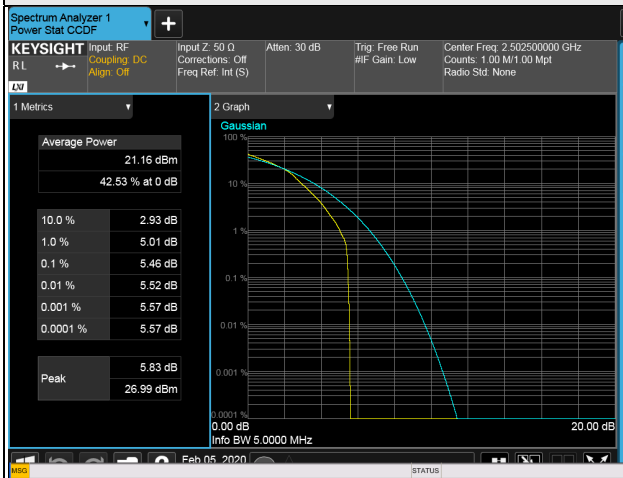
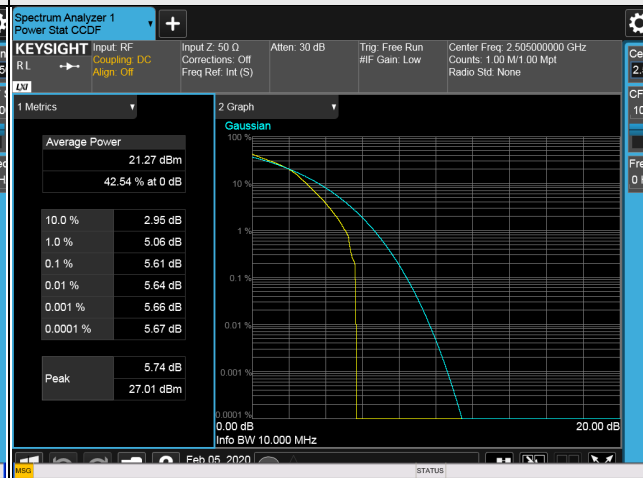


Spectrum Plot of Worst Value

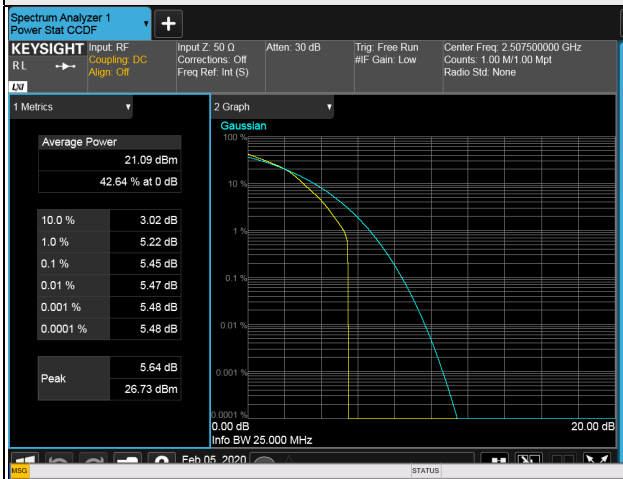
5MHz / 64QAM



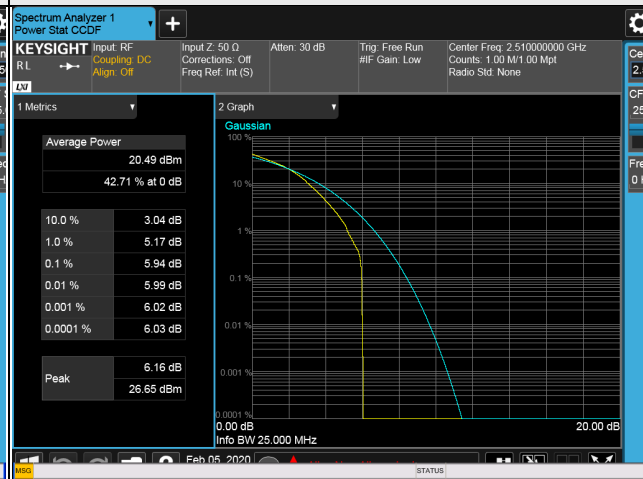
10MHz / 64QAM



15MHz / 64QAM



20MHz / 64QAM

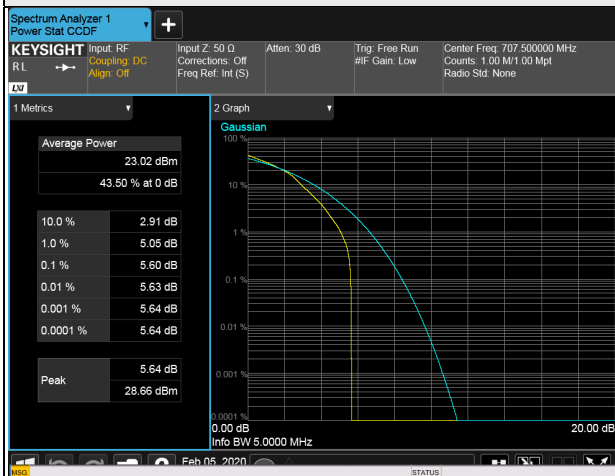


LTE Band 12

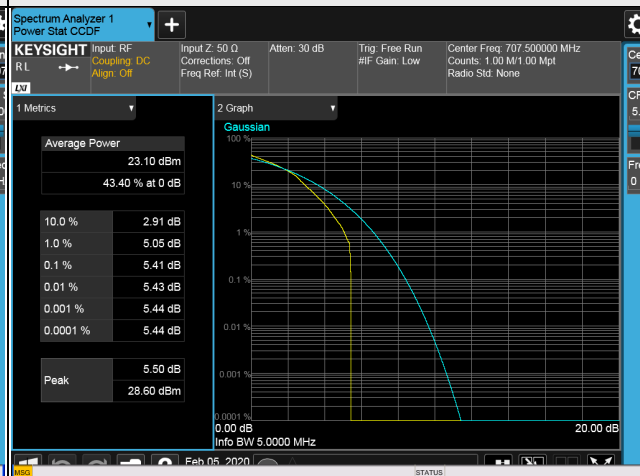
LTE Band 12, Channel Bandwidth 1.4MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
23017	699.7	3.95	5.27	5.31
23095	707.5	3.78	5.51	5.60
23173	715.3	3.77	4.84	5.01
LTE Band 12, Channel Bandwidth 3MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
23025	700.5	3.76	4.96	5.13
23095	707.5	3.66	5.27	5.41
23165	714.5	3.55	4.65	4.75
LTE Band 12, Channel Bandwidth 5MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
23035	701.5	3.67	5.16	5.19
23095	707.5	3.67	4.88	5.04
23155	713.5	3.60	5.06	5.22
LTE Band 12, Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
23060	704.0	3.39	4.53	4.43
23095	707.5	3.51	4.85	4.82
23130	711.0	3.71	5.30	5.45

Spectrum Plot of Worst Value

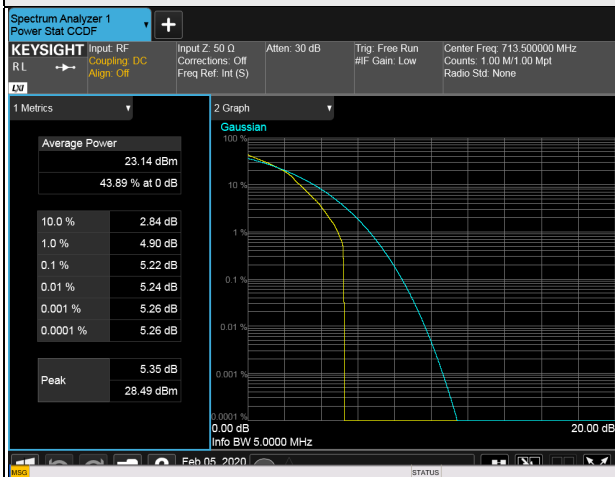
1.4MHz / 64QAM



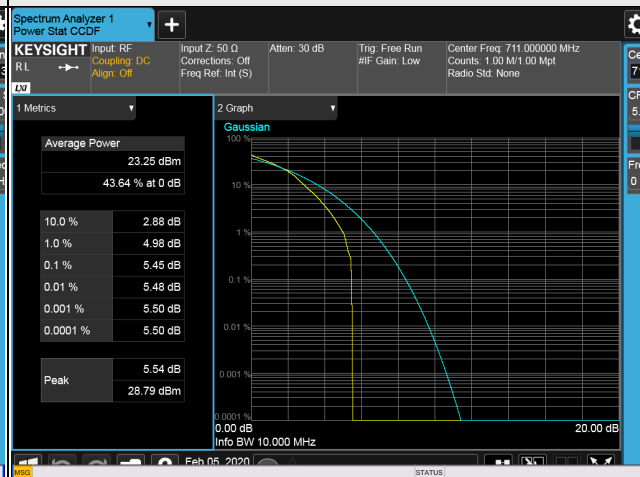
3MHz / 64QAM



5MHz / 64QAM



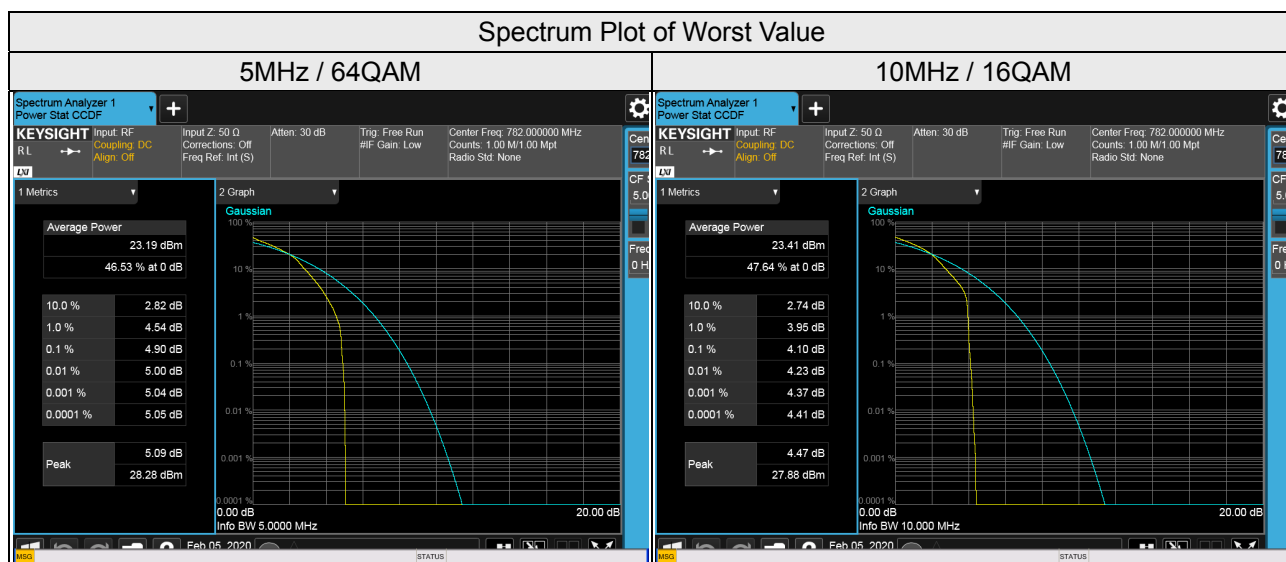
10MHz / 64QAM



LTE Band 13

LTE Band 13, Channel Bandwidth 5MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
23205	779.5	3.01	4.05	4.14
23230	782.0	3.22	4.61	4.90
23255	784.5	3.08	4.53	4.61

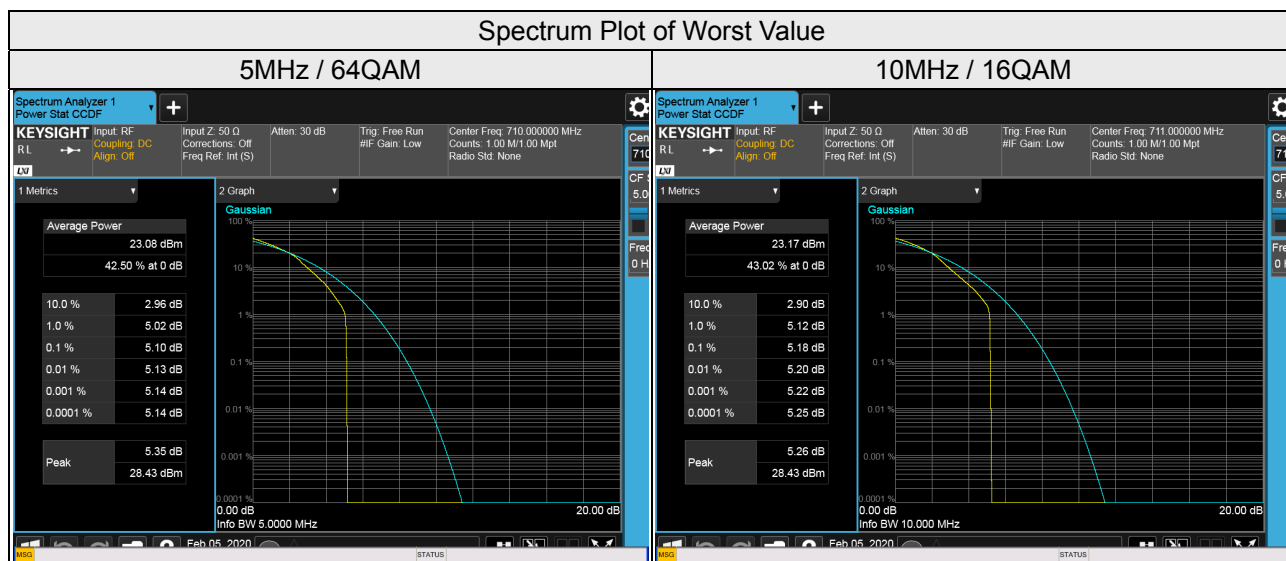
LTE Band 13, Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
23230	782.0	3.02	4.10	3.98



LTE Band 17

LTE Band 17, Channel Bandwidth 5MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
23755	706.5	3.53	4.55	4.78
23790	710.0	3.68	4.99	5.10
23825	713.5	3.67	4.91	4.93

LTE Band 17, Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
23780	709.0	3.55	4.76	4.73
23790	710.0	3.64	5.09	5.03
23800	711.0	3.70	5.18	5.16

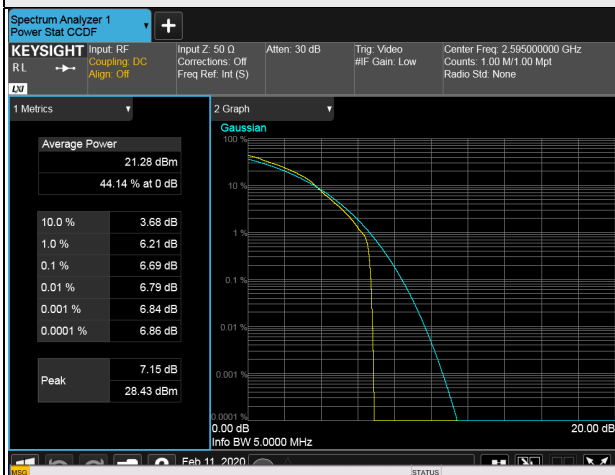


LTE Band 38

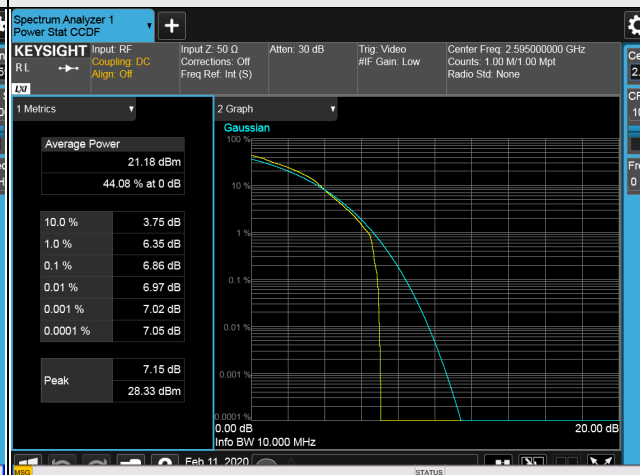
LTE Band 38, Channel Bandwidth 5MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
37775	2572.5	3.76	5.70	5.59
38000	2595.0	3.80	6.69	6.58
38225	2617.5	3.84	5.51	5.51
LTE Band 38, Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
37800	2575.0	3.87	6.50	6.35
38000	2595.0	3.96	6.86	6.50
38200	2615.0	4.27	6.50	9.31
LTE Band 38, Channel Bandwidth 15MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
37825	2577.5	4.65	5.20	4.84
38000	2595.0	4.98	6.28	5.60
38175	2612.5	5.04	6.40	6.11
LTE Band 38, Channel Bandwidth 20MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
37850	2580.0	5.08	6.12	5.94
38000	2595.0	4.88	6.26	5.66
38150	2610.0	4.97	5.62	6.22

Spectrum Plot of Worst Value

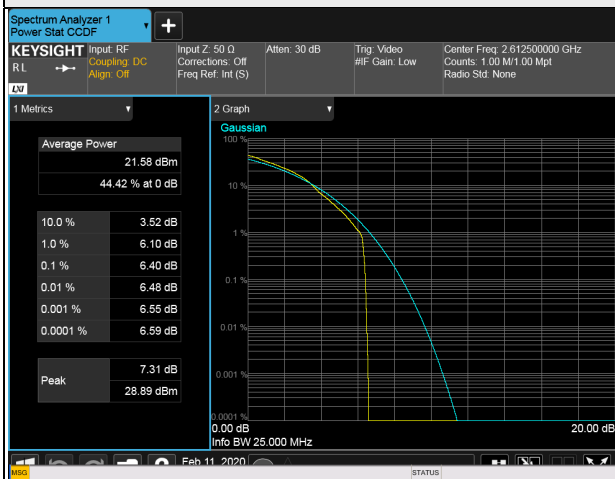
5MHz / 16QAM



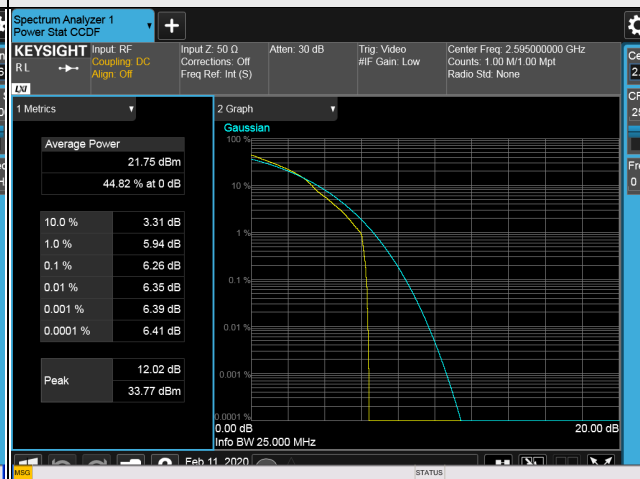
10MHz / 16QAM



15MHz / 16QAM



20MHz / 16QAM

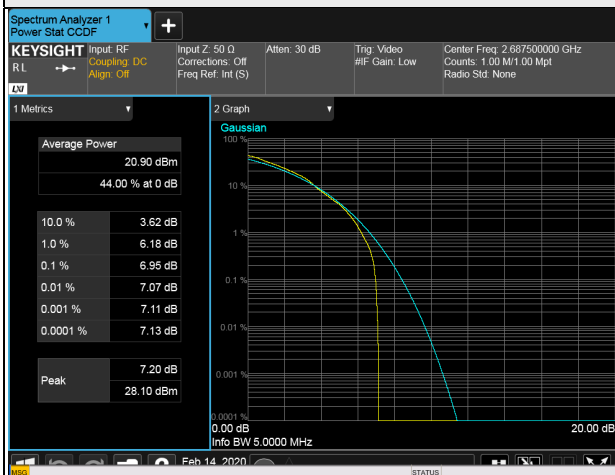


LTE Band 41

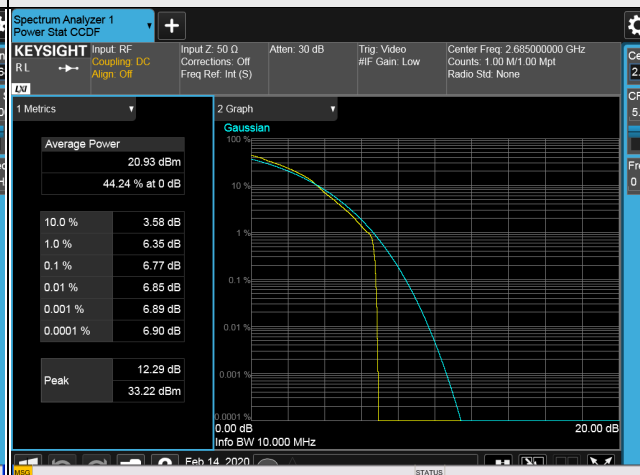
LTE Band 41, Channel Bandwidth 5MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
39675	2498.5	3.54	4.54	4.35
40620	2593	3.90	6.45	6.59
41565	2687.5	4.03	6.94	6.95
LTE Band 41, Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
39700	2501	3.47	4.57	4.30
40620	2593	4.00	6.38	6.37
41540	2685	4.06	6.77	6.60
LTE Band 41, Channel Bandwidth 15MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
39725	2503.5	4.50	5.45	5.15
40620	2593	4.65	5.50	6.04
41515	2682.5	4.90	6.71	6.04
LTE Band 41, Channel Bandwidth 20MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
39750	2506	4.44	5.68	5.13
40620	2593	4.72	6.30	6.16
41490	2680	4.86	6.75	5.81

Spectrum Plot of Worst Value

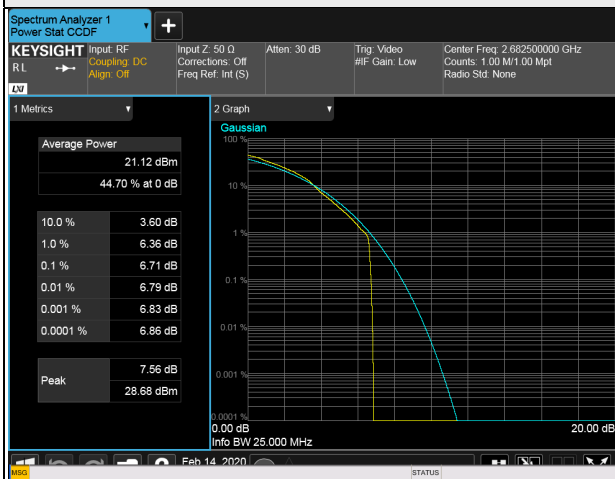
5MHz / 64QAM



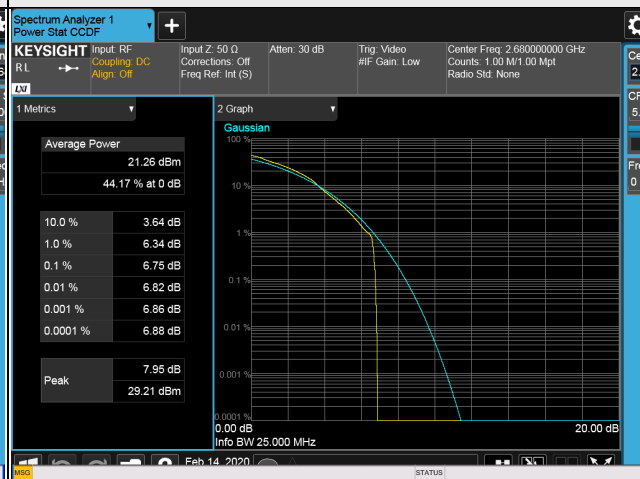
10MHz / 16QAM



15MHz / 16QAM



20MHz / 16QAM



LTE Band 66

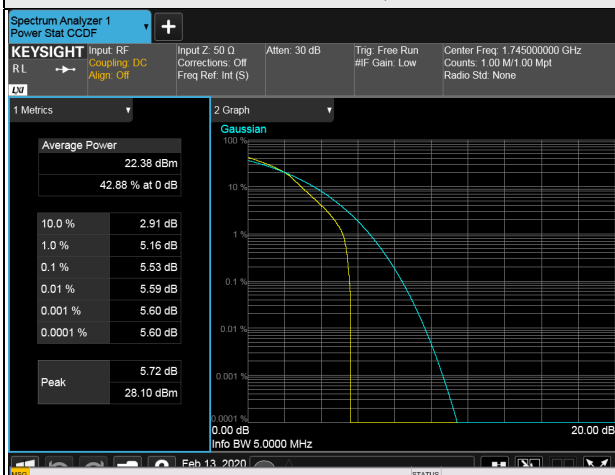
LTE Band 66, Channel Bandwidth 1.4MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
131979	1710.7	3.86	4.57	4.59
132322	1745.0	3.79	5.53	5.51
132665	1779.3	3.81	4.89	5.33
LTE Band 66, Channel Bandwidth 3MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
131987	1711.5	3.68	4.59	4.62
132322	1745.0	3.58	5.38	5.47
132657	1778.5	3.61	5.08	5.40
LTE Band 66, Channel Bandwidth 5MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
131997	1712.5	3.70	4.54	4.65
132322	1745.0	3.72	5.13	5.25
132647	1777.5	3.67	4.91	5.03
LTE Band 66, Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
132022	1715.0	3.71	4.39	4.48
132322	1745.0	3.81	4.65	4.72
132622	1775.0	3.76	4.45	4.58
LTE Band 66, Channel Bandwidth 15MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
132047	1717.5	3.73	4.45	4.74
132322	1745.0	3.65	4.38	4.38
132597	1772.5	3.55	4.25	4.33

LTE Band 66, Channel Bandwidth 20MHz

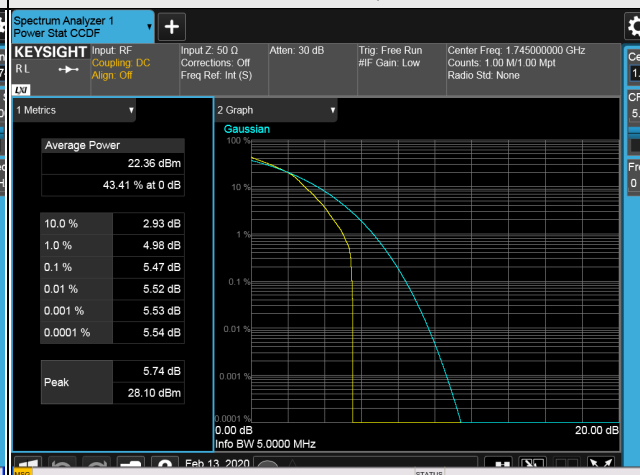
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
132072	1720.0	4.46	4.42	4.55
132322	1745.0	3.68	4.36	4.58
132572	1770.0	3.45	4.54	4.71

Spectrum Plot of Worst Value

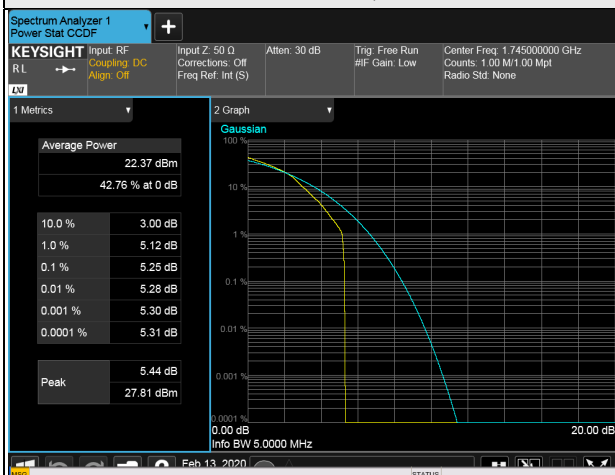
1.4MHz / 16QAM



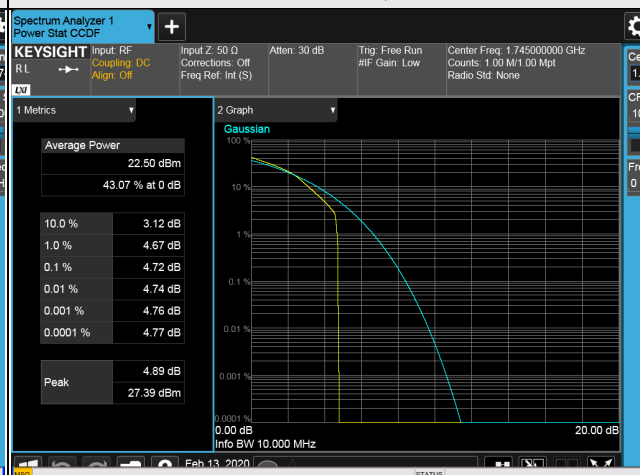
3MHz / 64QAM



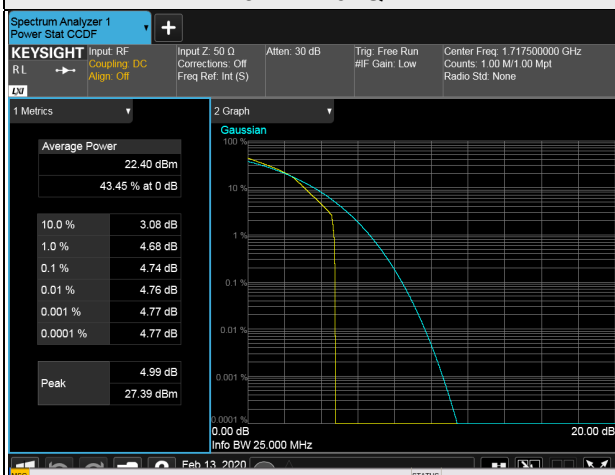
5MHz / 64QAM



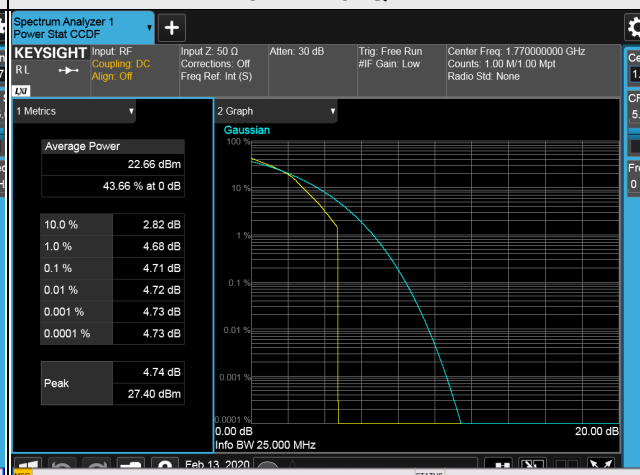
10MHz / 64QAM



15MHz / 64QAM



20MHz / 64QAM

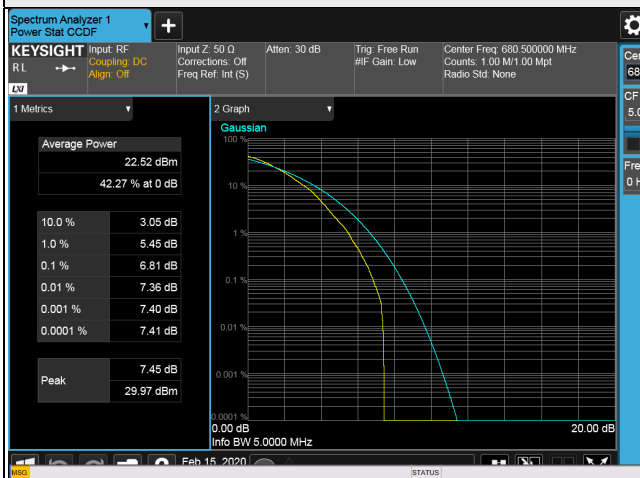


LTE Band 71

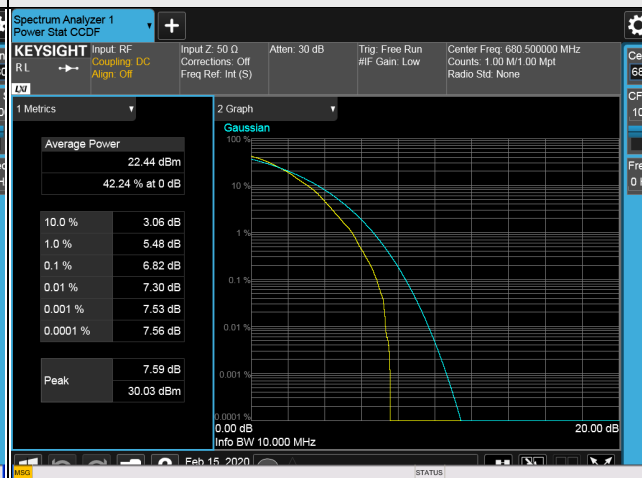
LTE Band 71, Channel Bandwidth 5MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
133147	665.5	3.44	4.89	6.13
133297	680.5	3.57	5.24	6.81
133447	695.5	3.64	5.28	6.79
LTE Band 71, Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
133172	668	3.50	5.07	6.50
133297	680.5	3.77	5.28	6.82
133422	693	5.35	3.73	6.75
LTE Band 71, Channel Bandwidth 15MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
133197	670.5	3.35	4.96	6.60
133297	680.5	3.55	5.22	6.84
133397	690.5	3.47	5.16	6.84
LTE Band 71, Channel Bandwidth 20MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
133222	673	3.33	5.00	6.50
133297	680.5	3.49	5.20	6.72
133372	688	3.37	5.05	6.46

Spectrum Plot of Worst Value

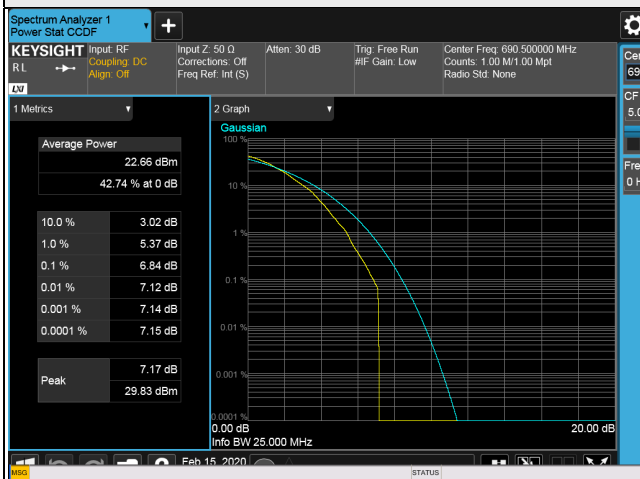
5MHz / 64QAM



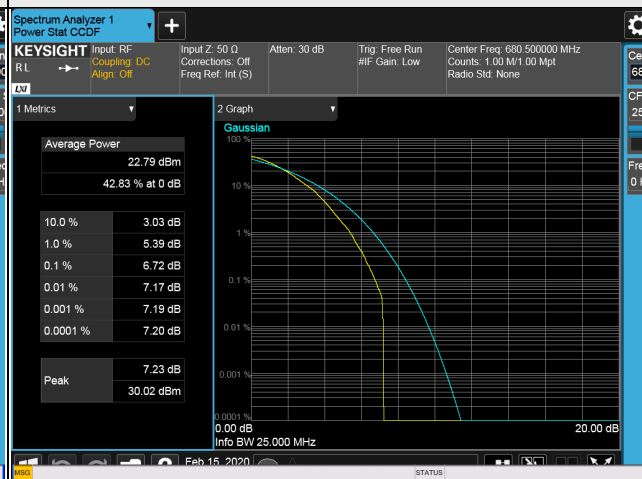
10MHz / 64QAM



15MHz / 64QAM



20MHz / 64QAM



4.7 Conducted Spurious Emissions

4.7.1 Limits of Conducted Spurious Emissions Measurement

For WCDMA Band 4, LTE Band 4, 66

In the FCC 27.53(h), On any frequency outside a licensee's frequency block, The power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log (P)$ dB. The emission limit equal to -13dBm .

For LTE Band 7, 38, 41

In the FCC 27.53(m)(4), On any frequency outside a licensee's frequency block, The power of any emission shall be attenuated below the transmitter power (P) by at least $55 + 10 \log (P)$ dB. The emission limit equal to -25dBm .

For LTE Band 13

According to FCC 27.53(c)(2) for 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.

According to FCC 27.53(f) for operations in the 775-788 MHz, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz. The limit of emissions is equal to -40 dBm

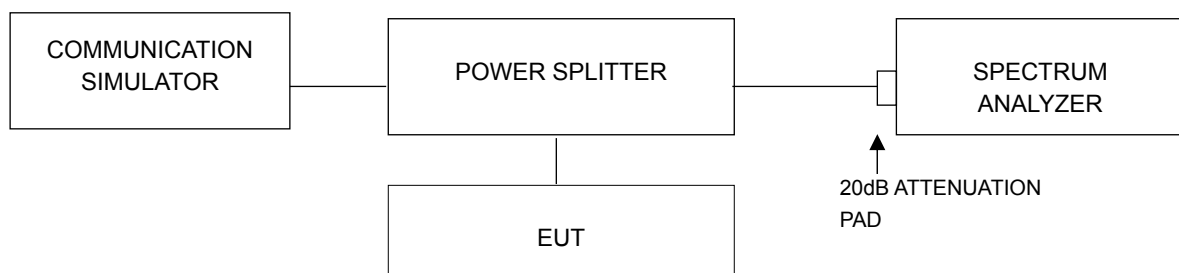
For LTE Band 12, 17, 71

According to FCC 27.53(g) for operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a 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, by at least $43 + 10 \log (P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater.

For LTE Band 30

In the FCC 27.53(a)(4)(iii), the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $70 + 10 \log (P)$ dB. The limit of emission is equal to -40 dBm.

4.7.2 Test Setup



4.7.3 Test Procedure

- All measurements were done at 3 channels: low, middle and high operational frequency range.
- When the spectrum scanned from 9kHz to 7GHz / 8GHz /18GHz /24GHz / 26GHz / 26.5GHz / 27GHz, it shall be connected to the attenuator with the carried frequency.

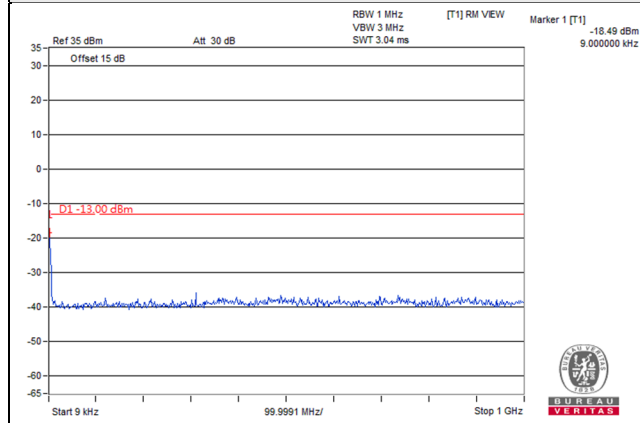
4.7.4 Test Results

WCDMA Band 4

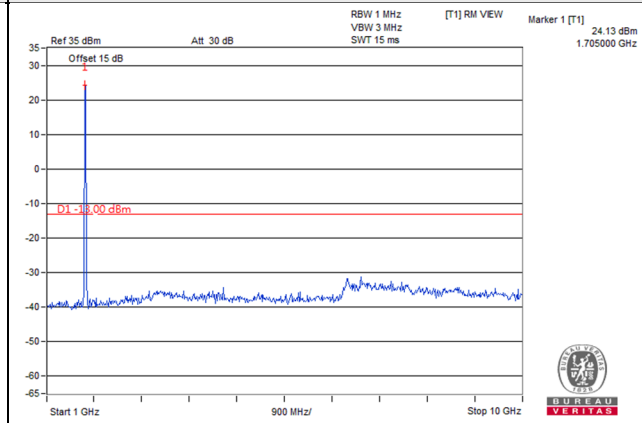
WCDMA

Channel 1312 (1712.4MHz)

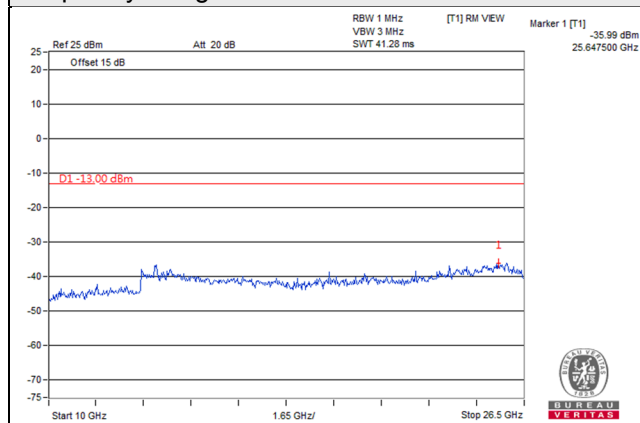
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~10GHz



Frequency Range : 10GHz~26.5GHz

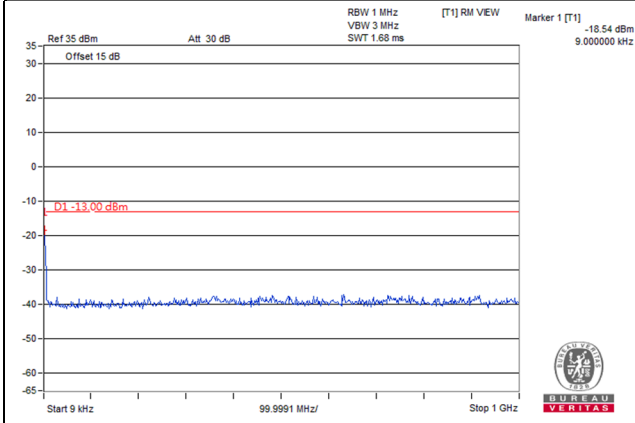


*The 9kHz signal over the limit is from Spectrum.

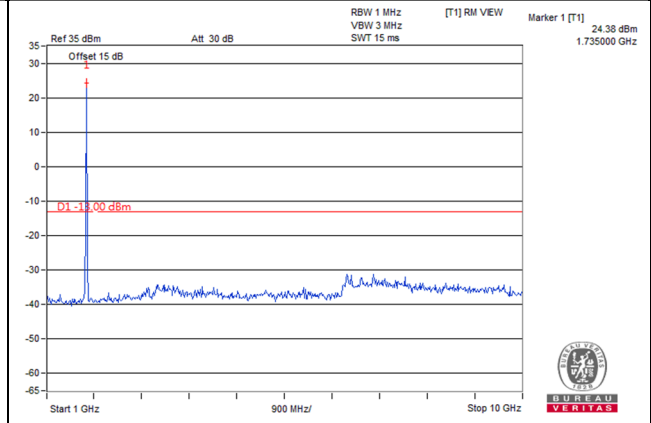
WCDMA

Channel 1413 (1732.6MHz)

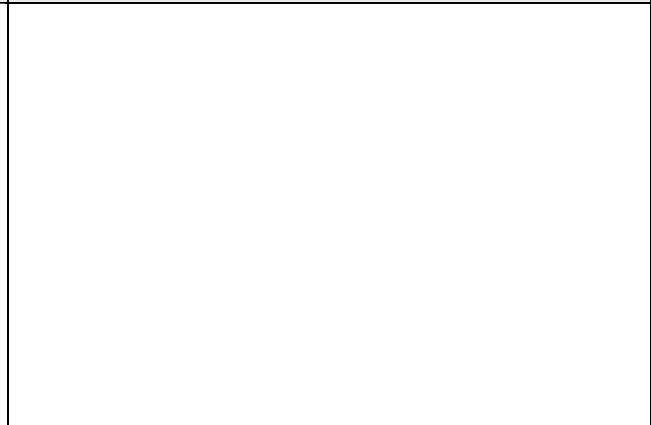
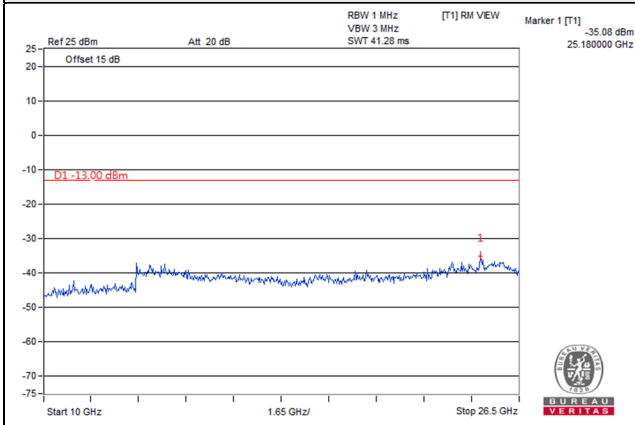
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~10GHz



Frequency Range : 10GHz~26.5GHz

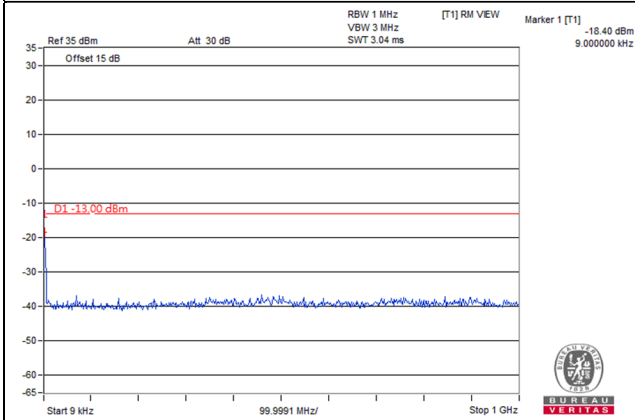


*The 9kHz signal over the limit is from Spectrum.

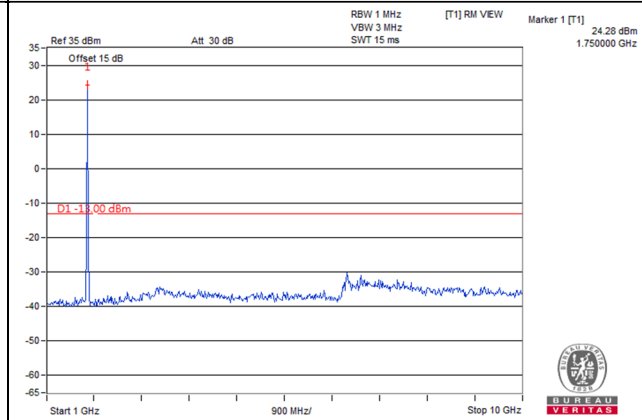
WCDMA

Channel 1513 (1752.6MHz)

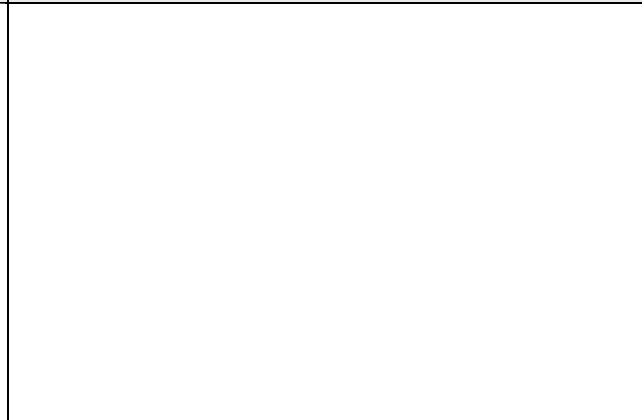
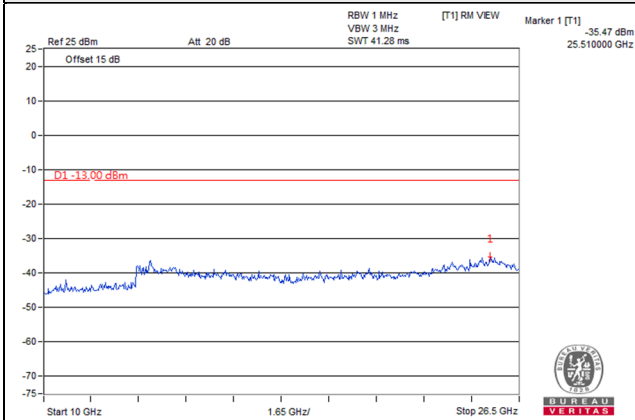
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~10GHz



Frequency Range : 10GHz~26.5GHz

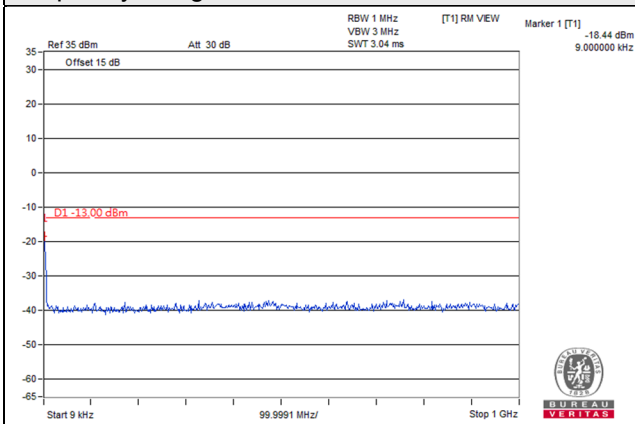


*The 9kHz signal over the limit is from Spectrum.

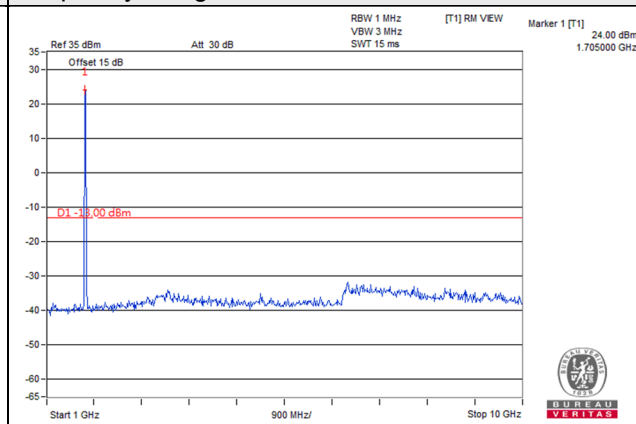
HSDPA

Channel 1312 (1712.4MHz)

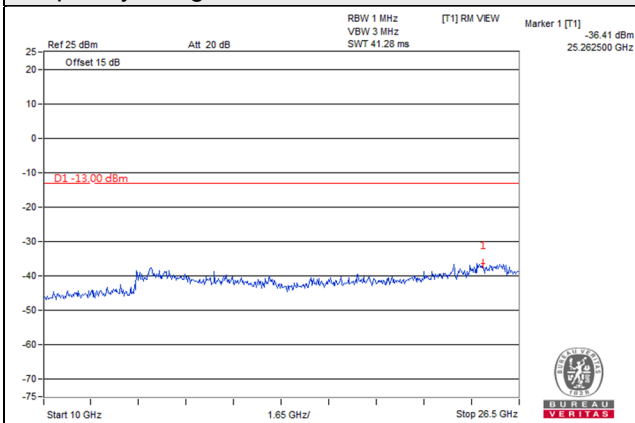
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~10GHz



Frequency Range : 10GHz~26.5GHz

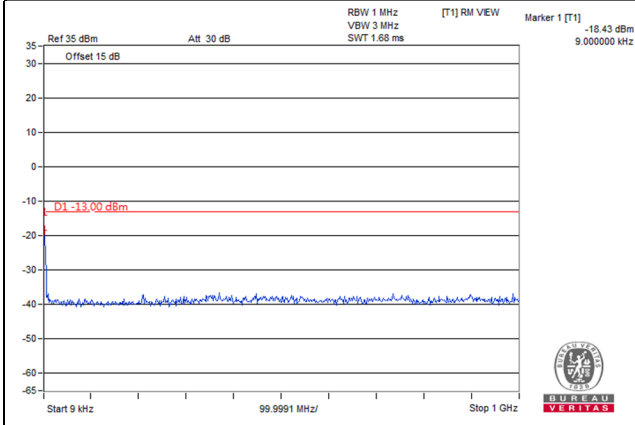


*The 9kHz signal over the limit is from Spectrum.

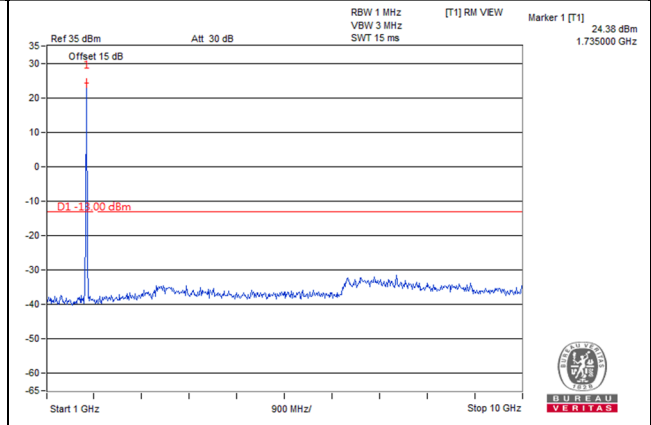
HSDPA

Channel 1413 (1732.6MHz)

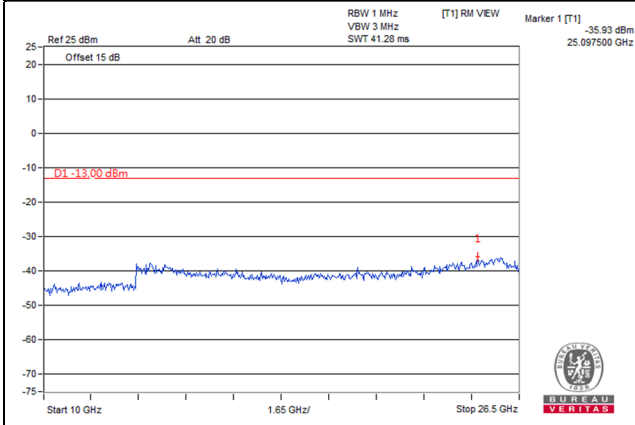
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~10GHz



Frequency Range : 10GHz~26.5GHz

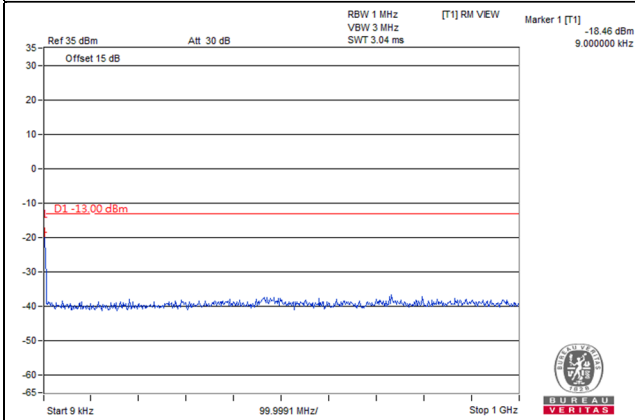


*The 9kHz signal over the limit is from Spectrum.

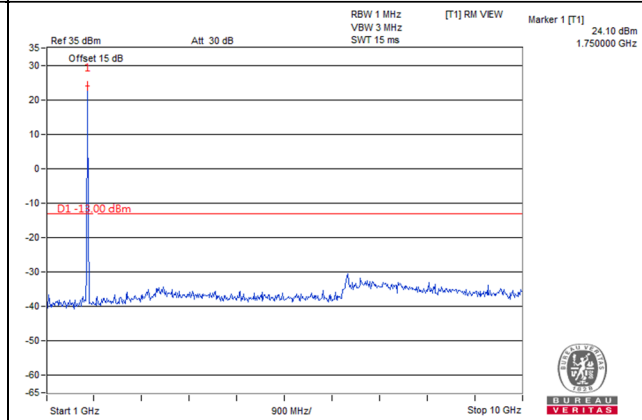
HSDPA

Channel 1513 (1752.6MHz)

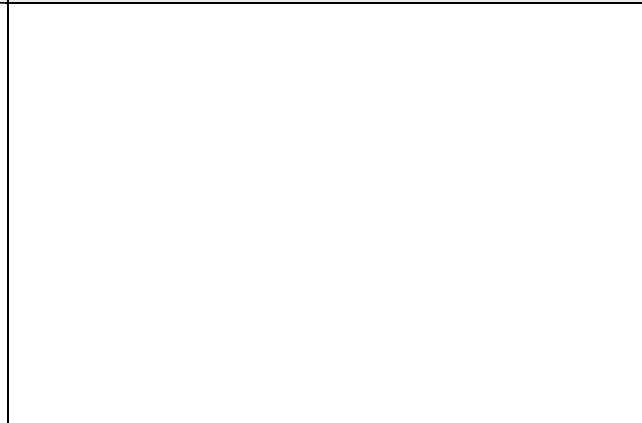
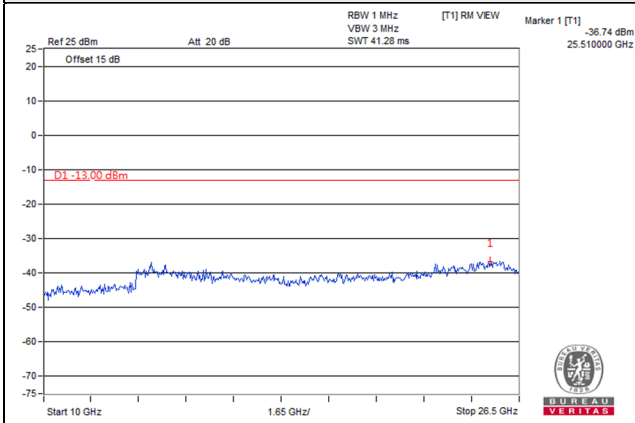
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~10GHz



Frequency Range : 10GHz~26.5GHz

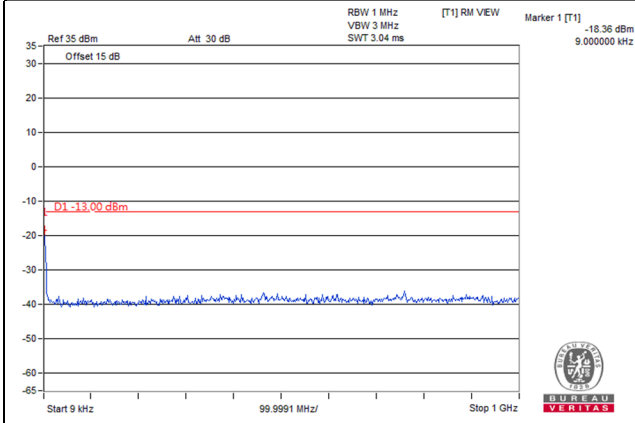


*The 9kHz signal over the limit is from Spectrum.

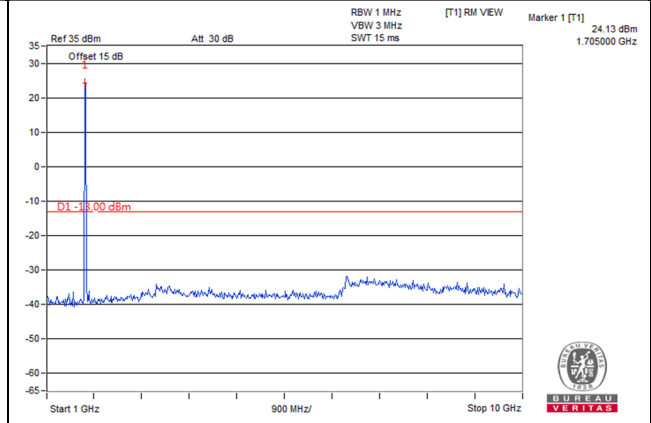
HSUPA

Channel 1312 (1712.4MHz)

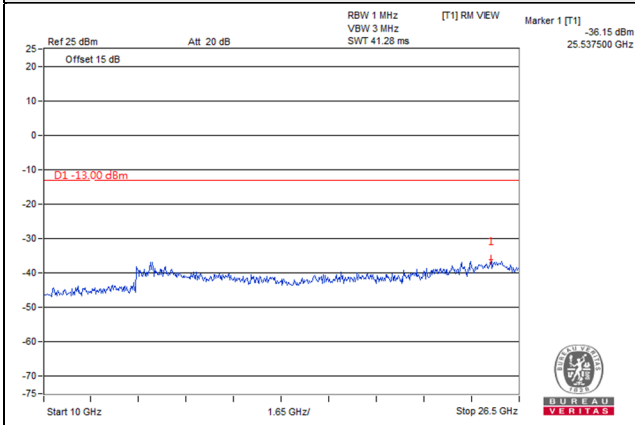
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~10GHz



Frequency Range : 10GHz~26.5GHz

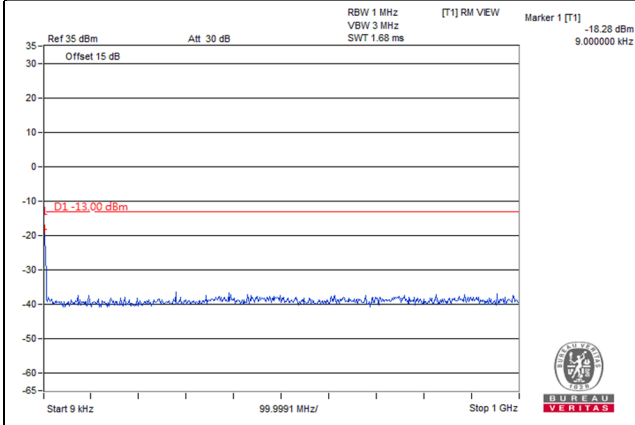


*The 9kHz signal over the limit is from Spectrum.

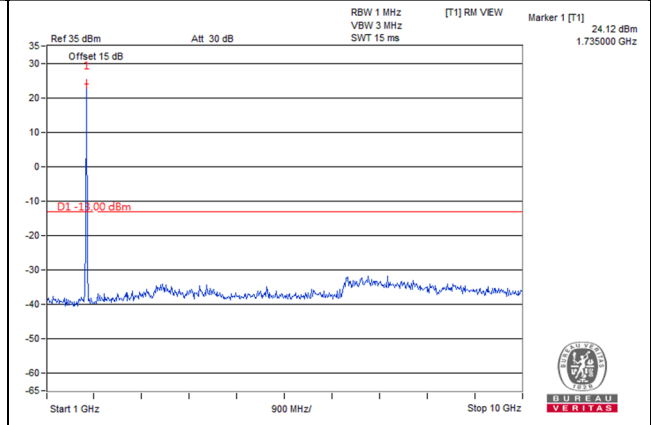
HSUPA

Channel 1413 (1732.6MHz)

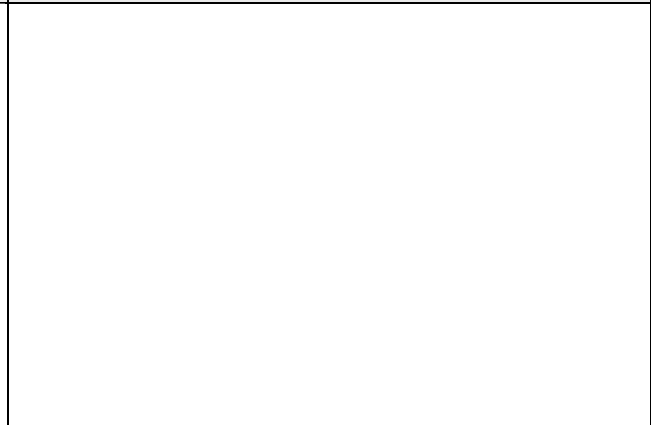
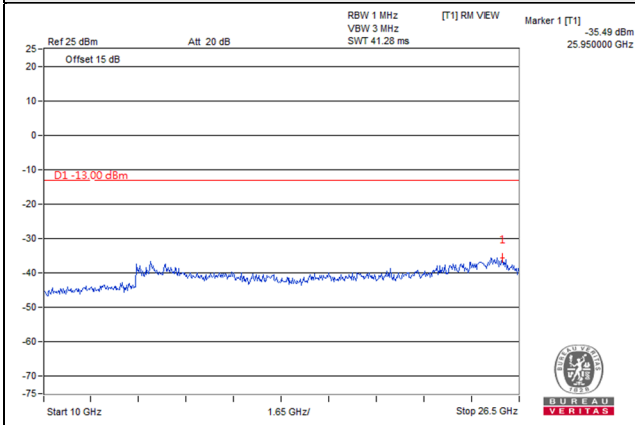
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~10GHz



Frequency Range : 10GHz~26.5GHz

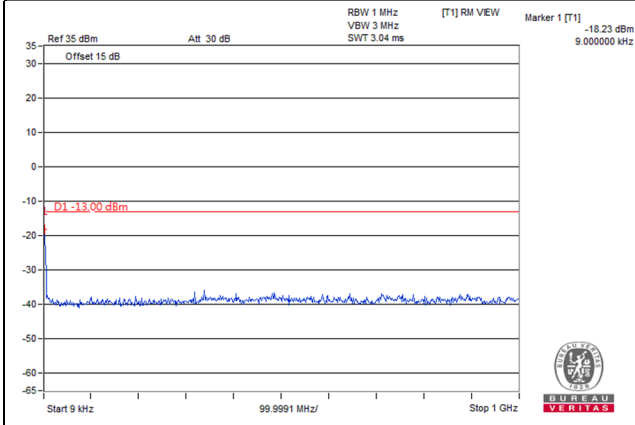


*The 9kHz signal over the limit is from Spectrum.

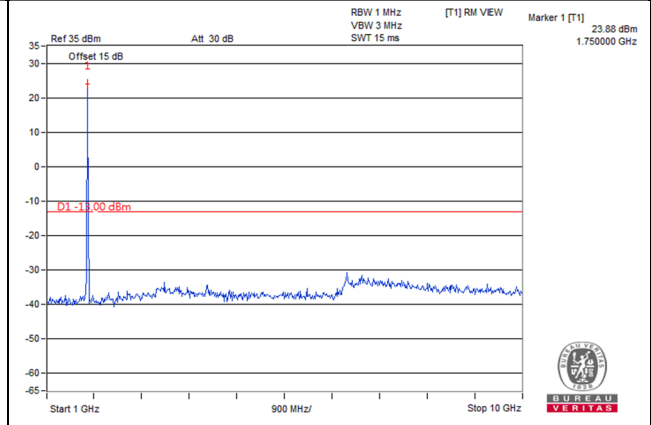
HSUPA

Channel 1513 (1752.6MHz)

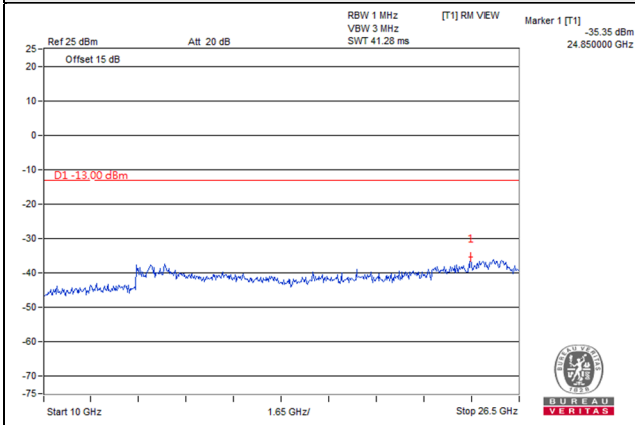
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~10GHz



Frequency Range : 10GHz~26.5GHz



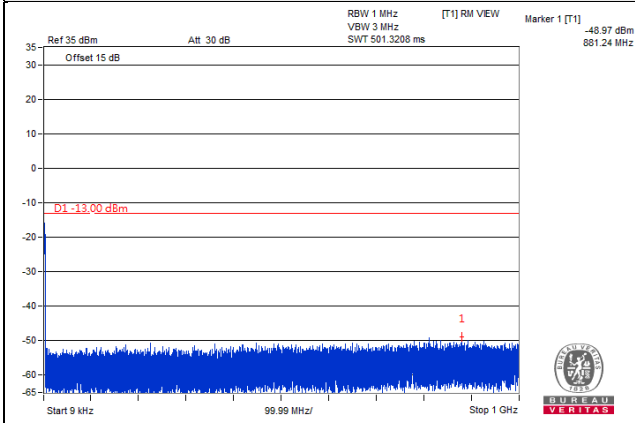
*The 9kHz signal over the limit is from Spectrum.

LTE Band 4

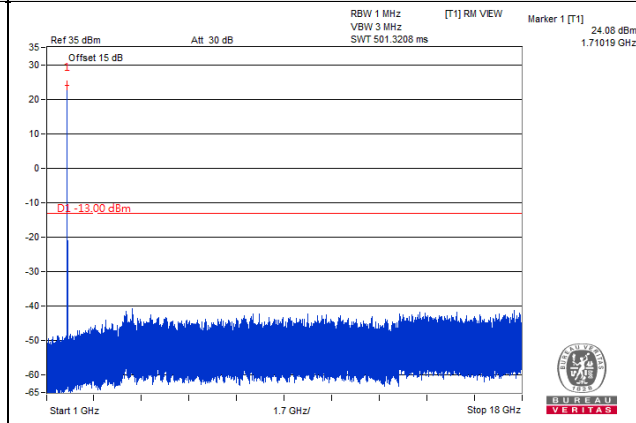
Channel Bandwidth: 1.4MHz

Channel 19957 (1710.7MHz)

Frequency Range : 9kHz~1GHz

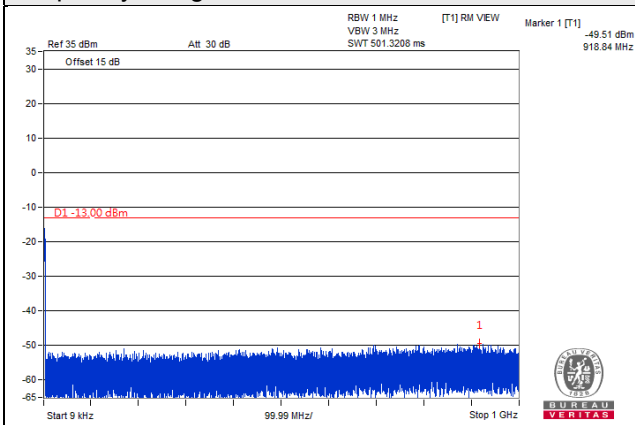


Frequency Range : 1GHz~18GHz

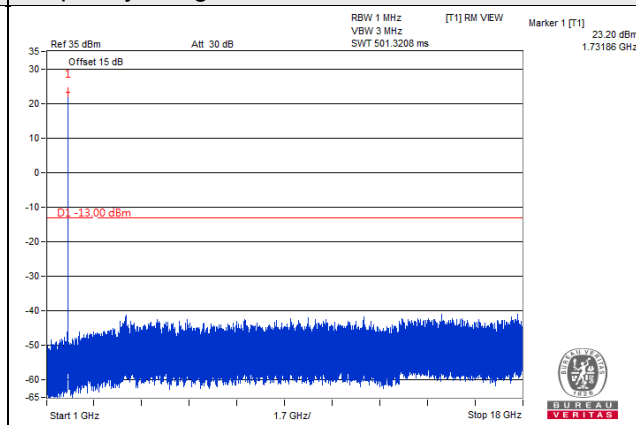


Channel 20175 (1732.5MHz)

Frequency Range : 9kHz~1GHz

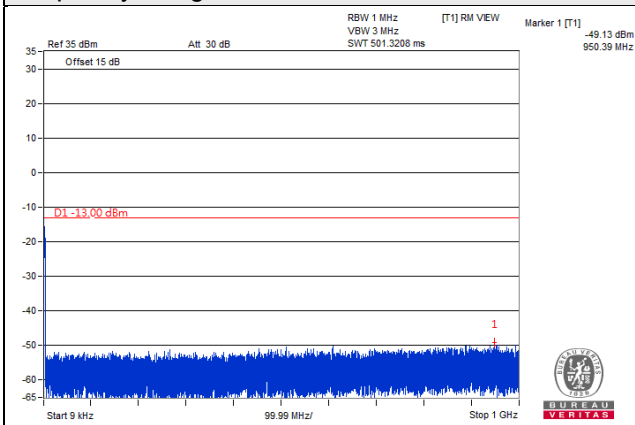


Frequency Range : 1GHz~18GHz

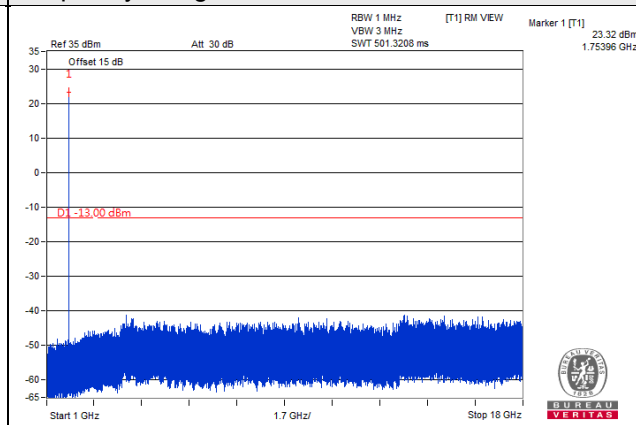


Channel 20393 (1754.3MHz)

Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~18GHz

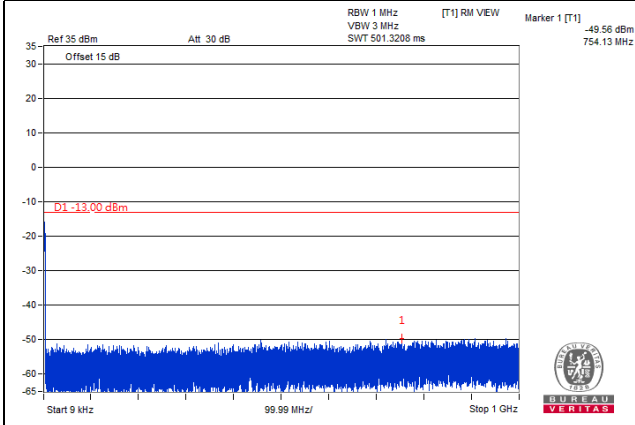


*The 9kHz signal over the limit is from Spectrum.

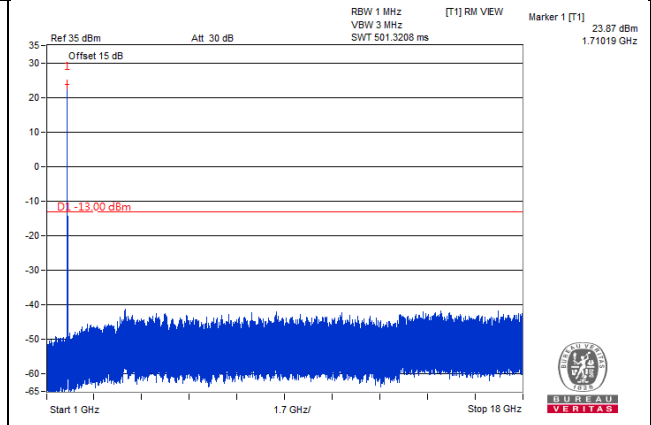
Channel Bandwidth: 3MHz

Channel 19965 (1711.5MHz)

Frequency Range : 9kHz~1GHz

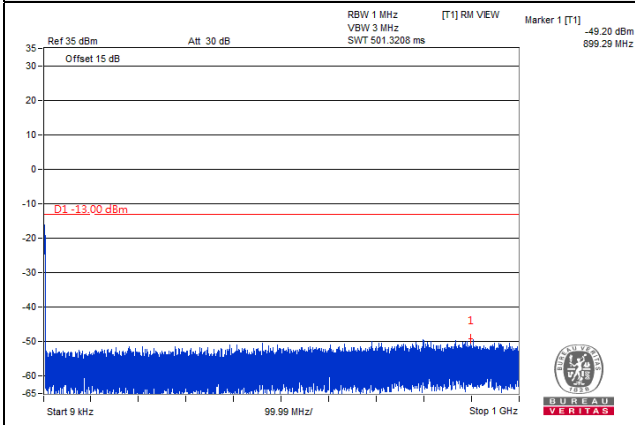


Frequency Range : 1GHz~18GHz

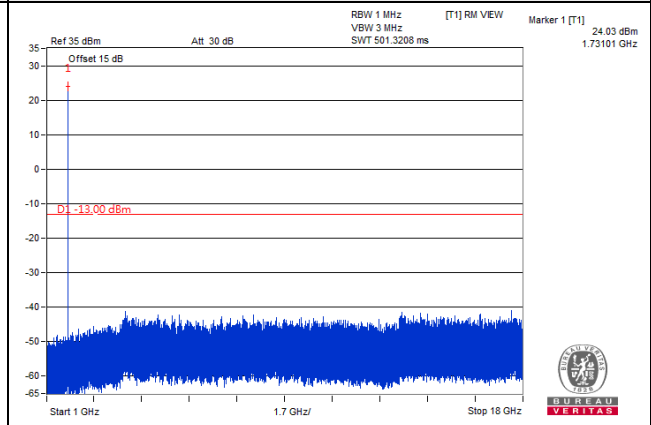


Channel 20175 (1732.5MHz)

Frequency Range : 9kHz~1GHz

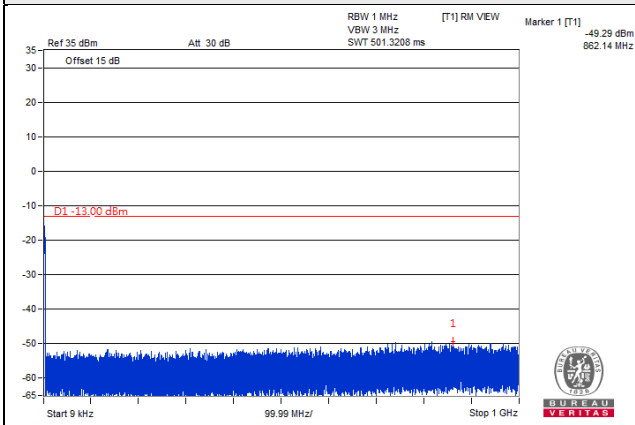


Frequency Range : 1GHz~18GHz

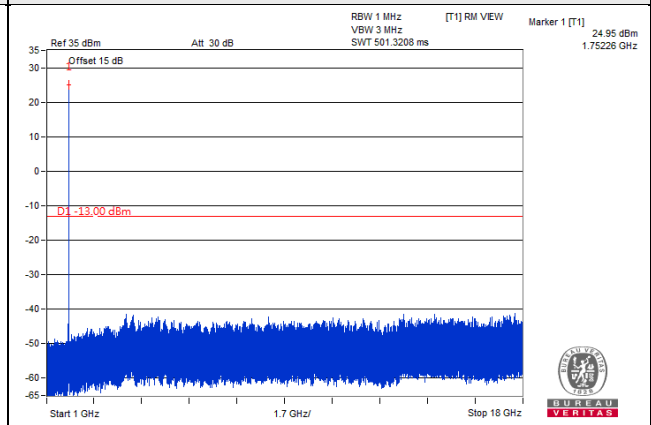


Channel 20385 (1753.5MHz)

Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~18GHz

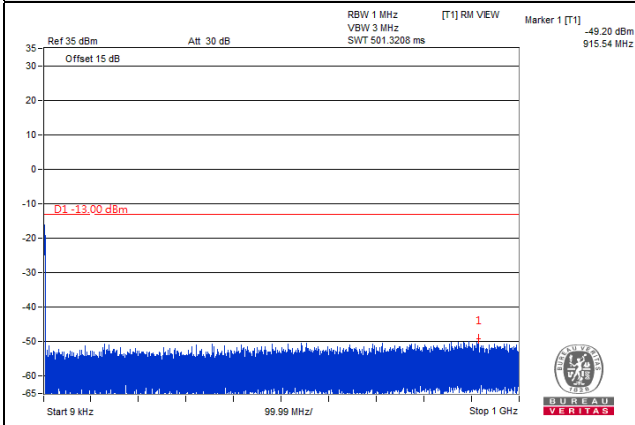


*The 9kHz signal over the limit is from Spectrum.

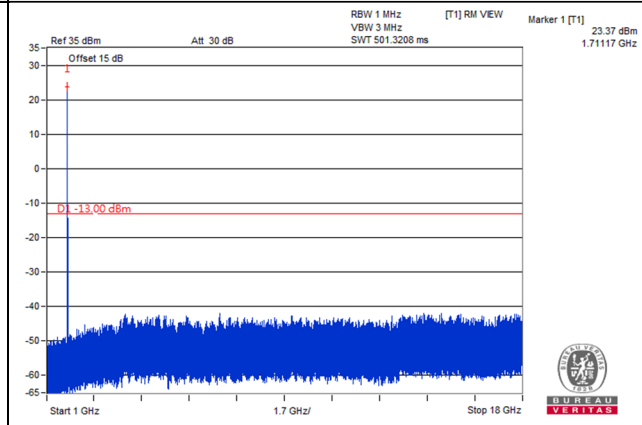
Channel Bandwidth: 5MHz

Channel 19975 (1712.5MHz)

Frequency Range : 9kHz~1GHz

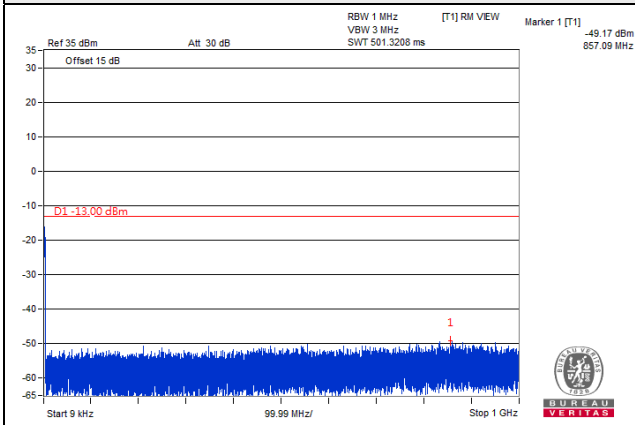


Frequency Range : 1GHz~18GHz

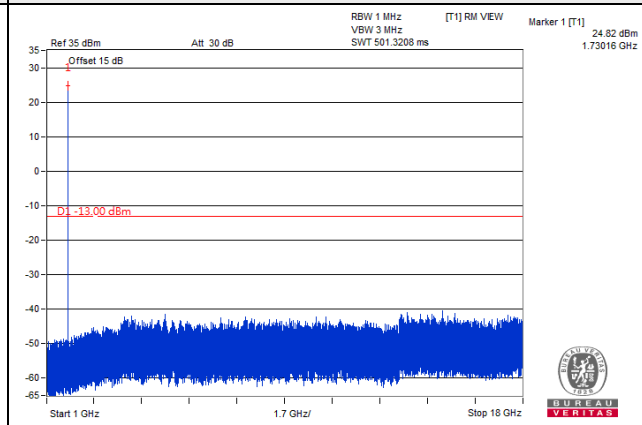


Channel 20175 (1732.5MHz)

Frequency Range : 9kHz~1GHz

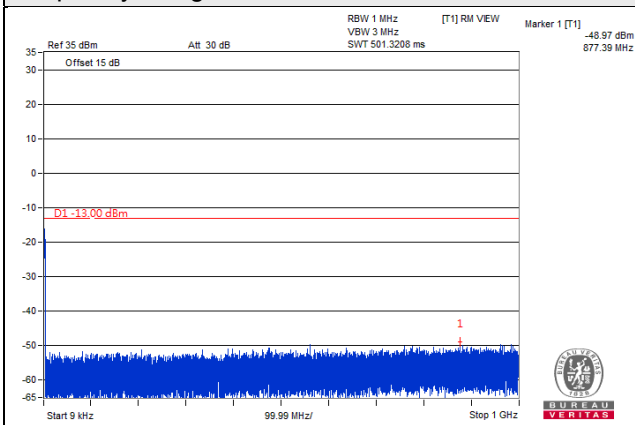


Frequency Range : 1GHz~18GHz

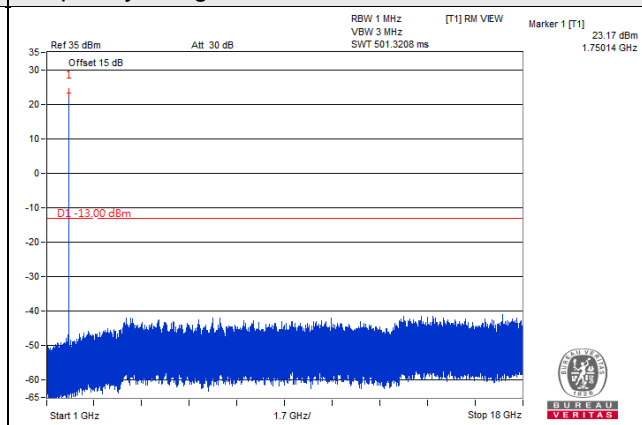


Channel 20375 (1752.5MHz)

Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~18GHz

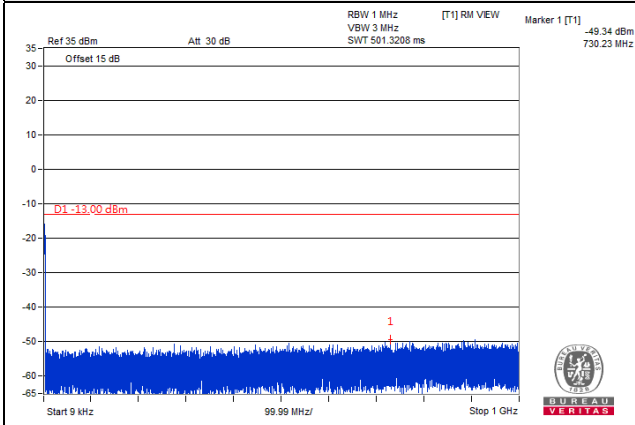


*The 9kHz signal over the limit is from Spectrum.

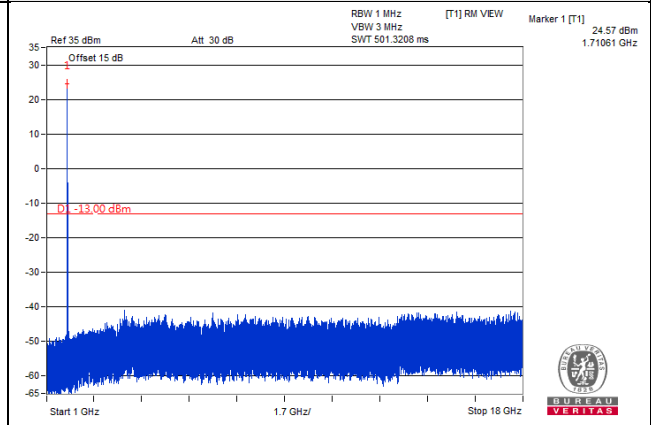
Channel Bandwidth: 10MHz

Channel 20000 (1715.0MHz)

Frequency Range : 9kHz~1GHz

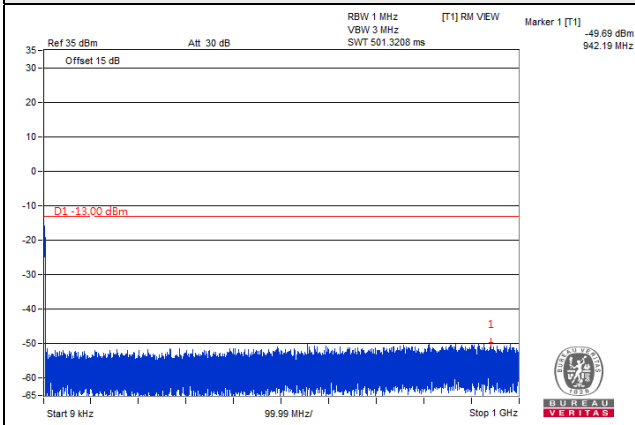


Frequency Range : 1GHz~18GHz

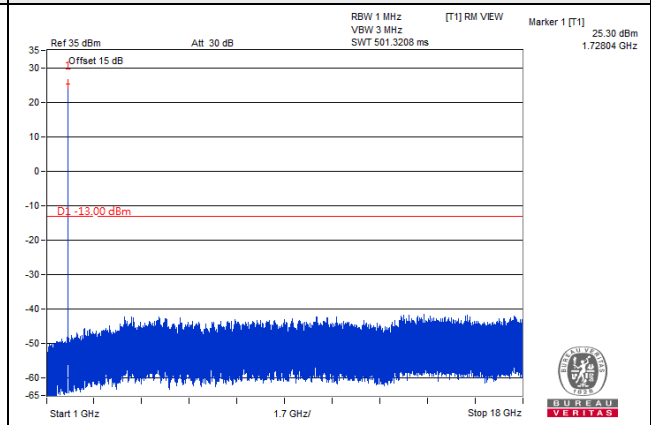


Channel 20175 (1732.5MHz)

Frequency Range : 9kHz~1GHz

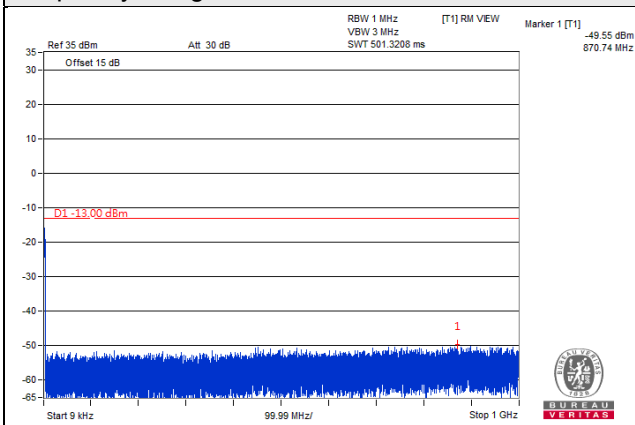


Frequency Range : 1GHz~18GHz

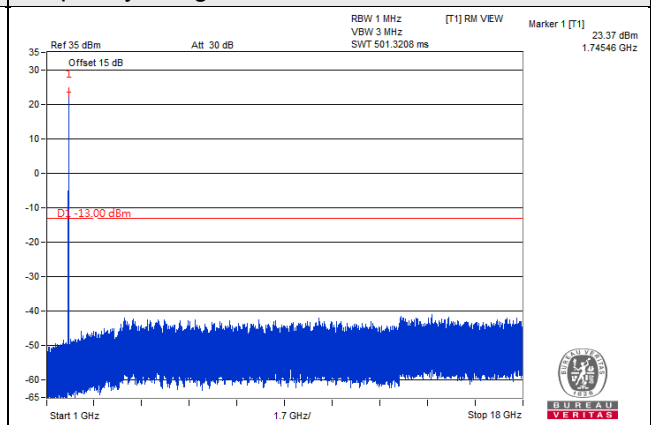


Channel 20350 (1750.0MHz)

Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~18GHz

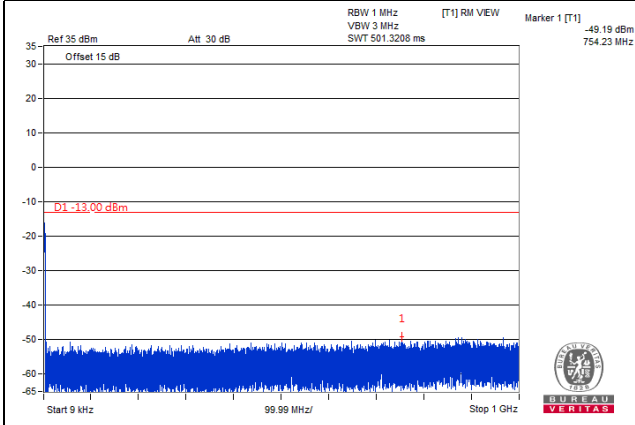


*The 9kHz signal over the limit is from Spectrum.

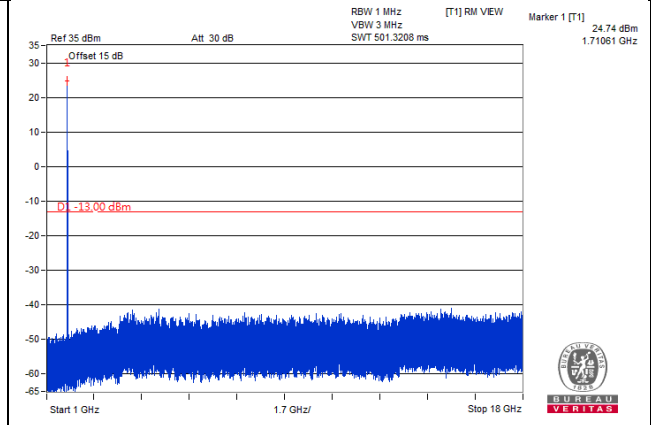
Channel Bandwidth: 15MHz

Channel 20025 (1717.5MHz)

Frequency Range : 9kHz~1GHz

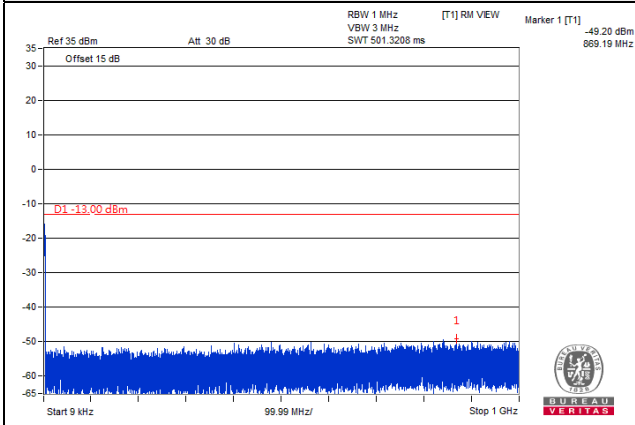


Frequency Range : 1GHz~18GHz

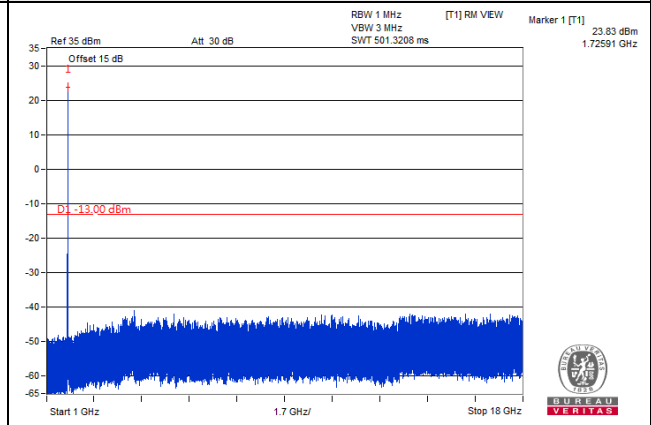


Channel 20175 (1732.5MHz)

Frequency Range : 9kHz~1GHz

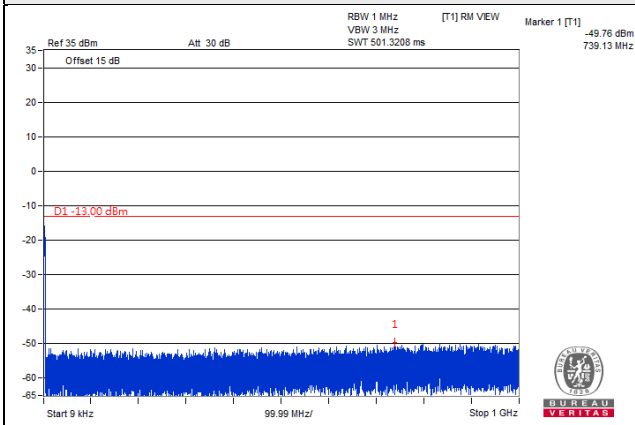


Frequency Range : 1GHz~18GHz

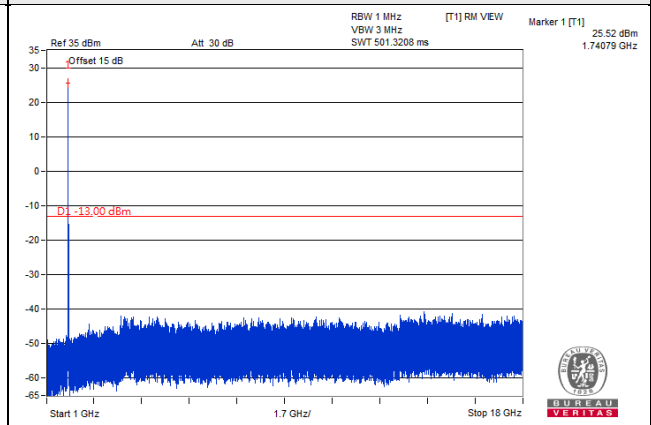


Channel 20325 (1747.5MHz)

Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~18GHz

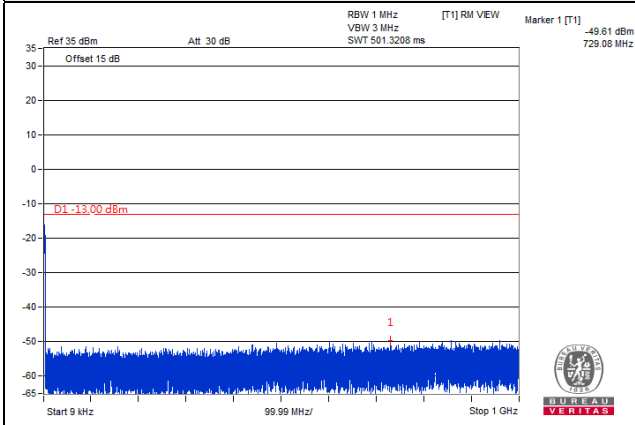


*The 9kHz signal over the limit is from Spectrum.

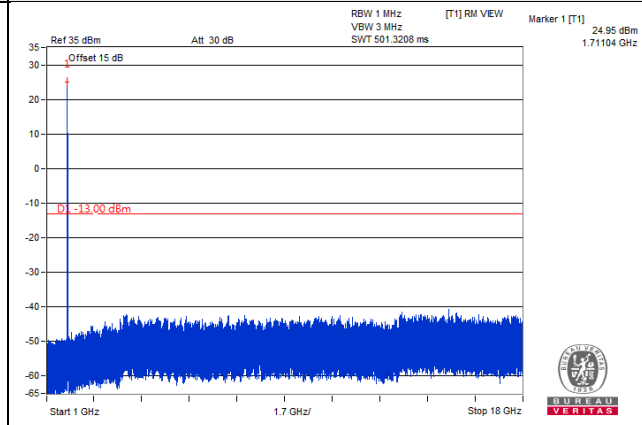
Channel Bandwidth: 20MHz

Channel 20050 (1720.0MHz)

Frequency Range : 9kHz~1GHz

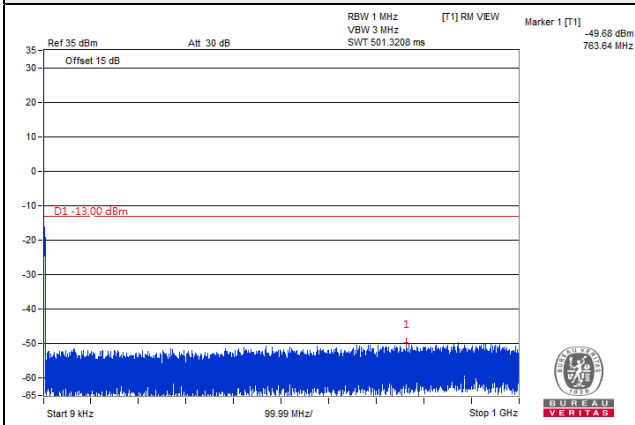


Frequency Range : 1GHz~18GHz

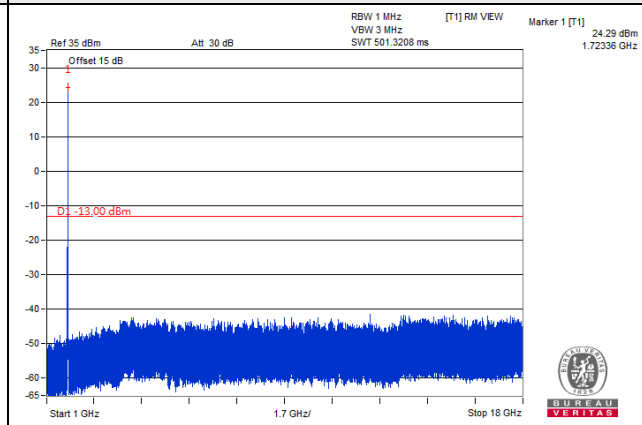


Channel 20175 (1732.5MHz)

Frequency Range : 9kHz~1GHz

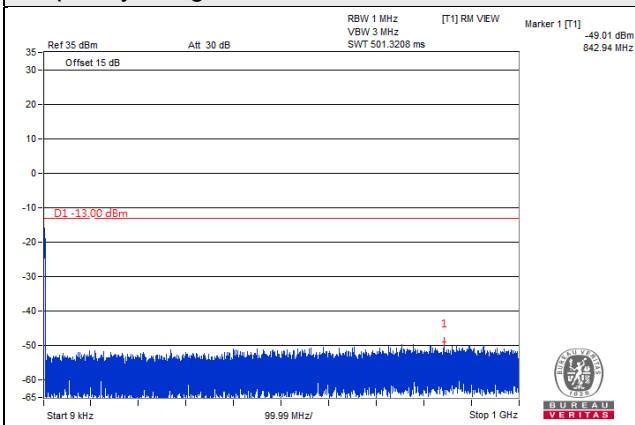


Frequency Range : 1GHz~18GHz

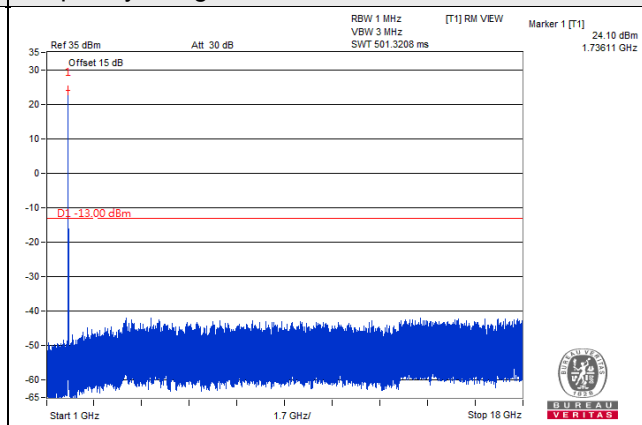


Channel 20300 (1745.0MHz)

Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~18GHz



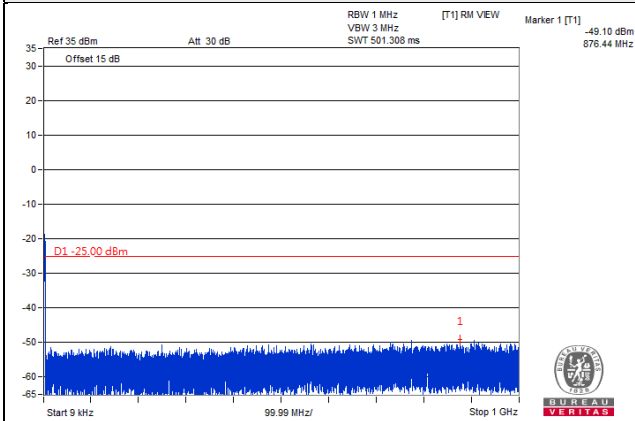
*The 9kHz signal over the limit is from Spectrum.

LTE Band 7

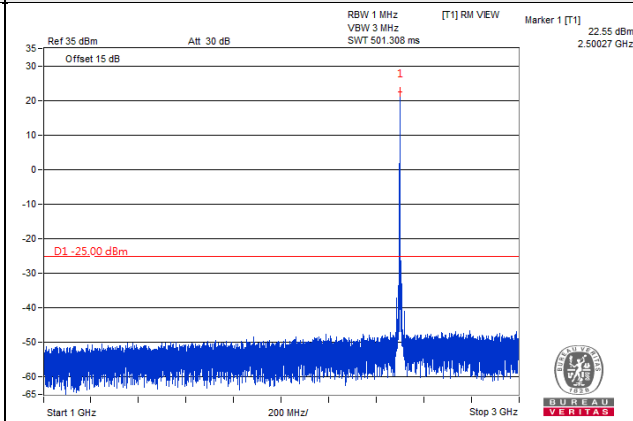
Channel Band width: 5MHz

Channel 20775(2502.5MHz)

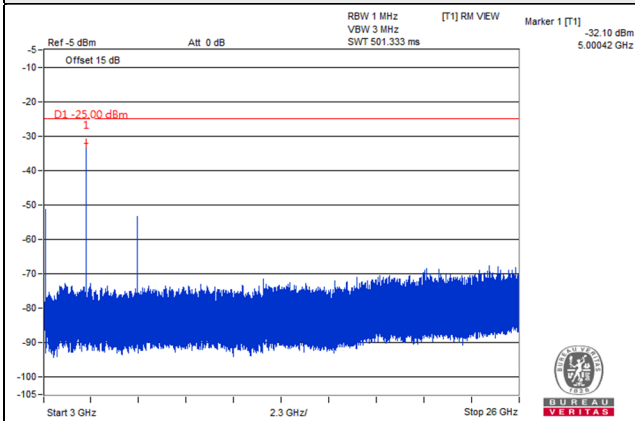
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~3GHz



Frequency Range : 3GHz~26GHz

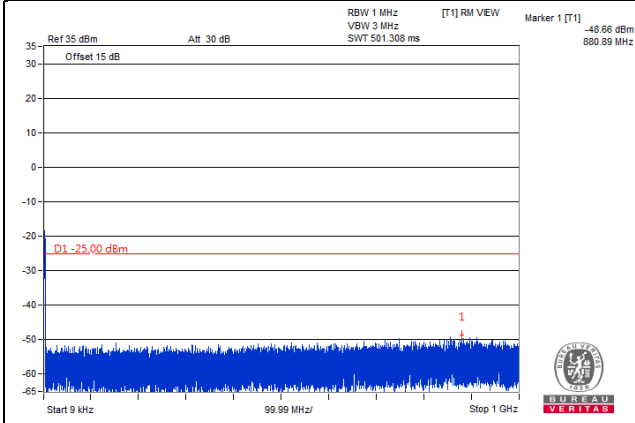


*The 9kHz signal over the limit is from Spectrum.

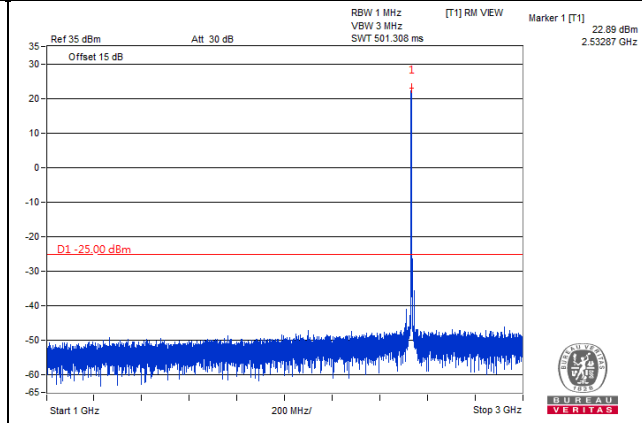
Channel Band width: 5MHz

Channel 21100(2535MHz)

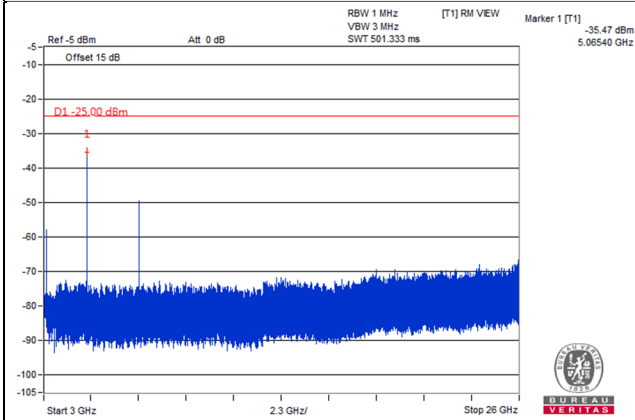
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~3GHz



Frequency Range : 3GHz~26GHz

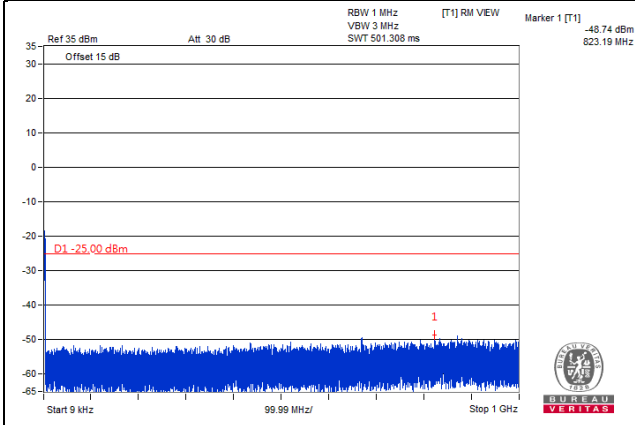


*The 9kHz signal over the limit is from Spectrum.

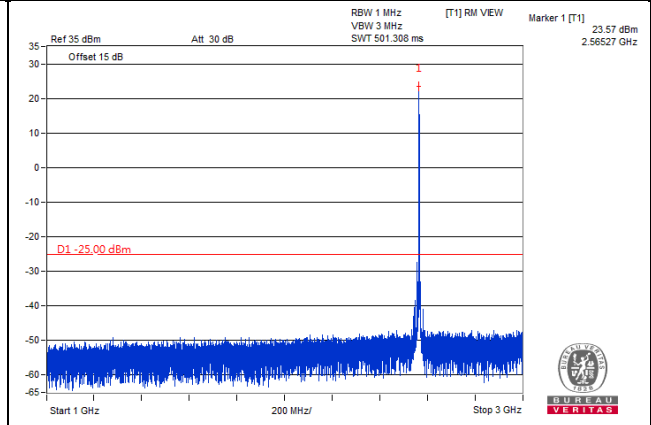
Channel Band width: 5MHz

Channel 21425(2567.5MHz)

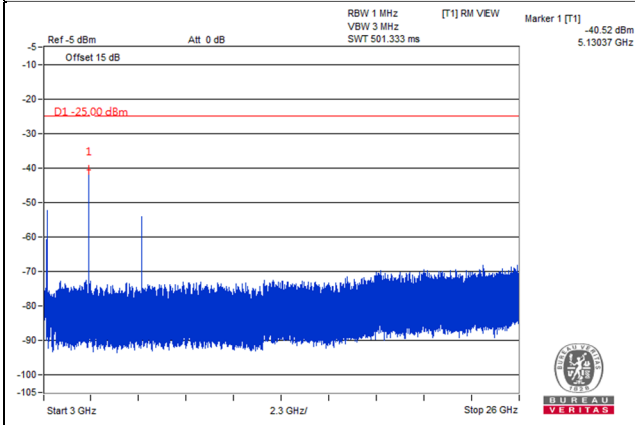
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~3GHz



Frequency Range : 3GHz~26GHz

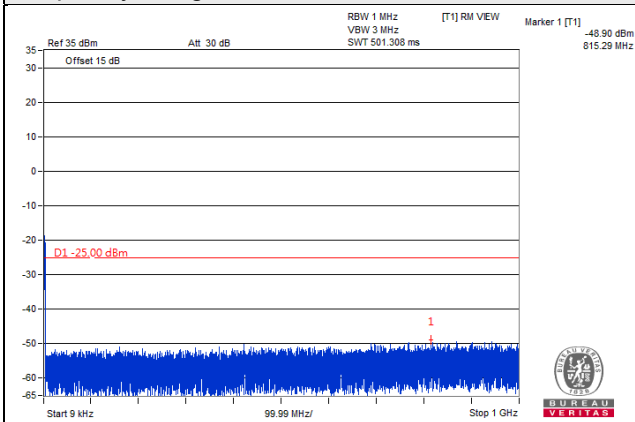


*The 9kHz signal over the limit is from Spectrum.

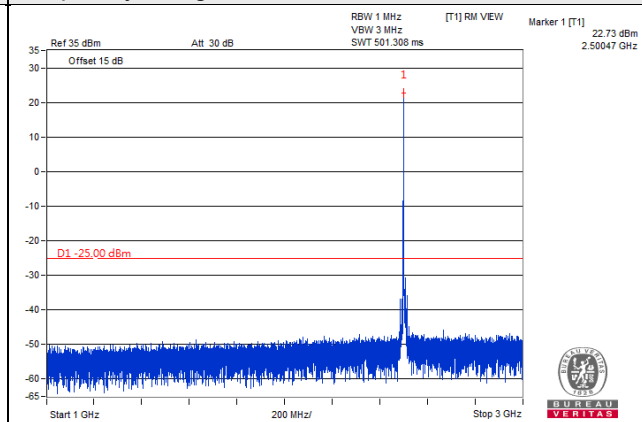
Channel Band width: 10MHz

Channel 20800(2505MHz)

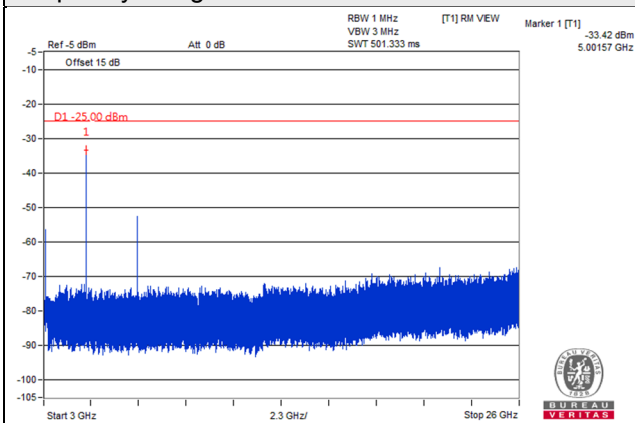
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~3GHz



Frequency Range : 3GHz~26GHz

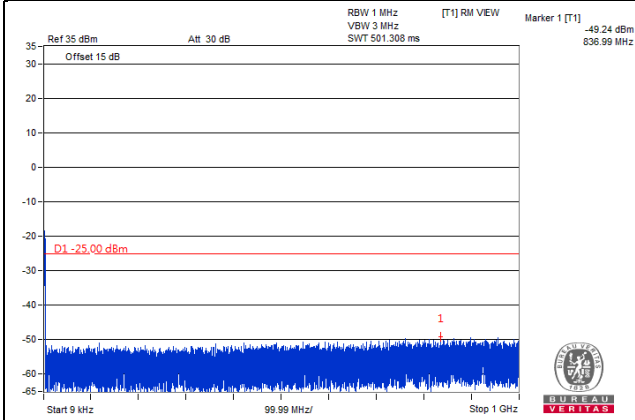


*The 9kHz signal over the limit is from Spectrum.

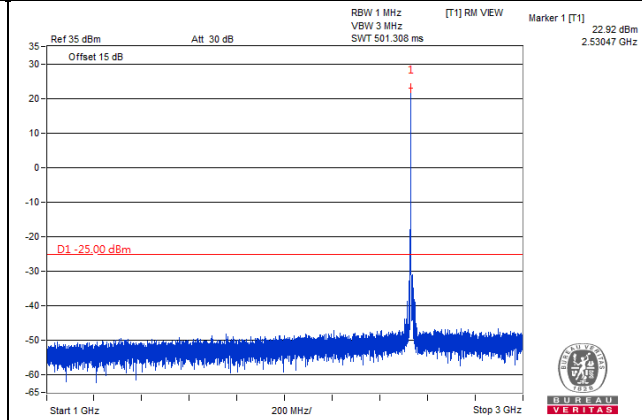
Channel Band width: 10MHz

Channel 21100(2535MHz)

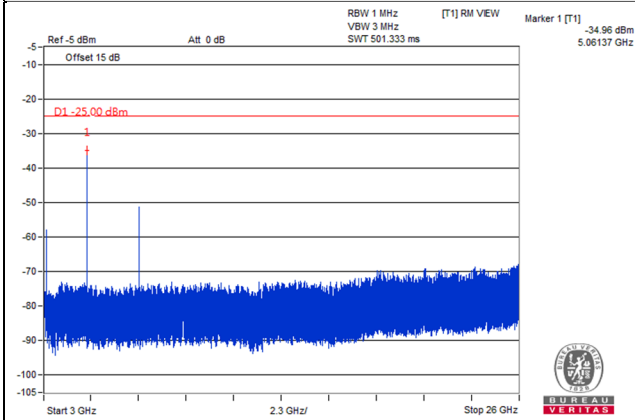
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~3GHz



Frequency Range : 3GHz~26GHz

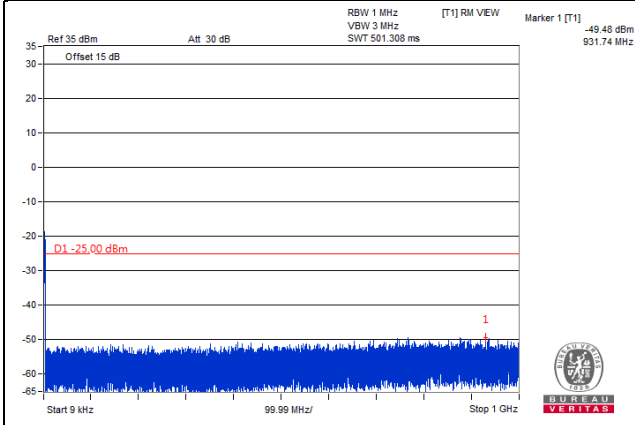


*The 9kHz signal over the limit is from Spectrum.

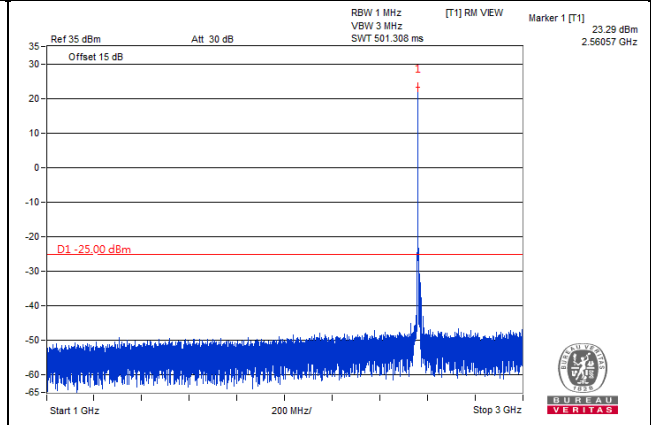
Channel Band width: 10MHz

Channel 21400(2565MHz)

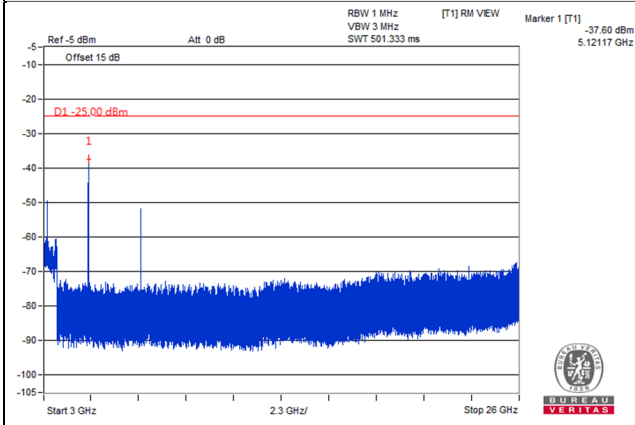
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~3GHz



Frequency Range : 3GHz~26GHz

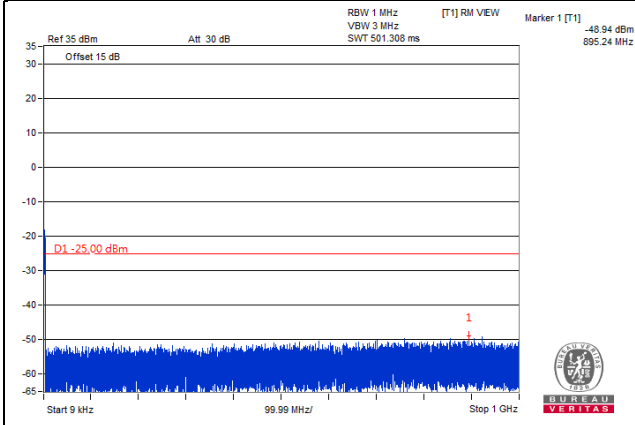


*The 9kHz signal over the limit is from Spectrum.

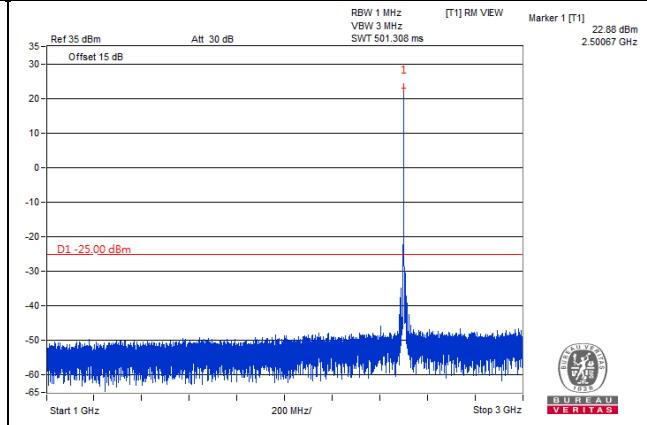
Channel Band width: 15MHz

Channel 20825(2507.5MHz)

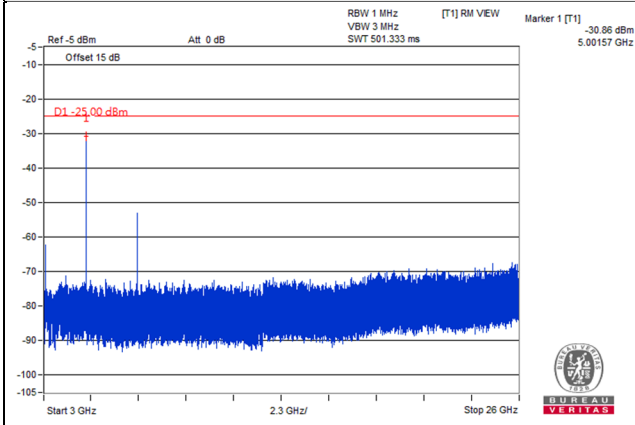
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~3GHz



Frequency Range : 3GHz~26GHz

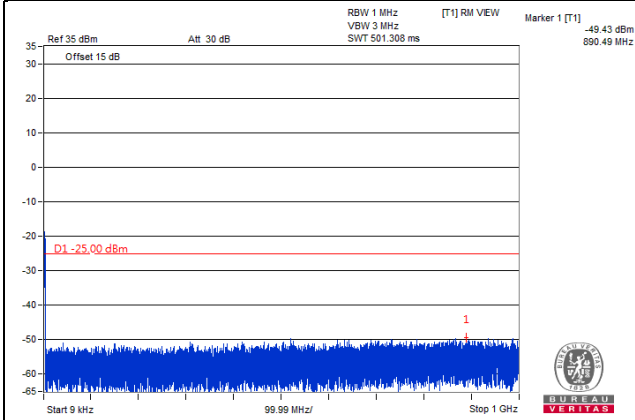


*The 9kHz signal over the limit is from Spectrum.

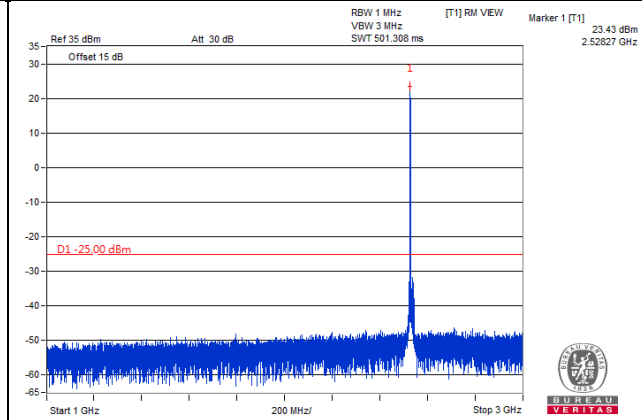
Channel Band width: 15MHz

Channel 21100(2535MHz)

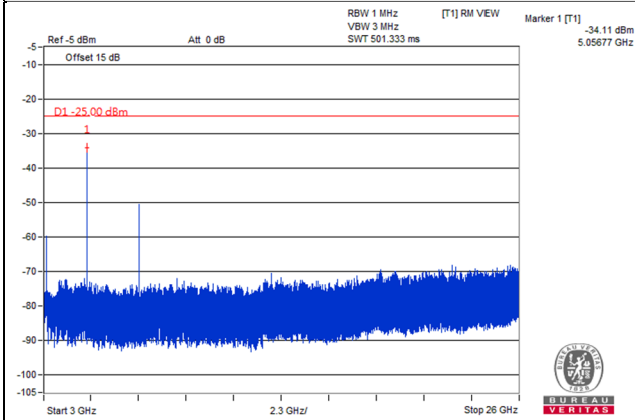
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~3GHz



Frequency Range : 3GHz~26GHz

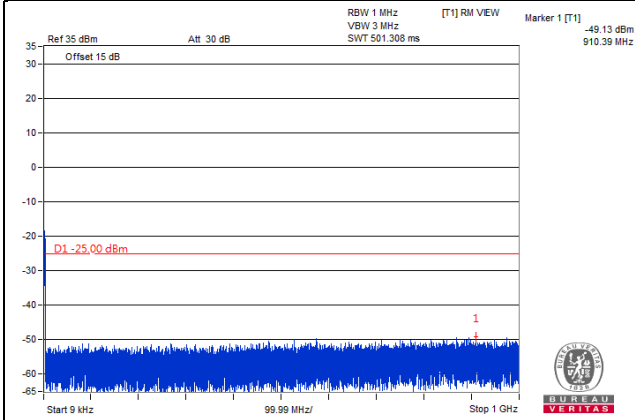


*The 9kHz signal over the limit is from Spectrum.

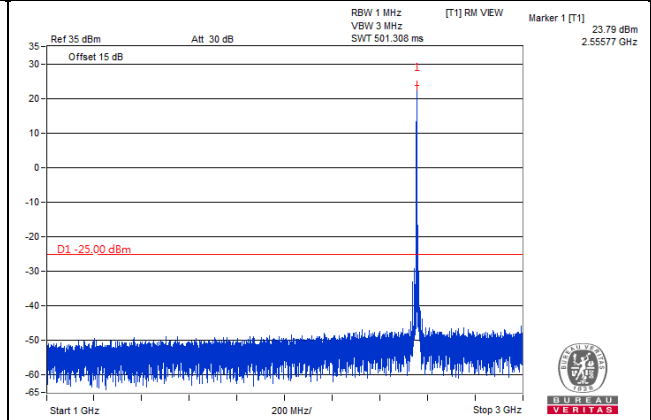
Channel Band width: 15MHz

Channel 21375(2562.5MHz)

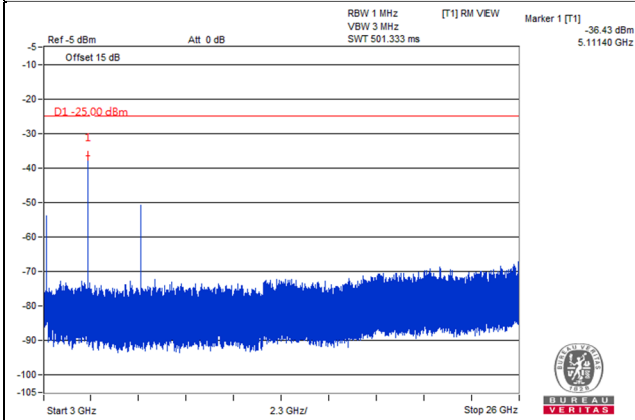
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~3GHz



Frequency Range : 3GHz~26GHz

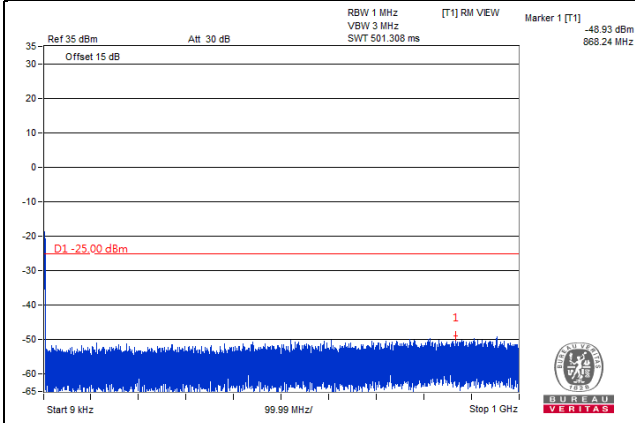


*The 9kHz signal over the limit is from Spectrum.

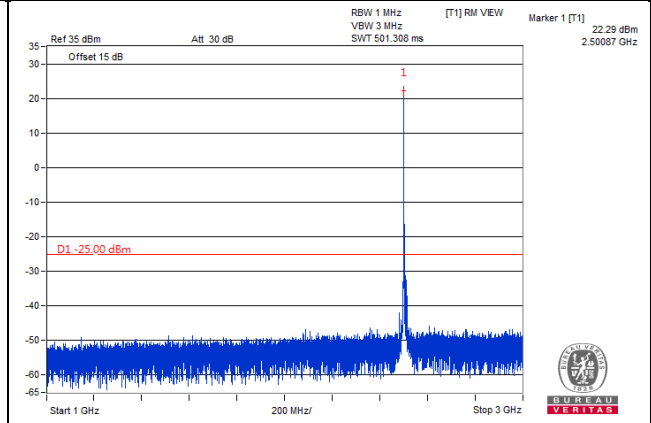
Channel Band width: 20MHz

Channel 20850(2510MHz)

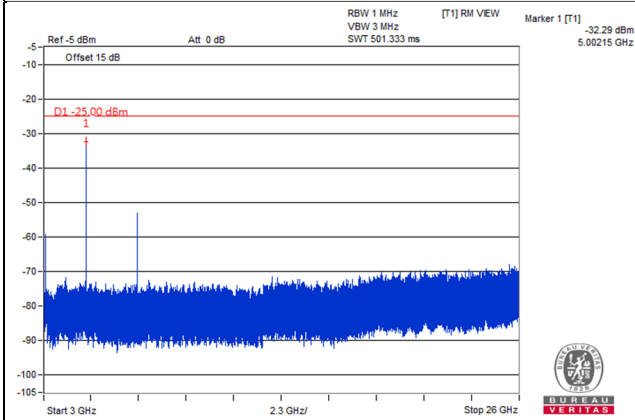
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~3GHz



Frequency Range : 3GHz~26GHz

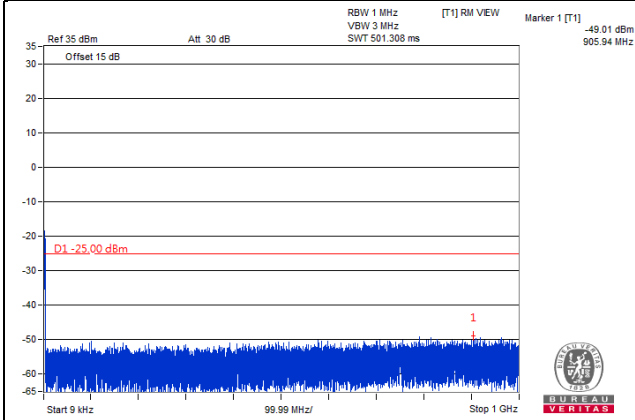


*The 9kHz signal over the limit is from Spectrum.

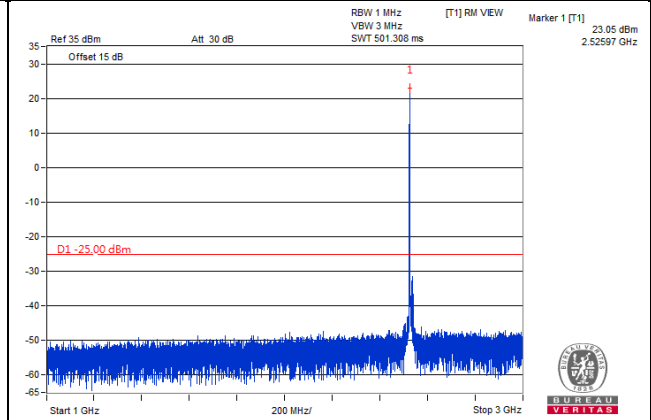
Channel Band width: 20MHz

Channel 21100(2535MHz)

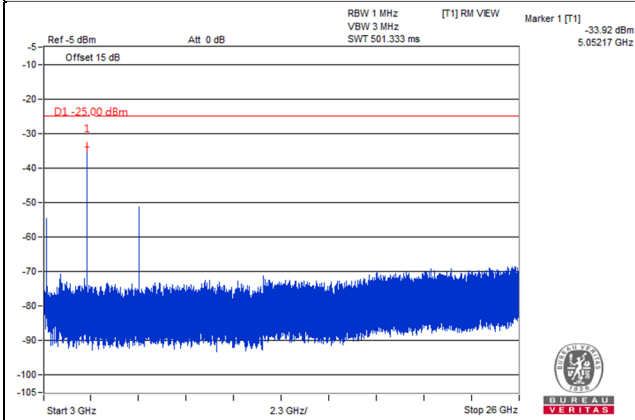
Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~3GHz



Frequency Range : 3GHz~26GHz



*The 9kHz signal over the limit is from Spectrum.