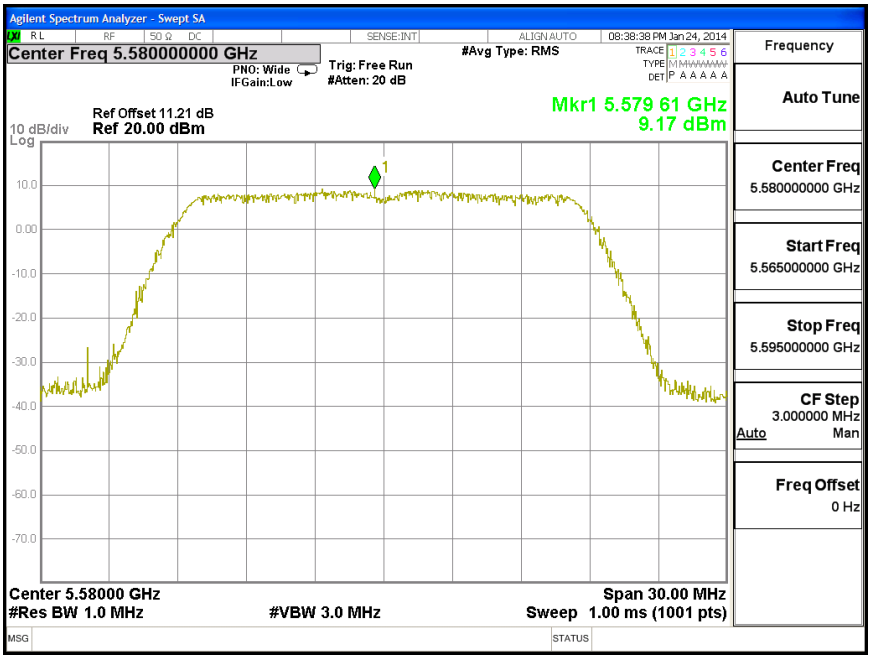
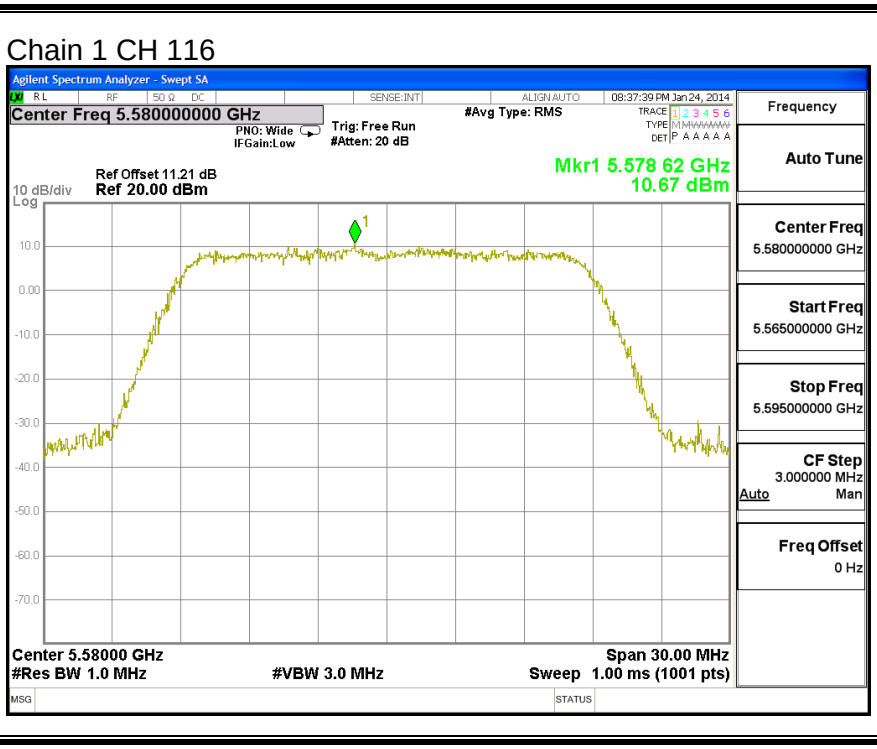
PEAK EXCURSION, Chain 0

Chain 0 CH 116



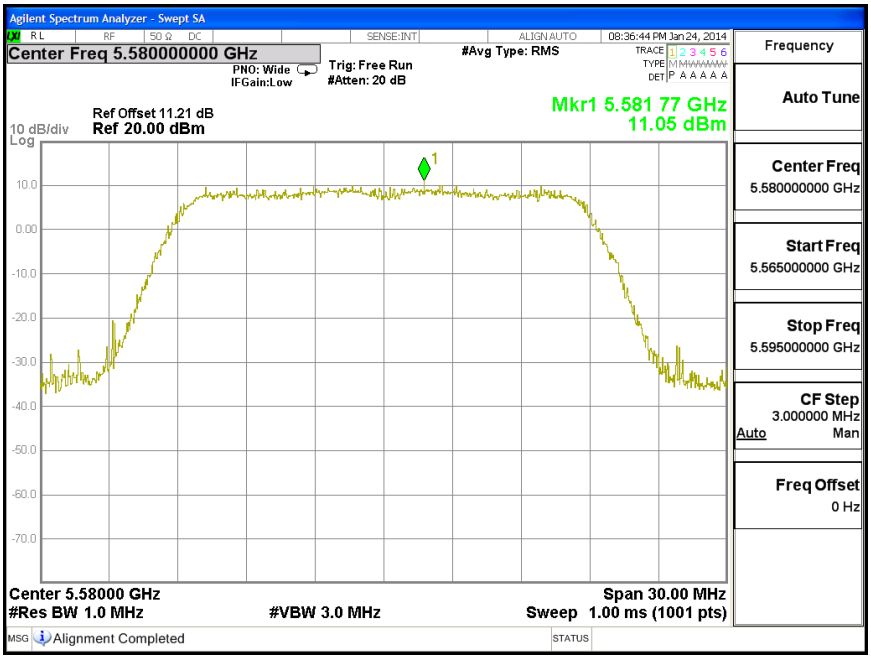
PEAK EXCURSION, Chain 1

Chain 1 CH 116



PEAK EXCURSION, Chain 2

Chain 2 CH 116



9.25. 802.11ac 20HMz 3TX CDD MODE, CHANNEL 144, 5.6 GHz BAND

9.25.1. 26 dB BANDWIDTH- UNII

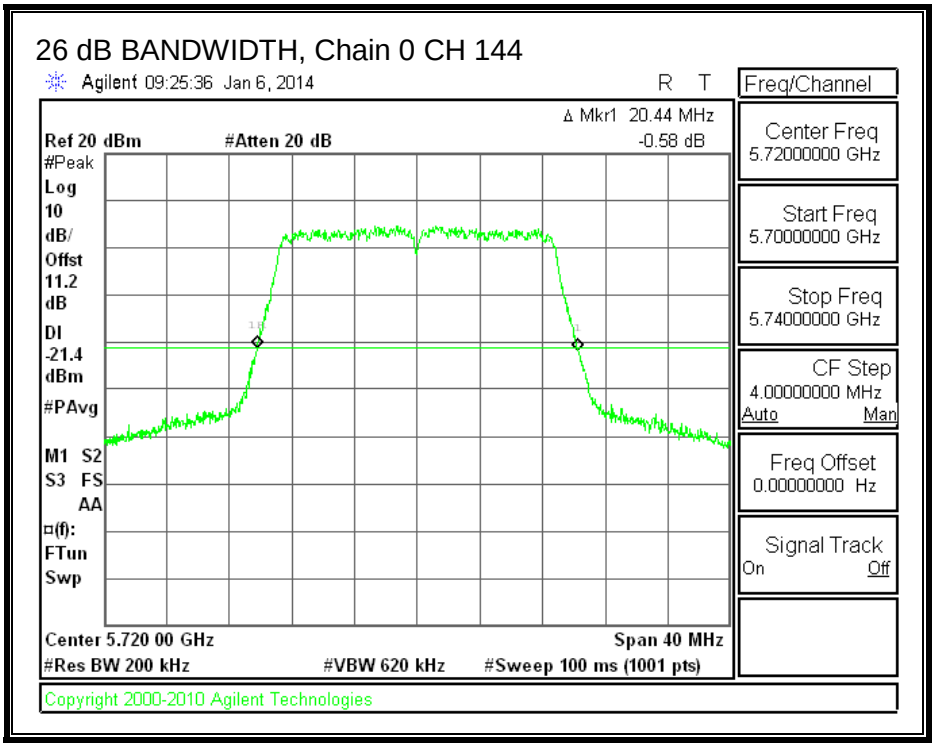
LIMITS

None; for reporting purposes only.

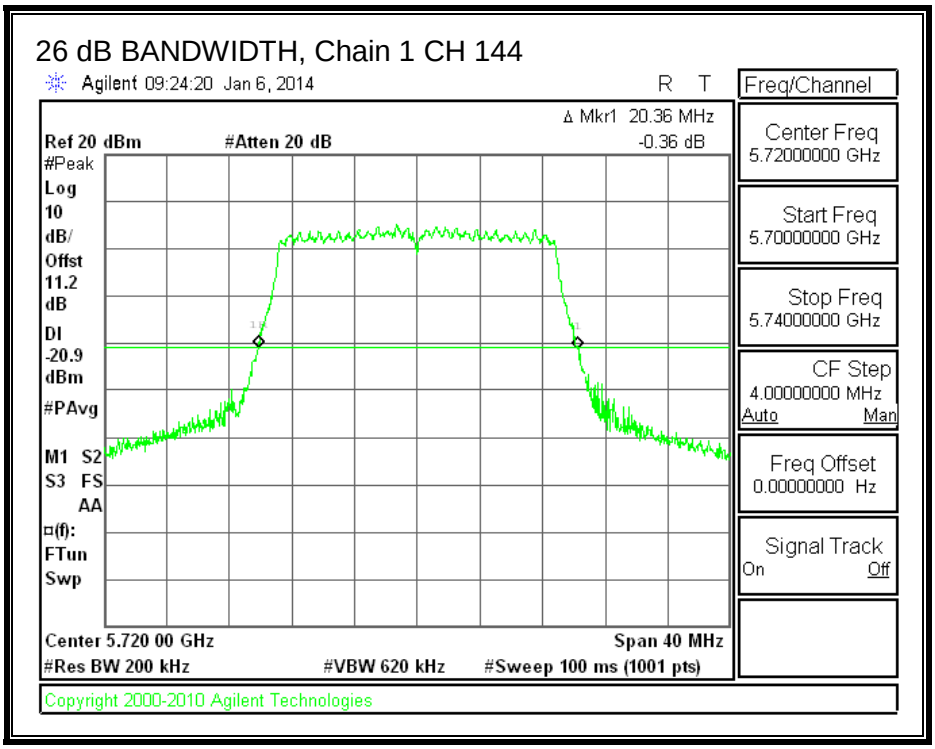
RESULTS

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)	26 dB BW Chain 2 (MHz)
144	5720	20.44	20.36	20.40

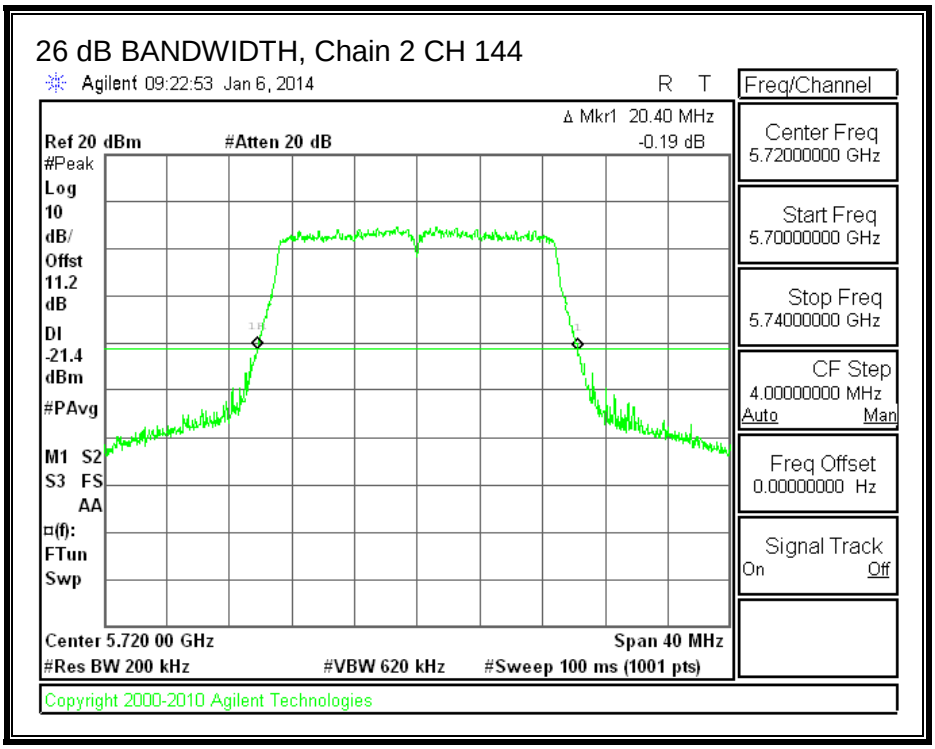
26 dB BANDWIDTH, Chain 0



26 dB BANDWIDTH, Chain 1



26 dB BANDWIDTH, Chain 2



9.25.2.99% BANDWIDTH

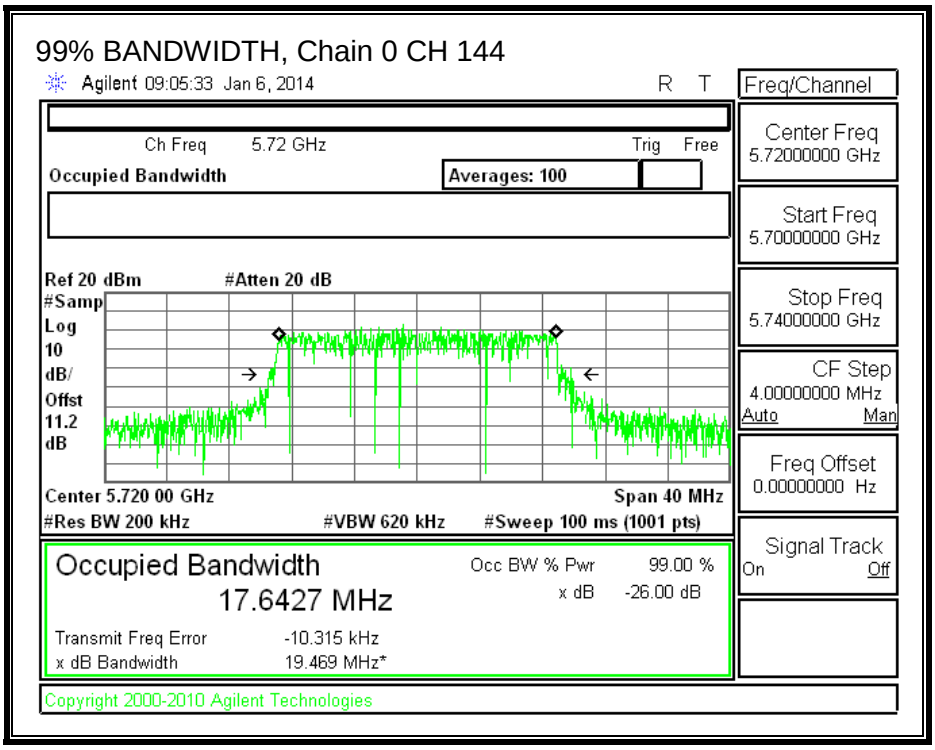
LIMITS

None; for reporting purposes only.

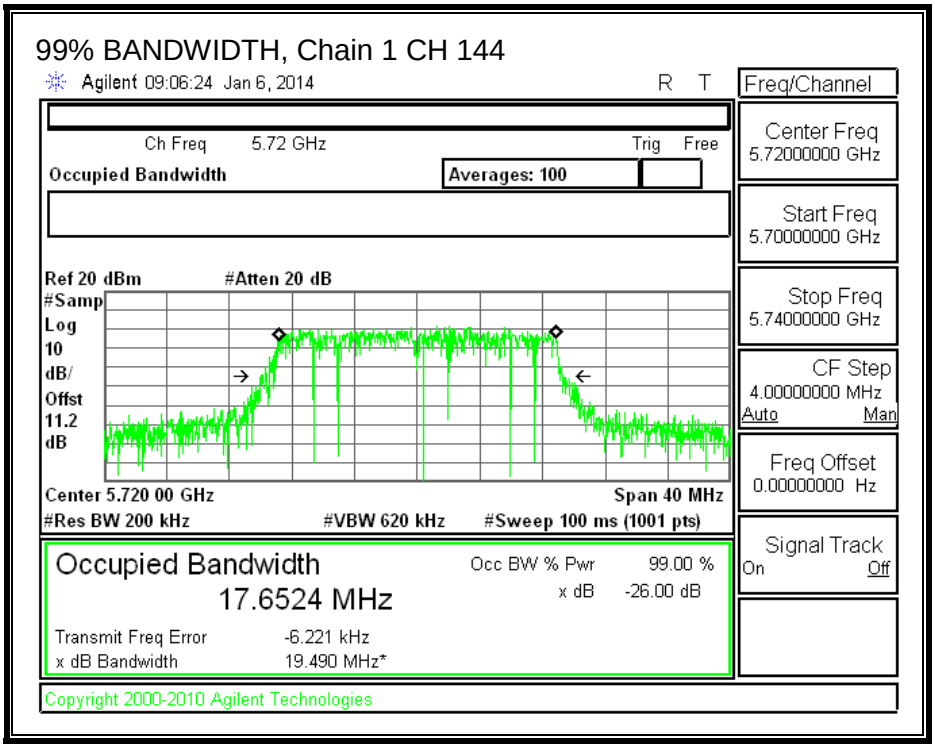
RESULTS

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
144	5720	17.6427	17.6524	17.6398

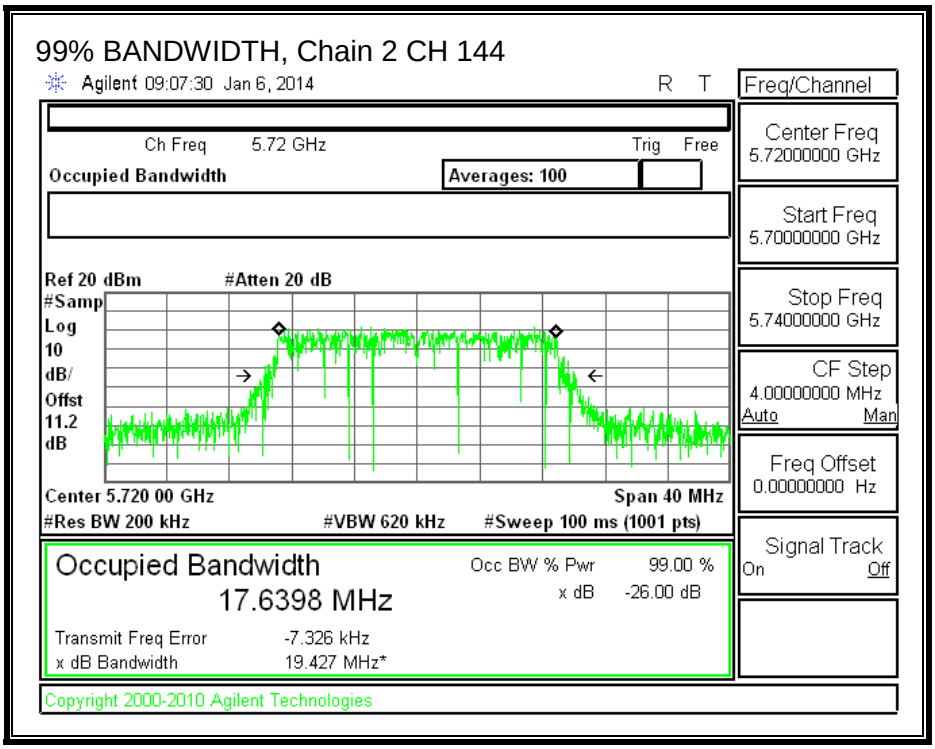
99% BANDWIDTH, Chain 0



99% BANDWIDTH, Chain 1



99% BANDWIDTH, Chain 2



9.25.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.5–5.7 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

For output power and PPSD, 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)
2.82	4.77	7.59

RESULTS

Limits (FCC), portion in UNII 2 ext band

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
144	5720	15.220	13.8214	2.82	7.59

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
144	5720	21.23	22.41	28.41	20.82	11.00	11.00	11.00

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

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	14.03	13.86	14.10	18.99	20.82	-1.83

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Chain 2 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
144	5720	3.58	3.46	3.67	8.56	11.00	-2.44

Limits (FCC), portion in 5.8 GHz DTS band

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Mid	5720	5.220	3.8214	2.82	7.59

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Mid	5720	16.59	16.82	22.82	15.23	11.00	11.00	11.00

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

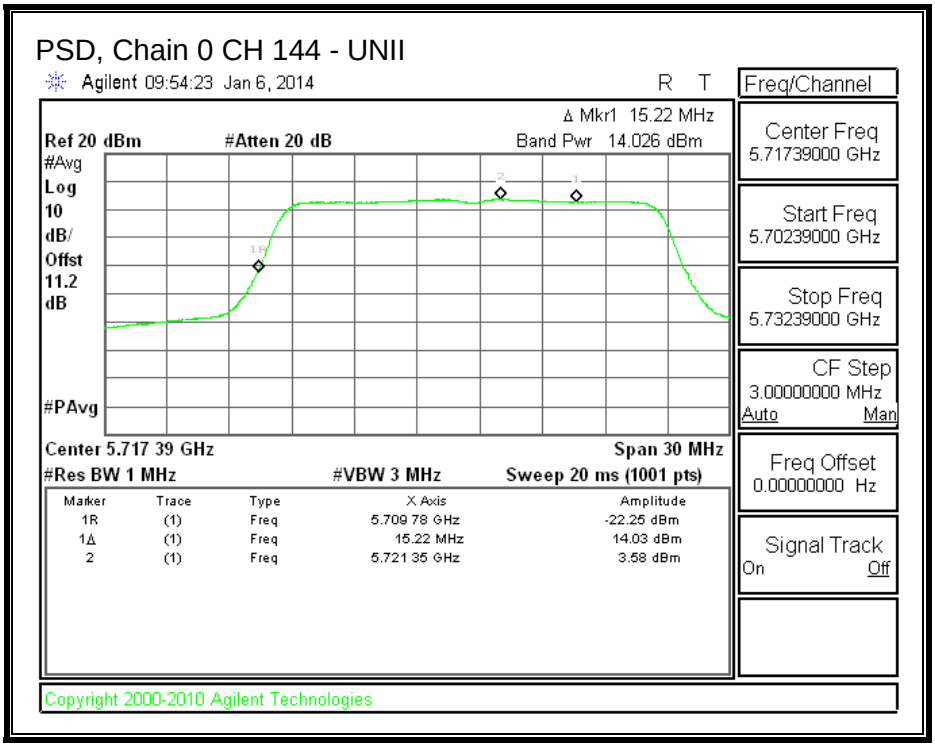
Output Power Results

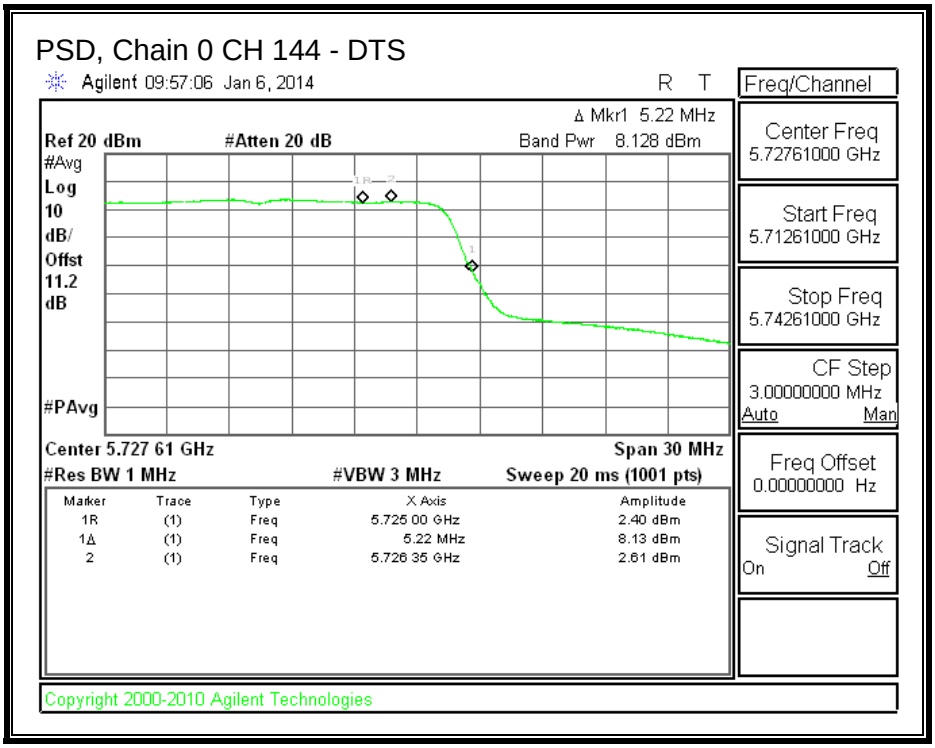
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Mid	5720	8.13	7.77	8.14	13.01	15.23	-2.22

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Chain 2 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Mid	5720	2.610	2.42	2.63	7.55	11.00	-3.45

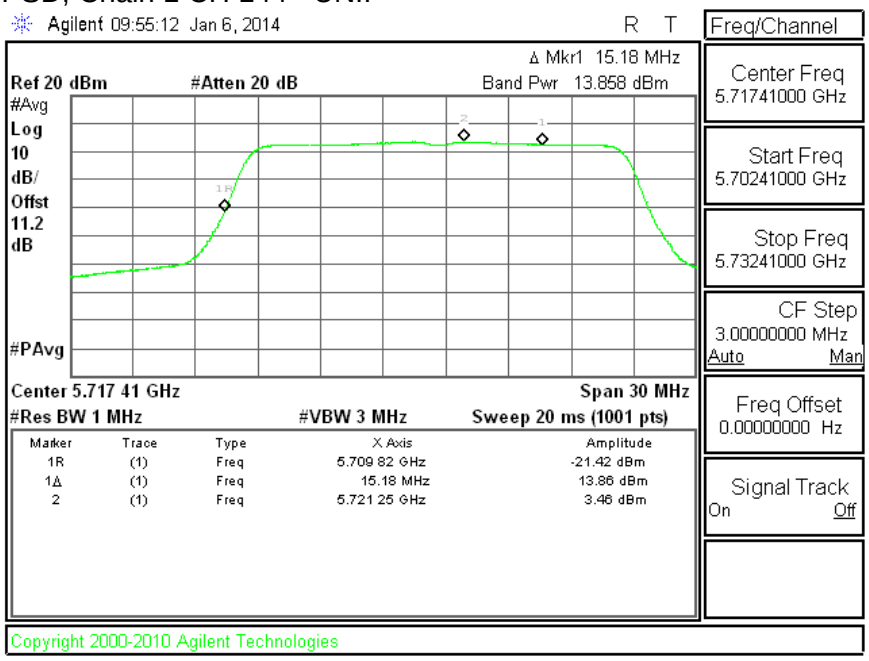
OUTPUT POWER & PPSD, Chain 0



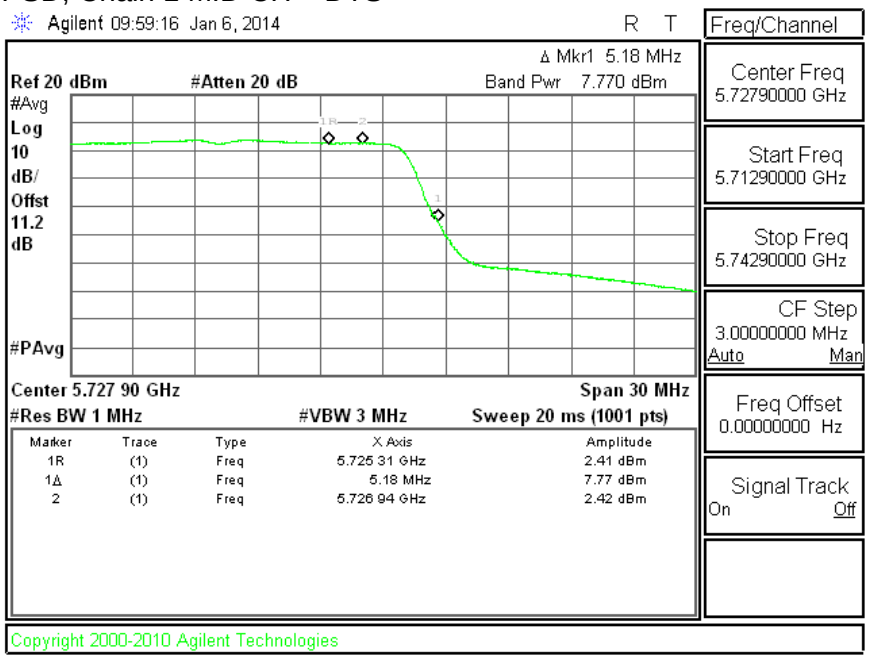


OUTPUT POWER & PPSD, Chain 1

PSD, Chain 1 CH 144 - UNII

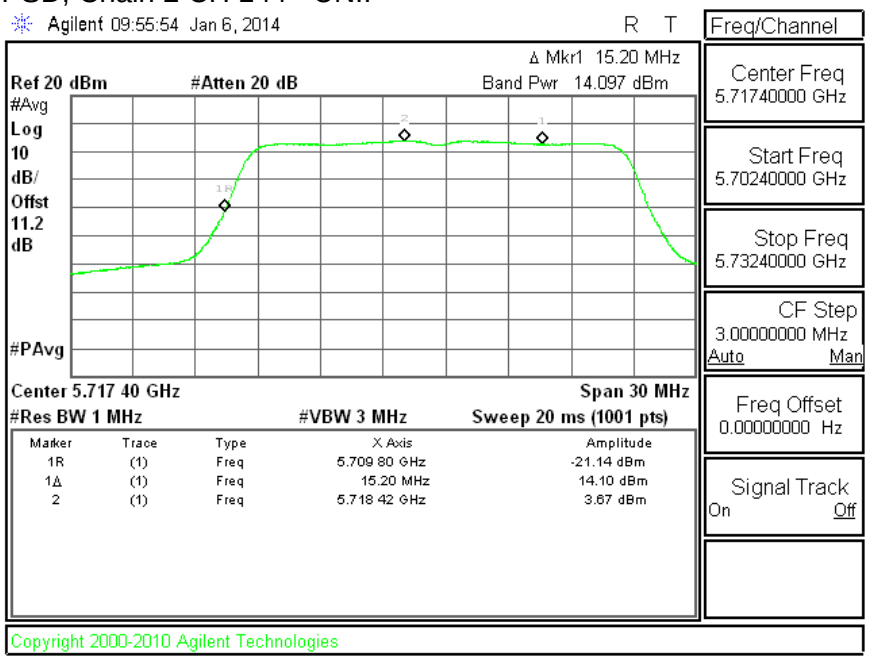


PSD, Chain 1 MID CH – DTS

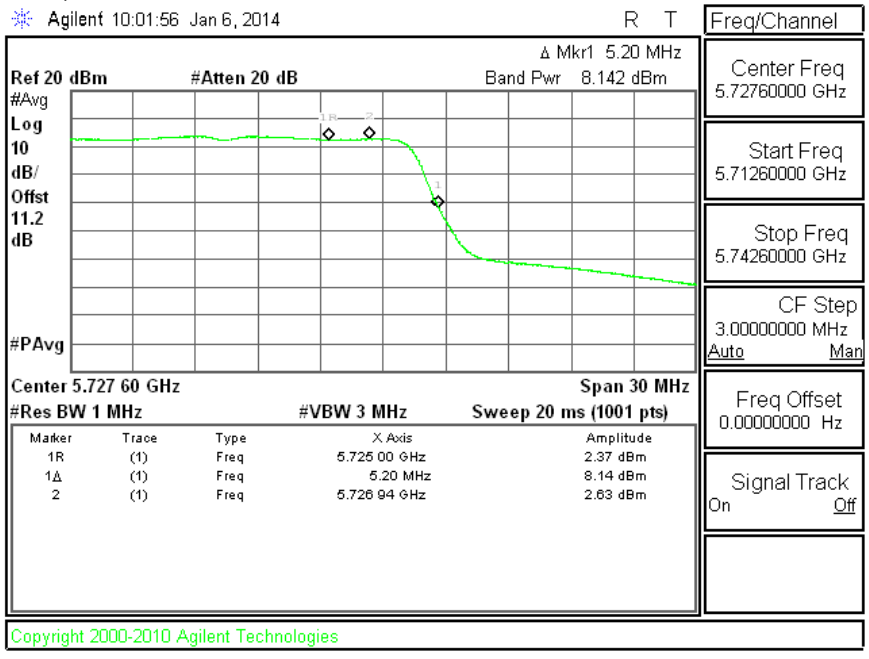


OUTPUT POWER & PPSD, Chain 2

PSD, Chain 2 CH 144 - UNII



PSD, Chain 2 CH 144 – DTS



9.26. 802.11n HT20 3TX SDM MODE IN THE 5.6 GHz BAND

9.26.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

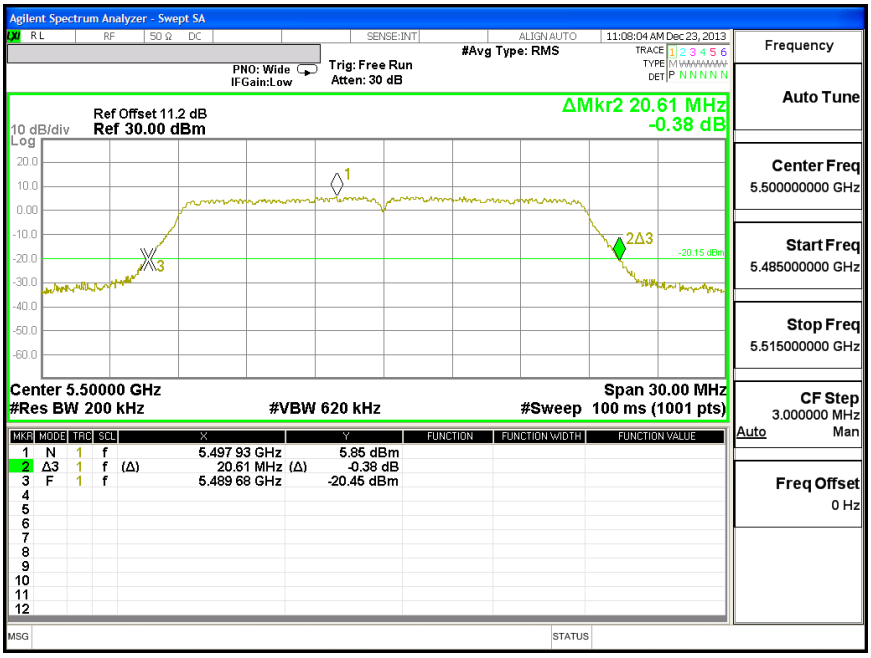
RESULTS

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)	26 dB BW Chain 2 (MHz)
100	5500	20.61	20.37	20.61
116	5580	20.58	20.46	20.43
140	5700	20.64	20.52	20.49

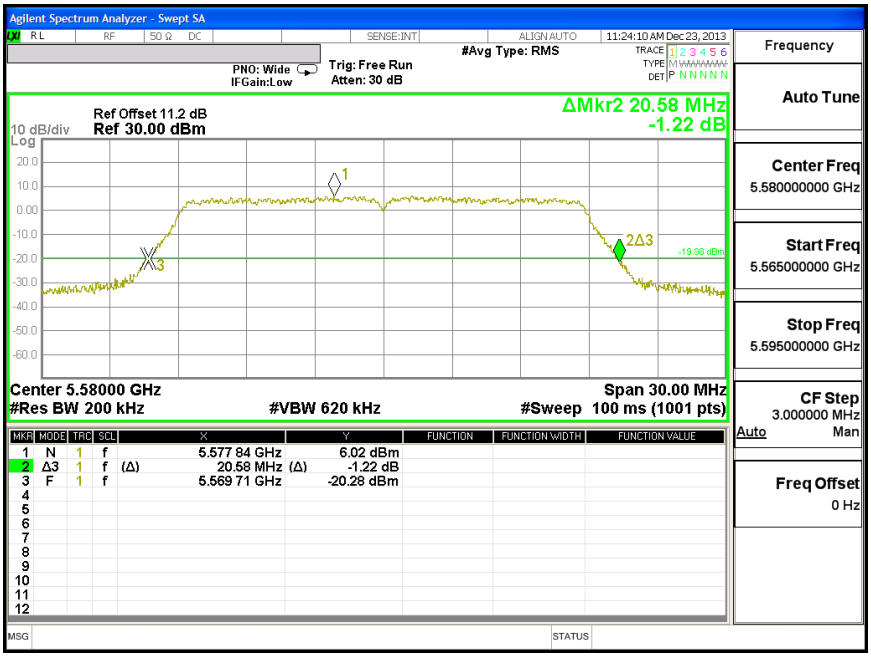
26 dB BANDWIDTH

26 dB BANDWIDTH, Chain 0

BANDWIDTH Chain 0 CH 100



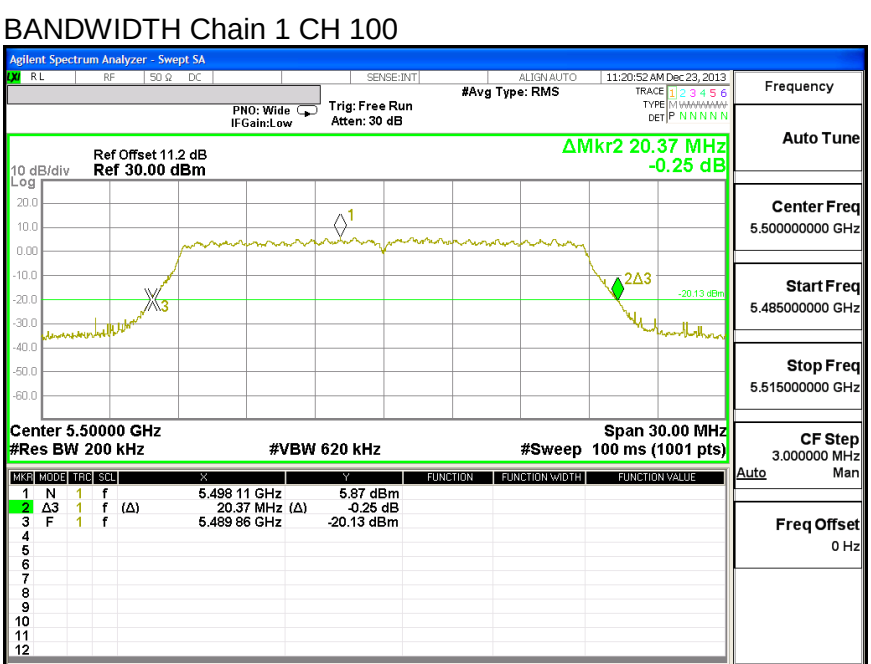
BANDWIDTH Chain 0 CH 116



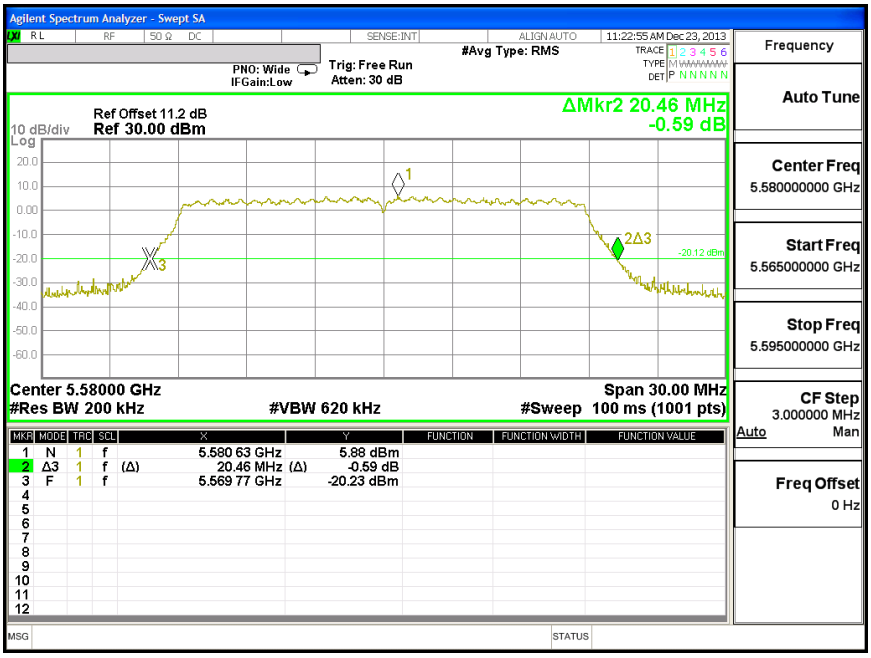
BANDWIDTH Chain 0 CH 140

26 dB BANDWIDTH, Chain 1

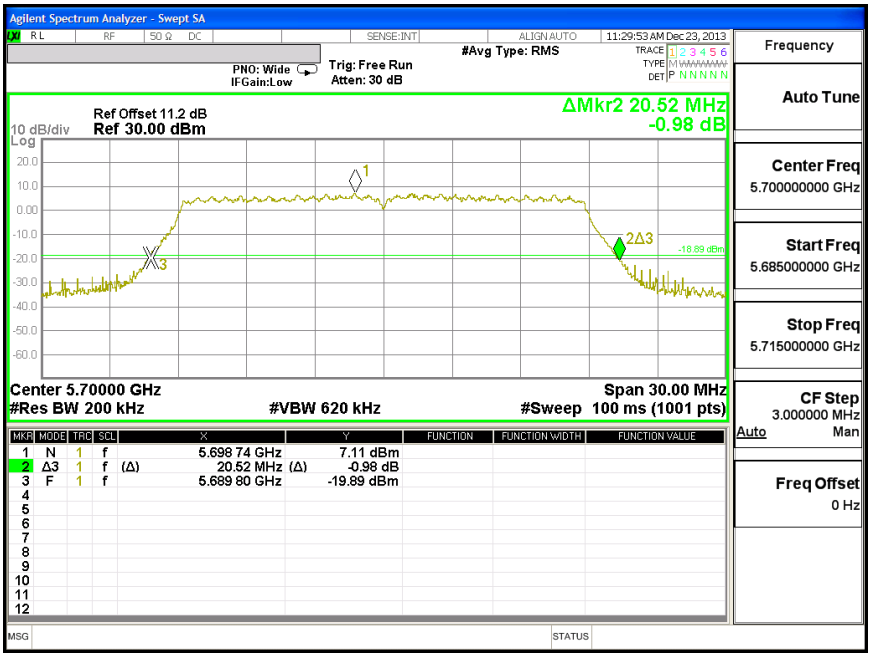
BANDWIDTH Chain 1 CH 100



BANDWIDTH Chain 1 CH 116

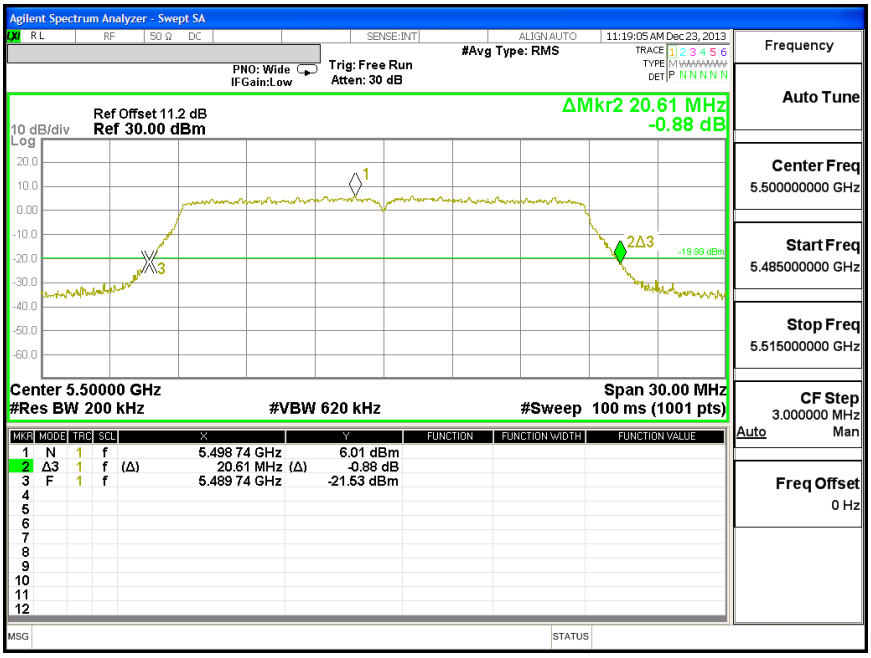


BANDWIDTH Chain 1 CH 140

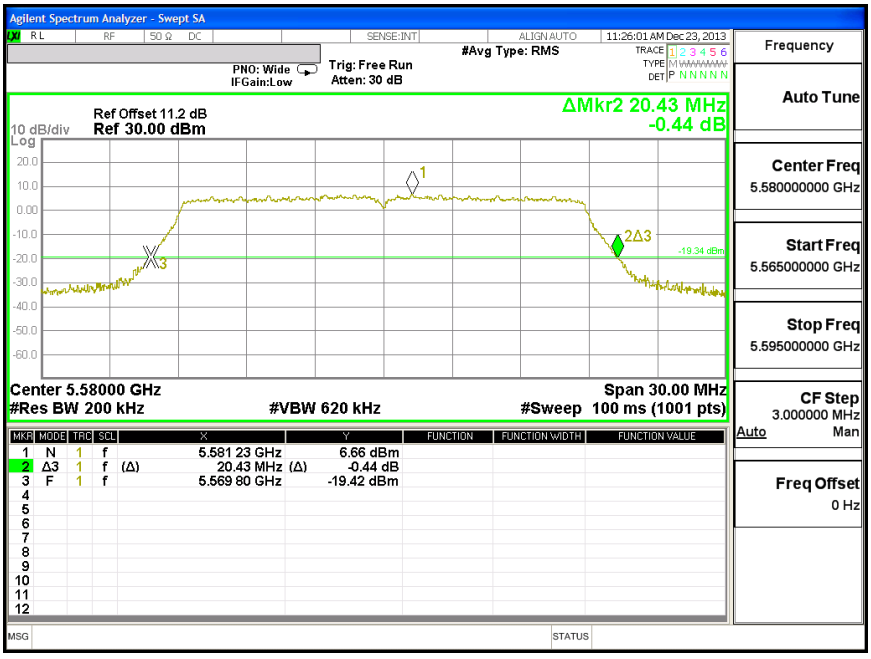


26 dB BANDWIDTH, Chain 2

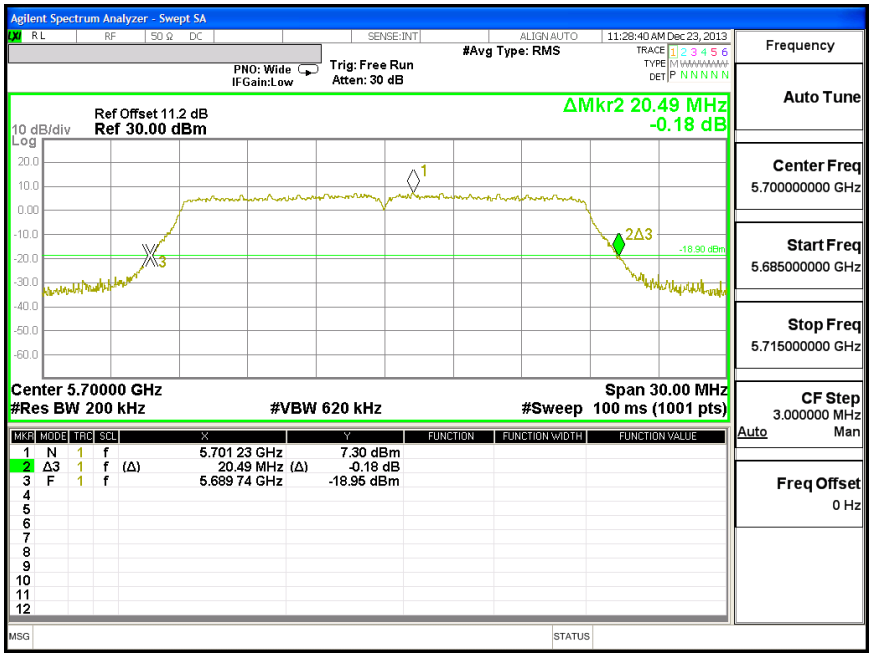
BANDWIDTH Chain 2 CH 100



BANDWIDTH Chain 2 CH 116



BANDWIDTH Chain 2 CH 140



9.26.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

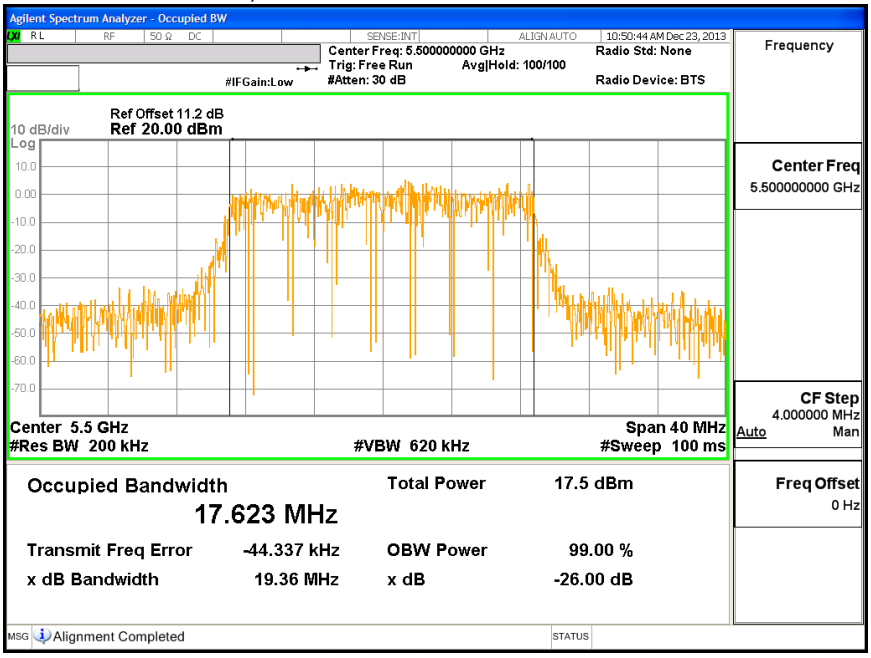
RESULTS

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
100	5500	17.623	17.658	17.638
116	5580	17.584	17.636	17.656
140	5700	17.609	17.639	17.726

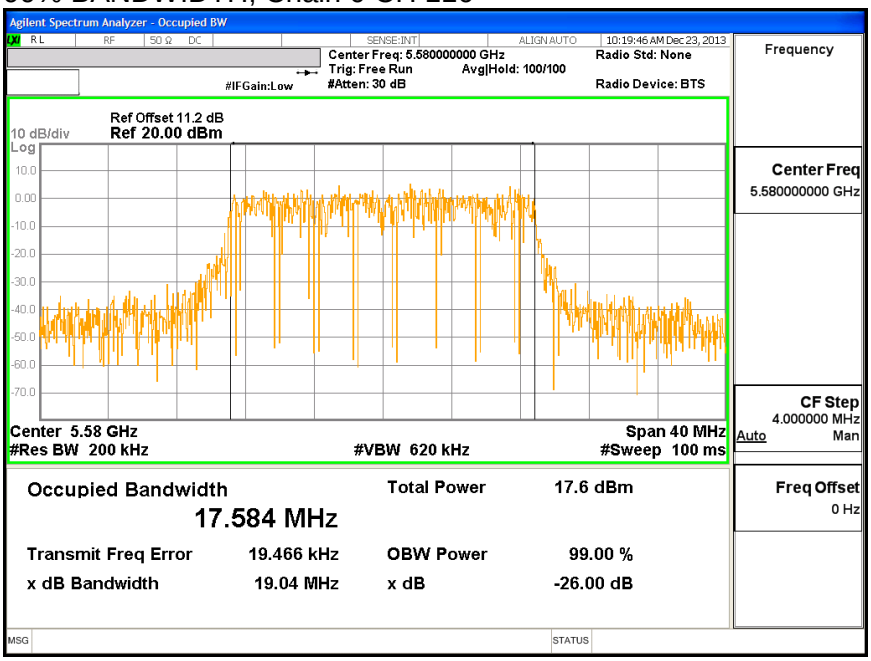
99% BANDWIDTH

99% BANDWIDTH, Chain 0

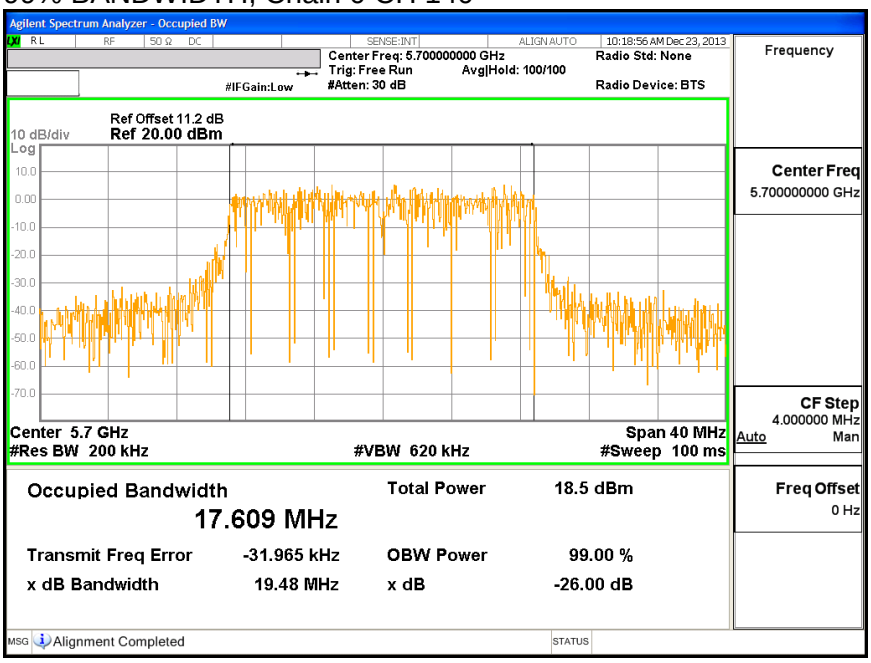
99% BANDWIDTH, Chain 0 CH 100



99% BANDWIDTH, Chain 0 CH 116

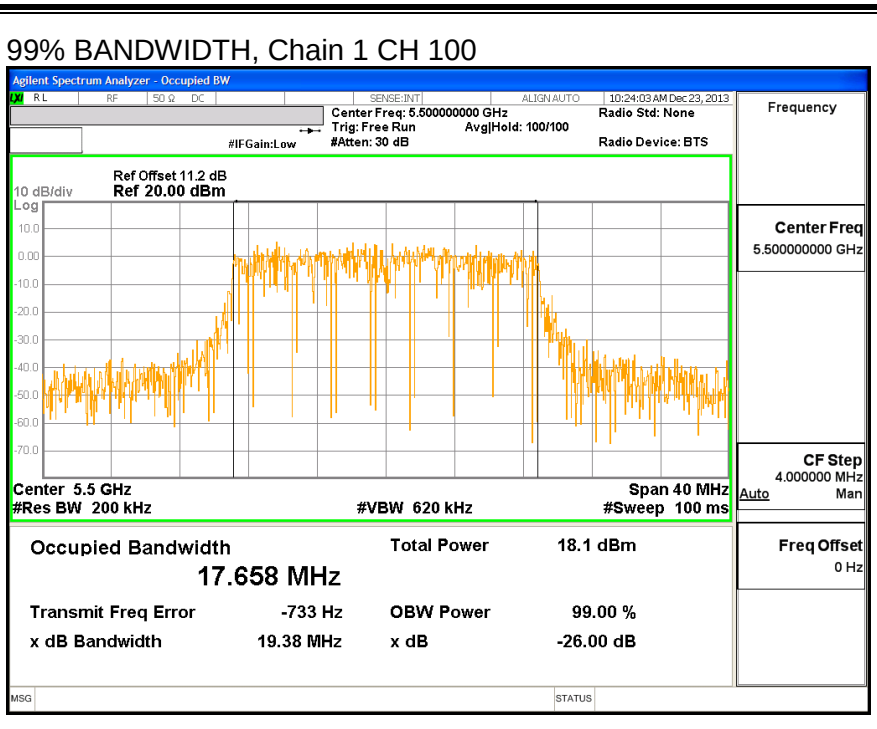


99% BANDWIDTH, Chain 0 CH 140

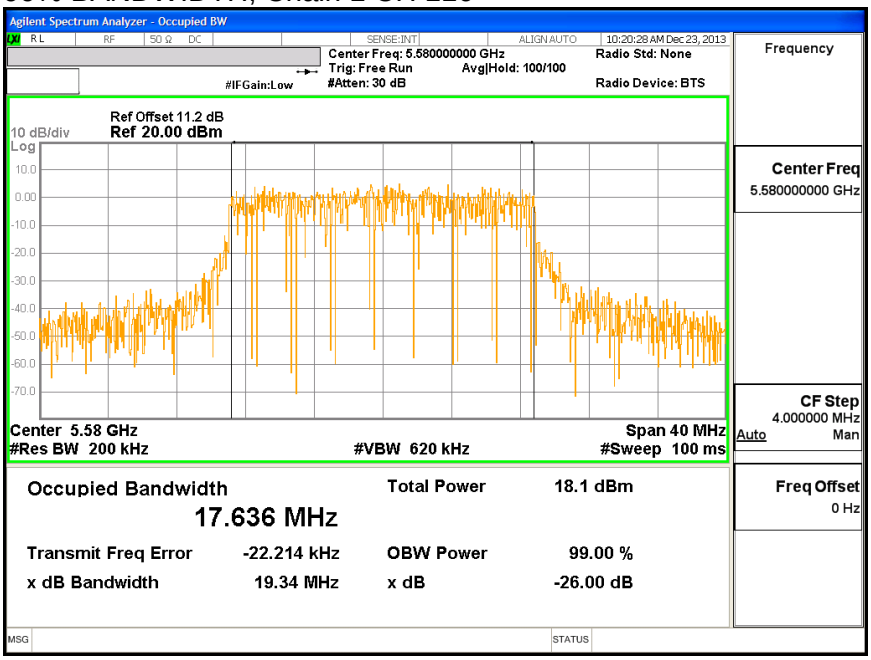


99% BANDWIDTH, Chain 1

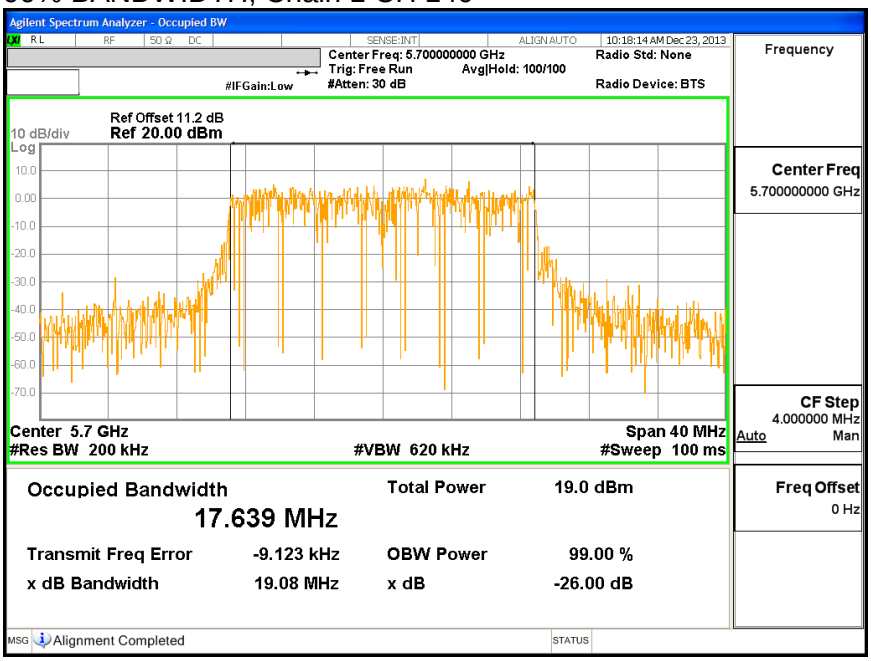
99% BANDWIDTH, Chain 1 CH 100



99% BANDWIDTH, Chain 1 CH 116

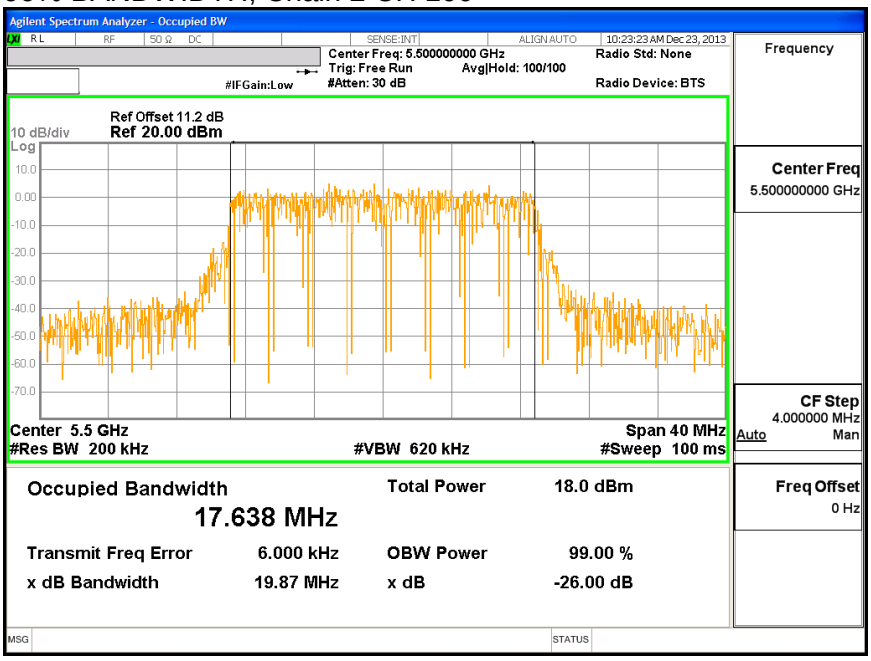


99% BANDWIDTH, Chain 1 CH 140

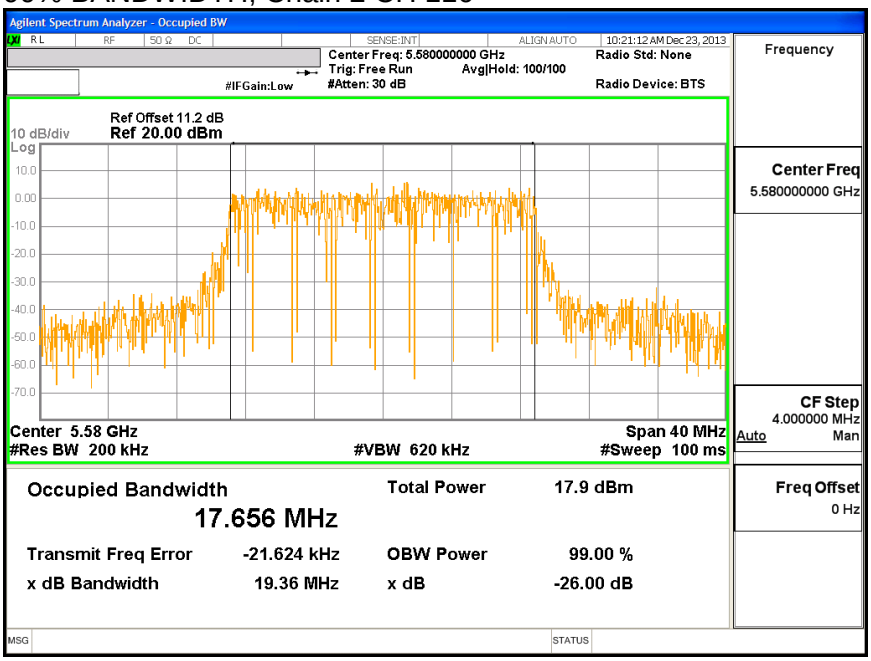


99% BANDWIDTH, Chain 2

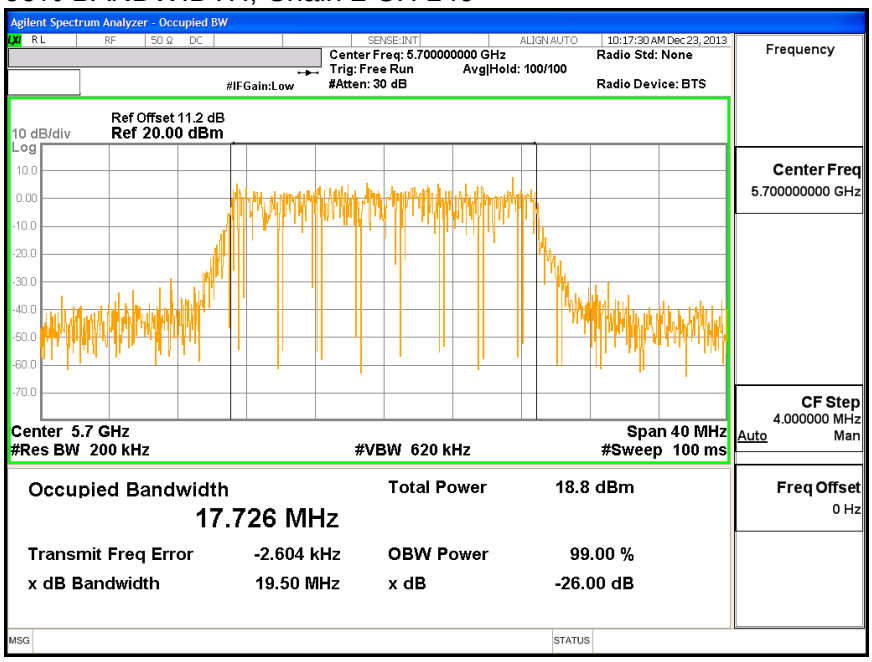
99% BANDWIDTH, Chain 2 CH 100



99% BANDWIDTH, Chain 2 CH 116



99% BANDWIDTH, Chain 2 CH 140



9.26.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11.21 dB (including 10 dB pad and 1.21 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Average Power Results

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Chain 2 Power (dBm)	Total Power (dBm)
100	5500	16.34	16.43	16.85	21.32
116	5580	14.92	15.10	15.45	19.93
140	5700	15.31	15.38	15.41	20.14

9.26.4. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.5–5.7 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 uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain.

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
100	5500	20.37	17.623	2.82	2.82
116	5580	20.43	17.584	2.82	2.82
140	5700	20.49	17.609	2.82	2.82

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
100	5500	24.00	23.46	29.46	23.46	11.00	11.00	11.00
116	5580	24.00	23.45	29.45	23.45	11.00	11.00	11.00
140	5700	24.00	23.46	29.46	23.46	11.00	11.00	11.00

Duty Cycle CF (dB)	0.17	Included in Calculations of Corr'd Power & PPSD

Output Power Results

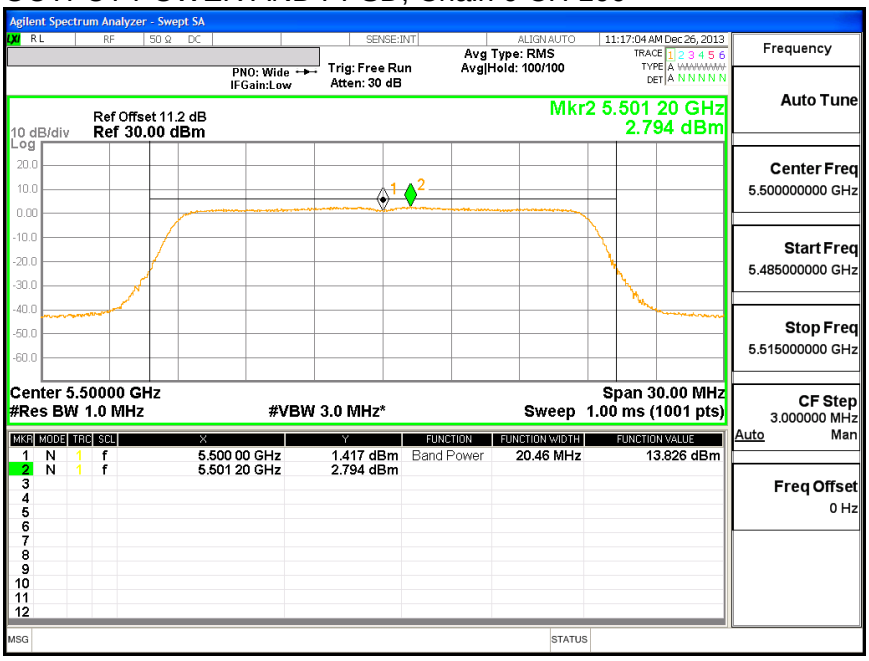
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
100	5500	13.826	13.759	14.169	18.86	23.46	-4.60
116	5580	16.130	16.084	16.332	21.12	23.45	-2.33
140	5700	15.975	16.318	16.293	21.14	23.46	-2.32

PPSD Results

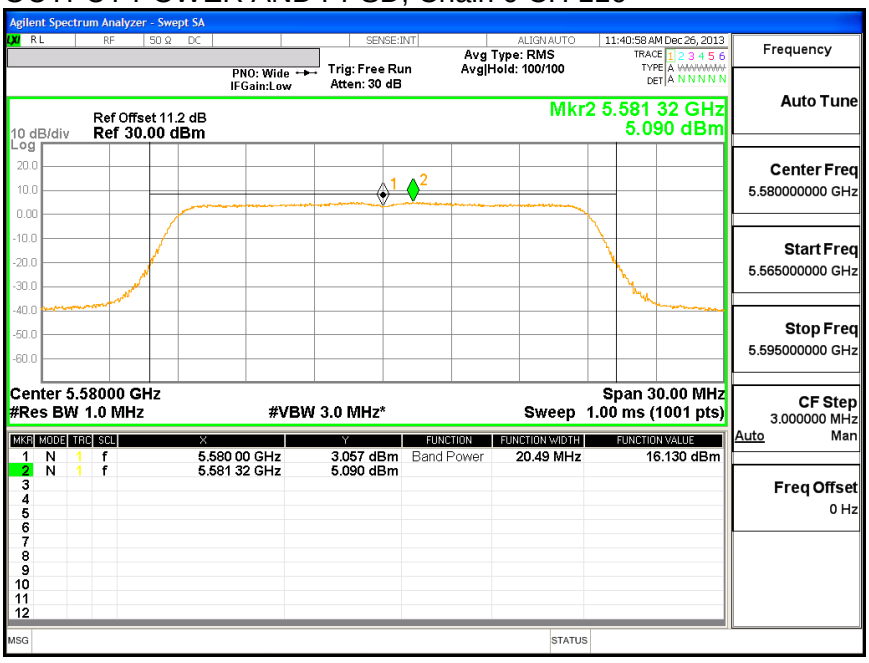
Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Chain 2 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
100	5500	2.794	2.974	3.161	7.92	11.00	-3.08
116	5580	5.090	5.086	5.250	10.08	11.00	-0.92
140	5700	4.836	5.450	5.168	10.10	11.00	-0.90

OUTPUT POWER AND PPSD, Chain 0

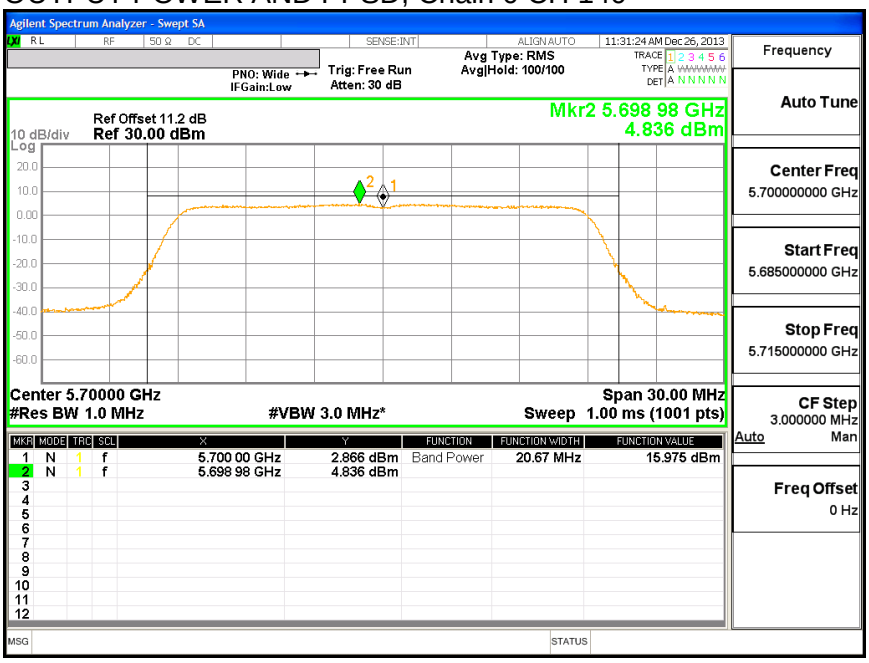
OUTPUT POWER AND PPSD, Chain 0 CH 100



OUTPUT POWER AND PPSD, Chain 0 CH 116

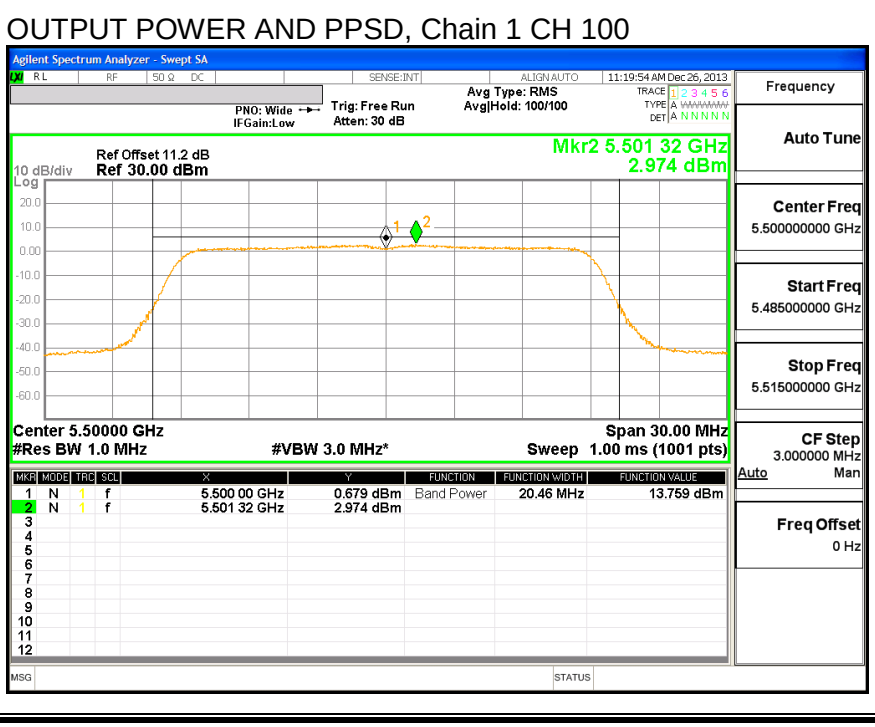


OUTPUT POWER AND PPSD, Chain 0 CH 140

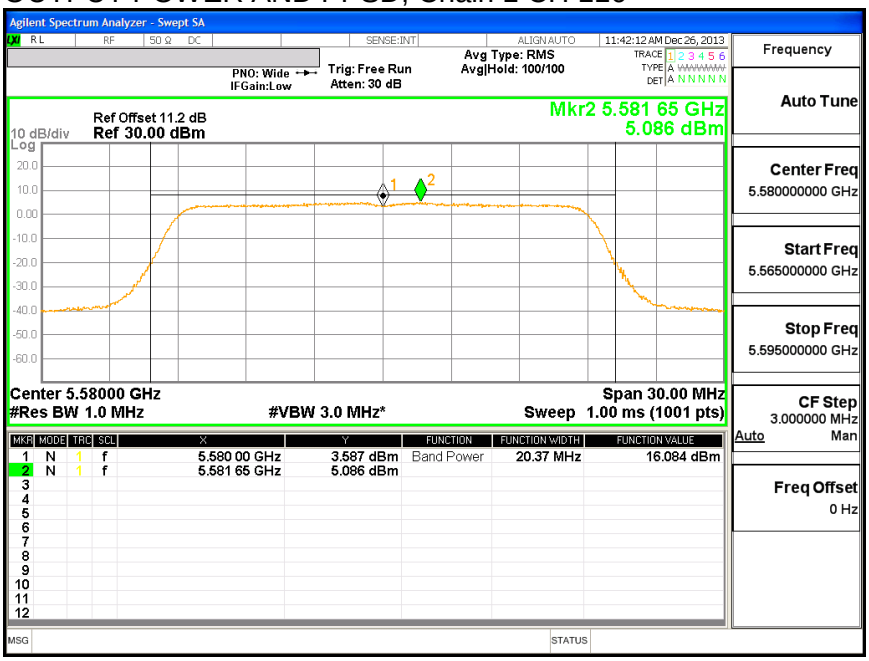


OUTPUT POWER AND PPSD, Chain 1

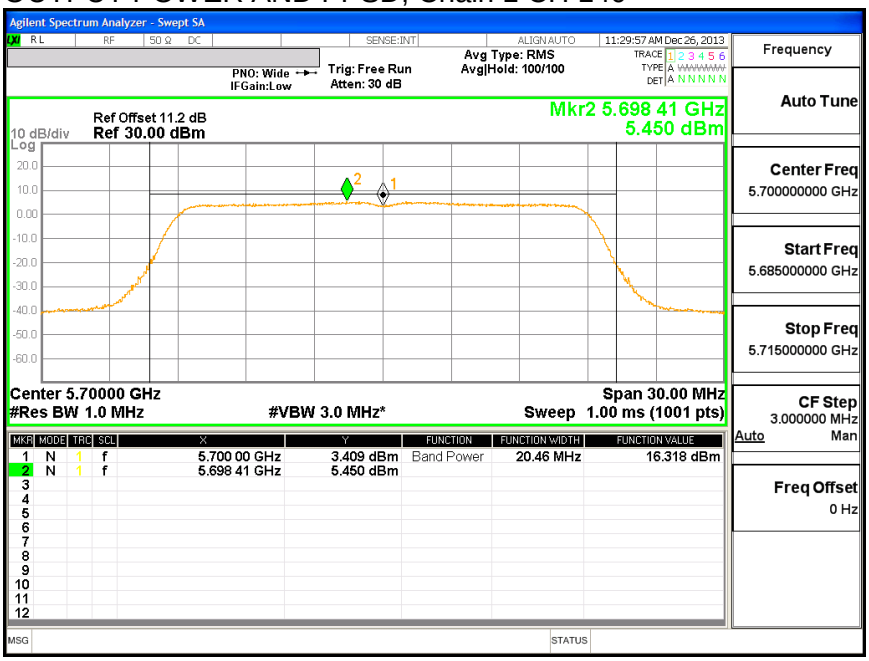
OUTPUT POWER AND PPSD, Chain 1 CH 100



OUTPUT POWER AND PPSD, Chain 1 CH 116

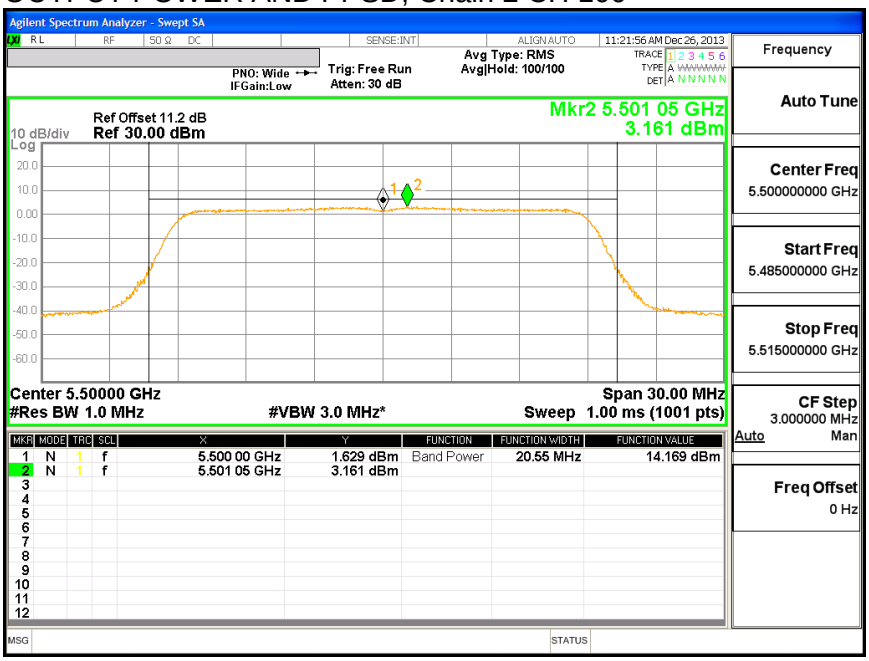


OUTPUT POWER AND PPSD, Chain 1 CH 140

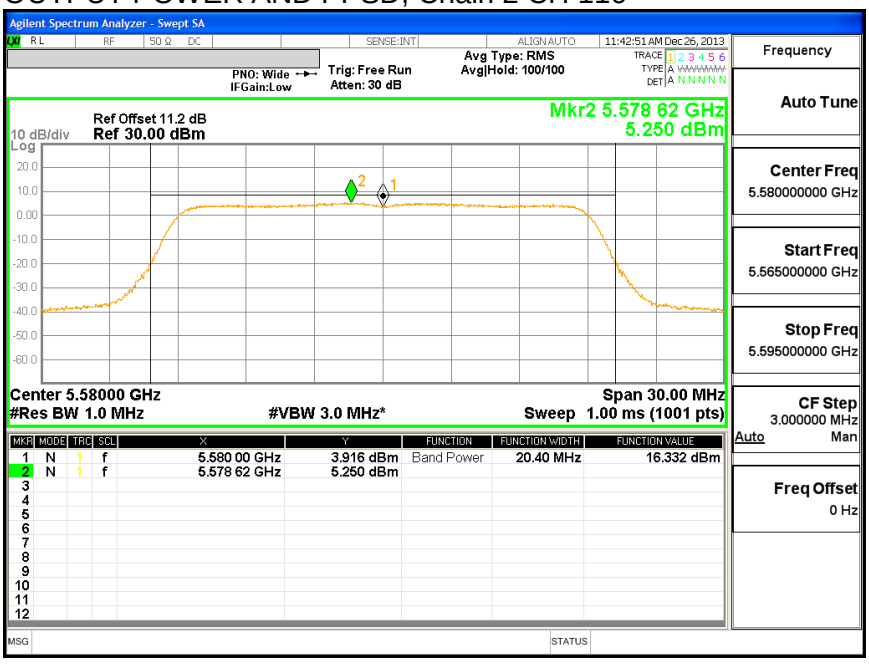


OUTPUT POWER AND PPSD, Chain 2

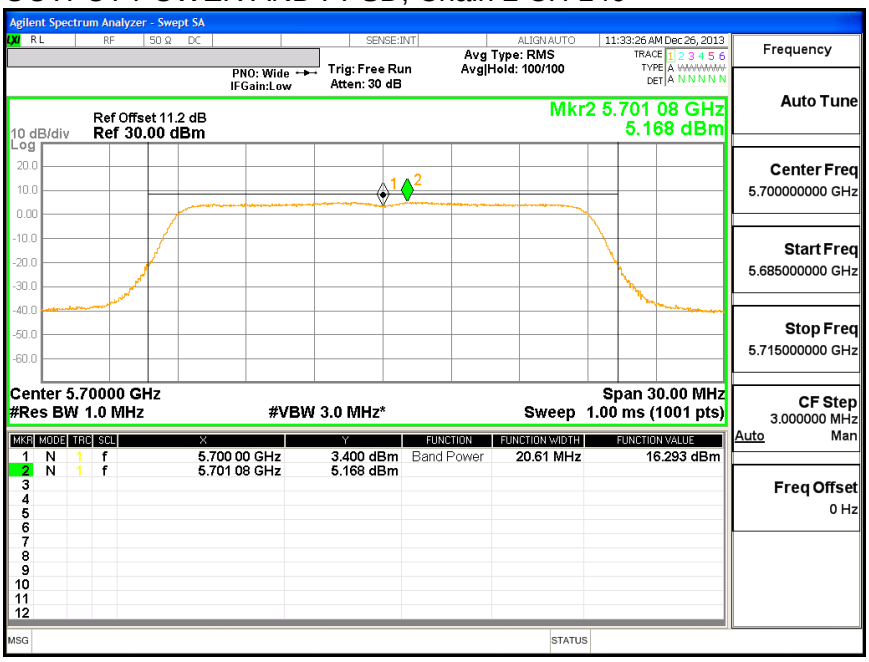
OUTPUT POWER AND PPSD, Chain 2 CH 100



OUTPUT POWER AND PPSD, Chain 2 CH 116



OUTPUT POWER AND PPSD, Chain 2 CH 140



9.26.5. 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)
116	5580	12.78	5.15	0.17	7.46	13	-5.54

Chain 1

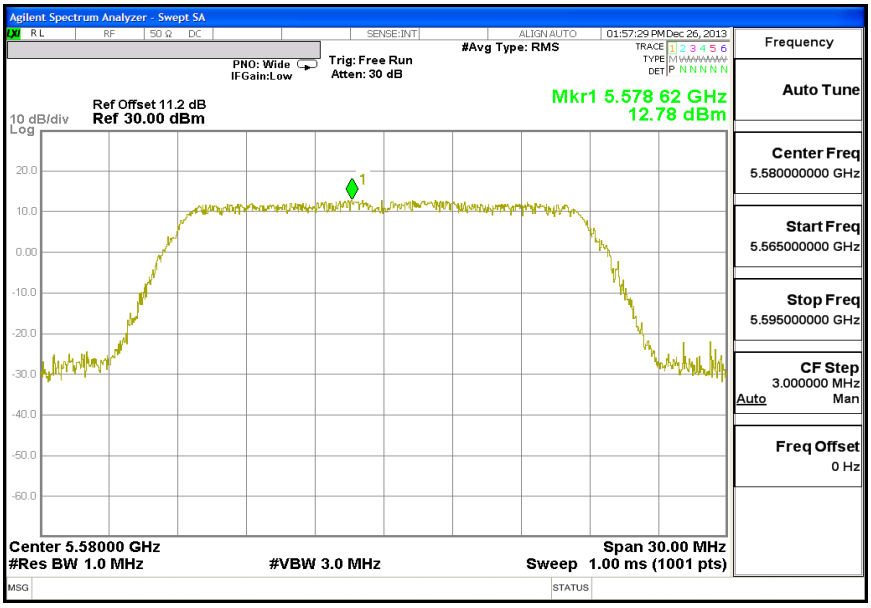
Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
116	5580	13.97	5.77	0.17	8.03	13	-4.97

Chain 2

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
116	5580	13.89	5.59	0.17	8.13	13	-4.87

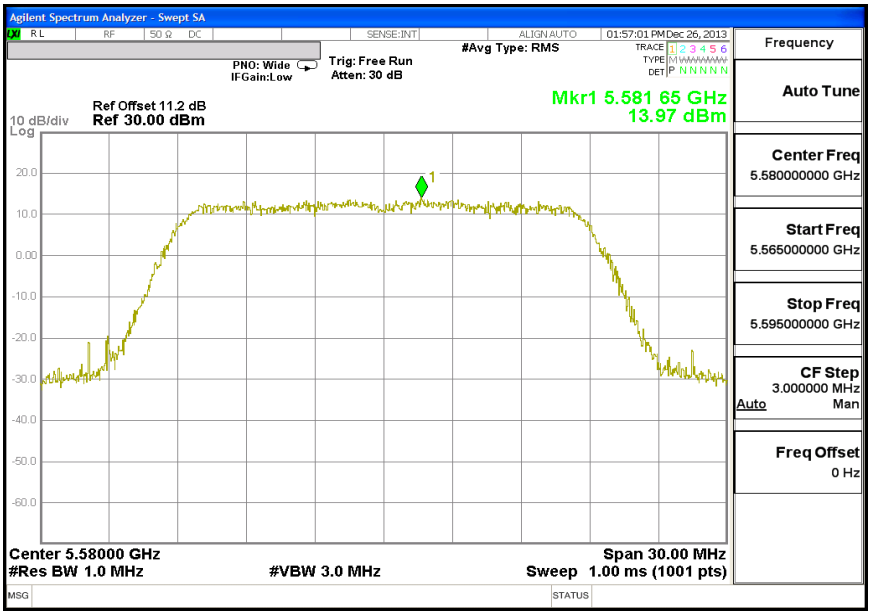
PEAK EXCURSION, Chain 0

Chain 0 CH 116



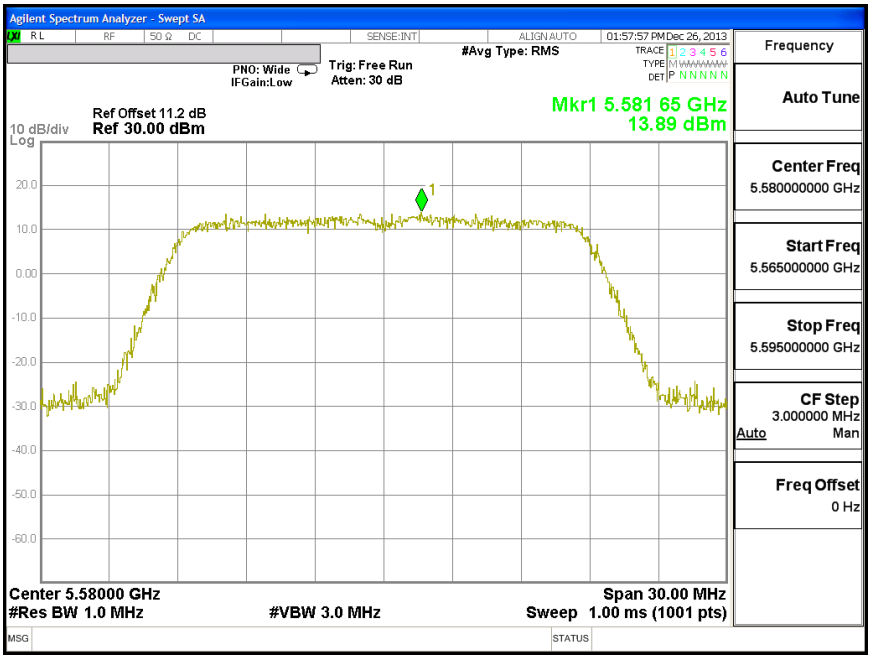
PEAK EXCURSION, Chain 1

Chain 1 CH 116



PEAK EXCURSION, Chain 2

Chain 2 CH 116



9.27. 802.11ac 20MHz 3TX SDM MODE, CHANNEL 144, 5.6 GHz BAND

9.27.1.26 dB BANDWIDTH- UNII

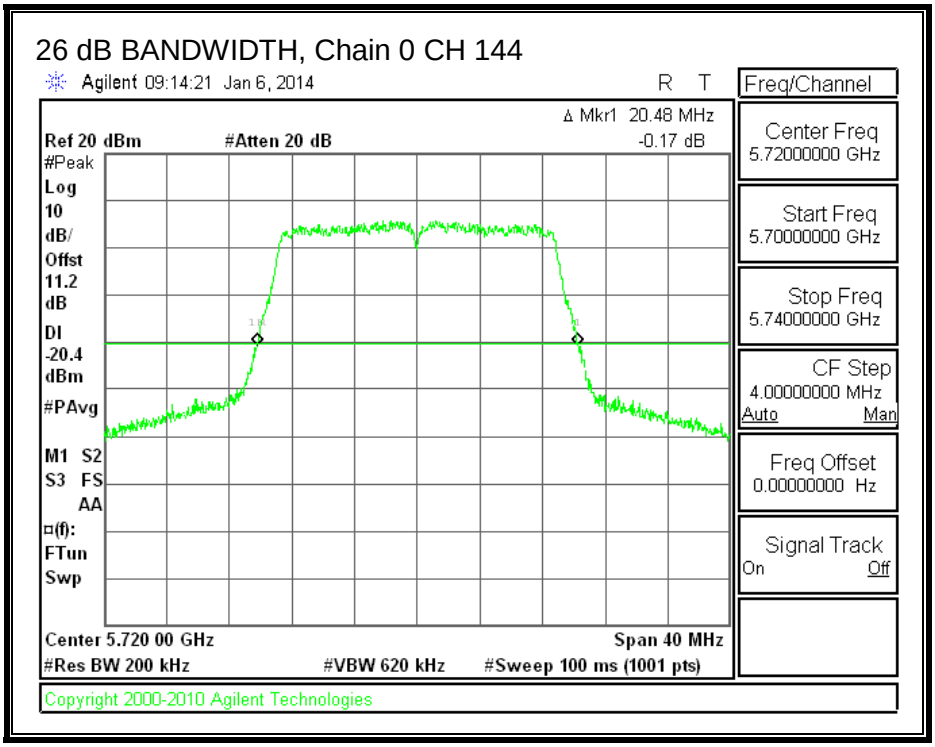
LIMITS

None; for reporting purposes only.

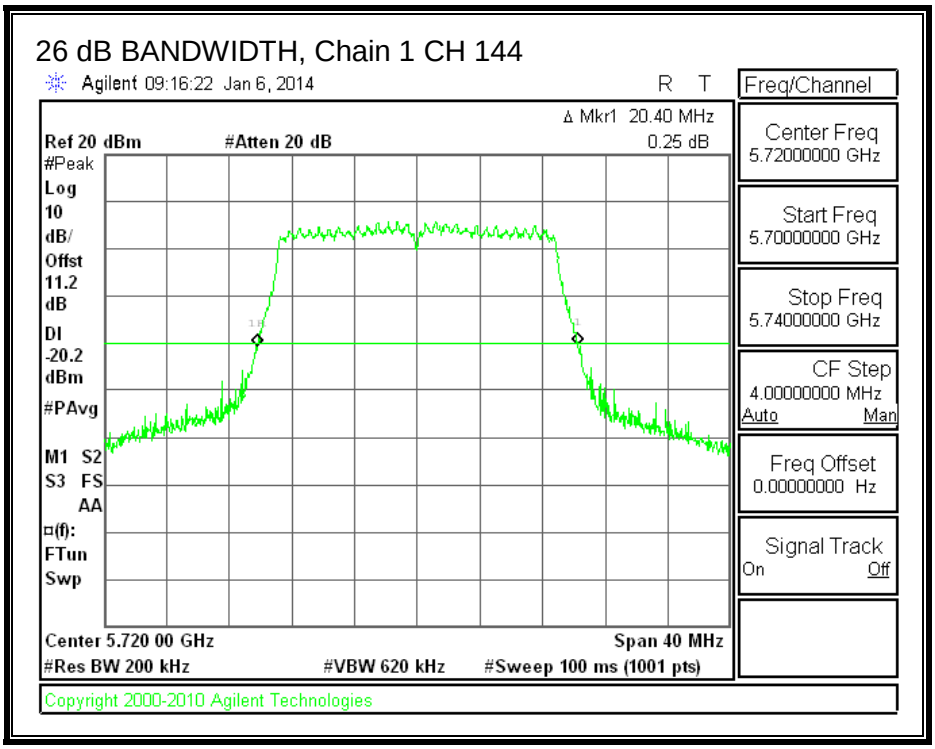
RESULTS

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)	26 dB BW Chain 2 (MHz)
144	5720	20.48	20.40	20.48

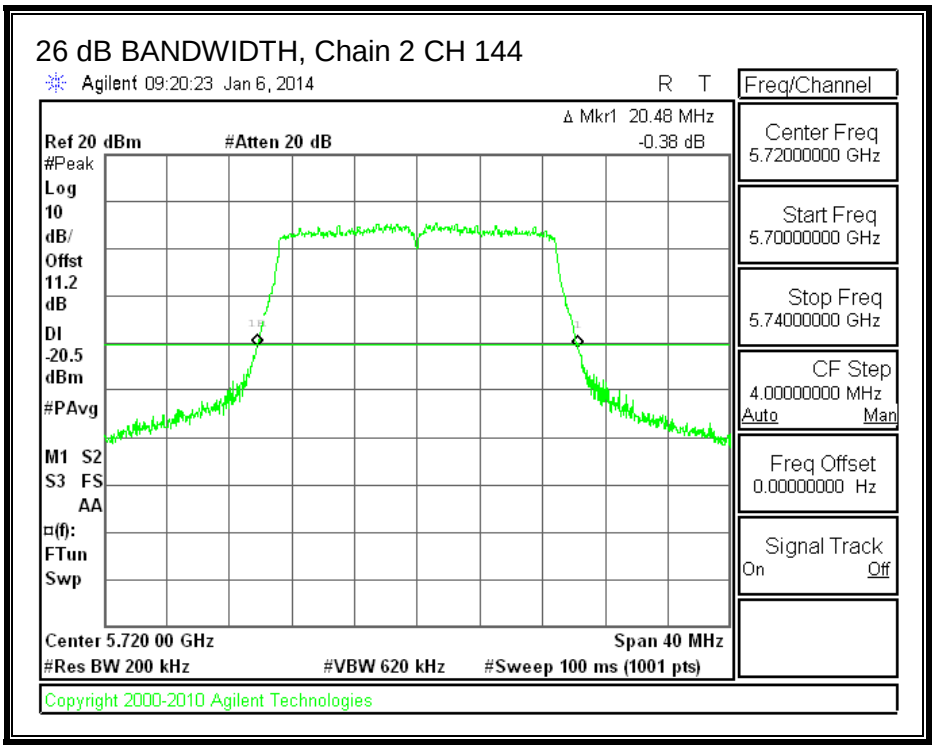
26 dB BANDWIDTH, Chain 0



26 dB BANDWIDTH, Chain 1



26 dB BANDWIDTH, Chain 2



9.27.2.99% BANDWIDTH

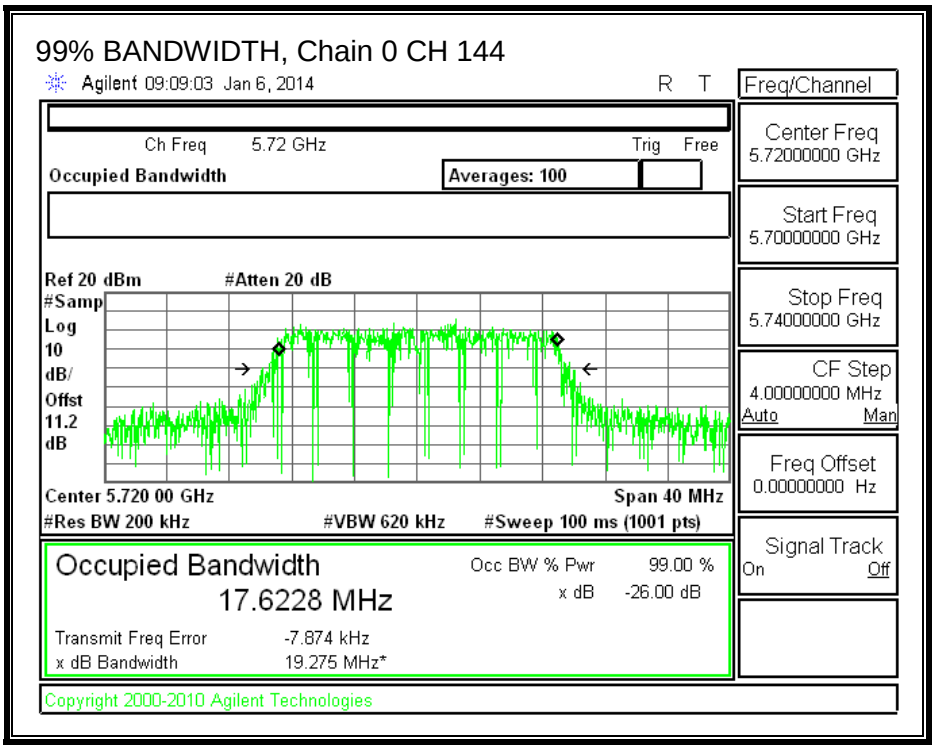
LIMITS

None; for reporting purposes only.

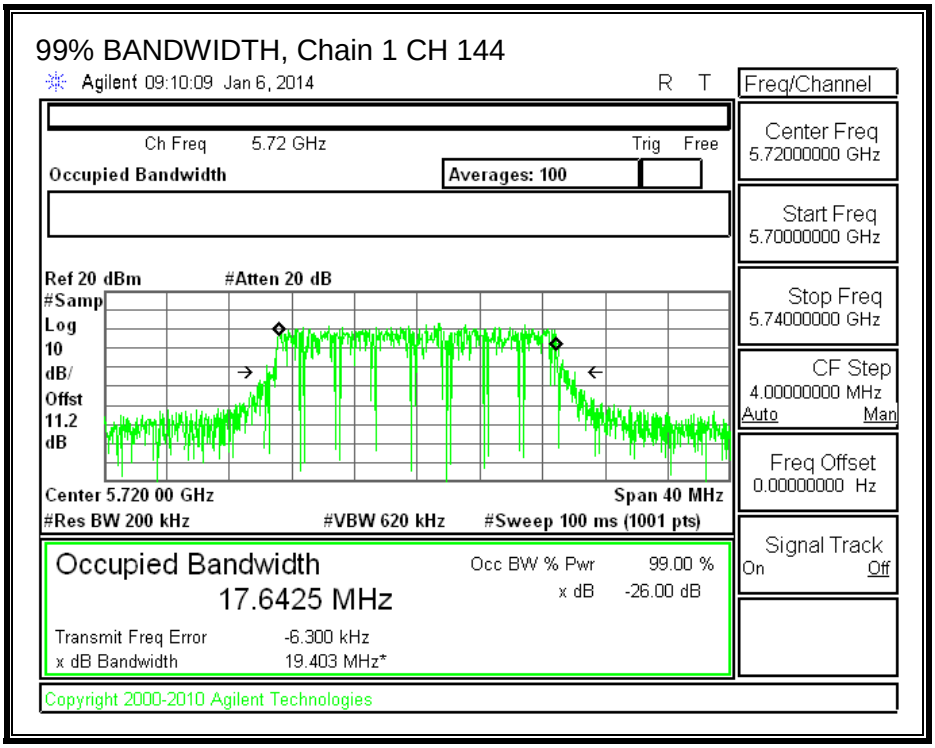
RESULTS

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
144	5720	17.6228	17.6425	17.6311

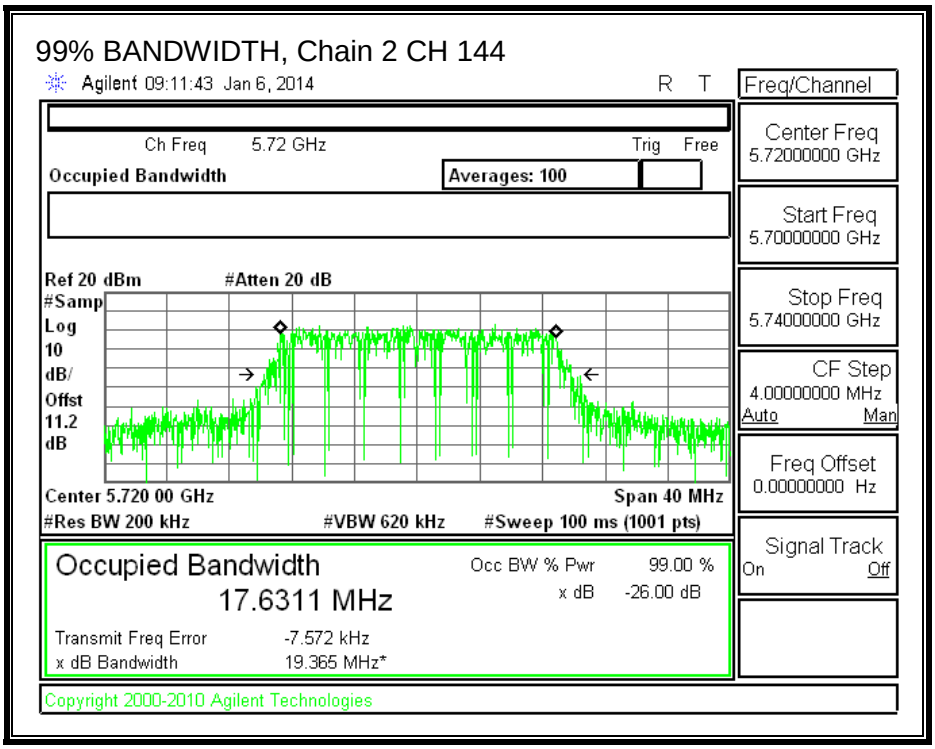
99% BANDWIDTH, Chain 0



99% BANDWIDTH, Chain 1



99% BANDWIDTH, Chain 2



9.27.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.5–5.7 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

For output power and PPSD, the TX chains are uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain.

Antenna Gain (dBi)
2.82

RESULTS

Limits (FCC), portion in UNII 2 ext band

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
144	5720	15.200	13.8199	2.82	2.82

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
144	5720	22.82	22.41	28.41	22.41	11.00	11.00	11.00

Duty Cycle CF (dB)	0.17	Included in Calculations of Corr'd Power & PPSD

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	14.81	14.73	14.71	19.69	22.41	-2.71

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Chain 2 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
144	5720	4.21	4.22	4.15	9.13	11.00	-1.87

Limits (FCC), portion in 5.8 GHz DTS band

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
144	5720	5.200	3.8199	2.82	2.82

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
144	5720	18.16	16.82	22.82	16.82	11.00	11.00	11.00

Duty Cycle CF (dB)	0.17	Included in Calculations of Corr'd Power & PPSD

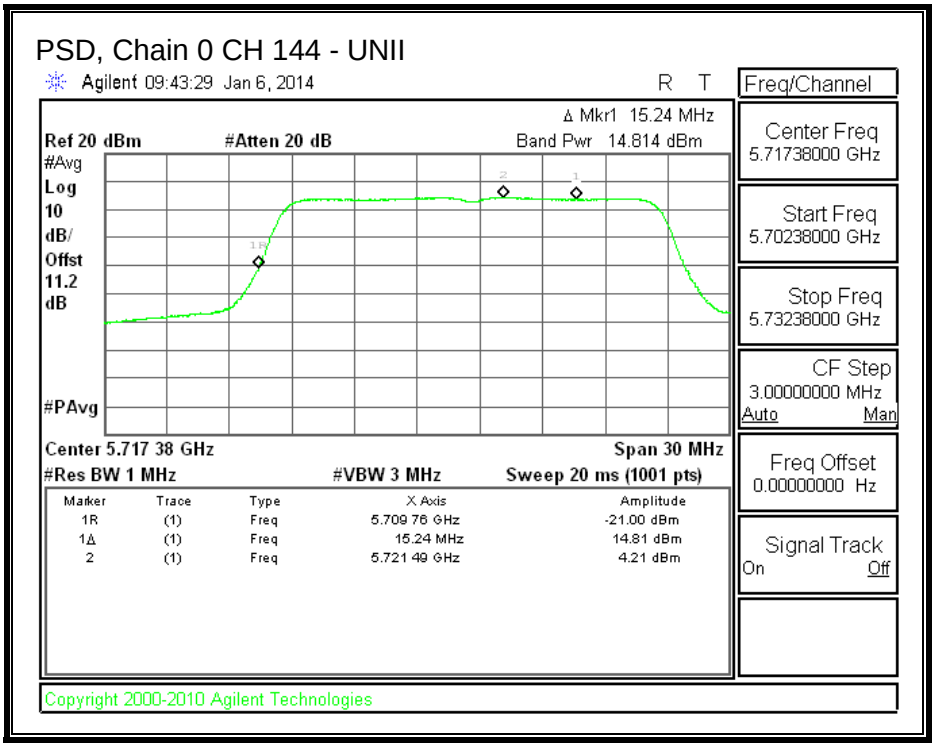
Output Power Results

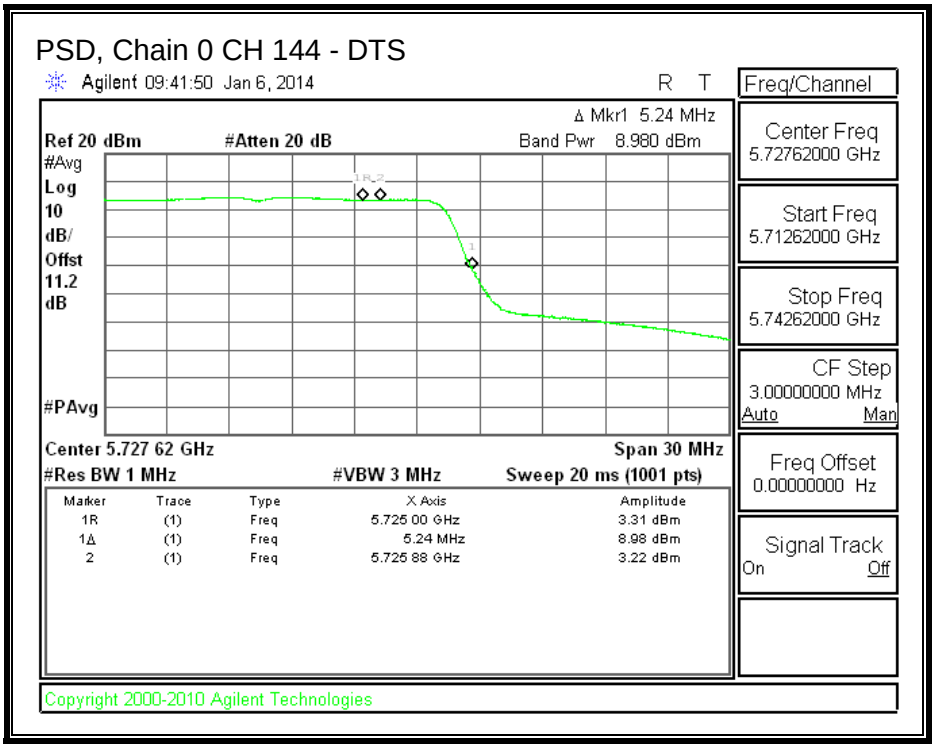
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	8.98	8.74	8.78	13.78	16.82	-3.04

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Chain 2 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
144	5720	3.220	2.93	2.94	7.97	11.00	-3.03

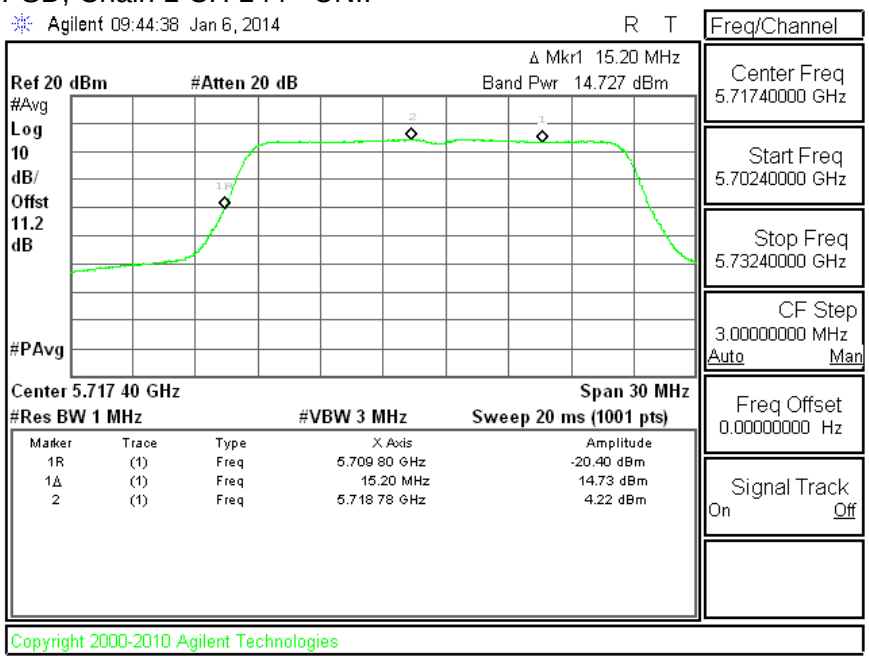
OUTPUT POWER & PPSD, Chain 0



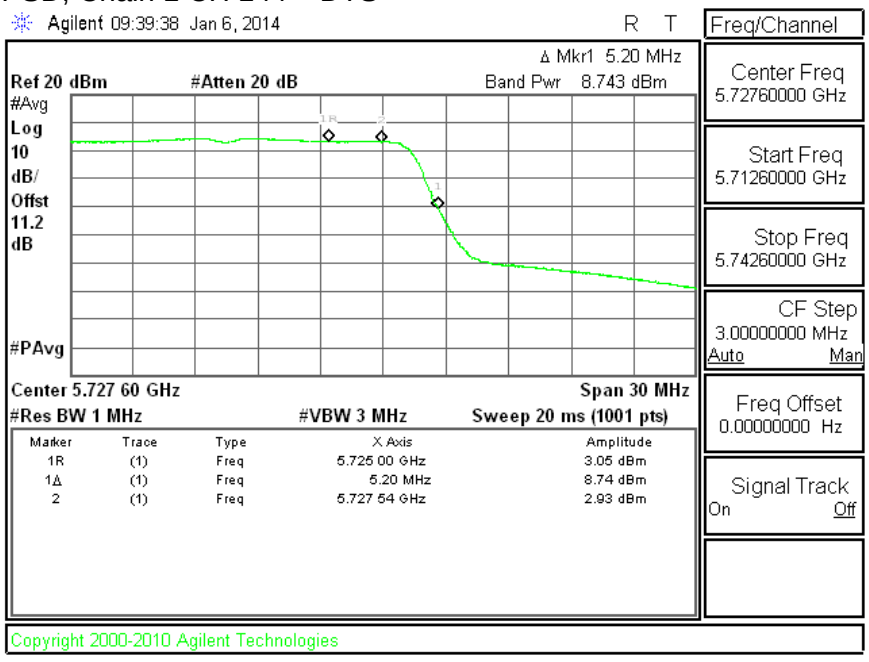


OUTPUT POWER & PPSD, Chain 1

PSD, Chain 1 CH 144 - UNII

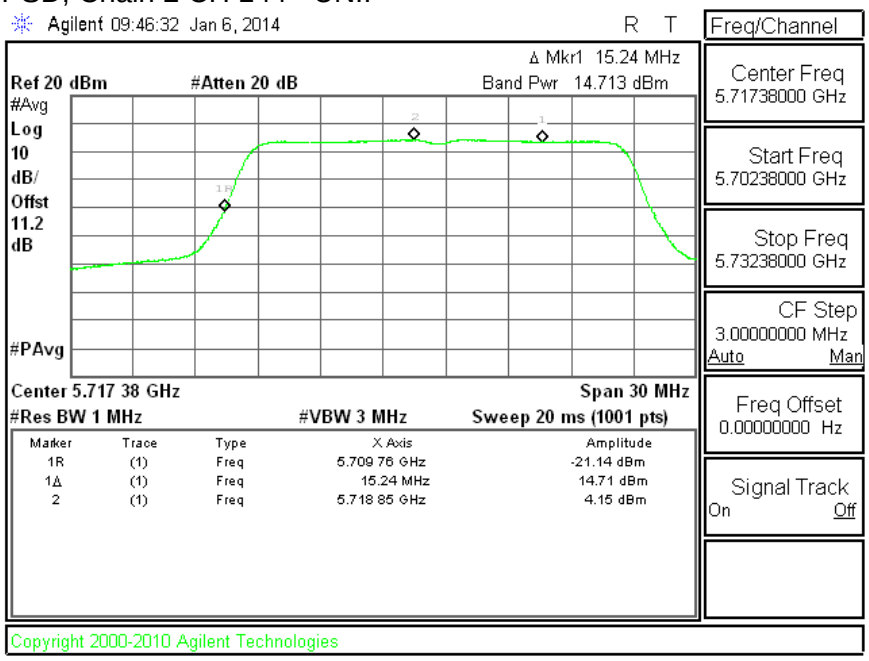


PSD, Chain 1 CH 144 – DTS

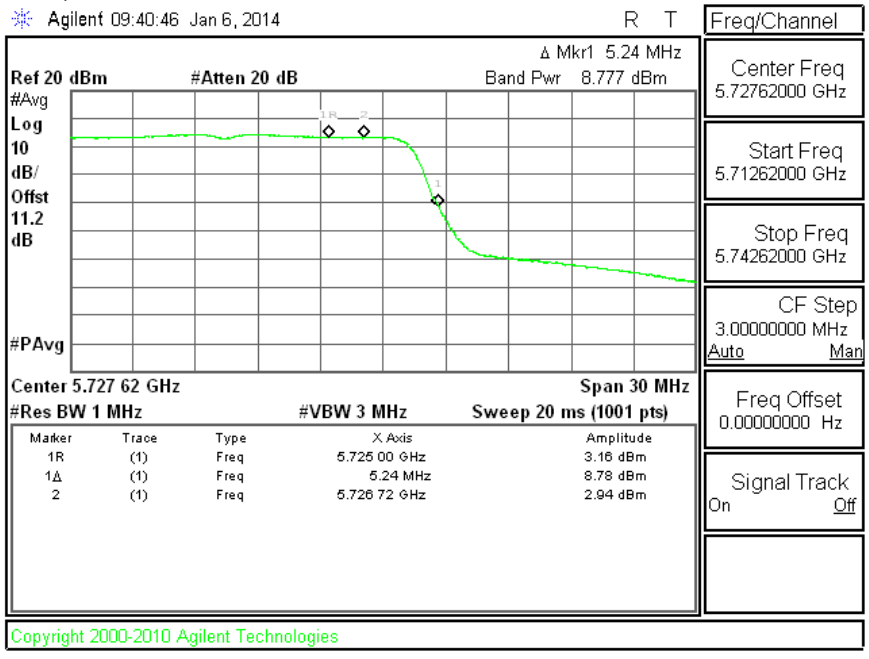


OUTPUT POWER & PPSD, Chain 2

PSD, Chain 2 CH 144 - UNII



PSD, Chain 2 CH 144 – DTS



9.28. 802.11n HT40 1TX SISO MODE IN THE 5.6 GHz BAND

9.28.1. 26 dB BANDWIDTH

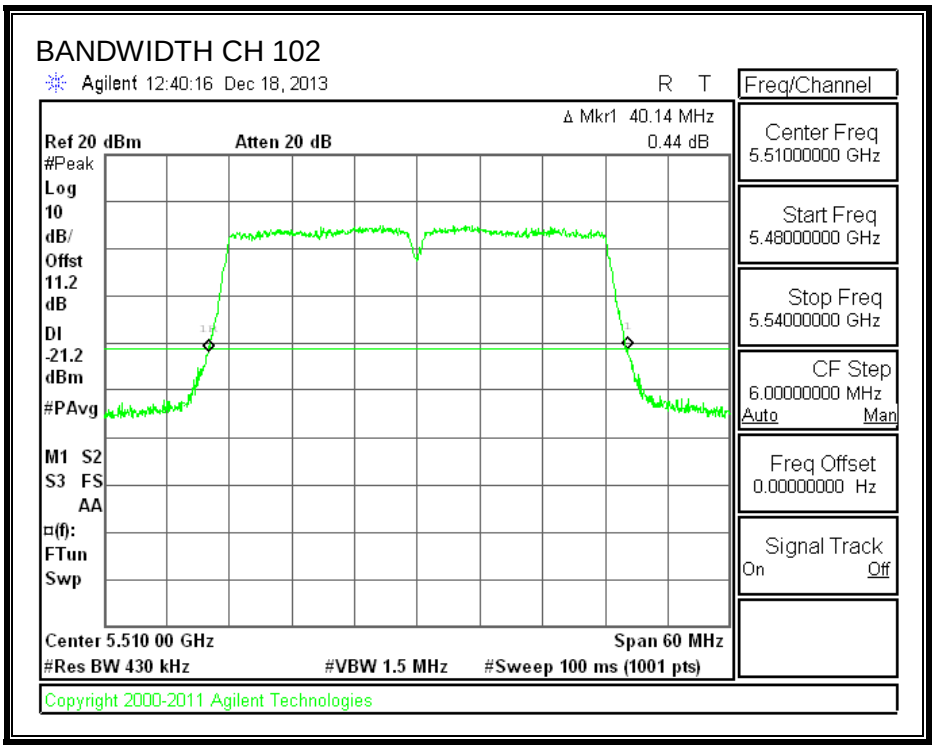
LIMITS

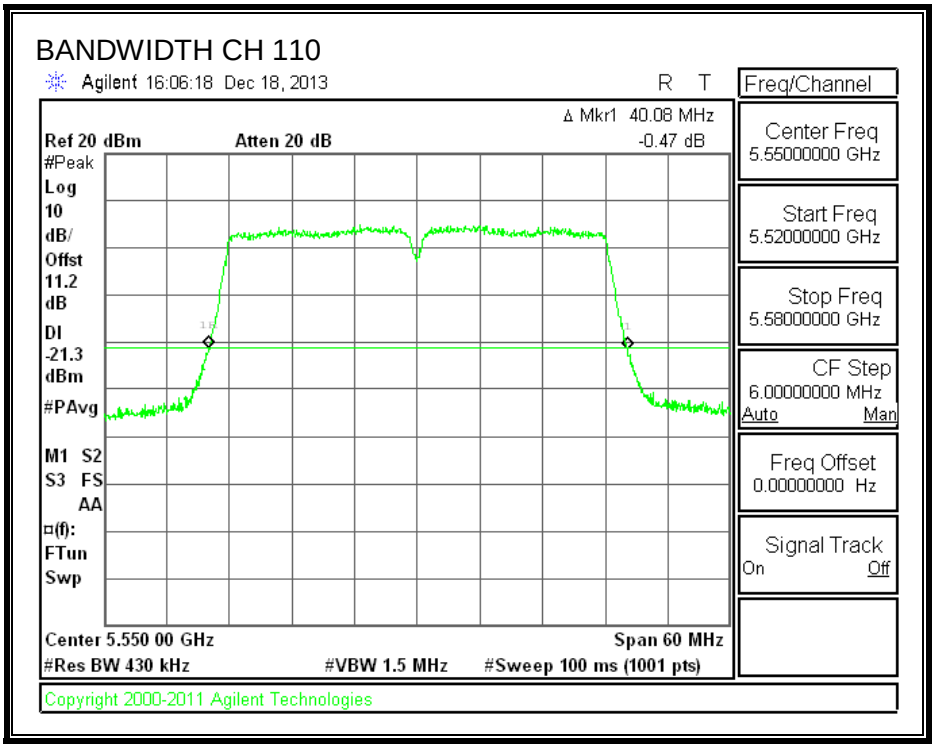
None; for reporting purposes only.

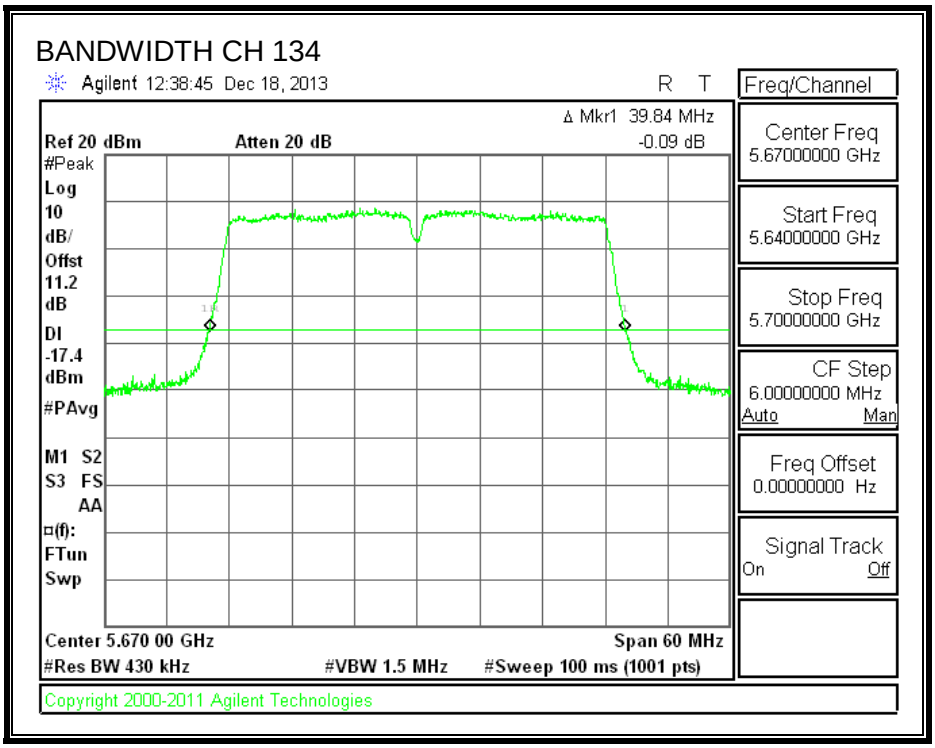
RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
102	5510	40.14
110	5550	40.08
134	5670	39.84

26 dB BANDWIDTH







9.28.2. 99% BANDWIDTH

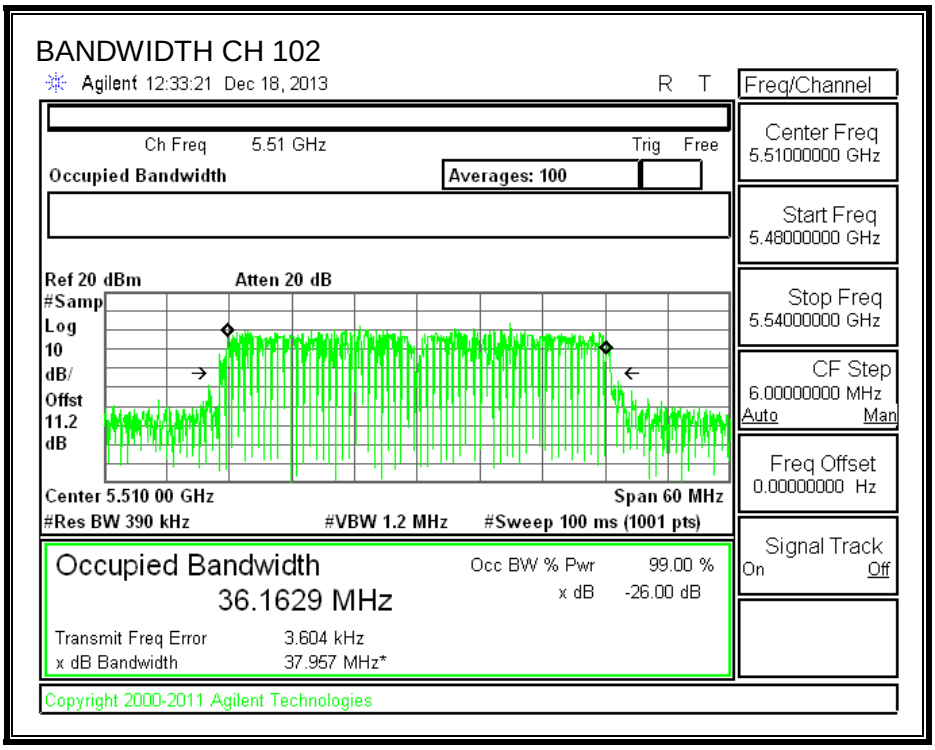
LIMITS

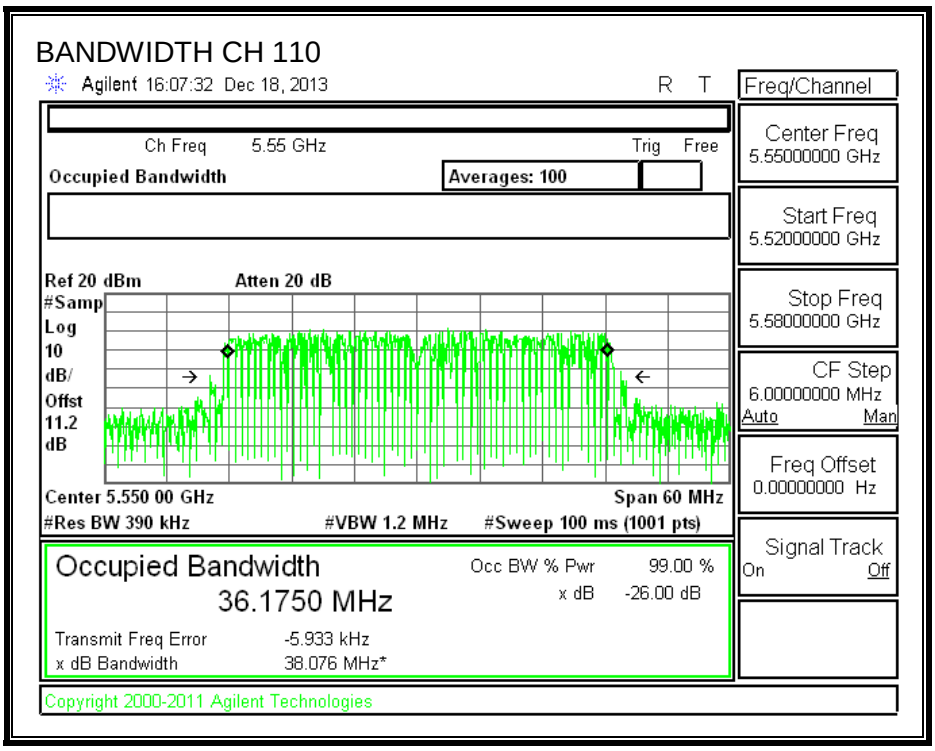
None; for reporting purposes only.

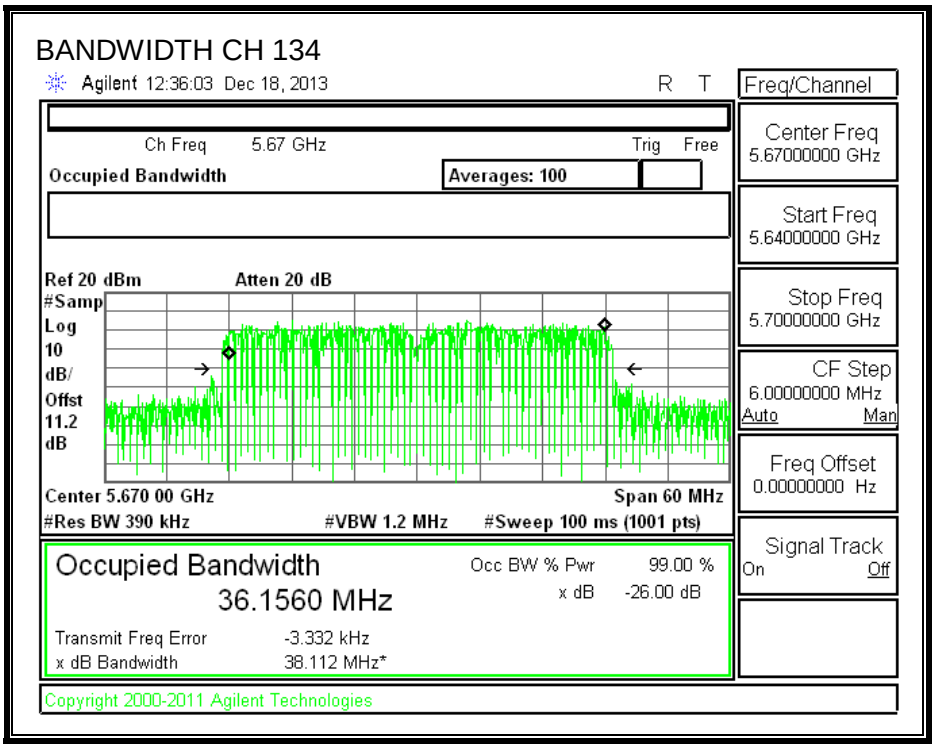
RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
102	5510	36.1629
110	5550	36.1750
134	5670	36.1560

99% BANDWIDTH







9.28.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11.21 dB (including 10 dB pad and 1.21 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
102	5510	13.8
110	5550	22.4
134	5670	16.7

9.28.4. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.5–5.7 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

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

Antenna Gain (dBi)
2.82

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
102	5510	40.1	36.2	2.82
110	5550	40.1	36.2	2.82
134	5670	39.8	36.2	2.82

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
102	5510	24.00	24.00	30.00	24.00	11.00	11.00	11.00
110	5550	24.00	24.00	30.00	24.00	11.00	11.00	11.00
134	5670	24.00	24.00	30.00	24.00	11.00	11.00	11.00

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

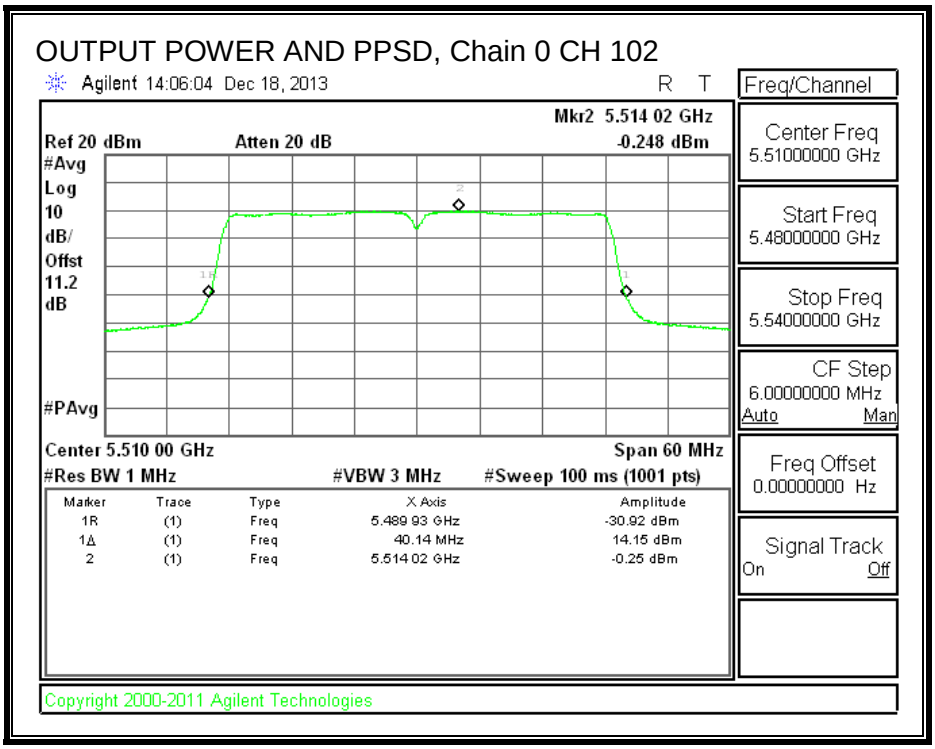
Output Power Results

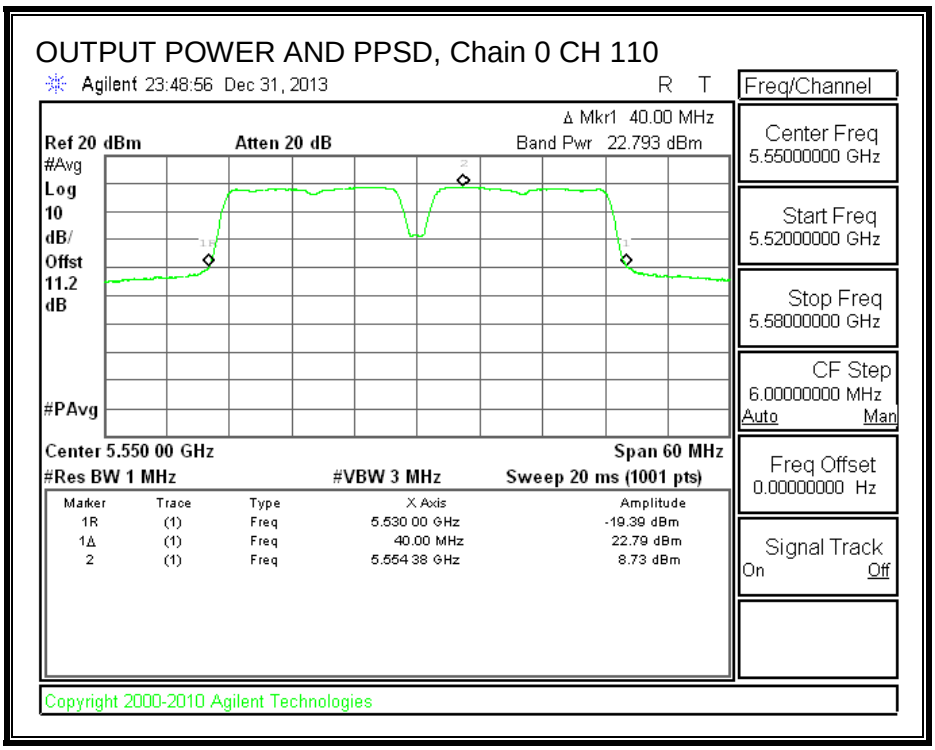
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
102	5510	14.15	14.57	24.00	-9.43
110	5550	22.79	23.21	24.00	-0.79
134	5670	17.60	18.02	24.00	-5.98

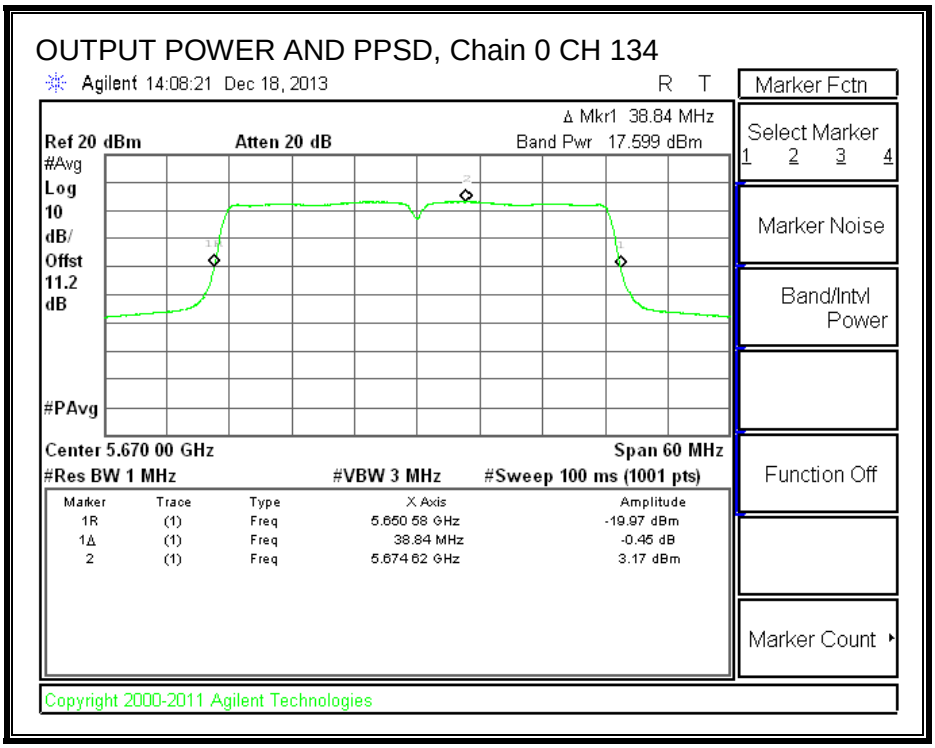
PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
102	5510	-0.25	0.17	11.00	-10.83
110	5550	8.73	9.15	11.00	-1.85
134	5670	3.17	3.59	11.00	-7.41

OUTPUT POWER AND PPSD, Chain 0







9.28.5. PEAK EXCURSION

LIMITS

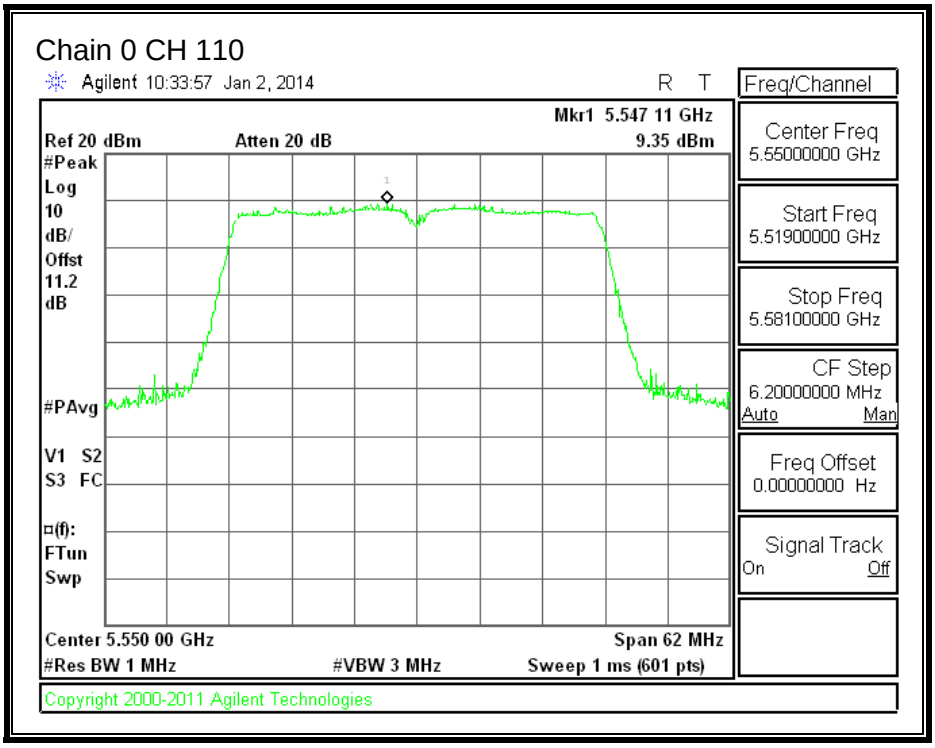
FCC §15.407 (a) (6)

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)
110	5550	9.35	8.73	0.42	0.20	13	-12.80

PEAK EXCURSION, Chain 0



9.29. 802.11ac 40MHz 1TX SISO MODE, CHANNEL 142, 5.6 GHz BAND

9.29.1. 26 dB BANDWIDTH

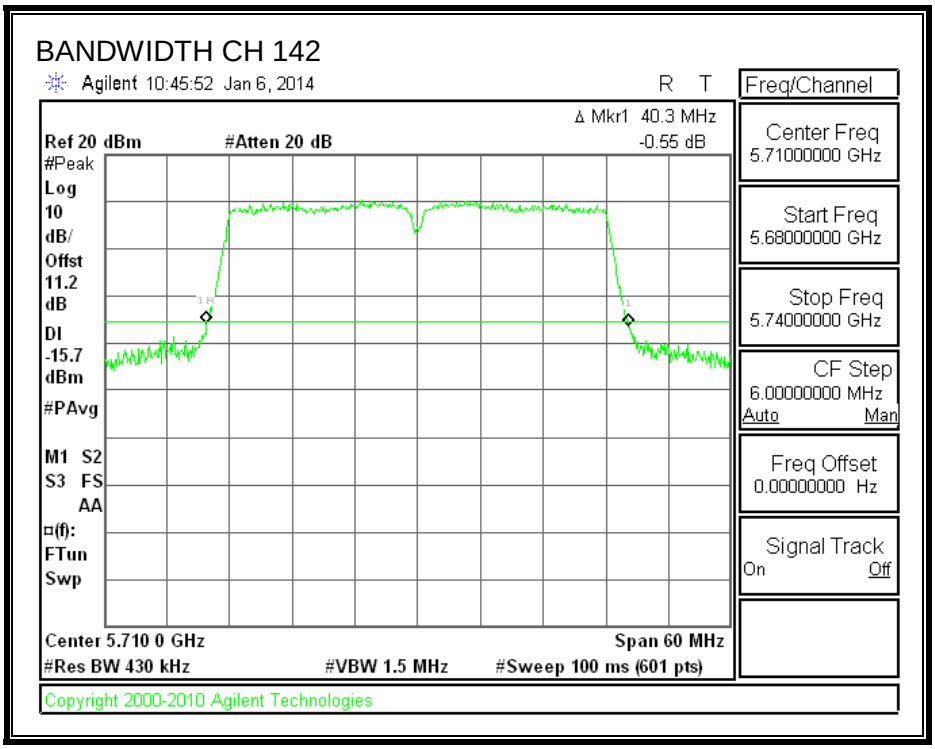
LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
142	5710	40.30

26 dB BANDWIDTH



9.29.2. 99% BANDWIDTH

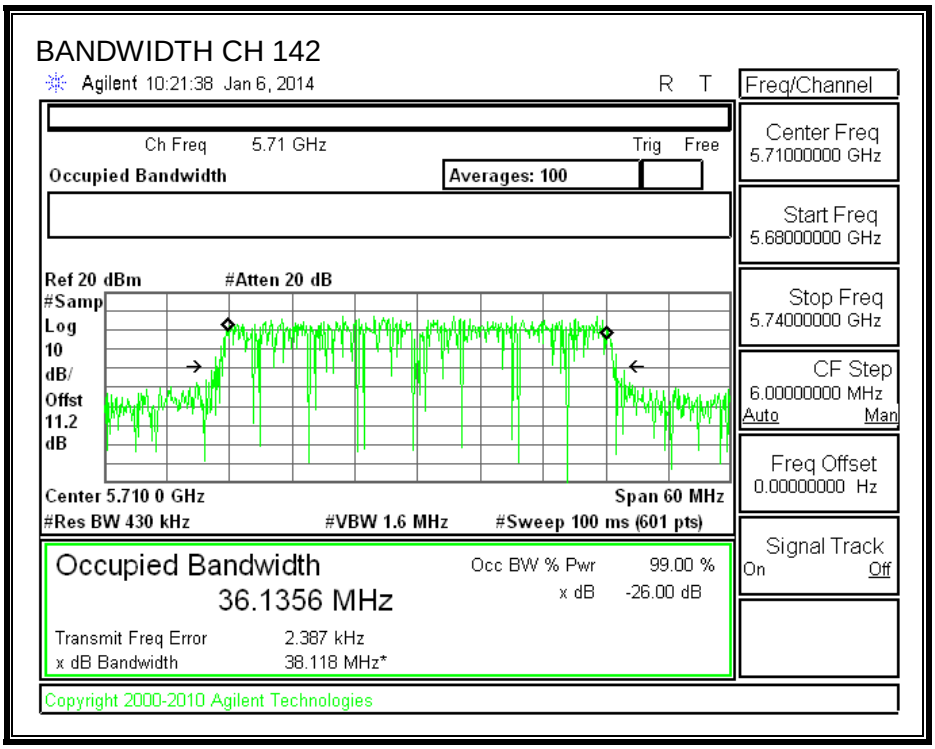
LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
142	5710	36.1356

99% BANDWIDTH



9.29.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.5–5.7 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

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

Antenna Gain (dBi)
2.82

RESULTS

Limits (FCC), portion in UNII 2 ext band

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
142	5710	35.15	33.0678	2.82

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PSD Limit (dBm)	IC PSD Limit (dBm)	PSD Limit (dBm)
142	5710	24.00	24.00	30.00	24.00	11.00	11.00	11.00

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	22.89	23.31	24.00	-0.69

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	9.320	9.74	11.00	-1.26

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

Limits (FCC), portion in 5.8 GHz DTS band

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
142	5710	5.15	3.0678	2.82

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PSD Limit (dBm)	IC PSD Limit (dBm)	PSD Limit (dBm)
142	5710	18.12	15.87	21.87	15.87	11.00	11.00	11.00

Output Power Results

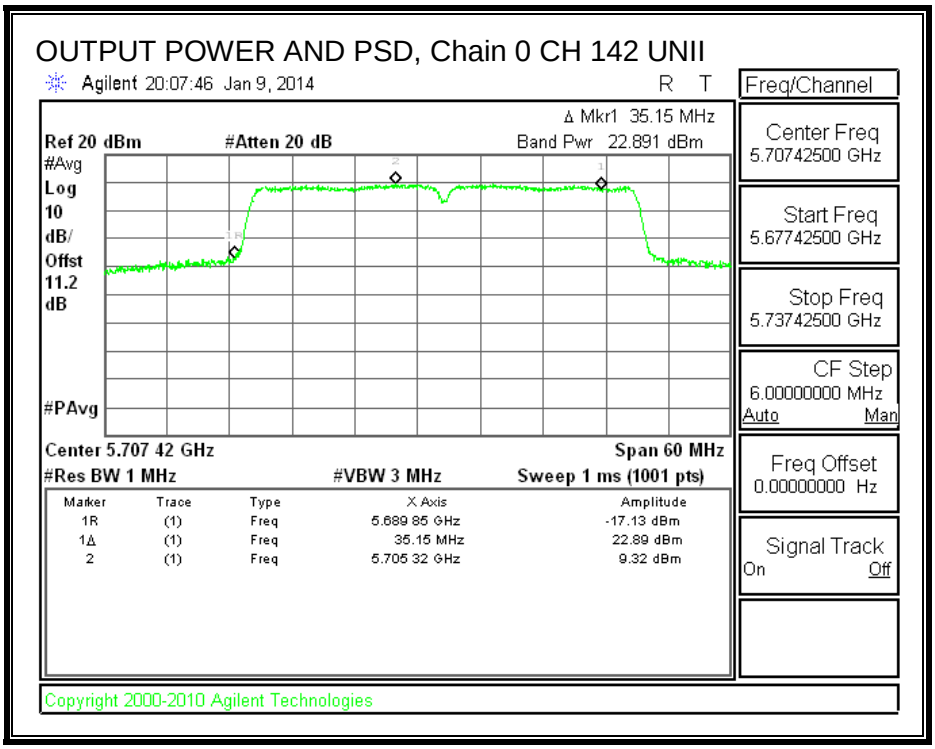
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	12.47	12.89	15.87	-2.98

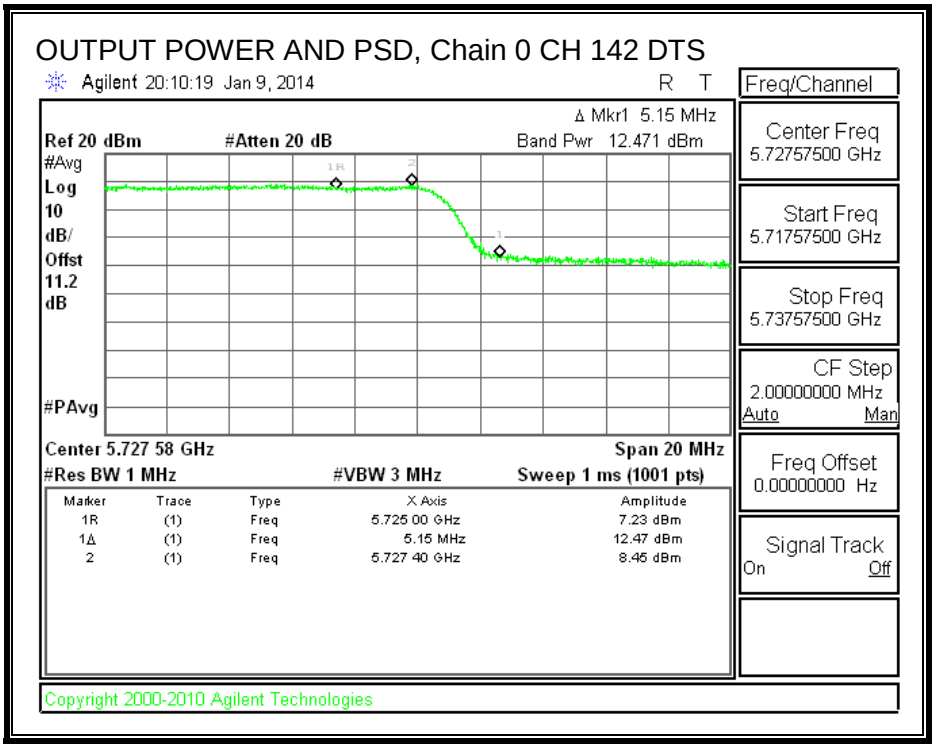
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
142	5710	8.450	8.87	11.00	-2.13

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

OUTPUT POWER AND PSD, Chain 0





9.30. 802.11n HT40 3TX CDD MODE IN THE 5.6 GHz BAND

9.30.1. 26 dB BANDWIDTH

LIMITS

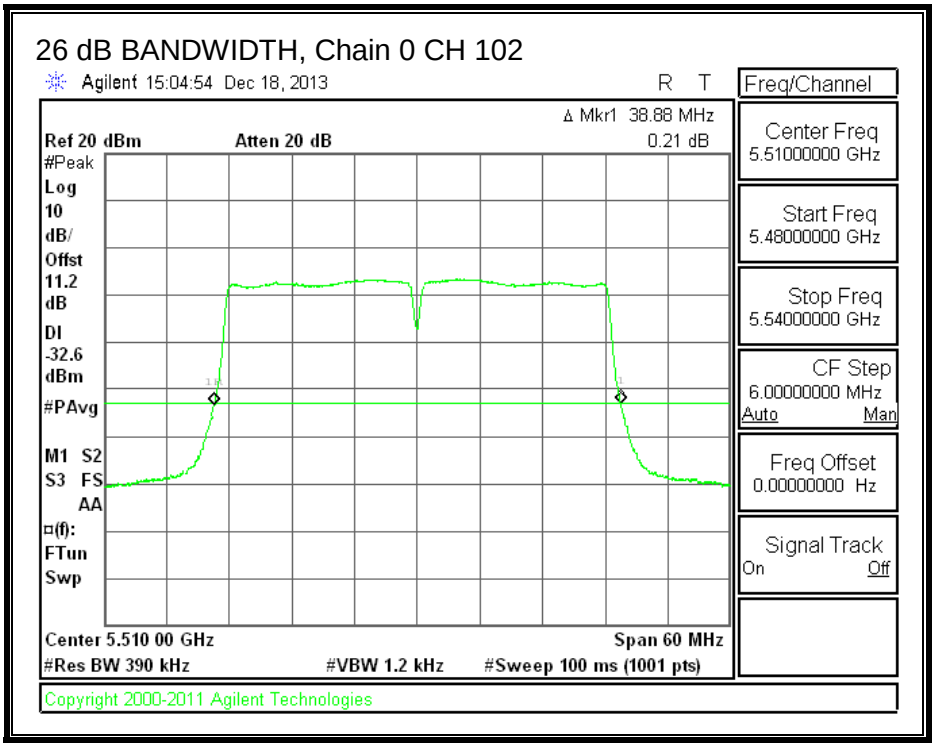
None; for reporting purposes only.

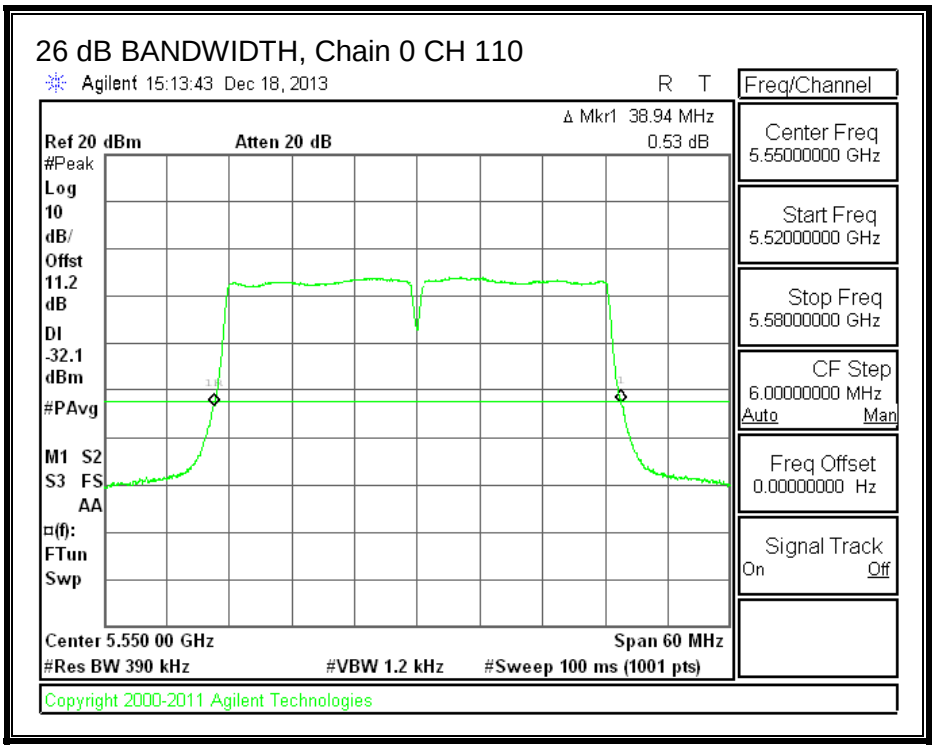
RESULTS

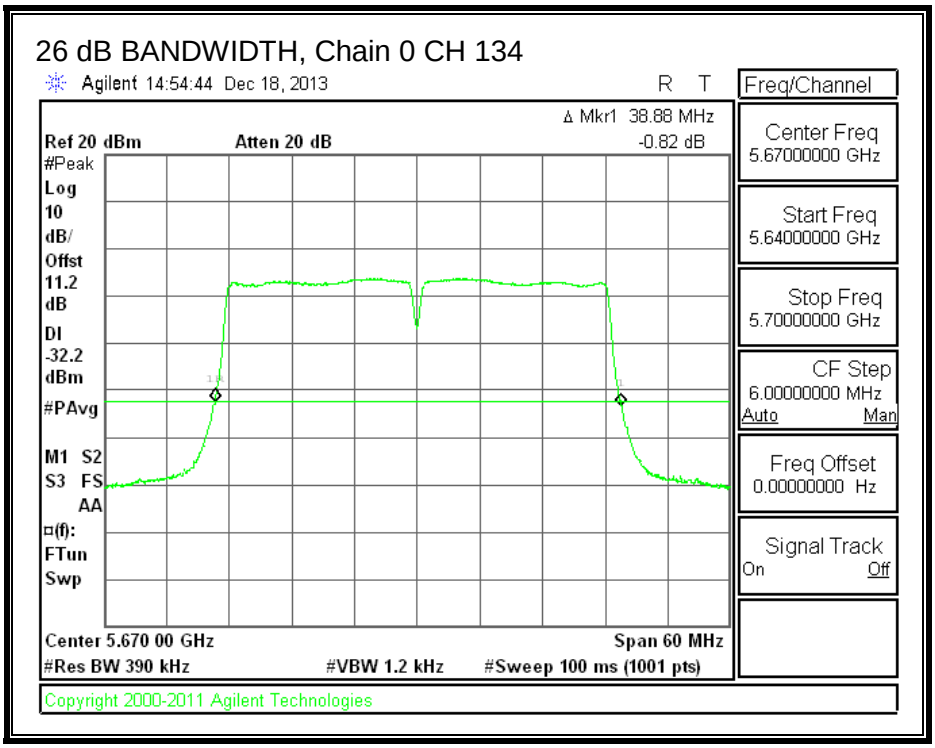
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)	26 dB BW Chain 2 (MHz)
102	5510	38.88	38.88	38.94
110	5550	38.94	38.82	38.88
134	5670	38.88	38.76	38.76

26 dB BANDWIDTH

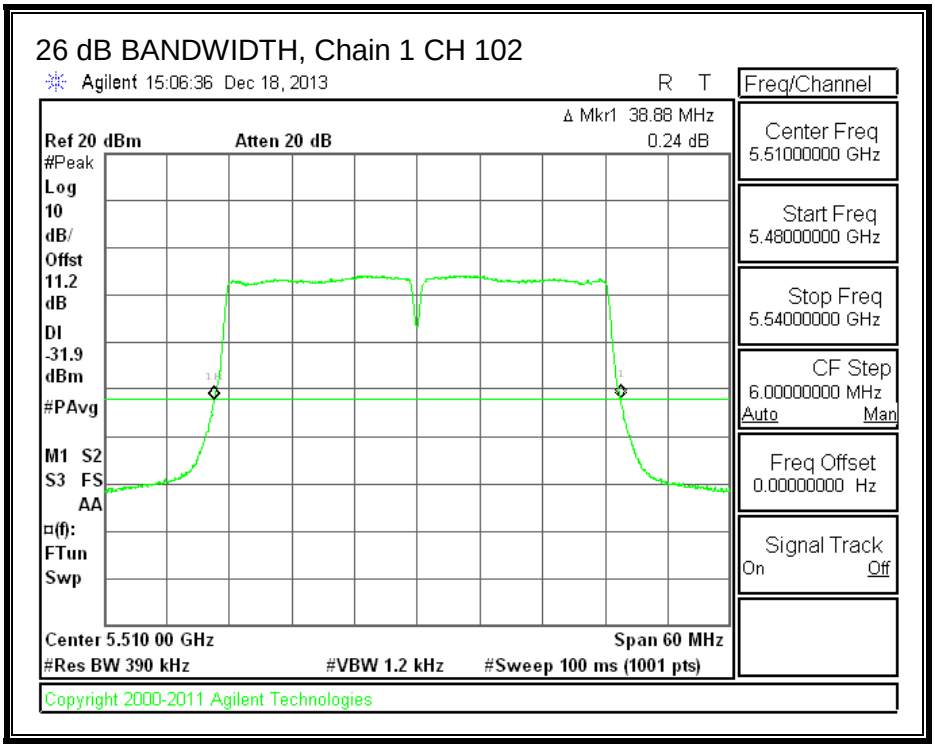
26 dB BANDWIDTH, Chain 0



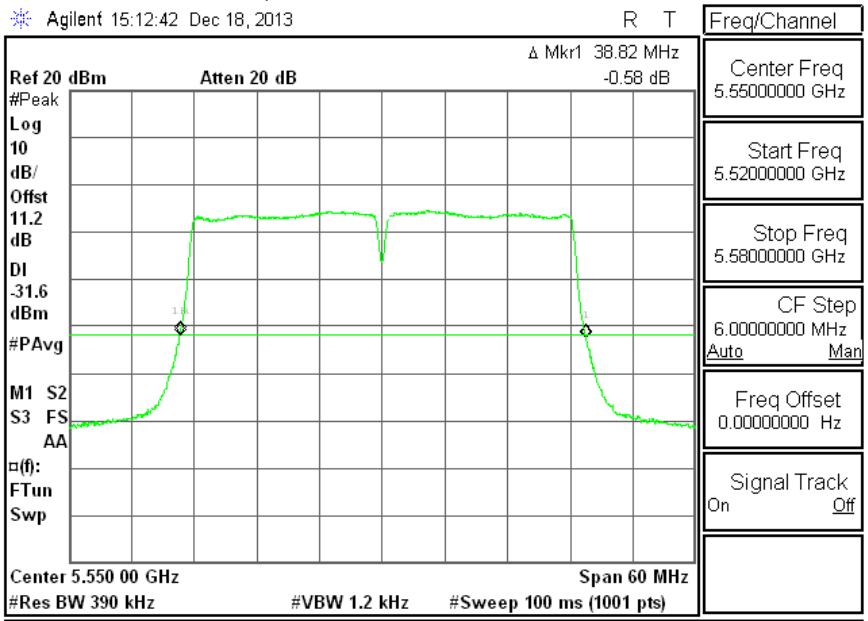




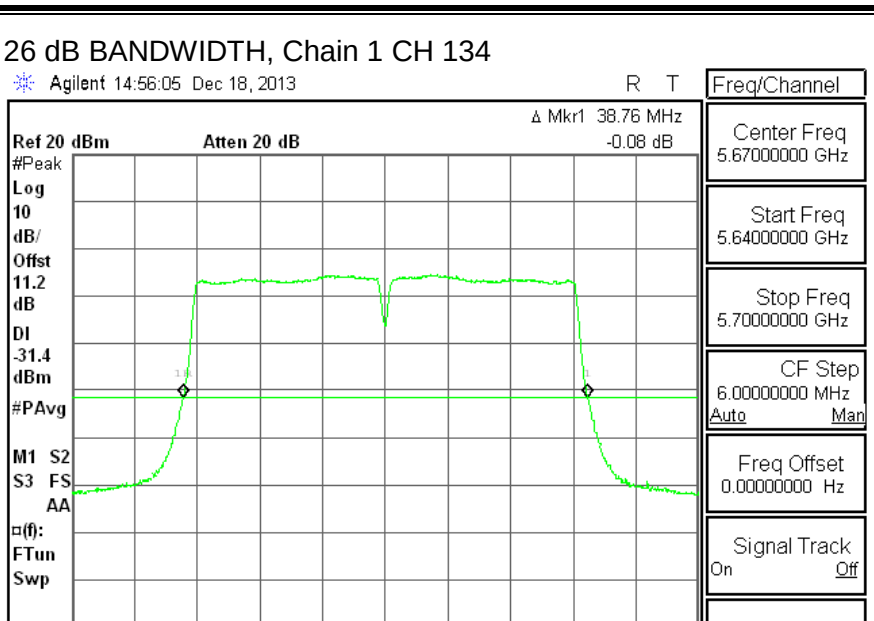
26 dB BANDWIDTH, Chain 1



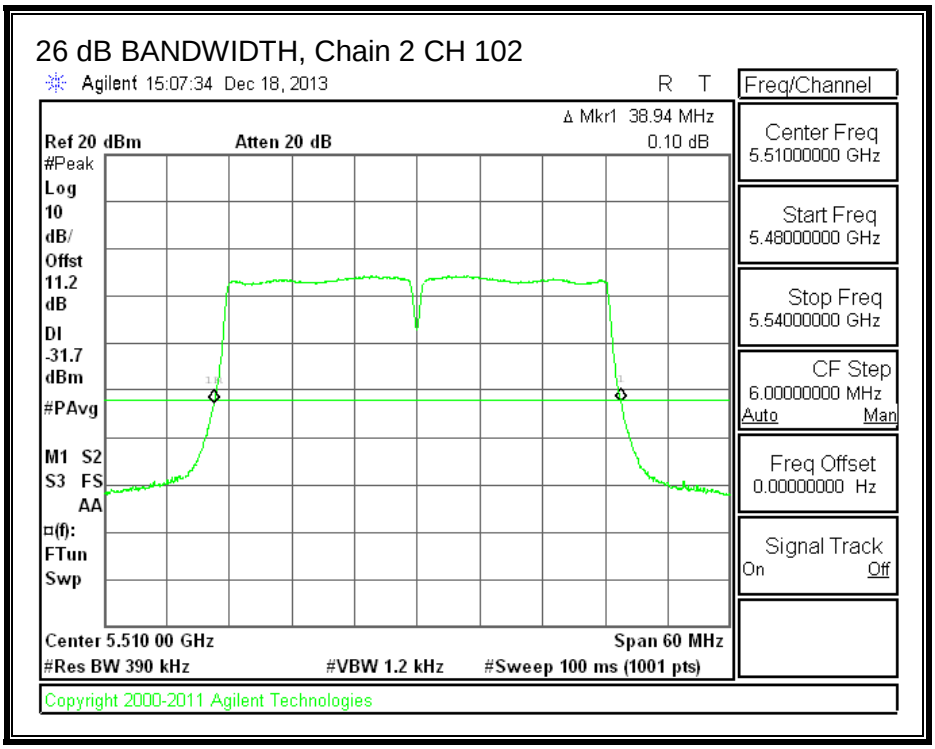
26 dB BANDWIDTH, Chain 1 CH 110

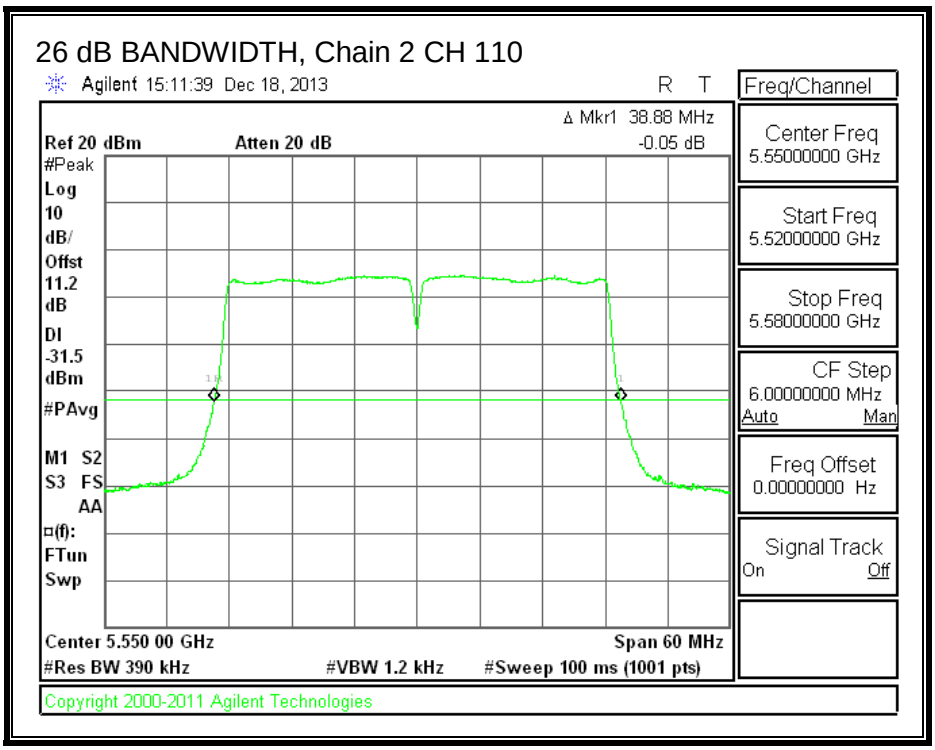


26 dB BANDWIDTH, Chain 1 CH 134

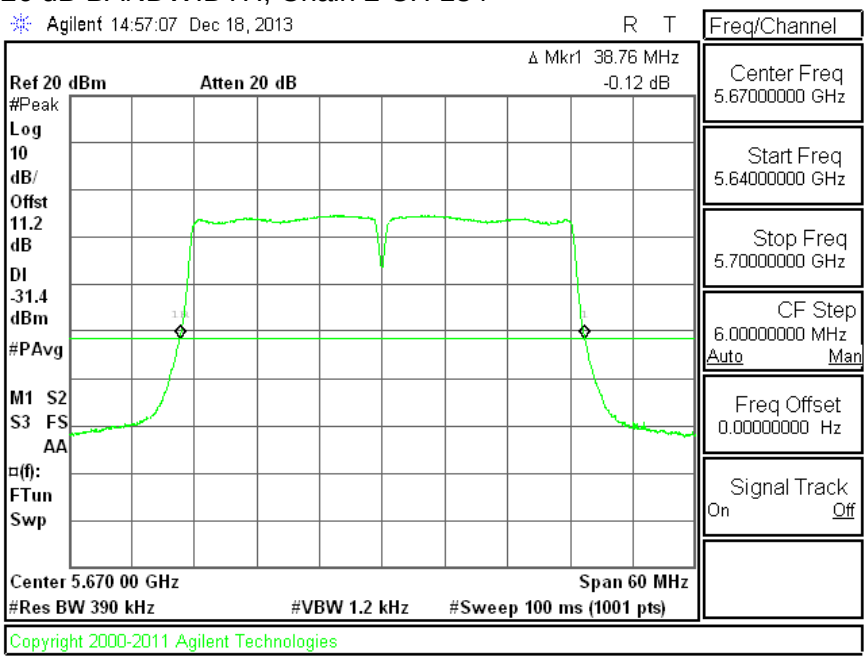


26 dB BANDWIDTH, Chain 2





26 dB BANDWIDTH, Chain 2 CH 134



9.30.2. 99% BANDWIDTH

LIMITS

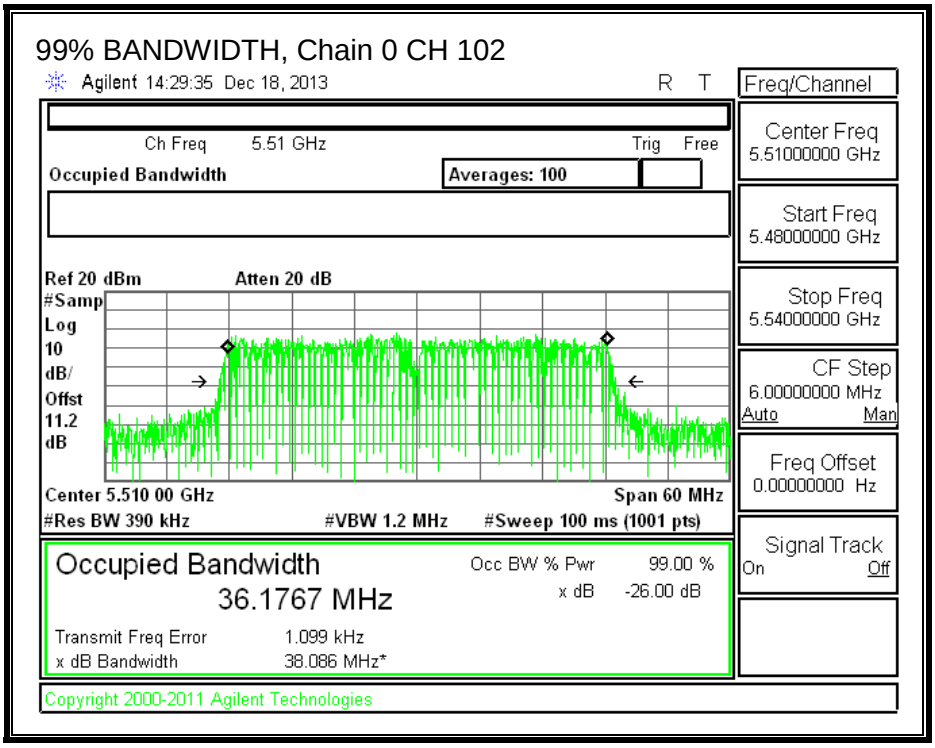
None; for reporting purposes only.

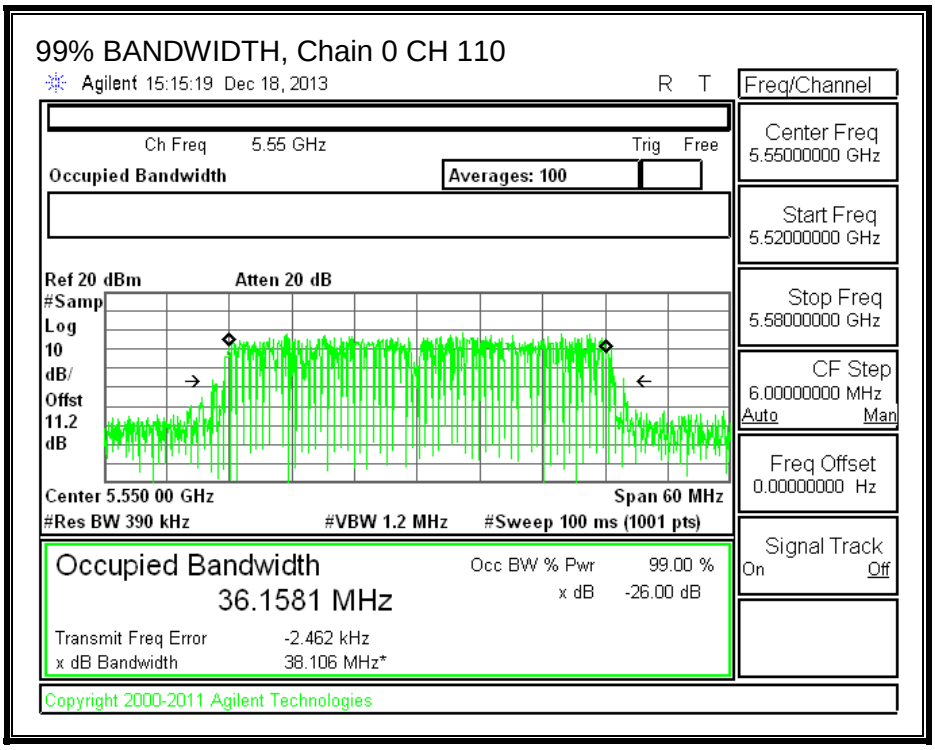
RESULTS

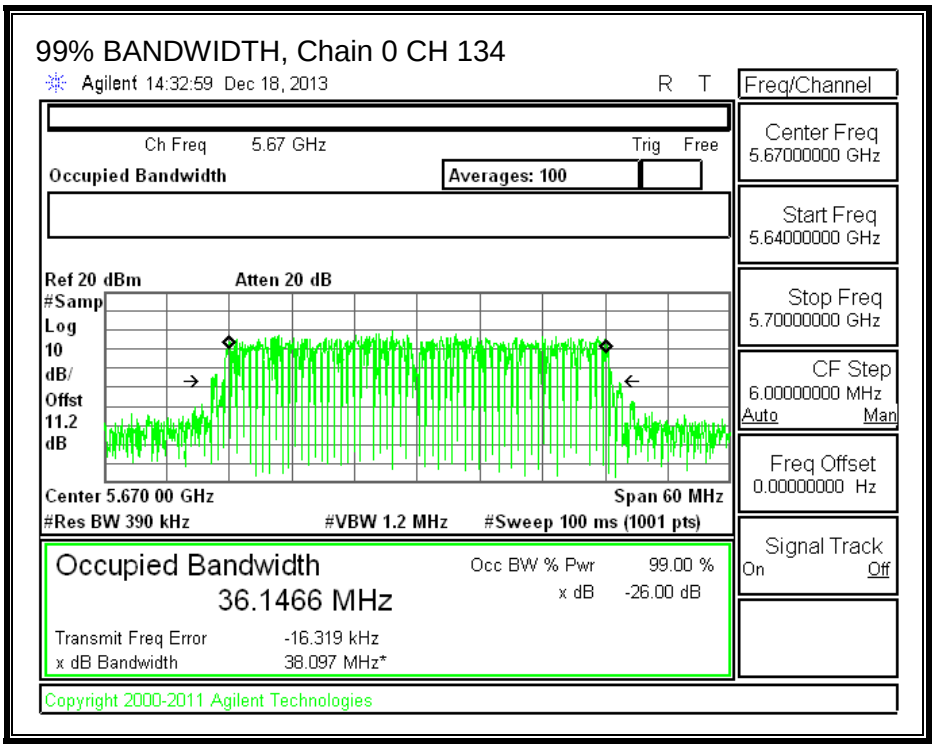
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
102	5510	36.1767	36.1412	36.1652
110	5550	36.1581	36.1627	36.1600
134	5670	36.1466	36.1444	36.1491

99% BANDWIDTH

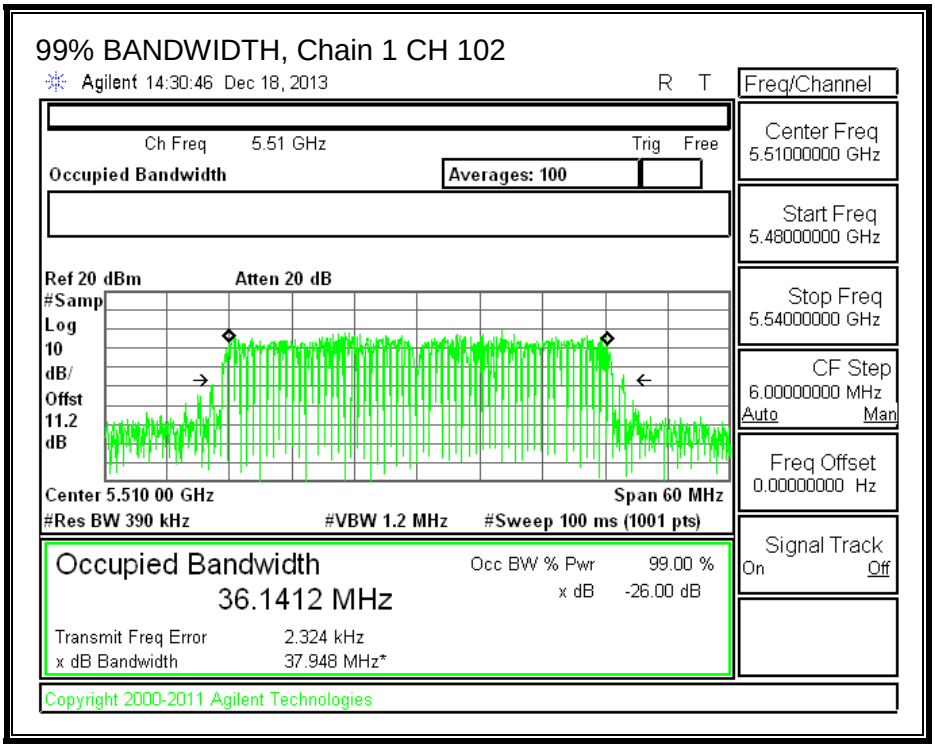
99% BANDWIDTH, Chain 0

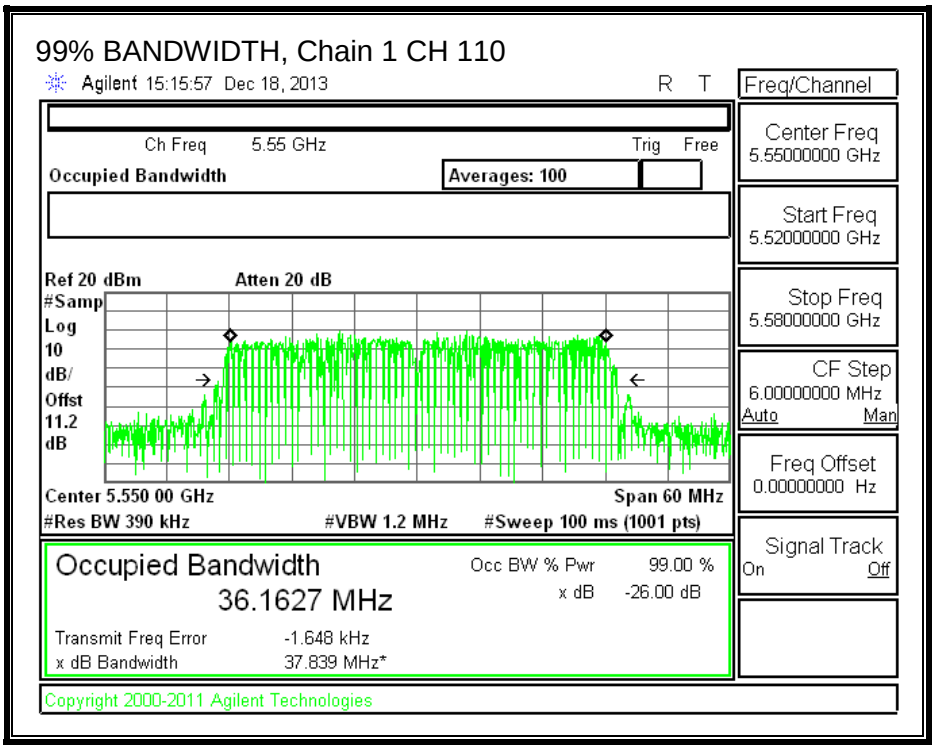


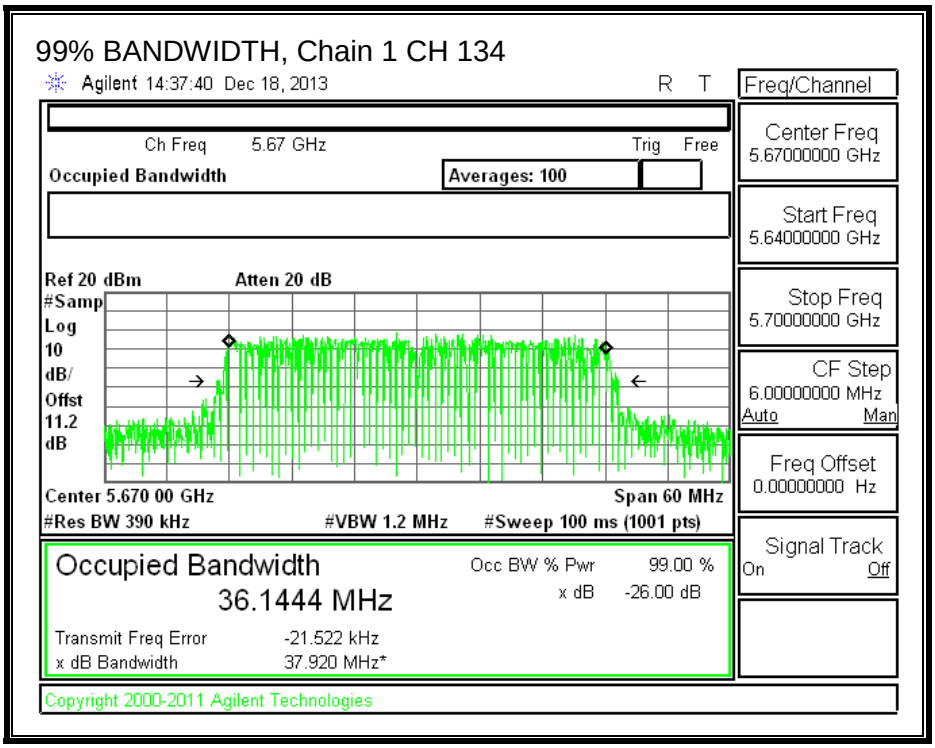




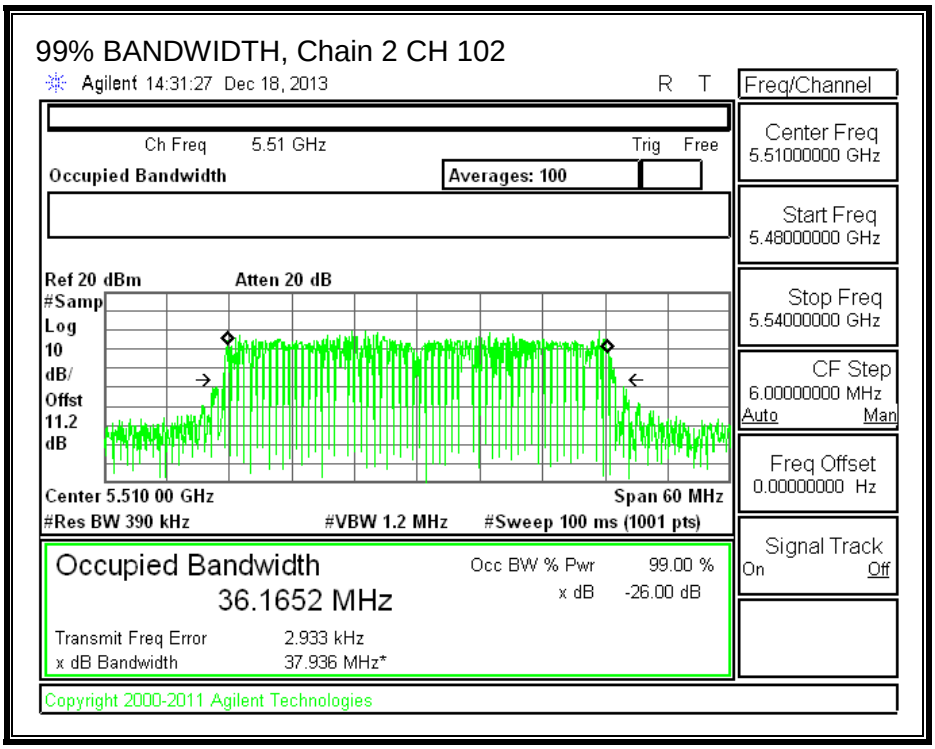
99% BANDWIDTH, Chain 1

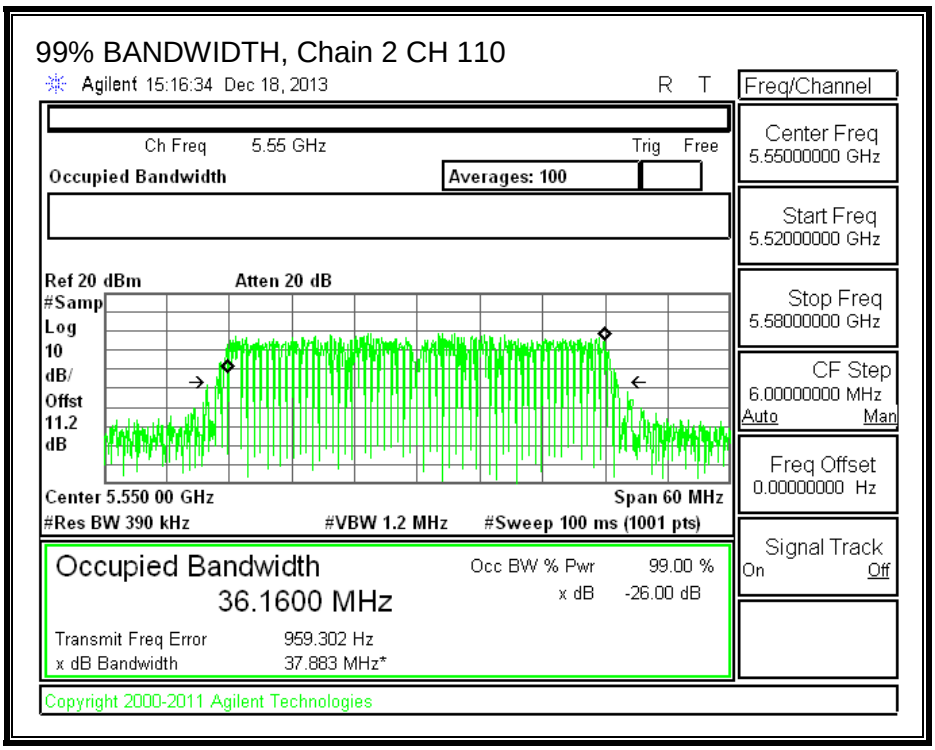


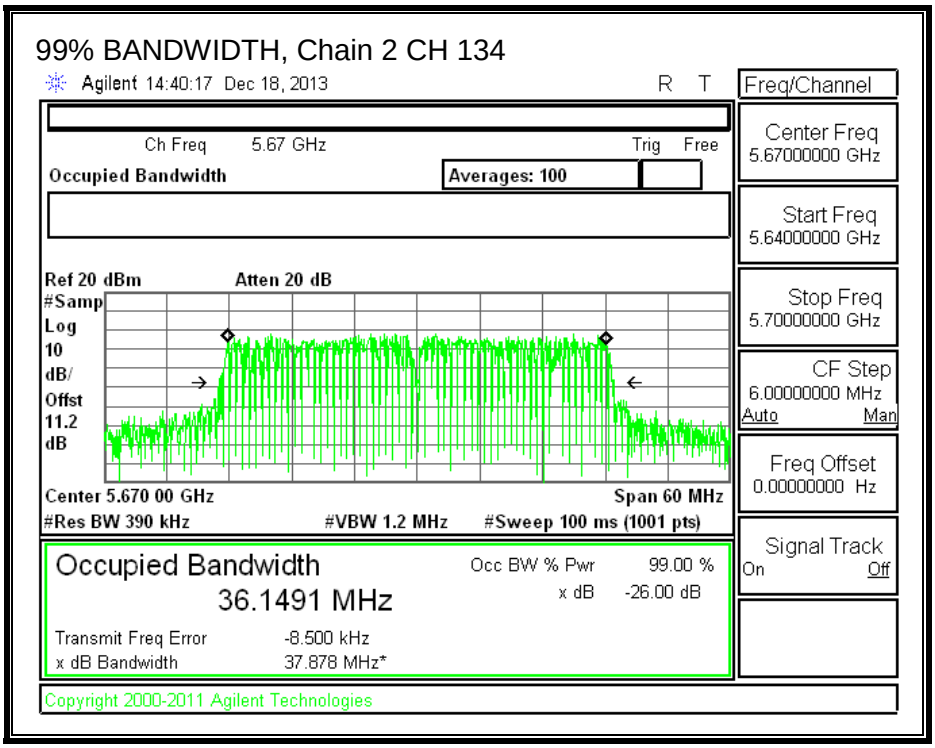




99% BANDWIDTH, Chain 2







9.30.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11.21 dB (including 10 dB pad and 1.21 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Average Power Results

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Chain 2 Power (dBm)	Total Power (dBm)
102	5510	7.41	8.70	9.16	13.26
110	5550	17.12	17.01	17.25	21.90
134	5670	9.91	10.21	10.82	15.10

9.30.4. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.5–5.7 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)
2.82	4.77	7.59

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
102	5510	38.88	36.1412	2.82	7.59
110	5550	38.82	36.1581	2.82	7.59
134	5670	38.76	36.1444	2.82	7.59

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
102	5510	24.00	24.00	30.00	24.00	9.41	11.00	9.41
110	5550	24.00	24.00	30.00	24.00	9.41	11.00	9.41
134	5670	24.00	24.00	30.00	24.00	9.41	11.00	9.41

Duty Cycle CF (dB)	0.14	Included in Calculations of Corr'd Power & PPSD

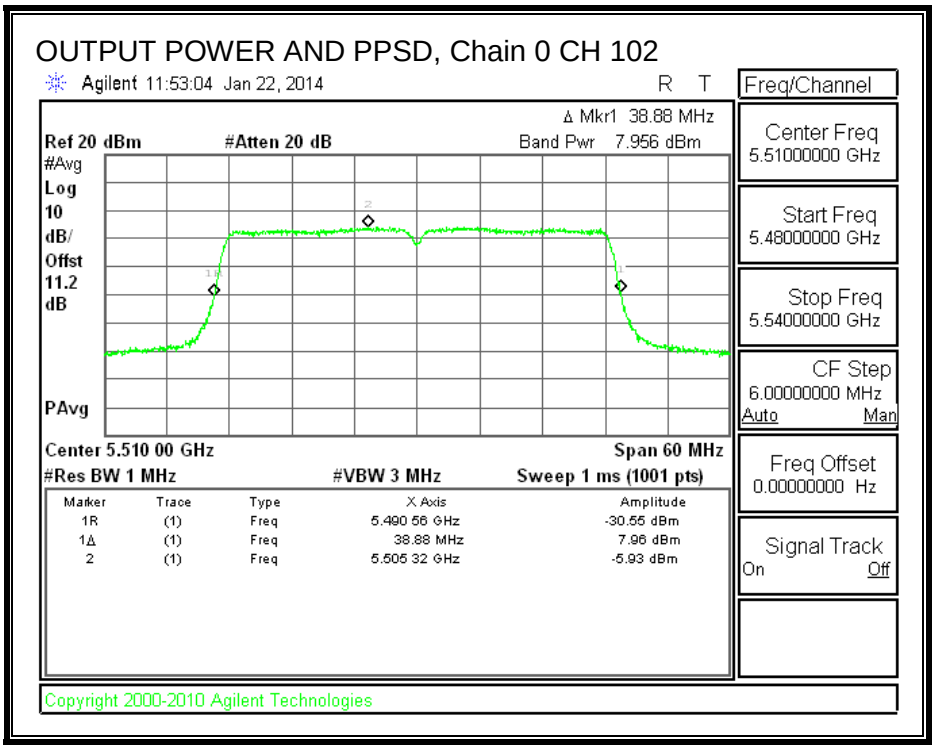
Output Power Results

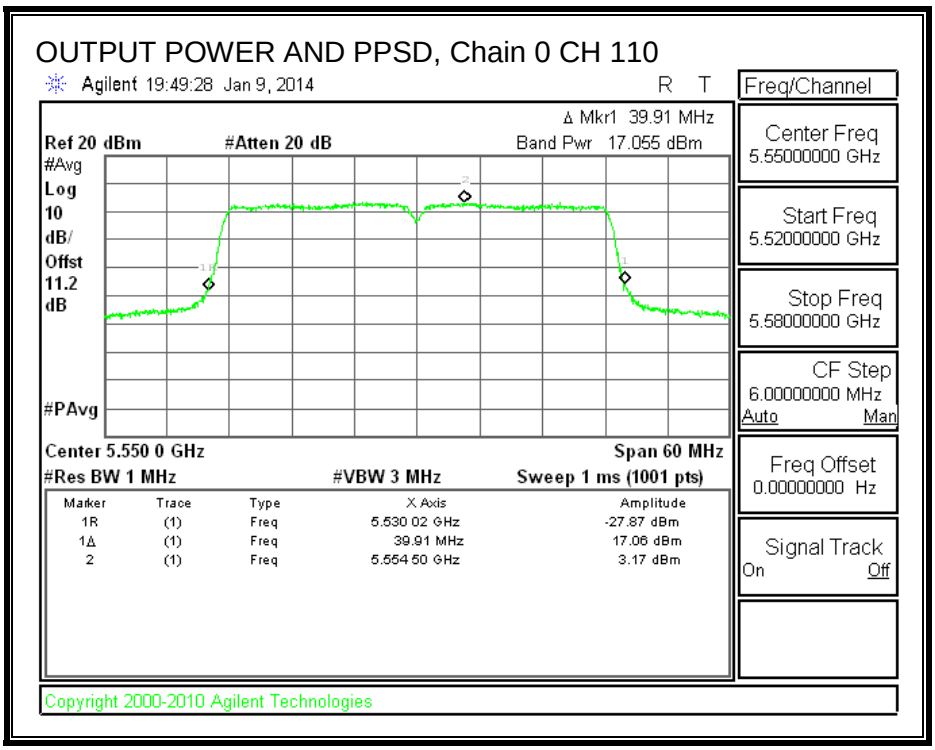
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
102	5510	7.96	9.12	9.49	13.82	24.00	-10.18
110	5550	17.06	17.05	17.80	22.23	24.00	-1.77
134	5670	11.95	12.41	12.75	17.29	24.00	-6.71

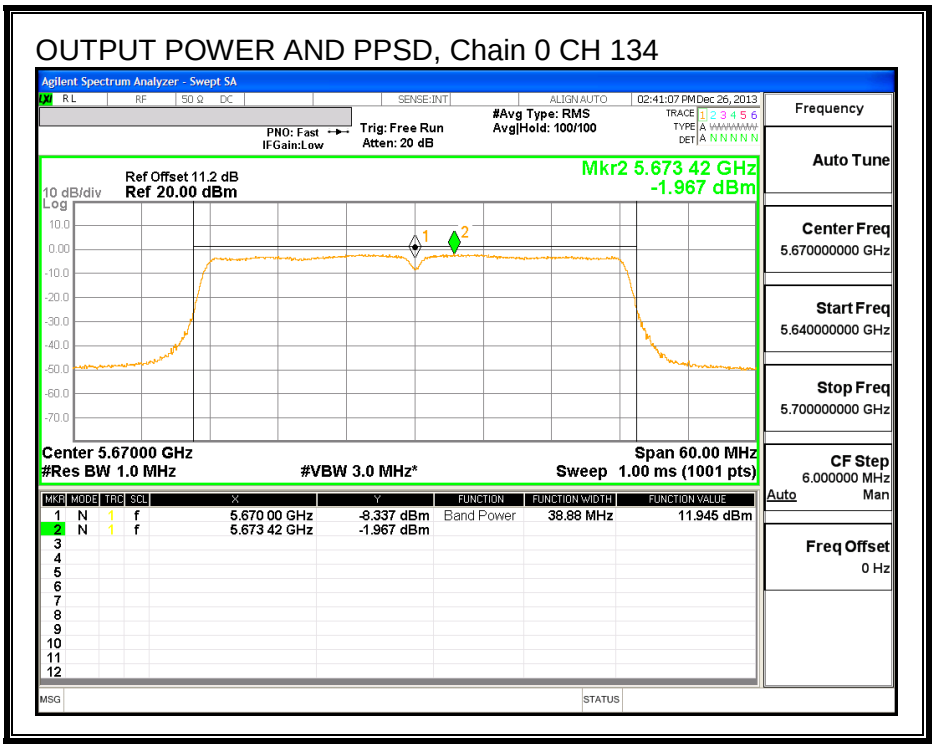
PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Chain 2 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
102	5510	-5.93	-4.53	-4.31	0.04	9.41	-9.37
110	5550	3.17	3.54	4.12	8.54	9.41	-0.87
134	5670	-1.97	-1.49	-1.25	3.35	9.41	-6.06

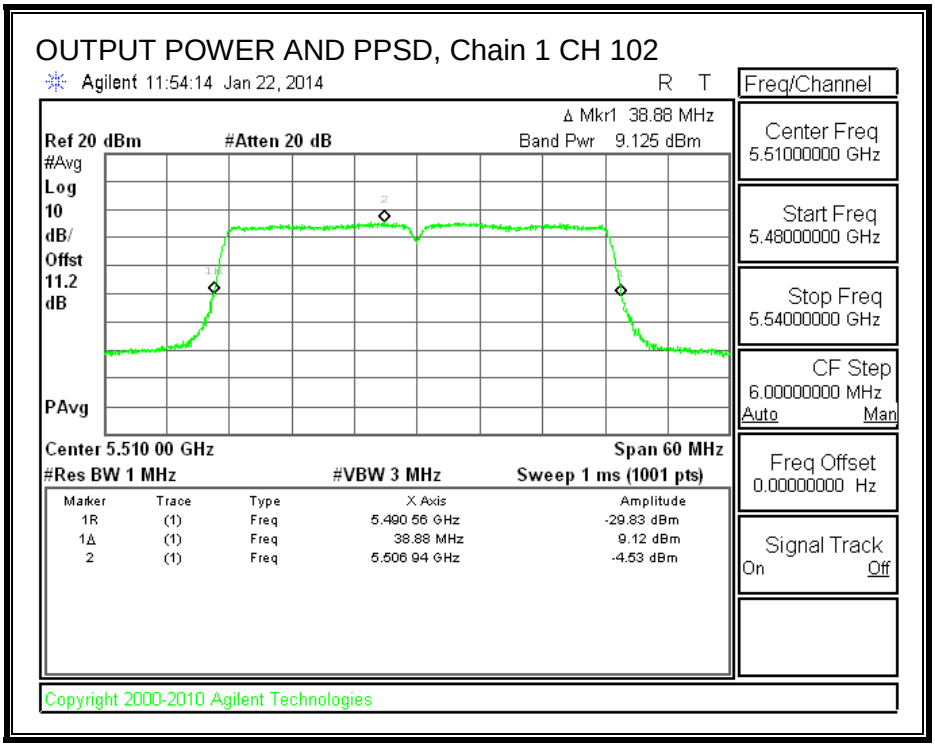
OUTPUT POWER AND PPSD, Chain 0

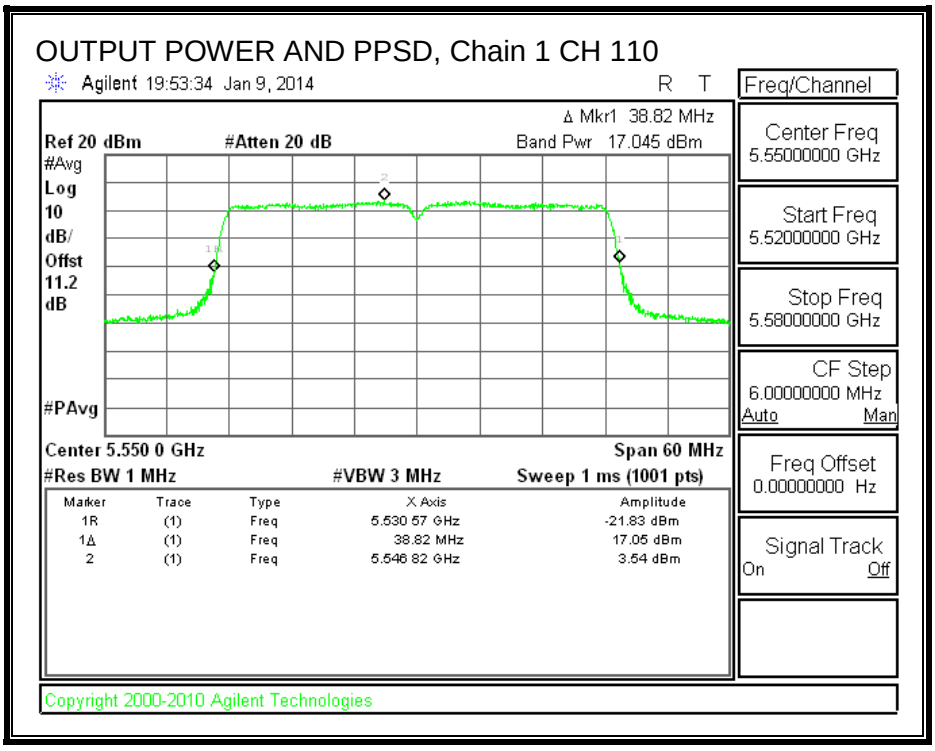


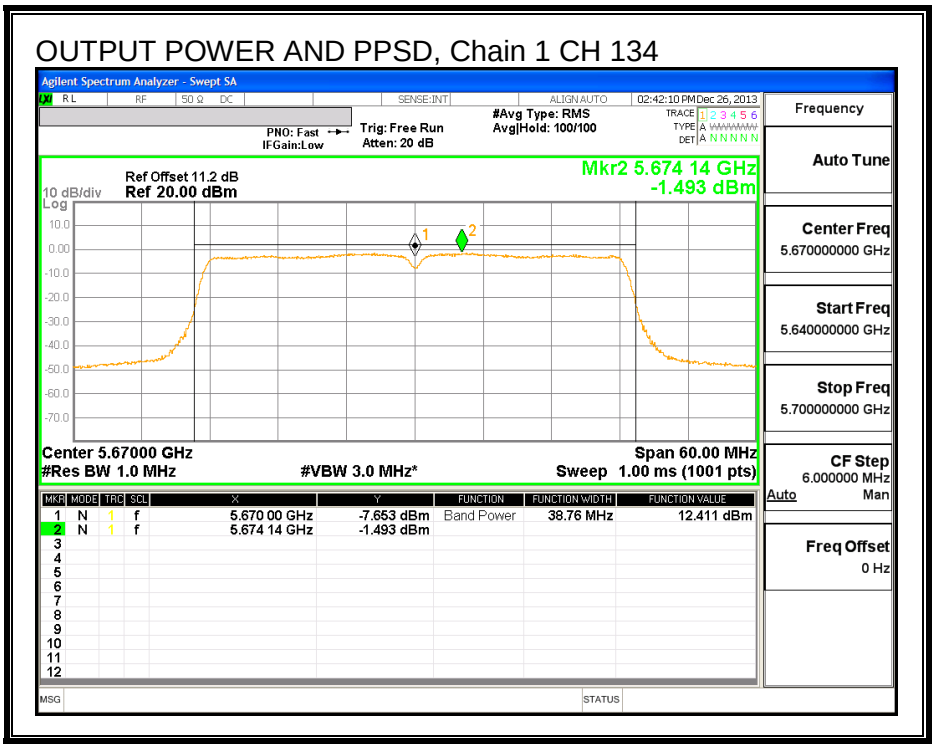




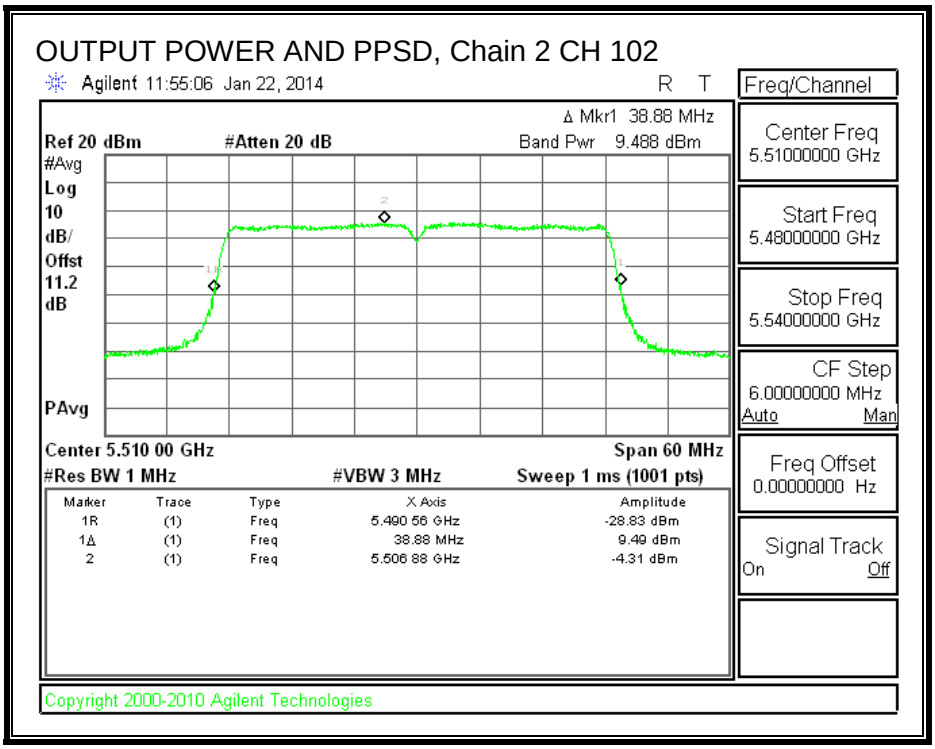
OUTPUT POWER AND PPSD, Chain 1

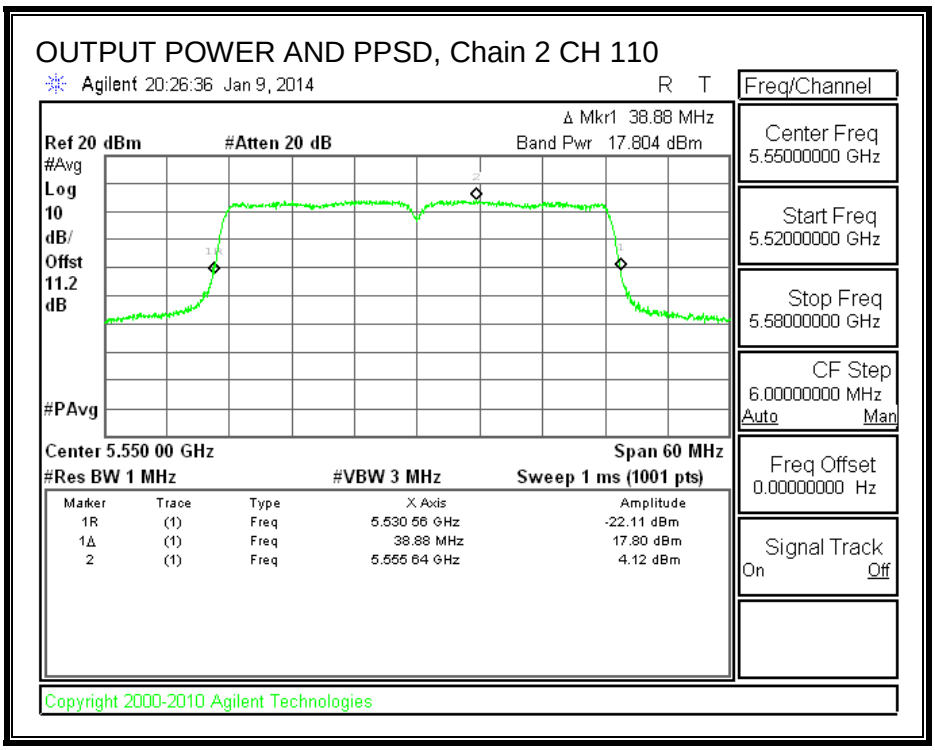




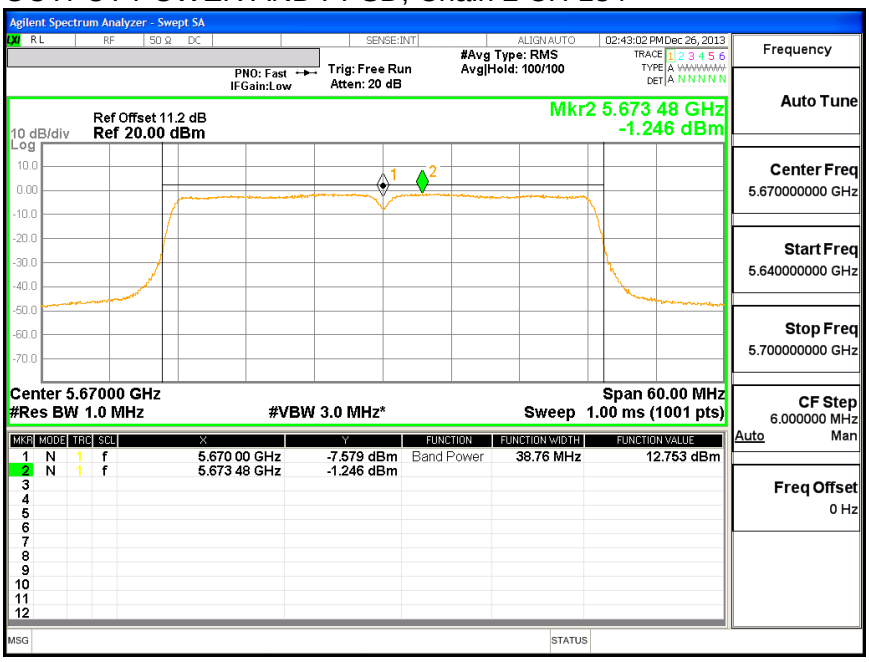


OUTPUT POWER AND PPSD, Chain 2





OUTPUT POWER AND PPSD, Chain 2 CH 134



9.30.5. 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)
110	5550	5.32	3.17	0.14	2.01	13	-10.99

Chain 1

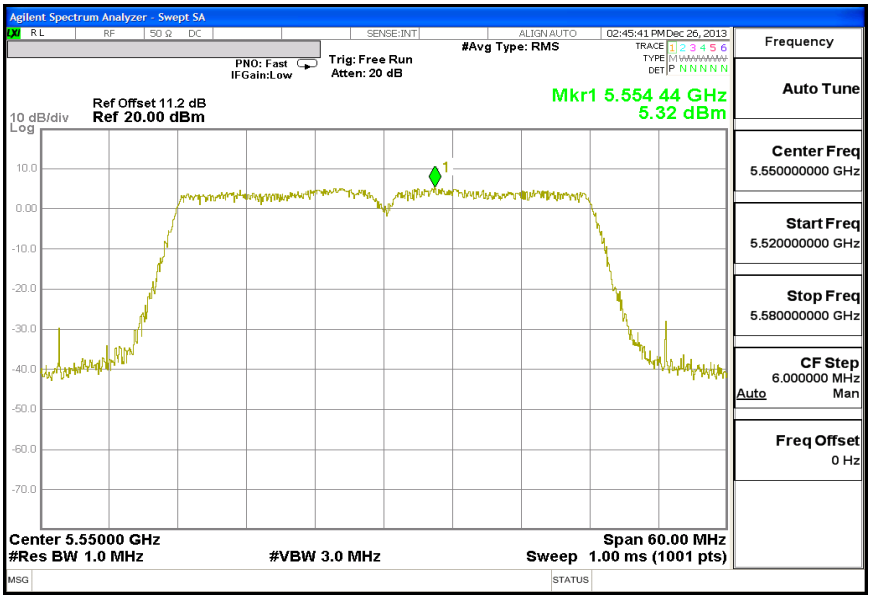
Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
110	5550	7.09	3.54	0.14	3.41	13	-9.59

Chain 2

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
110	5550	7.45	4.12	0.14	3.19	13	-9.81

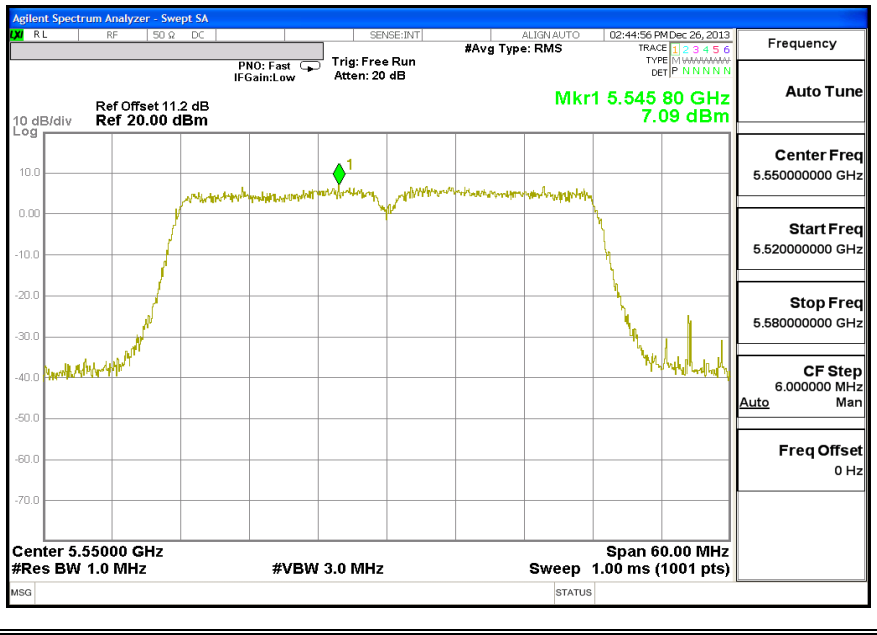
PEAK EXCURSION, Chain 0

Chain 0 CH 110



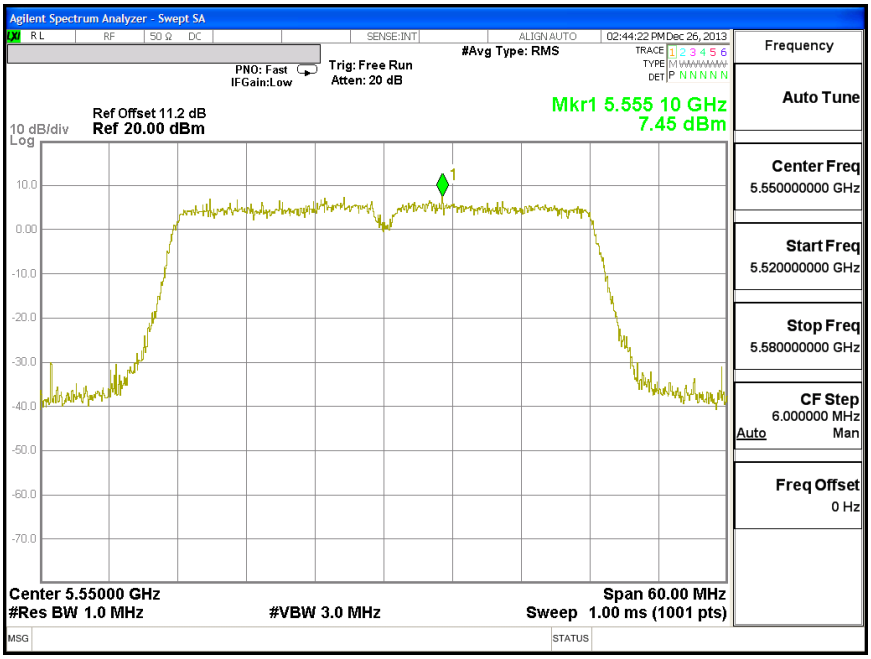
PEAK EXCURSION, Chain 1

Chain 1 CH 110



PEAK EXCURSION, Chain 2

Chain 2 CH 110



9.31. 802.11ac 40MHz 3TX CDD MODE, CHANNEL 142, 5.6 GHz BAND

9.31.1. 26 dB BANDWIDTH- UNII

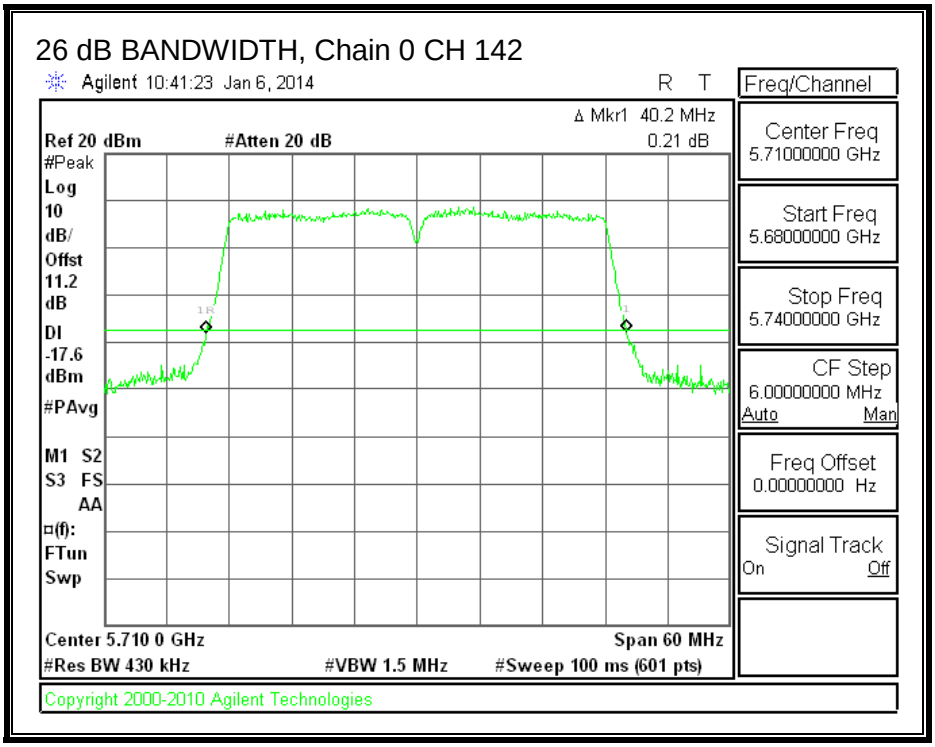
LIMITS

None; for reporting purposes only.

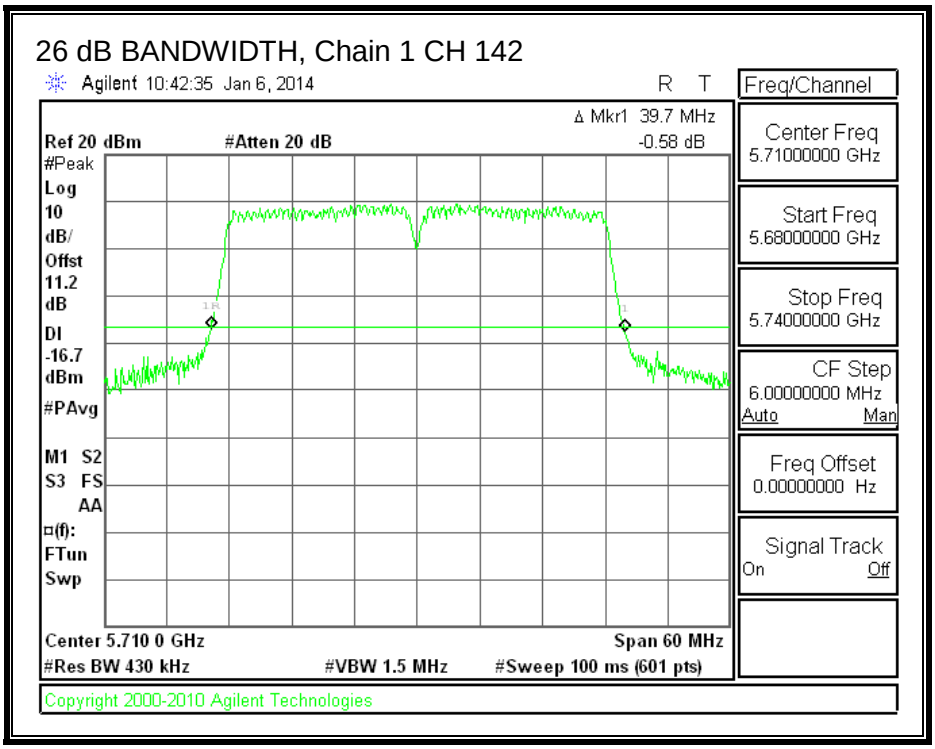
RESULTS

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)	26 dB BW Chain 2 (MHz)
142	5710	40.20	39.70	39.80

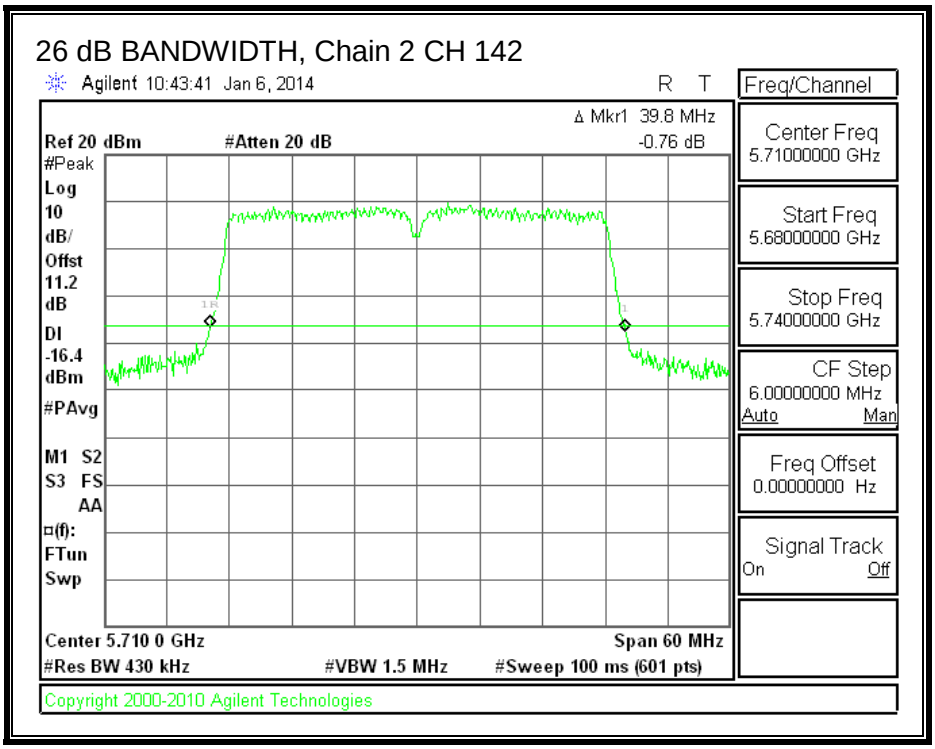
26 dB BANDWIDTH, Chain 0



26 dB BANDWIDTH, Chain 1



26 dB BANDWIDTH, Chain 2



9.31.2.99% BANDWIDTH

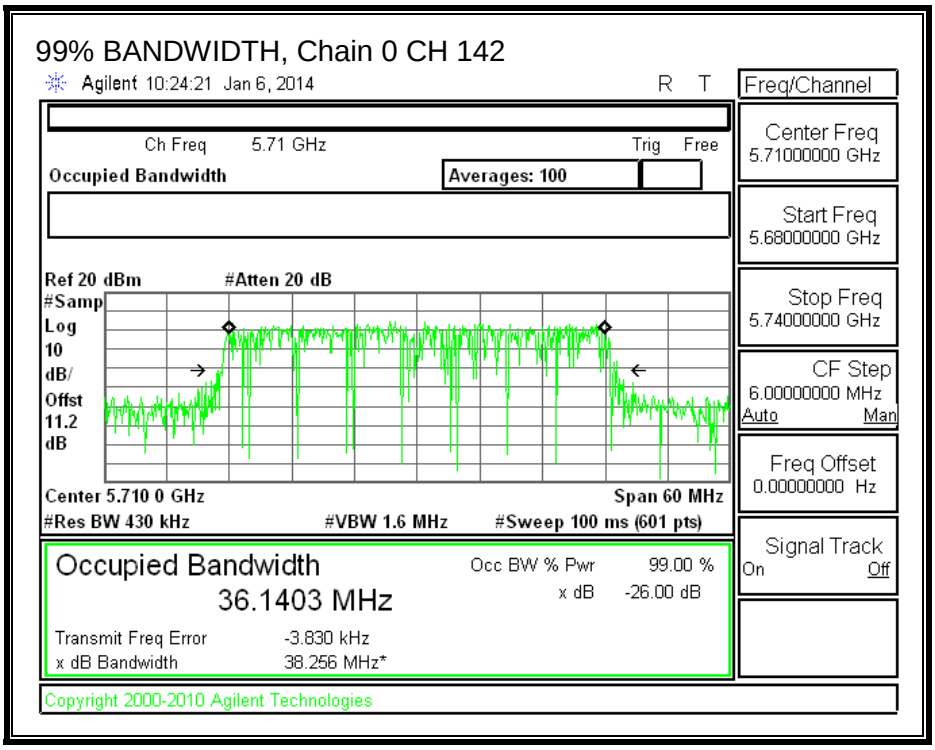
LIMITS

None; for reporting purposes only.

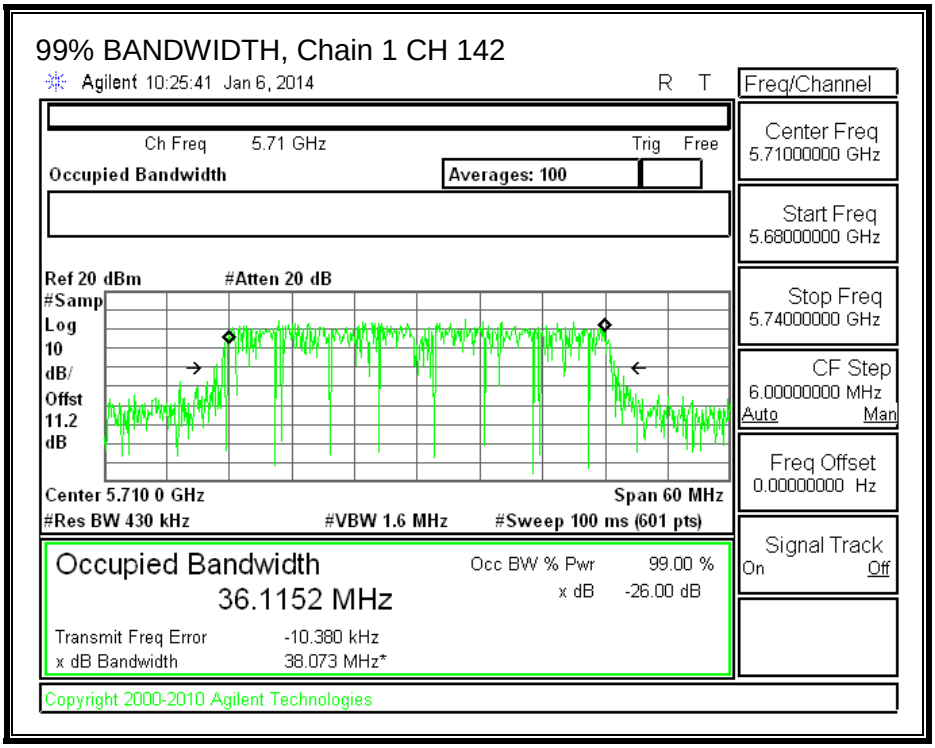
RESULTS

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
142	5710	36.1403	36.1152	36.1492

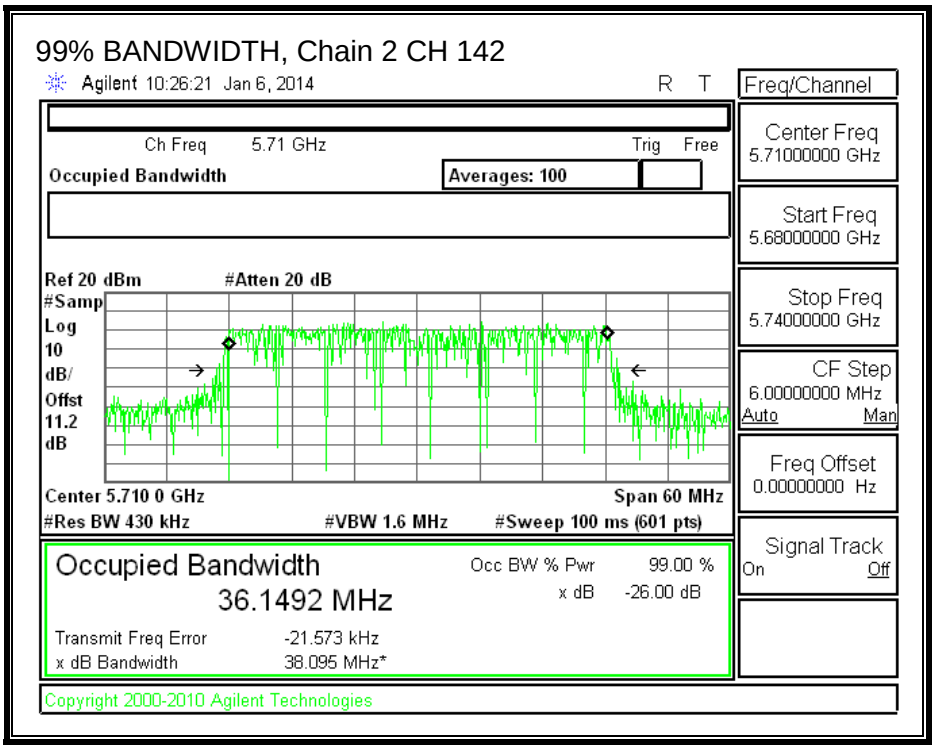
99% BANDWIDTH, Chain 0



99% BANDWIDTH, Chain 1



99% BANDWIDTH, Chain 2



9.31.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.5–5.7 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

For output power and PPSD, 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)
2.82	4.77	7.59

RESULTS

Limits (FCC), portion in UNII 2 ext band

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
142	5710	34.850	33.0576	2.82	7.59

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
142	5710	22.41	24.00	30.00	22.41	11.00	11.00	11.00

Duty Cycle CF (dB)	0.14	Included in Calculations of Corr'd Power & PPSD

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	16.90	16.72	16.85	21.74	22.41	-0.67

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Chain 2 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
142	5710	3.55	3.51	3.63	8.47	11.00	-2.53

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
142	5710	4.850	3.0576	2.82	2.82

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
142	5710	17.86	15.85	21.85	15.85	11.00	11.00	11.00

Duty Cycle CF (dB)	0.14	Included in Calculations of Corr'd Power & PPSD

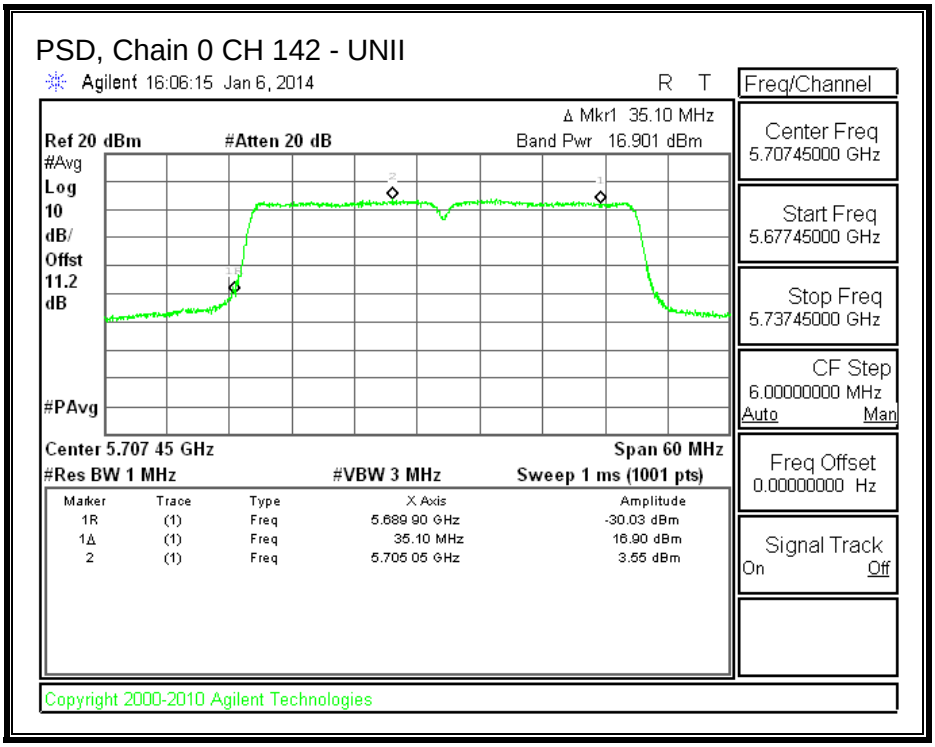
Output Power Results

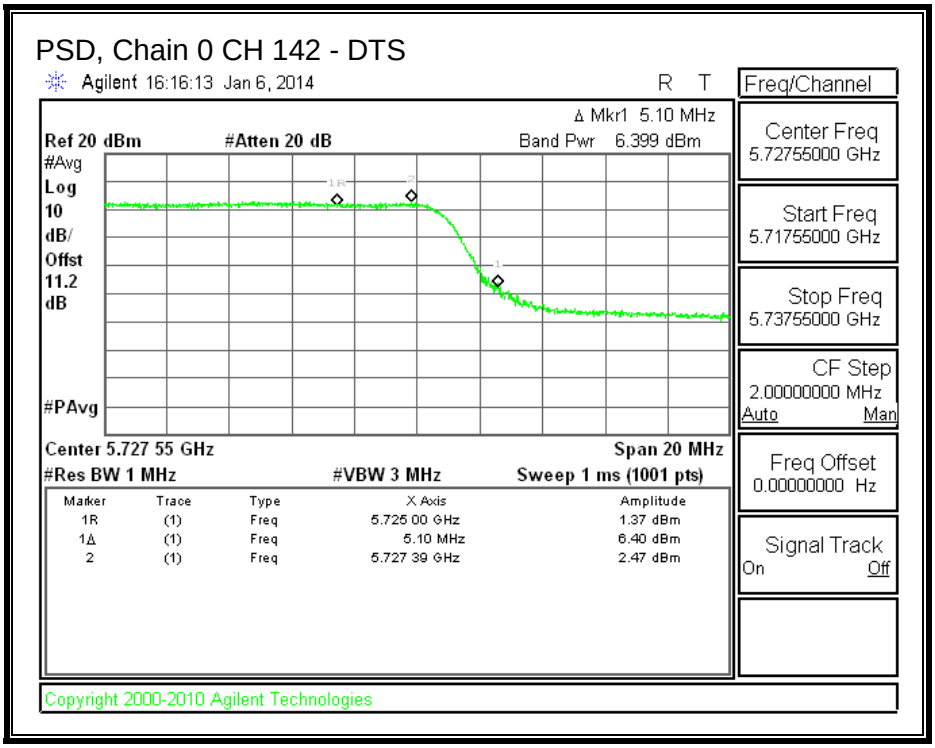
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	6.40	6.16	6.29	11.20	15.85	-4.66

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Chain 2 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
142	5710	2.470	2.50	2.19	7.30	11.00	-3.70

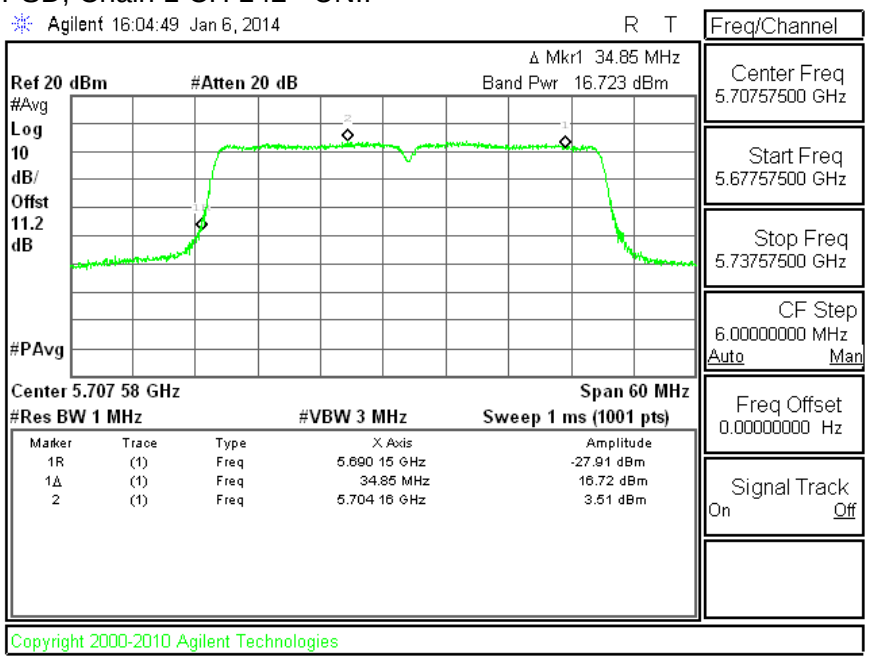
OUTPUT POWER & PPSD, Chain 0



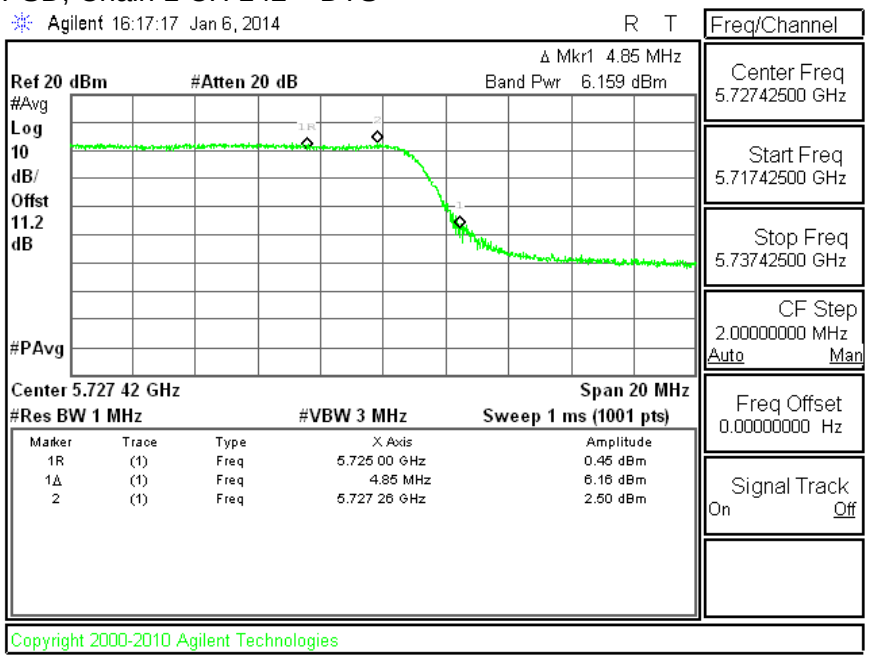


OUTPUT POWER & PPSD, Chain 1

PSD, Chain 1 CH 142 - UNII

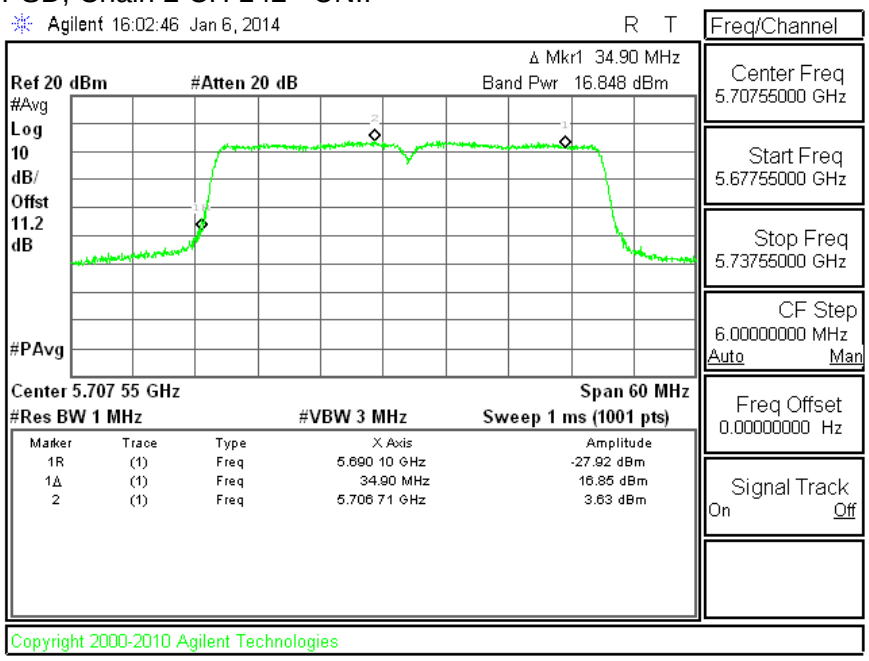


PSD, Chain 1 CH 142 – DTS

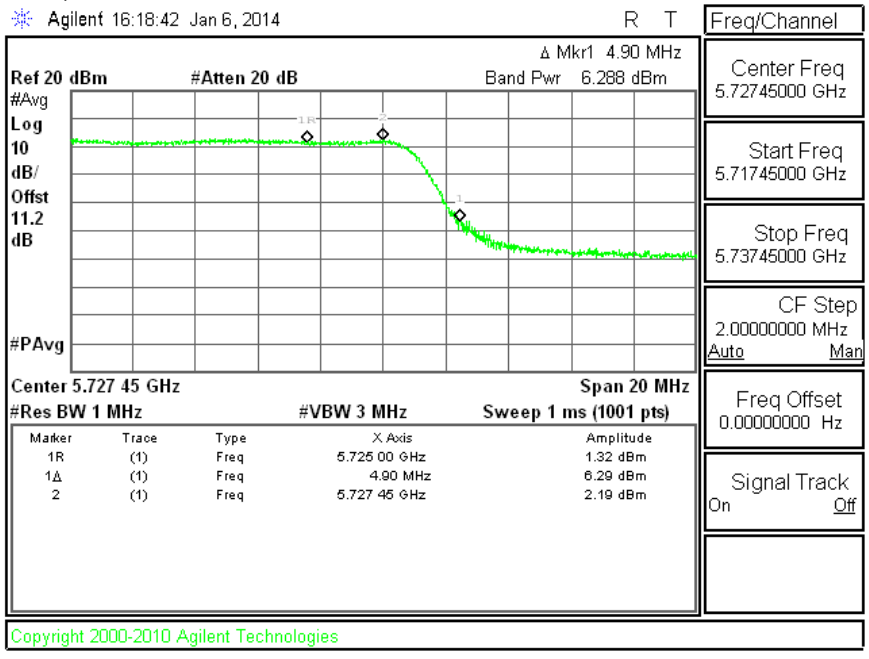


OUTPUT POWER & PPSD, Chain 2

PSD, Chain 2 CH 142 - UNII



PSD, Chain 2 CH 142 – DTS



9.32. 802.11n HT40 3TX SDM MODE IN THE 5.6 GHz BAND

9.32.1. 26 dB BANDWIDTH

LIMITS

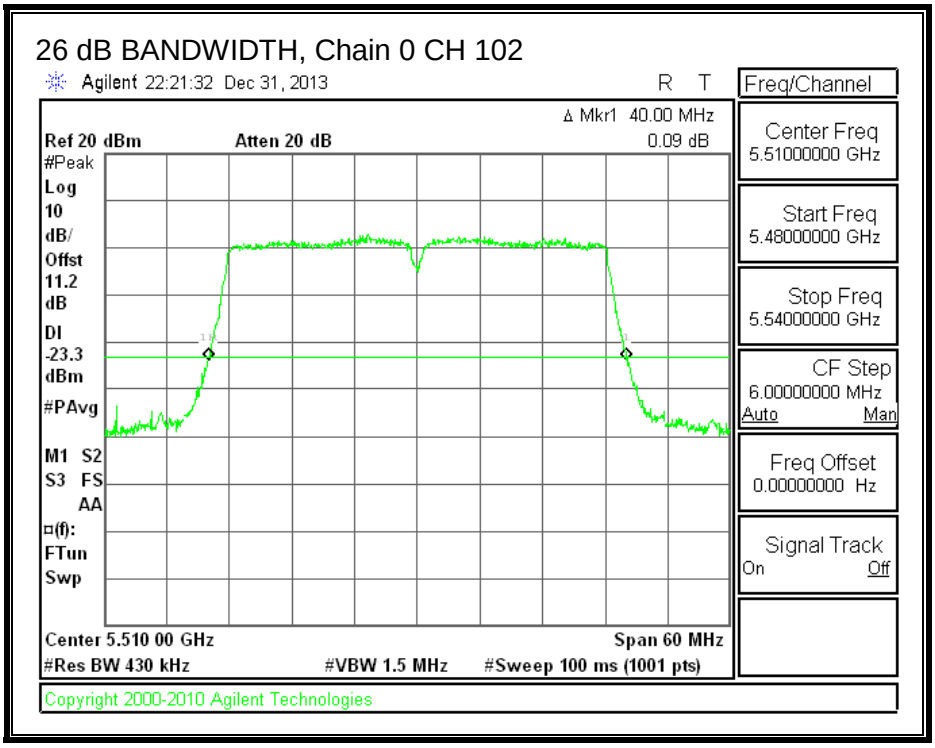
None; for reporting purposes only.

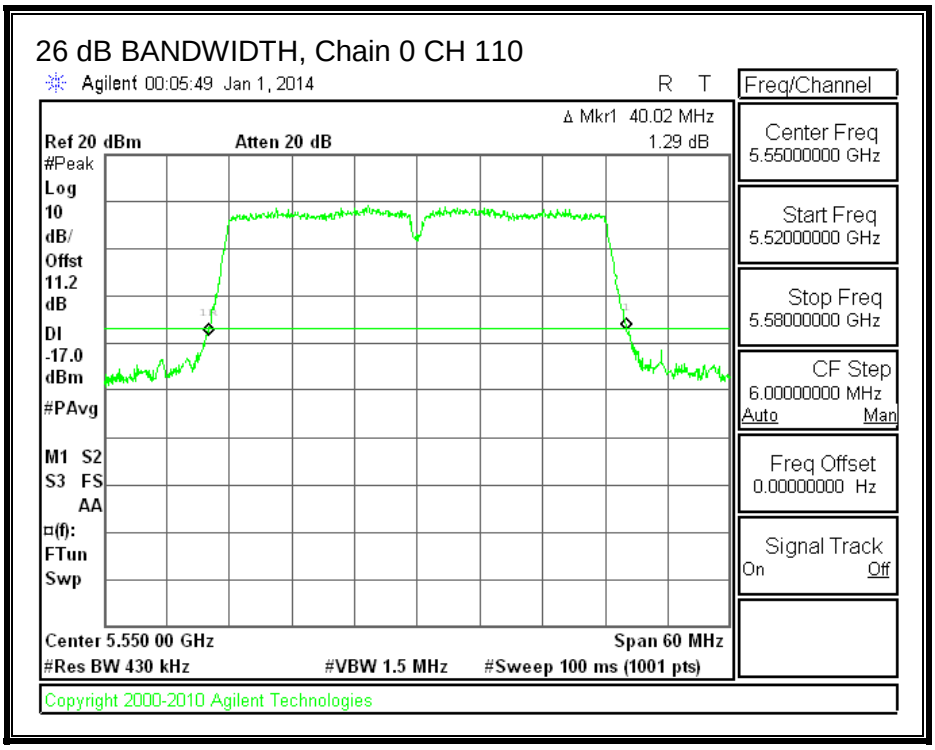
RESULTS

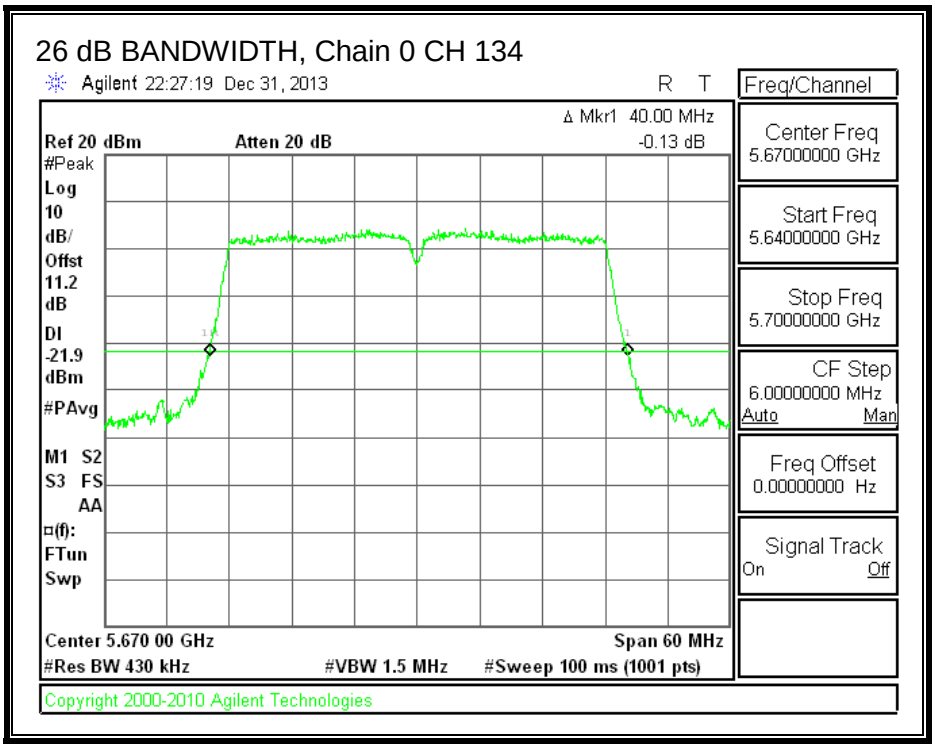
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)	26 dB BW Chain 2 (MHz)
102	5510	40.00	39.40	39.40
110	5550	40.02	39.34	39.58
134	5670	40.00	39.34	39.40

26 dB BANDWIDTH

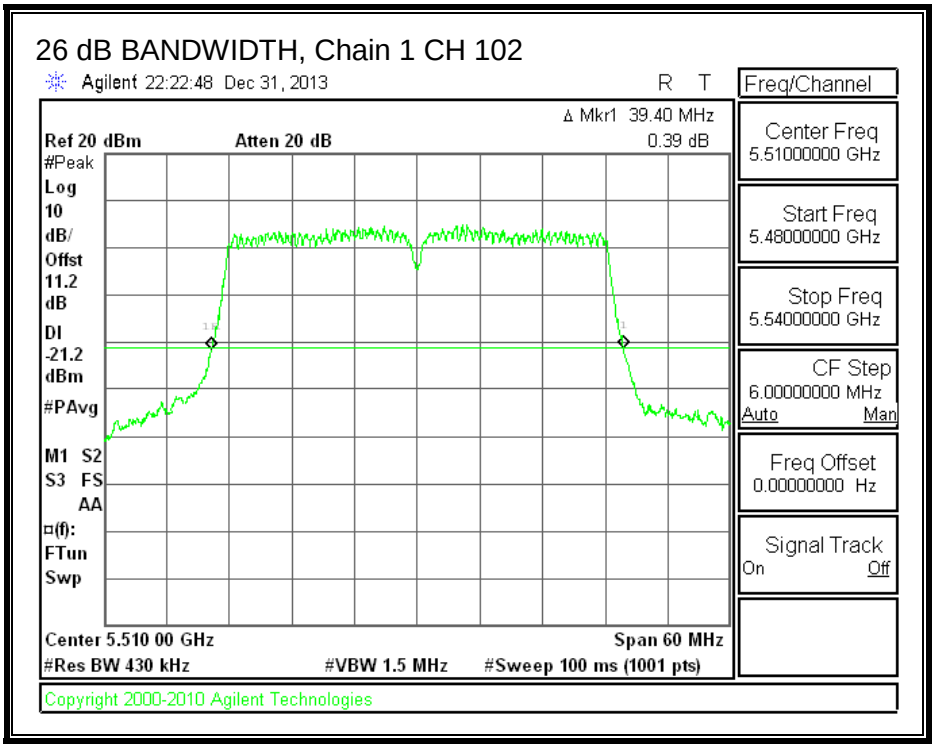
26 dB BANDWIDTH, Chain 0

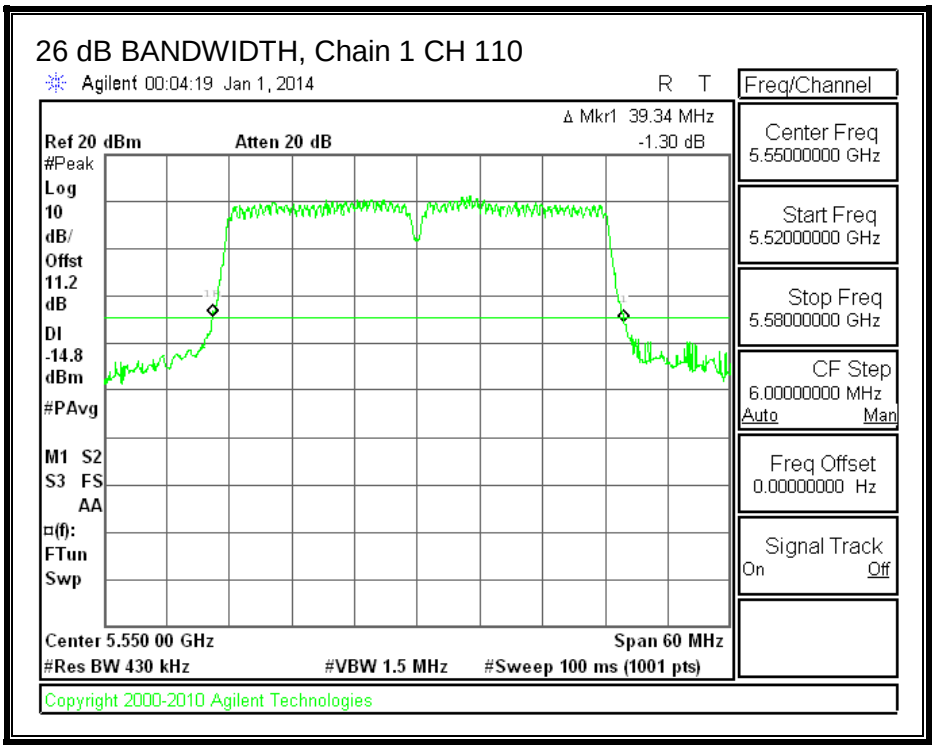


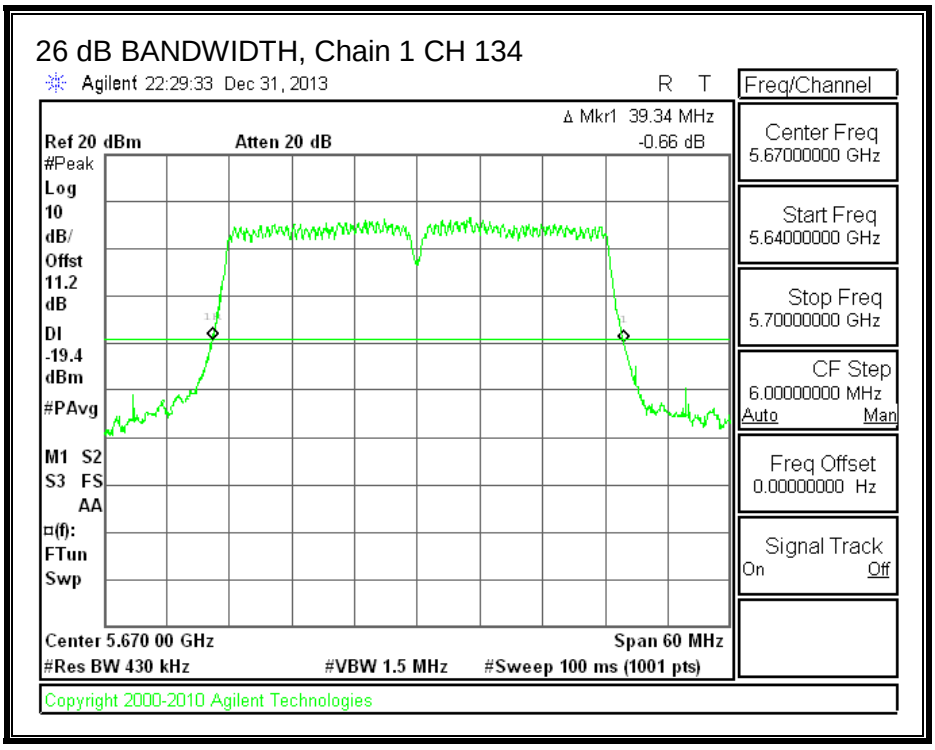




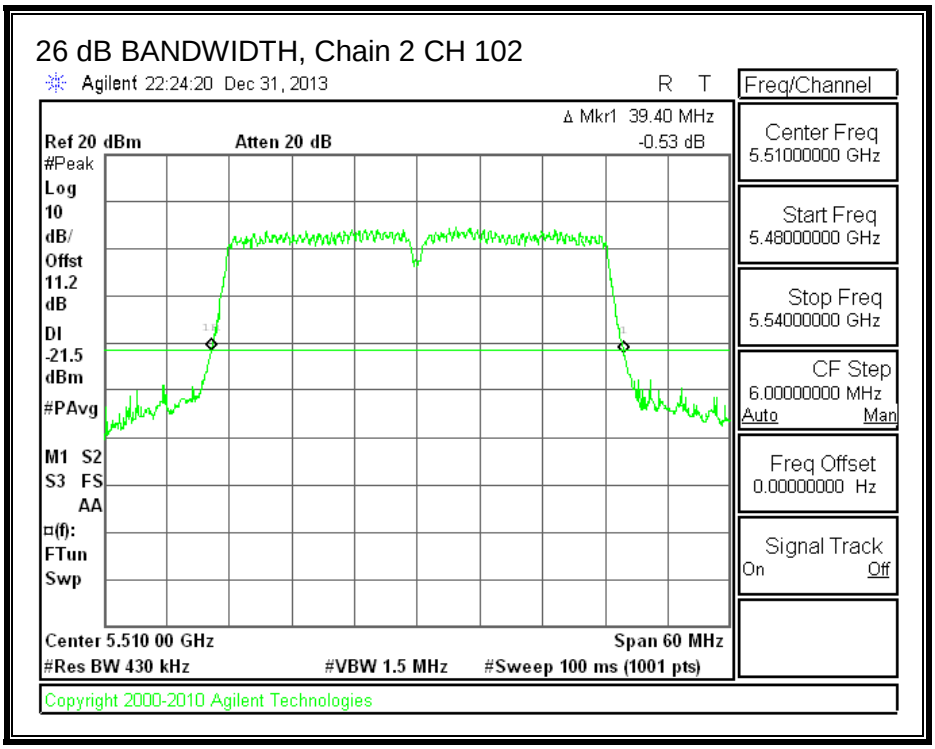
26 dB BANDWIDTH, Chain 1

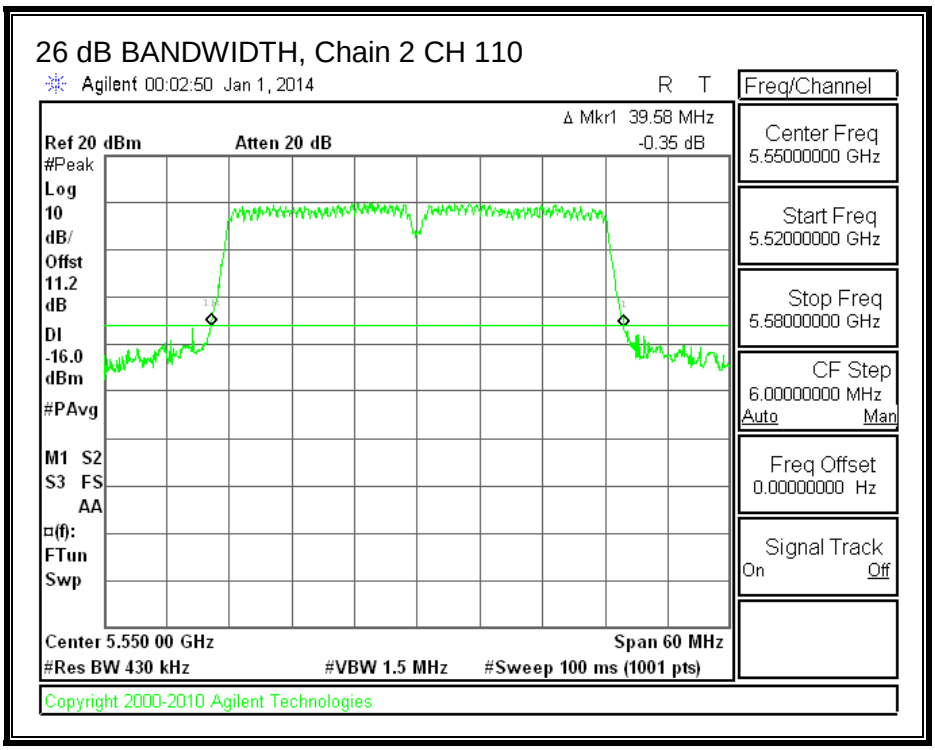


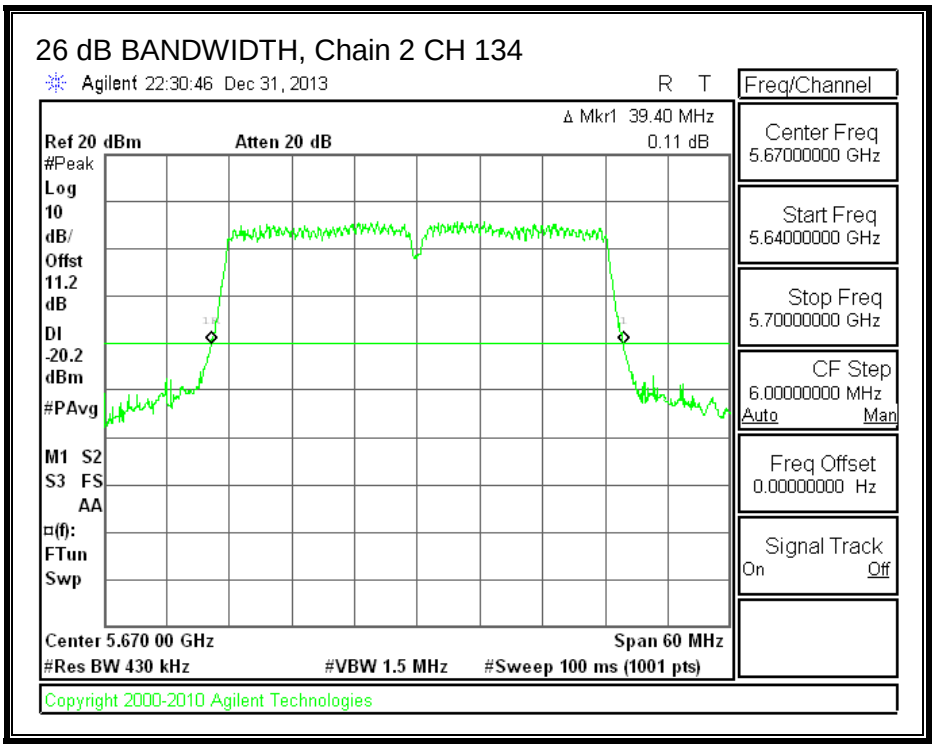




26 dB BANDWIDTH, Chain 2







9.32.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

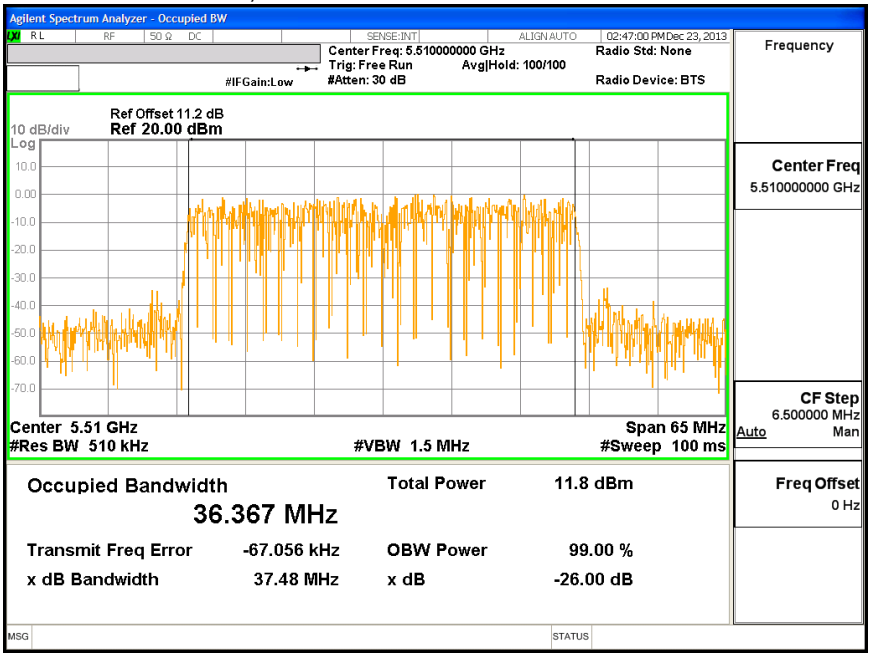
RESULTS

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
102	5510	36.367	36.353	36.389
110	5550	36.194	36.170	36.173
134	5670	36.131	36.272	36.116

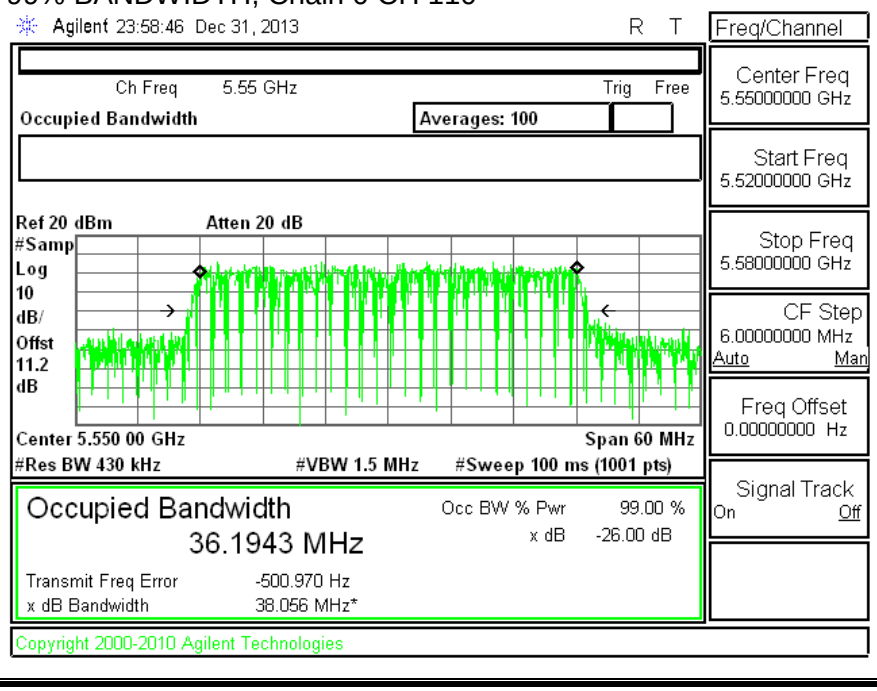
99% BANDWIDTH

99% BANDWIDTH, Chain 0

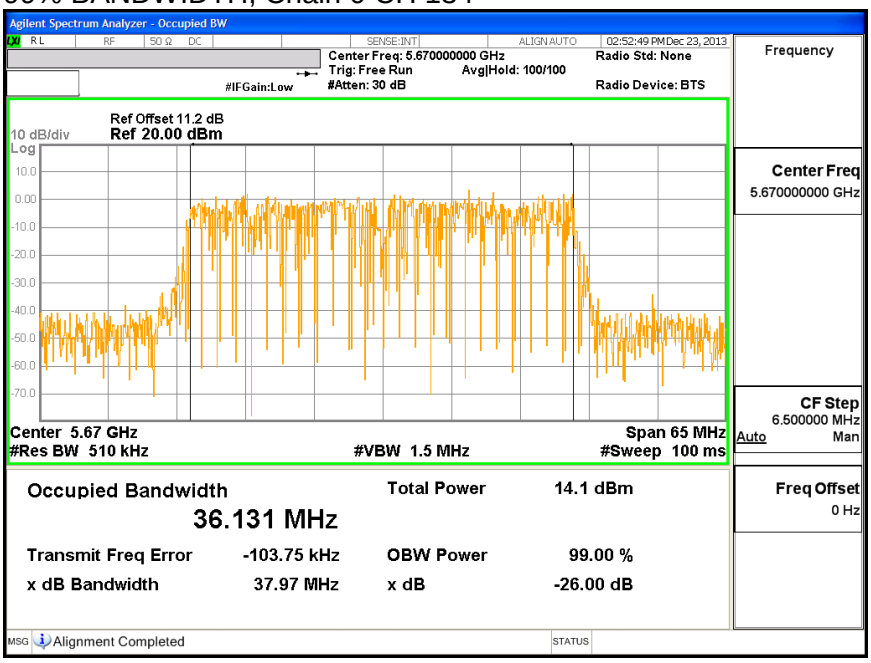
99% BANDWIDTH, Chain 0 CH 102



99% BANDWIDTH, Chain 0 CH 110

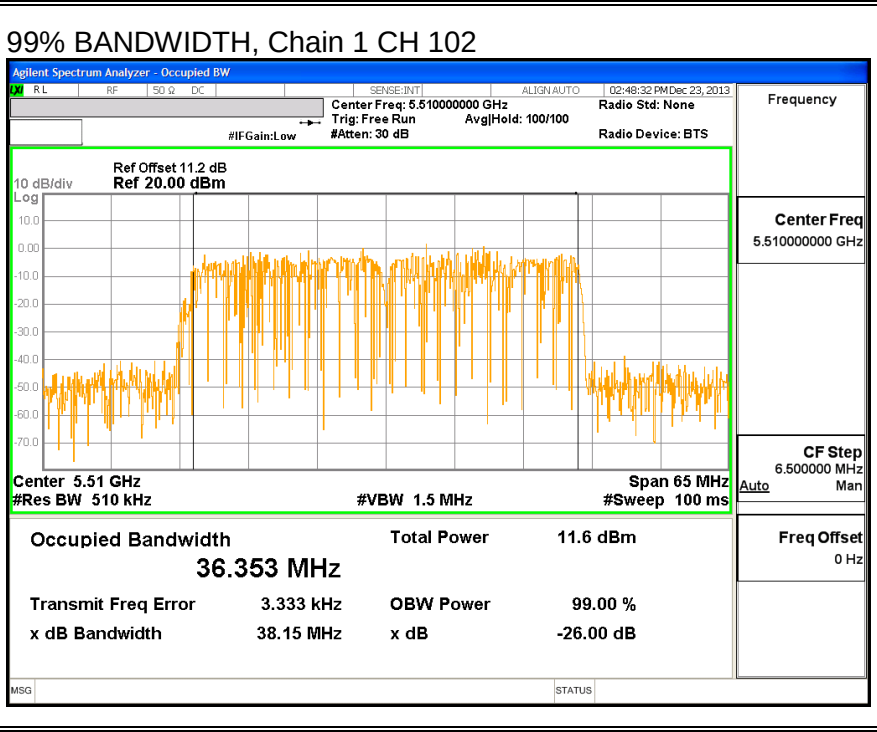


99% BANDWIDTH, Chain 0 CH 134

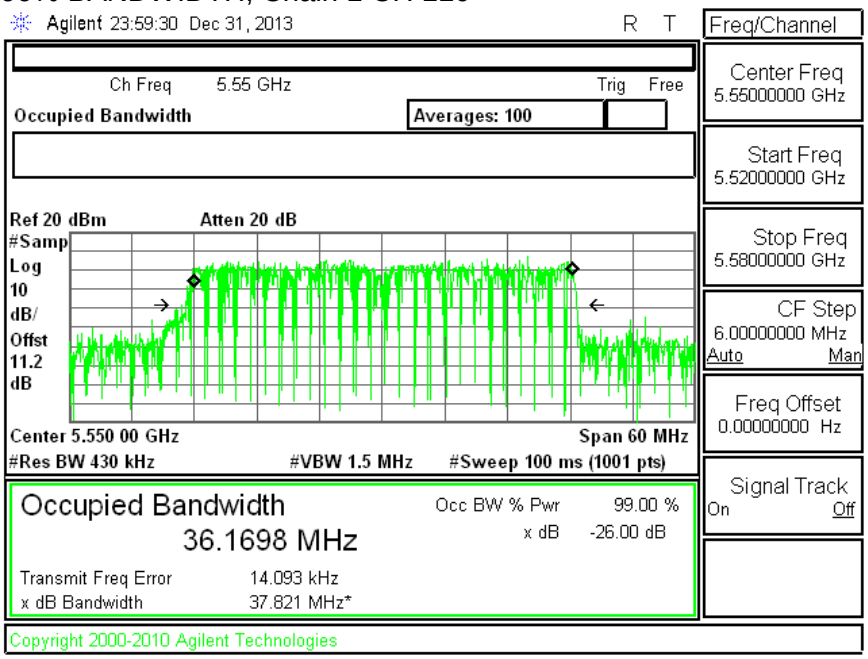


99% BANDWIDTH, Chain 1

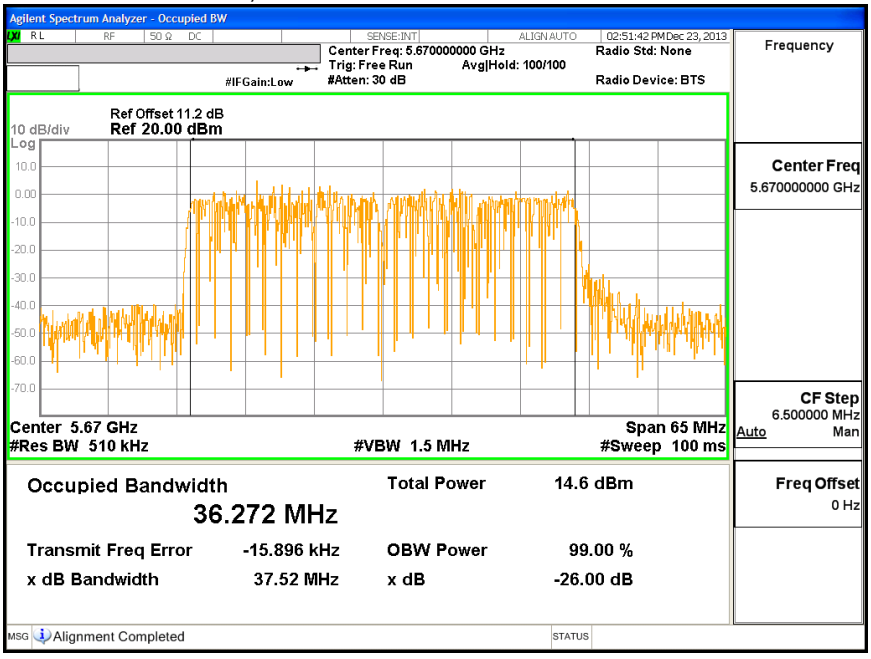
99% BANDWIDTH, Chain 1 CH 102



99% BANDWIDTH, Chain 1 CH 110

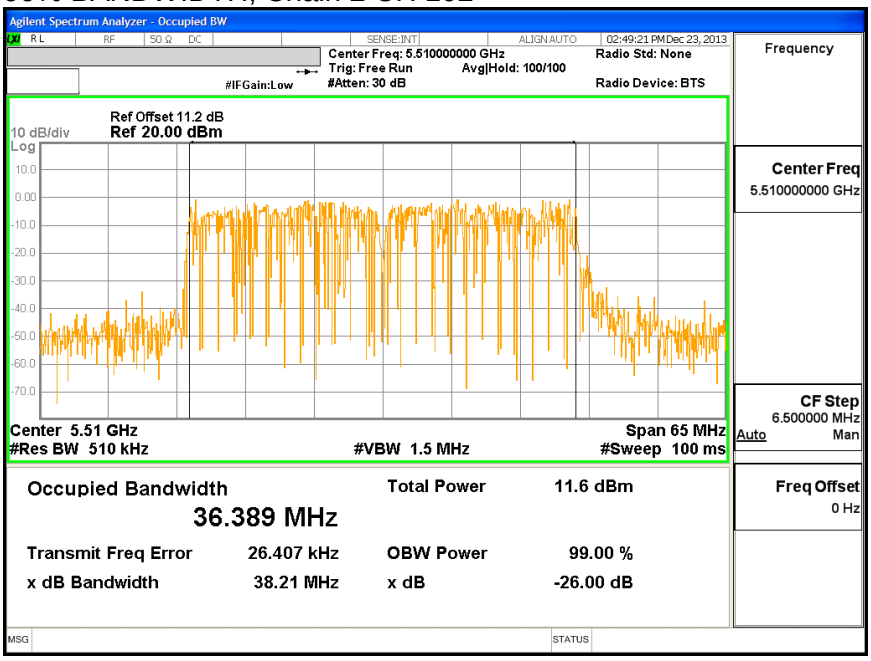


99% BANDWIDTH, Chain 1 CH 134

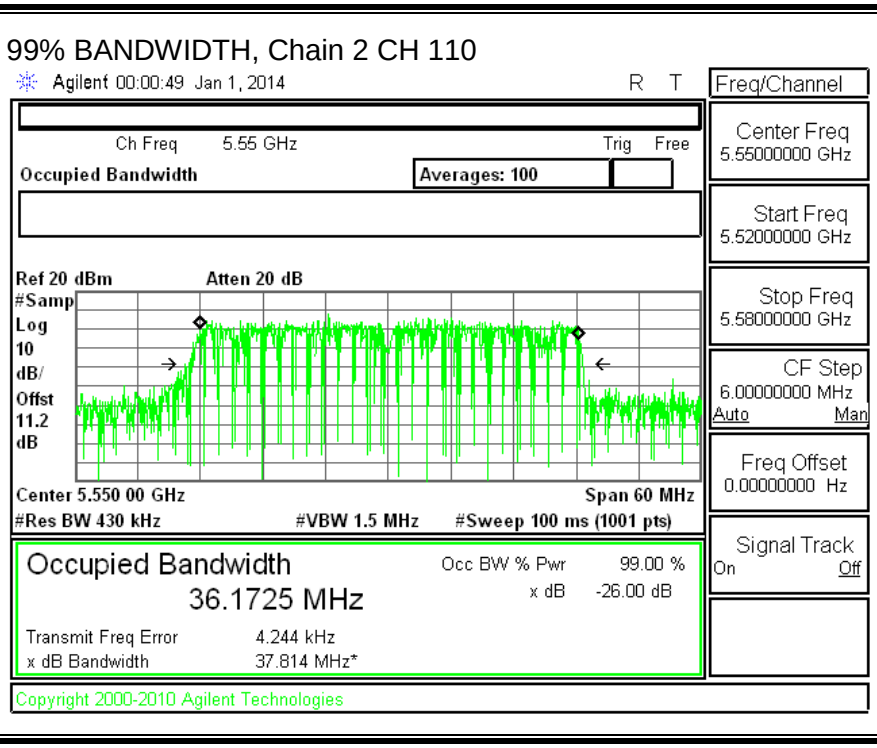


99% BANDWIDTH, Chain 2

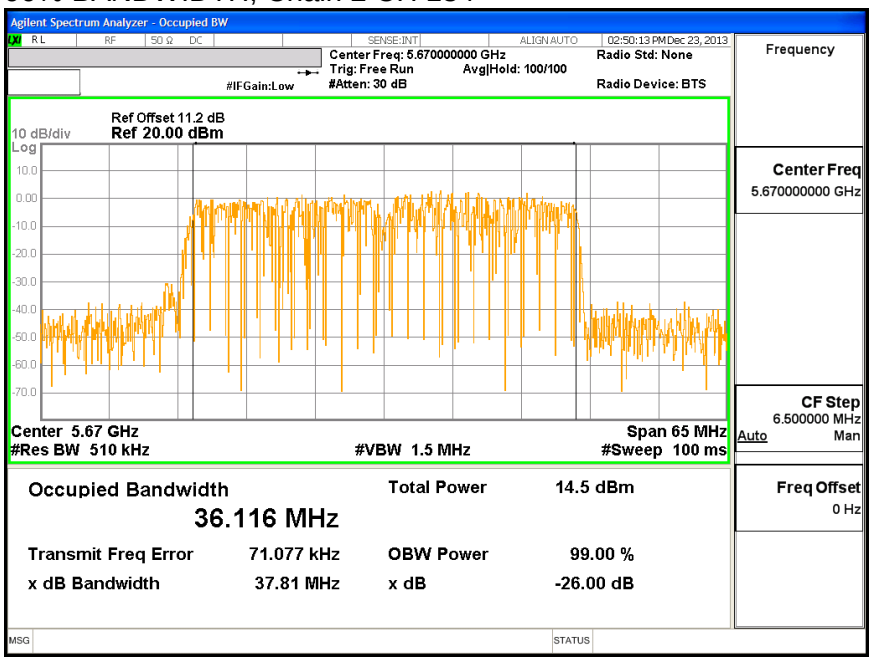
99% BANDWIDTH, Chain 2 CH 102



99% BANDWIDTH, Chain 2 CH 110



99% BANDWIDTH, Chain 2 CH 134



9.32.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11.21 dB (including 10 dB pad and 1.21 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Average Power Results

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Chain 2 Power (dBm)	Total Power (dBm)
102	5510	11.70	11.72	12.39	16.72
110	5550	17.68	17.74	17.95	22.56
134	5670	13.32	13.38	13.76	18.26

9.32.4. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.5–5.7 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 uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain.

Antenna Gain (dBi)
2.82

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
102	5510	39.40	36.3530	2.82	2.82
110	5550	39.80	36.3640	2.82	2.82
134	5670	39.34	36.1160	2.82	2.82

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
102	5510	24.00	24.00	30.00	24.00	11.00	11.00	11.00
110	5550	24.00	24.00	30.00	24.00	11.00	11.00	11.00
134	5670	24.00	24.00	30.00	24.00	11.00	11.00	11.00

Duty Cycle CF (dB)	0.34	Included in Calculations of Corr'd Power & PPSD

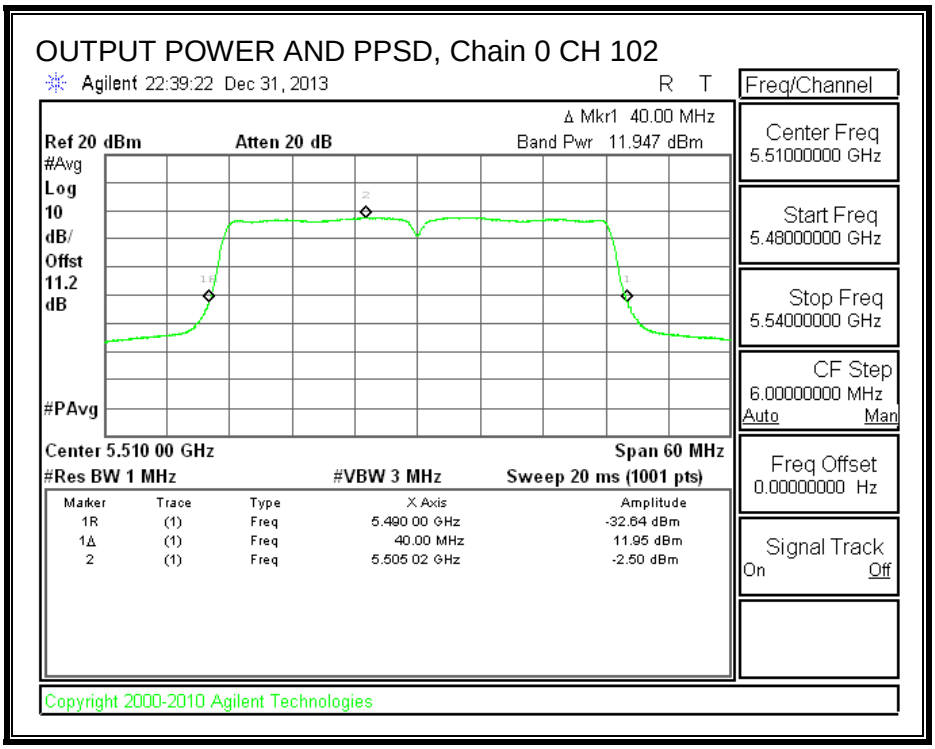
Output Power Results

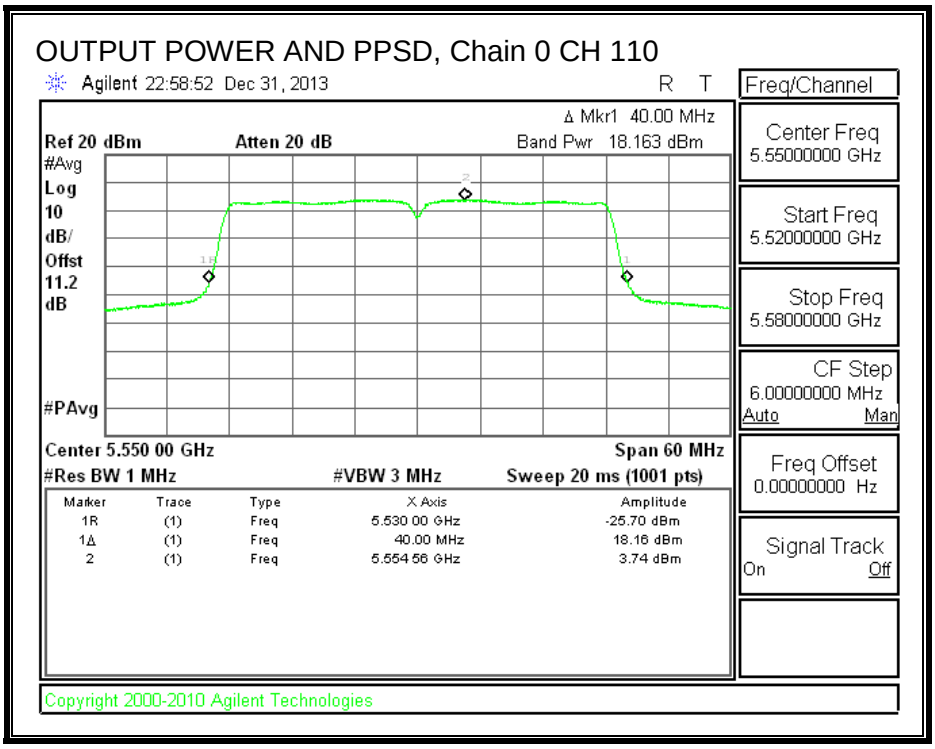
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
102	5510	11.95	12.38	12.71	17.47	24.00	-6.53
110	5550	18.16	18.43	18.36	23.43	24.00	-0.57
134	5670	13.16	13.76	13.93	18.74	24.00	-5.26

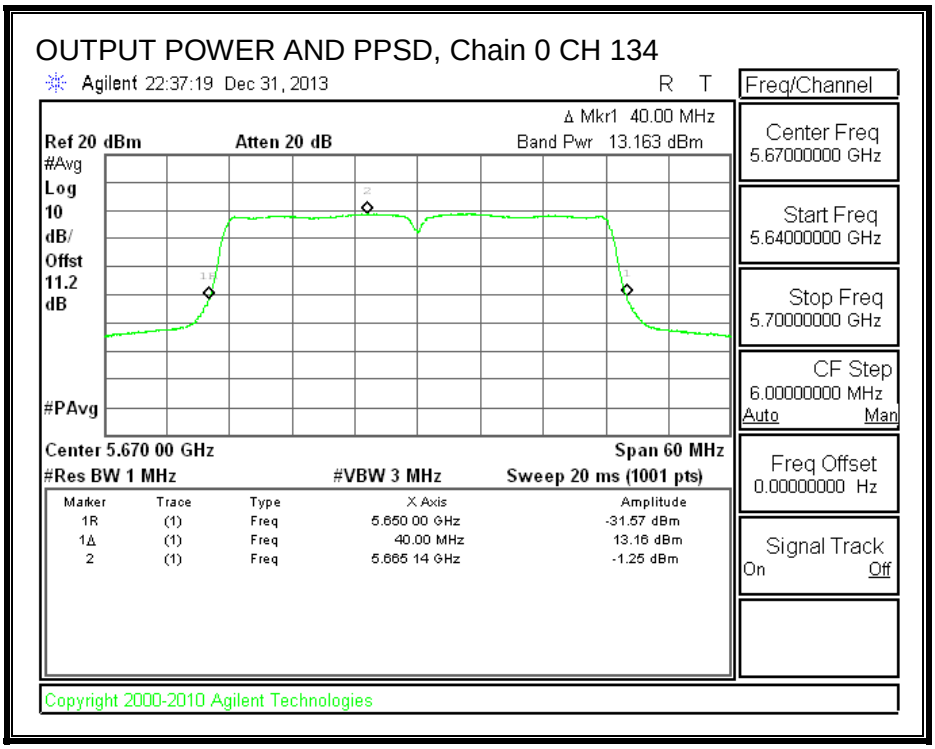
PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Chain 2 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
102	5510	-2.50	-1.89	-1.57	3.14	11.00	-7.86
110	5550	3.74	4.10	4.02	9.07	11.00	-1.93
134	5670	-1.25	-0.59	-0.45	4.36	11.00	-6.64

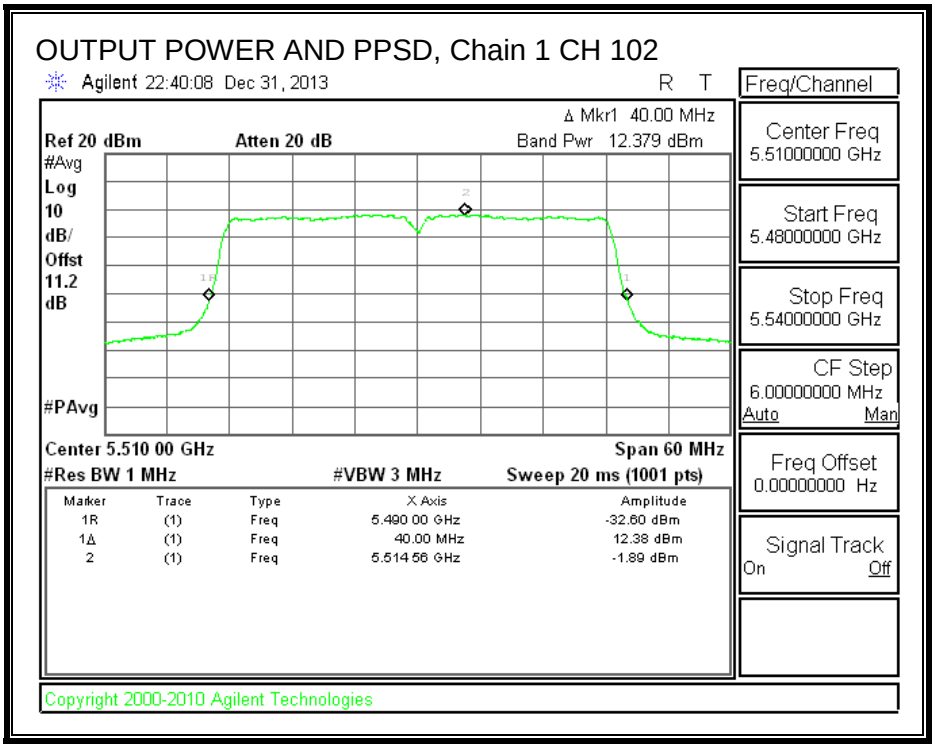
OUTPUT POWER AND PPSD, Chain 0

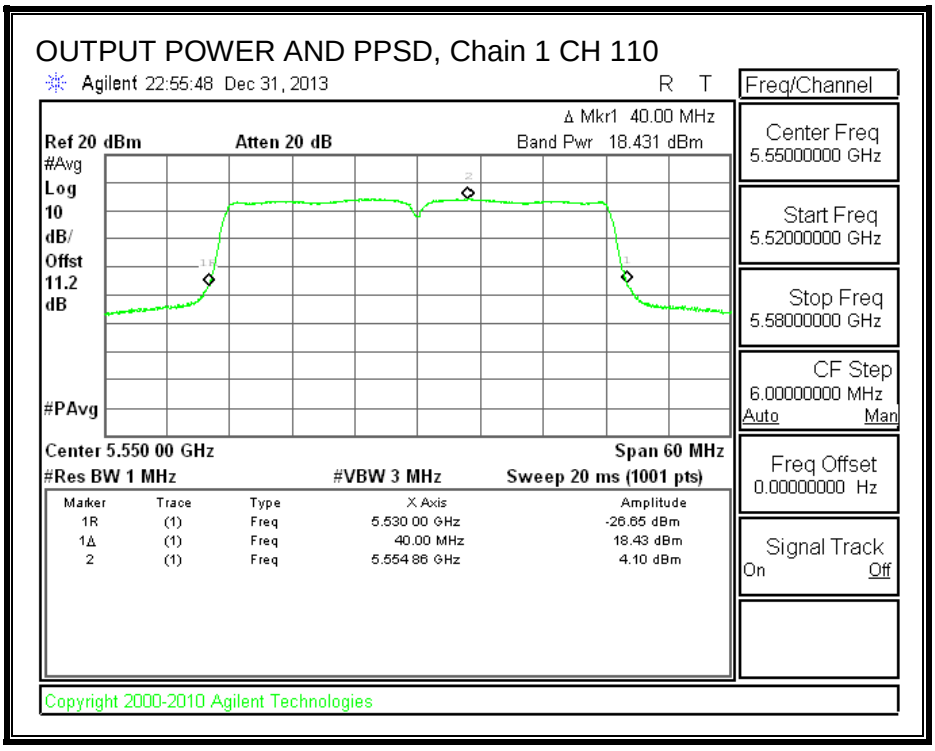


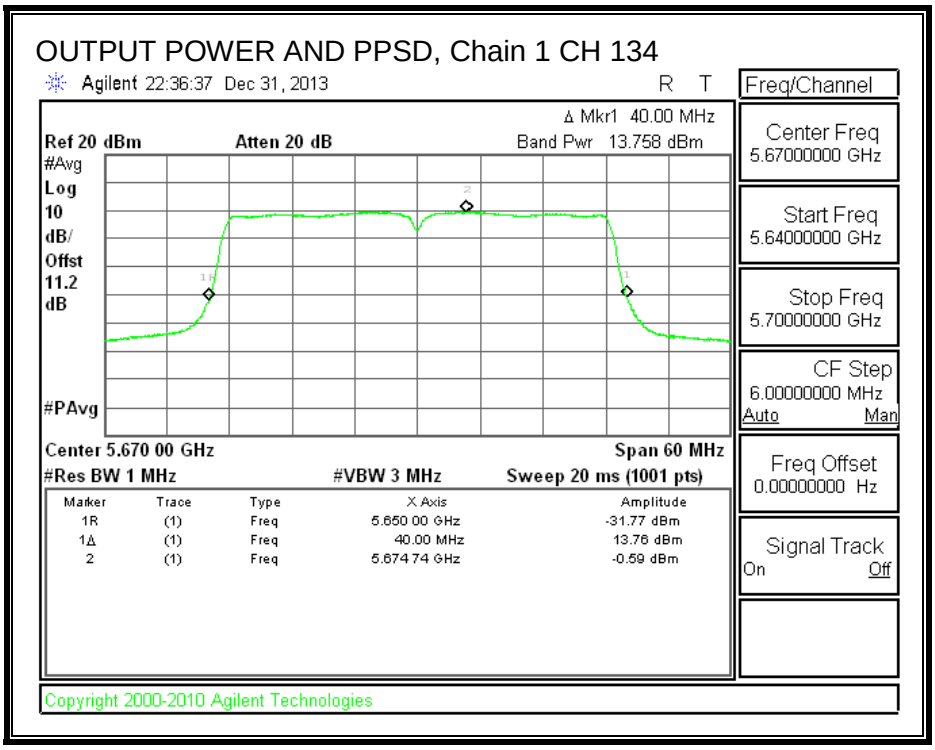




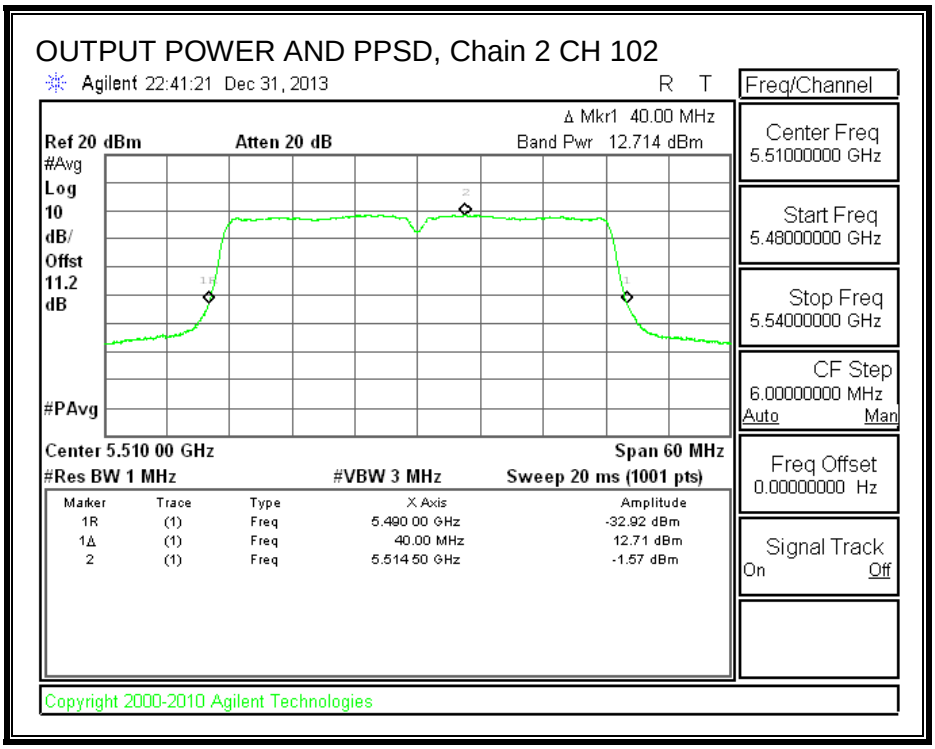
OUTPUT POWER AND PPSD, Chain 1

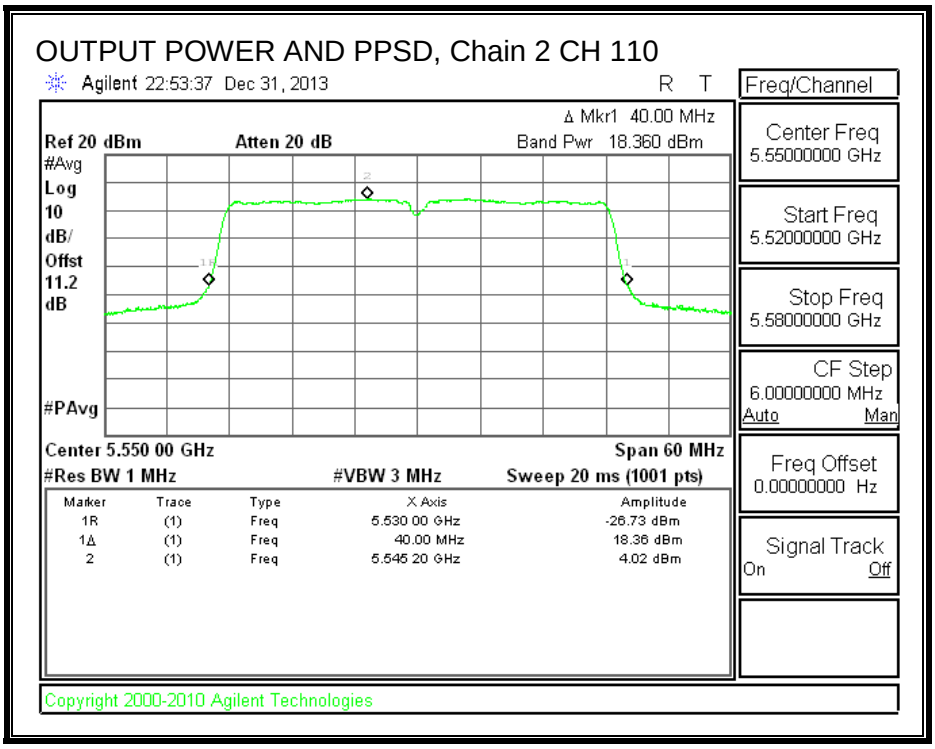




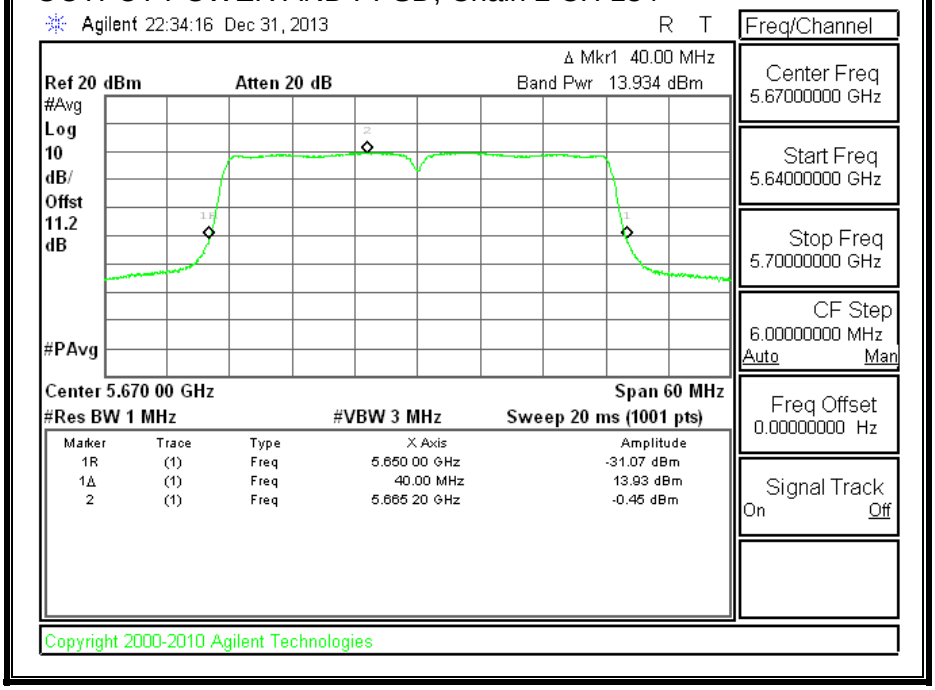


OUTPUT POWER AND PPSD, Chain 2





OUTPUT POWER AND PPSD, Chain 2 CH 134



9.32.5. 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)
110	5550	9.29	3.74	0.34	5.21	13	-7.79

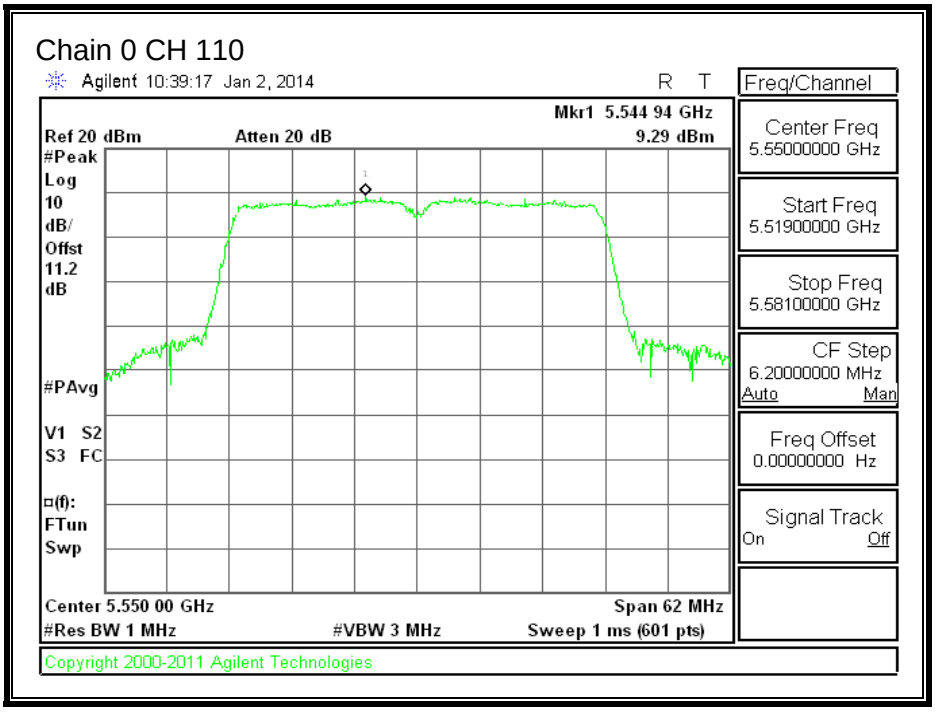
Chain 1

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
110	5550	9.62	4.10	0.34	5.18	13	-7.82

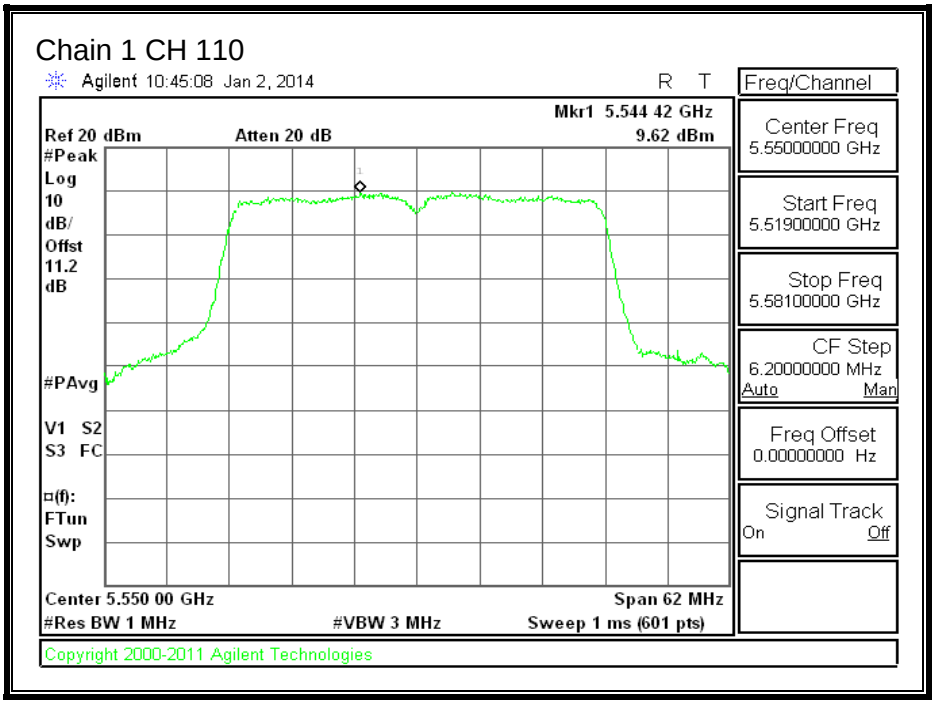
Chain 2

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
110	5550	10.27	4.02	0.34	5.91	13	-7.09

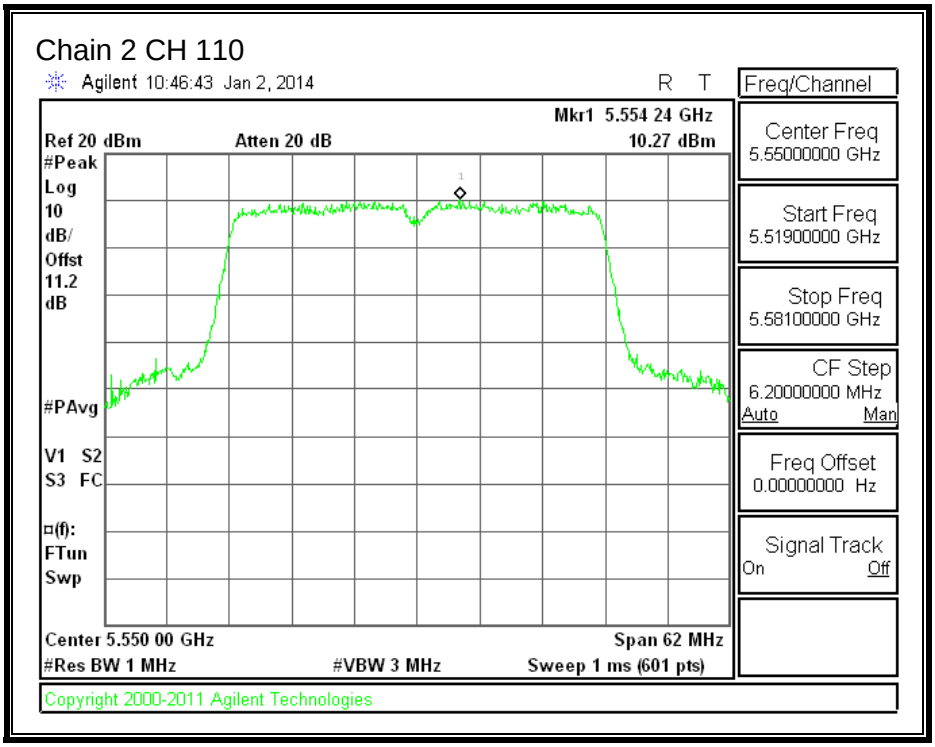
PEAK EXCURSION, Chain 0



PEAK EXCURSION, Chain 1



PEAK EXCURSION, Chain 2



9.33. 802.11ac 40MHz 3TX SDM MODE, CHANNEL 142, 5.6 GHz BAND

9.33.1. 26 dB BANDWIDTH- UNII

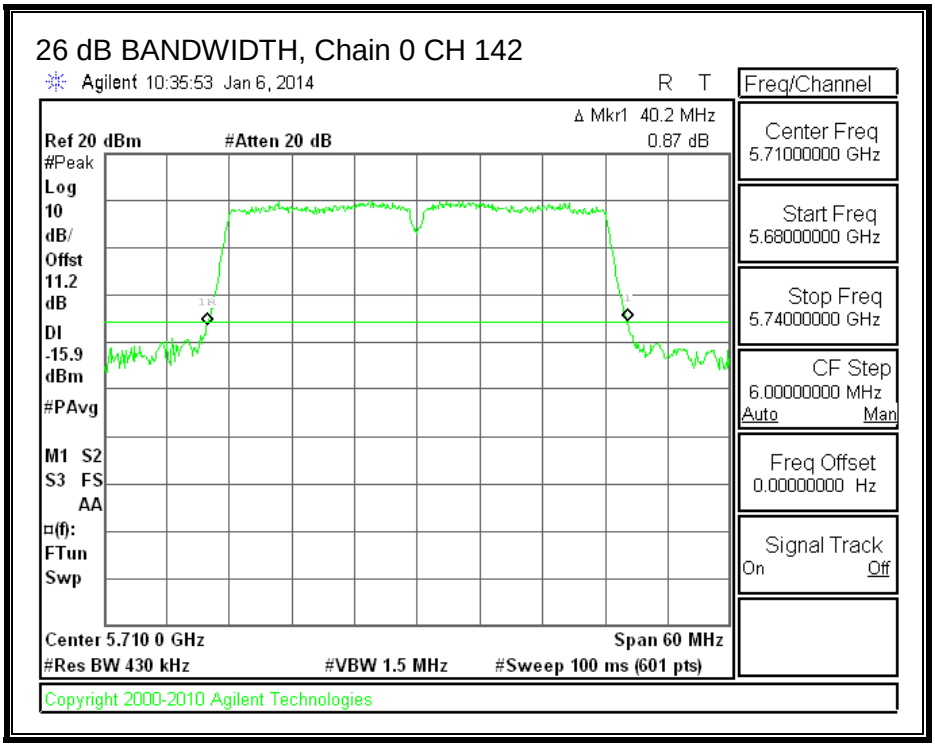
LIMITS

None; for reporting purposes only.

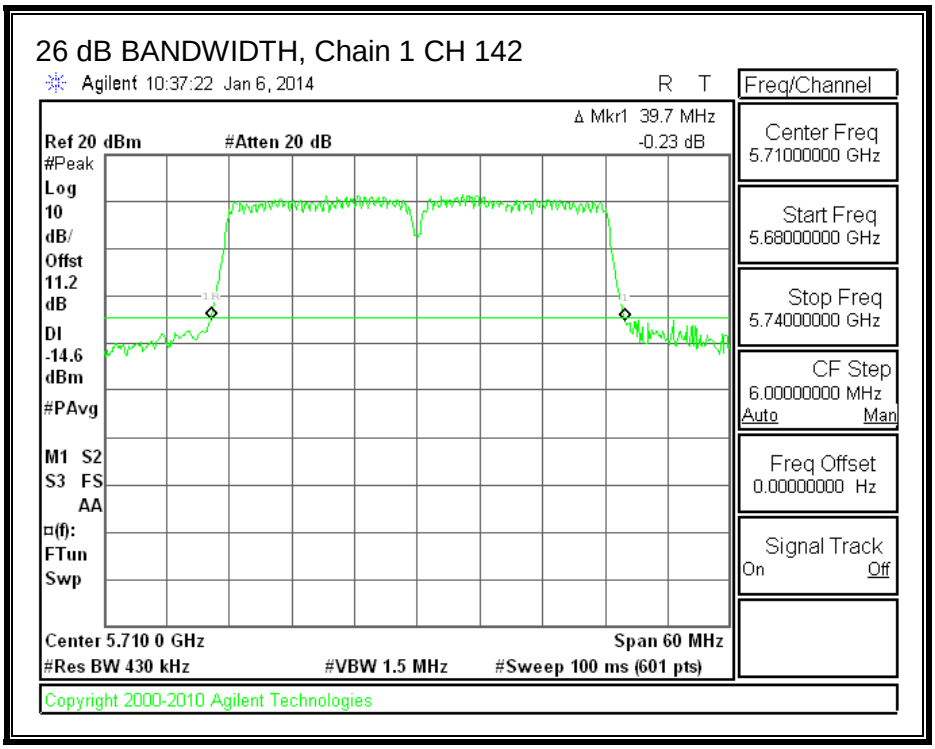
RESULTS

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)	26 dB BW Chain 2 (MHz)
142	5710	40.20	39.70	43.50

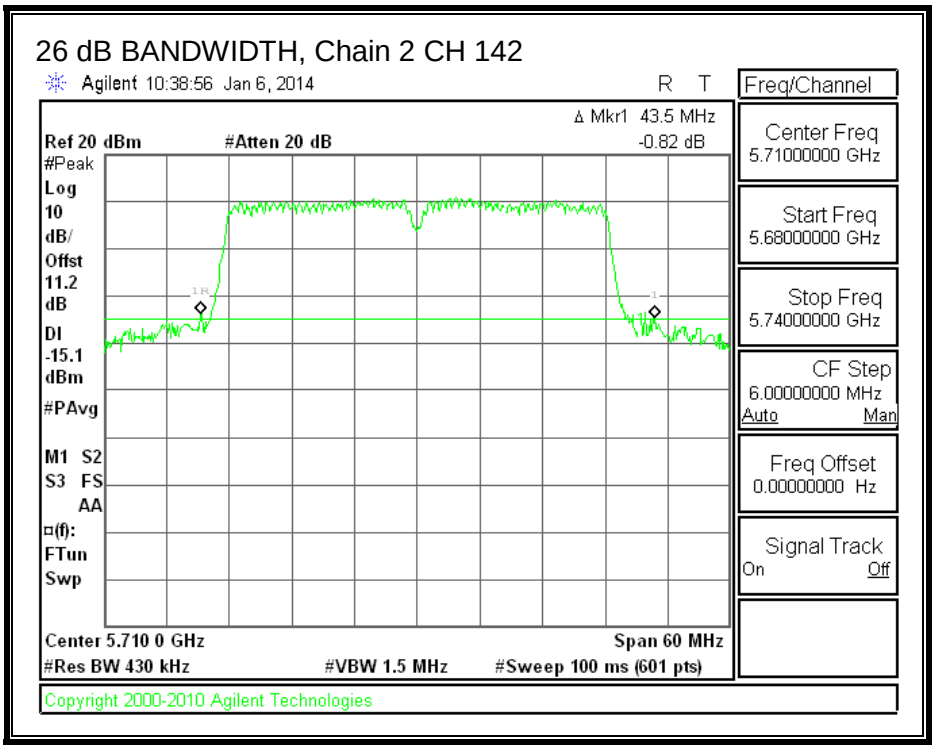
26 dB BANDWIDTH, Chain 0



26 dB BANDWIDTH, Chain 1



26 dB BANDWIDTH, Chain 2



9.33.2.99% BANDWIDTH

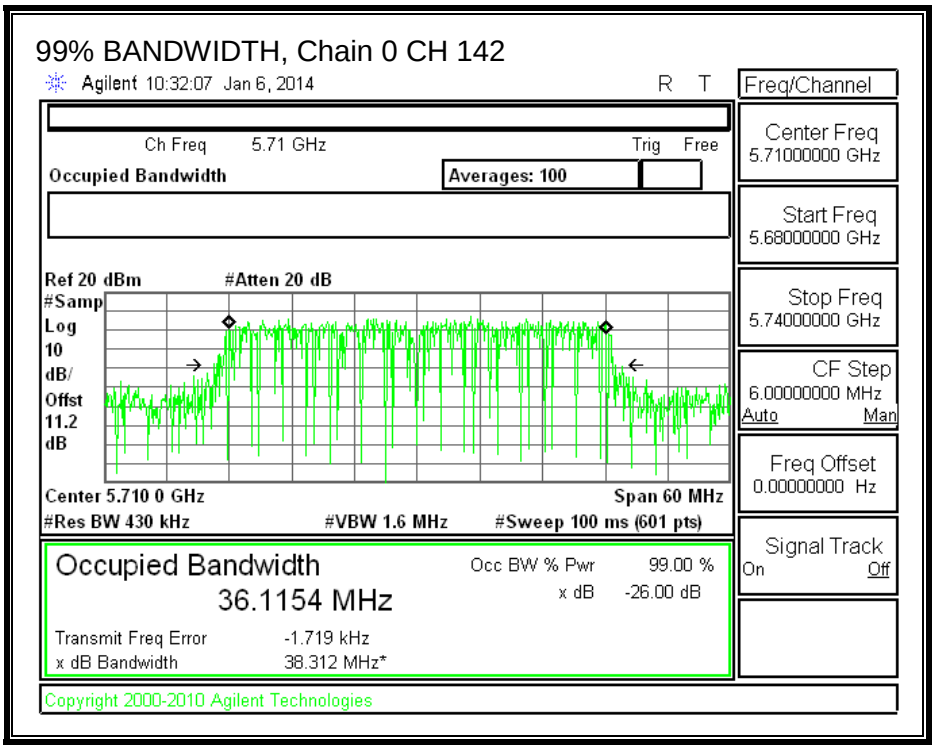
LIMITS

None; for reporting purposes only.

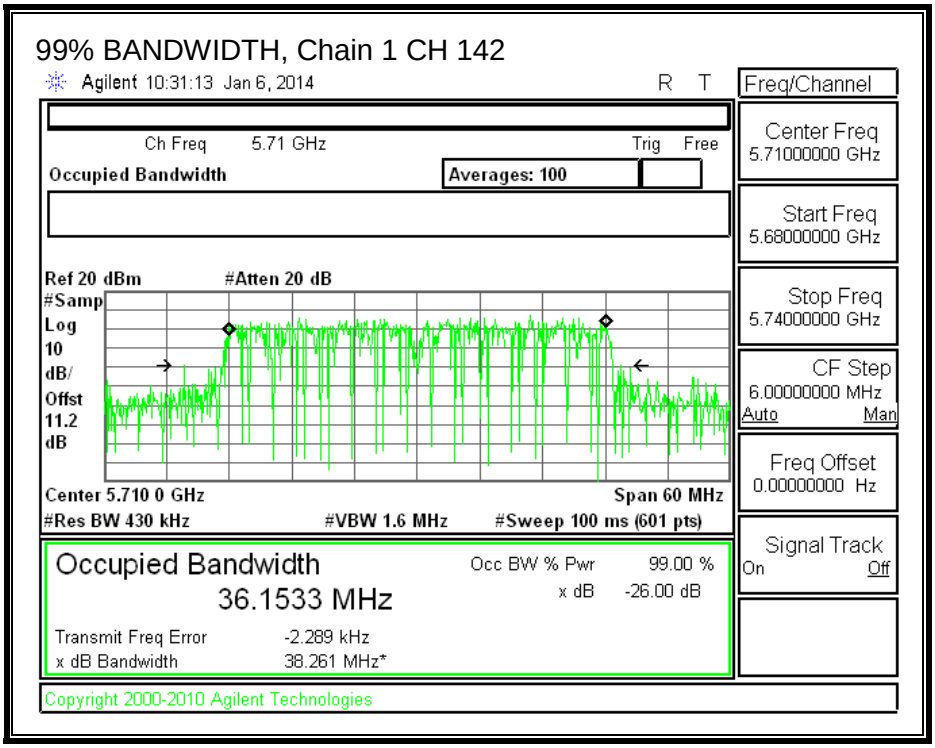
RESULTS

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
142	5710	36.1154	36.1533	36.1471

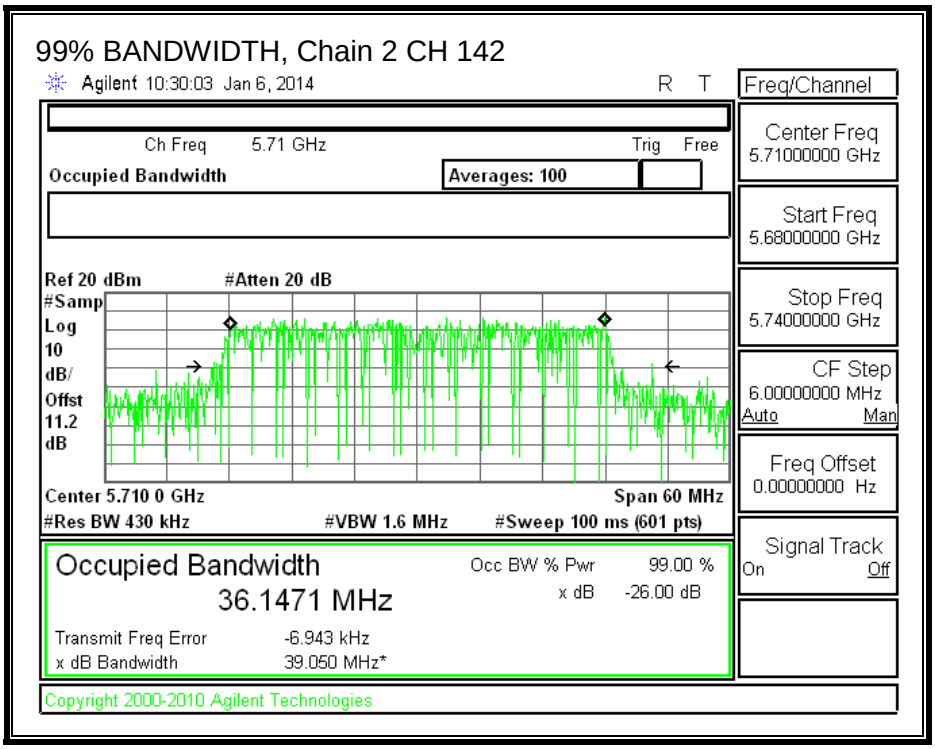
99% BANDWIDTH, Chain 0



99% BANDWIDTH, Chain 1



99% BANDWIDTH, Chain 2



9.33.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.5–5.7 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 uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain.

Antenna Gain (dBi)
2.82

RESULTS

Limits (FCC), portion in UNII 2 ext band

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
142	5710	34.850	33.0577	2.82	2.82

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
142	5710	24.00	24.00	30.00	24.00	11.00	11.00	11.00

Duty Cycle CF (dB)	0.34	Included in Calculations of Corr'd Power & PPSD

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	18.98	18.86	18.81	23.9	24.00	-0.10

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Chain 2 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
142	5710	5.53	5.73	5.35	10.65	11.00	-0.35

Limits (FCC), portion in 5.8 GHz DTS band

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
142	5710	4.850	3.0577	2.82	2.82

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
142	5710	17.86	15.85	21.85	15.85	11.00	11.00	11.00

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

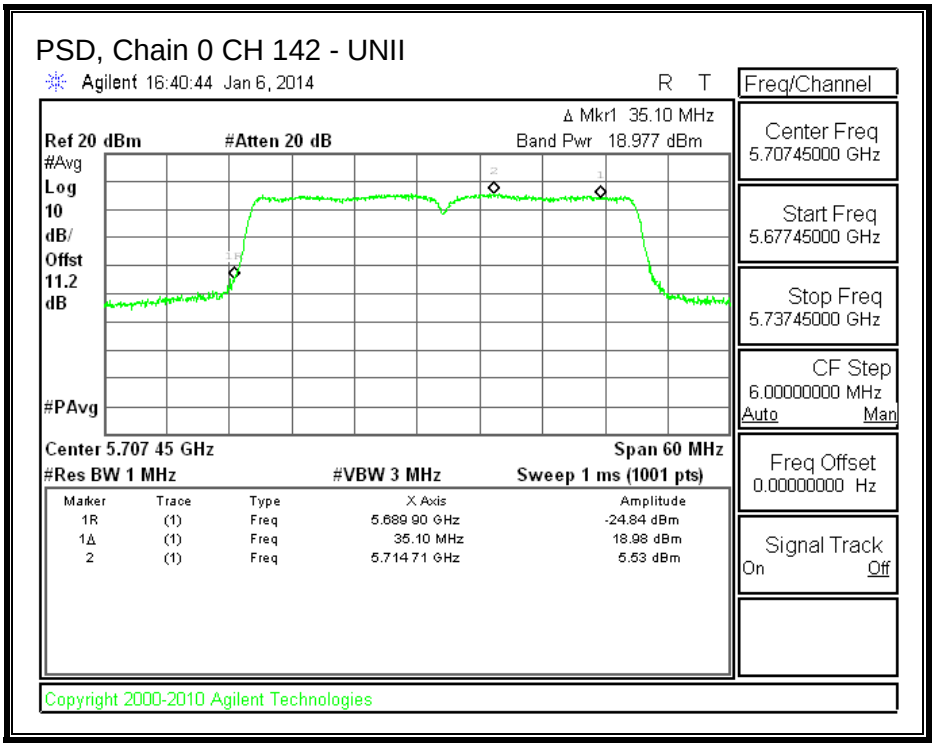
Output Power Results

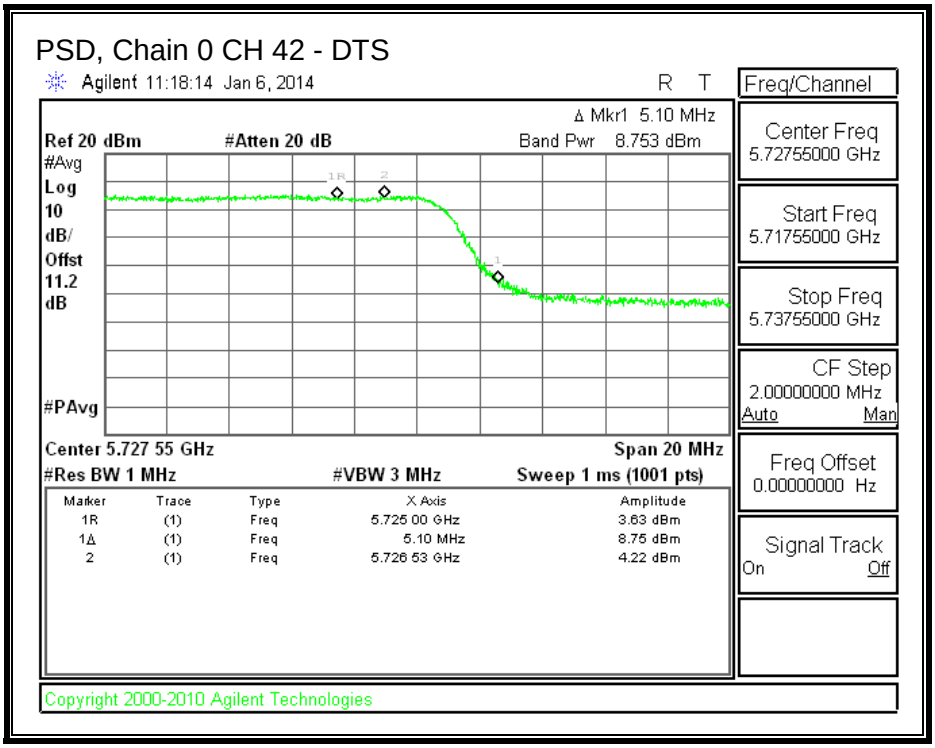
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	8.75	8.41	8.50	13.55	15.85	-2.31

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Chain 2 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
142	5710	4.220	4.07	3.62	8.97	11.00	-2.03

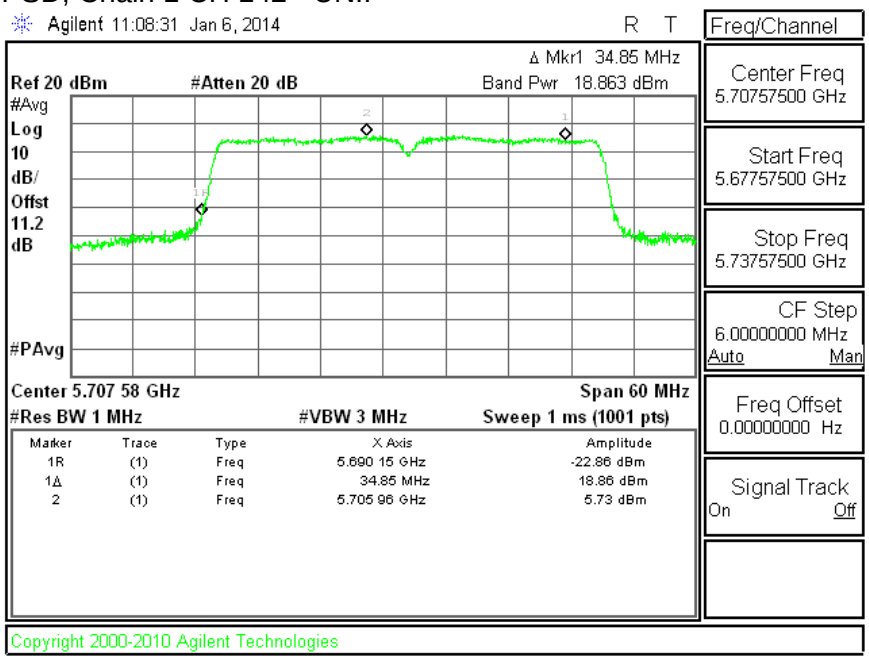
OUTPUT POWER & PPSD, Chain 0



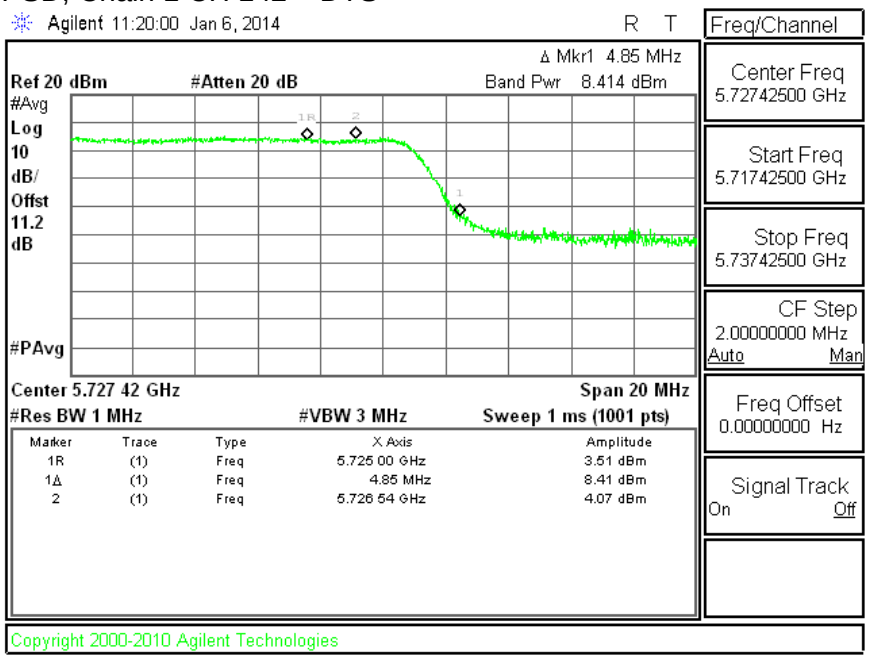


OUTPUT POWER & PPSD, Chain 1

PSD, Chain 1 CH 142 - UNII

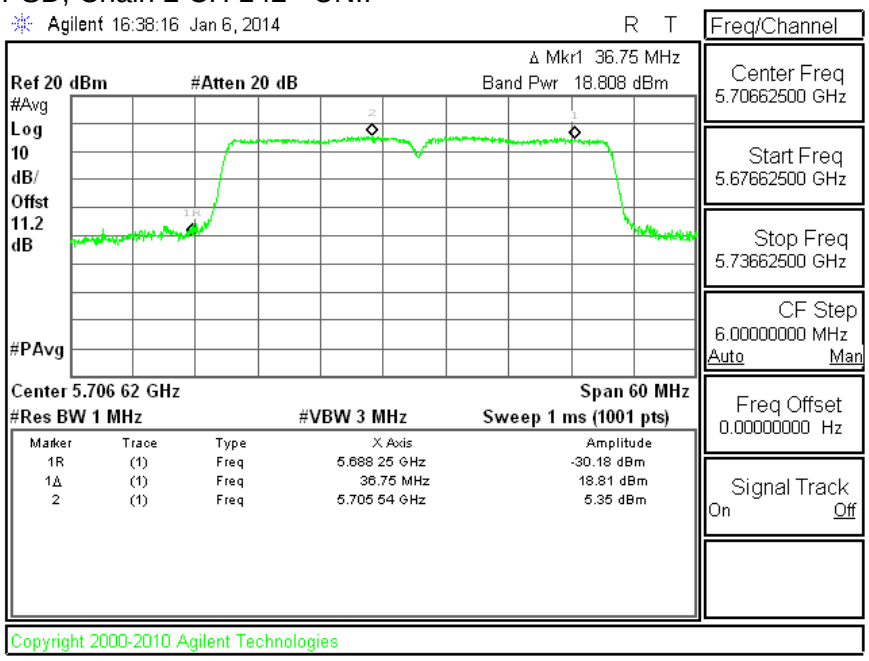


PSD, Chain 1 CH 142 – DTS

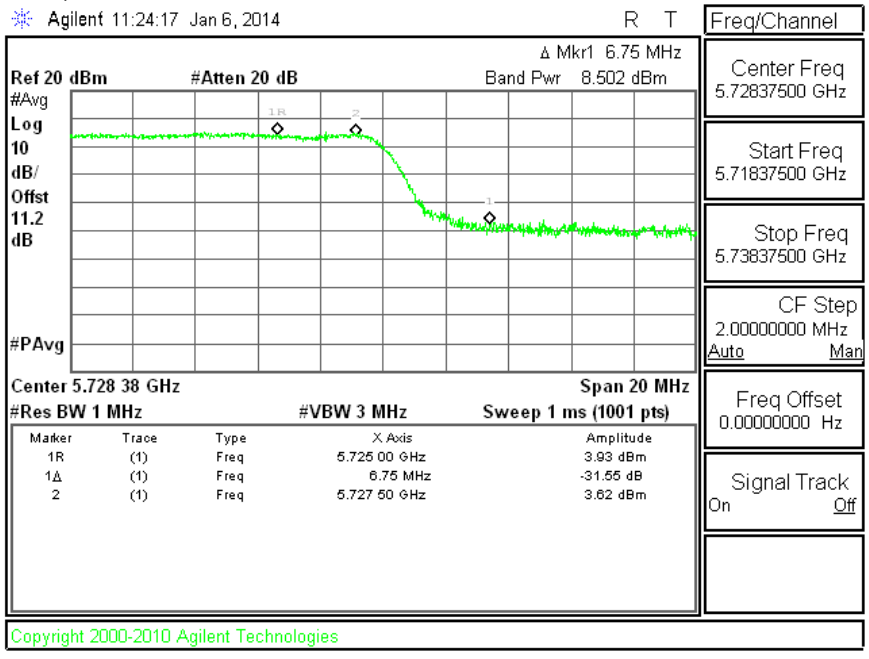


OUTPUT POWER & PPSD, Chain 2

PSD, Chain 2 CH 142 - UNII



PSD, Chain 2 CH 142 – DTS



9.34. 802.11ac 80MHz 1TX SISO MODE IN THE 5.6 GHz BAND

9.34.1. 26 dB BANDWIDTH

LIMITS

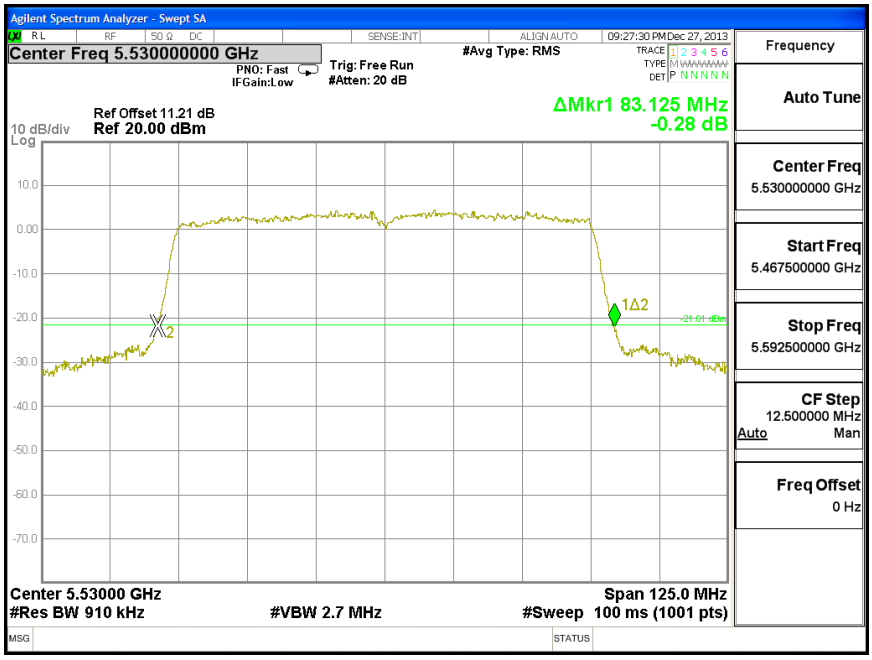
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
106	5530	83.125

26 dB BANDWIDTH

BANDWIDTH CH 106



9.34.2. 99% BANDWIDTH

LIMITS

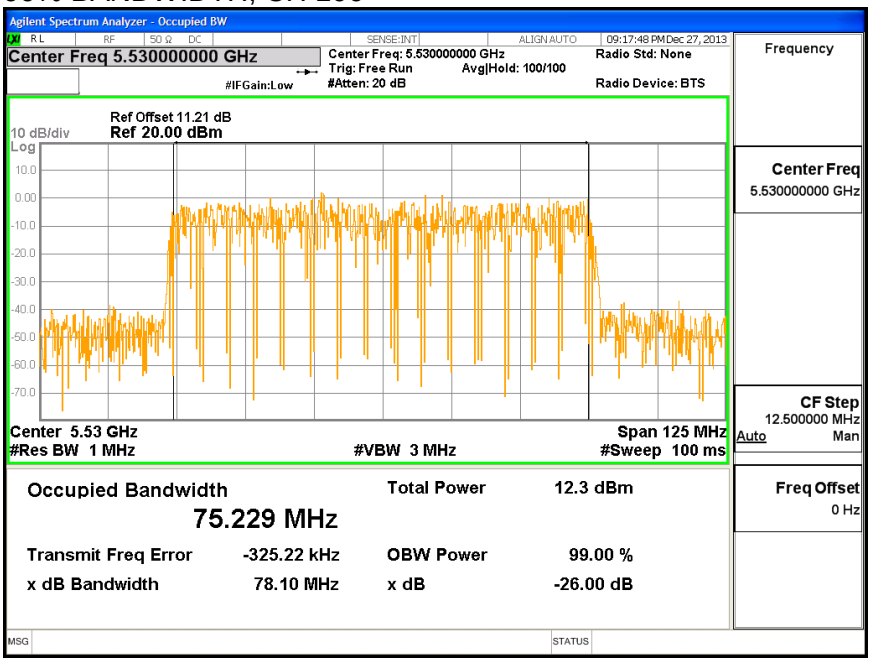
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
106	5530	75.229

99% BANDWIDTH

99% BANDWIDTH, CH 106



9.34.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11.26 dB (including 10 dB pad and 1.26 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
106	5530	13.54

9.34.4. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.5–5.7 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

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

Antenna Gain (dBi)
2.82

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
106	5530	83.125	75.2	2.82

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC EIRP Limit (dBm)	Max IC Power (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC eirp PSD Limit (dBm)	PPSD Limit (dBm)
106	5530	24.00	24.00	30.00	24.00	11.00	11.00	11.00

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

Output Power Results

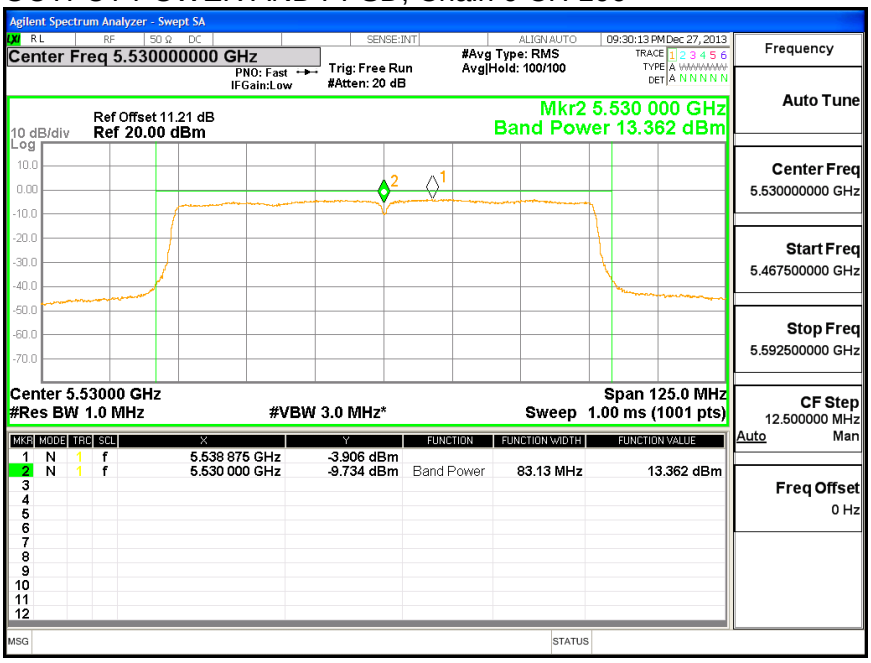
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
106	5530	13.362	13.63	24.00	-10.37

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
106	5530	-3.91	-3.64	11.00	-14.64

OUTPUT POWER AND PPSD, Chain 0

OUTPUT POWER AND PPSD, Chain 0 CH 106



9.34.5. PEAK EXCURSION

LIMITS

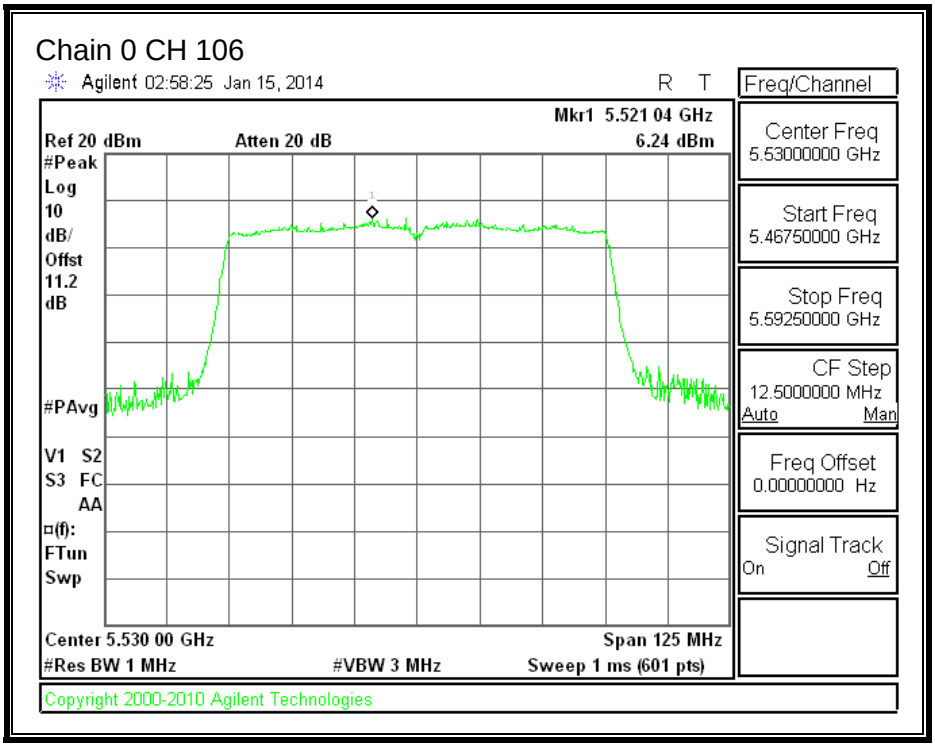
FCC §15.407 (a) (6)

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)
106	5530	6.24	-3.91	0.27	9.88	13	-3.12

PEAK EXCURSION, Chain 0



9.35. 802.11ac 80MHz 1TX SISO MODE, CHANNEL 138, 5.6 GHz BAND

9.35.1. 26 dB BANDWIDTH

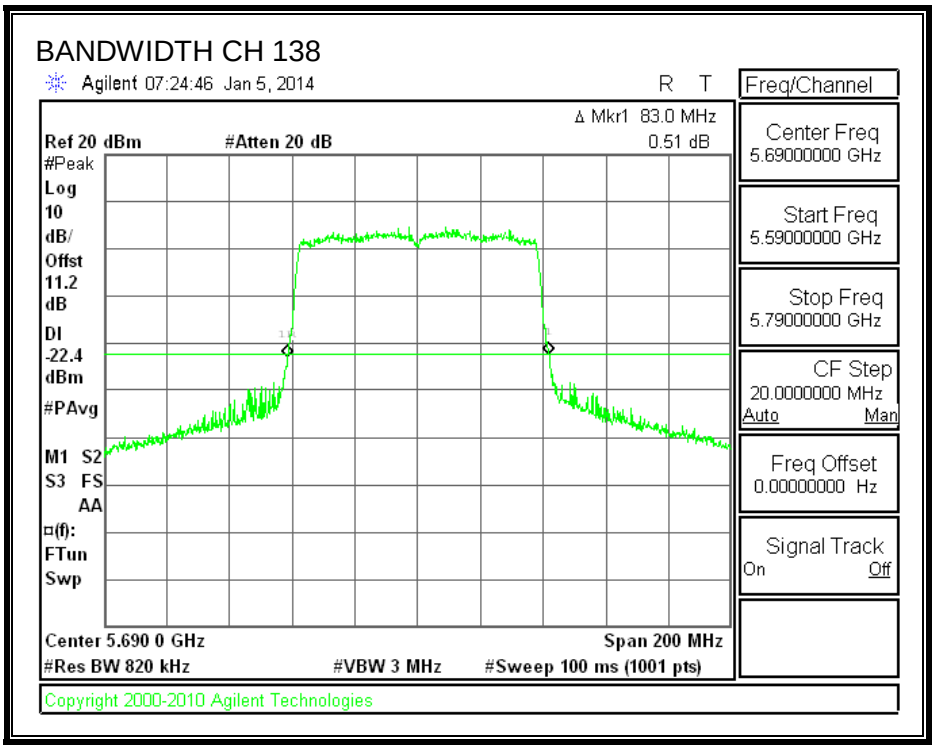
LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
138	5690	83.00

26 dB BANDWIDTH



9.35.2. 99% BANDWIDTH

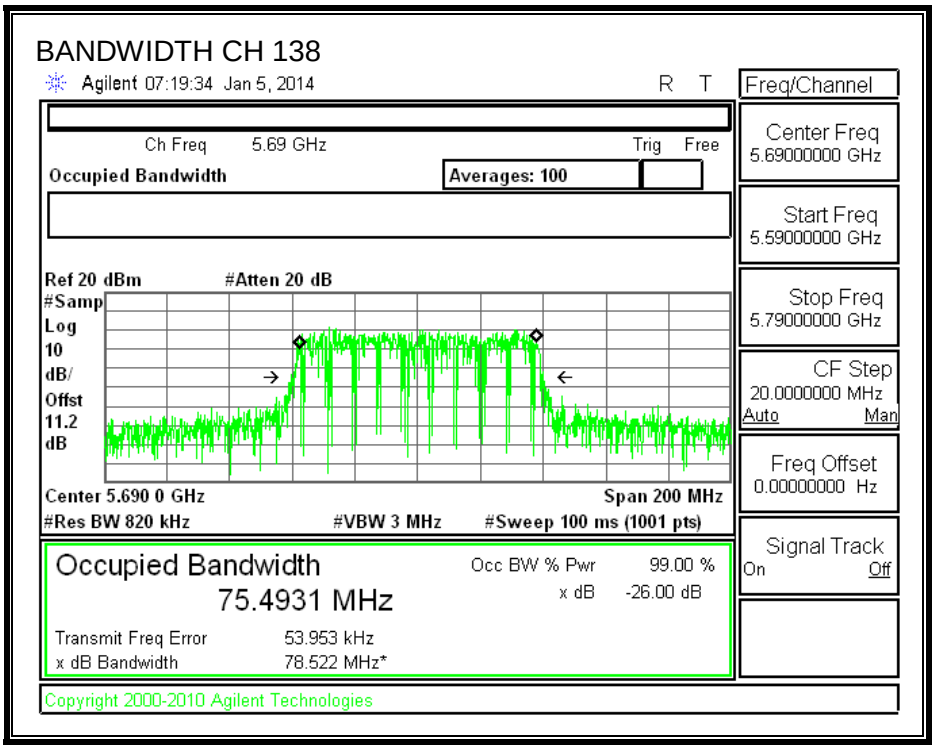
LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
138	5690	75.4931

99% BANDWIDTH



9.35.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.5–5.7 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

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

Antenna Gain (dBi)
2.82

RESULTS

Limits (FCC), portion in UNII 2 ext band

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
138	5690	76.50	72.7196	2.82

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PSD Limit (dBm)	IC PSD Limit (dBm)	PSD Limit (dBm)
138	5690	24.00	24.00	30.00	24.00	11.00	11.00	11.00

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	21.41	21.68	24.00	-2.32

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	3.990	4.26	11.00	-6.74

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

Limits (FCC), portion in 5.8 GHz DTS band

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
138	5690	6.50	2.7196	2.82

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PSD Limit (dBm)	IC PSD Limit (dBm)	PSD Limit (dBm)
138	5690	19.13	15.34	21.34	15.34	11.00	11.00	11.00

Output Power Results

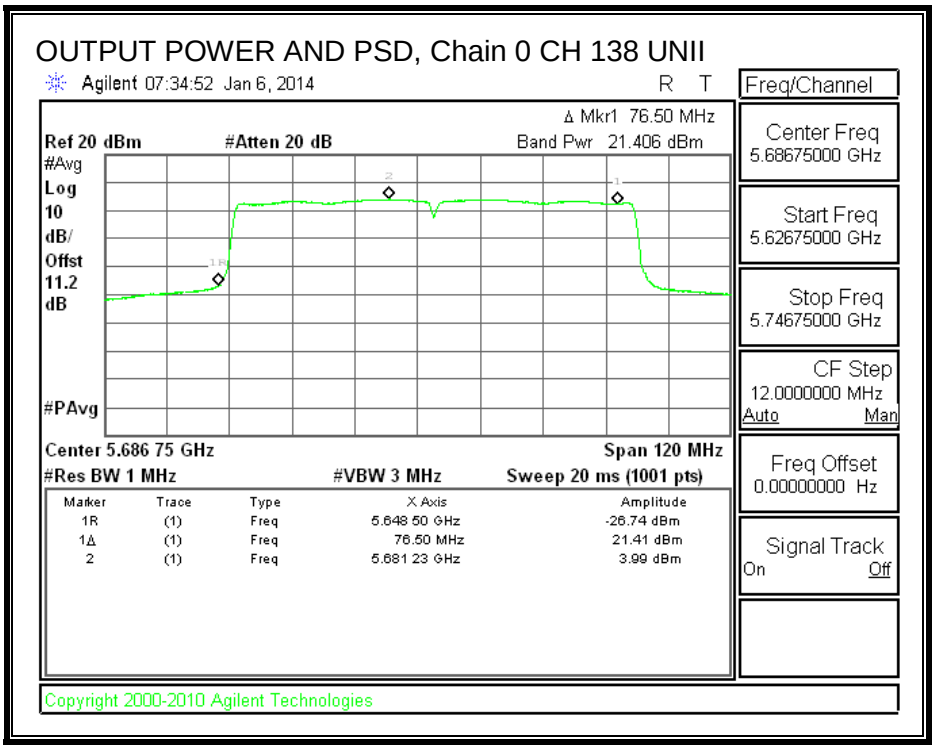
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	7.48	7.75	15.34	-7.59

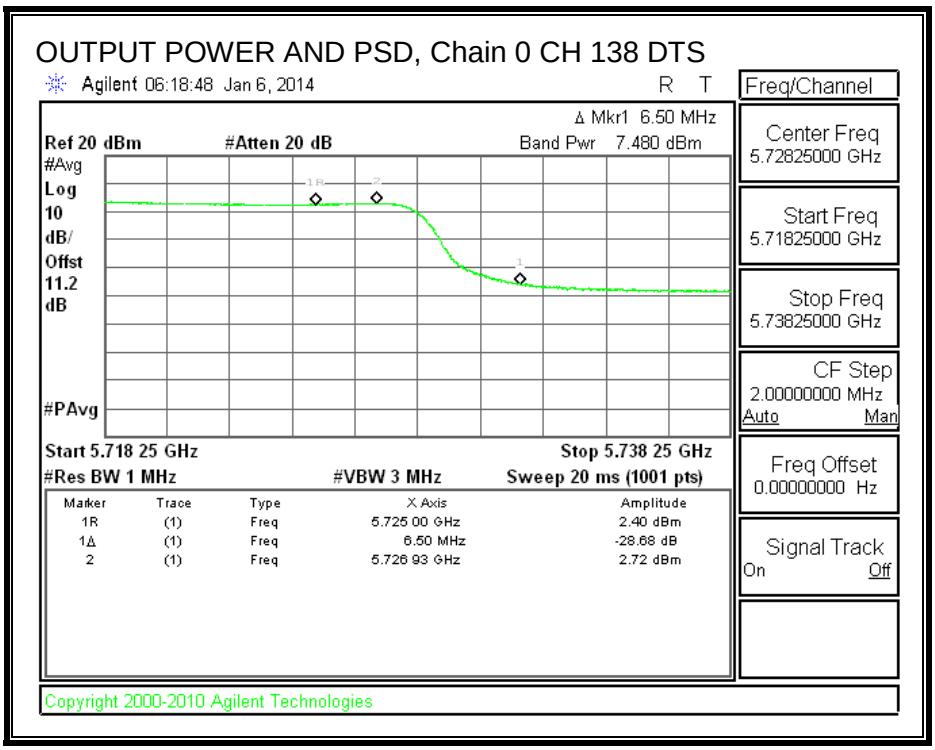
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
138	5690	2.720	2.99	11.00	-8.01

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

OUTPUT POWER AND PSD, Chain 0





9.36. 802.11ac 80MHz 3TX CDD MODE IN THE 5.6 GHz BAND

9.36.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

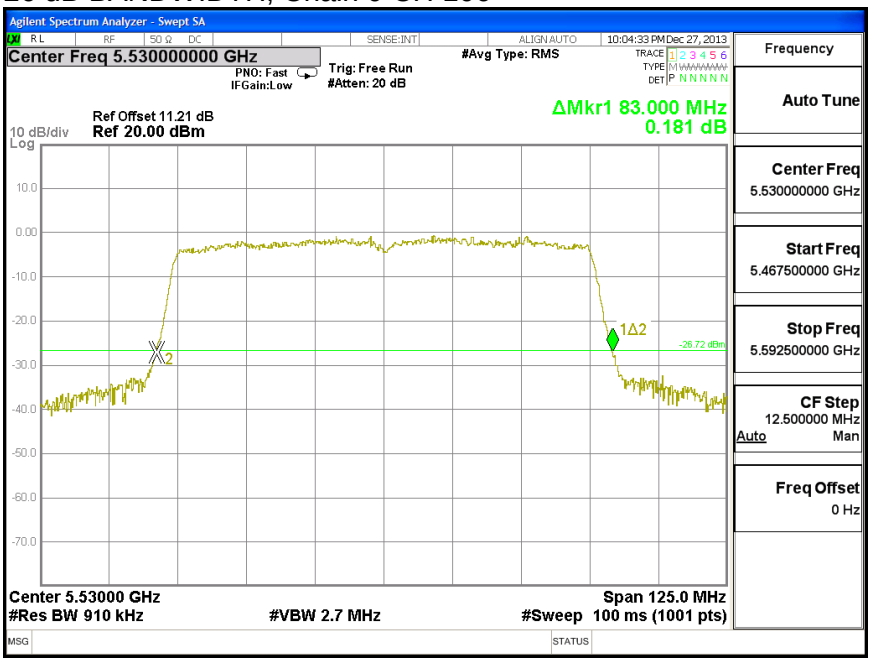
RESULTS

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)	26 dB BW Chain 2 (MHz)
106	5530	83.000	82.250	82.000

26 dB BANDWIDTH

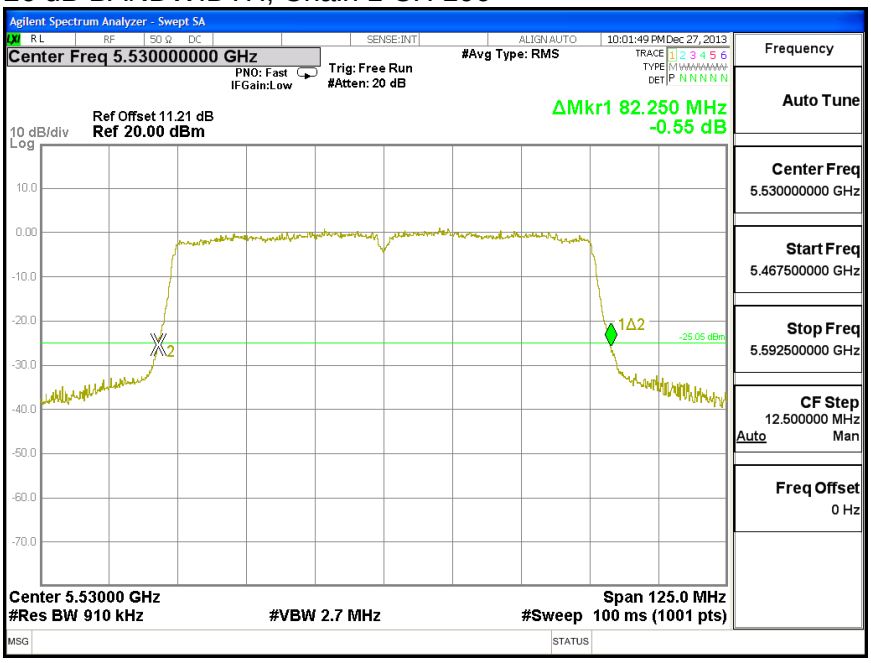
26 dB BANDWIDTH, Chain 0

26 dB BANDWIDTH, Chain 0 CH 106



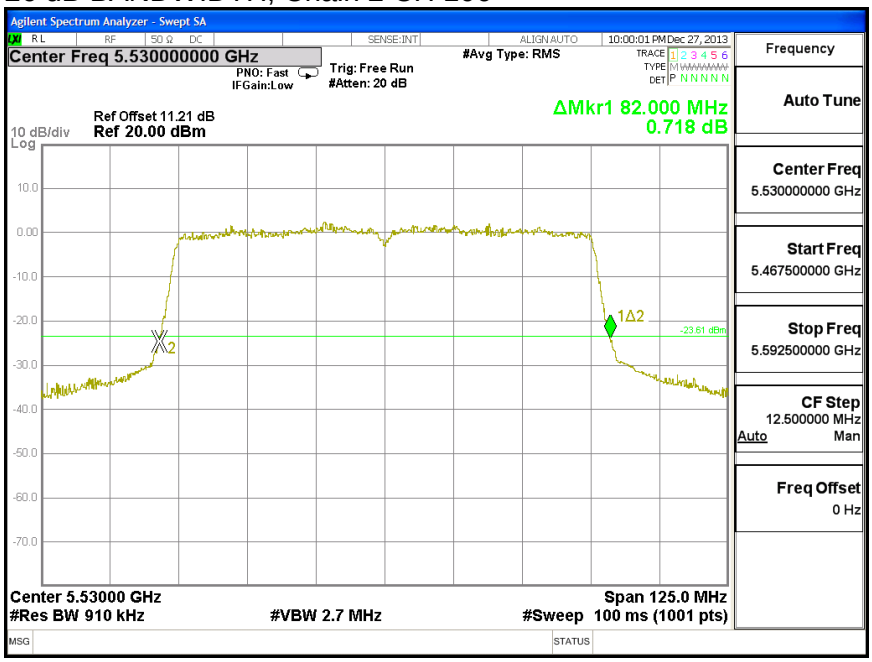
26 dB BANDWIDTH, Chain 1

26 dB BANDWIDTH, Chain 1 CH 106



26 dB BANDWIDTH, Chain 2

26 dB BANDWIDTH, Chain 2 CH 106



9.36.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

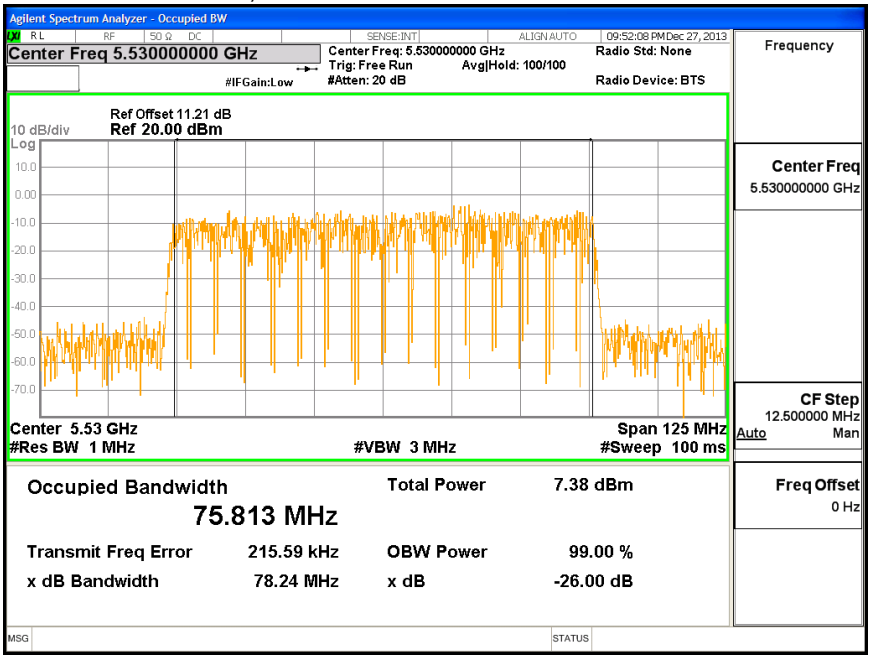
RESULTS

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
106	5530	75.813	75.745	75.775

99% BANDWIDTH

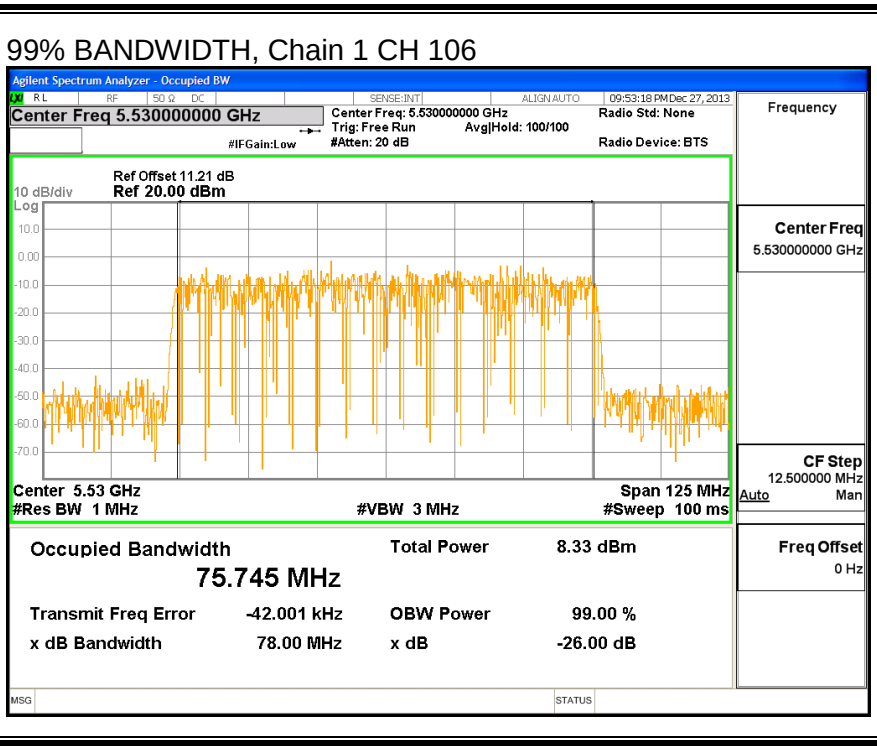
99% BANDWIDTH, Chain 0

99% BANDWIDTH, Chain 0 CH 106



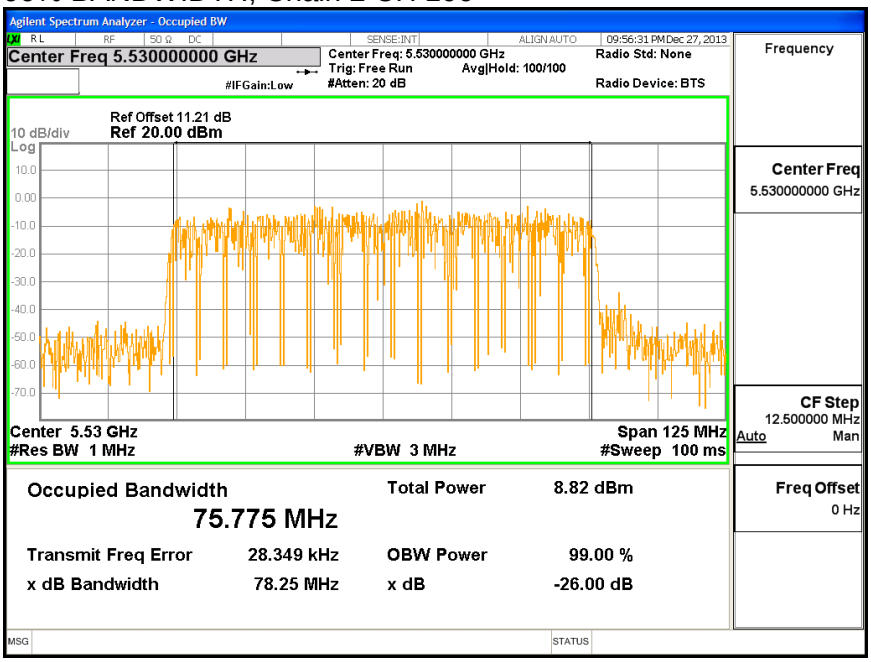
99% BANDWIDTH, Chain 1

99% BANDWIDTH, Chain 1 CH 106



99% BANDWIDTH, Chain 2

99% BANDWIDTH, Chain 2 CH 106



9.36.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11.26 dB (including 10 dB pad and 1.26 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Average Power Results

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Chain 2 Power (dBm)	Total Power (dBm)
106	5530	8.50	9.50	10.30	14.27

9.36.4. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.5–5.7 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)
2.82	4.77	7.59

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
106	5530	83.00	75.8130	2.82	7.59

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC EIRP Limit (dBm)	Max IC Power (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC eirp PSD Limit (dBm)	PPSD Limit (dBm)
106	5530	24.00	24.00	30.00	24.00	9.41	11.00	9.41

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

Output Power Results

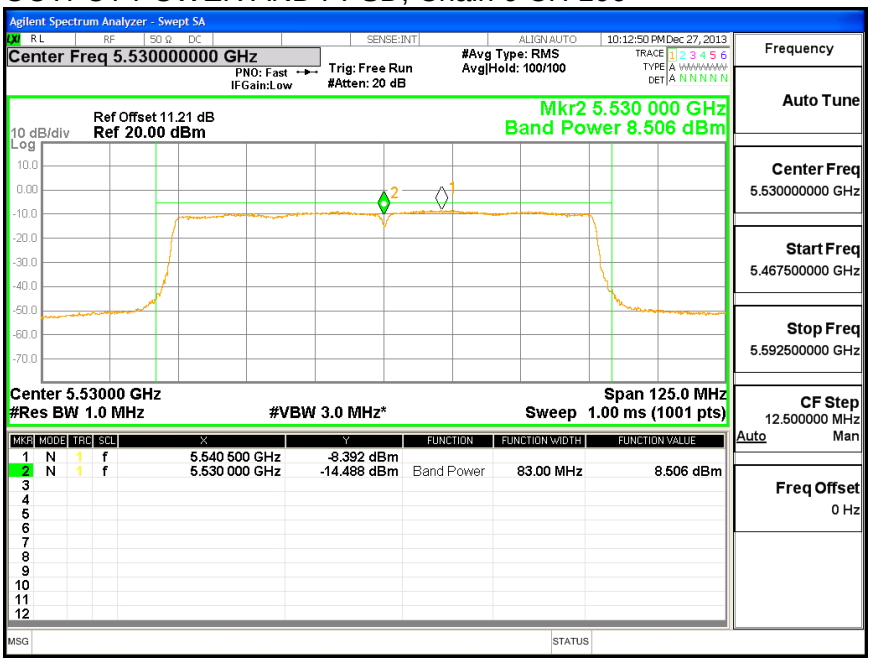
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
106	5530	8.51	9.55	10.36	14.58	24.00	-9.42

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Chain 2 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
106	5530	-8.39	-7.86	-6.77	-2.58	9.41	-11.99

OUTPUT POWER AND PPSD, Chain 0

OUTPUT POWER AND PPSD, Chain 0 CH 106



OUTPUT POWER AND PPSD, Chain 1

OUTPUT POWER AND PPSD, Chain 1 CH 106