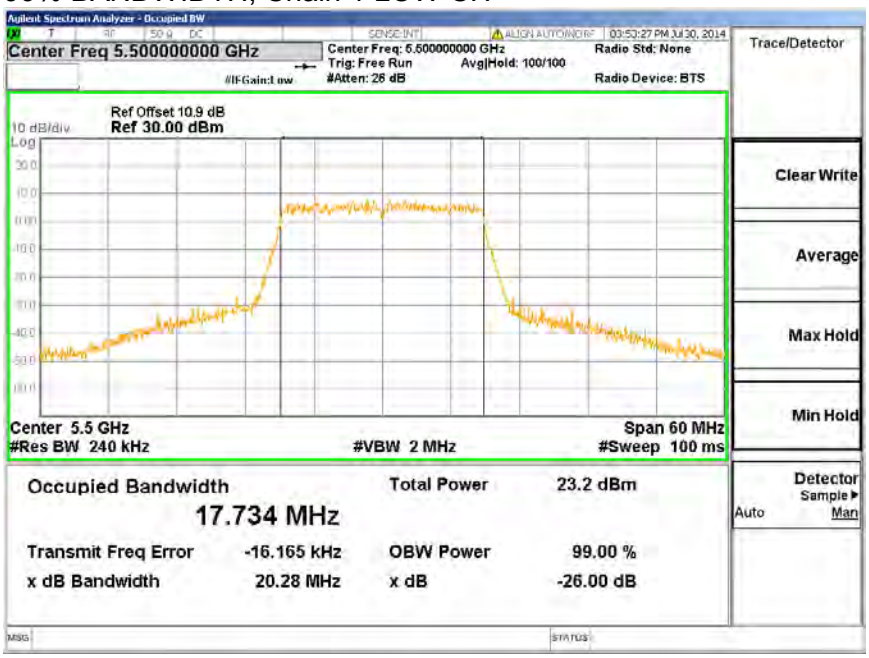
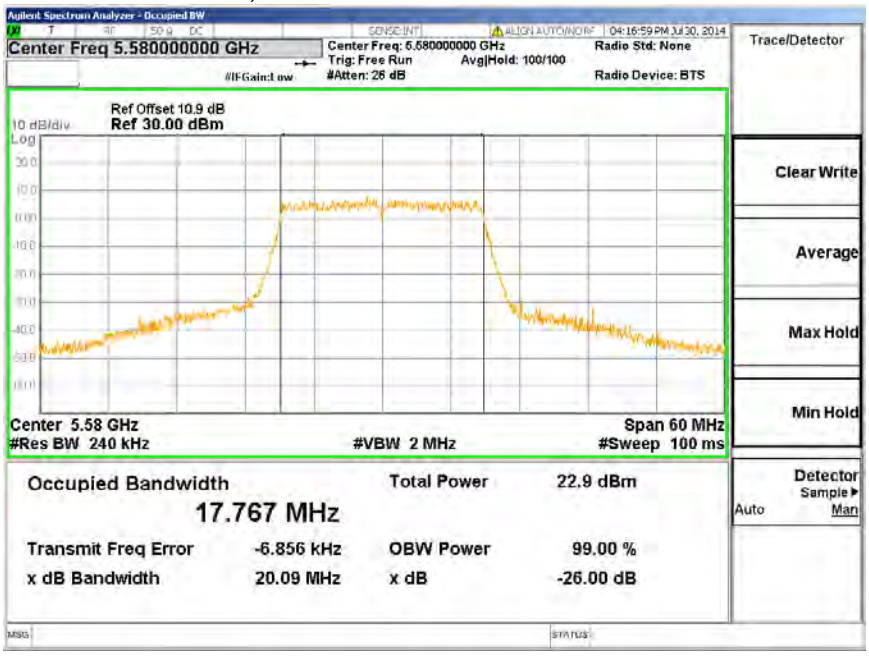
99% BANDWIDTH, Chain 1

99% BANDWIDTH, Chain 1 LOW CH

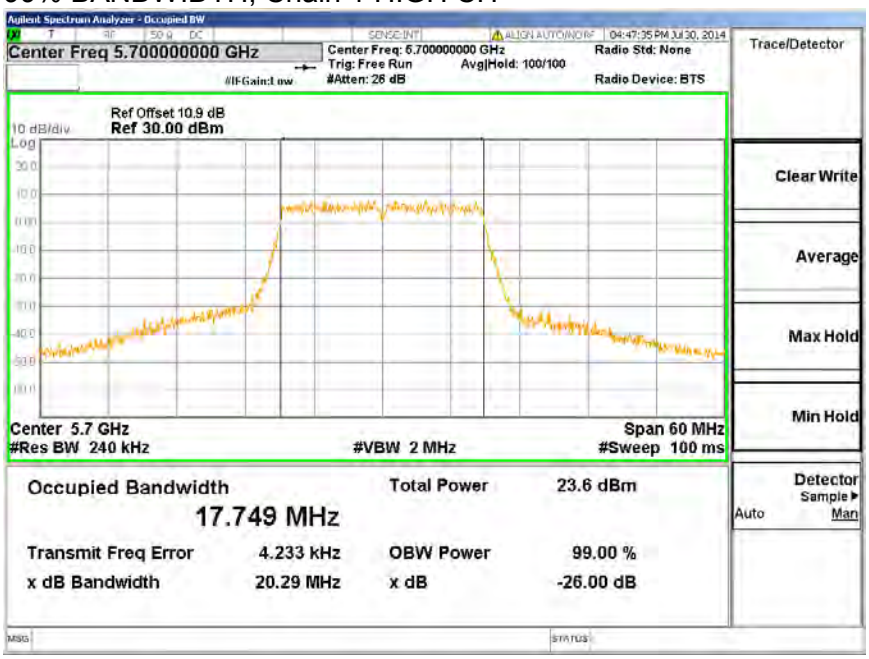


99% BANDWIDTH, Chain 1 MID CH

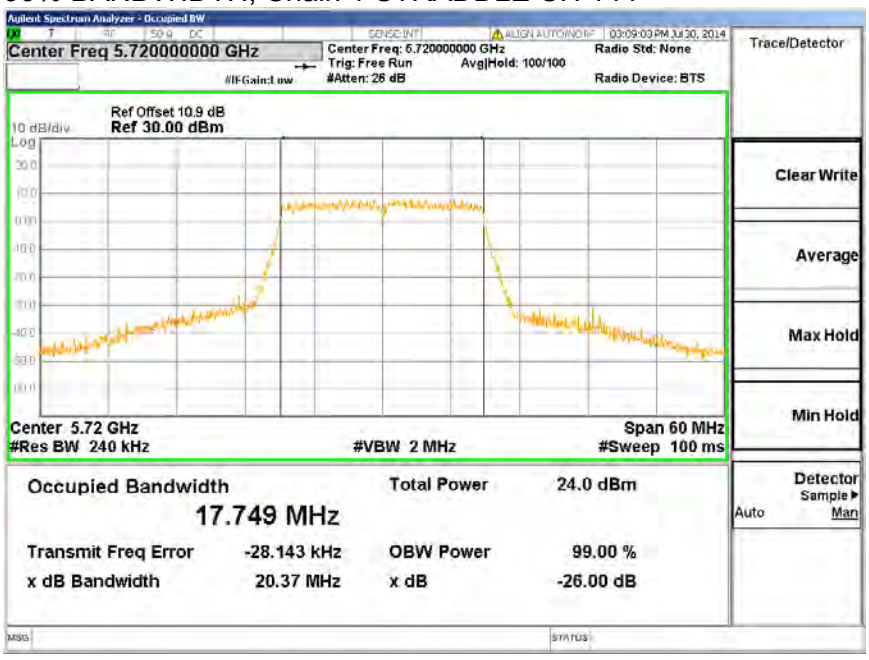


This report shall not be reproduced except in full, without the written approval of UL LLC

99% BANDWIDTH, Chain 1 HIGH CH



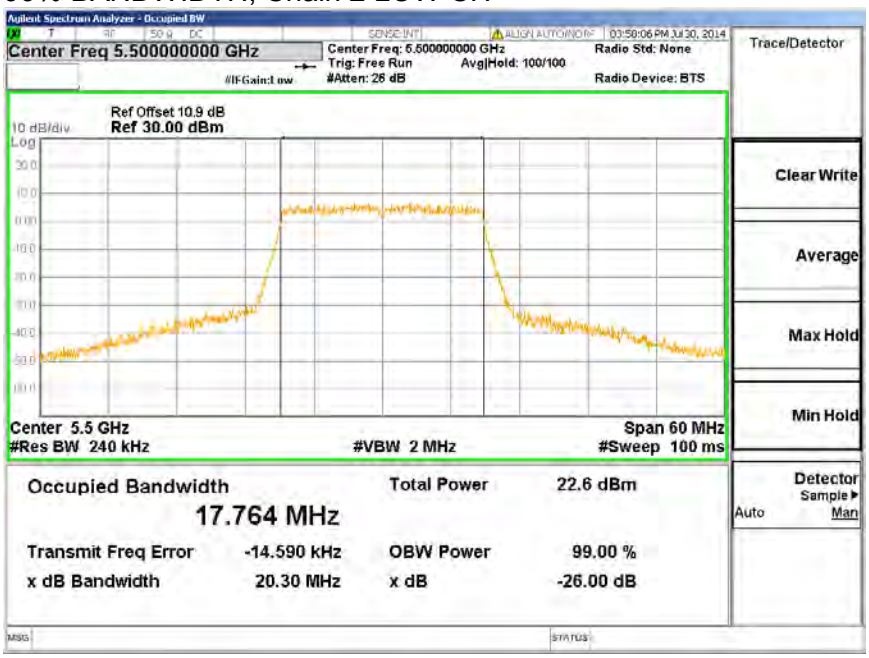
99% BANDWIDTH, Chain 1 STRADDLE CH 144



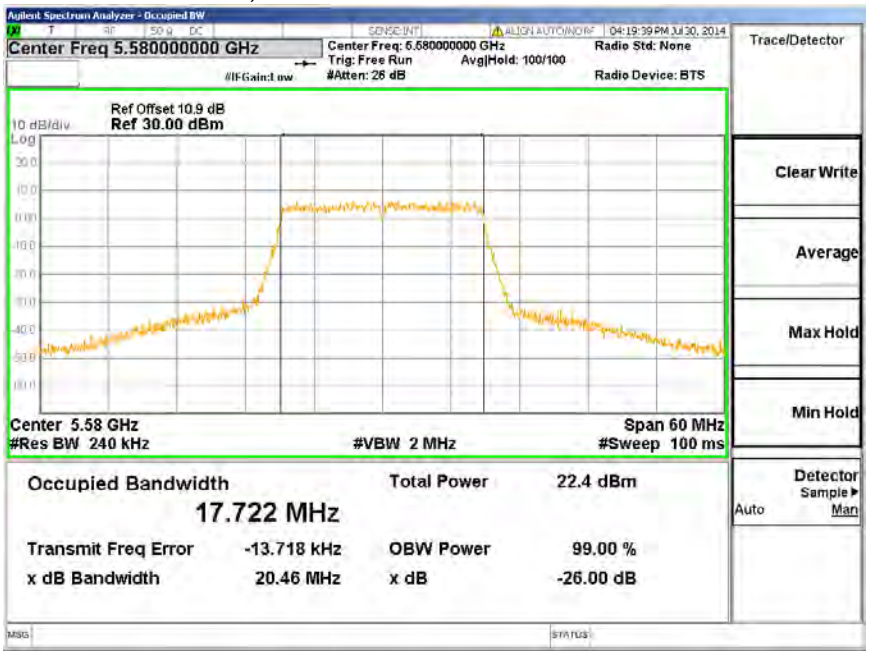
This report shall not be reproduced except in full, without the written approval of UL LLC

99% BANDWIDTH, Chain 2

99% BANDWIDTH, Chain 2 LOW CH

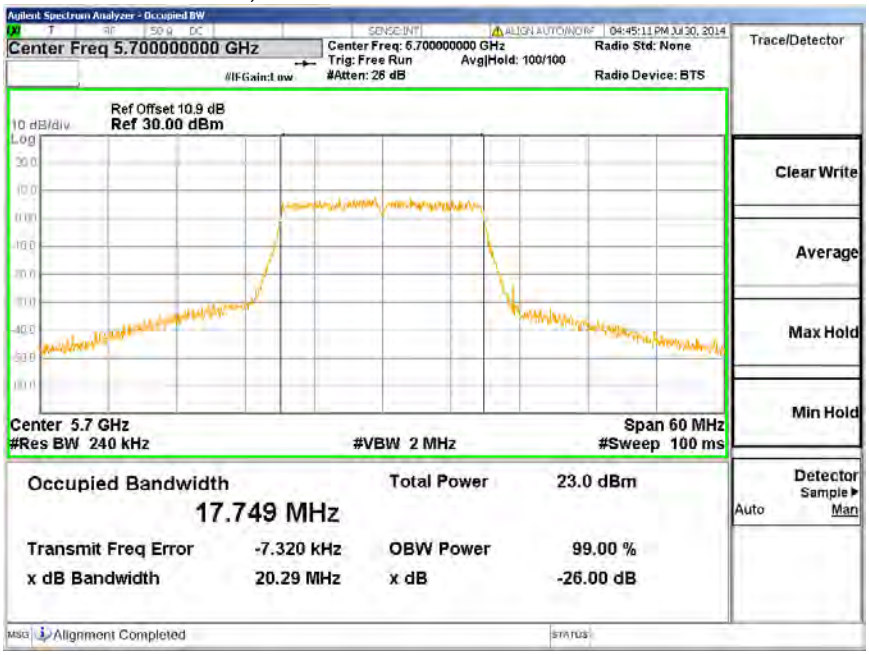


99% BANDWIDTH, Chain 2 MID CH

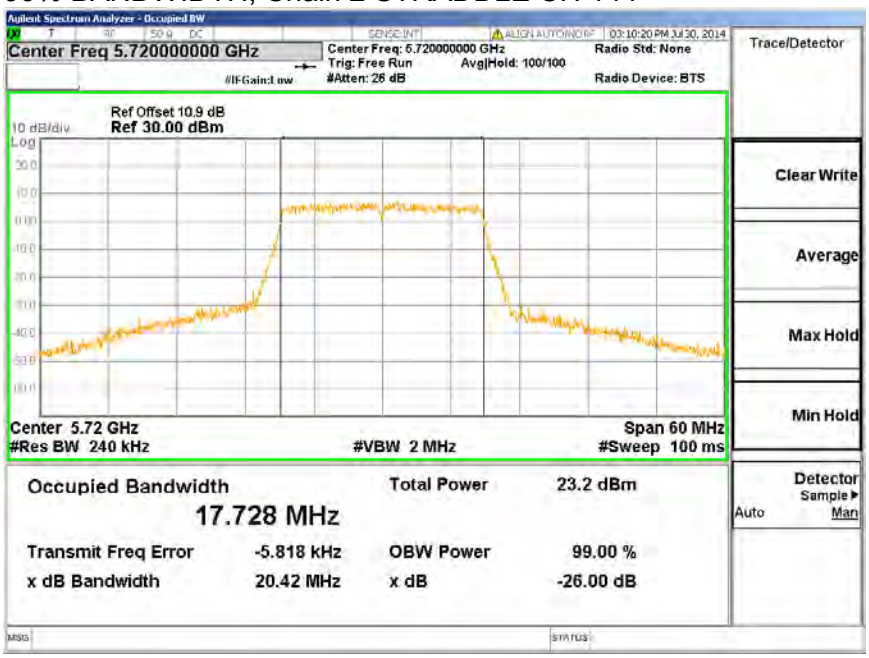


This report shall not be reproduced except in full, without the written approval of UL LLC

99% BANDWIDTH, Chain 2 HIGH CH



99% BANDWIDTH, Chain 2 STRADDLE CH 144



This report shall not be reproduced except in full, without the written approval of UL LLC

8.12.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Average Power Results

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Chain 2 Power (dBm)	Total Power (dBm)
Low	5500	18.14	18.57	18.11	23.05
Mid	5580	18.33	18.46	17.94	23.02
High	5700	18.24	18.35	17.71	22.88
144	5720	18.48	18.59	17.93	23.11

This report shall not be reproduced except in full, without the written approval of UL LLC

8.12.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.47–5.725 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

The TX chains are correlated and the antenna gain is the same for each chain. The directional gain is:

Antenna Gain (dBi)	10 * Log (3 chains) (dB)	Correlated Chains Directional Gain (dBi)
2.00	4.77	6.77

This report shall not be reproduced except in full, without the written approval of UL LLC

RESULTS

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5500	20.62	6.77	6.77	23.23	10.23
Mid	5580	20.52	6.77	6.77	23.23	10.23
High	5700	20.58	6.77	6.77	23.23	10.23

Duty Cycle CF (dB)	0.22	**Included in Calculations of Corr'd Power & PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	17.89	18.14	17.95	22.99	23.23	-0.24
Mid	5580	18.09	18.26	17.61	22.99	23.23	-0.24
High	5700	18.41	18.29	17.68	23.13	23.23	-0.10

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Chain 2 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5500	3.91	4.17	3.97	9.01	10.23	-1.22
Mid	5580	4.11	4.28	3.63	9.01	10.23	-1.22
High	5700	4.43	4.32	3.70	9.15	10.23	-1.08

This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 0

OUTPUT POWER AND PSD, Chain 0 LOW CH

OUTPUT POWER AND PSD, Chain 0 MID CH

This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 0 HIGH CH

OUTPUT POWER AND PSD, Chain 1

OUTPUT POWER AND PSD, Chain 1 LOW CH

This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 1 MID CH

OUTPUT POWER AND PSD, Chain 1 HIGH CH

This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 2

OUTPUT POWER AND PSD, Chain 2 LOW CH

OUTPUT POWER AND PSD, Chain 2 MID CH

This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 2 HIGH CH

This report shall not be reproduced except in full, without the written approval of UL LLC

STRADDLE CHANNEL 144 RESULTS

UNII-2C BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
144	5720	15.22	6.77	6.77	22.05	10.23

Duty Cycle CF (dB)	0.22	Included in Calculations of Corr'd Power & PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	16.83	17.32	16.53	21.90	22.05	-0.16

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Chain 2 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
144	5720	5.00	5.49	4.71	10.07	10.23	-0.16

This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 0 CH 144 UNII

OUTPUT POWER AND PSD, Chain 1 CH 144 UNII

This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 2 CH 144 UNII

This report shall not be reproduced except in full, without the written approval of UL LLC

UNII-3 BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
144	5720	5.20	6.77	6.77	23.23	16.23

Duty Cycle CF (dB)	0.22	Included in Calculations of Corr'd Power & PSD

Output Power Results

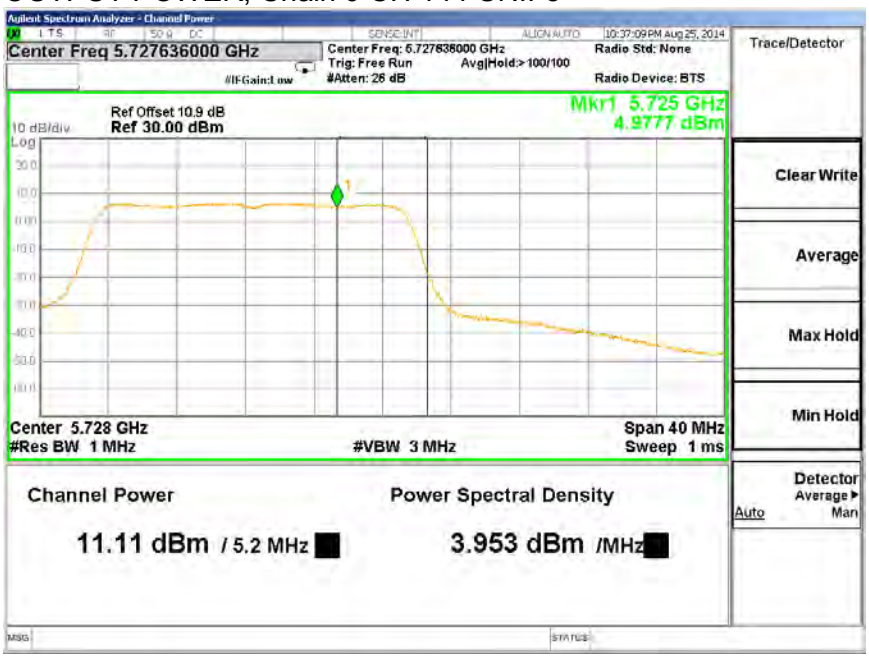
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	11.11	11.52	10.94	16.19	23.23	-7.04

PSD Results

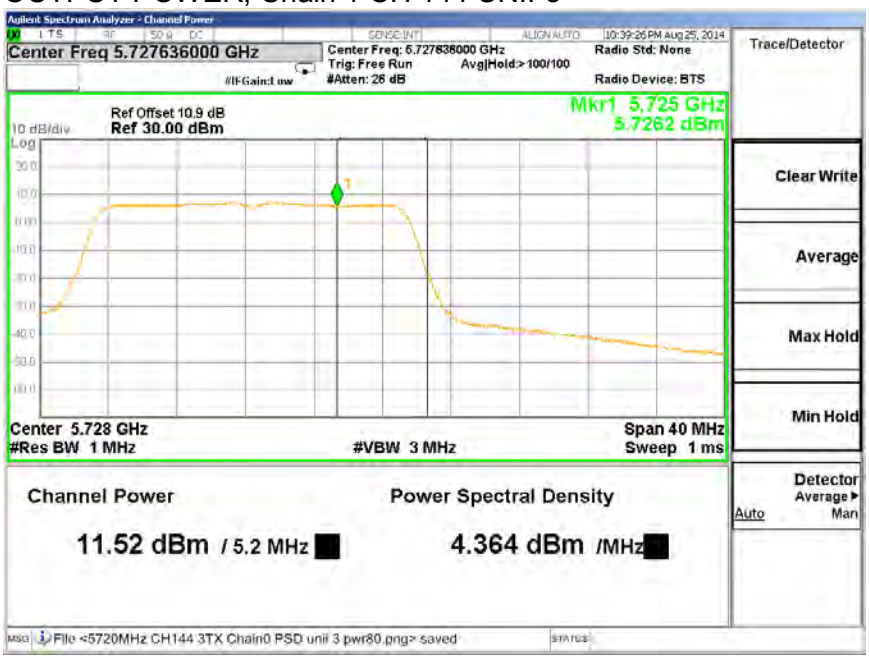
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Chain 2 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
144	5720	3.95	4.36	4.78	9.37	16.23	-6.86

This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER, Chain 0 CH 144 UNII-3



OUTPUT POWER, Chain 1 CH 144 UNII-3



This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER, Chain 2 CH 144 UNII-3

This report shall not be reproduced except in full, without the written approval of UL LLC

8.12.5. PEAK EXCURSION

LIMITS

FCC §15.407 (a) (6)

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

RESULTS

Refer to the results of 802.11n HT20 mode in the 5.6 GHz band.

Chain 0

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5580	15.58	3.91	0.22	11.45	13	-1.55

Chain 1

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5580	15.81	4.28	0.22	11.31	13	-1.69

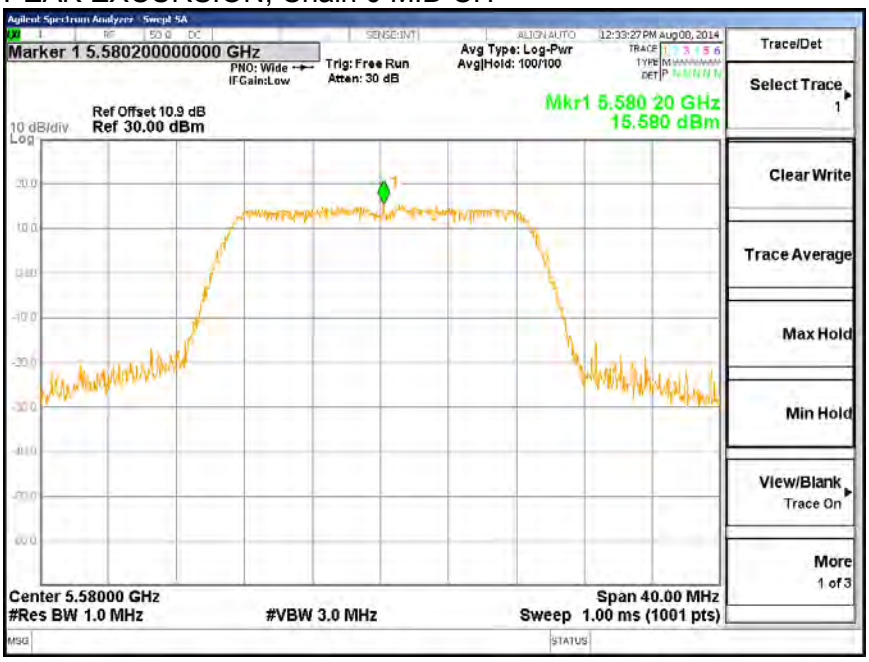
Chain 2

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5580	16.65	3.63	0.22	12.80	13	-0.20

This report shall not be reproduced except in full, without the written approval of UL LLC

PEAK EXCURSION, Chain 0

PEAK EXCURSION, Chain 0 MID CH



PEAK EXCURSION, Chain 1

PEAK EXCURSION, Chain 1 MID CH

This report shall not be reproduced except in full, without the written approval of UL LLC

PEAK EXCURSION, Chain 2

PEAK EXCURSION, Chain 2 MID CH

This report shall not be reproduced except in full, without the written approval of UL LLC

8.13. 802.11n HT40 1TX SISO MODE IN THE 5.6 GHz BAND

8.13.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

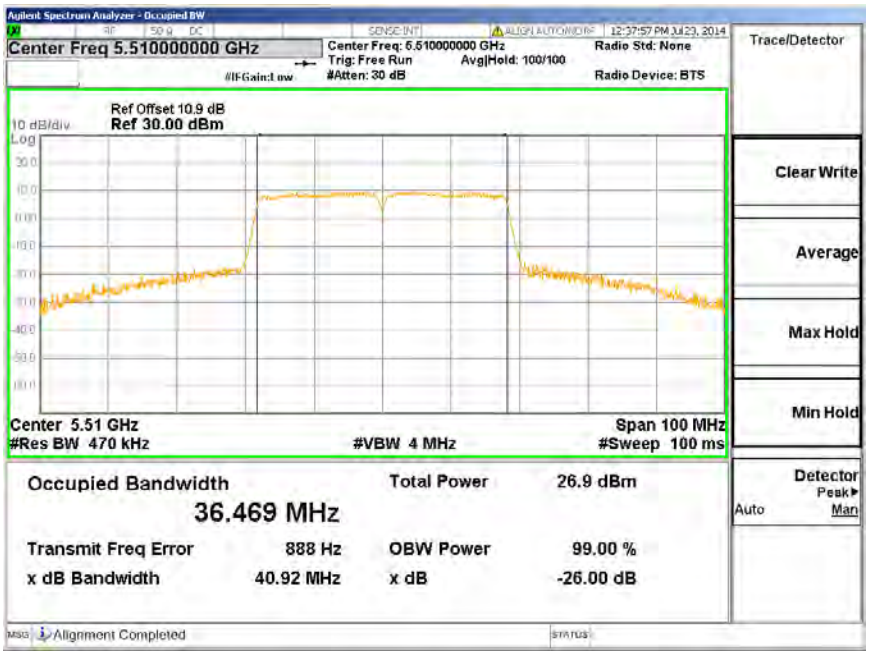
RESULTS

Channel	Frequency (MHz)	26dB Bandwidth (MHz)
Low	5510	40.9200
Mid	5550	40.2600
High	5670	40.2500
142	5710	40.1000

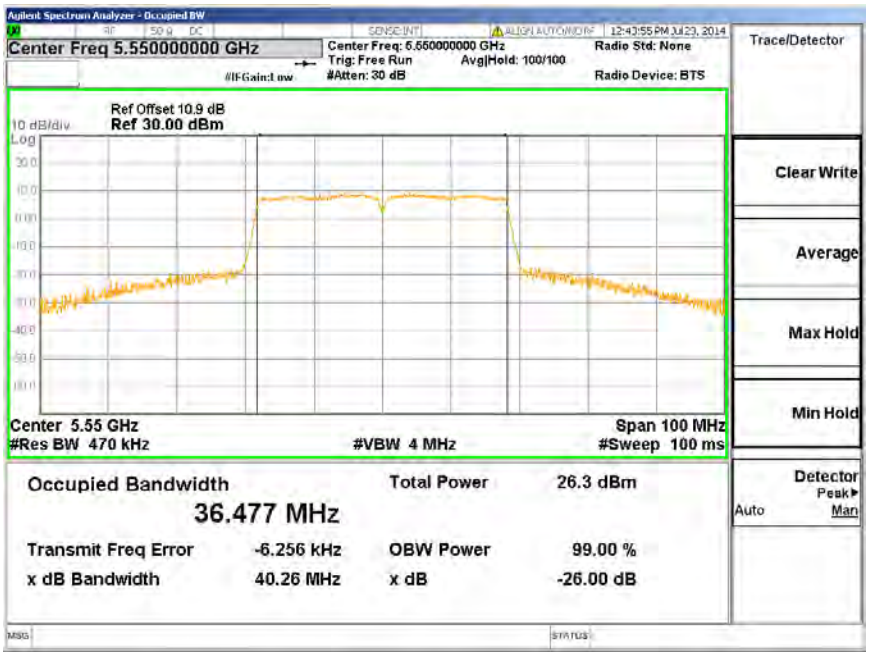
This report shall not be reproduced except in full, without the written approval of UL LLC

26 dB BANDWIDTH

BANDWIDTH LOW CH

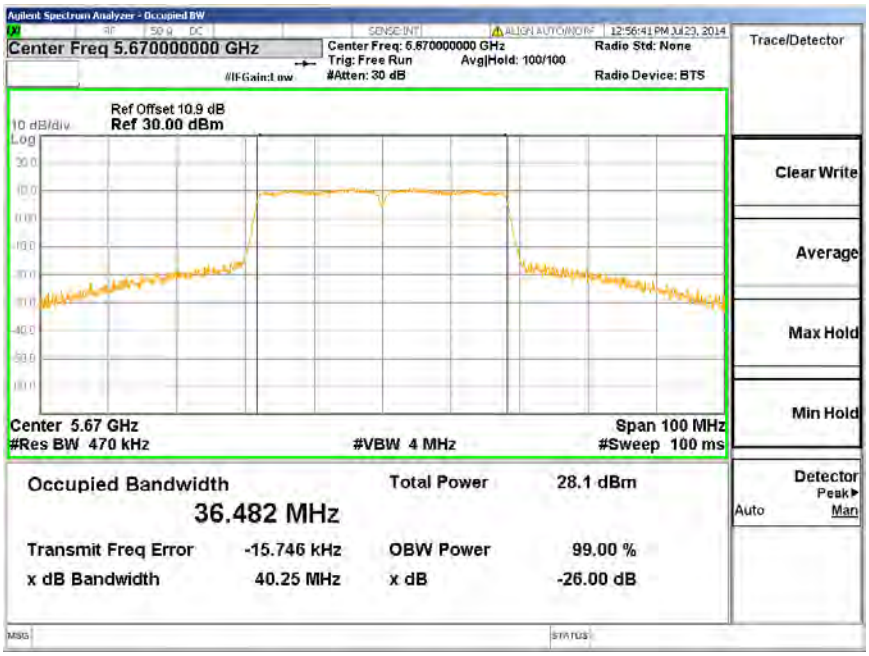


BANDWIDTH MID CH



This report shall not be reproduced except in full, without the written approval of UL LLC

BANDWIDTH HIGH CH



BANDWIDTH 142 CH

This report shall not be reproduced except in full, without the written approval of UL LLC

8.13.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

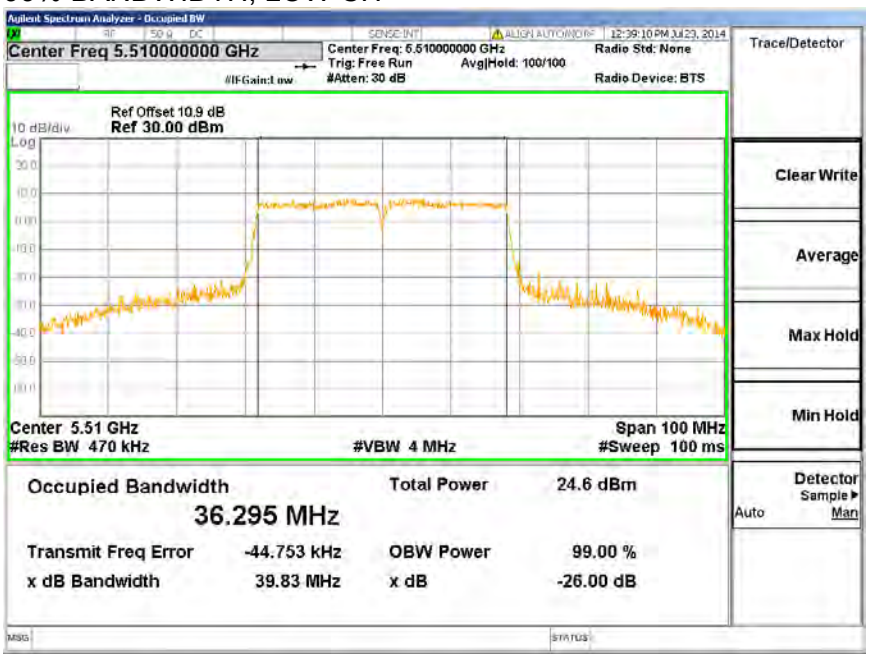
RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5510	36.2950
Mid	5550	36.2970
High	5670	36.3190
142	5710	36.3470

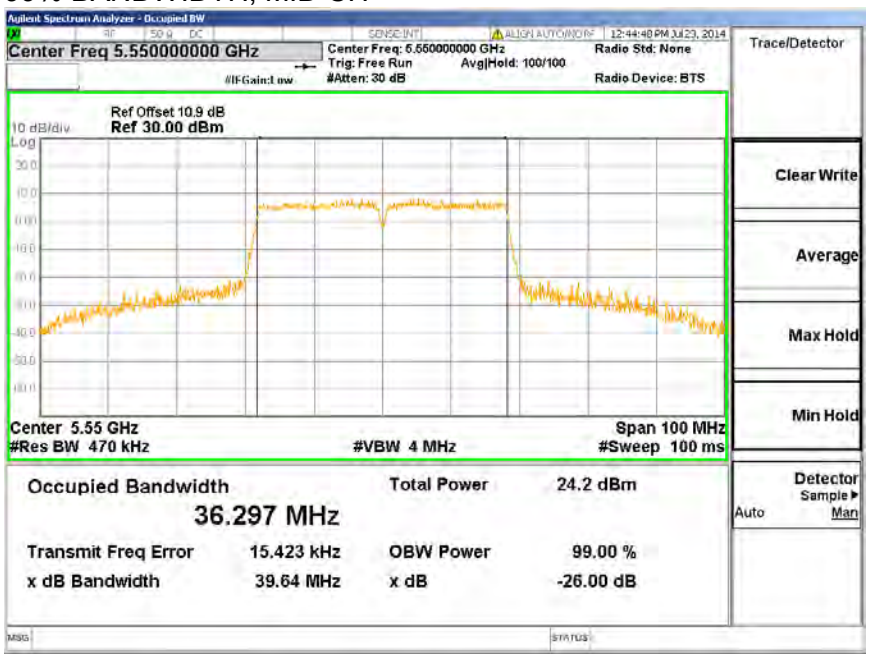
This report shall not be reproduced except in full, without the written approval of UL LLC

99% BANDWIDTH

99% BANDWIDTH, LOW CH

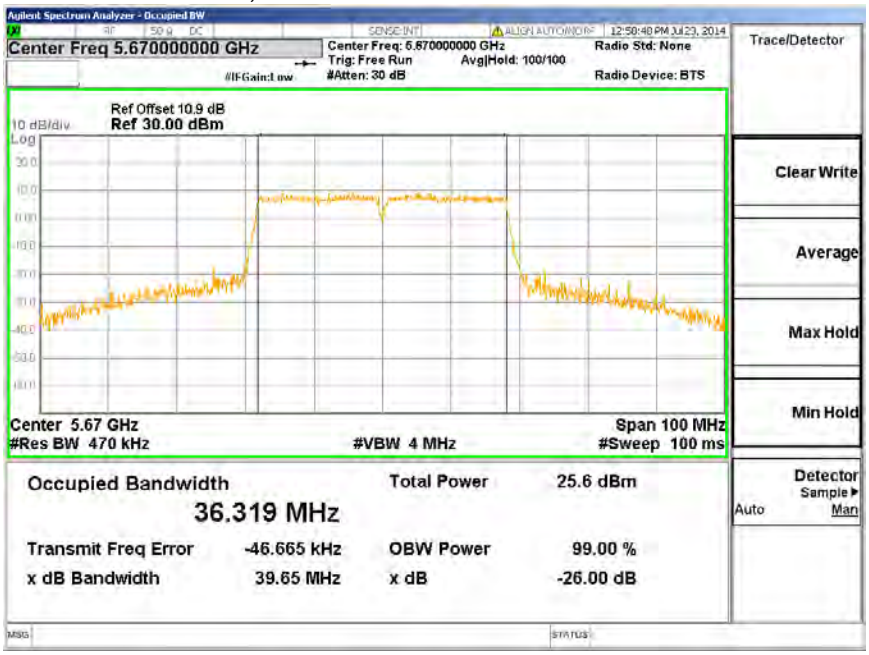


99% BANDWIDTH, MID CH

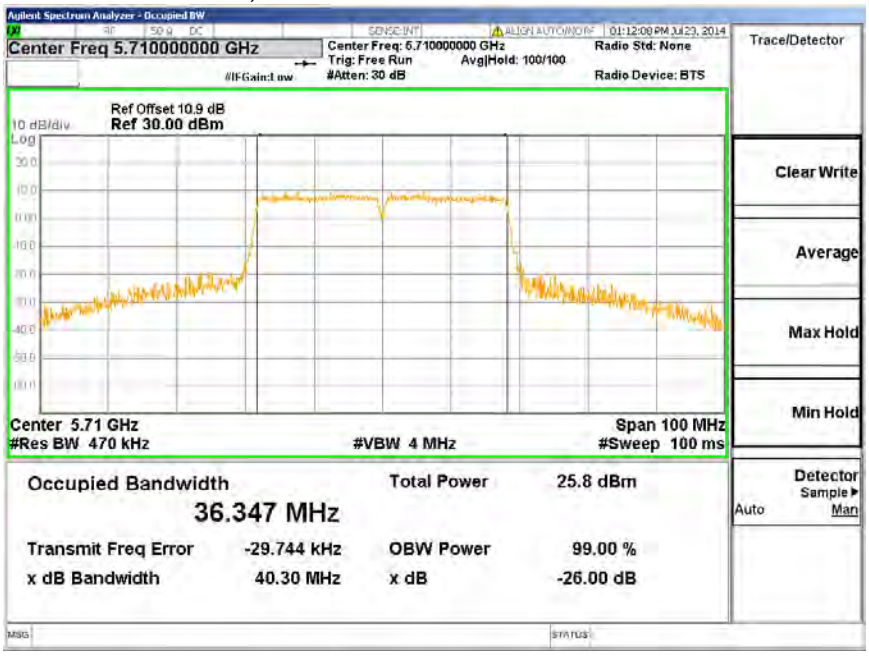


This report shall not be reproduced except in full, without the written approval of UL LLC

99% BANDWIDTH, HIGH CH



99% BANDWIDTH, 142 CH



This report shall not be reproduced except in full, without the written approval of UL LLC

8.13.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5510	12.38
Mid	5550	19.08
High	5670	19.97
142	5710	19.51

This report shall not be reproduced except in full, without the written approval of UL LLC

8.13.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.25–5.35 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

This report shall not be reproduced except in full, without the written approval of UL LLC

RESULTS

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5510	40.92	2.00	24.00	11.00
Mid	5550	40.26	2.00	24.00	11.00
High	5670	40.25	2.00	24.00	11.00

Duty Cycle CF (dB)	0.42	Included in Calculations of Corr'd Power & PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	11.97	12.39	24.00	-11.61
Mid	5550	18.65	19.07	24.00	-4.93
High	5670	20.14	20.56	24.00	-3.44

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5510	-4.56	-4.14	11.00	-15.14
Mid	5550	2.12	2.54	11.00	-8.46
High	5670	3.61	4.03	11.00	-6.97

This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 0

OUTPUT POWER AND PSD, Chain 0 LOW CH

OUTPUT POWER AND PSD, Chain 0 MID CH

This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 0 HIGH CH

This report shall not be reproduced except in full, without the written approval of UL LLC

STRADDLE CH 142 RESULTS

UNII-2C BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
142	5710	35.10	2.00	2.00	24.00	11.00

Duty Cycle CF (dB)	0.42	Included in Calculations of Corr'd Power & PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	20.49	20.91	24.00	-3.09

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	3.96	4.38	11.00	-6.62

*Note total output power across 2 bands was found to be compliant incorporating the single band 26dB BW within the limit, therefore a measured output power within the single band 26dBBW would also comply.

This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 0 CH 142

This report shall not be reproduced except in full, without the written approval of UL LLC

UNII-3 BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
142	5710	5.00	2.00	2.00	23.99	17.00

Duty Cycle CF (dB)	0.42	Included in Calculations of Corr'd Power & PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	20.49	20.91	23.99	-3.08

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	3.96	4.38	17.00	-12.62

*Note total output power across 2 bands was found to be compliant incorporating the single band 26dB BW within the limit, therefore a measured output power within the single band 26dBBW would also comply.

This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 0 CH 142

This report shall not be reproduced except in full, without the written approval of UL LLC

8.13.5. PEAK EXCURSION

LIMITS

FCC §15.407 (a) (6)

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

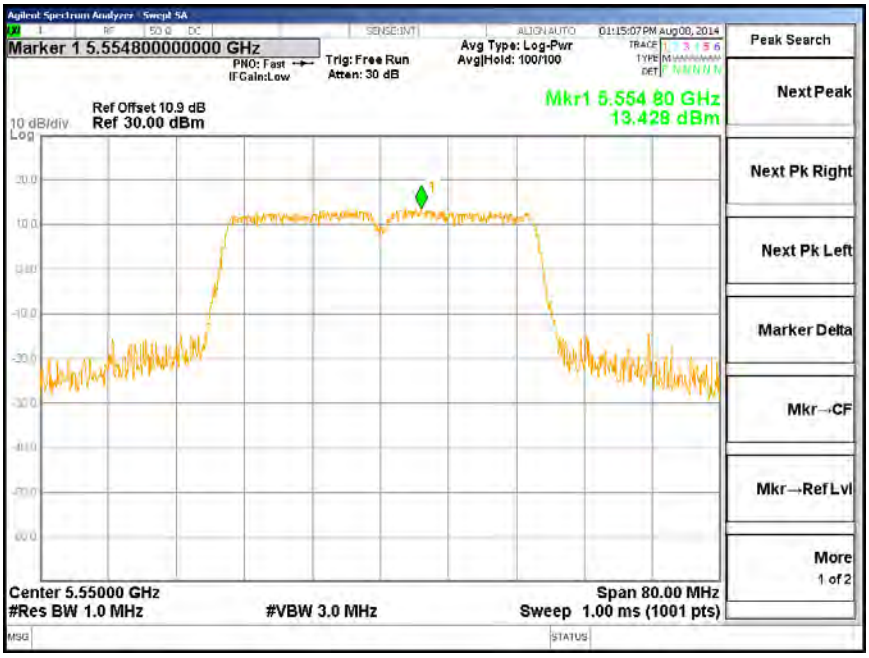
RESULTS

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5550	13.43	2.12	0.42	10.89	13	-2.11

This report shall not be reproduced except in full, without the written approval of UL LLC

PEAK EXCURSION

PEAK EXCURSION MID CH



This report shall not be reproduced except in full, without the written approval of UL LLC

8.14. 802.11n HT40 3TX CDD MODE IN THE 5.6 GHz BAND

8.14.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

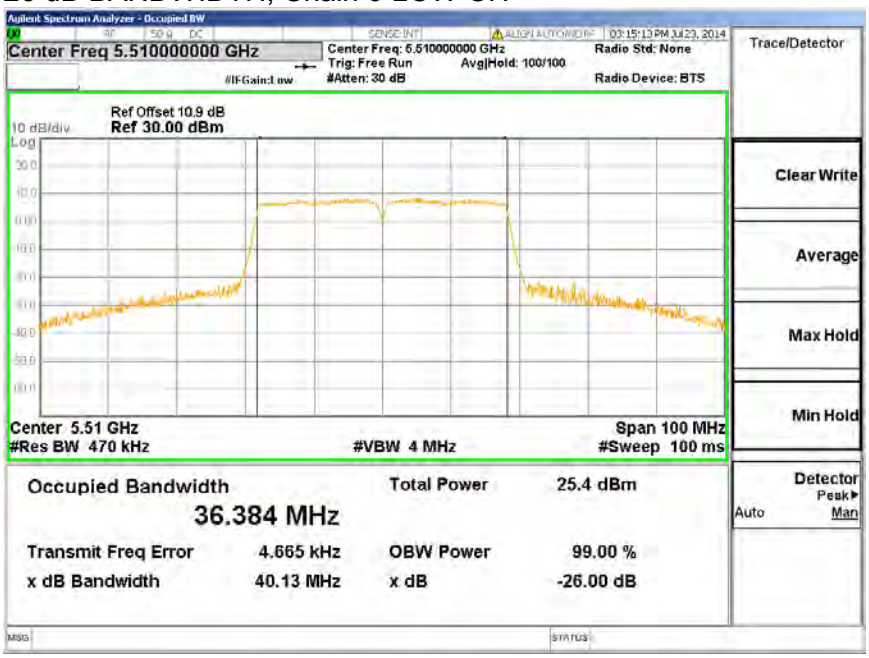
RESULTS

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)	26 dB BW Chain 2 (MHz)
Low	5510	40.13	39.32	39.58
Mid	5550	39.81	39.48	39.73
High	5670	40.30	39.41	39.70
142	5710	40.00	39.80	39.80

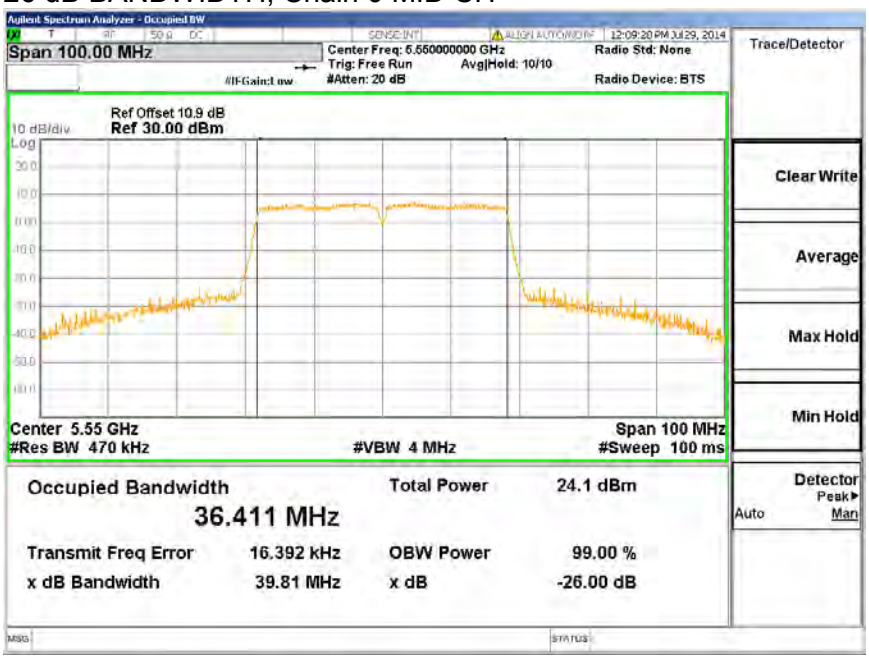
This report shall not be reproduced except in full, without the written approval of UL LLC

26 dB BANDWIDTH, Chain 0

26 dB BANDWIDTH, Chain 0 LOW CH

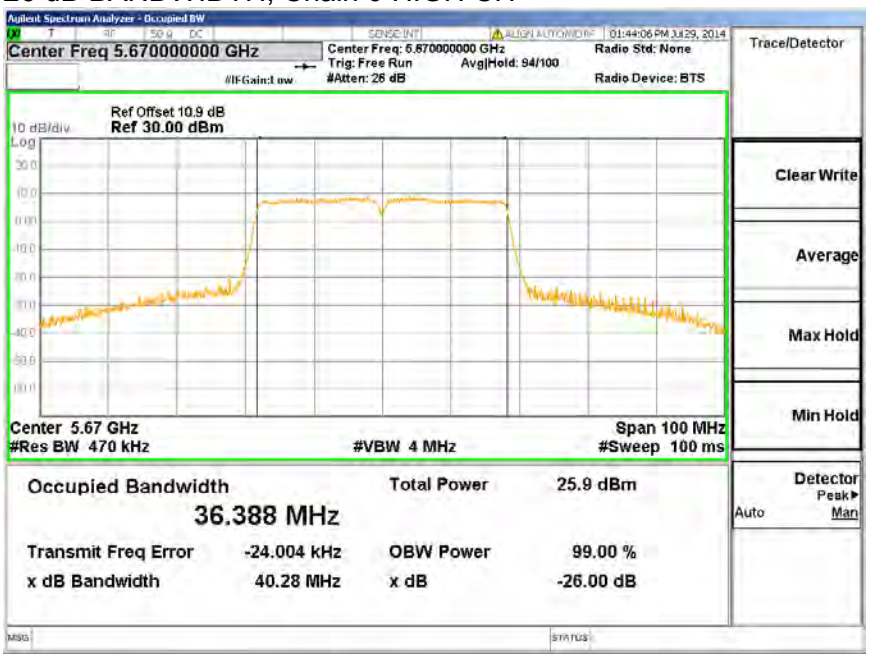


26 dB BANDWIDTH, Chain 0 MID CH



This report shall not be reproduced except in full, without the written approval of UL LLC

26 dB BANDWIDTH, Chain 0 HIGH CH

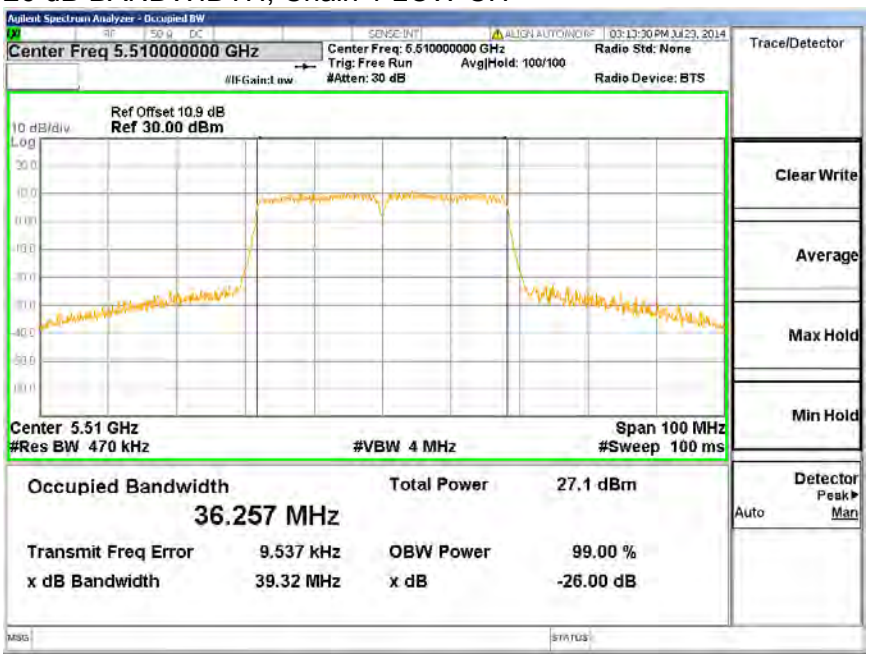


26 dB BANDWIDTH, Chain 0 STRADDLE CH 142

This report shall not be reproduced except in full, without the written approval of UL LLC

26 dB BANDWIDTH, Chain 1

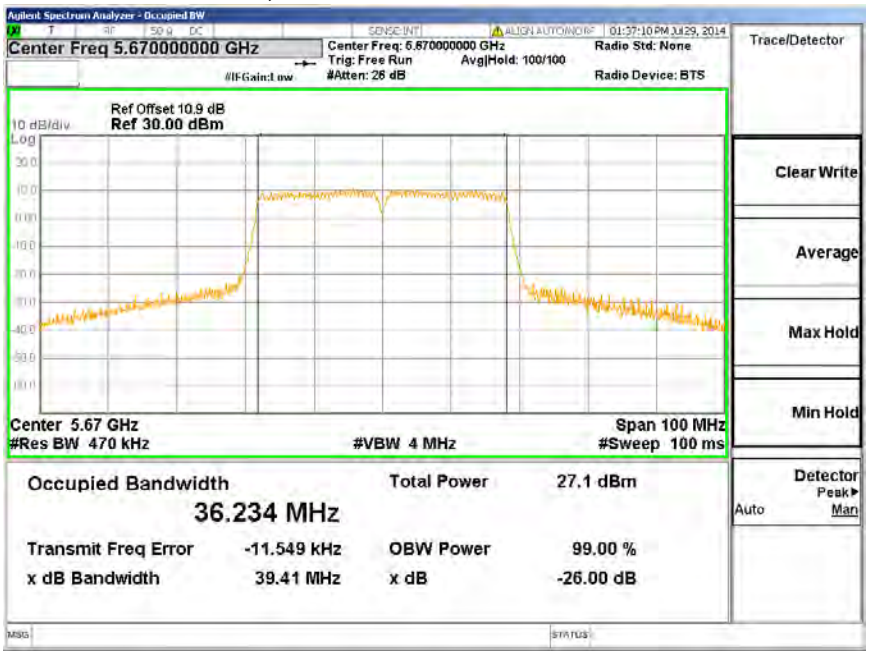
26 dB BANDWIDTH, Chain 1 LOW CH



26 dB BANDWIDTH, Chain 1 MID CH

This report shall not be reproduced except in full, without the written approval of UL LLC

26 dB BANDWIDTH, Chain 1 HIGH CH

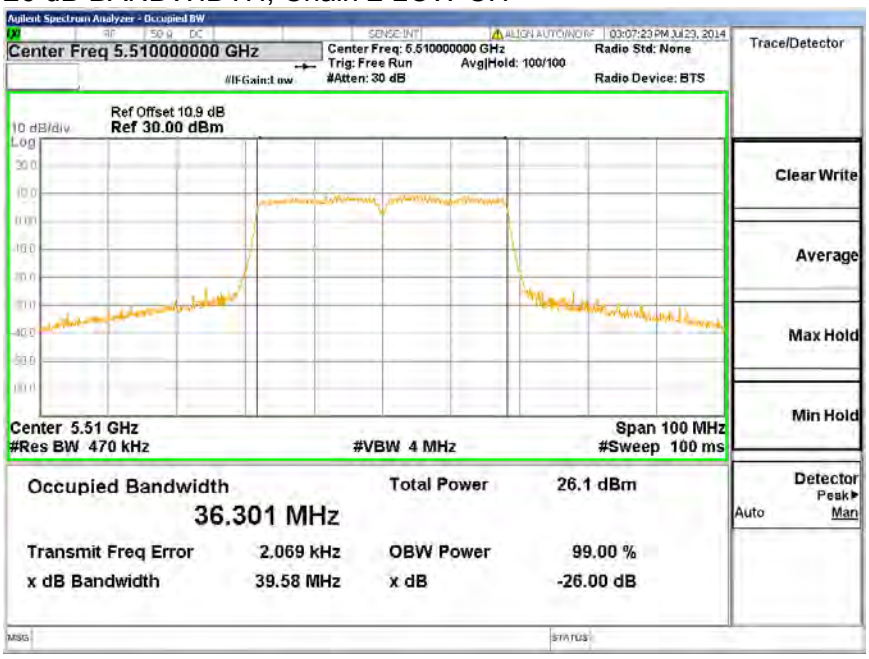


26 dB BANDWIDTH, Chain 1 STRADDLE CH 142

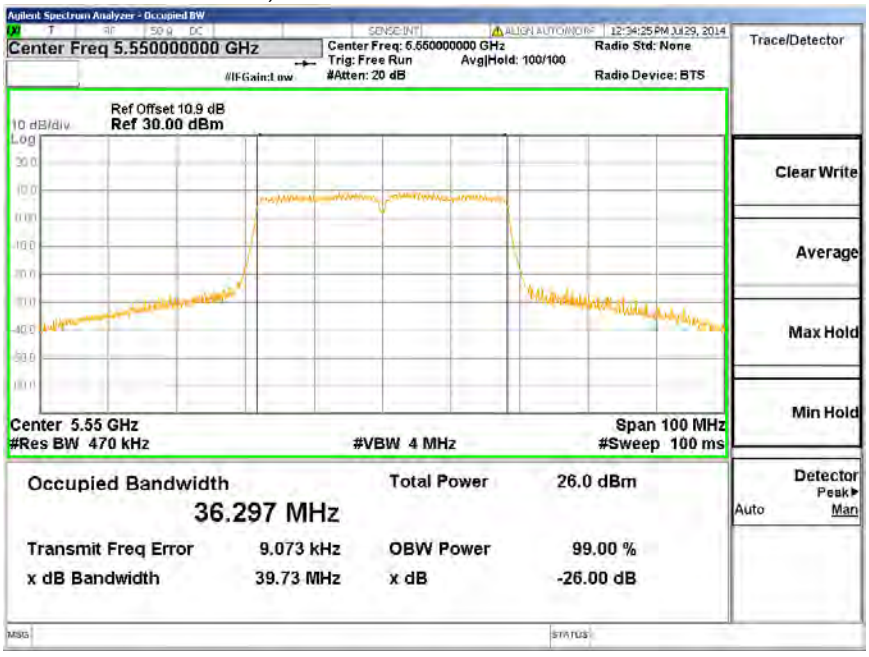
This report shall not be reproduced except in full, without the written approval of UL LLC

26 dB BANDWIDTH, Chain 2

26 dB BANDWIDTH, Chain 2 LOW CH

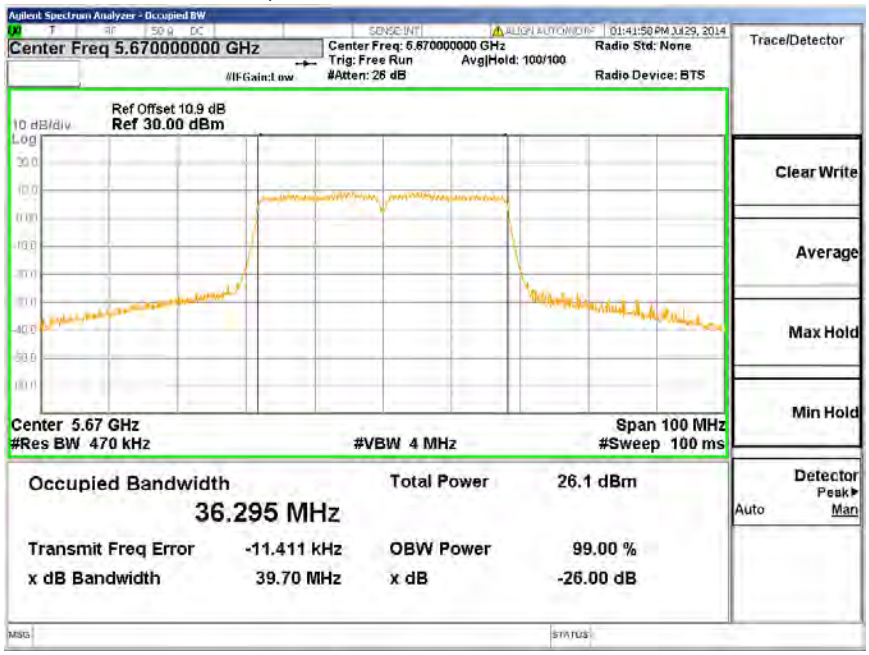


26 dB BANDWIDTH, Chain 2 MID CH



This report shall not be reproduced except in full, without the written approval of UL LLC

26 dB BANDWIDTH, Chain 2 HIGH CH



26 dB BANDWIDTH, Chain 2 STRADDLE CH 142

This report shall not be reproduced except in full, without the written approval of UL LLC

8.14.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

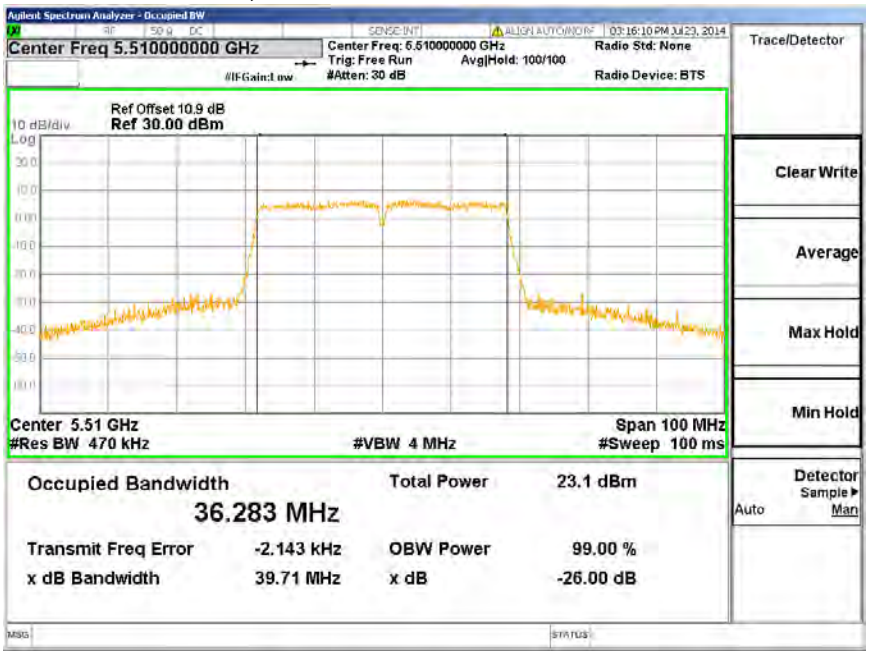
RESULTS

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
Low	5510	36.2830	36.2430	36.1780
Mid	5550	36.1760	36.2230	36.2940
High	5670	36.2300	36.2720	36.2160
142	5710	36.2500	36.2450	36.3310

This report shall not be reproduced except in full, without the written approval of UL LLC

99% BANDWIDTH, Chain 0

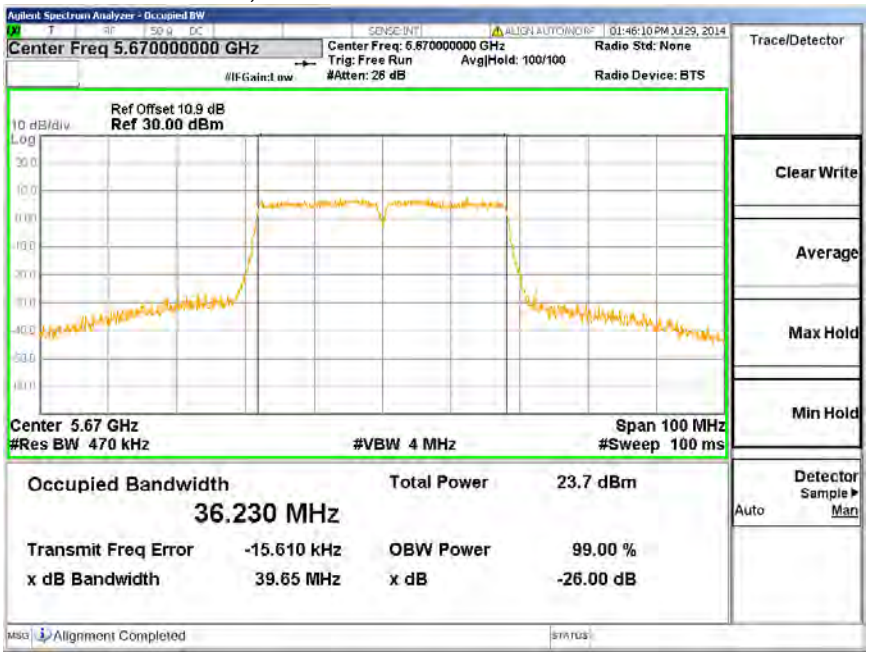
99% BANDWIDTH, Chain 0 LOW CH



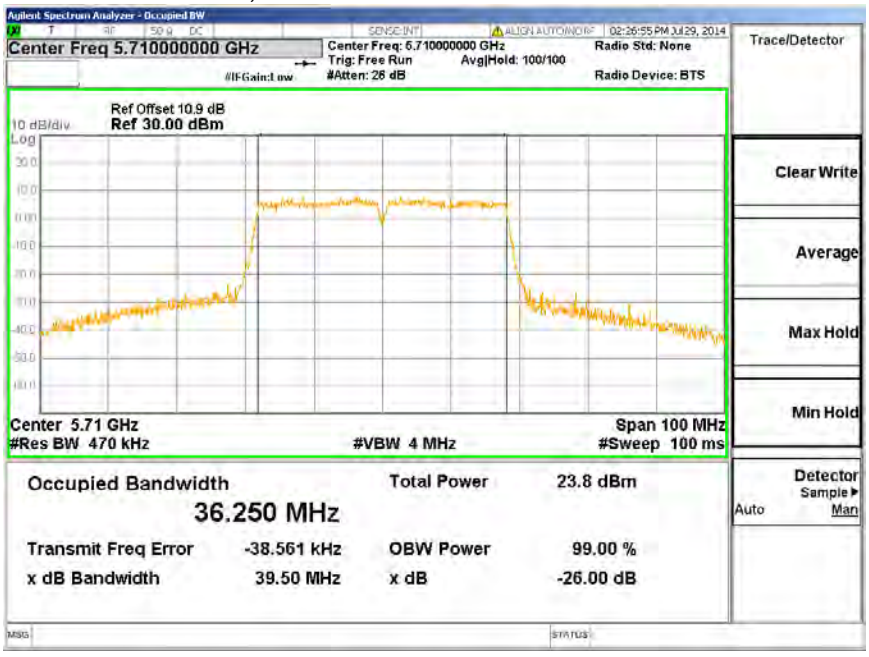
99% BANDWIDTH, Chain 0 MID CH

This report shall not be reproduced except in full, without the written approval of UL LLC

99% BANDWIDTH, Chain 0 HIGH CH



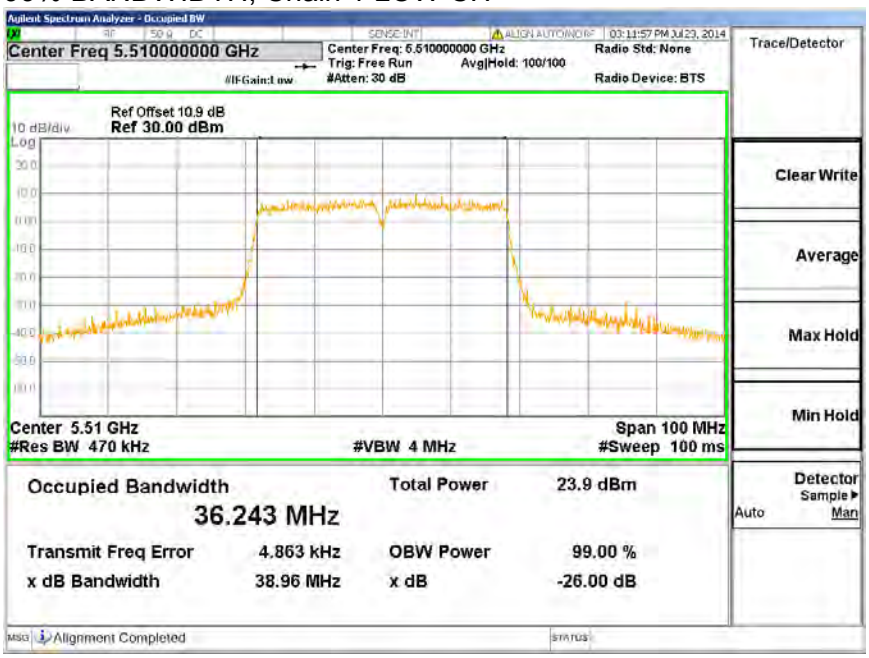
99% BANDWIDTH, Chain 0 STRADDLE CH 142



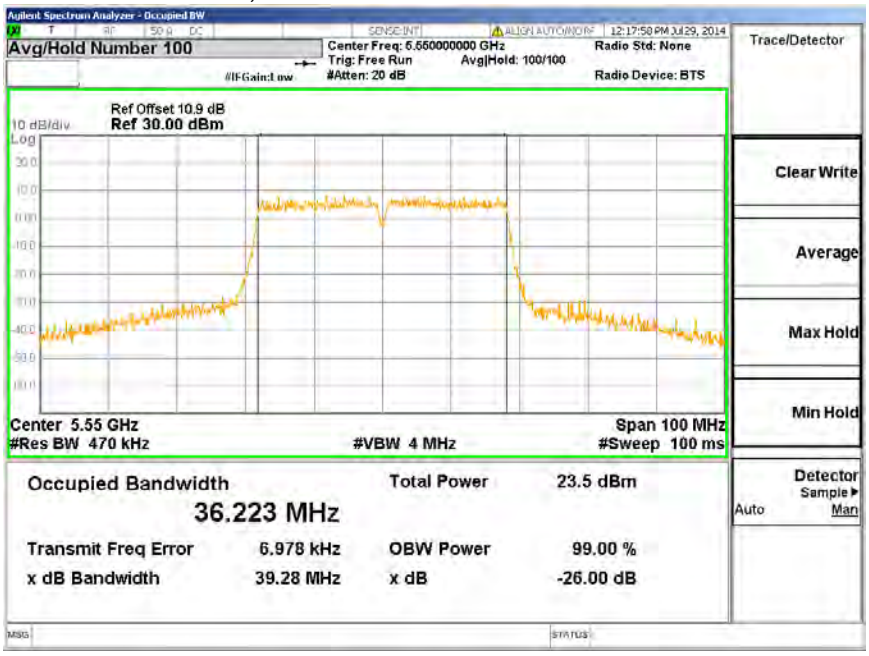
This report shall not be reproduced except in full, without the written approval of UL LLC

99% BANDWIDTH, Chain 1

99% BANDWIDTH, Chain 1 LOW CH

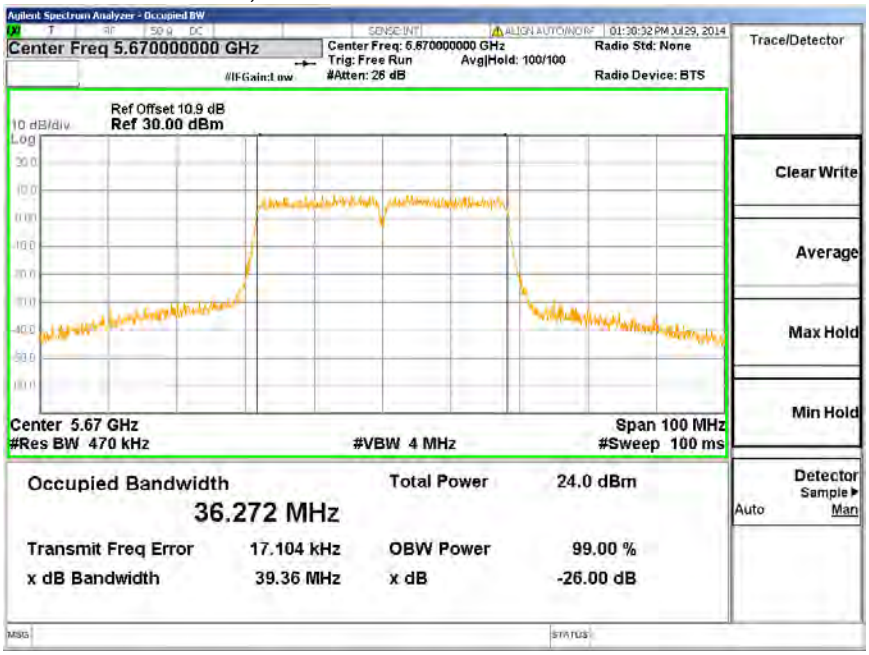


99% BANDWIDTH, Chain 1 MID CH

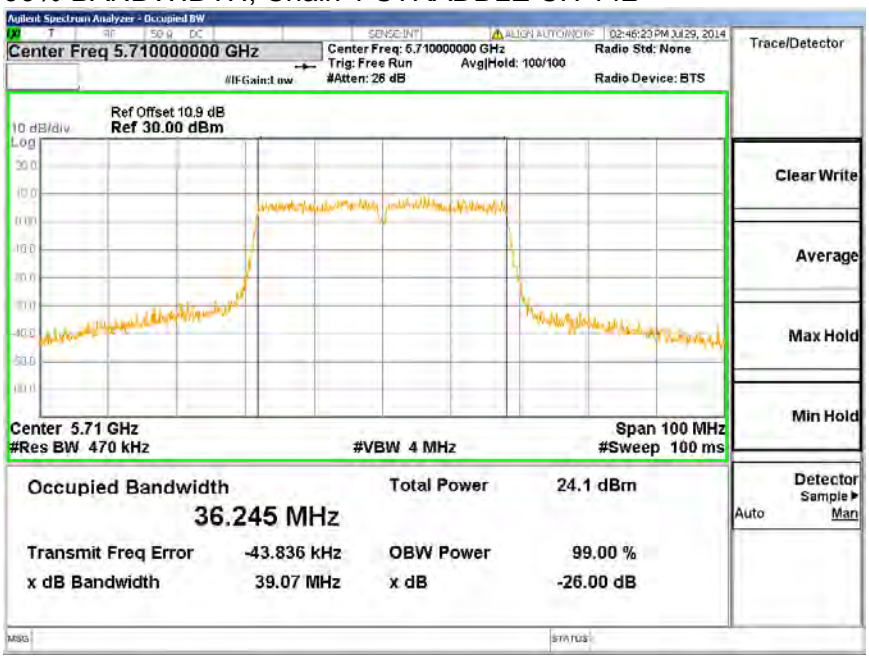


This report shall not be reproduced except in full, without the written approval of UL LLC

99% BANDWIDTH, Chain 1 HIGH CH



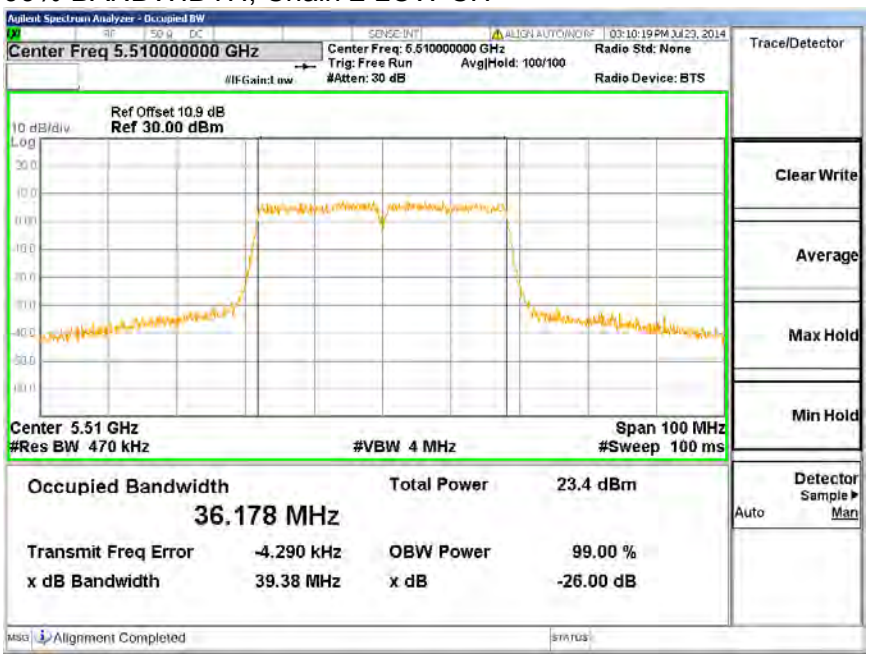
99% BANDWIDTH, Chain 1 STRADDLE CH 142



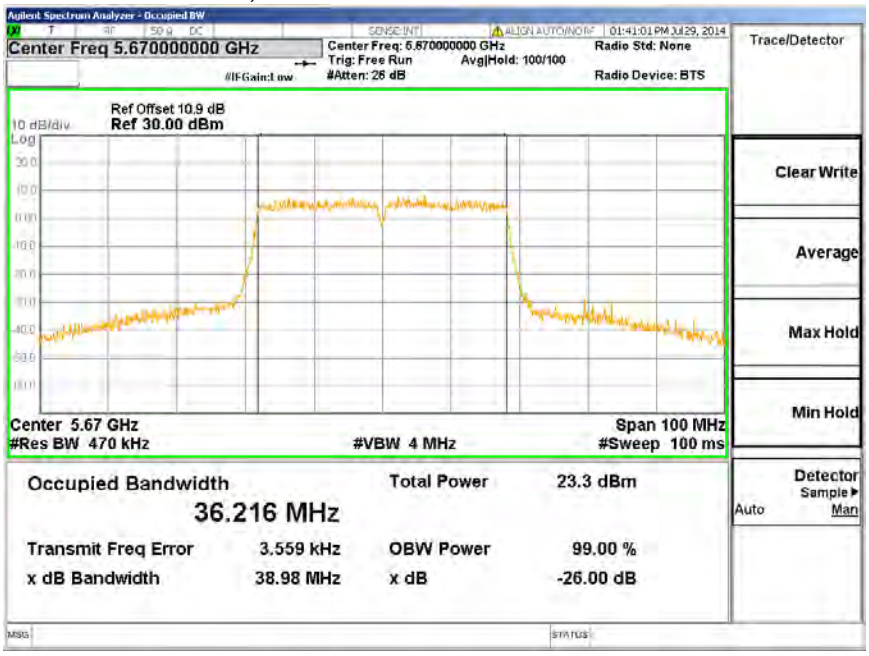
This report shall not be reproduced except in full, without the written approval of UL LLC

99% BANDWIDTH, Chain 2

99% BANDWIDTH, Chain 2 LOW CH

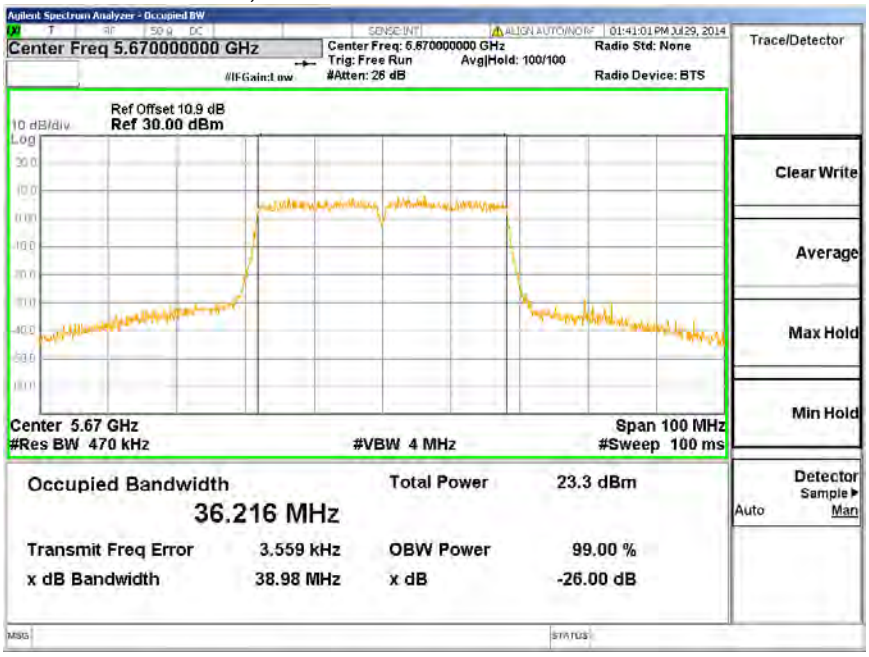


99% BANDWIDTH, Chain 2 MID CH

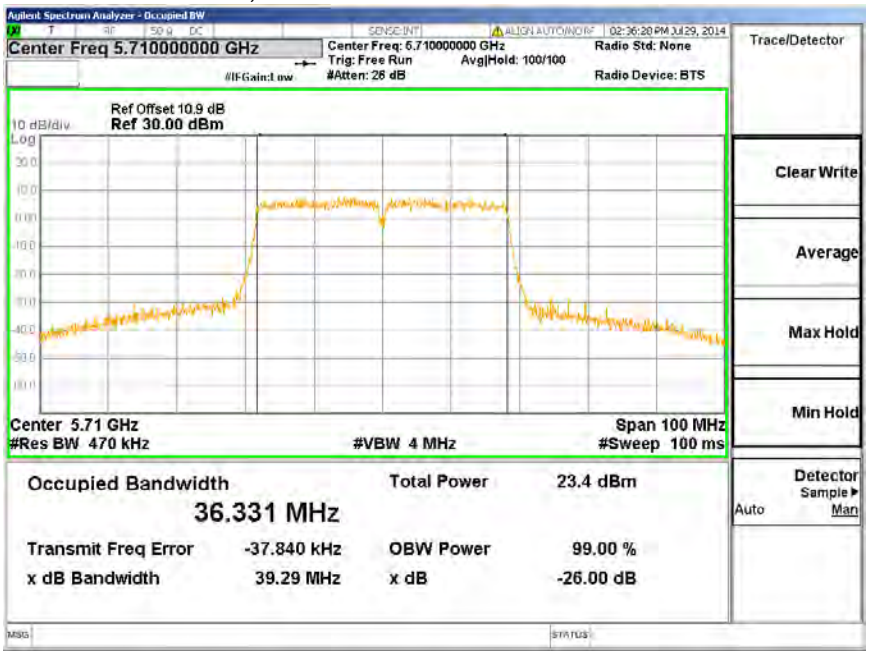


This report shall not be reproduced except in full, without the written approval of UL LLC

99% BANDWIDTH, Chain 2 HIGH CH



99% BANDWIDTH, Chain 2 STRADDLE CH 142



This report shall not be reproduced except in full, without the written approval of UL LLC

8.14.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Average Power Results

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Chain 2 Power (dBm)	Total Power (dBm)
Low	5510	10.42	11.18	10.26	15.41
Mid	5550	16.69	18.01	17.49	22.20
High	5670	17.94	18.08	17.39	22.58
142	5710	18.07	18.10	17.57	22.69

This report shall not be reproduced except in full, without the written approval of UL LLC

8.14.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.47–5.725 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

The TX chains are correlated and the antenna gain is the same for each chain. The directional gain is:

Antenna Gain (dBi)	10 * Log (3 chains) (dB)	Correlated Chains Directional Gain (dBi)
2.00	4.77	6.77

This report shall not be reproduced except in full, without the written approval of UL LLC

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5510	39.32	6.77	6.77	23.23	10.23
Mid	5550	39.48	6.77	6.77	23.23	10.23
High	5670	39.41	6.77	6.77	23.23	10.23

Duty Cycle CF (dB)	0.45	**Included in Calculations of Corr'd Power & PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	11.53	11.55	10.50	16.44	23.23	-6.79
Mid	5550	17.61	18.15	17.48	22.98	23.23	-0.25
High	5670	17.92	17.98	17.43	23.00	23.23	-0.23

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Chain 2 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5510	-5.00	-4.98	-6.03	-0.09	10.23	-10.32
Mid	5550	1.08	1.61	0.95	6.44	10.23	-3.79
High	5670	1.39	1.45	0.90	6.47	10.23	-3.76

This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 0

OUTPUT POWER AND PSD, Chain 0 LOW CH

OUTPUT POWER AND PSD, Chain 0 MID CH

This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 0 HIGH CH

OUTPUT POWER AND PSD, Chain 1

OUTPUT POWER AND PSD, Chain 1 LOW CH

This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 1 MID CH

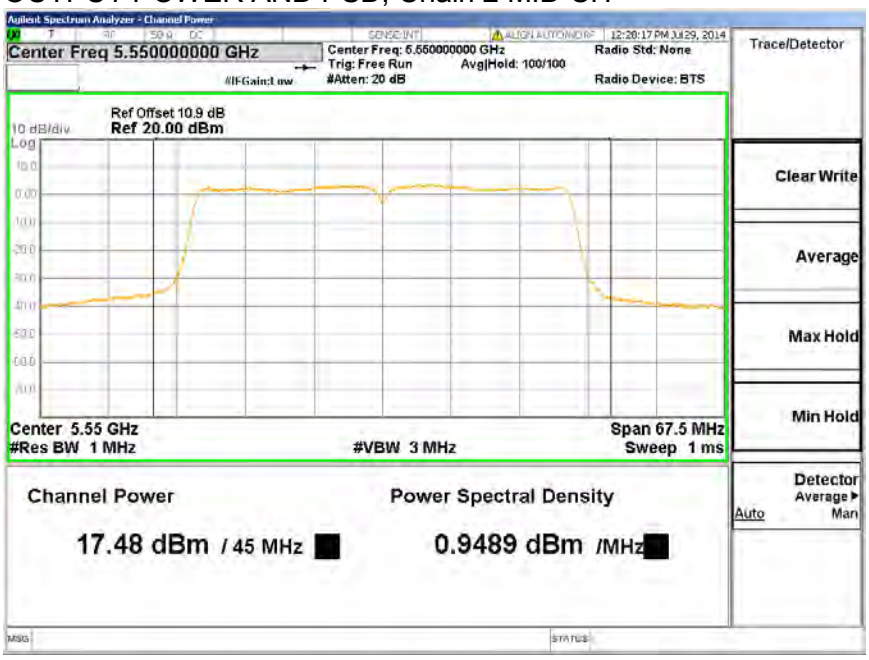
OUTPUT POWER AND PSD, Chain 1 HIGH CH

This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 2

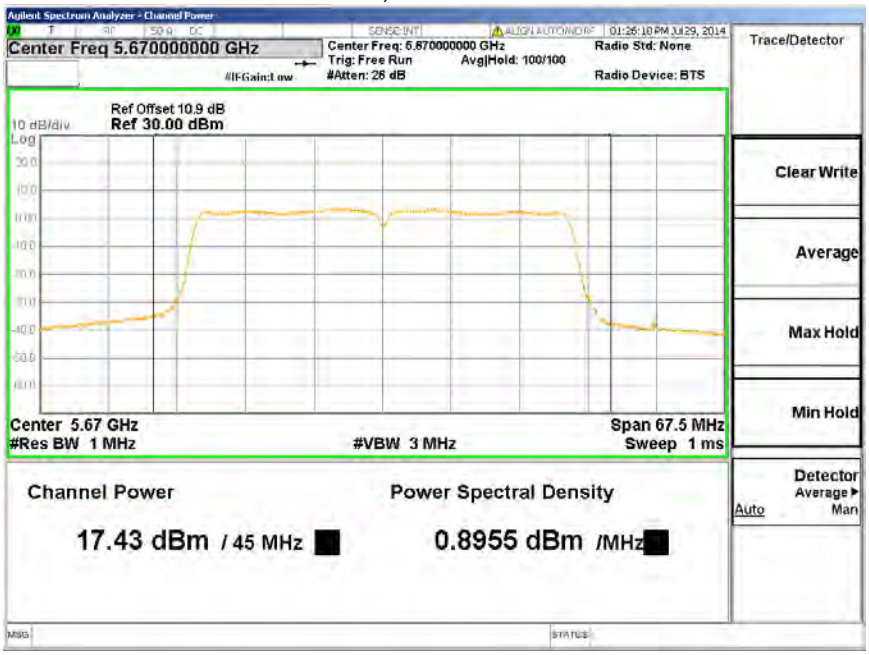
OUTPUT POWER AND PSD, Chain 2 LOW CH

OUTPUT POWER AND PSD, Chain 2 MID CH



This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 2 HIGH CH



This report shall not be reproduced except in full, without the written approval of UL LLC

STRADDLE CHANNEL 142 RESULTS

UNII-2C BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
142	5710	34.90	6.77	6.77	23.23	10.23

Duty Cycle CF (dB)	0.45	Included in Calculations of Corr'd Power & PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	17.94	18.06	17.52	23.07	23.23	-0.16

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Chain 2 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	1.41	1.53	0.99	6.54	10.23	-3.69

*Note total output power across 2 bands was found to be compliant incorporating the single band 26dB BW within the limit, therefore a measured output power within the single band 26dBBW would also comply.

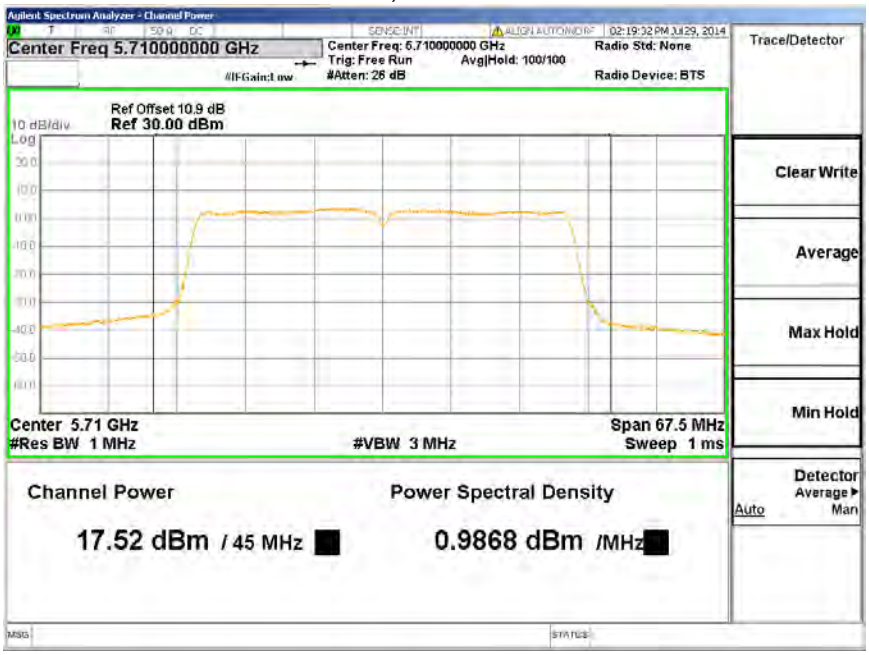
This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 0 CH 142 UNII

OUTPUT POWER AND PSD, Chain 1 CH 142 UNII

This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 2 CH 142 UNII



This report shall not be reproduced except in full, without the written approval of UL LLC

UNII-3 BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
142	5710	4.90	6.77	6.77	23.13	16.23

Duty Cycle CF (dB)	0.45	Included in Calculations of Corr'd Power & PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	17.94	18.06	17.52	23.07	23.13	-0.06

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Chain 2 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	1.41	1.53	0.99	6.54	16.23	-9.69

*Note total output power across 2 bands was found to be compliant incorporating the single band 26dB BW within the limit, therefore a measured output power within the single band 26dBBW would also comply.

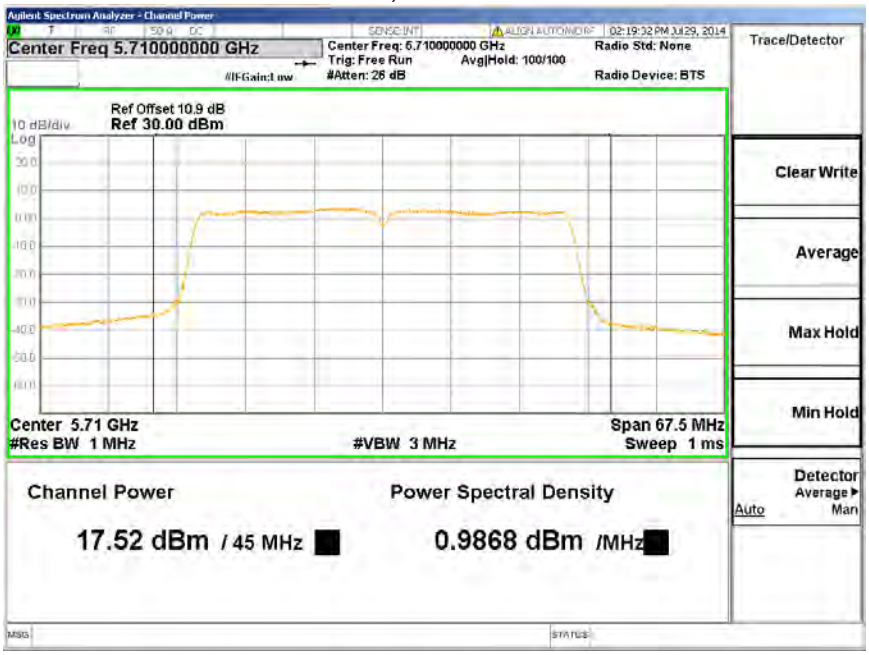
This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 0 CH 142 UNII

OUTPUT POWER AND PSD, Chain 1 CH 142 UNII

This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 2 CH 142 UNII



This report shall not be reproduced except in full, without the written approval of UL LLC

8.14.5. PEAK EXCURSION

LIMITS

FCC §15.407 (a) (6)

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

RESULTS

Chain 0

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5550	12.27	1.08	0.45	10.74	13	-2.26

Chain 1

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5550	13.25	1.61	0.45	11.19	13	-1.82

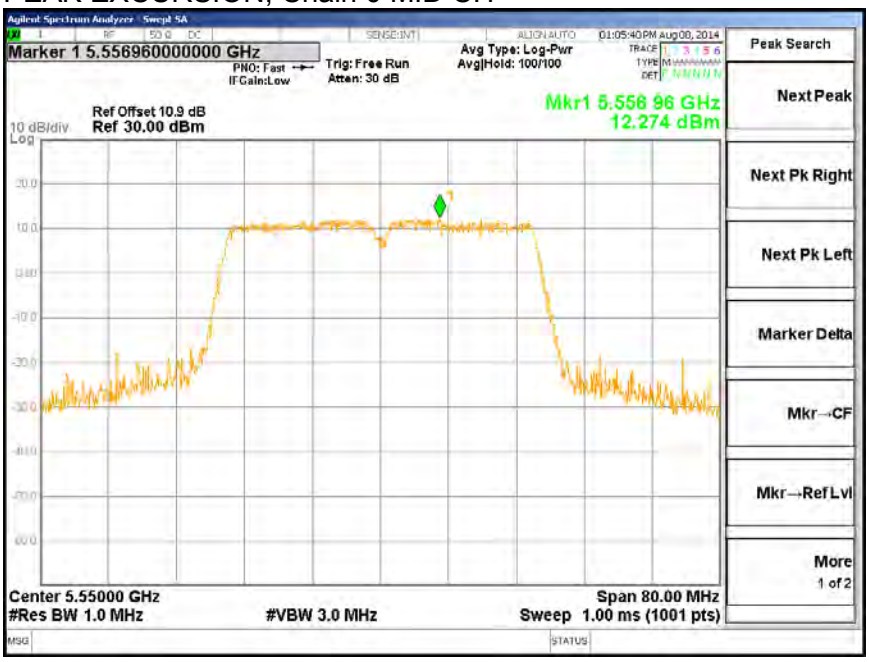
Chain 2

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5550	12.72	0.95	0.45	11.32	13	-1.68

This report shall not be reproduced except in full, without the written approval of UL LLC

PEAK EXCURSION, Chain 0

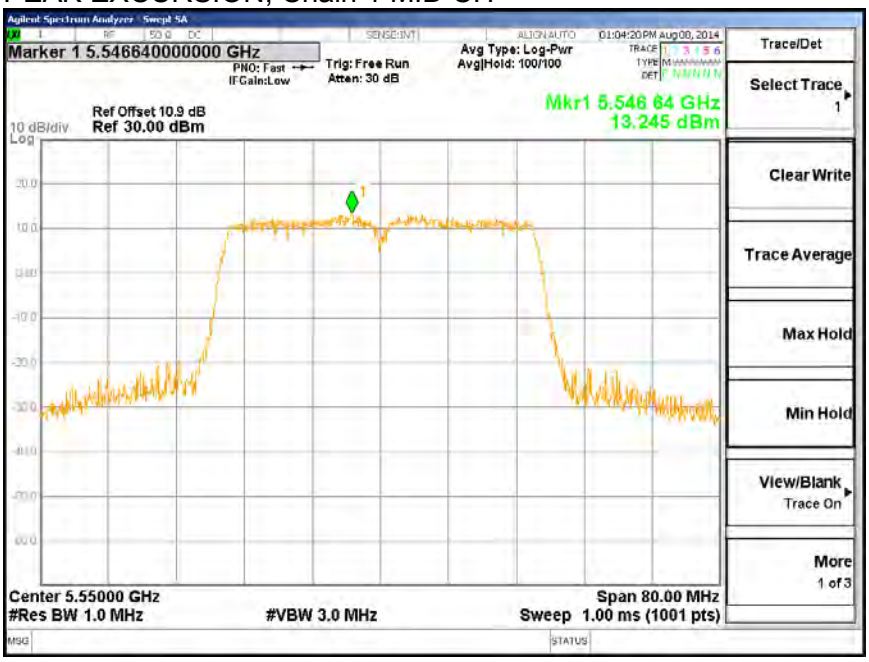
PEAK EXCURSION, Chain 0 MID CH



This report shall not be reproduced except in full, without the written approval of UL LLC

PEAK EXCURSION, Chain 1

PEAK EXCURSION, Chain 1 MID CH



This report shall not be reproduced except in full, without the written approval of UL LLC

PEAK EXCURSION, Chain 2

PEAK EXCURSION, Chain 2 MID CH

This report shall not be reproduced except in full, without the written approval of UL LLC

8.15. 802.11n HT80 1TX SISO MODE IN THE 5.6 GHz BAND

8.15.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

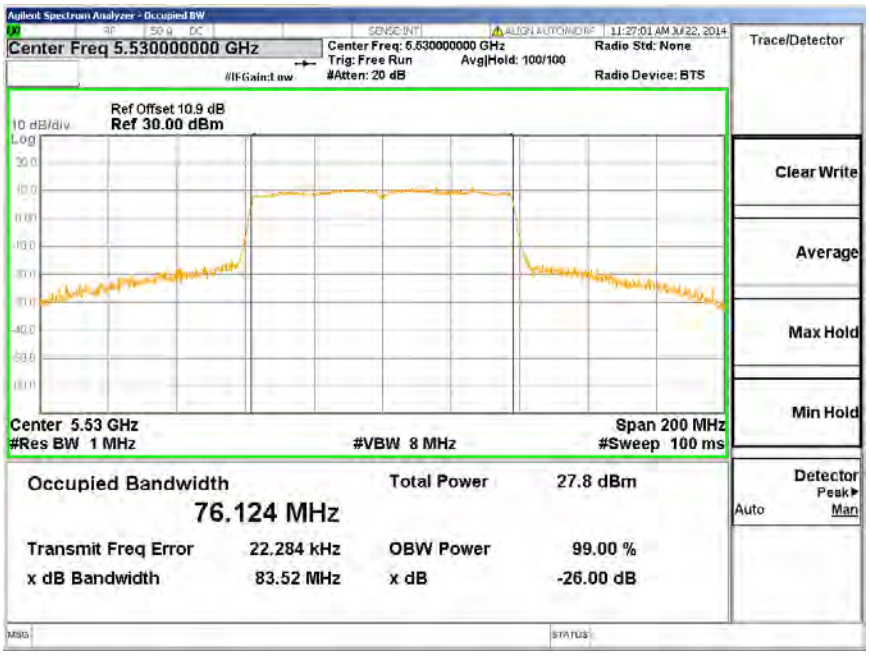
RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5530	83.52
High	5690	82.40

This report shall not be reproduced except in full, without the written approval of UL LLC

26 dB BANDWIDTH

BANDWIDTH LOW CH



BANDWIDTH HIGH CH

This report shall not be reproduced except in full, without the written approval of UL LLC

8.15.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

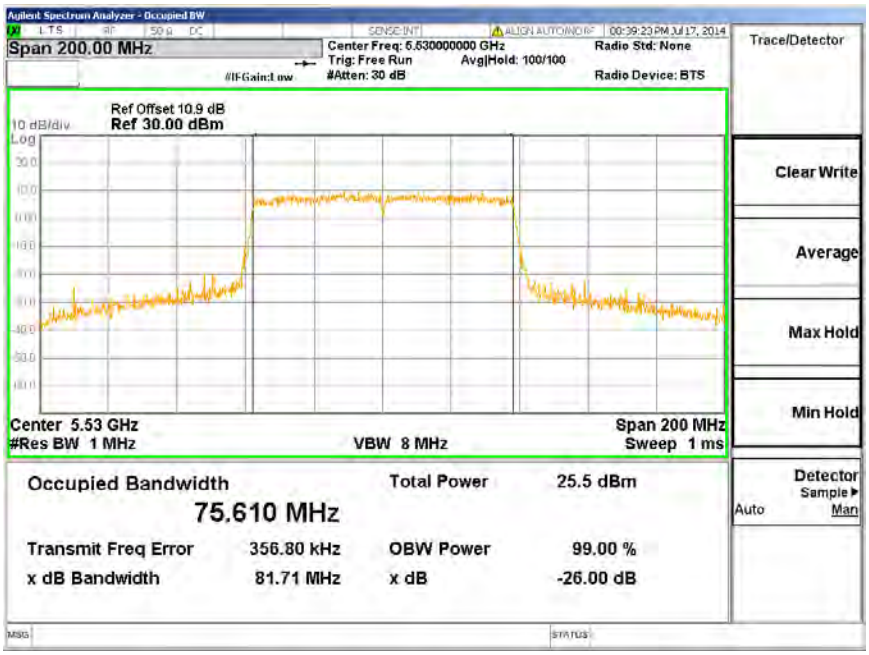
RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5530	75.6610
High	5690	75.6880

This report shall not be reproduced except in full, without the written approval of UL LLC

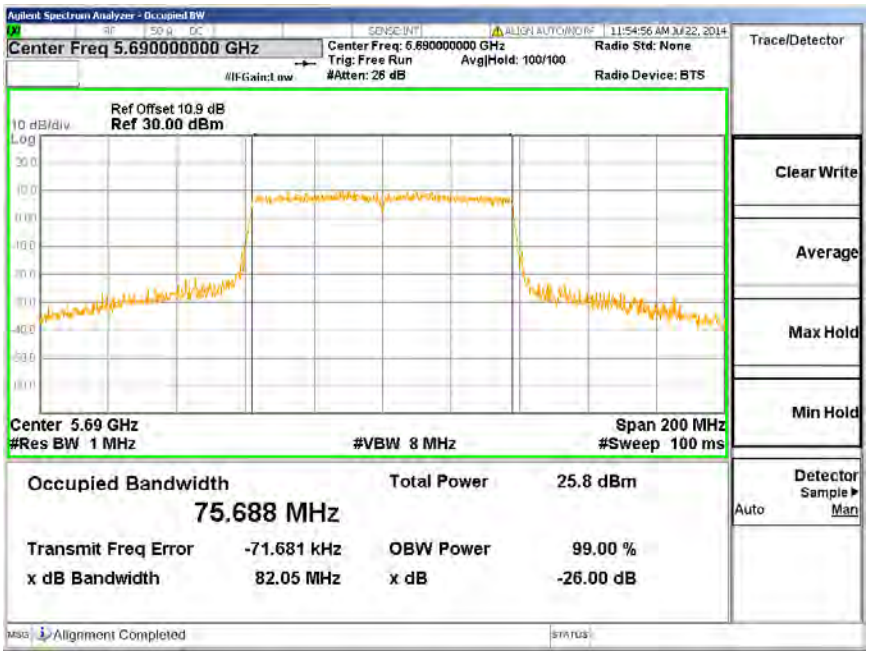
99% BANDWIDTH

BANDWIDTH LOW CH



This report shall not be reproduced except in full, without the written approval of UL LLC

BANDWIDTH HIGH CH



This report shall not be reproduced except in full, without the written approval of UL LLC

8.15.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5530	10.75
High	5690	19.64

This report shall not be reproduced except in full, without the written approval of UL LLC

8.15.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.47–5.725 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

This report shall not be reproduced except in full, without the written approval of UL LLC

RESULTS

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5530	83.52	2.00	24.00	11.00

Duty Cycle CF (dB)	0.26	Included in Calculations of Corr'd Power & PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5530	10.71	10.97	24.00	-13.03

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5530	-8.59	-8.33	11.00	-19.33

This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 0

OUTPUT POWER AND PSD, Chain 0 LOW CH

This report shall not be reproduced except in full, without the written approval of UL LLC

STRADDLE CHANNEL 138 RESULTS

UNII-2C BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
138	5690	75.90	2.00	2.00	24.00	11.00

Duty Cycle CF (dB)	0.26	Included in Calculations of Corr'd Power & PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	19.41	19.67	24.00	-4.33

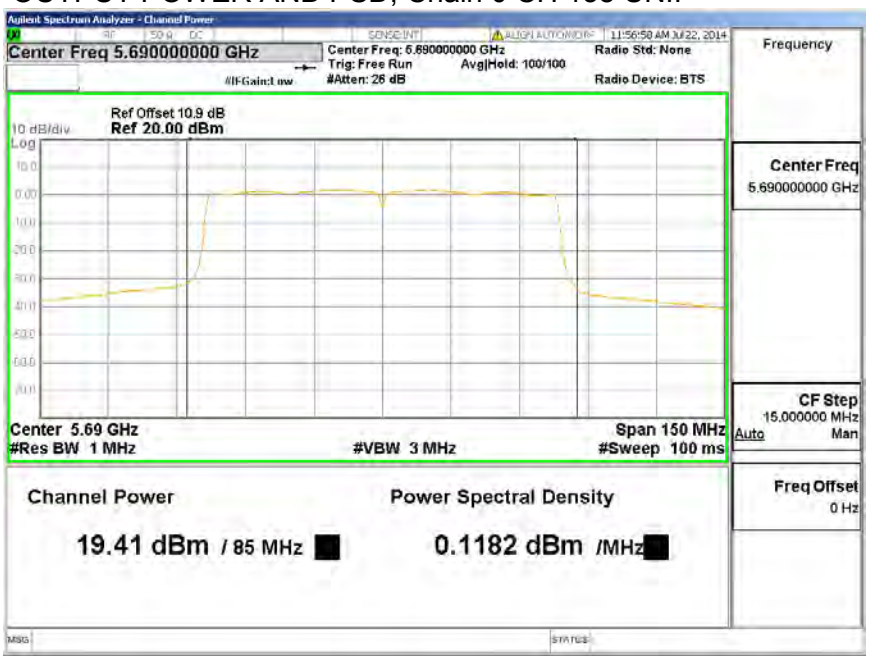
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	0.12	0.38	11.00	-10.62

*Note total output power across 2 bands was found to be compliant incorporating the single band 26dB BW within the limit, therefore a measured output power within the single band 26dBBW would also comply.

This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 0 CH 138 UNII



This report shall not be reproduced except in full, without the written approval of UL LLC

UNII-3 BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
138	5690	6.50	2.00	2.00	24.00	17.00

Duty Cycle CF (dB)	0.26	Included in Calculations of Corr'd Power & PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	19.41	19.67	24.00	-4.33

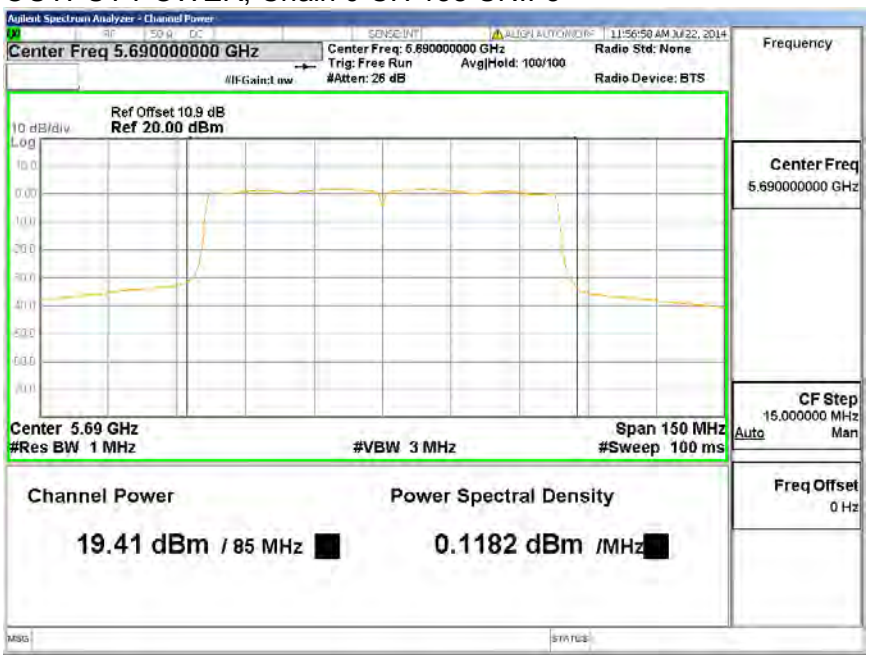
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	0.12	0.38	17.00	-16.62

*Note total output power across 2 bands was found to be compliant incorporating the single band 26dB BW within the limit, therefore a measured output power within the single band 26dBBW would also comply.

This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER, Chain 0 CH 138 UNII-3



This report shall not be reproduced except in full, without the written approval of UL LLC

8.15.5. PEAK EXCURSION

LIMITS

FCC §15.407 (a) (6)

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

RESULTS

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5690	9.98	0.12	0.26	9.60	13	-3.40

This report shall not be reproduced except in full, without the written approval of UL LLC

PEAK EXCURSION

PEAK EXCURSION MID CH

This report shall not be reproduced except in full, without the written approval of UL LLC

8.16. 802.11n HT80 3TX CDD MODE IN THE 5.6 GHz BAND

8.16.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

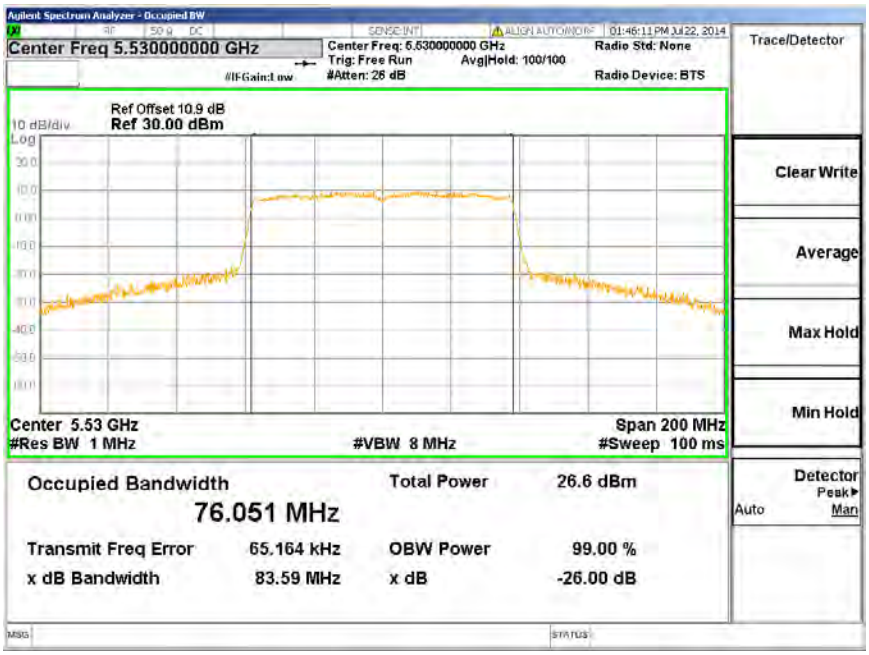
RESULTS

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)	26 dB BW Chain 2 (MHz)
Low	5530	83.59	82.54	82.33
High	5690	82.50	82.50	82.50

This report shall not be reproduced except in full, without the written approval of UL LLC

26 dB BANDWIDTH, Chain 0

BANDWIDTH Chain 0 LOW CH



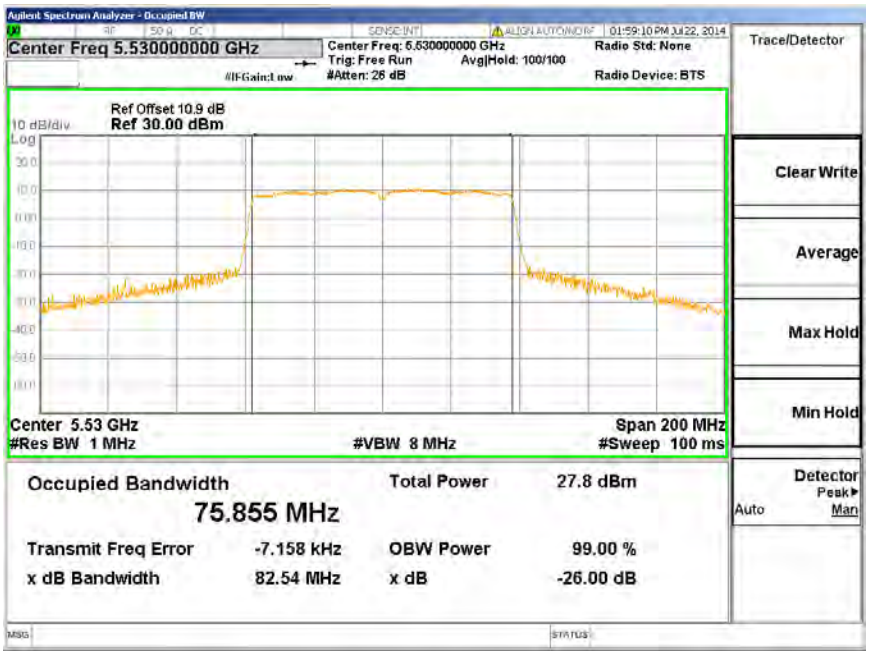
This report shall not be reproduced except in full, without the written approval of UL LLC

BANDWIDTH Chain 0 HIGH CH

This report shall not be reproduced except in full, without the written approval of UL LLC

26 dB BANDWIDTH, Chain 1

BANDWIDTH Chain 1 LOW CH



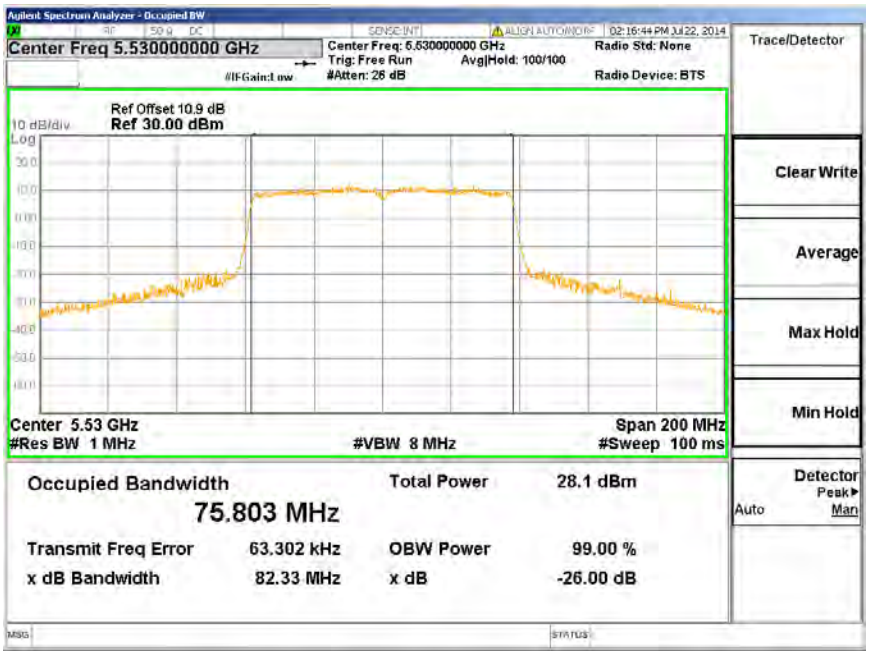
This report shall not be reproduced except in full, without the written approval of UL LLC

BANDWIDTH Chain 1 HIGH CH

This report shall not be reproduced except in full, without the written approval of UL LLC

26 dB BANDWIDTH, Chain 2

BANDWIDTH Chain 2 LOW CH



This report shall not be reproduced except in full, without the written approval of UL LLC

BANDWIDTH Chain 2 HIGH CH

This report shall not be reproduced except in full, without the written approval of UL LLC

8.16.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
Low	5530	75.7150	75.6120	75.6580
High	5690	75.7940	75.5820	75.7760

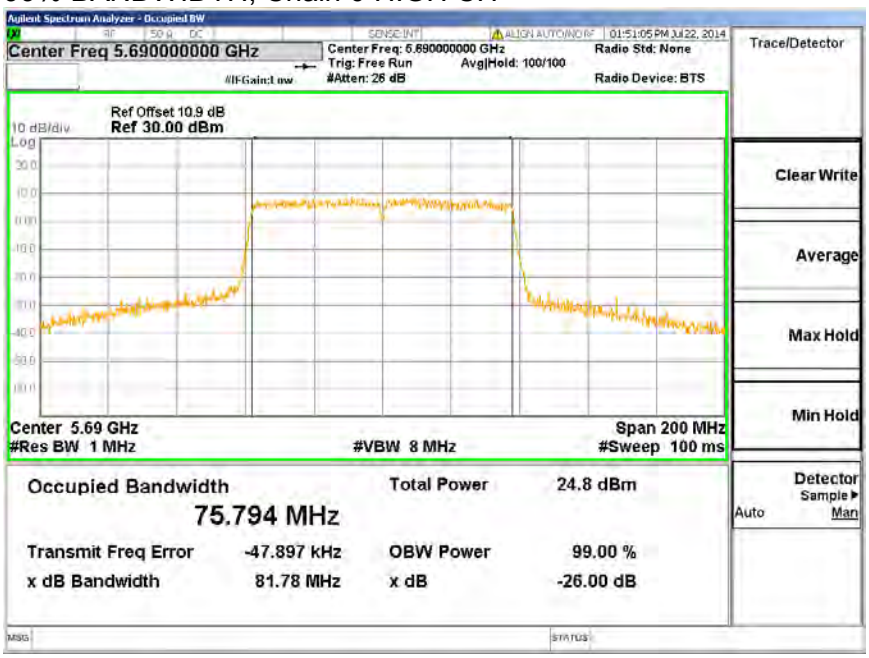
This report shall not be reproduced except in full, without the written approval of UL LLC

99% BANDWIDTH, Chain 0

99% BANDWIDTH, Chain 0 LOW CH

This report shall not be reproduced except in full, without the written approval of UL LLC

99% BANDWIDTH, Chain 0 HIGH CH



This report shall not be reproduced except in full, without the written approval of UL LLC

99% BANDWIDTH, Chain 1

99% BANDWIDTH, Chain 1 LOW CH

This report shall not be reproduced except in full, without the written approval of UL LLC

99% BANDWIDTH, Chain 1 HIGH CH

This report shall not be reproduced except in full, without the written approval of UL LLC

99% BANDWIDTH, Chain 2

99% BANDWIDTH, Chain 2 LOW CH

This report shall not be reproduced except in full, without the written approval of UL LLC

99% BANDWIDTH, Chain 2 HIGH CH

This report shall not be reproduced except in full, without the written approval of UL LLC

8.16.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Average Power Results

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Chain 2 Power (dBm)	Total Power (dBm)
Low	5530	8.94	8.76	7.52	13.22
High	5690	18.51	18.80	18.19	23.28

This report shall not be reproduced except in full, without the written approval of UL LLC

8.16.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.47–5.725 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

The TX chains are correlated and the antenna gain is the same for each chain. The directional gain is:

Antenna Gain (dBi)	10 * Log (3 chains) (dB)	Correlated Chains Directional Gain (dBi)
2.00	4.77	6.77

This report shall not be reproduced except in full, without the written approval of UL LLC

RESULTS

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5530	82.33	6.77	6.77	23.23	10.23

Duty Cycle CF (dB)	0.27	**Included in Calculations of Corr'd Power & PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5530	8.94	8.84	7.44	13.50	23.23	-9.73

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Chain 2 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5530	-10.36	-10.45	-11.86	-5.80	10.23	-16.03

This report shall not be reproduced except in full, without the written approval of UL LLC

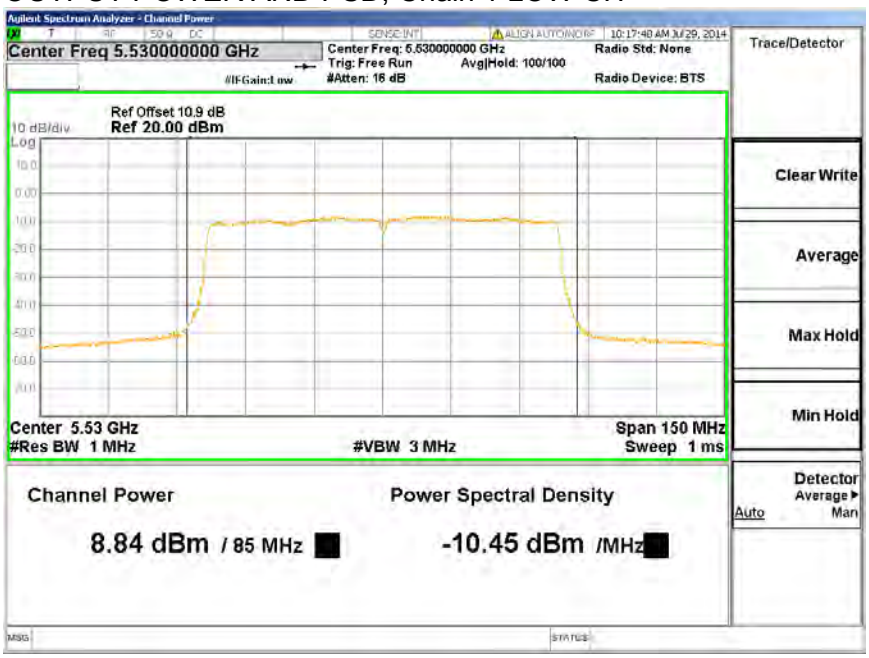
OUTPUT POWER AND PSD, Chain 0

OUTPUT POWER AND PSD, Chain 0 LOW CH

This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 1

OUTPUT POWER AND PSD, Chain 1 LOW CH



This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 2

OUTPUT POWER AND PSD, Chain 2 LOW CH

This report shall not be reproduced except in full, without the written approval of UL LLC

STRADDLE CHANNEL 138 RESULTS

UNII-2C BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
138	5690	75.90	6.77	6.77	23.23	10.23

Duty Cycle CF (dB)	0.27	Included in Calculations of Corr'd Power & PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	17.20	18.70	18.15	23.10	23.23	-0.13

PSD Results

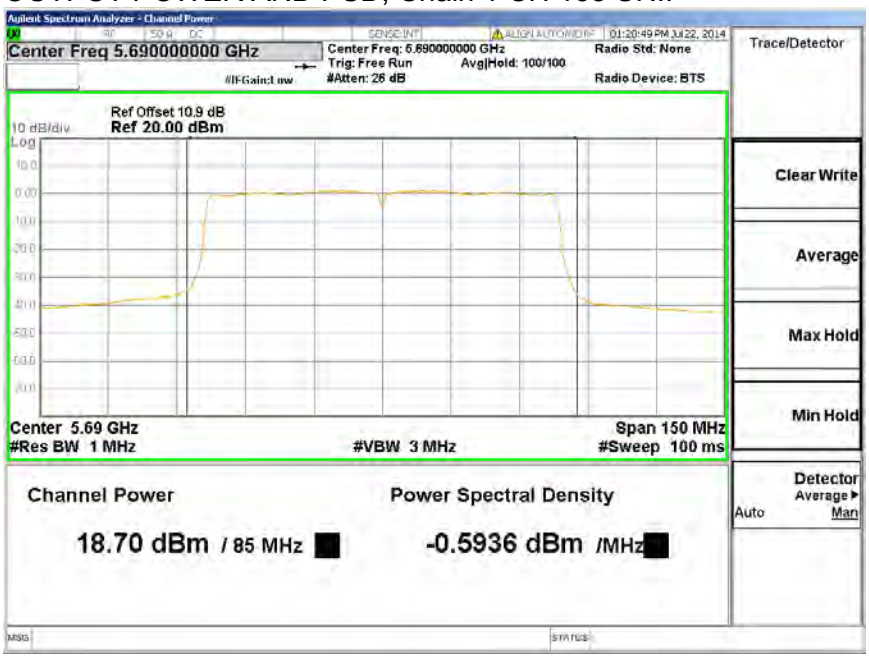
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Chain 2 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-2.09	-0.59	-1.15	3.81	10.23	-6.42

*Note total output power across 2 bands was found to be compliant incorporating the single band 26dB BW within the limit, therefore a measured output power within the single band 26dBBW would also comply.

This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 0 CH 138 UNII

OUTPUT POWER AND PSD, Chain 1 CH 138 UNII



This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 2 CH 138 UNII

This report shall not be reproduced except in full, without the written approval of UL LLC

UNII-3 BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
138	5690	6.60	6.77	6.77	23.23	16.23

Duty Cycle CF (dB)	0.27	Included in Calculations of Corr'd Power & PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	17.20	18.70	18.15	23.10	23.23	-0.13

PSD Results

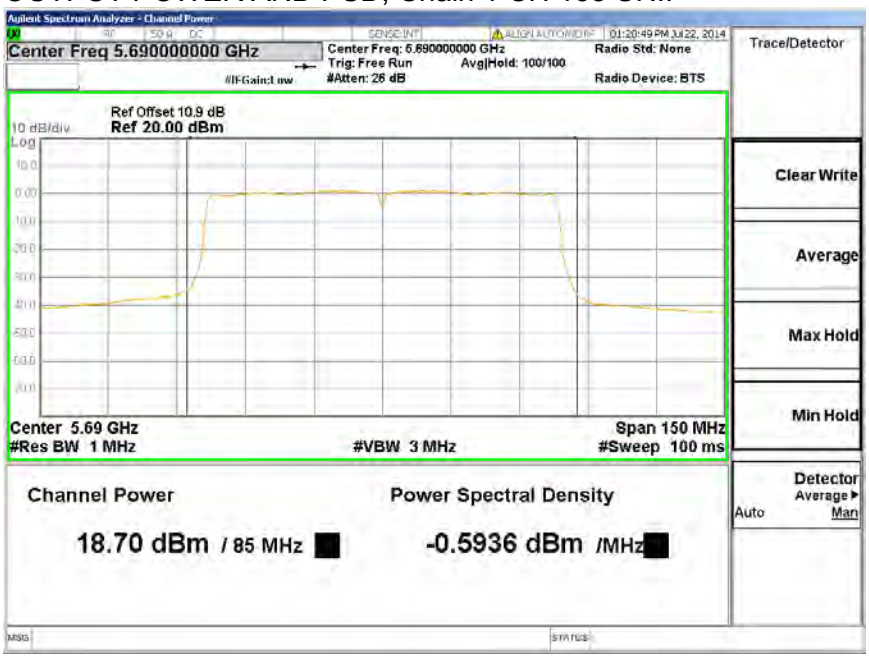
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Chain 2 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	-2.09	-0.59	-1.15	3.81	16.23	-12.42

*Note total output power across 2 bands was found to be compliant incorporating the single band 26dB BW within the limit, therefore a measured output power within the single band 26dBBW would also comply.

This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 0 CH 138 UNII

OUTPUT POWER AND PSD, Chain 1 CH 138 UNII



This report shall not be reproduced except in full, without the written approval of UL LLC

OUTPUT POWER AND PSD, Chain 2 CH 138 UNII

This report shall not be reproduced except in full, without the written approval of UL LLC

8.16.5. PEAK EXCURSION

LIMITS

FCC §15.407 (a) (6)

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

RESULTS

Chain 0

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5690	9.49	-2.09	0.27	11.31	13	-1.69

Chain 1

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5690	10.66	-0.59	0.27	10.98	13	-2.02

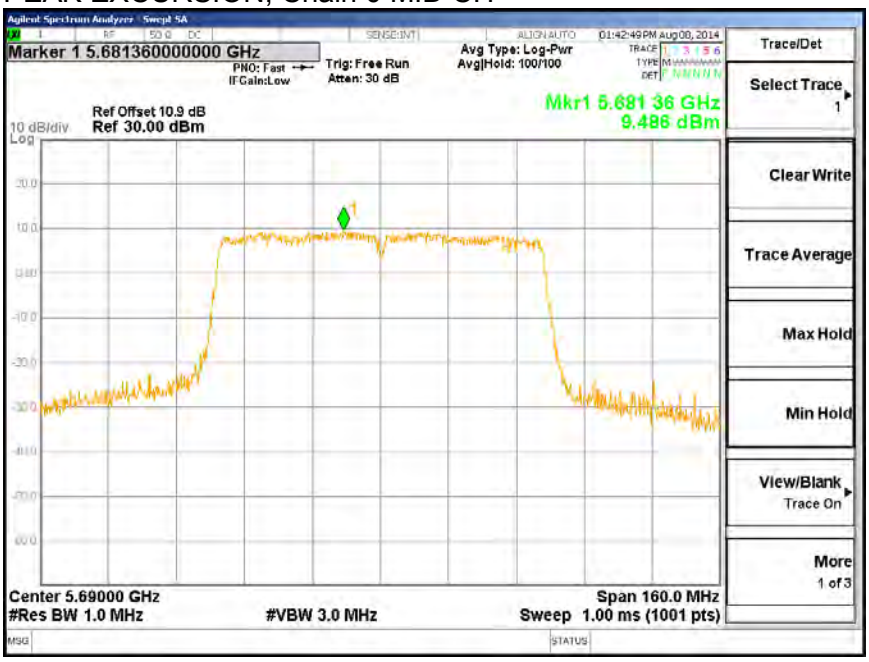
Chain 2

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5690	10.90	-1.15	0.27	11.78	13	-1.22

This report shall not be reproduced except in full, without the written approval of UL LLC

PEAK EXCURSION, Chain 0

PEAK EXCURSION, Chain 0 MID CH



This report shall not be reproduced except in full, without the written approval of UL LLC

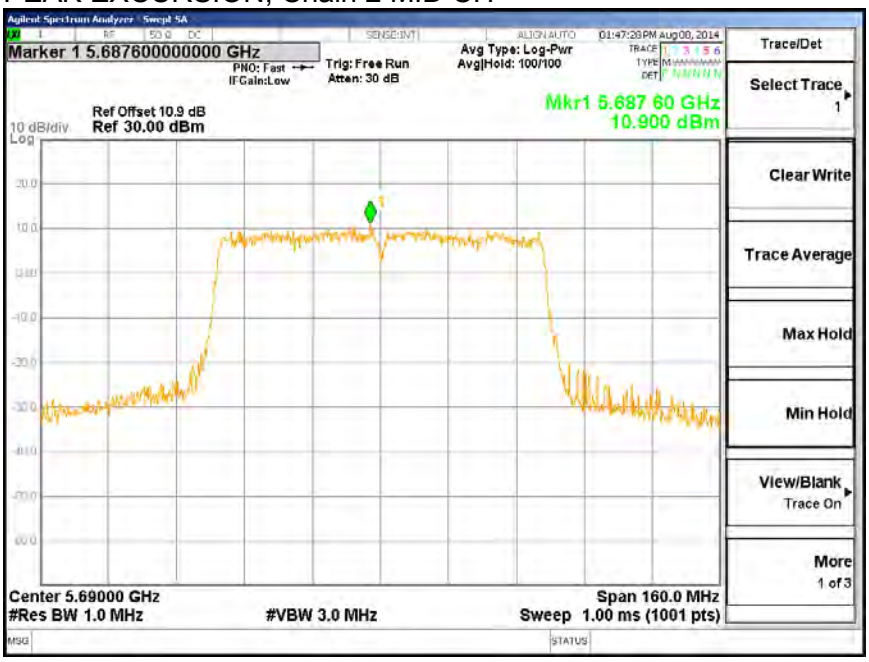
PEAK EXCURSION, Chain 1

PEAK EXCURSION, Chain 1 MID CH

This report shall not be reproduced except in full, without the written approval of UL LLC

PEAK EXCURSION, Chain 2

PEAK EXCURSION, Chain 2 MID CH



This report shall not be reproduced except in full, without the written approval of UL LLC