

9. FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

9.1. Standard Applicable

According to FCC §2.1053,

FCC §22.917(a), §24.238(a), §27.53 (h)

Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

FCC §27.53(c) for LTE B13

For operations in the 746–758 MHz band and the 776–788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(2) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB (-13dBm)

(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;

FCC §27.53 (f) for LTE B13

For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

FCC §27.53(c) (5) & FCC §27.53(g) for LTE B12, 13

Compliance for operations in the 600 MHz, 698-746 MHz, 746-758 MHz and the 776-788 MHz band with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

FCC §27.53(h)(3) for LTE B4

Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

FCC §27.53(m) (4) (6) for LTE B7, 38, 41

For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log(P)$ dB on all fre-

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quencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed; for mobile digital stations, in the 1 megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 megahertz band is 2495-2496 MHz, in which case a resolution bandwidth of at least one percent may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 megahertz or 1 percent of emission bandwidth, as specified; or 1 megahertz or 2 percent for mobile digital stations, except in the band 2495-2496 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. With respect to television operations, measurements must be made of the separate visual and aural operating powers at sufficiently frequent intervals to ensure compliance with the rules.

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Table 2 — Unwanted Emissions for Mobile, Portable and Low-Power Fixed Subscriber Equipment

Frequency (MHz)	Attenuation (dB)
<2200	$43 + 10 \log_{10}(p)$
2200 - 2288	$70 + 10 \log_{10}(p)$
2288 - 2292	$67 + 10 \log_{10}(p)$
2292 - 2296	$61 + 10 \log_{10}(p)$
2296 - 2300	$55 + 10 \log_{10}(p)$
2300 - 2305	$43 + 10 \log_{10}(p)$
2305 - 2320	$43 + 10 \log_{10}(p)$ ^{Note}
2320 - 2324	$55 + 10 \log_{10}(p)$
2324 - 2328	$61 + 10 \log_{10}(p)$
2328 - 2337	$67 + 10 \log_{10}(p)$
2337 - 2341	$61 + 10 \log_{10}(p)$
2341 - 2345	$55 + 10 \log_{10}(p)$
2345 - 2360	$43 + 10 \log_{10}(p)$ ^{Note}
2360 - 2365	$43 + 10 \log_{10}(p)$
2365 - 2395	$70 + 10 \log_{10}(p)$
>2395	$43 + 10 \log_{10}(p)$

Note: Measured at the edges of the highest and lowest frequency range(s) in which the equipment is designed to operate. See Section 1.2 for the permitted frequency ranges for various equipment types.

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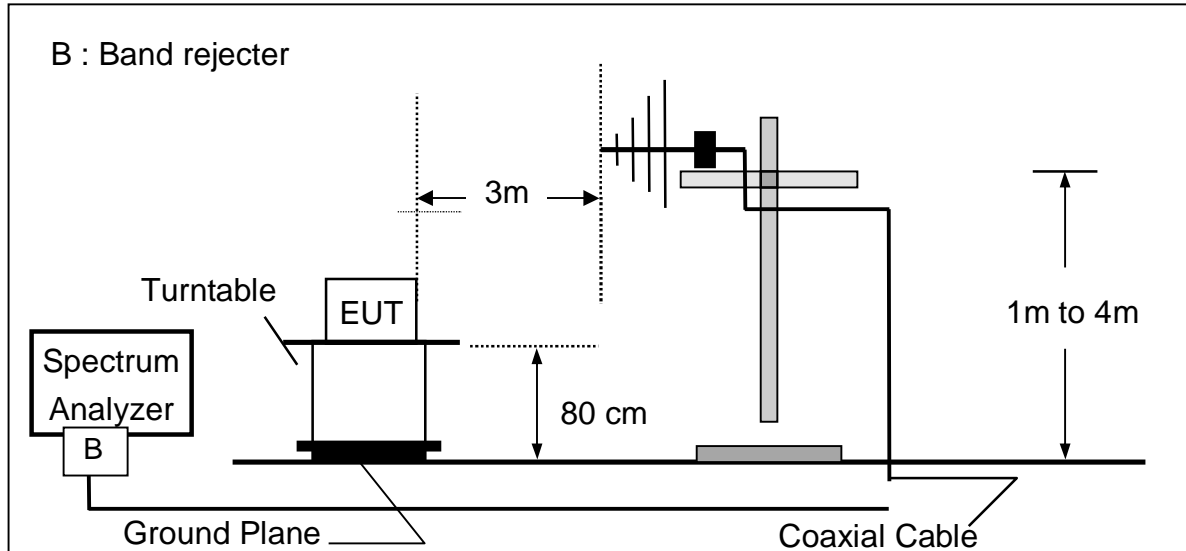
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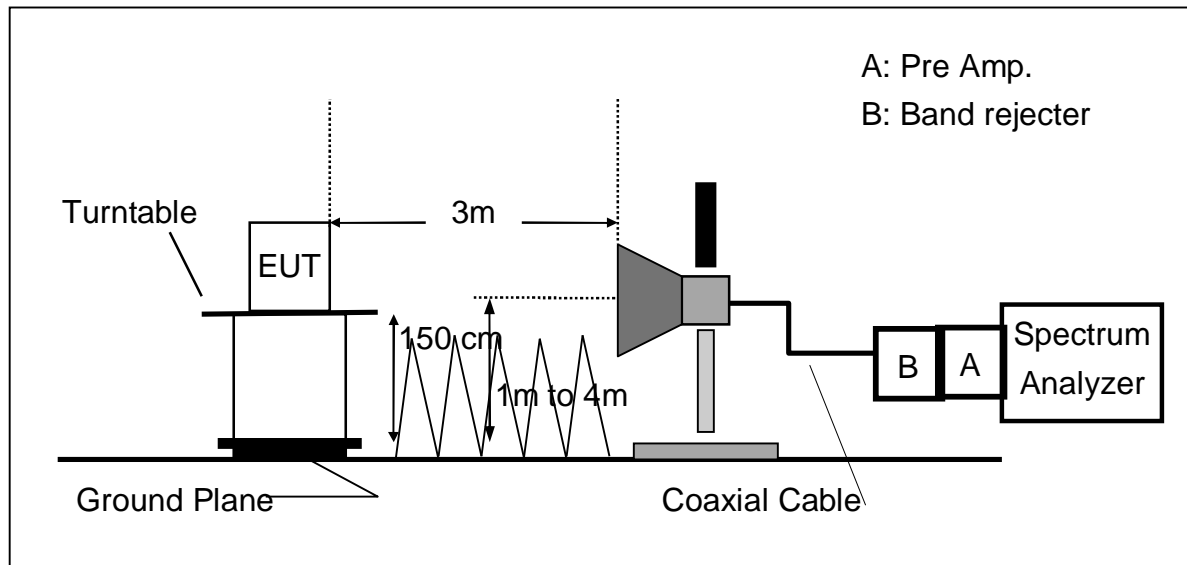
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9.2. EUT Setup

Radiated Emission Test Set-Up, Frequency Below 1000MHz



Radiated Emission Test Set-UP Frequency Over 1 GHz



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9.3. Measurement Procedure:

The EUT was placed on a non-conductive; the measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

The frequency range up to tenth harmonic was investigated for each of three fundamental frequencies (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method.

The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.

$$\text{ERP (dBm)} = \text{SG Level(dBm)} + \text{Antenna Gain(dBd)} + \text{Cable Loss(dB)}$$

$$\text{EIRP (dBm)} = \text{SG Level(dBm)} + \text{Antenna Gain(dBi)} + \text{Cable Loss(dB)}$$

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9.4. Measurement Equipment Used:

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Horn Antenna	Schwarzbeck	BBHA9170	184	12/25/2019	12/24/2020
Horn Antenna	Schwarzbeck	BBHA9120D	D803	12/20/2019	12/19/2020
Bi-log Antenna	TESEO	CBL 6112D	35242 & AT-N0555	01/13/2020	01/12/2021
Spectrum Analyzer	Agilent	E4446A	MY51100003	10/23/2019	10/22/2020
Radio Communication Analyzer	Anritsu	MT8820C	6200995019	04/01/2019	03/31/2020
Radio Communication Analyzer	Anritsu	MT8815B	6200711454	04/01/2019	03/31/2020
Pre-Amplifier	EMC Instruments	EMC184045B	980135	01/02/2020	01/01/2021
Pre-Amplifier	EMC Instruments	EMC051825	980152	01/02/2020	01/01/2021
Pre-Amplifier	HP	8447D	2944A09469	01/02/2020	01/01/2021
Filter 635-920	Micro-Tronics	WI	4	01/02/2020	01/01/2021
Filter 800-1000	Micro-Tronics	EWT	M1	01/02/2020	01/01/2021
Filter 1700-2000	Micro-Tronics	EWT	M3	01/02/2020	01/01/2021
Filter 2240-2700	Micro-Tronics	WI	2	01/02/2020	01/01/2021
1GHz High Pass Filter	Micro-Tronics	HPM50108	32	01/02/2020	01/01/2021
2GHz High Pass Filter	Micro-Tronics	HPM50110	36	01/02/2020	01/01/2021
High Pass Filter	WI	WHKX4.0/18G-10S S	22	01/02/2020	01/01/2021
Coaxial Cable	Huber Suhner	succoflex 102	MY2622/2	01/02/2020	01/01/2021
Coaxial Cable	Huber Suhner	succoflex 104A	800086/4a	01/02/2020	01/01/2021
Coaxial Cable	Huber Suhner	EMC 104-SM-SM-2000	160123	01/02/2020	01/01/2021

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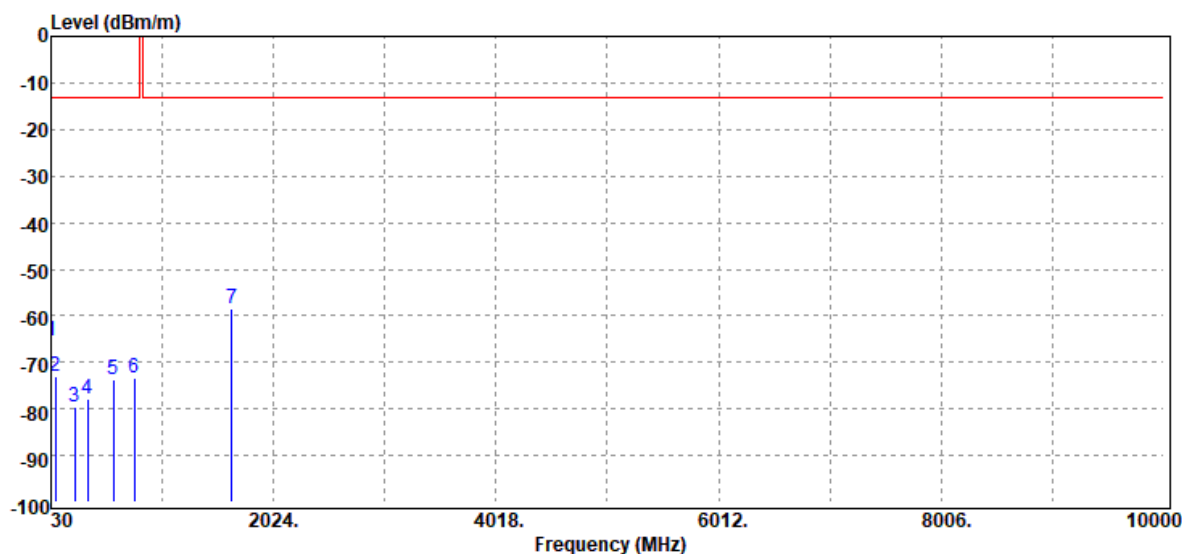
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9.5. Measurement Result:

Radiated Spurious Emission Measurement Result: GSM 850 Mode

Report Number	:ER/2019/C0150	Test Date	:2020-01-17
Operation Mode	:GSM 850	Temp./Humi.	:21.6/65
Test Mode	:Tx CH Low	Antenna Pol.	:VERTICAL
EUT Pol	:H Plane	Engineer	:Thomas
Test Channel	:824.2 MHz		



Freq.	EIRP/ERP	SG	Antenna	Cable	Limit	Margin
MHz	dBm	Output Level dBm	Gain dBi/dBd	Loss dB	dBm	dB
34.85	-65.52	-45.03	-19.90	-0.59	-13.00	-52.52
68.80	-72.93	-59.68	-12.45	-0.80	-13.00	-59.93
240.49	-79.51	-76.35	-1.73	-1.43	-13.00	-66.51
354.95	-77.93	-74.48	-1.54	-1.91	-13.00	-64.93
592.60	-73.68	-69.91	-1.74	-2.03	-13.00	-60.68
778.84	-73.39	-69.02	-1.71	-2.66	-13.00	-60.39
1648.40	-58.32	-63.61	9.30	-4.01	-13.00	-45.32

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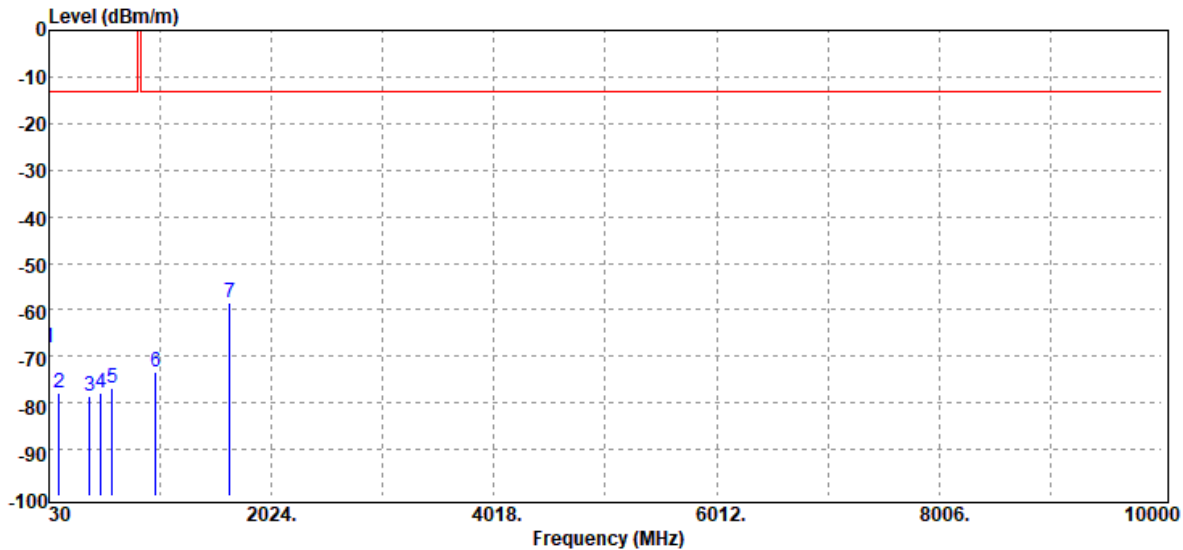
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Report Number :ER/2019/C0150
Operation Mode :GSM 850
Test Mode :Tx CH Low
EUT Pol :H Plane
Test Channel :824.2 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-68.09	-47.03	-20.49	-0.57	-13.00	-55.09
122.15	-77.90	-69.76	-7.10	-1.04	-13.00	-64.90
396.66	-78.42	-74.87	-1.61	-1.94	-13.00	-65.42
498.51	-77.82	-74.01	-1.49	-2.32	-13.00	-64.82
599.39	-76.86	-72.73	-1.86	-2.27	-13.00	-63.86
982.54	-73.51	-68.47	-1.74	-3.30	-13.00	-60.51
1648.40	-58.59	-63.88	9.30	-4.01	-13.00	-45.59

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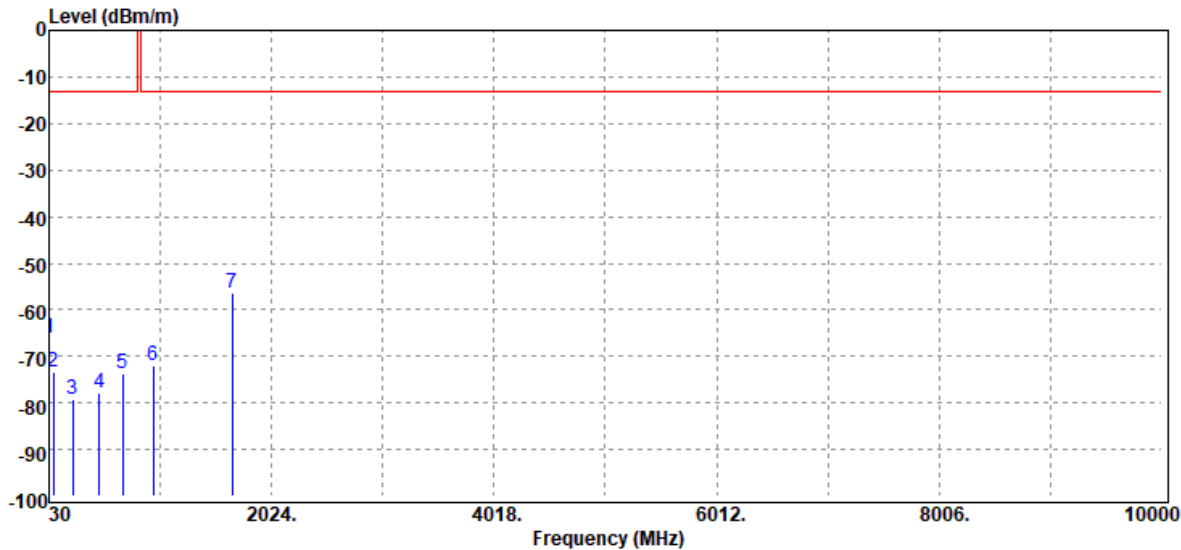
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Report Number :ER/2019/C0150
Operation Mode :GSM 850
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :836.6 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.02	-44.96	-20.49	-0.57	-13.00	-53.02
66.86	-73.53	-59.59	-13.15	-0.79	-13.00	-60.53
245.34	-79.27	-76.14	-1.66	-1.47	-13.00	-66.27
483.96	-77.90	-74.16	-1.51	-2.23	-13.00	-64.90
687.66	-73.63	-69.85	-1.29	-2.49	-13.00	-60.63
966.05	-71.98	-66.85	-1.86	-3.27	-13.00	-58.98
1673.20	-56.52	-61.98	9.49	-4.03	-13.00	-43.52

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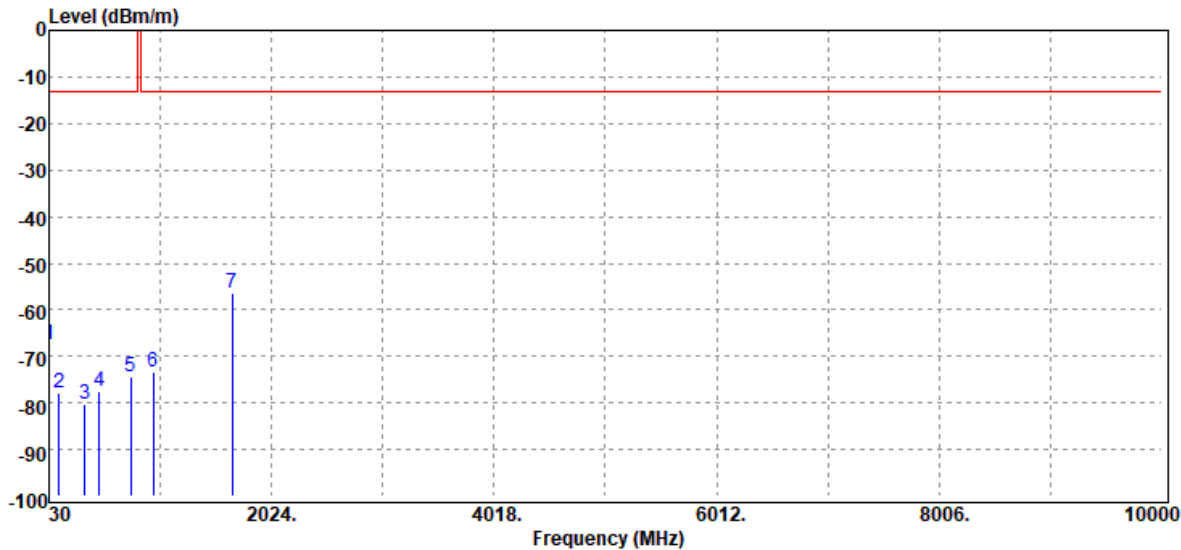
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Report Number :ER/2019/C0150
Operation Mode :GSM 850
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :836.6 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
34.85	-67.50	-47.01	-19.90	-0.59	-13.00	-54.50
117.30	-77.79	-69.68	-7.09	-1.02	-13.00	-64.79
348.16	-80.40	-77.01	-1.50	-1.89	-13.00	-67.40
481.05	-77.48	-73.80	-1.44	-2.24	-13.00	-64.48
762.35	-74.55	-70.13	-1.80	-2.62	-13.00	-61.55
966.05	-73.36	-68.23	-1.86	-3.27	-13.00	-60.36
1673.20	-56.42	-61.88	9.49	-4.03	-13.00	-43.42

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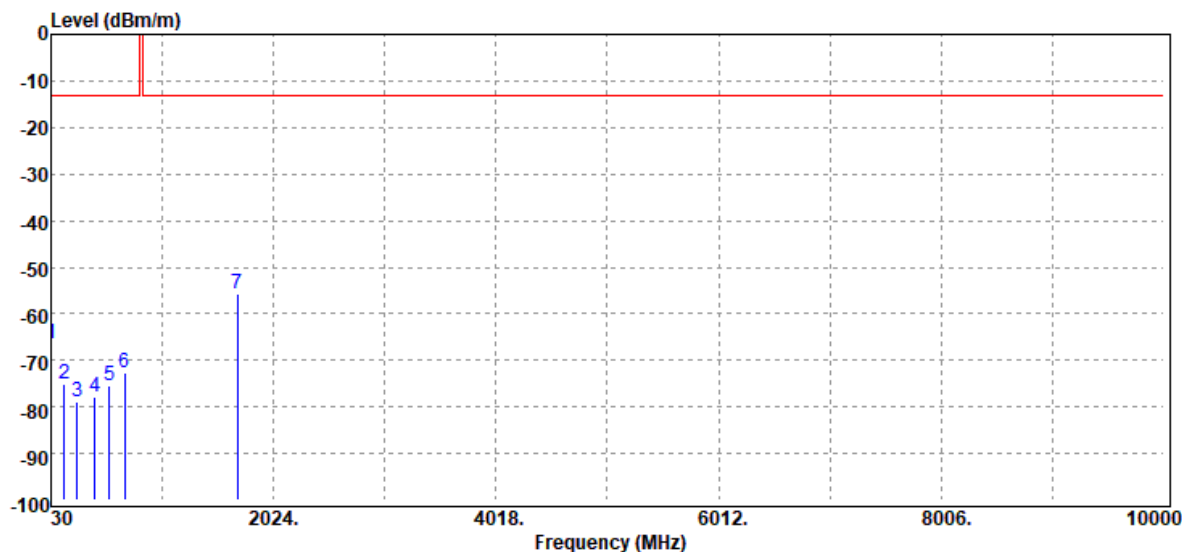
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Report Number :ER/2019/C0150
Operation Mode :GSM 850
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :848.8 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
33.88	-66.30	-45.57	-20.15	-0.58	-13.00	-53.30
150.28	-75.09	-66.18	-7.70	-1.21	-13.00	-62.09
260.86	-78.96	-75.68	-1.66	-1.62	-13.00	-65.96
420.91	-77.82	-74.20	-1.66	-1.96	-13.00	-64.82
553.80	-75.48	-71.78	-1.45	-2.25	-13.00	-62.48
689.60	-72.75	-68.99	-1.27	-2.49	-13.00	-59.75
1697.60	-55.56	-61.19	9.68	-4.05	-13.00	-42.56

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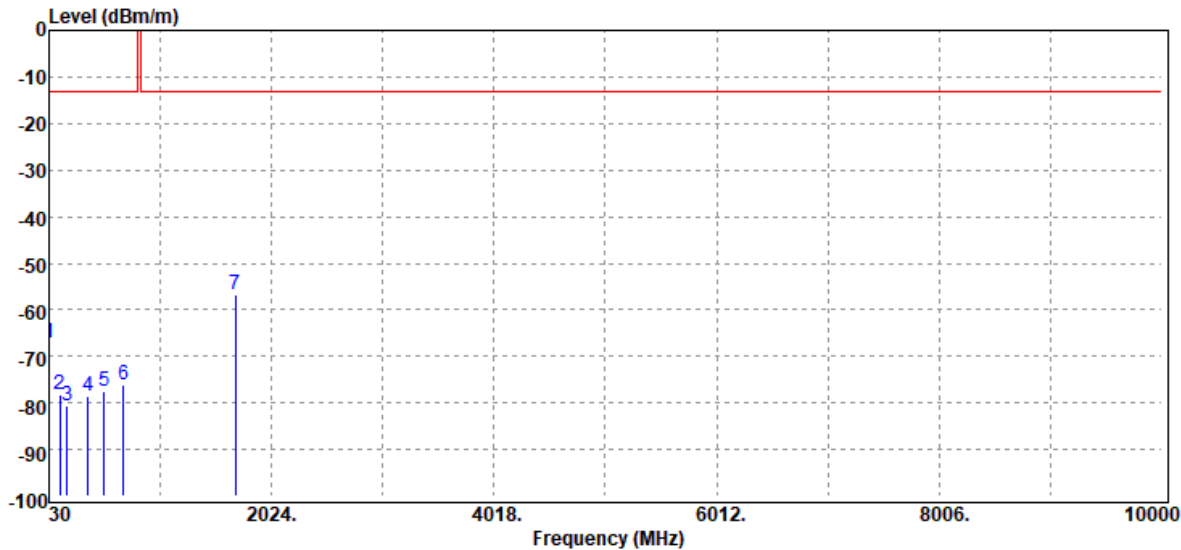
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Report Number :ER/2019/C0150
Operation Mode :GSM 850
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :848.8 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-67.30	-46.24	-20.49	-0.57	-13.00	-54.30
127.00	-78.22	-69.98	-7.16	-1.08	-13.00	-65.22
191.99	-80.71	-76.59	-2.77	-1.35	-13.00	-67.71
379.20	-78.52	-74.96	-1.64	-1.92	-13.00	-65.52
526.64	-77.46	-73.61	-1.44	-2.41	-13.00	-64.46
697.36	-75.97	-72.07	-1.32	-2.58	-13.00	-62.97
1697.60	-56.81	-62.44	9.68	-4.05	-13.00	-43.81

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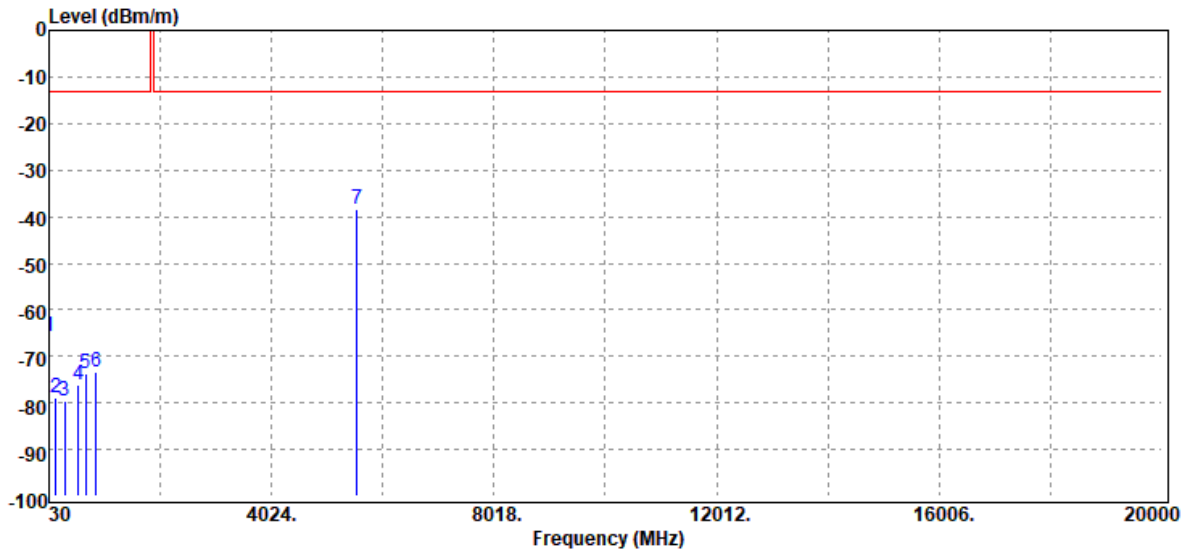
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Radiated Spurious Emission Measurement Result: GSM 1900 Mode

Report Number	:ER/2019/C0150	Test Date	:2020-01-17
Operation Mode	:GSM 1900	Temp./Humi.	:21.6/65
Test Mode	:Tx CH Low	Antenna Pol.	:VERTICAL
EUT Pol	:H Plane	Engineer	:Thomas
Test Channel	:1850.2 MHz		



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-65.71	-44.65	-20.49	-0.57	-13.00	-52.71
149.31	-78.89	-69.92	-7.76	-1.21	-13.00	-65.89
315.18	-79.62	-76.36	-1.58	-1.68	-13.00	-66.62
561.56	-76.24	-72.56	-1.39	-2.29	-13.00	-63.24
681.84	-73.64	-69.83	-1.30	-2.51	-13.00	-60.64
881.66	-73.33	-69.07	-1.73	-2.53	-13.00	-60.33
5550.60	-38.48	-44.16	13.00	-7.32	-13.00	-25.48

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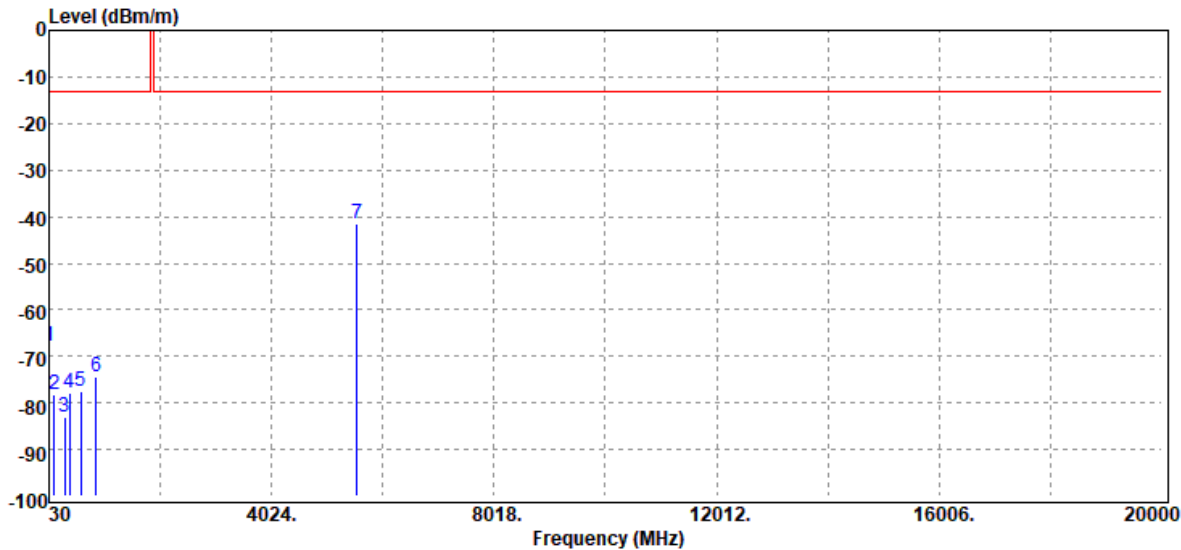
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Report Number :ER/2019/C0150
Operation Mode :GSM 1900
Test Mode :Tx CH Low
EUT Pol :H Plane
Test Channel :1850.2 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-67.93	-46.87	-20.49	-0.57	-13.00	-54.93
125.06	-78.03	-69.87	-7.10	-1.06	-13.00	-65.03
316.15	-82.90	-79.60	-1.61	-1.69	-13.00	-69.90
400.54	-77.70	-74.18	-1.60	-1.92	-13.00	-64.70
602.30	-77.35	-73.06	-1.94	-2.35	-13.00	-64.35
881.66	-74.23	-69.97	-1.73	-2.53	-13.00	-61.23
5550.60	-41.35	-47.03	13.00	-7.32	-13.00	-28.35

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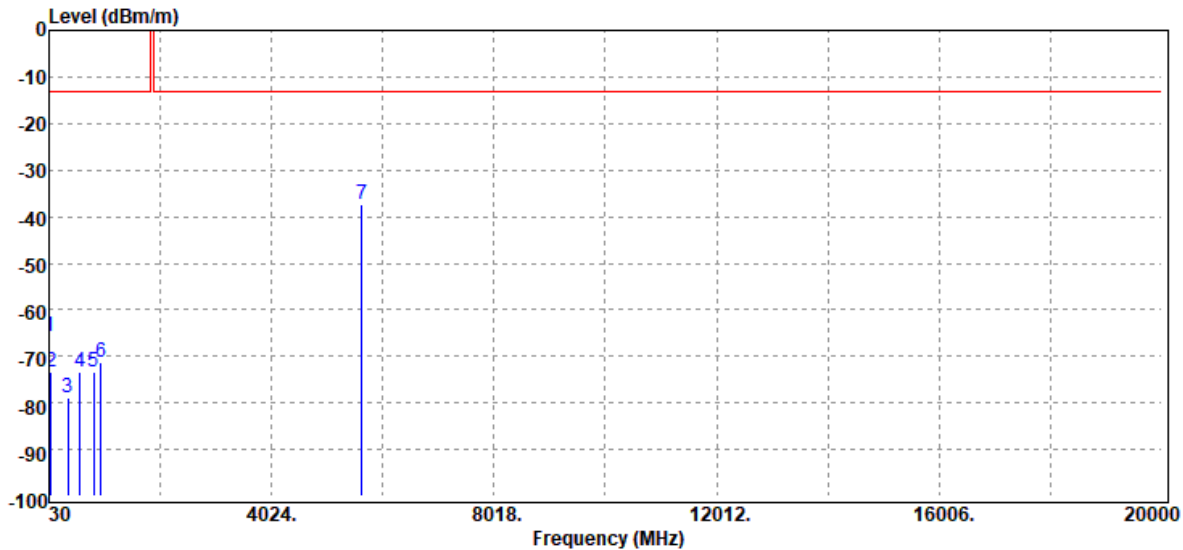
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Report Number :ER/2019/C0150
Operation Mode :GSM 1900
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :1880 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas


Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-65.80	-44.74	-20.49	-0.57	-13.00	-52.80
65.89	-73.27	-59.09	-13.40	-0.78	-13.00	-60.27
372.41	-78.74	-75.21	-1.62	-1.91	-13.00	-65.74
589.69	-73.29	-69.64	-1.71	-1.94	-13.00	-60.29
835.10	-73.26	-68.46	-1.81	-2.99	-13.00	-60.26
968.96	-71.28	-66.14	-1.89	-3.25	-13.00	-58.28
5640.00	-37.35	-43.13	13.26	-7.48	-13.00	-24.35

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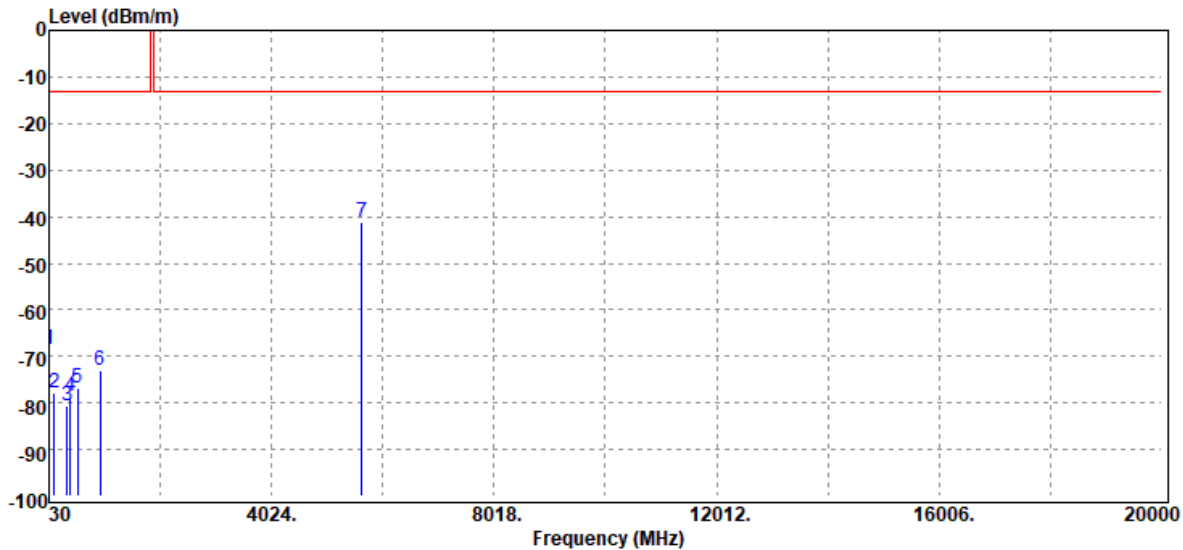
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Report Number :ER/2019/C0150
Operation Mode :GSM 1900
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :1880 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
34.85	-68.37	-47.88	-19.90	-0.59	-13.00	-55.37
125.06	-77.70	-69.54	-7.10	-1.06	-13.00	-64.70
353.98	-80.67	-77.24	-1.52	-1.91	-13.00	-67.67
413.15	-78.47	-74.94	-1.58	-1.95	-13.00	-65.47
537.31	-76.86	-73.28	-1.38	-2.20	-13.00	-63.86
944.71	-72.96	-68.01	-1.84	-3.11	-13.00	-59.96
5640.00	-41.25	-47.03	13.26	-7.48	-13.00	-28.25

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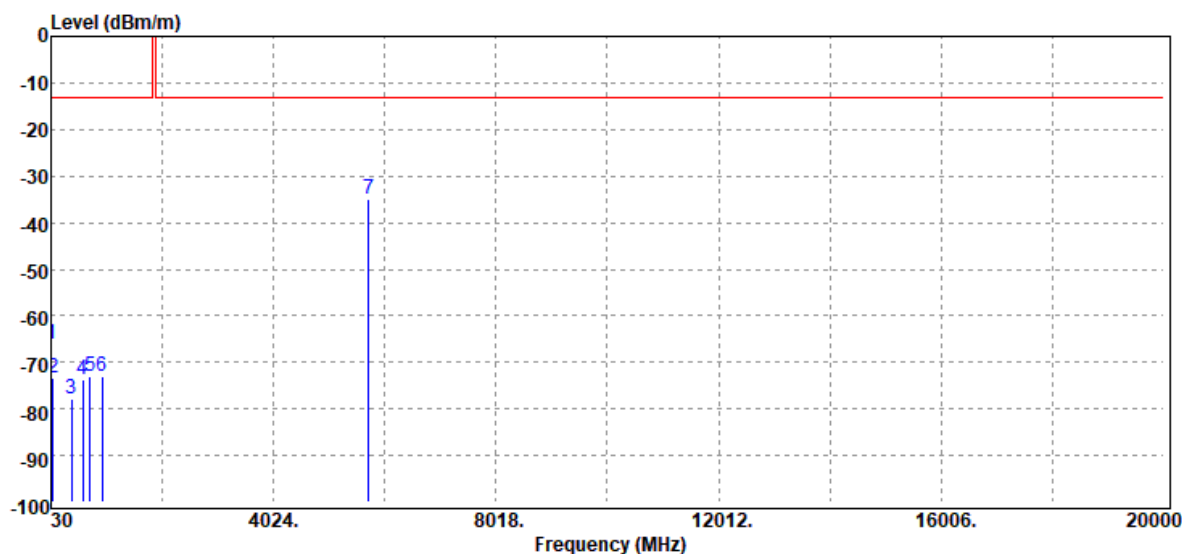
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Report Number :ER/2019/C0150
Operation Mode :GSM 1900
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :1909.8 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
34.85	-66.23	-45.74	-19.90	-0.59	-13.00	-53.23
66.86	-73.28	-59.34	-13.15	-0.79	-13.00	-60.28
405.39	-77.79	-74.27	-1.59	-1.93	-13.00	-64.79
604.24	-73.83	-69.45	-1.98	-2.40	-13.00	-60.83
725.49	-72.94	-69.30	-1.34	-2.30	-13.00	-59.94
944.71	-72.89	-67.94	-1.84	-3.11	-13.00	-59.89
5729.40	-34.96	-40.32	12.94	-7.58	-13.00	-21.96

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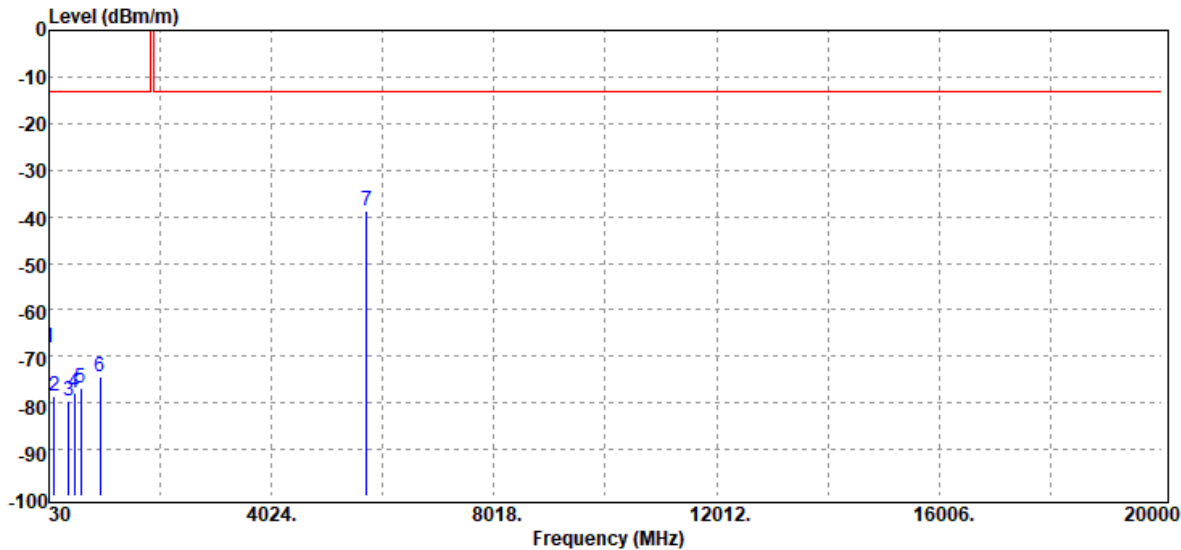
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Report Number :ER/2019/C0150
Operation Mode :GSM 1900
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :1909.8 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-68.08	-47.02	-20.49	-0.57	-13.00	-55.08
122.15	-78.62	-70.48	-7.10	-1.04	-13.00	-65.62
381.14	-79.52	-75.95	-1.64	-1.93	-13.00	-66.52
481.05	-78.00	-74.32	-1.44	-2.24	-13.00	-65.00
599.39	-76.79	-72.66	-1.86	-2.27	-13.00	-63.79
951.50	-74.31	-69.17	-1.91	-3.23	-13.00	-61.31
5729.40	-38.71	-44.07	12.94	-7.58	-13.00	-25.71

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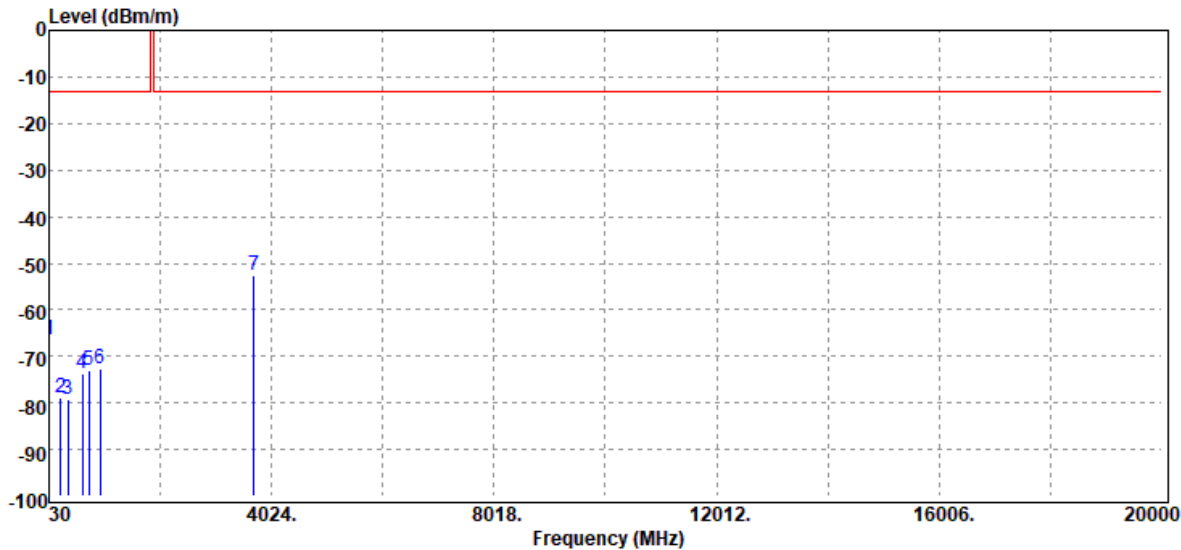
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Radiated Spurious Emission Measurement Result: WCDMA Band 2 Mode

Report Number	:ER/2019/C0150	Test Date	:2020-01-17
Operation Mode	:WCDMA B2	Temp./Humi.	:21.6/65
Test Mode	:Tx CH Low	Antenna Pol.	:VERTICAL
EUT Pol	:H Plane	Engineer	:Thomas
Test Channel	:1852.4 MHz		



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.32	-45.26	-20.49	-0.57	-13.00	-53.32
240.49	-78.98	-75.82	-1.73	-1.43	-13.00	-65.98
367.56	-79.38	-75.89	-1.58	-1.91	-13.00	-66.38
636.25	-73.53	-69.49	-1.56	-2.48	-13.00	-60.53
745.86	-72.92	-68.71	-1.81	-2.40	-13.00	-59.92
949.56	-72.74	-67.65	-1.88	-3.21	-13.00	-59.74
3704.80	-52.62	-59.07	12.39	-5.94	-13.00	-39.62

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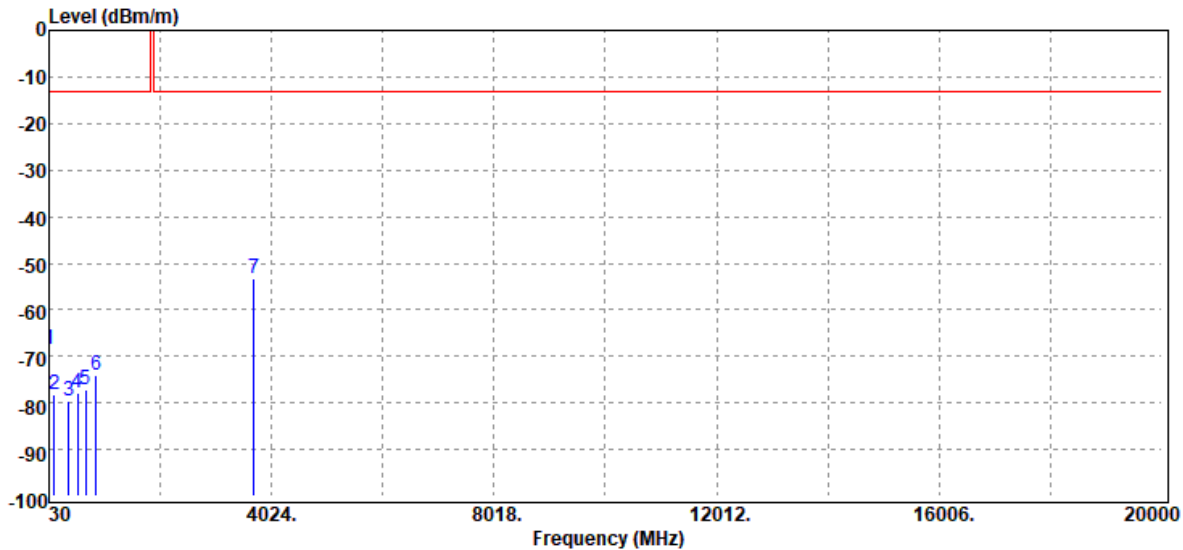
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Report Number :ER/2019/C0150
Operation Mode :WCDMA B2
Test Mode :Tx CH Low
EUT Pol :H Plane
Test Channel :1852.4 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
33.88	-68.49	-47.76	-20.15	-0.58	-13.00	-55.49
122.15	-78.05	-69.91	-7.10	-1.04	-13.00	-65.05
379.20	-79.50	-75.94	-1.64	-1.92	-13.00	-66.50
546.04	-77.93	-74.33	-1.41	-2.19	-13.00	-64.93
681.84	-77.06	-73.25	-1.30	-2.51	-13.00	-64.06
881.66	-73.96	-69.70	-1.73	-2.53	-13.00	-60.96
3704.80	-53.31	-59.76	12.39	-5.94	-13.00	-40.31

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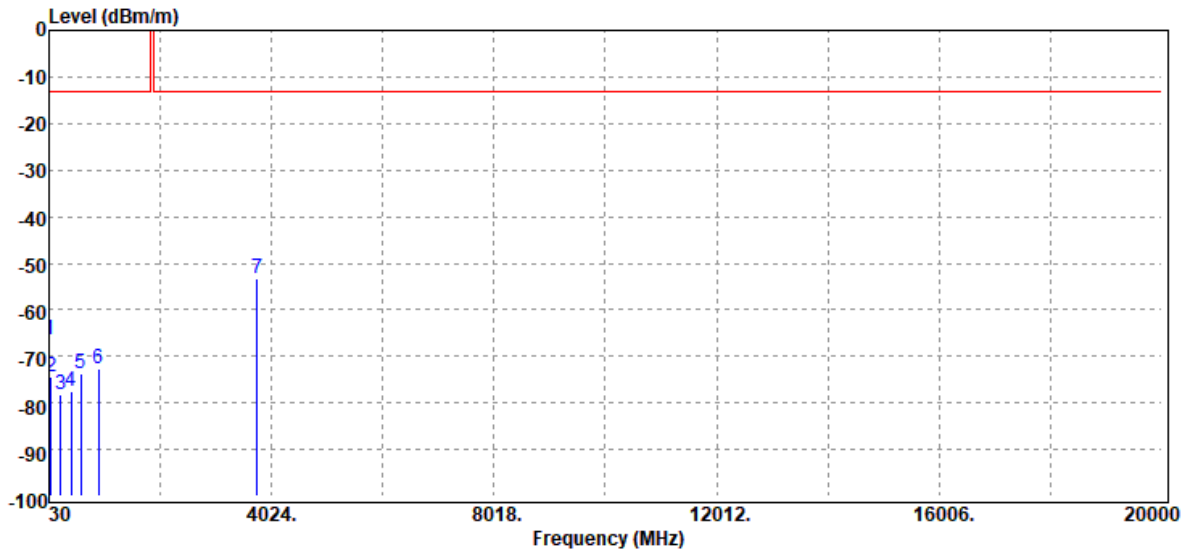
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Report Number :ER/2019/C0150
Operation Mode :WCDMA B2
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :1880 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.30	-45.24	-20.49	-0.57	-13.00	-53.30
66.86	-74.55	-60.61	-13.15	-0.79	-13.00	-61.55
245.34	-78.33	-75.20	-1.66	-1.47	-13.00	-65.33
420.91	-77.67	-74.05	-1.66	-1.96	-13.00	-64.67
597.45	-73.83	-69.82	-1.81	-2.20	-13.00	-60.83
919.49	-72.74	-67.96	-1.94	-2.84	-13.00	-59.74
3760.00	-53.13	-59.41	12.30	-6.02	-13.00	-40.13

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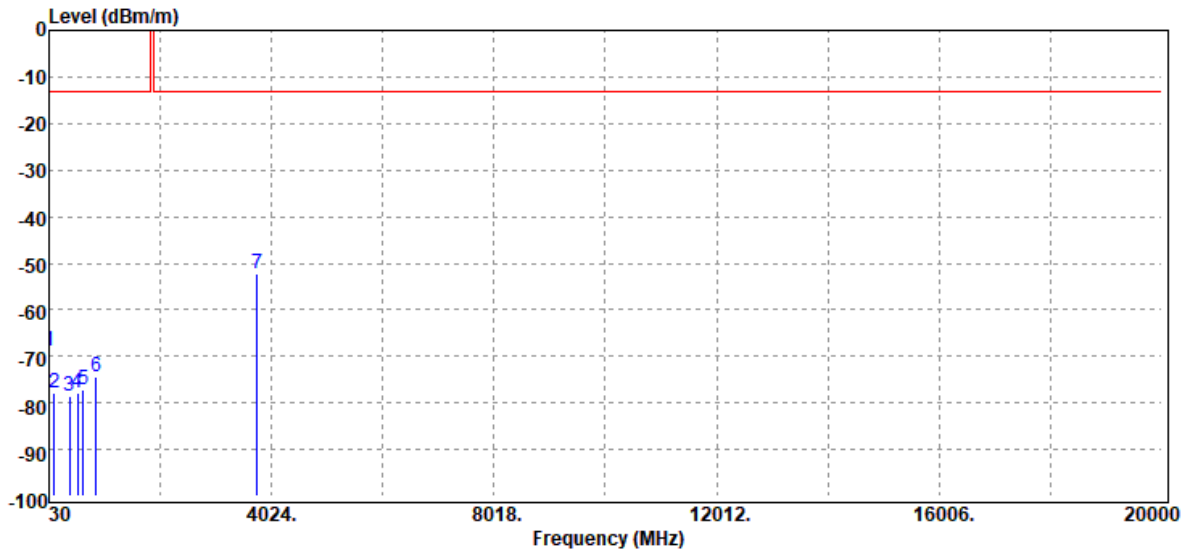
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Report Number :ER/2019/C0150
Operation Mode :WCDMA B2
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :1880 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
34.85	-68.69	-48.20	-19.90	-0.59	-13.00	-55.69
120.21	-77.97	-69.89	-7.06	-1.02	-13.00	-64.97
391.81	-78.43	-74.84	-1.62	-1.97	-13.00	-65.43
546.04	-77.74	-74.14	-1.41	-2.19	-13.00	-64.74
643.04	-77.27	-73.11	-1.54	-2.62	-13.00	-64.27
875.84	-74.45	-70.24	-1.71	-2.50	-13.00	-61.45
3760.00	-52.19	-58.47	12.30	-6.02	-13.00	-39.19

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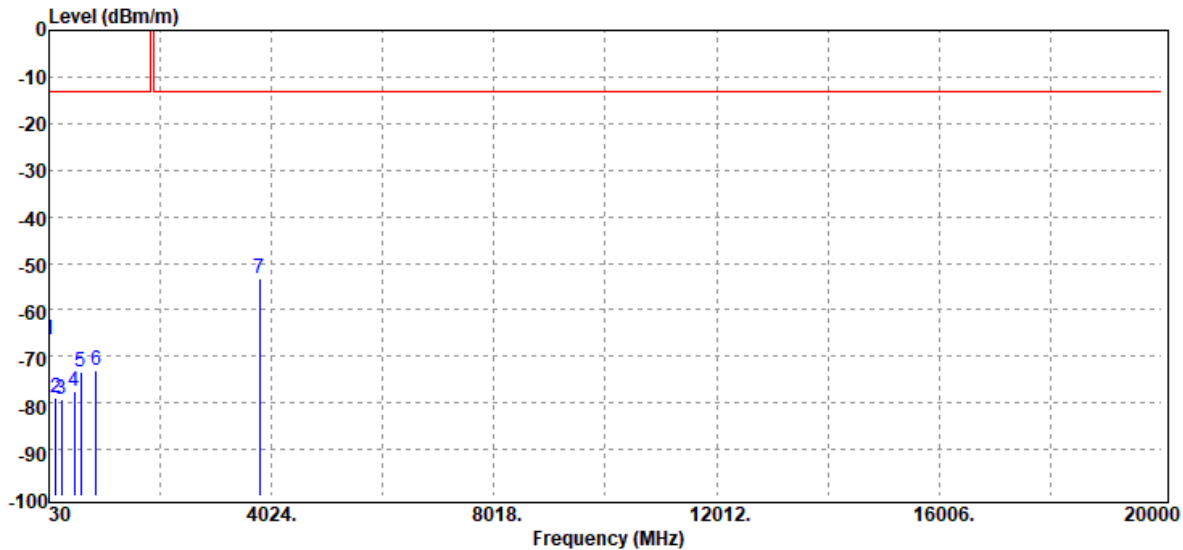
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Report Number :ER/2019/C0150
Operation Mode :WCDMA B2
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :1907.6 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.54	-45.48	-20.49	-0.57	-13.00	-53.54
153.19	-78.85	-70.13	-7.46	-1.26	-13.00	-65.85
257.95	-79.16	-75.93	-1.63	-1.60	-13.00	-66.16
488.81	-77.67	-73.92	-1.54	-2.21	-13.00	-64.67
599.39	-73.31	-69.18	-1.86	-2.27	-13.00	-60.31
871.96	-72.86	-68.68	-1.67	-2.51	-13.00	-59.86
3815.20	-53.15	-59.32	12.27	-6.10	-13.00	-40.15

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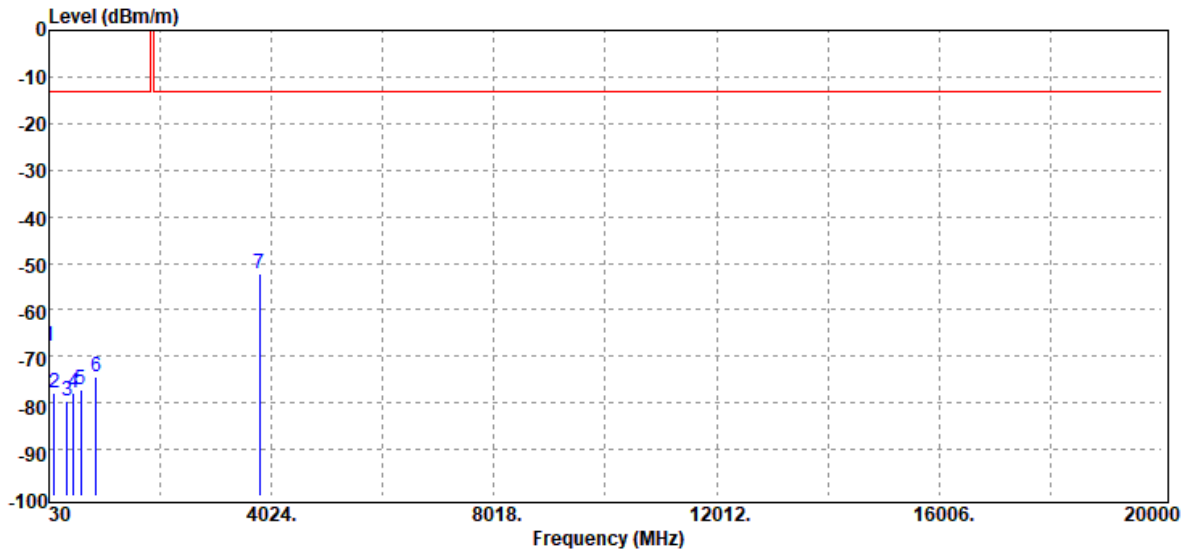
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Report Number :ER/2019/C0150
Operation Mode :WCDMA B2
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :1907.6 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-67.91	-46.85	-20.49	-0.57	-13.00	-54.91
123.12	-77.99	-69.91	-7.04	-1.04	-13.00	-64.99
354.95	-79.72	-76.27	-1.54	-1.91	-13.00	-66.72
476.20	-77.78	-74.04	-1.49	-2.25	-13.00	-64.78
602.30	-77.10	-72.81	-1.94	-2.35	-13.00	-64.10
873.90	-74.24	-70.05	-1.69	-2.50	-13.00	-61.24
3815.20	-52.08	-58.25	12.27	-6.10	-13.00	-39.08

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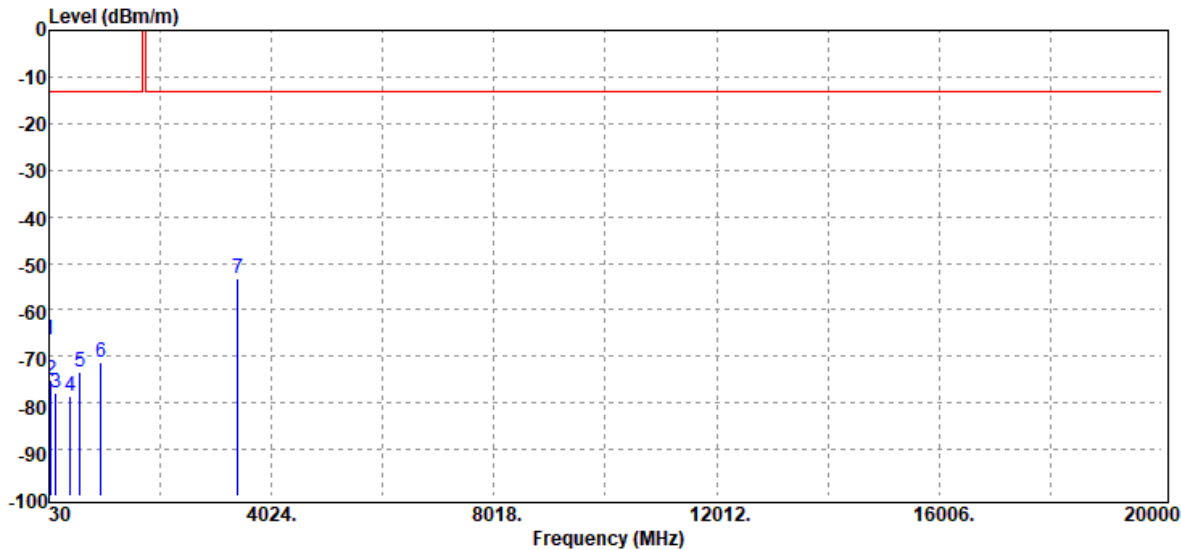
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Radiated Spurious Emission Measurement Result: WCDMA Band 4 Mode

Report Number	:ER/2019/C0150	Test Date	:2020-01-17
Operation Mode	:WCDMA B4	Temp./Humi.	:21.6/65
Test Mode	:Tx CH Low	Antenna Pol.	:VERTICAL
EUT Pol	:H Plane	Engineer	:Thomas
Test Channel	:1712.4 MHz		



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.56	-45.50	-20.49	-0.57	-13.00	-53.56
66.86	-75.00	-61.06	-13.15	-0.79	-13.00	-62.00
154.16	-77.86	-69.12	-7.46	-1.28	-13.00	-64.86
410.24	-78.54	-75.03	-1.58	-1.93	-13.00	-65.54
590.66	-73.19	-69.51	-1.72	-1.96	-13.00	-60.19
967.99	-71.17	-66.03	-1.88	-3.26	-13.00	-58.17
3424.80	-53.28	-59.88	12.40	-5.80	-13.00	-40.28

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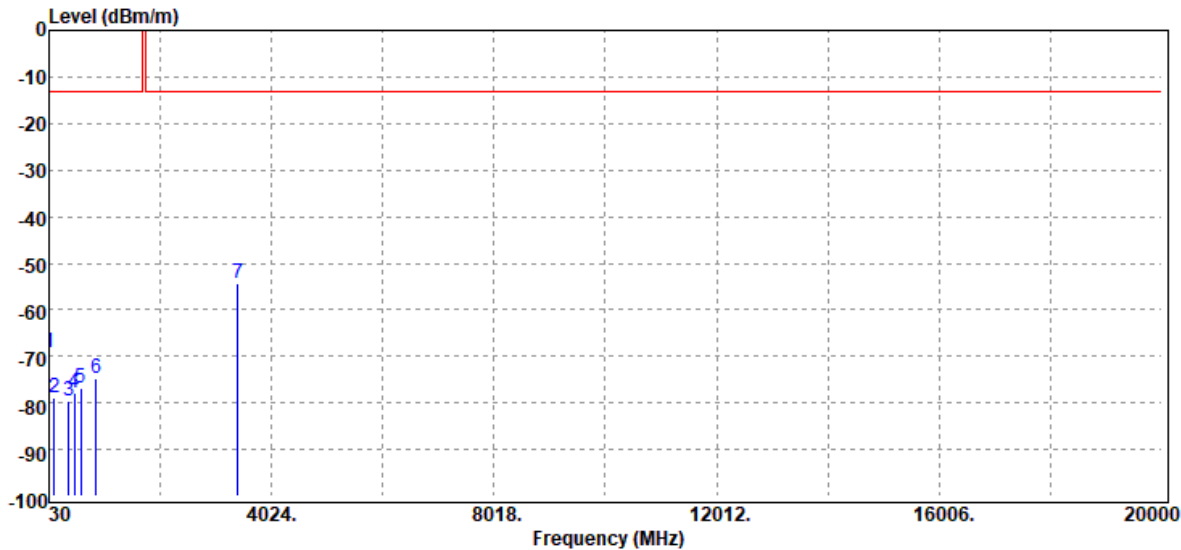
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Report Number :ER/2019/C0150
Operation Mode :WCDMA B4
Test Mode :Tx CH Low
EUT Pol :H Plane
Test Channel :1712.4 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
34.85	-69.28	-48.79	-19.90	-0.59	-13.00	-56.28
128.94	-78.84	-70.52	-7.23	-1.09	-13.00	-65.84
379.20	-79.62	-76.06	-1.64	-1.92	-13.00	-66.62
479.11	-77.75	-74.06	-1.44	-2.25	-13.00	-64.75
595.51	-76.95	-73.06	-1.76	-2.13	-13.00	-63.95
870.02	-74.78	-70.62	-1.65	-2.51	-13.00	-61.78
3424.80	-54.17	-60.77	12.40	-5.80	-13.00	-41.17

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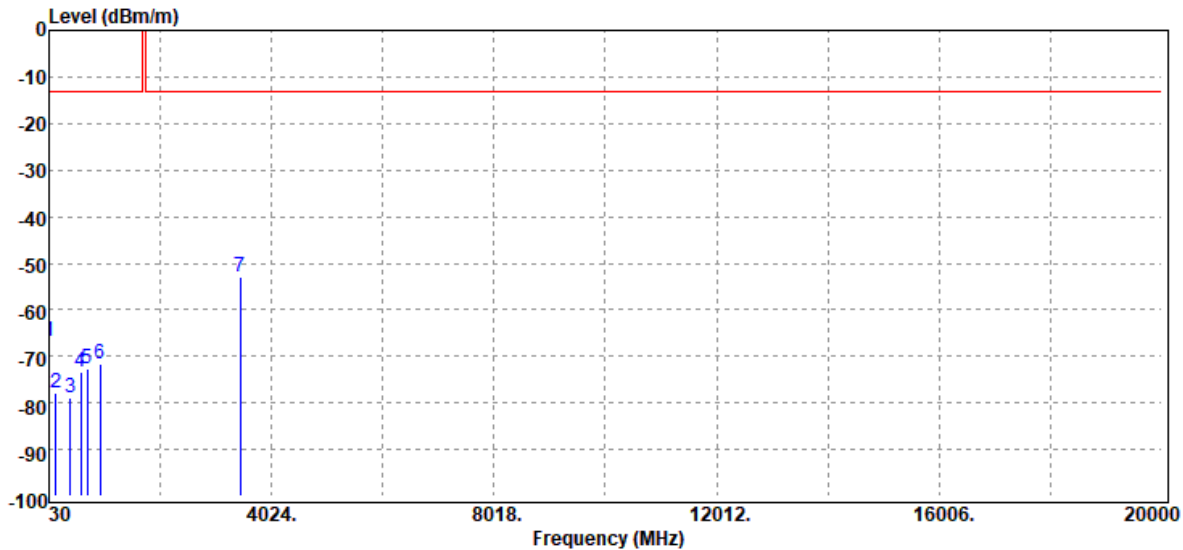
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Report Number :ER/2019/C0150
Operation Mode :WCDMA B4
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :1732.6 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
33.88	-66.89	-46.16	-20.15	-0.58	-13.00	-53.89
156.10	-77.97	-69.40	-7.26	-1.31	-13.00	-64.97
410.24	-78.79	-75.28	-1.58	-1.93	-13.00	-65.79
599.39	-73.36	-69.23	-1.86	-2.27	-13.00	-60.36
720.64	-72.83	-69.03	-1.38	-2.42	-13.00	-59.83
954.41	-71.64	-66.45	-1.93	-3.26	-13.00	-58.64
3465.20	-53.02	-59.64	12.37	-5.75	-13.00	-40.02

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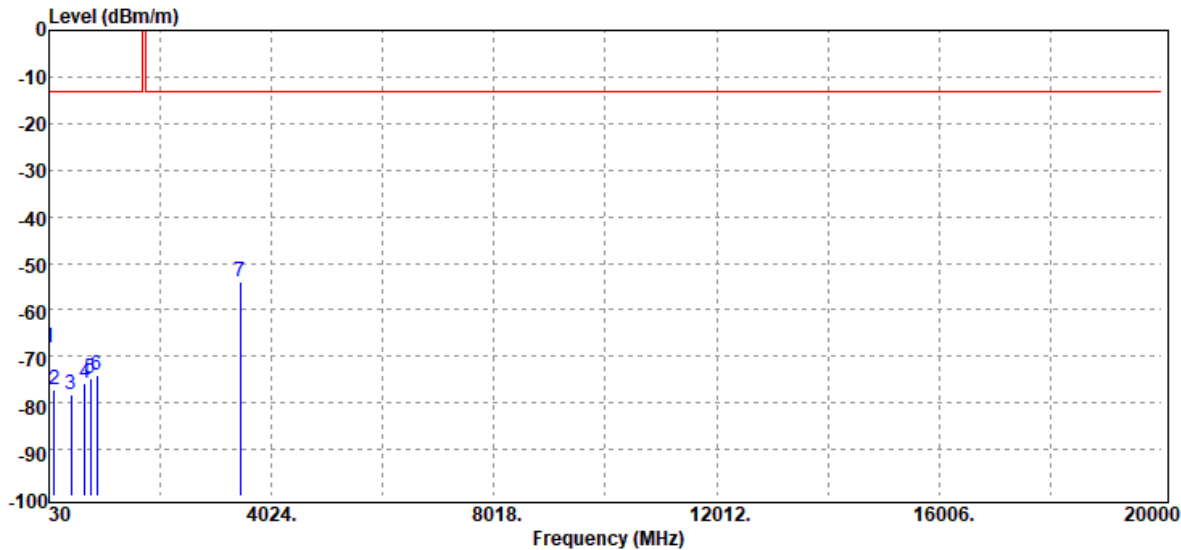
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Report Number :ER/2019/C0150
Operation Mode :WCDMA B4
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :1732.6 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
30.00	-68.13	-46.41	-21.20	-0.52	-13.00	-55.13
122.15	-77.13	-68.99	-7.10	-1.04	-13.00	-64.13
432.55	-78.26	-74.76	-1.67	-1.83	-13.00	-65.26
668.26	-75.83	-71.51	-1.31	-3.01	-13.00	-62.83
779.81	-74.83	-70.46	-1.70	-2.67	-13.00	-61.83
883.60	-73.88	-69.61	-1.71	-2.56	-13.00	-60.88
3465.20	-53.85	-60.47	12.37	-5.75	-13.00	-40.85

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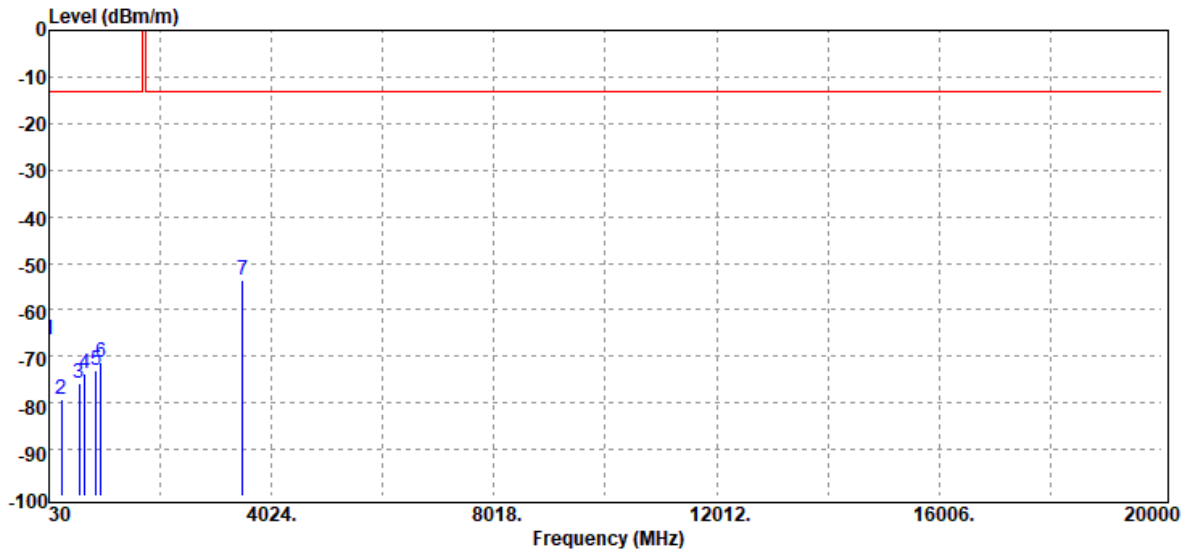
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Report Number :ER/2019/C0150
Operation Mode :WCDMA B4
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :1752.6 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.59	-45.53	-20.49	-0.57	-13.00	-53.59
256.01	-79.13	-75.94	-1.62	-1.57	-13.00	-66.13
571.26	-75.87	-72.24	-1.45	-2.18	-13.00	-62.87
679.90	-73.75	-69.94	-1.29	-2.52	-13.00	-60.75
869.05	-73.13	-68.94	-1.64	-2.55	-13.00	-60.13
968.96	-71.39	-66.25	-1.89	-3.25	-13.00	-58.39
3505.20	-53.50	-60.06	12.28	-5.72	-13.00	-40.50

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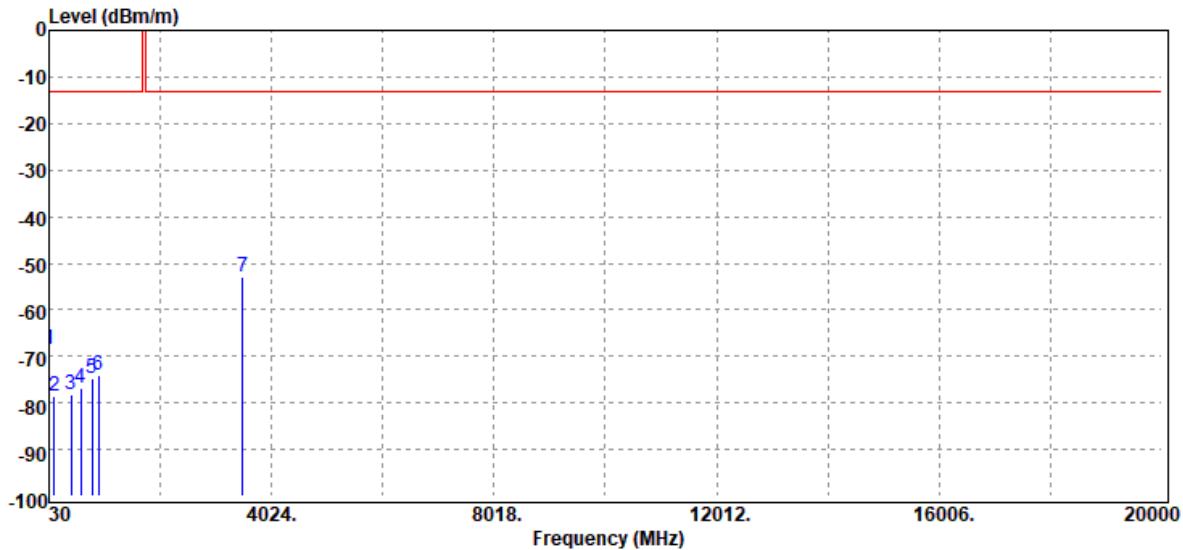
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Report Number :ER/2019/C0150
Operation Mode :WCDMA B4
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :1752.6 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-68.42	-47.36	-20.49	-0.57	-13.00	-55.42
124.09	-78.61	-70.49	-7.07	-1.05	-13.00	-65.61
427.70	-78.26	-74.77	-1.62	-1.87	-13.00	-65.26
602.30	-76.87	-72.58	-1.94	-2.35	-13.00	-63.87
804.06	-74.81	-70.04	-1.61	-3.16	-13.00	-61.81
914.64	-74.22	-69.58	-1.81	-2.83	-13.00	-61.22
3505.20	-53.04	-59.60	12.28	-5.72	-13.00	-40.04

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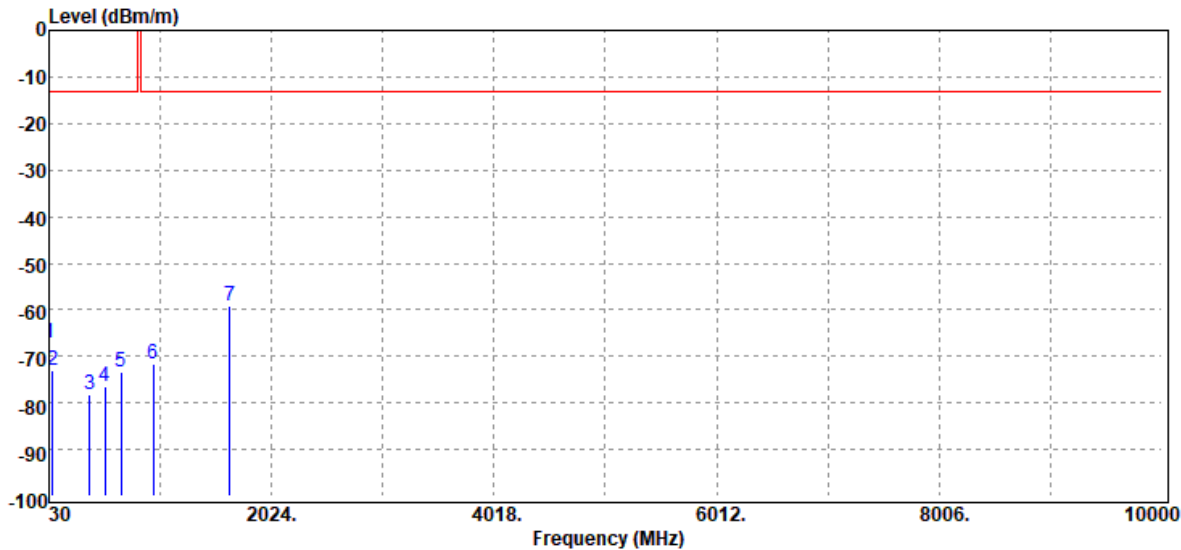
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Radiated Spurious Emission Measurement Result: WCDMA Band 5 Mode

Report Number	:ER/2019/C0150	Test Date	:2020-01-17
Operation Mode	:WCDMA B5	Temp./Humi.	:21.6/65
Test Mode	:Tx CH Low	Antenna Pol.	:VERTICAL
EUT Pol	:H Plane	Engineer	:Thomas
Test Channel	:826.4 MHz		



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.98	-45.92	-20.49	-0.57	-13.00	-53.98
65.89	-73.09	-58.91	-13.40	-0.78	-13.00	-60.09
396.66	-78.05	-74.50	-1.61	-1.94	-13.00	-65.05
534.40	-76.41	-72.78	-1.38	-2.25	-13.00	-63.41
675.05	-73.46	-69.47	-1.25	-2.74	-13.00	-60.46
963.14	-71.55	-66.40	-1.86	-3.29	-13.00	-58.55
1652.80	-59.29	-64.60	9.32	-4.01	-13.00	-46.29

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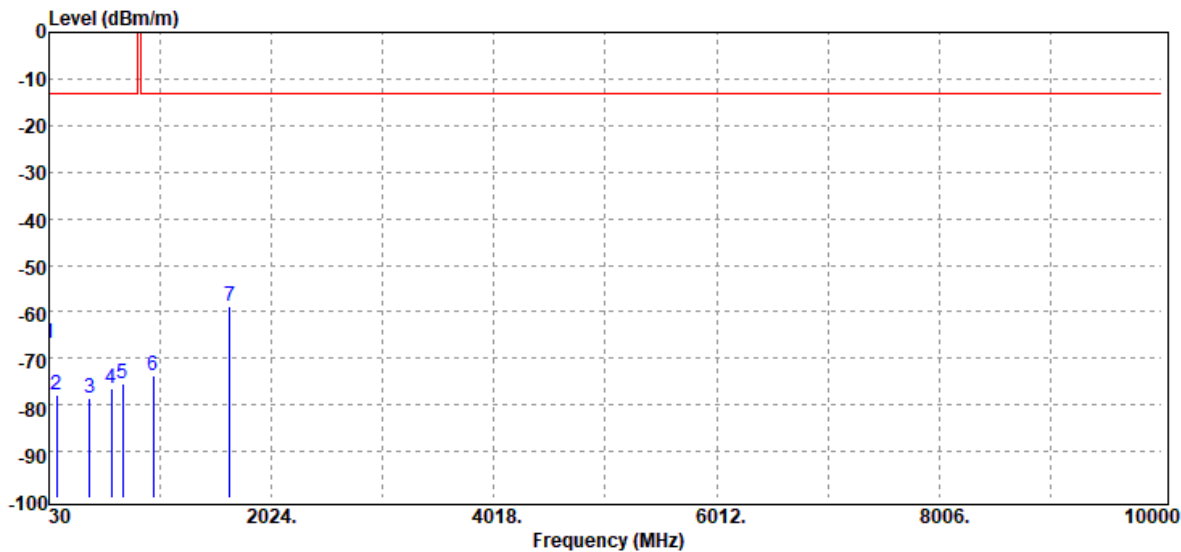
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Report Number :ER/2019/C0150
Operation Mode :WCDMA B5
Test Mode :Tx CH Low
EUT Pol :H Plane
Test Channel :826.4 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.95	-45.89	-20.49	-0.57	-13.00	-53.95
99.84	-77.90	-70.81	-6.12	-0.97	-13.00	-64.90
393.75	-78.41	-74.84	-1.61	-1.96	-13.00	-65.41
589.69	-76.50	-72.85	-1.71	-1.94	-13.00	-63.50
686.69	-75.39	-71.58	-1.31	-2.50	-13.00	-62.39
961.20	-73.80	-68.61	-1.88	-3.31	-13.00	-60.80
1652.80	-58.98	-64.29	9.32	-4.01	-13.00	-45.98

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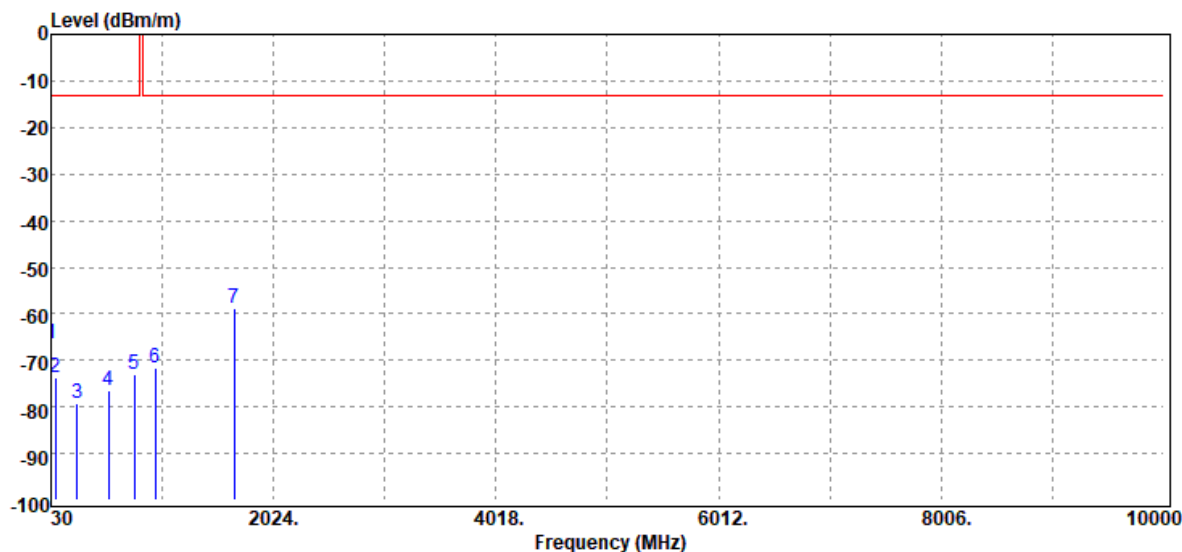
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Report Number :ER/2019/C0150
Operation Mode :WCDMA B5
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :836.6 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.58	-45.52	-20.49	-0.57	-13.00	-53.58
68.80	-73.55	-60.30	-12.45	-0.80	-13.00	-60.55
260.86	-79.36	-76.08	-1.66	-1.62	-13.00	-66.36
544.10	-76.31	-72.72	-1.41	-2.18	-13.00	-63.31
778.84	-72.99	-68.62	-1.71	-2.66	-13.00	-59.99
964.11	-71.74	-66.59	-1.86	-3.29	-13.00	-58.74
1673.20	-58.84	-64.30	9.49	-4.03	-13.00	-45.84

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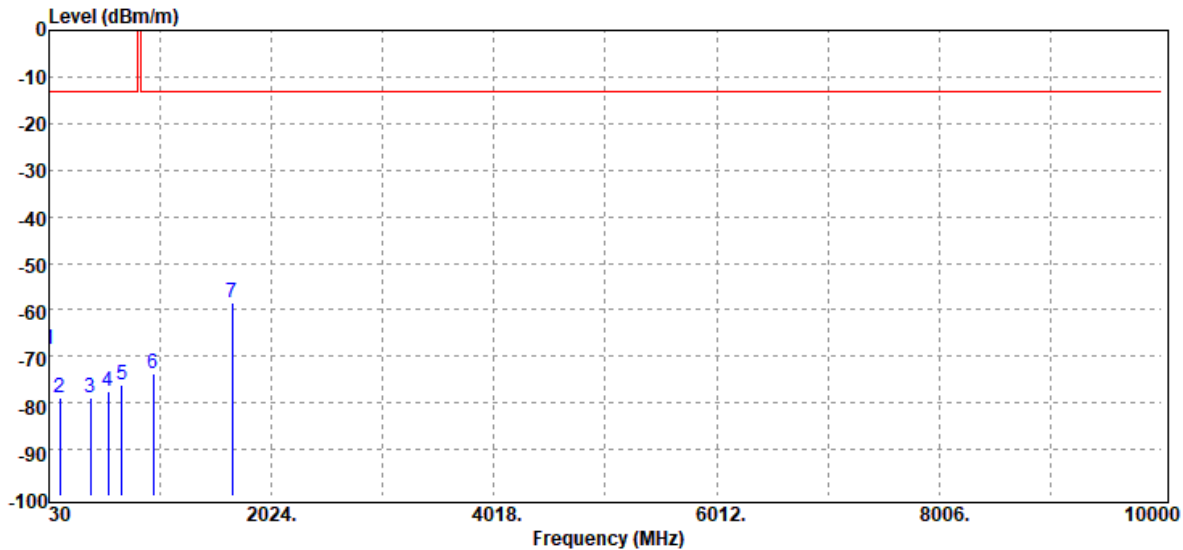
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Report Number :ER/2019/C0150
Operation Mode :WCDMA B5
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :836.6 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas


Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-68.67	-47.61	-20.49	-0.57	-13.00	-55.67
124.09	-78.79	-70.67	-7.07	-1.05	-13.00	-65.79
398.60	-79.01	-75.48	-1.60	-1.93	-13.00	-66.01
560.59	-77.63	-73.95	-1.38	-2.30	-13.00	-64.63
684.75	-76.12	-72.29	-1.33	-2.50	-13.00	-63.12
966.05	-73.72	-68.59	-1.86	-3.27	-13.00	-60.72
1673.20	-58.38	-63.84	9.49	-4.03	-13.00	-45.38

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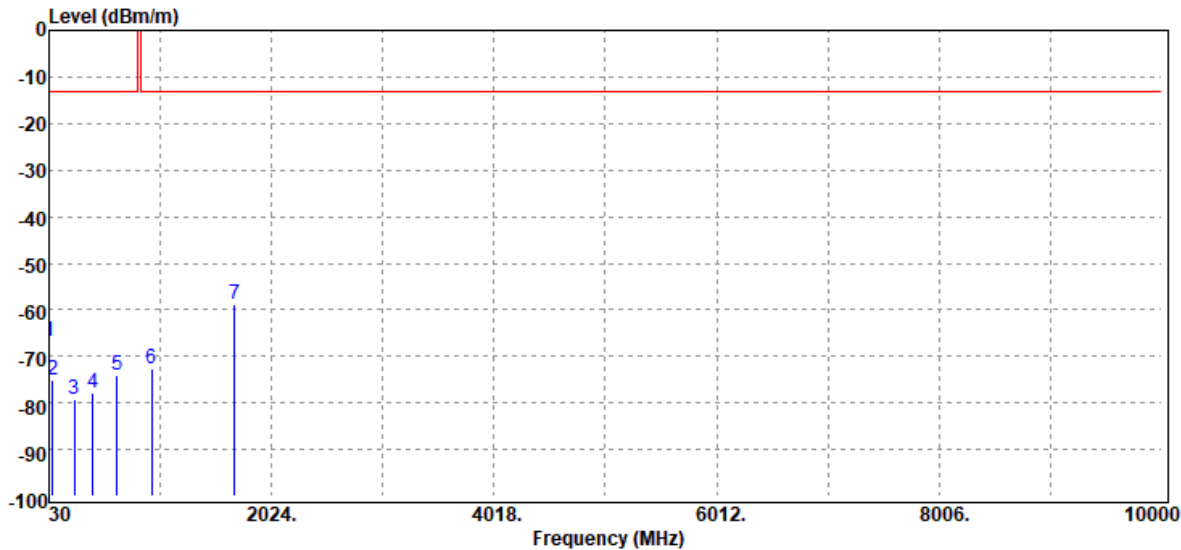
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Report Number :ER/2019/C0150
Operation Mode :WCDMA B5
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :846.6 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.71	-45.65	-20.49	-0.57	-13.00	-53.71
65.89	-75.12	-60.94	-13.40	-0.78	-13.00	-62.12
256.01	-79.29	-76.10	-1.62	-1.57	-13.00	-66.29
419.94	-77.89	-74.24	-1.68	-1.97	-13.00	-64.89
638.19	-74.02	-69.99	-1.54	-2.49	-13.00	-61.02
949.56	-72.83	-67.74	-1.88	-3.21	-13.00	-59.83
1693.20	-58.84	-64.44	9.65	-4.05	-13.00	-45.84

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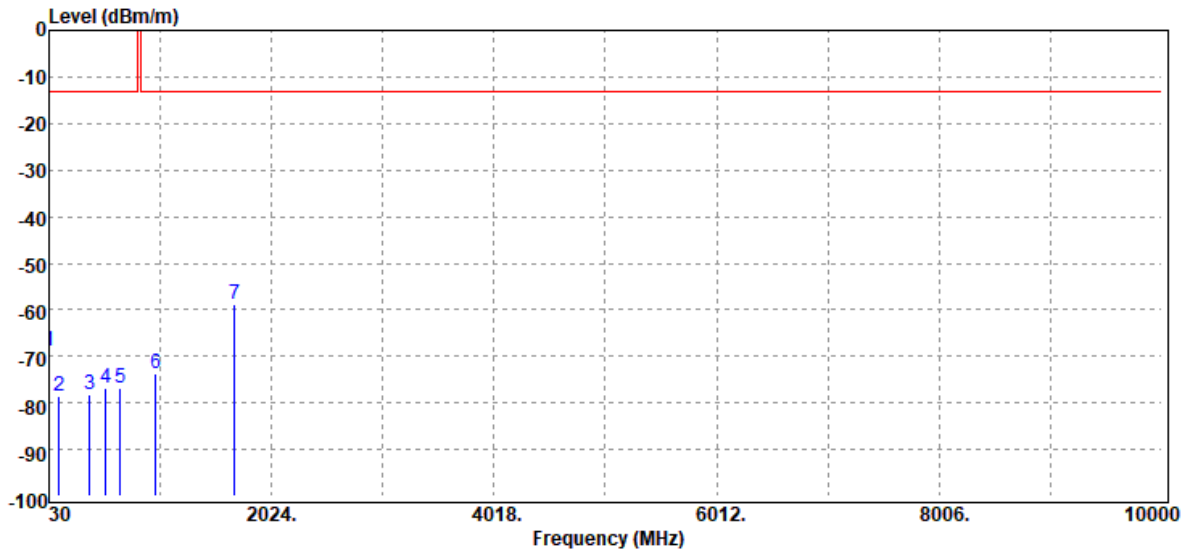
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Report Number :ER/2019/C0150
Operation Mode :WCDMA B5
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :846.6 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
30.00	-68.91	-47.19	-21.20	-0.52	-13.00	-55.91
122.15	-78.55	-70.41	-7.10	-1.04	-13.00	-65.55
393.75	-78.09	-74.52	-1.61	-1.96	-13.00	-65.09
536.34	-76.97	-73.37	-1.38	-2.22	-13.00	-63.97
670.20	-76.74	-72.46	-1.32	-2.96	-13.00	-63.74
982.54	-73.68	-68.64	-1.74	-3.30	-13.00	-60.68
1693.20	-58.72	-64.32	9.65	-4.05	-13.00	-45.72

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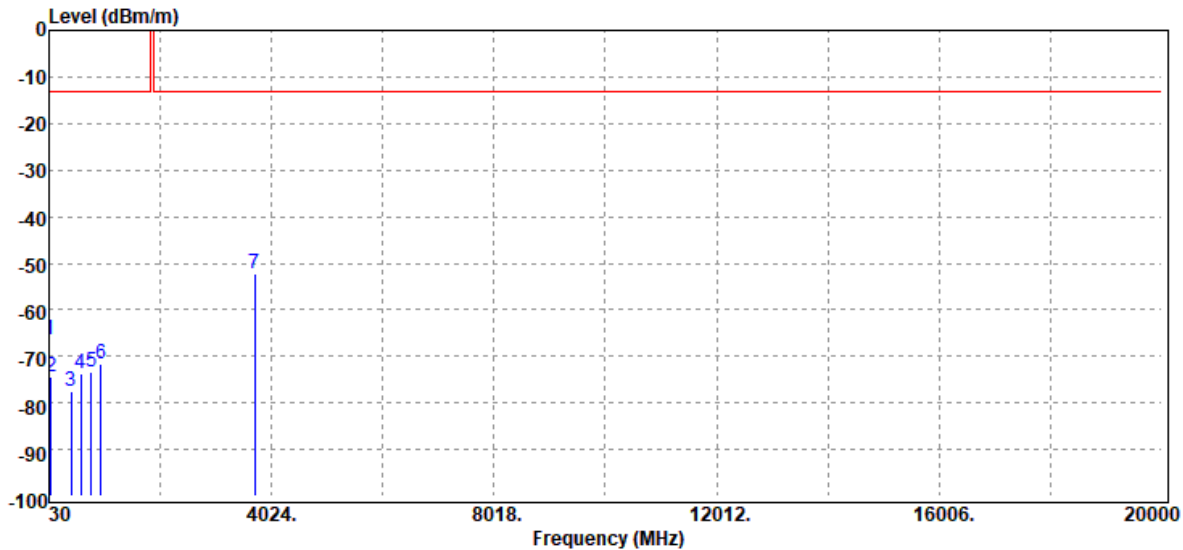
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Radiated Spurious Emission Measurement Result: LTE-Band 2 (The Worst Case)

Report Number	:ER/2019/C0150	Test Date	:2020-01-17
Operation Mode	:LTE B2	Temp./Humi.	:21.6/65
Test Mode	:Tx CH Low	Antenna Pol.	:VERTICAL
EUT Pol	:H Plane	Engineer	:Thomas
Test Channel	:1860 MHz		



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.42	-45.36	-20.49	-0.57	-13.00	-53.42
65.89	-74.27	-60.09	-13.40	-0.78	-13.00	-61.27
422.85	-77.65	-74.10	-1.62	-1.93	-13.00	-64.65
594.54	-73.57	-69.72	-1.75	-2.10	-13.00	-60.57
784.66	-73.31	-68.85	-1.64	-2.82	-13.00	-60.31
959.26	-71.60	-66.39	-1.90	-3.31	-13.00	-58.60
3720.00	-52.14	-58.54	12.36	-5.96	-13.00	-39.14

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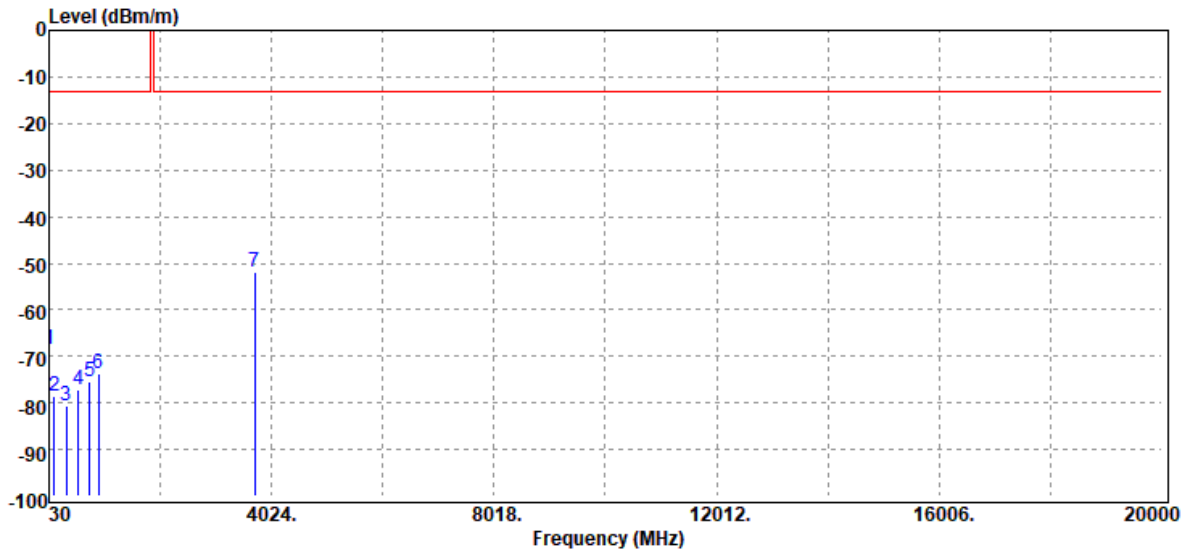
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Report Number :ER/2019/C0150
Operation Mode :LTE B2
Test Mode :Tx CH Low
EUT Pol :H Plane
Test Channel :1860 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-68.34	-47.28	-20.49	-0.57	-13.00	-55.34
119.24	-78.44	-70.31	-7.11	-1.02	-13.00	-65.44
345.25	-80.72	-77.26	-1.57	-1.89	-13.00	-67.72
558.65	-77.19	-73.50	-1.40	-2.29	-13.00	-64.19
754.59	-75.26	-70.92	-1.78	-2.56	-13.00	-62.26
919.49	-73.62	-68.84	-1.94	-2.84	-13.00	-60.62
3720.00	-51.75	-58.15	12.36	-5.96	-13.00	-38.75

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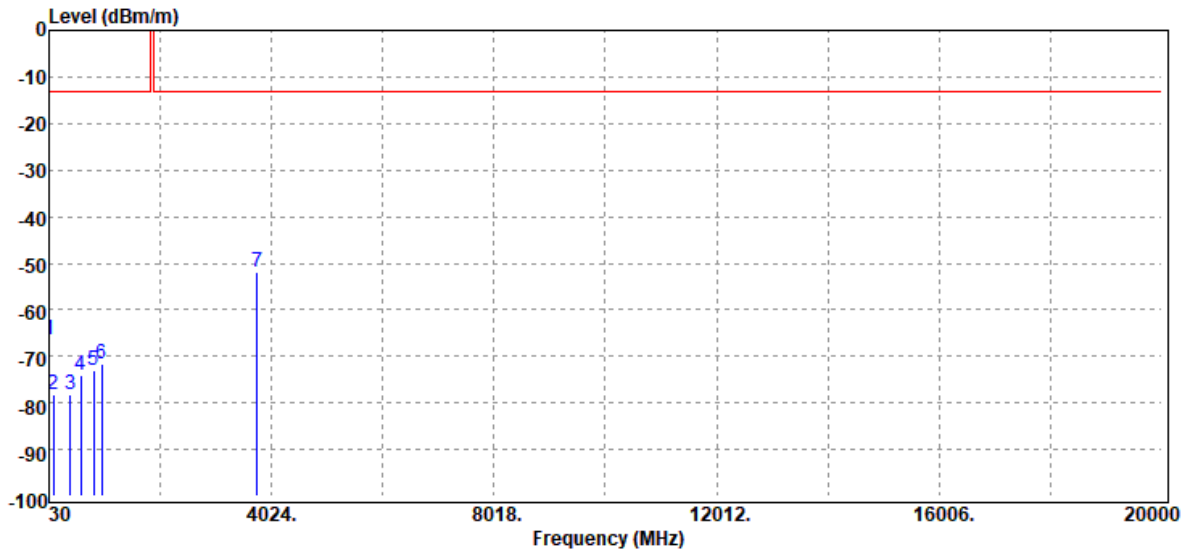
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Report Number :ER/2019/C0150
Operation Mode :LTE B2
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :1880 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.57	-45.51	-20.49	-0.57	-13.00	-53.57
115.36	-78.23	-70.07	-7.14	-1.02	-13.00	-65.23
416.06	-78.08	-74.52	-1.60	-1.96	-13.00	-65.08
600.36	-74.02	-69.83	-1.89	-2.30	-13.00	-61.02
827.34	-72.86	-68.15	-1.73	-2.98	-13.00	-59.86
978.66	-71.50	-66.41	-1.80	-3.29	-13.00	-58.50
3760.00	-51.78	-58.06	12.30	-6.02	-13.00	-38.78

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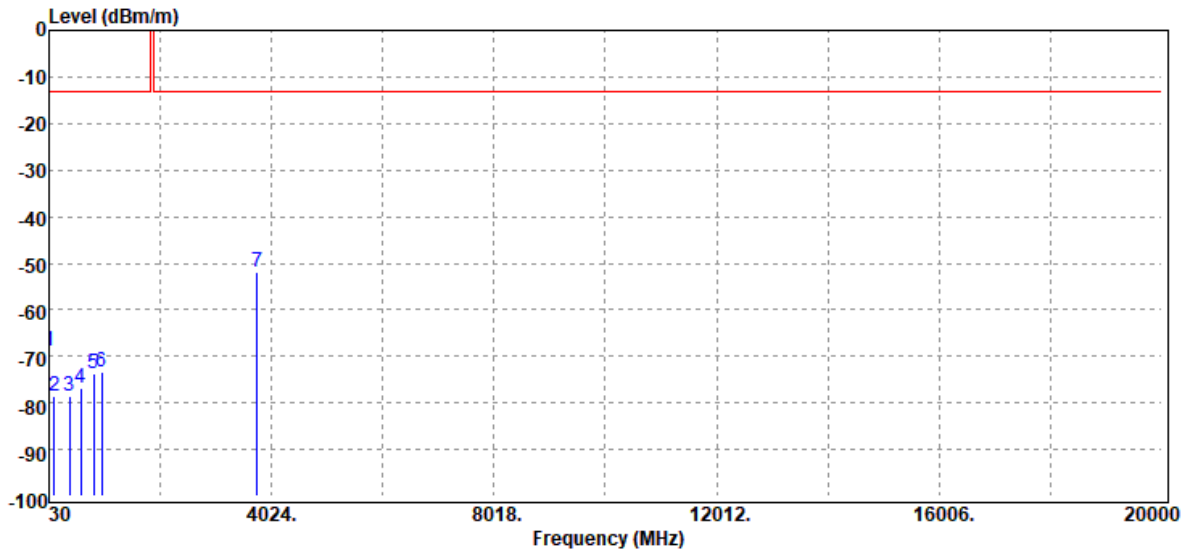
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Report Number :ER/2019/C0150
Operation Mode :LTE B2
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :1880 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-68.69	-47.63	-20.49	-0.57	-13.00	-55.69
125.06	-78.70	-70.54	-7.10	-1.06	-13.00	-65.70
391.81	-78.68	-75.09	-1.62	-1.97	-13.00	-65.68
594.54	-76.73	-72.88	-1.75	-2.10	-13.00	-63.73
835.10	-73.64	-68.84	-1.81	-2.99	-13.00	-60.64
972.84	-73.46	-68.38	-1.82	-3.26	-13.00	-60.46
3760.00	-51.92	-58.20	12.30	-6.02	-13.00	-38.92

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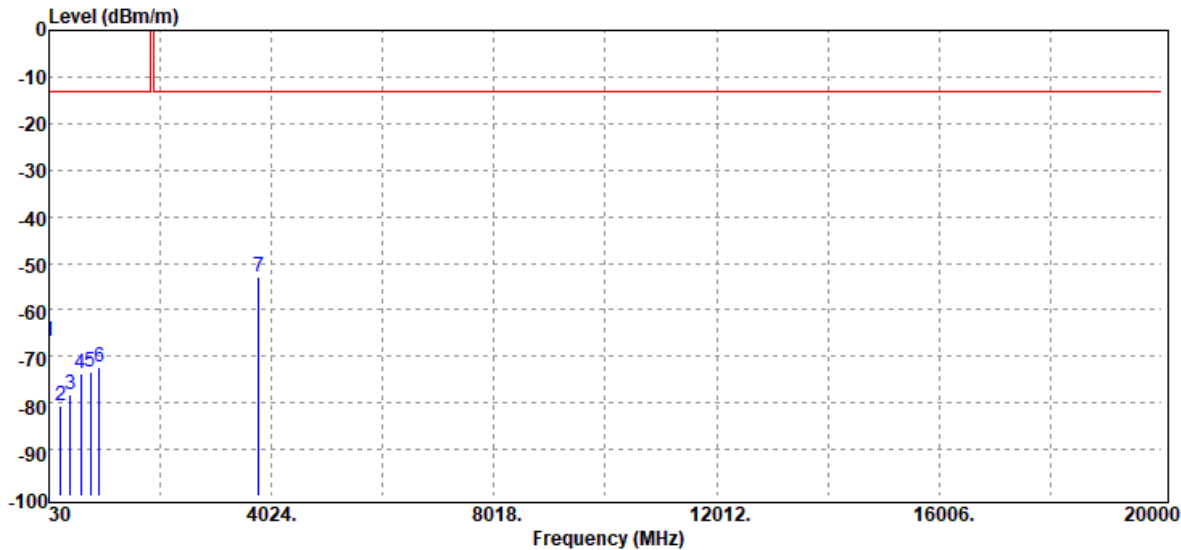
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Report Number :ER/2019/C0150
Operation Mode :LTE B2
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :1900 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.72	-45.66	-20.49	-0.57	-13.00	-53.72
233.70	-80.73	-77.63	-1.62	-1.48	-13.00	-67.73
419.94	-78.33	-74.68	-1.68	-1.97	-13.00	-65.33
595.51	-73.77	-69.88	-1.76	-2.13	-13.00	-60.77
774.96	-73.38	-69.00	-1.75	-2.63	-13.00	-60.38
934.04	-72.37	-67.51	-1.91	-2.95	-13.00	-59.37
3800.00	-52.79	-59.02	12.30	-6.07	-13.00	-39.79

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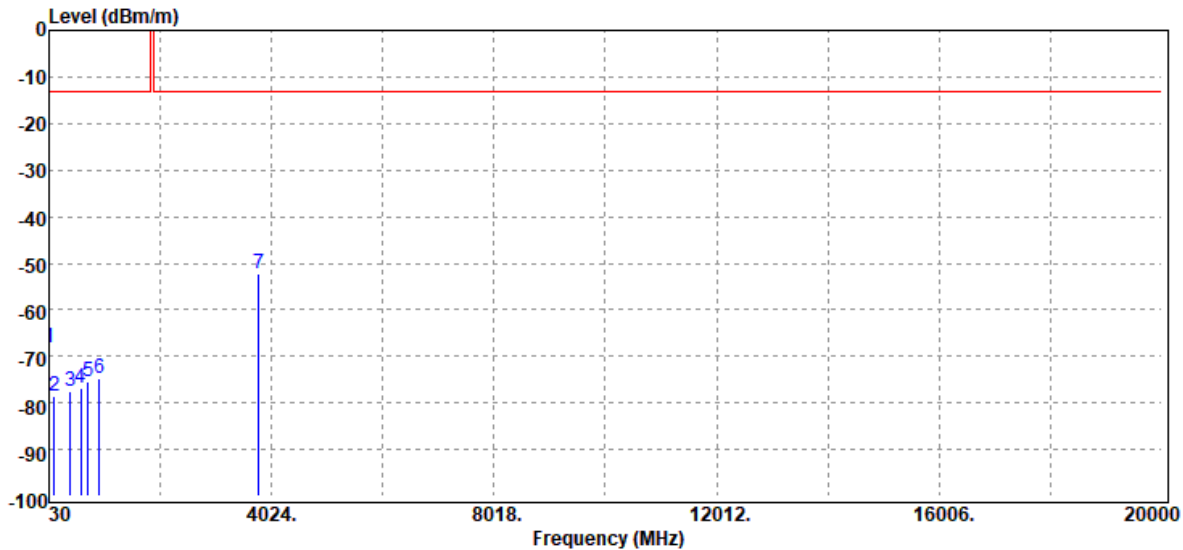
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Report Number :ER/2019/C0150
Operation Mode :LTE B2
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :1900 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-68.22	-47.16	-20.49	-0.57	-13.00	-55.22
124.09	-78.42	-70.30	-7.07	-1.05	-13.00	-65.42
410.24	-77.44	-73.93	-1.58	-1.93	-13.00	-64.44
595.51	-76.99	-73.10	-1.76	-2.13	-13.00	-63.99
735.19	-75.49	-71.74	-1.52	-2.23	-13.00	-62.49
927.25	-74.57	-69.78	-1.90	-2.89	-13.00	-61.57
3800.00	-52.36	-58.59	12.30	-6.07	-13.00	-39.36

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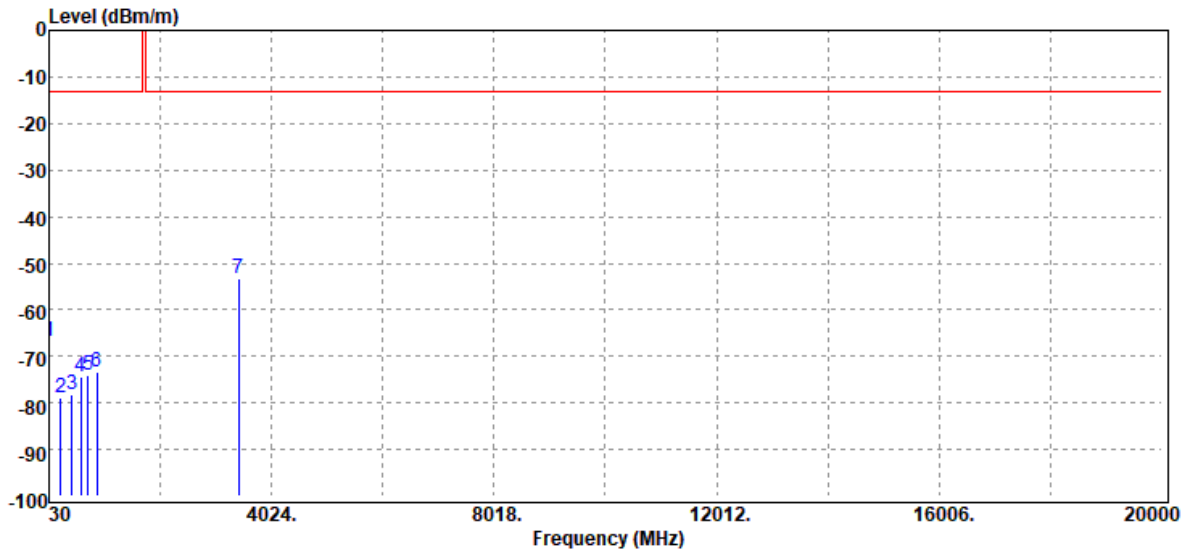
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Radiated Spurious Emission Measurement Result: LTE-Band 4 (The Worst Case)

Report Number	:ER/2019/C0150	Test Date	:2020-01-17
Operation Mode	:LTE B4	Temp./Humi.	:21.6/65
Test Mode	:Tx CH Low	Antenna Pol.	:VERTICAL
EUT Pol	:H Plane	Engineer	:Thomas
Test Channel	:1720 MHz		



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.73	-45.67	-20.49	-0.57	-13.00	-53.73
236.61	-78.89	-75.77	-1.66	-1.46	-13.00	-65.89
437.40	-78.33	-74.78	-1.72	-1.83	-13.00	-65.33
594.54	-74.41	-70.56	-1.75	-2.10	-13.00	-61.41
728.40	-73.92	-70.26	-1.43	-2.23	-13.00	-60.92
883.60	-73.24	-68.97	-1.71	-2.56	-13.00	-60.24
3440.00	-53.24	-59.86	12.40	-5.78	-13.00	-40.24

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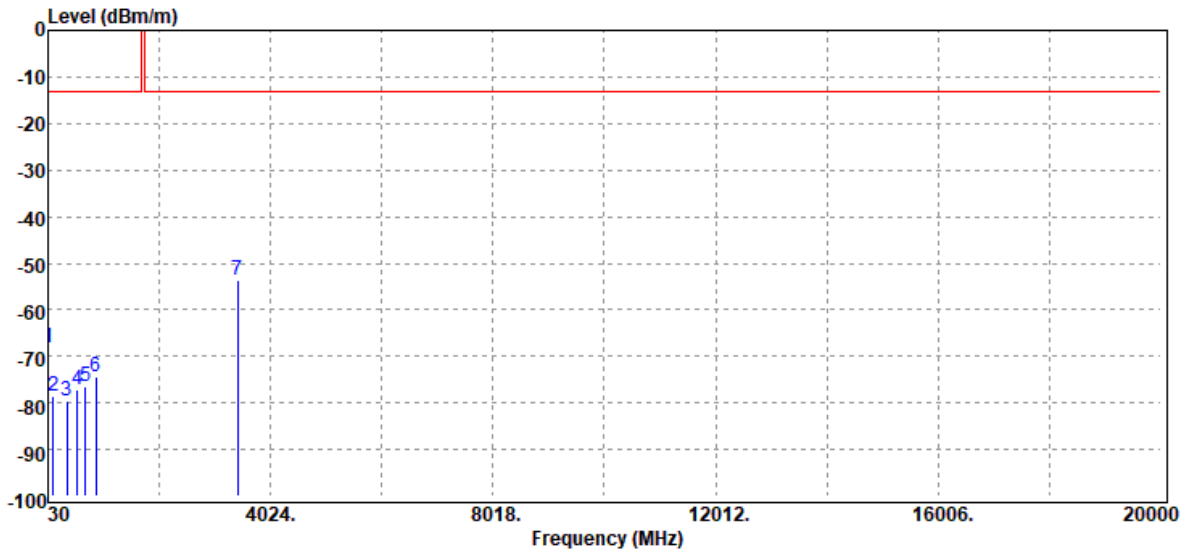
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Report Number :ER/2019/C0150
Operation Mode :LTE B4
Test Mode :Tx CH Low
EUT Pol :H Plane
Test Channel :1720 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
30.00	-68.33	-46.61	-21.20	-0.52	-13.00	-55.33
125.06	-78.58	-70.42	-7.10	-1.06	-13.00	-65.58
369.50	-79.42	-75.93	-1.58	-1.91	-13.00	-66.42
553.80	-77.06	-73.36	-1.45	-2.25	-13.00	-64.06
704.15	-76.60	-72.69	-1.29	-2.62	-13.00	-63.60
883.60	-74.38	-70.11	-1.71	-2.56	-13.00	-61.38
3440.00	-53.64	-60.26	12.40	-5.78	-13.00	-40.64

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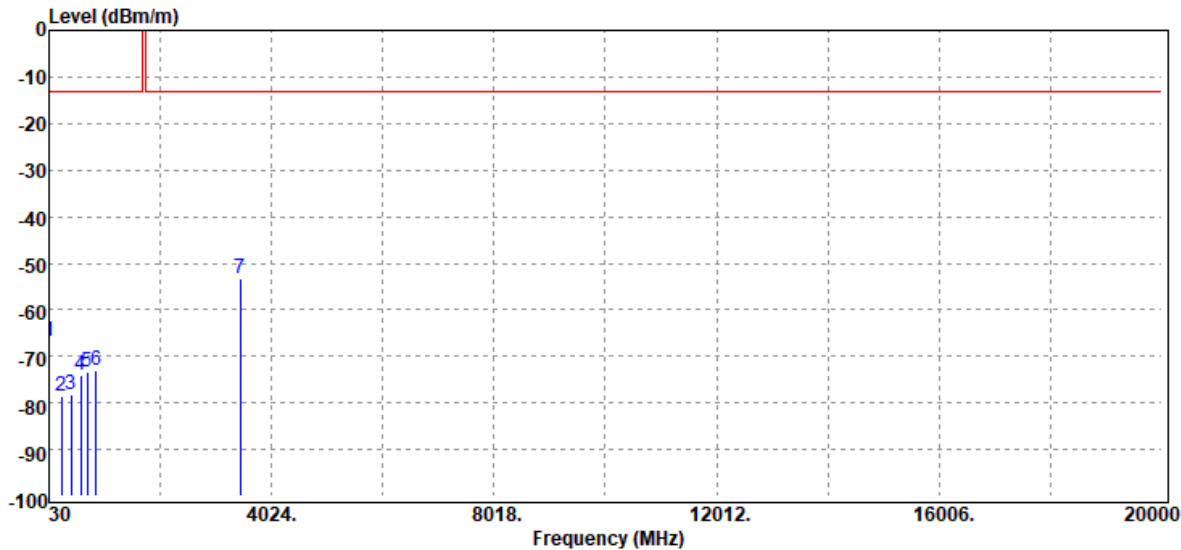
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Report Number :ER/2019/C0150
Operation Mode :LTE B4
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :1732.5 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.66	-45.60	-20.49	-0.57	-13.00	-53.66
257.95	-78.60	-75.37	-1.63	-1.60	-13.00	-65.60
429.64	-78.37	-74.87	-1.66	-1.84	-13.00	-65.37
597.45	-73.92	-69.91	-1.81	-2.20	-13.00	-60.92
716.76	-73.26	-69.40	-1.36	-2.50	-13.00	-60.26
870.99	-73.13	-68.96	-1.66	-2.51	-13.00	-60.13
3465.00	-53.16	-59.78	12.37	-5.75	-13.00	-40.16

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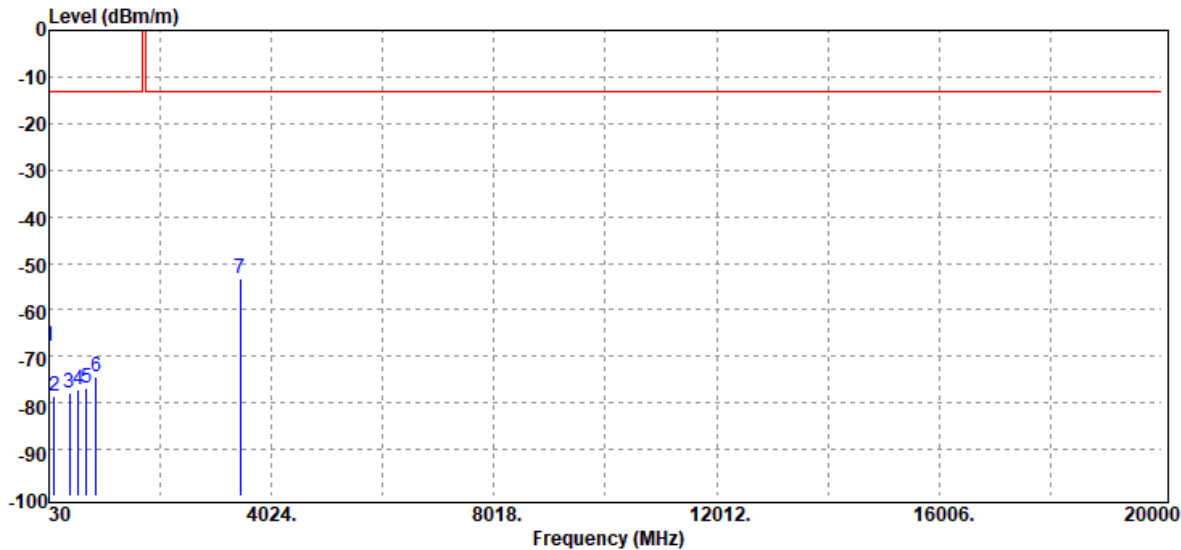
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Report Number :ER/2019/C0150
Operation Mode :LTE B4
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :1732.5 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-67.96	-46.90	-20.49	-0.57	-13.00	-54.96
120.21	-78.48	-70.40	-7.06	-1.02	-13.00	-65.48
403.45	-77.85	-74.33	-1.59	-1.93	-13.00	-64.85
550.89	-77.33	-73.68	-1.43	-2.22	-13.00	-64.33
702.21	-76.84	-72.91	-1.31	-2.62	-13.00	-63.84
880.69	-74.53	-70.28	-1.74	-2.51	-13.00	-61.53
3465.00	-53.34	-59.96	12.37	-5.75	-13.00	-40.34

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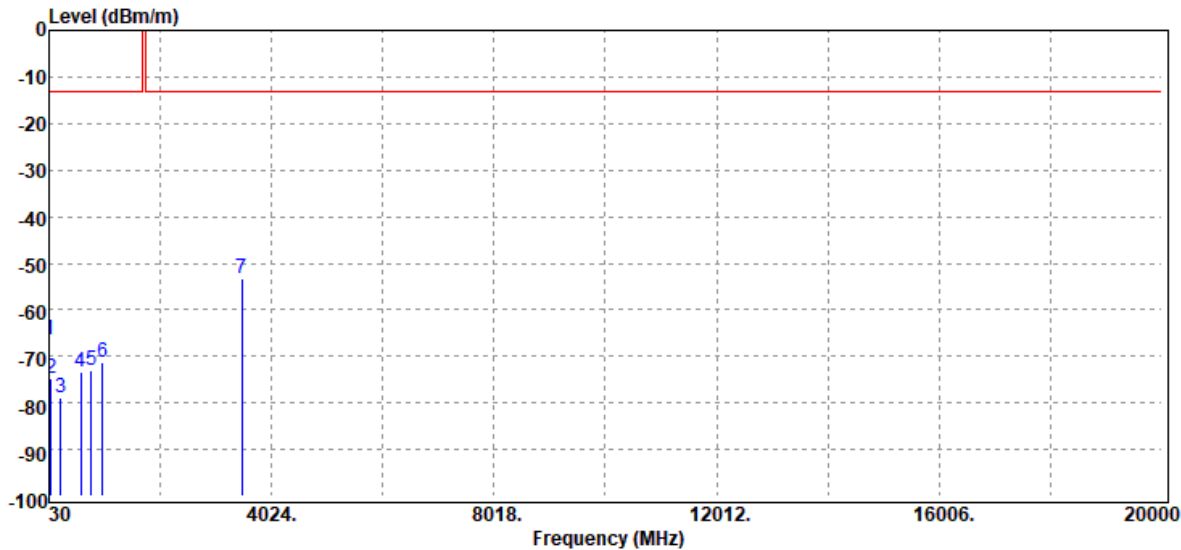
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Report Number :ER/2019/C0150
Operation Mode :LTE B4
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :1745 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.45	-45.39	-20.49	-0.57	-13.00	-53.45
66.86	-74.63	-60.69	-13.15	-0.79	-13.00	-61.63
243.40	-78.89	-75.74	-1.69	-1.46	-13.00	-65.89
605.21	-73.21	-68.79	-2.00	-2.42	-13.00	-60.21
784.66	-73.11	-68.65	-1.64	-2.82	-13.00	-60.11
988.36	-71.37	-66.45	-1.64	-3.28	-13.00	-58.37
3490.00	-53.17	-59.78	12.32	-5.71	-13.00	-40.17

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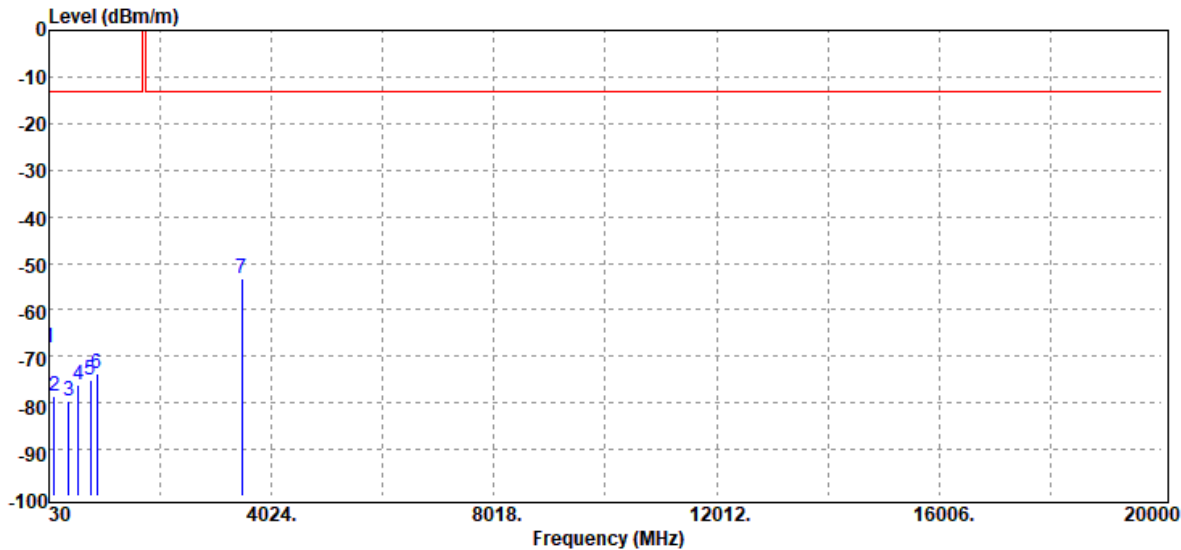
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Report Number :ER/2019/C0150
Operation Mode :LTE B4
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :1745 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-68.23	-47.17	-20.49	-0.57	-13.00	-55.23
127.00	-78.51	-70.27	-7.16	-1.08	-13.00	-65.51
386.96	-79.75	-76.15	-1.63	-1.97	-13.00	-66.75
555.74	-76.13	-72.42	-1.44	-2.27	-13.00	-63.13
774.96	-75.16	-70.78	-1.75	-2.63	-13.00	-62.16
885.54	-73.73	-69.42	-1.71	-2.60	-13.00	-60.73
3490.00	-53.16	-59.77	12.32	-5.71	-13.00	-40.16

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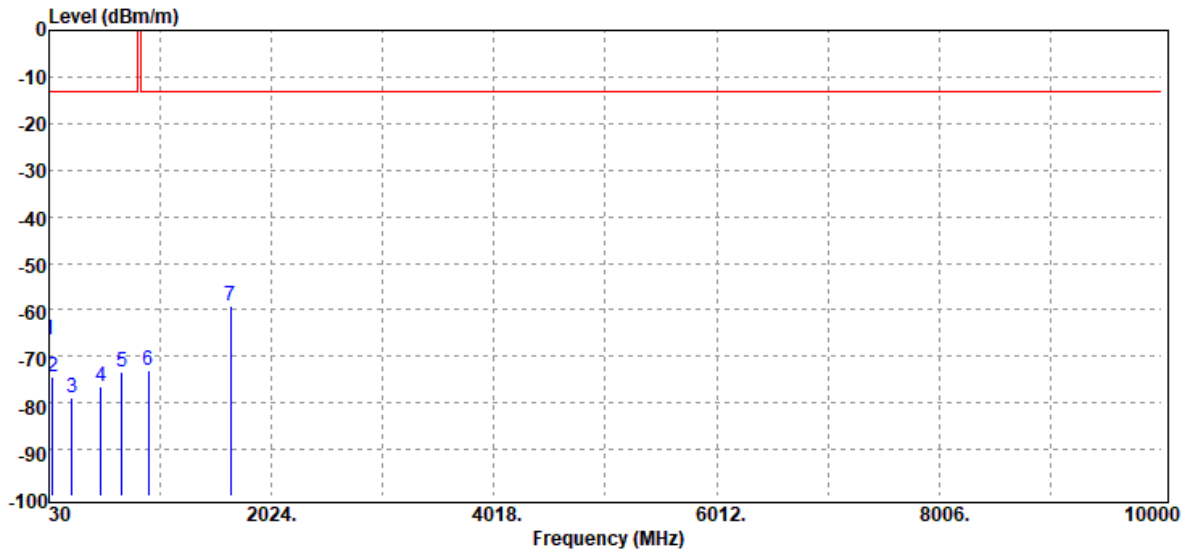
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Radiated Spurious Emission Measurement Result: LTE-Band 5 (The Worst Case)

Report Number	:ER/2019/C0150	Test Date	:2020-01-17
Operation Mode	:LTE B5	Temp./Humi.	:21.6/65
Test Mode	:Tx CH Low	Antenna Pol.	:VERTICAL
EUT Pol	:H Plane	Engineer	:Thomas
Test Channel	:829 MHz		



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.53	-45.47	-20.49	-0.57	-13.00	-53.53
65.89	-74.37	-60.19	-13.40	-0.78	-13.00	-61.37
238.55	-78.84	-75.69	-1.71	-1.44	-13.00	-65.84
492.69	-76.56	-72.77	-1.55	-2.24	-13.00	-63.56
682.81	-73.32	-69.50	-1.31	-2.51	-13.00	-60.32
917.55	-72.90	-68.17	-1.89	-2.84	-13.00	-59.90
1658.00	-59.18	-64.52	9.36	-4.02	-13.00	-46.18

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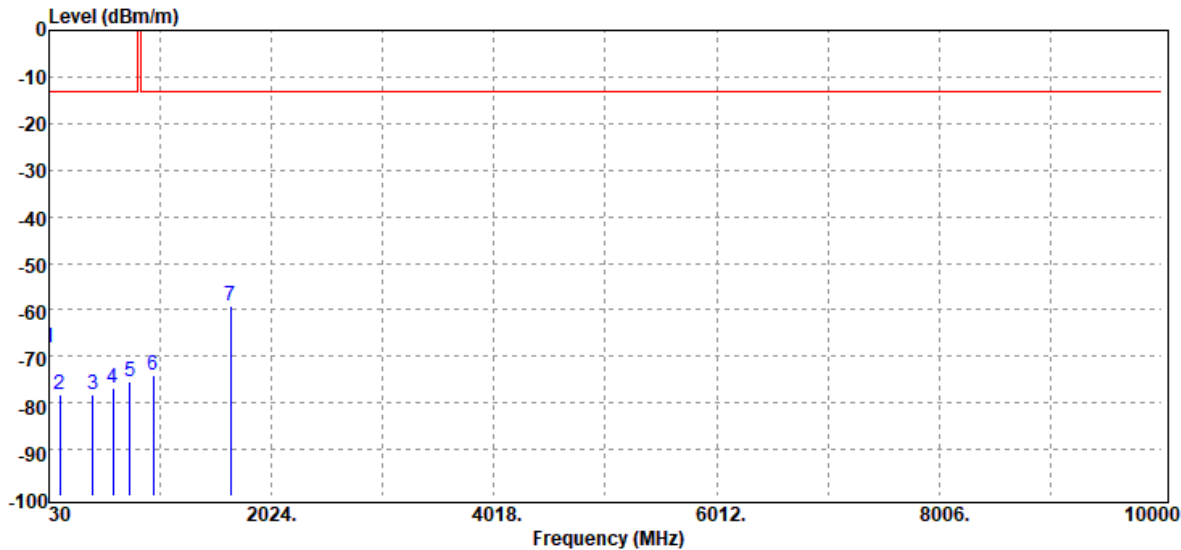
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Report Number :ER/2019/C0150
Operation Mode :LTE B5
Test Mode :Tx CH Low
EUT Pol :H Plane
Test Channel :829 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-68.22	-47.16	-20.49	-0.57	-13.00	-55.22
128.94	-78.28	-69.96	-7.23	-1.09	-13.00	-65.28
420.91	-78.14	-74.52	-1.66	-1.96	-13.00	-65.14
602.30	-76.83	-72.54	-1.94	-2.35	-13.00	-63.83
755.56	-75.47	-71.12	-1.78	-2.57	-13.00	-62.47
966.05	-73.90	-68.77	-1.86	-3.27	-13.00	-60.90
1658.00	-59.09	-64.43	9.36	-4.02	-13.00	-46.09

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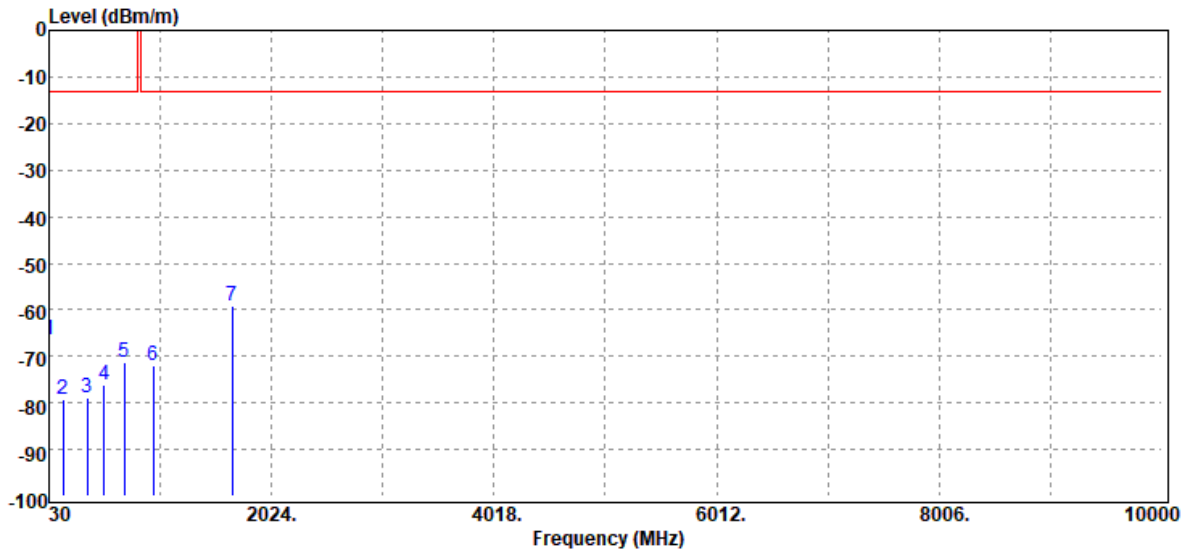
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Report Number :ER/2019/C0150
Operation Mode :LTE B5
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :836.5 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.55	-45.49	-20.49	-0.57	-13.00	-53.55
155.13	-79.15	-70.54	-7.32	-1.29	-13.00	-66.15
369.50	-78.94	-75.45	-1.58	-1.91	-13.00	-65.94
526.64	-76.09	-72.24	-1.44	-2.41	-13.00	-63.09
707.06	-71.38	-67.46	-1.29	-2.63	-13.00	-58.38
966.05	-72.12	-66.99	-1.86	-3.27	-13.00	-59.12
1673.00	-59.02	-64.48	9.49	-4.03	-13.00	-46.02

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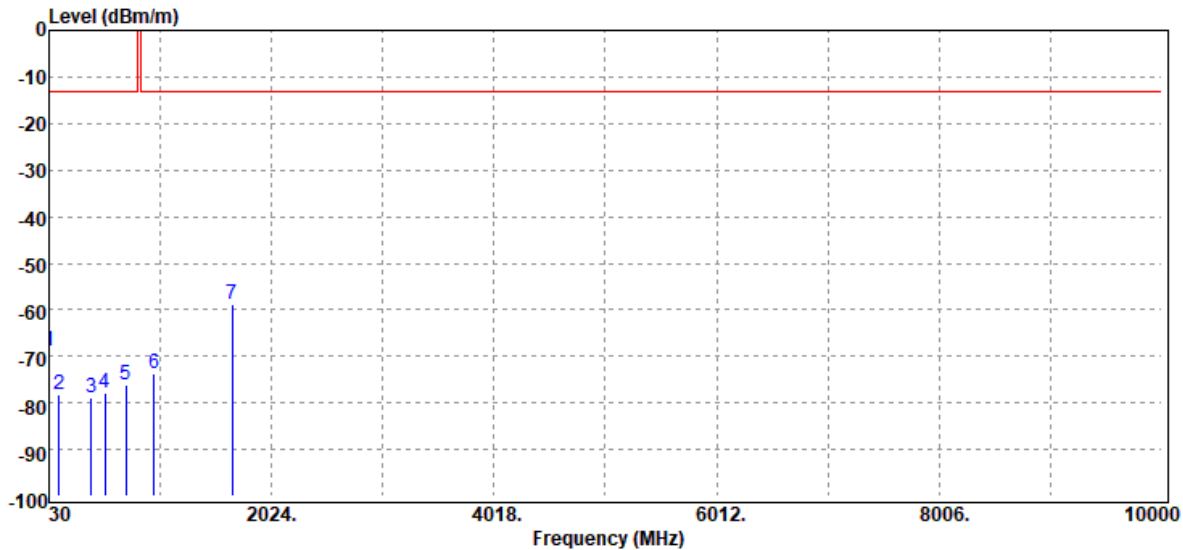
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Report Number :ER/2019/C0150
Operation Mode :LTE B5
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :836.5 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-68.90	-47.84	-20.49	-0.57	-13.00	-55.90
120.21	-78.08	-70.00	-7.06	-1.02	-13.00	-65.08
405.39	-78.74	-75.22	-1.59	-1.93	-13.00	-65.74
532.46	-77.69	-74.00	-1.41	-2.28	-13.00	-64.69
716.76	-76.29	-72.43	-1.36	-2.50	-13.00	-63.29
970.90	-73.82	-68.70	-1.87	-3.25	-13.00	-60.82
1673.00	-58.97	-64.43	9.49	-4.03	-13.00	-45.97

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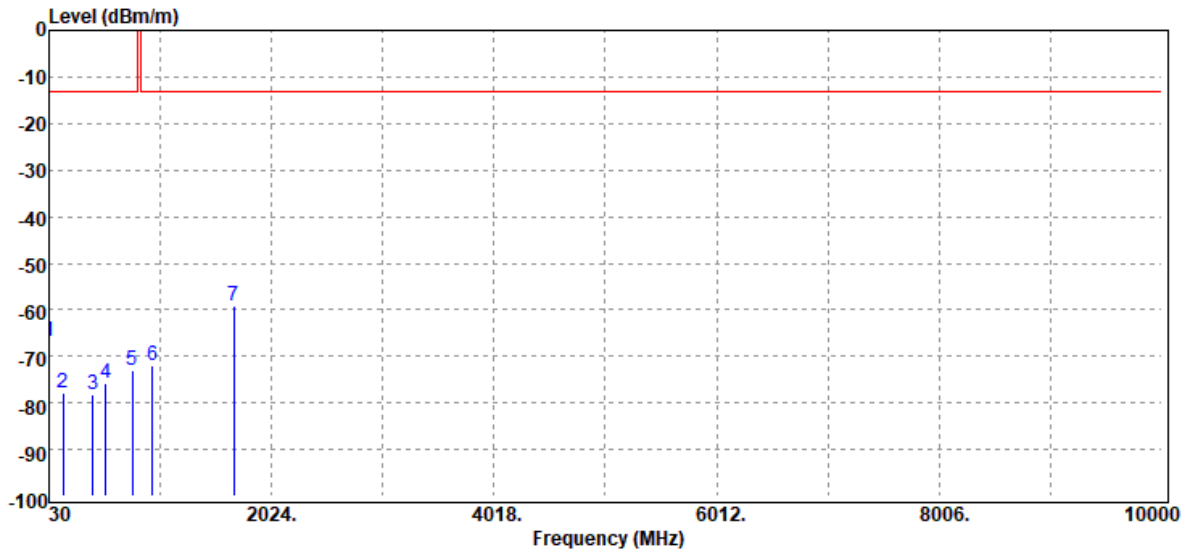
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Report Number :ER/2019/C0150
Operation Mode :LTE B5
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :844 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
33.88	-66.92	-46.19	-20.15	-0.58	-13.00	-53.92
154.16	-77.99	-69.25	-7.46	-1.28	-13.00	-64.99
422.85	-78.11	-74.56	-1.62	-1.93	-13.00	-65.11
537.31	-75.69	-72.11	-1.38	-2.20	-13.00	-62.69
774.96	-72.89	-68.51	-1.75	-2.63	-13.00	-59.89
954.41	-72.02	-66.83	-1.93	-3.26	-13.00	-59.02
1688.00	-59.27	-64.83	9.61	-4.05	-13.00	-46.27

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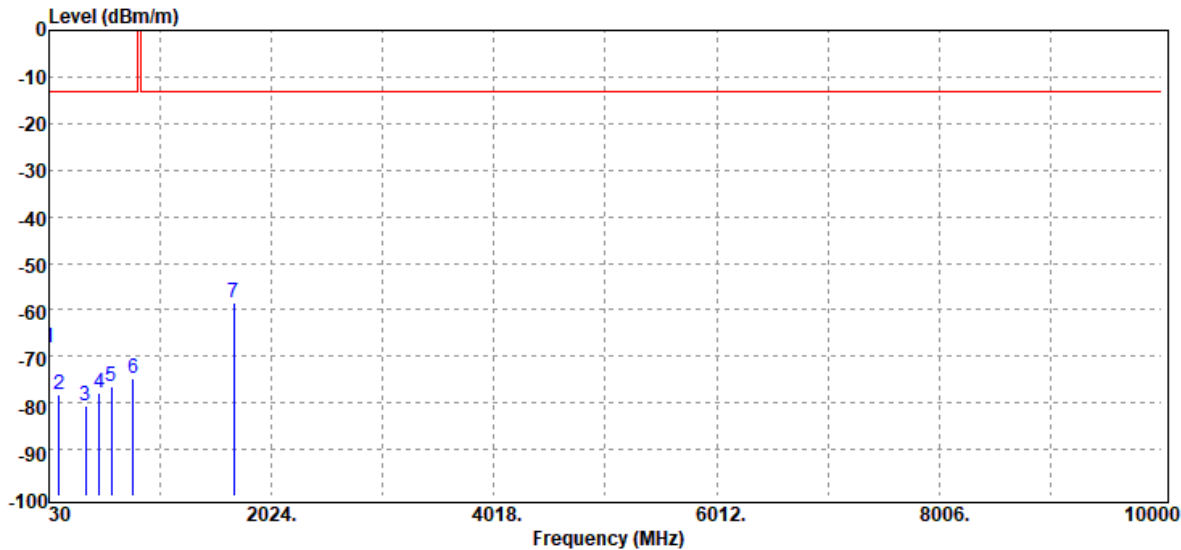
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Report Number :ER/2019/C0150
Operation Mode :LTE B5
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :844 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
33.88	-68.09	-47.36	-20.15	-0.58	-13.00	-55.09
122.15	-78.20	-70.06	-7.10	-1.04	-13.00	-65.20
354.95	-80.78	-77.33	-1.54	-1.91	-13.00	-67.78
481.05	-77.81	-74.13	-1.44	-2.24	-13.00	-64.81
592.60	-76.49	-72.72	-1.74	-2.03	-13.00	-63.49
784.66	-74.84	-70.38	-1.64	-2.82	-13.00	-61.84
1688.00	-58.33	-63.89	9.61	-4.05	-13.00	-45.33

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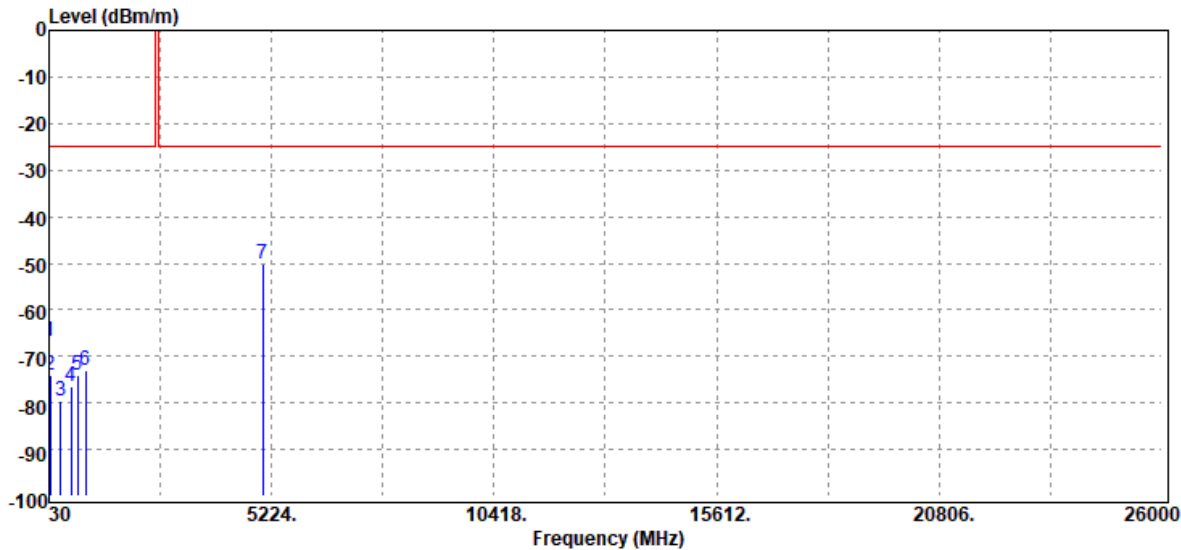
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Radiated Spurious Emission Measurement Result: LTE-Band 7 (The Worst Case)

Report Number :ER/2019/C0150
Operation Mode :LTE B7
Test Mode :Tx CH Low
EUT Pol :H Plane
Test Channel :2510 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.62	-45.56	-20.49	-0.57	-25.00	-41.62
66.86	-74.11	-60.17	-13.15	-0.79	-25.00	-49.11
309.36	-79.55	-76.24	-1.70	-1.61	-25.00	-54.55
547.01	-76.38	-72.76	-1.42	-2.20	-25.00	-51.38
689.60	-73.95	-70.19	-1.27	-2.49	-25.00	-48.95
885.54	-72.91	-68.60	-1.71	-2.60	-25.00	-47.91
5020.00	-50.19	-55.49	12.32	-7.02	-25.00	-25.19

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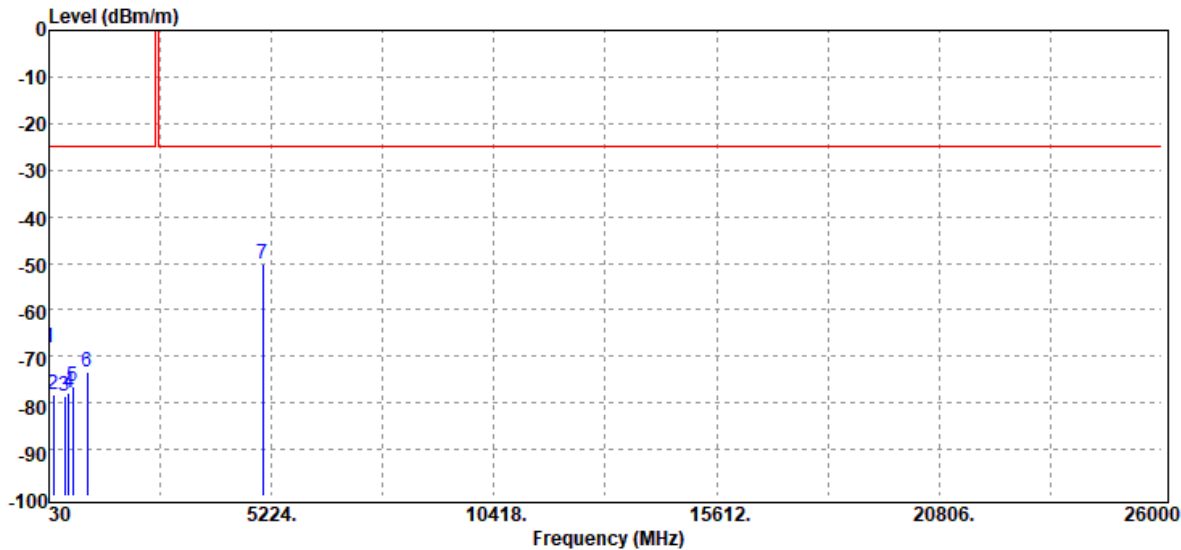
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Report Number :ER/2019/C0150
Operation Mode :LTE B7
Test Mode :Tx CH Low
EUT Pol :H Plane
Test Channel :2510 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
33.88	-68.19	-47.46	-20.15	-0.58	-25.00	-43.19
124.09	-78.29	-70.17	-7.07	-1.05	-25.00	-53.29
391.81	-78.43	-74.84	-1.62	-1.97	-25.00	-53.43
485.90	-77.97	-74.22	-1.53	-2.22	-25.00	-52.97
592.60	-76.56	-72.79	-1.74	-2.03	-25.00	-51.56
924.34	-73.22	-68.42	-1.93	-2.87	-25.00	-48.22
5020.00	-50.22	-55.52	12.32	-7.02	-25.00	-25.22

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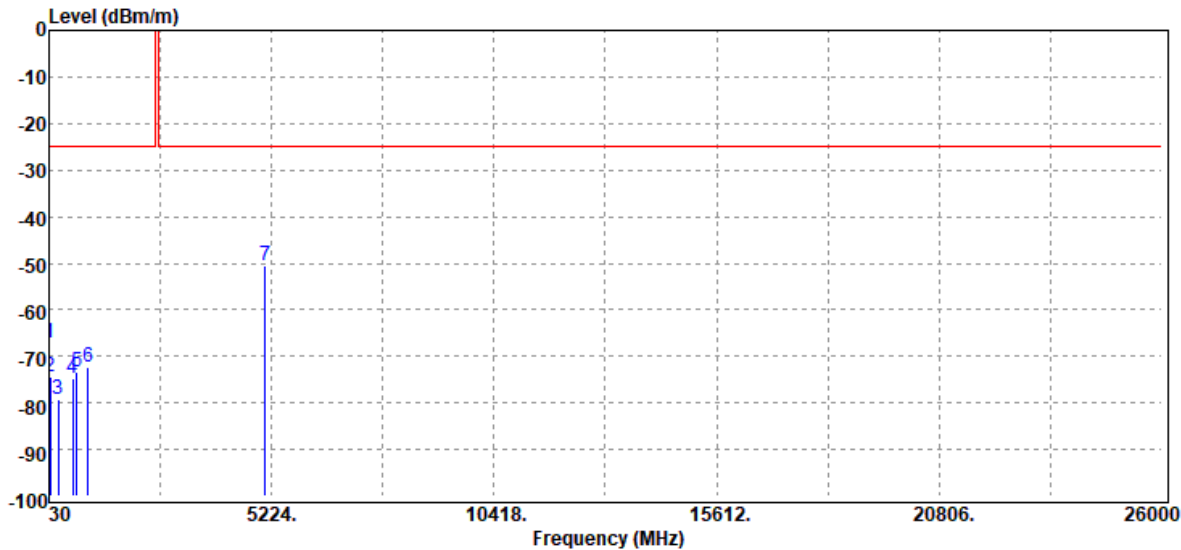
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Report Number :ER/2019/C0150
Operation Mode :LTE B7
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :2535 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.97	-45.91	-20.49	-0.57	-25.00	-41.97
65.89	-74.44	-60.26	-13.40	-0.78	-25.00	-49.44
253.10	-79.36	-76.18	-1.64	-1.54	-25.00	-54.36
583.87	-74.78	-71.23	-1.59	-1.96	-25.00	-49.78
675.05	-73.20	-69.21	-1.25	-2.74	-25.00	-48.20
943.74	-72.31	-67.35	-1.87	-3.09	-25.00	-47.31
5070.00	-50.40	-55.56	12.16	-7.00	-25.00	-25.40

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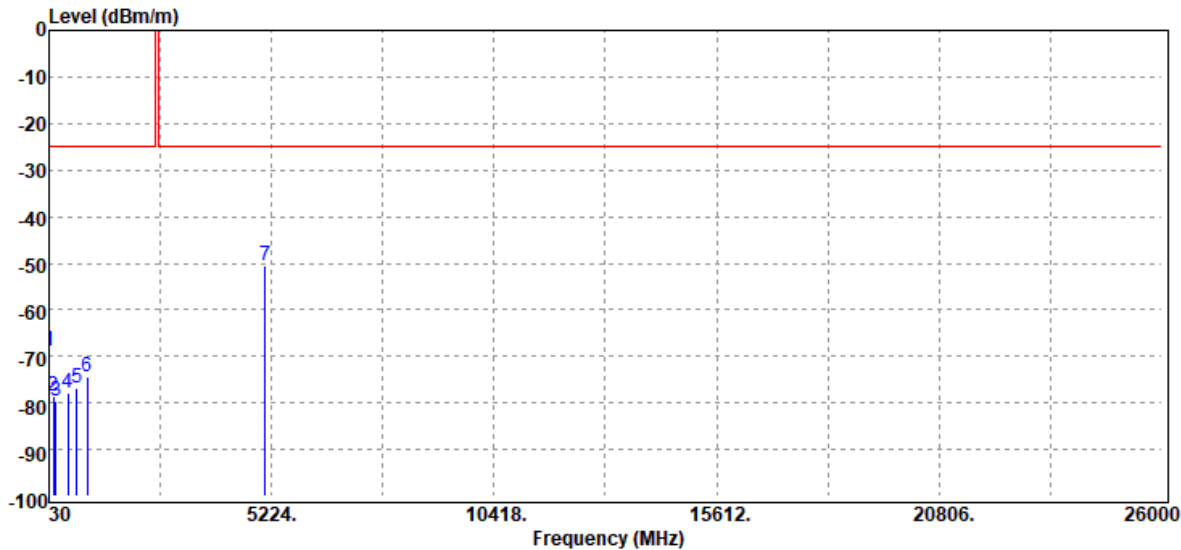
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Report Number :ER/2019/C0150
Operation Mode :LTE B7
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :2535 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
30.00	-68.77	-47.05	-21.20	-0.52	-25.00	-43.77
124.09	-78.72	-70.60	-7.07	-1.05	-25.00	-53.72
191.99	-79.45	-75.33	-2.77	-1.35	-25.00	-54.45
469.41	-77.76	-74.00	-1.50	-2.26	-25.00	-52.76
675.05	-76.67	-72.68	-1.25	-2.74	-25.00	-51.67
924.34	-74.34	-69.54	-1.93	-2.87	-25.00	-49.34
5070.00	-50.45	-55.61	12.16	-7.00	-25.00	-25.45

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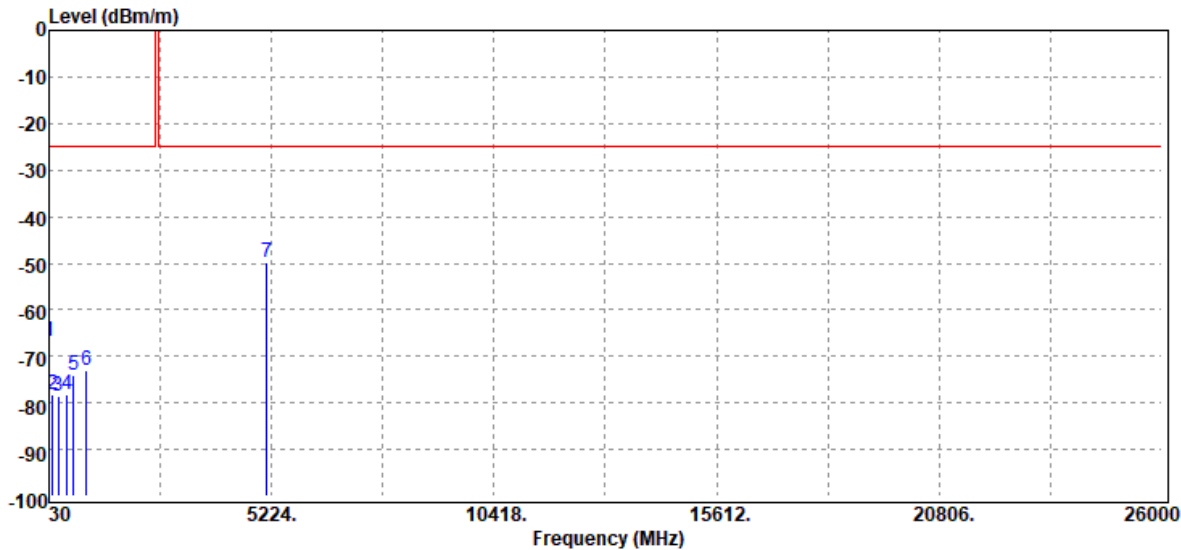
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Report Number :ER/2019/C0150
Operation Mode :LTE B7
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :2560 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.75	-45.69	-20.49	-0.57	-25.00	-41.75
115.36	-78.08	-69.92	-7.14	-1.02	-25.00	-53.08
238.55	-78.39	-75.24	-1.71	-1.44	-25.00	-53.39
444.19	-78.18	-74.59	-1.69	-1.90	-25.00	-53.18
599.39	-74.12	-69.99	-1.86	-2.27	-25.00	-49.12
898.15	-72.88	-68.35	-1.74	-2.79	-25.00	-47.88
5120.00	-49.87	-54.94	12.10	-7.03	-25.00	-24.87

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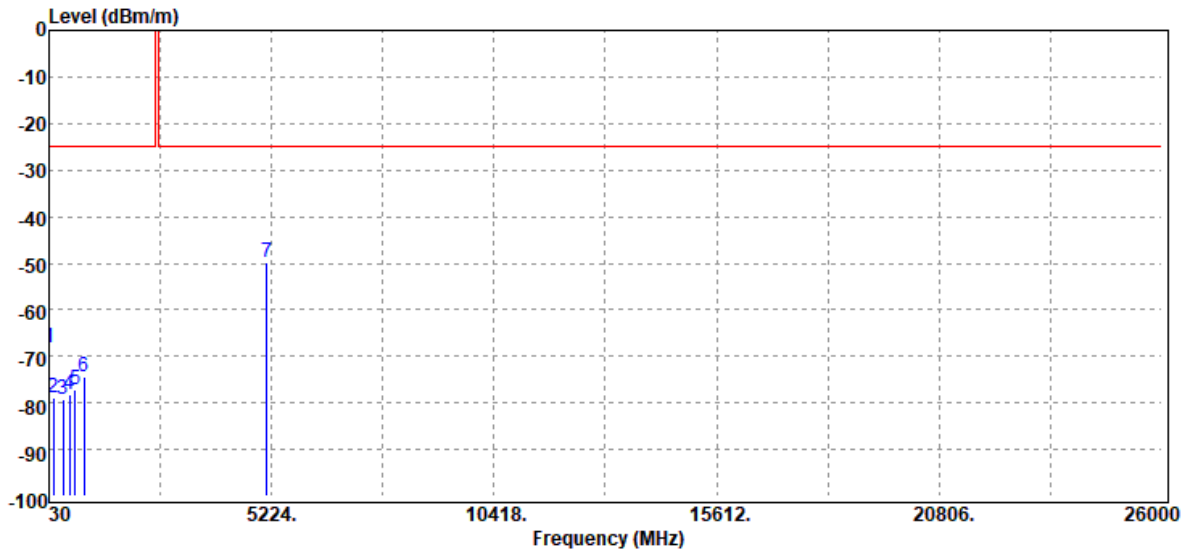
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Report Number :ER/2019/C0150
Operation Mode :LTE B7
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :2560 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
30.00	-68.27	-46.55	-21.20	-0.52	-25.00	-43.27
124.09	-78.83	-70.71	-7.07	-1.05	-25.00	-53.83
359.80	-79.41	-75.97	-1.51	-1.93	-25.00	-54.41
507.24	-78.35	-74.36	-1.48	-2.51	-25.00	-53.35
643.04	-77.22	-73.06	-1.54	-2.62	-25.00	-52.22
842.86	-74.24	-69.45	-1.72	-3.07	-25.00	-49.24
5120.00	-50.00	-55.07	12.10	-7.03	-25.00	-25.00

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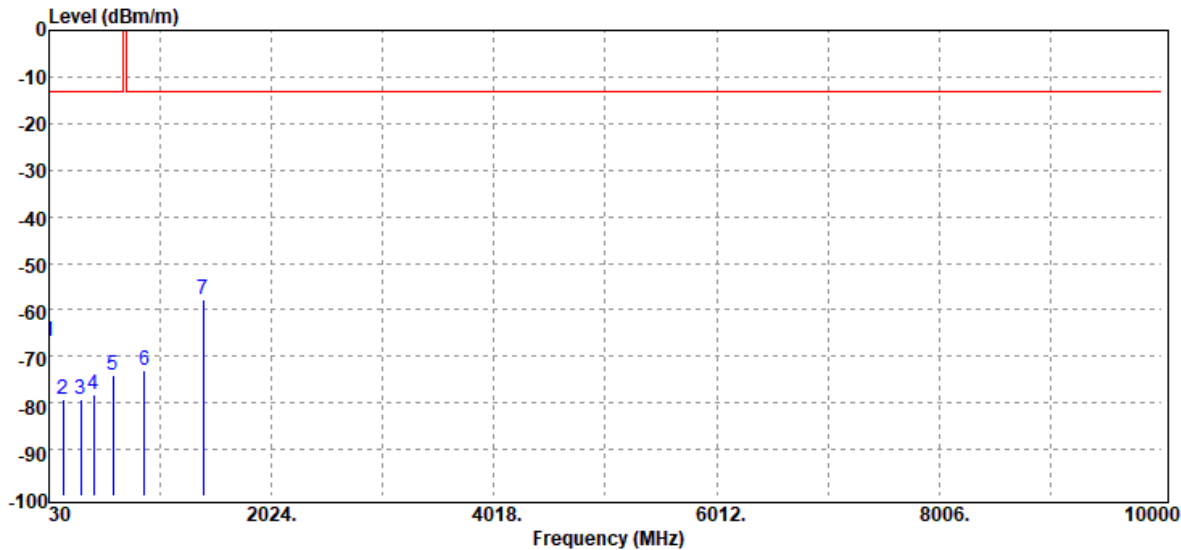
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Radiated Spurious Emission Measurement Result: LTE-Band 12 (The Worst Case)

Report Number	:ER/2019/C0150	Test Date	:2020-01-17
Operation Mode	:LTE B12	Temp./Humi.	:21.6/65
Test Mode	:Tx CH Low	Antenna Pol.	:VERTICAL
EUT Pol	:H Plane	Engineer	:Thomas
Test Channel	:704 MHz		



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.74	-45.68	-20.49	-0.57	-13.00	-53.74
156.10	-79.07	-70.50	-7.26	-1.31	-13.00	-66.07
314.21	-79.21	-75.95	-1.59	-1.67	-13.00	-66.21
430.61	-78.25	-74.74	-1.67	-1.84	-13.00	-65.25
604.24	-74.15	-69.77	-1.98	-2.40	-13.00	-61.15
883.60	-72.84	-68.57	-1.71	-2.56	-13.00	-59.84
1408.00	-57.77	-61.99	7.92	-3.70	-13.00	-44.77

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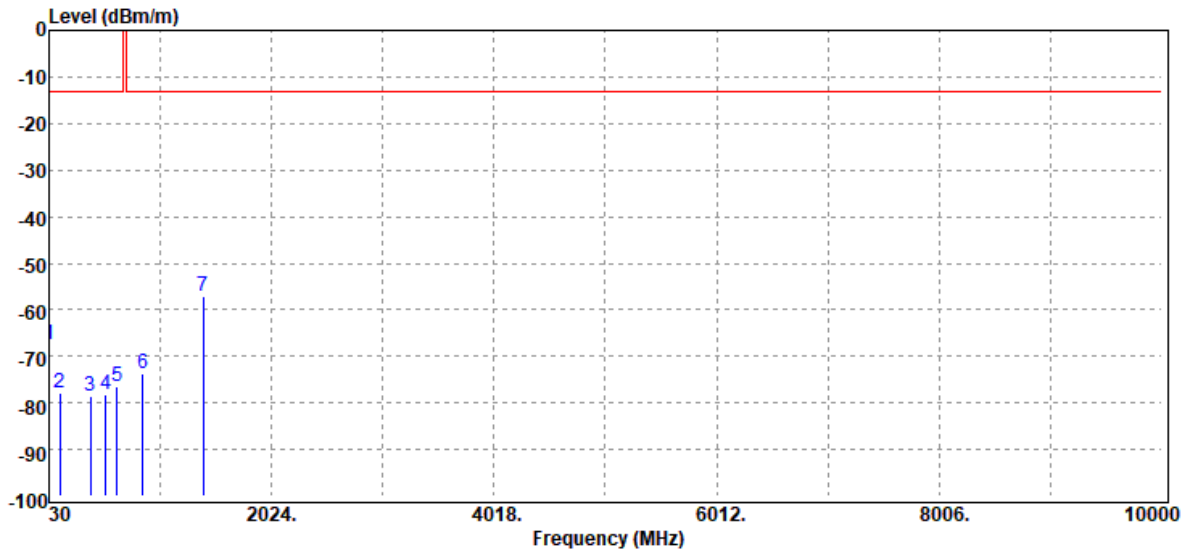
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Report Number :ER/2019/C0150
Operation Mode :LTE B12
Test Mode :Tx CH Low
EUT Pol :H Plane
Test Channel :704 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-67.57	-46.51	-20.49	-0.57	-13.00	-54.57
127.00	-77.81	-69.57	-7.16	-1.08	-13.00	-64.81
403.45	-78.47	-74.95	-1.59	-1.93	-13.00	-65.47
542.16	-78.05	-74.48	-1.40	-2.17	-13.00	-65.05
643.04	-76.64	-72.48	-1.54	-2.62	-13.00	-63.64
871.96	-73.80	-69.62	-1.67	-2.51	-13.00	-60.80
1408.00	-56.97	-61.19	7.92	-3.70	-13.00	-43.97

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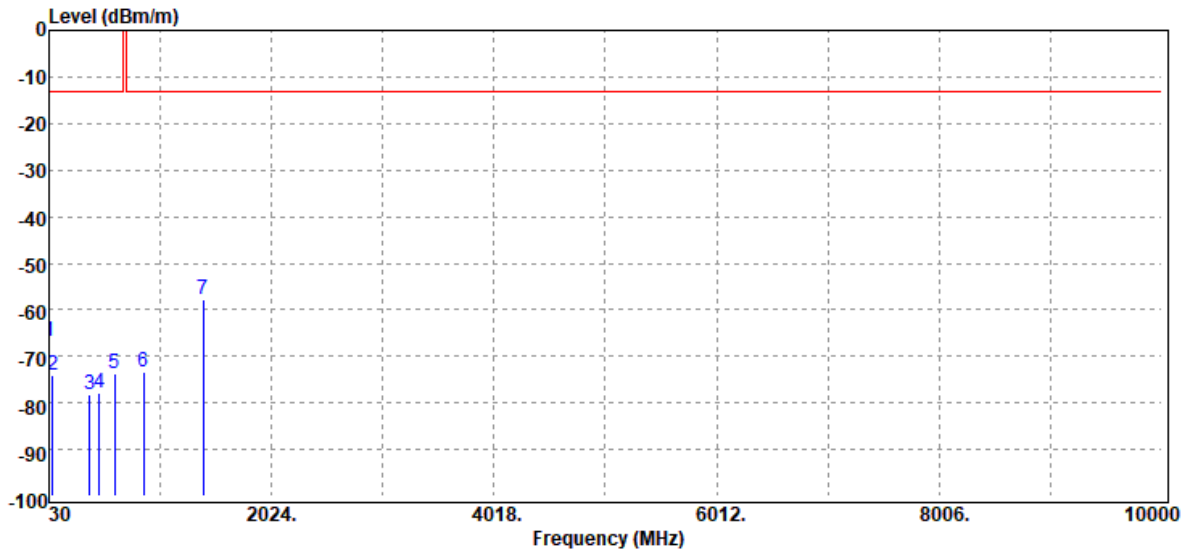
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Report Number :ER/2019/C0150
Operation Mode :LTE B12
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :707.5 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.80	-45.74	-20.49	-0.57	-13.00	-53.80
65.89	-74.04	-59.86	-13.40	-0.78	-13.00	-61.04
391.81	-78.13	-74.54	-1.62	-1.97	-13.00	-65.13
479.11	-77.70	-74.01	-1.44	-2.25	-13.00	-64.70
618.79	-73.73	-69.47	-1.73	-2.53	-13.00	-60.73
875.84	-73.24	-69.03	-1.71	-2.50	-13.00	-60.24
1415.00	-57.68	-61.91	7.93	-3.70	-13.00	-44.68

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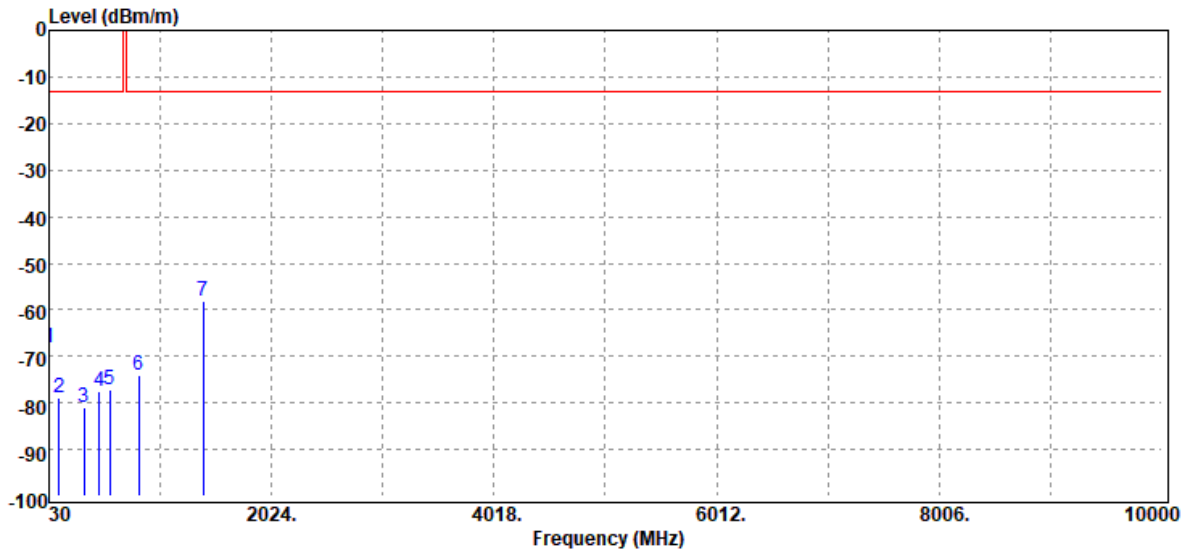
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Report Number :ER/2019/C0150
Operation Mode :LTE B12
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :707.5 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas


Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
30.97	-68.18	-46.62	-21.02	-0.54	-13.00	-55.18
122.15	-78.83	-70.69	-7.10	-1.04	-13.00	-65.83
343.31	-81.10	-77.62	-1.59	-1.89	-13.00	-68.10
479.11	-77.44	-73.75	-1.44	-2.25	-13.00	-64.44
576.11	-77.26	-73.65	-1.55	-2.06	-13.00	-64.26
835.10	-73.97	-69.17	-1.81	-2.99	-13.00	-60.97
1415.00	-58.02	-62.25	7.93	-3.70	-13.00	-45.02

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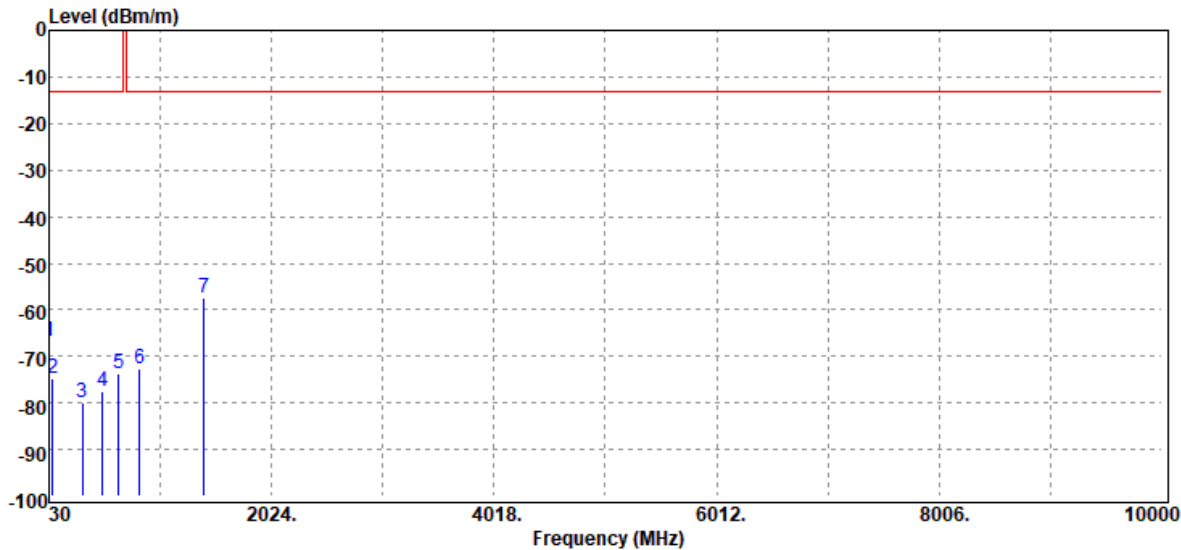
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Report Number :ER/2019/C0150
Operation Mode :LTE B12
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :711 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
33.88	-66.84	-46.11	-20.15	-0.58	-13.00	-53.84
65.89	-74.87	-60.69	-13.40	-0.78	-13.00	-61.87
328.76	-79.91	-76.27	-1.73	-1.91	-13.00	-66.91
507.24	-77.41	-73.42	-1.48	-2.51	-13.00	-64.41
655.65	-73.82	-69.33	-1.42	-3.07	-13.00	-60.82
839.95	-72.71	-67.93	-1.75	-3.03	-13.00	-59.71
1422.00	-57.35	-61.58	7.94	-3.71	-13.00	-44.35

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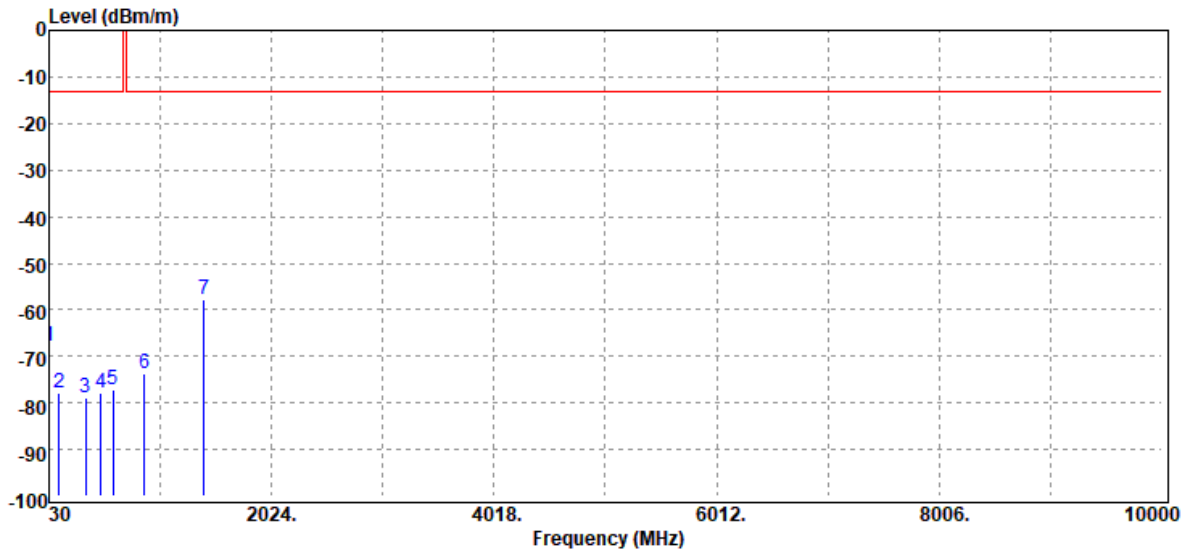
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Report Number :ER/2019/C0150
Operation Mode :LTE B12
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :711 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
30.00	-67.87	-46.15	-21.20	-0.52	-13.00	-54.87
119.24	-77.80	-69.67	-7.11	-1.02	-13.00	-64.80
357.86	-78.88	-75.44	-1.52	-1.92	-13.00	-65.88
493.66	-77.90	-74.09	-1.55	-2.26	-13.00	-64.90
605.21	-77.19	-72.77	-2.00	-2.42	-13.00	-64.19
888.45	-73.81	-69.43	-1.73	-2.65	-13.00	-60.81
1422.00	-57.82	-62.05	7.94	-3.71	-13.00	-44.82

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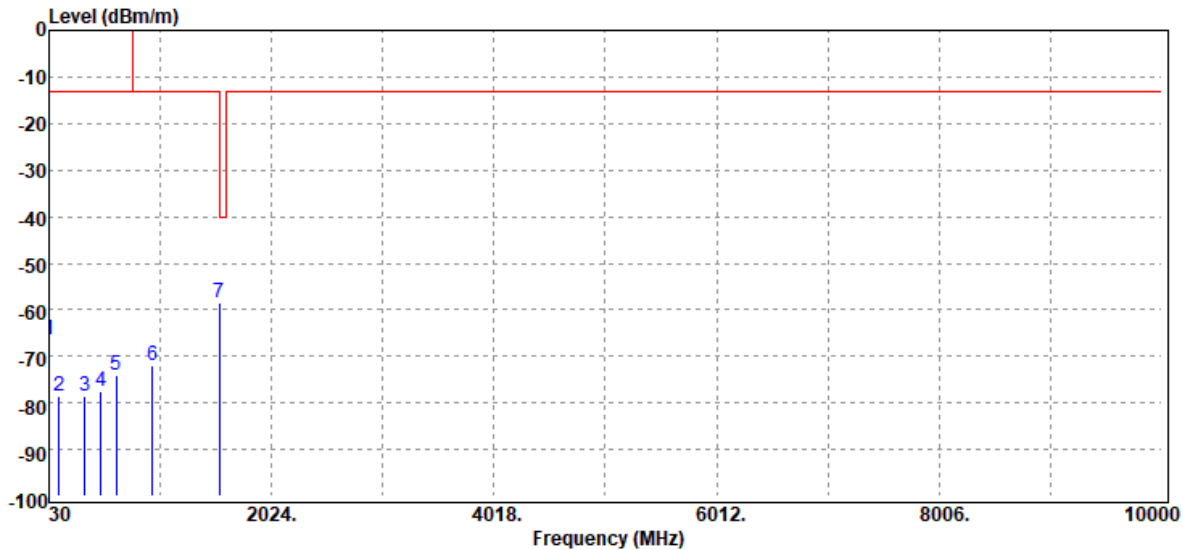
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Radiated Spurious Emission Measurement Result: LTE-Band 13 (The Worst Case)

Report Number	:ER/2019/C0150	Test Date	:2020-01-17
Operation Mode	:LTE B13	Temp./Humi.	:21.6/65
Test Mode	:Tx CH Low	Antenna Pol.	:VERTICAL
EUT Pol	:H Plane	Engineer	:Thomas
Test Channel	:779.5 MHz		



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.56	-45.50	-20.49	-0.57	-13.00	-53.56
117.30	-78.44	-70.33	-7.09	-1.02	-13.00	-65.44
348.16	-78.71	-75.32	-1.50	-1.89	-13.00	-65.71
493.66	-77.65	-73.84	-1.55	-2.26	-13.00	-64.65
634.31	-74.01	-69.95	-1.59	-2.47	-13.00	-61.01
954.41	-71.95	-66.76	-1.93	-3.26	-13.00	-58.95
1559.00	-58.51	-63.74	9.12	-3.89	-40.00	-18.51

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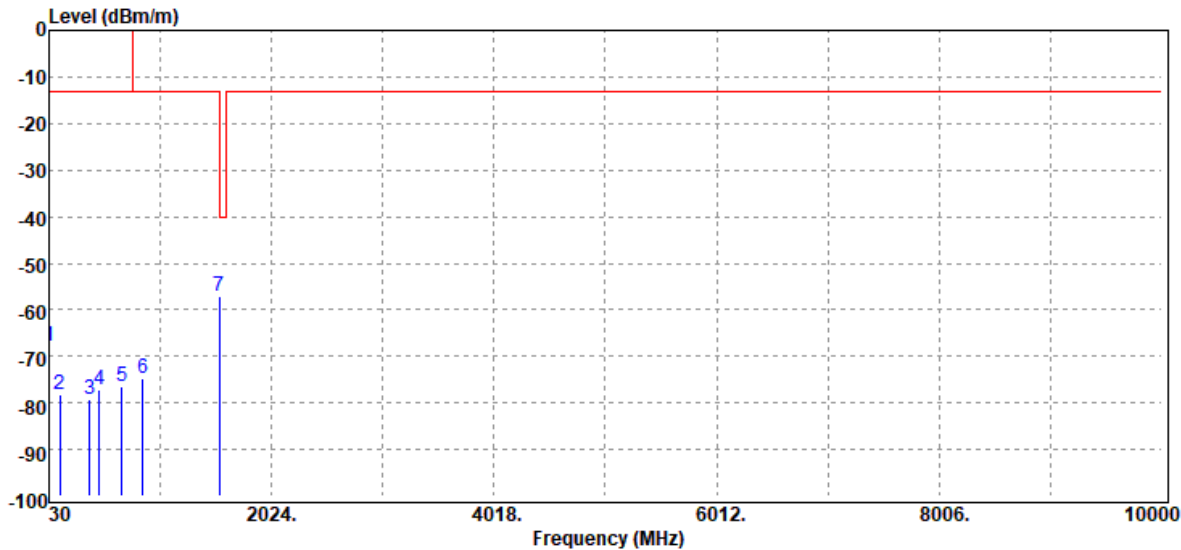
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Report Number :ER/2019/C0150
Operation Mode :LTE B13
Test Mode :Tx CH Low
EUT Pol :H Plane
Test Channel :779.5 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-67.93	-46.87	-20.49	-0.57	-13.00	-54.93
125.06	-78.31	-70.15	-7.10	-1.06	-13.00	-65.31
393.75	-79.38	-75.81	-1.61	-1.96	-13.00	-66.38
479.11	-77.05	-73.36	-1.44	-2.25	-13.00	-64.05
679.90	-76.53	-72.72	-1.29	-2.52	-13.00	-63.53
870.99	-74.58	-70.41	-1.66	-2.51	-13.00	-61.58
1559.00	-56.96	-62.19	9.12	-3.89	-40.00	-16.96

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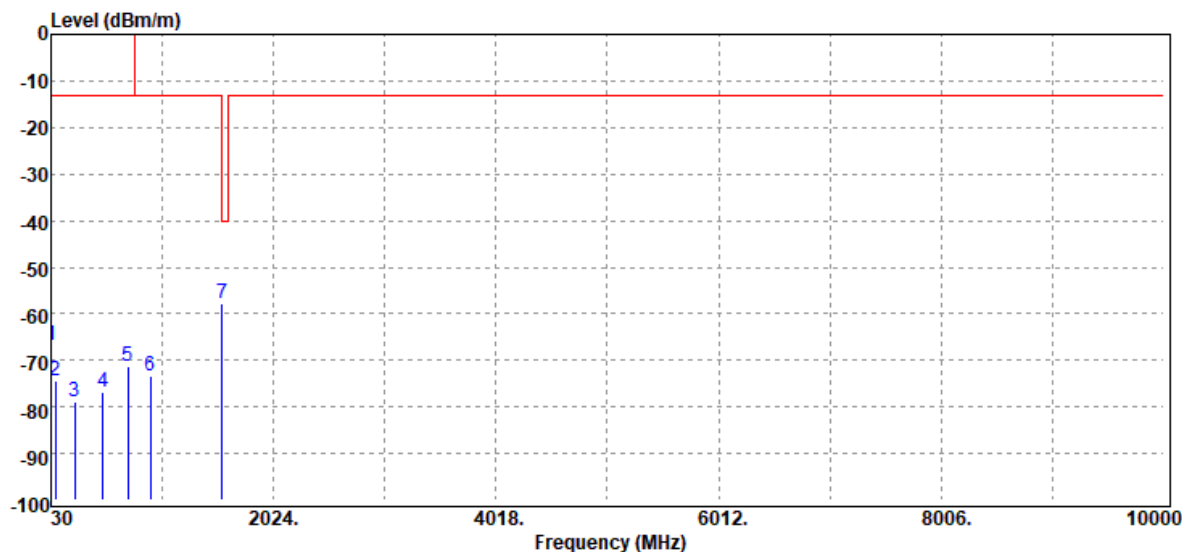
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Report Number :ER/2019/C0150
Operation Mode :LTE B13
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :782 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
33.88	-66.94	-46.21	-20.15	-0.58	-13.00	-53.94
66.86	-74.33	-60.39	-13.15	-0.79	-13.00	-61.33
241.46	-78.85	-75.69	-1.72	-1.44	-13.00	-65.85
492.69	-76.83	-73.04	-1.55	-2.24	-13.00	-63.83
716.76	-71.29	-67.43	-1.36	-2.50	-13.00	-58.29
917.55	-73.22	-68.49	-1.89	-2.84	-13.00	-60.22
1564.00	-57.83	-63.06	9.13	-3.90	-40.00	-17.83

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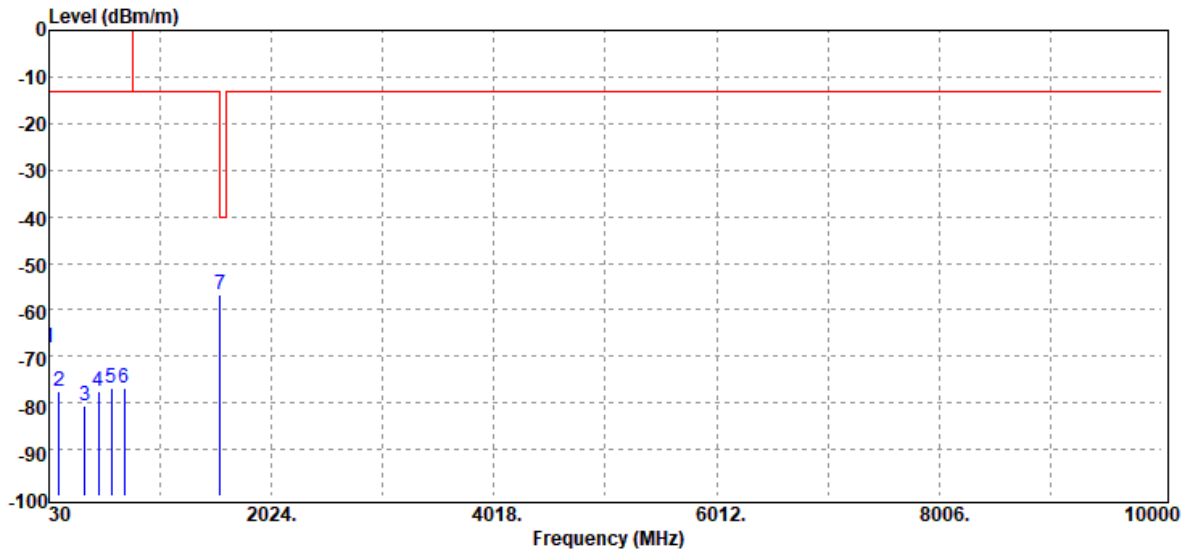
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Report Number :ER/2019/C0150
Operation Mode :LTE B13
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :782 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-68.24	-47.18	-20.49	-0.57	-13.00	-55.24
123.12	-77.55	-69.47	-7.04	-1.04	-13.00	-64.55
348.16	-80.52	-77.13	-1.50	-1.89	-13.00	-67.52
476.20	-77.36	-73.62	-1.49	-2.25	-13.00	-64.36
590.66	-76.86	-73.18	-1.72	-1.96	-13.00	-63.86
706.09	-76.69	-72.77	-1.29	-2.63	-13.00	-63.69
1564.00	-56.79	-62.02	9.13	-3.90	-40.00	-16.79

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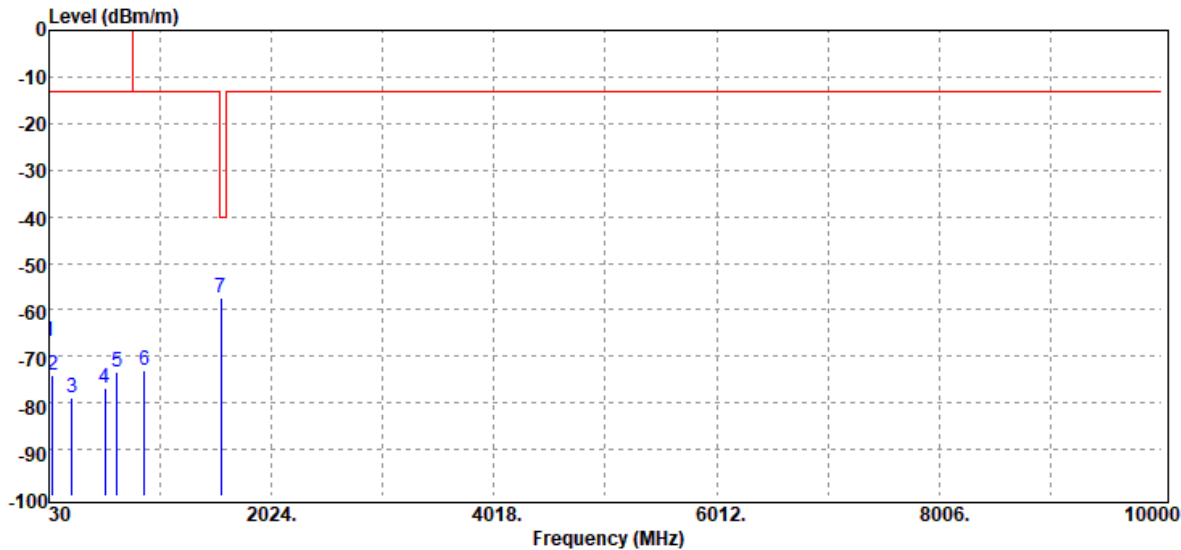
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Report Number :ER/2019/C0150
Operation Mode :LTE B13
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :784.5 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.67	-45.61	-20.49	-0.57	-13.00	-53.67
65.89	-74.13	-59.95	-13.40	-0.78	-13.00	-61.13
238.55	-78.75	-75.60	-1.71	-1.44	-13.00	-65.75
530.52	-76.85	-73.09	-1.44	-2.32	-13.00	-63.85
638.19	-73.49	-69.46	-1.54	-2.49	-13.00	-60.49
886.51	-73.04	-68.71	-1.72	-2.61	-13.00	-60.04
1569.00	-57.57	-62.81	9.14	-3.90	-40.00	-17.57

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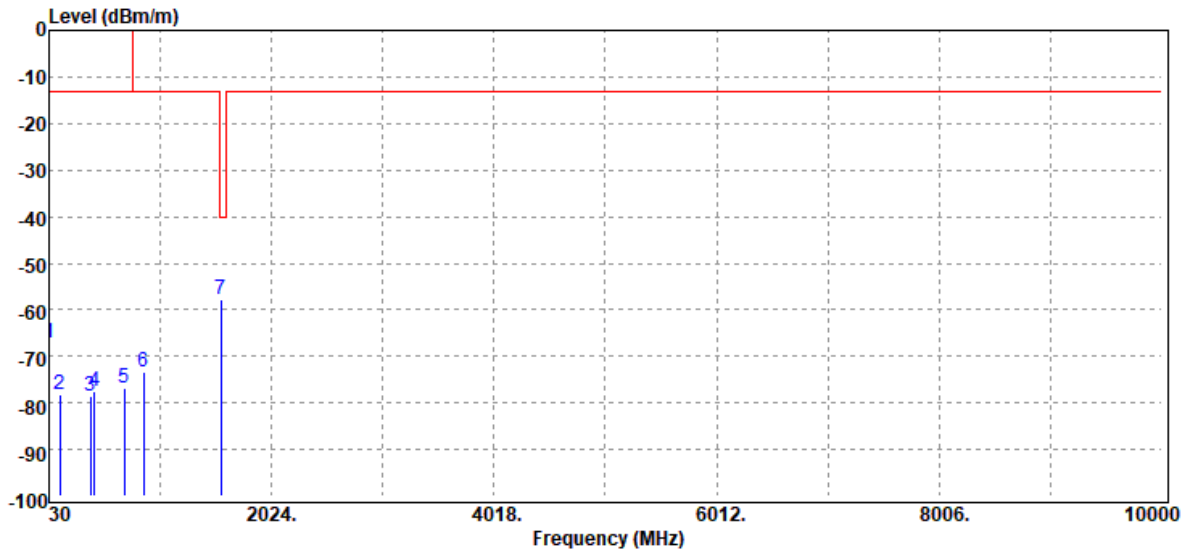
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Report Number :ER/2019/C0150
Operation Mode :LTE B13
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :784.5 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-67.09	-46.03	-20.49	-0.57	-13.00	-54.09
125.06	-78.03	-69.87	-7.10	-1.06	-13.00	-65.03
398.60	-78.62	-75.09	-1.60	-1.93	-13.00	-65.62
440.31	-77.38	-73.79	-1.76	-1.83	-13.00	-64.38
704.15	-76.73	-72.82	-1.29	-2.62	-13.00	-63.73
880.69	-73.32	-69.07	-1.74	-2.51	-13.00	-60.32
1569.00	-57.66	-62.90	9.14	-3.90	-40.00	-17.66

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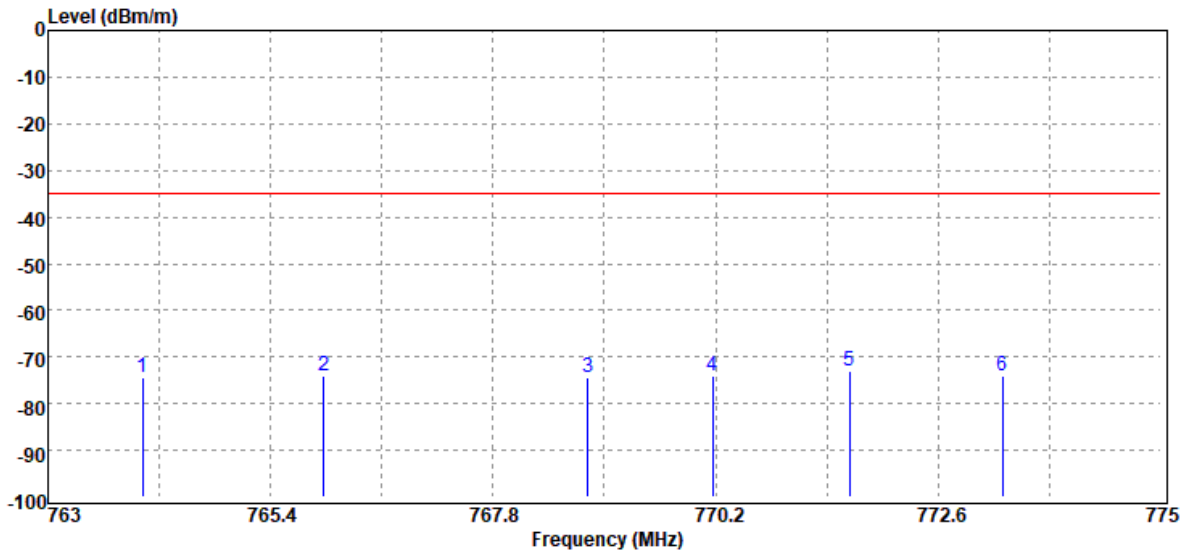
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Radiated Spurious Emission Measurement Result: LTE-Band 13 (763~775MHz)

Report Number :ER/2019/C0150
Operation Mode :LTE B13
Test Mode :Tx CH Low
EUT Pol :H Plane
Test Channel :779.5 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
764.02	-74.54	-70.15	-1.78	-2.61	-35.00	-39.54
765.98	-74.11	-69.75	-1.76	-2.60	-35.00	-39.11
768.82	-74.41	-70.10	-1.72	-2.59	-35.00	-39.41
770.16	-74.22	-69.93	-1.71	-2.58	-35.00	-39.22
771.64	-72.98	-68.66	-1.72	-2.60	-35.00	-37.98
773.30	-74.18	-69.83	-1.74	-2.61	-35.00	-39.18

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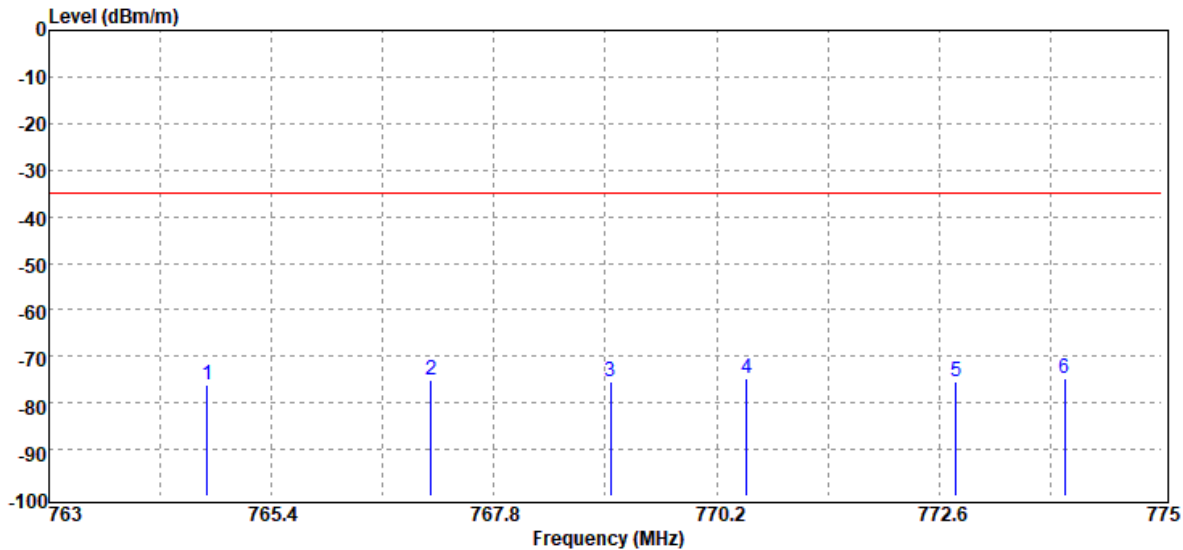
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Report Number :ER/2019/C0150
Operation Mode :LTE B13
Test Mode :Tx CH Low
EUT Pol :H Plane
Test Channel :779.5 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
764.70	-76.08	-71.70	-1.77	-2.61	-35.00	-41.08
767.12	-75.22	-70.88	-1.74	-2.60	-35.00	-40.22
769.06	-75.56	-71.26	-1.72	-2.58	-35.00	-40.56
770.52	-74.58	-70.29	-1.71	-2.58	-35.00	-39.58
772.78	-75.50	-71.16	-1.73	-2.61	-35.00	-40.50
773.96	-74.81	-70.45	-1.74	-2.62	-35.00	-39.81

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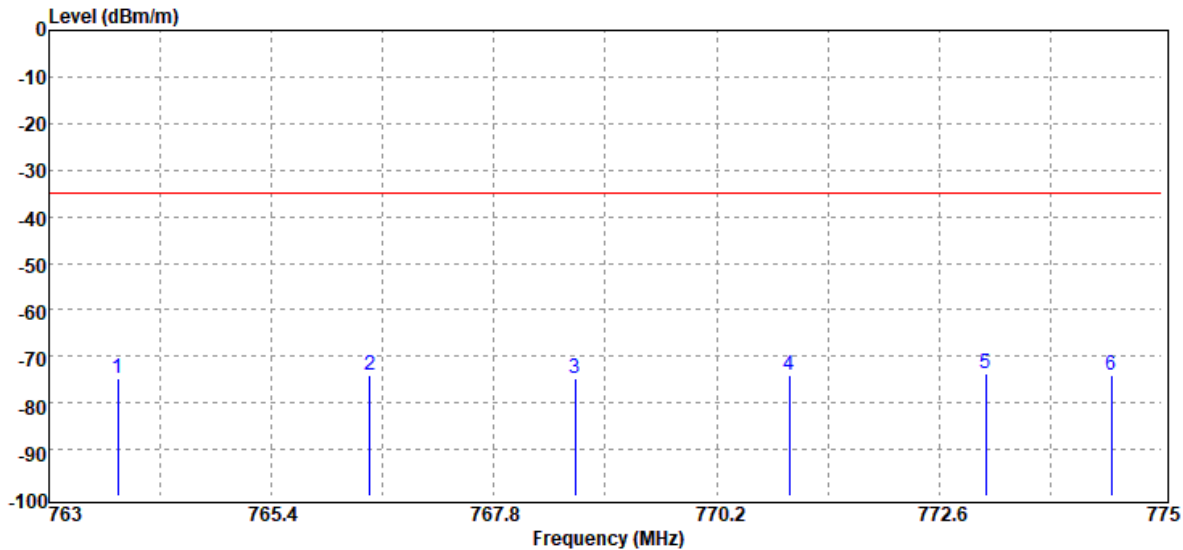
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Report Number :ER/2019/C0150
Operation Mode :LTE B13
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :782 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
763.74	-74.85	-70.46	-1.78	-2.61	-35.00	-39.85
766.46	-73.98	-69.63	-1.75	-2.60	-35.00	-38.98
768.68	-74.87	-70.55	-1.73	-2.59	-35.00	-39.87
770.98	-73.88	-69.57	-1.72	-2.59	-35.00	-38.88
773.10	-73.75	-69.41	-1.73	-2.61	-35.00	-38.75
774.46	-73.98	-69.61	-1.75	-2.62	-35.00	-38.98

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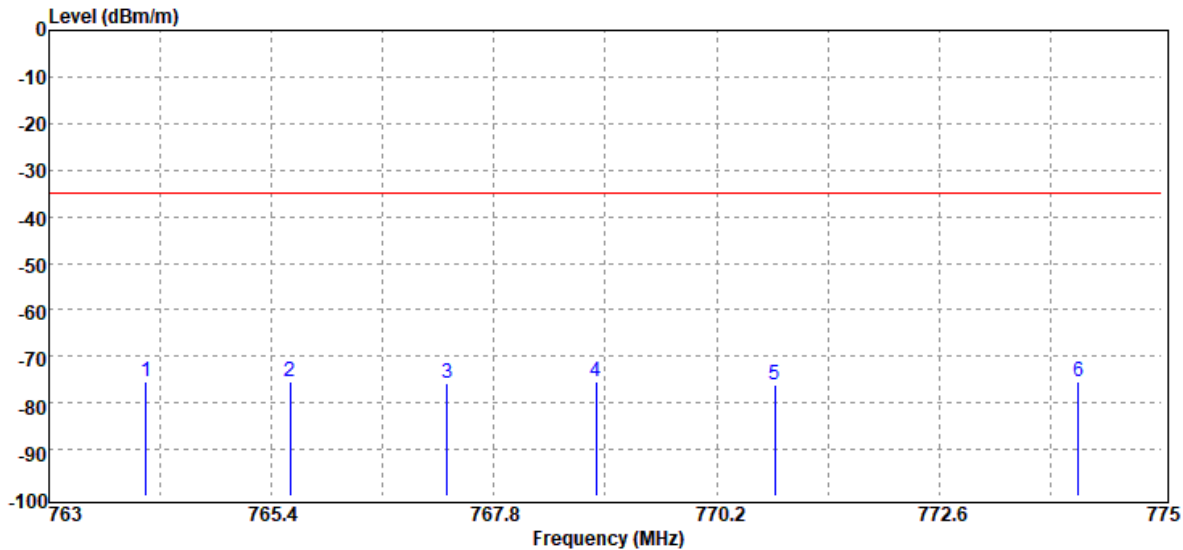
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Report Number :ER/2019/C0150
Operation Mode :LTE B13
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :782 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
764.04	-75.46	-71.07	-1.78	-2.61	-35.00	-40.46
765.60	-75.45	-71.09	-1.76	-2.60	-35.00	-40.45
767.30	-75.94	-71.61	-1.74	-2.59	-35.00	-40.94
768.90	-75.36	-71.05	-1.72	-2.59	-35.00	-40.36
770.82	-76.07	-71.76	-1.72	-2.59	-35.00	-41.07
774.10	-75.52	-71.16	-1.74	-2.62	-35.00	-40.52

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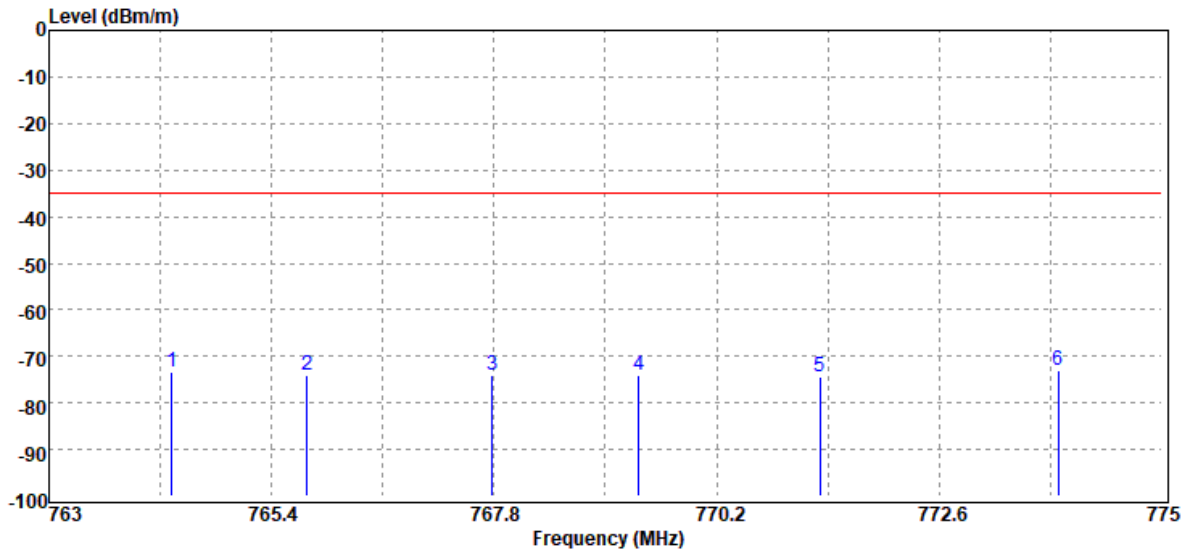
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Report Number :ER/2019/C0150
Operation Mode :LTE B13
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :784.5 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
764.32	-73.22	-68.83	-1.78	-2.61	-35.00	-38.22
765.78	-74.02	-69.66	-1.76	-2.60	-35.00	-39.02
767.78	-73.89	-69.56	-1.74	-2.59	-35.00	-38.89
769.36	-74.04	-69.74	-1.72	-2.58	-35.00	-39.04
771.32	-74.27	-69.96	-1.72	-2.59	-35.00	-39.27
773.88	-72.90	-68.54	-1.74	-2.62	-35.00	-37.90

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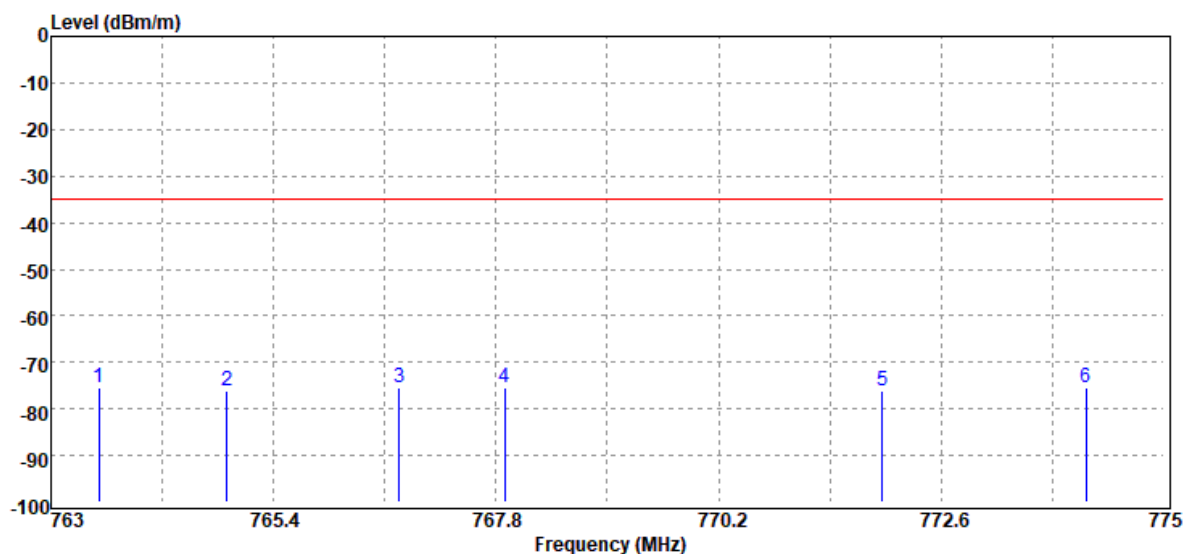
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Report Number :ER/2019/C0150
Operation Mode :LTE B13
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :784.5 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
763.52	-75.31	-70.92	-1.78	-2.61	-35.00	-40.31
764.90	-76.08	-71.70	-1.77	-2.61	-35.00	-41.08
766.76	-75.36	-71.01	-1.75	-2.60	-35.00	-40.36
767.90	-75.52	-71.19	-1.74	-2.59	-35.00	-40.52
771.96	-76.01	-71.68	-1.73	-2.60	-35.00	-41.01
774.16	-75.56	-71.20	-1.74	-2.62	-35.00	-40.56

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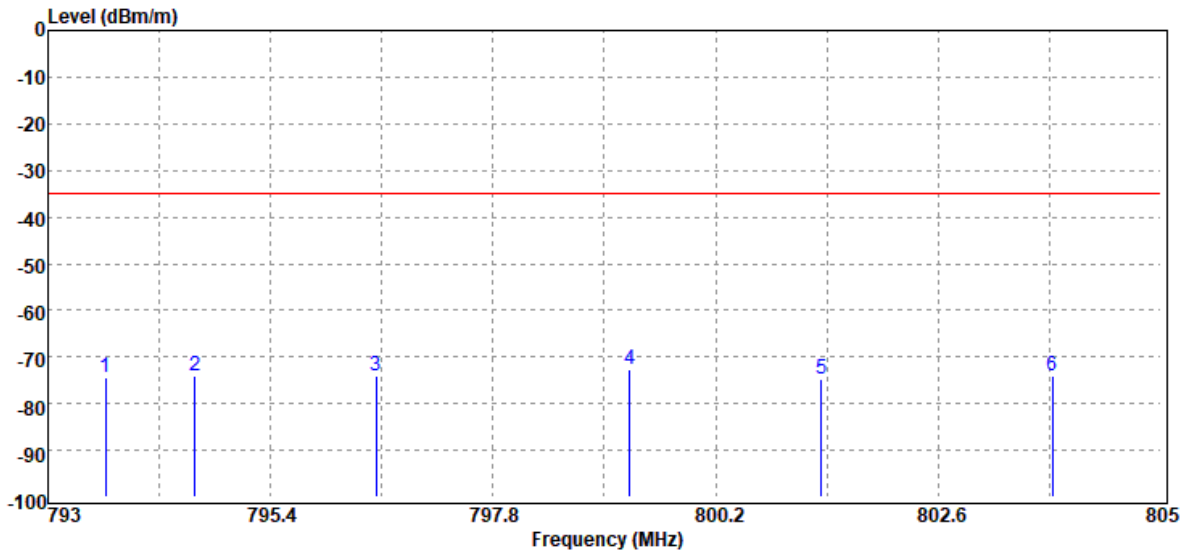
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Radiated Spurious Emission Measurement Result: LTE-Band 13 (793~805MHz)

Report Number :ER/2019/C0150
Operation Mode :LTE B13
Test Mode :Tx CH Low
EUT Pol :H Plane
Test Channel :779.5 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
793.62	-74.25	-69.55	-1.65	-3.05	-35.00	-39.25
794.58	-74.20	-69.51	-1.63	-3.06	-35.00	-39.20
796.54	-73.92	-69.21	-1.61	-3.10	-35.00	-38.92
799.28	-72.80	-68.07	-1.59	-3.14	-35.00	-37.80
801.34	-74.73	-69.98	-1.59	-3.16	-35.00	-39.73
803.84	-74.21	-69.44	-1.61	-3.16	-35.00	-39.21

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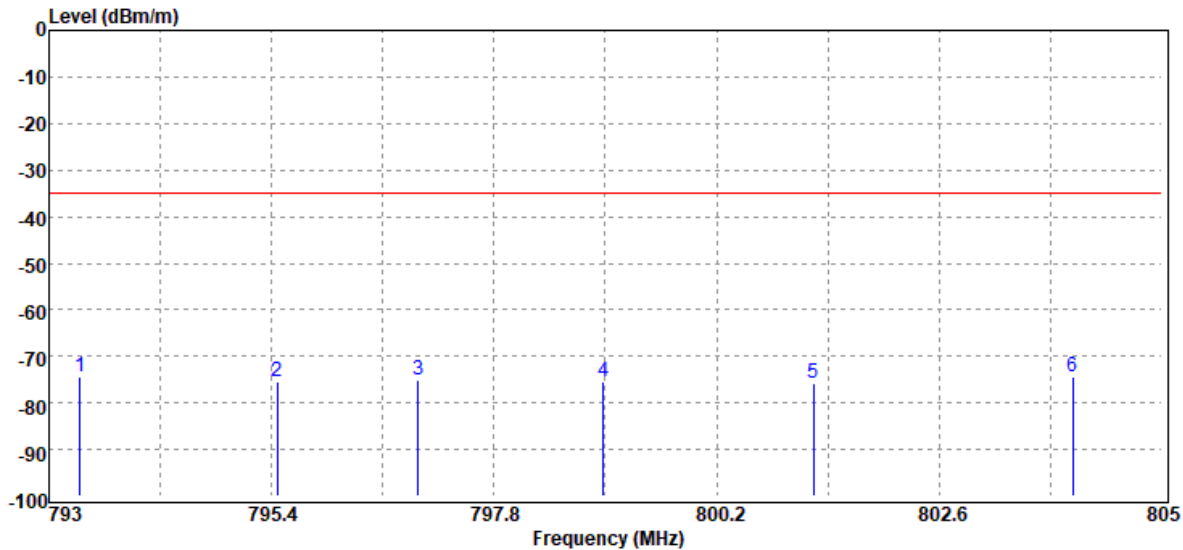
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Report Number :ER/2019/C0150
Operation Mode :LTE B13
Test Mode :Tx CH Low
EUT Pol :H Plane
Test Channel :779.5 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
793.34	-74.34	-69.65	-1.65	-3.04	-35.00	-39.34
795.46	-75.42	-70.71	-1.63	-3.08	-35.00	-40.42
796.98	-75.16	-70.45	-1.61	-3.10	-35.00	-40.16
798.98	-75.49	-70.76	-1.59	-3.14	-35.00	-40.49
801.24	-75.73	-70.98	-1.59	-3.16	-35.00	-40.73
804.04	-74.41	-69.64	-1.61	-3.16	-35.00	-39.41

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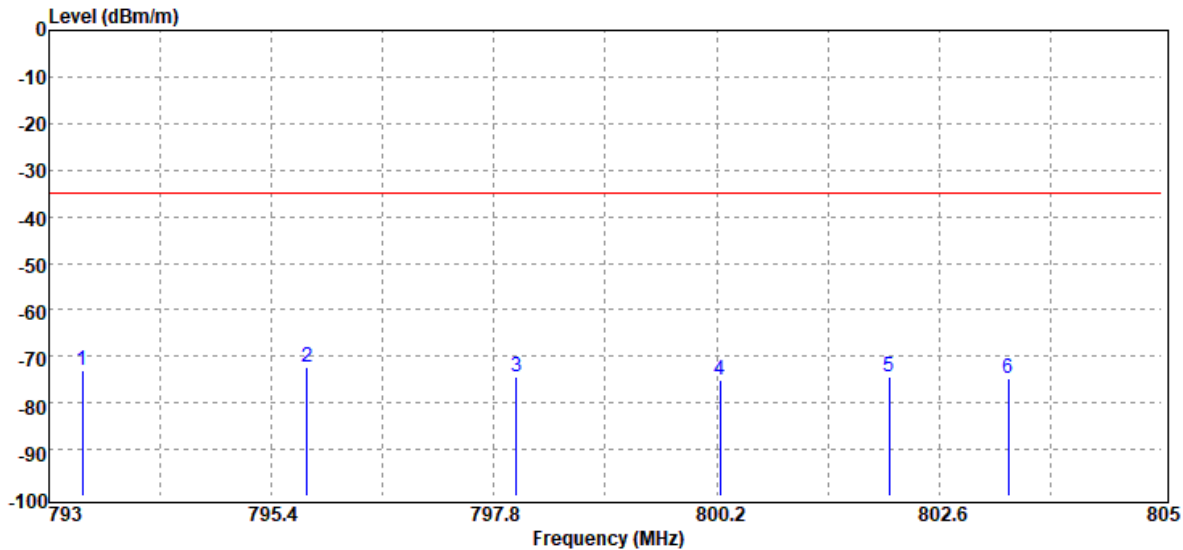
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Report Number :ER/2019/C0150
Operation Mode :LTE B13
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :782 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
793.36	-72.99	-68.30	-1.65	-3.04	-35.00	-37.99
795.78	-72.46	-67.76	-1.62	-3.08	-35.00	-37.46
798.04	-74.49	-69.77	-1.60	-3.12	-35.00	-39.49
800.24	-74.94	-70.20	-1.58	-3.16	-35.00	-39.94
802.06	-74.36	-69.60	-1.60	-3.16	-35.00	-39.36
803.34	-74.67	-69.90	-1.61	-3.16	-35.00	-39.67

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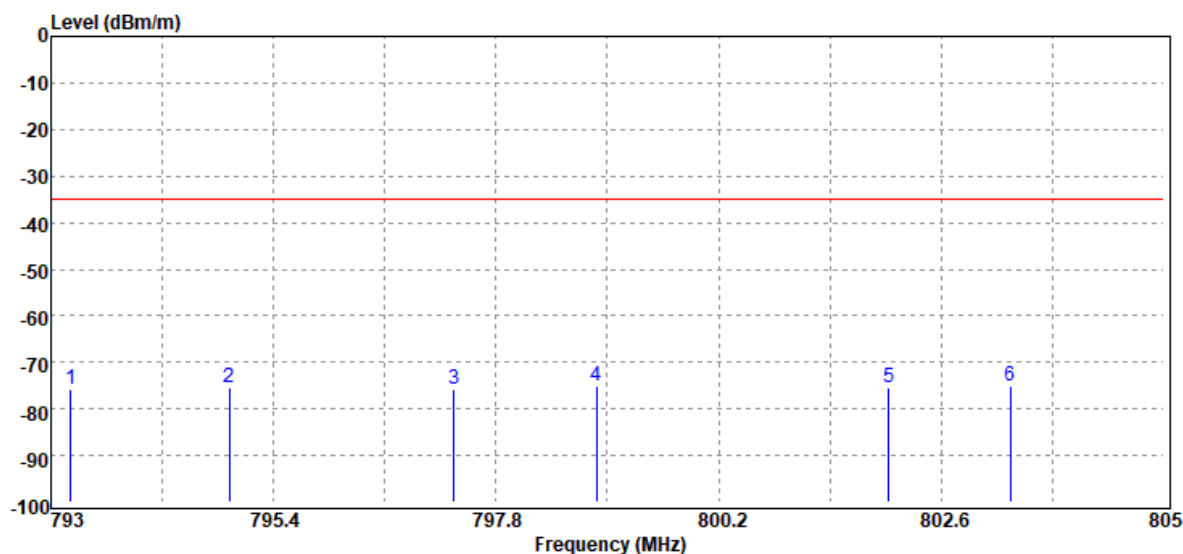
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Report Number :ER/2019/C0150
Operation Mode :LTE B13
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :782 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
793.22	-75.70	-71.01	-1.65	-3.04	-35.00	-40.70
794.92	-75.53	-70.83	-1.63	-3.07	-35.00	-40.53
797.34	-75.81	-71.09	-1.61	-3.11	-35.00	-40.81
798.88	-75.16	-70.43	-1.59	-3.14	-35.00	-40.16
802.04	-75.54	-70.78	-1.60	-3.16	-35.00	-40.54
803.34	-75.20	-70.43	-1.61	-3.16	-35.00	-40.20

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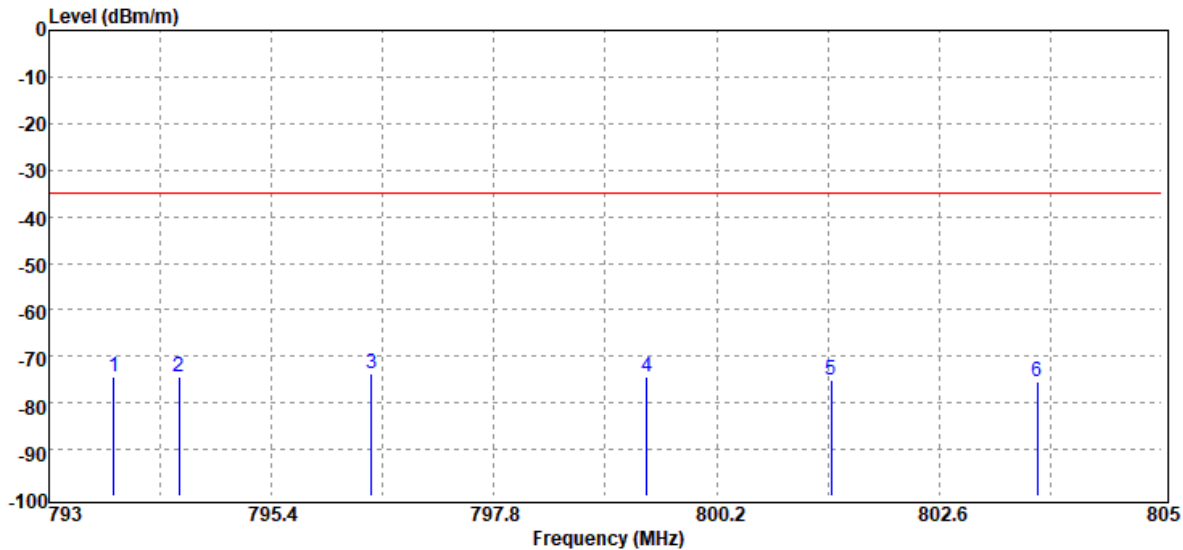
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Report Number :ER/2019/C0150
Operation Mode :LTE B13
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :784.5 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
793.70	-74.40	-69.70	-1.65	-3.05	-35.00	-39.40
794.40	-74.48	-69.78	-1.64	-3.06	-35.00	-39.48
796.48	-73.68	-68.97	-1.62	-3.09	-35.00	-38.68
799.44	-74.47	-69.73	-1.59	-3.15	-35.00	-39.47
801.44	-74.93	-70.18	-1.59	-3.16	-35.00	-39.93
803.66	-75.28	-70.51	-1.61	-3.16	-35.00	-40.28

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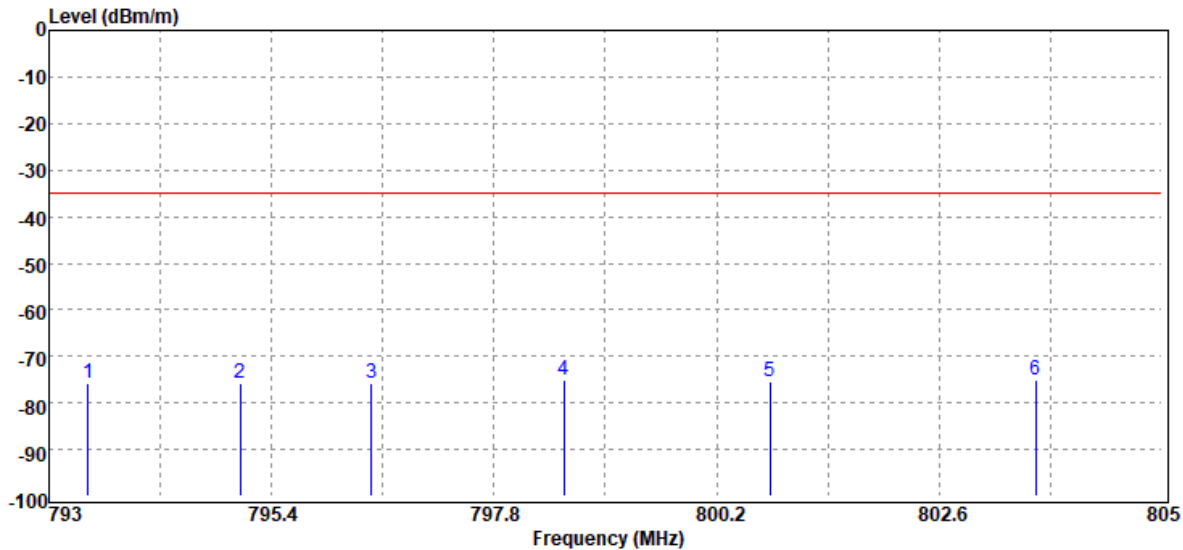
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Report Number :ER/2019/C0150
Operation Mode :LTE B13
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :784.5 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
793.42	-75.90	-71.21	-1.65	-3.04	-35.00	-40.90
795.06	-75.77	-71.07	-1.63	-3.07	-35.00	-40.77
796.48	-75.62	-70.91	-1.62	-3.09	-35.00	-40.62
798.56	-75.24	-70.52	-1.59	-3.13	-35.00	-40.24
800.78	-75.34	-70.59	-1.59	-3.16	-35.00	-40.34
803.64	-75.11	-70.34	-1.61	-3.16	-35.00	-40.11

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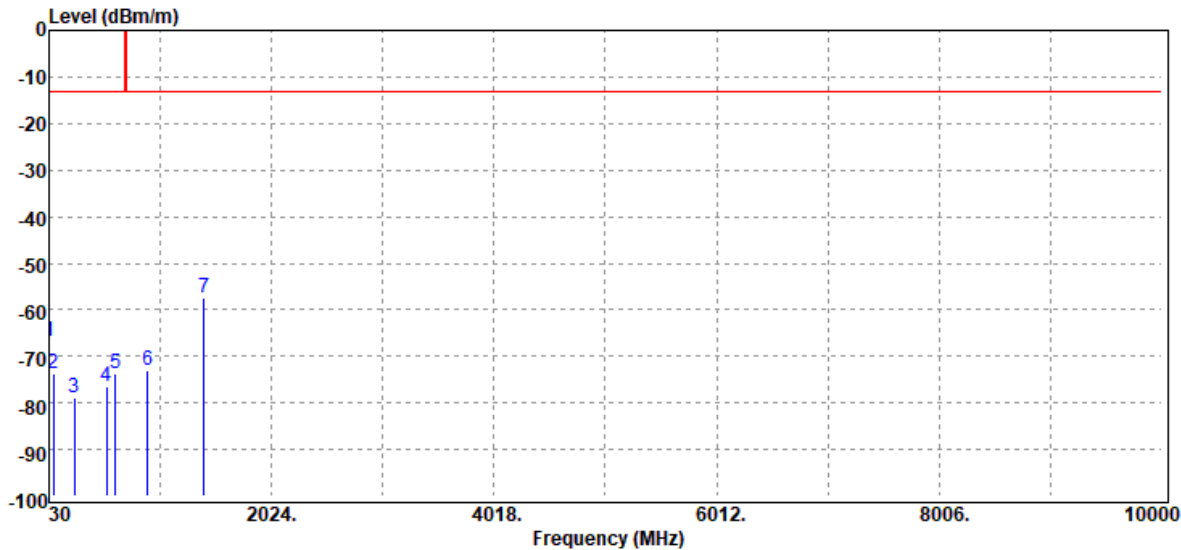
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Radiated Spurious Emission Measurement Result: LTE-Band 17 (The Worst Case)

Report Number	:ER/2019/C0150	Test Date	:2020-01-17
Operation Mode	:LTE B17	Temp./Humi.	:21.6/65
Test Mode	:Tx CH Low	Antenna Pol.	:VERTICAL
EUT Pol	:H Plane	Engineer	:Thomas
Test Channel	:709 MHz		



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.73	-45.67	-20.49	-0.57	-13.00	-53.73
66.86	-73.84	-59.90	-13.15	-0.79	-13.00	-60.84
255.04	-78.92	-75.75	-1.61	-1.56	-13.00	-65.92
548.95	-76.58	-72.94	-1.43	-2.21	-13.00	-63.58
628.49	-73.78	-69.68	-1.64	-2.46	-13.00	-60.78
915.61	-73.05	-68.39	-1.83	-2.83	-13.00	-60.05
1418.00	-57.46	-61.69	7.94	-3.71	-13.00	-44.46

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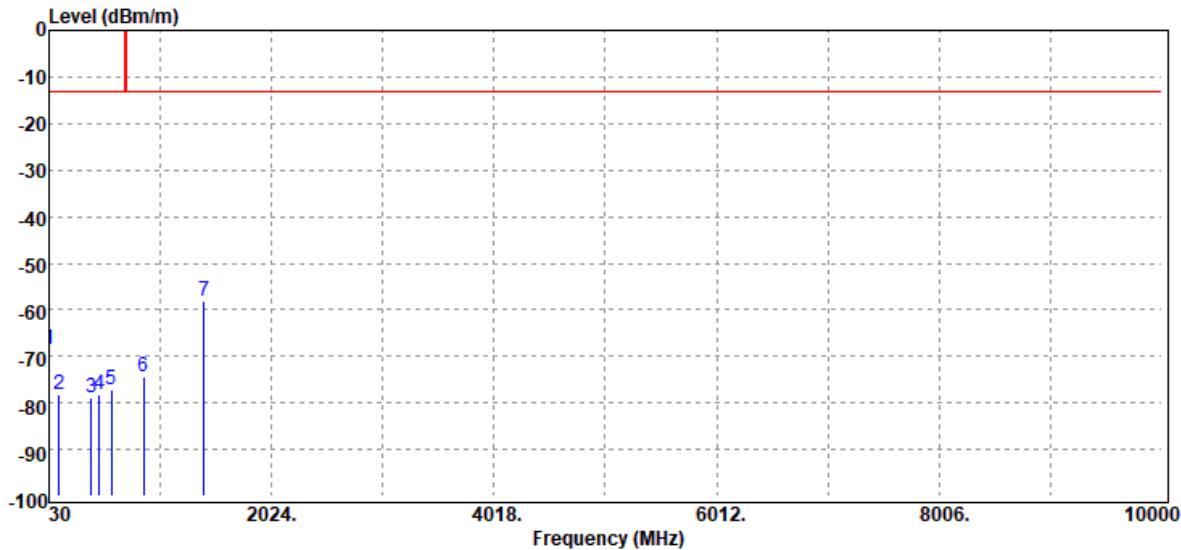
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Report Number :ER/2019/C0150
Operation Mode :LTE B17
Test Mode :Tx CH Low
EUT Pol :H Plane
Test Channel :709 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
30.00	-68.58	-46.86	-21.20	-0.52	-13.00	-55.58
122.15	-78.36	-70.22	-7.10	-1.04	-13.00	-65.36
406.36	-78.73	-75.21	-1.59	-1.93	-13.00	-65.73
479.11	-78.21	-74.52	-1.44	-2.25	-13.00	-65.21
589.69	-77.00	-73.35	-1.71	-1.94	-13.00	-64.00
875.84	-74.42	-70.21	-1.71	-2.50	-13.00	-61.42
1418.00	-58.25	-62.48	7.94	-3.71	-13.00	-45.25

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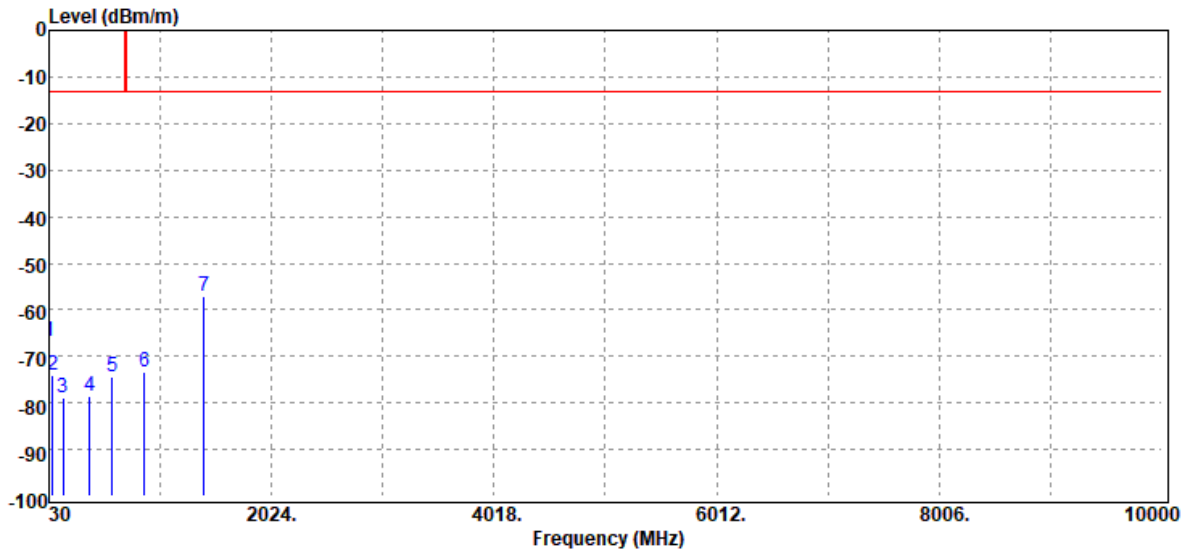
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Report Number :ER/2019/C0150
Operation Mode :LTE B17
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :710 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.95	-45.89	-20.49	-0.57	-13.00	-53.95
65.89	-74.14	-59.96	-13.40	-0.78	-13.00	-61.14
156.10	-78.74	-70.17	-7.26	-1.31	-13.00	-65.74
396.66	-78.60	-75.05	-1.61	-1.94	-13.00	-65.60
597.45	-74.28	-70.27	-1.81	-2.20	-13.00	-61.28
881.66	-73.31	-69.05	-1.73	-2.53	-13.00	-60.31
1420.00	-57.11	-61.34	7.94	-3.71	-13.00	-44.11

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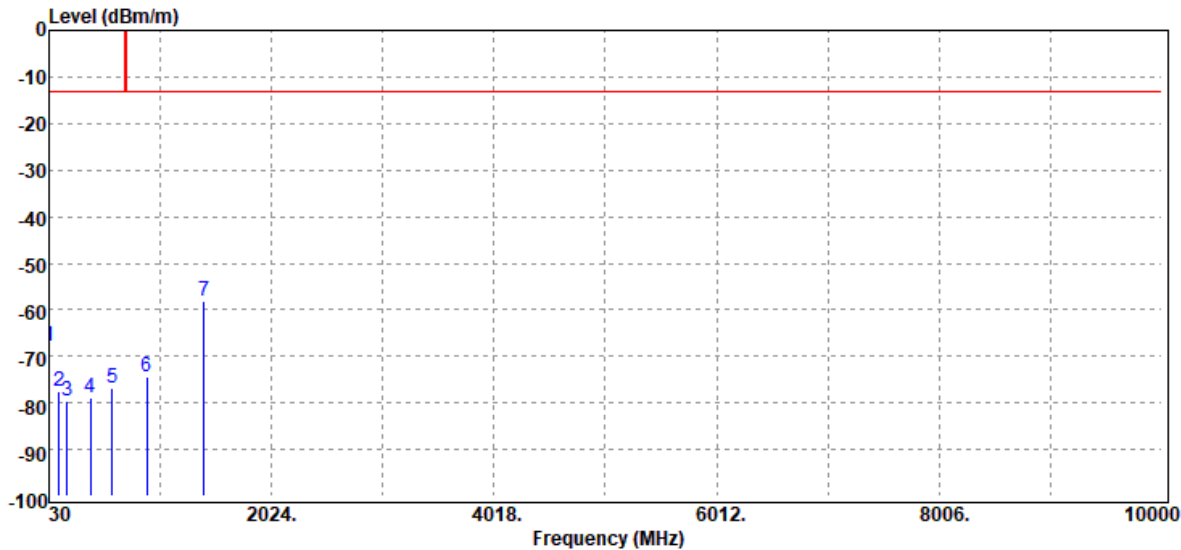
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Report Number :ER/2019/C0150
Operation Mode :LTE B17
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :710 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
30.00	-67.70	-45.98	-21.20	-0.52	-13.00	-54.70
122.15	-77.65	-69.51	-7.10	-1.04	-13.00	-64.65
191.99	-79.61	-75.49	-2.77	-1.35	-13.00	-66.61
401.51	-78.73	-75.21	-1.60	-1.92	-13.00	-65.73
597.45	-76.67	-72.66	-1.81	-2.20	-13.00	-63.67
905.91	-74.48	-69.84	-1.82	-2.82	-13.00	-61.48
1420.00	-58.04	-62.27	7.94	-3.71	-13.00	-45.04

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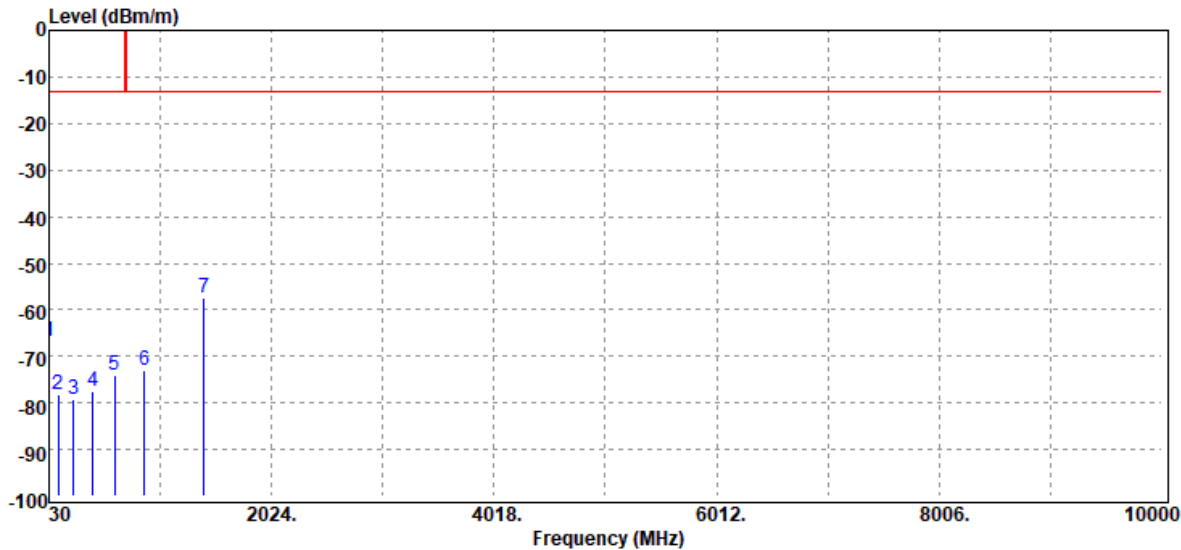
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Report Number :ER/2019/C0150
Operation Mode :LTE B17
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :711 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.62	-45.56	-20.49	-0.57	-13.00	-53.62
115.36	-78.30	-70.14	-7.14	-1.02	-13.00	-65.30
248.25	-79.36	-76.20	-1.67	-1.49	-13.00	-66.36
422.85	-77.35	-73.80	-1.62	-1.93	-13.00	-64.35
616.85	-74.15	-69.81	-1.80	-2.54	-13.00	-61.15
886.51	-73.08	-68.75	-1.72	-2.61	-13.00	-60.08
1422.00	-57.45	-61.68	7.94	-3.71	-13.00	-44.45

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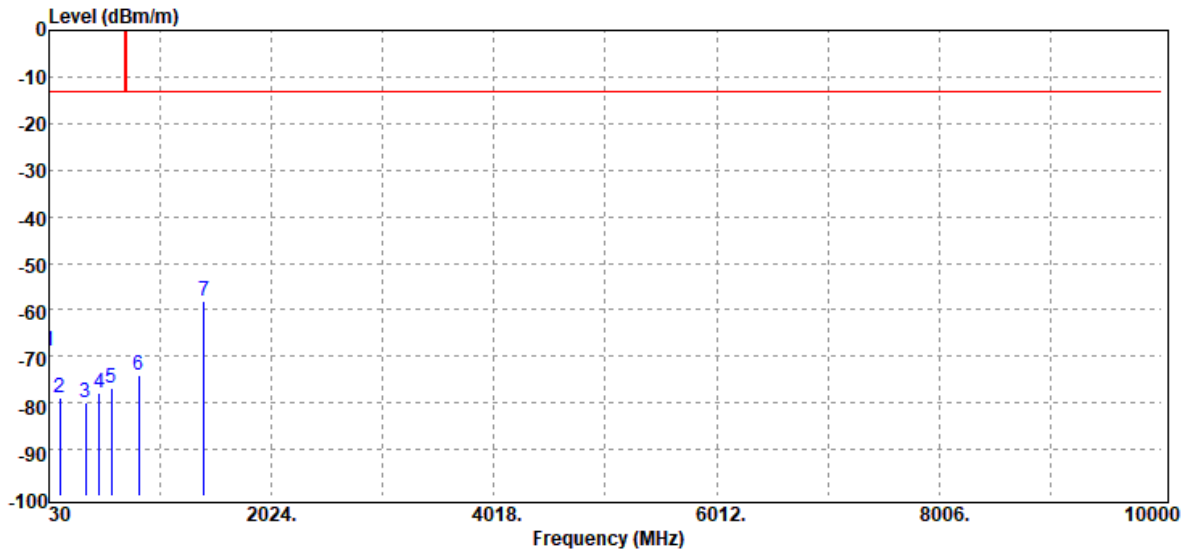
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Report Number :ER/2019/C0150
Operation Mode :LTE B17
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :711 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-68.98	-47.92	-20.49	-0.57	-13.00	-55.98
128.94	-78.95	-70.63	-7.23	-1.09	-13.00	-65.95
361.74	-80.10	-76.64	-1.54	-1.92	-13.00	-67.10
483.96	-78.01	-74.27	-1.51	-2.23	-13.00	-65.01
590.66	-76.88	-73.20	-1.72	-1.96	-13.00	-63.88
835.10	-74.06	-69.26	-1.81	-2.99	-13.00	-61.06
1422.00	-58.21	-62.44	7.94	-3.71	-13.00	-45.21

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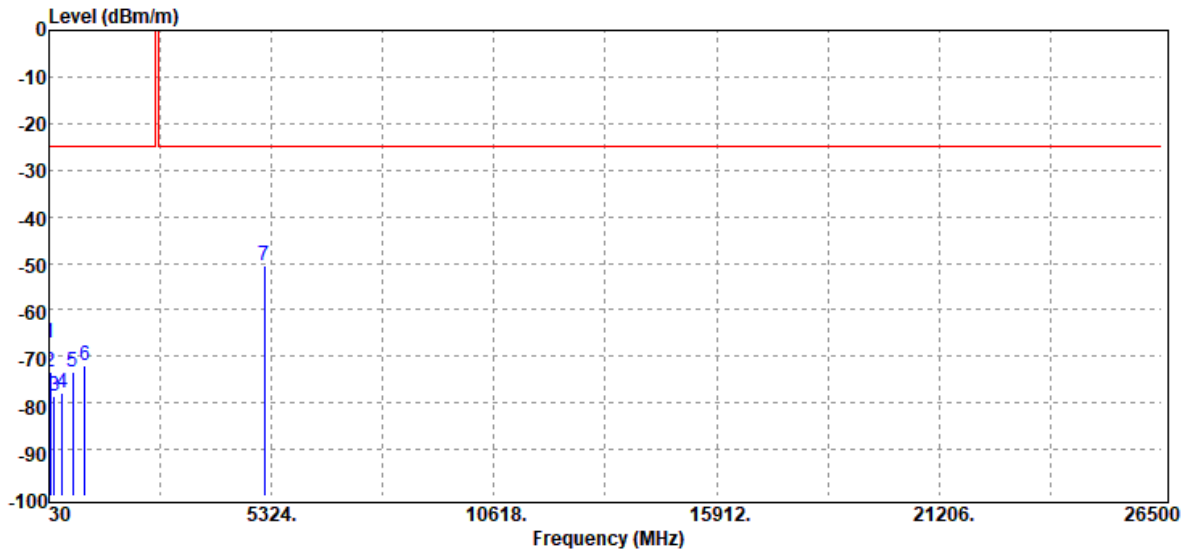
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Radiated Spurious Emission Measurement Result: LTE-Band 38 (The Worst Case)

Report Number	:ER/2019/C0150	Test Date	:2020-01-17
Operation Mode	:LTE B38	Temp./Humi.	:21.6/65
Test Mode	:Tx CH Low	Antenna Pol.	:VERTICAL
EUT Pol	:H Plane	Engineer	:Thomas
Test Channel	:2580 MHz		



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
34.85	-66.99	-46.50	-19.90	-0.59	-25.00	-41.99
66.86	-73.36	-59.42	-13.15	-0.79	-25.00	-48.36
153.19	-78.63	-69.91	-7.46	-1.26	-25.00	-53.63
348.16	-77.75	-74.36	-1.50	-1.89	-25.00	-52.75
597.45	-73.49	-69.48	-1.81	-2.20	-25.00	-48.49
885.54	-71.98	-67.67	-1.71	-2.60	-25.00	-46.98
5160.00	-50.47	-55.50	12.14	-7.11	-25.00	-25.47

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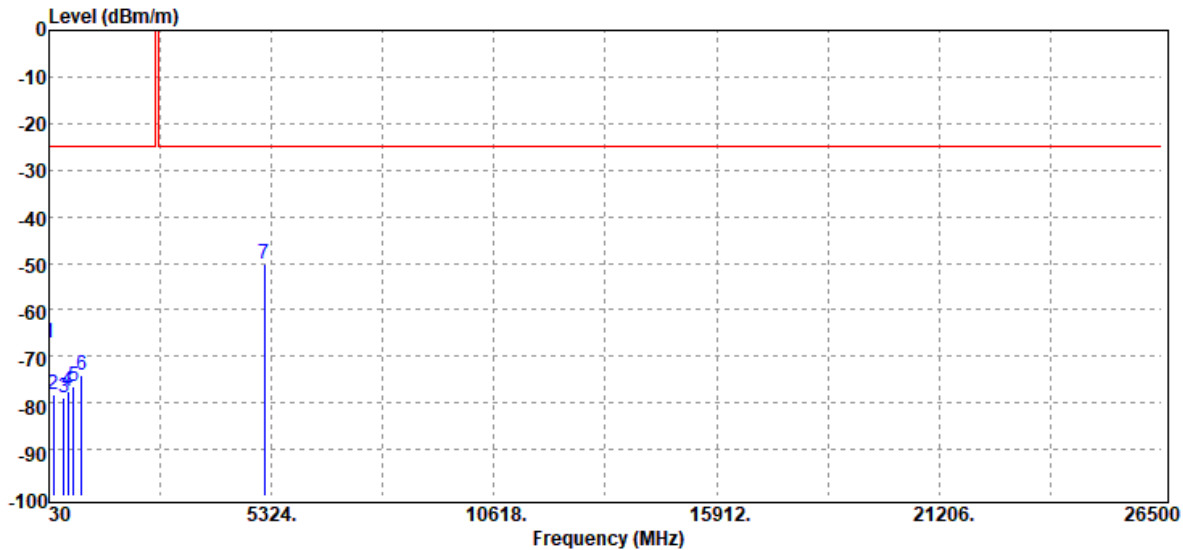
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Report Number :ER/2019/C0150
Operation Mode :LTE B38
Test Mode :Tx CH Low
EUT Pol :H Plane
Test Channel :2580 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.99	-45.93	-20.49	-0.57	-25.00	-41.99
129.91	-78.21	-69.85	-7.26	-1.10	-25.00	-53.21
382.11	-78.95	-75.38	-1.64	-1.93	-25.00	-53.95
481.05	-77.35	-73.67	-1.44	-2.24	-25.00	-52.35
616.85	-76.36	-72.02	-1.80	-2.54	-25.00	-51.36
796.30	-73.95	-69.24	-1.62	-3.09	-25.00	-48.95
5160.00	-50.07	-55.10	12.14	-7.11	-25.00	-25.07

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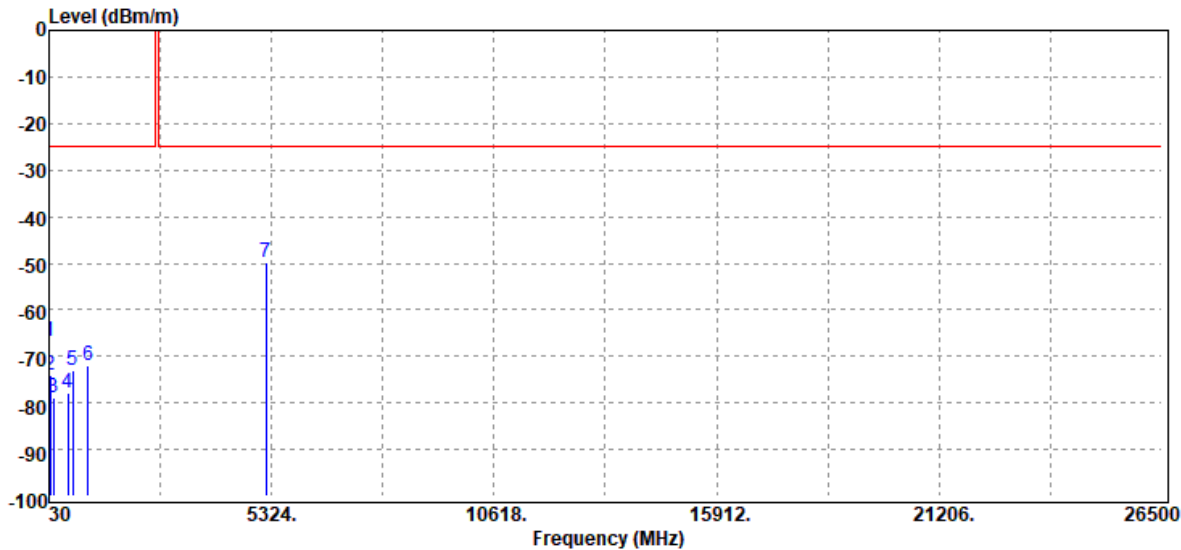
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Report Number :ER/2019/C0150
Operation Mode :LTE B38
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :2595 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.71	-45.65	-20.49	-0.57	-25.00	-41.71
66.86	-74.07	-60.13	-13.15	-0.79	-25.00	-49.07
143.49	-78.96	-69.85	-7.95	-1.16	-25.00	-53.96
473.29	-77.99	-74.22	-1.51	-2.26	-25.00	-52.99
595.51	-73.15	-69.26	-1.76	-2.13	-25.00	-48.15
964.11	-71.86	-66.71	-1.86	-3.29	-25.00	-46.86
5190.00	-49.91	-55.00	12.26	-7.17	-25.00	-24.91

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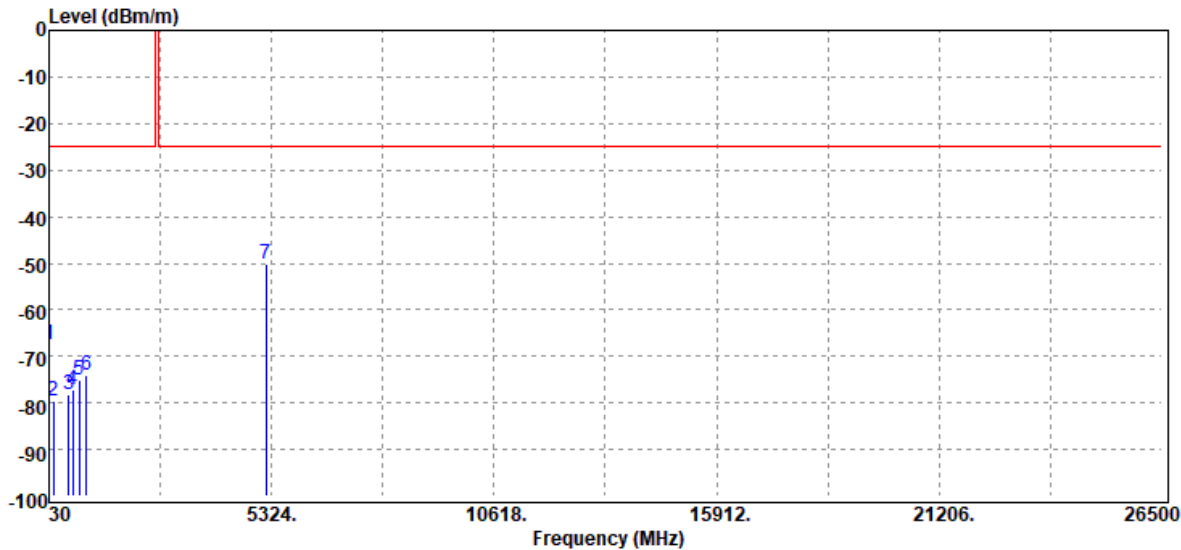
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Report Number :ER/2019/C0150
Operation Mode :LTE B38
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :2595 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-67.46	-46.40	-20.49	-0.57	-25.00	-42.46
129.91	-79.54	-71.18	-7.26	-1.10	-25.00	-54.54
490.75	-78.07	-74.31	-1.54	-2.22	-25.00	-53.07
602.30	-77.32	-73.03	-1.94	-2.35	-25.00	-52.32
747.80	-75.19	-70.92	-1.82	-2.45	-25.00	-50.19
929.19	-74.22	-69.44	-1.88	-2.90	-25.00	-49.22
5190.00	-50.26	-55.35	12.26	-7.17	-25.00	-25.26

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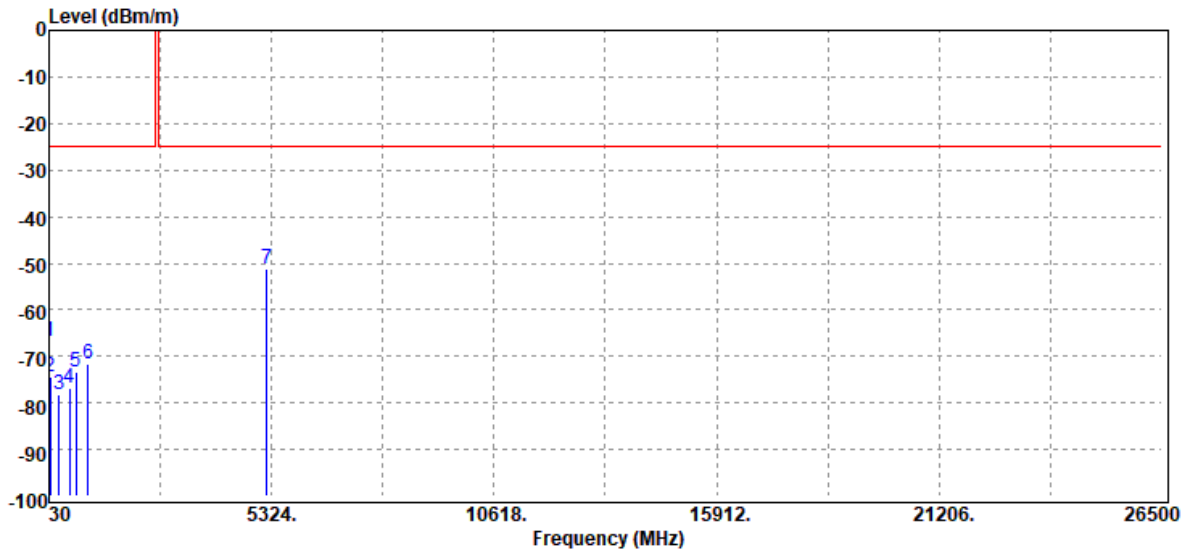
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Report Number :ER/2019/C0150
Operation Mode :LTE B38
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :2610 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.88	-45.82	-20.49	-0.57	-25.00	-41.88
66.86	-74.25	-60.31	-13.15	-0.79	-25.00	-49.25
260.86	-78.29	-75.01	-1.66	-1.62	-25.00	-53.29
510.15	-76.98	-72.91	-1.49	-2.58	-25.00	-51.98
667.29	-73.44	-69.10	-1.30	-3.04	-25.00	-48.44
966.05	-71.69	-66.56	-1.86	-3.27	-25.00	-46.69
5220.00	-51.05	-56.32	12.46	-7.19	-25.00	-26.05

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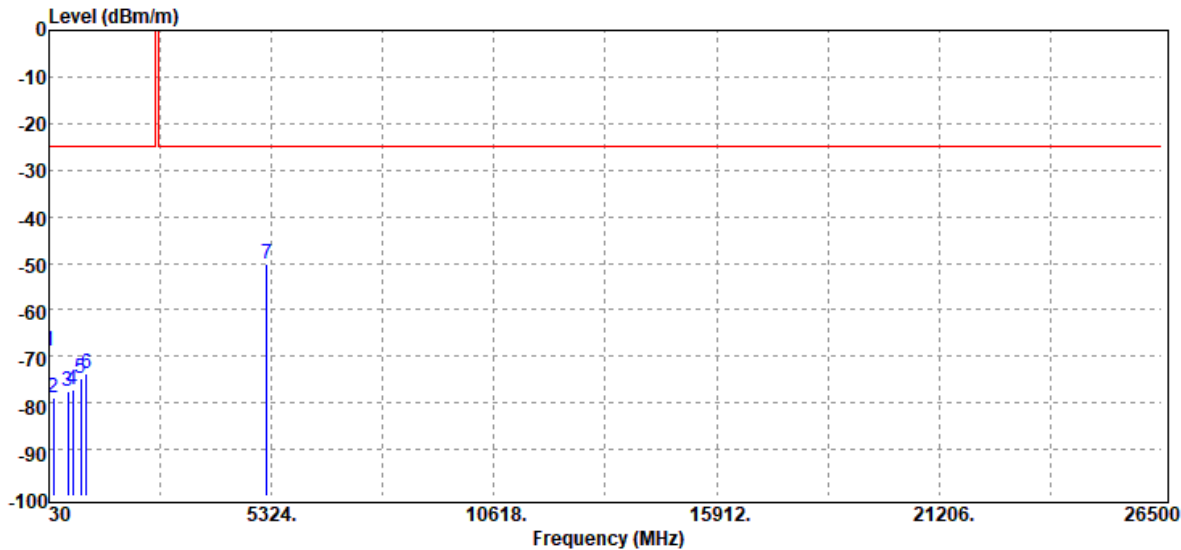
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Report Number :ER/2019/C0150
Operation Mode :LTE B38
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :2610 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-68.75	-47.69	-20.49	-0.57	-25.00	-43.75
127.00	-79.04	-70.80	-7.16	-1.08	-25.00	-54.04
482.99	-77.60	-73.88	-1.49	-2.23	-25.00	-52.60
604.24	-77.11	-72.73	-1.98	-2.40	-25.00	-52.11
781.75	-74.79	-70.38	-1.68	-2.73	-25.00	-49.79
920.46	-73.75	-68.94	-1.96	-2.85	-25.00	-48.75
5220.00	-50.02	-55.29	12.46	-7.19	-25.00	-25.02

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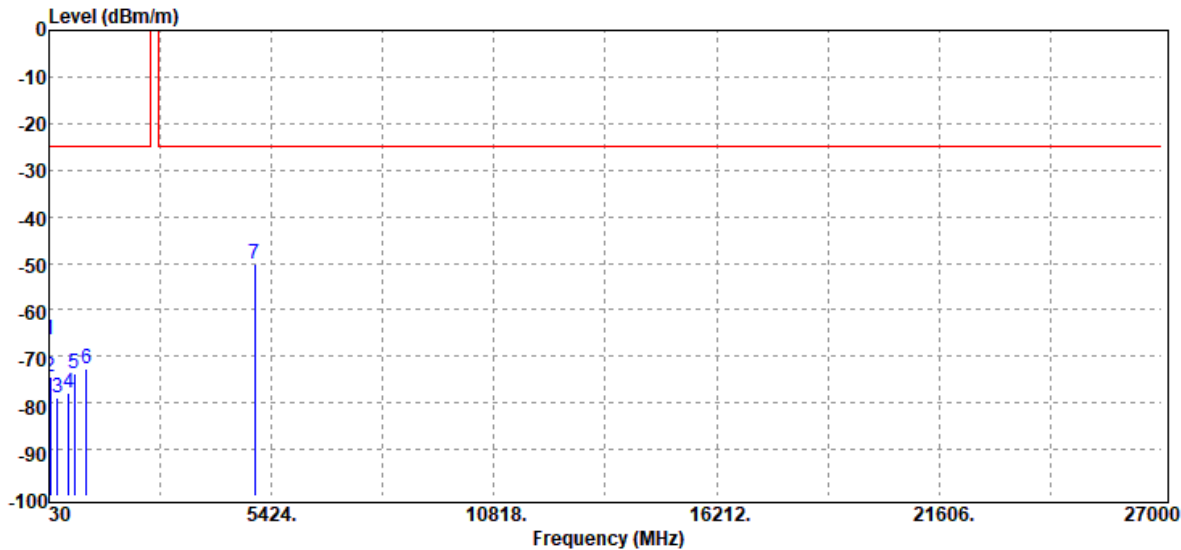
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Radiated Spurious Emission Measurement Result: LTE-Band 41 (The Worst Case)

Report Number	:ER/2019/C0150	Test Date	:2020-01-17
Operation Mode	:LTE B41	Temp./Humi.	:21.6/65
Test Mode	:Tx CH Low	Antenna Pol.	:VERTICAL
EUT Pol	:H Plane	Engineer	:Thomas
Test Channel	:2506 MHz		



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.48	-45.42	-20.49	-0.57	-25.00	-41.48
68.80	-74.33	-61.08	-12.45	-0.80	-25.00	-49.33
238.55	-78.85	-75.70	-1.71	-1.44	-25.00	-53.85
503.36	-77.95	-74.06	-1.47	-2.42	-25.00	-52.95
636.25	-73.71	-69.67	-1.56	-2.48	-25.00	-48.71
939.86	-72.83	-67.83	-1.98	-3.02	-25.00	-47.83
5012.00	-50.24	-55.57	12.35	-7.02	-25.00	-25.24

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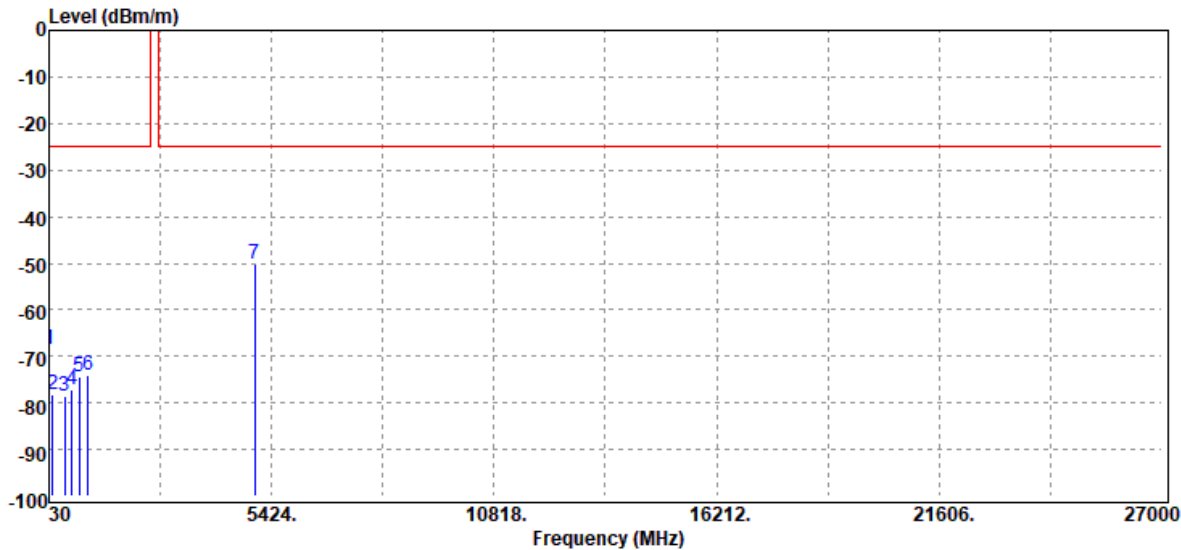
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Report Number :ER/2019/C0150
Operation Mode :LTE B41
Test Mode :Tx CH Low
EUT Pol :H Plane
Test Channel :2506 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-68.35	-47.29	-20.49	-0.57	-25.00	-43.35
124.09	-78.17	-70.05	-7.07	-1.05	-25.00	-53.17
401.51	-78.55	-75.03	-1.60	-1.92	-25.00	-53.55
594.54	-77.05	-73.20	-1.75	-2.10	-25.00	-52.05
769.14	-74.26	-69.96	-1.72	-2.58	-25.00	-49.26
973.81	-73.90	-68.84	-1.79	-3.27	-25.00	-48.90
5012.00	-50.34	-55.67	12.35	-7.02	-25.00	-25.34

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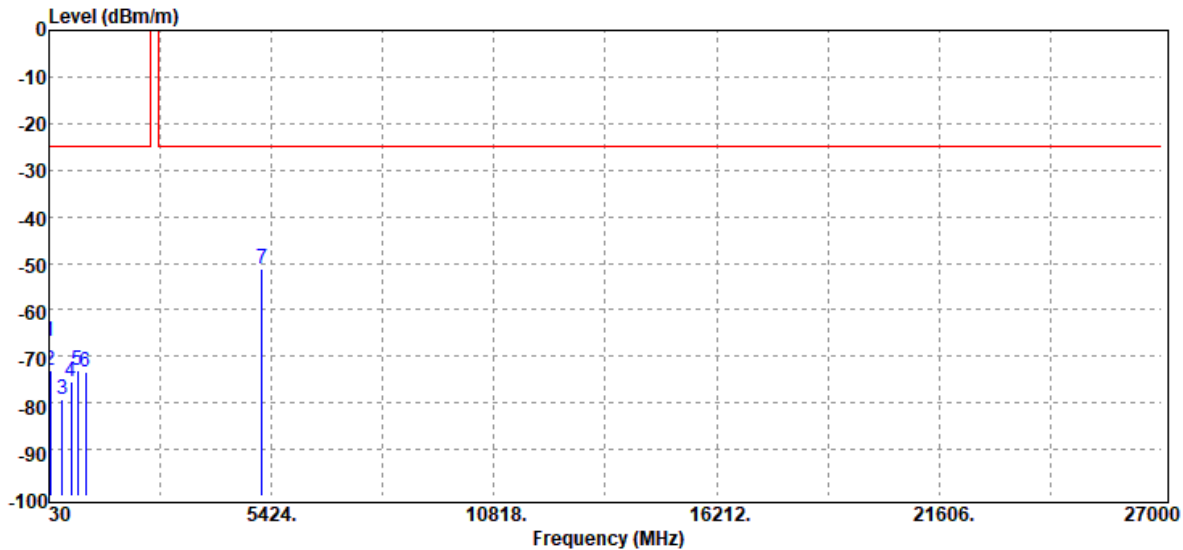
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Report Number :ER/2019/C0150
Operation Mode :LTE B41
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :2593 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas


Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.89	-45.83	-20.49	-0.57	-25.00	-41.89
66.86	-73.16	-59.22	-13.15	-0.79	-25.00	-48.16
347.19	-79.08	-75.66	-1.53	-1.89	-25.00	-54.08
561.56	-75.42	-71.74	-1.39	-2.29	-25.00	-50.42
723.55	-73.15	-69.45	-1.35	-2.35	-25.00	-48.15
920.46	-73.23	-68.42	-1.96	-2.85	-25.00	-48.23
5186.00	-51.04	-56.12	12.24	-7.16	-25.00	-26.04

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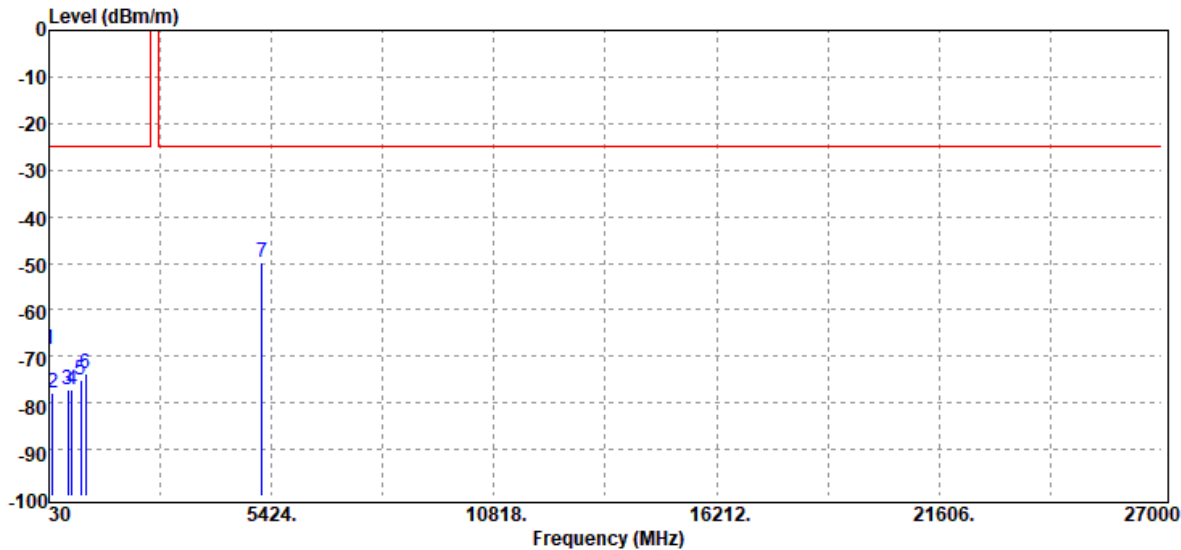
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Report Number :ER/2019/C0150
Operation Mode :LTE B41
Test Mode :Tx CH Mid
EUT Pol :H Plane
Test Channel :2593 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
30.00	-68.37	-46.65	-21.20	-0.52	-25.00	-43.37
120.21	-77.91	-69.83	-7.06	-1.02	-25.00	-52.91
479.11	-77.30	-73.61	-1.44	-2.25	-25.00	-52.30
589.69	-77.14	-73.49	-1.71	-1.94	-25.00	-52.14
791.45	-75.01	-70.33	-1.67	-3.01	-25.00	-50.01
915.61	-73.76	-69.10	-1.83	-2.83	-25.00	-48.76
5186.00	-49.86	-54.94	12.24	-7.16	-25.00	-24.86

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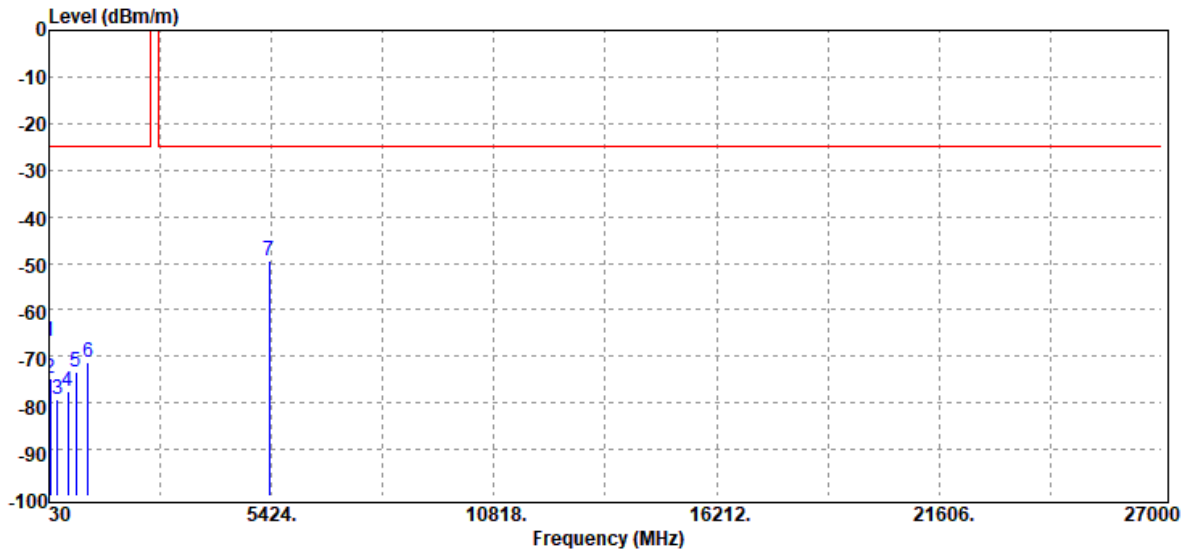
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Report Number :ER/2019/C0150
Operation Mode :LTE B41
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :2680 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :VERTICAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-66.77	-45.71	-20.49	-0.57	-25.00	-41.77
65.89	-74.57	-60.39	-13.40	-0.78	-25.00	-49.57
236.61	-79.16	-76.04	-1.66	-1.46	-25.00	-54.16
482.99	-77.40	-73.68	-1.49	-2.23	-25.00	-52.40
681.84	-73.46	-69.65	-1.30	-2.51	-25.00	-48.46
967.99	-71.20	-66.06	-1.88	-3.26	-25.00	-46.20
5360.00	-49.65	-55.25	12.90	-7.30	-25.00	-24.65

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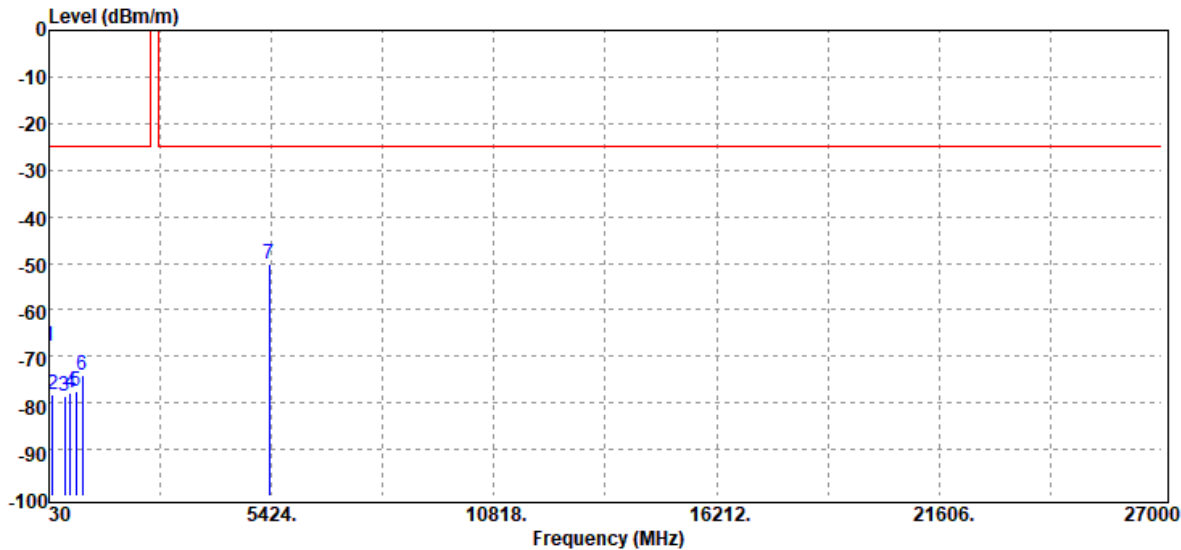
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Report Number :ER/2019/C0150
Operation Mode :LTE B41
Test Mode :Tx CH High
EUT Pol :H Plane
Test Channel :2680 MHz

Test Date :2020-01-17
Temp./Humi. :21.6/65
Antenna Pol. :HORIZONTAL
Engineer :Thomas



Freq. MHz	EIRP/ERP dBm	SG Output Level dBm	Antenna Gain dBi/dBd	Cable Loss dB	Limit dBm	Margin dB
32.91	-67.84	-46.78	-20.49	-0.57	-25.00	-42.84
124.09	-78.09	-69.97	-7.07	-1.05	-25.00	-53.09
413.15	-78.49	-74.96	-1.58	-1.95	-25.00	-53.49
553.80	-77.78	-74.08	-1.45	-2.25	-25.00	-52.78
682.81	-77.38	-73.56	-1.31	-2.51	-25.00	-52.38
842.86	-74.06	-69.27	-1.72	-3.07	-25.00	-49.06
5360.00	-50.32	-55.92	12.90	-7.30	-25.00	-25.32

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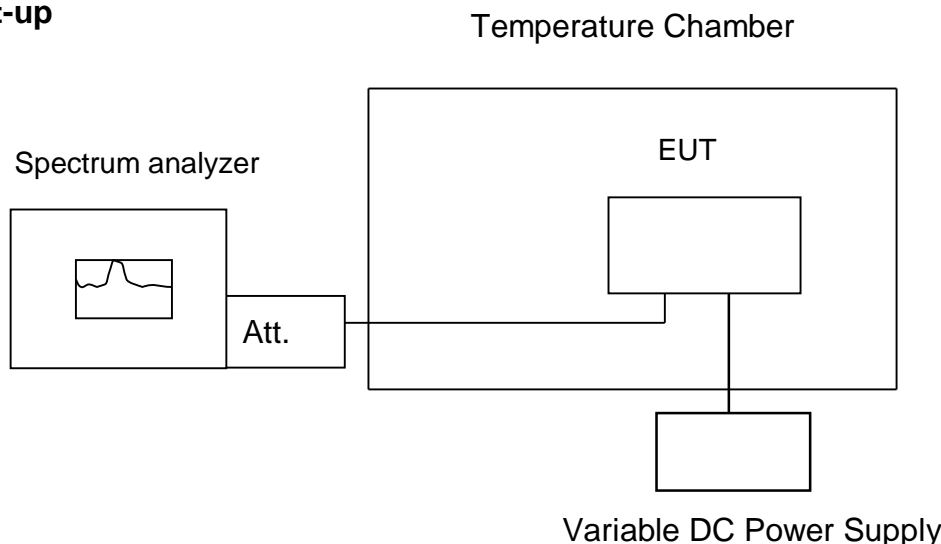
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10. FREQUENCY STABILITY MEASUREMENT

10.1. Standard Applicable

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

10.2. Test Set-up



Note: Measurement setup for testing on Antenna connector

10.3. Measurement Procedure

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

Set chamber temperature to 25°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency. Reduce the input voltage to specify extreme voltage variation (+/- 15%) and endpoint as declared by the manufacturer, record the maximum frequency change.

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10.4. Measurement Equipment Used

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Radio Communication Analyser	Anritsu	MT8820C	6200995019	04/01/2019	03/31/2020
DC Power Supply	Agilent	E3640A	MY52410006	12/10/2019	12/09/2020
Temperature Chamber	TERCHY	MHG-120LF	911009	05/17/2019	05/16/2020
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY57120290	02/13/2019	02/12/2020
Attenuator	Mini-Circuit	BW-S10W2+	2	01/02/2020	01/01/2021
DC Block	Mini-Circuits	BLK-18-S+	1	01/02/2020	01/01/2021
Splitter	RF-LAMBDA	RFLT2W1G18G	11-JSPF412-018	01/02/2020	01/01/2021

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10.5. Measurement Result

GPRS 850 Mid Channel		836.6	MHz	
Limit: +/- 2.5 ppm				
Vdc	Temp. (°C)	Freq. (MHz)	Delta (Hz)	Limit (Hz)
FREQUENCY ERROR vs. VOLTAGE				
4	20	836.599999	-1	2091
3.85	20	836.599999	-1	2091
3.7	20	836.599992	-8	2091
3.09 (End point)	20	836.59999	-10	2091
FREQUENCY ERROR vs. Temp.				
3.85	50	836.599992	-8	2091
3.85	40	836.600009	9	2091
3.85	30	836.599996	-4	2091
3.85	20	836.600005	5	2091
3.85	10	836.599991	-9	2091
3.85	0	836.599991	-9	2091
3.85	-10	836.599997	-3	2091
3.85	-20	836.600005	5	2091
3.85	-30	836.600002	2	2091

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GPRS 1900 Mid Channel			1880	MHz
Limit: +/- 2.5 ppm				
Vdc	Temp. (°C)	Freq. (MHz)	Delta (Hz)	Limit (Hz)
FREQUENCY ERROR vs. VOLTAGE				
4	20	1880.000007	7	4700
3.85	20	1879.999991	-9	4700
3.7	20	1880.000001	1	4700
3.09 (End point)	20	1879.999994	-6	4700
FREQUENCY ERROR vs. Temp.				
3.85	50	1880.000009	9	4700
3.85	40	1880	0	4700
3.85	30	1880.000003	3	4700
3.85	20	1880.000007	7	4700
3.85	10	1880.000005	5	4700
3.85	0	1879.999991	-9	4700
3.85	-10	1880.000004	4	4700
3.85	-20	1879.999996	-4	4700
3.85	-30	1880.000008	8	4700

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WCDMA II Mid Channel			1880	MHz
Limit: +/- 2.5 ppm				
Vdc	Temp. (°C)	Freq. (MHz)	Delta (Hz)	Limit (Hz)
FREQUENCY ERROR vs. VOLTAGE				
4	20	1880.000002	2	4700
3.85	20	1879.999998	-2	4700
3.7	20	1880.000002	2	4700
3.09 (End point)	20	1879.99999	-10	4700
FREQUENCY ERROR vs. Temp.				
3.85	50	1880.00001	10	4700
3.85	40	1880.000008	8	4700
3.85	30	1879.999996	-4	4700
3.85	20	1880.000007	7	4700
3.85	10	1879.999991	-9	4700
3.85	0	1880.000005	5	4700
3.85	-10	1879.999997	-3	4700
3.85	-20	1880.000007	7	4700
3.85	-30	1879.999997	-3	4700

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WCDMA IV Mid Channel			1732.6	MHz
Limit: +/- 2.5 ppm				
Vdc	Temp. (°C)	Freq. (MHz)	Delta (Hz)	Limit (Hz)
FREQUENCY ERROR vs. VOLTAGE				
4	20	1732.599997	-3	4331
3.85	20	1732.599995	-5	4331
3.7	20	1732.599995	-5	4331
3.09 (End point)	20	1732.600007	7	4331
FREQUENCY ERROR vs. Temp.				
3.85	50	1732.6	0	4331
3.85	40	1732.600002	2	4331
3.85	30	1732.599992	-8	4331
3.85	20	1732.599999	-1	4331
3.85	10	1732.599998	-2	4331
3.85	0	1732.600001	1	4331
3.85	-10	1732.599999	-1	4331
3.85	-20	1732.600002	2	4331
3.85	-30	1732.599991	-9	4331

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WCDMA V Mid Channel			836.6	MHz
Limit: +/- 2.5 ppm				
Vdc	Temp. (°C)	Freq. (MHz)	Delta (Hz)	Limit (Hz)
FREQUENCY ERROR vs. VOLTAGE				
4	20	836.59999	-10	2091
3.85	20	836.599994	-6	2091
3.7	20	836.600009	9	2091
3.09 (End point)	20	836.599995	-5	2091
FREQUENCY ERROR vs. Temp.				
3.85	50	836.599999	-1	2091
3.85	40	836.599998	-2	2091
3.85	30	836.600002	2	2091
3.85	20	836.599995	-5	2091
3.85	10	836.599992	-8	2091
3.85	0	836.599991	-9	2091
3.85	-10	836.600004	4	2091
3.85	-20	836.600005	5	2091
3.85	-30	836.600002	2	2091

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Reference Freq.: LTE B2 Mid Channel 1880 MHz 20M QPSK CH 18900				
Power Supply Vdc	Temp. (°C)	Freq. (MHz)	Delta (Hz)	Limit = +/- 2.5 ppm (Hz)
Freq. ERROR vs. VOLTAGE				
4	25	1879.999990	-10	4700
3.85	25	1880.000005	5	4700
3.7	25	1880.000005	5	4700
3.1 (End Point)	25	1880.000005	5	4700
Freq. ERROR vs. Temp.				
3.85	-30	1880.000005	5	4700
3.85	-20	1880.000007	7	4700
3.85	-10	1879.999996	-4	4700
3.85	0	1880.000001	1	4700
3.85	10	1880.000000	0	4700
3.85	20	1880.000009	9	4700
3.85	30	1880.000003	3	4700
3.85	40	1880.000000	0	4700
3.85	50	1879.999996	-4	4700

Reference Freq.: LTE B4 Mid Channel 1732.5 MHz 20M QPSK CH 20175				
Power Supply Vdc	Temp. (°C)	Freq. (MHz)	Delta (Hz)	Limit = +/- 2.5 ppm (Hz)
Freq. ERROR vs. VOLTAGE				
4	25	1732.500008	8	4331
3.85	25	1732.500009	9	4331
3.7	25	1732.499999	-1	4331
3.1 (End Point)	25	1732.499994	-6	4331
Freq. ERROR vs. Temp.				
3.85	-30	1732.499992	-8	4331
3.85	-20	1732.500004	4	4331
3.85	-10	1732.500008	8	4331
3.85	0	1732.500009	9	4331
3.85	10	1732.499999	-1	4331
3.85	20	1732.499996	-4	4331
3.85	30	1732.500006	6	4331
3.85	40	1732.500004	4	4331
3.85	50	1732.499993	-7	4331

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Reference Freq.:		LTE B5 Mid Channel		836.5	MHz 10M QPSK CH 20525
Power Supply Vdc	Temp. (°C)	Freq. (MHz)	Delta (Hz)	Limit = +/- 2.5 ppm (Hz)	
Freq. ERROR vs. VOLTAGE					
4	25	836.500003	3	2091	
3.85	25	836.500003	3	2091	
3.7	25	836.500006	6	2091	
3.1 (End Point)	25	836.500003	3	2091	
Freq. ERROR vs. Temp.					
3.85	-30	836.499999	-1	2091	
3.85	-20	836.500009	9	2091	
3.85	-10	836.500002	2	2091	
3.85	0	836.499994	-6	2091	
3.85	10	836.500006	6	2091	
3.85	20	836.500003	3	2091	
3.85	30	836.499992	-8	2091	
3.85	40	836.500007	7	2091	
3.85	50	836.499995	-5	2091	

Reference Freq.:	LTE B7 Mid		2535	MHz 10M QPSK CH 21100
	Channel			
Power Supply Vdc	Temp. (°C)	Freq. (MHz)	Delta (Hz)	Limit = +/- 2.5 ppm (Hz)
Freq. ERROR vs. VOLTAGE				
4	25	2535.000006	6	6338
3.85	25	2534.999997	-3	6338
3.7	25	2534.999993	-7	6338
3.1	25	2535.000007	7	6338
(End Point)				
Freq. ERROR vs. Temp.				
3.85	-30	2535.000009	9	6338
3.85	-20	2534.999996	-4	6338
3.85	-10	2535.000000	0	6338
3.85	0	2534.999995	-5	6338
3.85	10	2535.000005	5	6338
3.85	20	2535.000008	8	6338
3.85	30	2535.000008	8	6338
3.85	40	2535.000007	7	6338
3.85	50	2534.999998	-2	6338

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Reference Freq.: LTE B12 Mid Channel 707.5 MHz 10M QPSK CH 23095				
Power Supply Vdc	Temp. (°C)	Freq. (MHz)	Delta (Hz)	Limit = +/- 2.5 ppm (Hz)
Freq. ERROR vs. VOLTAGE				
4	25	707.499996	-4	1769
3.85	25	707.499996	-4	1769
3.7	25	707.500007	7	1769
3.1 (End Point)	25	707.499998	-2	1769
Freq. ERROR vs. Temp.				
3.85	-30	707.500007	7	1769
3.85	-20	707.500006	6	1769
3.85	-10	707.499992	-8	1769
3.85	0	707.500008	8	1769
3.85	10	707.500006	6	1769
3.85	20	707.499997	-3	1769
3.85	30	707.499996	-4	1769
3.85	40	707.500007	7	1769
3.85	50	707.500009	9	1769

Reference Freq.: LTE B13 Mid Channel 782 MHz 10M QPSK CH 23230				
Power Supply Vdc	Temp. (°C)	Freq. (MHz)	Delta (Hz)	Limit = +/- 2.5 ppm (Hz)
Freq. ERROR vs. VOLTAGE				
4	25	781.999997	-3	1955
3.85	25	782.000005	5	1955
3.7	25	781.999992	-8	1955
3.1 (End Point)	25	781.999994	-6	1955
Freq. ERROR vs. Temp.				
3.85	-30	782.000006	6	1955
3.85	-20	782.000004	4	1955
3.85	-10	782.000000	0	1955
3.85	0	782.000001	1	1955
3.85	10	781.999996	-4	1955
3.85	20	781.999998	-2	1955
3.85	30	782.000002	2	1955
3.85	40	781.999994	-6	1955
3.85	50	781.999999	-1	1955

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Reference Freq.:		LTE B17 Mid Channel		710	MHz 10M QPSK CH 23790
Power Supply Vdc	Temp. (°C)	Freq. (MHz)	Delta (Hz)	Limit = +/- 2.5 ppm (Hz)	
Freq. ERROR vs. VOLTAGE					
4	25	710.000005	5	1775	
3.85	25	709.999993	-7	1775	
3.7	25	709.999994	-6	1775	
3.1 (End Point)	25	710.000005	5	1775	
Freq. ERROR vs. Temp.					
3.85	-30	709.999996	-4	1775	
3.85	-20	709.999997	-3	1775	
3.85	-10	709.999997	-3	1775	
3.85	0	709.999992	-8	1775	
3.85	10	710.000009	9	1775	
3.85	20	709.999994	-6	1775	
3.85	30	710.000001	1	1775	
3.85	40	709.999996	-4	1775	
3.85	50	709.999999	-1	1775	

Reference Freq.:		LTE B38 Mid Channel		2595	MHz 10M QPSK CH 38000
Power Supply Vdc	Temp. (°C)	Freq. (MHz)	Delta (Hz)	Limit = +/- 2.5 ppm (Hz)	
Freq. ERROR vs. VOLTAGE					
4	25	2595.000009	9	6488	
3.85	25	2595.000008	8	6488	
3.7	25	2594.999990	-10	6488	
3.1 (End Point)	25	2594.999999	-1	6488	
Freq. ERROR vs. Temp.					
3.85	-30	2594.999994	-6	6488	
3.85	-20	2595.000009	9	6488	
3.85	-10	2594.999992	-8	6488	
3.85	0	2595.000009	9	6488	
3.85	10	2595.000003	3	6488	
3.85	20	2594.999994	-6	6488	
3.85	30	2595.000002	2	6488	
3.85	40	2594.999996	-4	6488	
3.85	50	2594.999994	-6	6488	

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Reference Freq.:		LTE B41 Mid Channel		2593 MHz	10M QPSK CH 40620
Power Supply Vdc	Temp. (°C)	Freq. (MHz)	Delta (Hz)	Limit = +/- 2.5 ppm (Hz)	
Freq. ERROR vs. VOLTAGE					
4	25	2593.000006	6	6488	
3.85	25	2592.999998	-2	6488	
3.7	25	2592.999992	-8	6488	
3.1 (End Point)	25	2592.999998	-2	6488	
Freq. ERROR vs. Temp.					
3.85	-30	2592.999994	-6	6488	
3.85	-20	2592.999995	-5	6488	
3.85	-10	2593.000007	7	6488	
3.85	0	2593.000004	4	6488	
3.85	10	2593.000005	5	6488	
3.85	20	2592.999995	-5	6488	
3.85	30	2592.999990	-10	6488	
3.85	40	2592.999995	-5	6488	
3.85	50	2593.000009	9	6488	

Note: The battery is rated 3.85Vdc.

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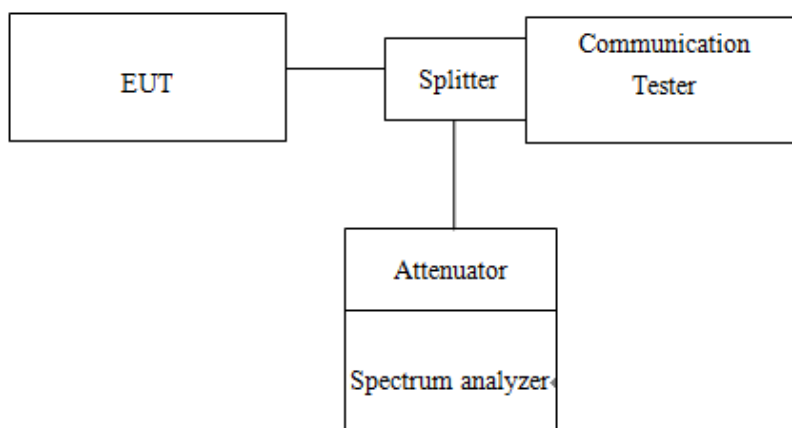
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11. PEAK TO AVERAGE RATIO

11.1. Standard Applicable

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

11.2. Test SET-UP



11.3. Measurement Procedure

1. KDB 971168 D01 is employed as the following procedure is proper adjusted accordingly:
2. Set resolution/measurement bandwidth \geq signal's occupied bandwidth; & internal = 1ms
3. Set the number of counts to a value that stabilizes the measured CCDF curve.

11.4. Measurement Equipment Used

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Radio Communication Analyzer	Anritsu	MT8820C	6200995019	04/01/2019	03/31/2020
DC Power Supply	Agilent	E3640A	MY52410006	12/10/2019	12/09/2020
Temperature Chamber	TERCHY	MHG-120LF	911009	05/17/2019	05/16/2020
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY57120290	02/13/2019	02/12/2020
Attenuator	Mini-Circuit	BW-S10W2+	2	01/02/2020	01/01/2021
DC Block	Mini-Circuits	BLK-18-S+	1	01/02/2020	01/01/2021
Splitter	RF-LAMBAD	RFLT2W1G18G	11-JSPF412-018	01/02/2020	01/01/2021

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11.5. Measurement Result

Tabular Results:

Freq. (MHz)	CH	Peak-to-Average Ratio (dB)	
		GSM 850	GPRS 850
824.2	128	8.25	10.1
836.6	190	9.87	10.45
848.8	251	9.81	9.51

Freq. (MHz)	CH	Peak-to-Average Ratio (dB)	
		GSM 1900	GPRS 1900
1850.2	512	9.71	8.98
1880	661	9.17	9.71
1909.8	810	8.01	9.51

Freq. (MHz)	CH	Peak-to-Average Ratio (dB)		
		WCDMA II	HSDPA II	HSUPA II
1852.4	9262	2.80	3.57	3.98
1880	9400	2.80	4.21	3.88
1907.6	9538	2.88	3.48	3.74

Freq. (MHz)	CH	Peak-to-Average Ratio (dB)		
		WCDMA IV	HSDPA IV	HSUPA IV
1712.4	1312	2.91	3.59	3.86
1732.6	1413	2.84	3.79	3.80
1752.6	1513	2.83	3.60	3.99

Freq. (MHz)	CH	Peak-to-Average Ratio (dB)		
		WCDMA V	HSDPA V	HSUPA V
826.4	4132	2.95	3.69	4.11
836.6	4183	2.90	3.49	3.58
846.6	4233	2.87	3.98	3.90

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LTE BAND 2							
Channel bandwidth: 1.4MHz				Channel bandwidth: 3MHz			
Freq. (MHz)	CH	PAPR (dB)		Freq. (MHz)	CH	PAPR (dB)	
		64QAM	Limit			64QAM	Limit
1850.7	18607	6.38	13	1851.5	18615	6.36	13
1880.0	18900	6.44	13	1880.0	18900	6.24	13
1909.3	19193	6.34	13	1908.5	19185	6.47	13

LTE BAND 2							
Channel bandwidth: 5MHz				Channel bandwidth: 10MHz			
Freq. (MHz)	CH	PAPR (dB)		Freq. (MHz)	CH	PAPR (dB)	
		64QAM	Limit			64QAM	Limit
1852.5	18625	6.25	13	1855.0	18650	6.32	13
1880.0	18900	6.31	13	1880.0	18900	6.32	13
1907.5	19175	6.29	13	1905.0	19150	6.46	13

LTE BAND 2							
Channel bandwidth: 15MHz				Channel bandwidth: 20MHz			
Freq. (MHz)	CH	PAPR (dB)		Freq. (MHz)	CH	PAPR (dB)	
		64QAM	Limit			64QAM	Limit
1857.5	18675	6.28	13	1860.0	18700	6.34	13
1880.0	18900	6.49	13	1880.0	18900	6.40	13
1902.5	19125	6.38	13	1900.0	19100	6.49	13

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LTE BAND 4							
Channel bandwidth: 1.4MHz				Channel bandwidth: 3MHz			
Freq. (MHz)	CH	PAPR (dB)		Freq. (MHz)	CH	PAPR (dB)	
		64QAM	Limit			64QAM	Limit
1710.7	19957	6.64	13	1711.5	19965	6.53	13
1732.5	20175	6.56	13	1732.5	20175	6.51	13
1754.3	20393	6.36	13	1753.5	20385	6.50	13

LTE BAND 4							
Channel bandwidth: 5MHz				Channel bandwidth: 10MHz			
Freq. (MHz)	CH	PAPR (dB)		Freq. (MHz)	CH	PAPR (dB)	
		64QAM	Limit			64QAM	Limit
1712.5	19957	6.48	13	1715.0	20000	6.45	13
1732.5	20175	6.37	13	1732.5	20175	6.35	13
1752.5	20375	6.38	13	1750.0	20350	6.36	13

LTE BAND 4							
Channel bandwidth: 15MHz				Channel bandwidth: 20MHz			
Freq. (MHz)	CH	PAPR (dB)		Freq. (MHz)	CH	PAPR (dB)	
		64QAM	Limit			64QAM	Limit
1717.5	20025	6.45	13	1720.0	20050	6.47	13
1732.5	20175	6.47	13	1732.5	20175	6.40	13
1747.5	20325	6.36	13	1745.0	20300	6.37	13

LTE BAND 5							
Channel bandwidth: 1.4MHz				Channel bandwidth: 3MHz			
Freq. (MHz)	CH	PAPR (dB)		Freq. (MHz)	CH	PAPR (dB)	
		64QAM	Limit			64QAM	Limit
824.7	20407	6.76	13	825.5	20415	6.51	13
836.5	20525	6.80	13	836.5	20525	6.53	13
848.3	20643	6.68	13	847.5	20635	6.52	13

LTE BAND 5							
Channel bandwidth: 5MHz				Channel bandwidth: 10MHz			
Freq. (MHz)	CH	PAPR (dB)		Freq. (MHz)	CH	PAPR (dB)	
		64QAM	Limit			64QAM	Limit
826.5	20425	6.54	13	829.0	20450	6.55	13
836.5	20525	6.40	13	836.5	20525	6.44	13
846.5	20625	6.45	13	844.0	20600	6.40	13

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LTE BAND 7							
Channel bandwidth: 5MHz				Channel bandwidth: 10MHz			
Freq. (MHz)	CH	PAPR (dB)		Freq. (MHz)	CH	PAPR (dB)	
		64QAM	Limit			64QAM	Limit
2502.5	20775	6.60	13	2505.0	20800	6.48	13
2535.0	21100	6.56	13	2535.0	21100	6.45	13
2567.5	21375	6.52	13	2565.0	21350	6.46	13

LTE BAND 7							
Channel bandwidth: 15MHz				Channel bandwidth: 20MHz			
Freq. (MHz)	CH	PAPR (dB)		Freq. (MHz)	CH	PAPR (dB)	
		64QAM	Limit			64QAM	Limit
2507.5	20825	6.45	13	2510	20850	6.51	13
2535.0	21100	6.49	13	2535	21100	6.46	13
2562.5	21375	6.53	13	2560	21350	6.54	13

LTE BAND 12							
Channel bandwidth: 1.4MHz				Channel bandwidth: 3MHz			
Freq. (MHz)	CH	PAPR (dB)		Freq. (MHz)	CH	PAPR (dB)	
		64QAM	Limit			64QAM	Limit
699.7	23017	6.68	13	700.5	23025	6.45	13
707.5	23095	6.54	13	707.5	23095	6.53	13
715.3	23173	6.50	13	714.5	23165	6.46	13

LTE BAND 12							
Channel bandwidth: 5MHz				Channel bandwidth: 10MHz			
Freq. (MHz)	CH	PAPR (dB)		Freq. (MHz)	CH	PAPR (dB)	
		64QAM	Limit			64QAM	Limit
701.5	23035	6.50	13	704.0	23060	6.52	13
707.5	23095	6.43	13	707.5	23095	6.29	13
713.5	23155	6.39	13	711.0	23130	6.31	13

LTE BAND 13							
Channel bandwidth: 5MHz				Channel bandwidth: 10MHz			
Freq. (MHz)	CH	PAPR (dB)		Freq. (MHz)	CH	PAPR (dB)	
		64QAM	Limit			64QAM	Limit
779.5	23205	6.35	13	782.0	23230	6.47	13
782.0	23230	6.47	13				
784.5	23255	6.74	13				

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LTE BAND 17							
Channel bandwidth: 1.4MHz				Channel bandwidth: 3MHz			
Freq. (MHz)	CH	PAPR (dB)		Freq. (MHz)	CH	PAPR (dB)	
		64QAM	Limit			64QAM	Limit
706.5	23755	6.56	13	709.0	23780	6.36	13
710.0	23790	6.54	13	710.0	23790	6.47	13
713.5	23825	6.41	13	711.0	23800	6.47	13

LTE BAND 38							
Channel bandwidth: 5MHz				Channel bandwidth: 10MHz			
Freq. (MHz)	CH	PAPR (dB)		Freq. (MHz)	CH	PAPR (dB)	
		64QAM	Limit			64QAM	Limit
2572.5	37775	10.12	13	2575	37800	11.00	13
2595.0	38000	10.09	13	2595	38000	9.31	13
2617.5	38225	10.32	13	2615	38200	10.38	13

LTE BAND 38							
Channel bandwidth: 15MHz				Channel bandwidth: 20MHz			
Freq. (MHz)	CH	PAPR (dB)		Freq. (MHz)	CH	PAPR (dB)	
		64QAM	Limit			64QAM	Limit
2577.5	37825	10.88	13	2580.0	37850	9.58	13
2595.0	38000	7.18	13	2595.0	38000	8.67	13
2612.5	38175	9.64	13	2610.0	38150	8.05	13

LTE BAND 41							
Channel bandwidth: 5MHz				Channel bandwidth: 10MHz			
Freq. (MHz)	CH	PAPR (dB)		Freq. (MHz)	CH	PAPR (dB)	
		64QAM	Limit			64QAM	Limit
2498.5	39675	11.63	13	2501.0	39700	10.55	13
2593.0	40620	10.66	13	2593.0	40620	11.18	13
2687.5	41565	9.90	13	2685.0	41540	7.88	13

LTE BAND 41							
Channel bandwidth: 15MHz				Channel bandwidth: 20MHz			
Freq. (MHz)	CH	PAPR (dB)		Freq. (MHz)	CH	PAPR (dB)	
		64QAM	Limit			64QAM	Limit
2503.5	39725	7.46	13	2506.0	39750	9.03	13
2593.0	40620	11.76	13	2593.0	40620	7.62	13
2682.5	41515	10.01	13	2680.0	41490	7.39	13

Please refer to next page for test plots.

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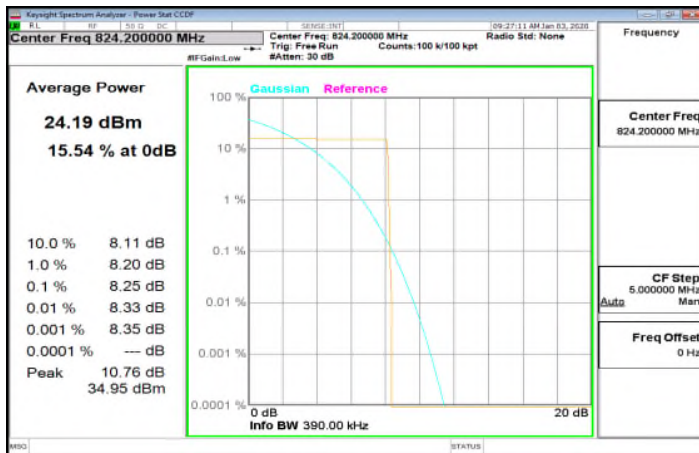
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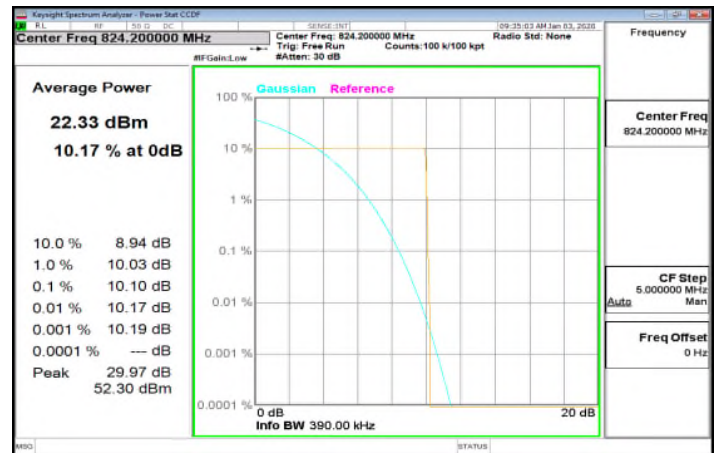
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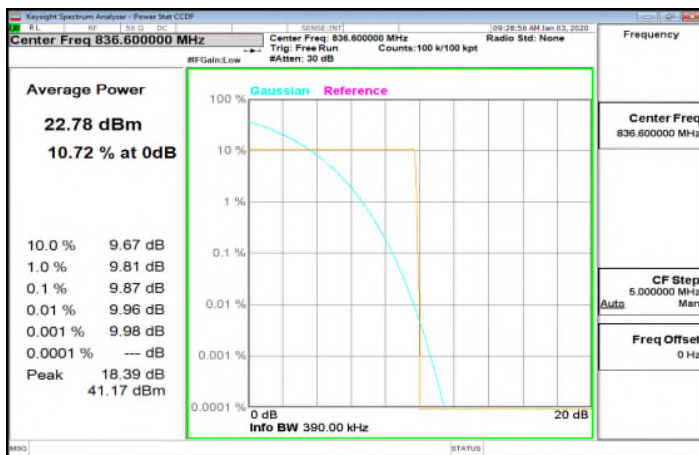
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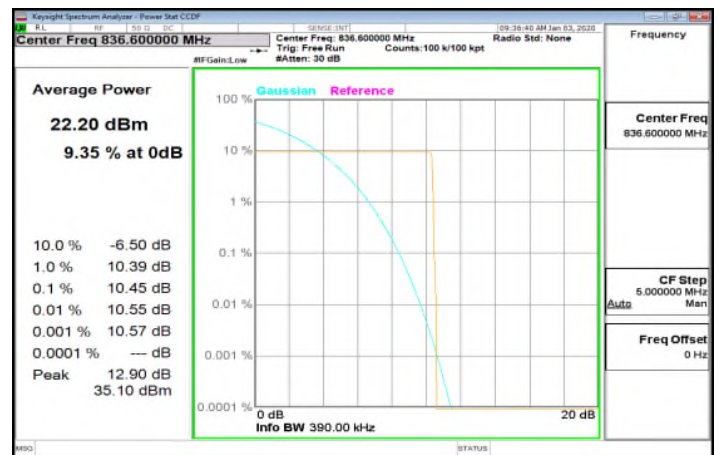
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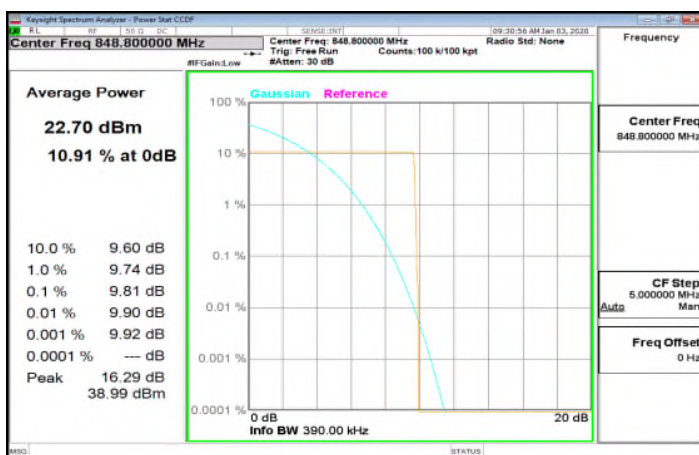
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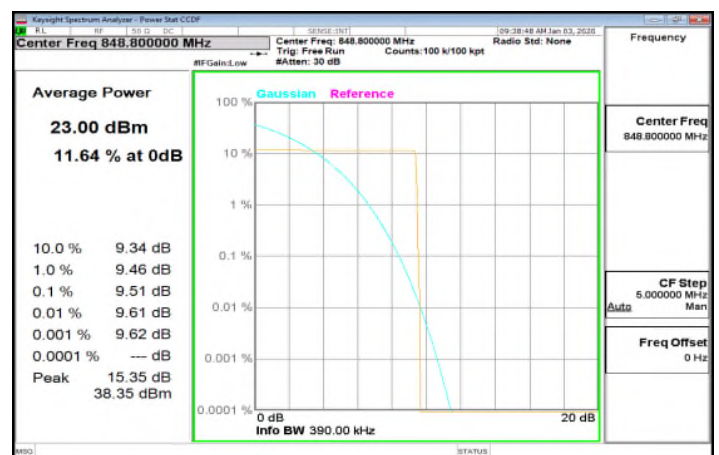
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GSM_850MHz_HighCH251-848.8



GPRS_850MHz_HighCH251-848.8



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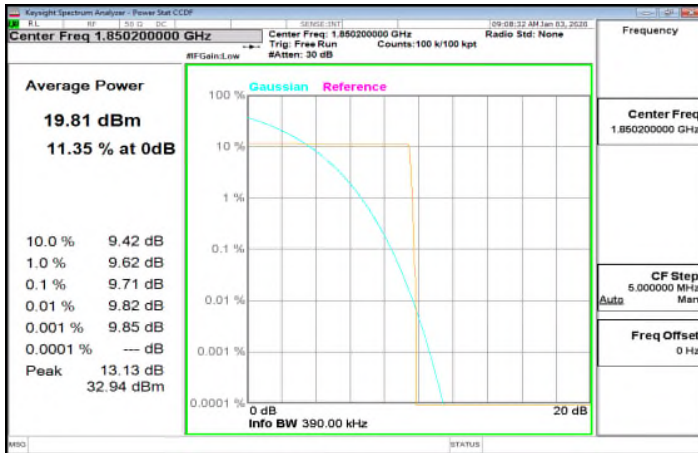
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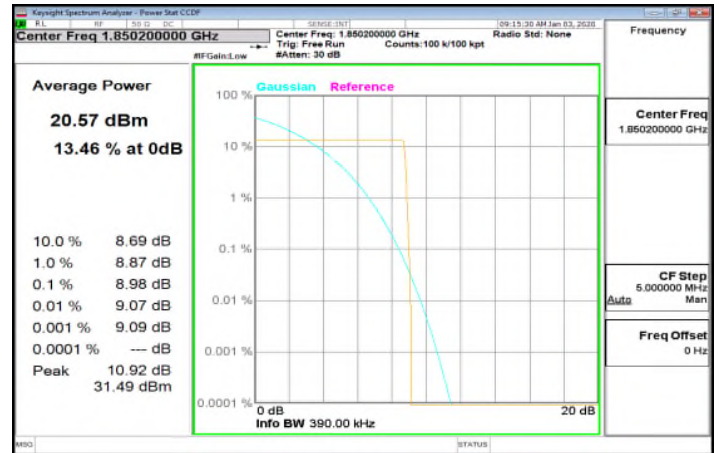
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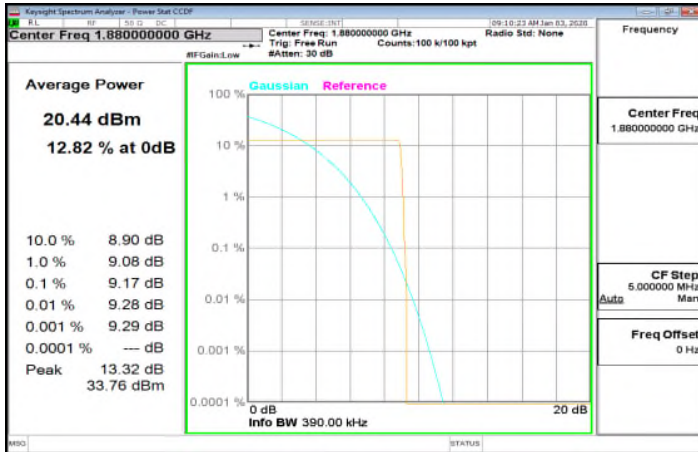
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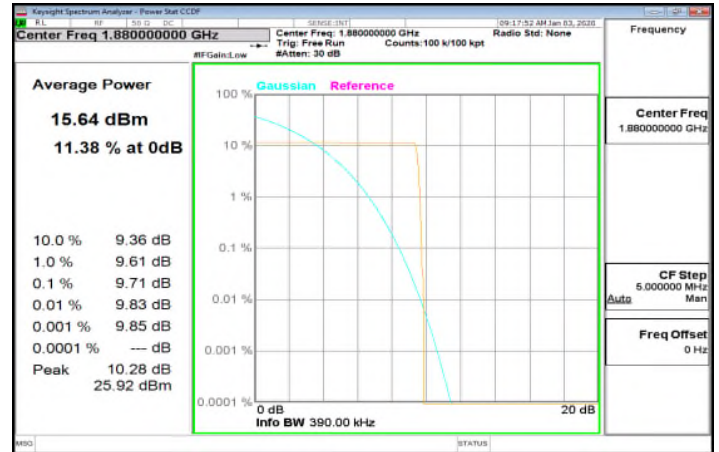
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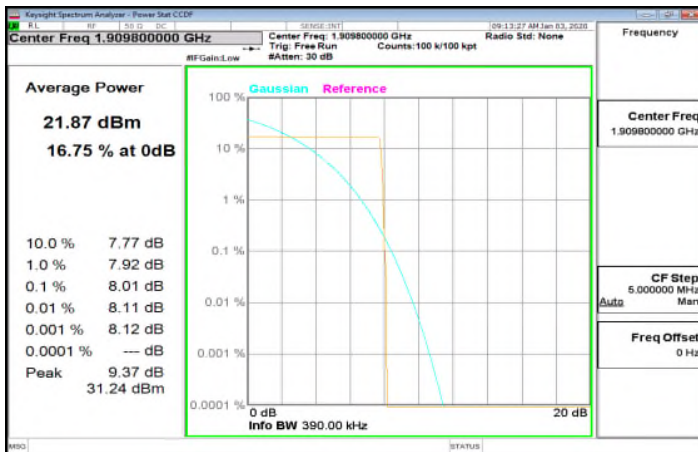
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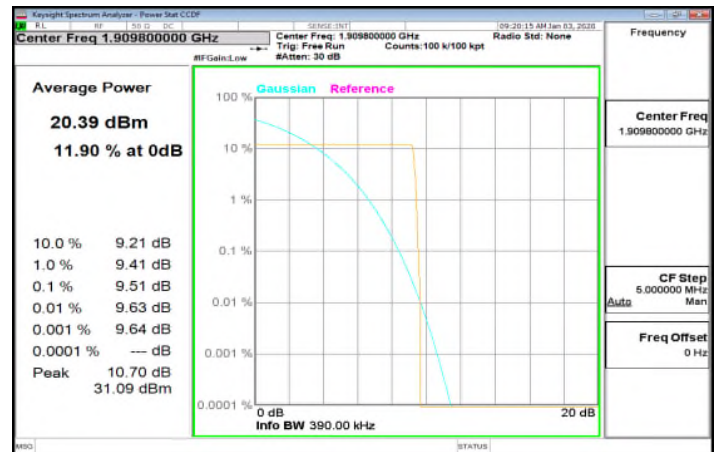
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GSM_1900MHz_HighCH810-1909.8



GPRS_1900MHz_HighCH810-1909.8



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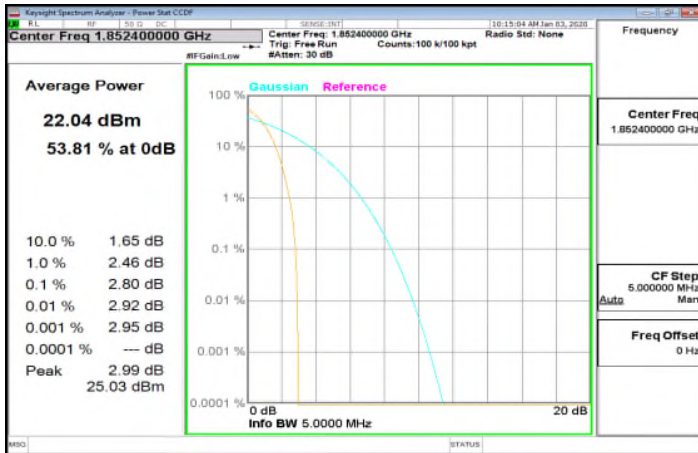
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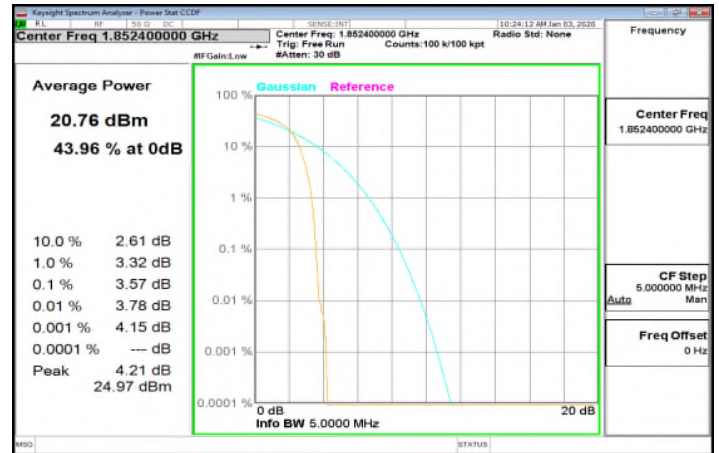
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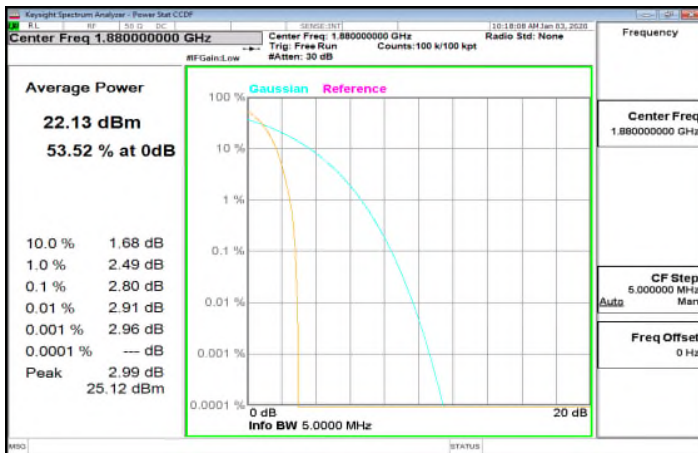
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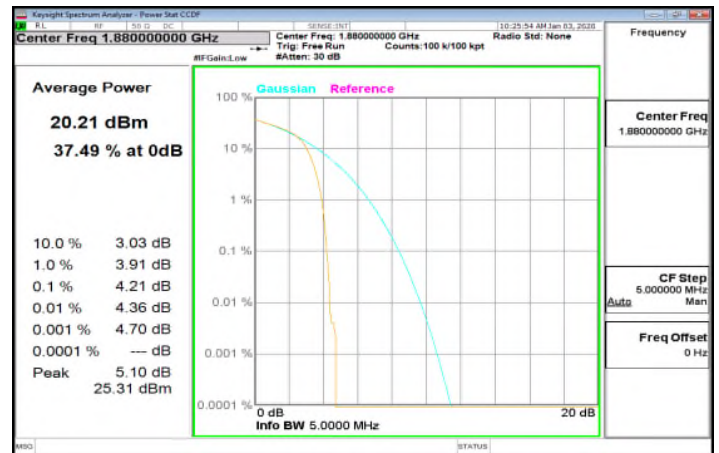
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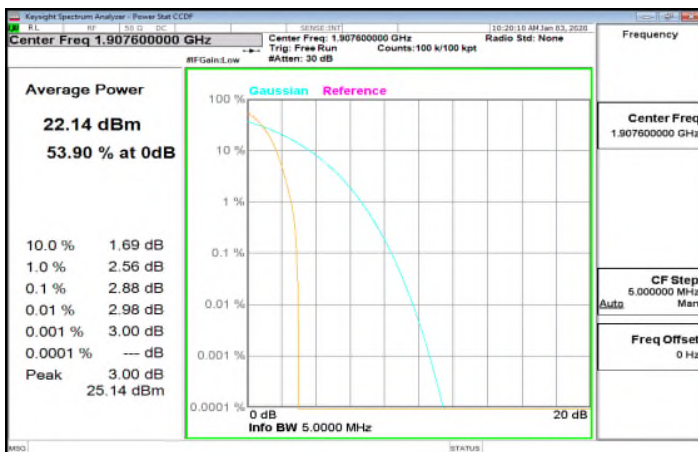
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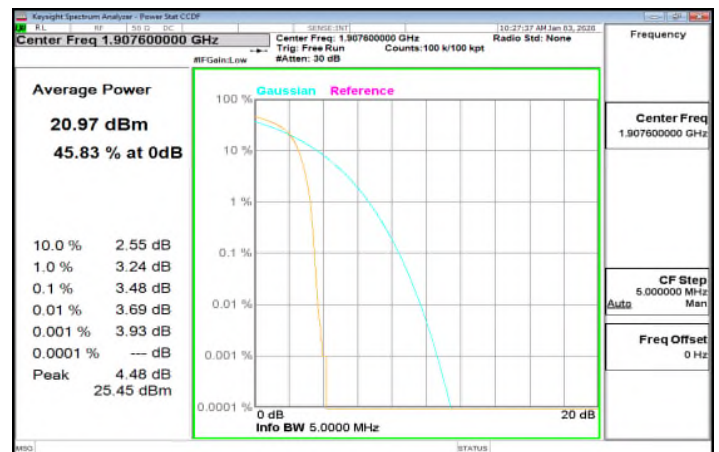
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WCDMA_B2_HighCH9538-1907.6



HSDPA_B2_HighCH9538-1907.6



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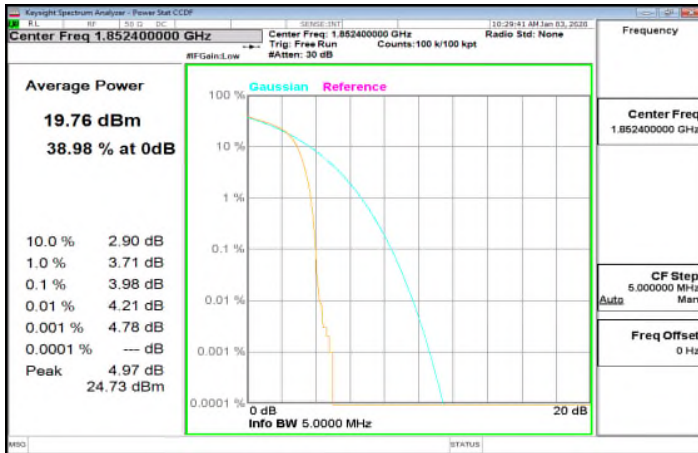
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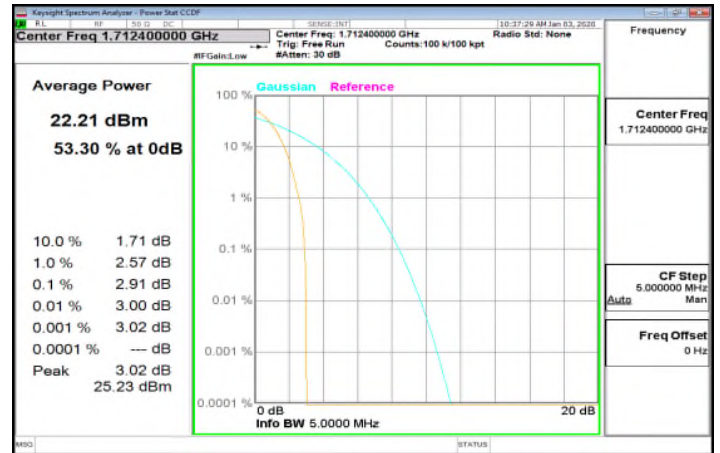
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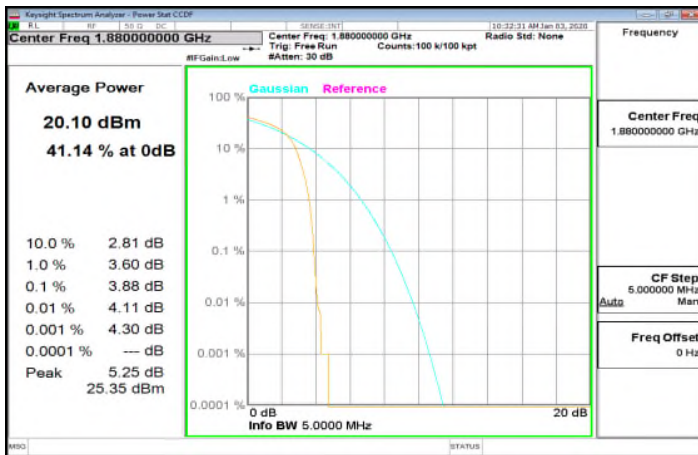
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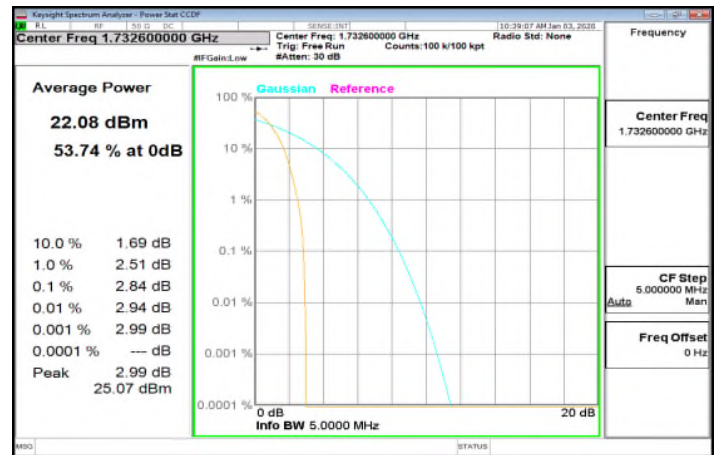
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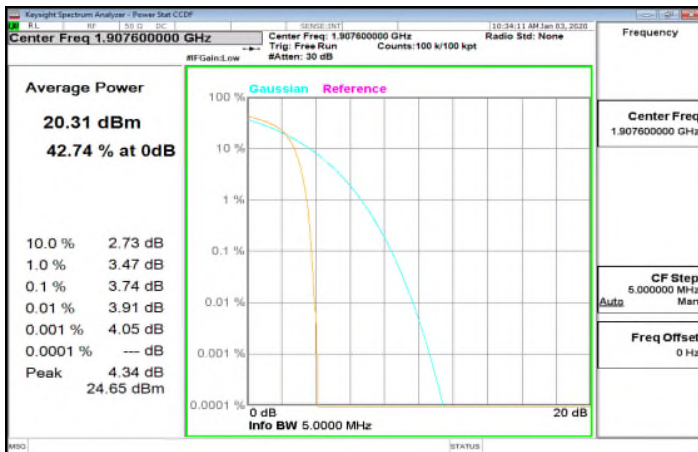
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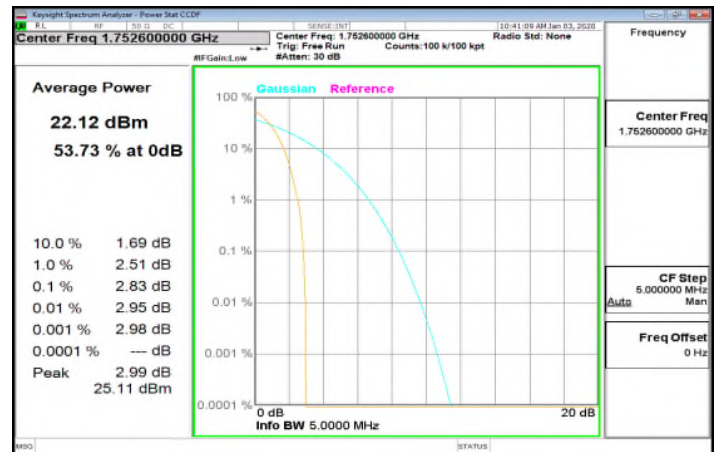
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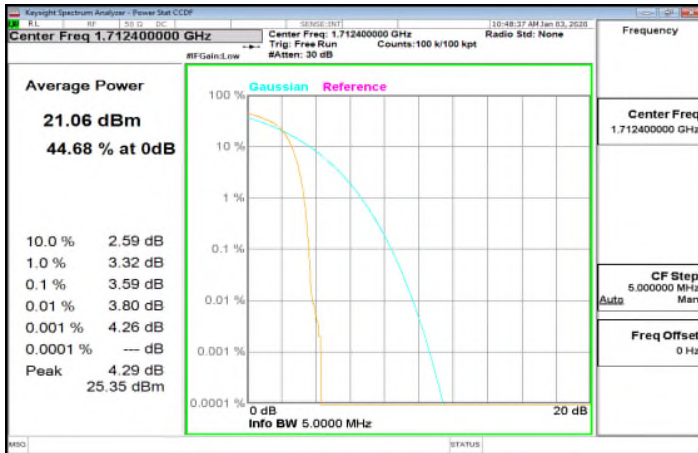
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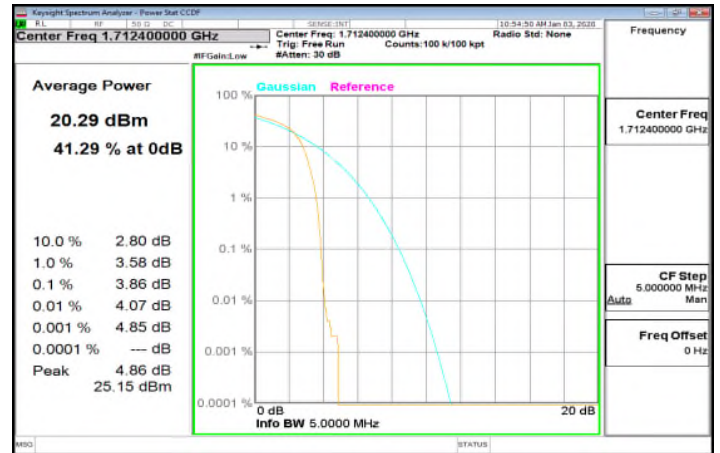
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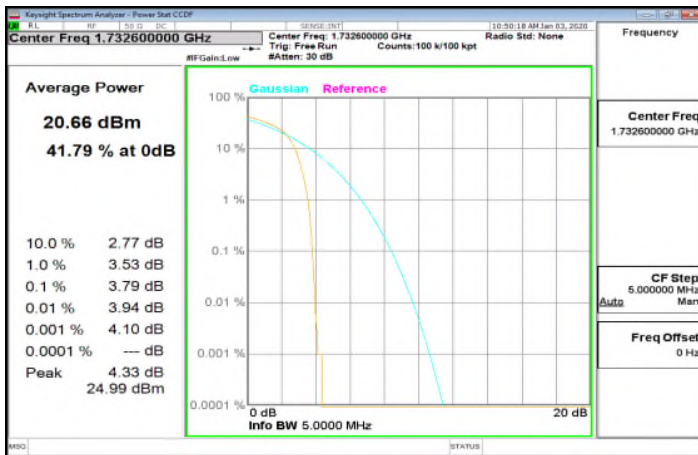
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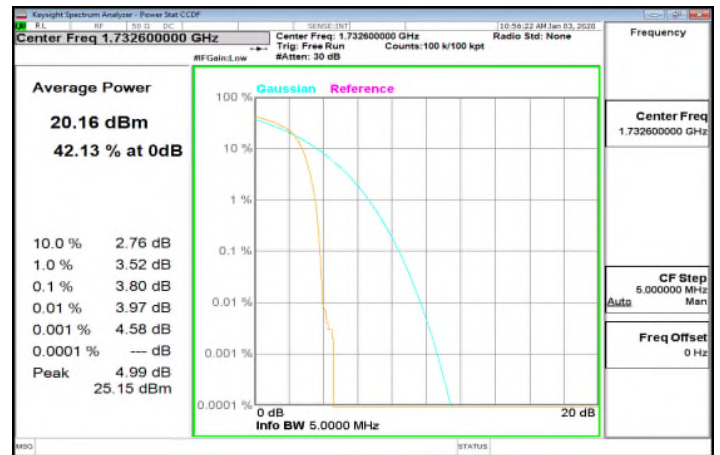
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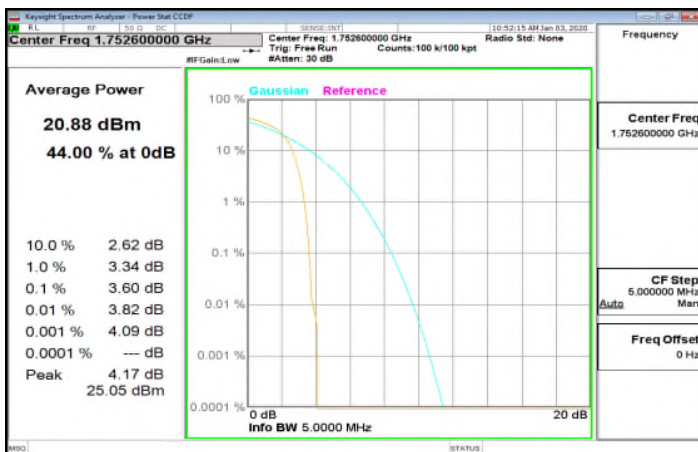
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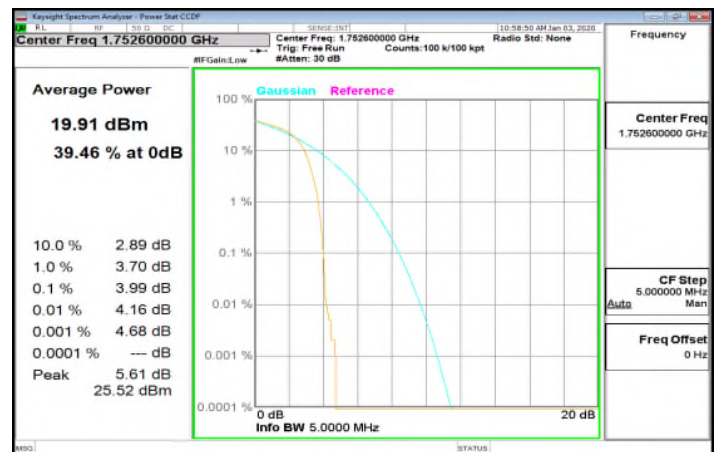
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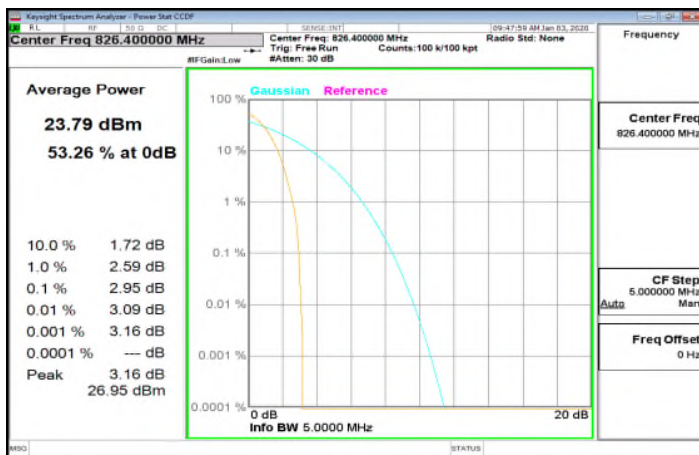
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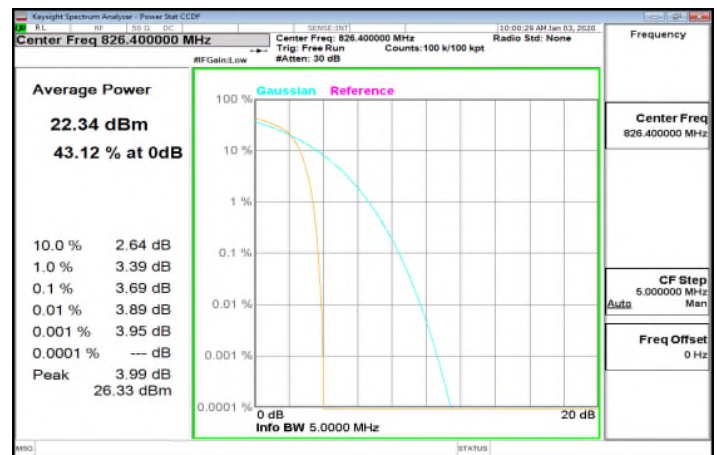
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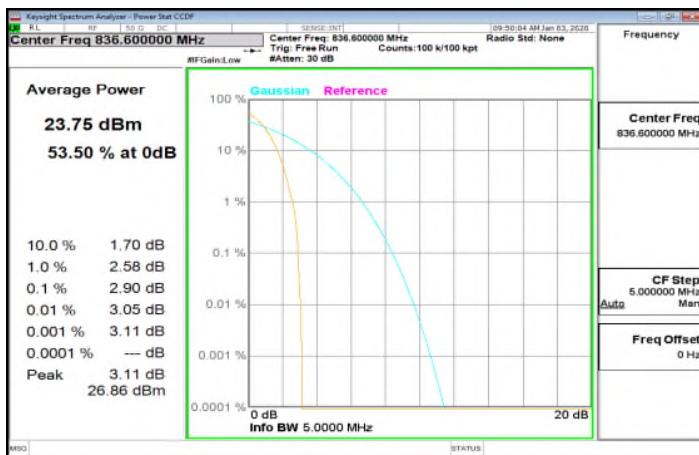
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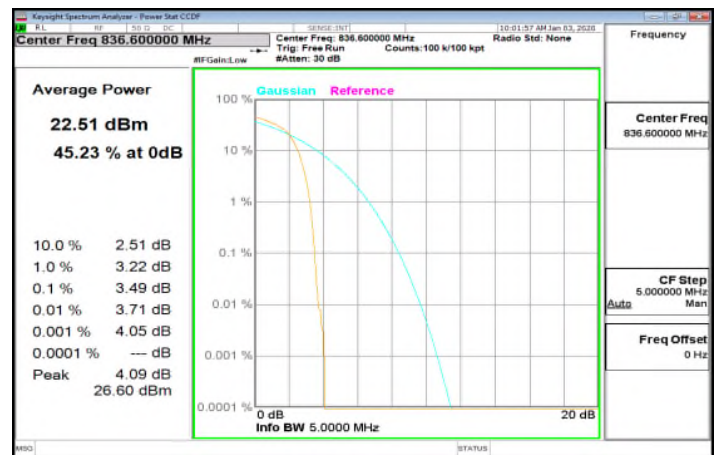
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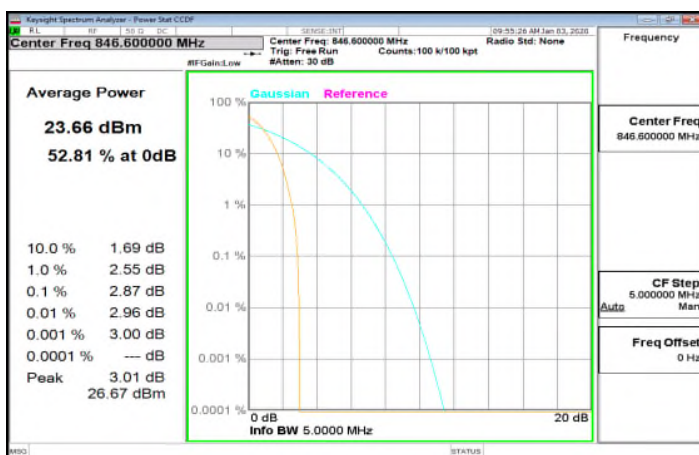
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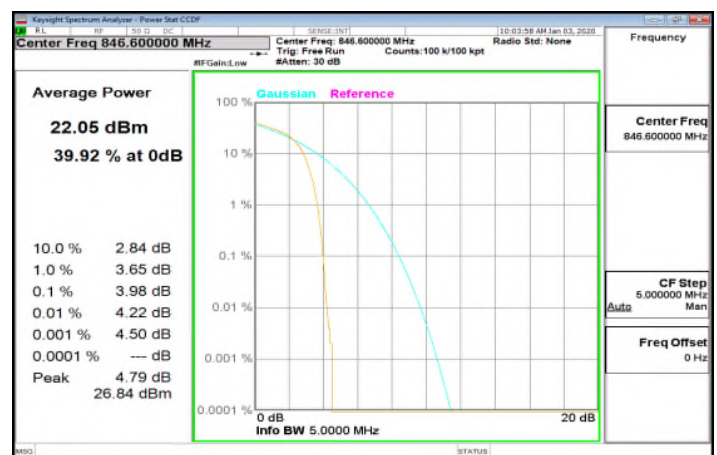
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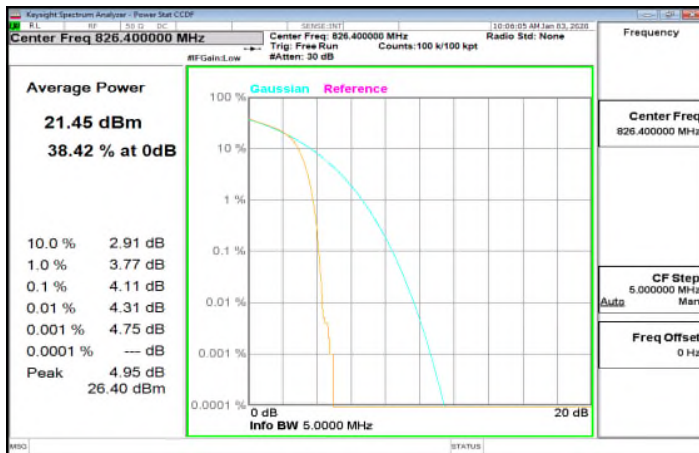
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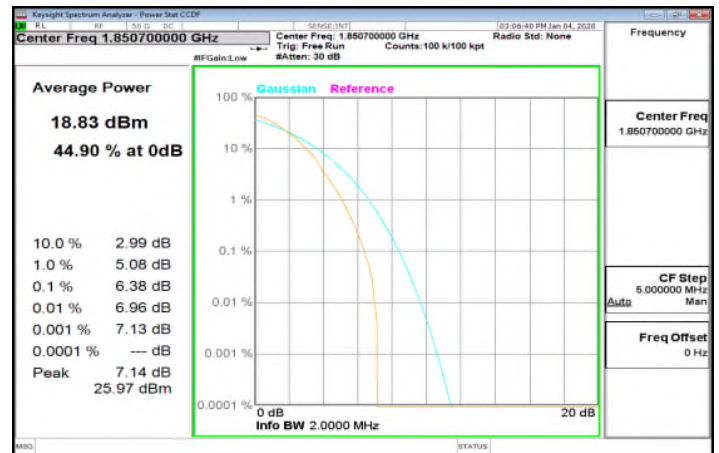
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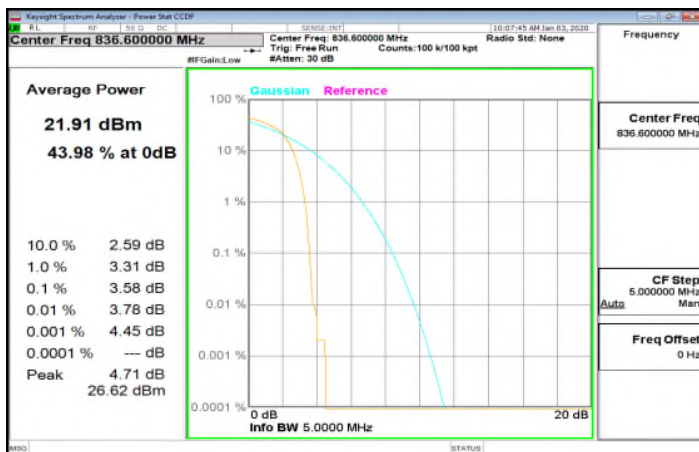
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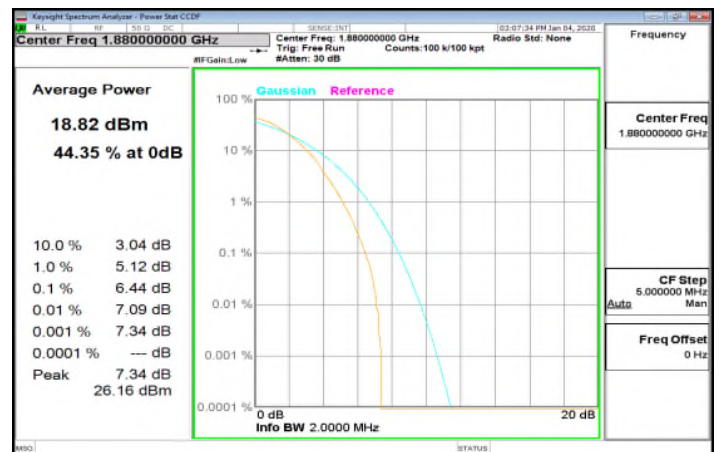
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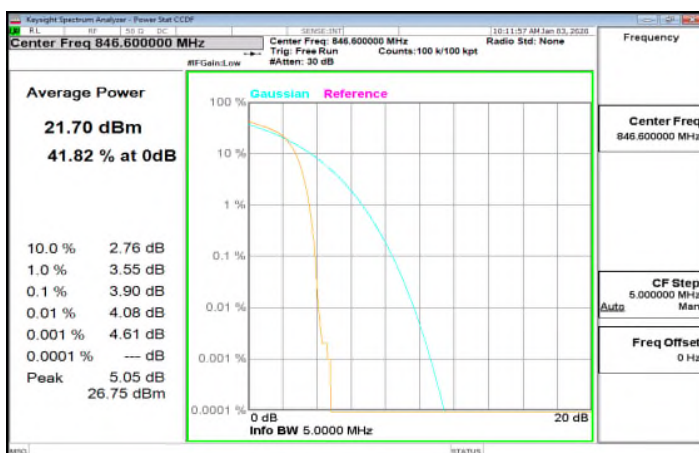
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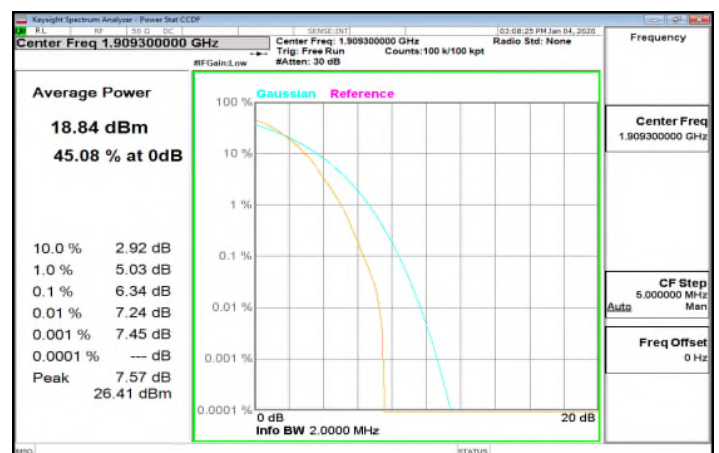
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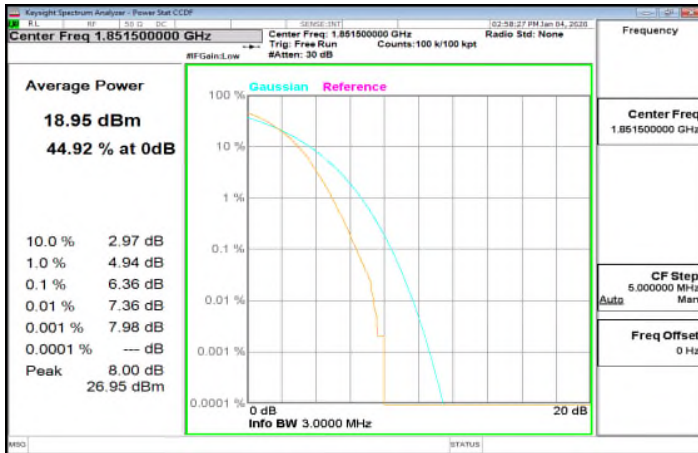
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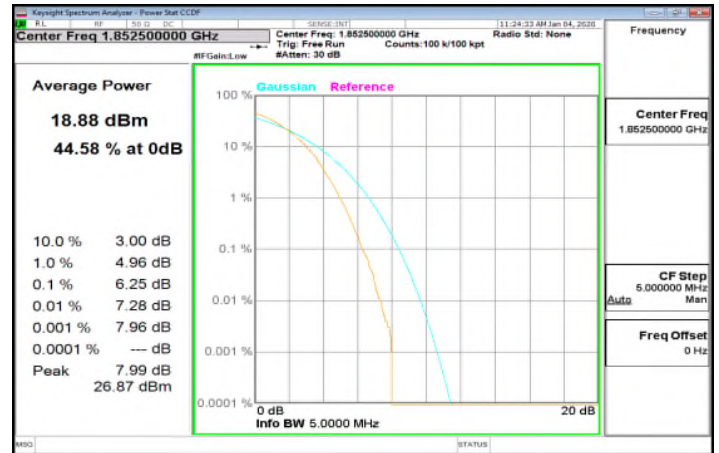
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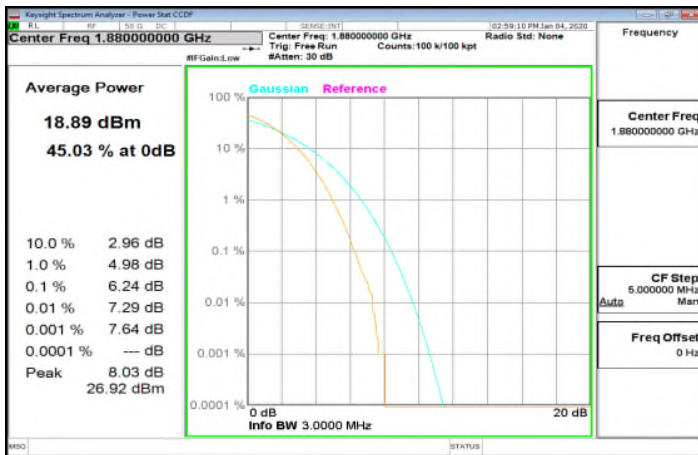
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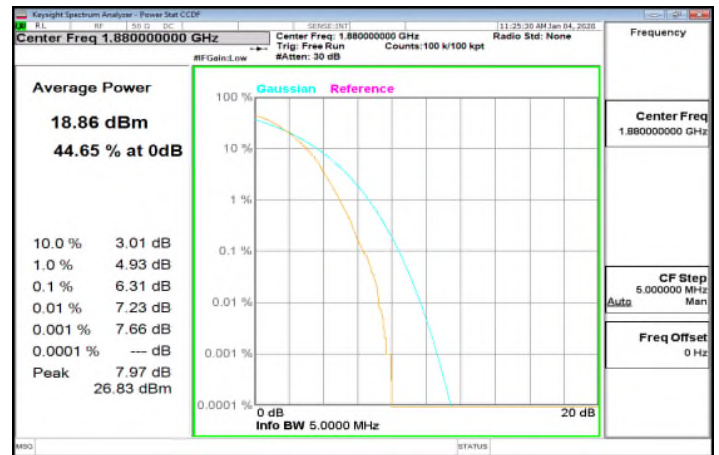
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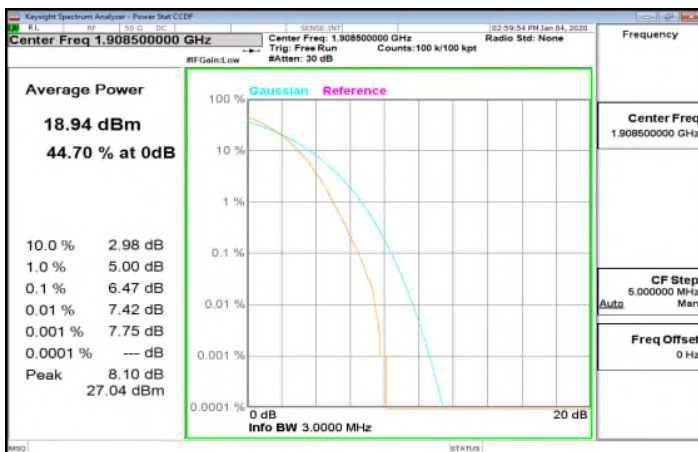
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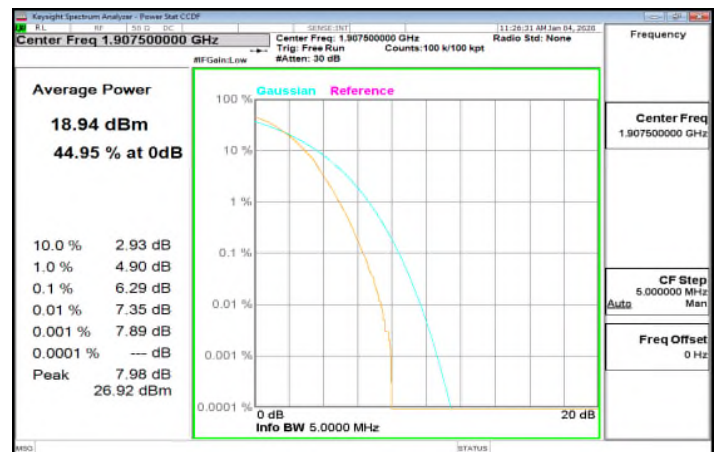
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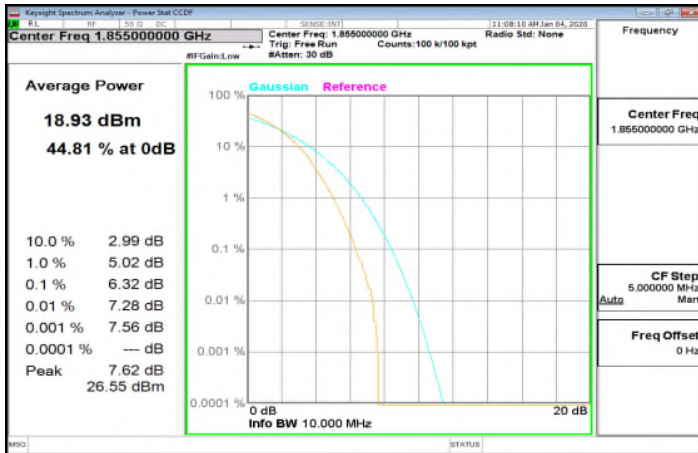
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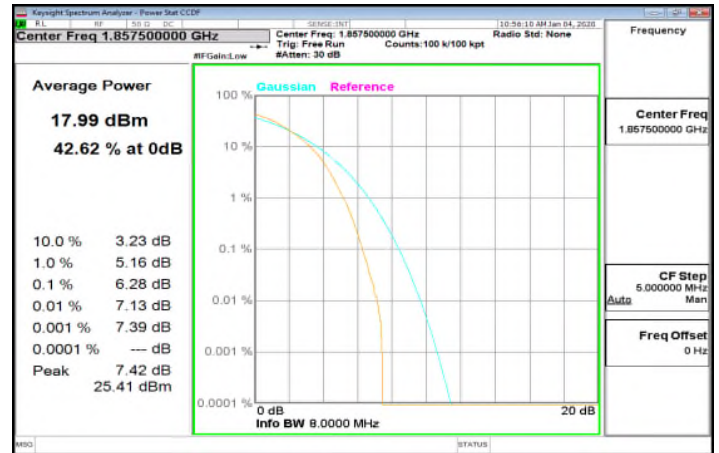
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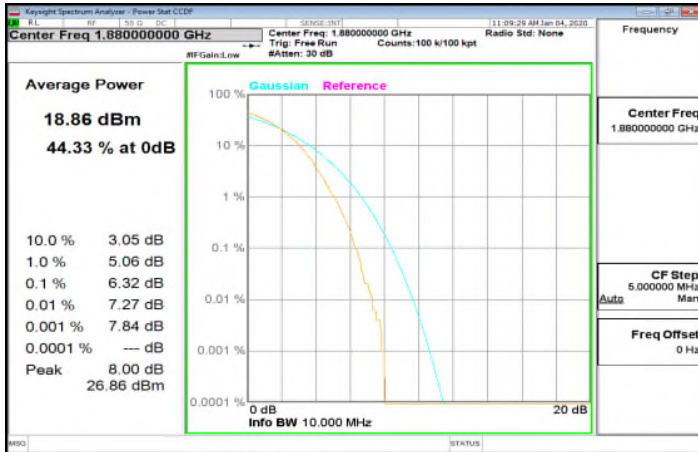
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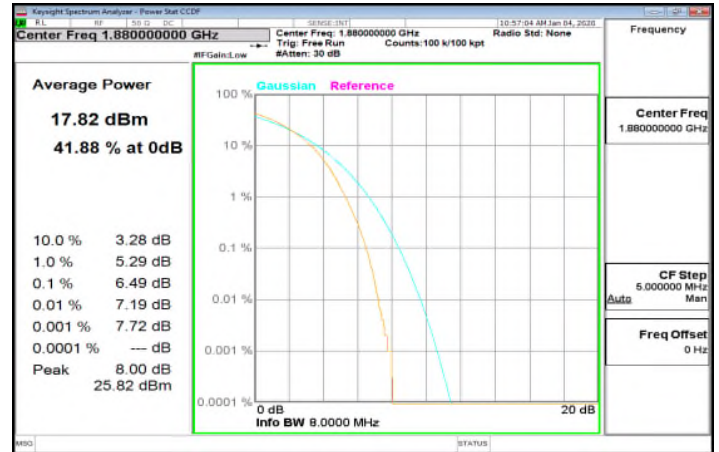
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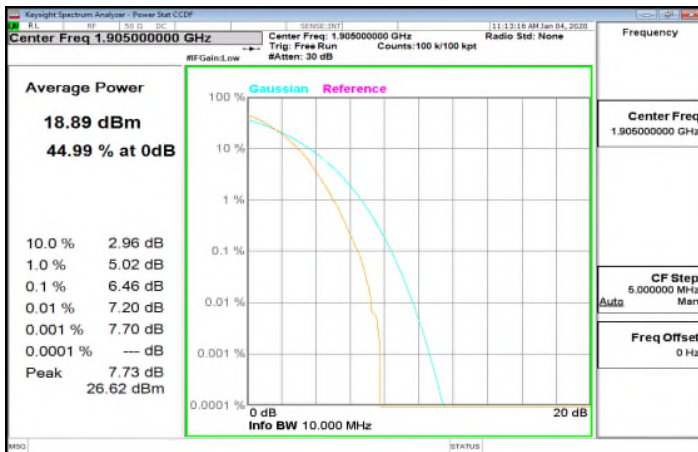
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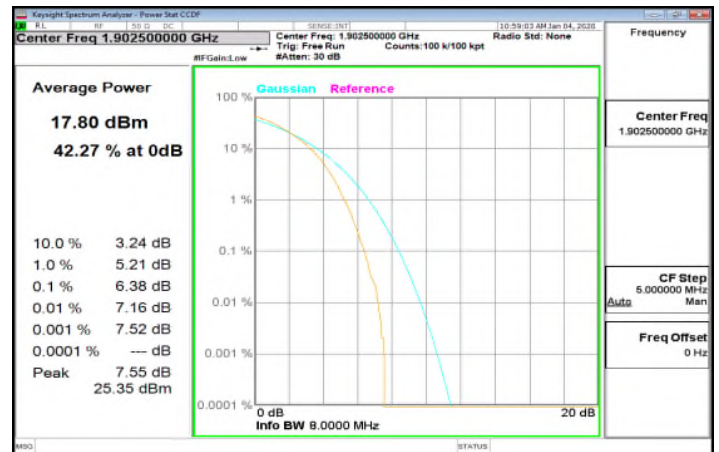
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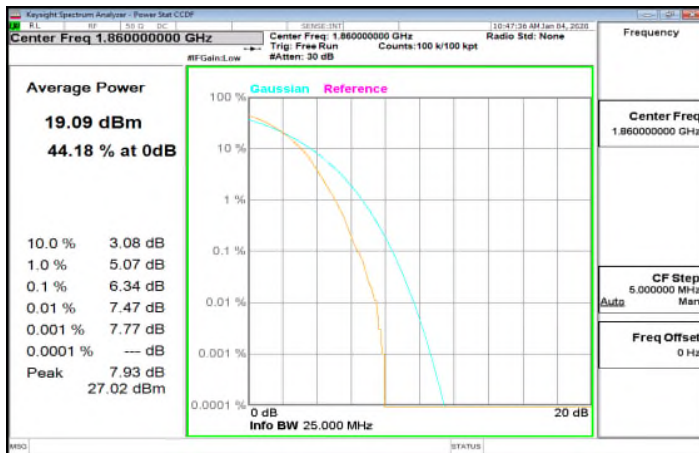
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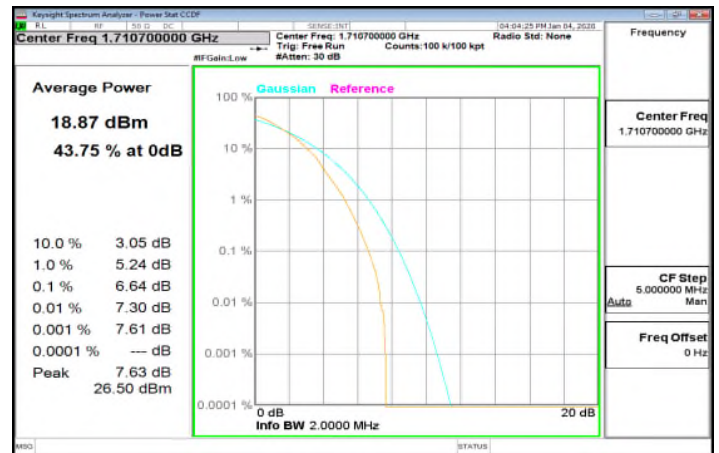
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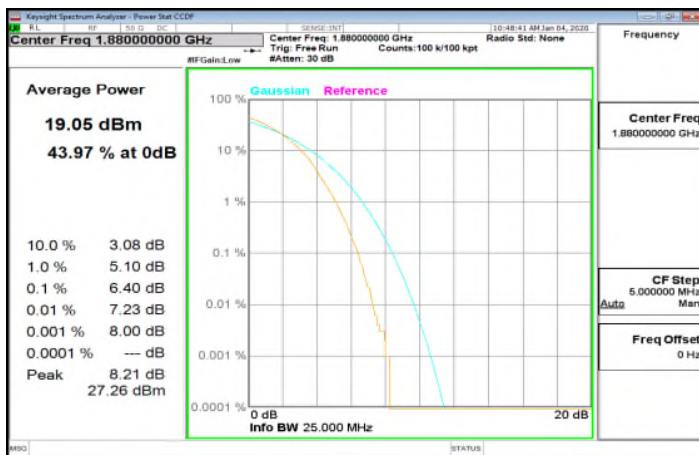
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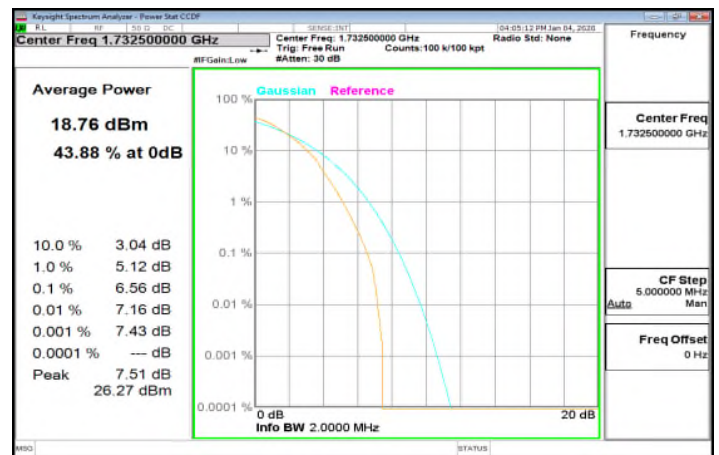
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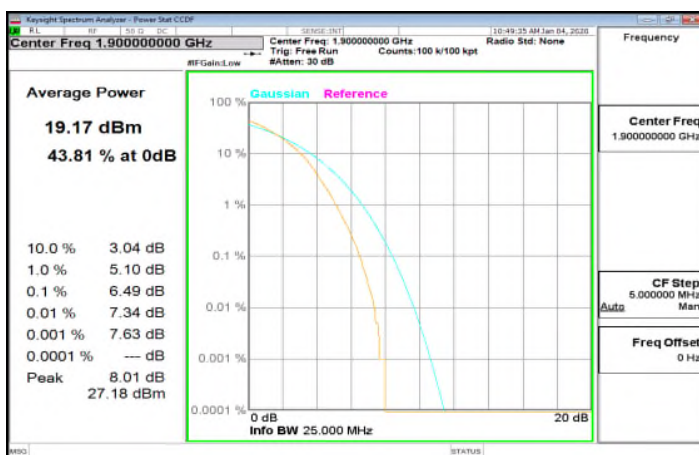
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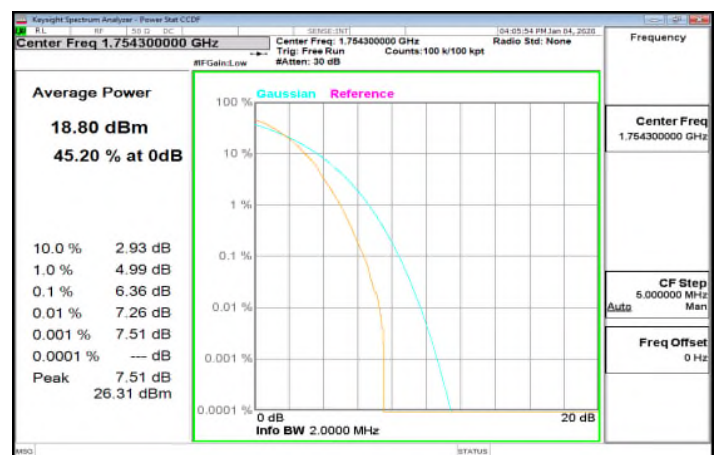
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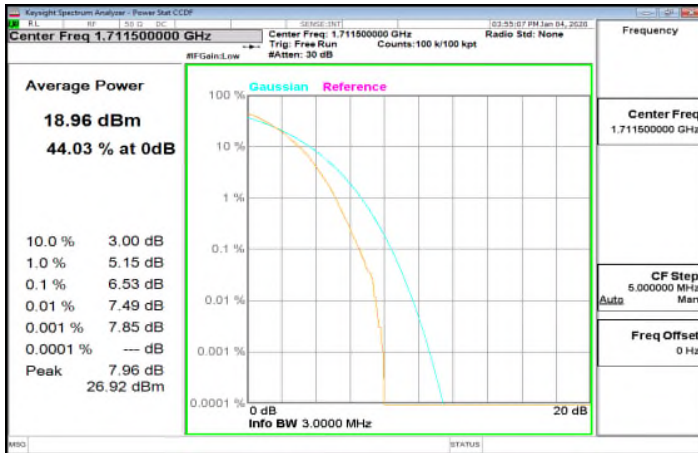
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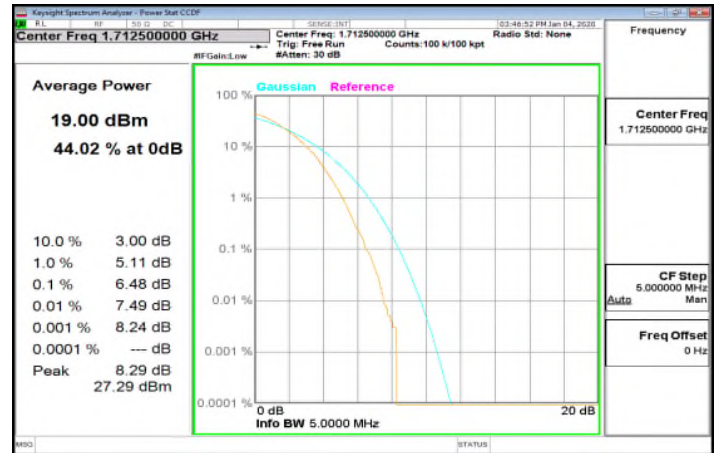
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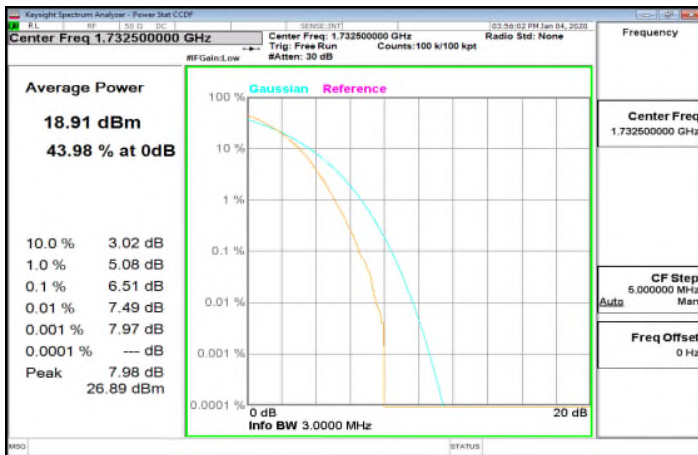
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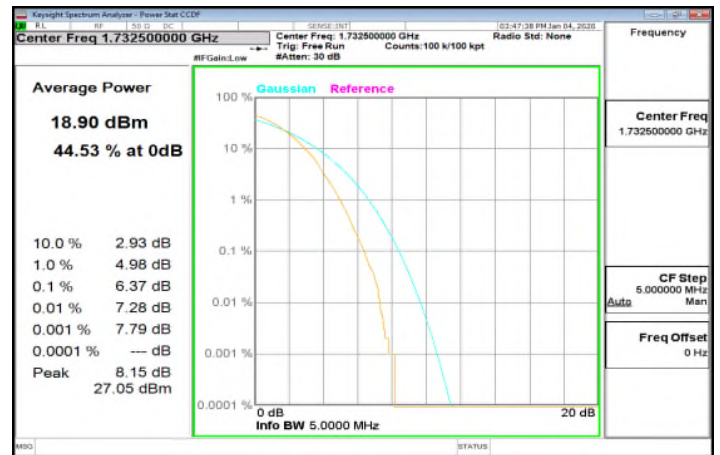
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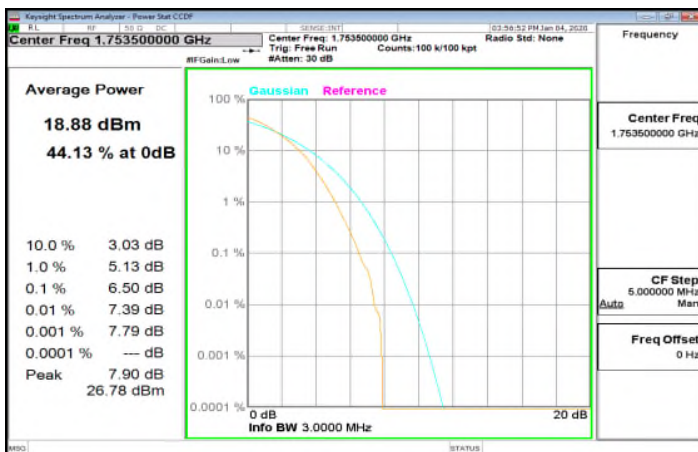
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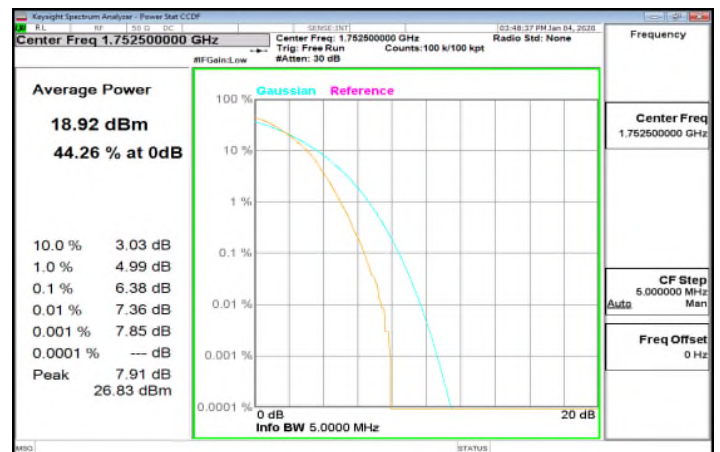
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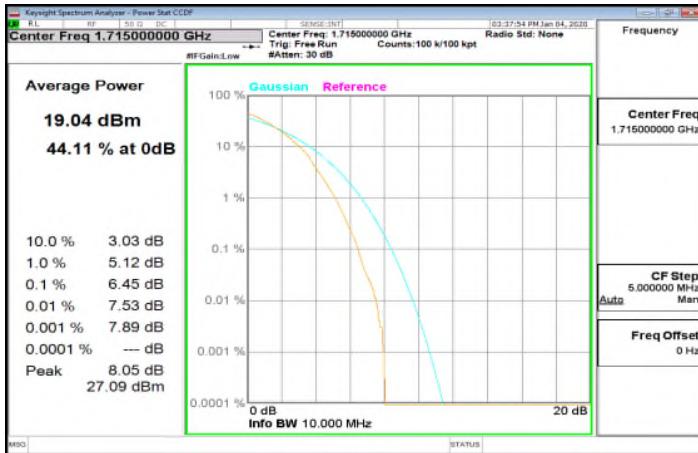
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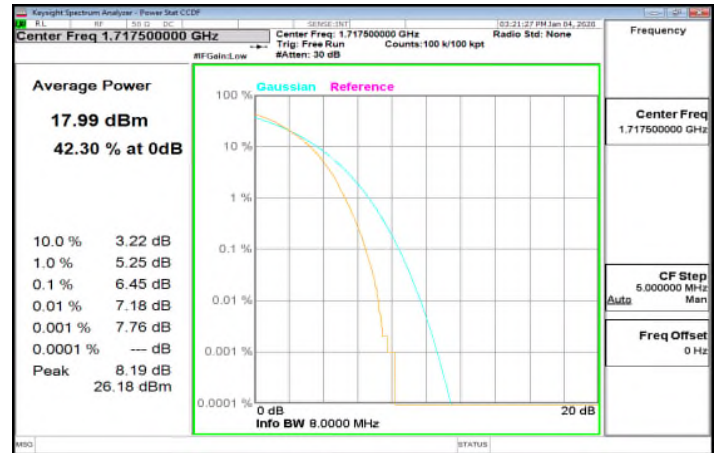
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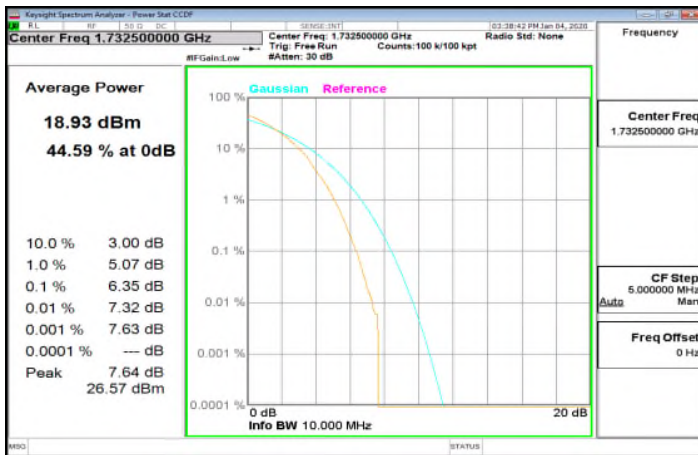
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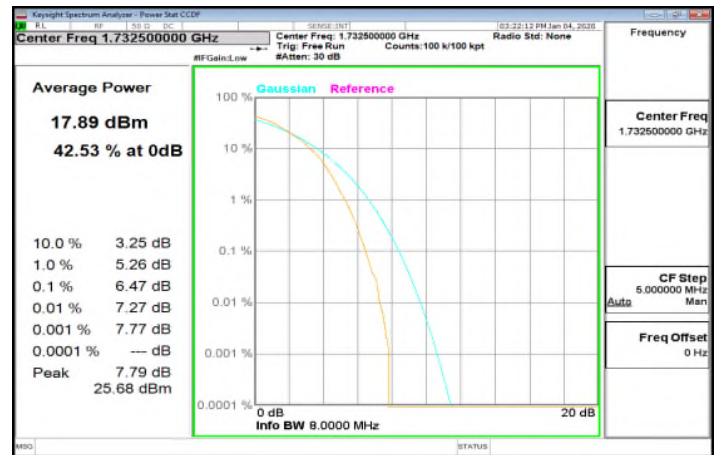
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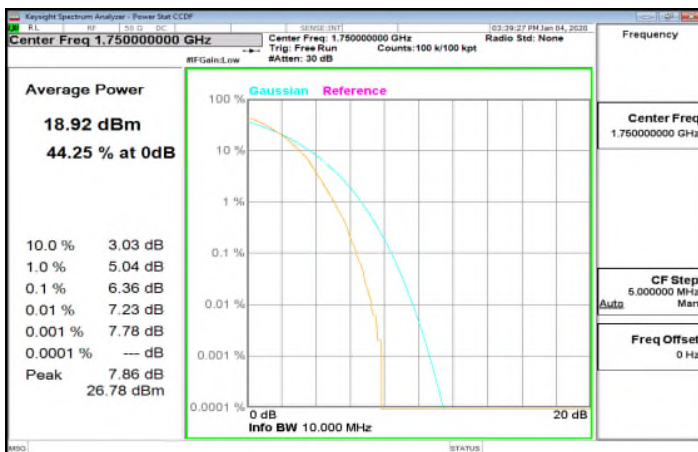
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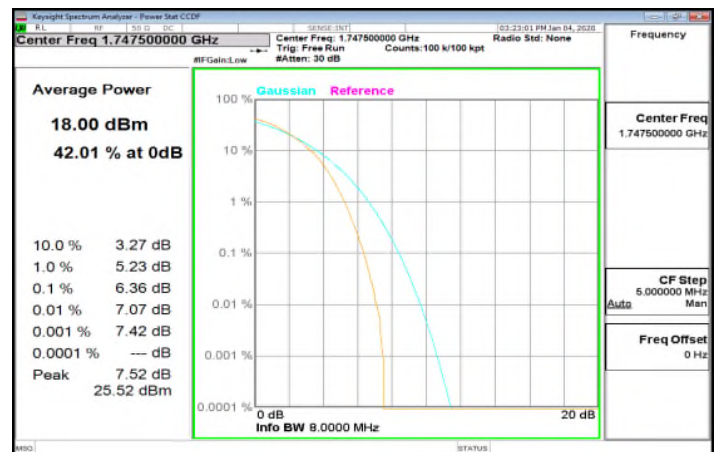
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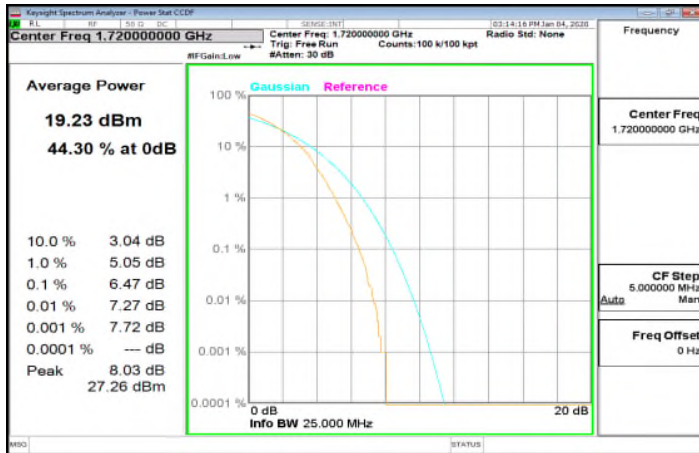
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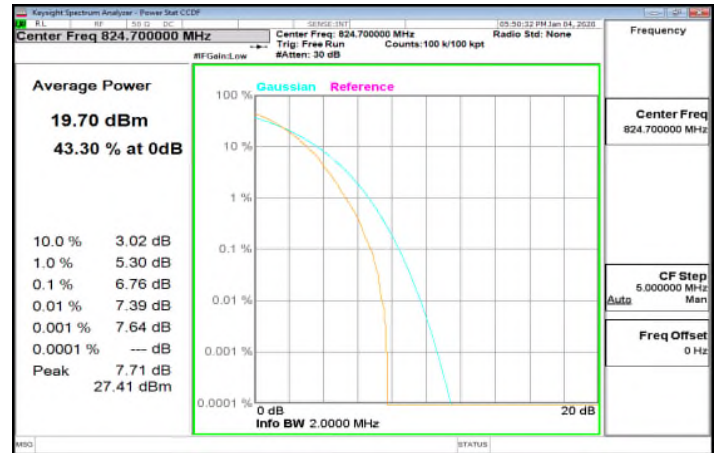
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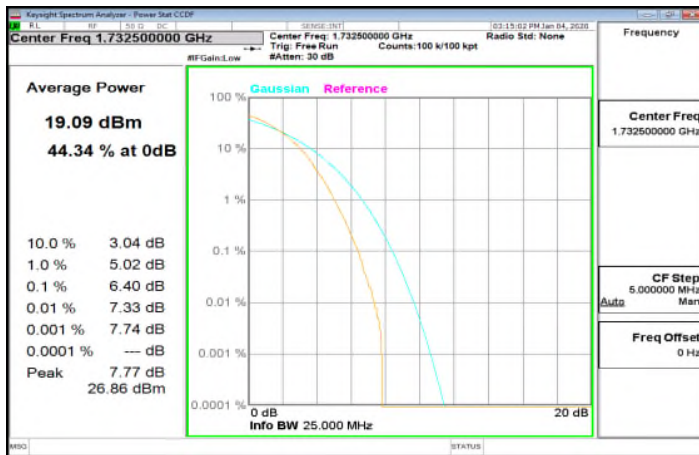
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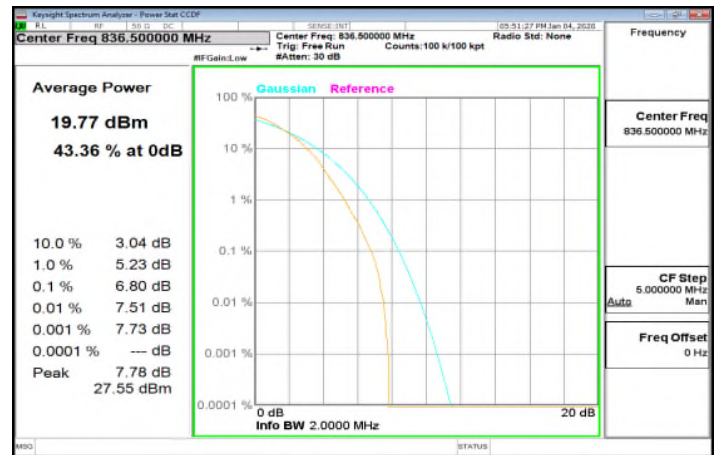
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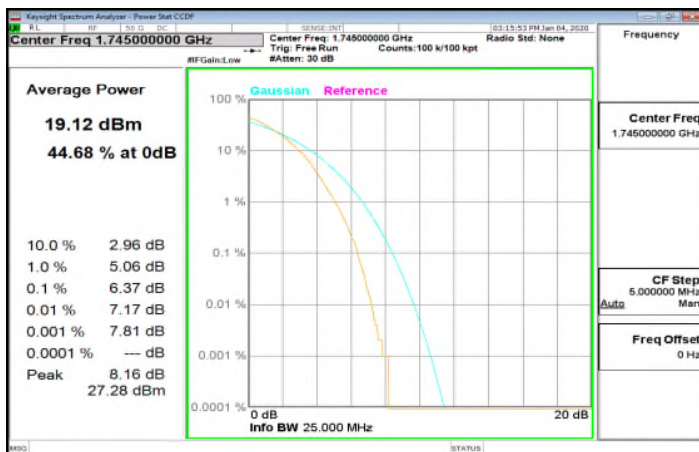
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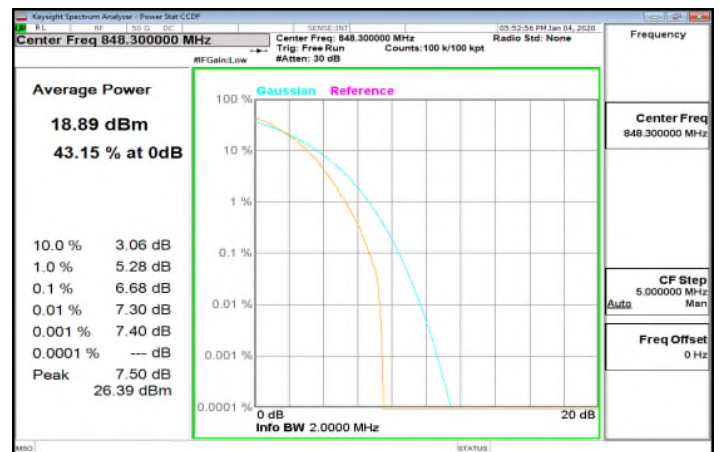
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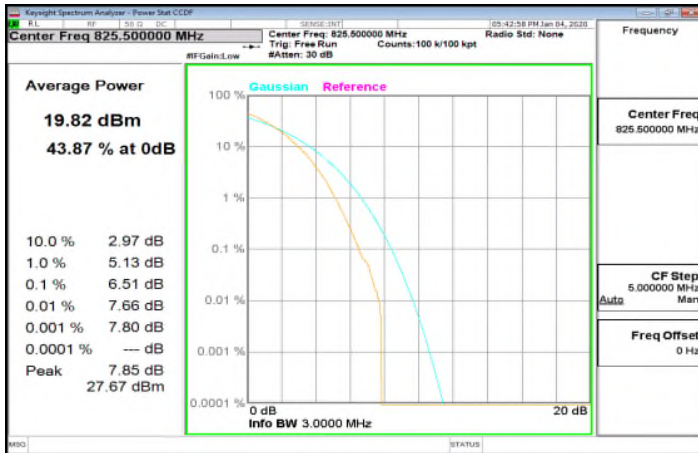
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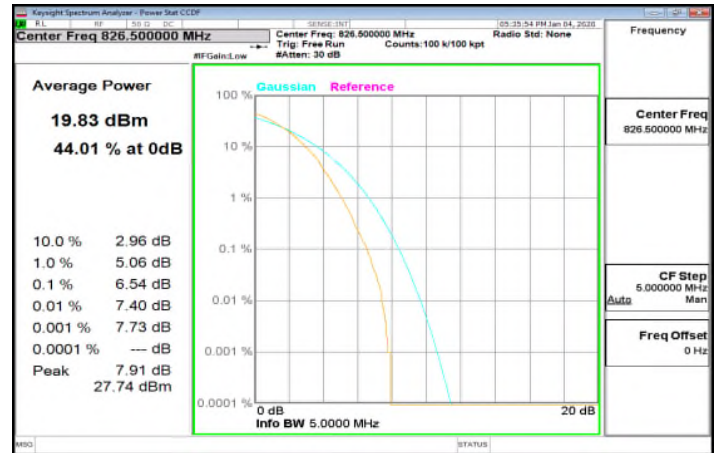
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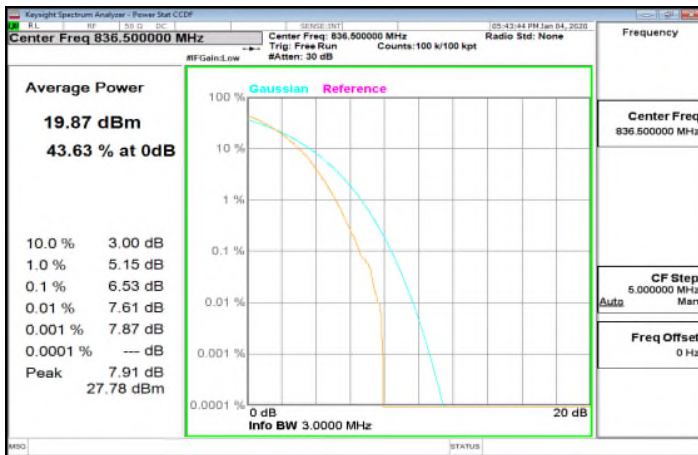
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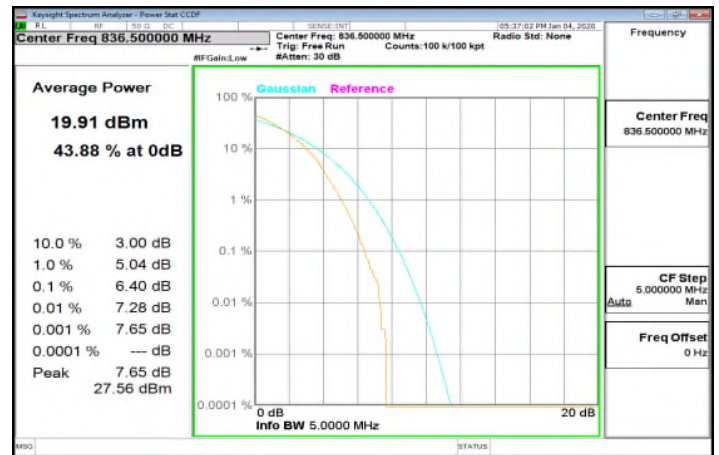
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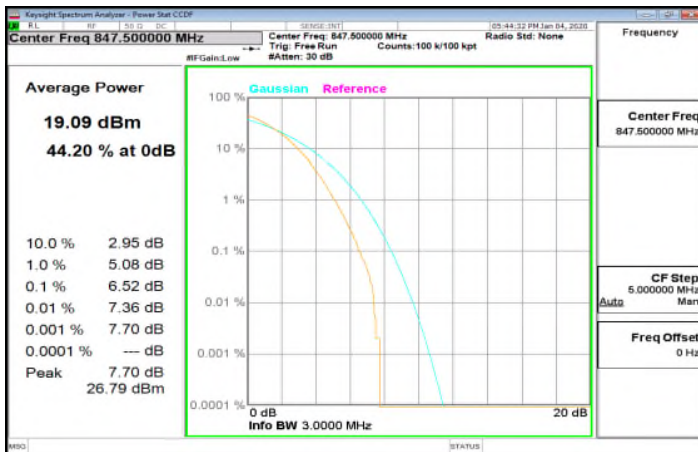
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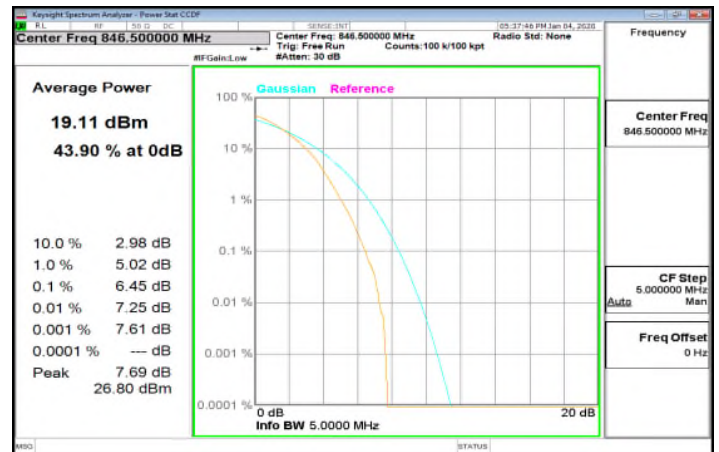
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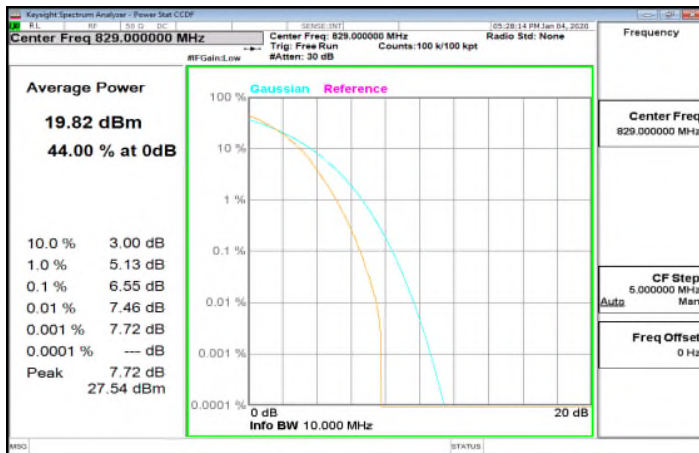
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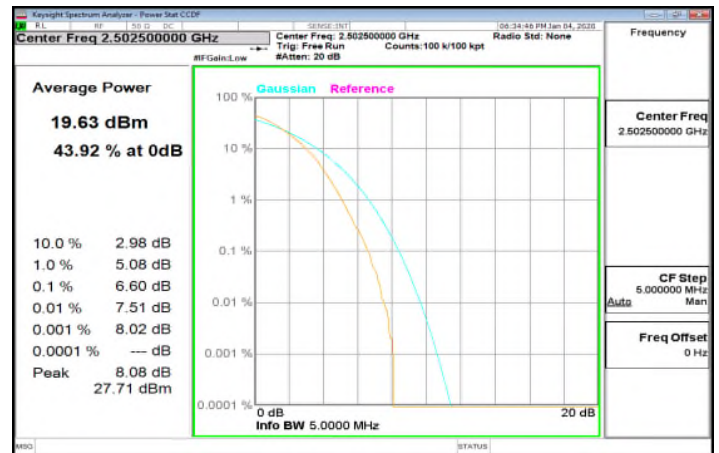
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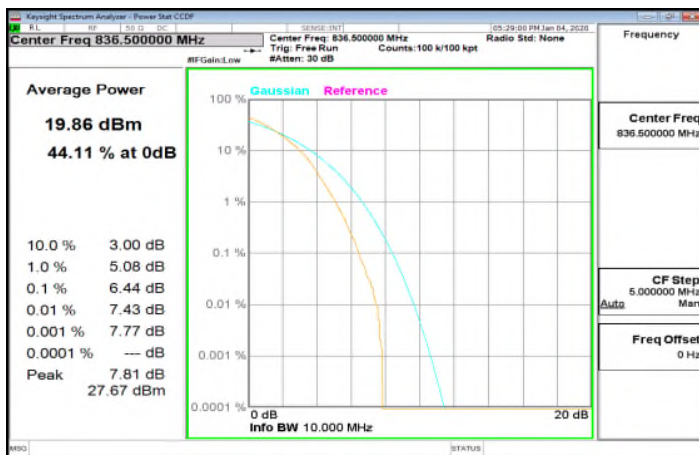
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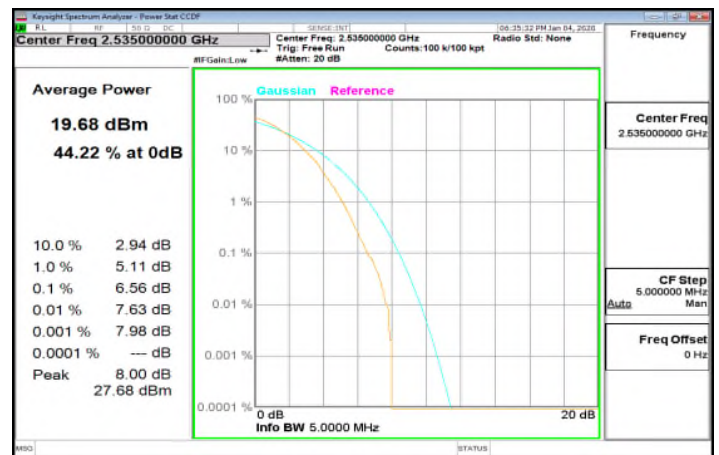
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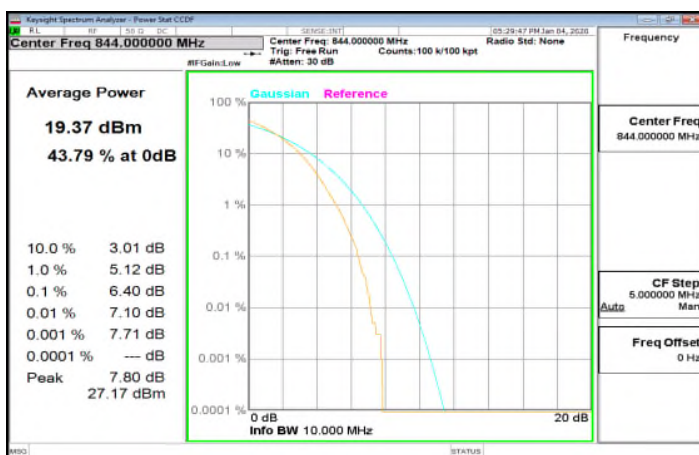
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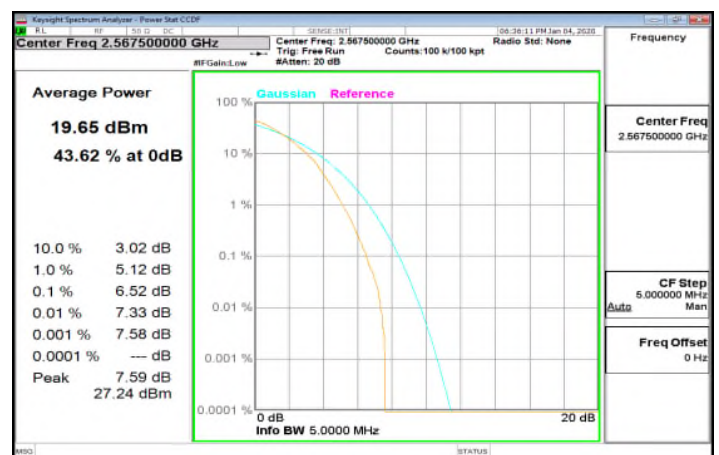
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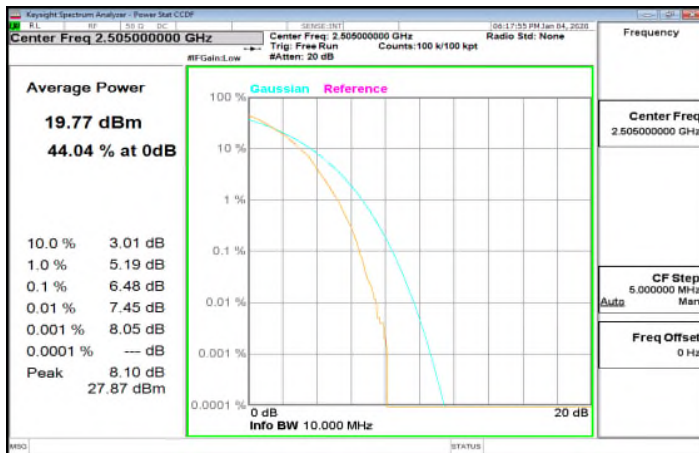
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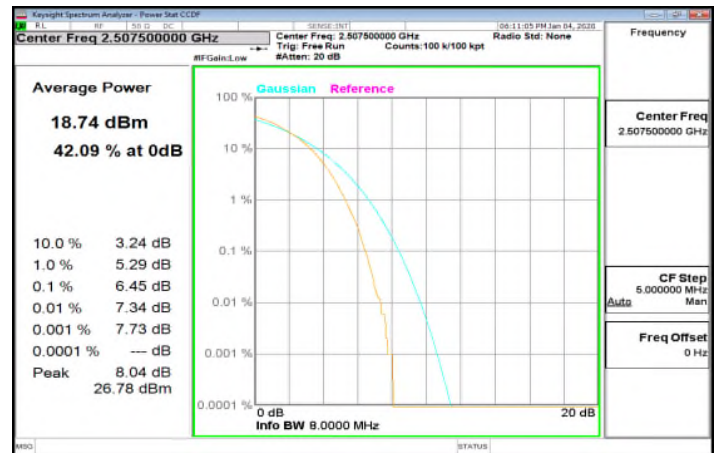
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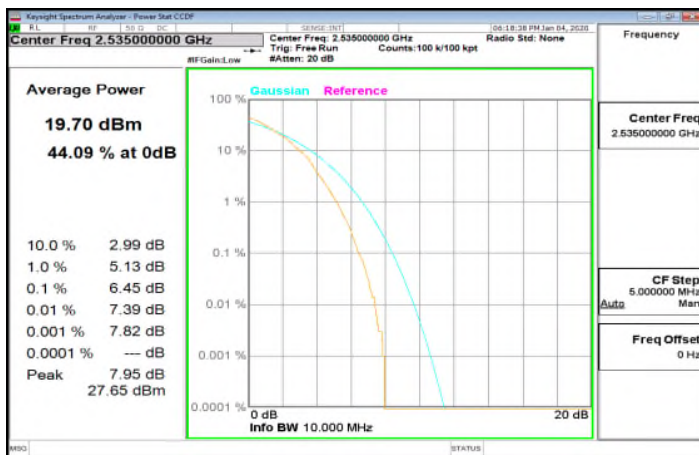
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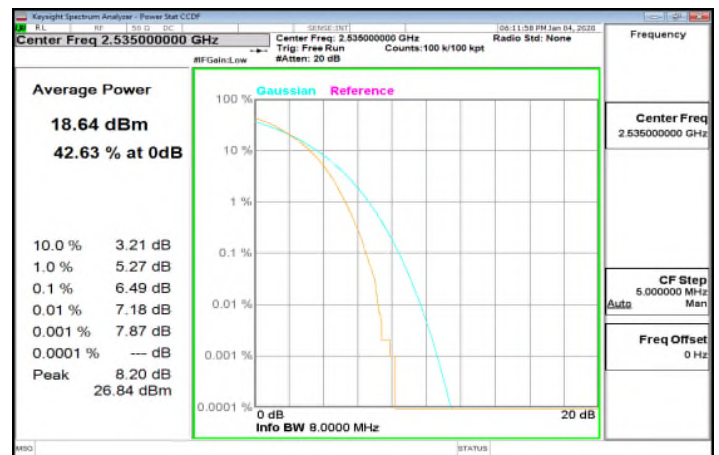
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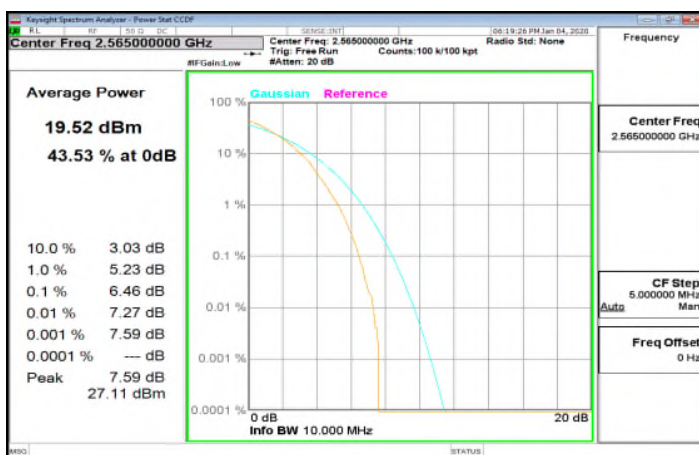
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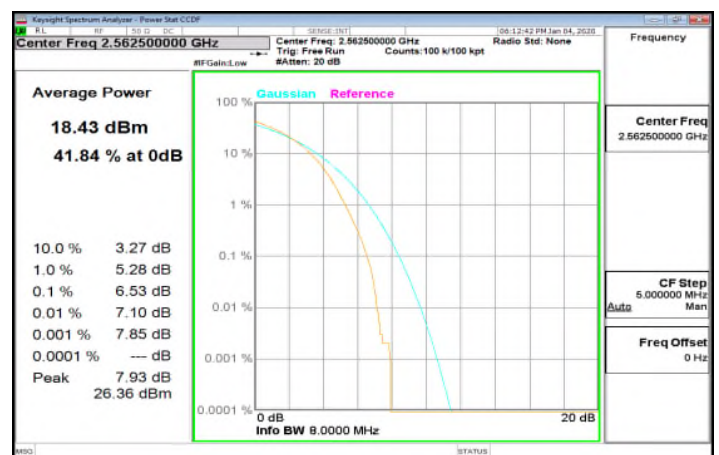
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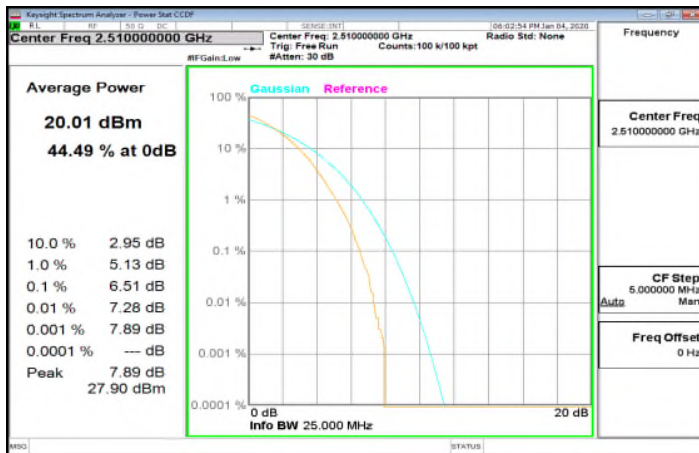
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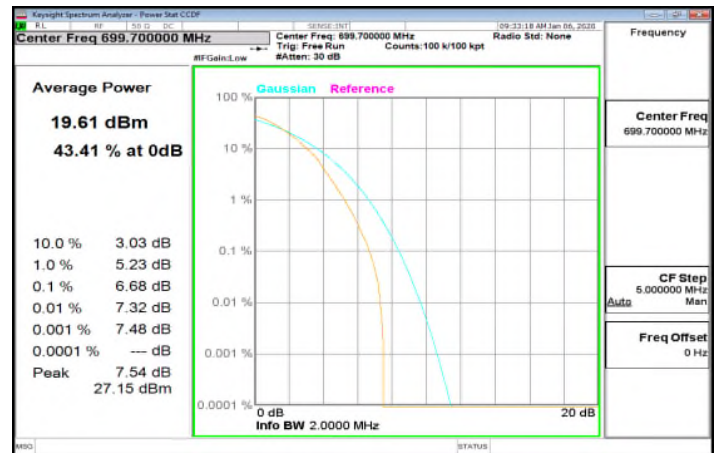
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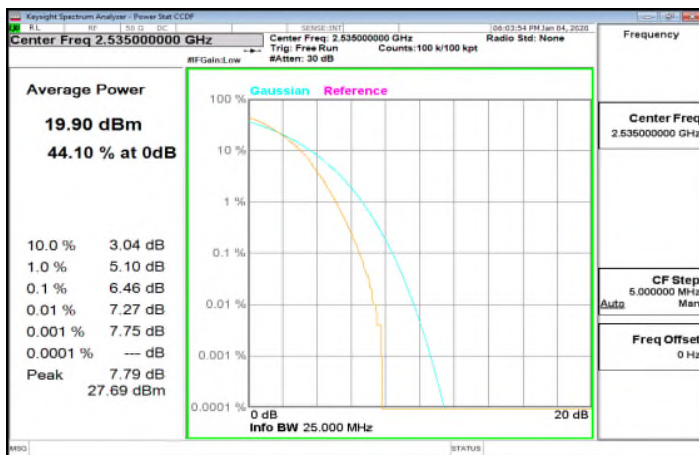
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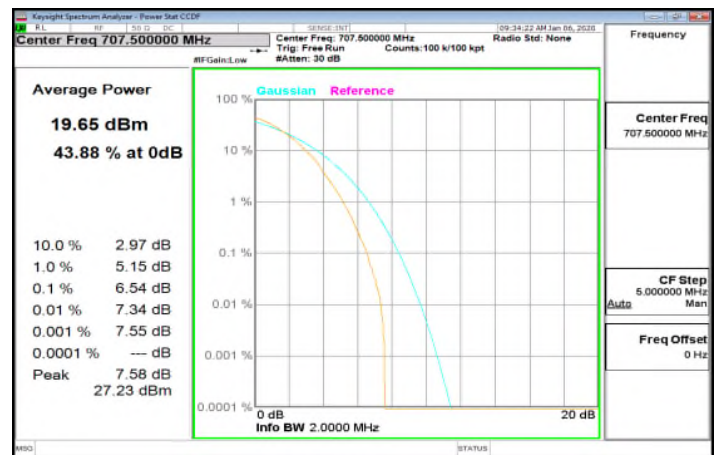
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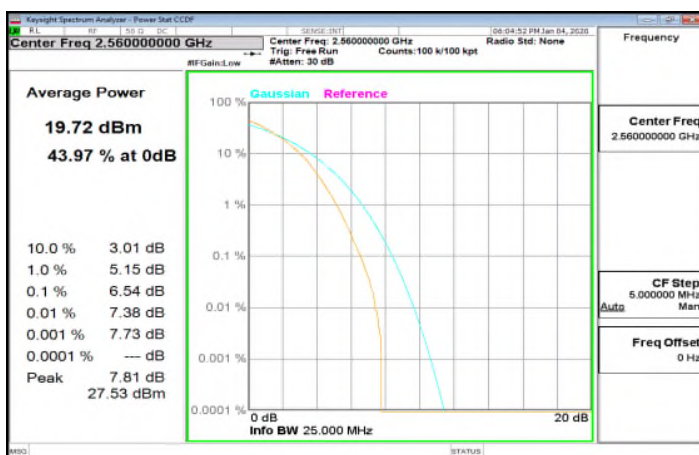
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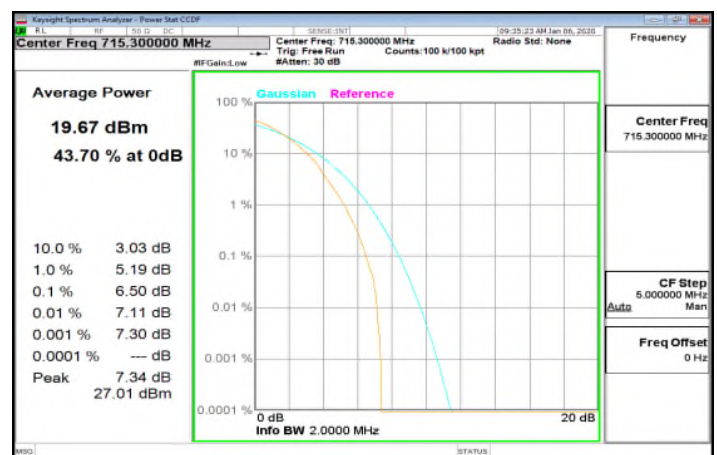
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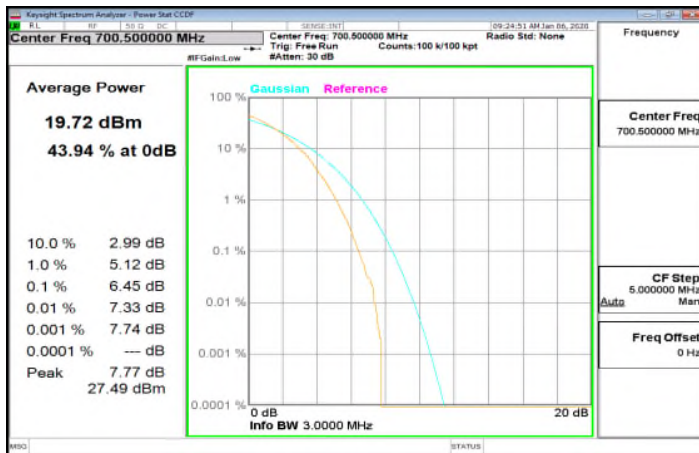
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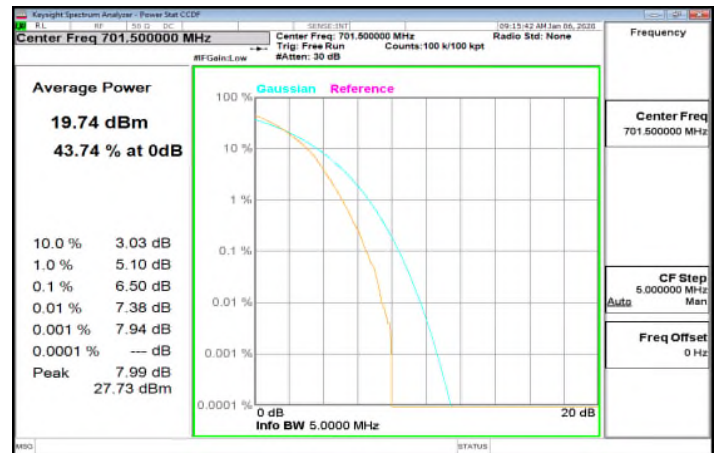
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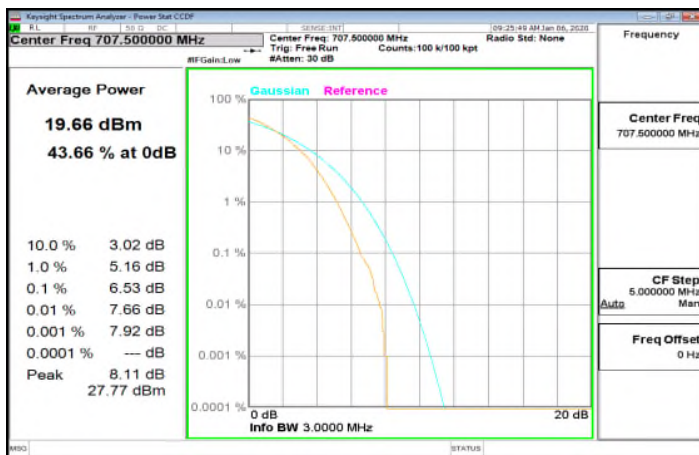
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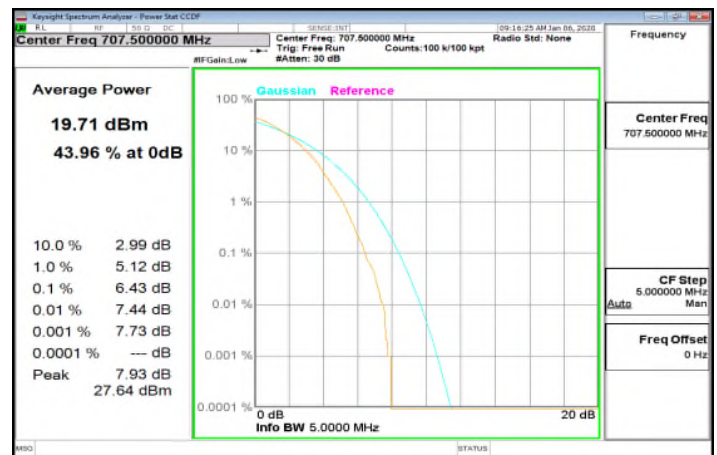
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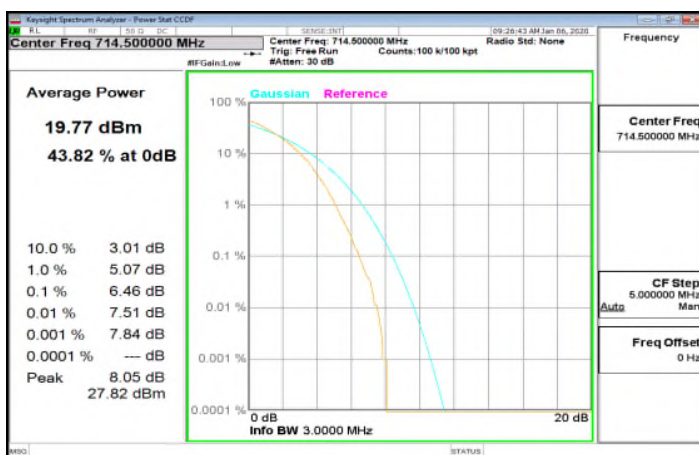
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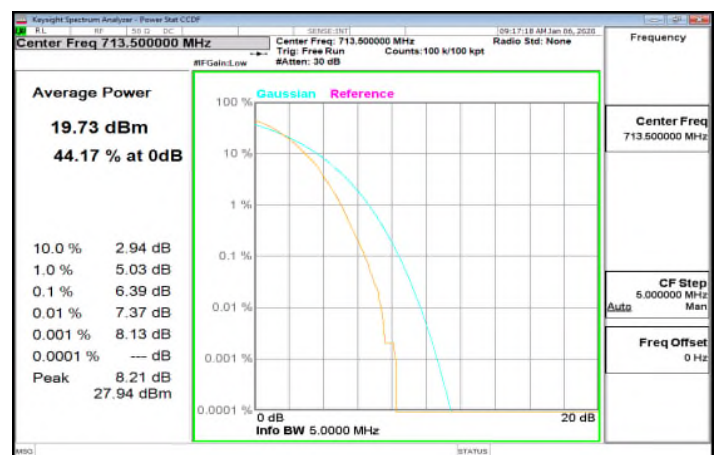
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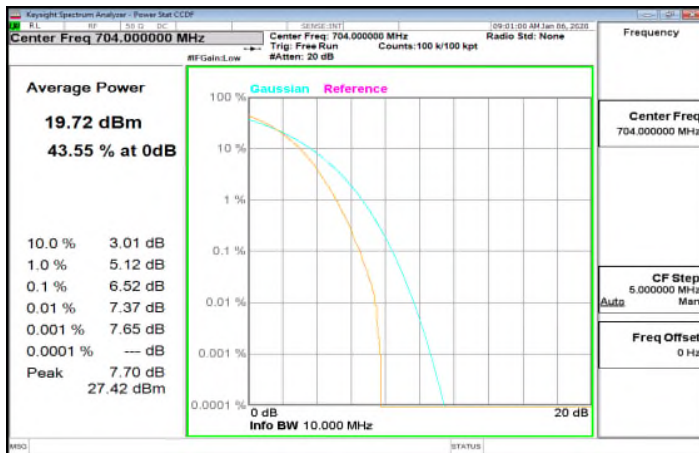
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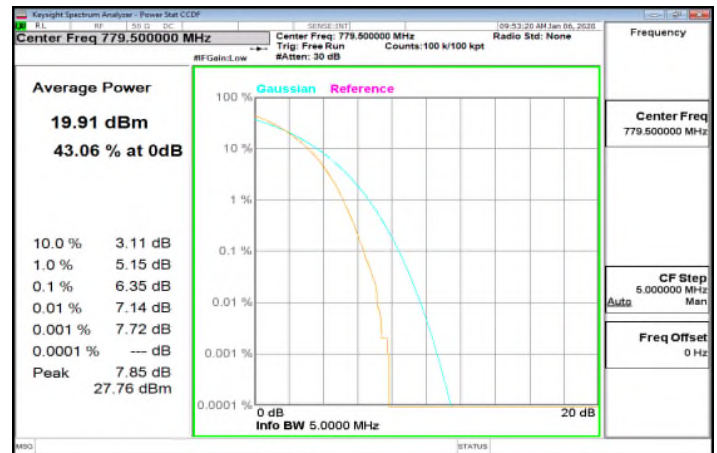
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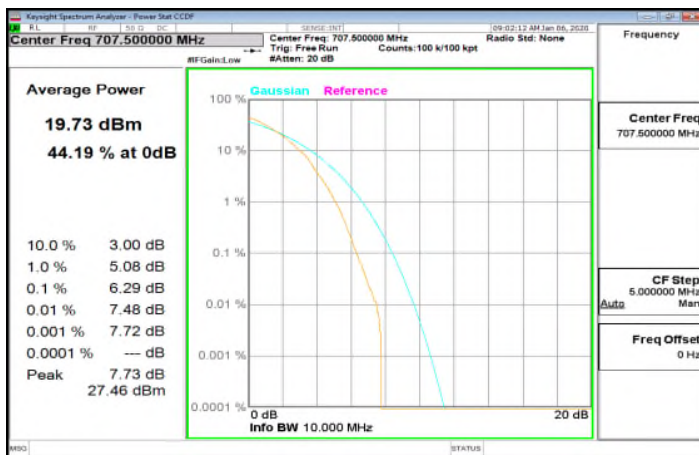
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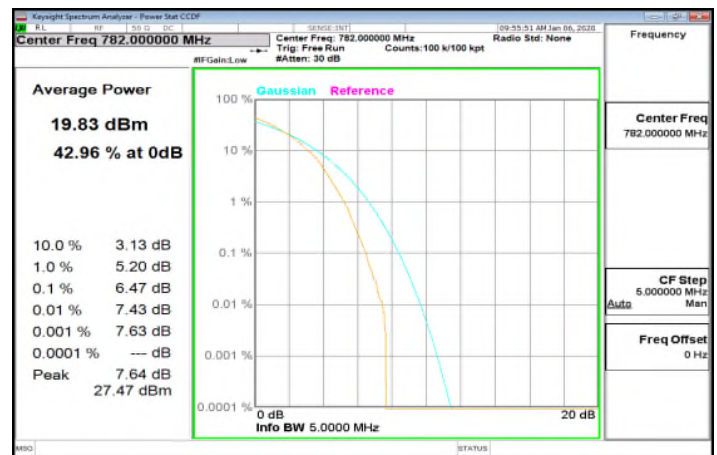
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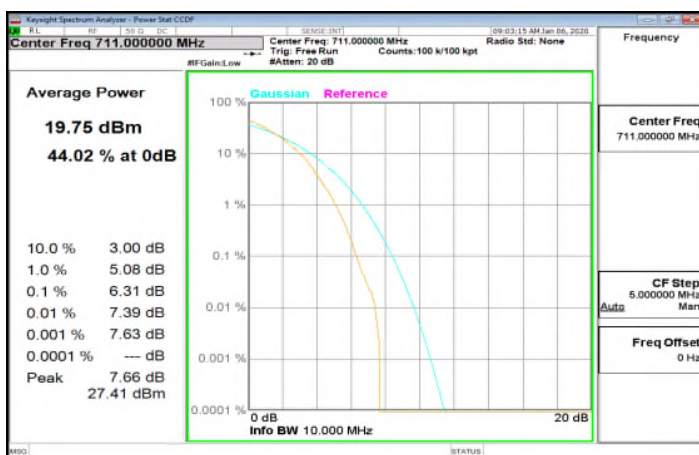
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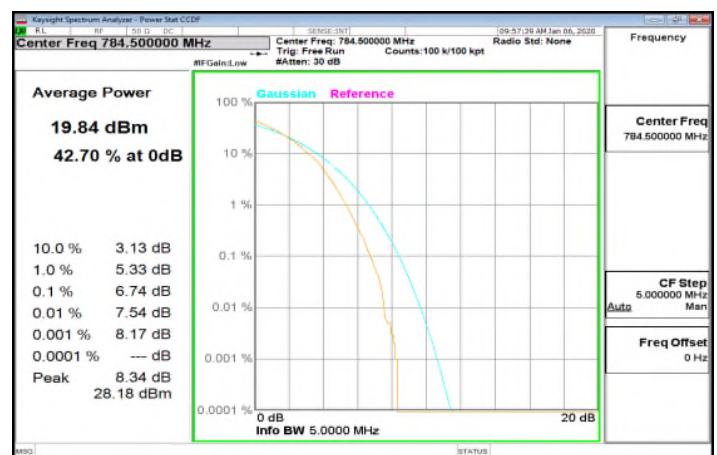
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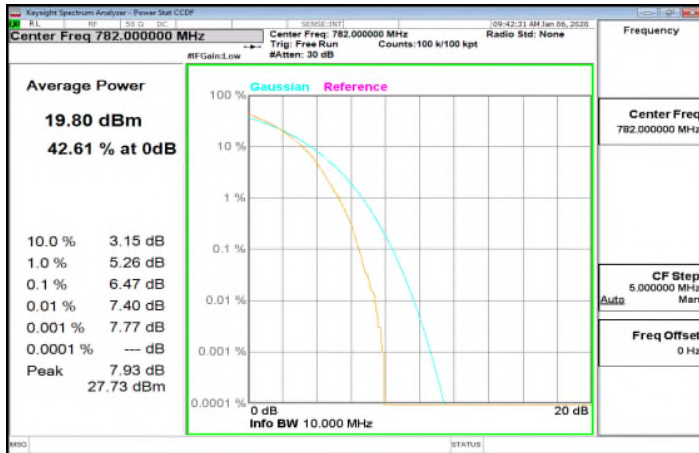
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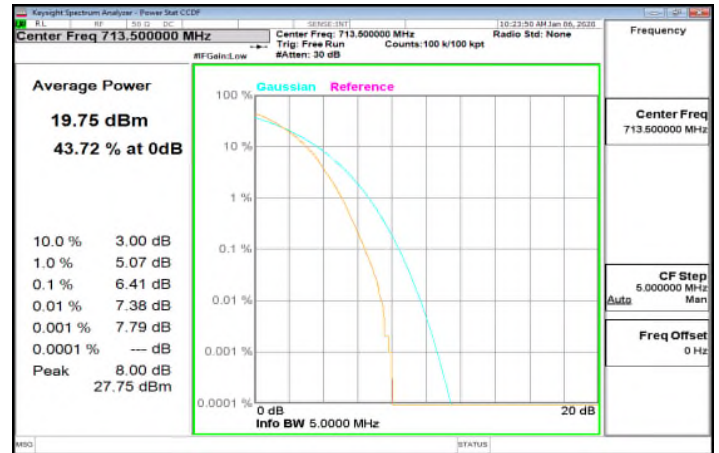
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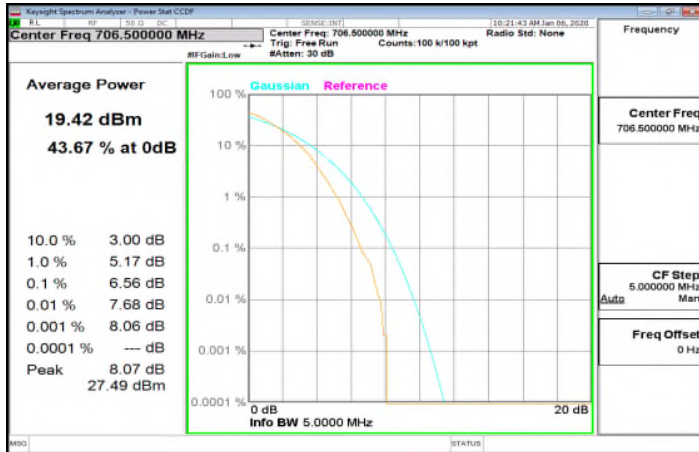
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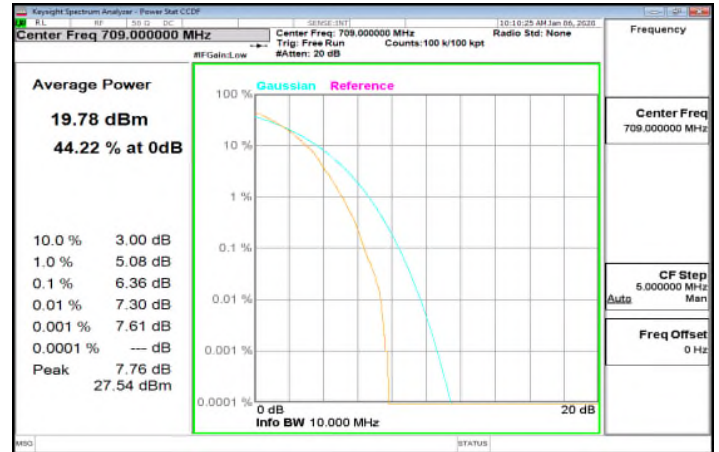
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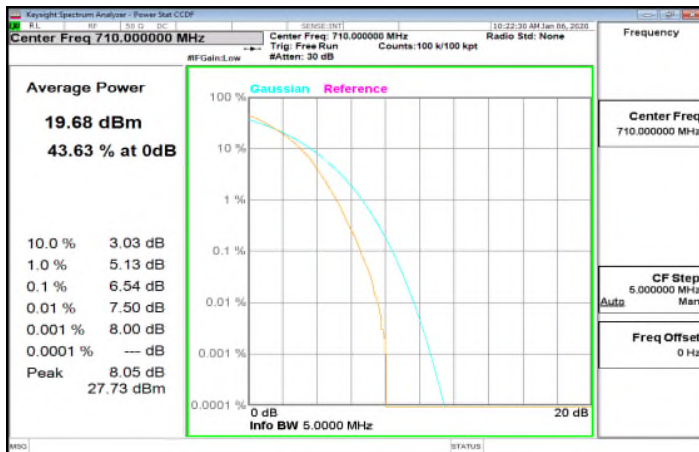
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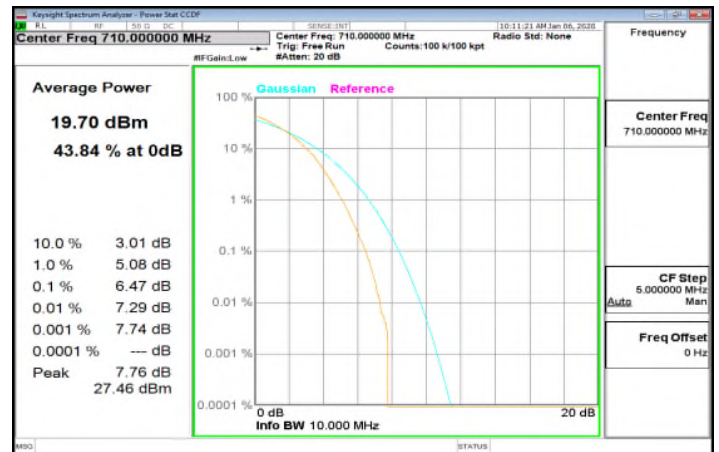
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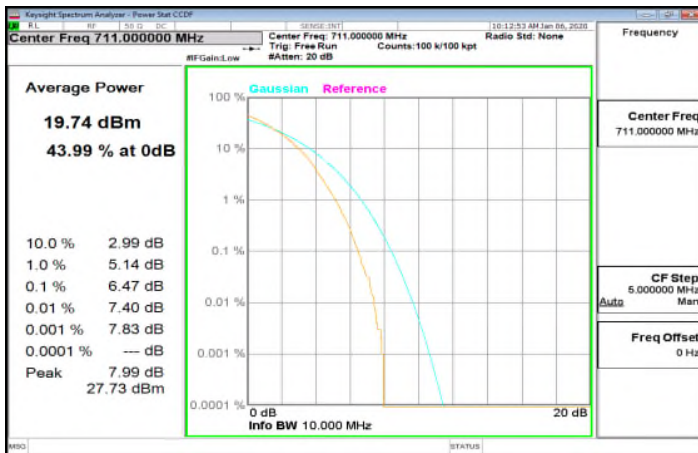
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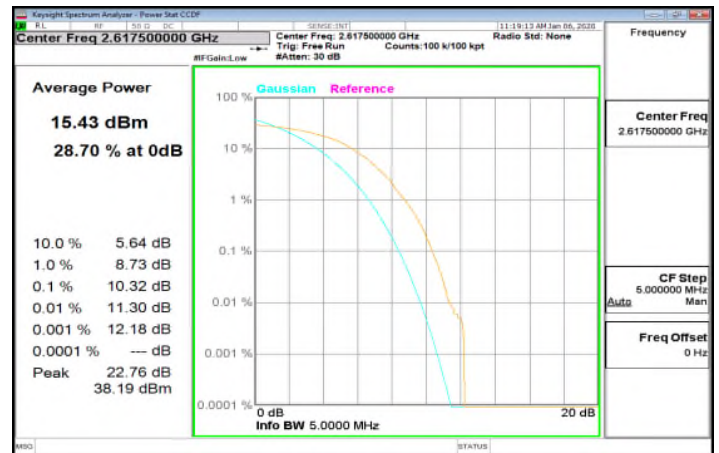
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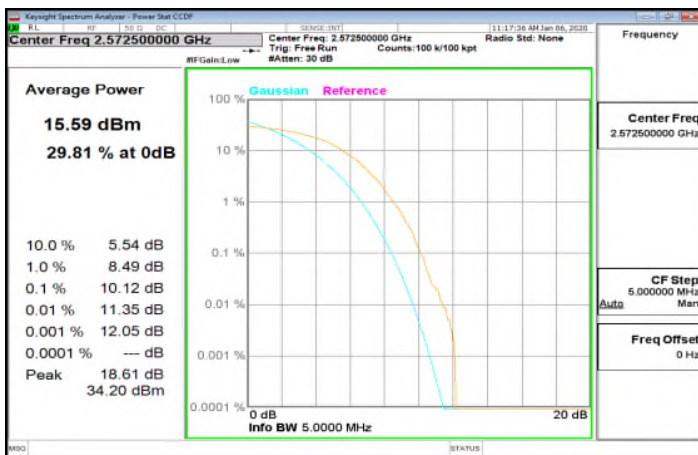
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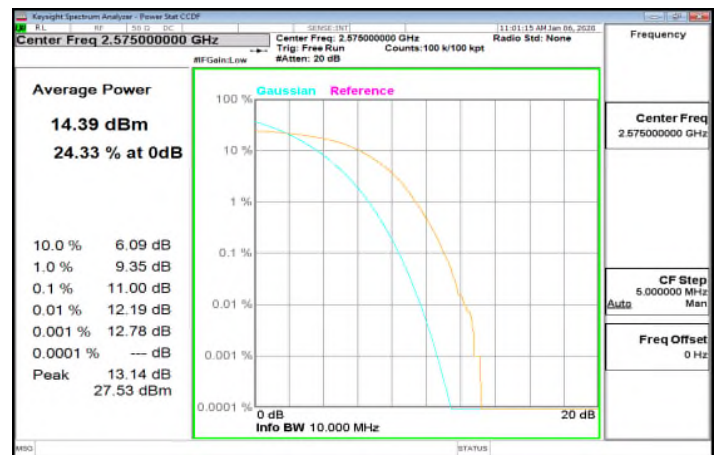
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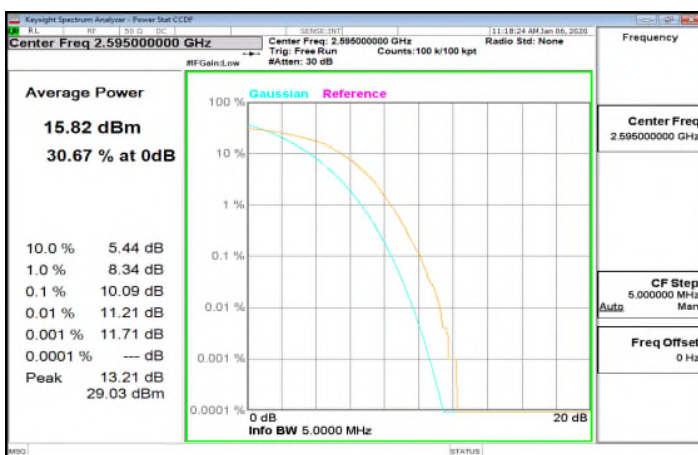
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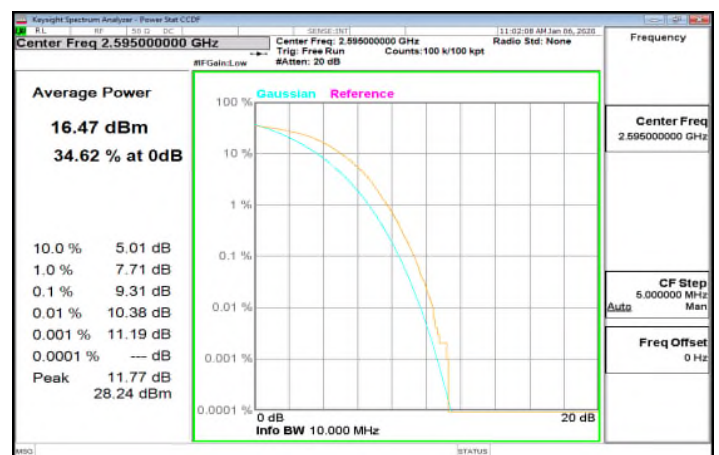
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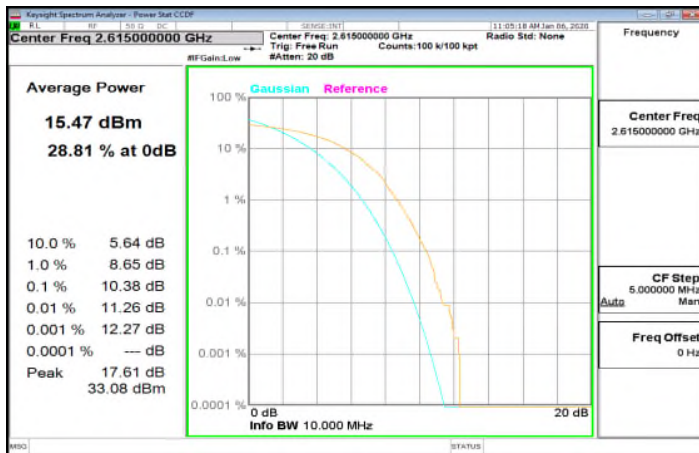
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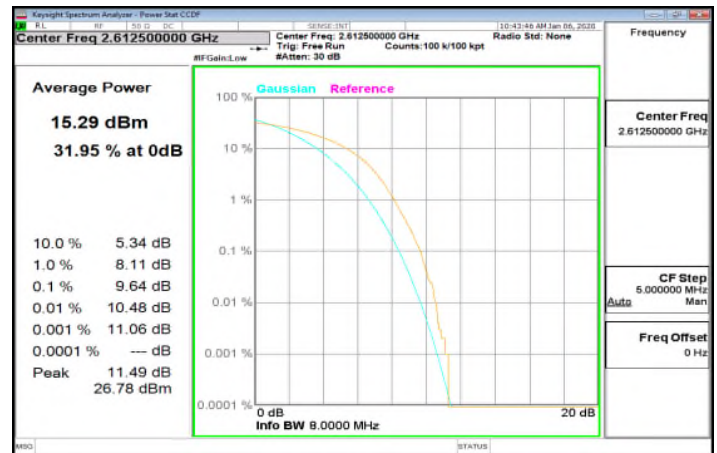
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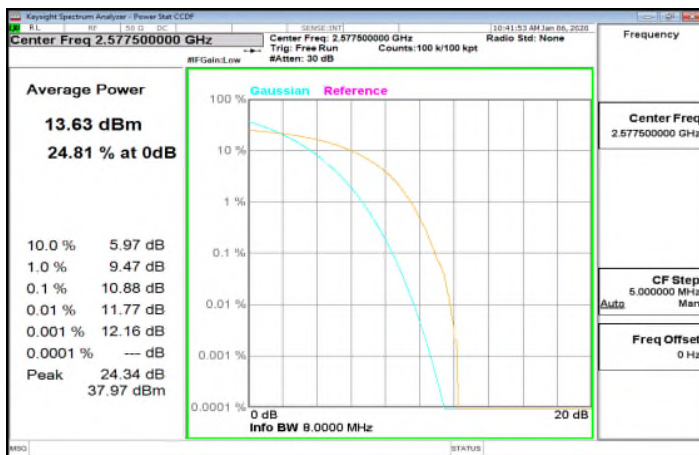
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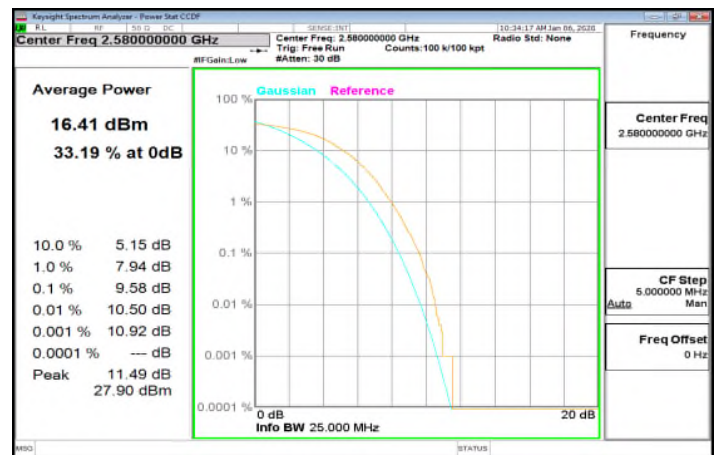
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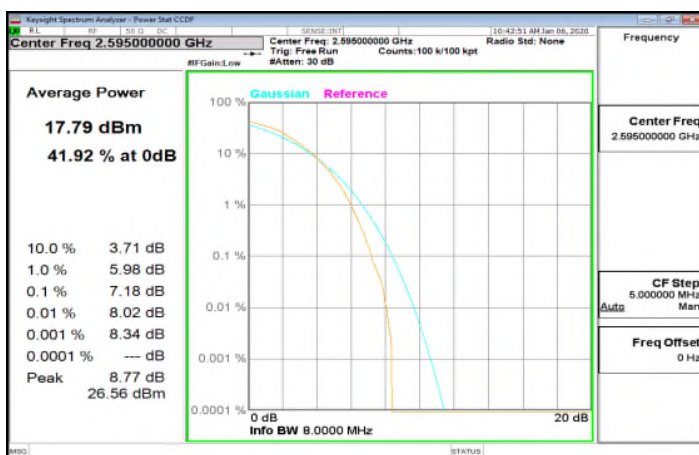
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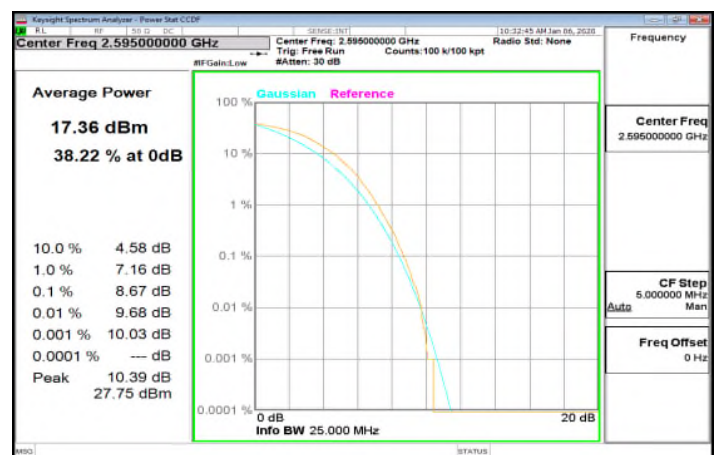
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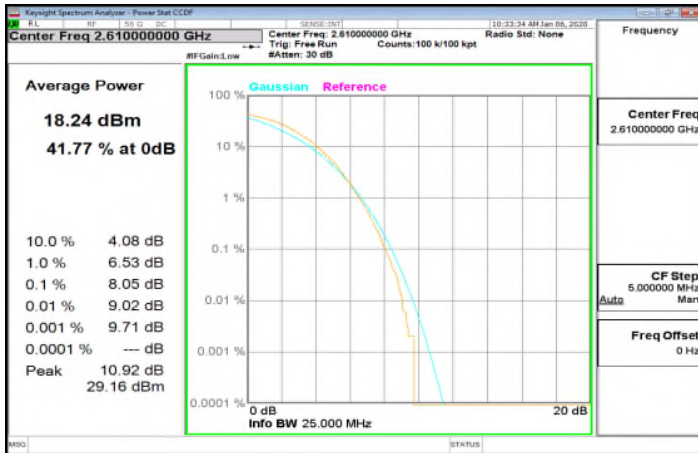
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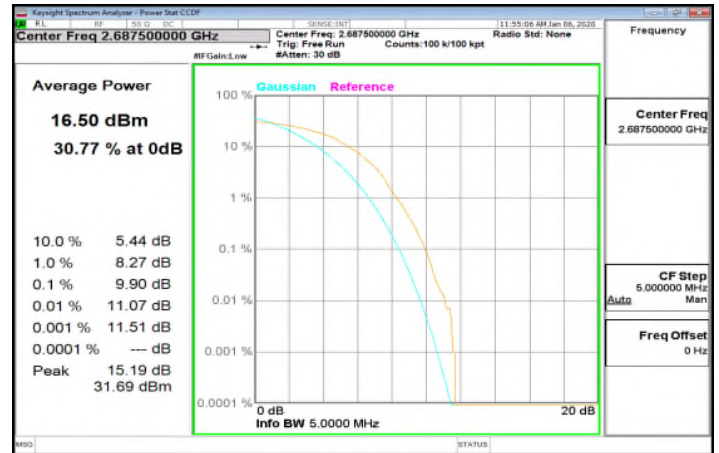
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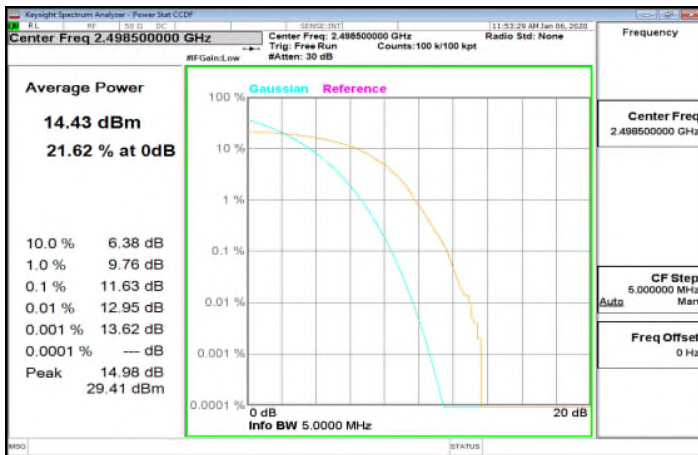
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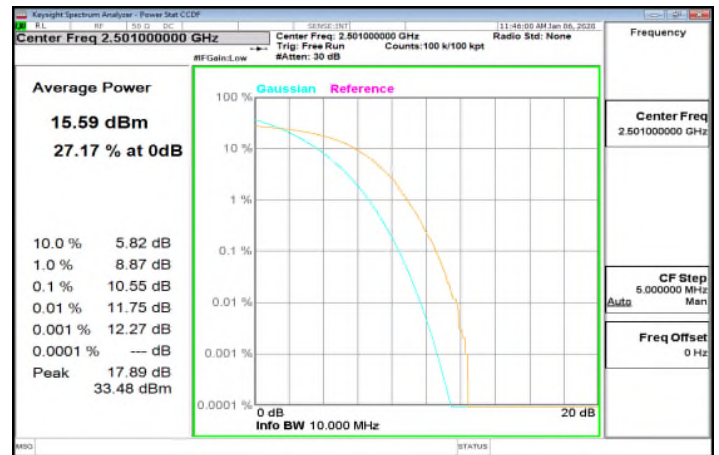
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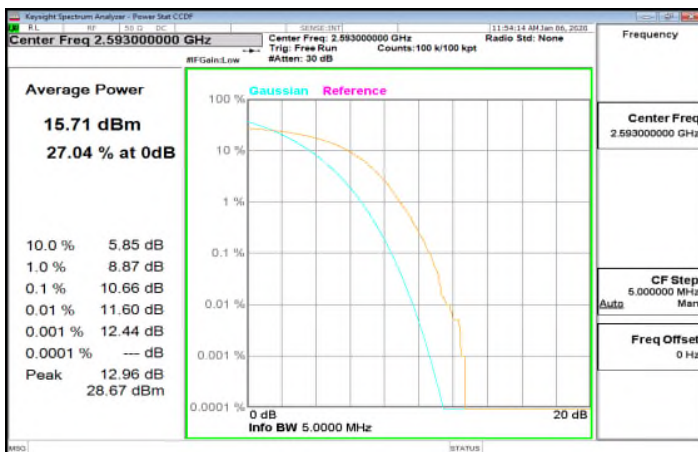
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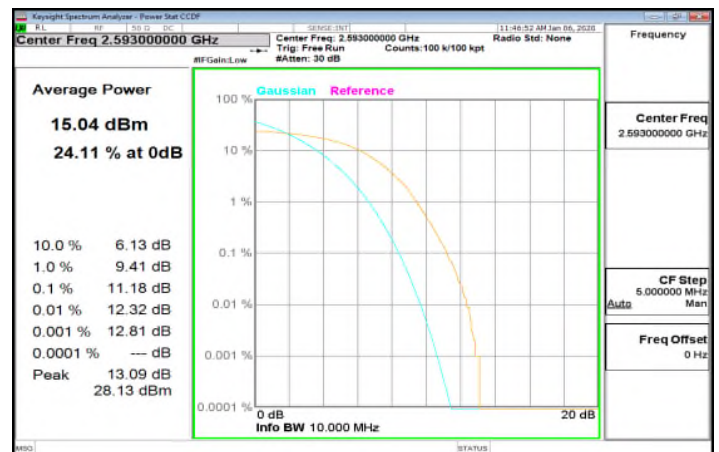
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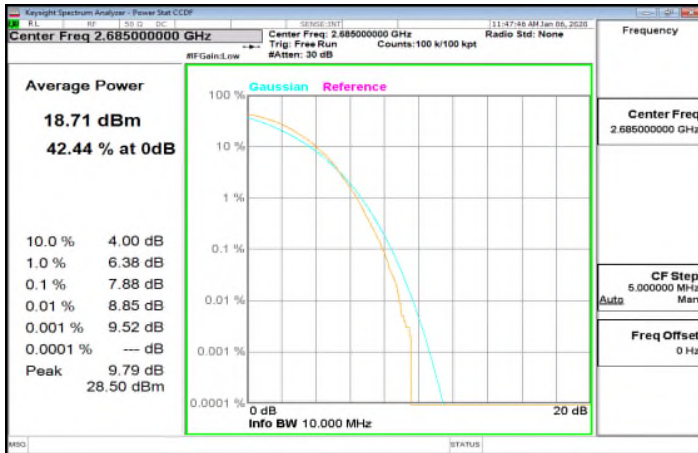
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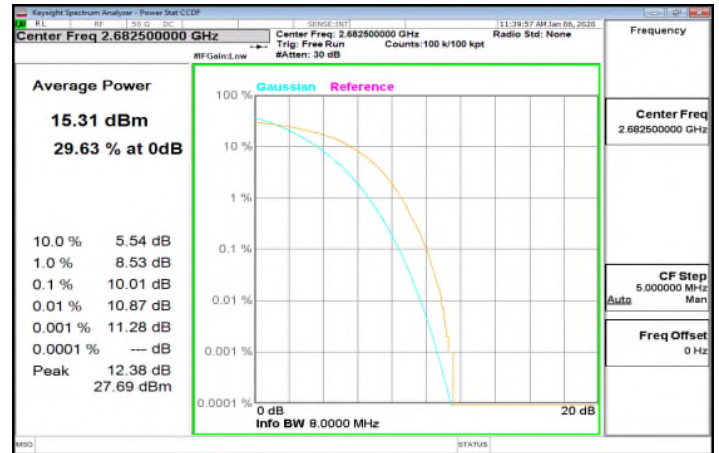
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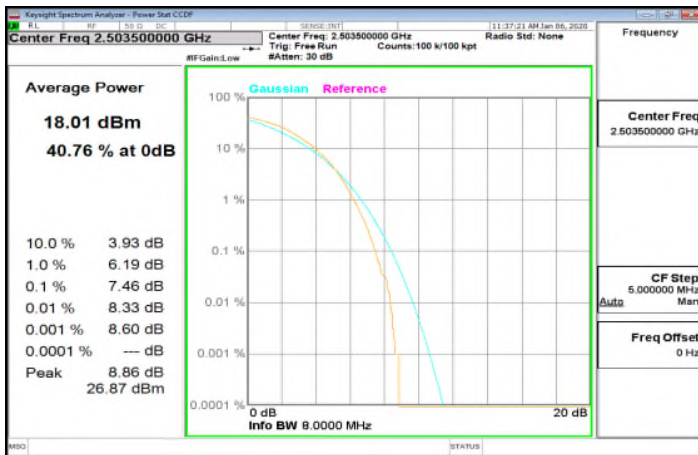
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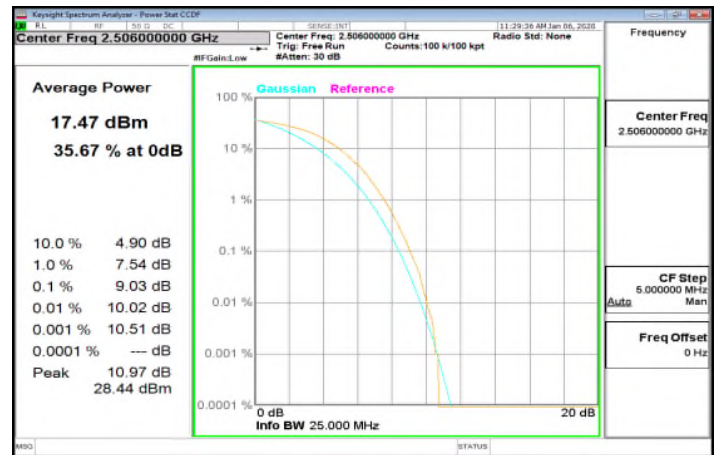
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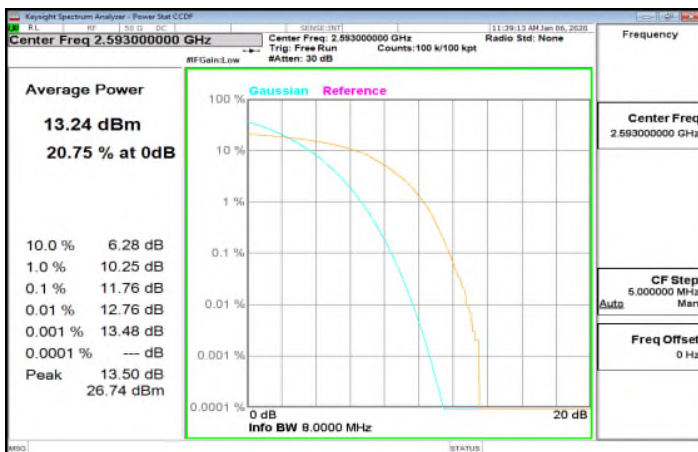
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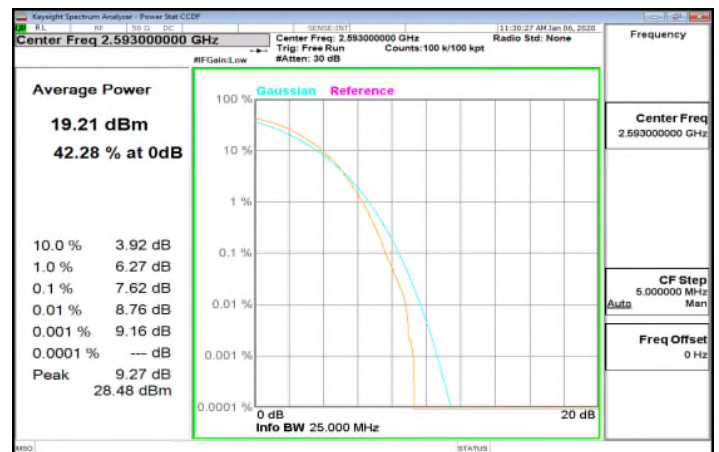
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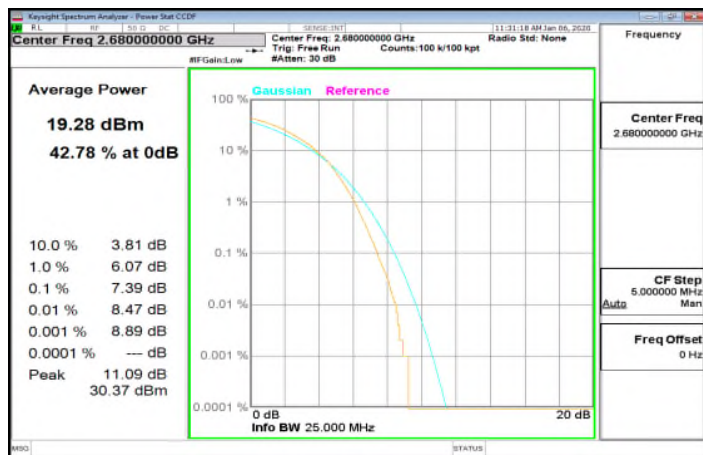
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