

TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 81 of 152

4.1.5 Conducted Spurious Emission & Authorized-band band-edge

RESULT:

PASS

Test standard : FCC Part 15.247(d), 15.209

Requirement : ANSI C63.10-2013, KDB 558074

Kind of test site : Shielded room

Test setup

Test Channel : Low/Middle/High for spurious, Low/High for Band Edge

Operation Mode : A.1.a

Ambient temperature : 23°C

Relative humidity : 52%

For details refer to following test plot.

Note:

The all chains were tested respectively, but only the worst configuration shown here.

TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 82 of 152

Chain 1 Conducted Spurious Emission & Authorized-band band-edge, 802.11b, 2412MHz Carrier Level



Band Edge



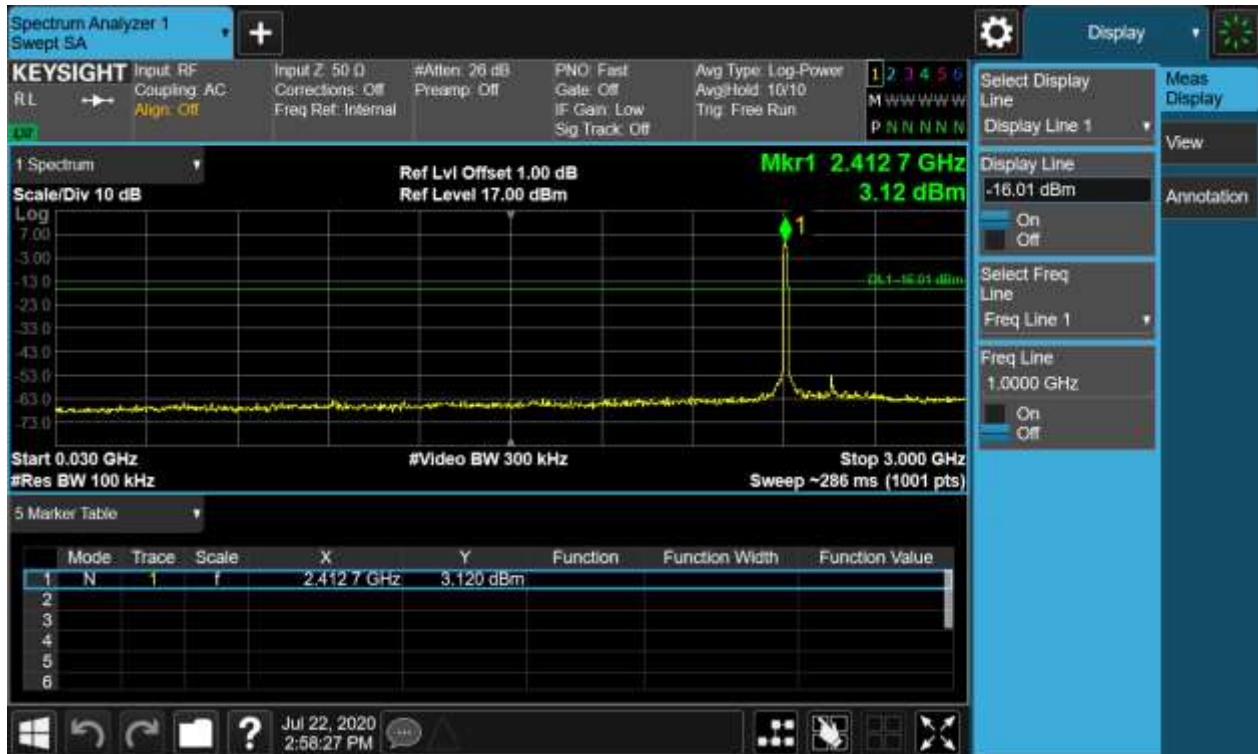
TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 83 of 152

Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 84 of 152

Chain 2 Conducted Spurious Emission & Authorized-band band-edge, 802.11b, 2412MHz Carrier Level



Band Edge



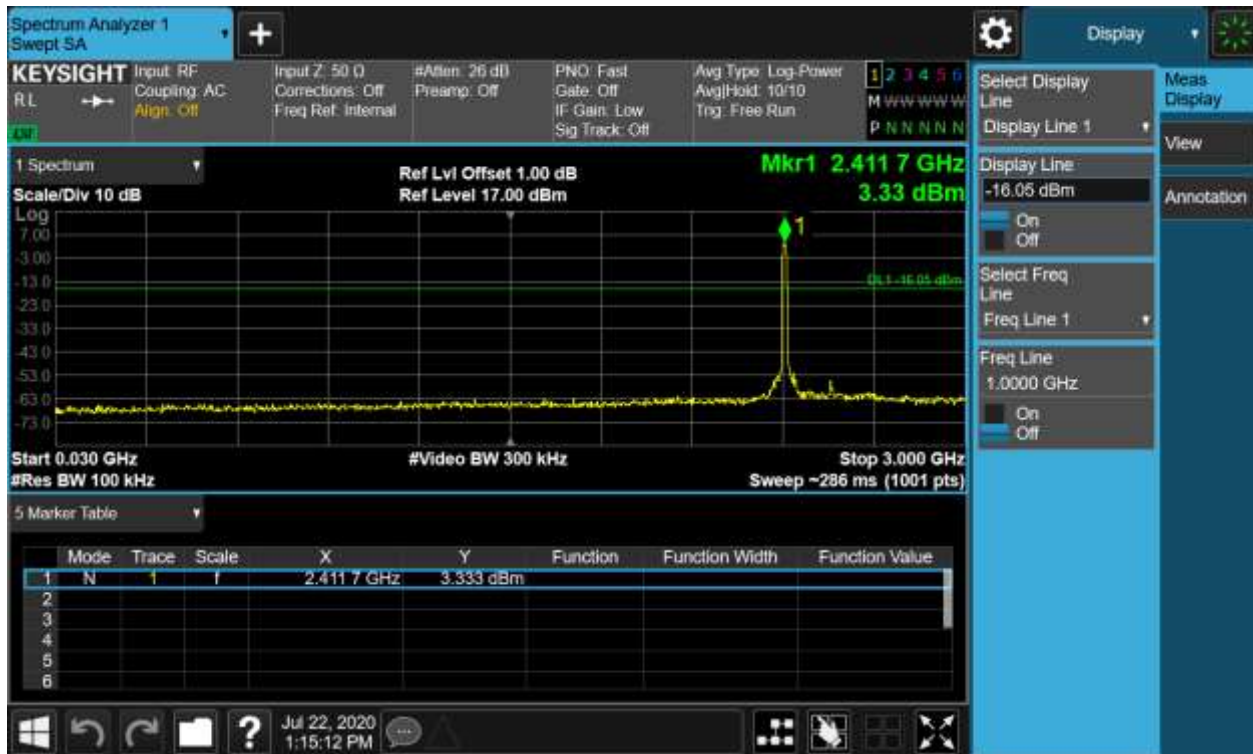
TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 85 of 152

Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 86 of 152

MIMO Conducted Spurious Emission & Authorized-band band-edge, 802.11b, 2412MHz Carrier Level



Band Edge



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 87 of 152

Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

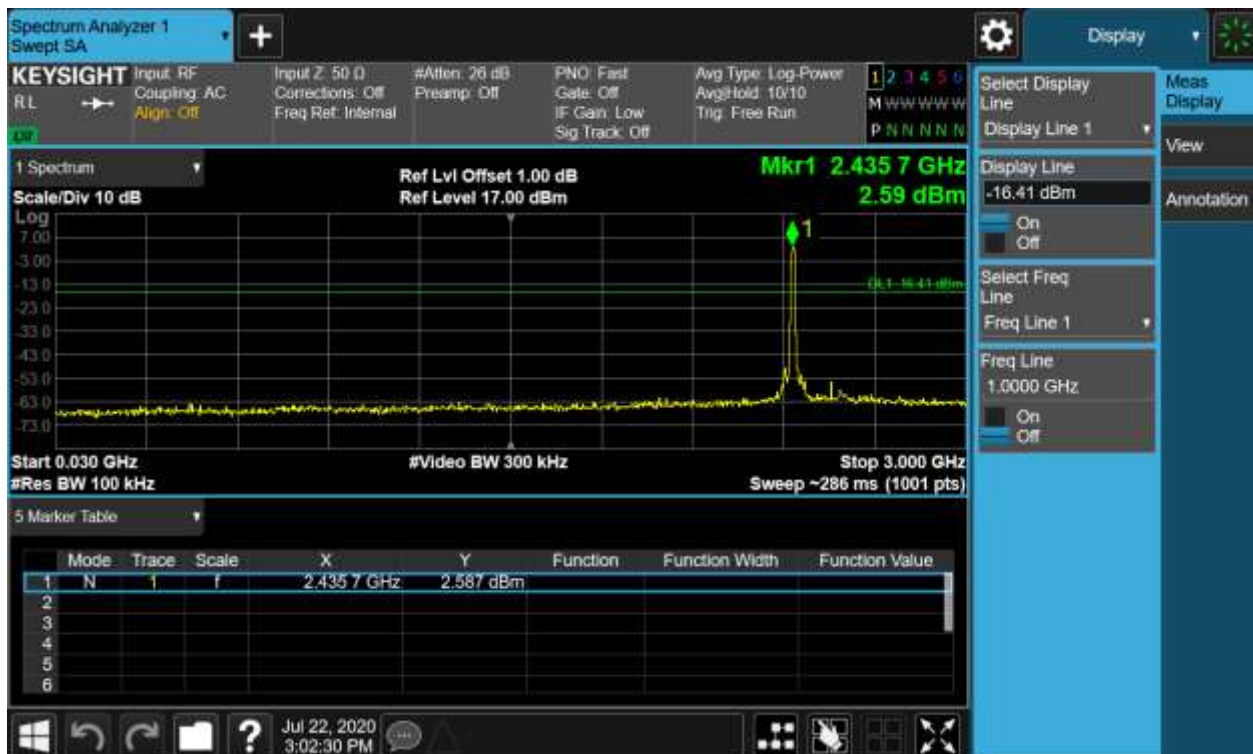
Date: 2020-08-17

Page 88 of 152

Chain 1 Conducted Spurious Emission & Authorized-band band-edge, 802.11b, 2437MHz Carrier Level



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 89 of 152



Chain 2 Conducted Spurious Emission & Authorized-band band-edge, 802.11b, 2437MHz Carrier Level



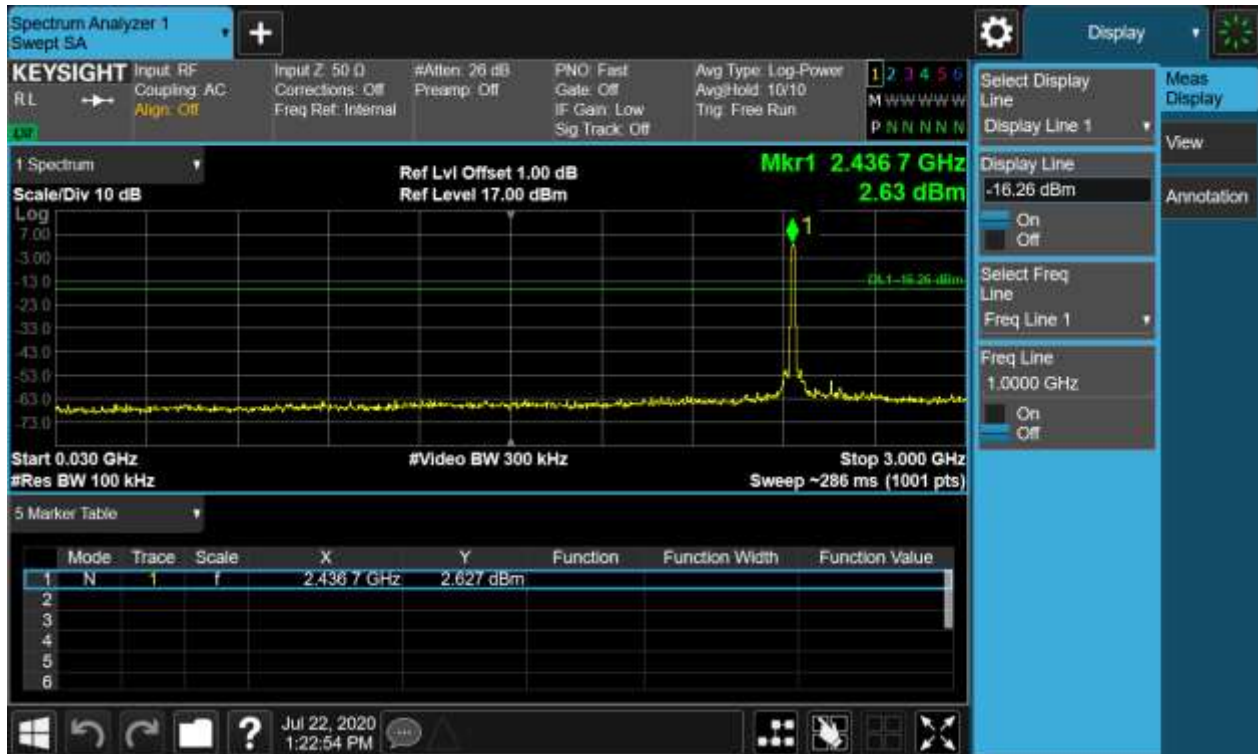
TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 90 of 152

Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 91 of 152

MIMO Conducted Spurious Emission & Authorized-band band-edge, 802.11b, 2437MHz Carrier Level



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 92 of 152



Chain 1 Conducted Spurious Emission & Authorized-band band-edge, 802.11b, 2462MHz Carrier Level



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 93 of 152

Band Edge



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 94 of 152



Chain 2 Conducted Spurious Emission & Authorized-band band-edge, 802.11b, 2462MHz Carrier Level



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 95 of 152

Band Edge



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 96 of 152



MIMO Conducted Spurious Emission & Authorized-band band-edge, 802.11b, 2462MHz
Carrier Level



TEST REPORT

Report No.: SHE20070010-02CE

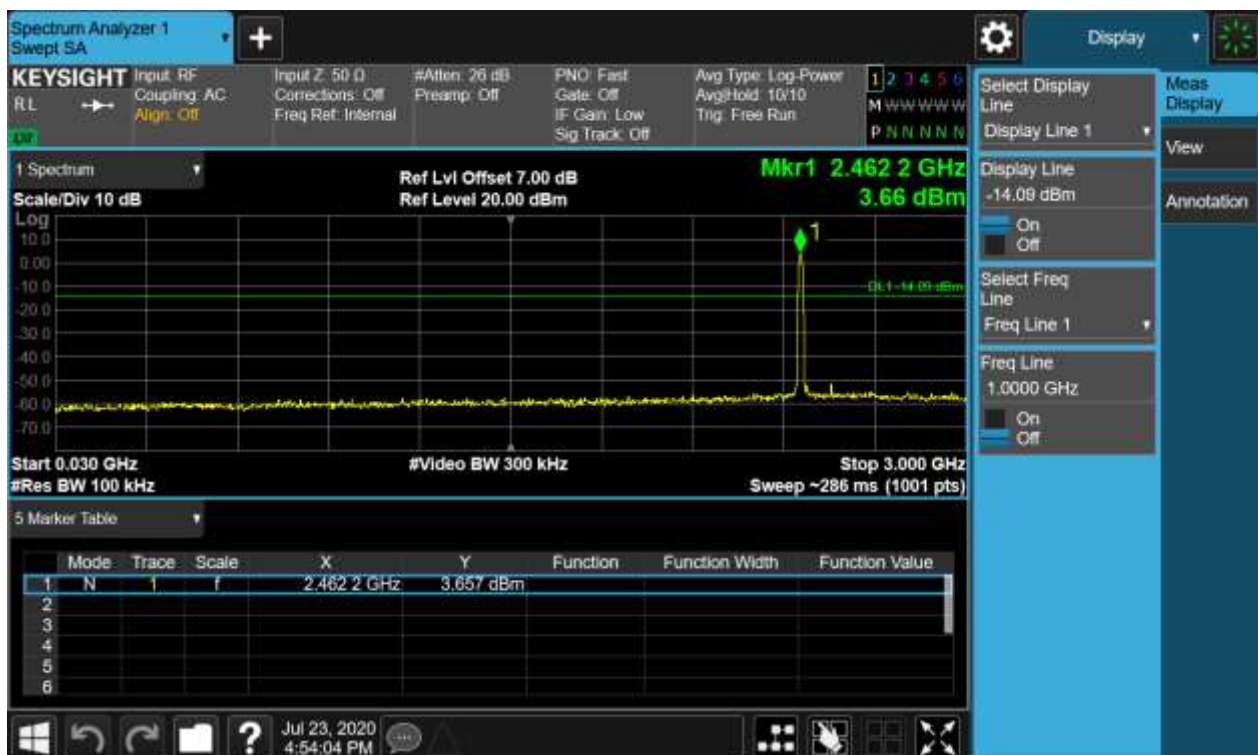
Date: 2020-08-17

Page 97 of 152

Band Edge



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 98 of 152



Chain 1 Conducted Spurious Emission & Authorized-band band-edge, 802.11g, 2412MHz Carrier Level



TEST REPORT

Report No.: SHE20070010-02CE

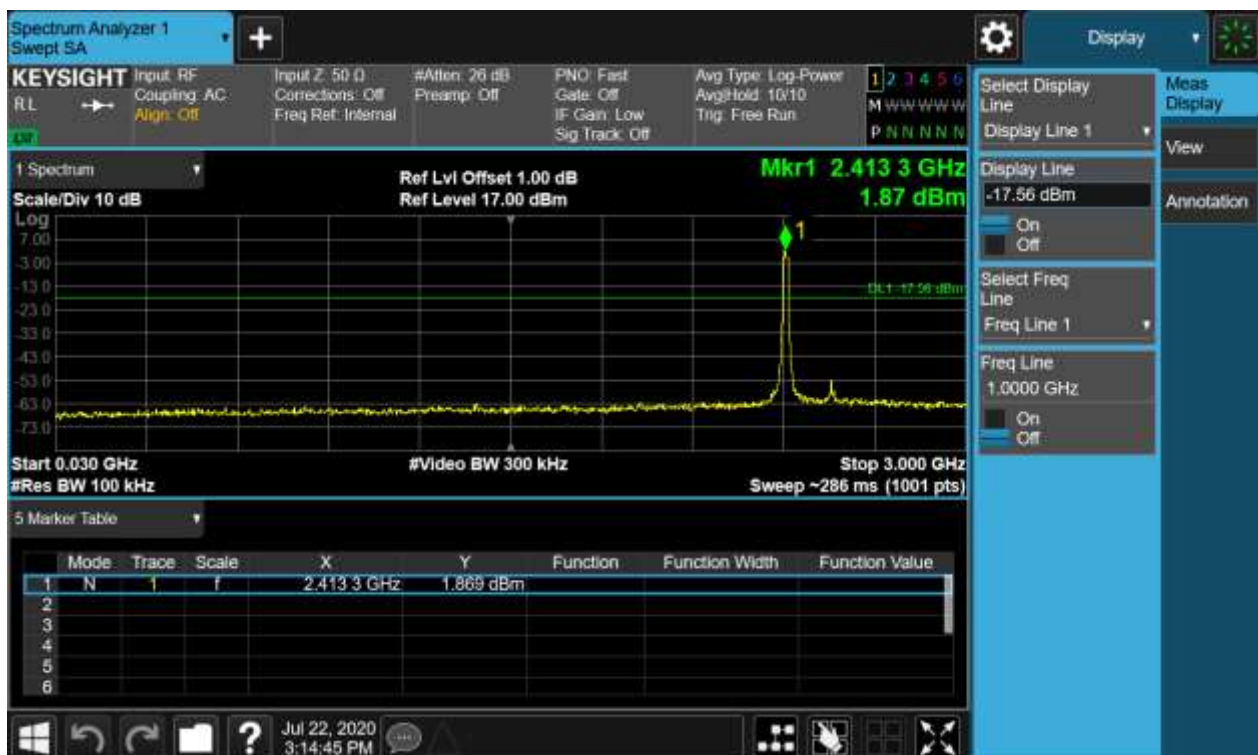
Date: 2020-08-17

Page 99 of 152

Band Edge



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 100 of 152



Chain 2 Conducted Spurious Emission & Authorized-band band-edge, 802.11g, 2412MHz Carrier Level



TEST REPORT

Report No.: SHE20070010-02CE

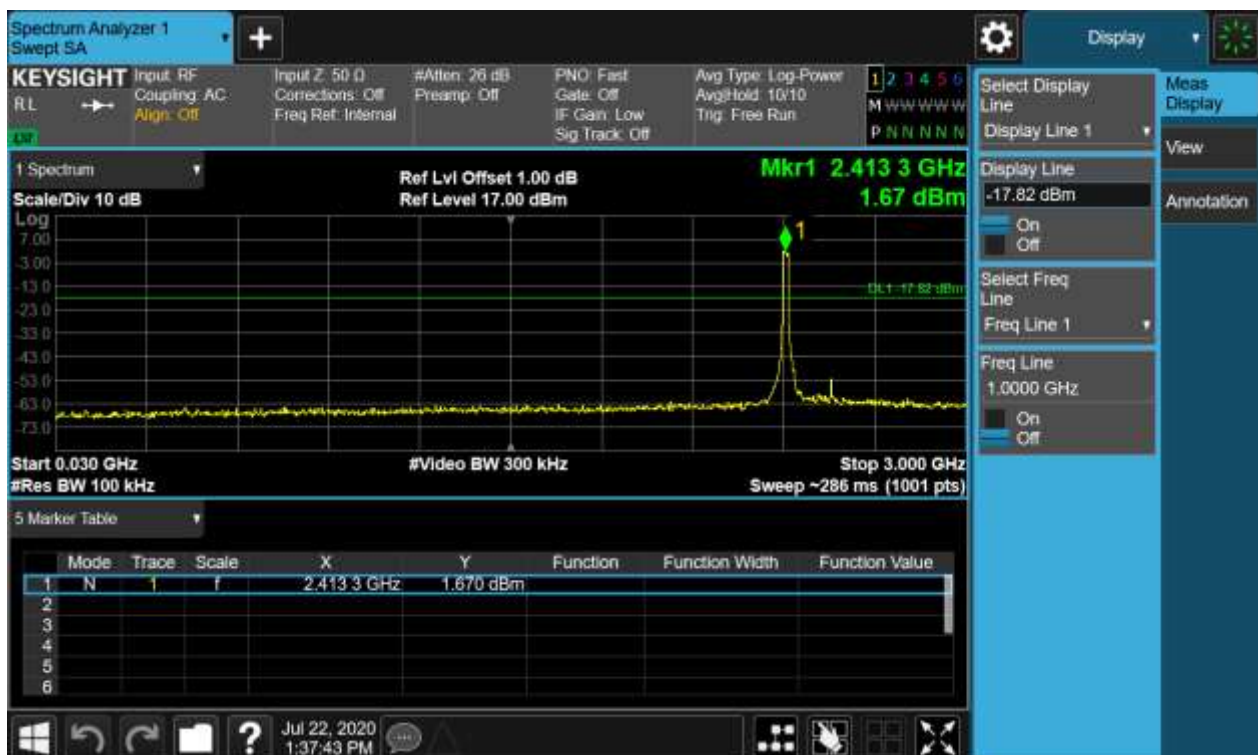
Date: 2020-08-17

Page 101 of 152

Band Edge



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 102 of 152



MIMO Conducted Spurious Emission & Authorized-band band-edge, 802.11g, 2412MHz Carrier Level



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 103 of 152

Band Edge



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 104 of 152



Chain 1 Conducted Spurious Emission & Authorized-band band-edge, 802.11g, 2437MHz Carrier Level



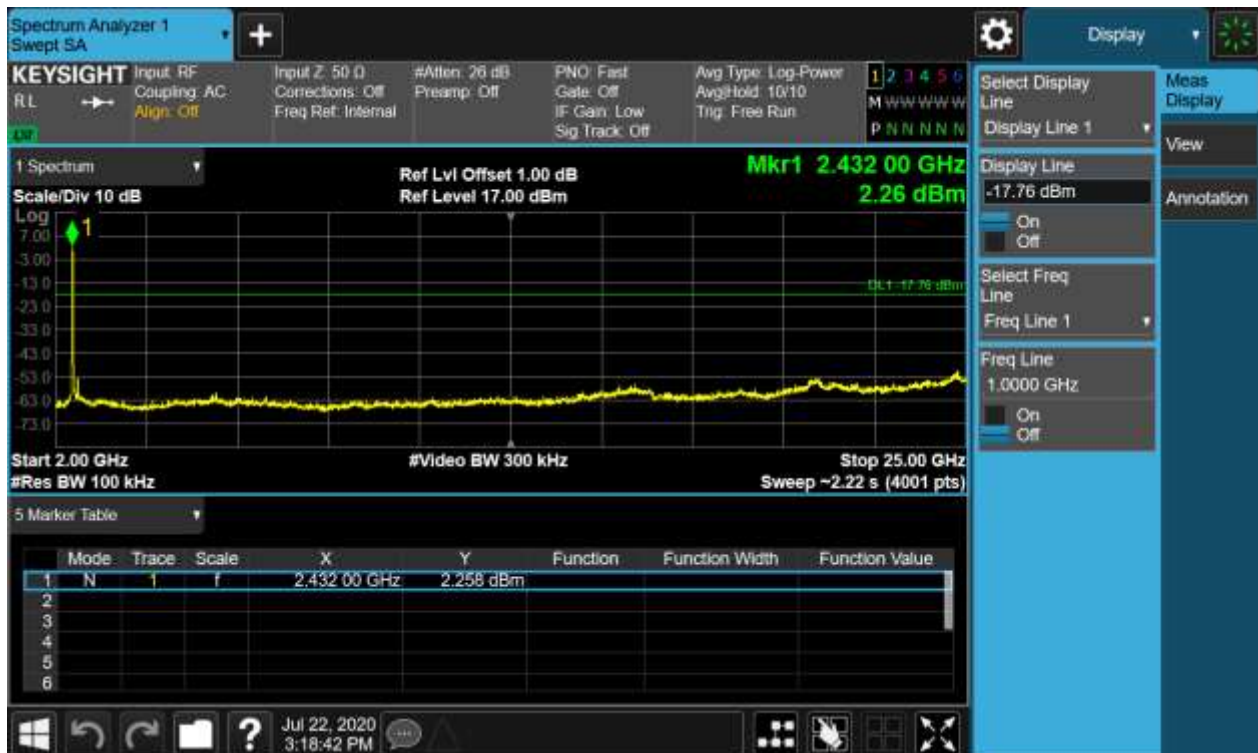
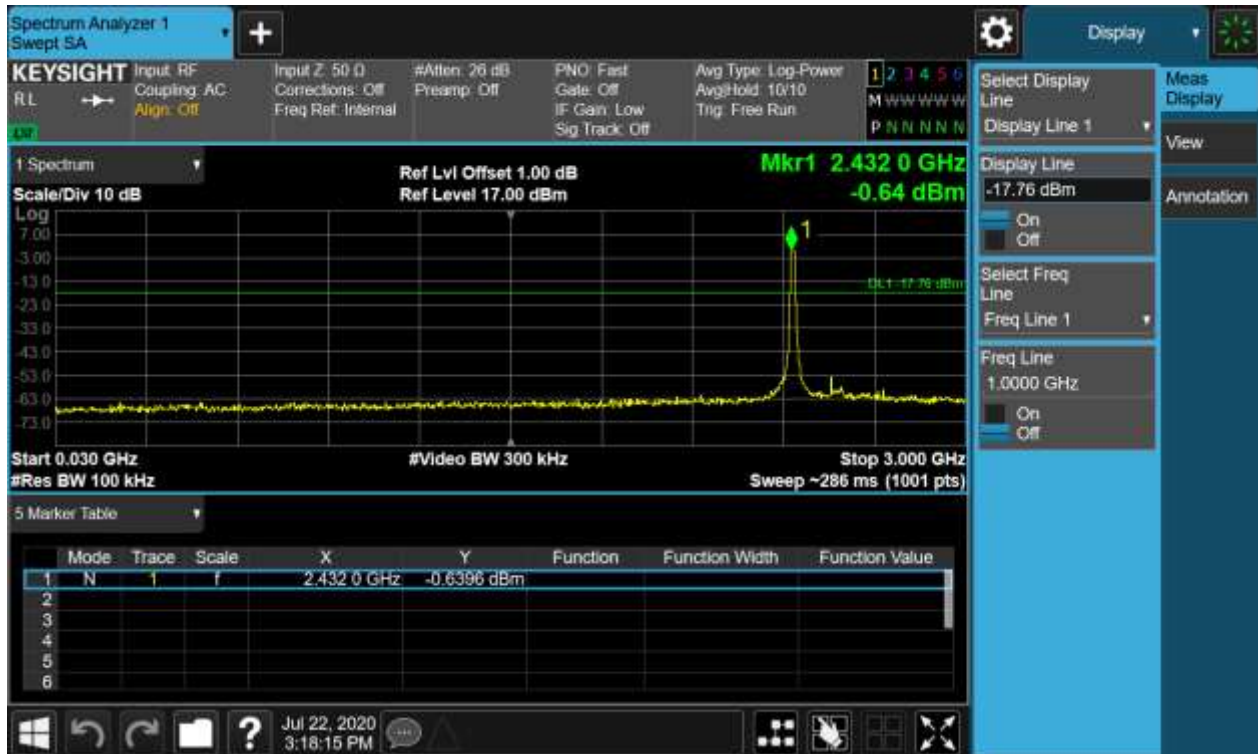
TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 105 of 152

Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 106 of 152

Chain 2 Conducted Spurious Emission & Authorized-band band-edge, 802.11g, 2437MHz Carrier Level



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 107 of 152



MIMO Conducted Spurious Emission & Authorized-band band-edge, 802.11g, 2437MHz
Carrier Level



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 108 of 152

Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 109 of 152

Chain 1 Conducted Spurious Emission & Authorized-band band-edge, 802.11g, 2462MHz Carrier Level



Band Edge



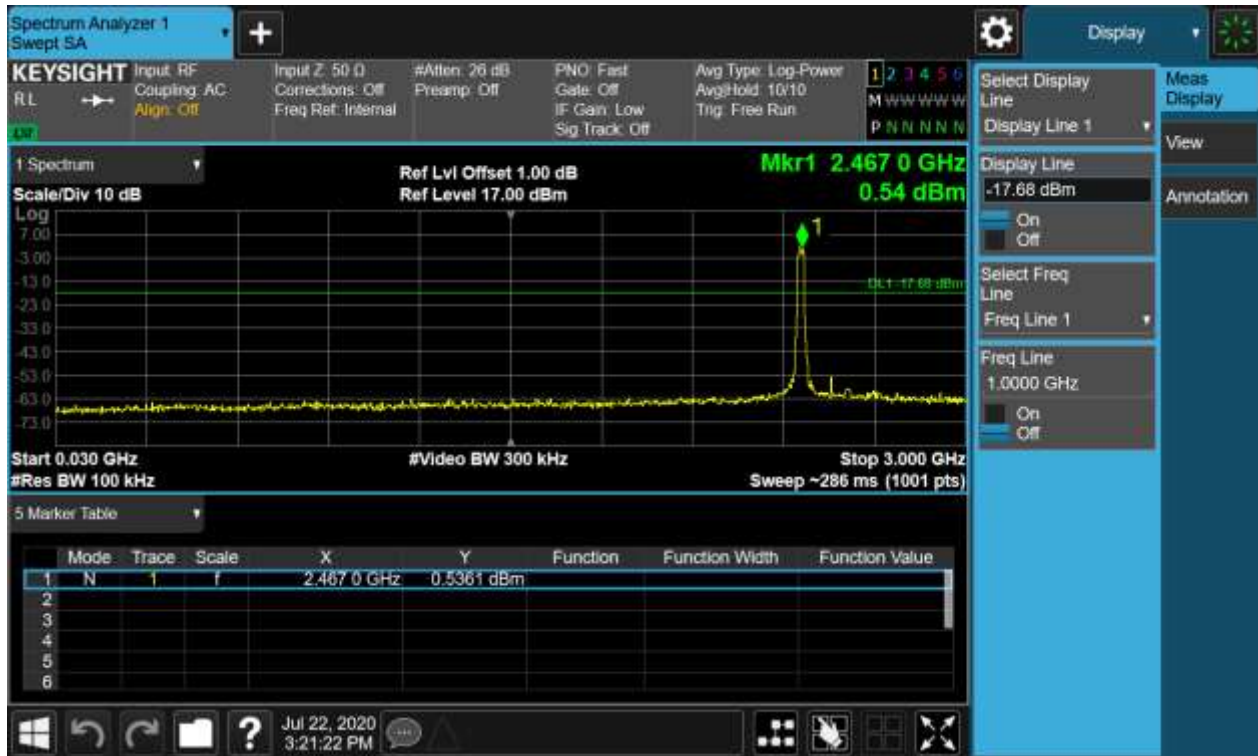
TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 110 of 152

Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 111 of 152

Chain 2 Conducted Spurious Emission & Authorized-band band-edge, 802.11g, 2462MHz Carrier Level



Band Edge



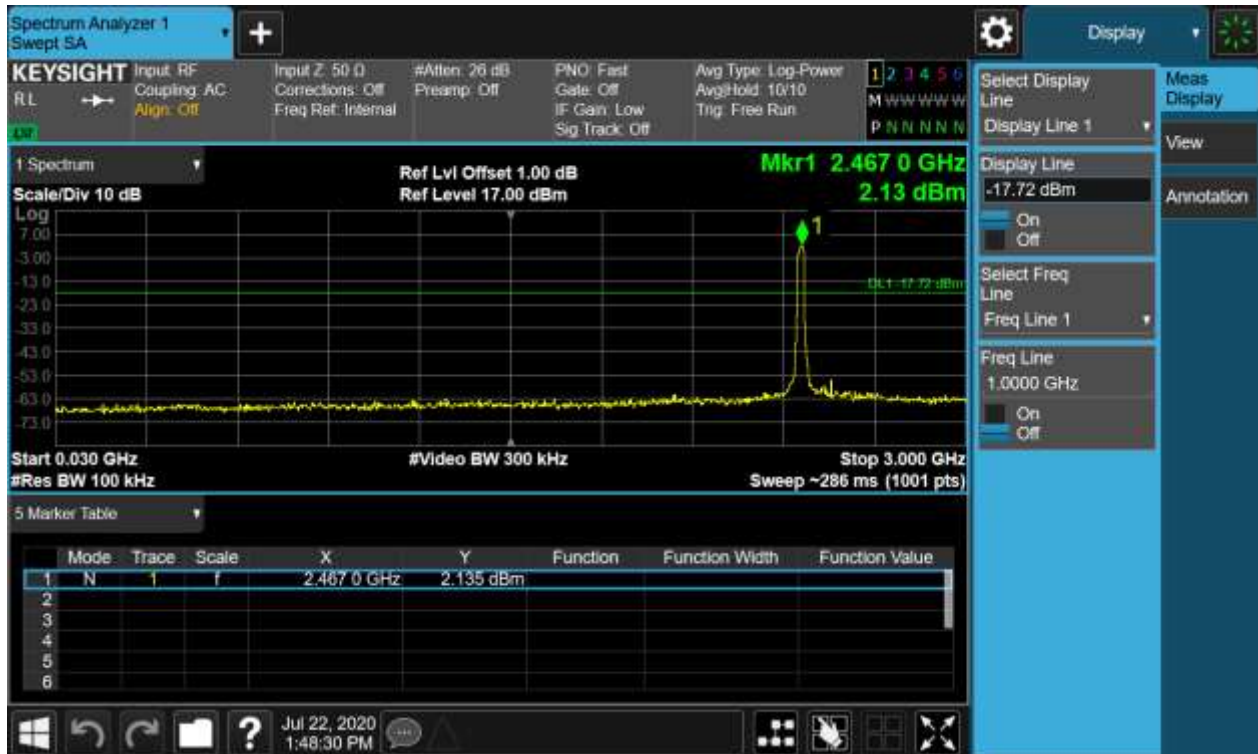
TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 112 of 152

Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 113 of 152

MIMO Conducted Spurious Emission & Authorized-band band-edge, 802.11g, 2462MHz Carrier Level



Band Edge



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 114 of 152

Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 115 of 152

Chain 1 Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT20), 2412MHz Carrier Level



Band Edge



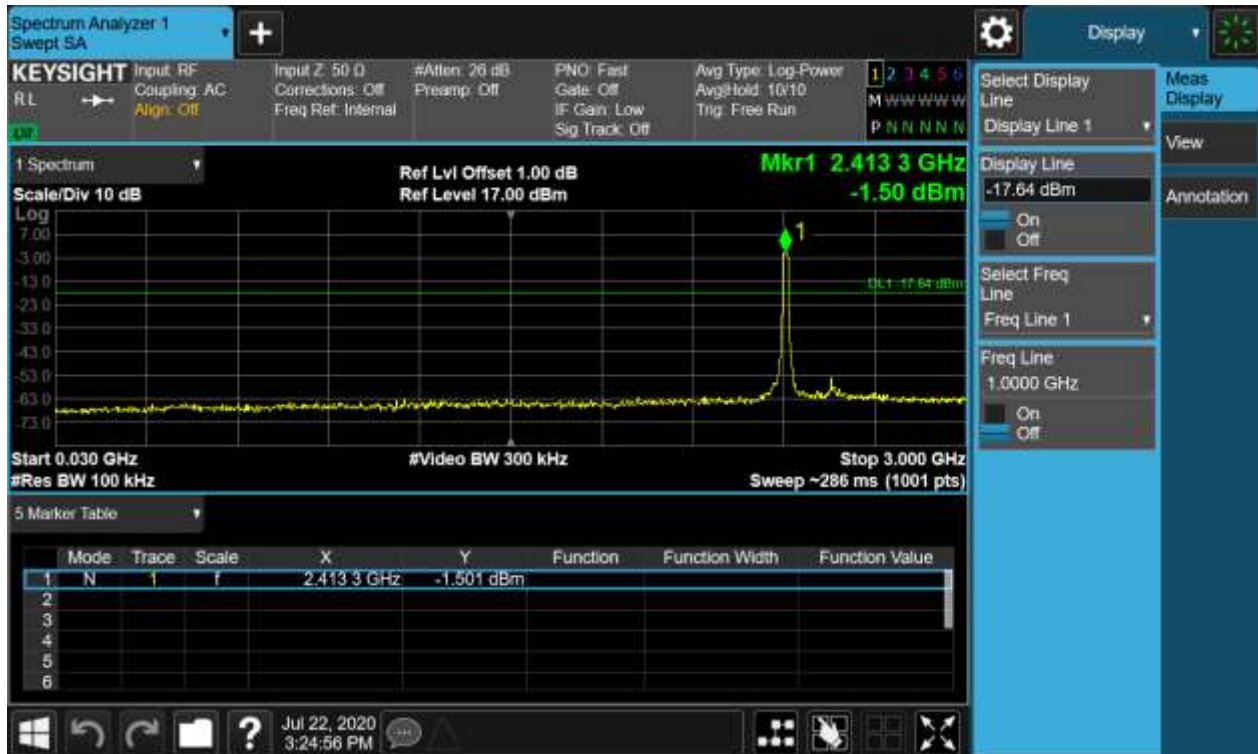
TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 116 of 152

Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 117 of 152

Chain 2 Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT20), 2412MHz Carrier Level



Band Edge



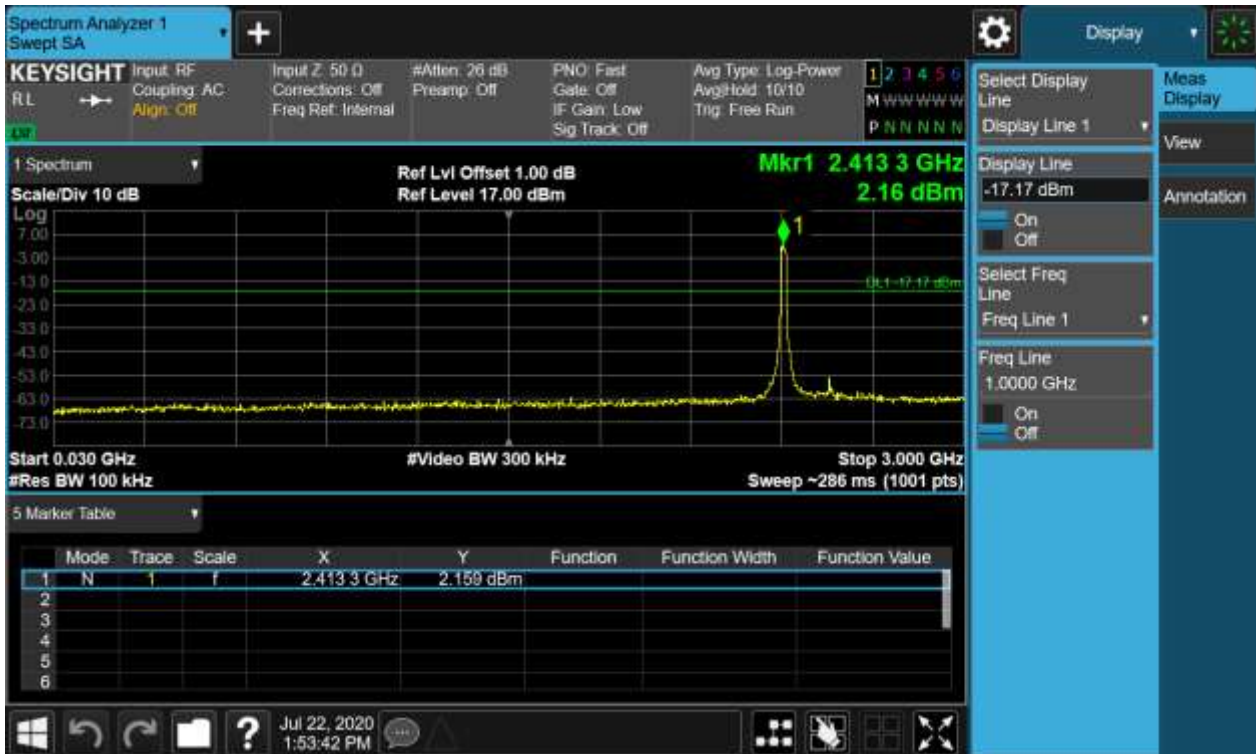
TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 118 of 152

Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 119 of 152

MIMO Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT20), 2412MHz Carrier Level



Band Edge



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 120 of 152

Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

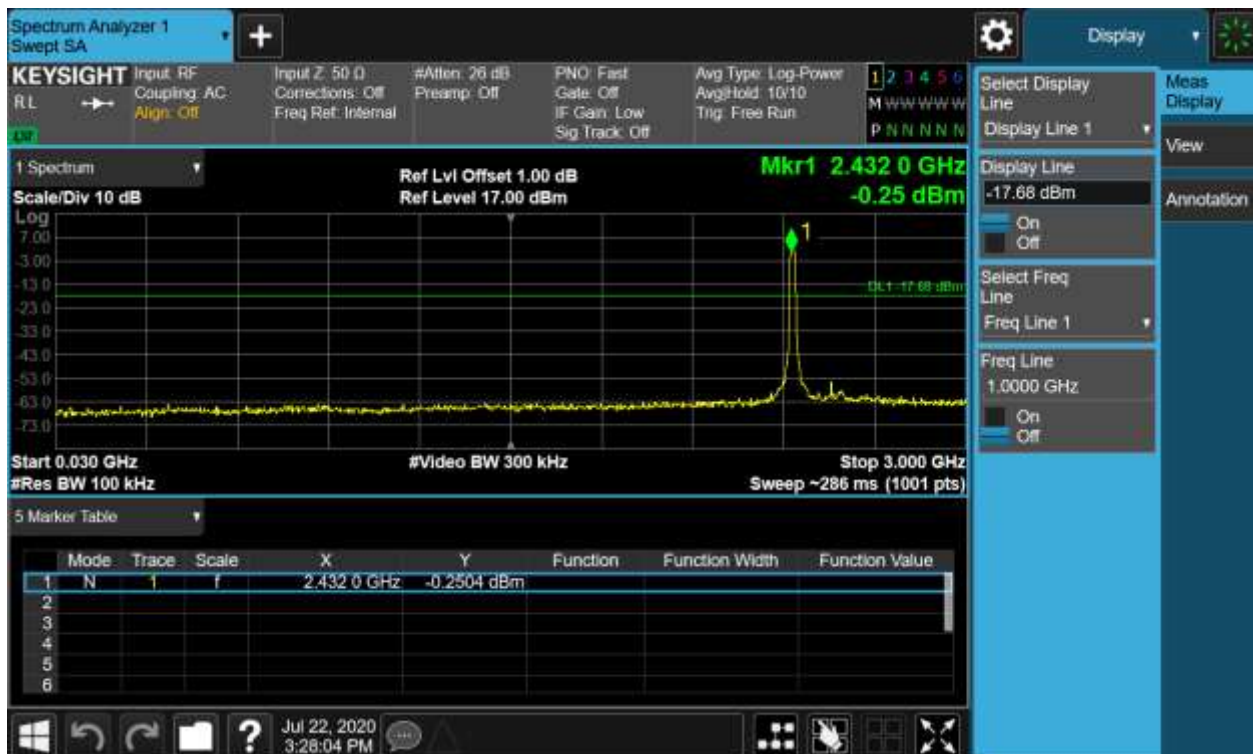
Date: 2020-08-17

Page 121 of 152

Chain 1 Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT20), 2437MHz Carrier Level



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 122 of 152



Chain 2 Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT20), 2437MHz Carrier Level



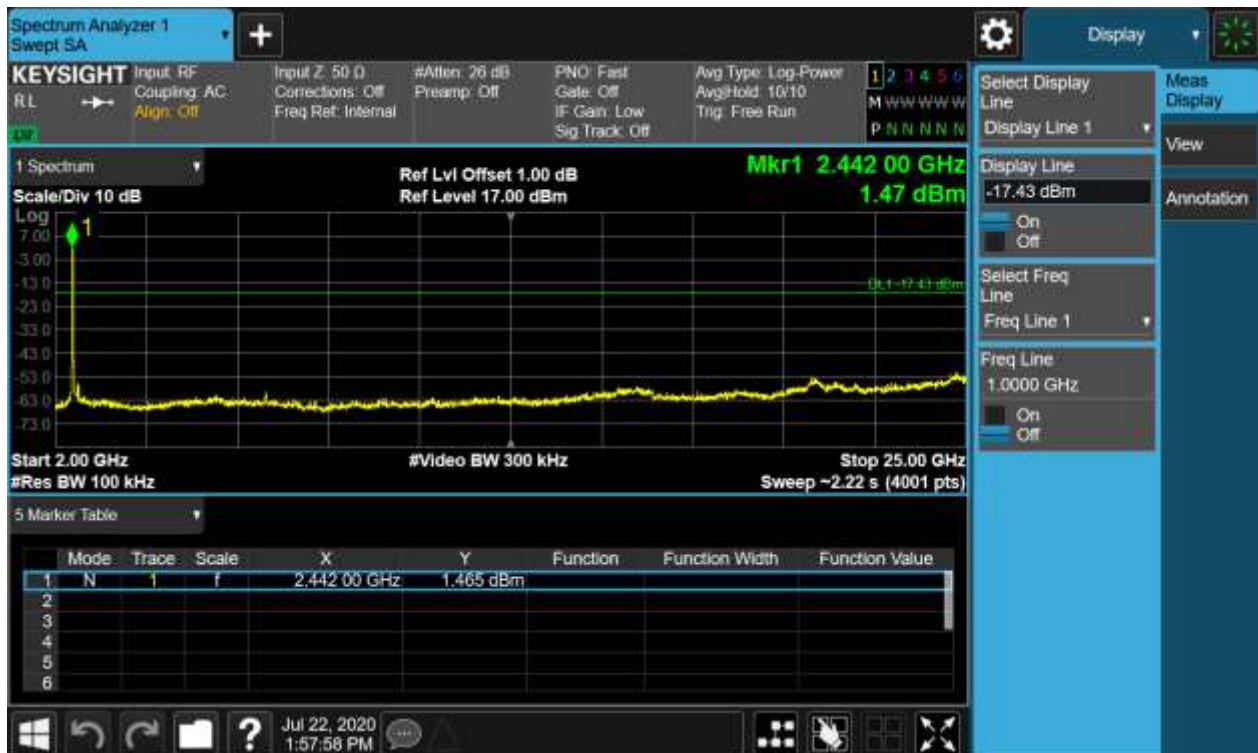
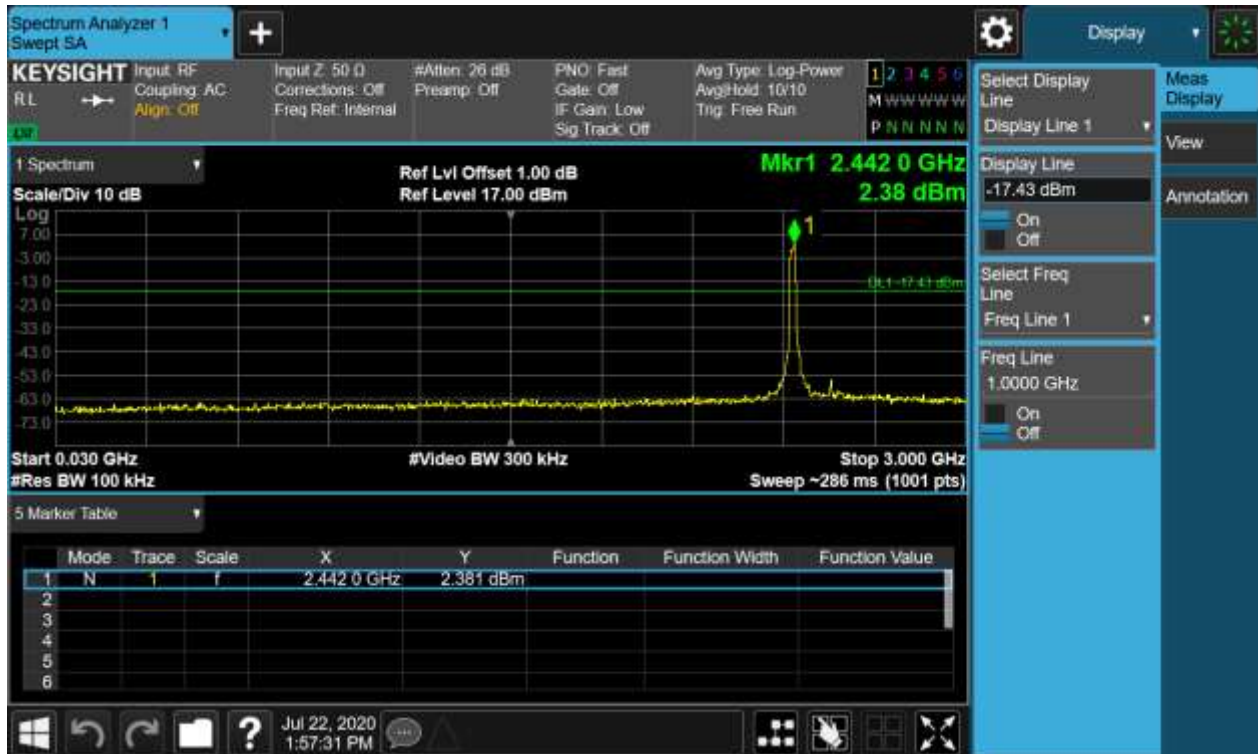
TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 123 of 152

Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 124 of 152

MIMO Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT20), 2437MHz Carrier Level



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 125 of 152



Chain 1 Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT20), 2462MHz Carrier Level



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 126 of 152

Band Edge



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 127 of 152



Chain 2 Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT20), 2462MHz Carrier Level



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 128 of 152

Band Edge



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 129 of 152



MIMO Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT20), 2462MHz Carrier Level



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 130 of 152

Band Edge



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 131 of 152



Chain 1 Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT40), 2422MHz Carrier Level



TEST REPORT

Report No.: SHE20070010-02CE

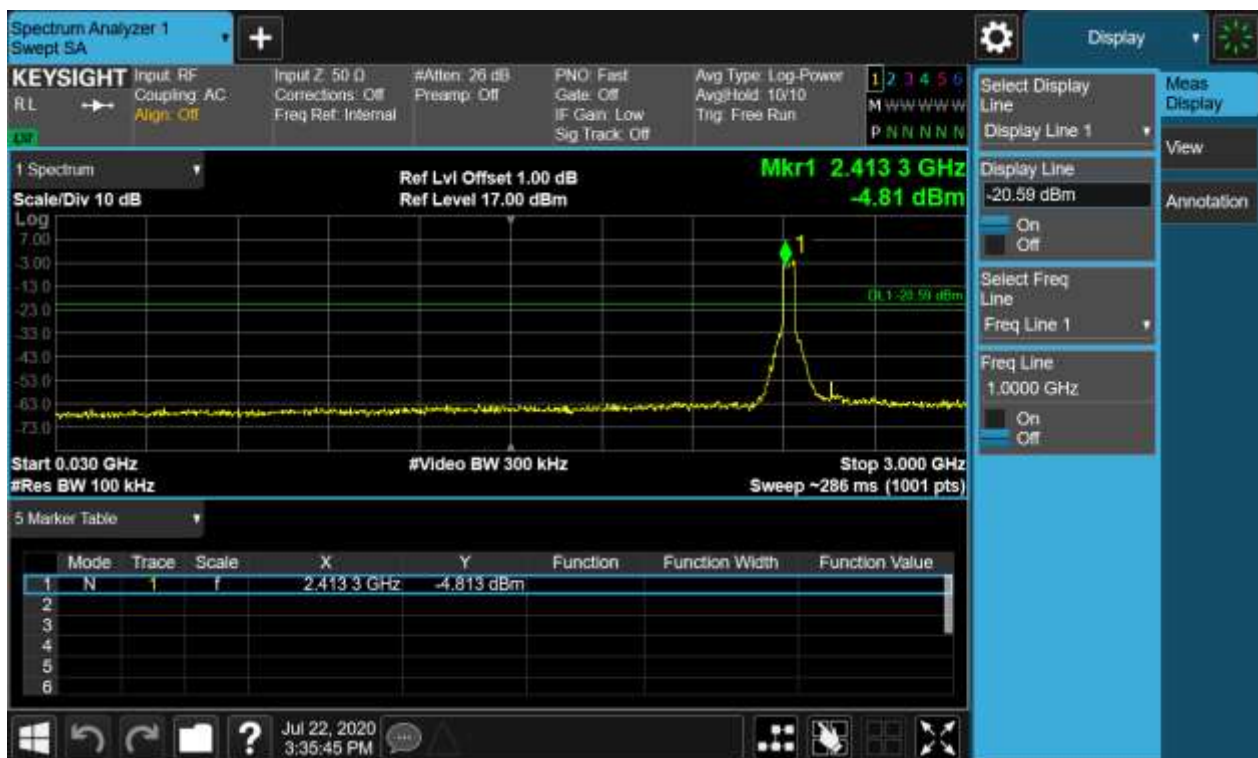
Date: 2020-08-17

Page 132 of 152

Band Edge



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 133 of 152



Chain 2 Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT40), 2422MHz Carrier Level



TEST REPORT

Report No.: SHE20070010-02CE

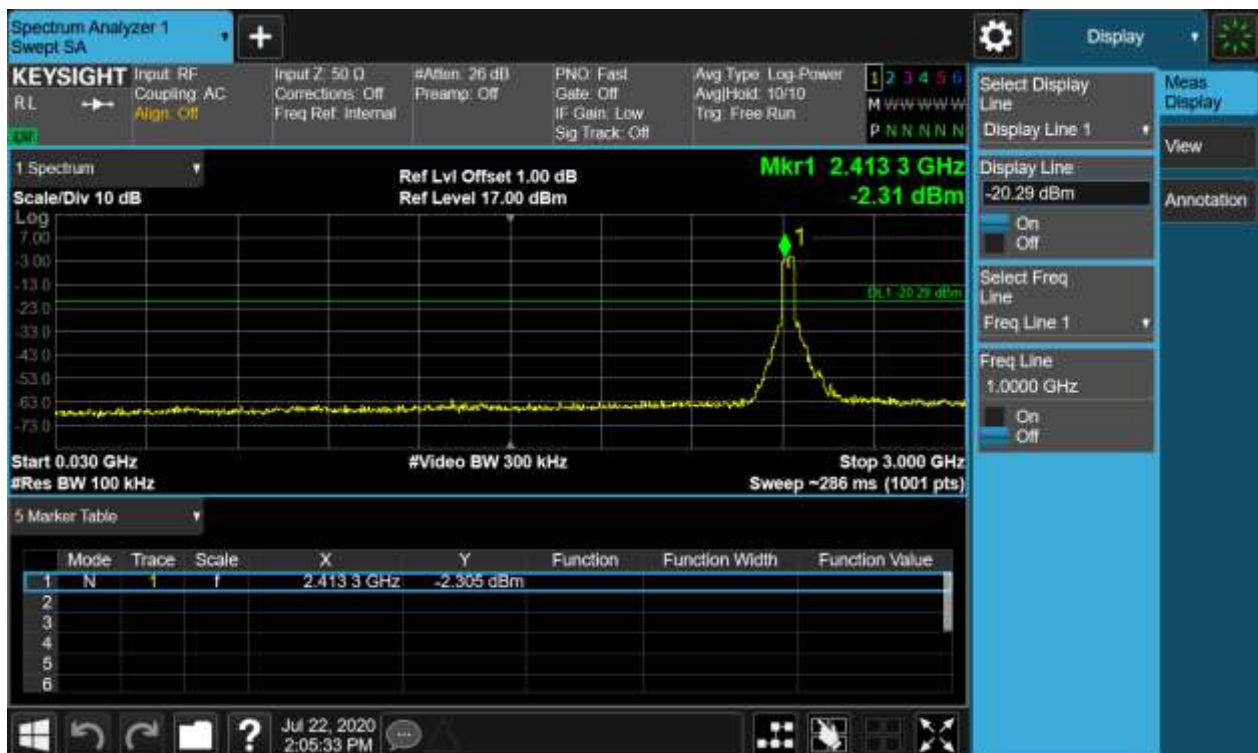
Date: 2020-08-17

Page 134 of 152

Band Edge



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 135 of 152



MIMO Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT40), 2422MHz Carrier Level



TEST REPORT

Report No.: SHE20070010-02CE

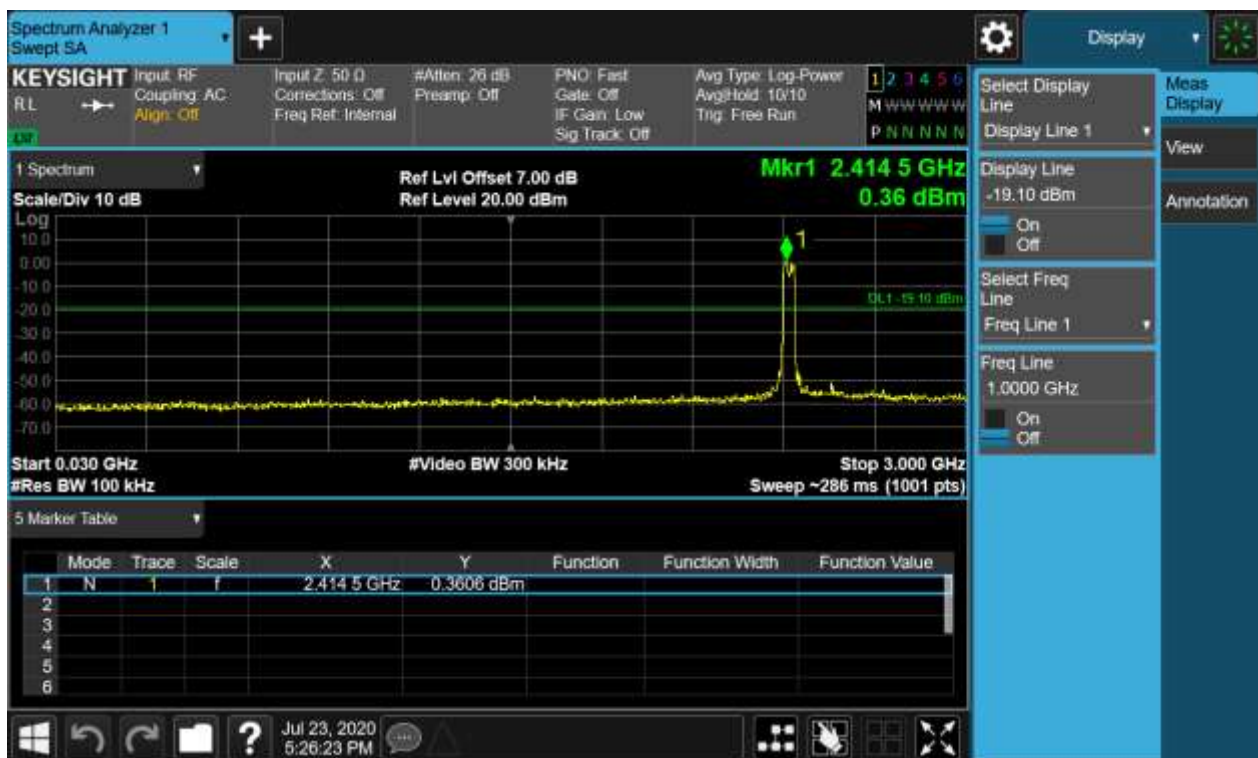
Date: 2020-08-17

Page 136 of 152

Band Edge



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 137 of 152



Chain 1 Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT40), 2437MHz Carrier Level



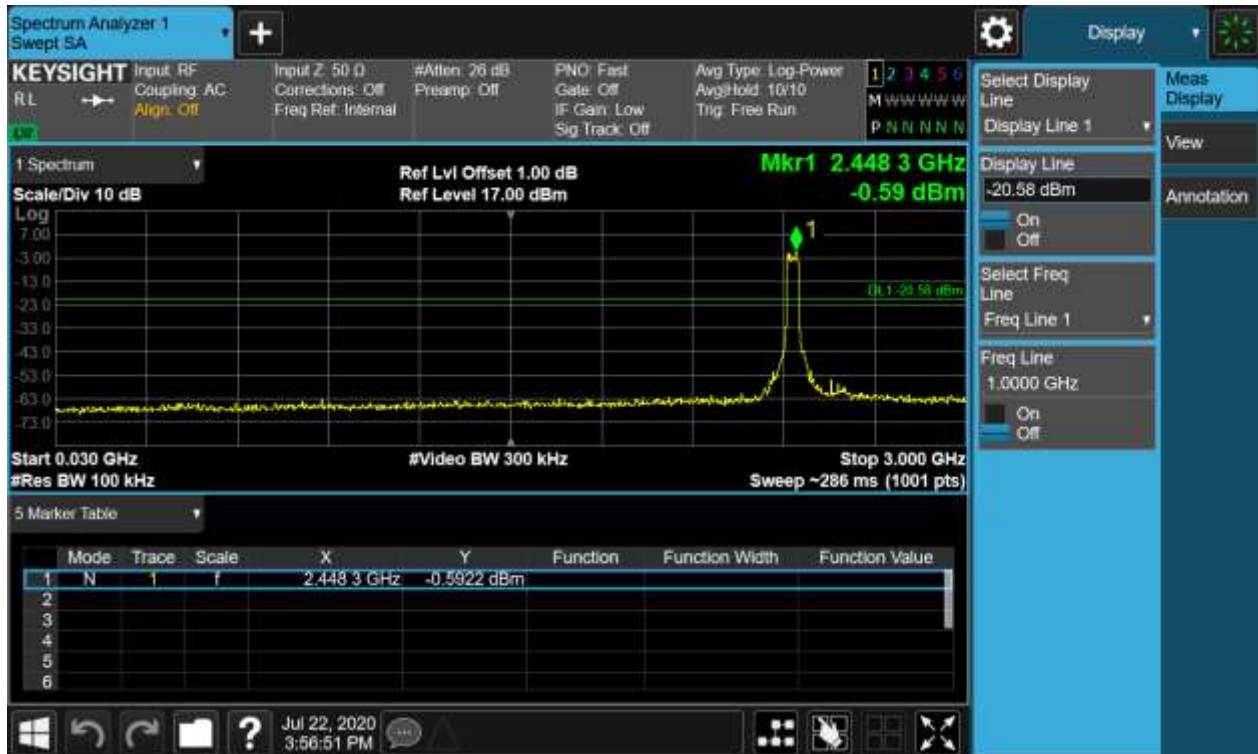
TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 138 of 152

Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

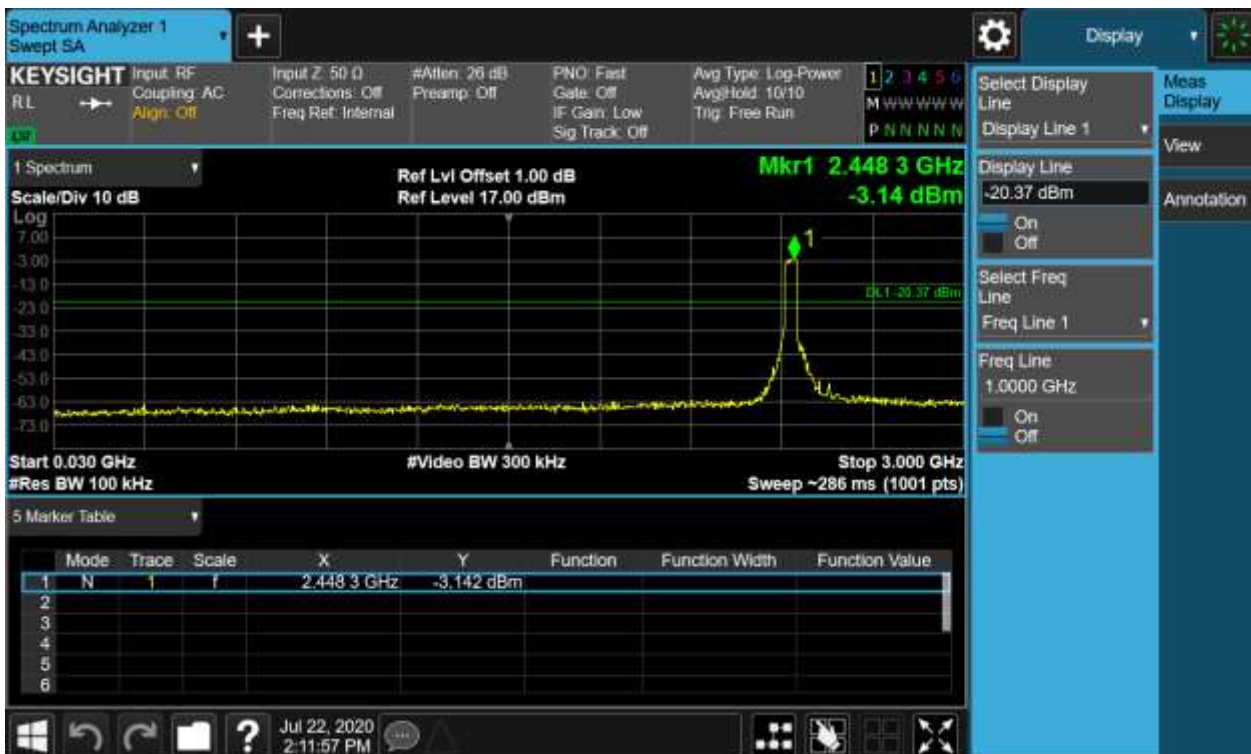
Date: 2020-08-17

Page 139 of 152

Chain 2 Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT40), 2437MHz
Carrier Level



Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 140 of 152



MIMO Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT40), 2437MHz Carrier Level



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 141 of 152

Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 142 of 152

Chain 1 Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT40), 2452MHz
Carrier Level



Band Edge



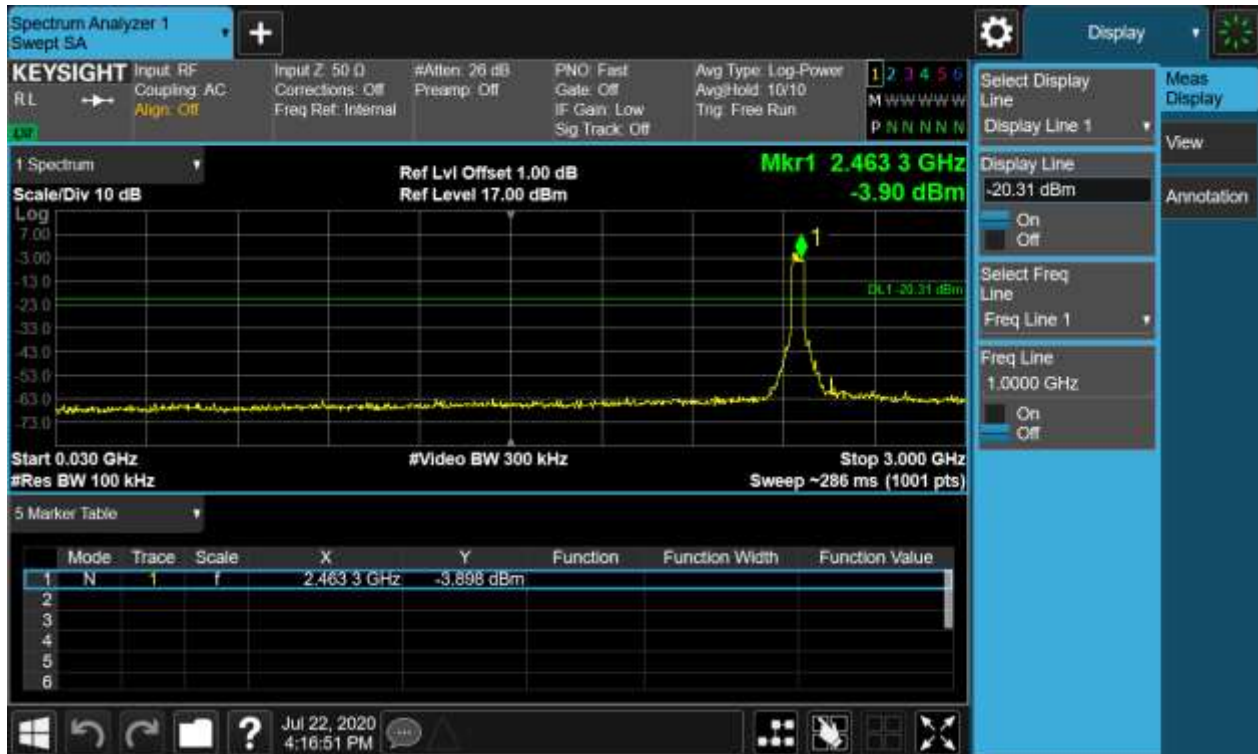
TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 143 of 152

Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 144 of 152

Chain2 Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT40), 2452MHz
Carrier Level



Band Edge



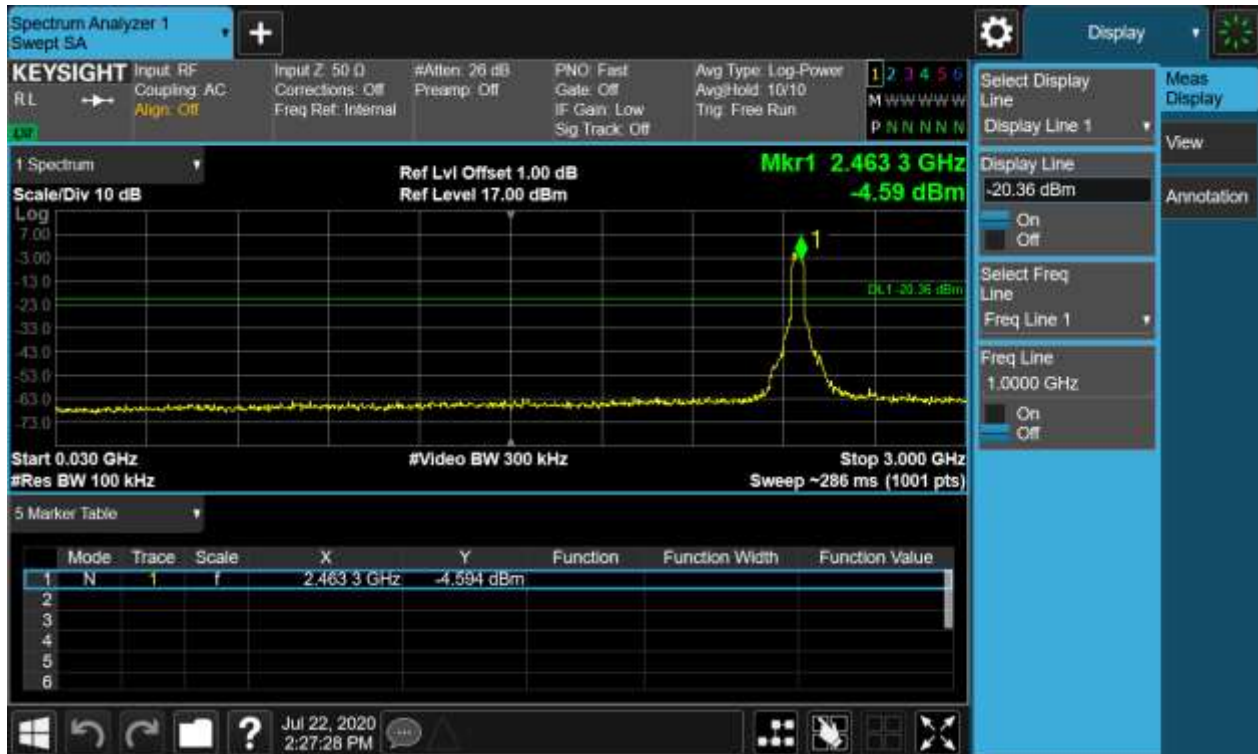
TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 145 of 152

Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 146 of 152

MIMO Conducted Spurious Emission & Authorized-band band-edge, 802.11n(HT40), 2452MHz Carrier Level



Band Edge



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 147 of 152

Conducted spurious emissions 30MHz-25GHz



TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 148 of 152

4.1.6 Spurious Emission

RESULT:

PASS

Test standard : FCC Part 15.247(d), 15.205, 15.209

Requirement : ANSI C63.10-2013, KDB 558074

Kind of test site : 3m Semi-Anechoic Chamber

Test setup

Test Channel : Low/Middle/High

Operation Mode : A

Ambient temperature : 23°C

Relative humidity : 52%

Notes:

1. Test plots please refer to the annex document

“WIFI2.4G-TX EXHIBIT A of SHE20070010-02CE FCC mimo”.

2. For 9 kHz ~ 30 MHz, the amplitude of spurious emissions that are attenuated by more than 20dB below the permissible. The value has no need to be reported.

3. The spurious above 18GHz is noise only and 20dB below the limit. The value has no need to be reported.

4. The EUT is working in the Normal link mode below 1 GHz.

5. The all chains were tested respectively, but only the worst configuration shown here.

TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 149 of 152

4.1.7 Band Edge (Restricted-band band-edge)

RESULT:

PASS

Test standard : FCC Part 15.247(d), 15.205, 15.209

Requirement : ANSI C63.10-2013, KDB 558074

Kind of test site : 3m Semi-Anechoic Chamber

Test setup

Test Channel : Low/Middle/High

Operation Mode : A.1

Ambient temperature : 23°C

Relative humidity : 52%

Note:

1. Test plots please refer to the annex document

“WIFI2.4G-TX EXHIBIT A of SHE20070010-02CE FCC mimo”.

2. The all chains were tested respectively, but only the worst configuration shown here.

TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 150 of 152

4.2 Mains Emissions

4.2.1 Conducted Emission on AC Mains

RESULT:

PASS

Test standard : FCC Part 15.207(a)

Requirement : ANSI C63.10-2013

Kind of test site : Shielded room

Test setup

Input Voltage : AC 120V, 60Hz; AC 240V, 50Hz

Operation Mode : A

Earthing : Not Connected

Ambient temperature : 23°C

Relative humidity : 52%

For details refer to following test plot.

TEST REPORT

Report No.: SHE20070010-02CE

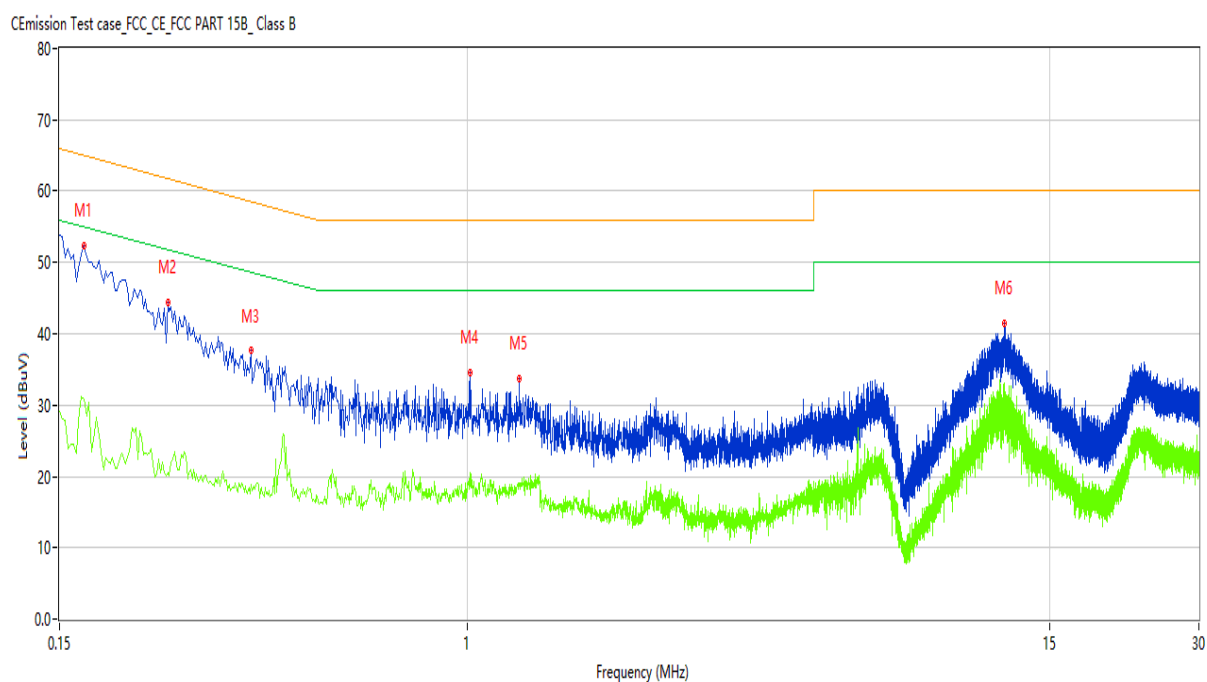
Date: 2020-08-17

Page 151 of 152

Note:

The all configurations were tested respectively, but only the worst configuration shown here.

Figure 1: Conducted Emission on AC Mains, L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.168	54.30	10.15	65.06	-10.76	Peak	L	Pass
1*	0.168	45.60	10.15	65.06	-19.46	QP	L	Pass
1**	0.168	30.76	10.15	55.06	-24.30	AV	L	Pass
2	0.248	45.12	10.14	61.82	-16.70	Peak	L	Pass
2*	0.248	36.27	10.14	61.82	-25.55	QP	L	Pass
2**	0.248	20.52	10.14	51.82	-31.30	AV	L	Pass
3	0.366	38.99	10.14	58.59	-19.60	Peak	L	Pass
3*	0.366	29.48	10.14	58.59	-29.11	QP	L	Pass
3**	0.366	18.75	10.14	48.59	-29.84	AV	L	Pass
4	1.014	34.20	10.15	56.00	-21.80	Peak	L	Pass
4*	1.014	25.56	10.15	56.00	-30.44	QP	L	Pass
4**	1.014	20.62	10.15	46.00	-25.38	AV	L	Pass
5	1.272	34.02	10.16	56.00	-21.98	Peak	L	Pass
5*	1.272	24.72	10.16	56.00	-31.28	QP	L	Pass
5**	1.272	18.64	10.16	46.00	-27.36	AV	L	Pass
6	12.126	42.73	10.46	60.00	-17.27	Peak	L	Pass
6*	12.126	35.95	10.46	60.00	-24.05	QP	L	Pass
6**	12.126	33.16	10.46	50.00	-16.84	AV	L	Pass

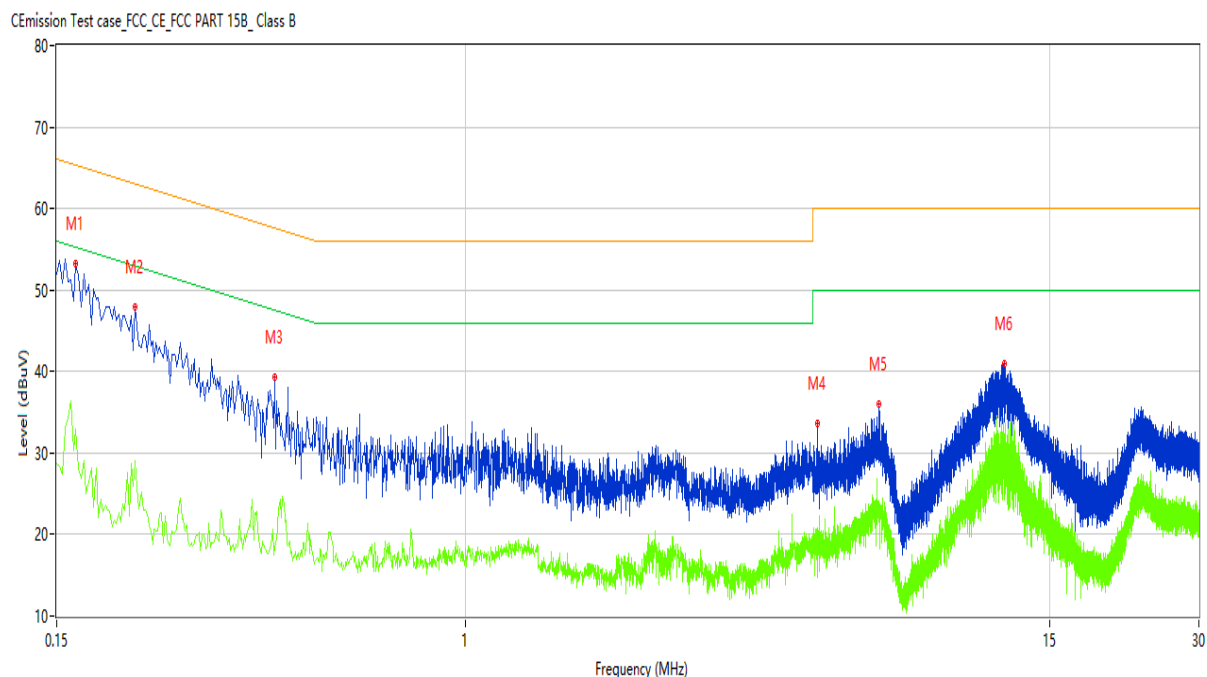
TEST REPORT

Report No.: SHE20070010-02CE

Date: 2020-08-17

Page 152 of 152

Figure 2: Conducted Emission on AC Mains, N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.164	54.97	10.15	65.26	-10.29	Peak	N	Pass
1*	0.164	47.96	10.15	65.26	-17.30	QP	N	Pass
1**	0.164	32.91	10.15	55.26	-22.35	AV	N	Pass
2	0.216	49.01	10.14	62.97	-13.96	Peak	N	Pass
2*	0.216	41.18	10.14	62.97	-21.79	QP	N	Pass
2**	0.216	29.10	10.14	52.97	-23.87	AV	N	Pass
3	0.412	39.39	10.15	57.61	-18.22	Peak	N	Pass
3*	0.412	28.98	10.15	57.61	-28.63	QP	N	Pass
3**	0.412	18.33	10.15	47.61	-29.28	AV	N	Pass
4	5.122	32.26	10.25	60.00	-27.74	Peak	N	Pass
4*	5.122	25.96	10.25	60.00	-34.04	QP	N	Pass
4**	5.122	20.33	10.25	50.00	-29.67	AV	N	Pass
5	6.812	35.64	10.30	60.00	-24.36	Peak	N	Pass
5*	6.812	29.18	10.30	60.00	-30.82	QP	N	Pass
5**	6.812	23.77	10.30	50.00	-26.23	AV	N	Pass
6	12.186	41.98	10.46	60.00	-18.02	Peak	N	Pass
6*	12.186	36.01	10.46	60.00	-23.99	QP	N	Pass
6**	12.186	27.86	10.46	50.00	-22.14	AV	N	Pass

End of the report