

Client:	Intel	Job Number:	J70976
Model:	533-agn MMW	T-Log Number:	T71055
		Account Manager:	D. Eriksen
Contact:	Robert Paxman		
Standard:	FCC 15 E / RSS -210 (RF Port)	Class:	N/A

**RSS-210 (LELAN) and FCC 15.407(UNII)  
Antenna Port Measurements - 802.11n MIMO Mode  
Power, PSD, Peak Excursion, Bandwidth and Spurious Emissions**

**Test Specific Details**

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 4/24/2008	Config. Used: 1
Test Engineer: John Caizzi	Config Change: None
Test Location: FT #4 & FT EMC#1	EUT Voltage: 3.3 VDC

**General Test Configuration**

When measuring the conducted emissions from the EUT's antenna port, the antenna port of the EUT was connected to the spectrum analyzer or power meter via a suitable attenuator to prevent overloading the measurement system. All measurements are corrected to allow for the external attenuators and cables used.

**Ambient Conditions:**

Temperature:	22	°C
Rel. Humidity:	31	%

**Summary of Results**

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1, Chains A + B	Power, 5150 - 5250MHz	15.407(a) (1), (2)	Pass	16.5 dBm / -.5 dB
1, Chains A + B	Power, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	18.7 dBm / -5.3 dB
1, Chains A + B	Power, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	18.8 dBm / - 5.2 dB
1, Chains A + B	PSD, 5150 - 5250MHz	15.407(a) (1), (2)	Pass	3.8 dBm/MHz (-0.2 dB)
1, Chains A + B	PSD, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	6.0 dBm/MHz (-5 dB)
1, Chains A + B	PSD, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	5.9 dBm/MHz (-5.1 dB)

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
2, Chains A + C	Power, 5150 - 5250MHz	15.407(a) (1), (2)	Pass	16.5 dBm / -.5 dB
2, Chains A + C	Power, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	17.8 dBm / -6.2 dB
2, Chains A + C	Power, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	17.2 dBm / -6.8 dB
2, Chains A + C	PSD, 5150 - 5250MHz	15.407(a) (1), (2)	Pass	3.8 dBm/MHz (-.2 dB)
2, Chains A + C	PSD, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	5.0 dBm/MHz / -6.0 dB
2, Chains A + C	PSD, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	4.4 dBm/MHz / -6.6 dB

-	Peak Excursion Envelope	15.407(a) (6)	Covered by single-chain measurements
-	Antenna Conducted Spurious	15.407(b)	

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Run #	Test Performed	Limit	Pass / Fail	Result / Margin
3, Chains B + C	Power, 5150 - 5250MHz	15.407(a) (1), (2)	Pass	16.4 dBm / -.6 dB
3, Chains B + C	Power, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	18.0 dBm / -.6.0 dB
3, Chains B + C	Power, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	17.5 dBm / -.6.5 dB
3, Chains B + C	PSD, 5150 - 5250MHz	15.407(a) (1), (2)	Pass	3.8 dBm/MHz (-.2 dB)
3, Chains B + C	PSD, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	5.1 dBm/MHz (-5.9 dB)
3, Chains B + C	PSD, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	4.8 dBm/MHz (-6.2 dB)

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
4, Chains A + B + C	Power, 5150 - 5250MHz	15.407(a) (1), (2)	Pass	16.5 dBm / -.5 dB
4, Chains A + B + C	Power, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	20.4 dBm / -.3.6 dB
4, Chains A + B + C	Power, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	20.5 dBm / -.3.5 dB
4, Chains A + B + C	PSD, 5150 - 5250MHz	15.407(a) (1), (2)	Pass	3.9dBm/MHz (-.1dB)
4, Chains A + B + C	PSD, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	7.6dBm/MHz (-3.4dB)
4, Chains A + B + C	PSD, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	7.7dBm/MHz (-3.3dB)

**Modifications Made During Testing**

No modifications were made to the EUT during testing

**Deviations From The Standard**

No deviations were made from the requirements of the standard.

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Run #1: Bandwidth, Output Power and Power spectral Density - Chain A + B

	Chain 1	Chain 2	Chain 3	Coherent	Effective <sup>5</sup>
Antenna Gain (dBi):	5	5	5	No	5.0

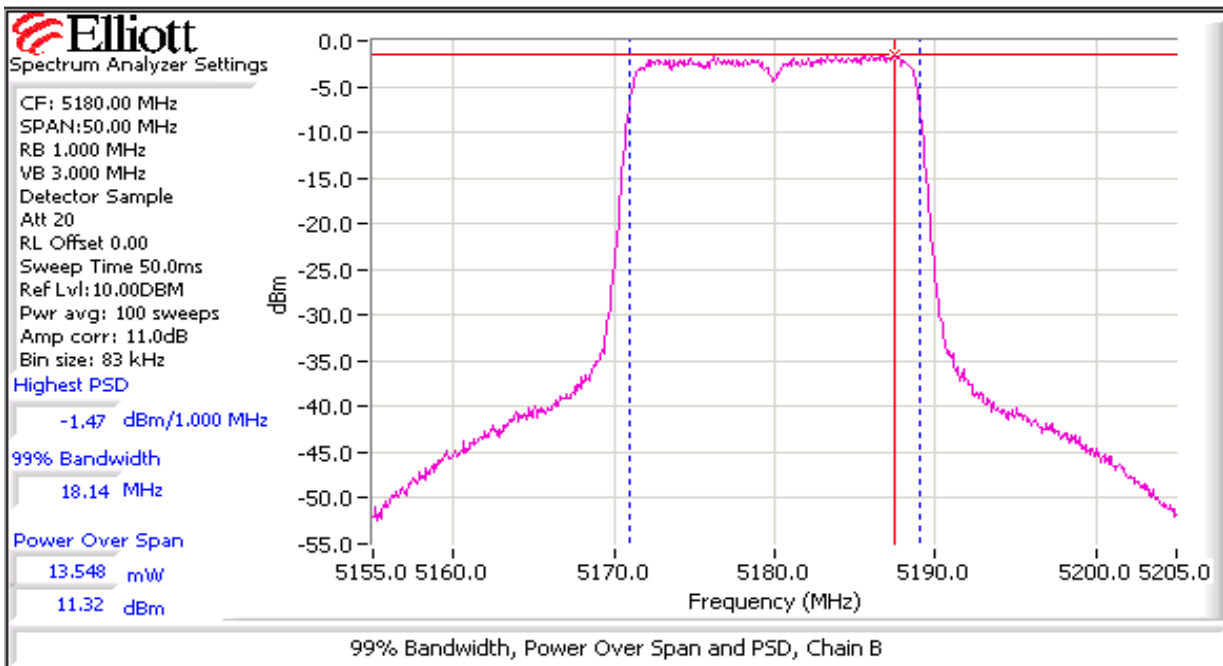
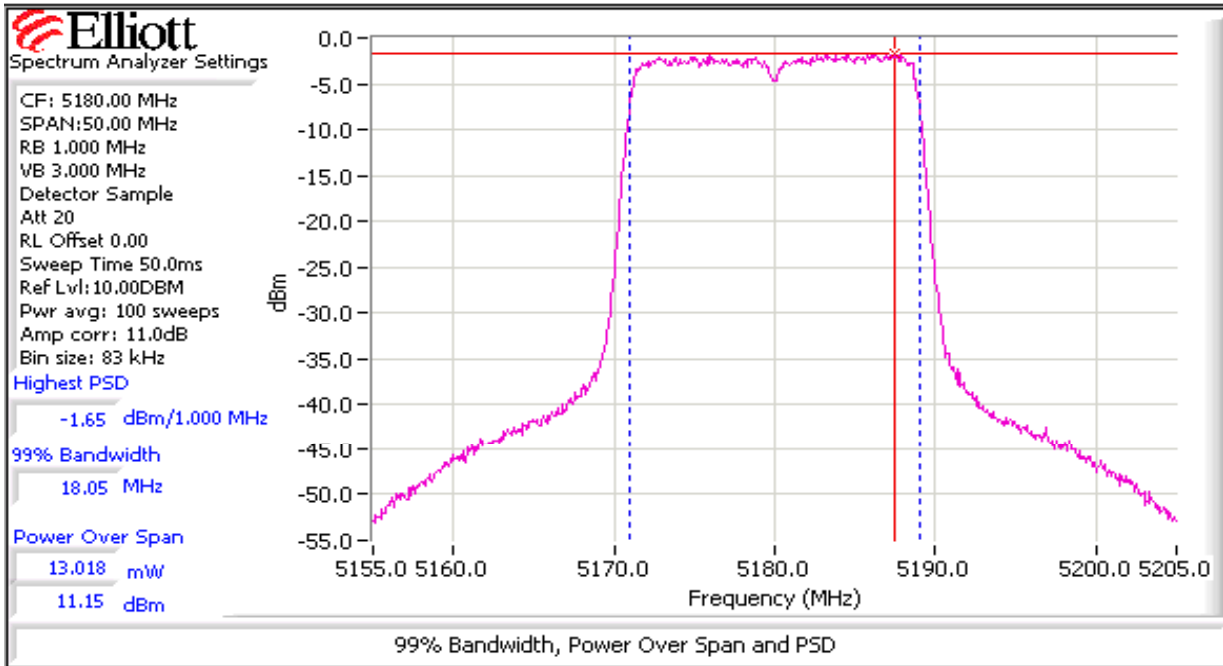
Frequency (MHz)	Software Setting	26dB BW (MHz)	Measured Output Power <sup>1</sup> dBm			Total		Limit (dBm)	Max Power (W)	Pass or Fail
			Chain A	Chain B	Chain C	mW	dBm			
5180	28.5, 27.5	36.9	11.2	11.3		26.6	14.2	17.0	0.045	PASS
5200	31.0, 31.0	39.1	13.3	13.7		45.1	16.5	17.0		PASS
5240	28.5, 27.0	30.0	13.8	13.2		44.4	16.5	17.0		PASS
5260	30.0, 29.0	35.3	16.0	15.4		73.8	18.7	24.0	0.074	PASS
5300	28.5, 27.5	31.3	15.1	15.4		67.0	18.3	24.0		PASS
5320	25.5, 24.5	31.8	12.1	12.0		32.2	15.1	24.0		PASS
5500	23.5, 23.5	27.5	12.1	12.4		33.4	15.2	24.0	0.075	PASS
5600	26.0, 25.5	22.3	15.5	14.1		61.1	17.9	24.0		PASS
5700	27.0, 26.0	30.6	15.8	15.7		75.2	18.8	24.0		PASS

Frequency (MHz)	99% <sup>4</sup> BW	Total Power	PSD <sup>2</sup> dBm/MHz			Total PSD		Limit		Pass or Fail
			Chain A	Chain B	Chain C	mW/MHz	dBm/MHz	FCC	RSS 210 <sup>3</sup>	
5180	18.1	14.2	-1.7	-1.5		1.4	1.5	4.0	5.0	PASS
5200	18.1	16.5	0.6	1.1		2.4	3.8	4.0	5.0	PASS
5240	18.1	16.5	1.1	0.5		2.4	3.8	4.0	5.0	PASS
5260	18.1	18.7	3.5	2.5		4.0	6.0	11.0	11.0	PASS
5300	18.1	18.3	2.4	2.7		3.6	5.6	11.0	11.0	PASS
5320	18.1	15.1	-0.5	-0.6		1.8	2.5	11.0	11.0	PASS
5500	18.1	15.2	-0.9	-0.5		1.7	2.4	11.0	11.0	PASS
5600	18.1	17.9	2.6	1.1		3.1	5.0	11.0	11.0	PASS
5700	18.2	18.8	2.9	2.9		3.9	5.9	11.0	11.0	PASS

Note 1:	Output power measured using a spectrum analyzer (see plots below): RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 50 MHz
Note 2:	Measured using the same analyzer settings used for output power.
Note 3:	For RSS-210 the limit for the 5150 - 5250 MHz band accounts for the antenna gain as the maximum eirp allowed is 10dBm/MHz. The limits are also corrected for instances where the highest measured value of the PSD exceeds the average PSD (calculated from the measured power divided by the measured 99% bandwidth) by more than 3dB by the amount that the measured value exceeds the average by more than 3dB.
Note 4:	99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB >=3xRB
Note 5:	For MIMO systems the total output power and total PSD are calculated from the sum of the powers of the individual chains (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operating mode of the MIMO device. If the signals are non-coherent between the transmit chains then the gain used to determine the limits is the highest gain of the individual chains, and the EIRP is the sum of the products of gain and power on each chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain, and the EIRP is the product of the effective gain and total power.

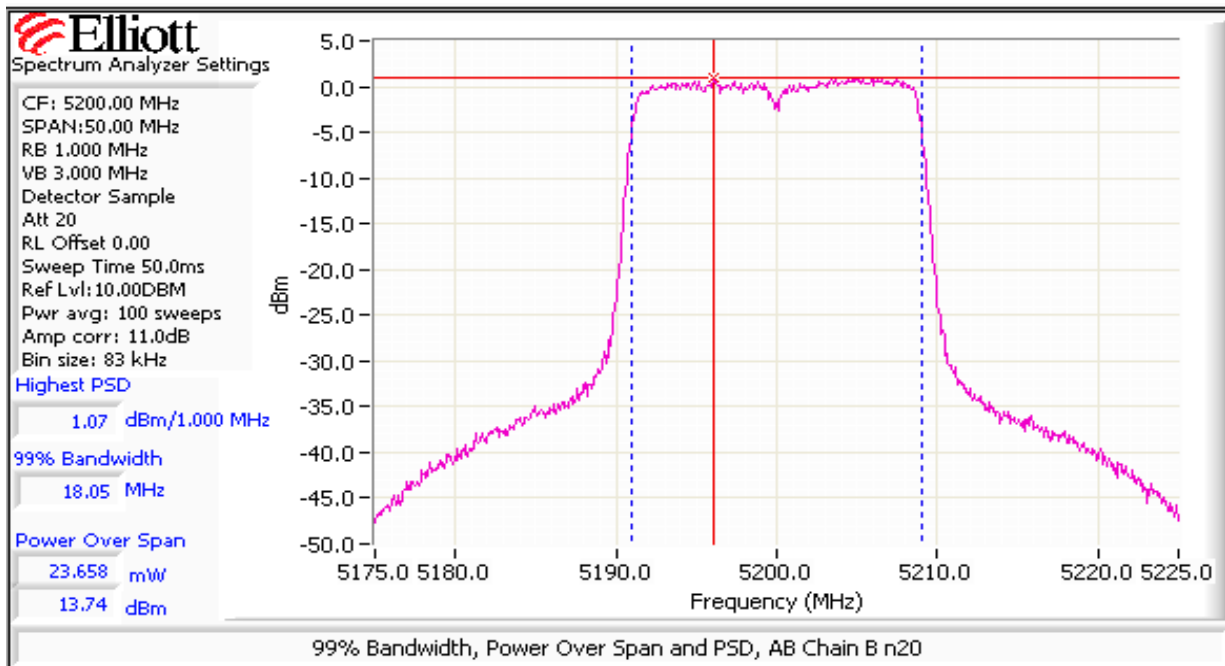
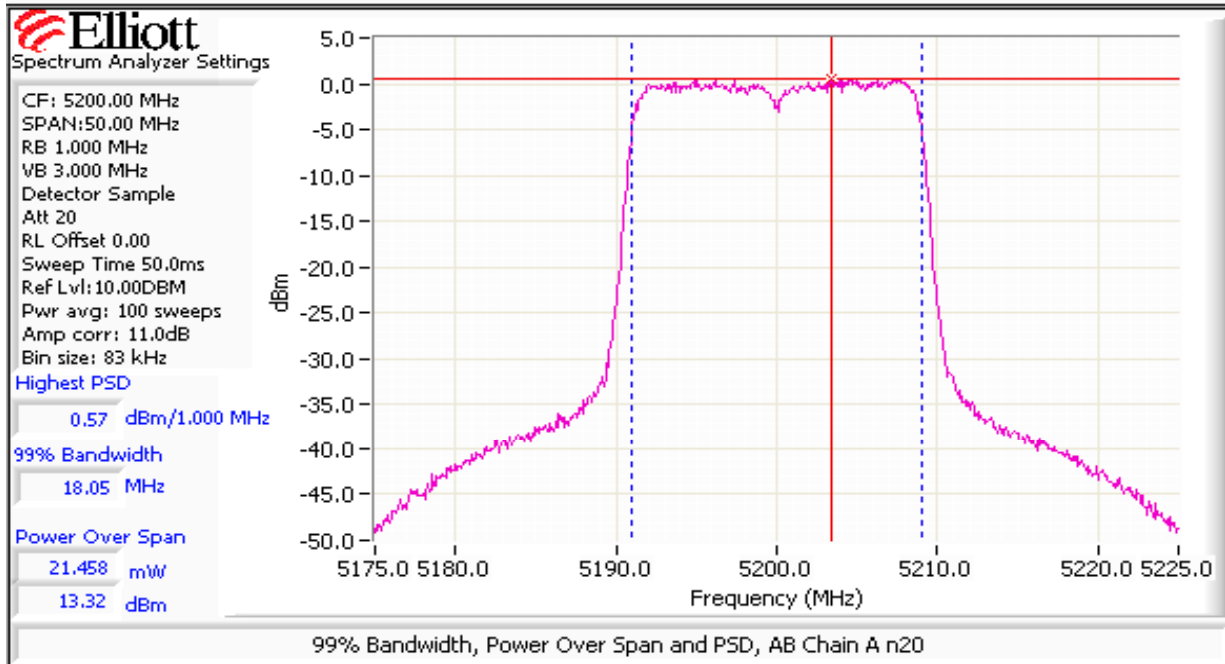
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Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #1: Bandwidth, Output Power and Power spectral Density - Chain A + B



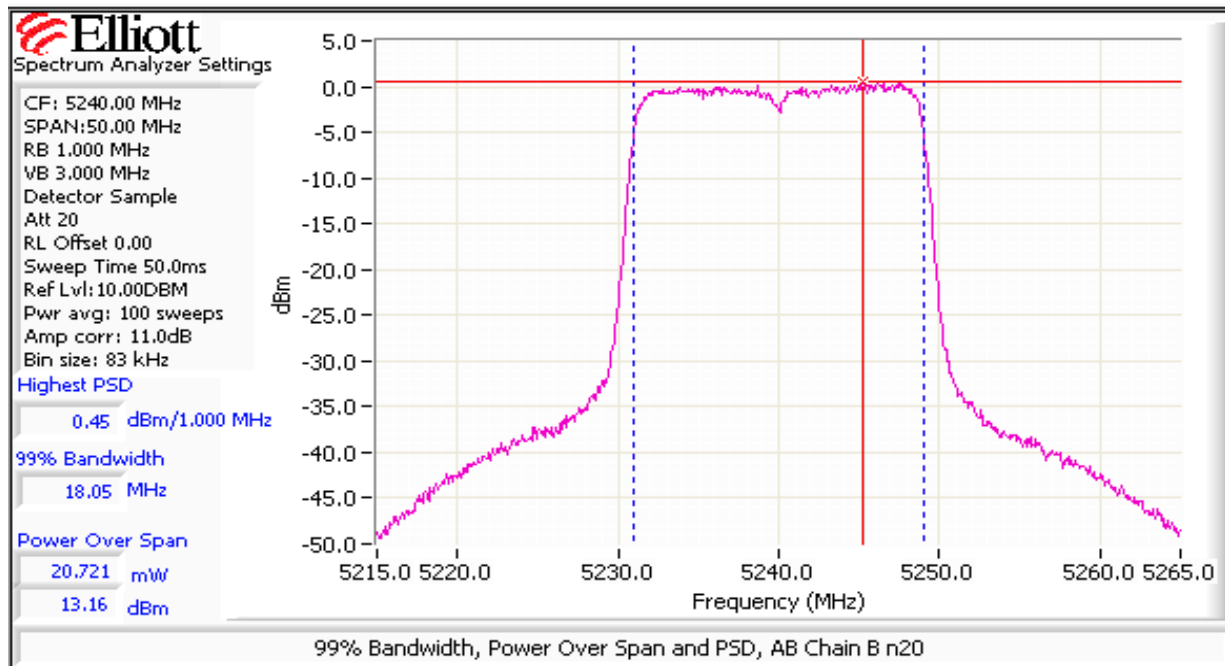
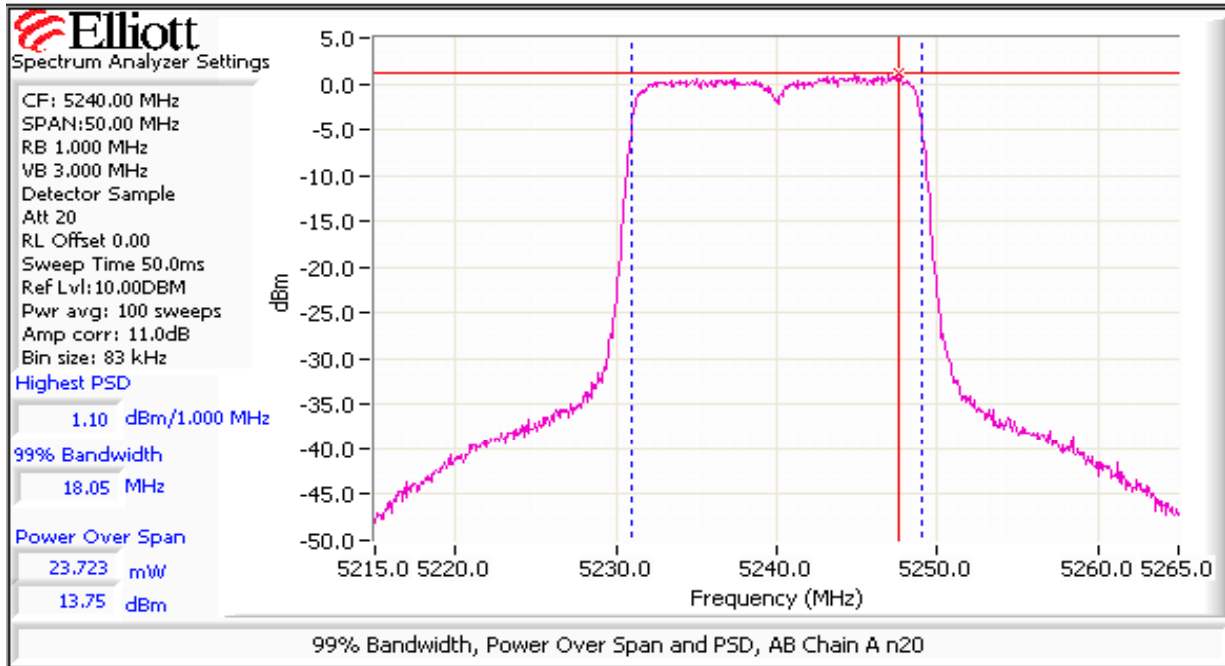
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Run #1: Bandwidth, Output Power and Power spectral Density - Chain A + B



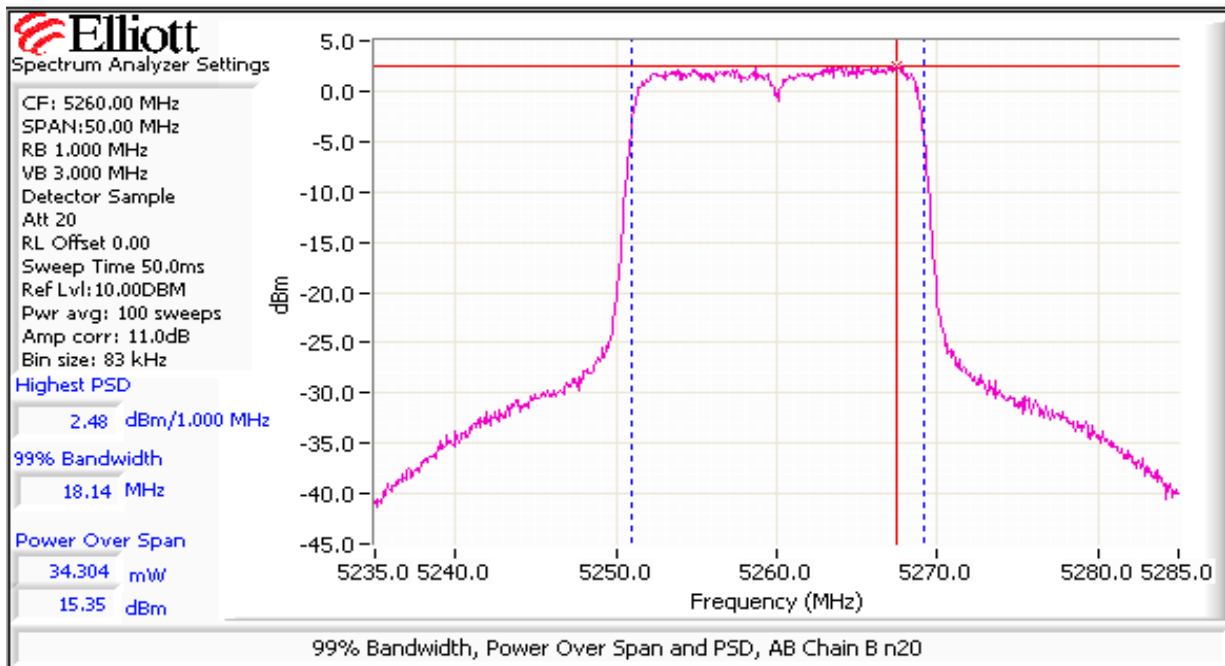
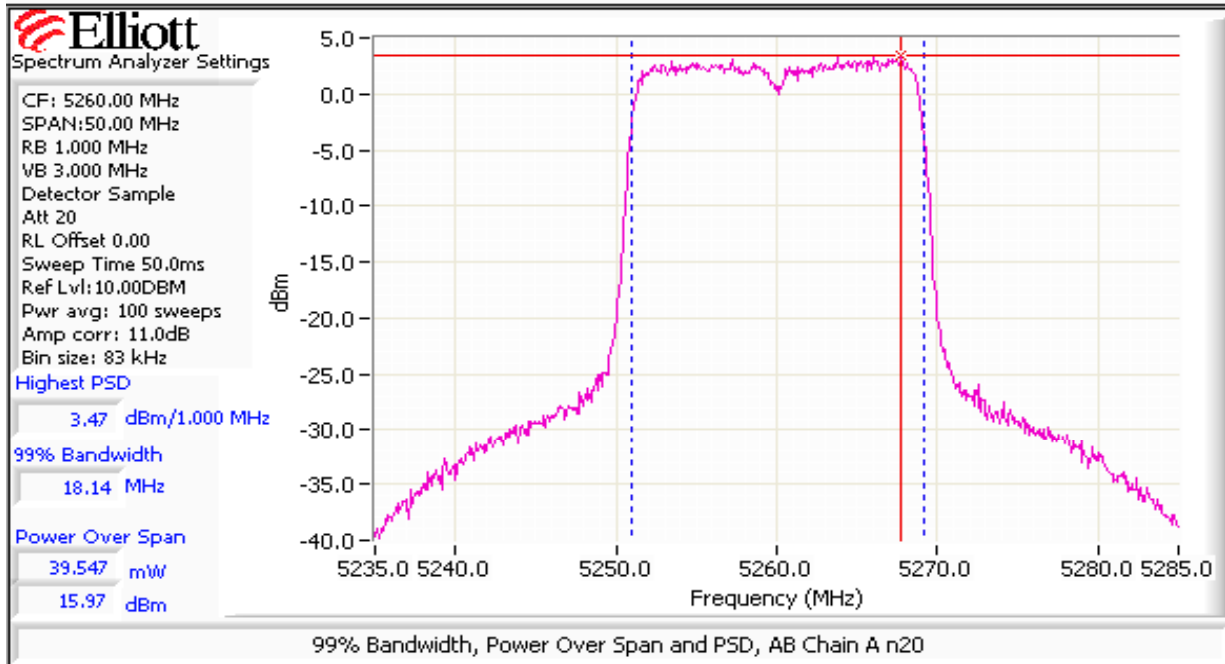
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Run #1: Bandwidth, Output Power and Power spectral Density - Chain A + B



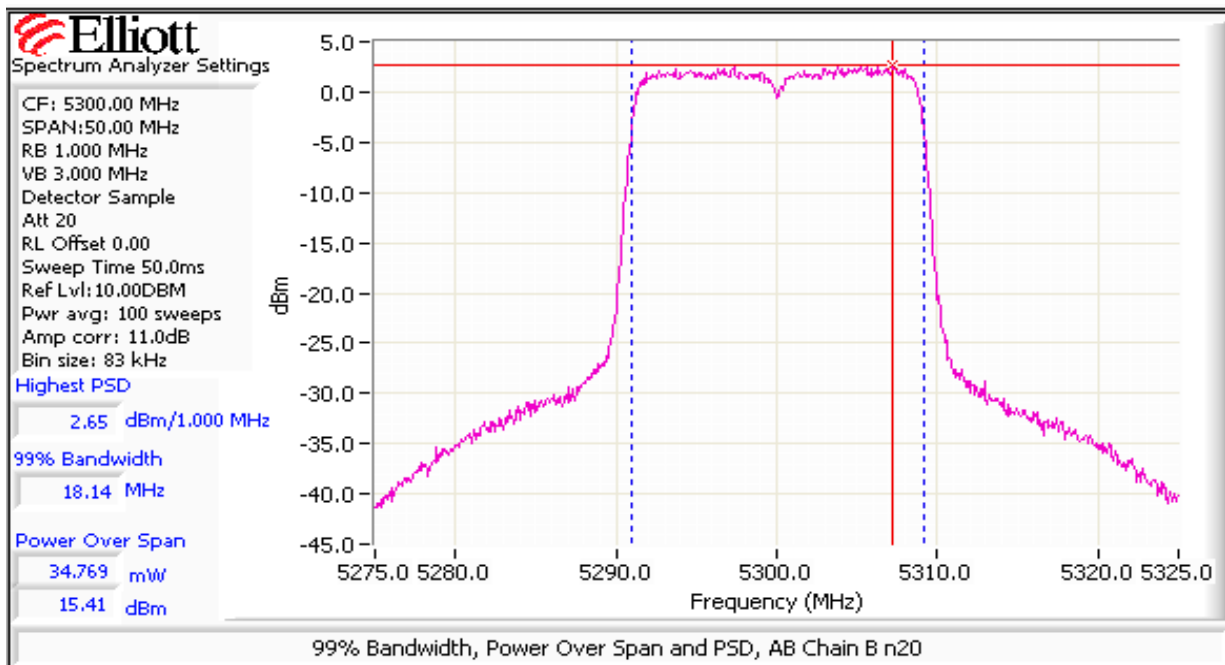
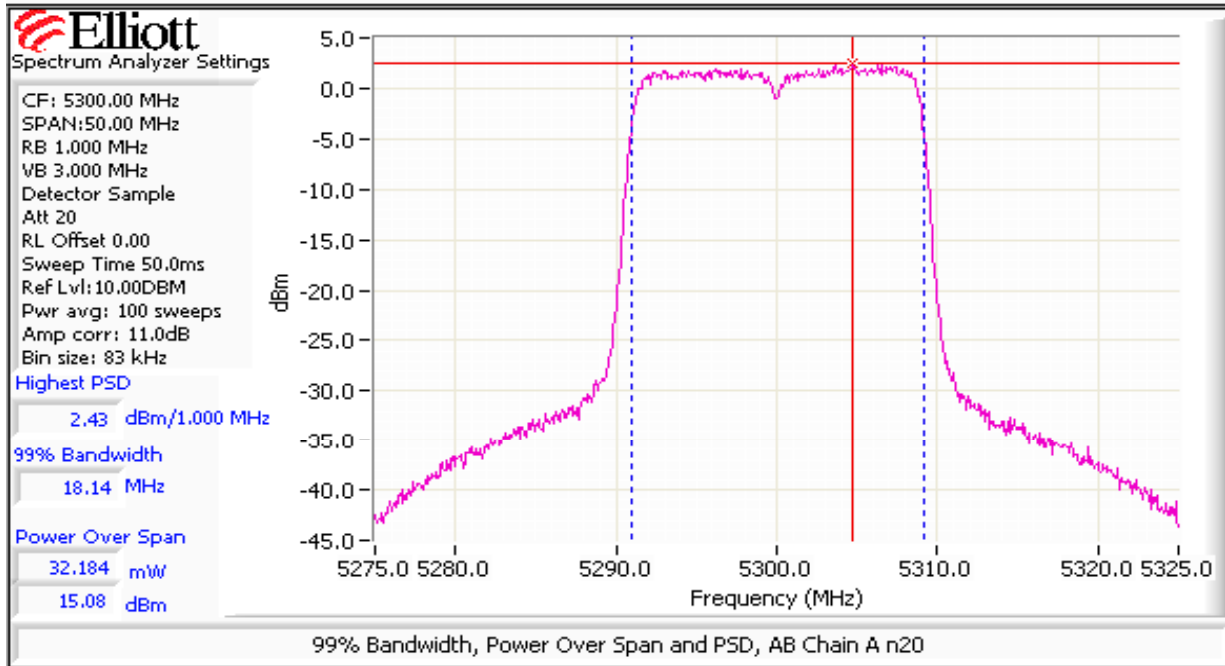
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Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #1: Bandwidth, Output Power and Power spectral Density - Chain A + B



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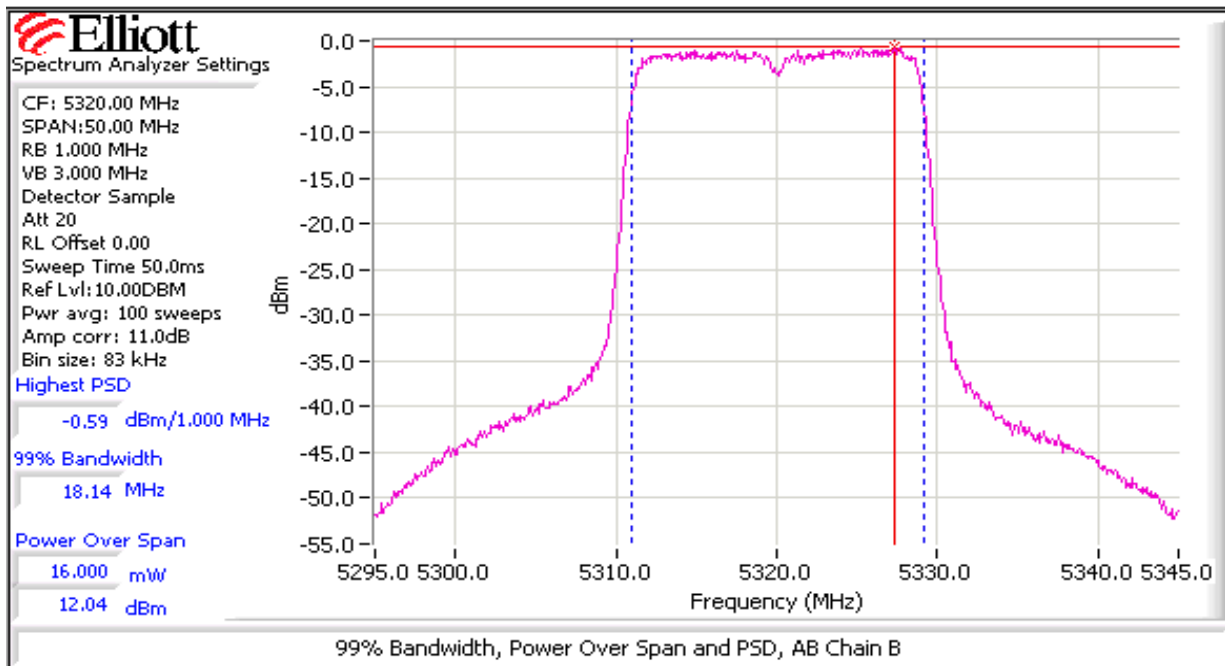
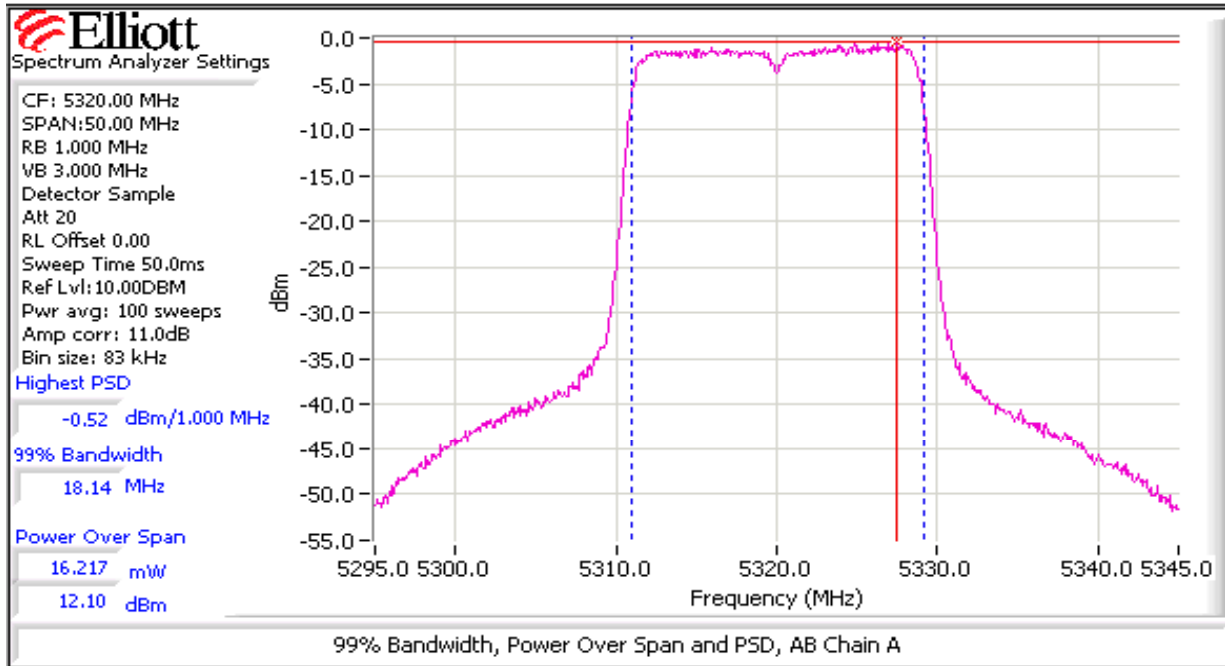
Run #1: Bandwidth, Output Power and Power spectral Density - Chain A + B





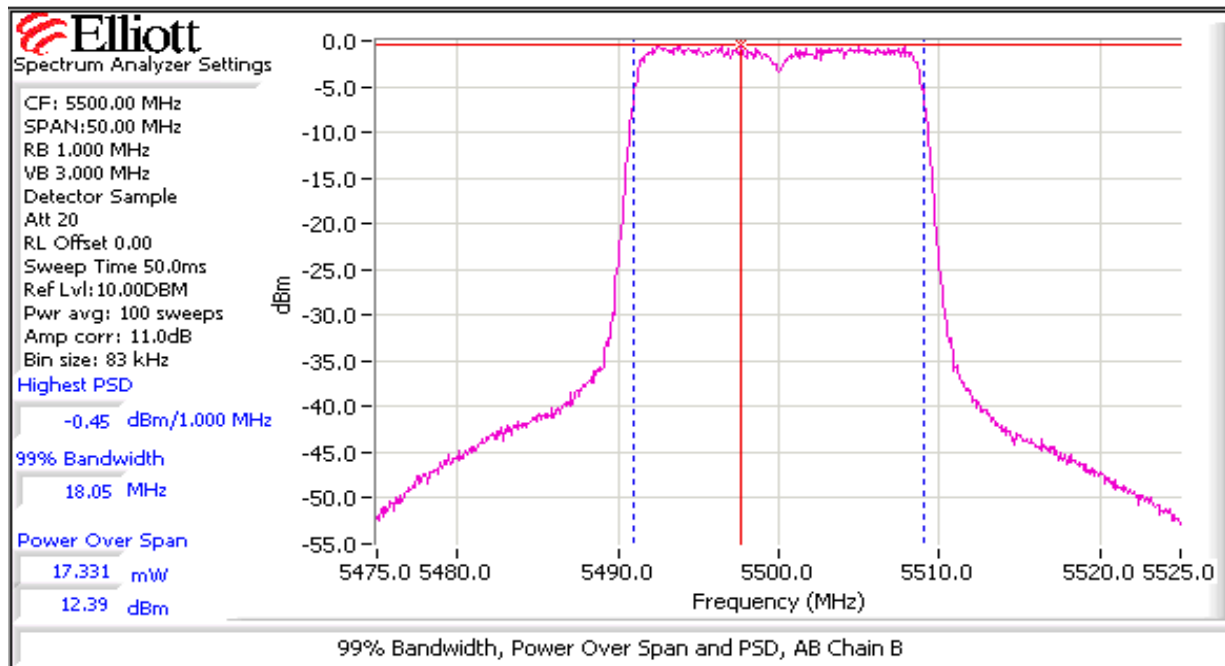
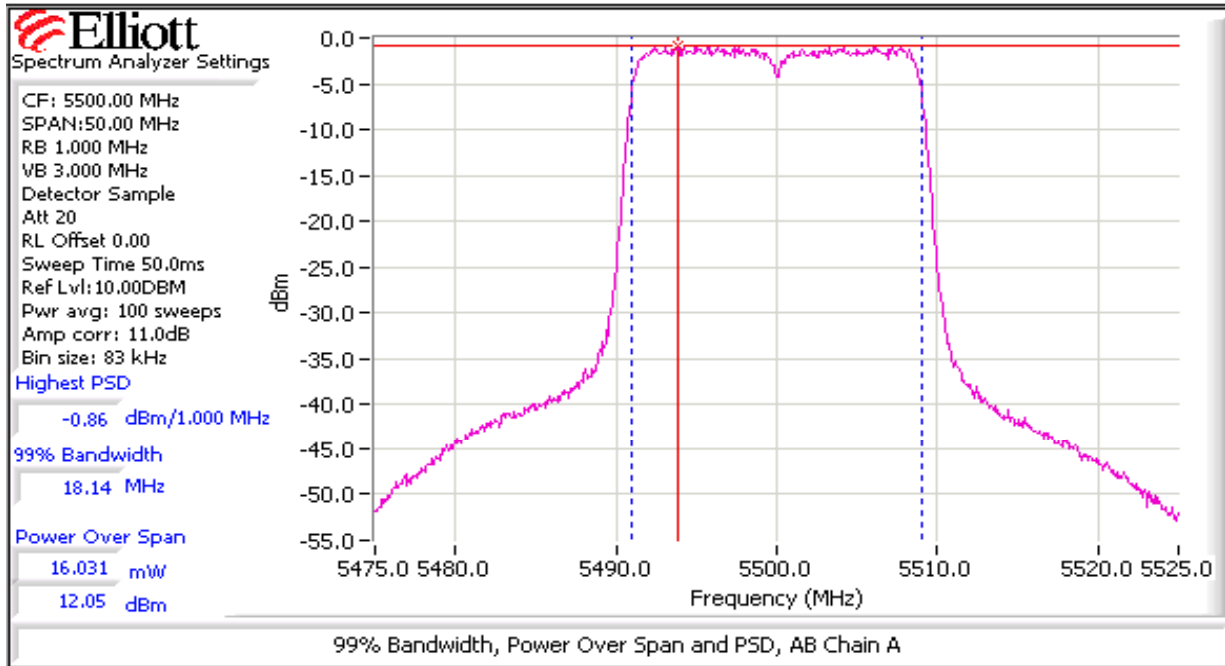
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Run #1: Bandwidth, Output Power and Power spectral Density - Chain A + B



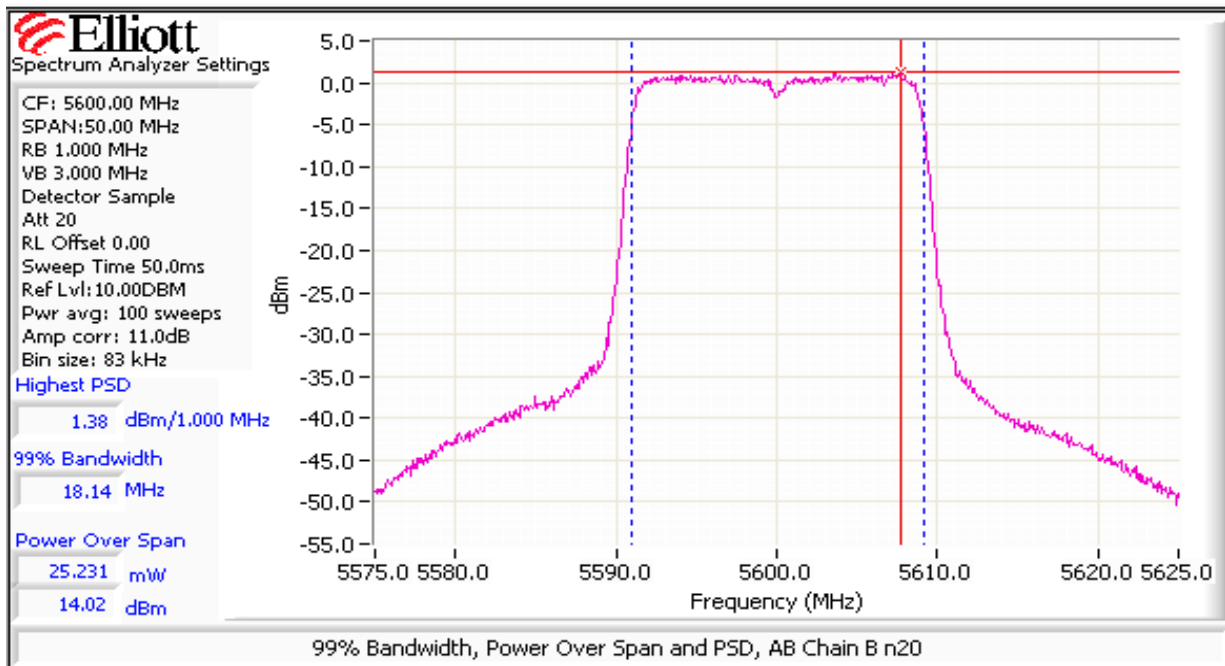
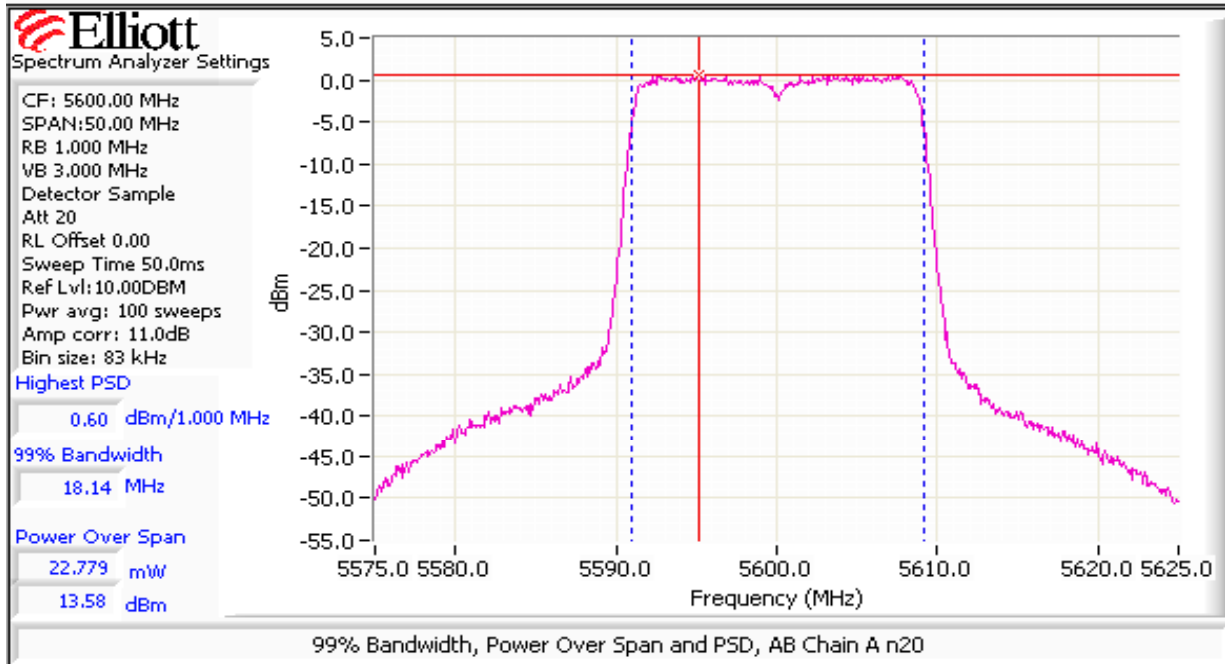
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Run #1: Bandwidth, Output Power and Power spectral Density - Chain A + B



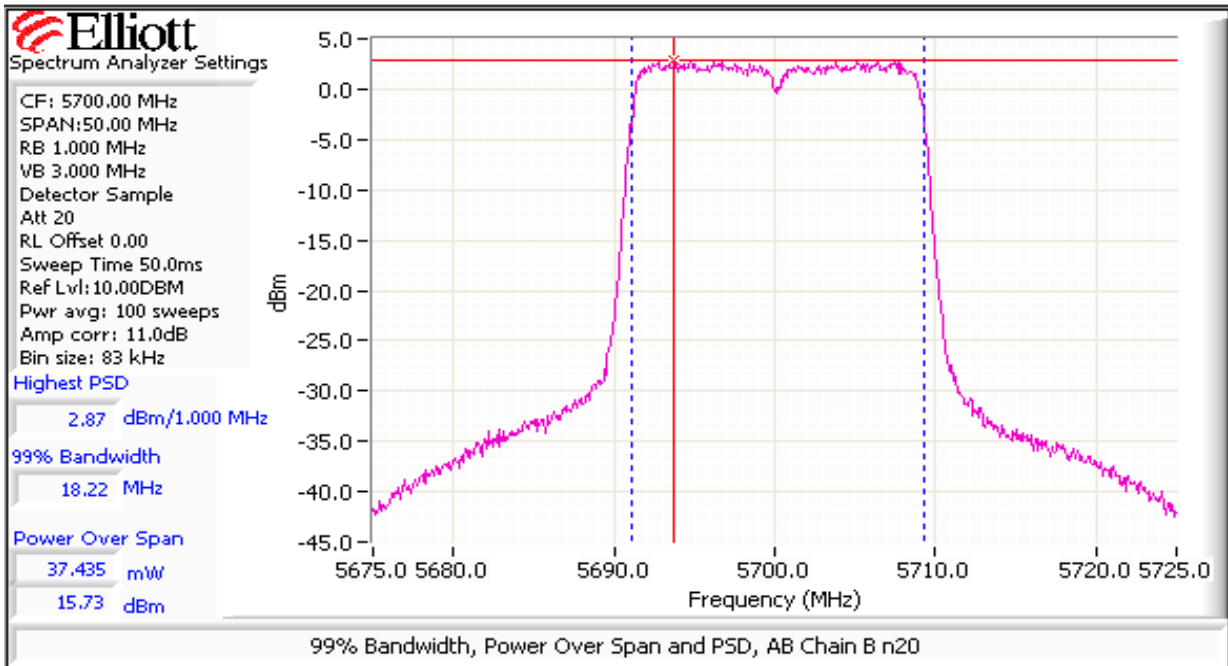
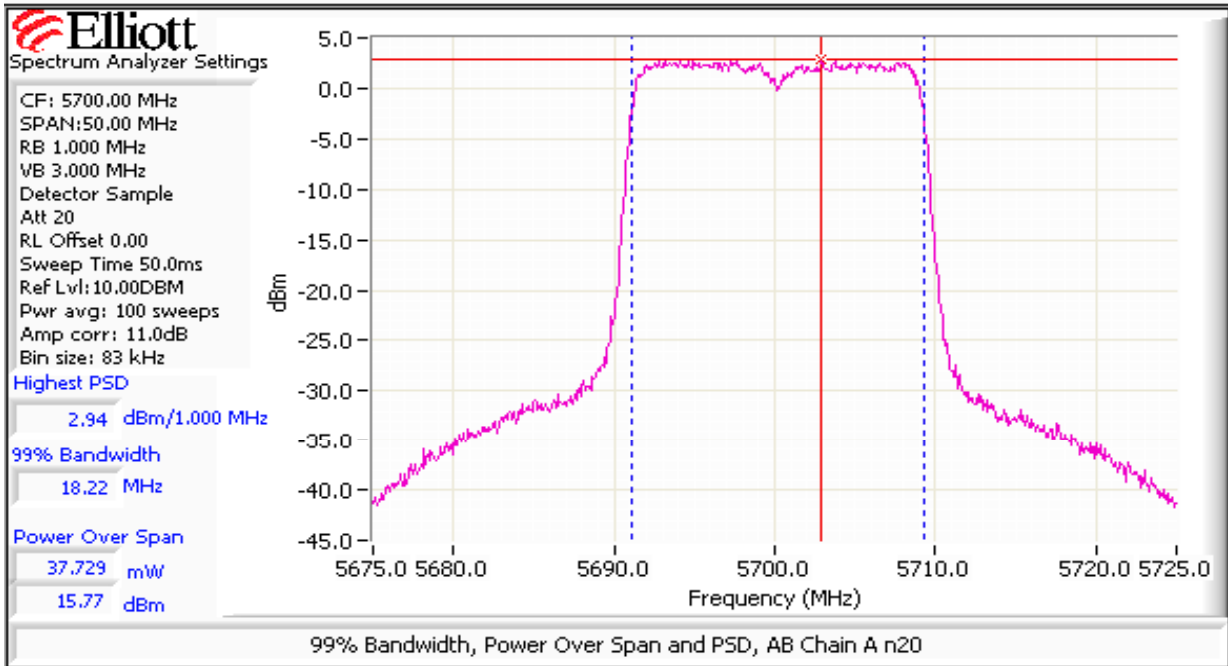
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Run #1: Bandwidth, Output Power and Power spectral Density - Chain A + B



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Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #1: Bandwidth, Output Power and Power spectral Density - Chain A + B



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Model:	533-agn MMW	T-Log Number:	T71055
		Account Manager:	D. Eriksen
Contact:	Robert Paxman		
Standard:	FCC 15 E / RSS -210 (RF Port)	Class:	N/A

Run #2: Bandwidth, Output Power and Power spectral Density - Chain A + C

	Chain 1	Chain 2	Chain 3	Coherent	Effective <sup>5</sup>
Antenna Gain (dBi):	5	5	5	No	5.0

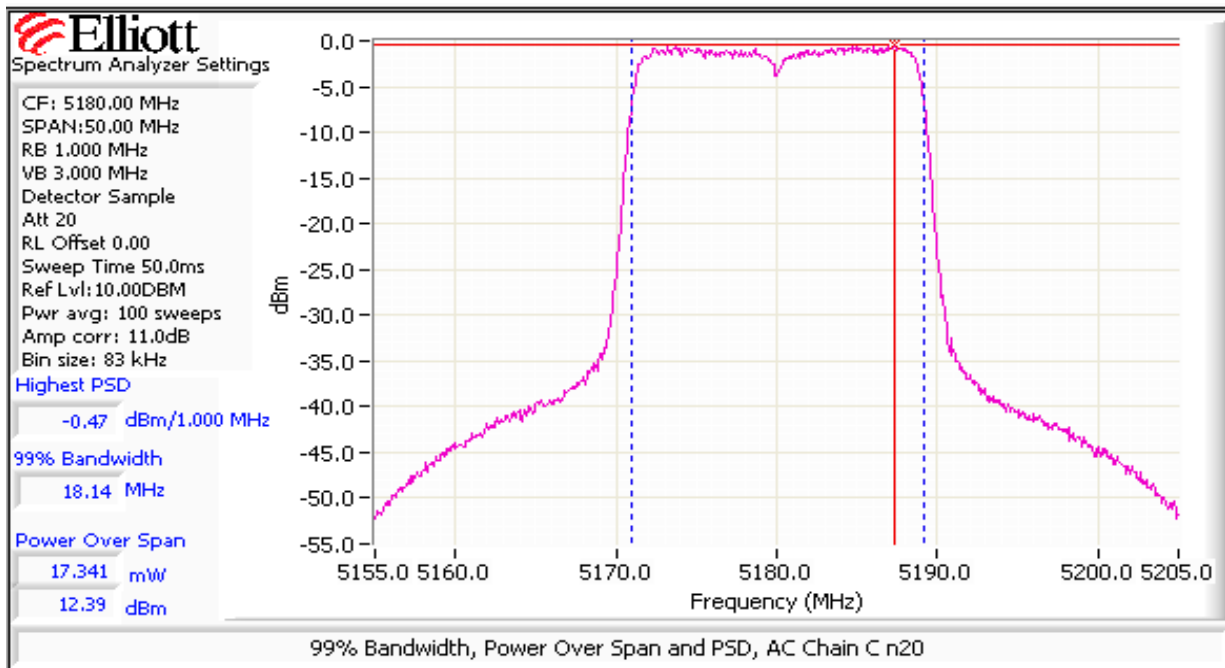
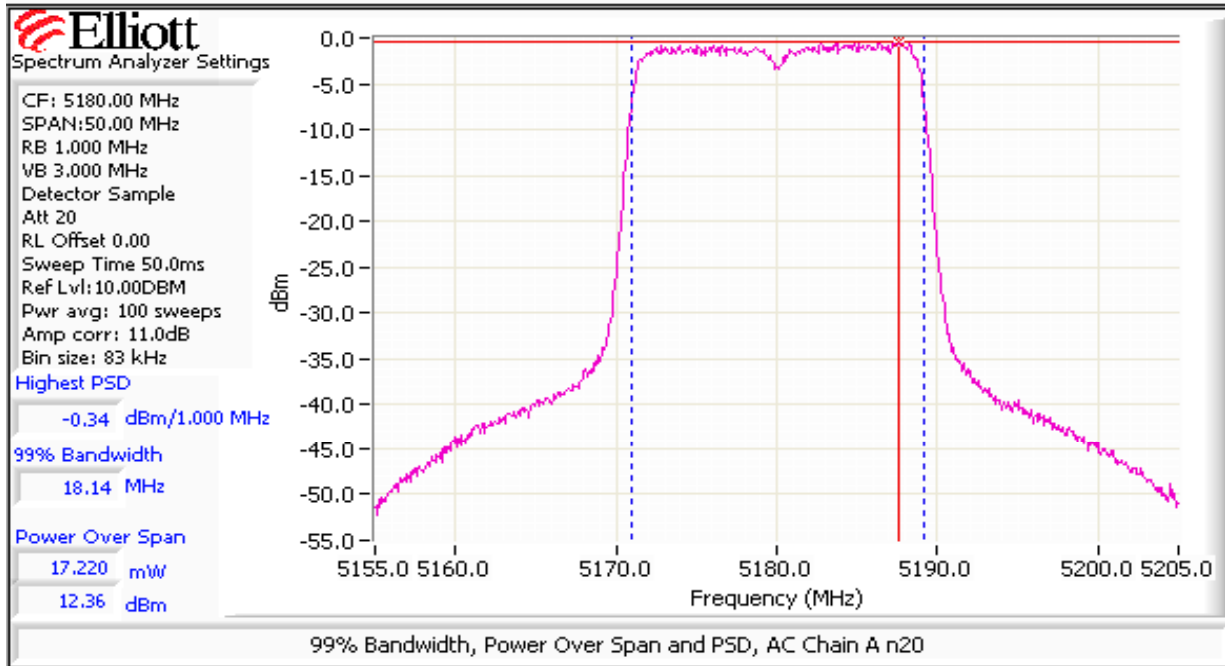
Frequency (MHz)	Software Setting	26dB BW (MHz)	Measured Output Power <sup>1</sup> dBm			Total		Limit (dBm)	Max Power (W)	Pass or Fail
			Chain A	Chain B	Chain C	mW	dBm			
5180	29.0, 28.5	36.9	12.4		12.4	34.6	15.4	17.0	0.045	PASS
5200	30, 29.5	37.0	13.1		13.6	43.3	16.4	17.0		PASS
5240	28.5, 28.5	30.0	13.7		13.3	44.6	16.5	17.0		PASS
5260	29.5, 30	36.8	15.1		14.5	60.3	17.8	24.0	0.060	PASS
5280	29, 30	27.5	14.4		14.8	57.7	17.6	24.0		PASS
5320	25.5, 26	28.1	12.0		11.7	30.6	14.9	24.0		PASS
5500	24.0, 24.5	26.9	12.0		11.7	30.4	14.8	24.0	0.052	PASS
5600	26.5, 26.5	22.3	14.2		14.1	51.9	17.2	24.0		PASS
5700	27, 26.5	28.3	14.3		14.0	52.2	17.2	24.0		PASS

Frequency (MHz)	99% <sup>4</sup> BW	Total Power	PSD <sup>2</sup> dBm/MHz			Total PSD		Limit		Pass or Fail
			Chain A	Chain B	Chain C	mW/MHz	dBm/MHz	FCC	RSS 210 <sup>3</sup>	
5180	18.1	15.4	-0.3		-0.5	1.8	2.6	4.0	5.0	PASS
5200	18.1	16.4	0.3		0.8	2.3	3.6	4.0	5.0	PASS
5240	18.1	16.5	0.9		0.6	2.4	3.8	4.0	5.0	PASS
5260	18.1	17.8	2.3		1.7	3.2	5.0	11.0	11.0	PASS
5280	18.2	17.6	1.8		2.1	3.1	4.9	11.0	11.0	PASS
5320	18.1	14.9	-0.7		-1.0	1.7	2.2	11.0	11.0	PASS
5500	18.1	14.8	-0.8		-1.2	1.6	2.0	11.0	11.0	PASS
5600	18.1	17.2	1.2		1.6	2.8	4.4	11.0	11.0	PASS
5700	18.2	17.2	1.6		1.1	2.7	4.4	11.0	11.0	PASS

- Note 1: Output power measured using a spectrum analyzer (see plots below):  
RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 50 MHz
- Note 2: Measured using the same analyzer settings used for output power.
- Note 3: For RSS-210 the limit for the 5150 - 5250 MHz band accounts for the antenna gain as the maximum eirp allowed is 10dBm/MHz. The limits are also corrected for instances where the highest measured value of the PSD exceeds the average PSD (calculated from the measured power divided by the measured 99% bandwidth) by more than 3dB by the amount that the measured value exceeds the average by more than 3dB.
- Note 4: 99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB >=3xRB
- Note 5: For MIMO systems the total output power and total PSD are calculated from the sum of the powers of the individual chains (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operating mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power on each chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain and the EIRP is the product of the effective gain and total power.

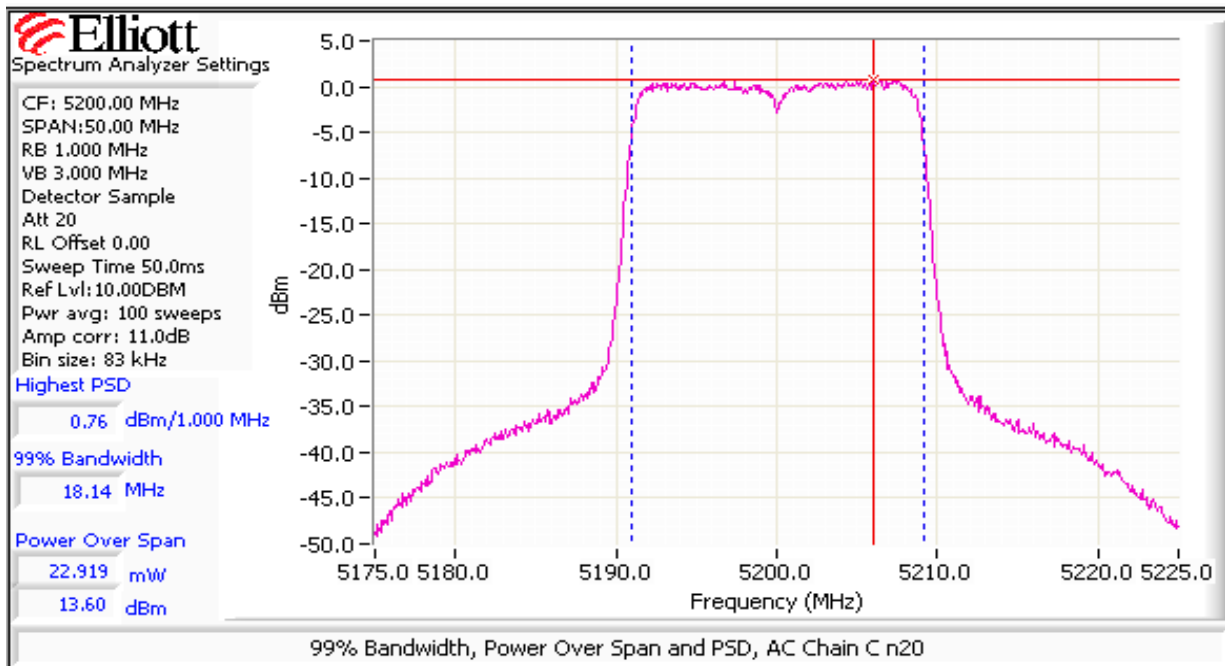
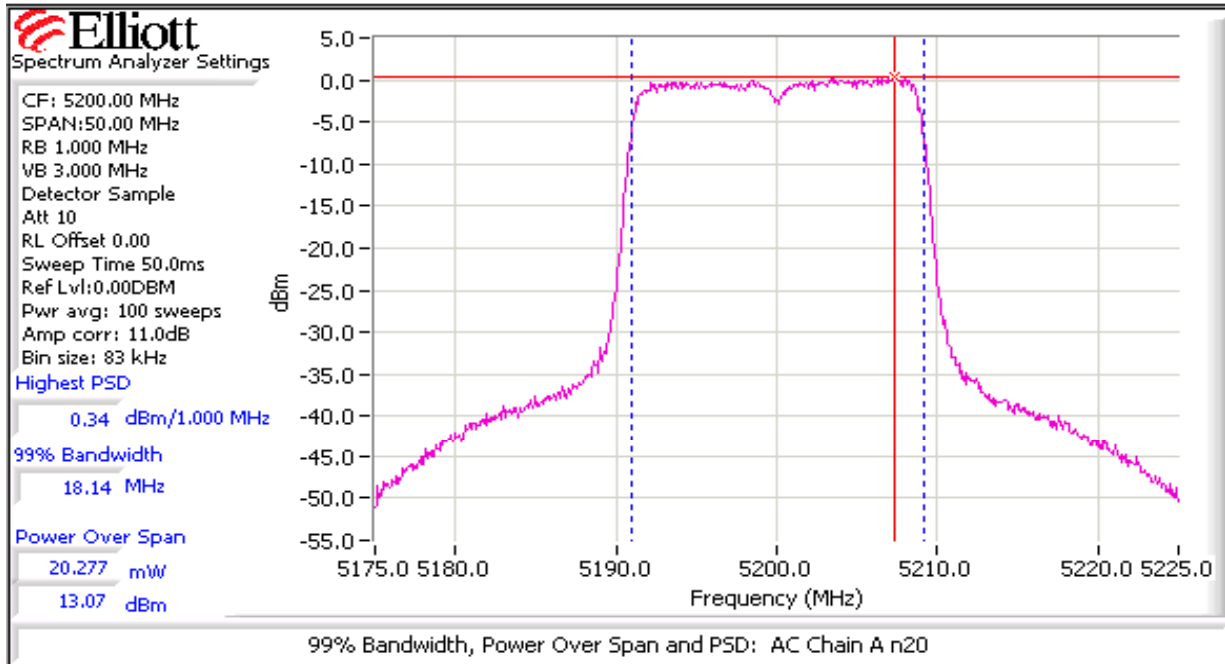
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Run #2: Bandwidth, Output Power and Power spectral Density - Chain A + C



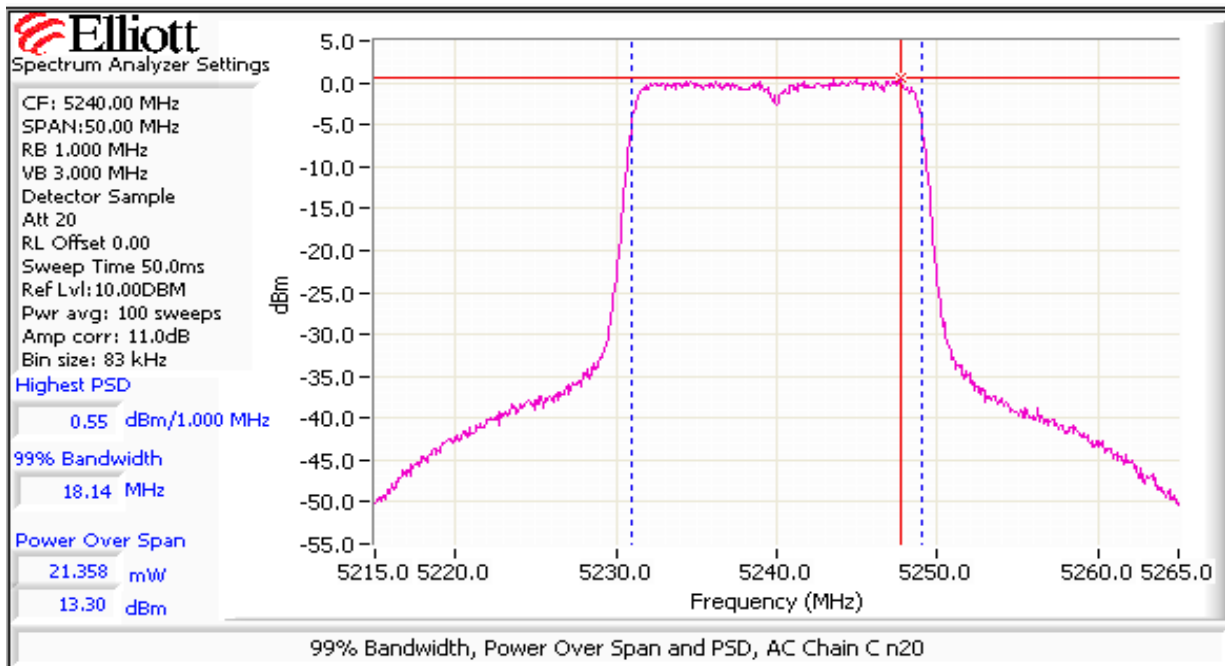
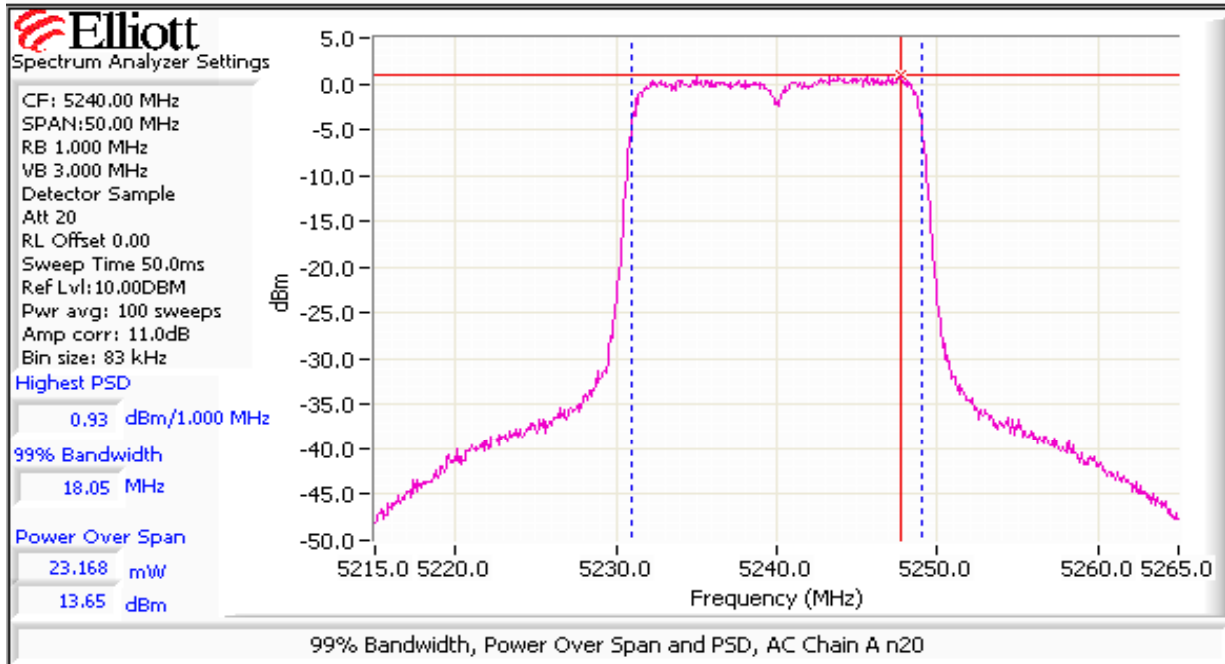
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Run #2: Bandwidth, Output Power and Power spectral Density - Chain A + C



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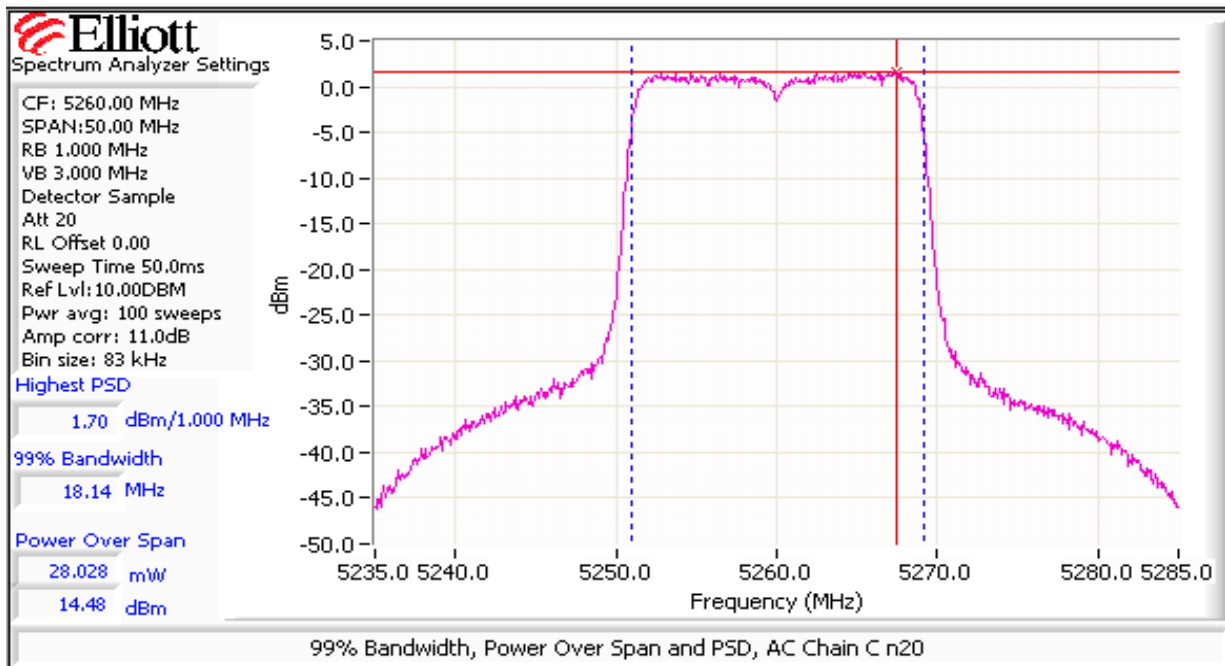
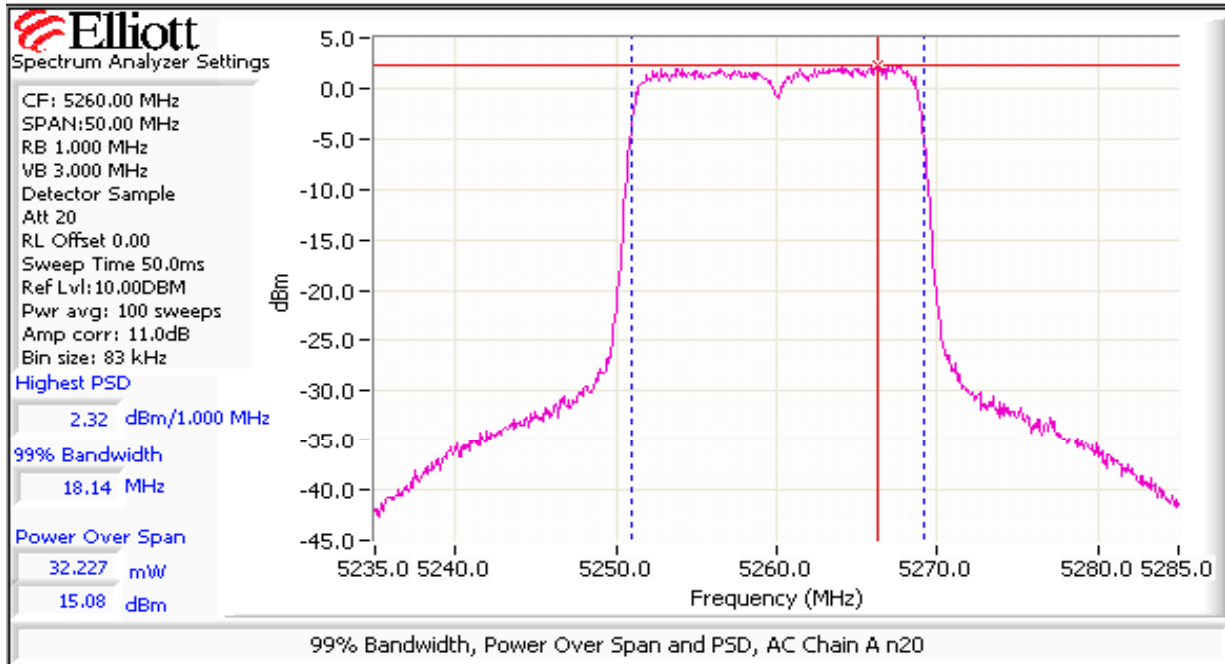
Run #2: Bandwidth, Output Power and Power spectral Density - Chain A + C





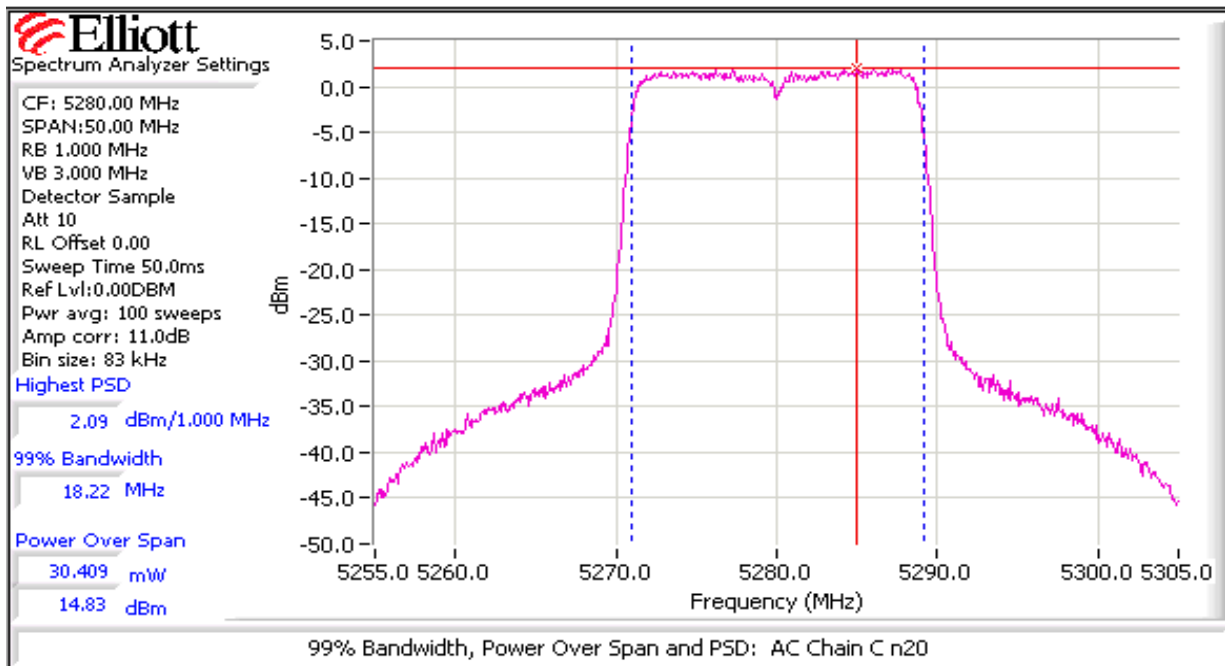
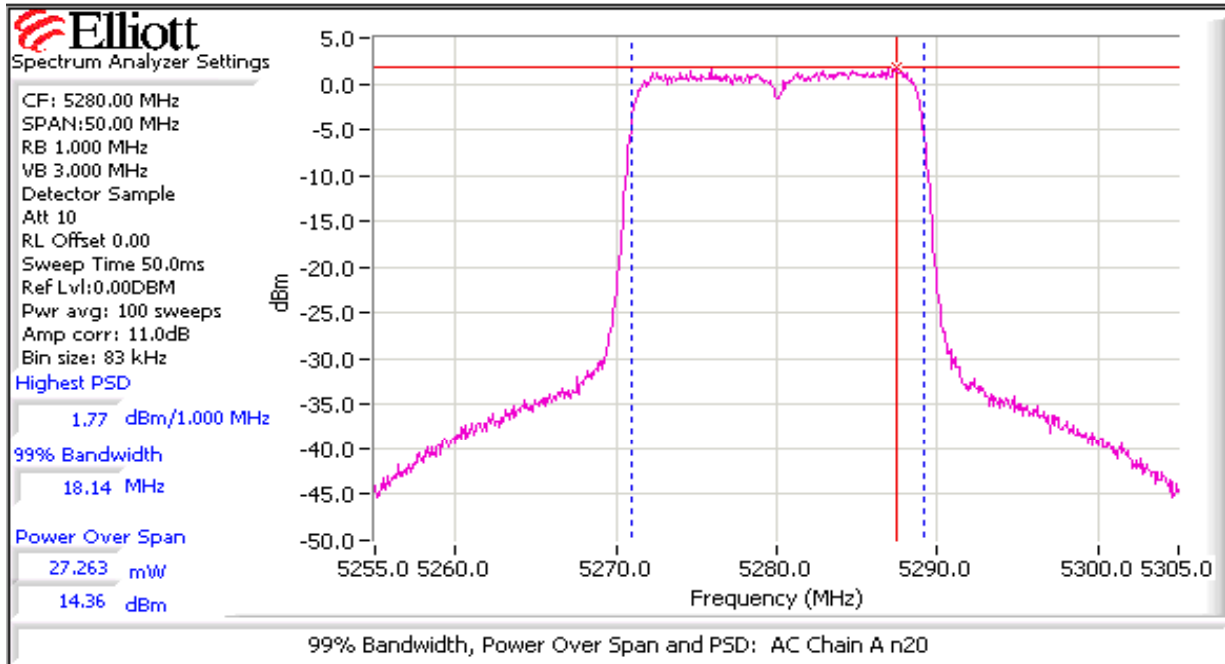
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Run #2: Bandwidth, Output Power and Power spectral Density - Chain A + C



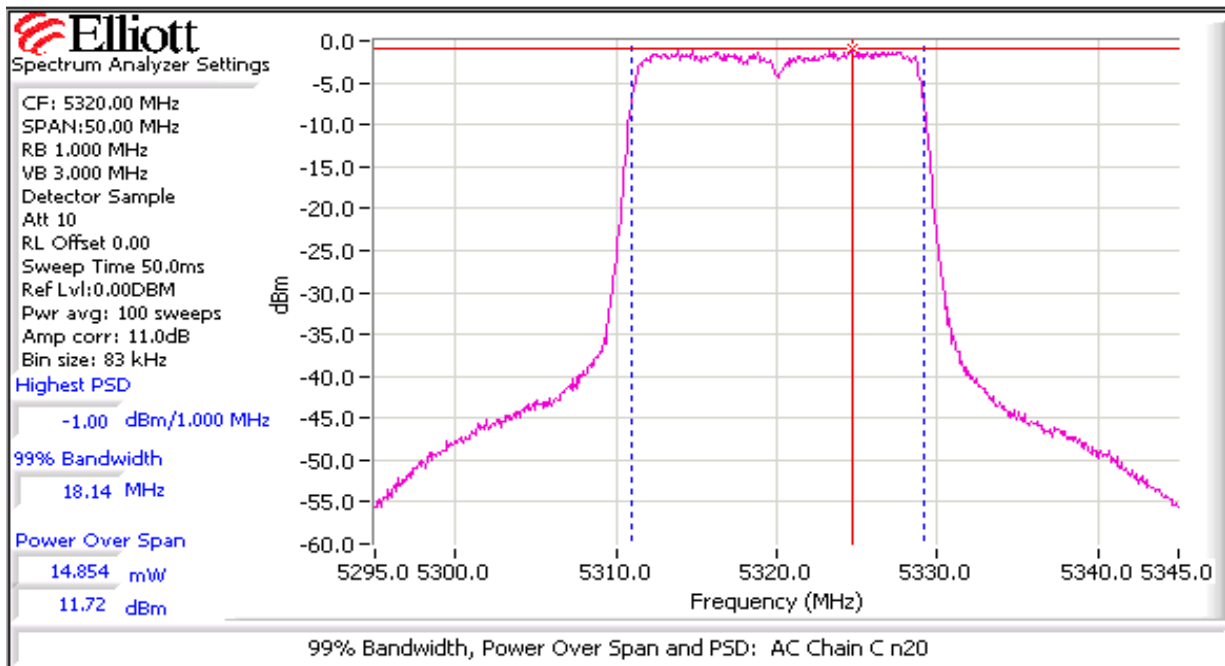
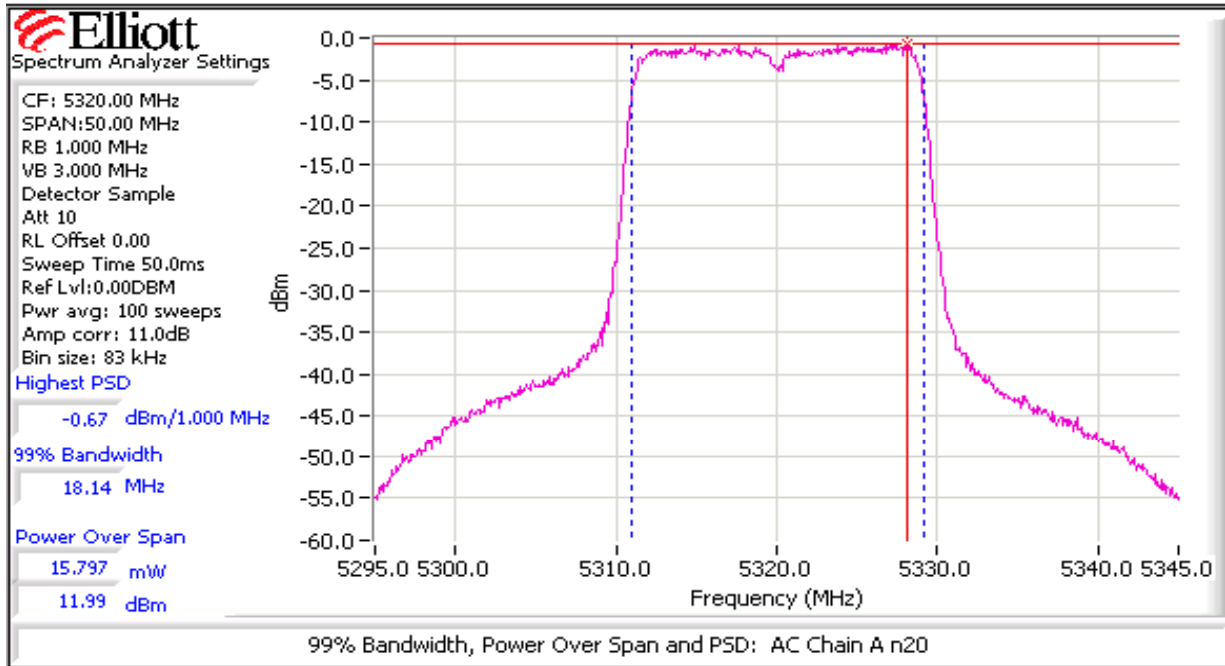
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Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #2: Bandwidth, Output Power and Power spectral Density - Chain A + C



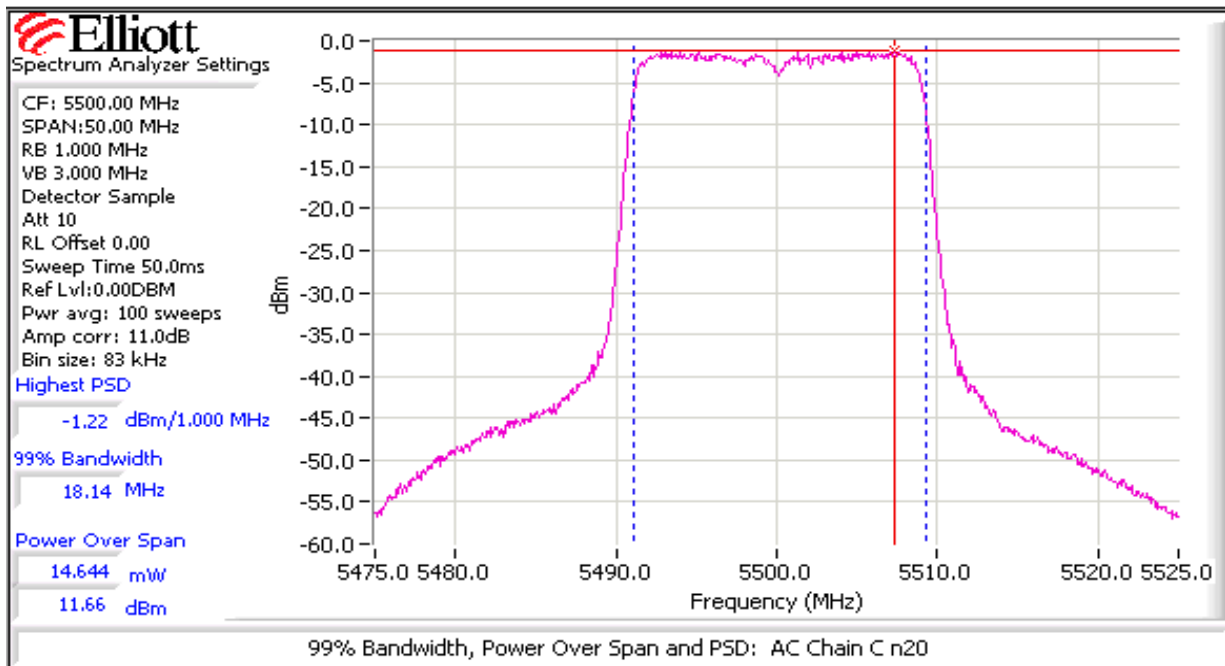
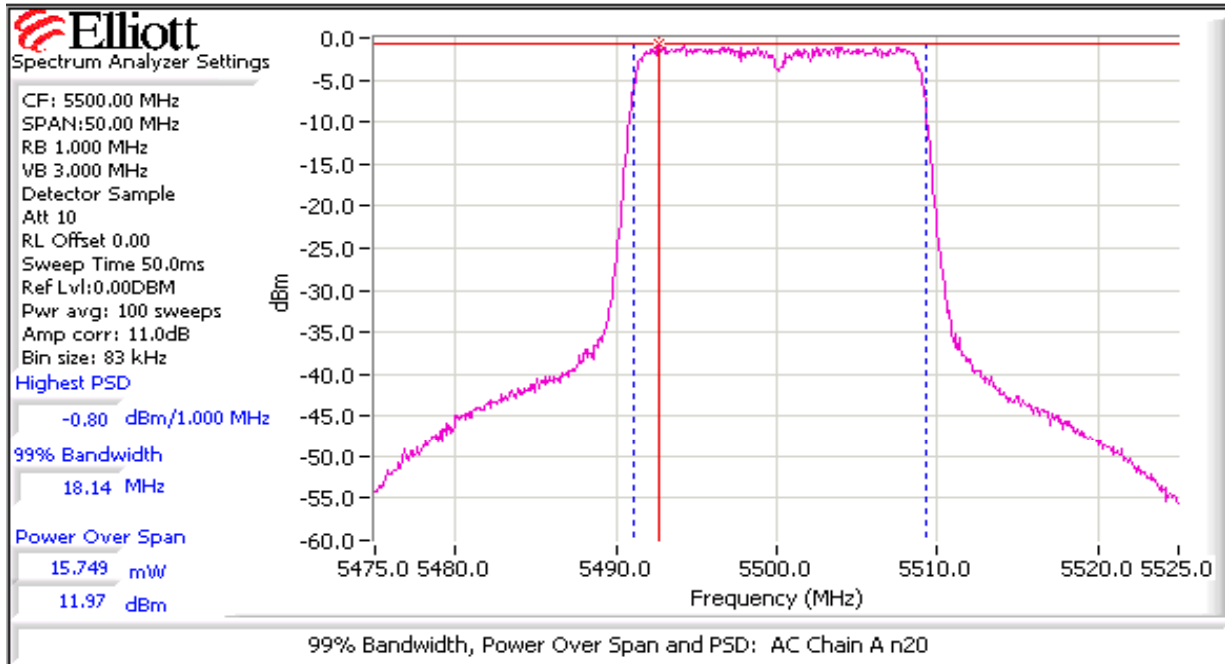
Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #2: Bandwidth, Output Power and Power spectral Density - Chain A + C



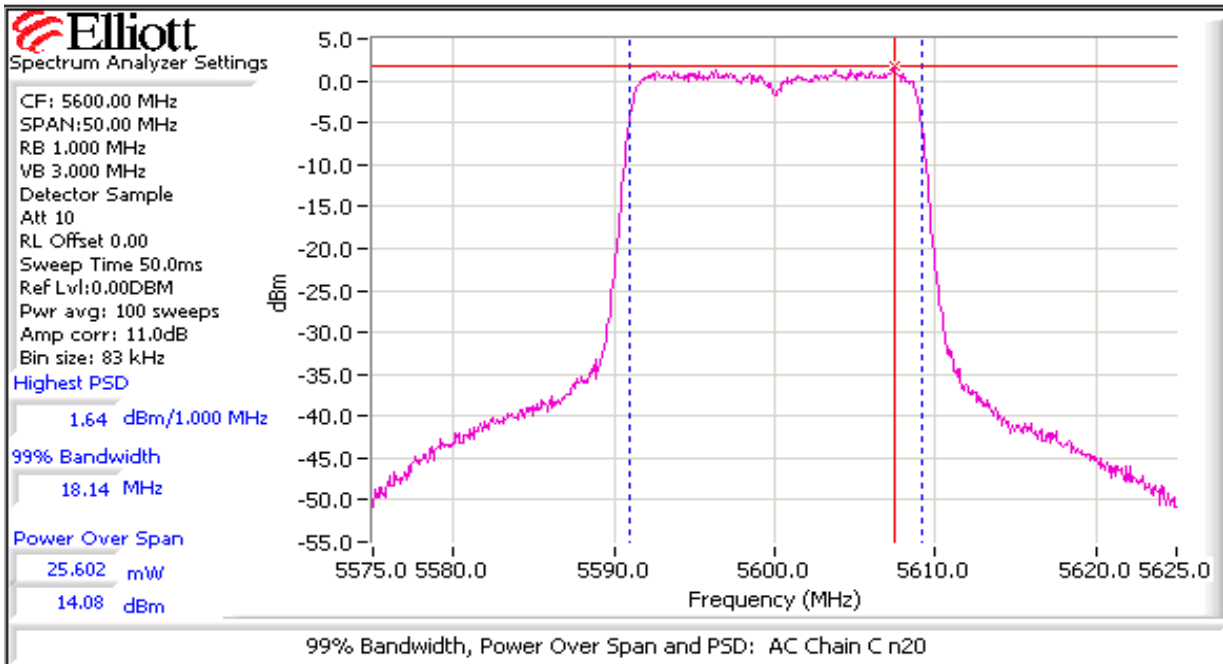
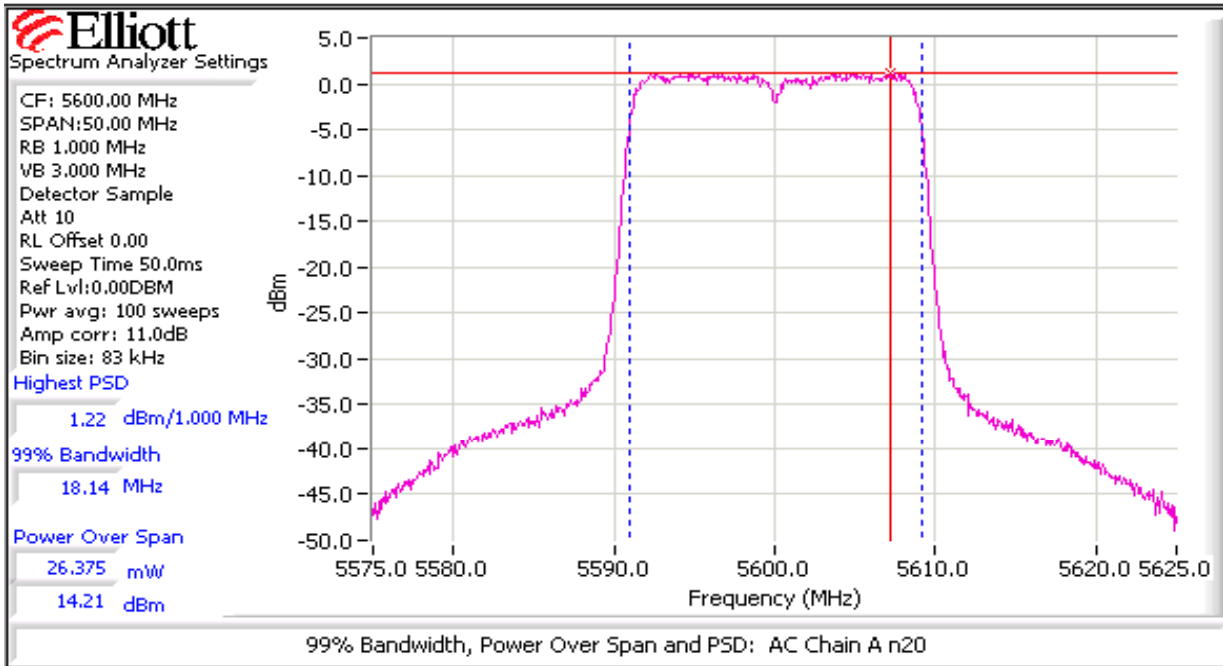
Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #2: Bandwidth, Output Power and Power spectral Density - Chain A + C



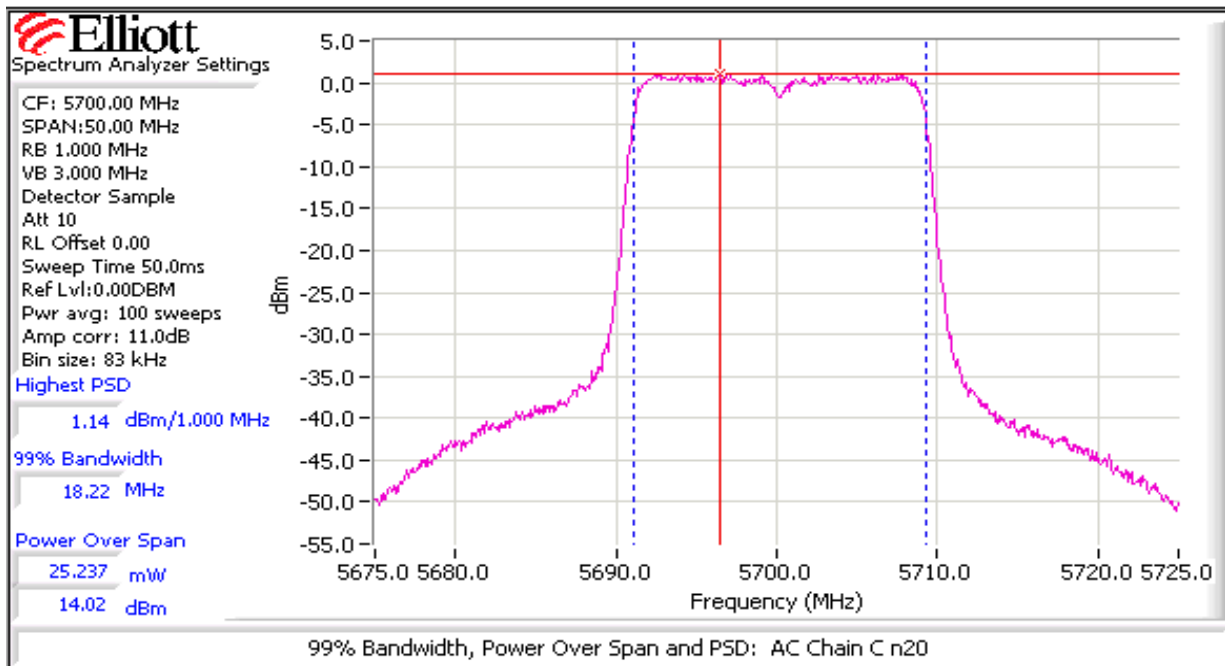
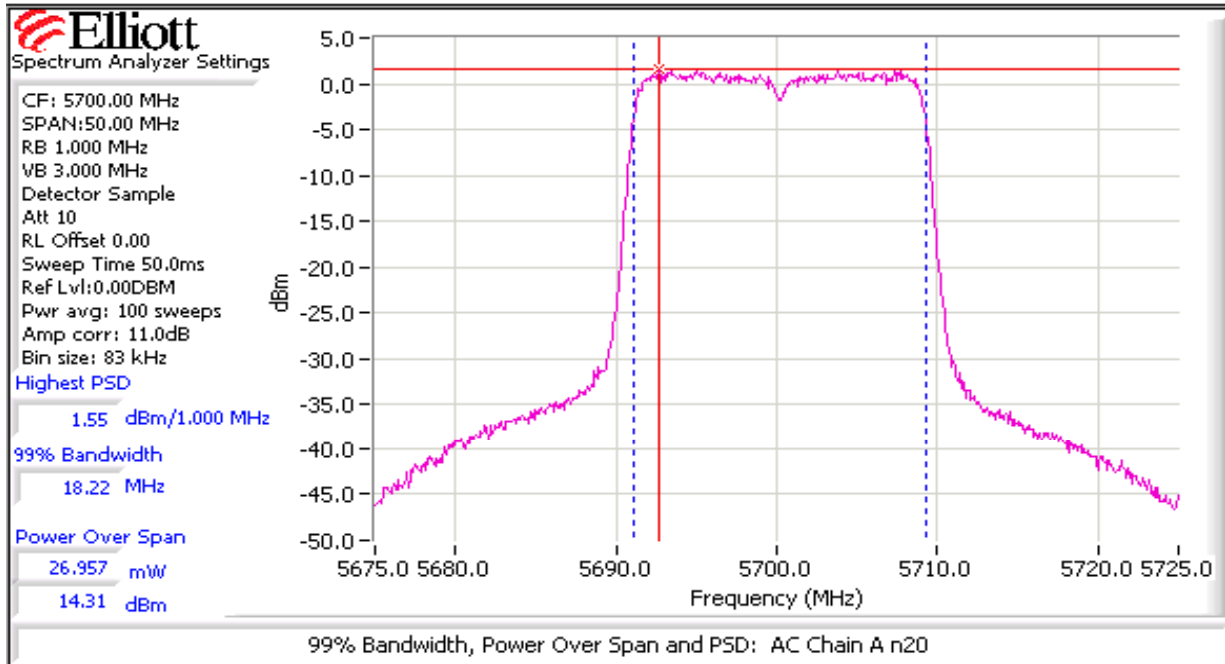
Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #2: Bandwidth, Output Power and Power spectral Density - Chain A + C



Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #2: Bandwidth, Output Power and Power spectral Density - Chain A + C



Client:	Intel	Job Number:	J70976
Model:	533-agn MMW	T-Log Number:	T71055
		Account Manager:	D. Eriksen
Contact:	Robert Paxman		
Standard:	FCC 15 E / RSS -210 (RF Port)	Class:	N/A

Run #3: Bandwidth, Output Power and Power spectral Density - Chain B + C

	Chain 1	Chain 2	Chain 3	Coherent	Effective <sup>5</sup>
Antenna Gain (dBi):	5	5	5	No	5.0

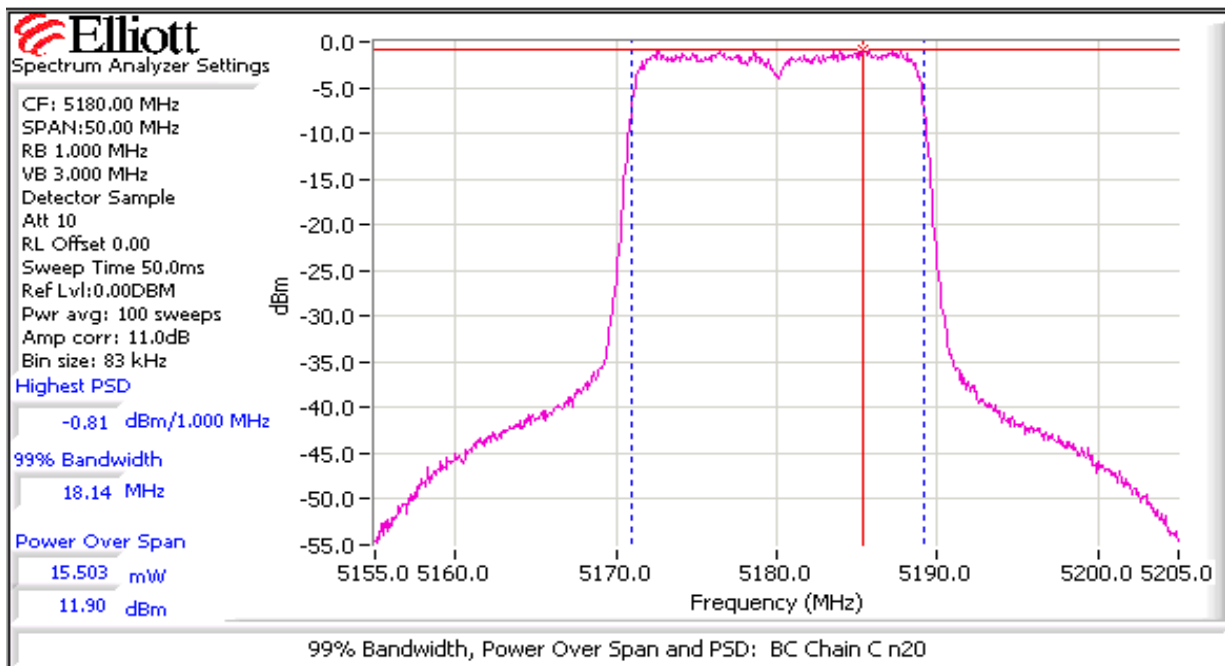
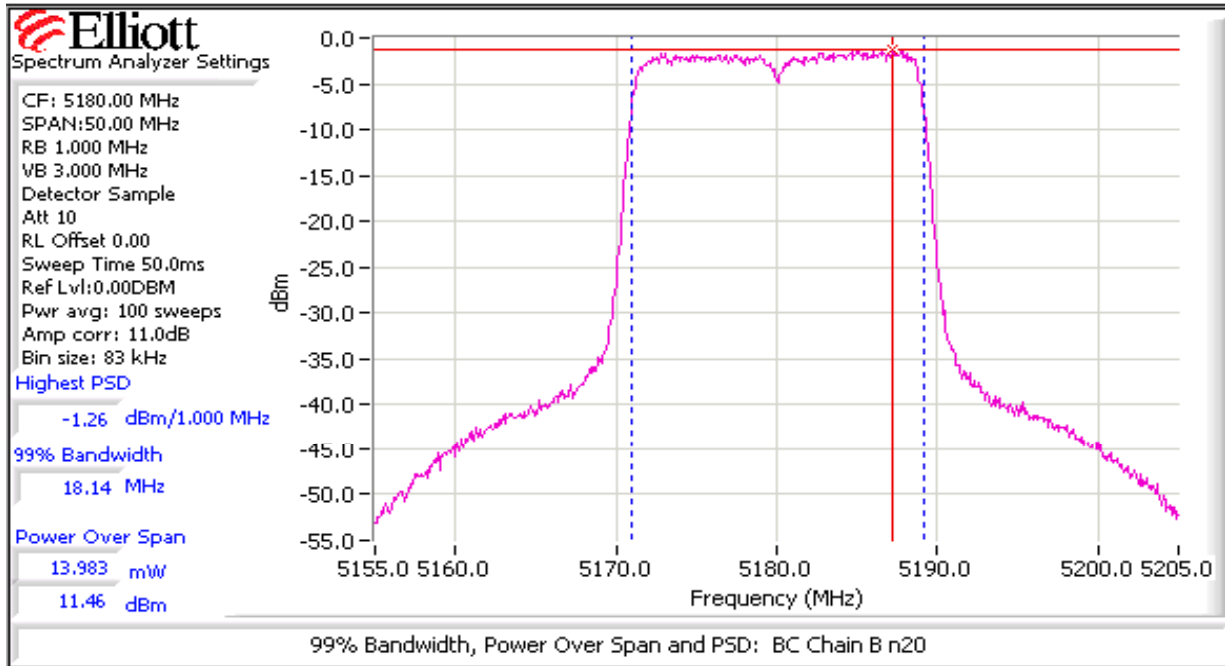
Frequency (MHz)	Software Setting	26dB BW (MHz)	Measured Output Power <sup>1</sup> dBm			Total		Limit (dBm)	Max Power (W)	Pass or Fail
			Chain A	Chain B	Chain C	mW	dBm			
5180	28.5, 29.0	37.7		11.5	11.9	29.5	14.7	17.0	0.044	PASS
5200	30.0, 30.5	37.0		13.4	13.5	44.1	16.4	17.0		PASS
5240	29.0, 29.0	33.3		13.7	13.0	43.5	16.4	17.0		PASS
5260	29.5, 30.5	35.3		14.8	14.5	58.6	17.7	24.0	0.062	PASS
5300	28.5, 30.0	27.5		15.3	14.6	62.5	18.0	24.0		PASS
5320	24.5, 26.0	28.1		11.3	11.4	27.5	14.4	24.0		PASS
5500	23.5, 24.5	26.9		11.5	11.1	27.1	14.3	24.0	0.057	PASS
5600	27.0, 27.0	23.4		14.7	14.4	56.9	17.5	24.0		PASS
5700	27.0, 27.5	28.3		14.6	14.3	55.9	17.5	24.0		PASS

Frequency (MHz)	99% <sup>4</sup> BW	Total Power	PSD <sup>2</sup> dBm/MHz			Total PSD		Limit		Pass or Fail
			Chain A	Chain B	Chain C	mW/MHz	dBm/MHz	FCC	RSS 210 <sup>3</sup>	
5180	18.1	14.7		-1.3	-0.8	1.6	2.0	4.0	5.0	PASS
5200	18.1	16.4		0.7	0.6	2.3	3.7	4.0	5.0	PASS
5240	18.1	16.4		1.2	0.4	2.4	3.8	4.0	5.0	PASS
5260	18.1	17.7		2.1	1.8	3.1	5.0	11.0	11.0	PASS
5300	18.1	18.0		2.5	1.7	3.2	5.1	11.0	11.0	PASS
5320	18.1	14.4		-1.4	-1.2	1.5	1.7	11.0	11.0	PASS
5500	18.2	14.3		-1.3	-1.6	1.4	1.6	11.0	11.0	PASS
5600	18.1	17.5		1.8	1.7	3.0	4.8	11.0	11.0	PASS
5700	18.2	17.5		1.8	1.6	2.9	4.7	11.0	11.0	PASS

- Note 1: Output power measured using a spectrum analyzer (see plots below): RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 50 MHz
- Note 2: Measured using the same analyzer settings used for output power.
- Note 3: For RSS-210 the limit for the 5150 - 5250 MHz band accounts for the antenna gain as the maximum eirp allowed is 10dBm/MHz. The limits are also corrected for instances where the highest measured value of the PSD exceeds the average PSD (calculated from the measured power divided by the measured 99% bandwidth) by more than 3dB by the amount that the measured value exceeds the average by more than 3dB.
- Note 4: 99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB >=3xRB
- Note 5: For MIMO systems the total output power and total PSD are calculated from the sum of the powers of the individual chains (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operating mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power on each chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain and the EIRP is the product of the effective gain and total power.

Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

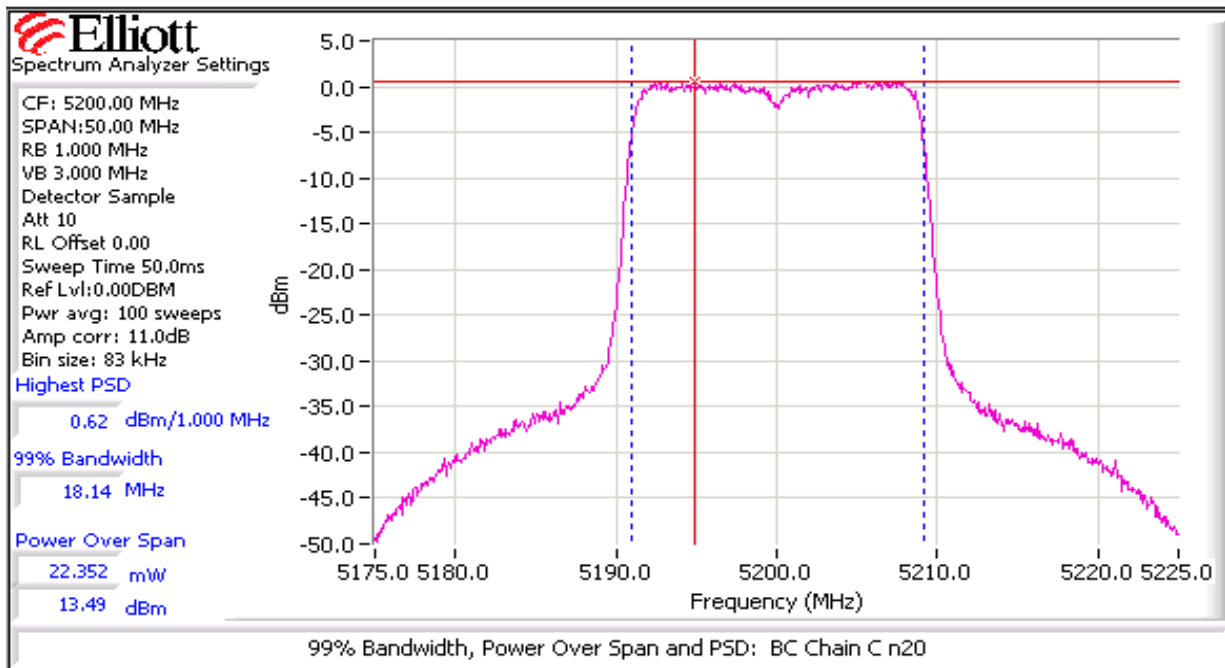
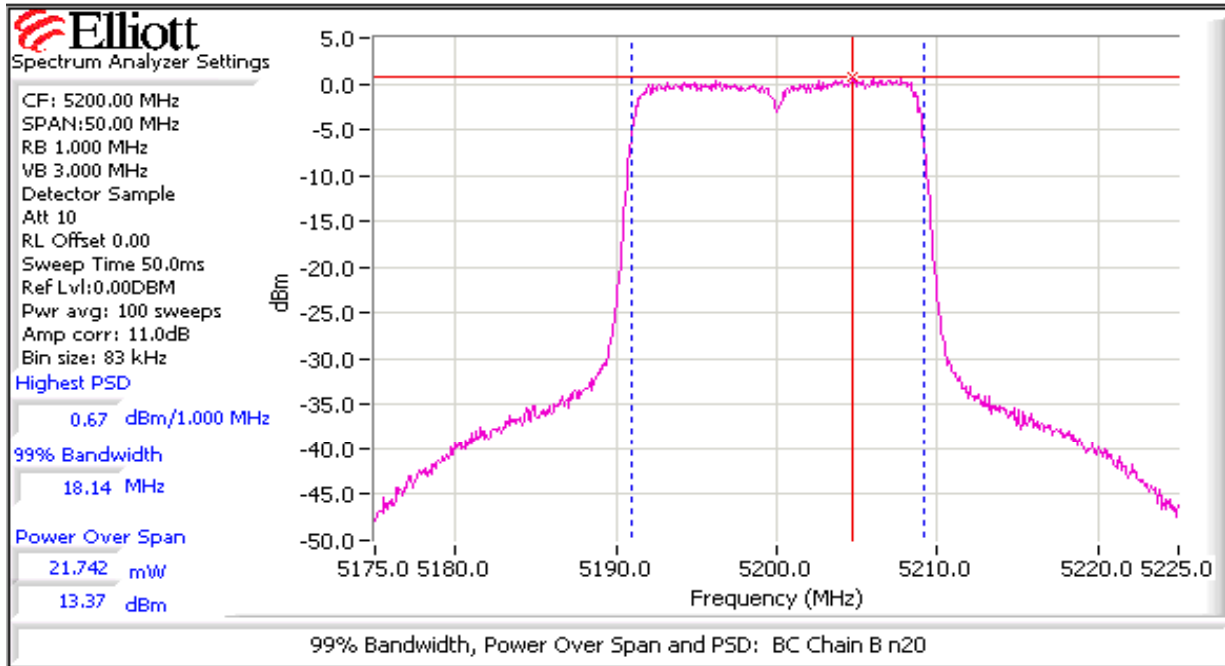
Run #3: Bandwidth, Output Power and Power spectral Density - Chain B + C





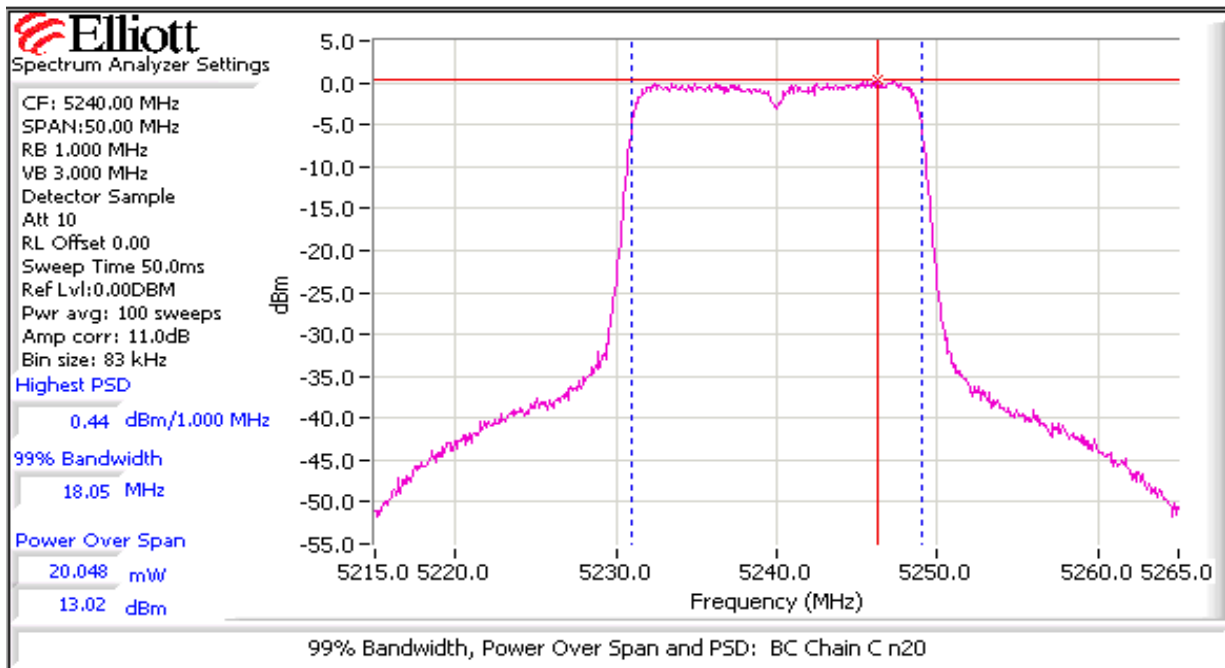
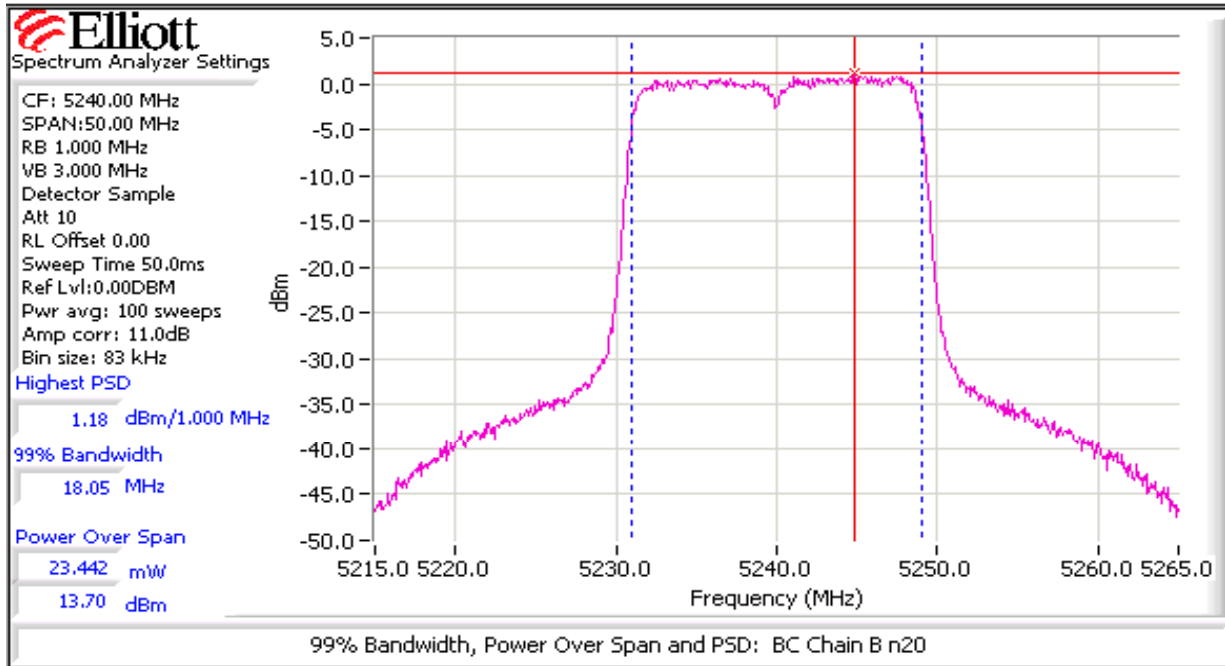
Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

### Run #3: Bandwidth, Output Power and Power spectral Density - Chain B + C



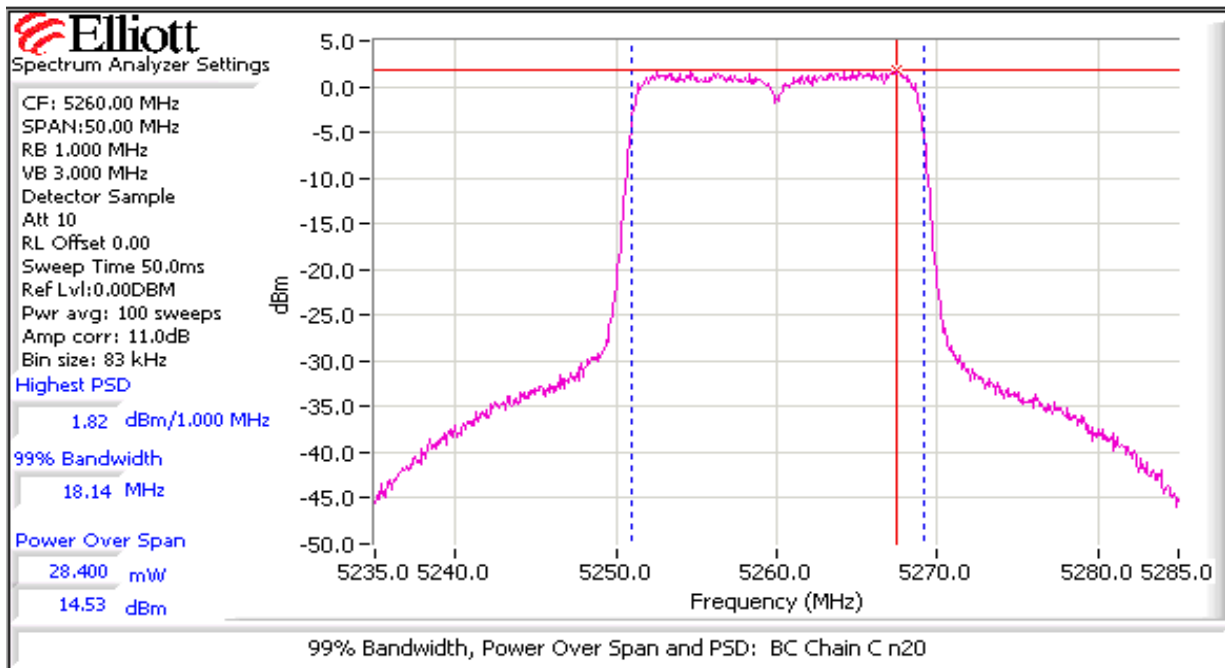
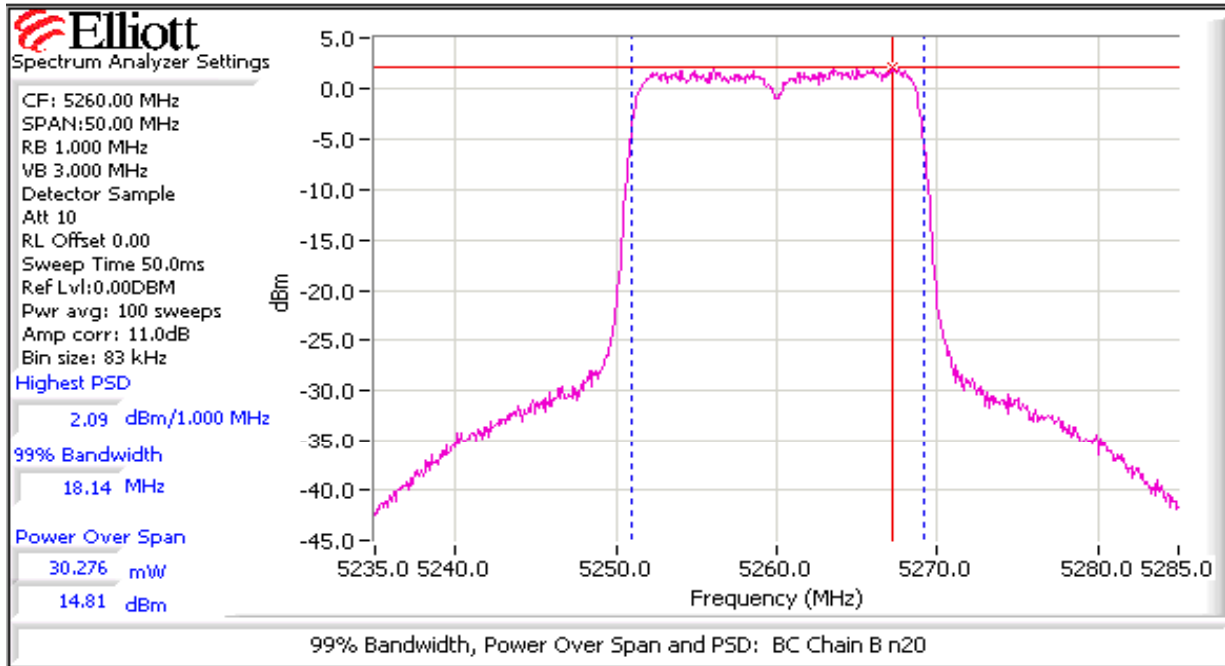
Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

### Run #3: Bandwidth, Output Power and Power spectral Density - Chain B + C



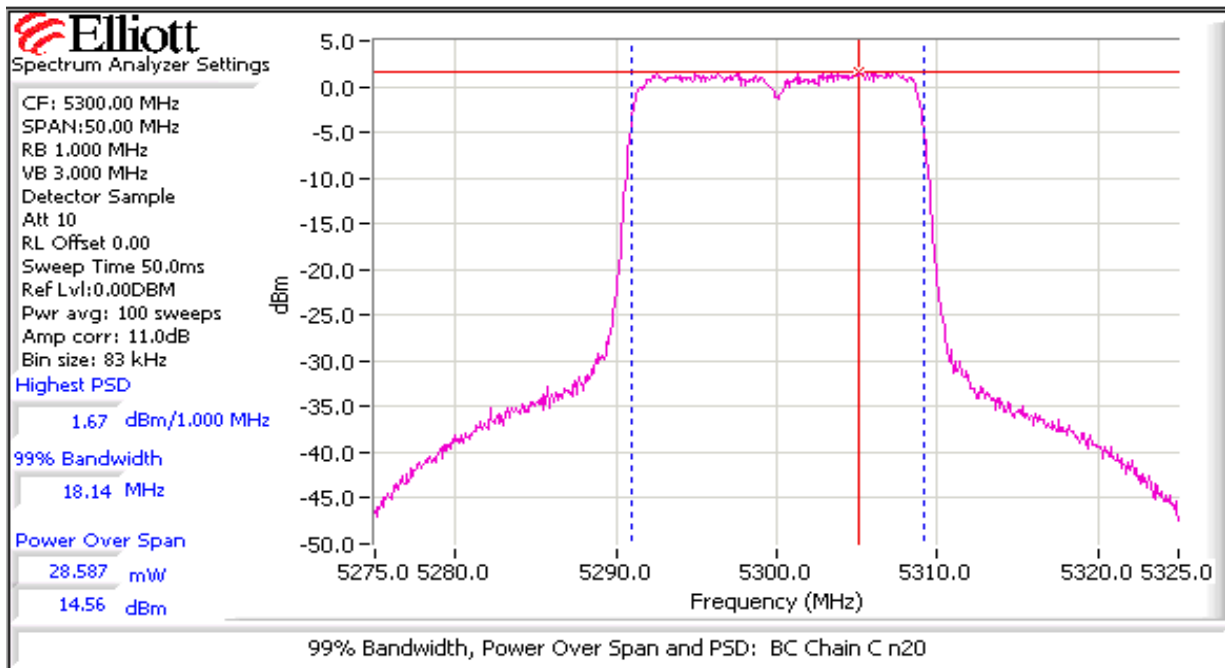
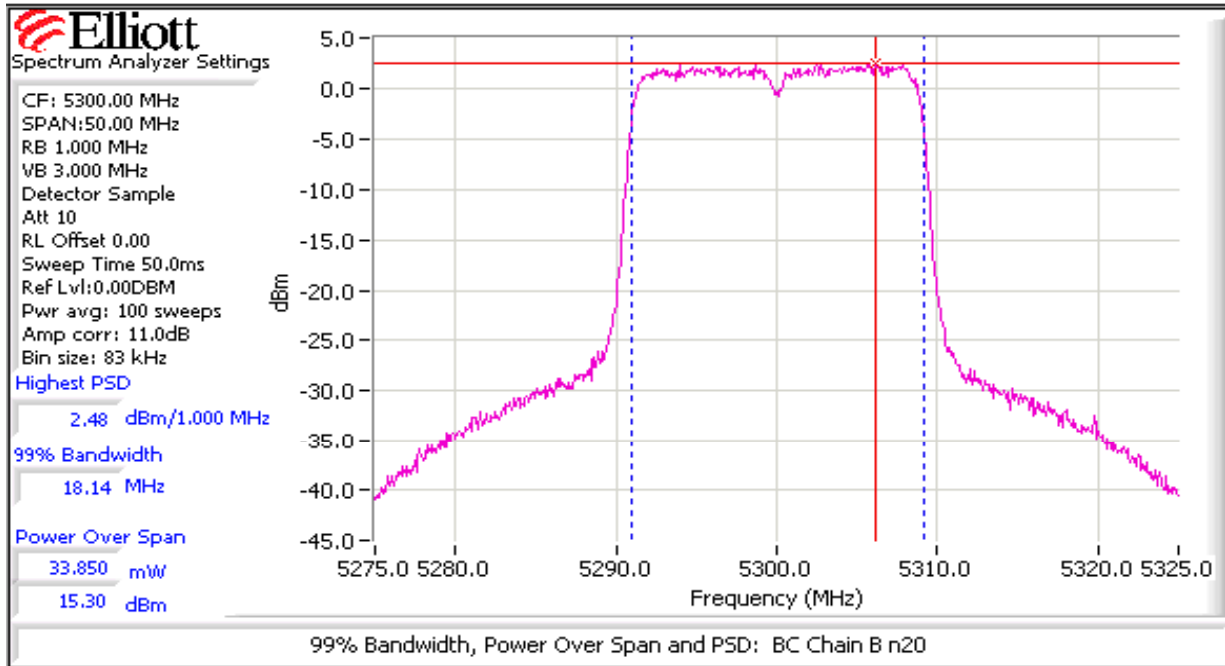
Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #3: Bandwidth, Output Power and Power spectral Density - Chain B + C



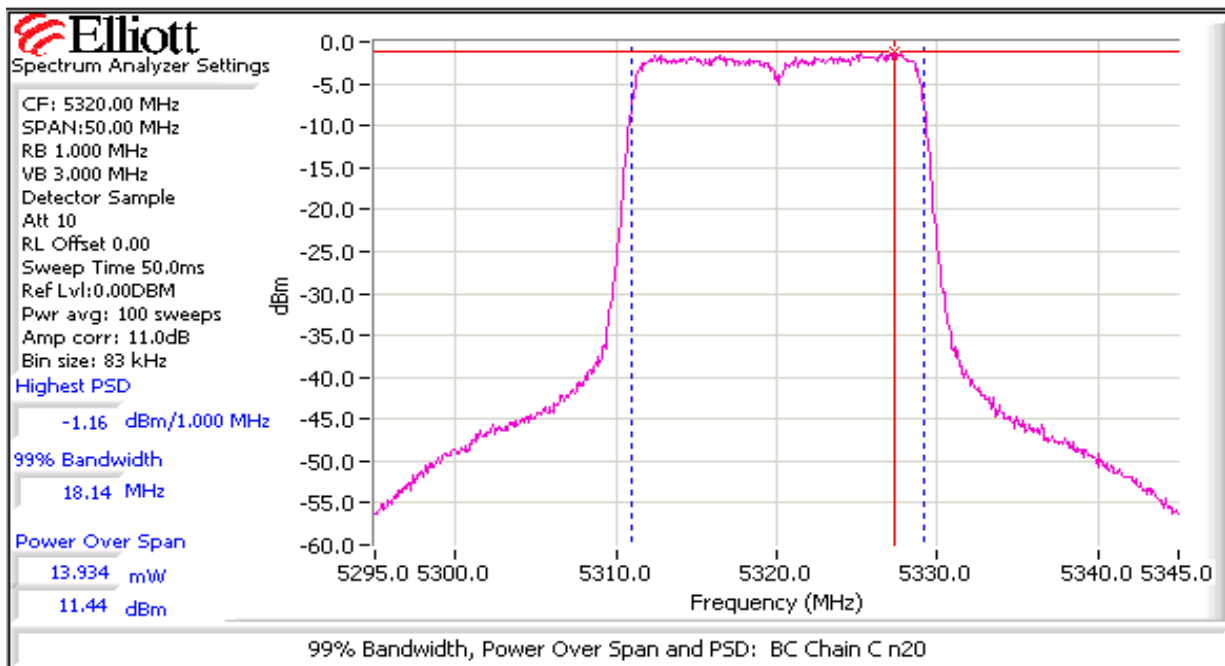
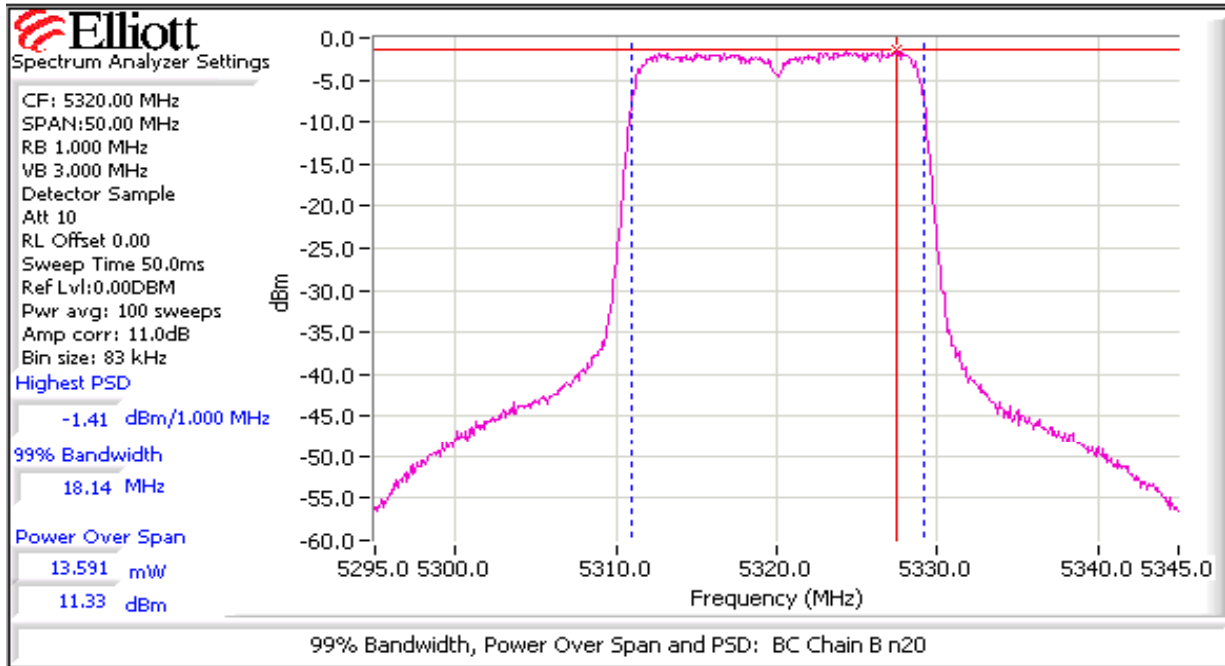
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Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

### Run #3: Bandwidth, Output Power and Power spectral Density - Chain B + C



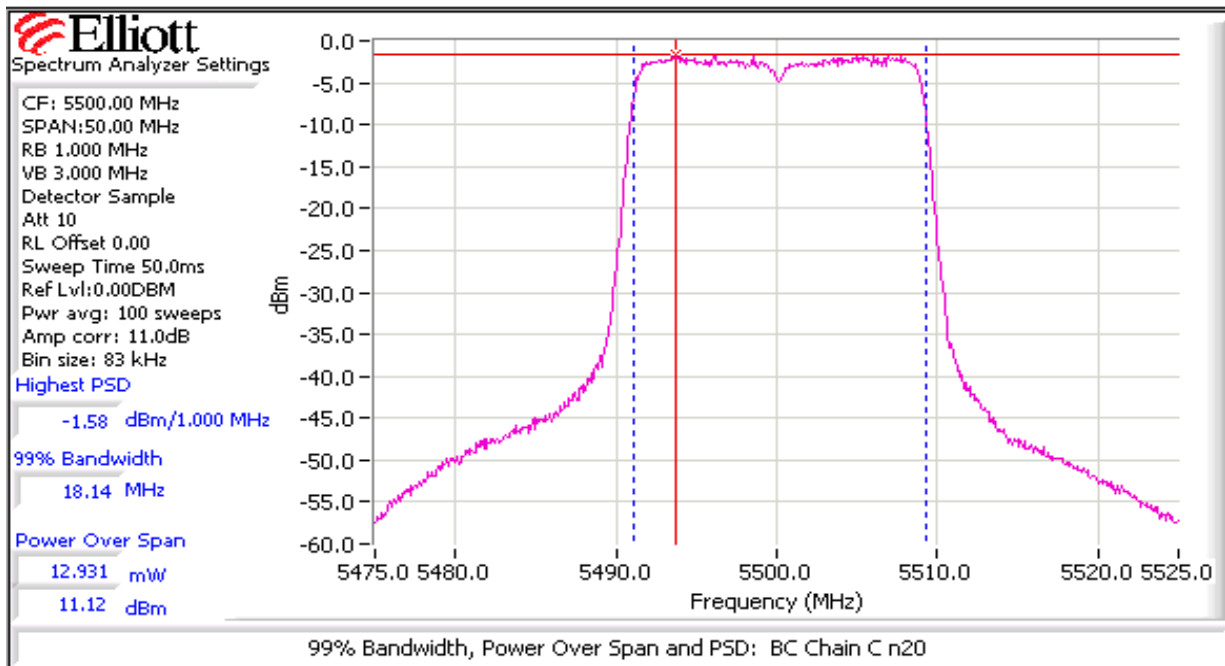
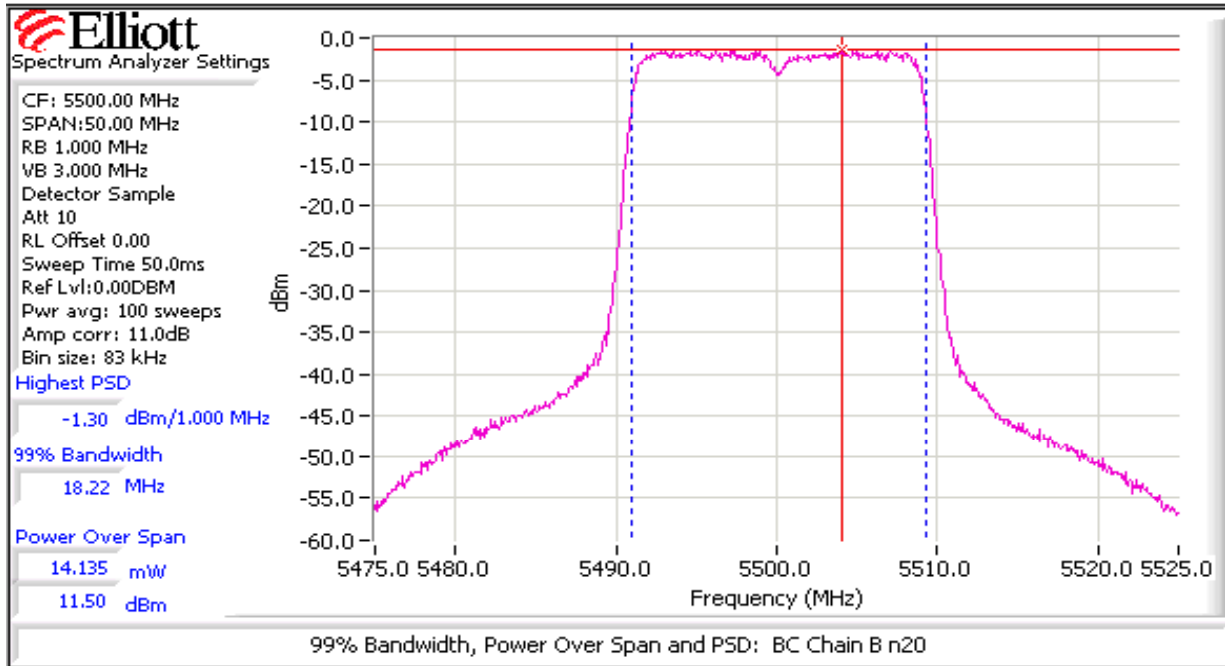
Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

### Run #3: Bandwidth, Output Power and Power spectral Density - Chain B + C



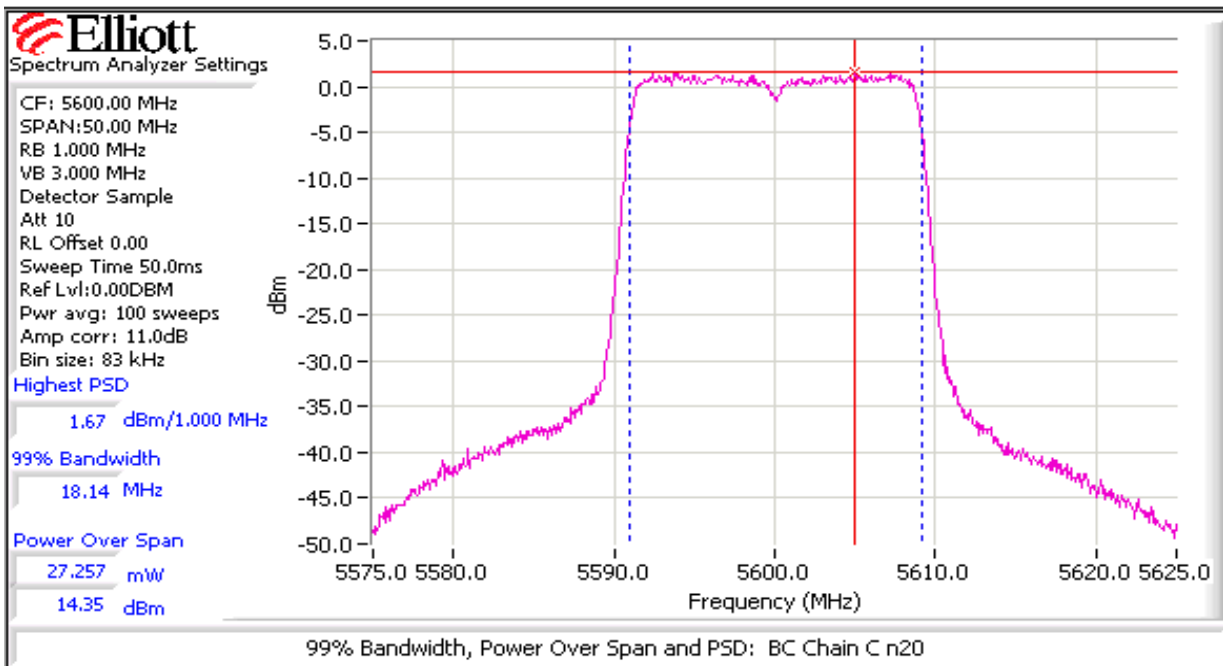
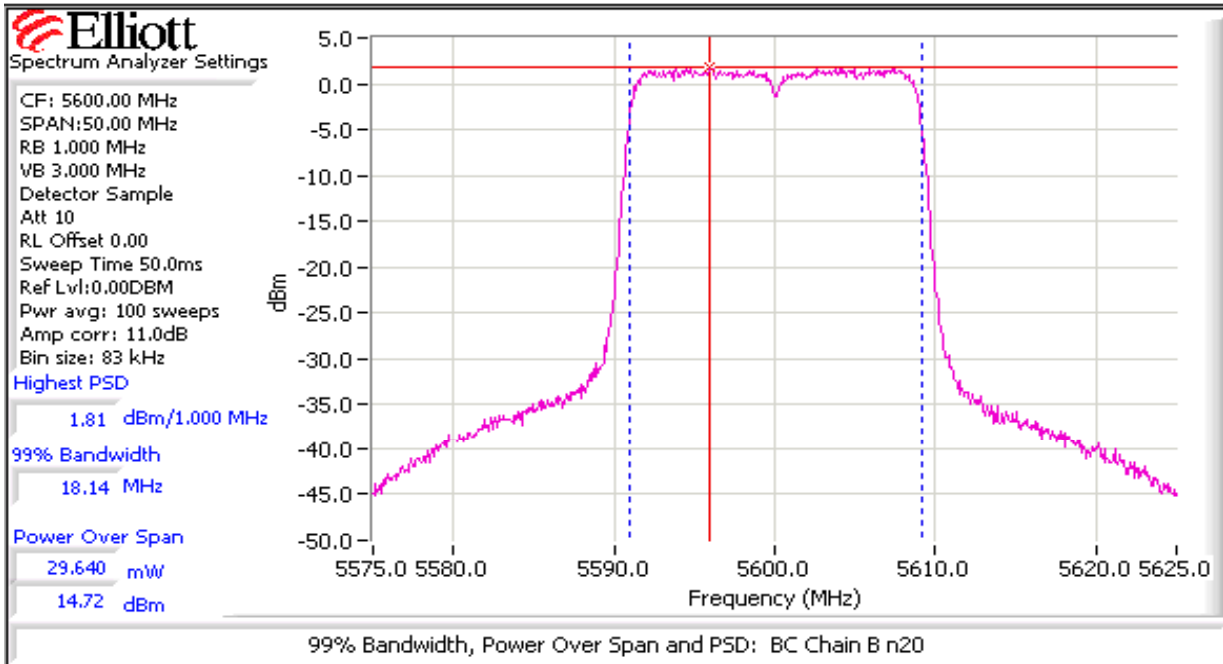
Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

### Run #3: Bandwidth, Output Power and Power spectral Density - Chain B + C



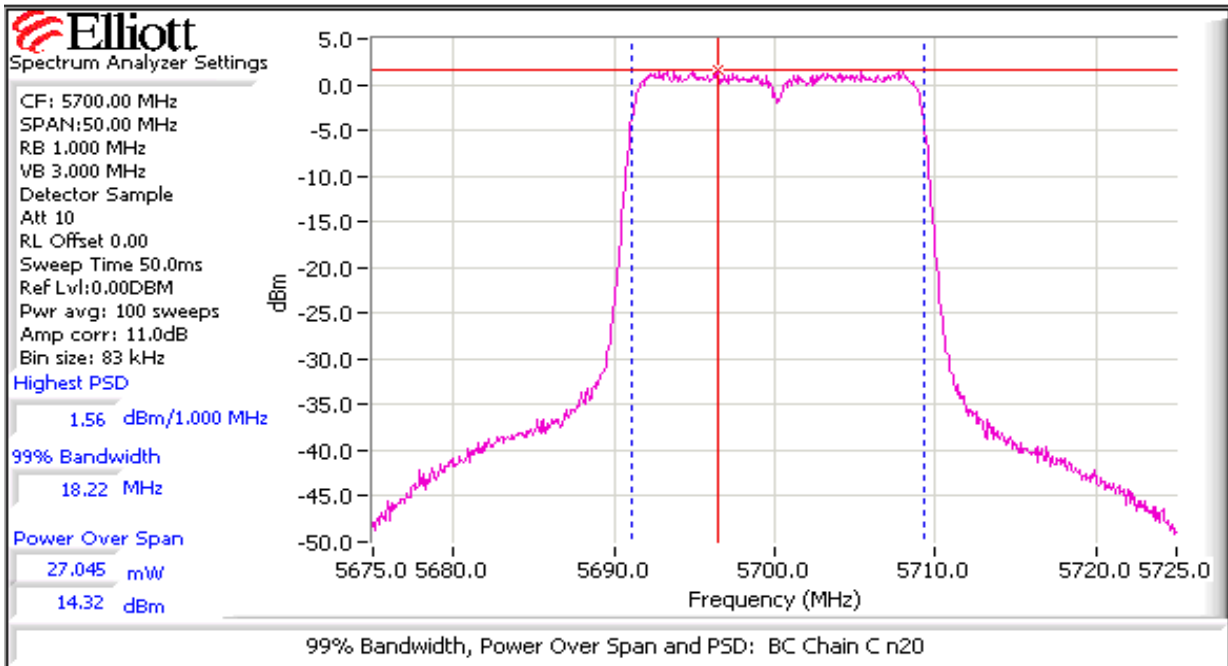
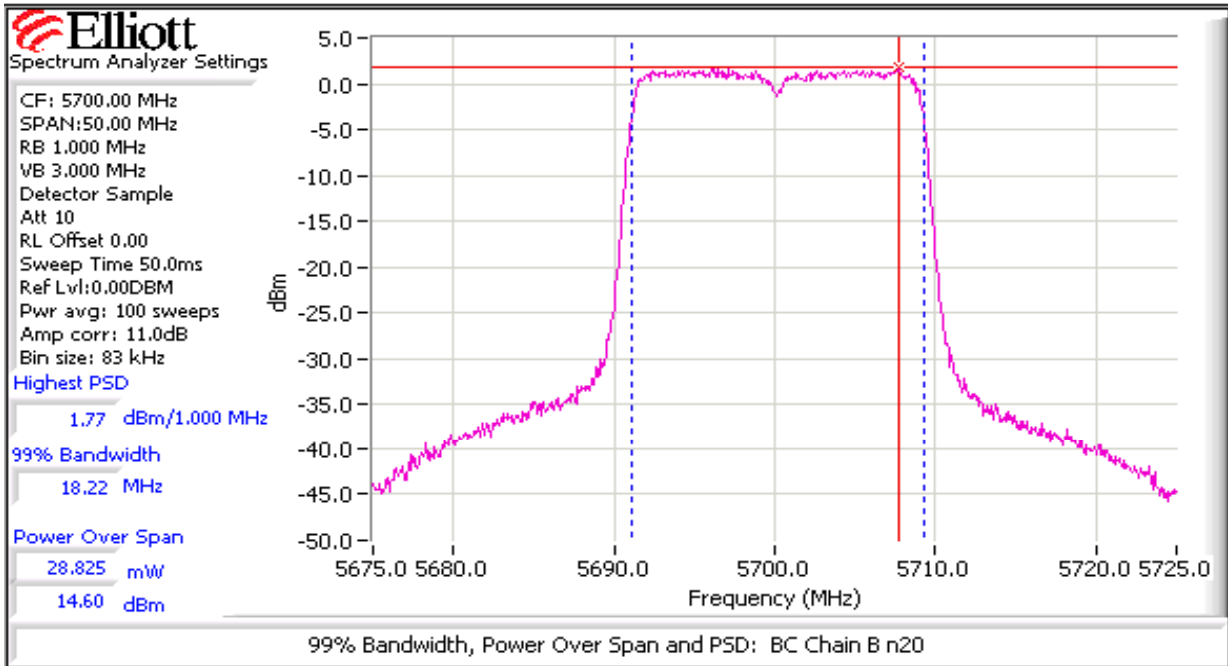
Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

### Run #3: Bandwidth, Output Power and Power spectral Density - Chain B + C



Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

### Run #3: Bandwidth, Output Power and Power spectral Density - Chain B + C





Client:	Intel	Job Number:	J70976
Model:	533-agn MMW	T-Log Number:	T71055
		Account Manager:	D. Eriksen
Contact:	Robert Paxman		
Standard:	FCC 15 E / RSS -210 (RF Port)	Class:	N/A

Date of Test: 4/30/2008  
 Test Engineer: John Caizzi  
 Test Location: FT EMC#1

Config. Used: 1  
 Config Change: None  
 EUT Voltage: 3.3 VDC

Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C

	Chain 1	Chain 2	Chain 3	Coherent	Effective <sup>5</sup>
Antenna Gain (dBi):	5	5	5	No	5.0

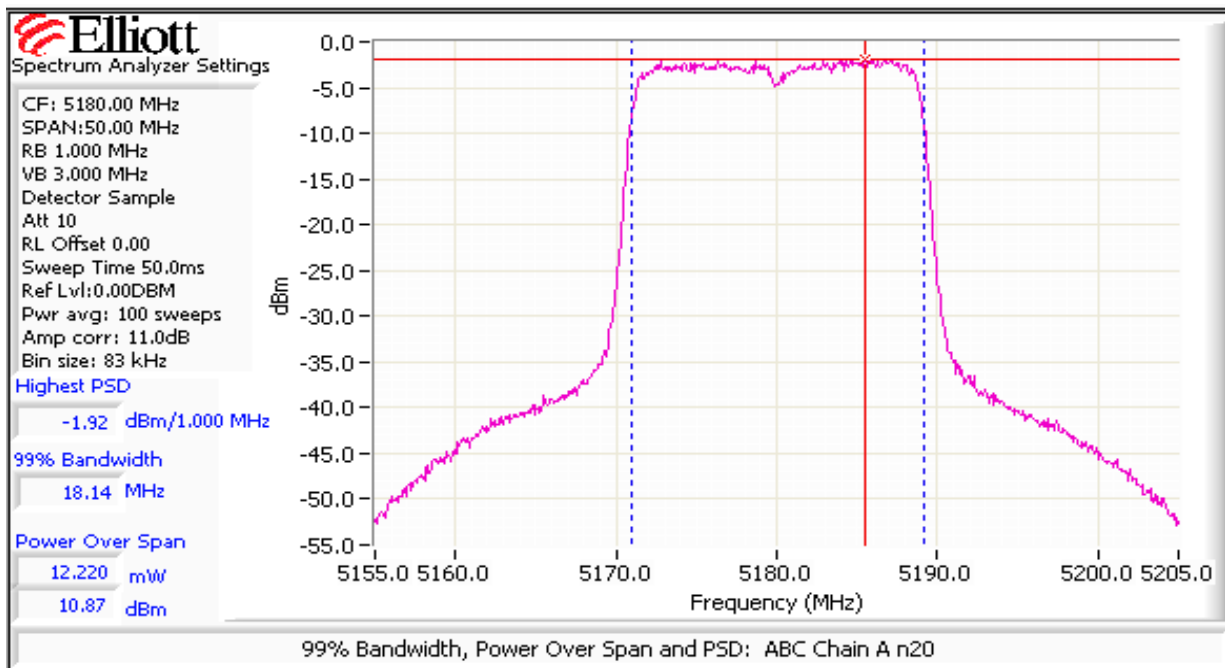
Frequency (MHz)	Software Setting	26dB BW (MHz)	Measured Output Power <sup>1</sup> dBm			Total		Limit (dBm)	Max Power (W)	Pass or Fail
			Chain A	Chain B	Chain C	mW	dBm			
5180	30.5/30/30.5	36.9	10.9	11.2	11.7	40.0	16.0	17.0	0.044	PASS
5200	30.5/29.5/30	37.0	11.7	12.0	11.4	44.4	16.5	17.0		PASS
5240	30/29/29.5	30.0	11.5	11.6	11.2	41.7	16.2	17.0		PASS
5260	33/32/33	35.3	15.4	15.6	15.7	108.5	20.4	24.0	0.108	PASS
5300	31.5/30.5/32	27.5	15.2	14.7	14.4	89.3	19.5	24.0		PASS
5320	27/26/27	28.1	11.2	11.3	10.3	37.4	15.7	24.0	0.111	PASS
5500	25.5/25.5/26	26.9	11.6	11.2	11.3	41.2	16.2	24.0		PASS
5600	28.5/27.5/28.5	22.3	13.8	13.5	13.6	69.4	18.4	24.0		PASS
5700	31/30.5/30.5	28.3	15.5	15.8	15.7	111.2	20.5	24.0	PASS	

Frequency (MHz)	99% <sup>4</sup> BW	Total Power	PSD <sup>2</sup> dBm/MHz			Total PSD		Limit		Pass or Fail
			Chain A	Chain B	Chain C	mW/MHz	dBm/MHz	FCC	RSS 210 <sup>3</sup>	
5180	18.1	16.0	-1.9	-1.4	-1.0	2.2	3.4	4.0	5.0	PASS
5200	18.1	16.5	-1.0	-0.6	-1.0	2.5	3.9	4.0	5.0	PASS
5240	18.1	16.2	-1.3	-1.2	-1.4	2.2	3.4	4.0	5.0	PASS
5260	18.1	20.4	2.6	2.9	3.0	5.8	7.6	11.0	11.0	PASS
5300	18.1	19.5	2.6	1.9	1.6	4.8	6.8	11.0	11.0	PASS
5320	18.1	15.7	-1.6	-1.1	-2.3	2.1	3.2	11.0	11.0	PASS
5500	18.2	16.2	-1.0	-1.5	-1.5	2.2	3.4	11.0	11.0	PASS
5600	18.1	18.4	1.0	1.2	0.7	3.7	5.7	11.0	11.0	PASS
5700	18.3	20.5	2.7	3.2	2.9	5.9	7.7	11.0	11.0	PASS

Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

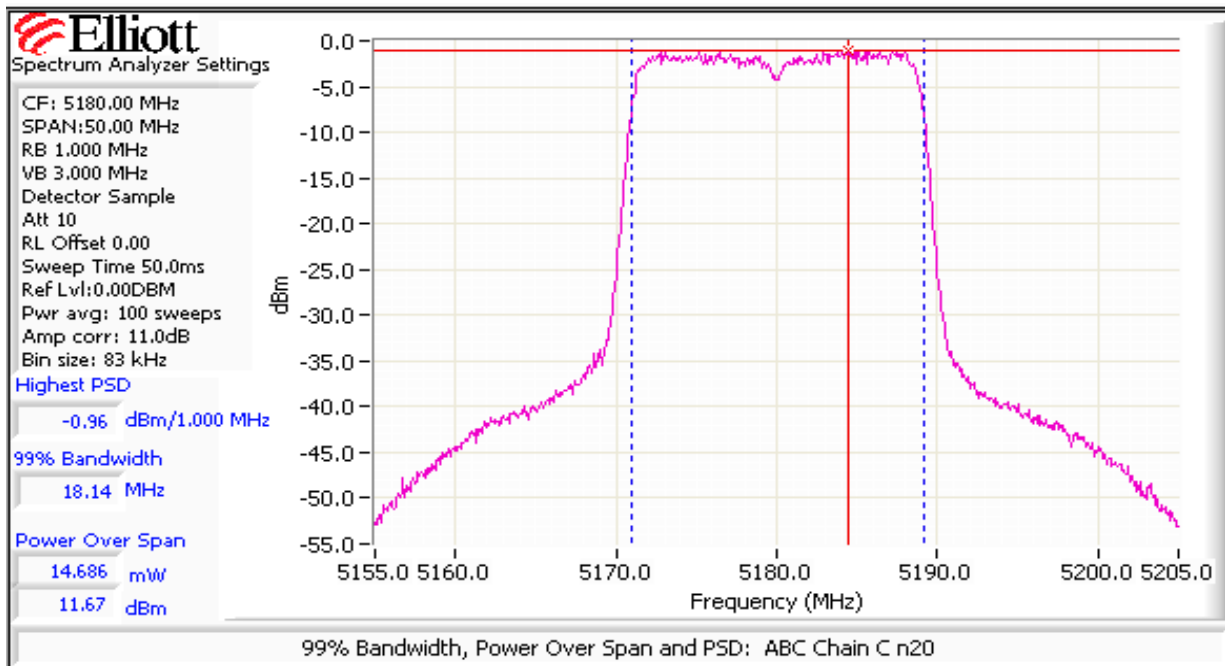
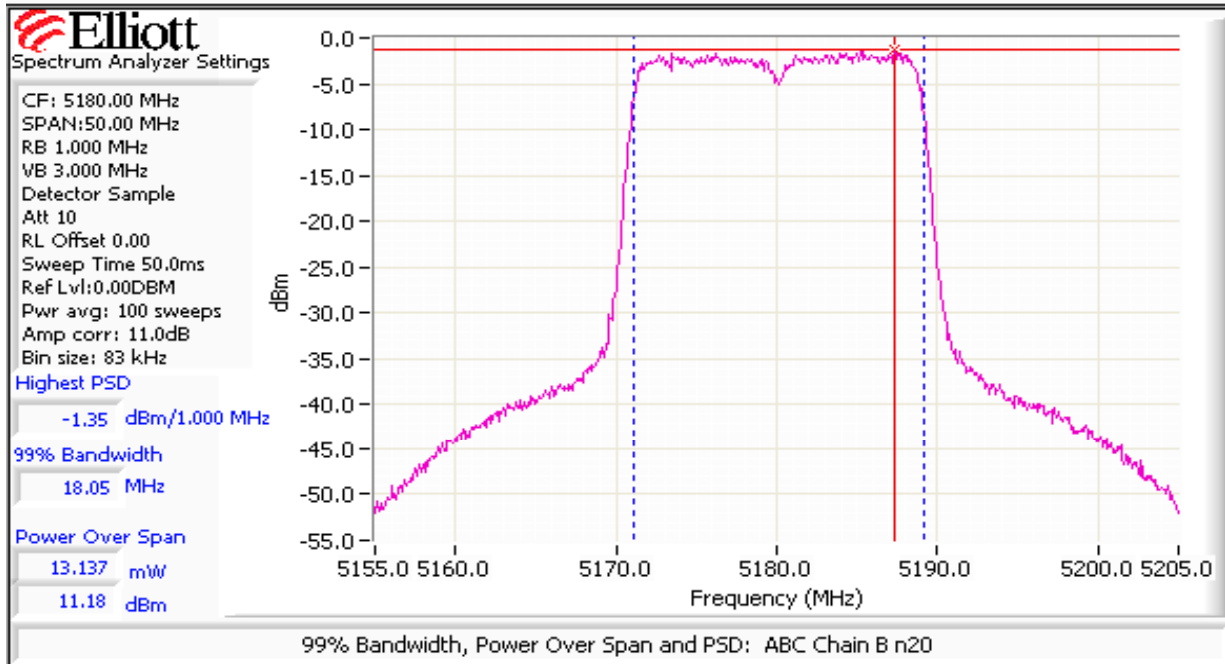
Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C

Note 1:	Output power measured using a spectrum analyzer (see plots below): RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 50 MHz
Note 2:	Measured using the same analyzer settings used for output power.
Note 3:	For RSS-210 the limit for the 5150 - 5250 MHz band accounts for the antenna gain as the maximum eirp allowed is 10dBm/MHz. The limits are also corrected for instances where the highest measured value of the PSD exceeds the average PSD (calculated from the measured power divided by the measured 99% bandwidth) by more than 3dB by the amount that the measured value exceeds the average by more than 3dB.
Note 4:	99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB >=3xRB
Note 5:	For MIMO systems the total output power and total PSD are calculated from the sum of the powers of the individual chains (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operating mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power on each chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain and the EIRP is the product of the effective gain and total power.



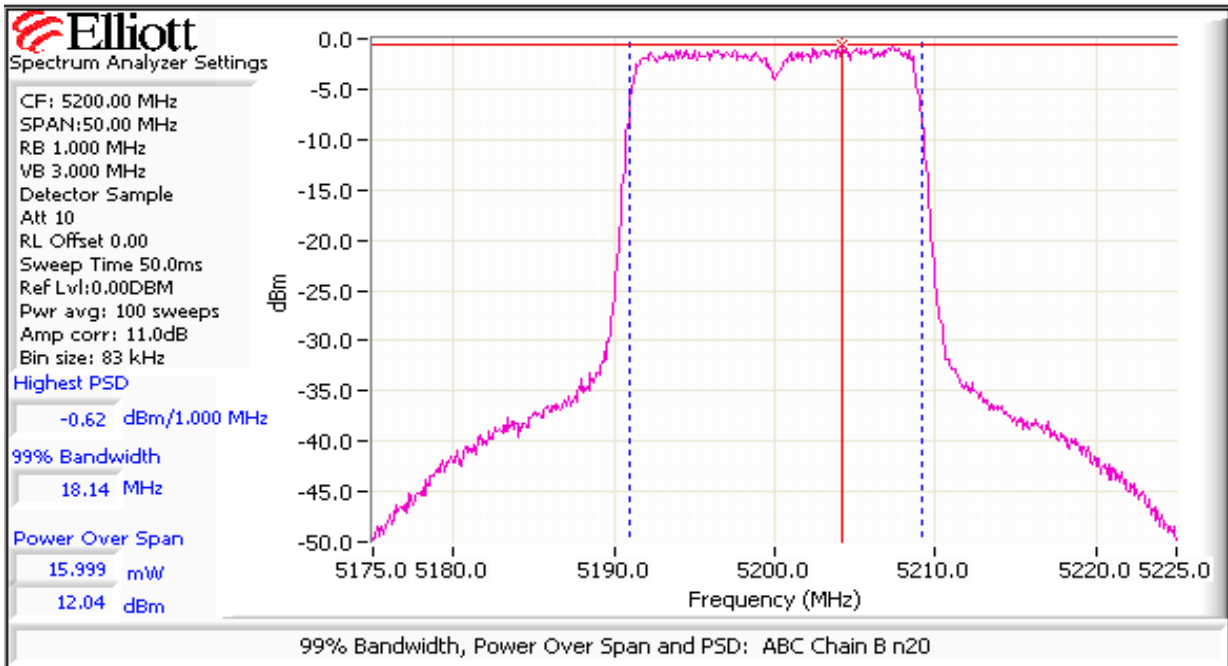
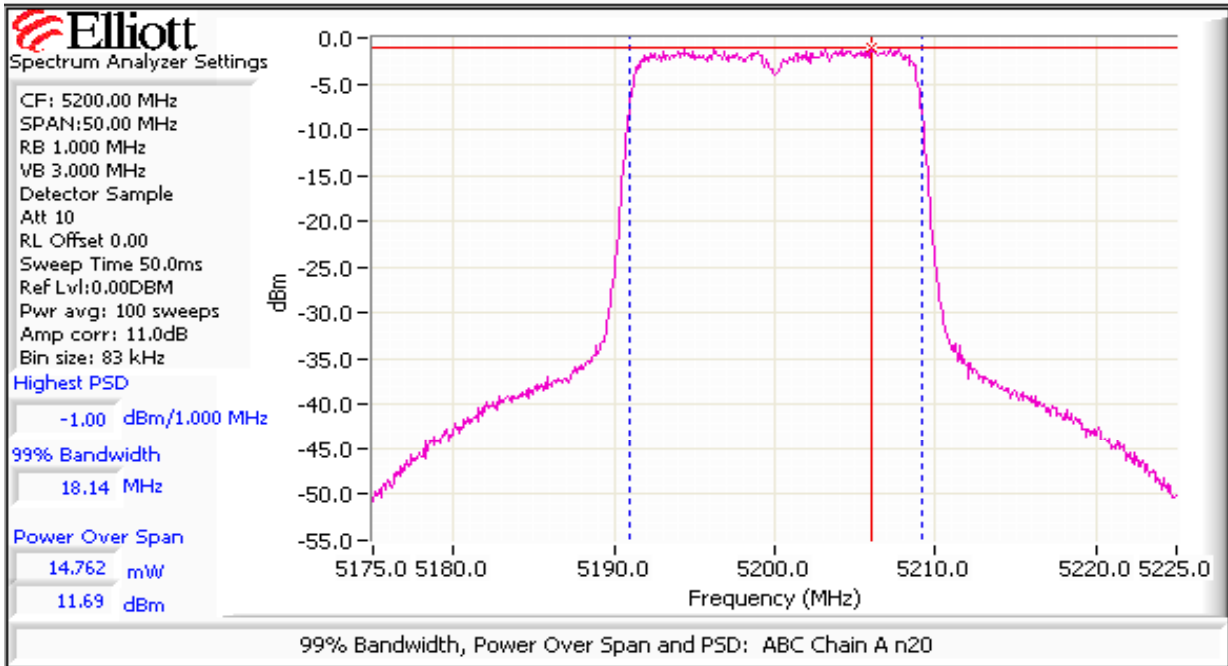
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Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C



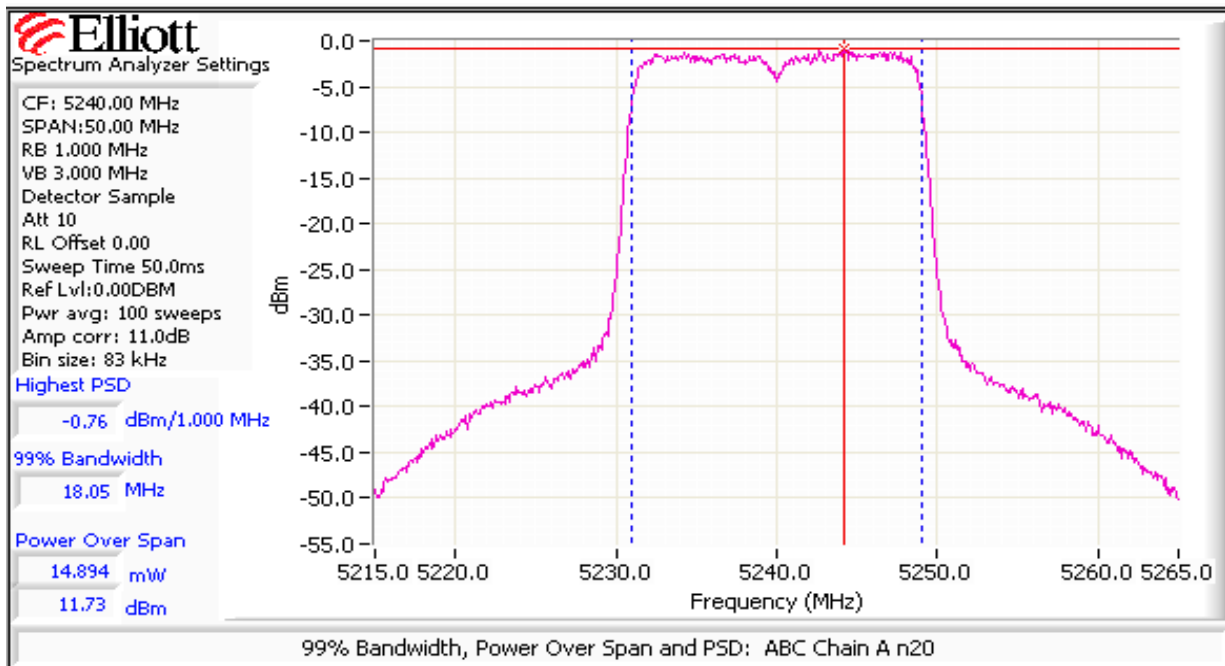
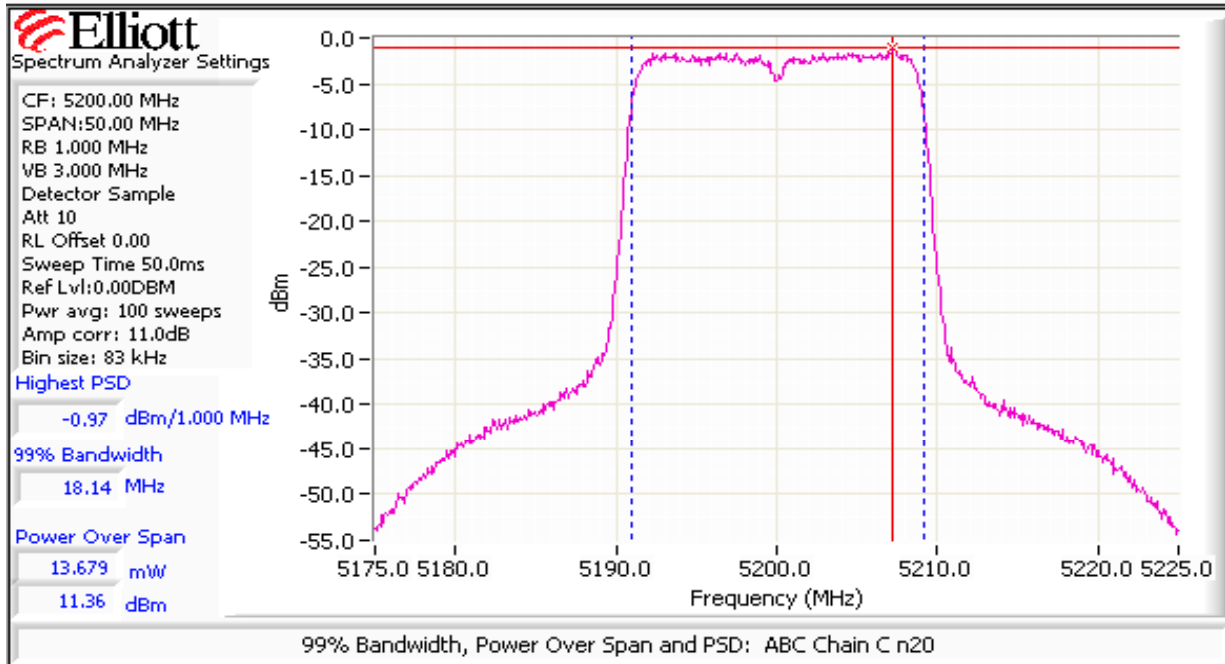
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Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C



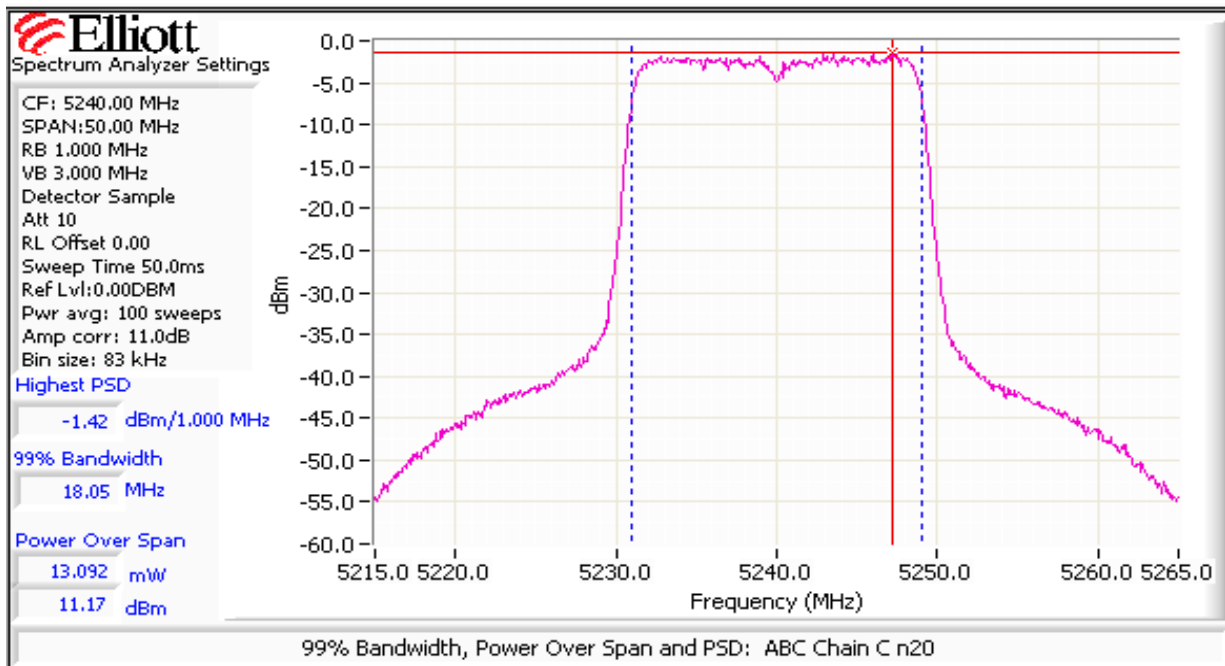
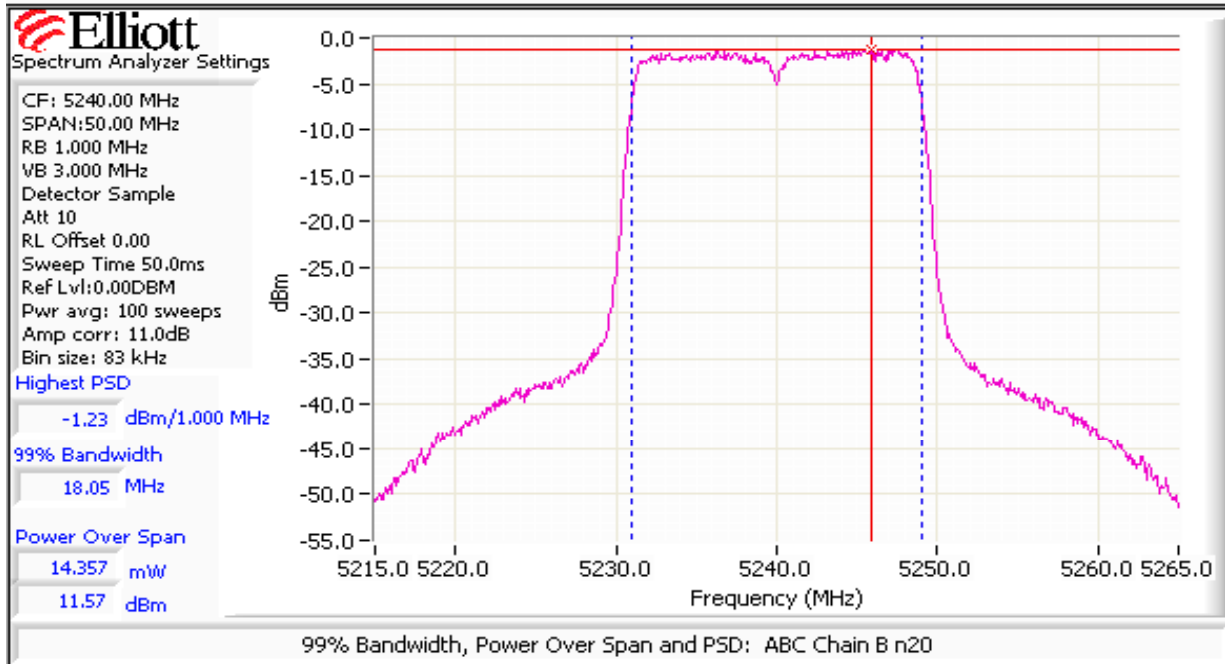
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Model: 533-agn MMW	T-Log Number: T71055
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Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C



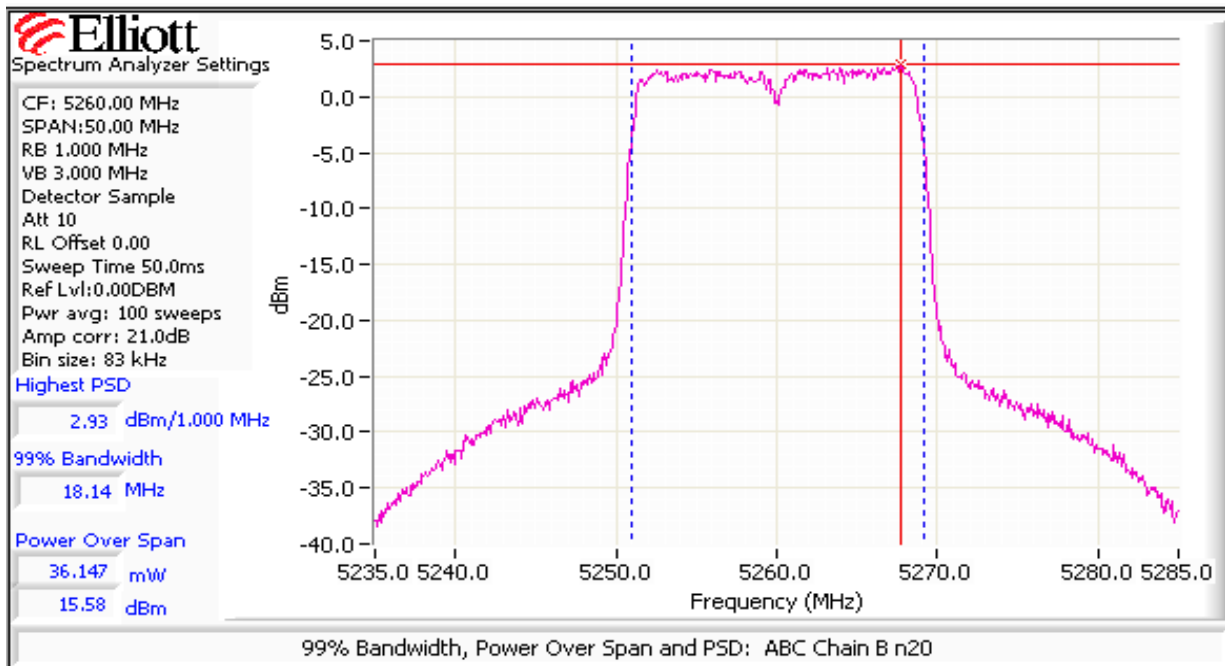
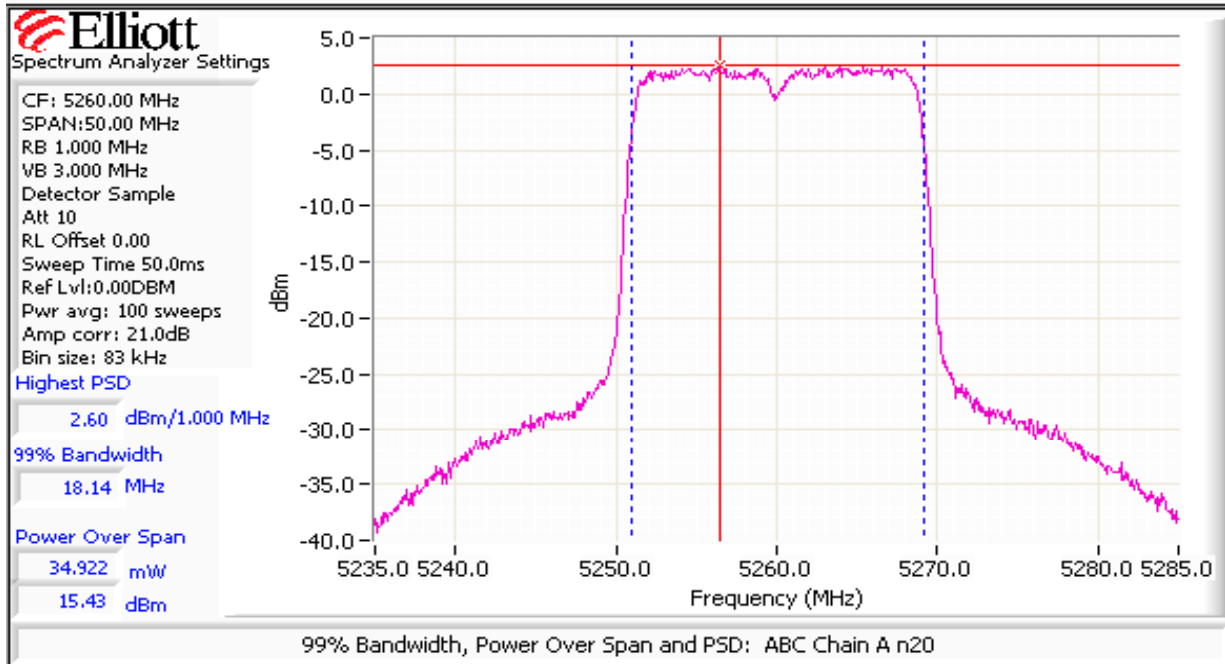
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Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C



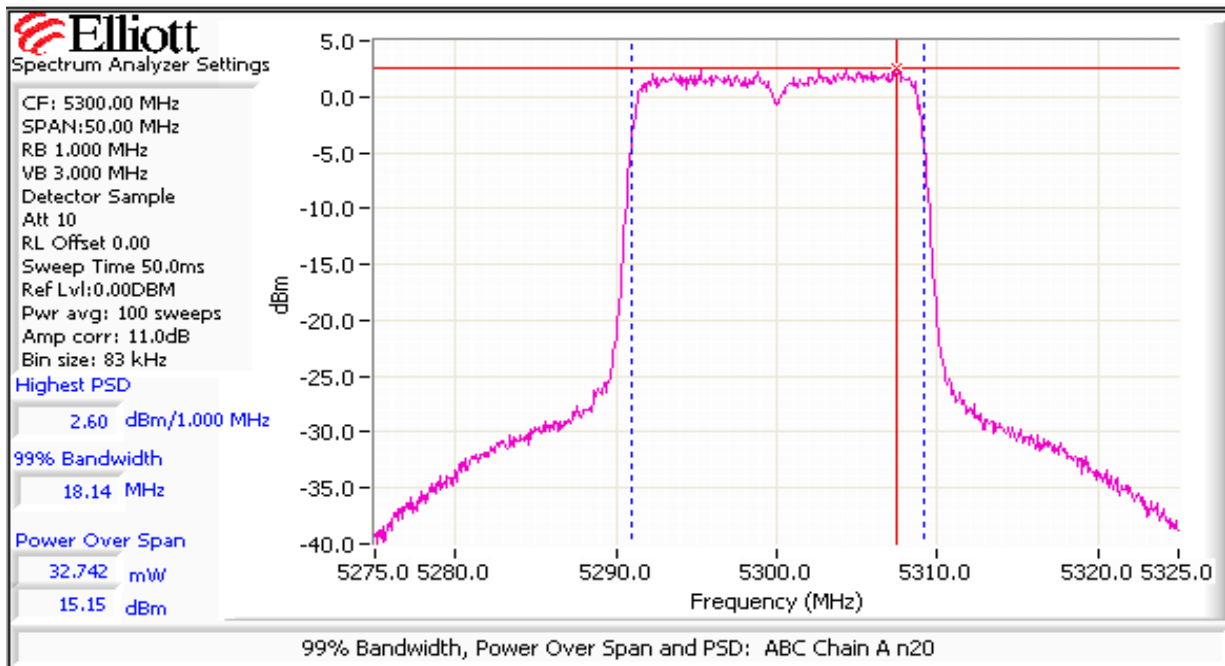
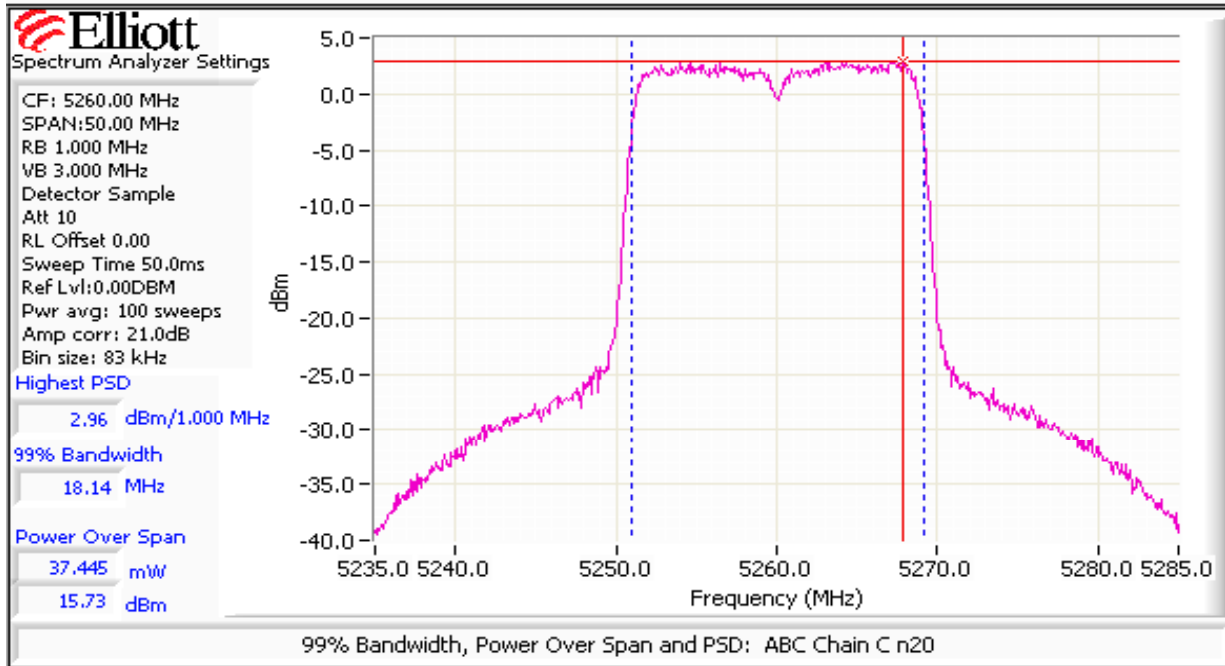
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Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C



Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

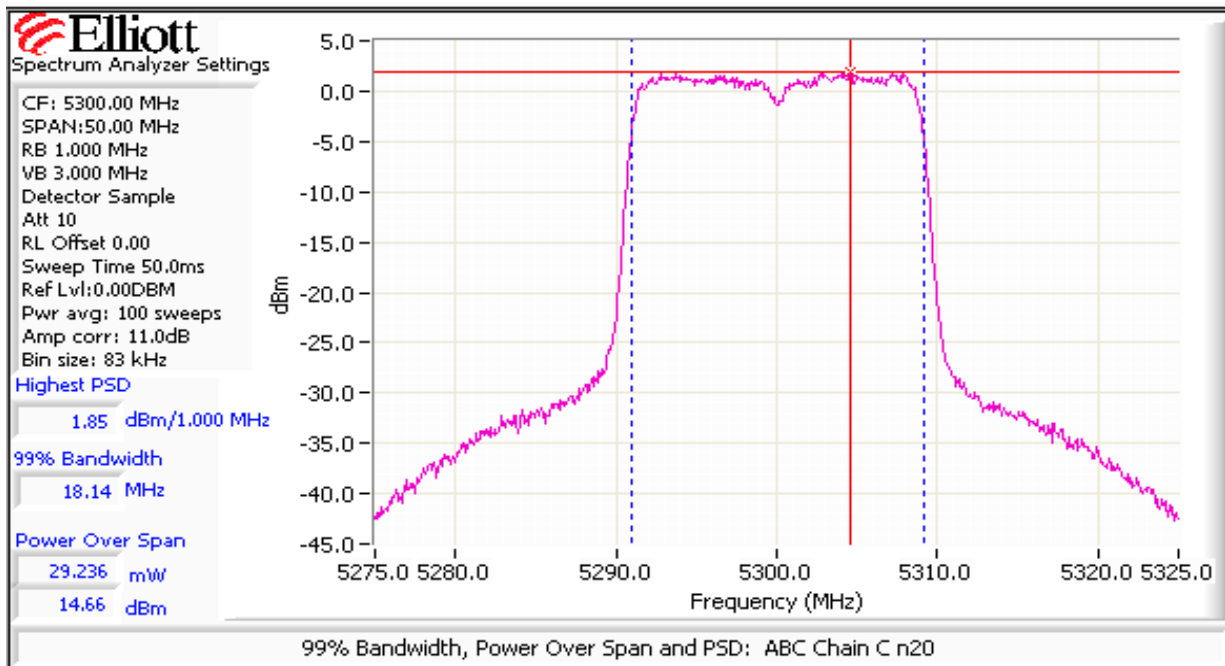
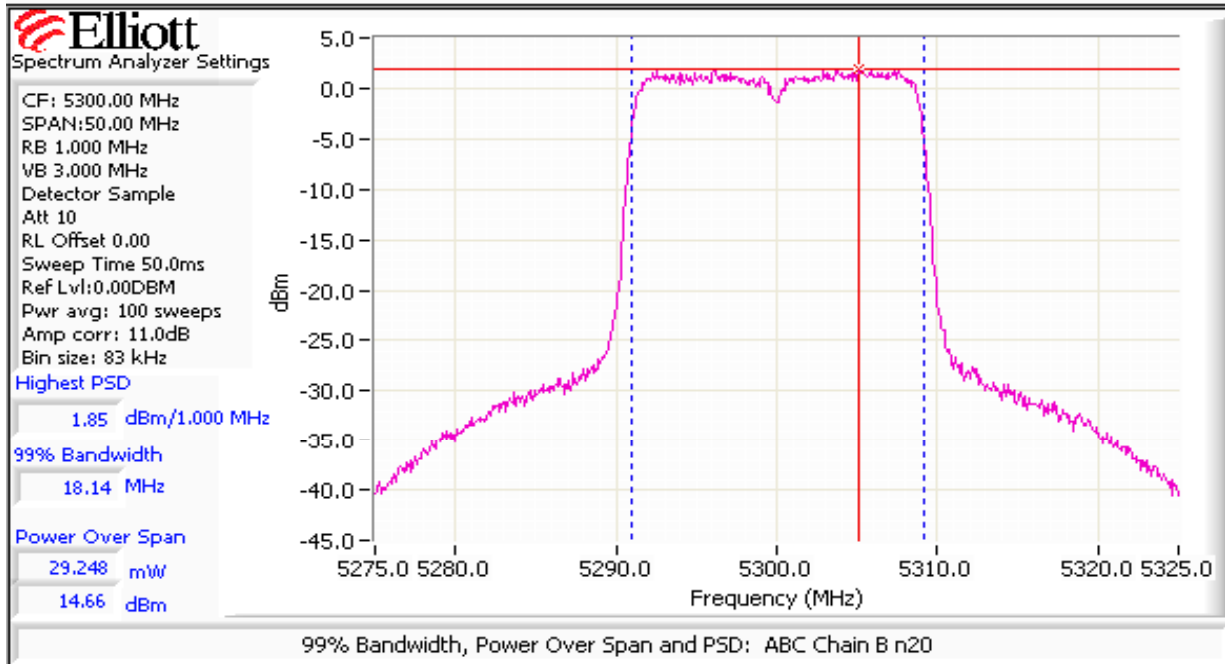
Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C





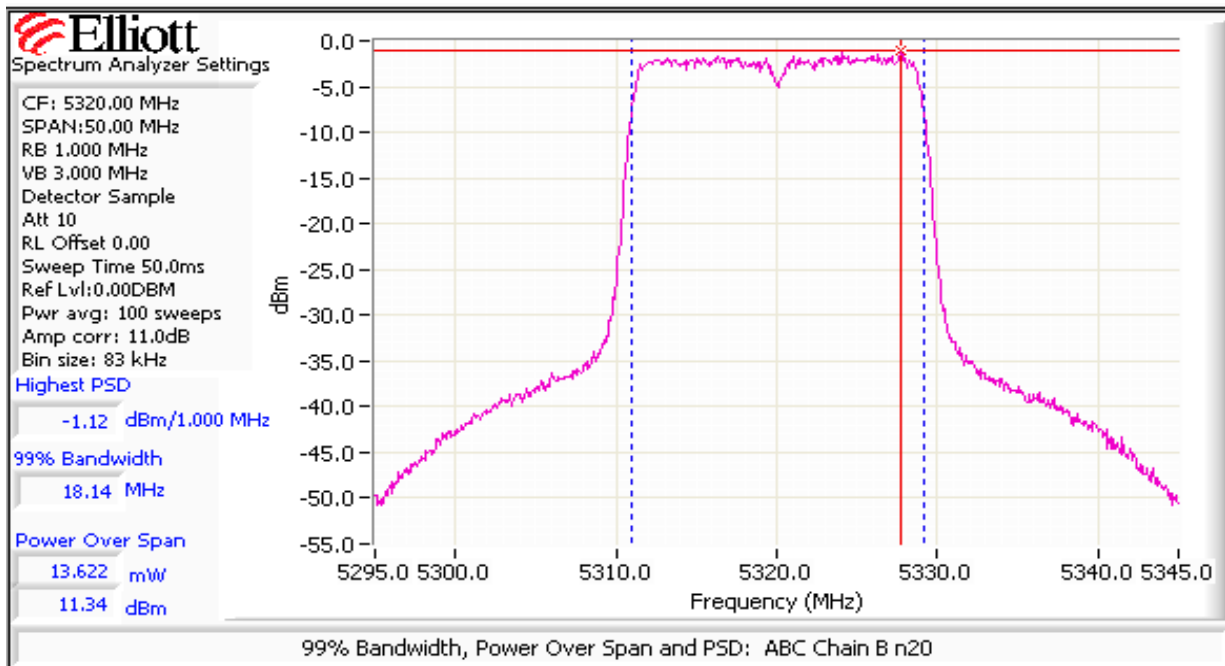
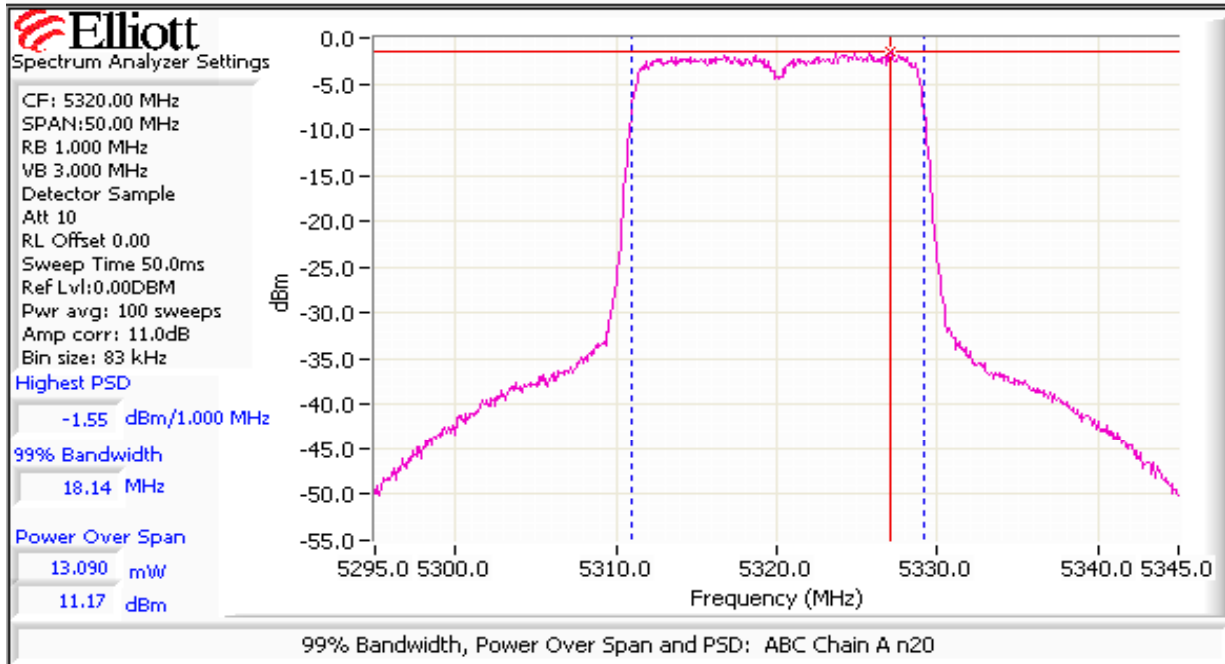
Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C



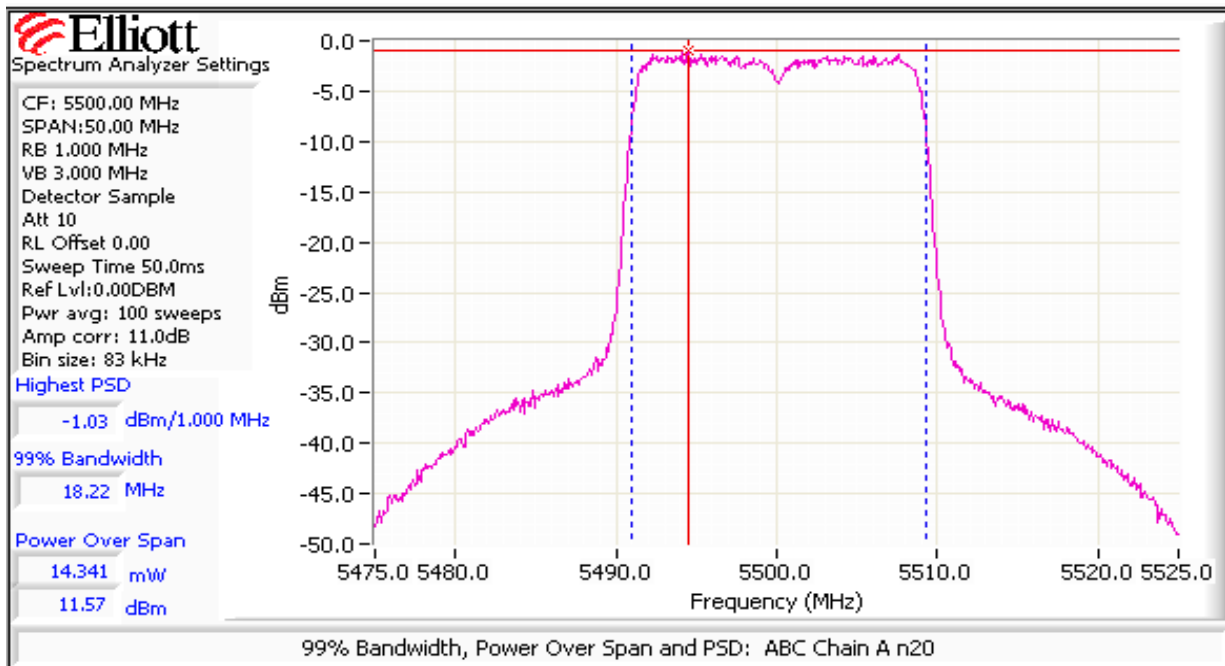
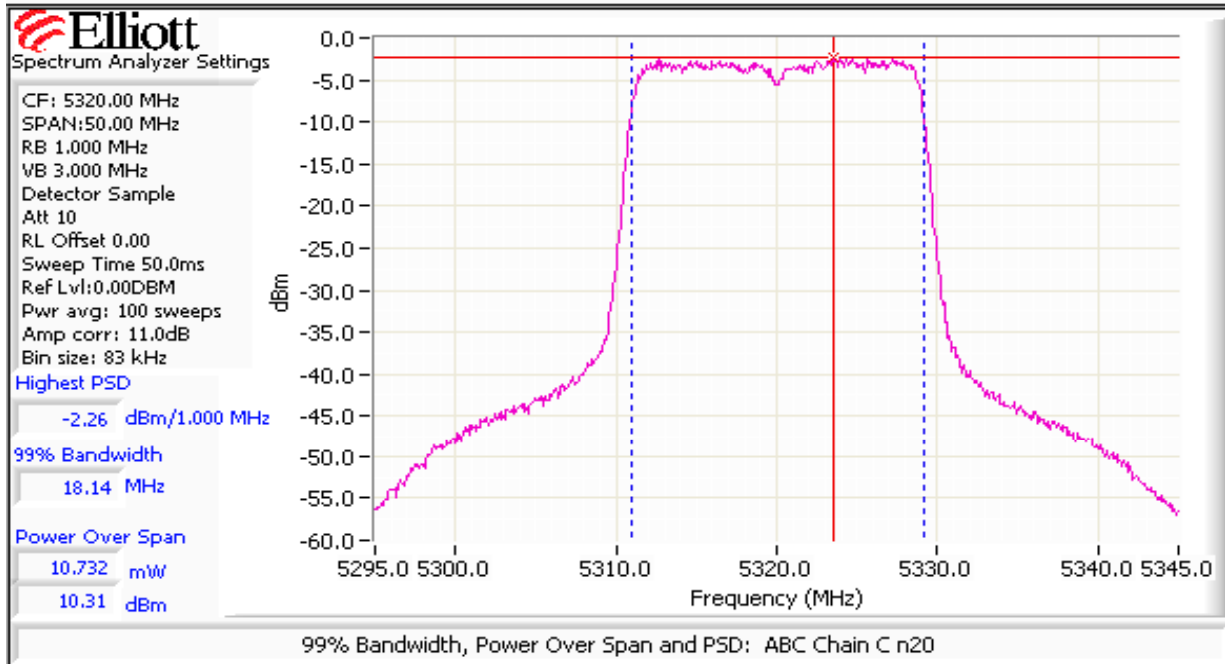
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Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C



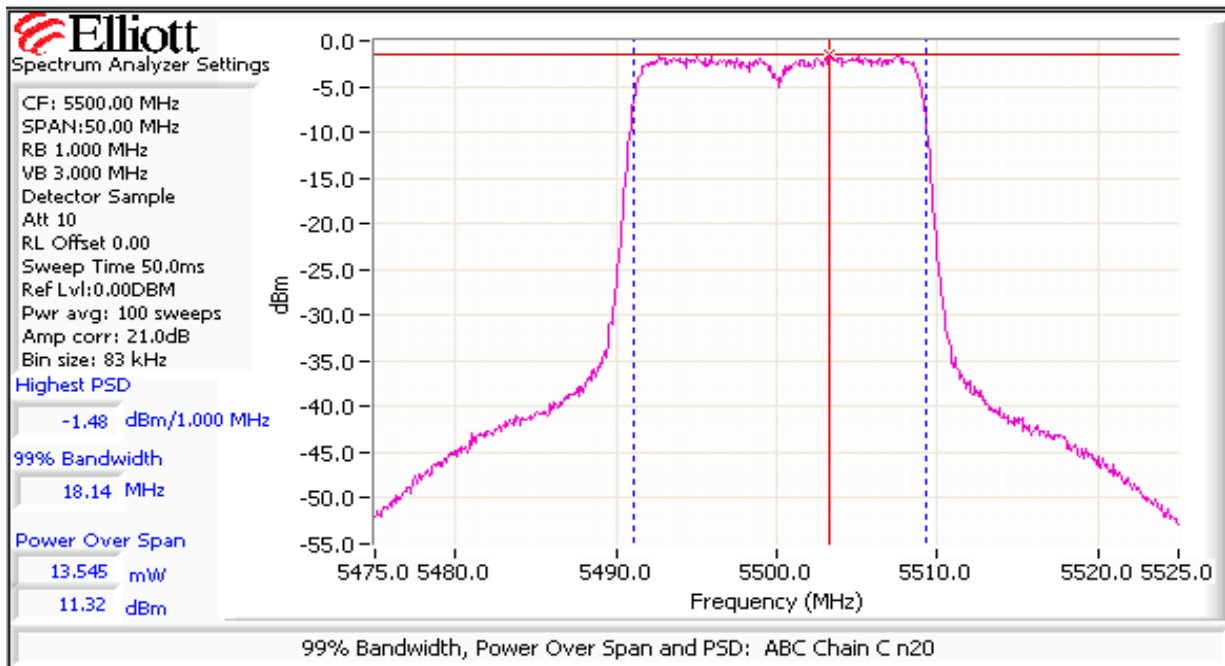
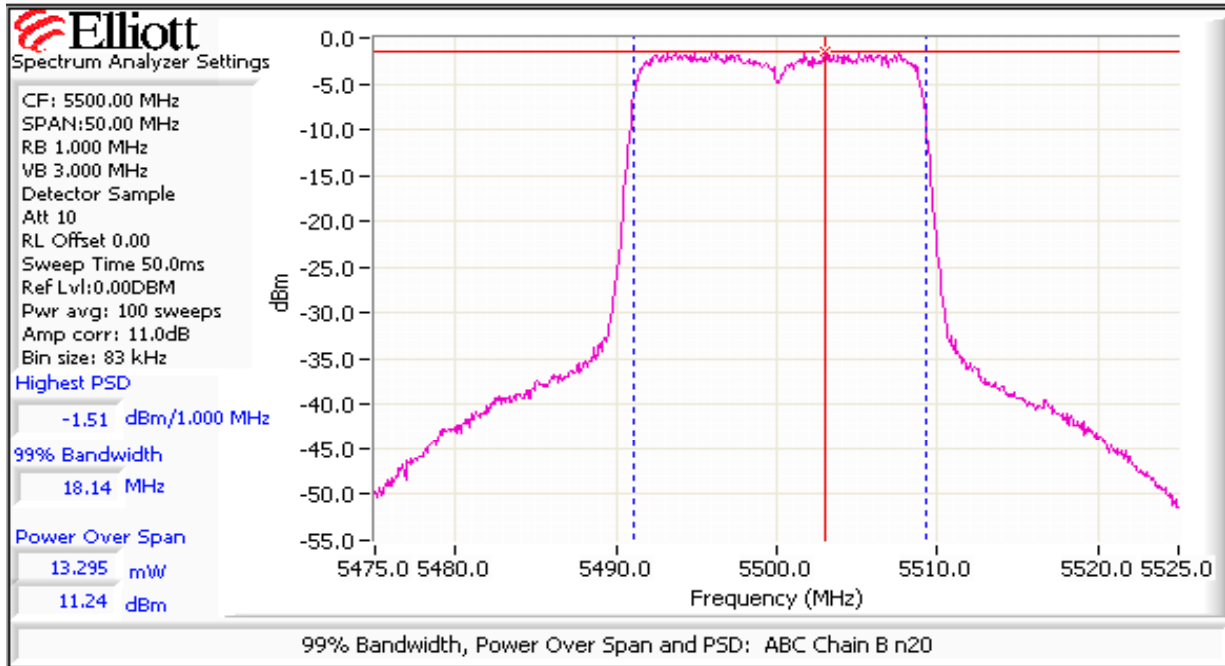
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Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C



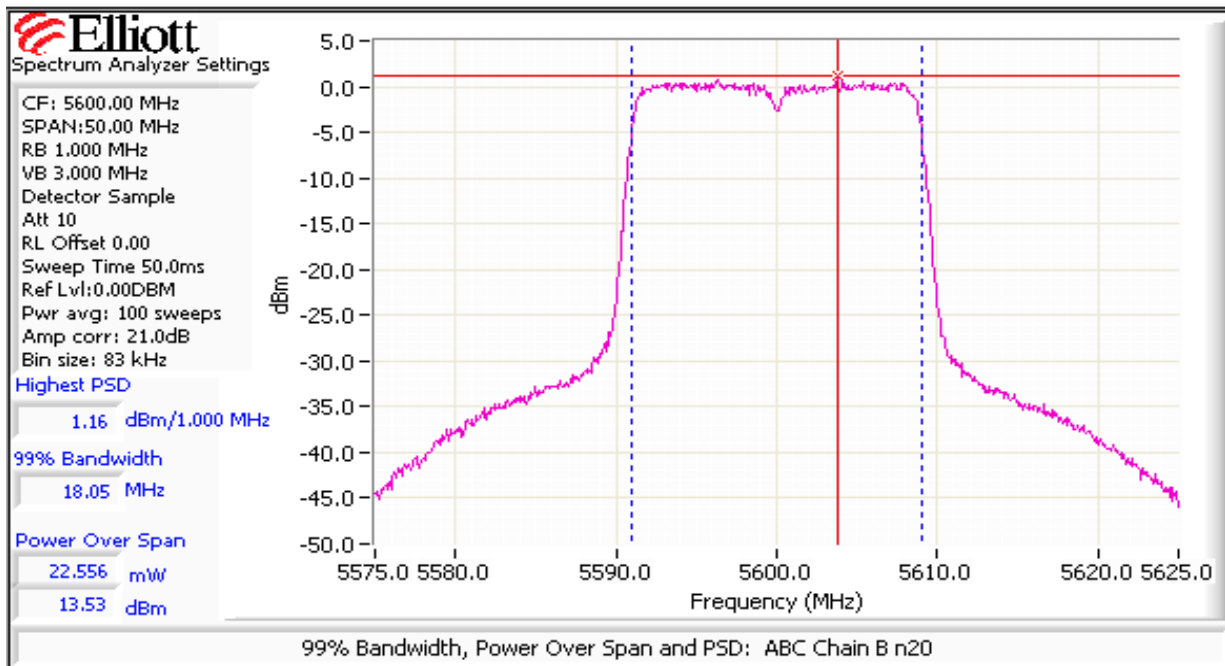
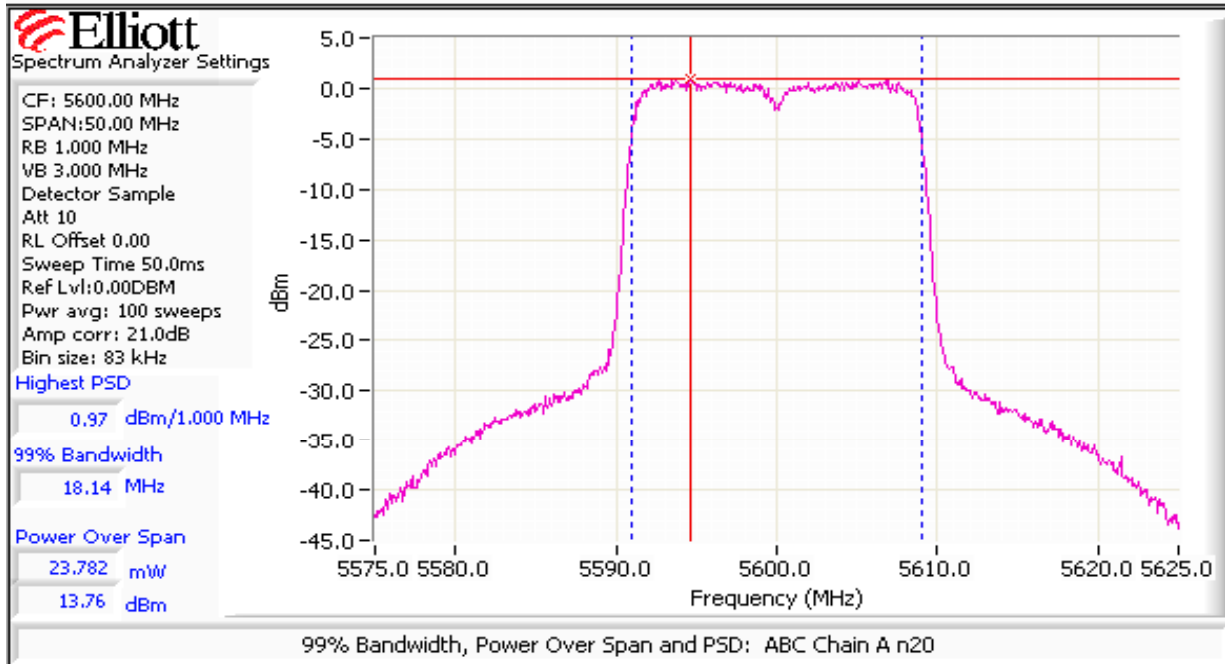
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Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C



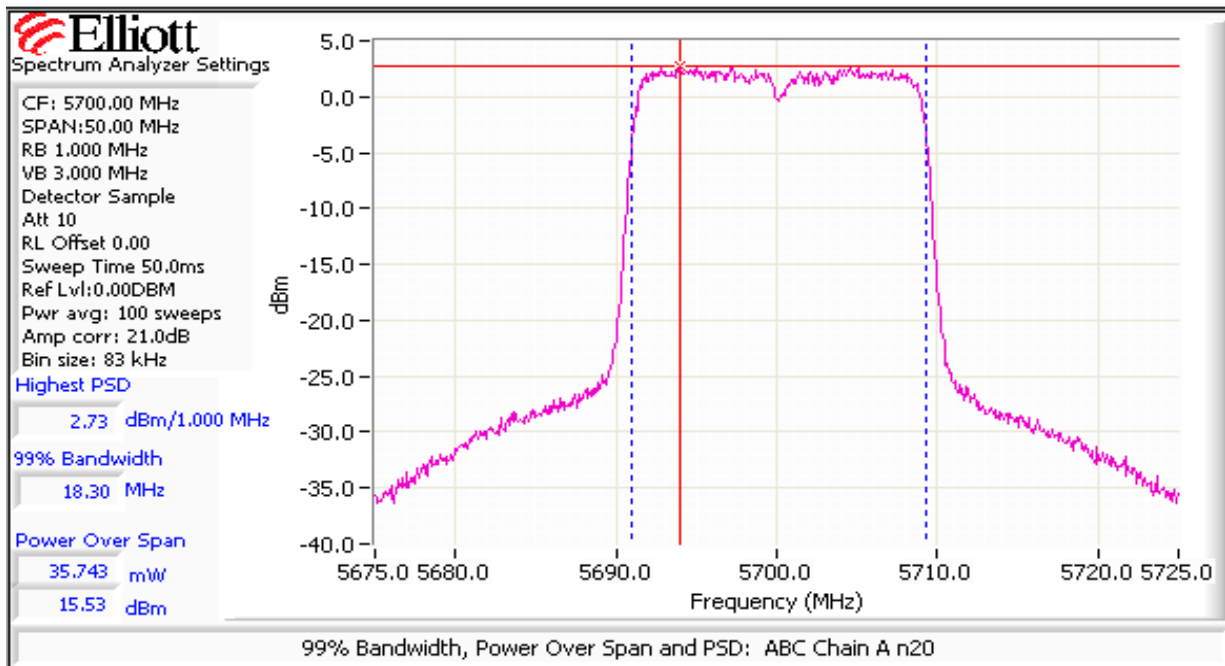
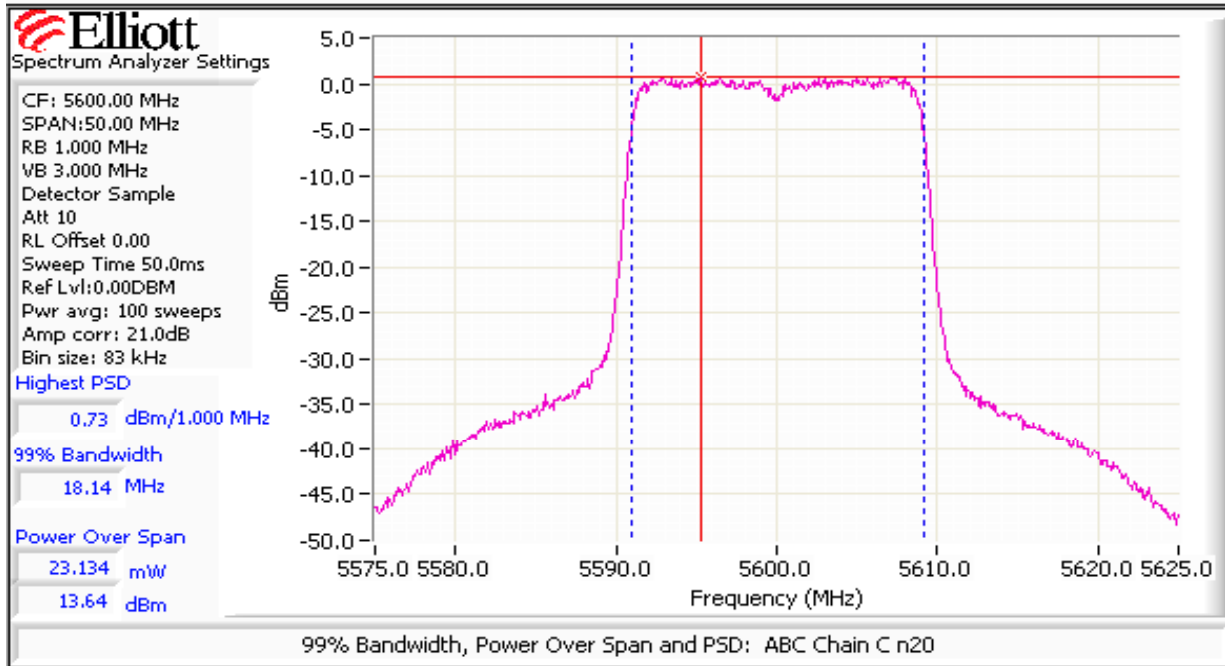
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Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C



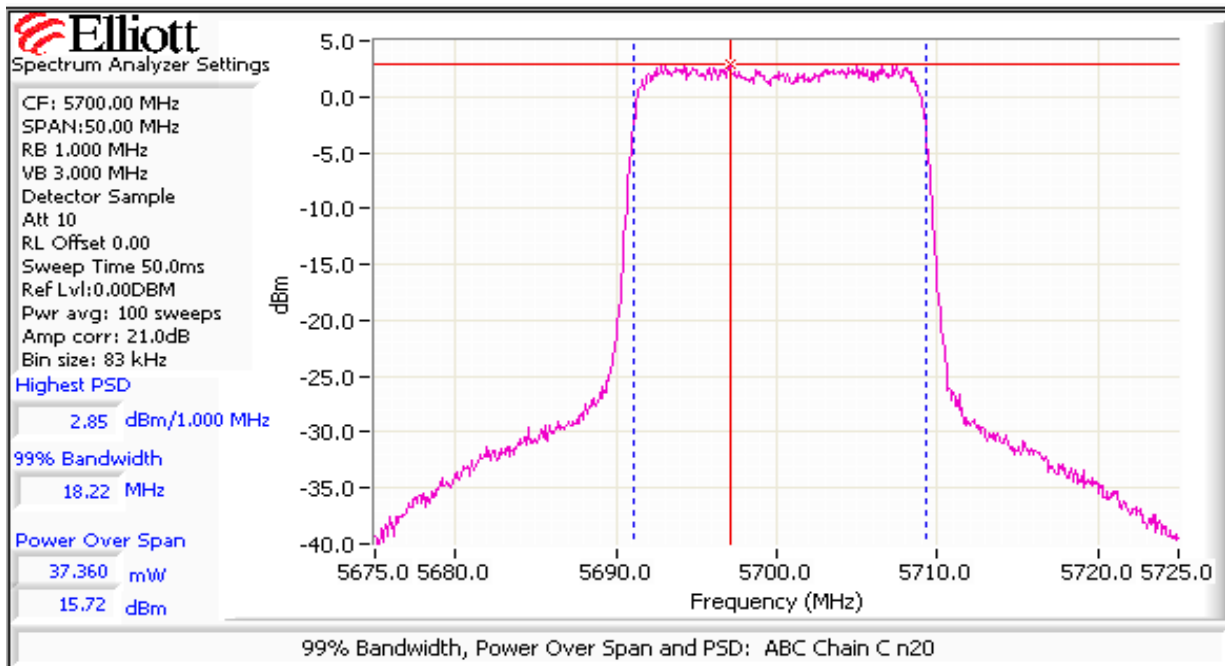
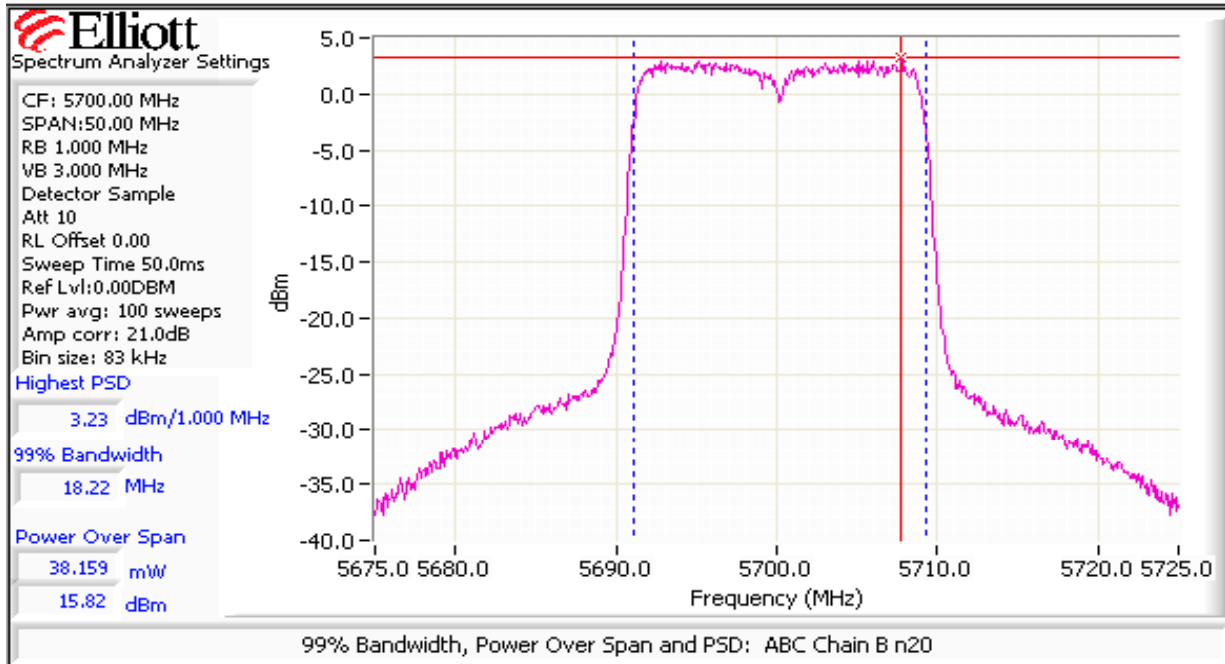
Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C



Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C



Client:	Intel	Job Number:	J70976
Model:	533-agn MMW	T-Log Number:	T71055
		Account Manager:	D. Eriksen
Contact:	Robert Paxman		
Standard:	FCC 15 E / RSS -210 (RF Port)	Class:	N/A

**RSS-210 (LELAN) and FCC 15.407(UNII)  
Antenna Port Measurements - 802.11n 40MHz MIMO Mode  
Power, PSD, Peak Excursion, Bandwidth and Spurious Emissions**

**Test Specific Details**

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 4/23/2008  
 Test Engineer: Suhaila Khushzad  
 Test Location: FT Lab # 1

Config. Used: 1  
 Config Change: None  
 EUT Voltage: Powered From Host System(3.3DC V)

**General Test Configuration**

When measuring the conducted emissions from the EUT's antenna port, the antenna port of the EUT was connected to the spectrum analyzer or power meter via a suitable attenuator to prevent overloading the measurement system. All measurements are corrected to allow for the external attenuators and cables used.

**Ambient Conditions:**                      Temperature:            22.1 °C  
    Rel. Humidity:            34 %

**Summary of Results**

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1, Chains A + B	Power, 5150 - 5250MHz	15.407(a) (1), (2)	Pass	15.9 dBm(39mW)
1, Chains A + B	Power, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	15.6 dBm(37mW)
1, Chains A + B	Power, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	15.6 dBm(36mW)
1, Chains A + B	PSD, 5150 - 5250MHz	15.407(a) (1), (2)	Pass	1dBm/MHz
1, Chains A + B	PSD, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	0.8dBm/MHz
1, Chains A + B	PSD, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	0.3dBm/MHz

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
2, Chains A + C	Power, 5150 - 5250MHz	15.407(a) (1), (2)	Pass	16.6 dBm / -.4 dB
2, Chains A + C	Power, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	19.4 dBm / -4.6 dB
2, Chains A + C	Power, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	19.1 dBm / -4.9 dB
2, Chains A + C	PSD, 5150 - 5250MHz	15.407(a) (1), (2)	Pass	1.8dBm/MHz (-2.2dB)
2, Chains A + C	PSD, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	4.4dBm/MHz (-6.6dB)
2, Chains A + C	PSD, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	3.7dBm/MHz (-7.3dB)

-	Peak Excursion Envelope	15.407(a) (6)	Covered by single-chain measurements
-	Antenna Conducted Spurious	15.407(b)	



Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
	Account Manager: D. Eriksen
Contact: Robert Paxman	
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
3, Chains B + C	Power, 5150 - 5250MHz	15.407(a) (1), (2)	Pass	16.6 dBm / -.4 dB
3, Chains B + C	Power, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	16.4 dBm / -.6 dB
3, Chains B + C	Power, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	15.9 dBm / -.1 dB
3, Chains B + C	PSD, 5150 - 5250MHz	15.407(a) (1), (2)	Pass	1.7 dBm/MHz (-2.3 dB)
3, Chains B + C	PSD, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	1.4 dBm/MHz (-9.6 dB)
3, Chains B + C	PSD, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	.6 dBm/MHz (-10.4 dB)

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
4, Chains A + B + C	Power, 5150 - 5250MHz	15.407(a) (1), (2)	Pass	16.3 dBm / -.7 dB
4, Chains A + B + C	Power, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	18.0 dBm / -.0 dB
4, Chains A + B + C	Power, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	17.3 dBm / -.7 dB
4, Chains A + B + C	PSD, 5150 - 5250MHz	15.407(a) (1), (2)	Pass	1.6 dBm/MHz (-2.4 dB)
4, Chains A + B + C	PSD, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	3.2 dBm/MHz (-7.8 dB)
4, Chains A + B + C	PSD, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	2.3 dBm/MHz (-8.7 dB)

**Modifications Made During Testing**

No modifications were made to the EUT during testing

**Deviations From The Standard**

No deviations were made from the requirements of the standard.

**Notes**

Blue shaded cells contain calculated values. Total Power and PSD is the sum of the power measurements on each of the individual chain powers (linear unit summation, so 10dBm + 10dBm would give a total power of 13dBm (10mw+10mW = 20mW)).

Client:	Intel	Job Number:	J70976
Model:	533-agn MMW	T-Log Number:	T71055
		Account Manager:	D. Eriksen
Contact:	Robert Paxman		
Standard:	FCC 15 E / RSS -210 (RF Port)	Class:	N/A

Run #1: Bandwidth, Output Power and Power spectral Density - Chain A + B

	Chain 1	Chain 2	Chain 3	Coherent	Effective <sup>5</sup>
Antenna Gain (dBi):	5	5	5	No	5.0

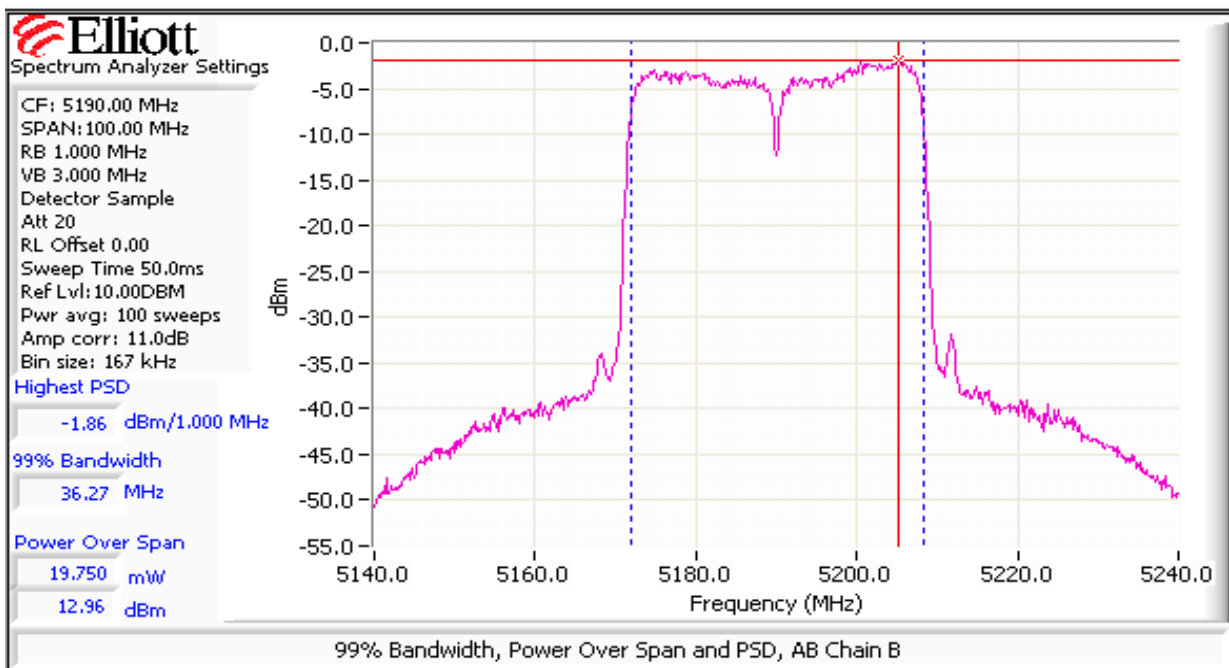
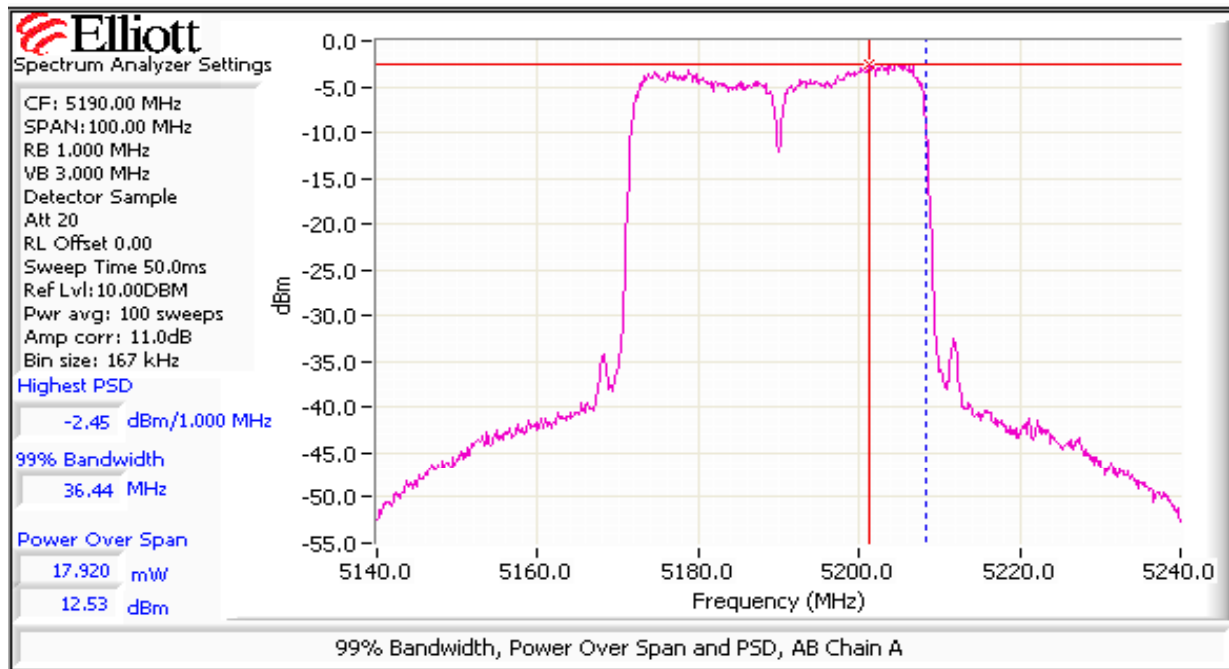
Frequency (MHz)	Software Setting	26dB BW (MHz)	Measured Output Power <sup>1</sup> dBm			Total		Limit (dBm)	Max Power (W)	Pass or Fail
			Chain A	Chain B	Chain C	mW	dBm			
5190	28.5, 28	41.7	12.5	13.0		37.7	15.8	17.0	0.039	PASS
5230	27, 27	60.8	12.5	13.3		39.0	15.9	17.0		PASS
5270	26, 25.5	63.7	12.5	12.7		36.6	15.6	24.0	0.037	PASS
5310	25, 24	42.0	12.4	12.3		34.2	15.3	24.0		PASS
5510	23.5, 23	46.0	12.7	12.4		36.1	15.6	24.0	0.036	PASS
5590	23.5, 23	44.5	12.6	12.5		35.8	15.5	24.0		PASS
5670	23.5, 23	43.5	12.4	12.6		35.6	15.5	24.0		PASS

Frequency (MHz)	99% <sup>4</sup> BW	Total Power	PSD <sup>2</sup> dBm/MHz			Total PSD		Limit		Pass or Fail
			Chain A	Chain B	Chain C	mW/MHz	dBm/MHz	FCC	RSS 210 <sup>3</sup>	
5190	36.3	15.8	-2.5	-1.9		1.2	0.9	4.0	5.0	PASS
5230	36.3	15.9	-2.7	-1.5		1.3	1.0	4.0	5.0	PASS
5270	36.3	15.6	-2.2	-2.3		1.2	0.8	11.0	11.0	PASS
5310	36.3	15.3	-2.2	-2.8		1.1	0.5	11.0	11.0	PASS
5510	36.4	15.6	-2.5	-2.9		1.1	0.3	11.0	11.0	PASS
5590	36.4	15.5	-2.7	-2.9		1.0	0.2	11.0	11.0	PASS
5670	36.4	15.5	-3.0	-2.7		1.0	0.1	11.0	11.0	PASS

- Note 1: Output power measured using a spectrum analyzer (see plots below): RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 100 MHz
- Note 2: Measured using the same analyzer settings used for output power.
- Note 3: For RSS-210 the limit for the 5150 - 5250 MHz band accounts for the antenna gain as the maximum eirp allowed is 10dBm/MHz. The limits are also corrected for instances where the highest measured value of the PSD exceeds the average PSD (calculated from the measured power divided by the measured 99% bandwidth) by more than 3dB by the amount that the measured value exceeds the average by more than 3dB.
- Note 4: 99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB >=3xRB
- Note 5: For MIMO systems the total output power and total PSD are calculated from the sum of the powers of the individual chains (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operating mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power on each chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain and the EIRP is the product of the effective gain and total power.

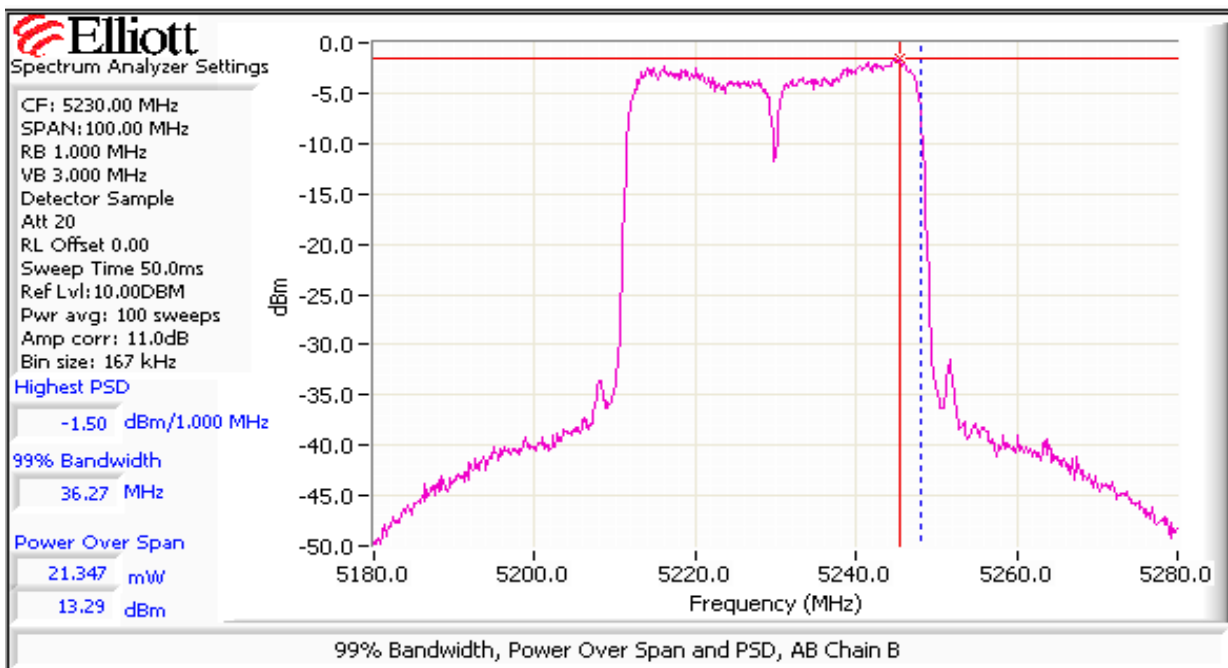
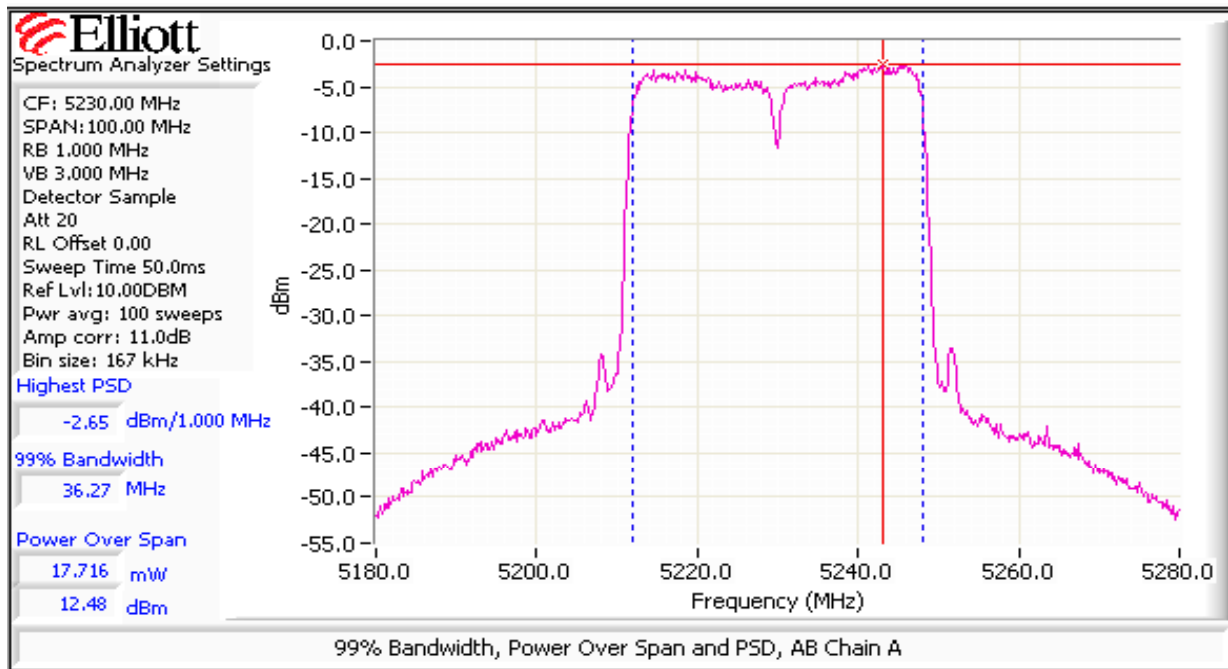
Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #1: Bandwidth, Output Power and Power spectral Density - Chain A + B



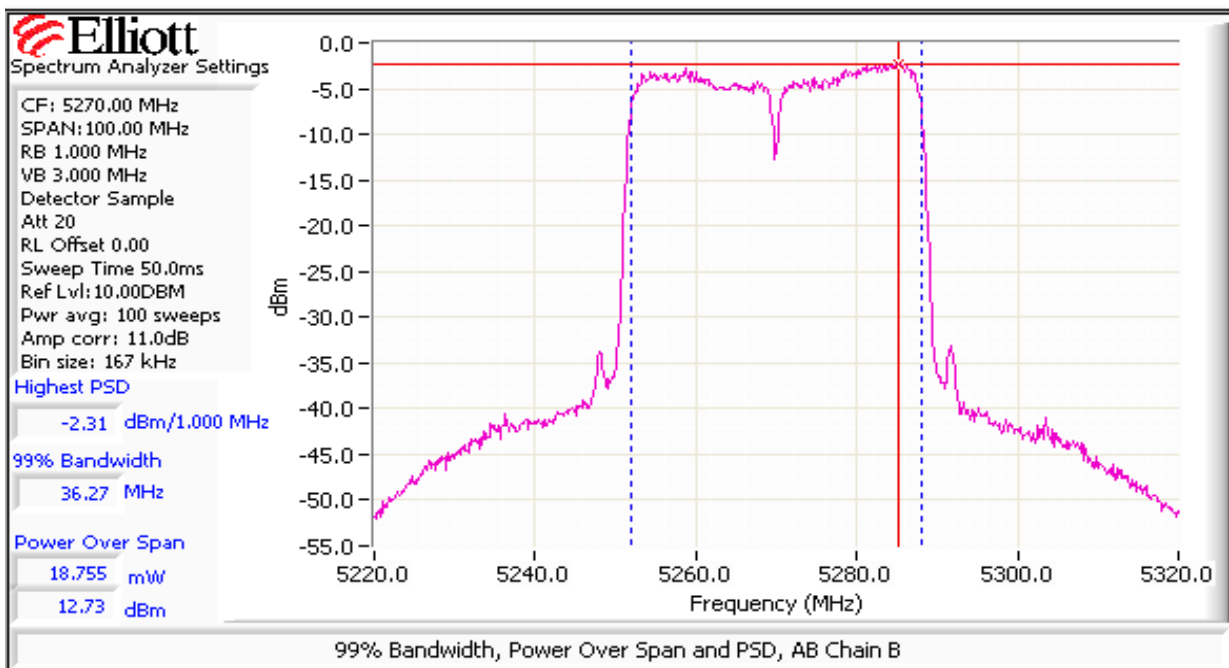
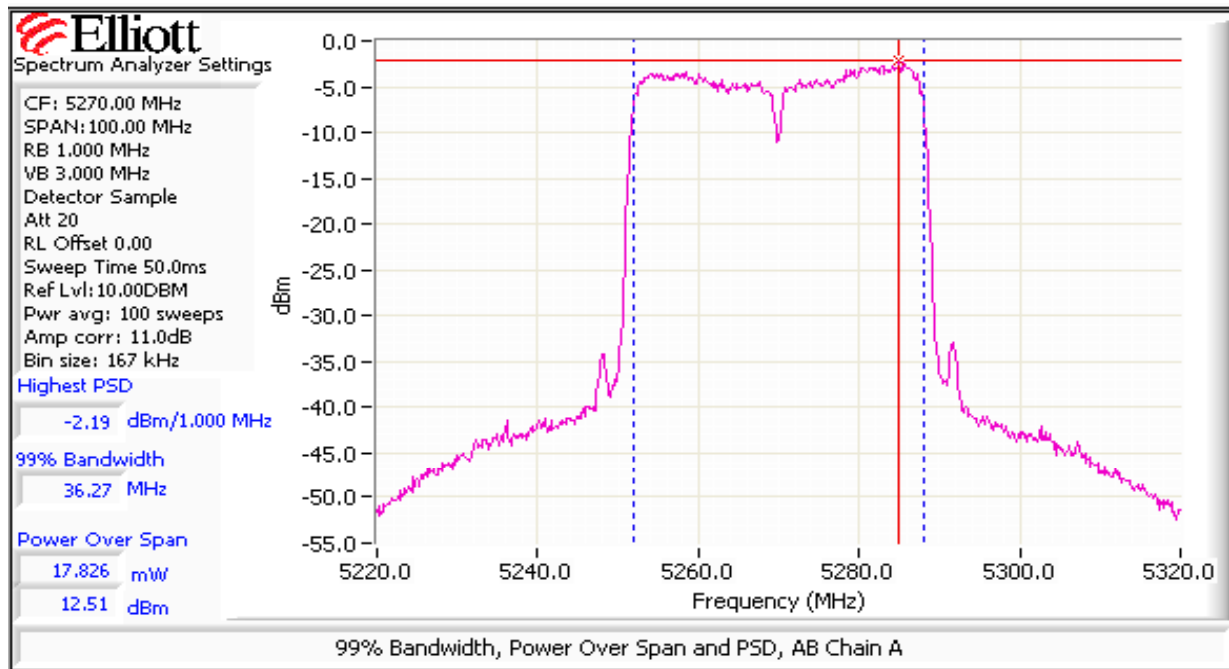
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Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #1: Bandwidth, Output Power and Power spectral Density - Chain A + B



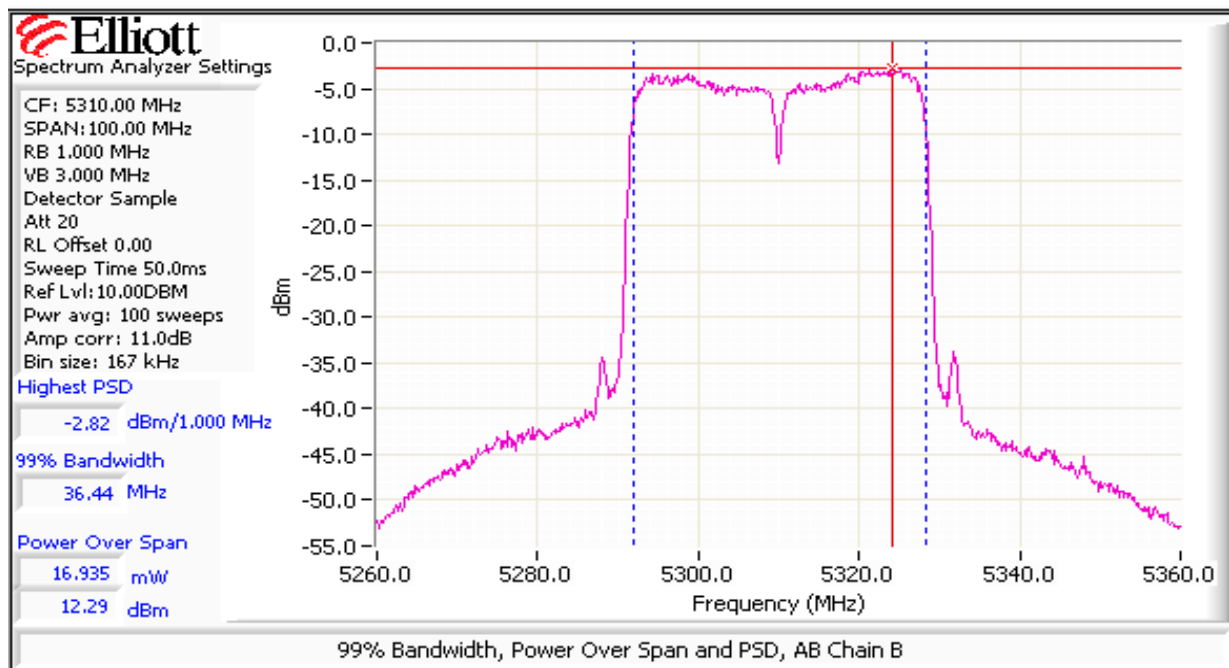
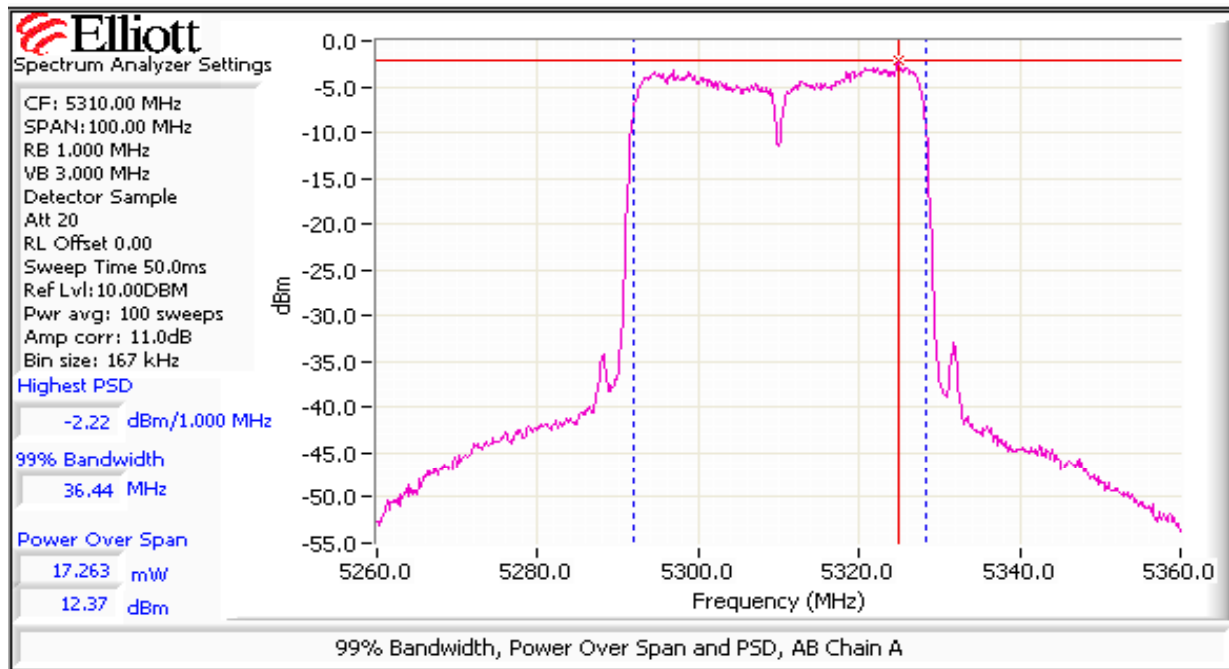
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Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #1: Bandwidth, Output Power and Power spectral Density - Chain A + B



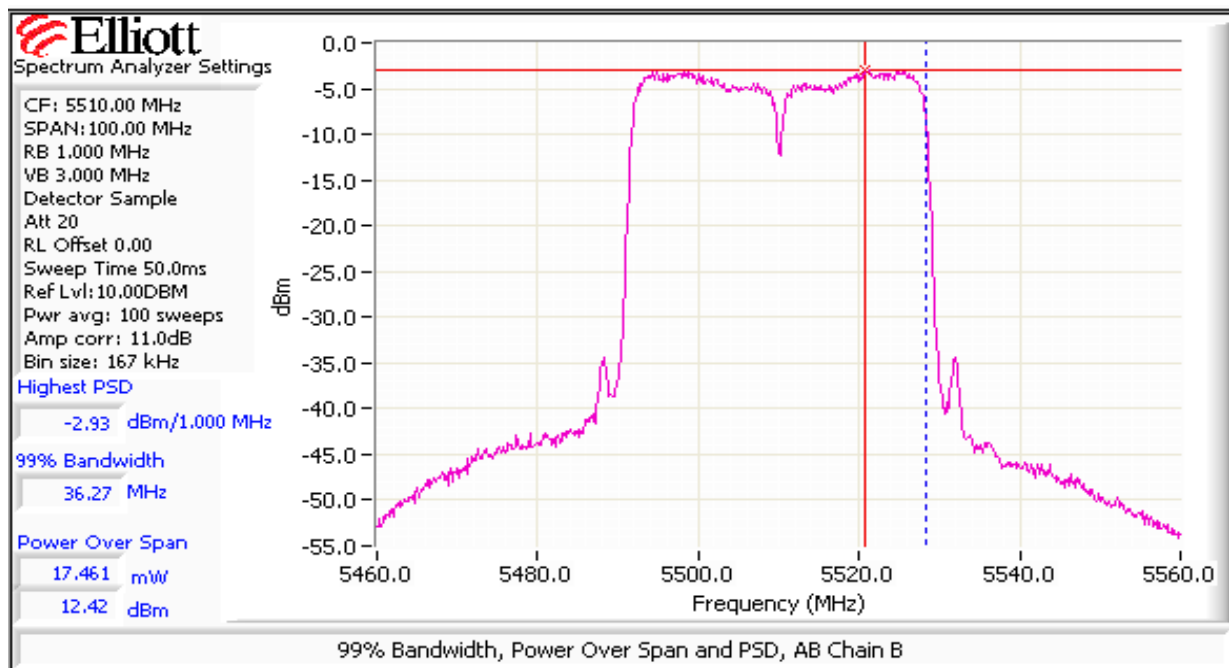
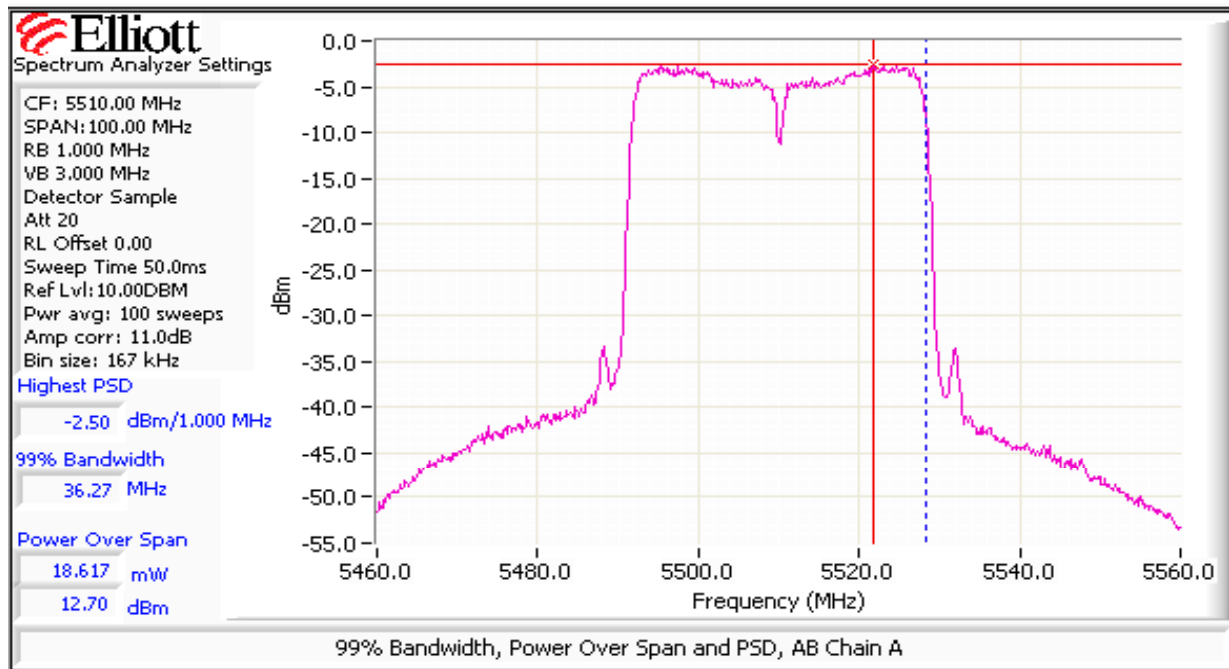
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Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #1: Bandwidth, Output Power and Power spectral Density - Chain A + B



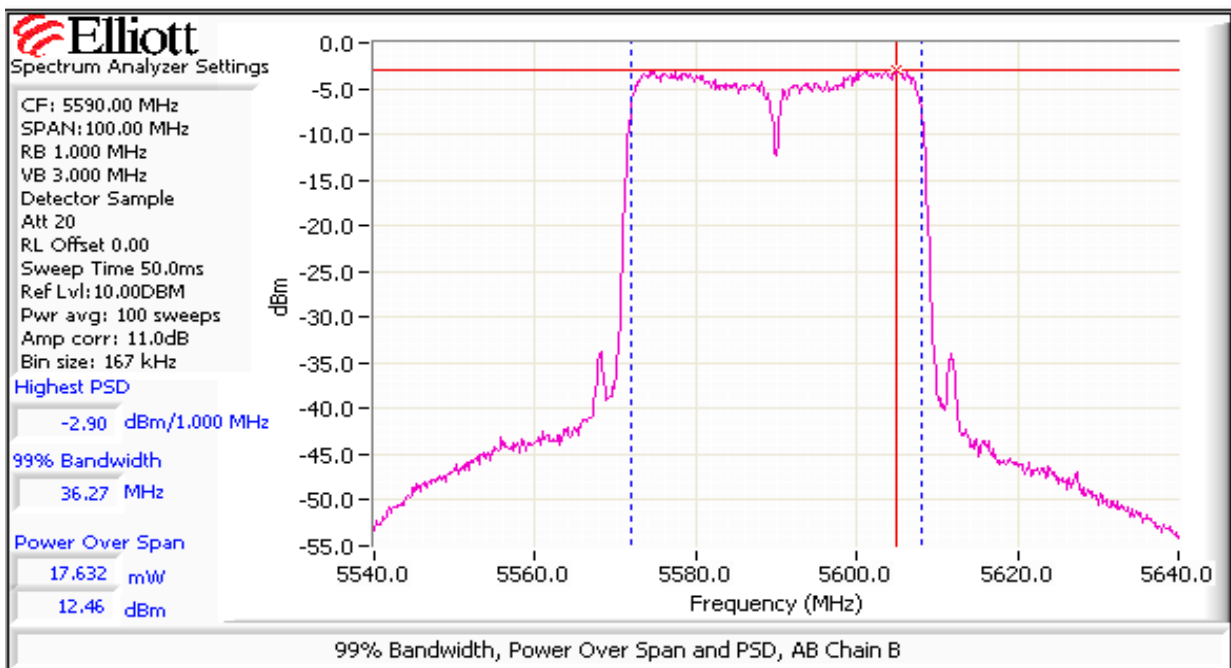
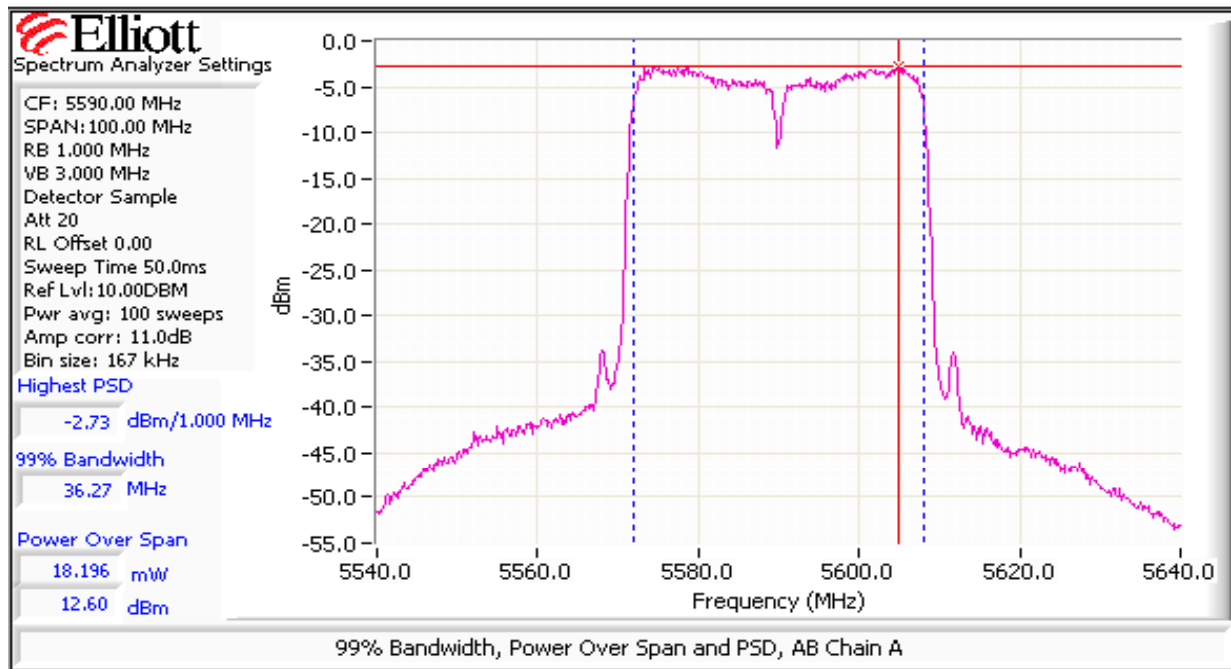
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Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #1: Bandwidth, Output Power and Power spectral Density - Chain A + B



Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

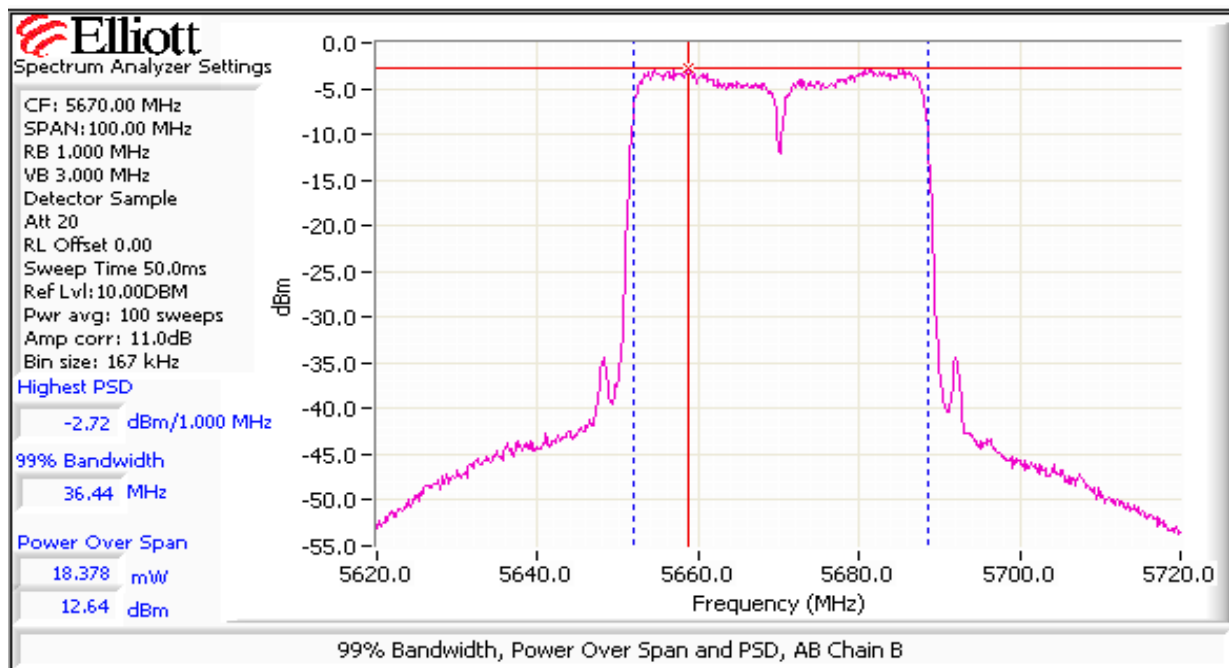
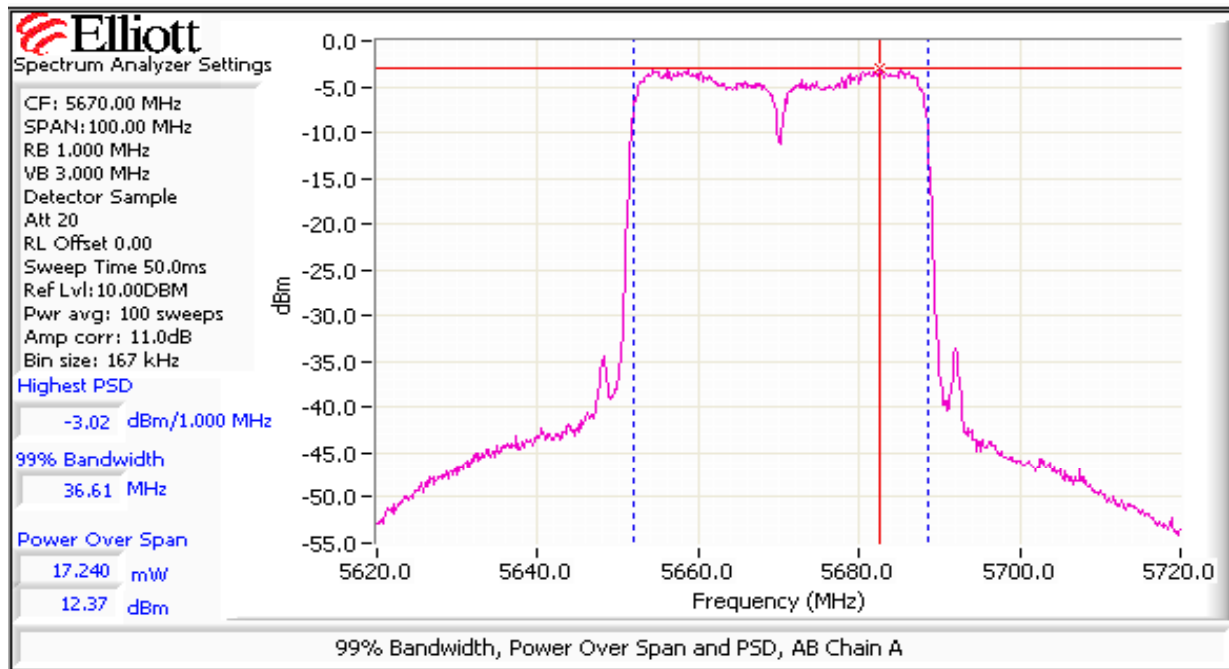
Run #1: Bandwidth, Output Power and Power spectral Density - Chain A + B





Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #1: Bandwidth, Output Power and Power spectral Density - Chain A + B



Client:	Intel	Job Number:	J70976
Model:	533-agn MMW	T-Log Number:	T71055
		Account Manager:	D. Eriksen
Contact:	Robert Paxman		
Standard:	FCC 15 E / RSS -210 (RF Port)	Class:	N/A

Run #2: Bandwidth, Output Power and Power spectral Density - Chain A + C

	Chain 1	Chain 2	Chain 3	Coherent	Effective <sup>5</sup>
Antenna Gain (dBi):	5	5	5	No	5.0

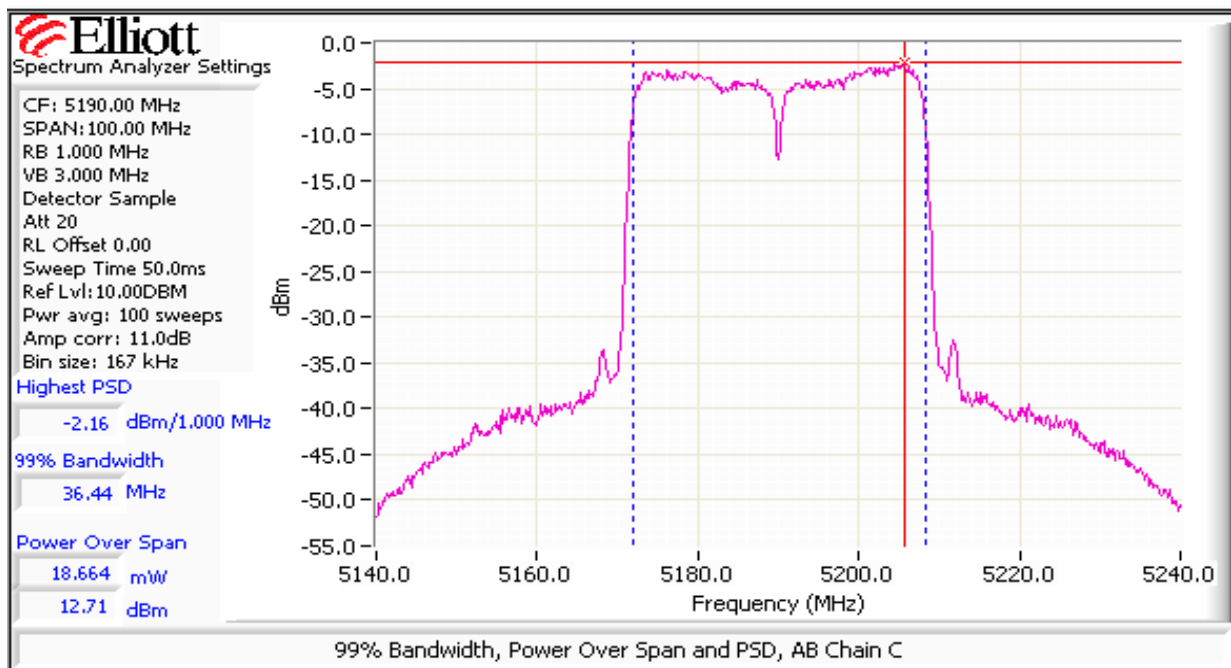
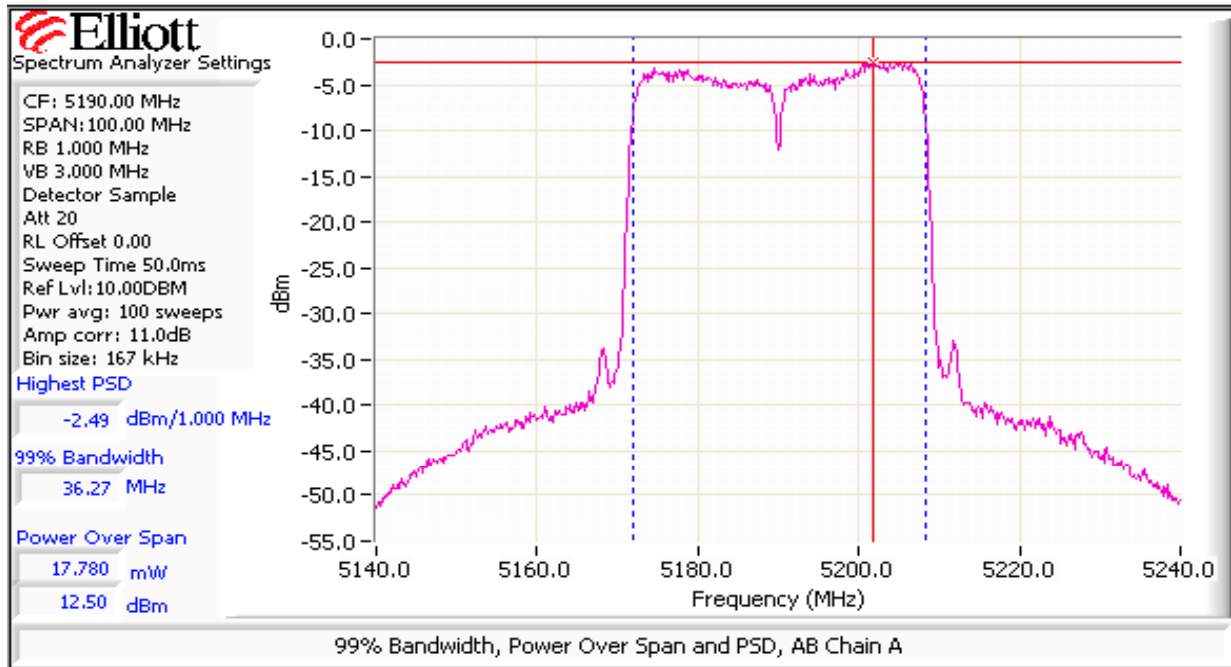
Frequency (MHz)	Software Setting	26dB BW (MHz)	Measured Output Power <sup>1</sup> dBm			Total		Limit (dBm)	Max Power (W)	Pass or Fail
			Chain A	Chain B	Chain C	mW	dBm			
5190	29, 28.5	43.0	12.5		12.7	36.4	15.6	17.0	0.045	PASS
5230	30.5/30	60.8	13.6		13.5	45.2	16.6	17.0		PASS
5270	33.5/34	63.7	16.4		16.4	87.2	19.4	24.0	0.087	PASS
5310	25.5, 26	42.8	11.1		10.9	25.2	14.0	24.0		PASS
5510	23.5, 23.5	48.0	10.6		10.2	22.1	13.4	24.0	0.081	PASS
5590	29/29	44.5	15.5		15.2	69.2	18.4	24.0		PASS
5670	31/30.5	46.0	16.1		16.0	80.6	19.1	24.0		PASS

Frequency (MHz)	99% <sup>4</sup> BW	Total Power	PSD <sup>2</sup> dBm/MHz			Total PSD		Limit		Pass or Fail
			Chain A	Chain B	Chain C	mW/MHz	dBm/MHz	FCC	RSS 210 <sup>3</sup>	
5190	36.3	15.6	-2.5		-2.2	1.2	0.7	4.0	5.0	PASS
5230	36.3	16.0	-0.8		-1.7	1.5	1.8	4.0	5.0	PASS
5270	40.8	15.6	1.6		1.2	2.8	4.4	11.0	9.1	PASS
5310	36.4	15.6	-3.4		-3.9	0.9	-0.6	11.0	11.0	PASS
5510	36.4	15.6	-4.5		-4.8	0.7	-1.6	11.0	11.0	PASS
5590	36.6	15.6	0.2		0.3	2.1	3.2	11.0	10.7	PASS
5670	36.9	15.6	0.7		0.6	2.3	3.7	11.0	10.3	PASS

- Note 1: Output power measured using a spectrum analyzer (see plots below): RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 100 MHz.
- Note 2: Measured using the same analyzer settings used for output power.
- Note 3: For RSS-210 the limit for the 5150 - 5250 MHz band accounts for the antenna gain as the maximum eirp allowed is 10dBm/MHz. The limits are also corrected for instances where the highest measured value of the PSD exceeds the average PSD (calculated from the measured power divided by the measured 99% bandwidth) by more than 3dB by the amount that the measured value exceeds the average by more than 3dB.
- Note 4: 99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB >=3xRB
- Note 5: For MIMO systems the total output power and total PSD are calculated from the sum of the powers of the individual chains (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operating mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power on each chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain and the EIRP is the product of the effective gain and total power.

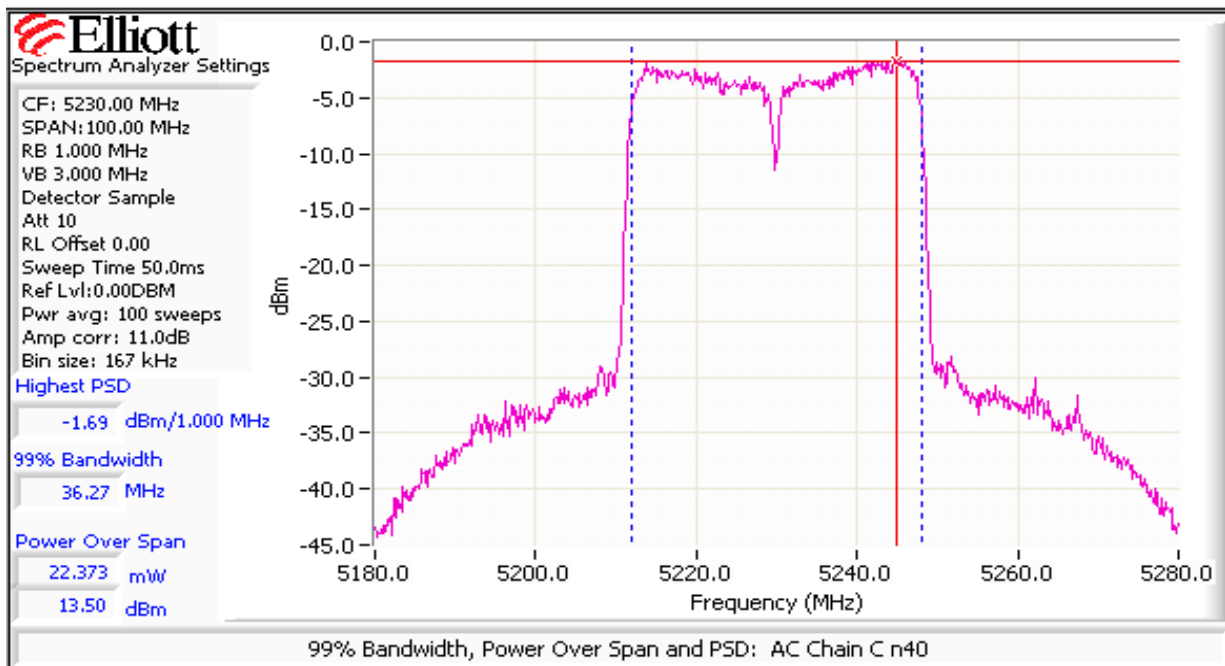
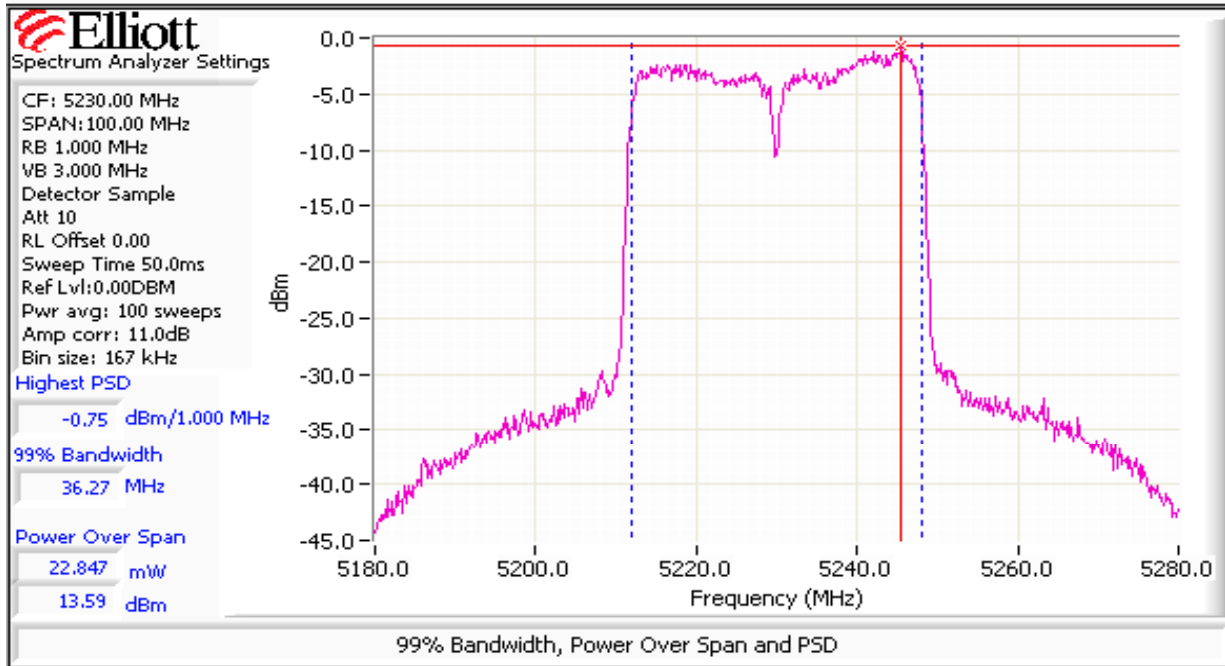
Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #2: Bandwidth, Output Power and Power spectral Density - Chain A + C



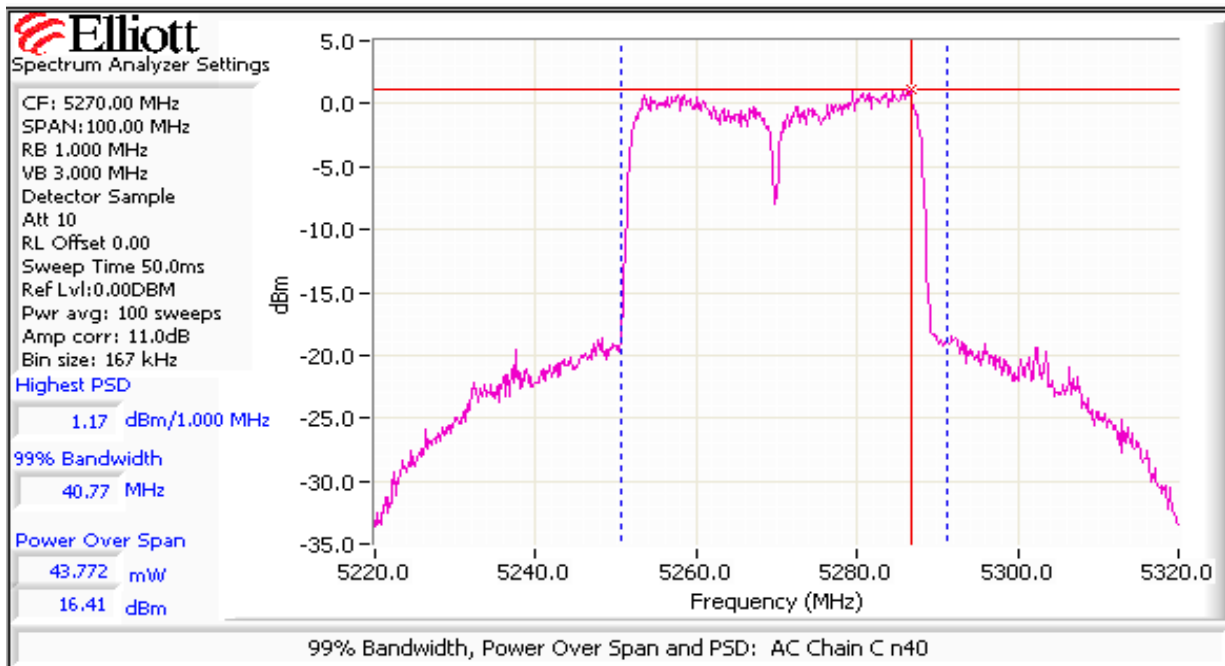
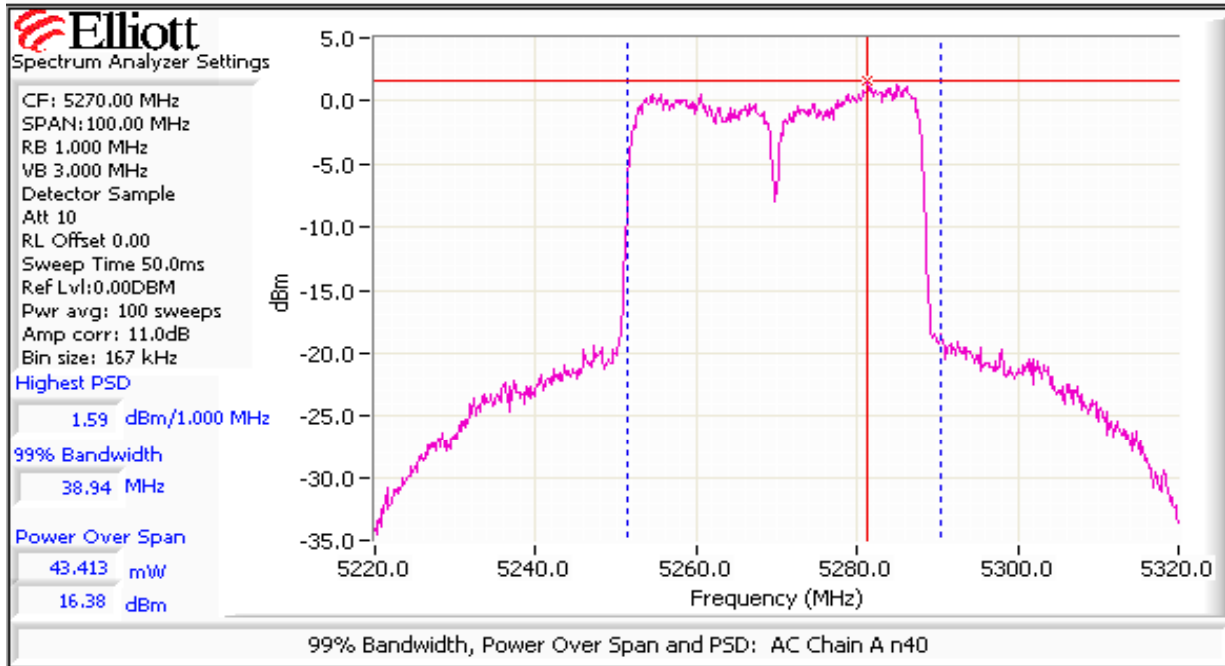
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Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #2: Bandwidth, Output Power and Power spectral Density - Chain A + C



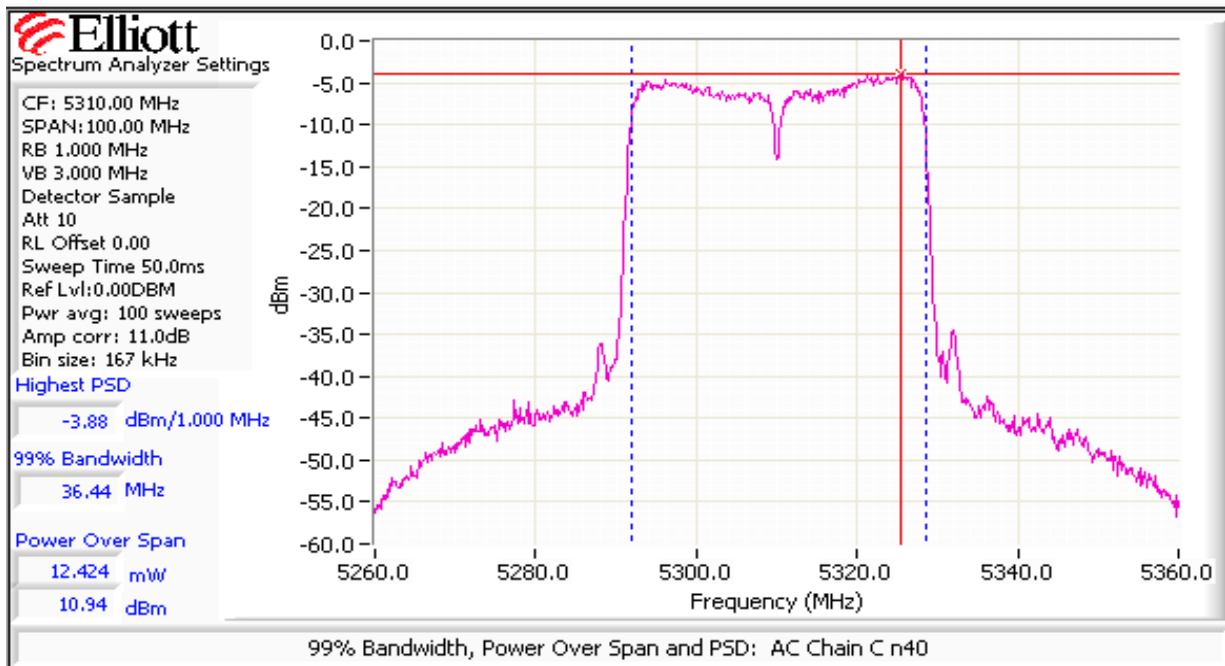
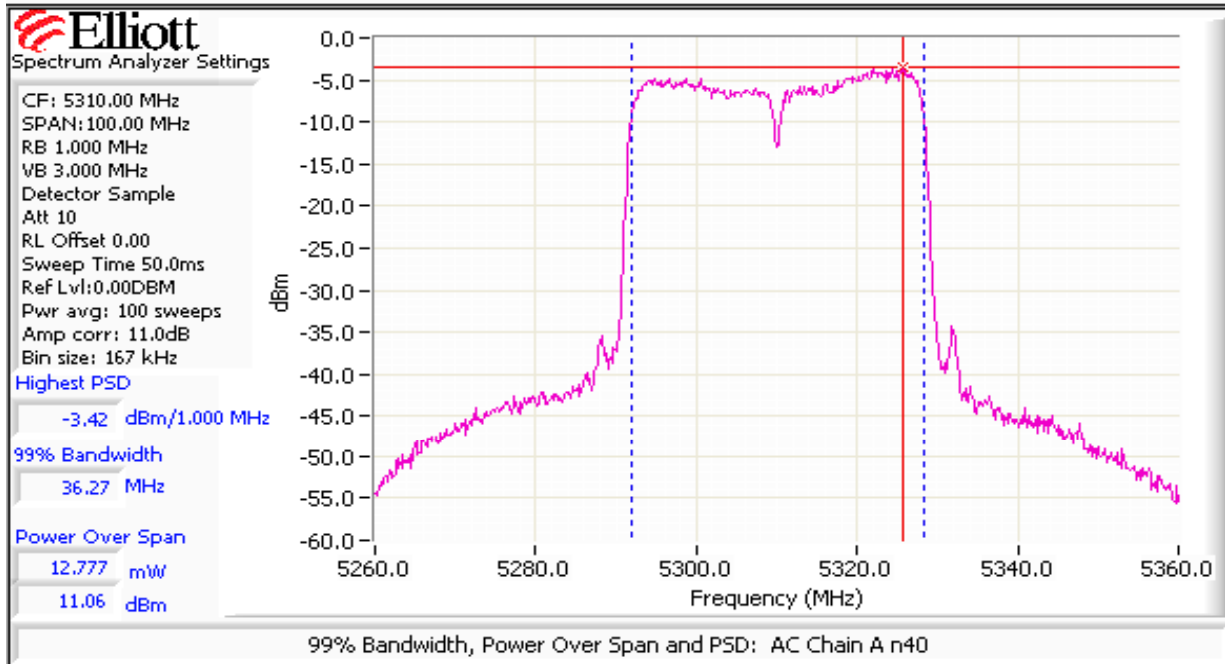
Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #2: Bandwidth, Output Power and Power spectral Density - Chain A + C



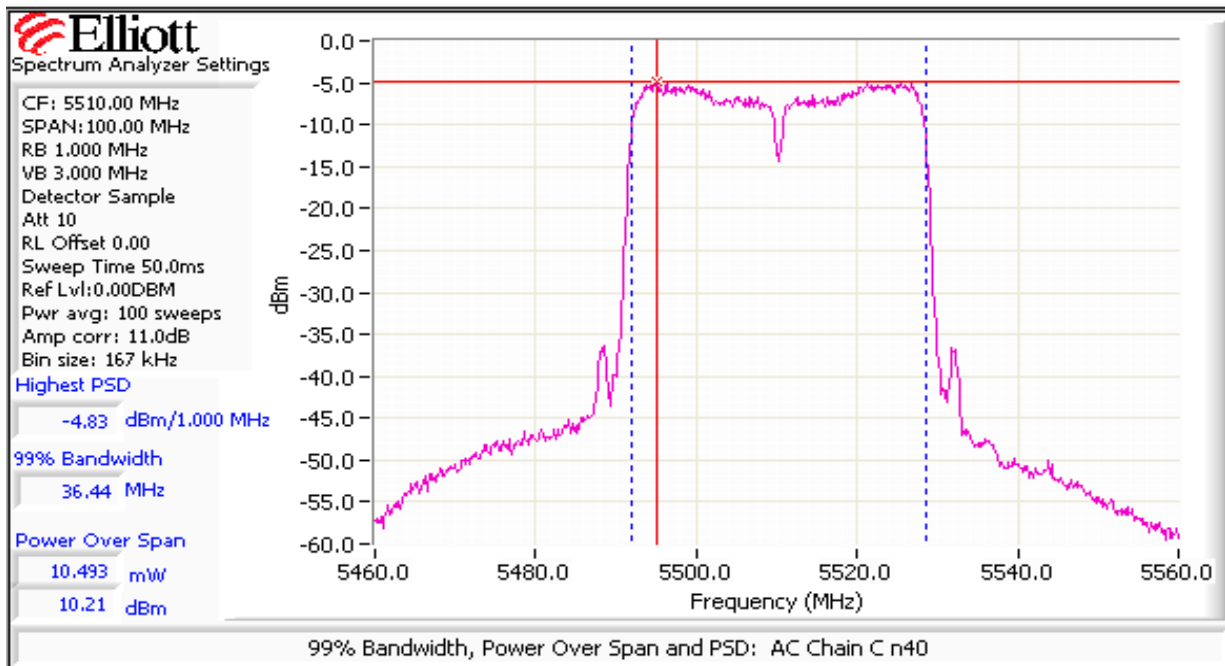
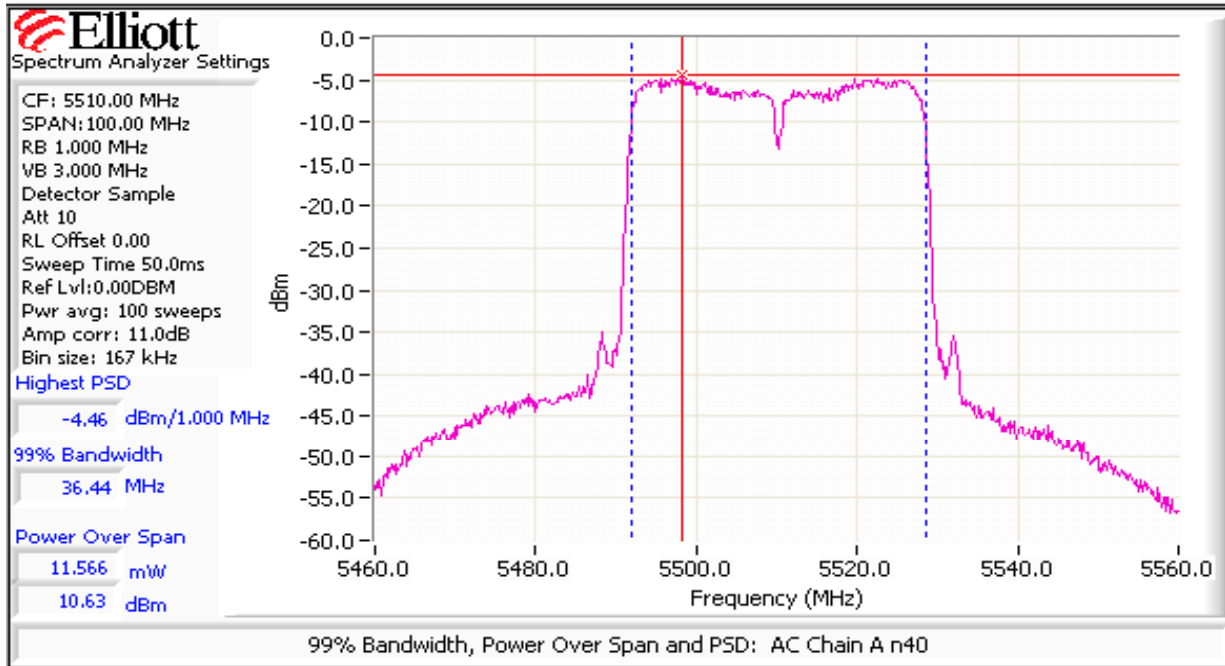
Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #2: Bandwidth, Output Power and Power spectral Density - Chain A + C



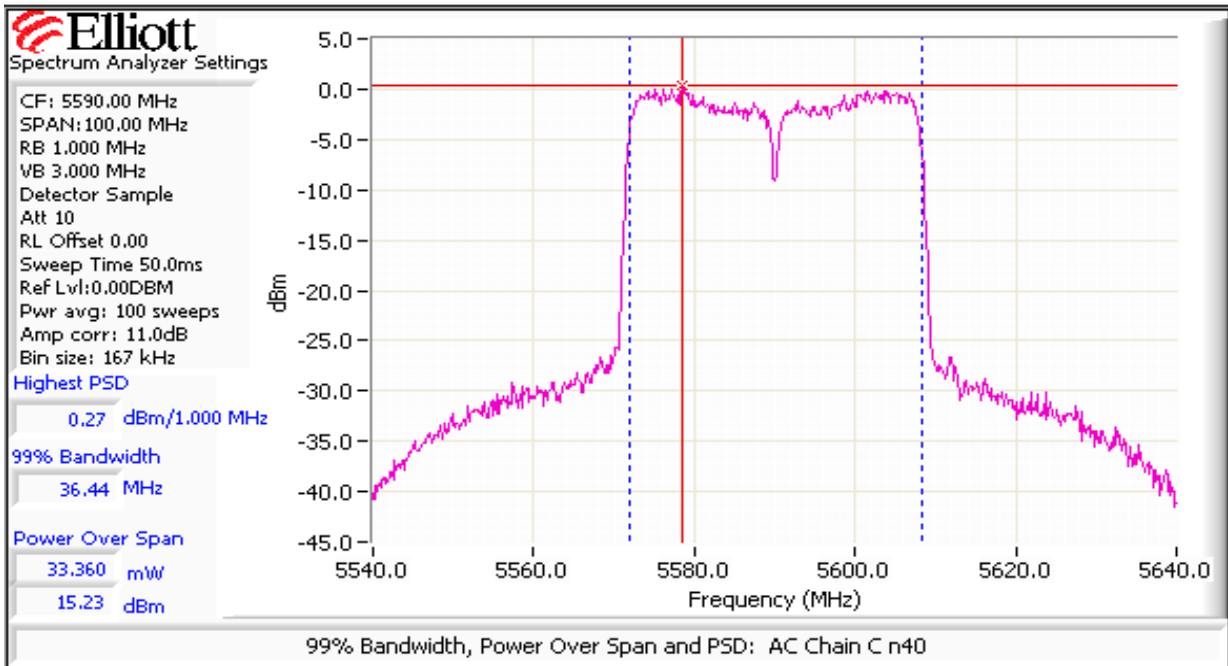
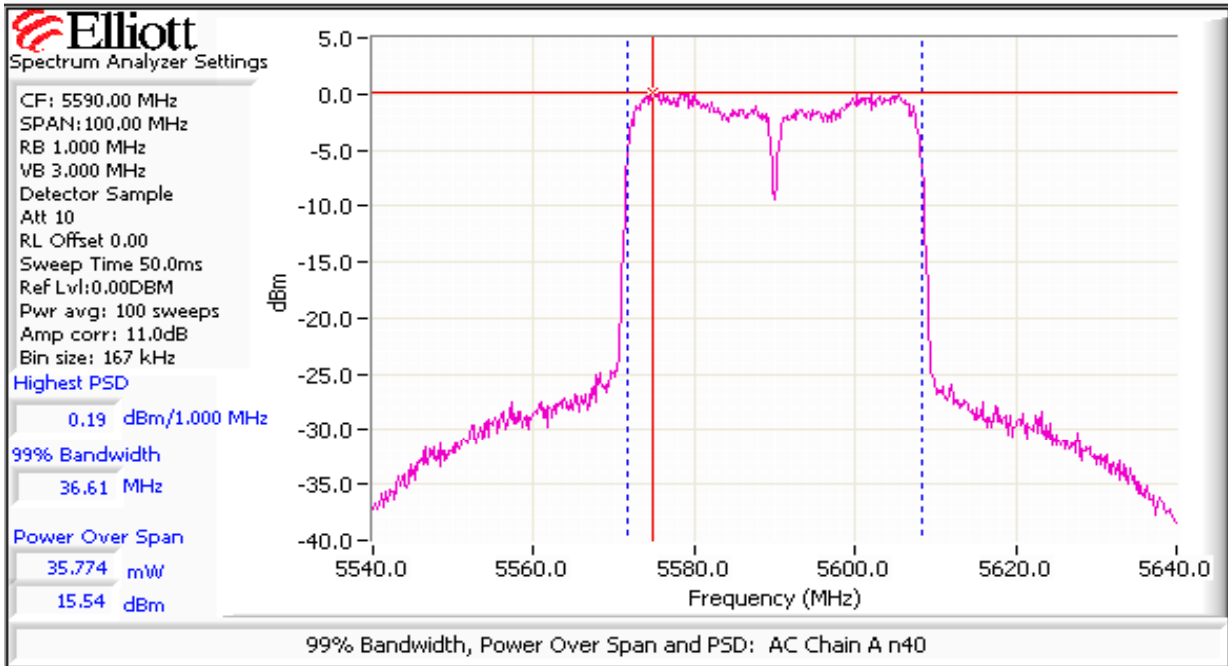
Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #2: Bandwidth, Output Power and Power spectral Density - Chain A + C



Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

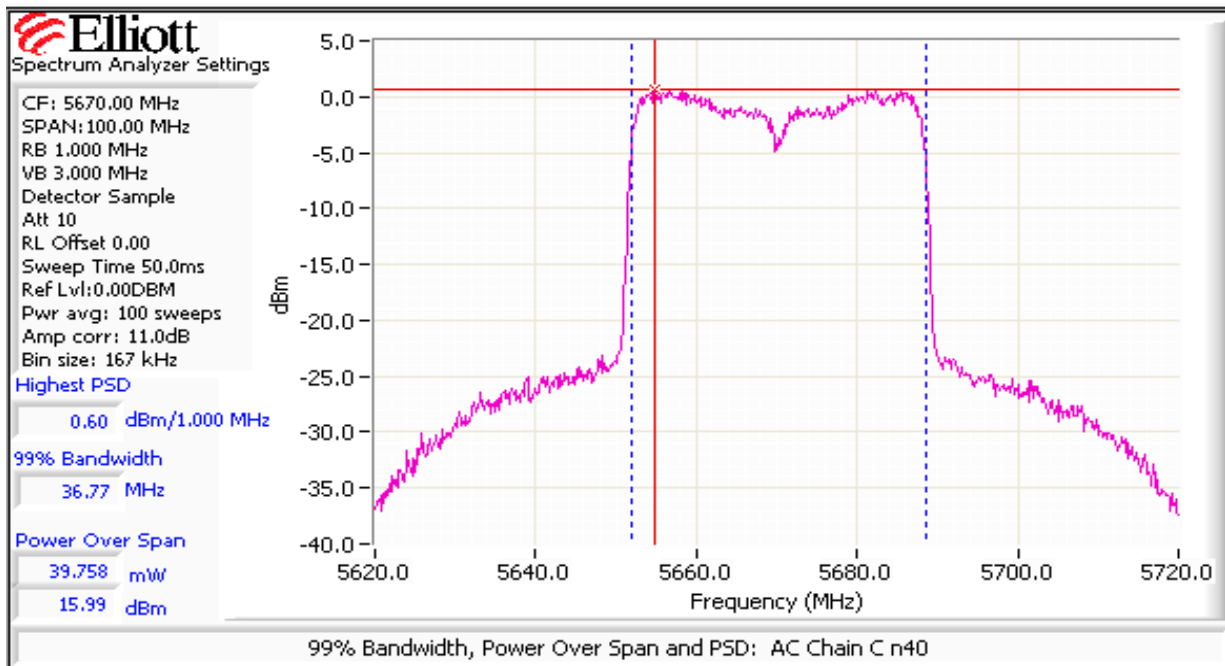
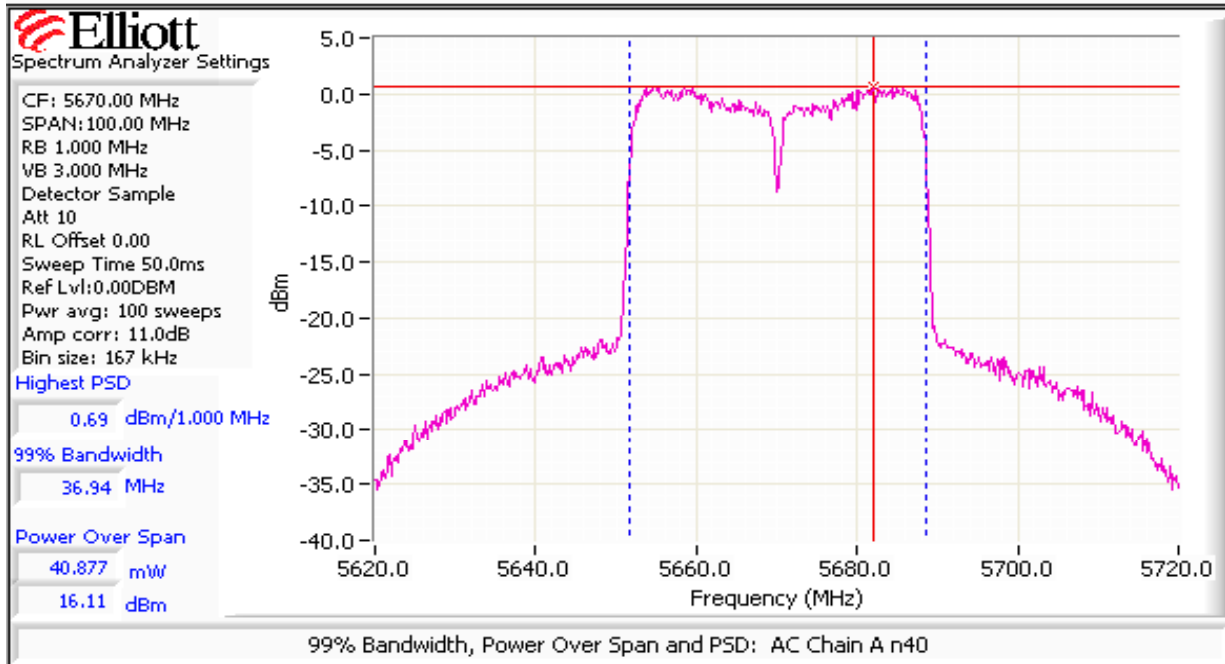
Run #2: Bandwidth, Output Power and Power spectral Density - Chain A + C





Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #2: Bandwidth, Output Power and Power spectral Density - Chain A + C



Client:	Intel	Job Number:	J70976
Model:	533-agn MMW	T-Log Number:	T71055
Contact:	Robert Paxman	Account Manager:	D. Eriksen
Standard:	FCC 15 E / RSS -210 (RF Port)	Class:	N/A

Run #3: Bandwidth, Output Power and Power spectral Density - Chain B + C

	Chain 1	Chain 2	Chain 3	Coherent	Effective <sup>5</sup>
Antenna Gain (dBi):	5	5	5	No	5.0

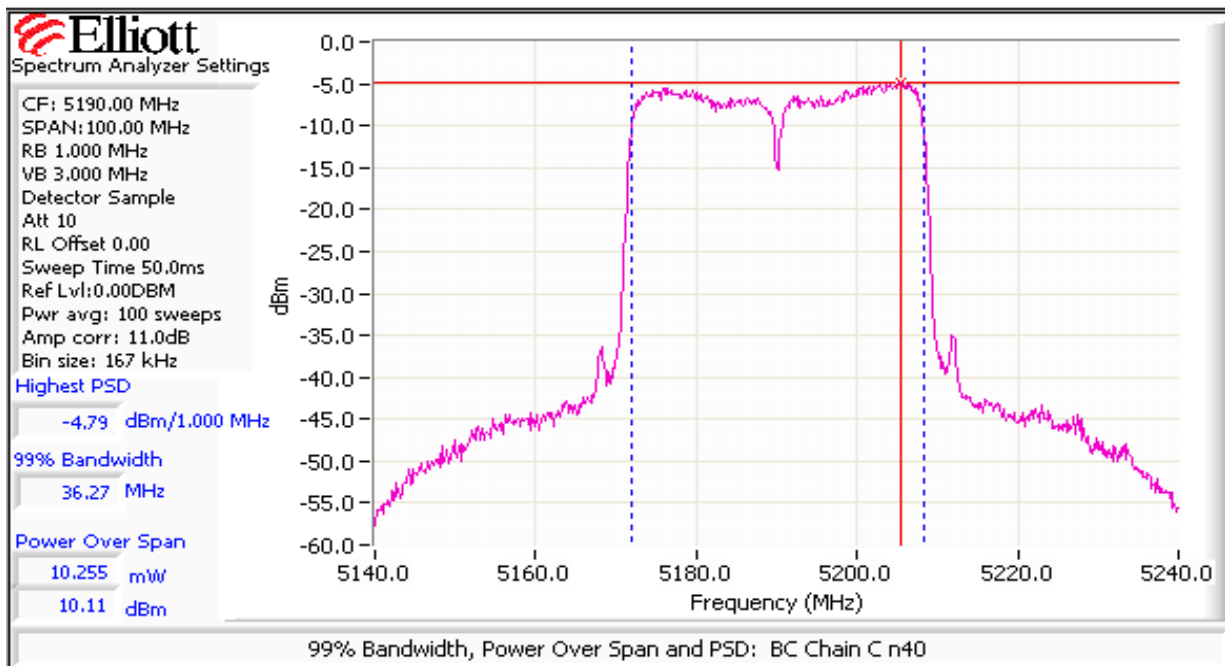
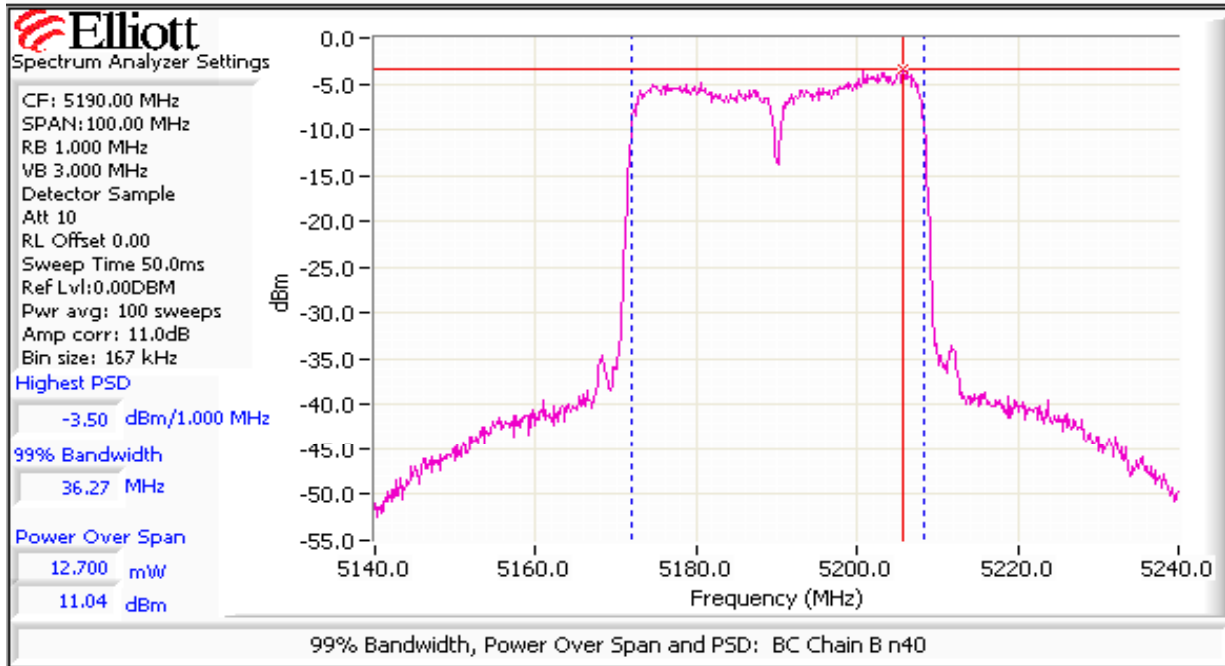
Frequency (MHz)	Software Setting	26dB BW (MHz)	Measured Output Power <sup>1</sup> dBm			Total		Limit (dBm)	Max Power (W)	Pass or Fail
			Chain A	Chain B	Chain C	mW	dBm			
5190	27.5/27.5	41.7		11.0	10.1	23.0	13.6	17.0	0.046	PASS
5230	29.5/30.5	60.8		13.8	13.4	45.6	16.6	17.0		PASS
5270	27.5/29	63.7		13.6	13.2	43.6	16.4	24.0	0.044	PASS
5310	23.5/25.5	42.0		9.9	10.2	20.0	13.0	24.0		PASS
5510	23/23.5	46.0		10.2	10.3	21.2	13.3	24.0	0.039	PASS
5590	24.5/25	44.5		11.5	11.7	29.0	14.6	24.0		PASS
5670	25.5/25.5	43.5		13.2	12.5	39.0	15.9	24.0		PASS

Frequency (MHz)	99% <sup>4</sup> BW	Total Power	PSD <sup>2</sup> dBm/MHz			Total PSD		Limit		Pass or Fail
			Chain A	Chain B	Chain C	mW/MHz	dBm/MHz	FCC	RSS 210 <sup>3</sup>	
5190	36.3	13.6		-3.5	-4.8	0.8	-1.1	4.0	5.0	PASS
5230	36.3	16.6		-1.0	-1.5	1.5	1.7	4.0	5.0	PASS
5270	36.3	16.4		-1.3	-1.9	1.4	1.4	11.0	11.0	PASS
5310	36.4	13.0		-5.1	-4.8	0.6	-2.0	11.0	11.0	PASS
5510	36.4	13.3		-5.0	-5.0	0.6	-2.0	11.0	11.0	PASS
5590	36.4	14.6		-3.6	-3.5	0.9	-0.5	11.0	11.0	PASS
5670	36.4	15.9		-2.0	-2.8	1.2	0.6	11.0	11.0	PASS

- Note 1: Output power measured using a spectrum analyzer (see plots below):  
RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 100 MHz.
- Note 2: Measured using the same analyzer settings used for output power.
- Note 3: For RSS-210 the limit for the 5150 - 5250 MHz band accounts for the antenna gain as the maximum eirp allowed is 10dBm/MHz. The limits are also corrected for instances where the highest measured value of the PSD exceeds the average PSD (calculated from the measured power divided by the measured 99% bandwidth) by more than 3dB by the amount that the measured value exceeds the average by more than 3dB.
- Note 4: 99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB >=3xRB
- Note 5: For MIMO systems the total output power and total PSD are calculated from the sum of the powers of the individual chains (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operating mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power on each chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain and the EIRP is the product of the effective gain and total power.

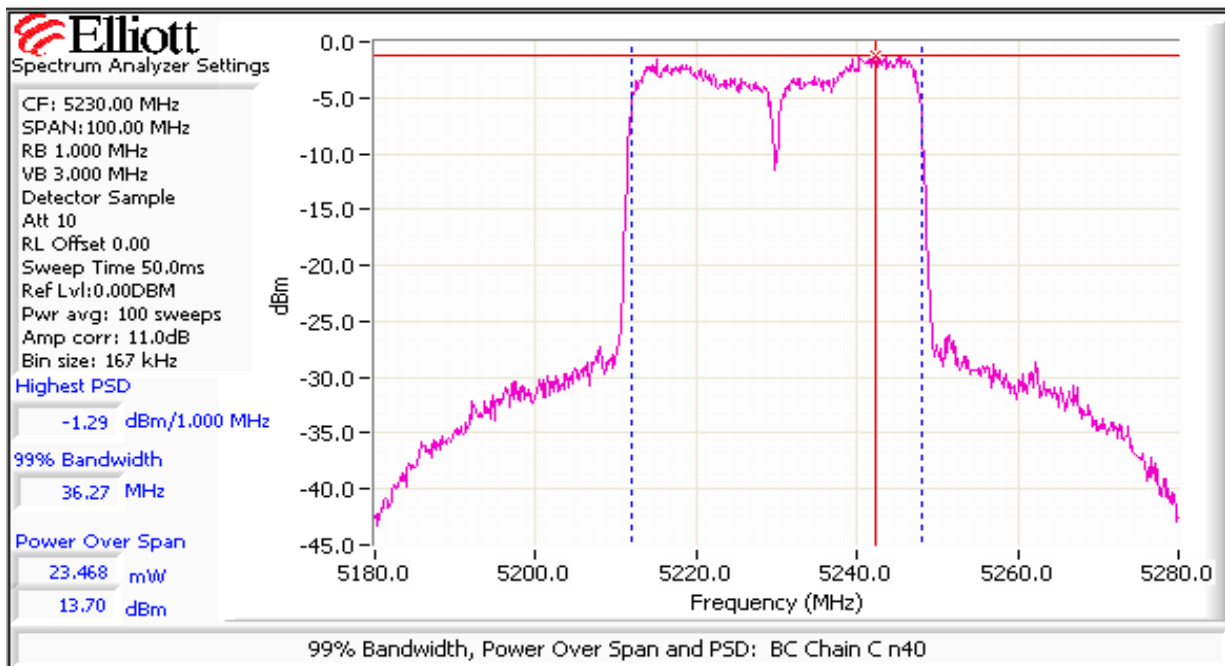
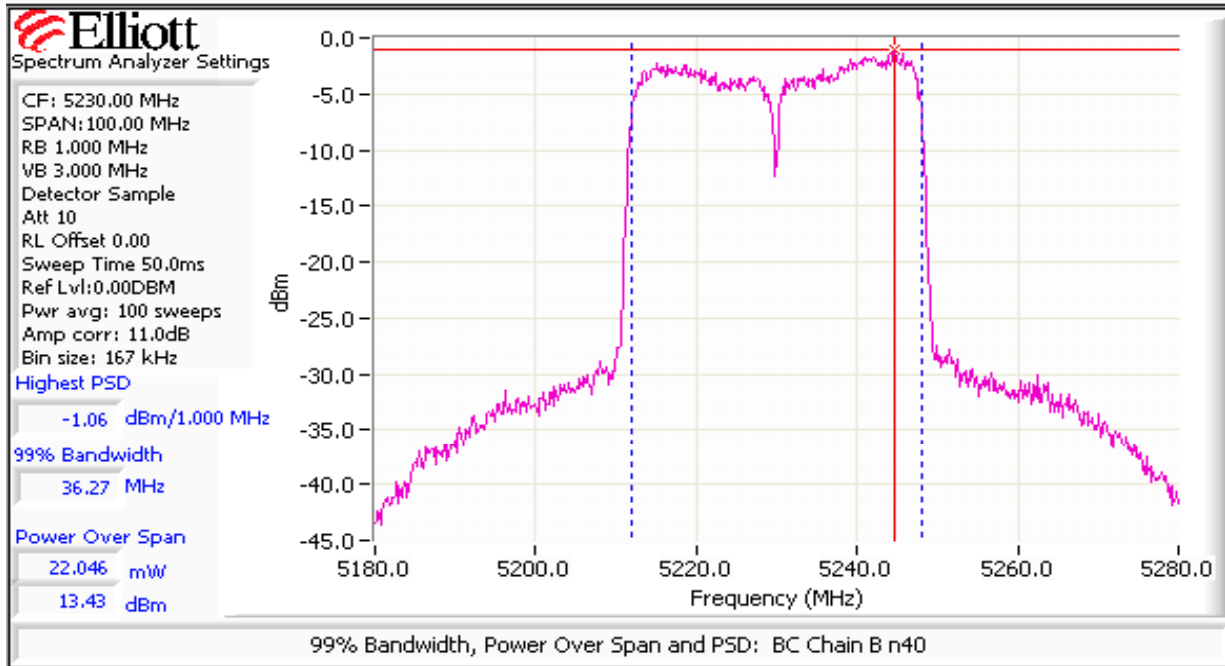
Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #3: Bandwidth, Output Power and Power spectral Density - Chain B + C



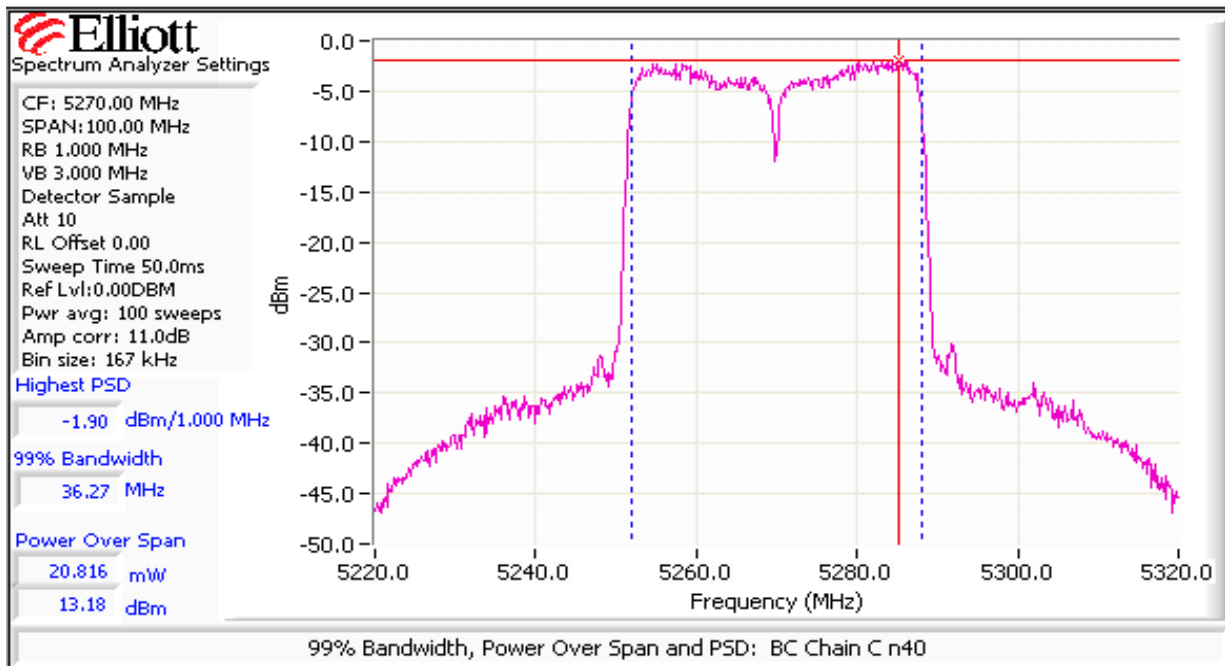
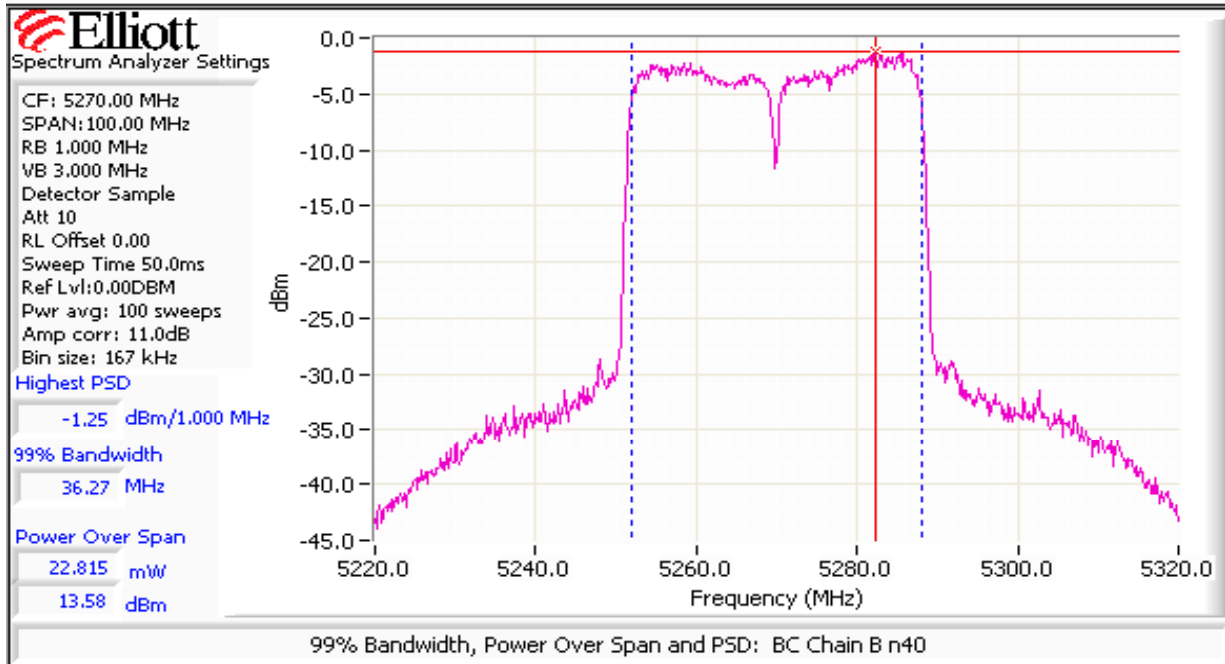
Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #3: Bandwidth, Output Power and Power spectral Density - Chain B + C



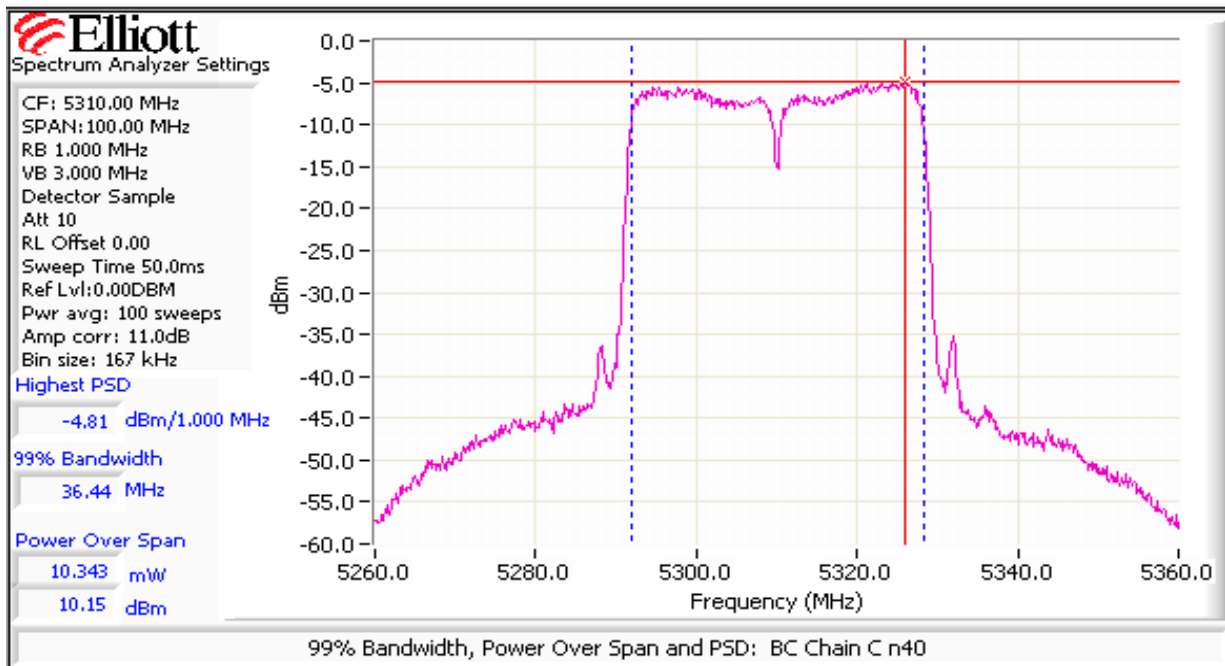
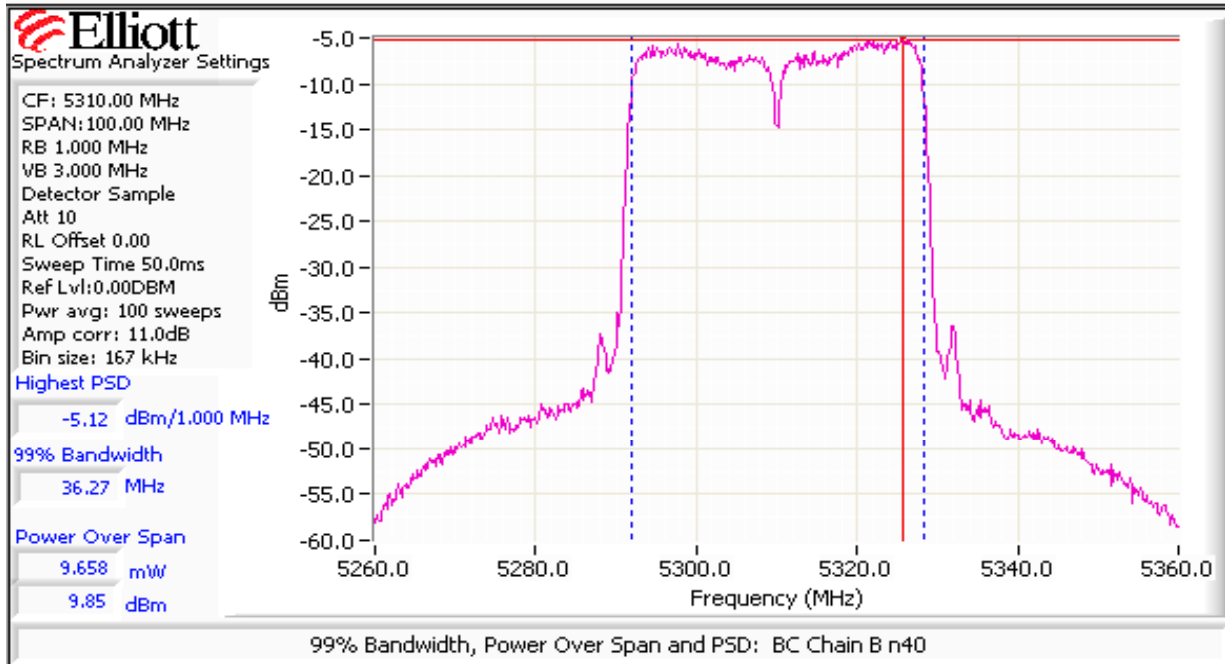
Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #3: Bandwidth, Output Power and Power spectral Density - Chain B + C



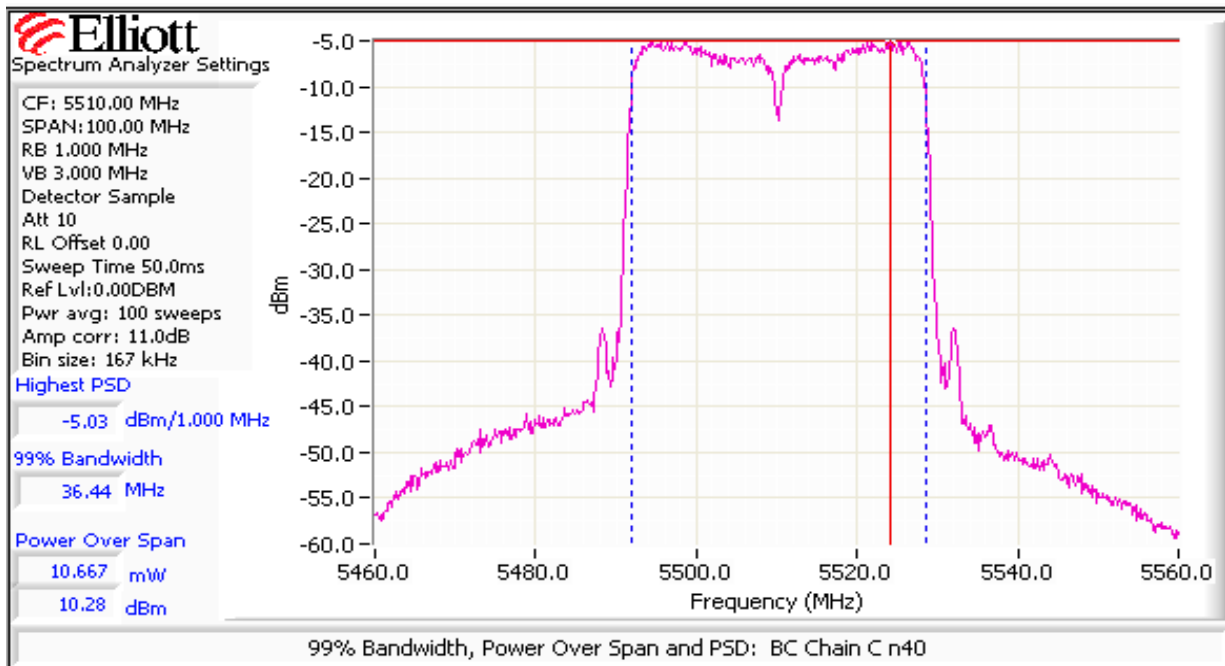
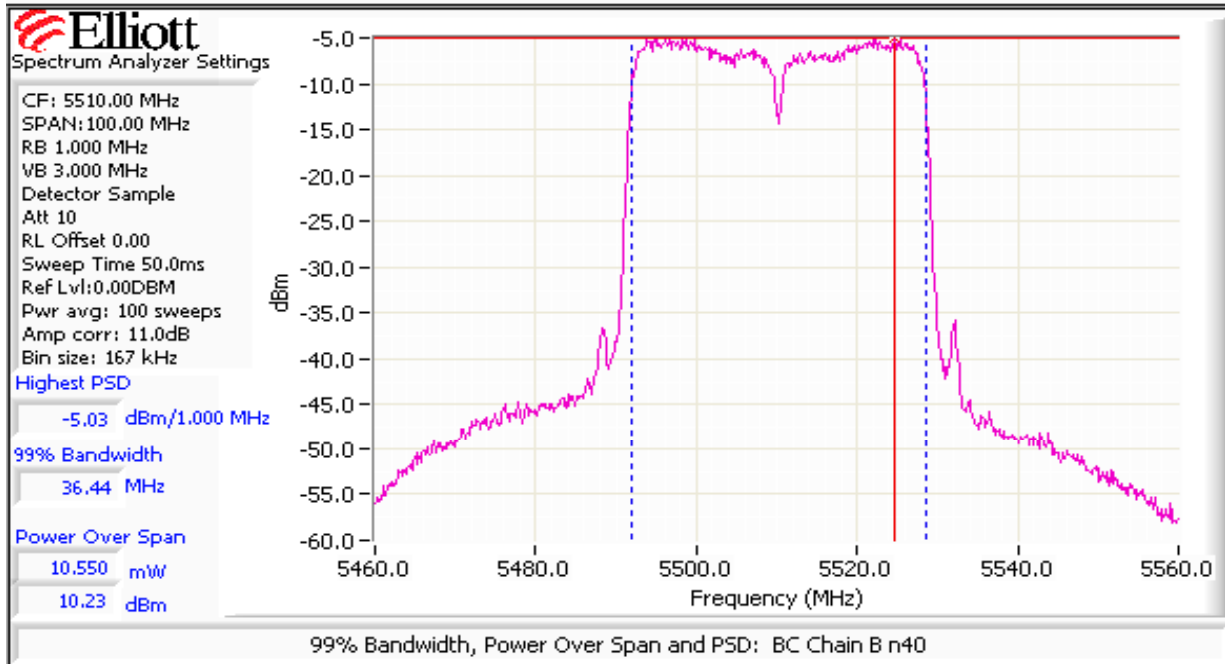
Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

### Run #3: Bandwidth, Output Power and Power spectral Density - Chain B + C



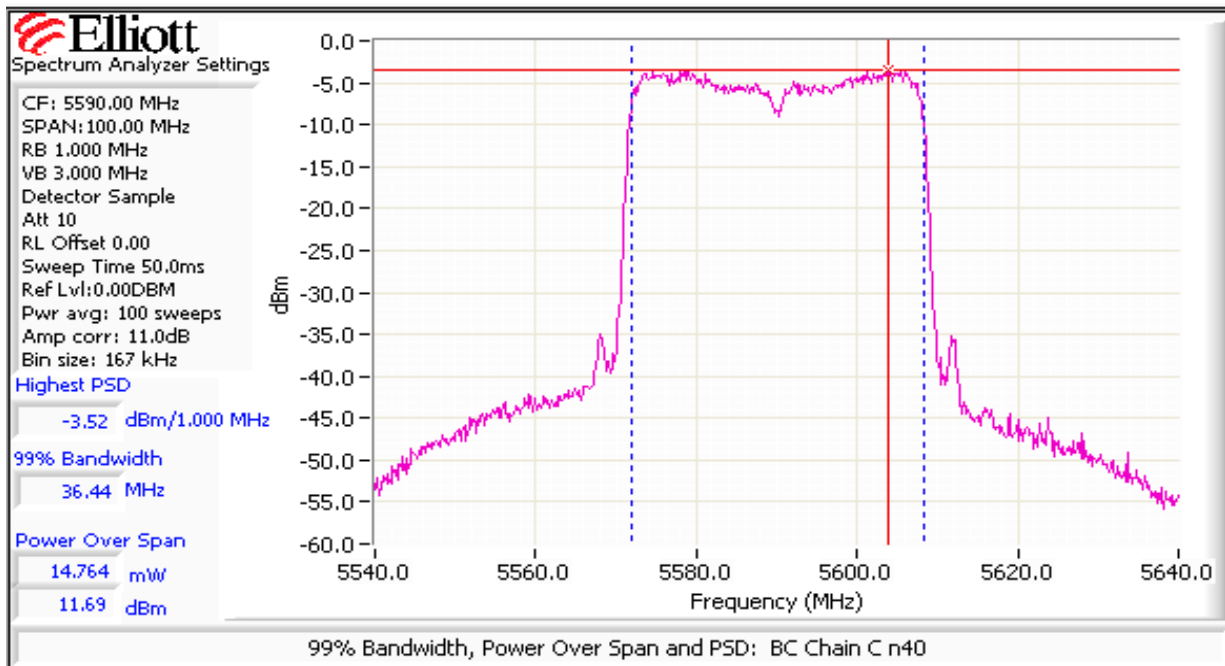
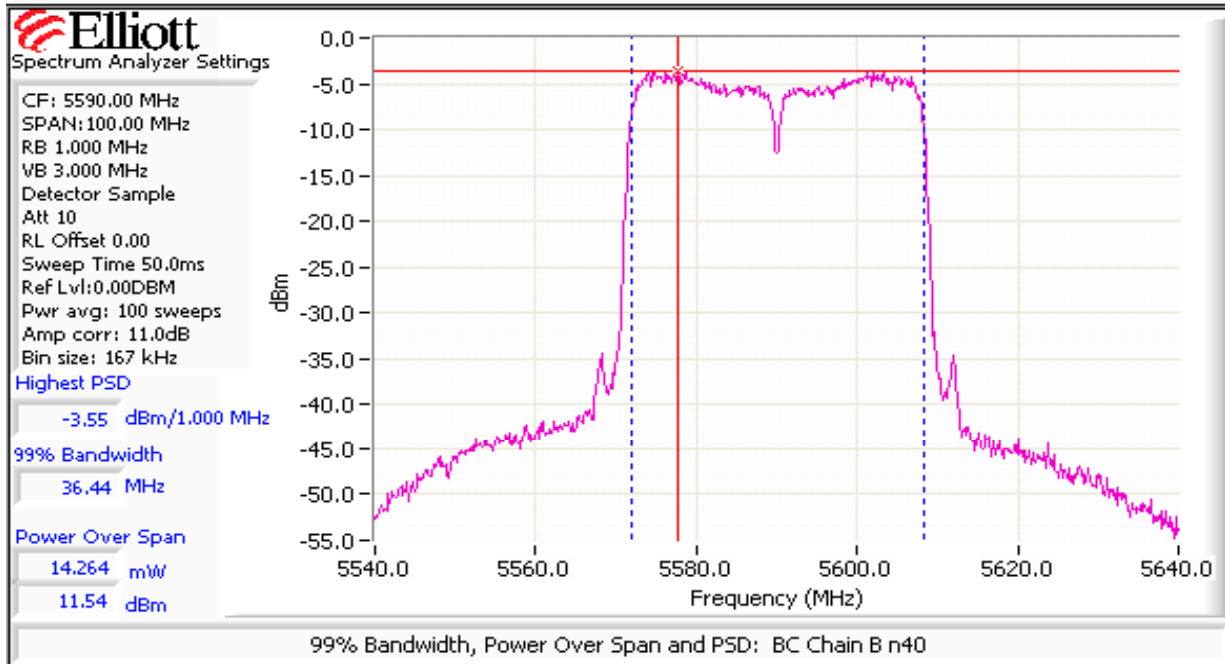
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Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

### Run #3: Bandwidth, Output Power and Power spectral Density - Chain B + C



Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

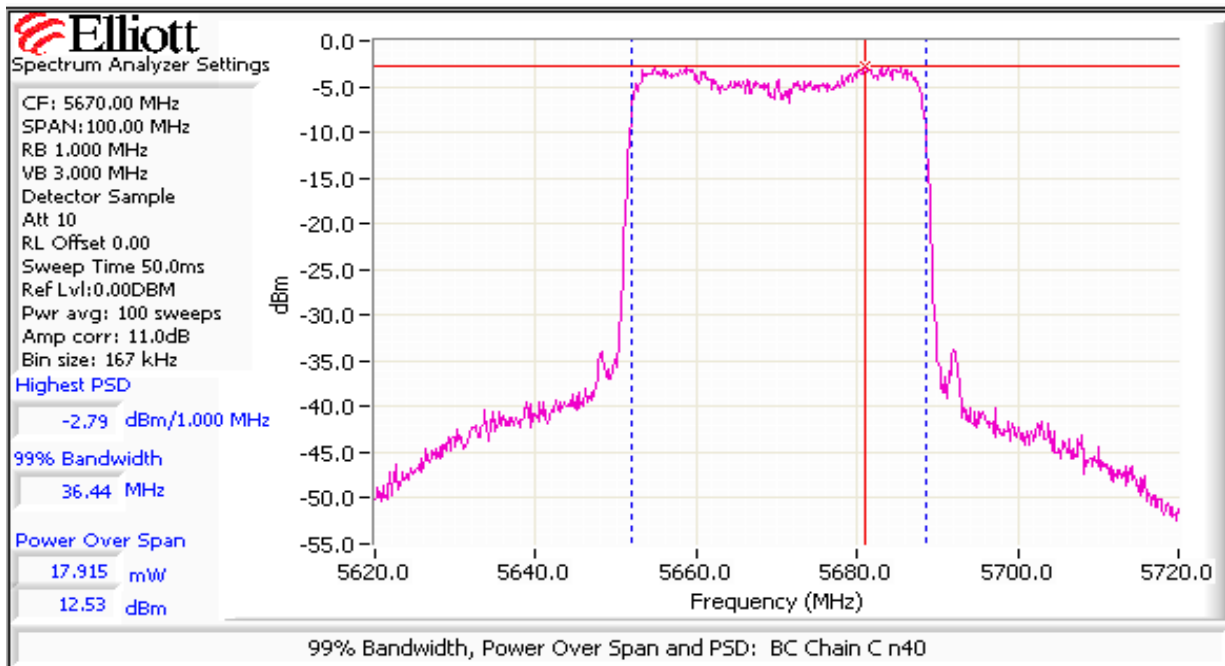
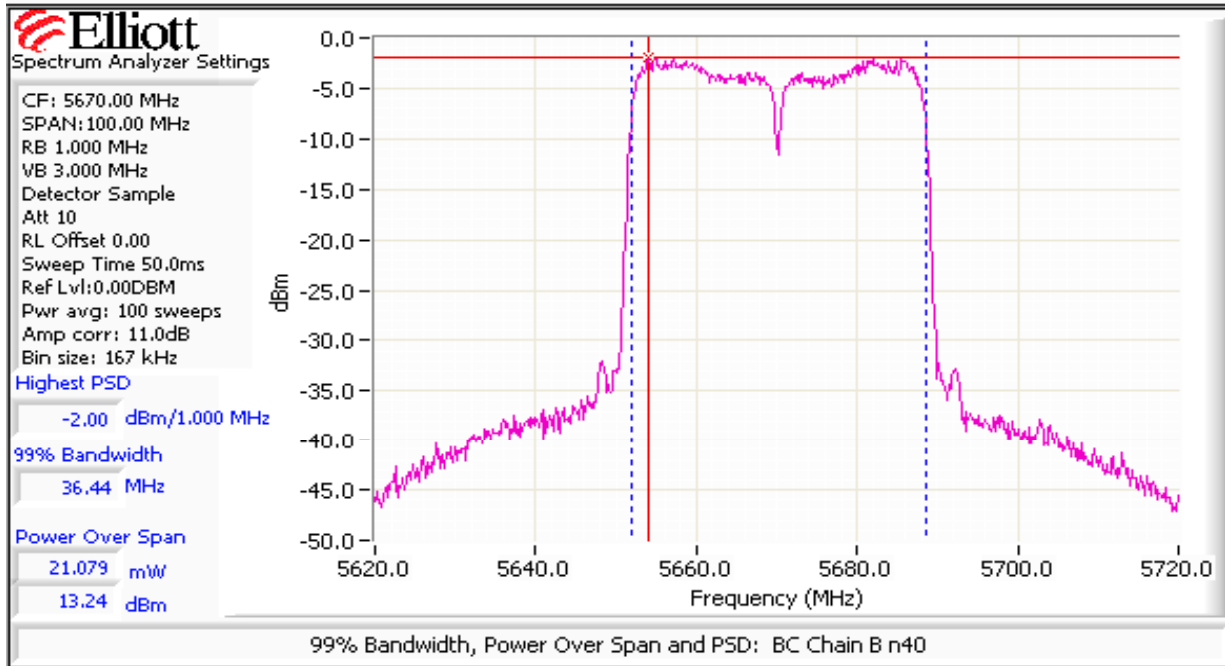
### Run #3: Bandwidth, Output Power and Power spectral Density - Chain B + C





Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #3: Bandwidth, Output Power and Power spectral Density - Chain B + C



Client:	Intel	Job Number:	J70976
Model:	533-agn MMW	T-Log Number:	T71055
		Account Manager:	D. Eriksen
Contact:	Robert Paxman		
Standard:	FCC 15 E / RSS -210 (RF Port)	Class:	N/A

Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C

	Chain 1	Chain 2	Chain 3	Coherent	Effective <sup>5</sup>
Antenna Gain (dBi):	5	5	5	No	5.0

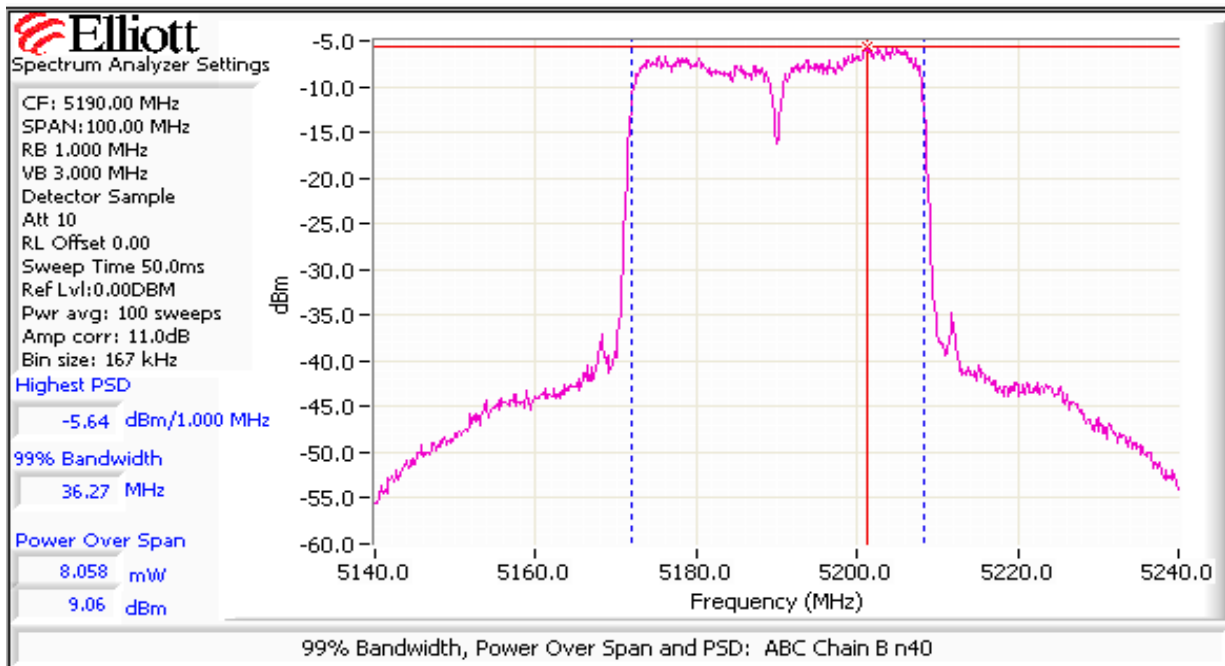
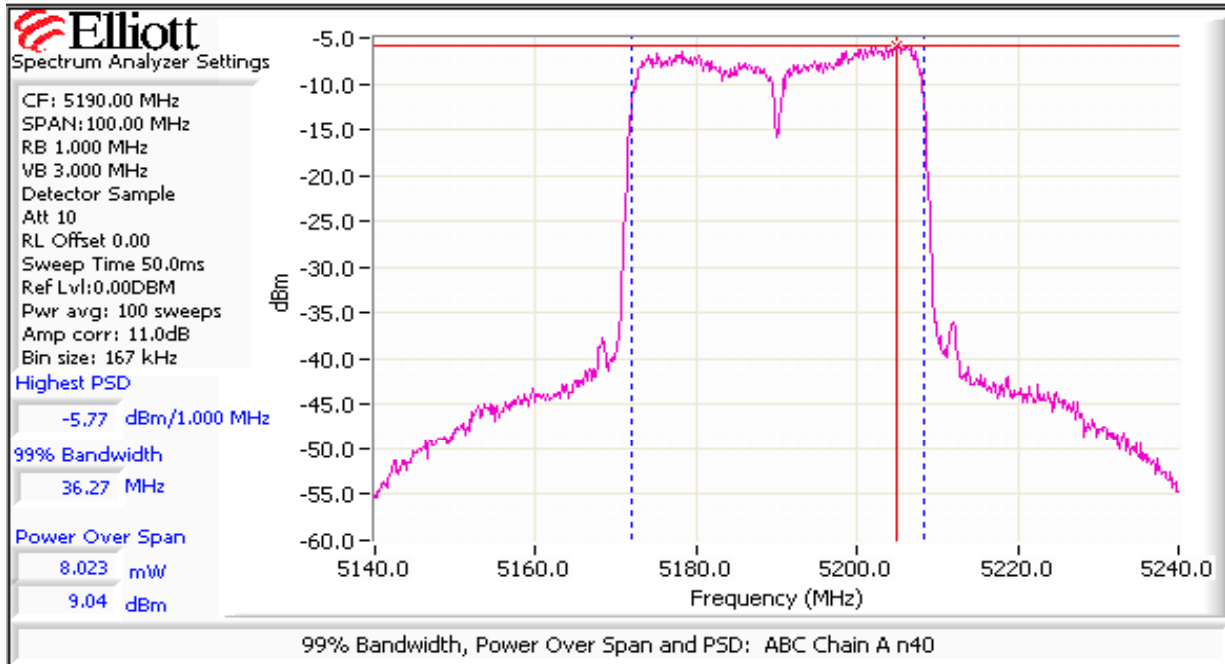
Frequency (MHz)	Software Setting	26dB BW (MHz)	Measured Output Power <sup>1</sup> dBm			Total		Limit (dBm)	Max Power (W)	Pass or Fail
			Chain A	Chain B	Chain C	mW	dBm			
5190	29.5/29/28.5	41.7	9.0	9.1	8.3	22.8	13.6	17.0	0.042	PASS
5230	31.5/31.0/31.5	60.8	11.5	11.7	11.3	42.4	16.3	17.0		PASS
5270	32/30.5/32	63.7	13.1	13.3	13.2	62.6	18.0	24.0	0.063	PASS
5310	26/25/27	42.0	8.7	8.4	9.1	22.3	13.5	24.0		PASS
5510	25/24.5/25.5	46.0	8.7	8.9	9.1	23.3	13.7	24.0	0.054	PASS
5590	28/27.5/28.5	44.5	11.4	11.5	12.0	43.9	16.4	24.0		PASS
5670	29.5/28.5/29.5	43.5	12.9	12.1	12.5	53.7	17.3	24.0		PASS

Frequency (MHz)	99% <sup>4</sup> BW	Total Power	PSD <sup>2</sup> dBm/MHz			Total PSD		Limit		Pass or Fail
			Chain A	Chain B	Chain C	mW/MHz	dBm/MHz	FCC	RSS 210 <sup>3</sup>	
5190	36.3	13.6	-5.8	-5.6	-6.4	0.8	-1.2	4.0	5.0	PASS
5230	36.3	16.3	-3.3	-2.8	-3.5	1.5	1.6	4.0	5.0	PASS
5270	36.4	18.0	-1.8	-1.3	-1.6	2.1	3.2	11.0	11.0	PASS
5310	36.4	13.5	-6.4	-6.2	-5.8	0.7	-1.3	11.0	11.0	PASS
5510	36.4	13.7	-6.1	-6.1	-5.9	0.8	-1.2	11.0	11.0	PASS
5590	36.4	16.4	-3.7	-3.4	-3.0	1.4	1.4	11.0	11.0	PASS
5670	36.4	17.3	-1.9	-3.0	-2.5	1.7	2.3	11.0	11.0	PASS

- Note 1: Output power measured using a spectrum analyzer (see plots below): RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 100 MHz.
- Note 2: Measured using the same analyzer settings used for output power.
- Note 3: For RSS-210 the limit for the 5150 - 5250 MHz band accounts for the antenna gain as the maximum eirp allowed is 10dBm/MHz. The limits are also corrected for instances where the highest measured value of the PSD exceeds the average PSD (calculated from the measured power divided by the measured 99% bandwidth) by more than 3dB by the amount that the measured value exceeds the average by more than 3dB.
- Note 4: 99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB >=3xRB
- Note 5: For MIMO systems the total output power and total PSD are calculated from the sum of the powers of the individual chains (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operating mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power on each chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain and the EIRP is the product of the effective gain and total power.

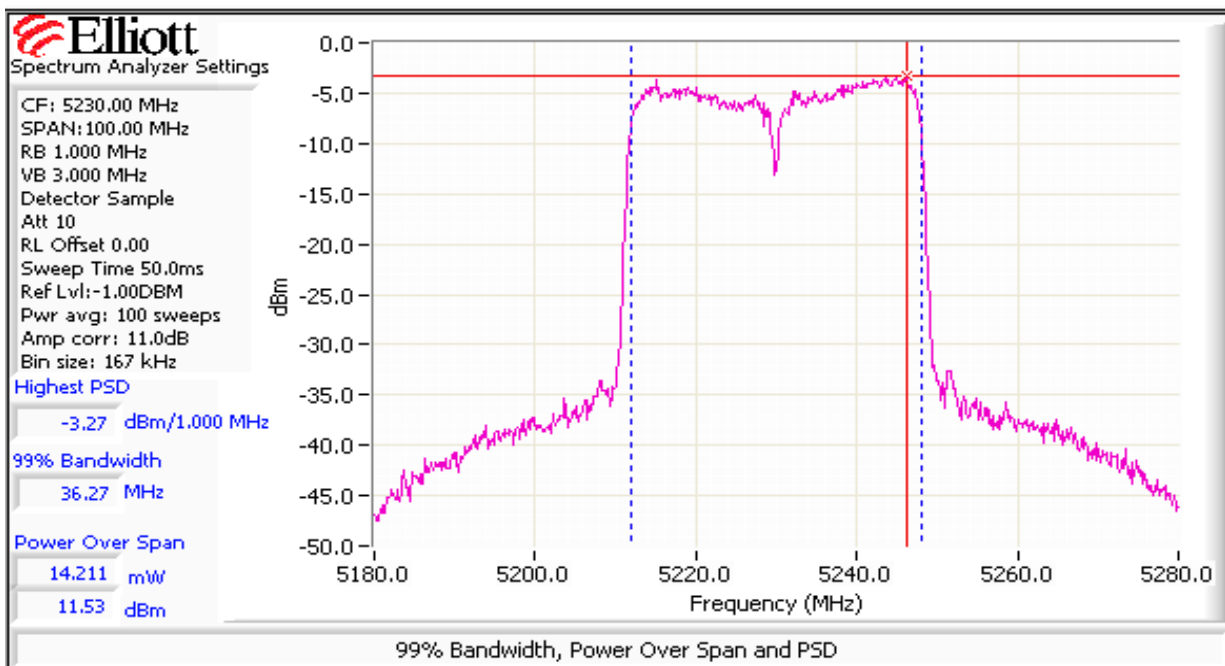
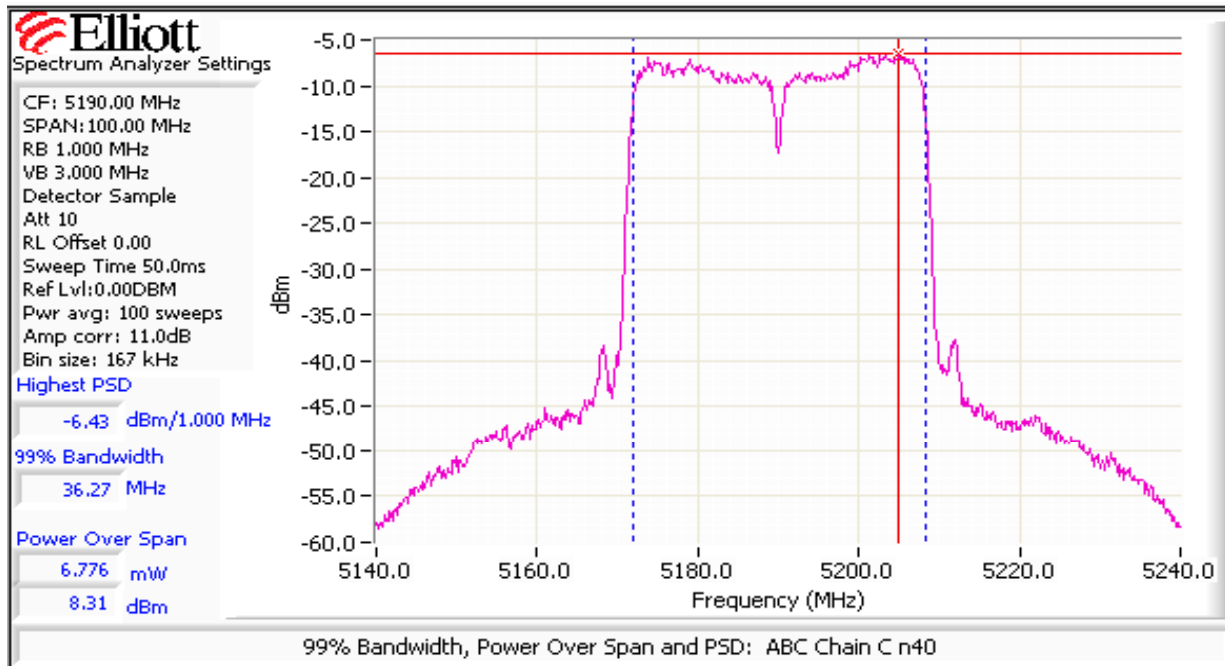
Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C



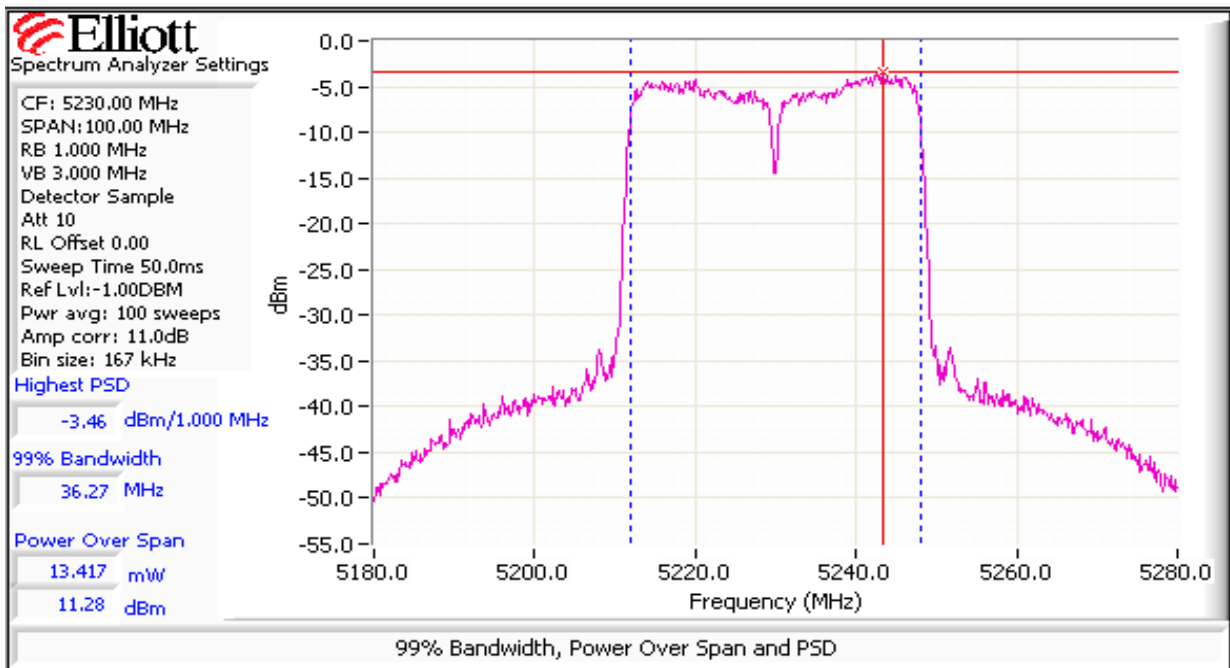
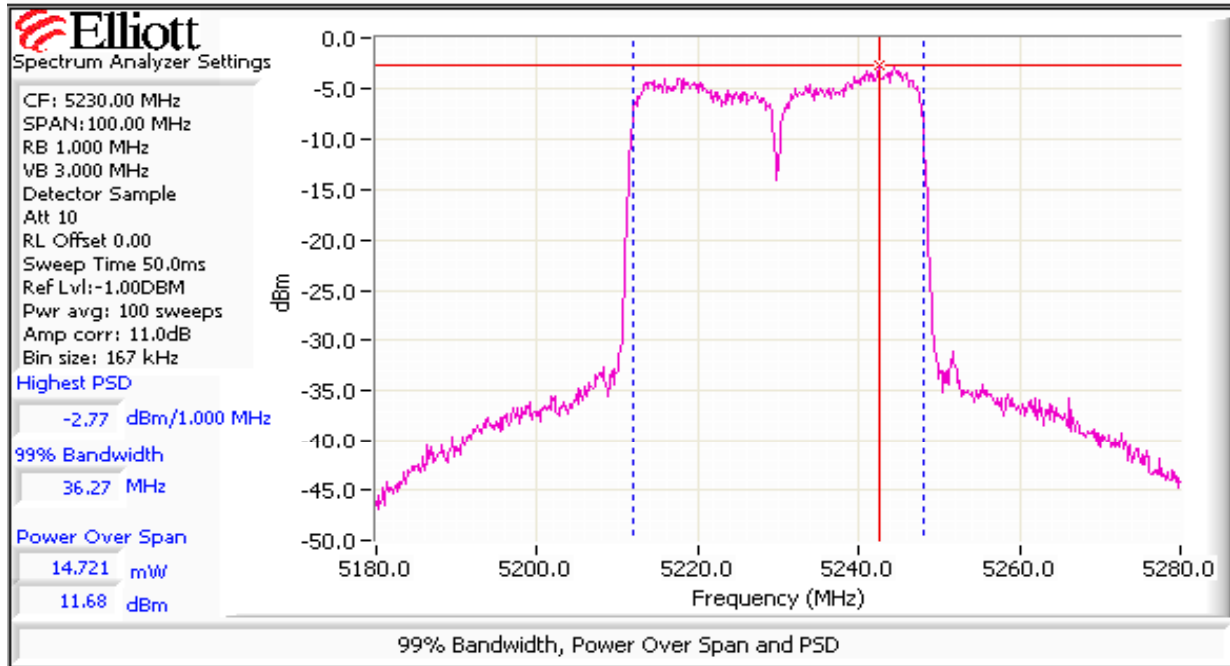
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Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C



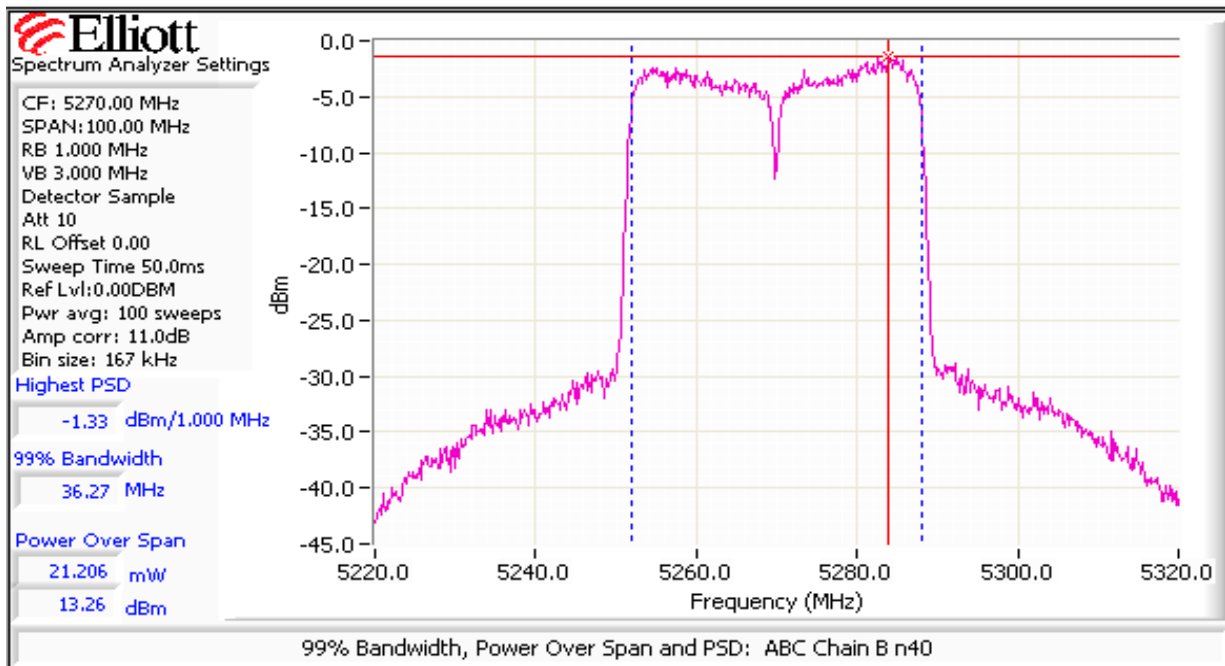
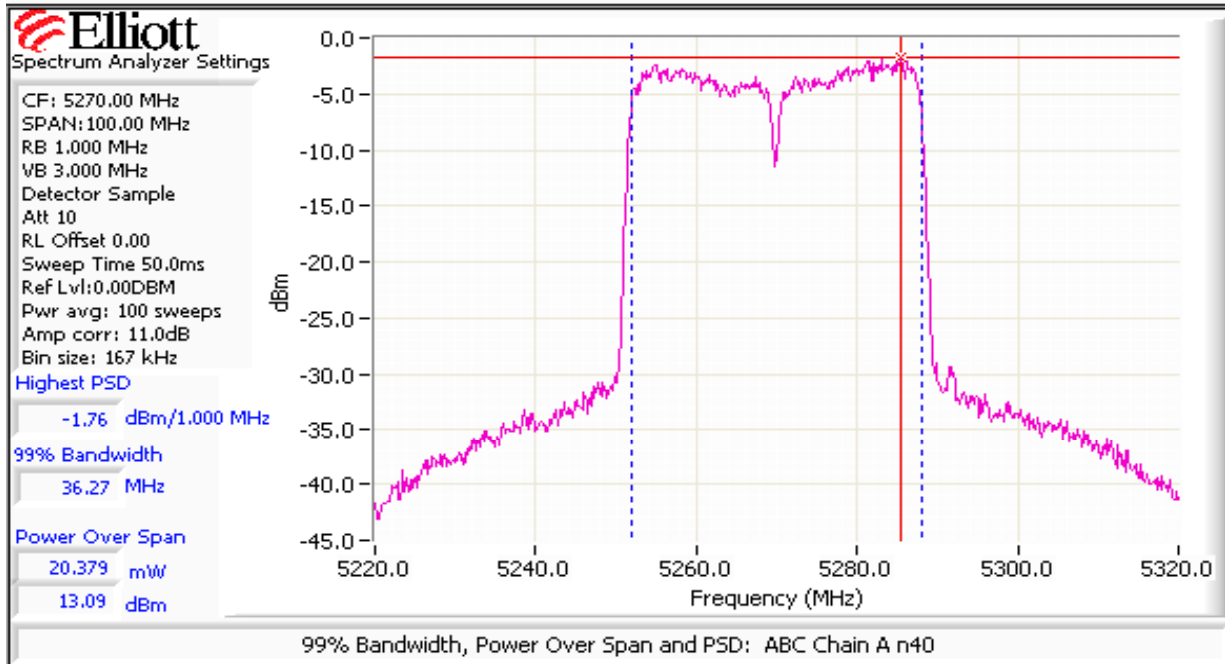
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Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C



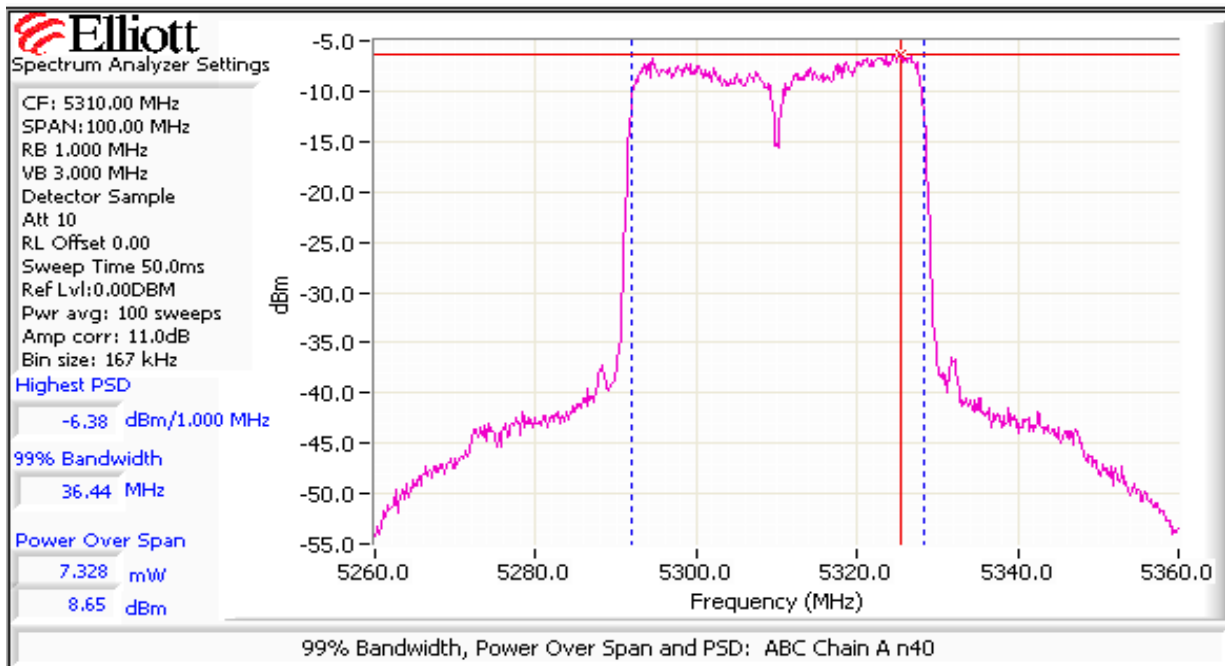
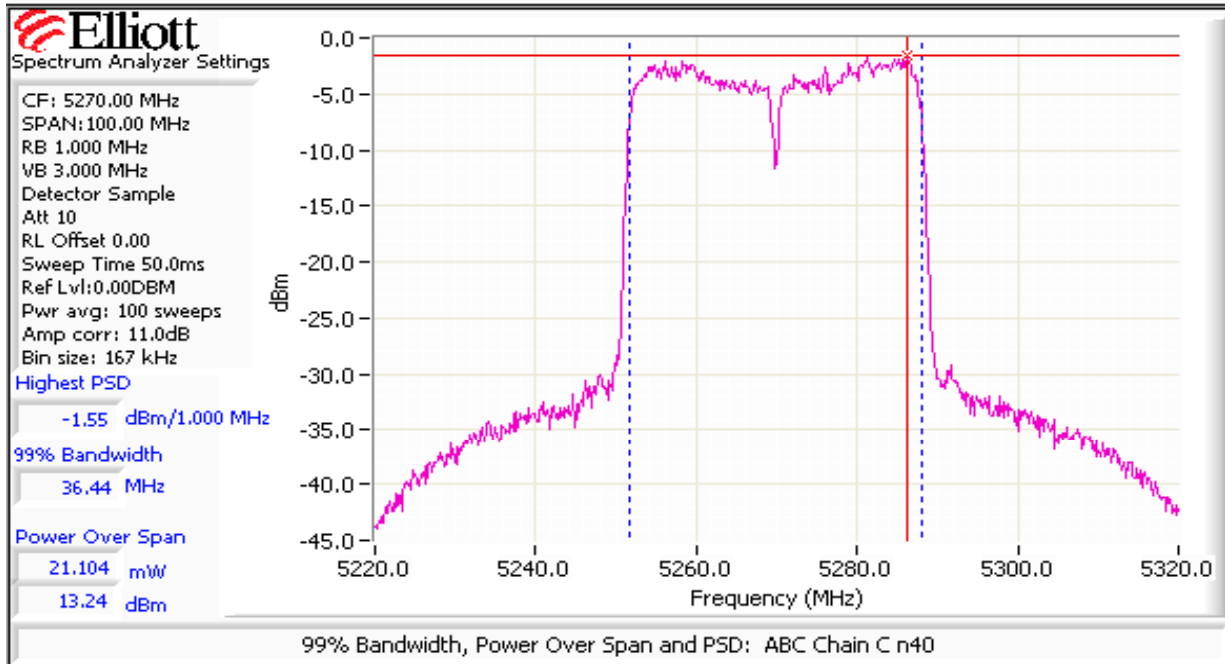
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Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C



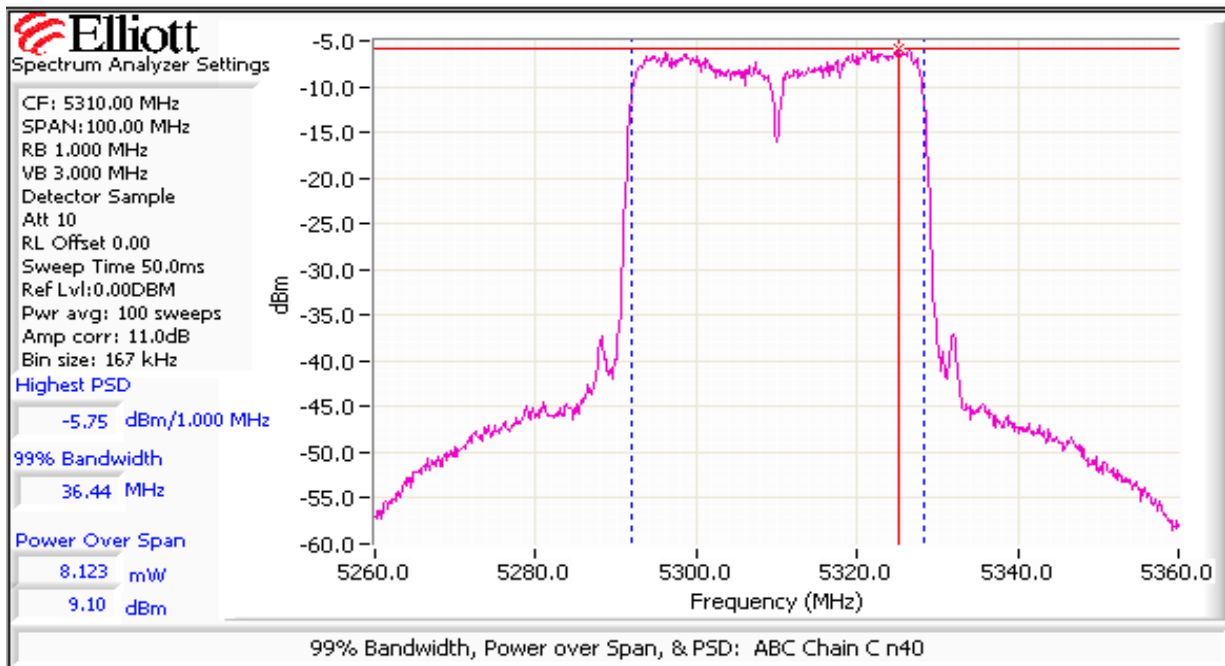
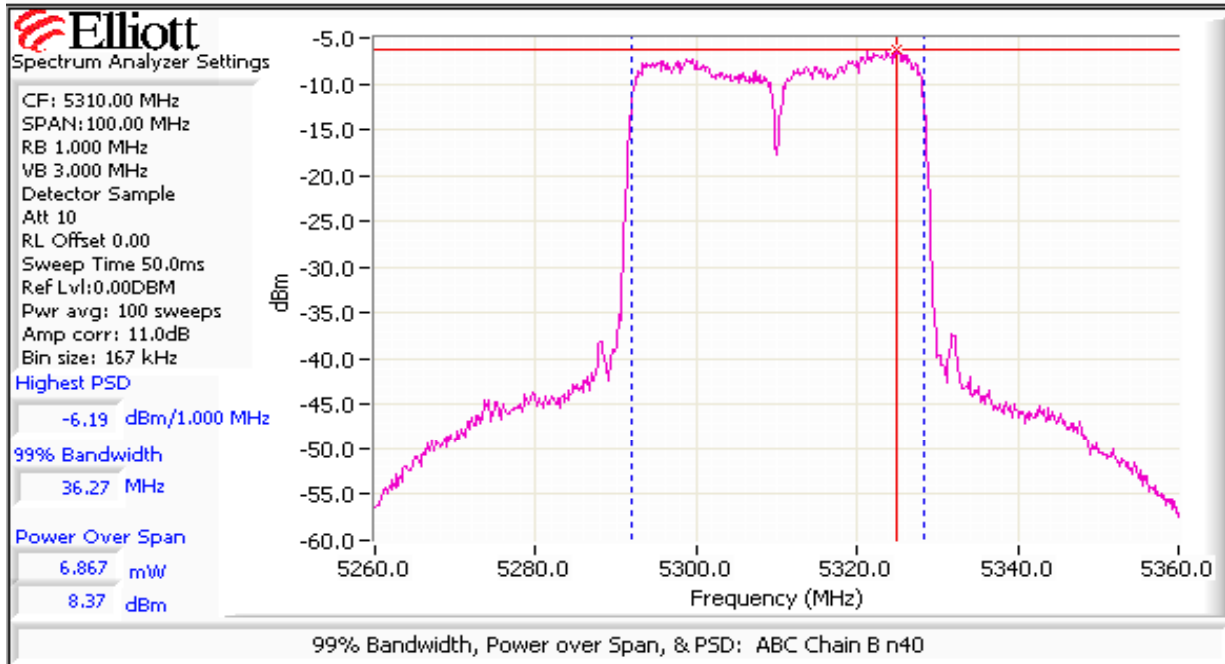
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Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C



Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

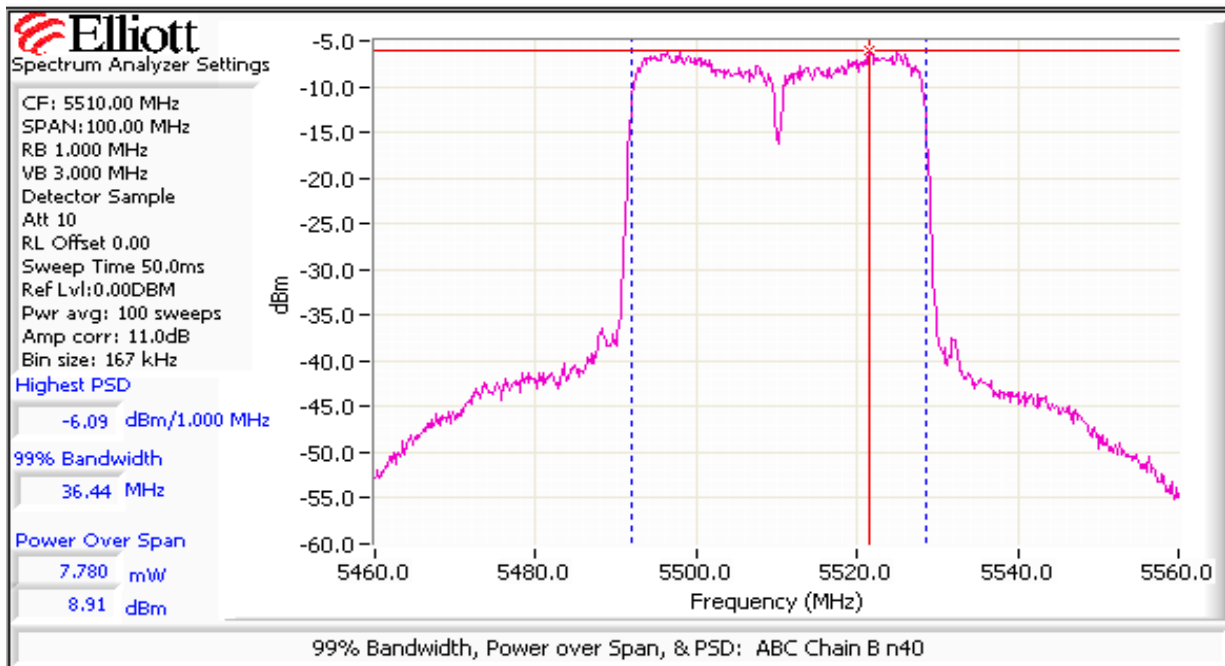
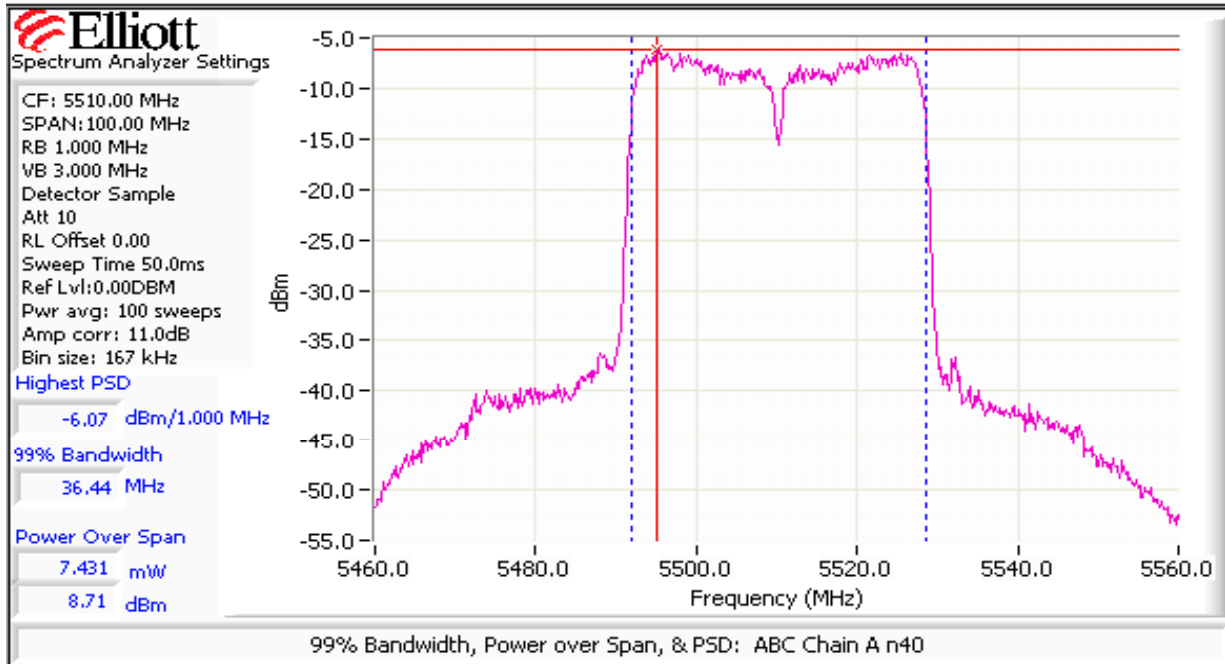
Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C





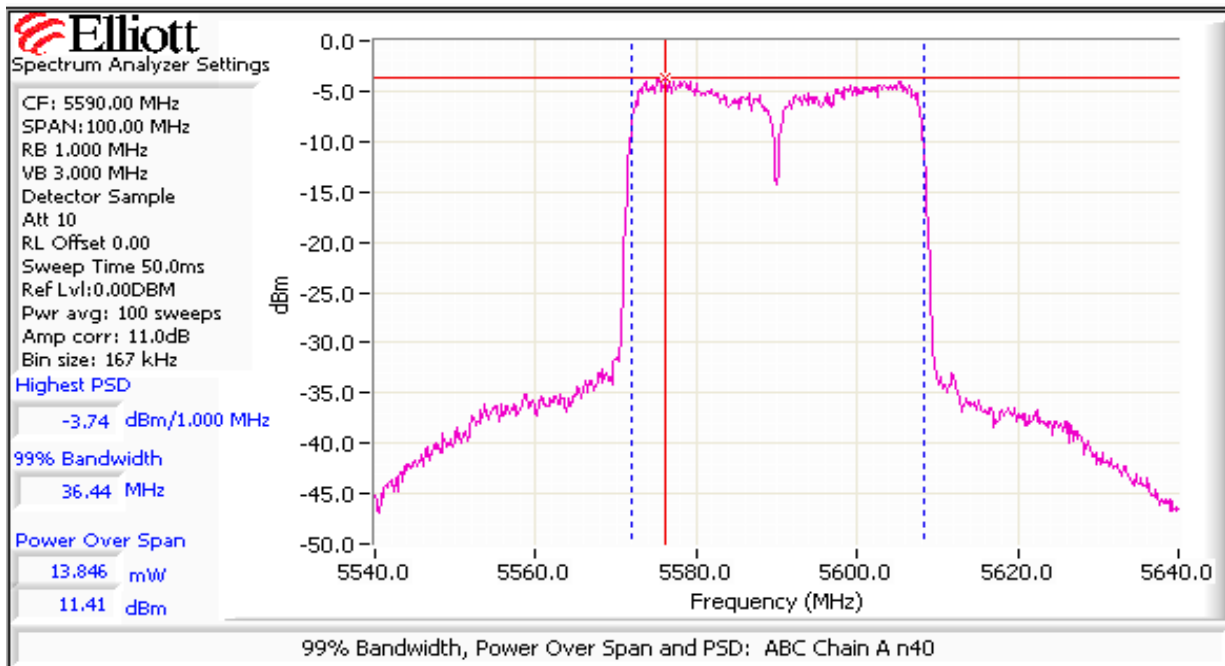
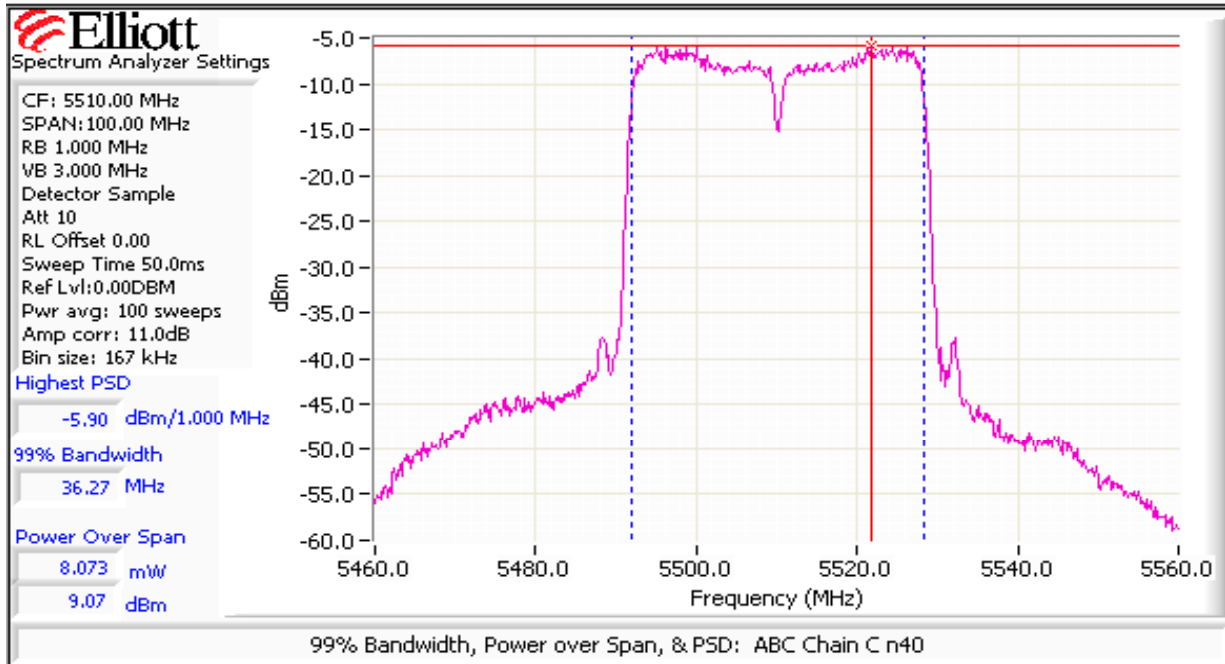
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Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C



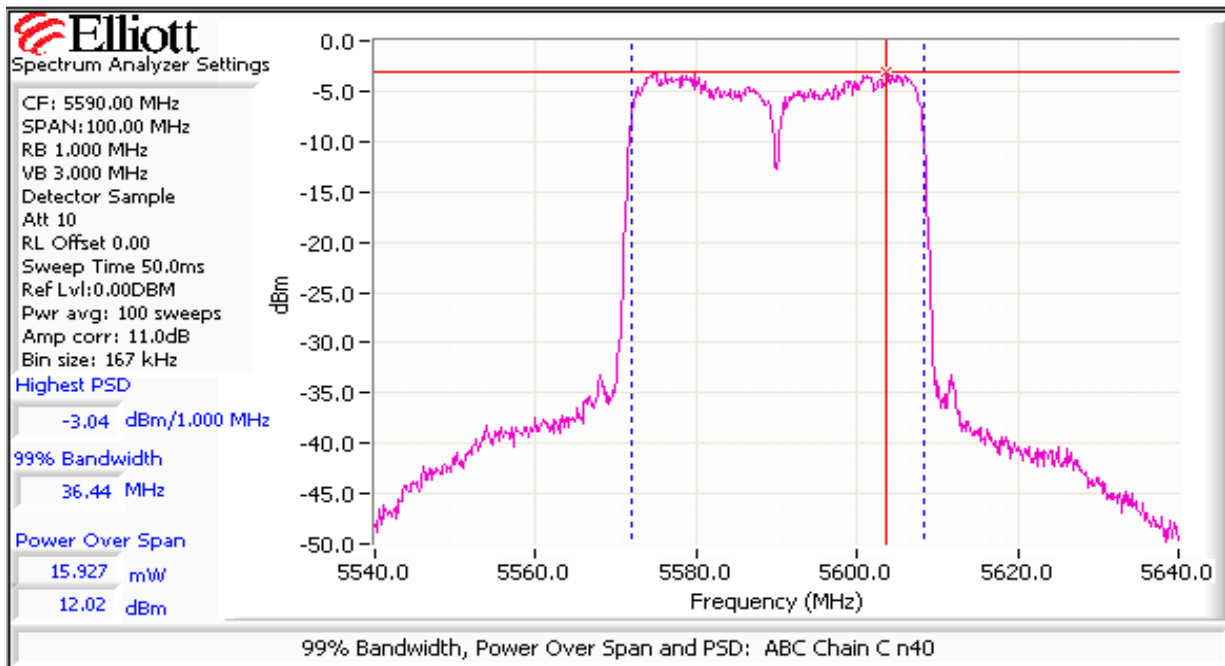
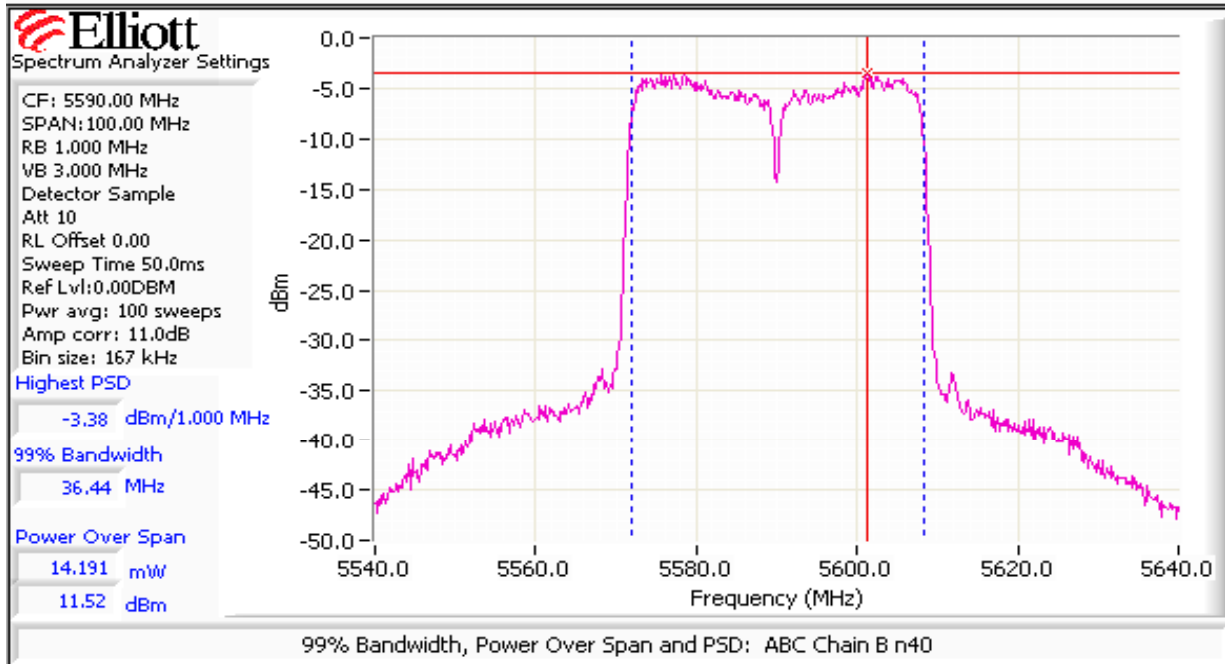
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Model: 533-agn MMW	T-Log Number: T71055
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Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C



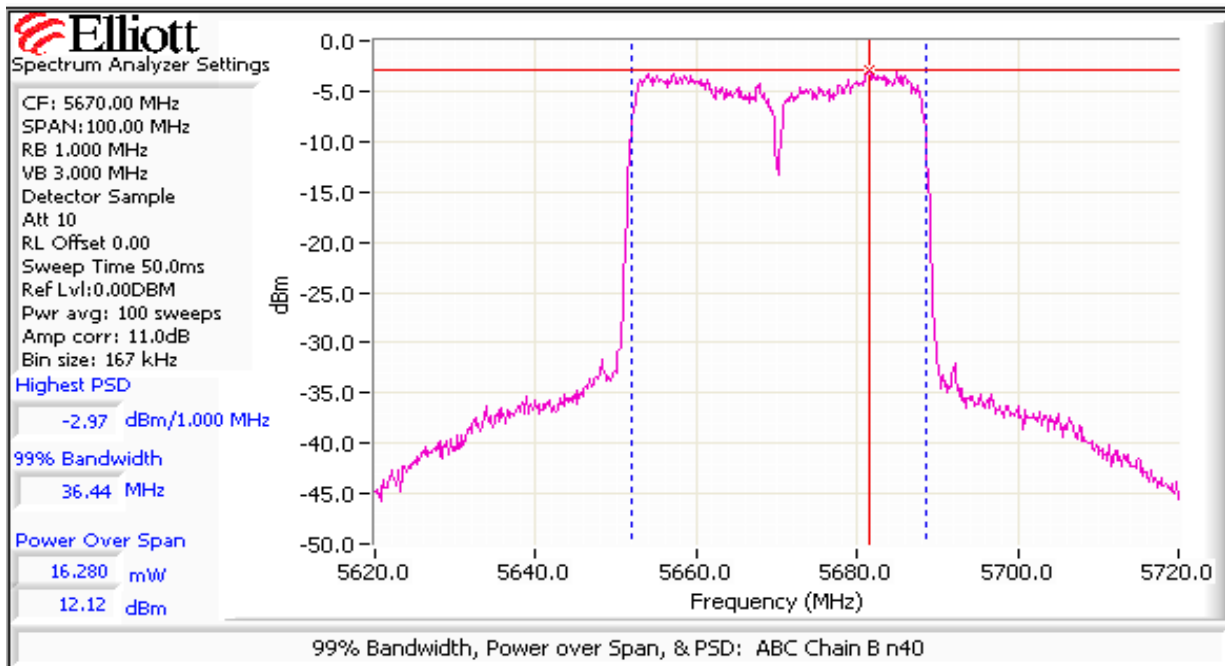
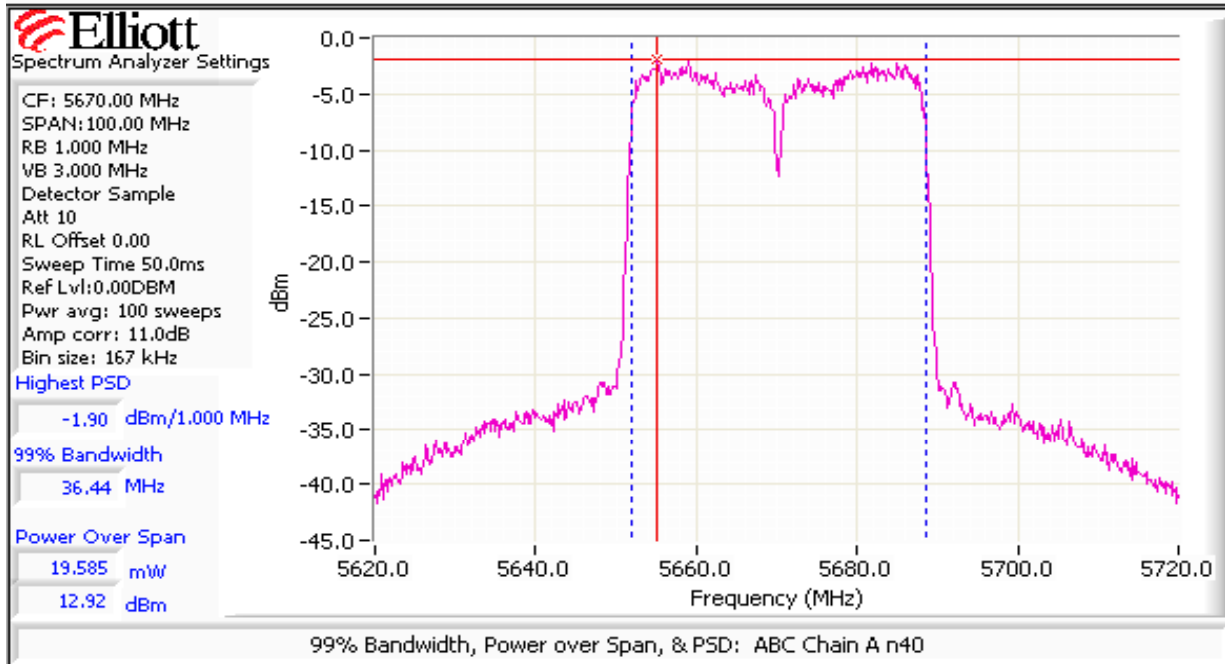
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Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C



Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C



Client: Intel	Job Number: J70976
Model: 533-agn MMW	T-Log Number: T71055
Contact: Robert Paxman	Account Manager: D. Eriksen
Standard: FCC 15 E / RSS -210 (RF Port)	Class: N/A

Run #4: Bandwidth, Output Power and Power spectral Density - Chain A + B + C

