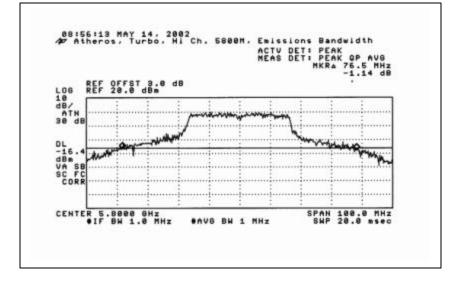


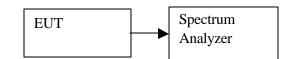
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9.2. PEAK POWER

TEST SETUP



Detector Function Setting of Test Receiver

Frequency Range (MHz)	Detector Function	Resolution Bandwidth	Video Bandwidth
Above 1000	🔀 Peak	X 1 MHz	

TEST PROCEDURE

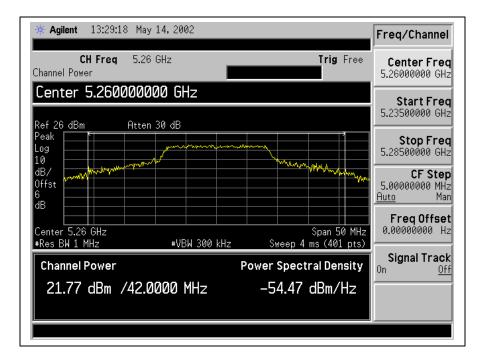
The EUT is configured on a test bench as shown above in a continuously transmitting / receiving mode. For each channel measured, the highest reading is corrected for the emissions bandwidth of that channel to yield the peak power.

Peak Power = Measured Channel Power from Analyzer.

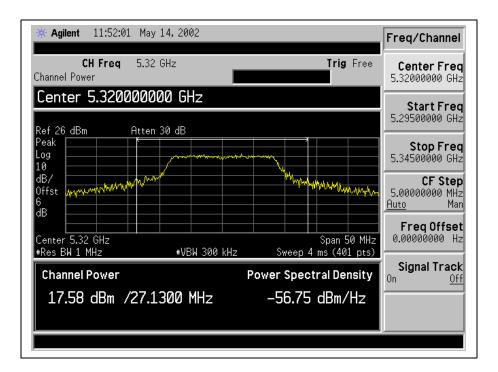
Operating in the 5.15	- 5.35 GHz Band (Normal	Mode)
Channel	Frequency (MHz)	Channel Power Measured (dBm)
Low	5180	16.41
Middle	5260	21.77
High	5320	17.58
Operating in the 5.15	- 5.35 GHz Band (Turbo I	Mode)
Channel	Frequency (MHz)	Channel Power Measured (dBm)
Low	5210	16.61
Middle	5250	16.54
High	5290	19.13
Operating in the 5.72	5 – 5.850 GHz Band (Norm	nal Mode)
Channel	Frequency (MHz)	Channel Power Measured (dBm)
Low	5745	19.86
Middle	5785	19.73
High	5825	19.76
Operating in the 5.72	5 – 5.850 GHz Band (Turb	o Mode)
Channel	Frequency (MHz)	Channel Power Measured (dBm)
Low	5760	19.59
Middle	N/A	N/A
High	5800	19.50

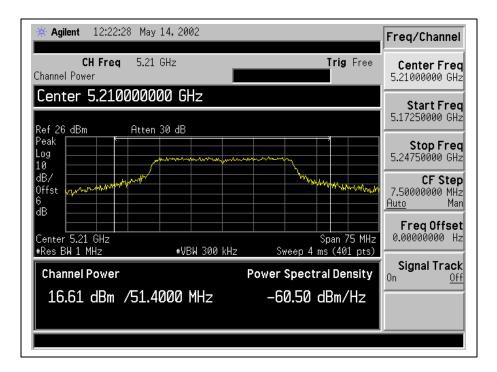
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CH Freq 5.18 GHz Trig Free Channel Power	Center Freq 5.18000000 GHz Start Freq 5.15500000 GHz
Ref 26 dBm Atten 30 dB	
Log 10	Stop Freq 5.20500000 GHz
dB/ Offst dB	CF Step 5.00000000 MHz <u>Auto</u> Man
Center 5.18 GHz Span 50 MHz #Res BW 1 MHz #VBW 300 kHz Sweep 4 ms (401 pts)	Freq Offset 0.00000000 Hz
Channel Power Power Spectral Density	Signal Track On <u>Off</u>
16.41 dBm /27.5000 MHz -57.98 dBm/Hz	



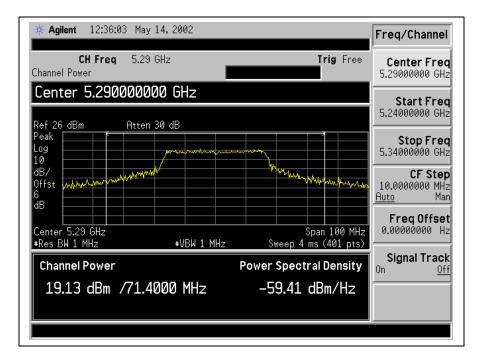
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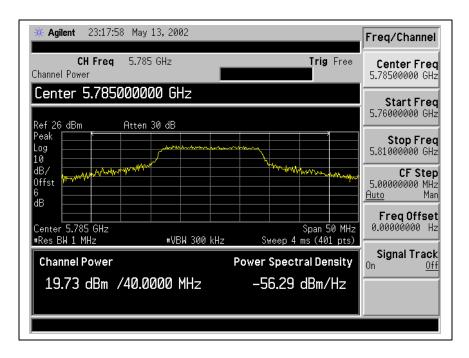
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★ Agilent 12:28:49 May 14, 2002	Freq/Channel
CH Freq 5.25 GHz Trig Free Channel Power	Center Freq 5.25000000 GHz
Center 5.250000000 GHz Ref 26 dBm Atten 30 dB	Start Freq 5.21250000 GHz
Peak Log 10	Stop Freq 5.28750000 GHz
dB/ Offst dB	CF Step 7.5000000 MHz <u>Auto</u> Man
Center 5.25 GHz Span 75 MHz #Res BW 1 MHz #VBW 300 kHz Sweep 4 ms (401 pts)	Freq Offset 0.00000000 Hz
Channel Power Power Spectral Density	Signal Track On <u>Off</u>
16.54 dBm /51.0000 MHz -60.53 dBm/Hz	



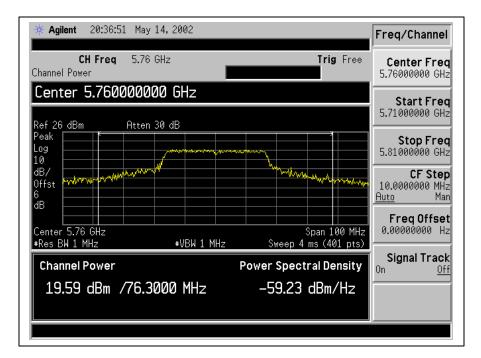
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★ Agilent 23:11:01 May 13, 2002	Freq/Channel
CH Freq 5.745 GHz Trig Fre	e Center Freq 5.74500000 GHz
Center 5.745000000 GHz Ref 26 dBm Atten 30 dB	Start Freq 5.72000000 GHz
Peak Contraction C	Stop Freq 5.77000000 GHz
dB/ Offst dB	CF Step 5.00000000 MHz <u>Auto</u> Man
Center 5.745 GHz Span 50 M #Res BW 1 MHz #VBW 300 kHz Sweep 4 ms (401 pt	
Channel Power Power Spectral Densit	Signal Track On <u>Off</u>
19.86 dBm /41.1300 MHz -56.28 dBm/Hz	

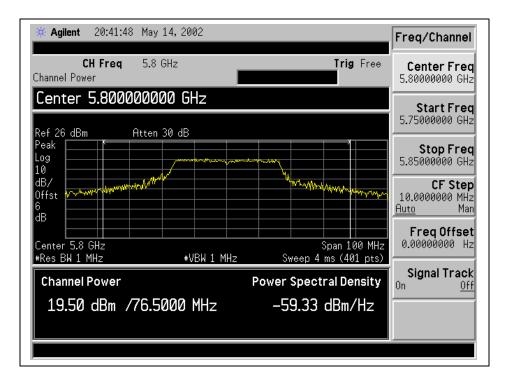


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★ Agilent 23:37:31 May 13, 2002	Freq/Channel		
CH Freq 5.825 GHz Trig Free Channel Power	Center Freq 5.82500000 GHz		
Center 5.825000000 GHz Ref 26 dBm Atten 30 dB	Start Freq 5.80000000 GHz		
Peak Log	Stop Freq 5.85000000 GHz		
10 dB/ 0ffst 6 dB	CF Step 5.0000000 MHz <u>Auto</u> Man		
Center 5.825 GHz Span 50 MHz #Res BW 1 MHz #VBW 300 kHz Sweep 4 ms (401 pts)	Freq Offset 0.00000000 Hz		
Channel Power Power Spectral Density On Off			
19.76 dBm /40.2500 MHz -56.29 dBm/Hz			



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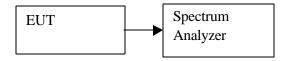
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9.3. PEAK POWER SPECTRAL DENSITY

Frequency Range (MHz)	Detector Function	Resolution Bandwidth	Video Bandwidth
Above 1000	Peak	1 MHz	3 MHz
	Average	1 MHz	10 Hz

Detector Function Setting of Test Receiver

TEST SETUP



TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer, the maximum level in a 1 MHz bandwidth was measured with the spectrum analyzer using RBW =1 MHz and VBW > 1 MHz. The PPSD is the highest level found across the emission in any 1 MHz band, after sweep of video averaging.

For the 5.725 to 5.850 GHz band, RBW = 3KHz, VBW = 3KHz, sweep time = span / 3 KHz, and video averaging was turned off.

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Result:

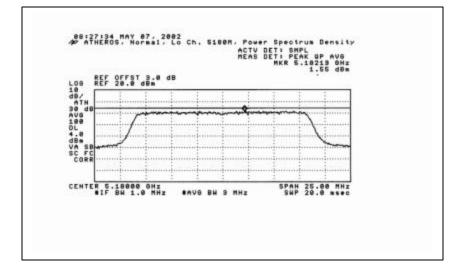
Test result: No non-compliance noted.

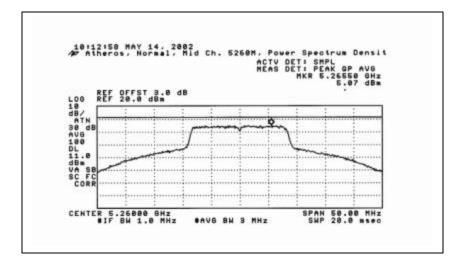
Operating in the 5.15	- 5.35 GHz Band (Norma	l Mode)	
Channel	Frequency (MHz)	Results (dBm)	Limit (dBm)
Low	5180	1.55	4
Middle	5260	5.07	11
High	5320	1.74	11
Operating in the 5.15	- 5.35 GHz Band (Turbo	Mode)	
Channel	Frequency (MHz)	Results (dBm)	Limit (dBm)
Low	5210	-1.46	4
Middle	5250	-1.50	4
High	5290	-0.56	11

Using RBW=VBW=3KHz, and set sweep time = span / 3KHz method.

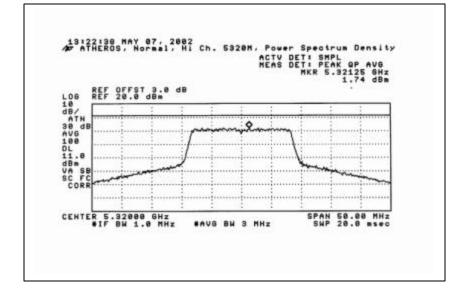
Operating in the 5.725 – 5.850 GHz Band (Normal Mode)				
Channel	Frequency (MHz)	Results (dBm)	Limit (dBm)	
Low	5745	-6.79	8	
Middle	5785	-6.65	8	
High	5825	-6.83	8	
Operating in the 5.725 – 5.850 GHz Band (Turbo Mode)				
Channel	Frequency (MHz)	Results (dBm)	Limit (dBm)	
Low	5760	-10.15	8	
Middle	N/A	N/A	8	
High	5800	-9.09	8	

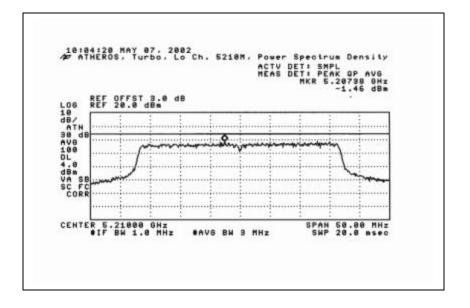
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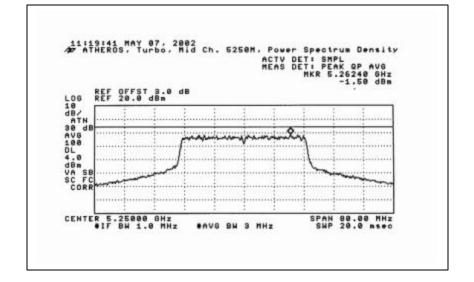


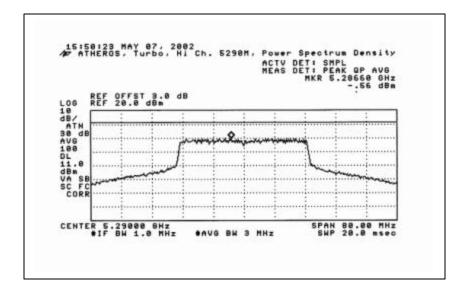
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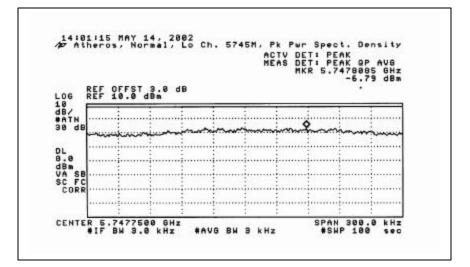


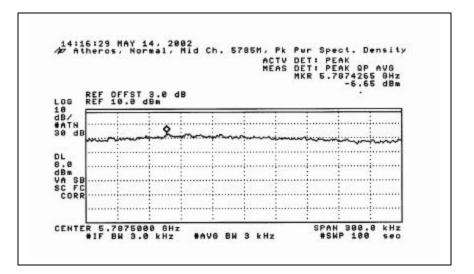
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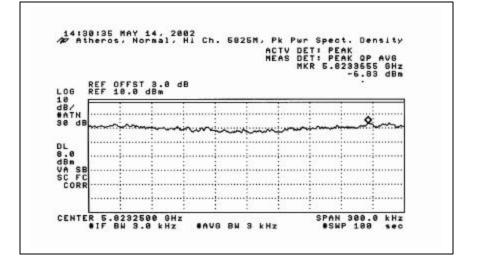


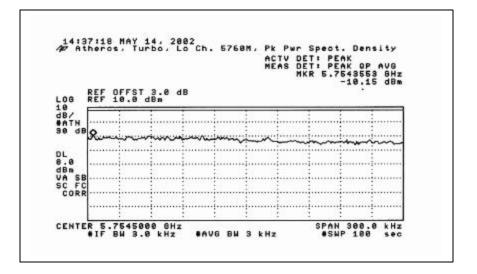
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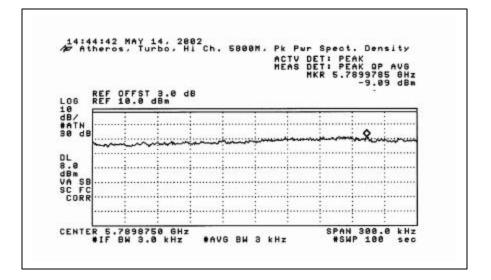


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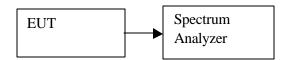
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9.4. PEAK EXCURSION (PEAK – AVERAGE RATIO)

Frequency Range (MHz)	Detector Function	Resolution Bandwidth	Video Bandwidth
Above 1000	⊠ Peak	1 MHz	X 1 MHz
	⊠ Average	1 MHz	30 KHz

Detector Function Setting of Test Receiver

TEST SETUP



TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer through an attenuator. The spectrum analyzer is set to 1 MHz RESOLUTION BW and 1MHz VIDEO BW. Trace A is set to Max Hold, then to View. The VIDEO BW is readjusted to 30 kHz, and the signal under this measurement condition is captured in Trace B.

The difference between the traces is investigated. The marker is placed at the frequency which shows the largest difference. The amplitude delta between the traces at this frequency is the peak excursion.

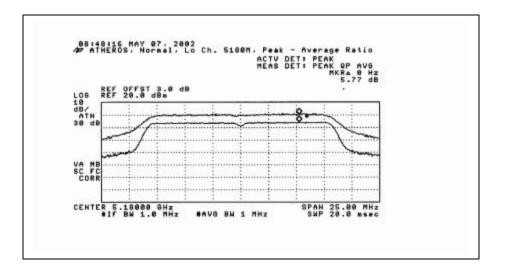
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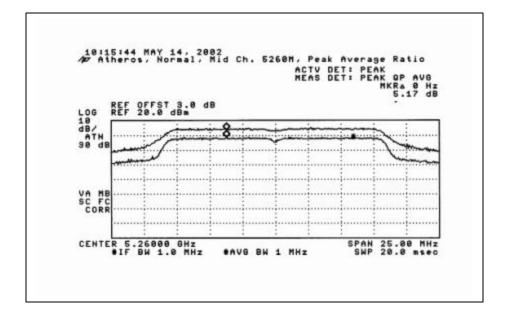
Result:

No non-compliance noted. See plots:

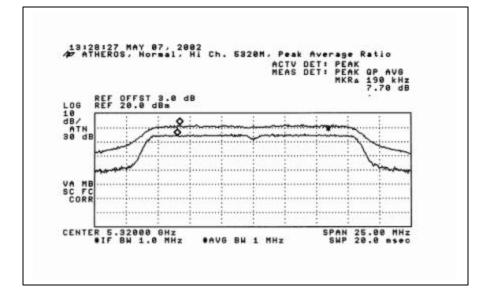
Operating in the 5.15 –	5.35 GHz Band (Normal M	Aode)
Channel	Frequency (MHz)	Results (dBm)
Low	5180	5.77
Middle	5260	5.17
High	5320	7.70
Operating in the 5.15 -	5.35 GHz Band (Turbo M	ode)
Channel	Frequency (MHz)	Results (dBm)
Low	5210	7.88
Middle	5250	6.30
High	5290	7.43
Operating in the 5.725	- 5.850 GHz Band (Norma	l Mode)
Channel	Frequency (MHz)	Results (dBm)
Low	5745	5.74
Middle	5785	4.86
High	5825	5.34
Operating in the 5.725	- 5.850 GHz Band (Turbo	Mode)
Channel	Frequency (MHz)	Results (dBm)
Low	5760	5.22
Middle	N/A	N/A
High	5800	5.43

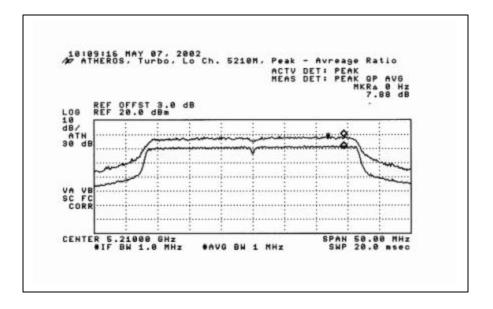
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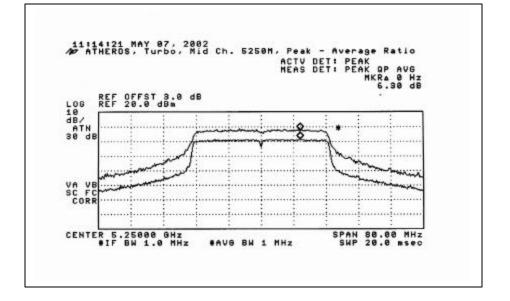


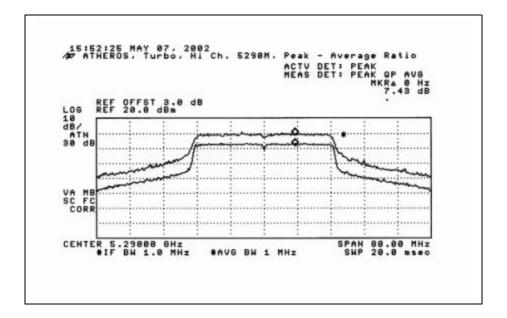
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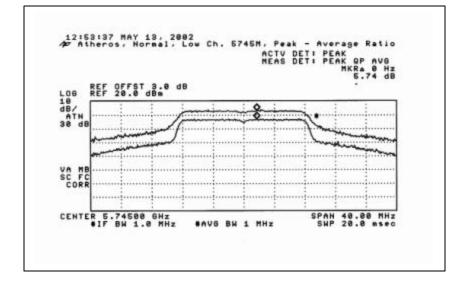


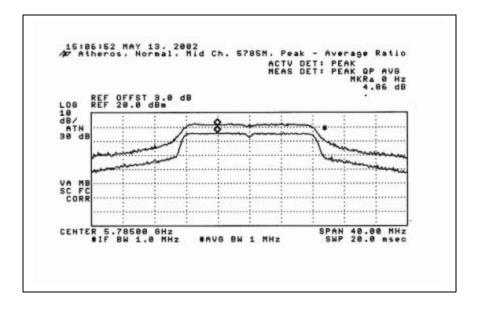
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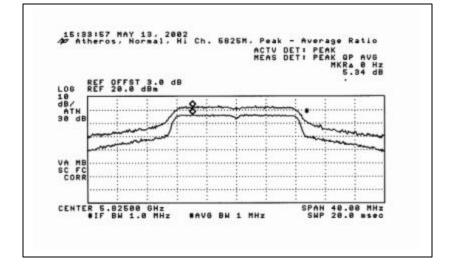


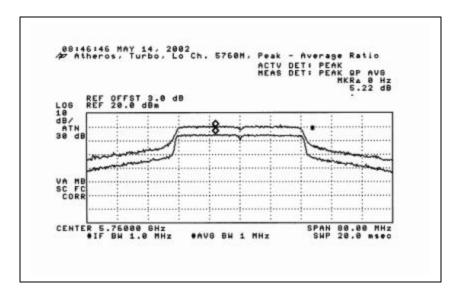
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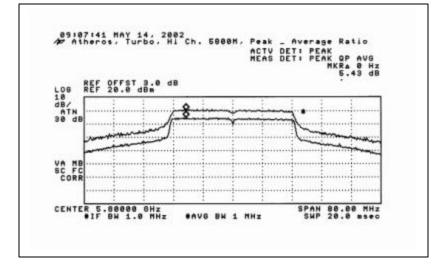


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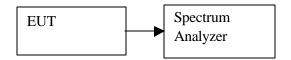


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9.5. UNDESIRABLE EMISSION - BAND EDGE & DELTA (PEAK & AVERAGE)

Frequency Range (MHz)	Detector Function	Resolution Bandwidth	Video Bandwidth		
Above 1000	⊠ Peak	1 MHz	X 1 MHz		
	⊠ Average	1 MHz	10 Hz		

TEST SETUP



TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer. The resolution and video bandwidth were set to 1MHz. The lower and upper band edge is investigated.

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RESULT

No non-compliance noted. See plots:

Operating in the 5.15 – 5.35 GHz Band (Normal Mode)										
Band	Frequency	Reading		Ant	Results EIRP 15.209 Lin		Limit	Margin (dB)		
Edge	(MHz)	(dE	Bm)	Gain	(dE	Bm)	(dBm)			
		Peak	Ave	(dBi)	Peak	Ave	Peak	Ave	Peak	Ave
Low	5150	-26.18	-45.78	1.5	-24.68	-44.28	-21	-41	-3.68	-3.28
High	5350	-29.63	-46.36	1.5	-28.13	-44.86	-21	-41	-7.13	-3.86
High	5351	N/A	-44.87	1.5	N/A	-43.37	N/A	-41	N/A	-2.37
Operating	Operating in the 5.15 – 5.35 GHz Band (Turbo Mode)									
Band	Frequency	Reading		Ant	Results EIRP		15.209 Limit		Margin (dB)	
Edge	(MHz)	(dE	Bm)	Gain	(dE	Bm)	(dBm)			
		Peak	Ave	(dBi)	Peak	Ave	Peak	Ave	Peak	Ave
Low	5150	-35.73	-47.51	1.5	-34.22	-46.01	-21	-41	-13.2	-5.01
Low	5087	N/A	-49.95	1.5	N/A	-48.45	N/A	-41	N/A	-7.45
High	5350	-30.73	-45.10	1.5	-29.23	-43.60	-21	-41	-8.23	-2.60

ET 99-231 Limit = -20dBc

Operating in the 5.725 – 5.850 GHz Band (Normal Mode)										
Band	Frequency	In-Band		Out-Of-Band		Delta		Margin (dB)		
Edge	(MHz)	Power		Power		(dBc)				
		(dBm)		(dBm)						
		Peak	Ave	Peak	Ave	Peak	Peak	Peak	Ave	
Low	5725	4.6	-3.3	-23.52	-32.67	-28.12	-29.37	-8.12	-9.37	
High	5850	5.4	-3.5	-29.90	-42.39	-35.30	-38.89	-15.3	-18.8	
Operating	Operating in the 5.725 – 5.850 GHz Band (Turbo Mode)									
Band	Frequency	In-Band		Out-Of-Band		Delta		Margin (dB)		
Edge	(MHz)	Pot	wer	Po	wer	(dBc)				
_		(dBm)		(dBm)						
		Peak	Ave	Peak	Ave	Peak	Ave	Peak	Ave	
Low	5725	6.3	-6.2	-20.25	-32.69	-26.55	-26.49	-6.55	-6.49	
High	5850	6.6	-6.2	-30.46	-43.32	-37.06	-37.02	-17.1	-17.0	

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