

Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Wifi Universal Smart Plug

Trade Mark: /

Test Model: WUSP-10A

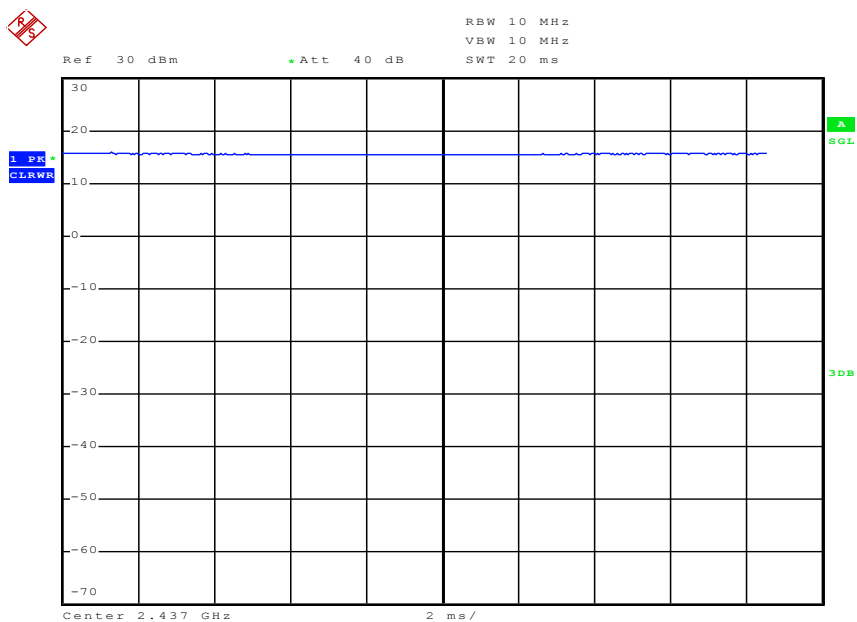
Environmental Conditions

Temperature:	23.4 ° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Li Huan
Supervised by:	Wang Chuang

A.1 Duty Cycle

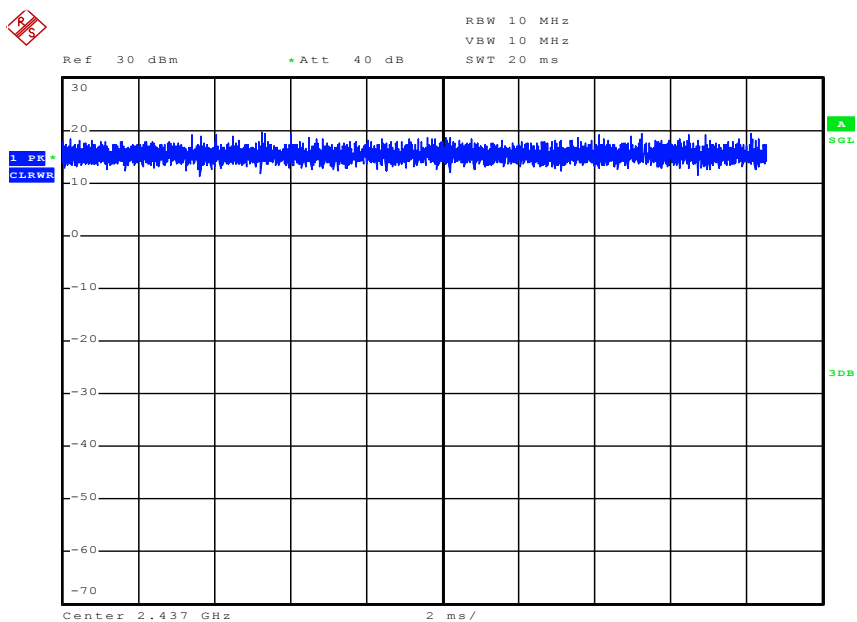
Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
11B	2437	Ant1	100	PASS
11G	2437	Ant1	100	PASS
11N20SISO	2437	Ant1	100	PASS

Duty Cycle_11B_2437_Ant1



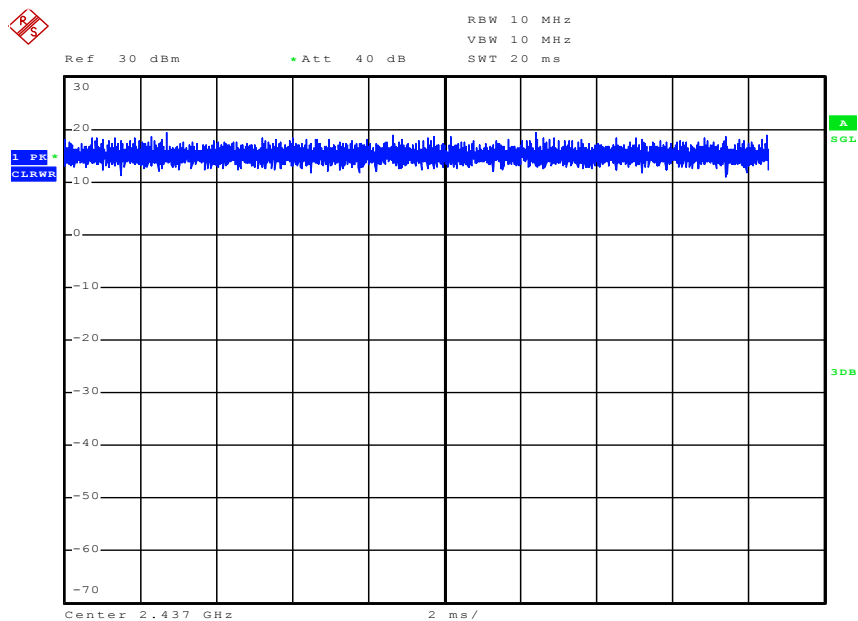
Date: 11.SEP.2019 22:24:24

Duty Cycle_11G_2437_Ant1



Date: 11.SEP.2019 22:24:51

Duty Cycle_11N20SISO_2437_Ant1



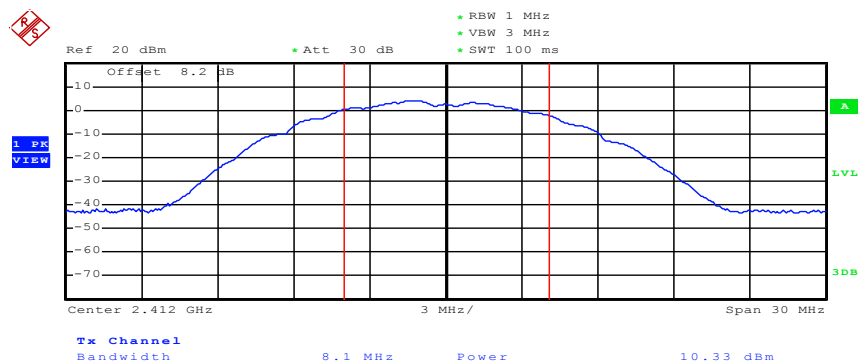
Date: 11.SEP.2019 22:25:32

A.2 Maximum Conducted Output Power

Mode	Channel	Meas.Level [dBm]	Limit [dBm]	Verdict
11B	LCH	10.33	30	PASS
	MCH	10.47	30	PASS
	HCH	9.45	30	PASS
11G	LCH	11.18	30	PASS
	MCH	11.57	30	PASS
	HCH	10.79	30	PASS
11N20SISO	LCH	11.08	30	PASS
	MCH	11.57	30	PASS
	HCH	9.5	30	PASS

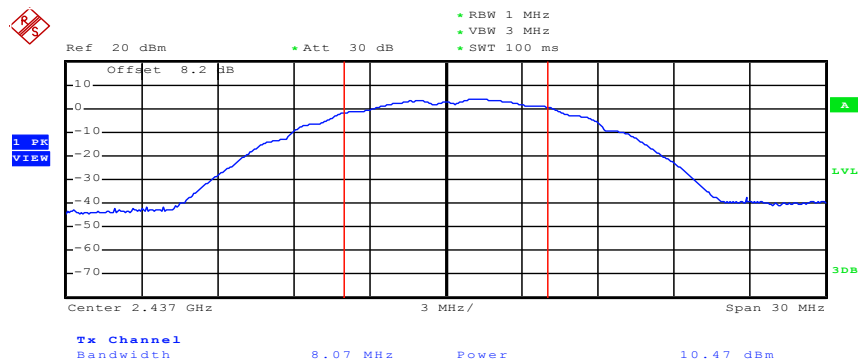
Test Graphs

11B/LCH



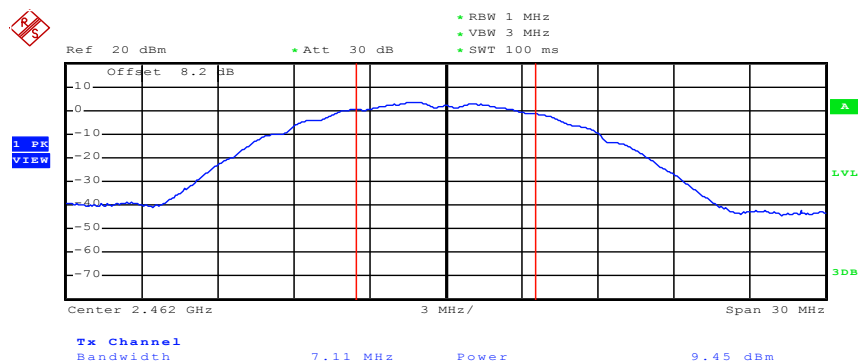
Date: 11 SEP 2019 21:55:43

11B/MCH



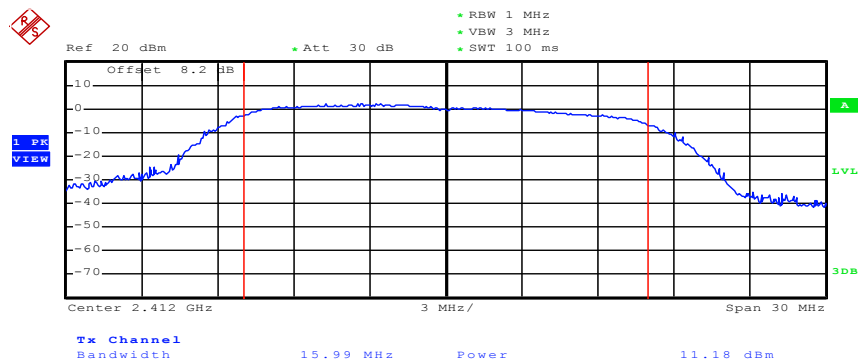
Date: 11 SEP 2019 21:58:15

11B/HCH



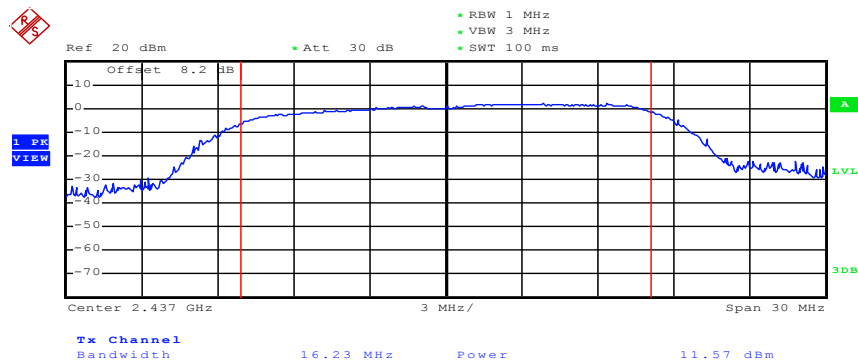
Date: 11.SEP.2019 22:00:02

11G/LCH



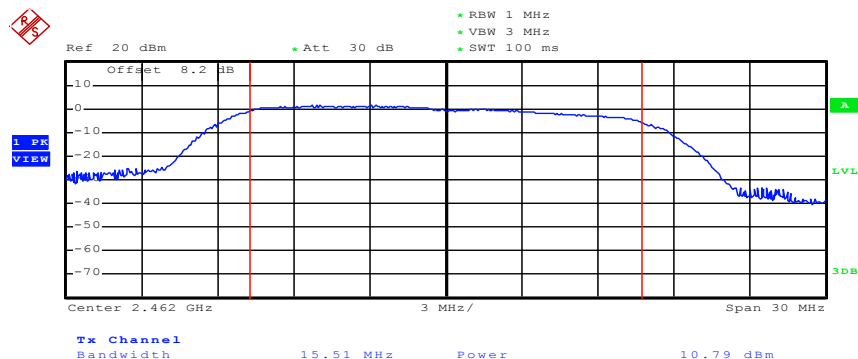
Date: 11 SEP 2019 22:04:08

11G/MCH



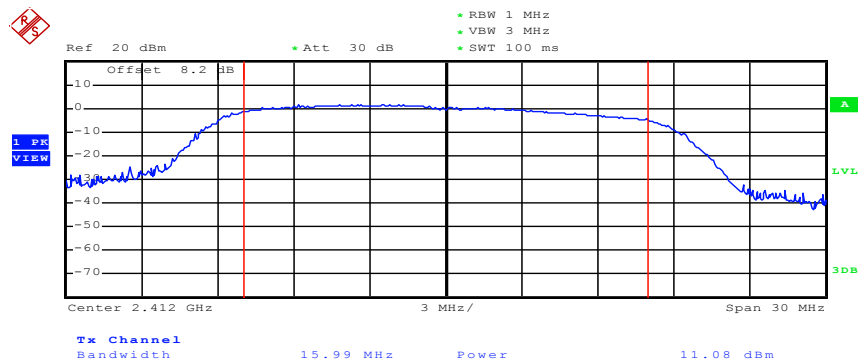
Date: 11.SEP.2019 22:06:40

11G/HCH



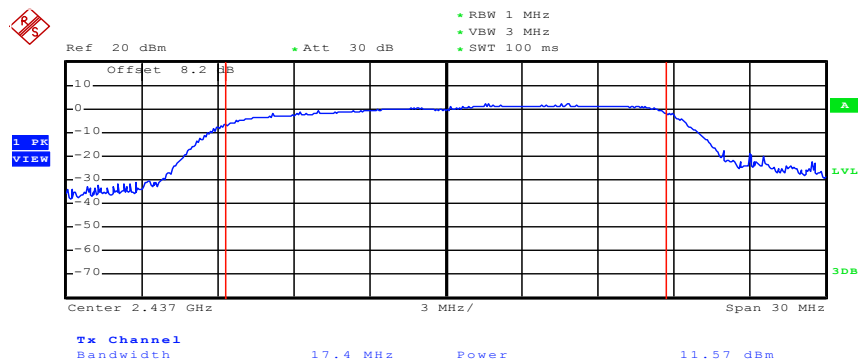
Date: 11 SEP 2019 22:08:24

11N20SISO/LCH



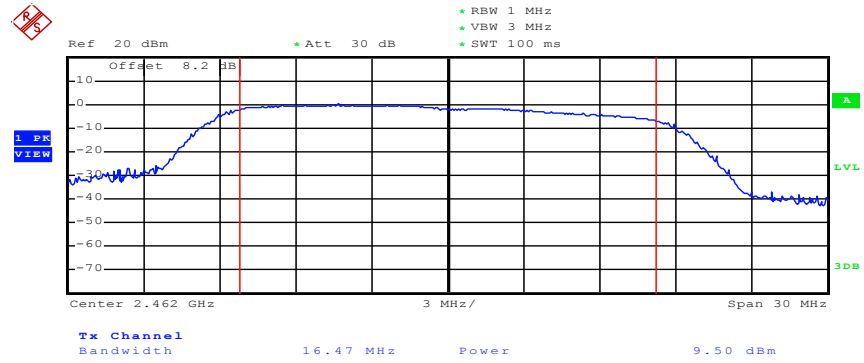
Date: 11.SEP.2019 22:11:08

11N20SISO/MCH



Date: 11 SEP 2019 22:13:37

11N20SISO/HCH



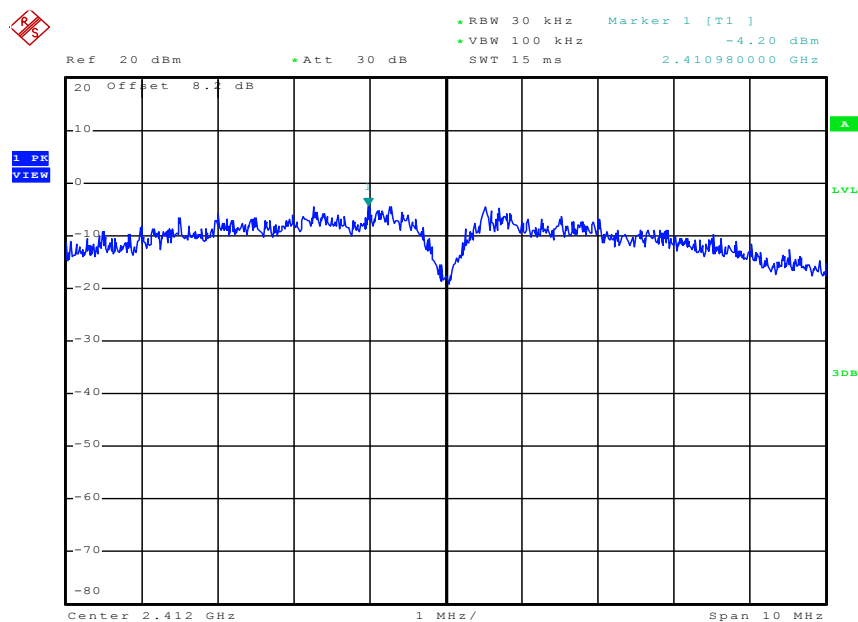
Date: 11.SEP.2019 22:15:26

A.3 Maximum Power Spectral Density

Mode	Channel	Meas.Level [dBm/30KHz]	Limit [dBm/3KHz]	Verdict
11B	LCH	-4.200	8	PASS
	MCH	-3.680	8	PASS
	HCH	-4.620	8	PASS
11G	LCH	-11.240	8	PASS
	MCH	-11.570	8	PASS
	HCH	-11.900	8	PASS
11N20SISO	LCH	-11.790	8	PASS
	MCH	-11.480	8	PASS
	HCH	-13.770	8	PASS

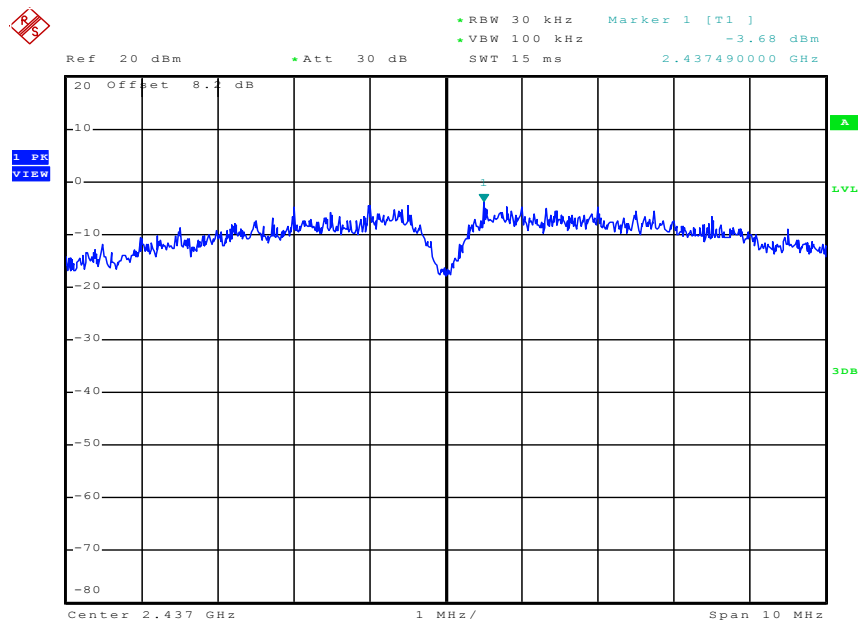
Test Graphs

11B/LCH



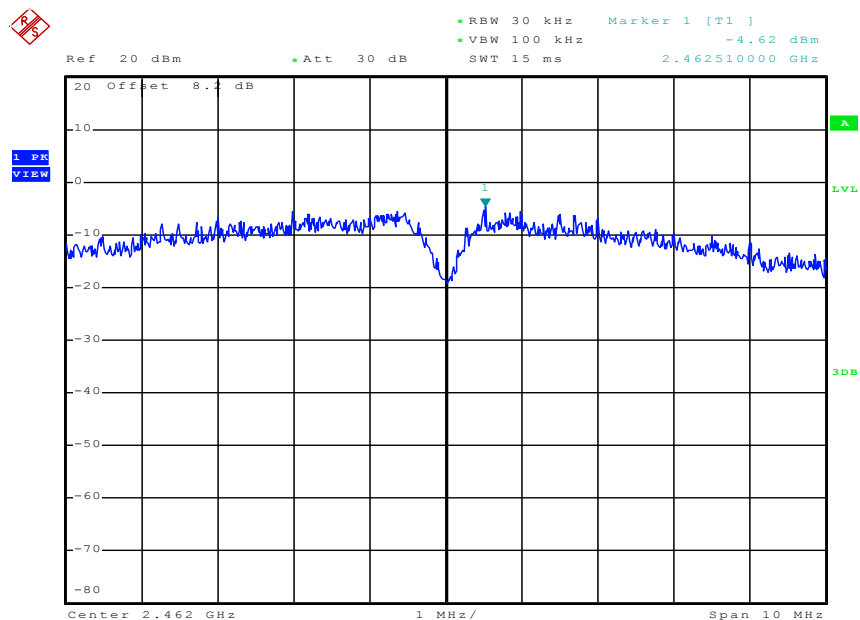
Date: 11 SEP 2019 21:55:56

11B/MCH



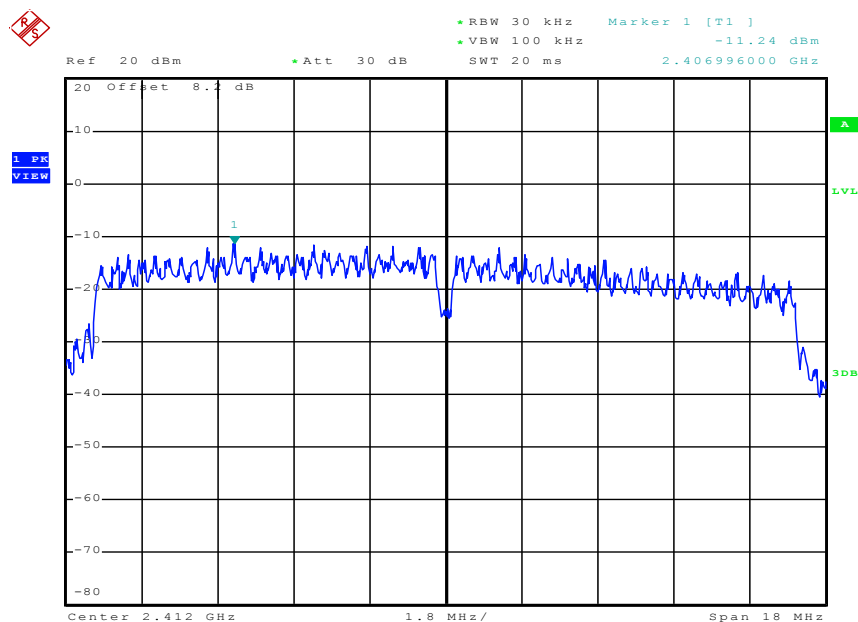
Date: 11 SEP 2019 21:58:28

11B/HCH



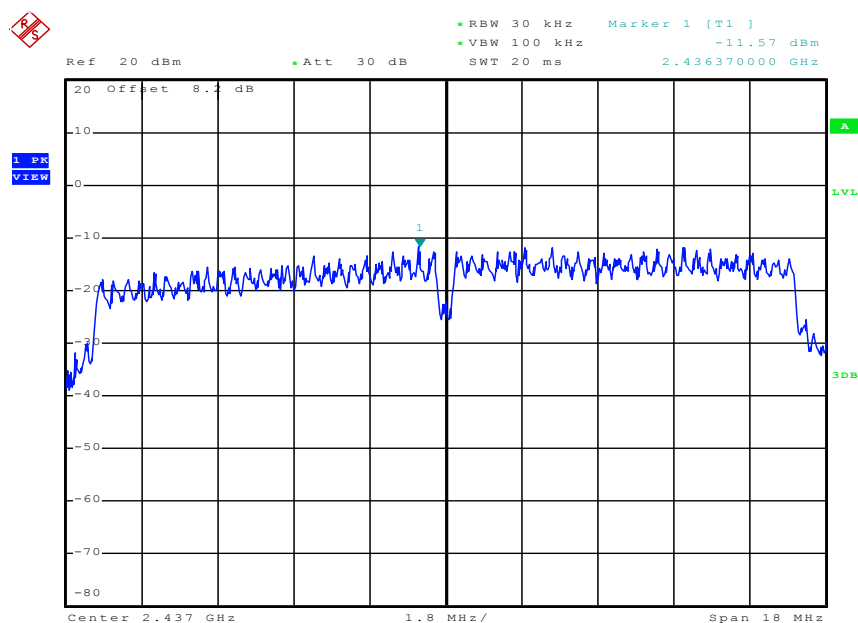
Date: 11 SEP 2019 22:00:15

11G/LCH



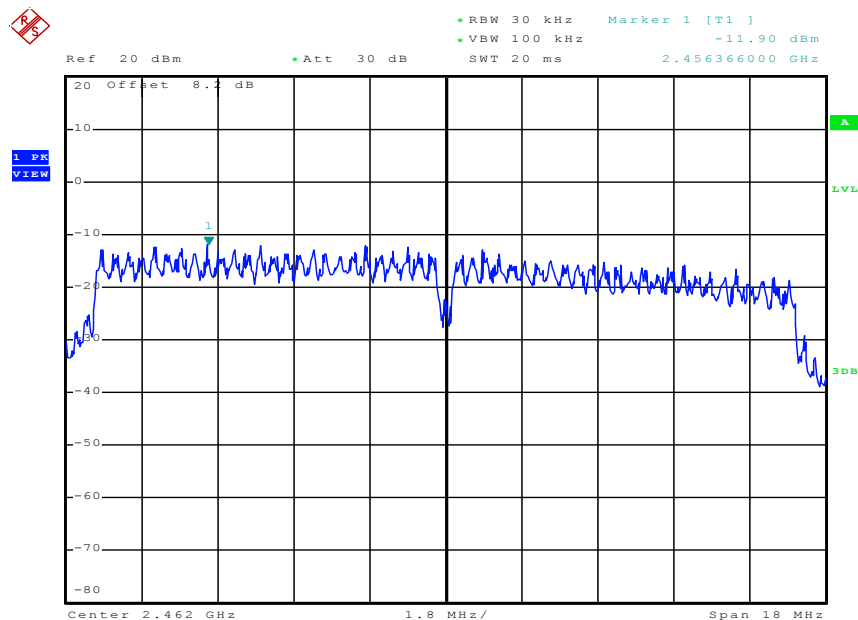
Date: 11.SEP.2019 22:04:21

11G/MCH



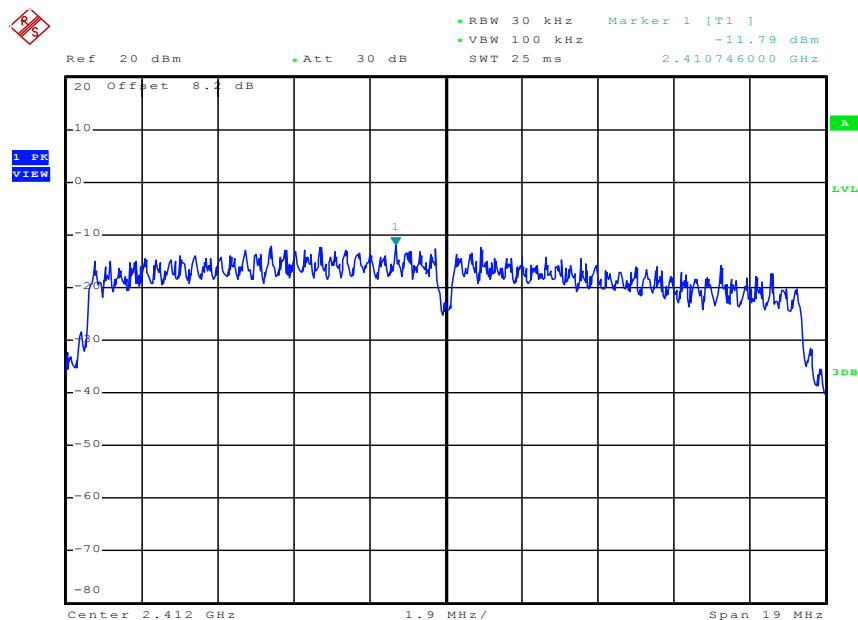
Date: 11 SEP 2019 22:06:53

11G/HCH



Date: 11.SEP.2019 22:08:37

11N20SISO/LCH



Date: 11 SEP 2019 22:11:21

Top status bar:

- Ref 20 dBm
- Att 30 dB
- RBW 30 kHz
- VBW 100 kHz
- SWT 25 ms
- Marker 1 [T1]
- 11.48 dBm
- 2.441997000 GHz

Left sidebar:

- 1 PR VIEW

Plot area:

- Y-axis: Power level in dBm, ranging from -80 to 20.
- X-axis: Frequency in GHz, ranging from 2.437 GHz to 2.456 GHz.
- Signal: A noisy blue line representing the spectrum.
- Marker 1: A green triangle pointing to the signal line at approximately 2.442 GHz.

Bottom status bar:

- Center 2.437 GHz
- 1.9 MHz/
- Span 19 MHz

Top status bar:

- RBW 30 kHz
- VBW 100 kHz
- Att 30 dB
- SWT 25 ms
- Marker 1 [T1]
- 13.77 dBm
- 2.457611000 GHz

Plot area:

- Ref 20 dBm
- Offset 8.2 dB
- Center 2.462 GHz
- Span 19 MHz
- 1. PK VIEW
- 3 dB
- 10
- 10
- 20
- 30
- 40
- 50
- 60
- 70
- 80

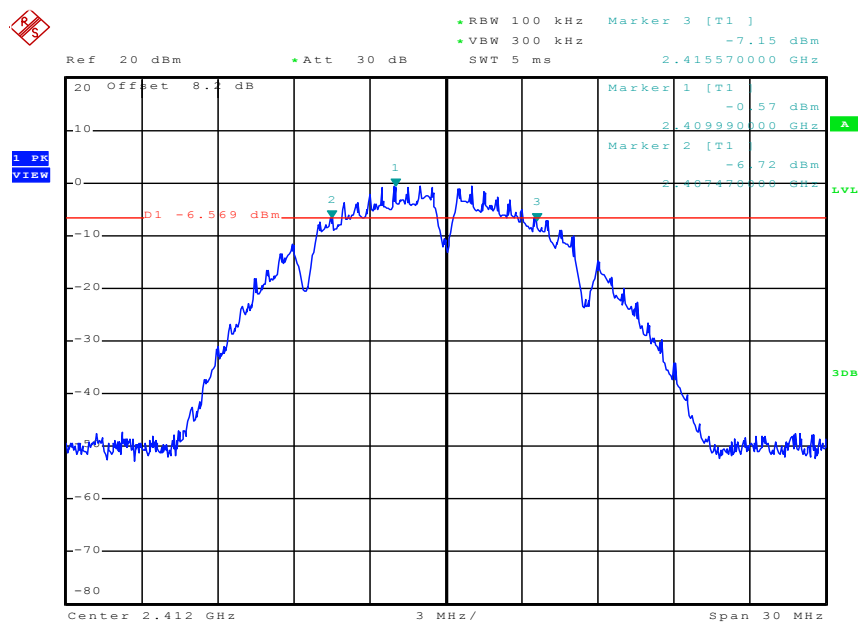
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A.4 6dB Bandwidth

Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
11B	LCH	8.100	≥ 0.5	PASS
	MCH	8.070	≥ 0.5	PASS
	HCH	7.110	≥ 0.5	PASS
11G	LCH	15.990	≥ 0.5	PASS
	MCH	16.230	≥ 0.5	PASS
	HCH	15.510	≥ 0.5	PASS
11N20SISO	LCH	15.990	≥ 0.5	PASS
	MCH	17.400	≥ 0.5	PASS
	HCH	16.470	≥ 0.5	PASS

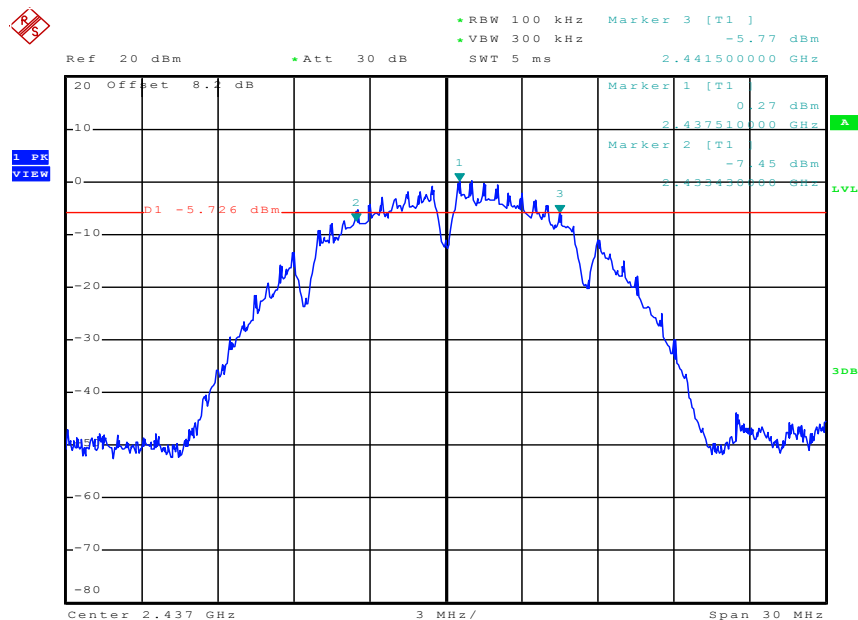
Test Graphs

11B/LCH



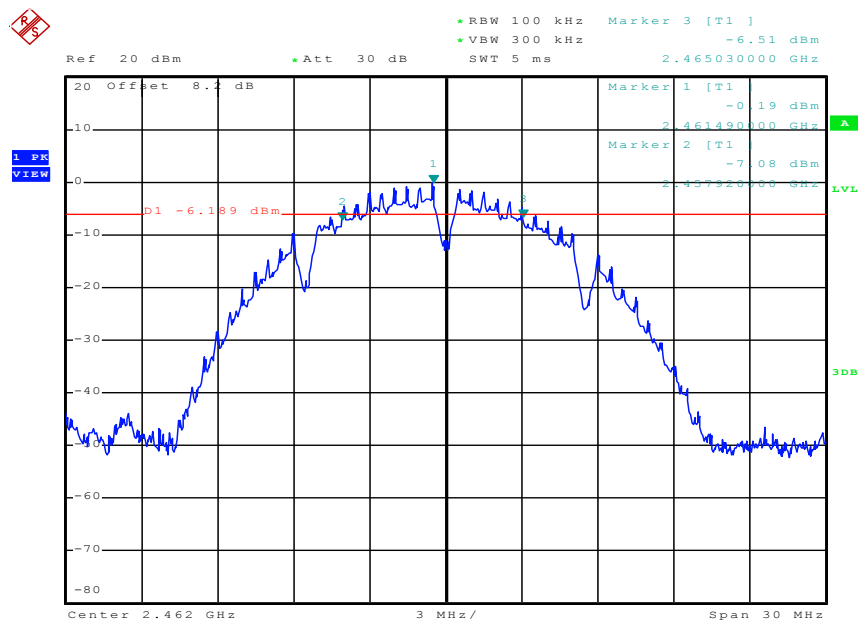
Date: 11 SEP 2019 21:55:09

11B/MCH



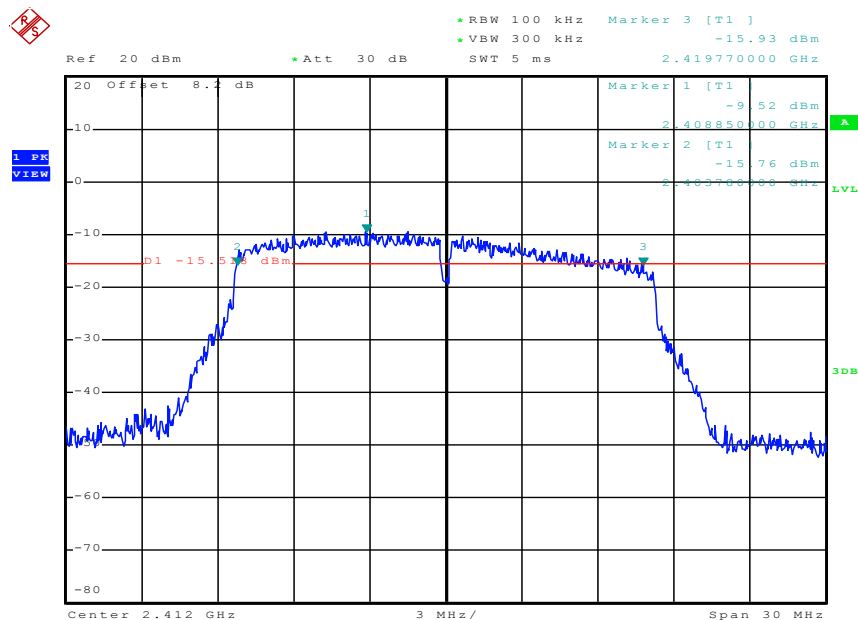
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11B/HCH



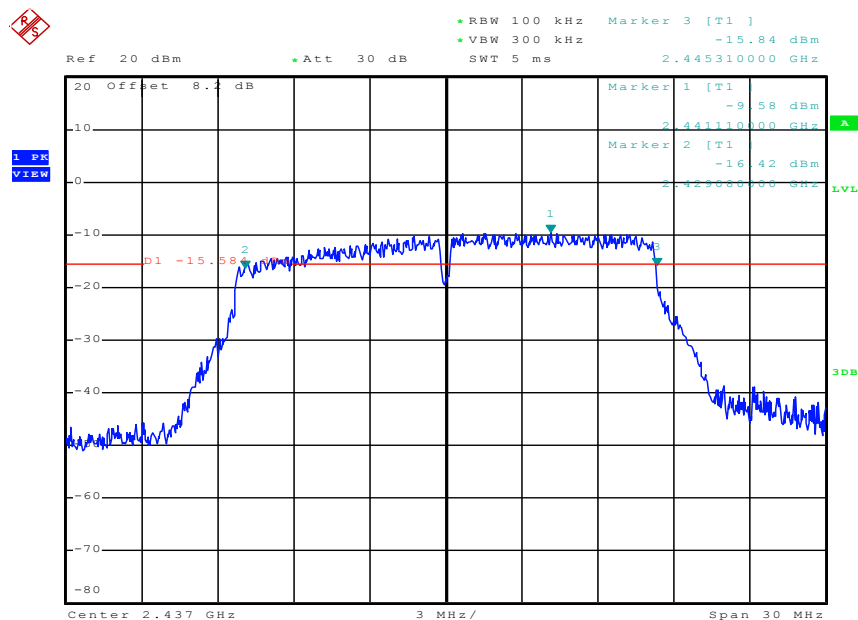
Date: 11 SEP 2019 21:59:27

11G/LCH



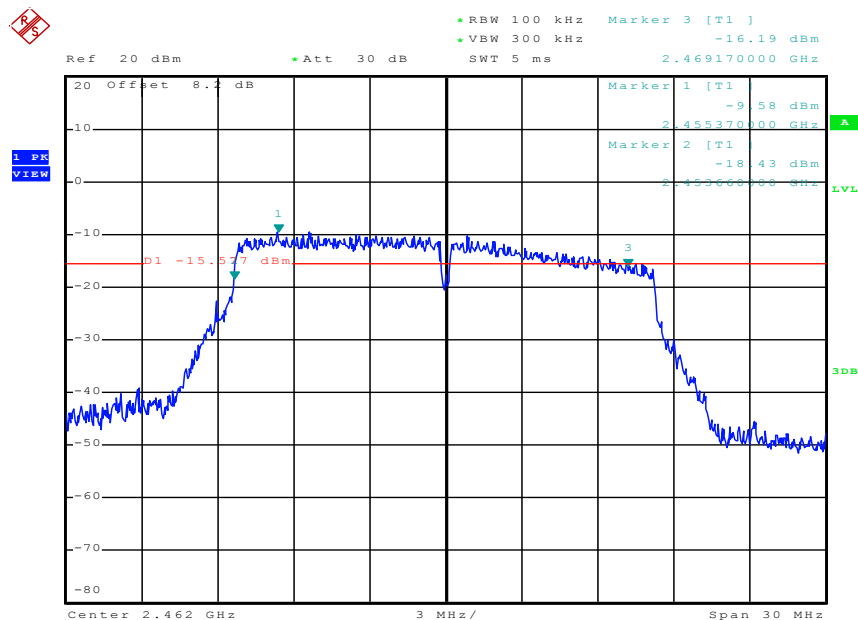
Date: 11 SEP 2019 22:03:33

11G/MCH



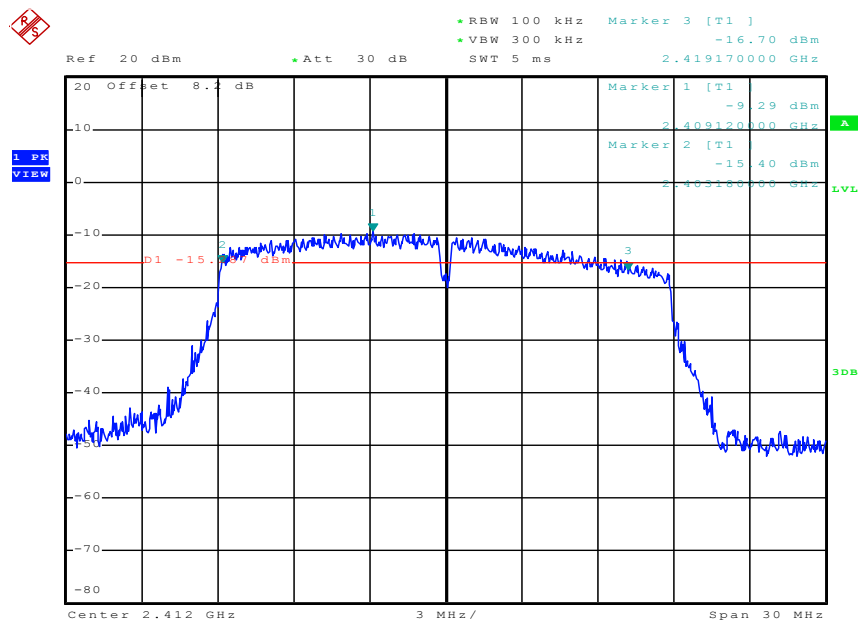
Date: 11 SEP 2019 22:06:05

11G/HCH



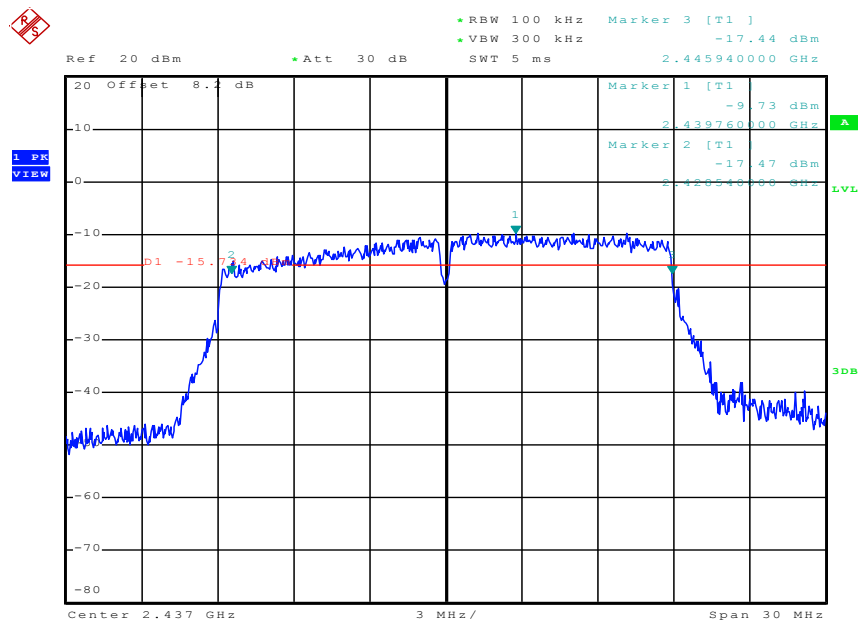
Date: 11 SEP 2019 22:07:50

11N20SISO/LCH



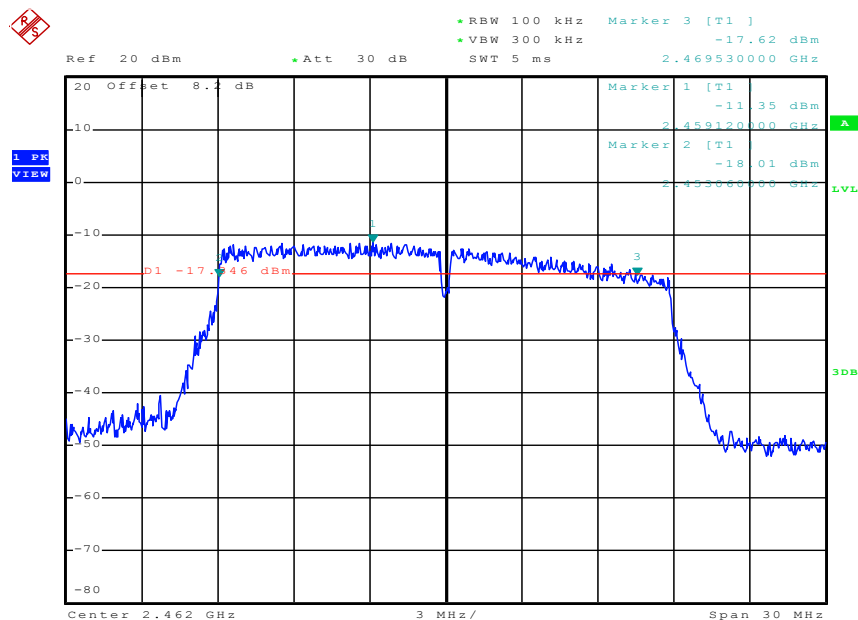
Date: 11 SEP 2019 22:10:34

11N20SISO/MCH



Date: 11.SEP.2019 22:13:03

11N20SISO/HCH



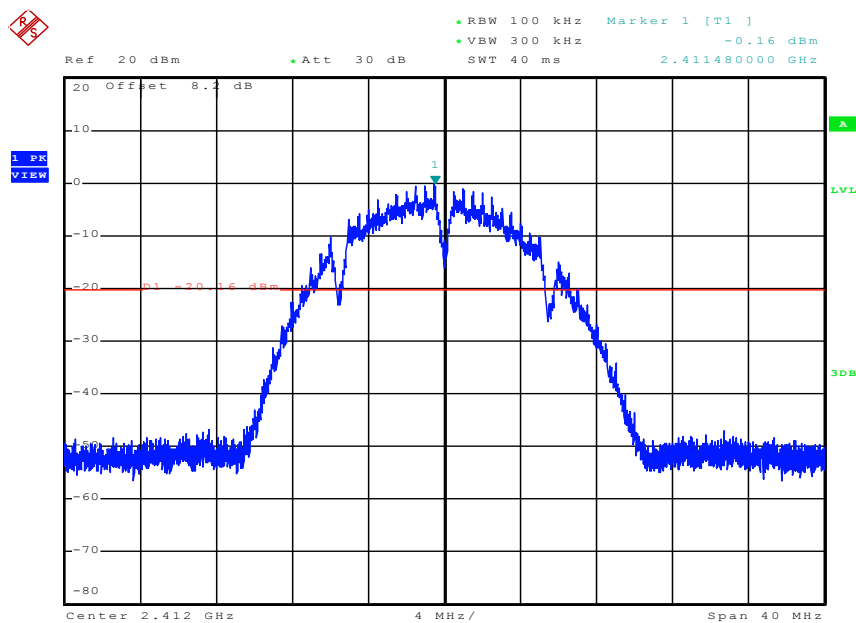
Date: 11.SEP.2019 22:14:52

A.5 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	LCH	-0.16	-32.120	-20.160	PASS
	MCH	0.14	-30.650	-19.860	PASS
	HCH	-0.82	-31.940	-20.820	PASS
11G	LCH	-9.38	-32.380	-29.380	PASS
	MCH	-9.53	-32.100	-29.530	PASS
	HCH	-10.04	-31.300	-30.040	PASS
11N20 SISO	LCH	-9.22	-31.200	-29.220	PASS
	MCH	-9.81	-31.120	-29.810	PASS
	HCH	-11.76	-32.450	-31.760	PASS

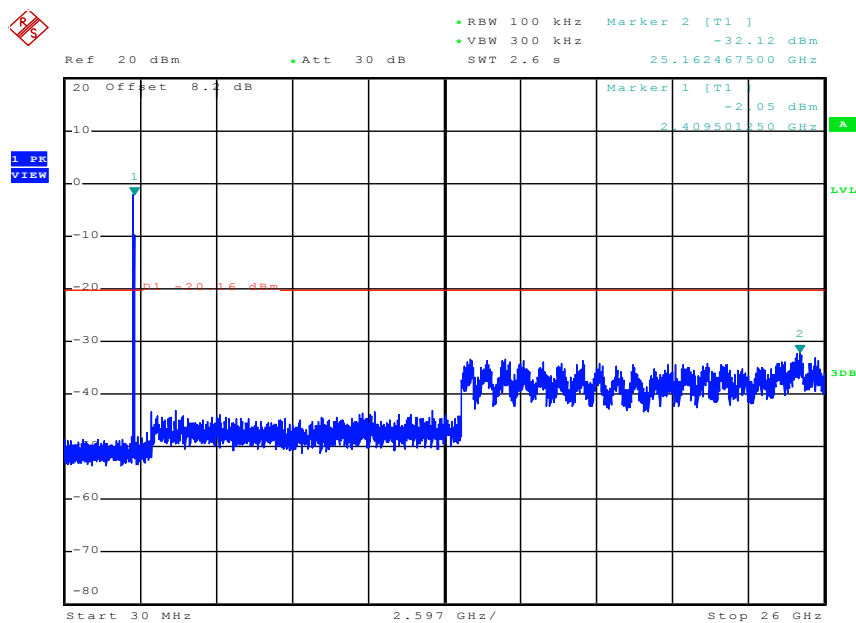
11B_LCH_Graphs

Pref/11B/LCH



Date: 11 SEP 2019 21:56:22

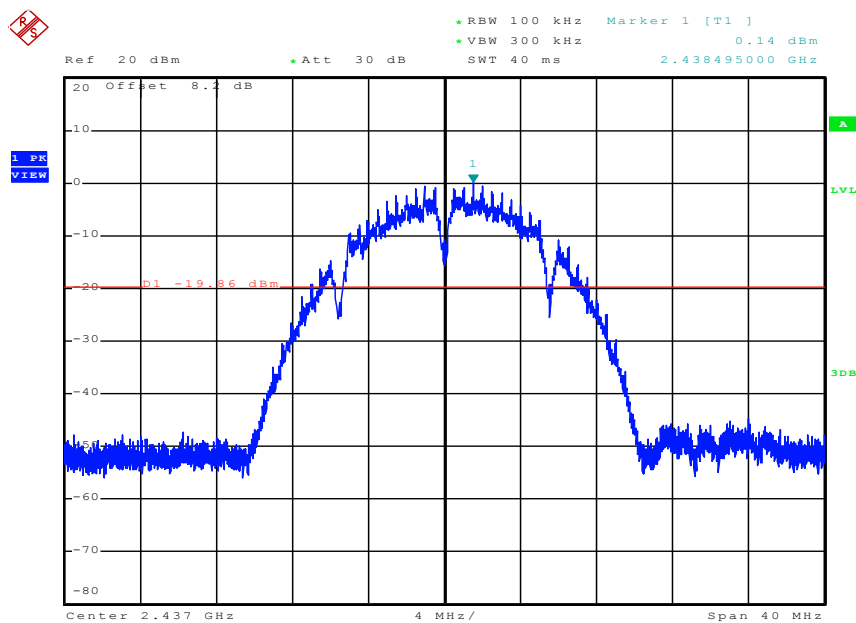
Puw/11B/LCH



Date: 11.SEP.2019 21:56:37

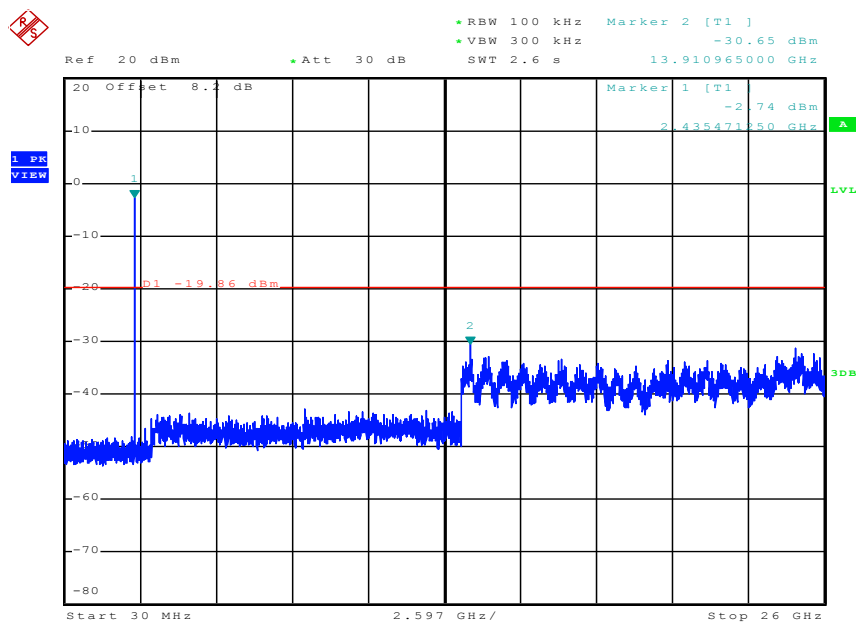
11B_MCH_Graphs

Pref/11B/MCH



Date: 11 SEP 2019 21:58:41

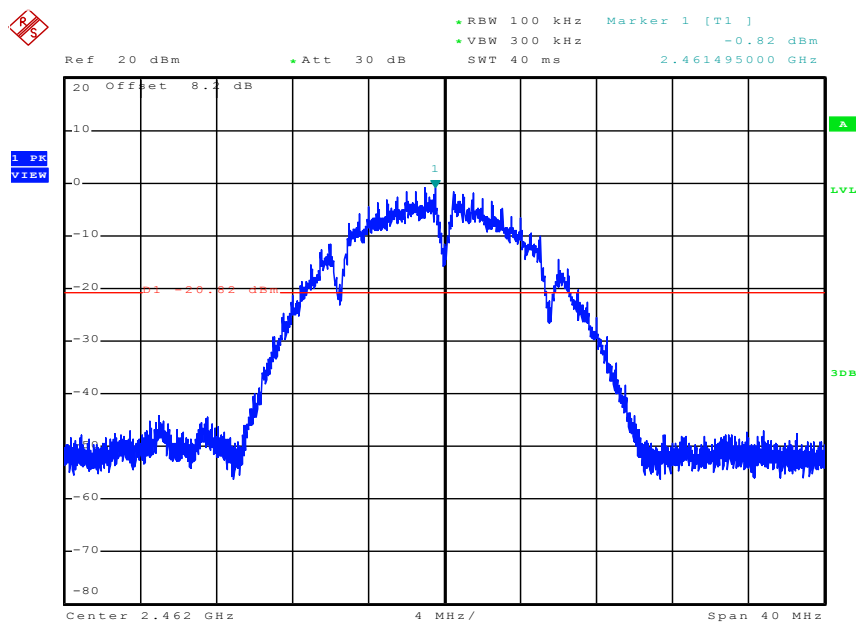
Puw/11B/MCH



Date: 11.SEP.2019 21:58:57

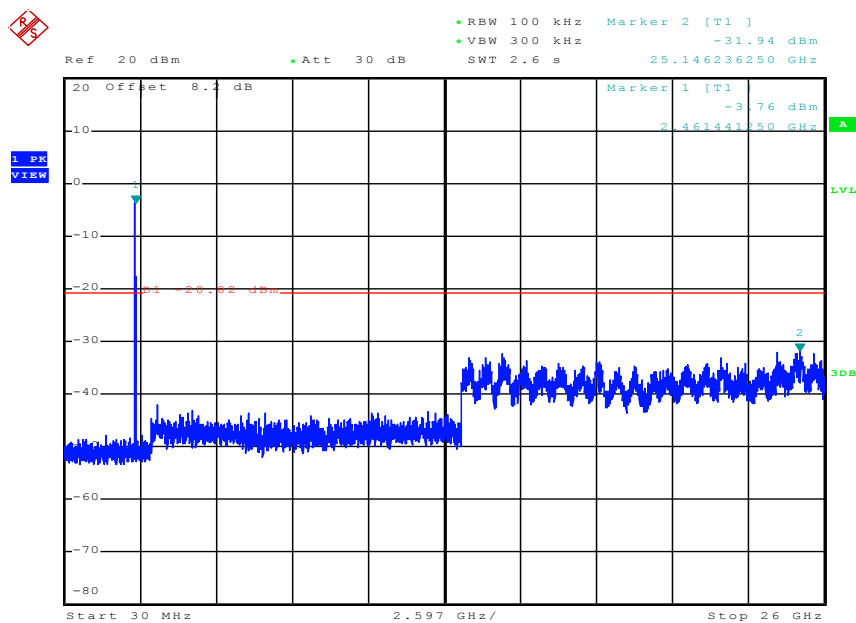
11B_HCH_Graphs

Pref/11B/HCH



Date: 11 SEP 2019 22:00:42

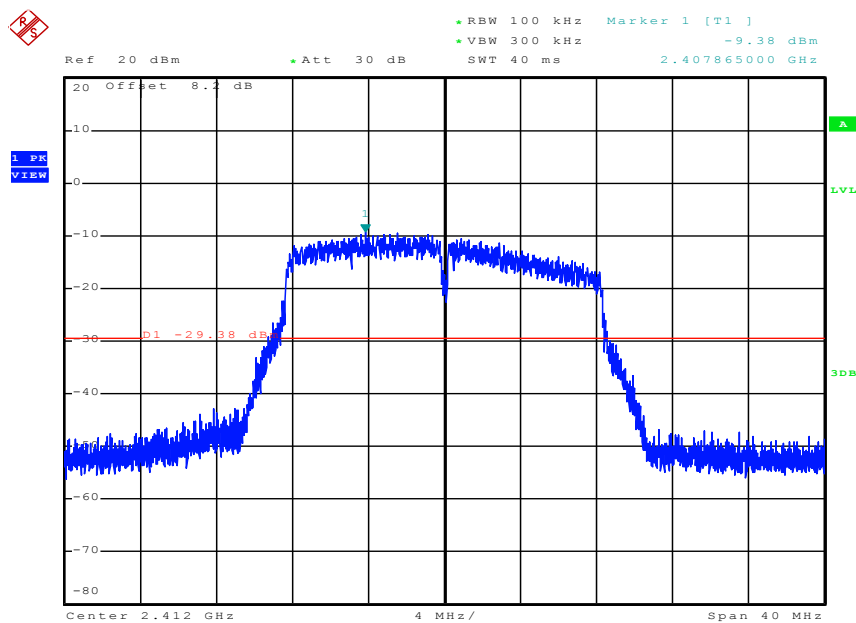
Puw/11B/HCH



Date: 11.SEP.2019 22:00:56

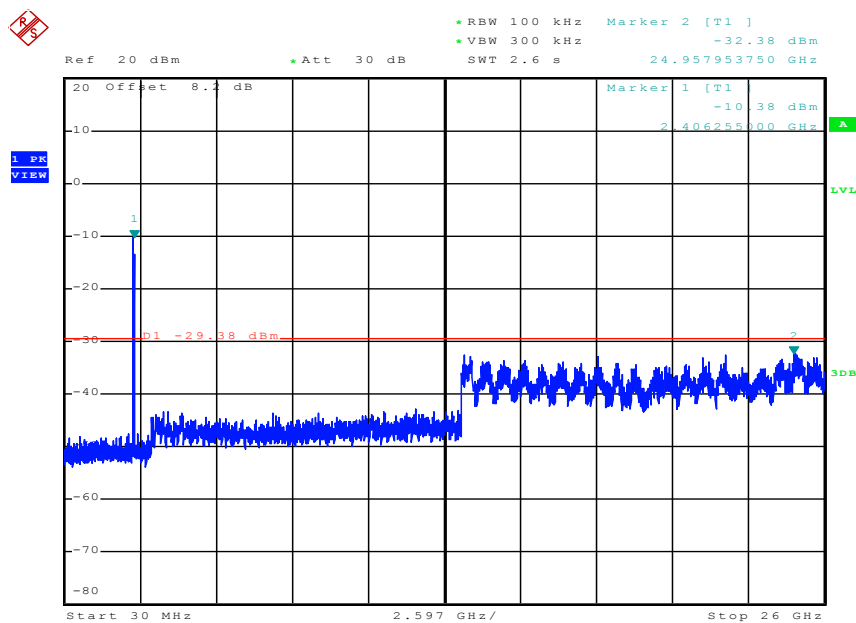
11G_LCH_Graphs

Pref/11G/LCH



Date: 11 SEP 2019 22:04:47

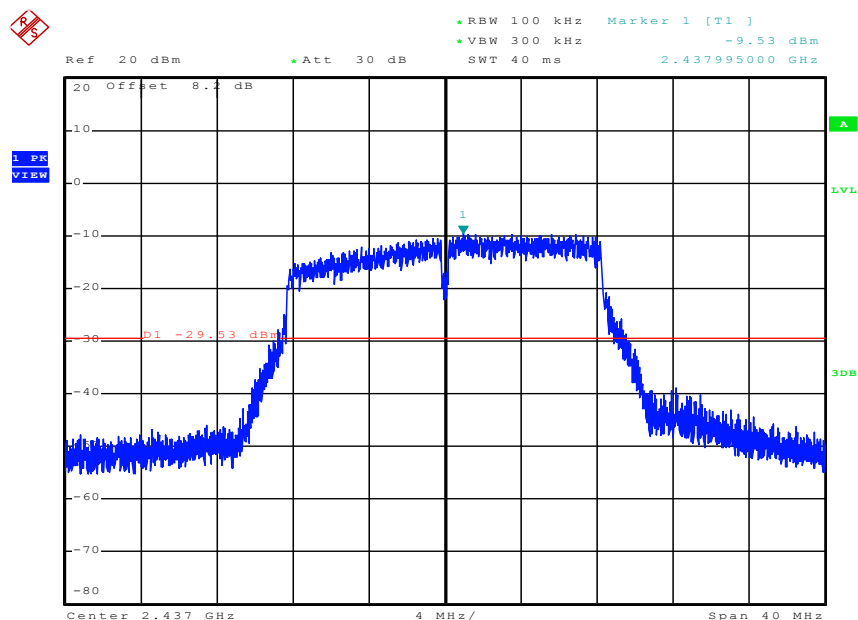
Puw/11G/LCH



Date: 11.SEP.2019 22:05:03

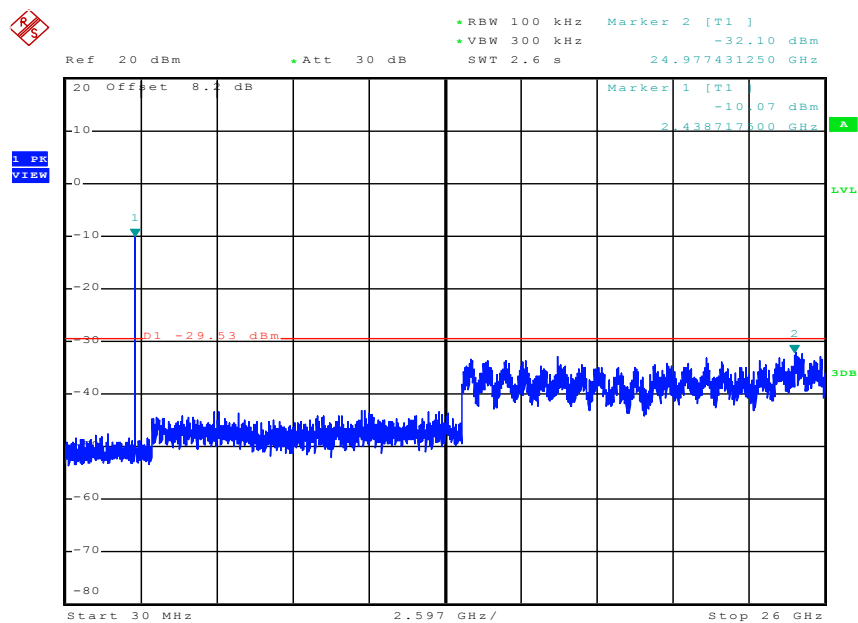
11G_MCH_Graphs

Pref/11G/MCH



Date: 11 SEP 2019 22:07:05

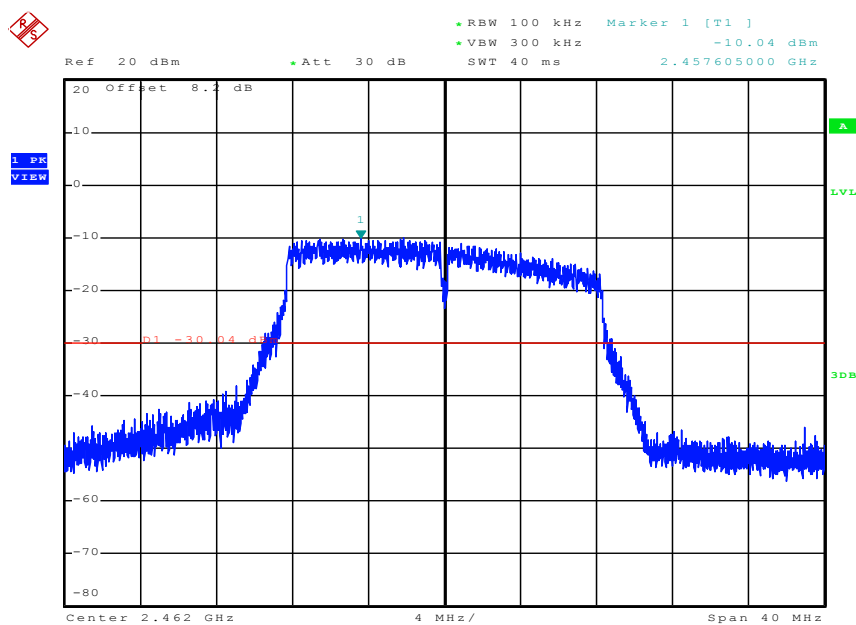
Puw/11G/MCH



Date: 11.SEP.2019 22:07:20

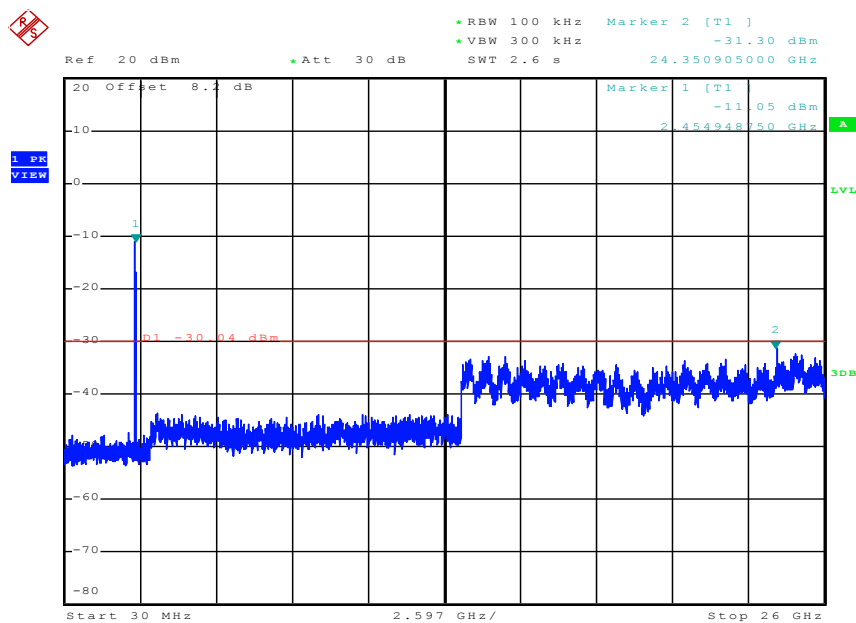
11G_HCH_Graphs

Pref/11G/HCH



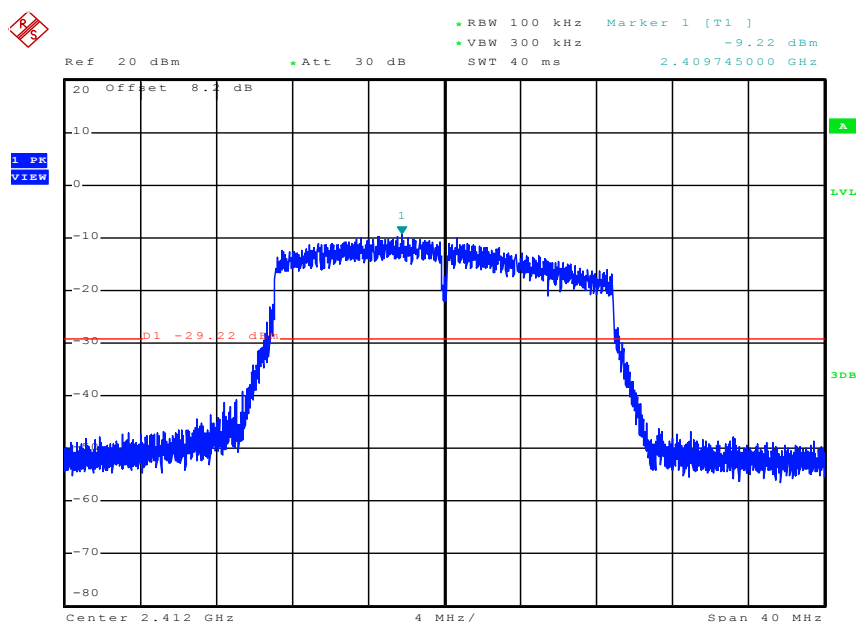
Date: 11 SEP 2019 22:09:03

Puw/11G/HCH

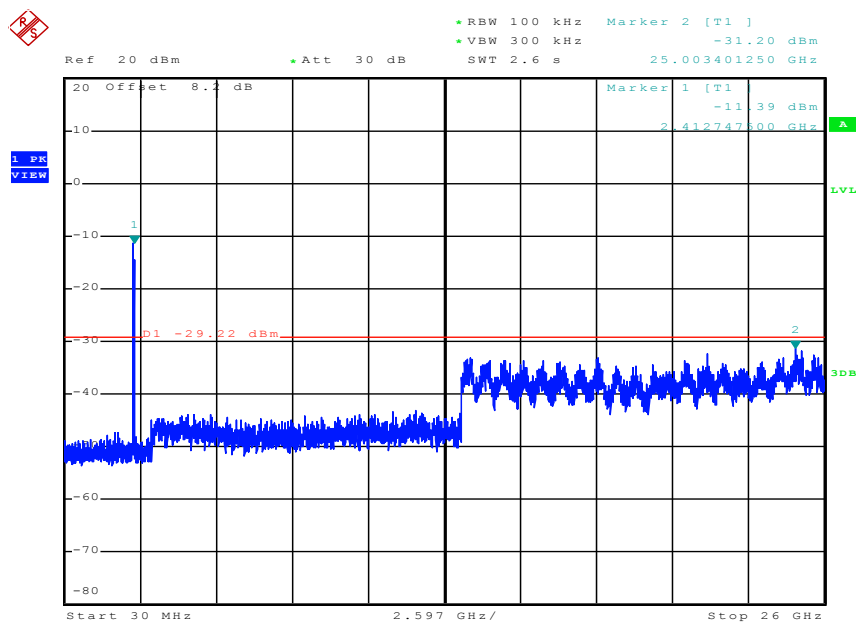


Date: 11.SEP.2019 22:09:18

11N20SISO_LCH_Graphs

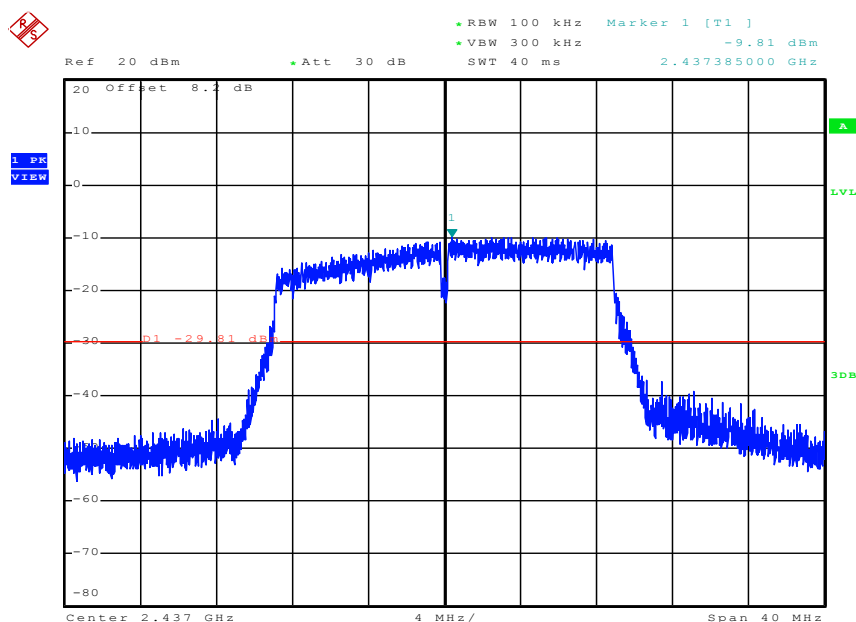
Pref/11N20SIS
O/LCH

Date: 11 SEP 2019 22:11:48

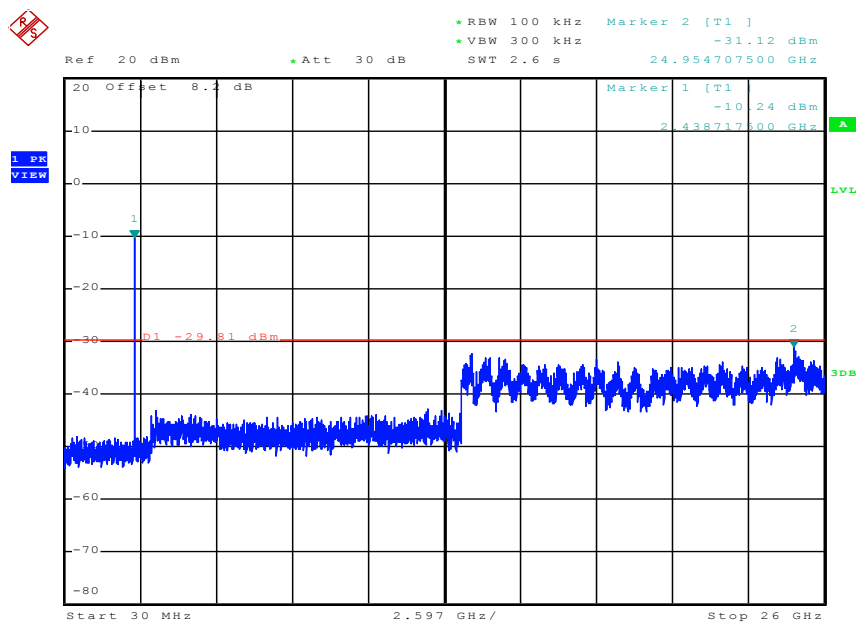
Puw/11N20
SISO/LCH

Date: 11.SEP.2019 22:12:02

11N20SISO_MCH_Graphs

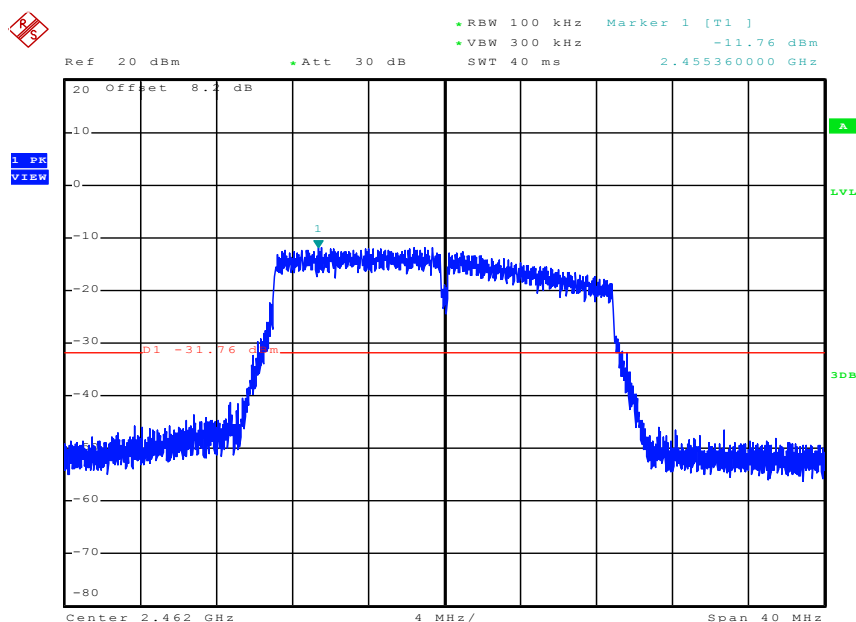
Pref/11N20
SISO/MCH

Date: 11 SEP 2019 22:14:02

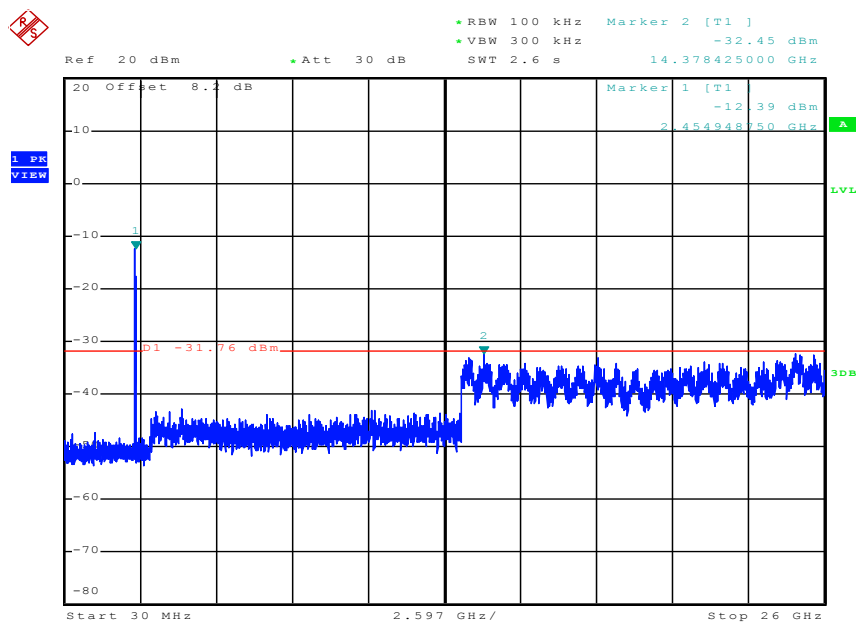
Puw/11N20
SISO/MCH

Date: 11.SEP.2019 22:14:17

11N20SISO_HCH_Graphs

Pref/11N20
SISO/HCH

Date: 11 SEP 2019 22:16:04

Puw/11N20
SISO/HCH

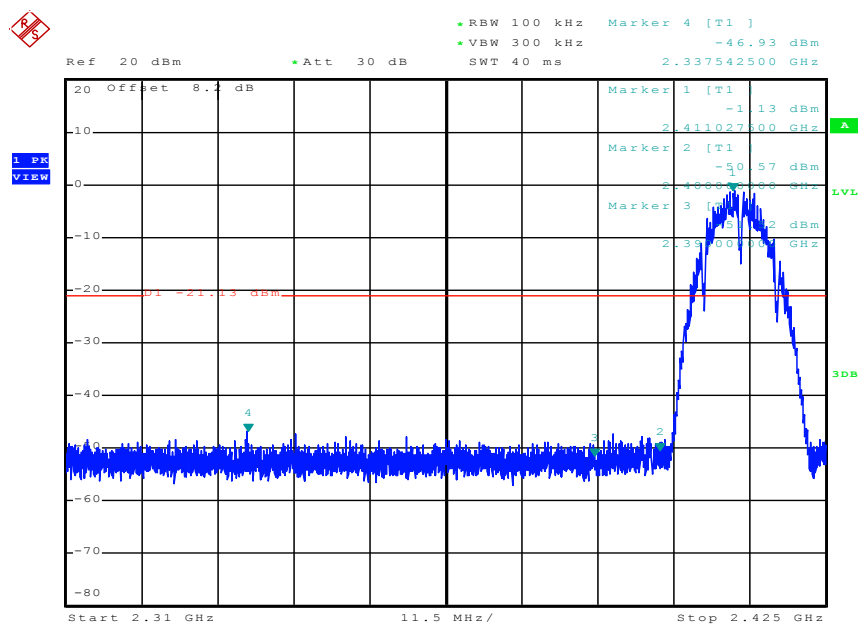
Date: 11 SEP 2019 22:16:19

A.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	-1.130	-46.927	-21.13	PASS
	HCH	-0.770	-47.842	-20.77	PASS
11G	LCH	-9.870	-47.600	-29.87	PASS
	HCH	-9.890	-47.442	-29.89	PASS
11N20SISO	LCH	-9.830	-45.925	-29.83	PASS
	HCH	-11.380	-48.248	-31.38	PASS

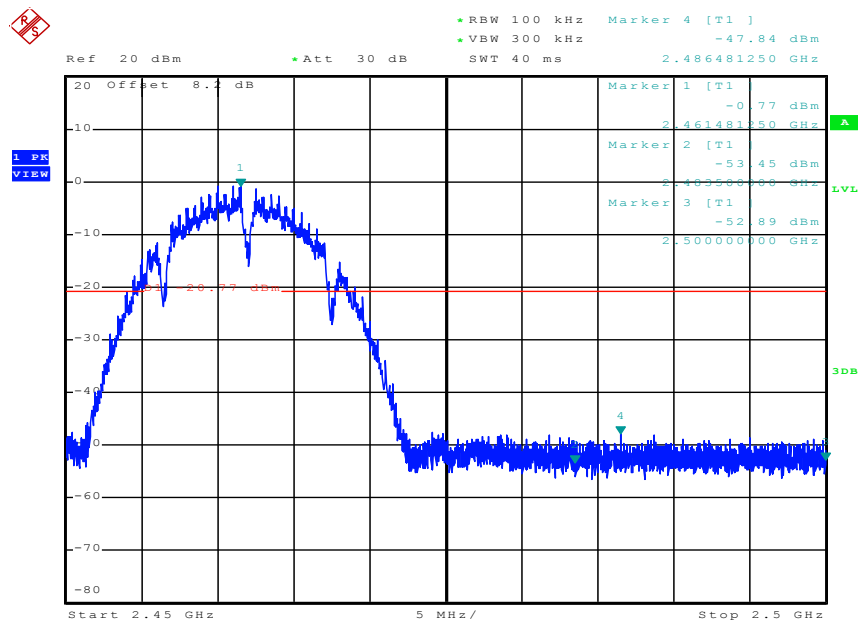
Test Graphs

11B/LCH



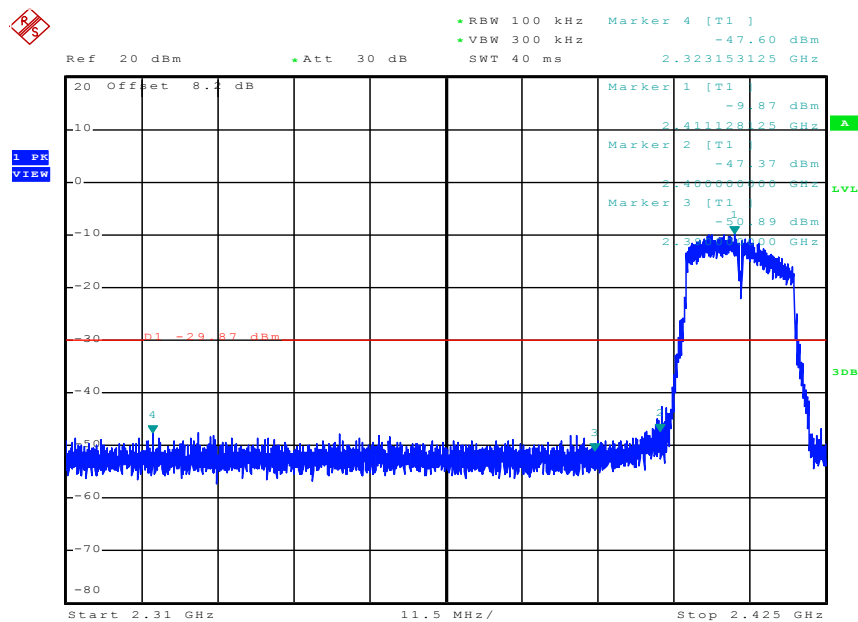
Date: 11 SEP 2019 21:56:09

11B/HCH



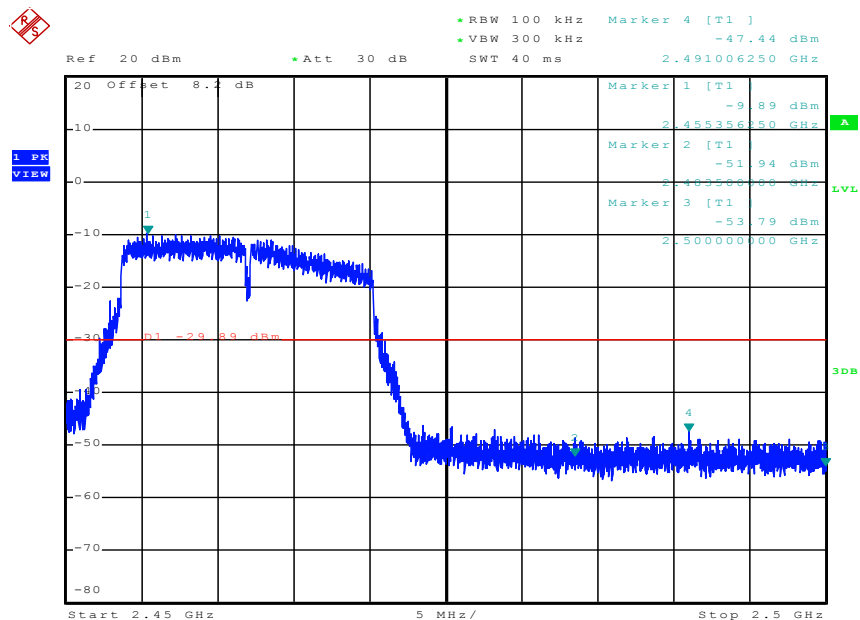
Date: 11 SEP 2019 22:00:28

11G/LCH



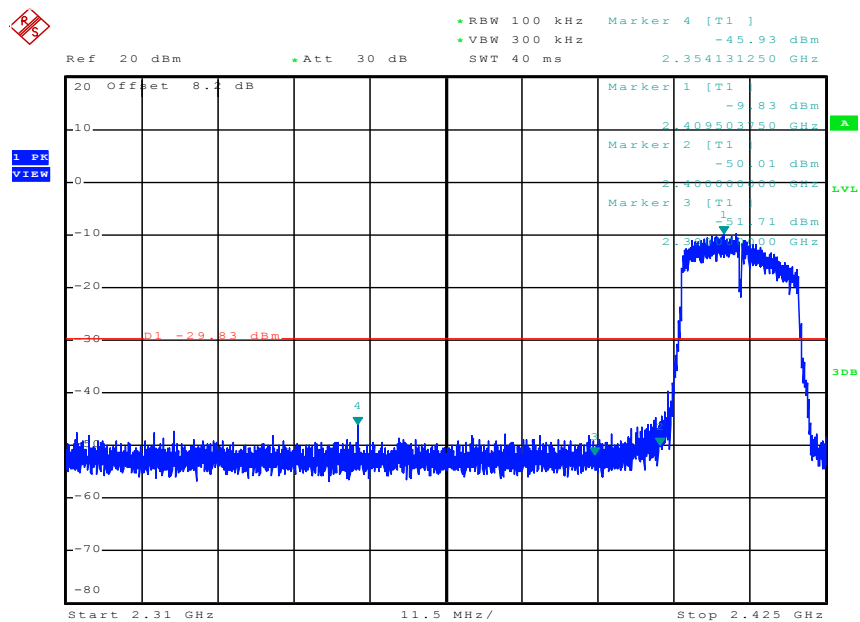
Date: 11 SEP 2019 22:04:34

11G/HCH



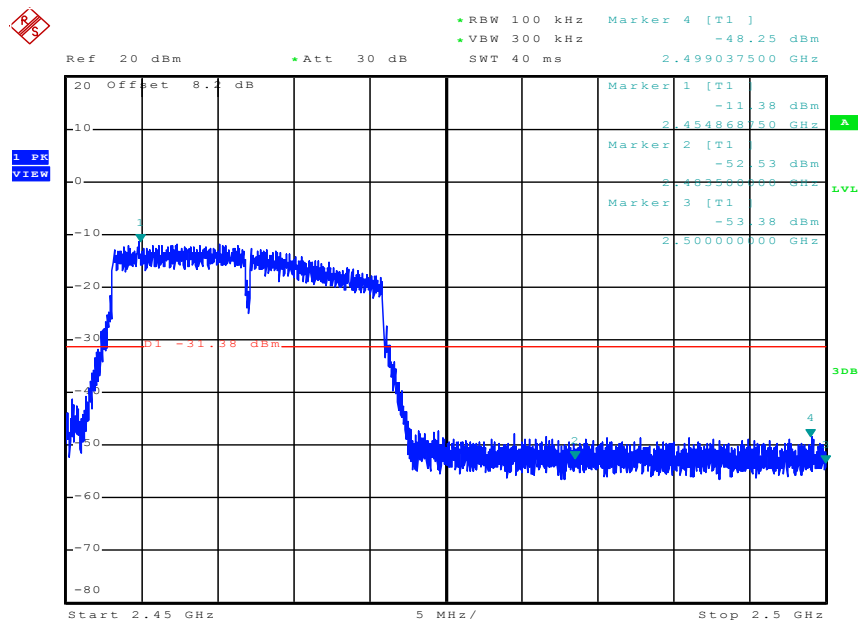
Date: 11 SEP 2019 22:08:50

11N20SISO/LCH



Date: 11 SEP 2019 22:11:34

11N20SISO/HCH

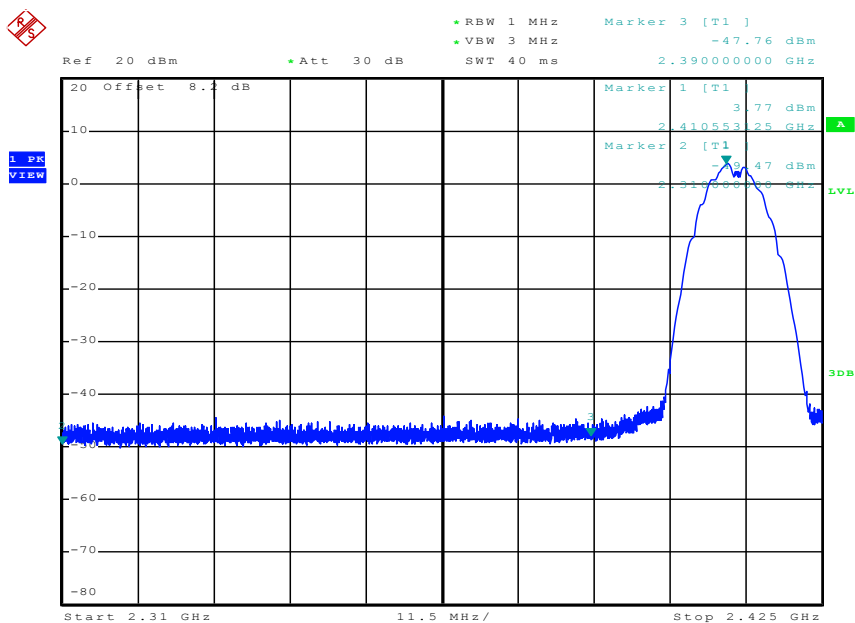


Date: 11.SEP.2019 22:15:52

A.7 Restrict-band band-edge measurements

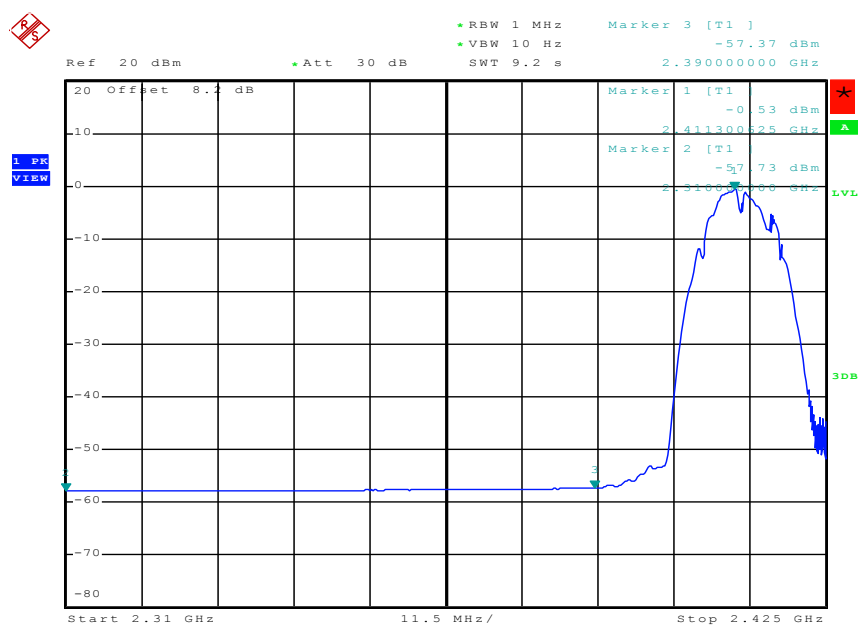
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
11B	2412	Ant1	2310.0	-49.47	2.0	0	45.79	PEAK	74	PASS
	2412	Ant1	2310.0	-57.73	2.0	0	37.53	AV	54	PASS
	2412	Ant1	2390.0	-47.76	2.0	0	47.50	PEAK	74	PASS
	2412	Ant1	2390.0	-57.37	2.0	0	37.89	AV	54	PASS
	2462	Ant1	2483.5	-47.40	2.0	0	47.86	PEAK	74	PASS
	2462	Ant1	2483.5	-57.46	2.0	0	37.80	AV	54	PASS
	2462	Ant1	2500.0	-47.34	2.0	0	47.92	PEAK	74	PASS
	2462	Ant1	2500.0	-57.94	2.0	0	37.32	AV	54	PASS
11G	2412	Ant1	2310.0	-47.86	2.0	0	47.40	PEAK	74	PASS
	2412	Ant1	2310.0	-57.72	2.0	0	37.54	AV	54	PASS
	2412	Ant1	2390.0	-48.22	2.0	0	47.04	PEAK	74	PASS
	2412	Ant1	2390.0	-57.18	2.0	0	38.08	AV	54	PASS
	2462	Ant1	2483.5	-46.49	2.0	0	48.77	PEAK	74	PASS
	2462	Ant1	2483.5	-56.79	2.0	0	38.47	AV	54	PASS
	2462	Ant1	2500.0	-48.20	2.0	0	47.06	PEAK	74	PASS
	2462	Ant1	2500.0	-57.93	2.0	0	37.33	AV	54	PASS
11N20 SISO	2412	Ant1	2310.0	-49.00	2.0	0	46.26	PEAK	74	PASS
	2412	Ant1	2310.0	-57.79	2.0	0	37.47	AV	54	PASS
	2412	Ant1	2390.0	-46.45	2.0	0	48.81	PEAK	74	PASS
	2412	Ant1	2390.0	-56.94	2.0	0	38.32	AV	54	PASS
	2462	Ant1	2483.5	-47.95	2.0	0	47.31	PEAK	74	PASS
	2462	Ant1	2483.5	-57.23	2.0	0	38.03	AV	54	PASS
	2462	Ant1	2500.0	-48.04	2.0	0	47.22	PEAK	74	PASS
	2462	Ant1	2500.0	-57.91	2.0	0	37.35	AV	54	PASS
	2422	Ant1	2390.0	-41.75	2.0	0	53.51	PEAK	74	PASS
	2422	Ant1	2390.0	-55.67	2.0	0	39.59	AV	54	PASS

Restrict-band band-edge measurements_11B_2412_Ant1_PEAK



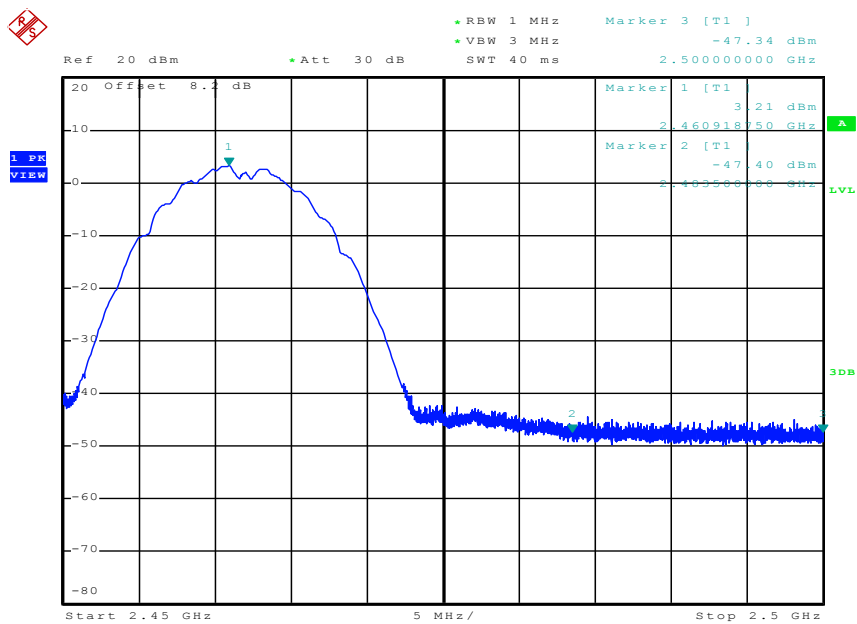
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Restrict-band band-edge measurements_11B_2412_Ant1_AV



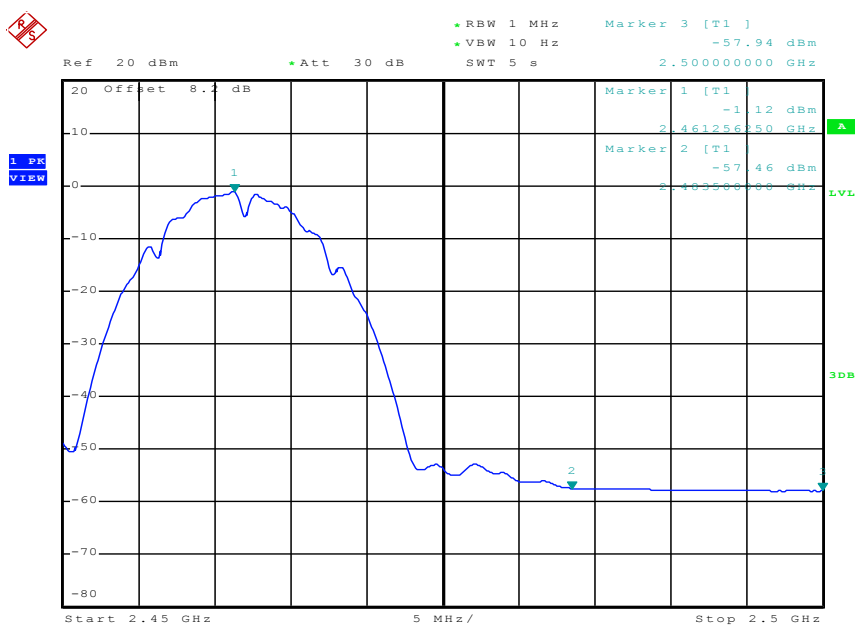
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Restrict-band band-edge measurements_11B_2462_Ant1_PEAK



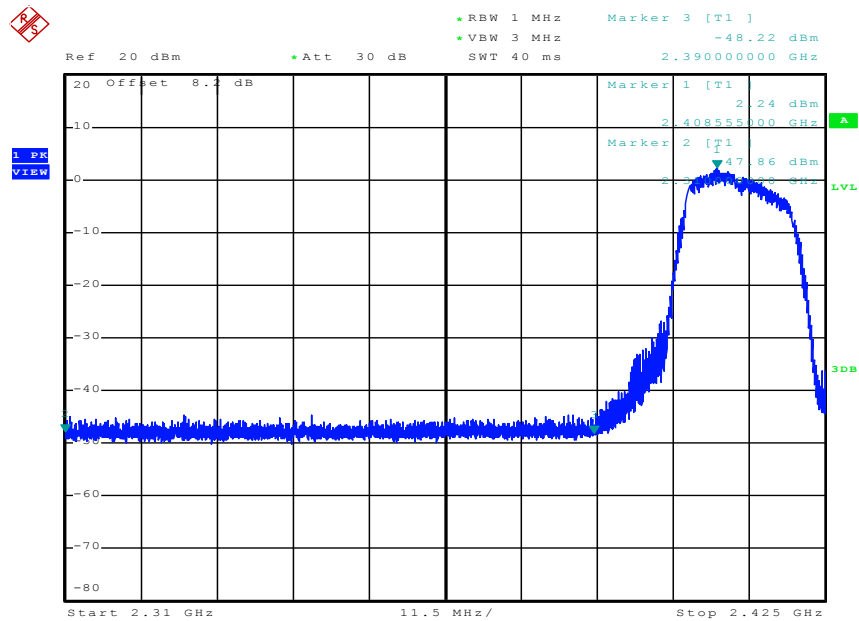
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Restrict-band band-edge measurements_11B_2462_Ant1_AV



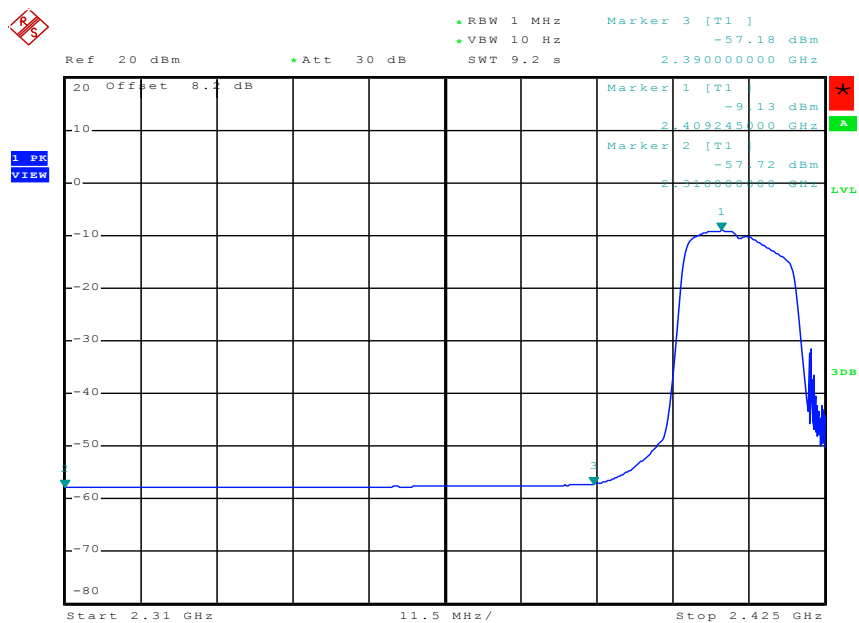
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Restrict-band band-edge measurements_11G_2412_Ant1_PEAK



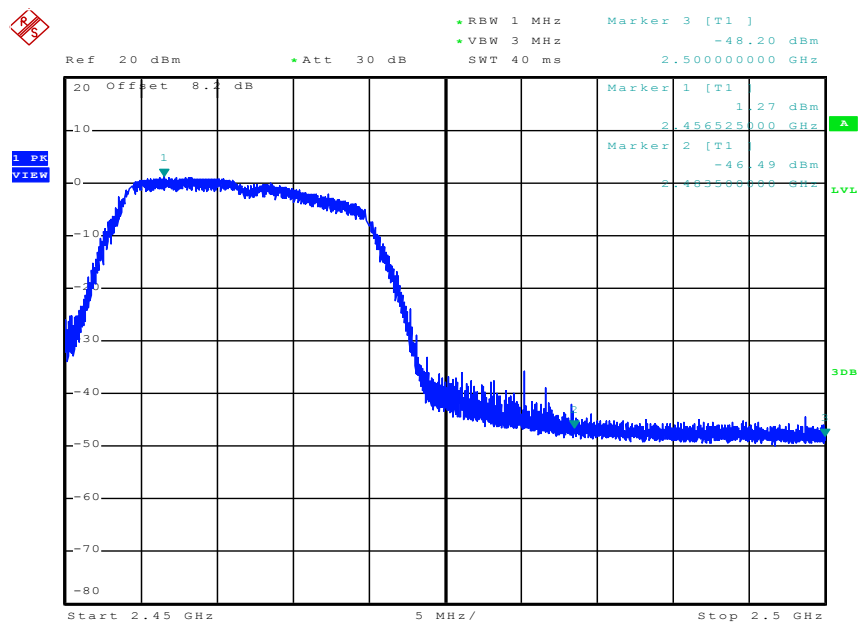
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Restrict-band band-edge measurements_11G_2412_Ant1_AV



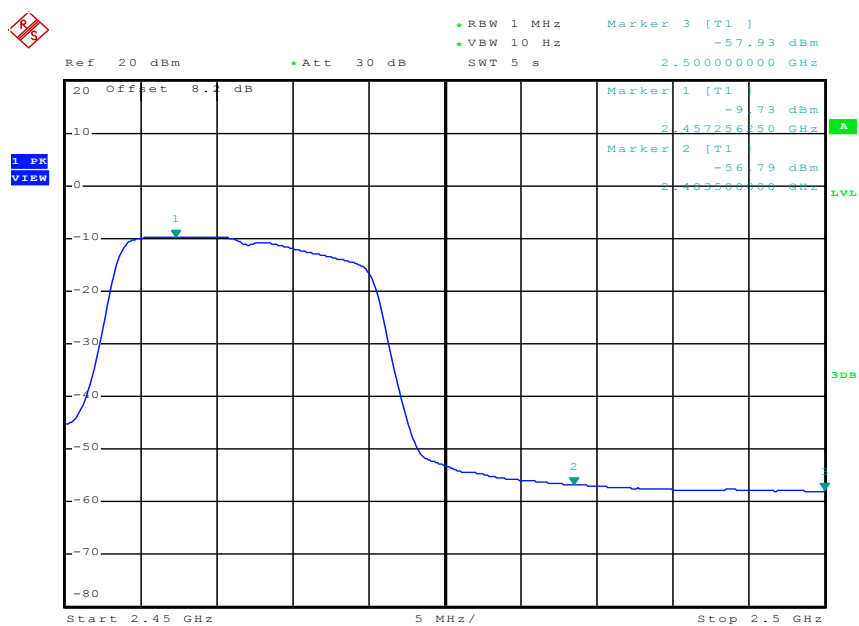
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Restrict-band band-edge measurements_11G_2462_Ant1_PEAK



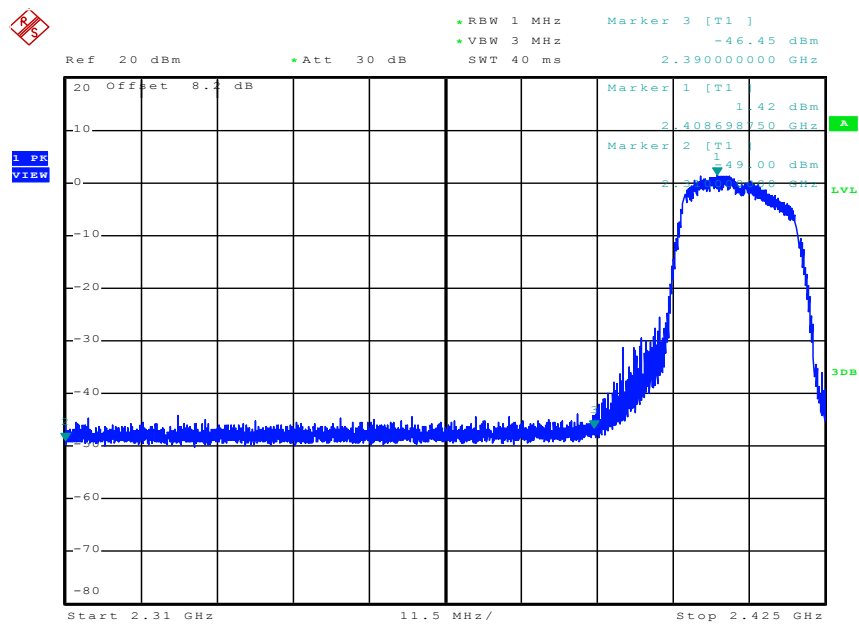
Date: 11.SEP.2019 22:09:37

Restrict-band band-edge measurements_11G_2462_Ant1_AV



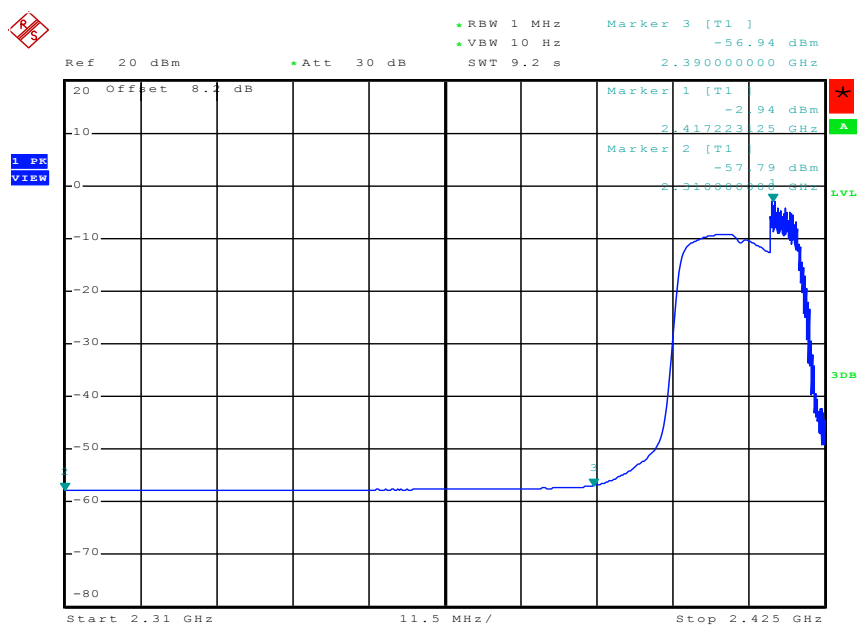
Date: 11.SEP.2019 22:09:52

Restrict-band band-edge measurements_11N20SISO_2412_Ant1_PEAK



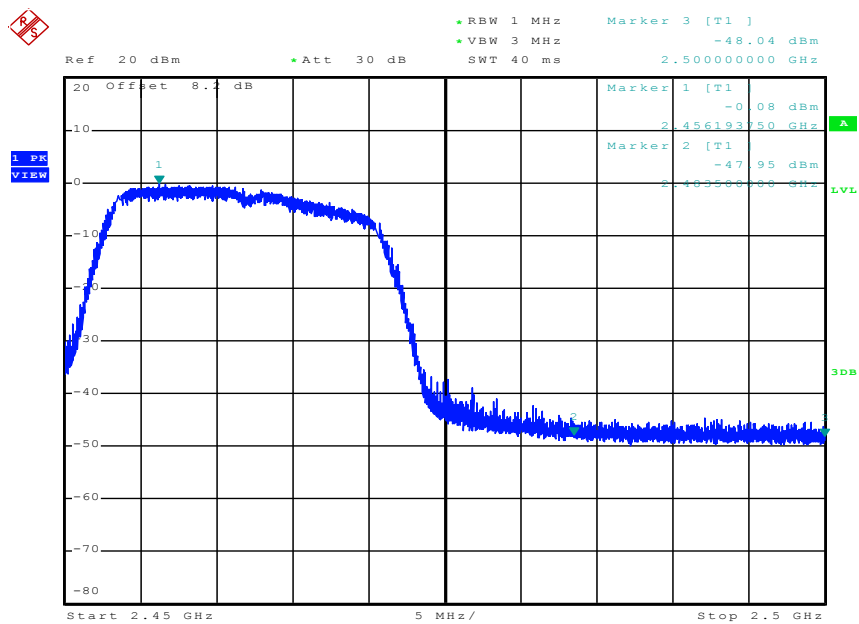
Date: 11.SEP.2019 22:12:21

Restrict-band band-edge measurements_11N20SISO_2412_Ant1_AV



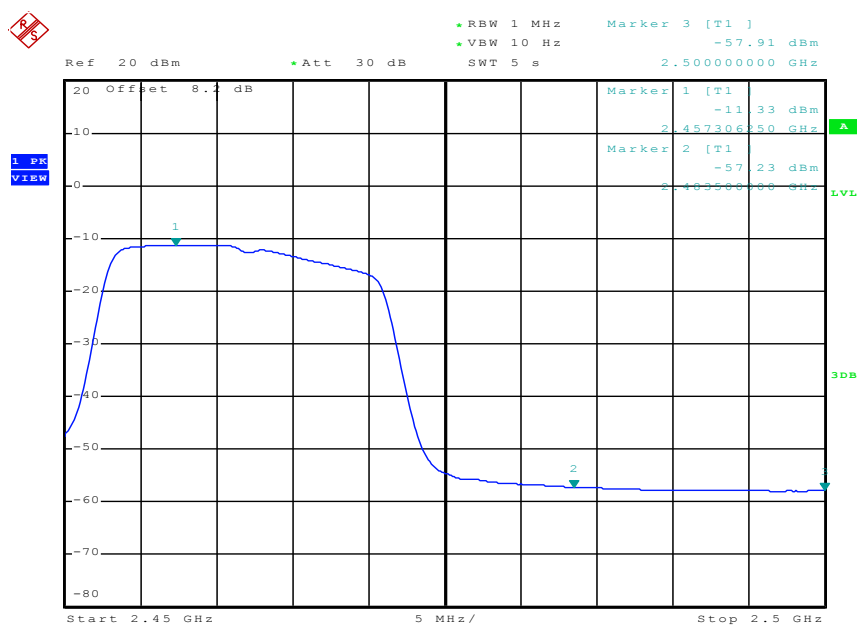
Date: 11.SEP.2019 22:12:37

Restrict-band band-edge measurements_11N20SISO_2462_Ant1_PEAK



Date: 11.SEP.2019 22:16:38

Restrict-band band-edge measurements_11N20SISO_2462_Ant1_AV



Date: 11.SEP.2019 22:16:53