



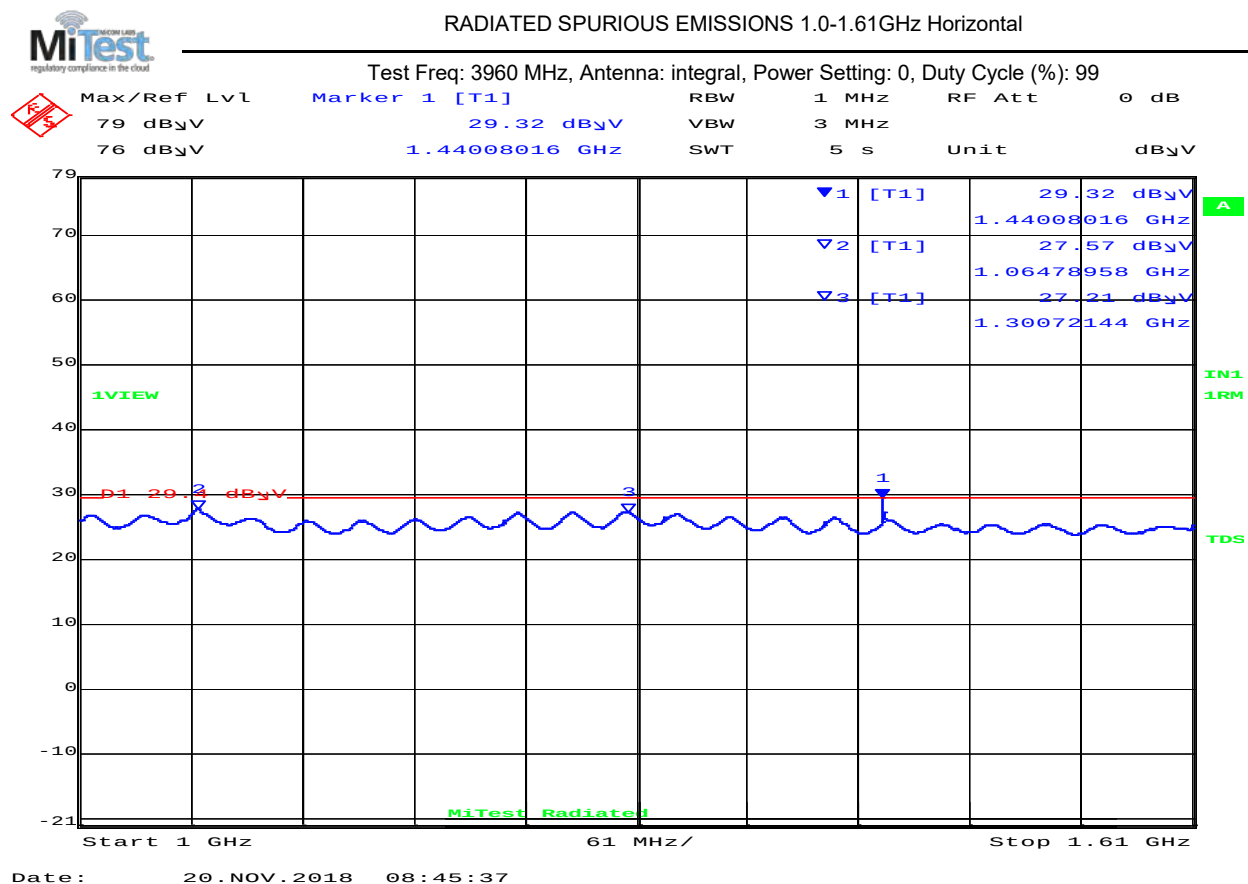
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To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
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3960 MHz

Equipment Configuration for Spurious Emissions 1-1.61 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1000.00– 1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	1440.1	28.2	Average	Horizontal	150	0	29.4	-1.2	Pass
2	1064.8	25.8	Average	Horizontal	150	0	29.4	-3.6	Pass
2	1300.7	24.5	Average	Horizontal	150	0	29.4	-4.9	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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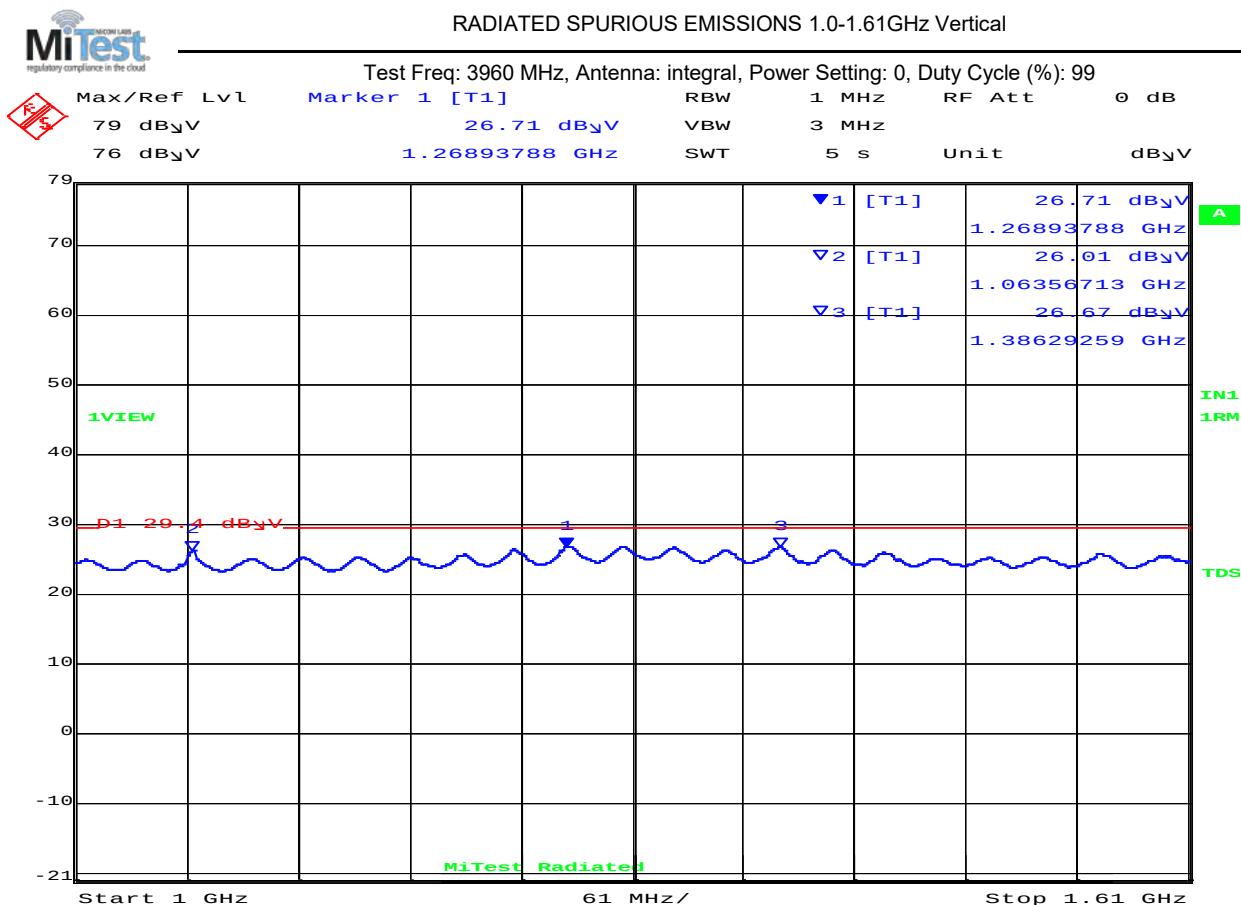


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Equipment Configuration for Spurious Emissions 1-1.61 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



Date: 20.NOV.2018 08:52:30

1000.00– 1610.00 MHz									
Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
1	1268.9	24.6	Average	Vertical	150	0	29.4	-4.80	Pass
2	1063.6	23.8	Average	Vertical	150	0	29.4	-5.60	Pass
2	1386.3	24.1	Average	Vertical	150	0	29.4	-5.30	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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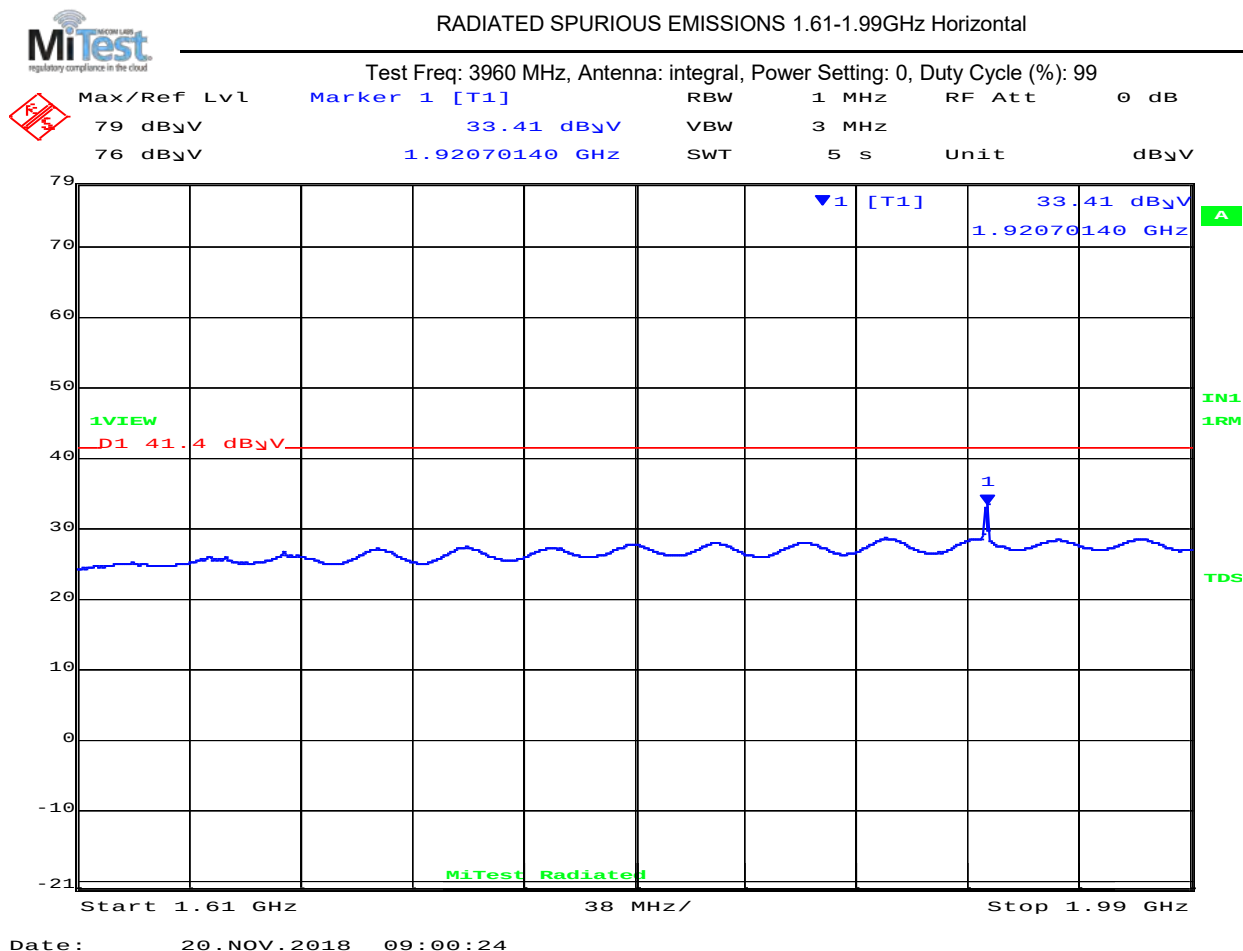


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Equipment Configuration for Spurious Emissions 1.61 - 1.99 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1610.00 – 1990.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals found within 6 dB of limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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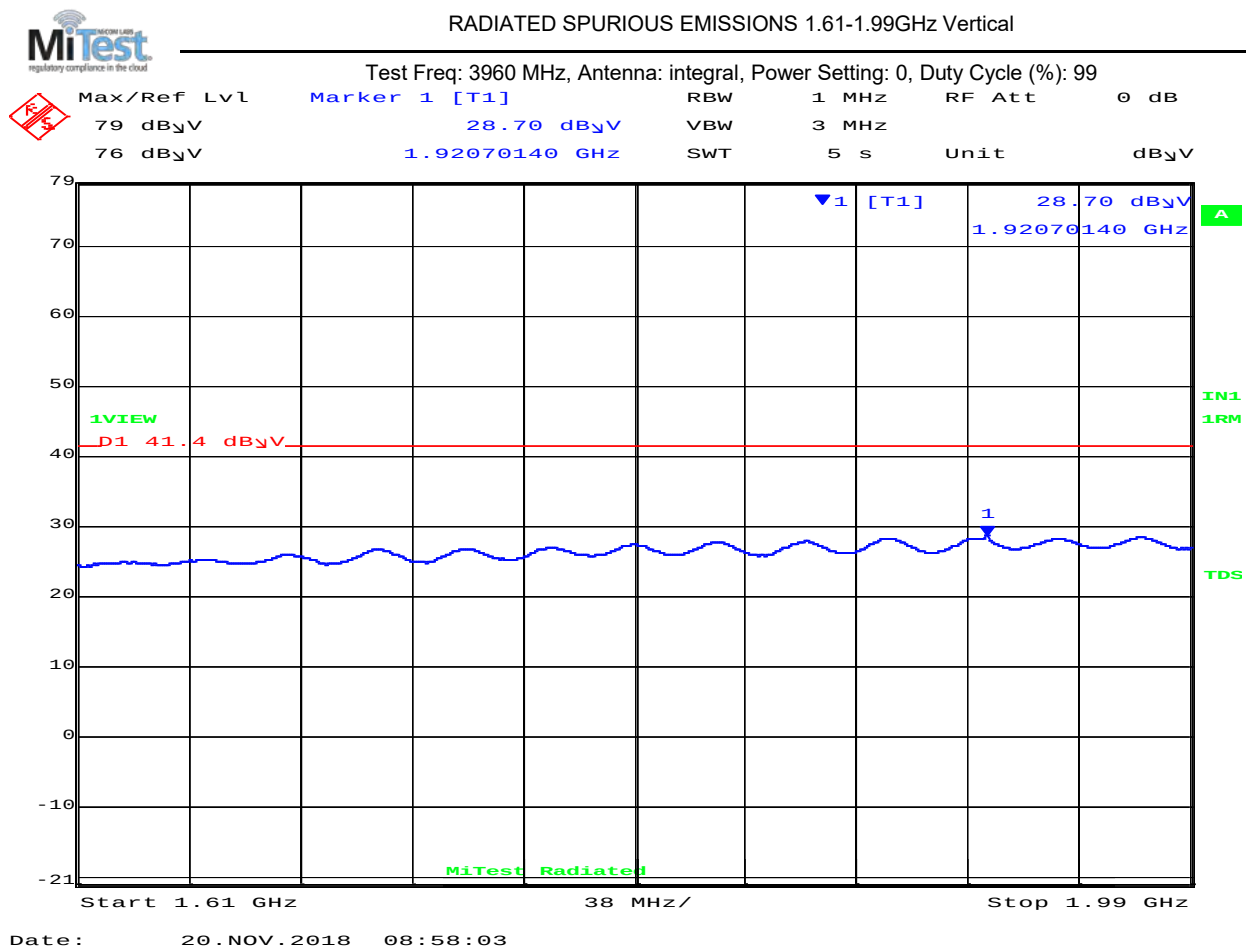


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Equipment Configuration for Spurious Emissions 1.61 – 1.99 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1610.00 – 1990.00 MHz

Num	Frequency MHz	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
No Signals found within 6 dB of limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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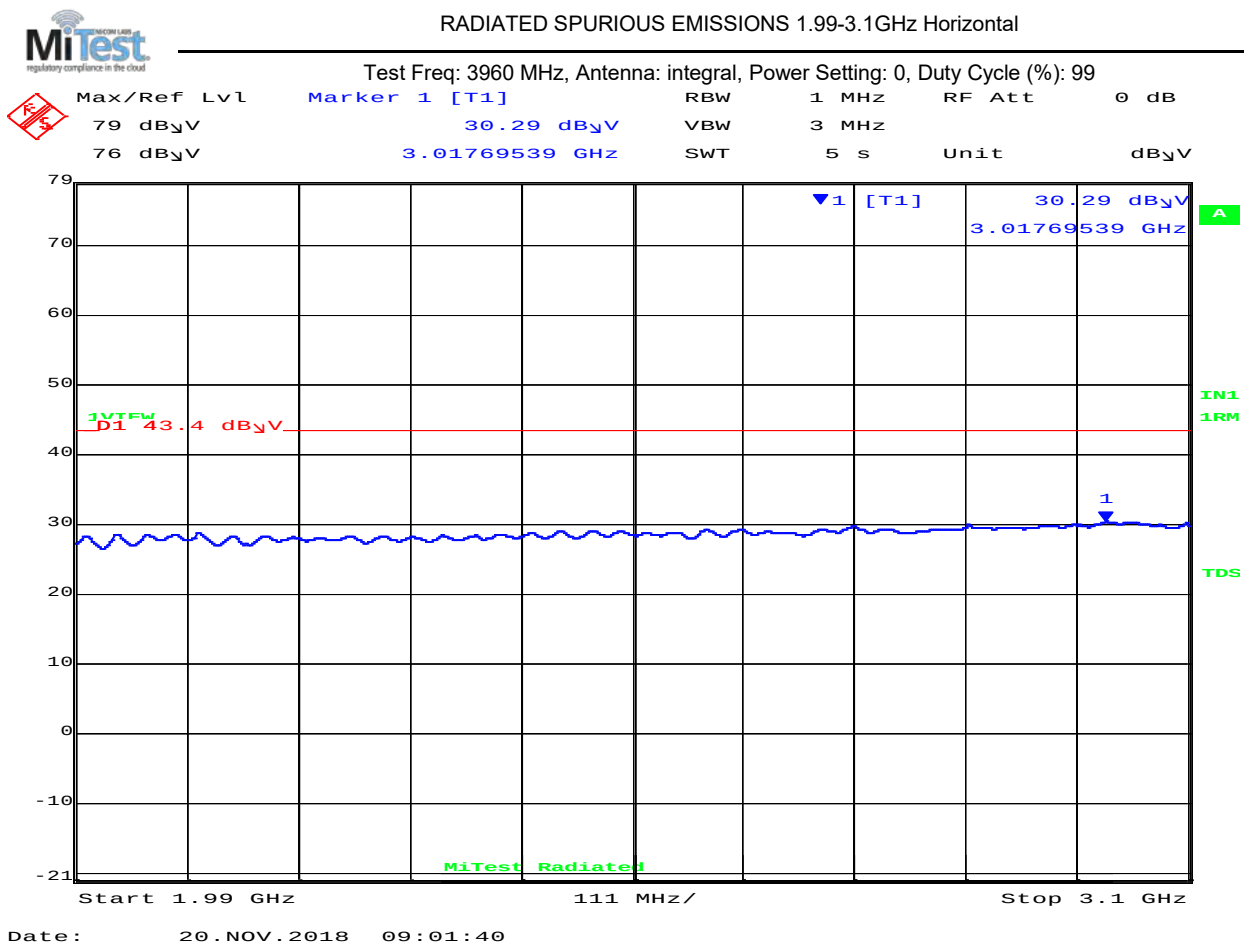


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Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1990.00 – 3100.00 GHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals found within 6 dB of limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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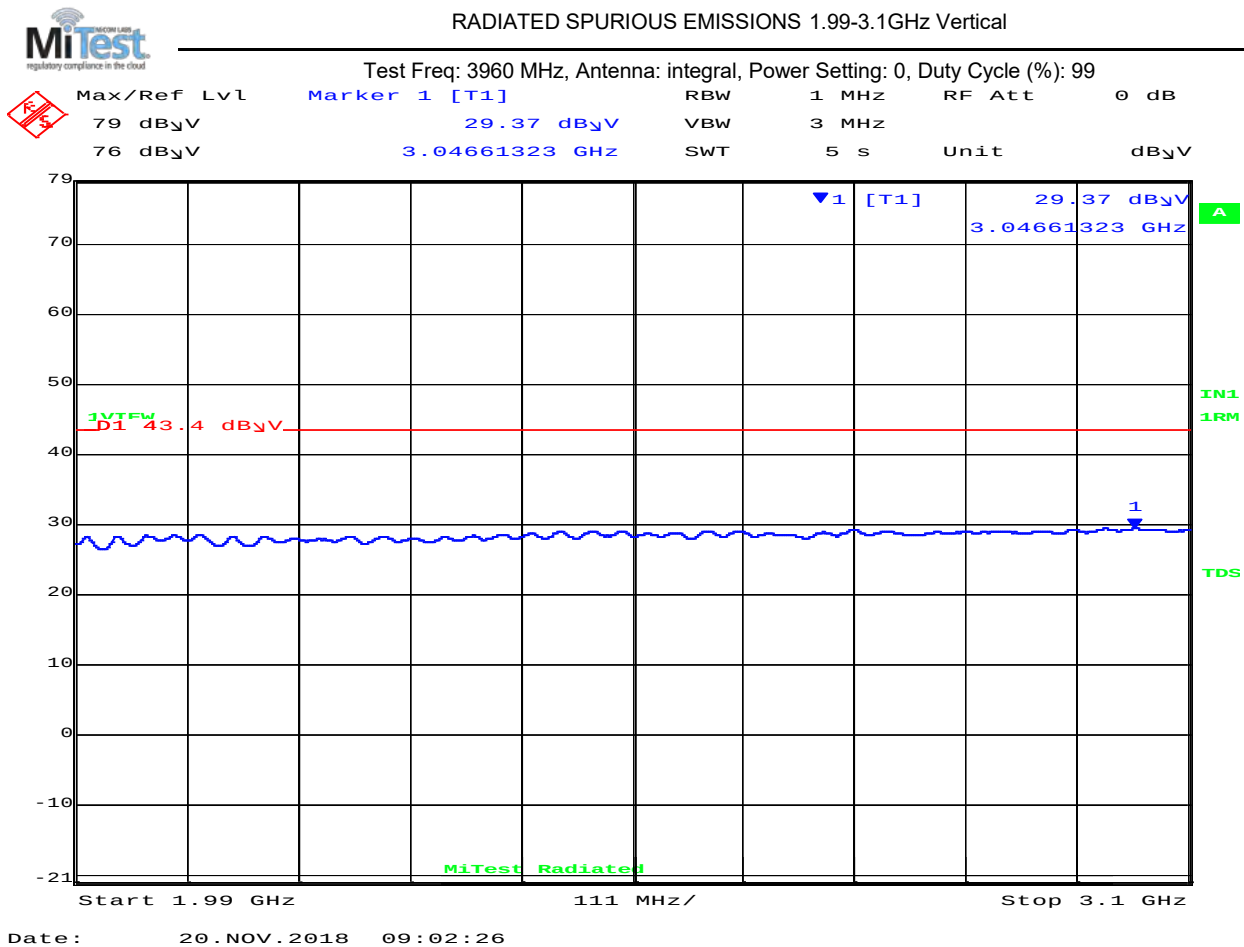


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Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1990.00 – 3100.00 GHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals found within 6 dB of limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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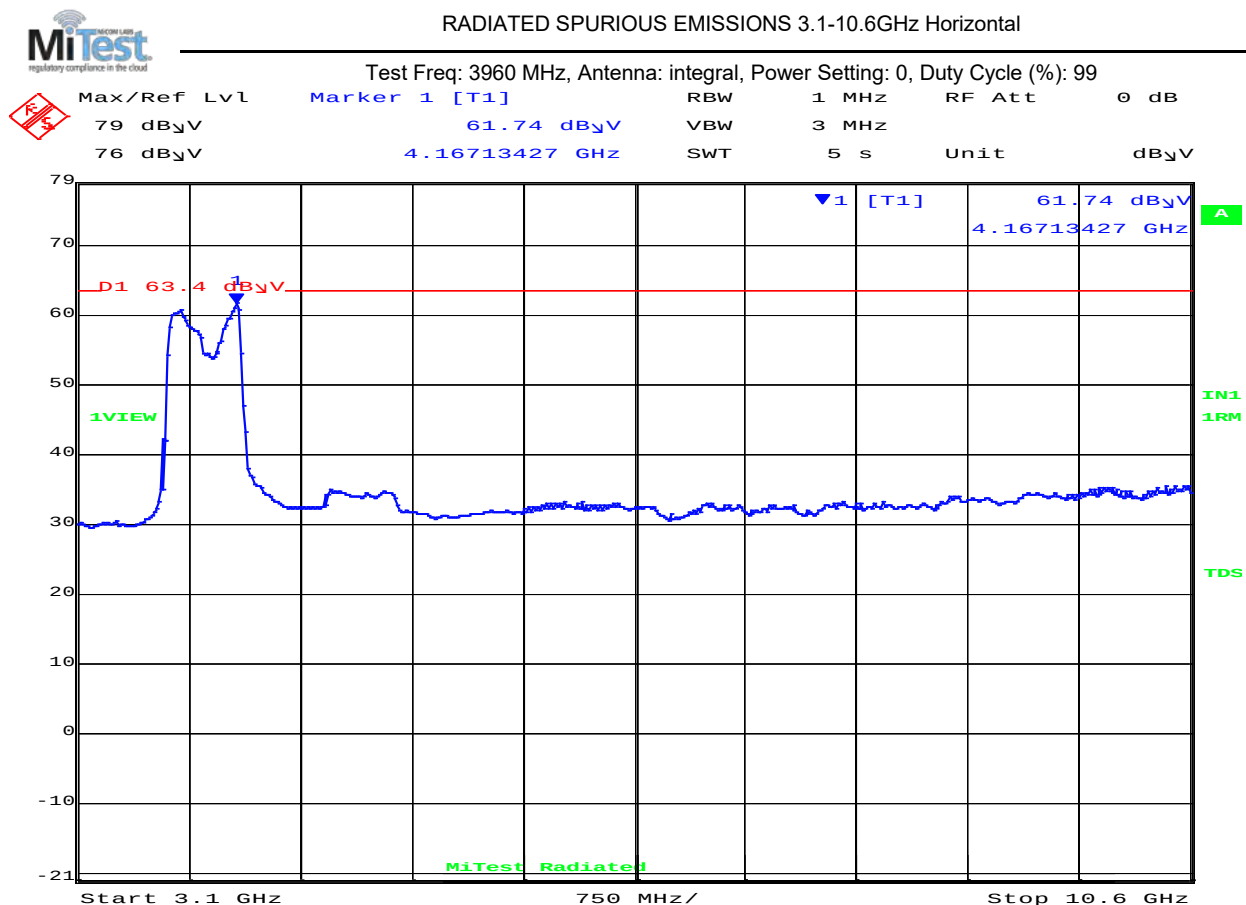


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Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



Date: 20.NOV.2018 09:10:38

3100.00 - 10600.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
1	4167.1	61.5	Average	Horizontal	150	0	63.4	-1.90	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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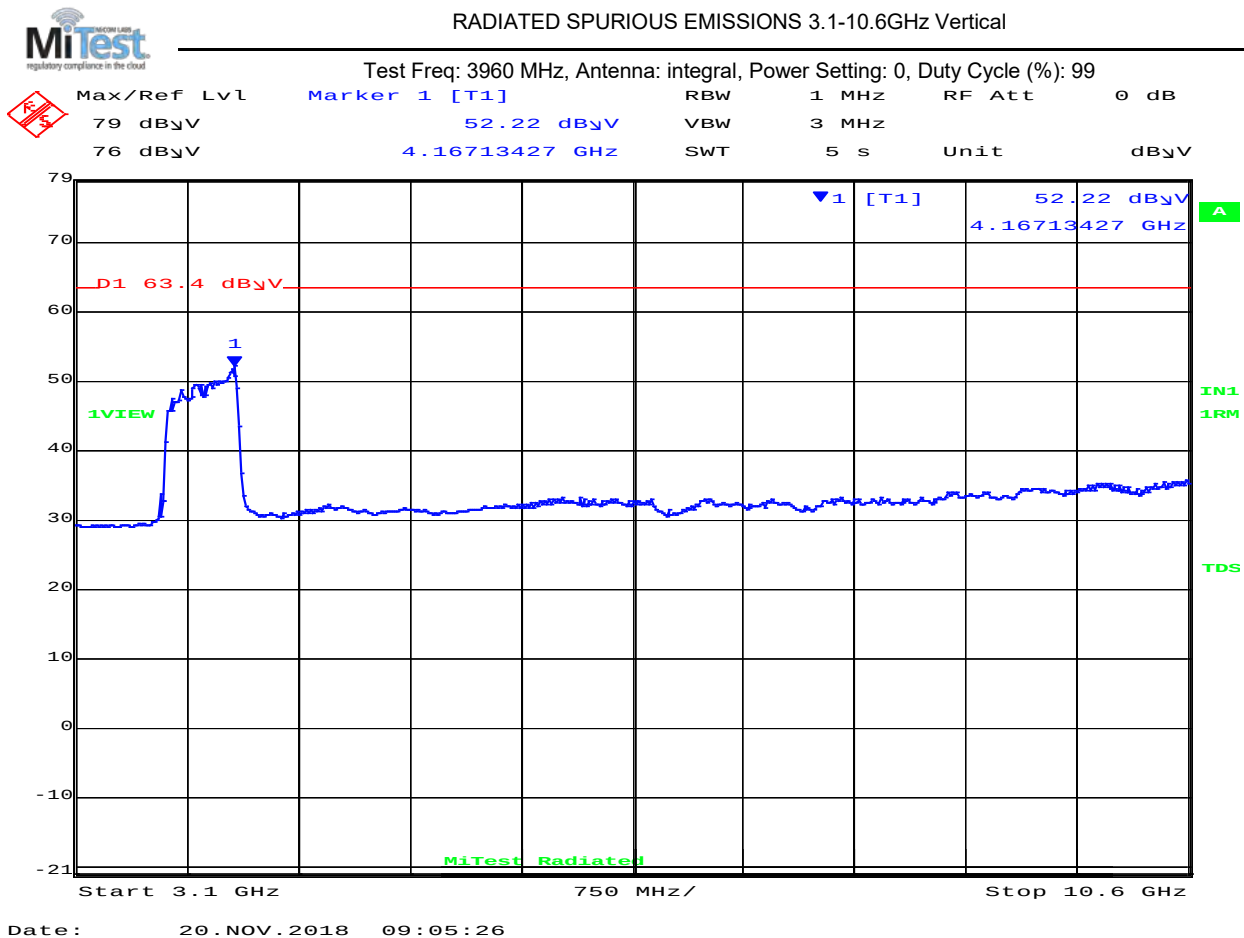


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Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



3100.00 - 10600.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals found within 6 dB of limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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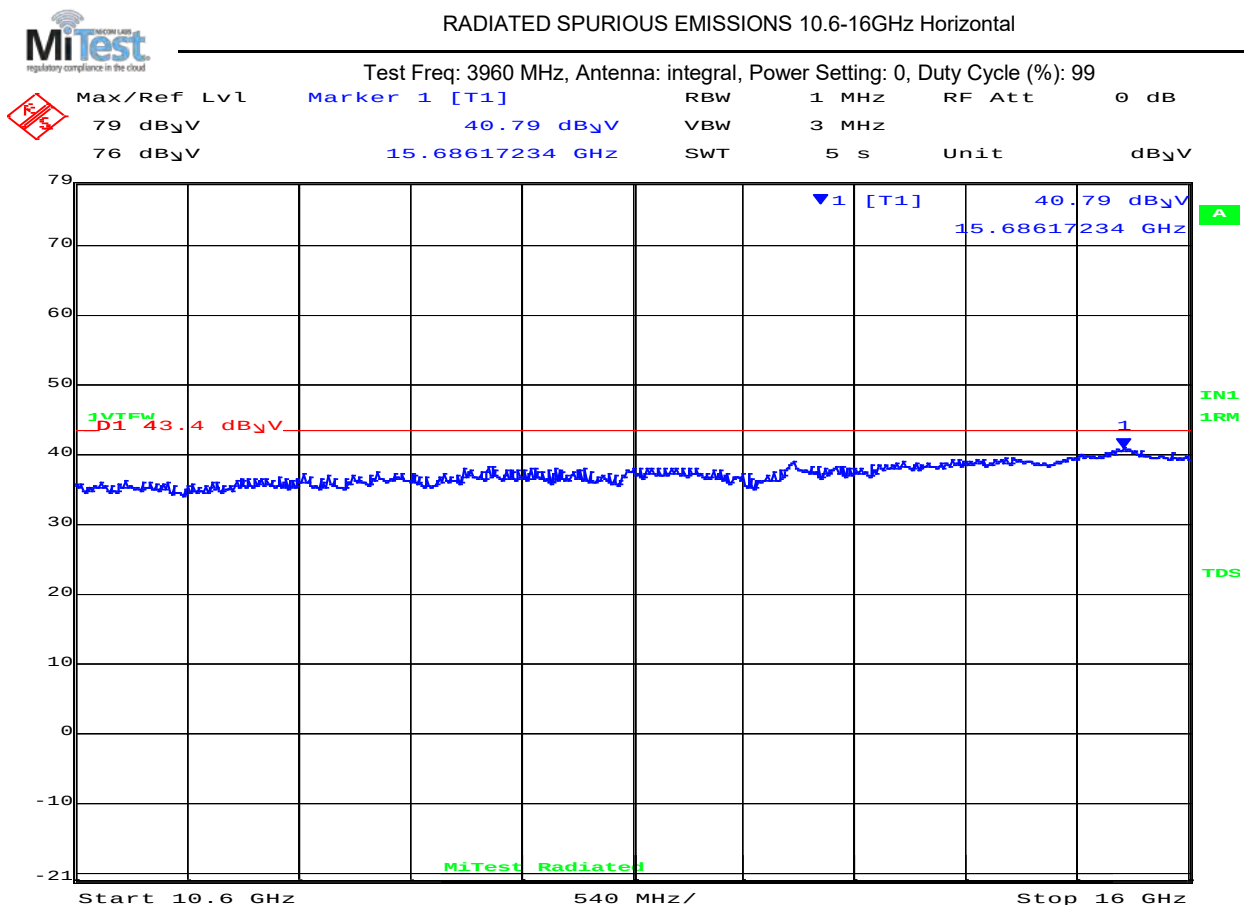


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Equipment Configuration for Spurious Emissions 10.6 – 16.0 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



Date: 20.NOV.2018 09:13:48

10600.00 – 16000.00 GHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
1	15686.2	39.7	Average	Horizontal	150	0	43.4	-3.70	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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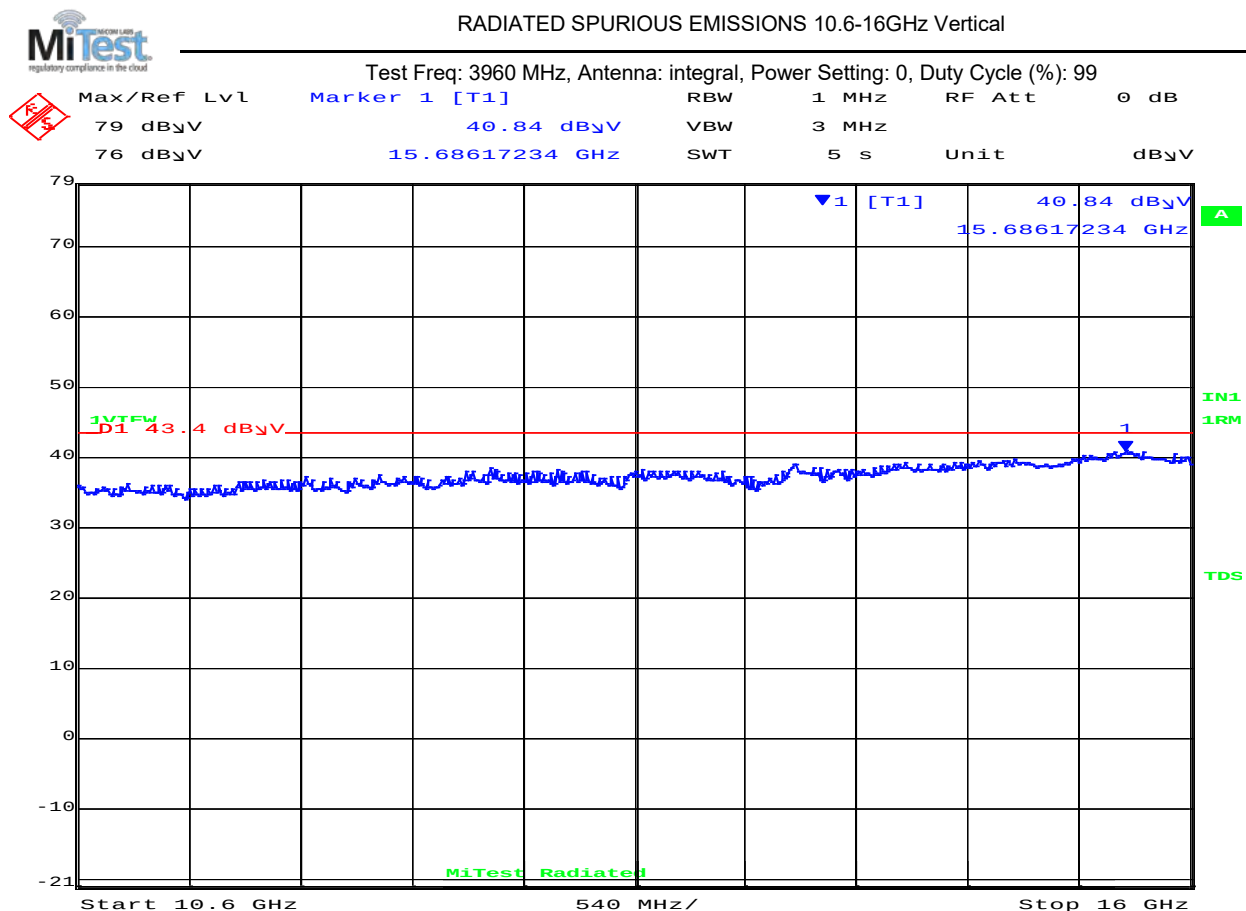


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Equipment Configuration for Spurious Emissions 10.6 – 16.0 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



Date: 20.NOV.2018 09:15:55

10600.00 – 16000.00 GHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	15686.2	39.8	Average	Vertical	150	0	43.4	-3.60	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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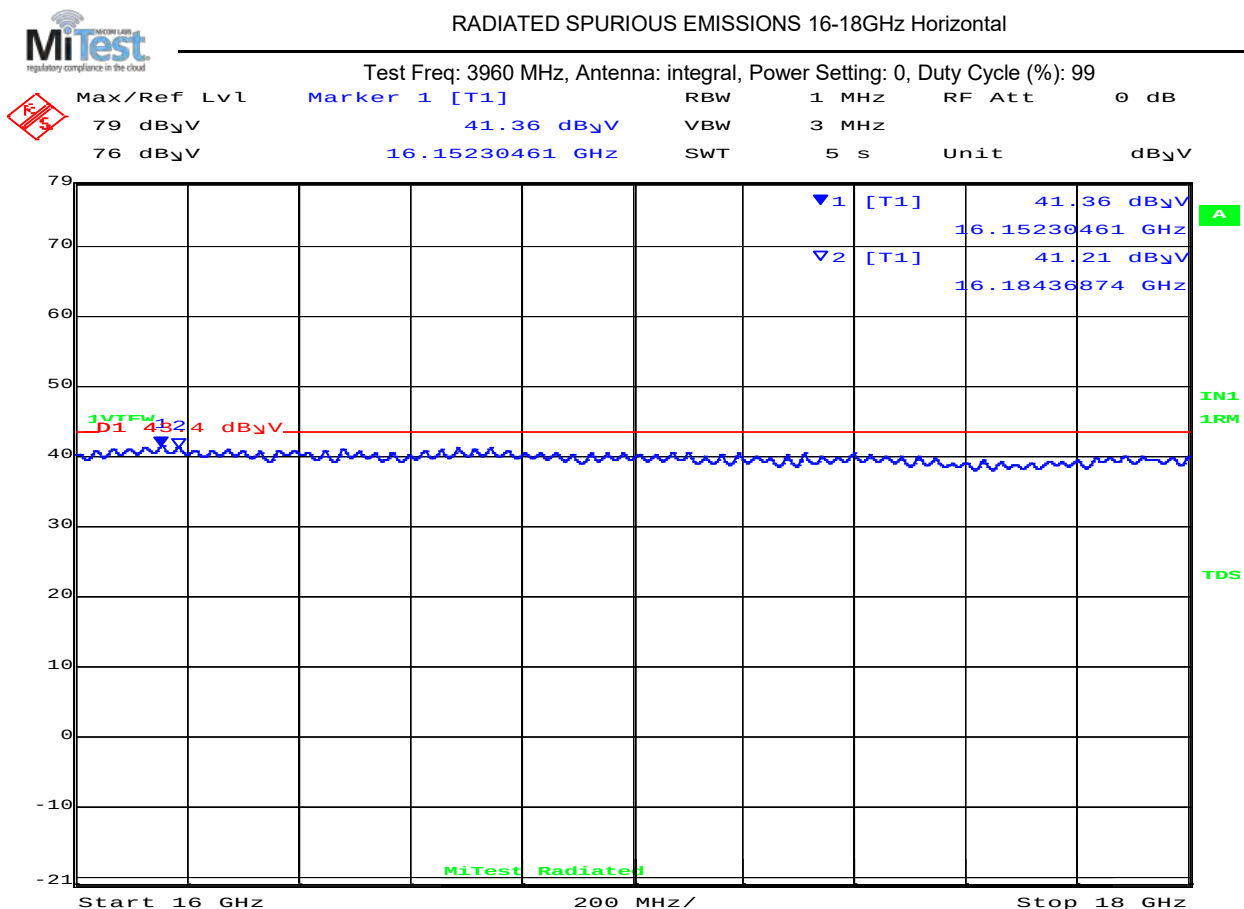


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Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



Date: 20.NOV.2018 09:20:37

16000.00 – 18000.00 GHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	16152.3	40.3	Average	Horizontal	150	0	43.4	-3.1	Pass
	16184.4	40.2	Average	Horizontal	150	0	43.4	-3.2	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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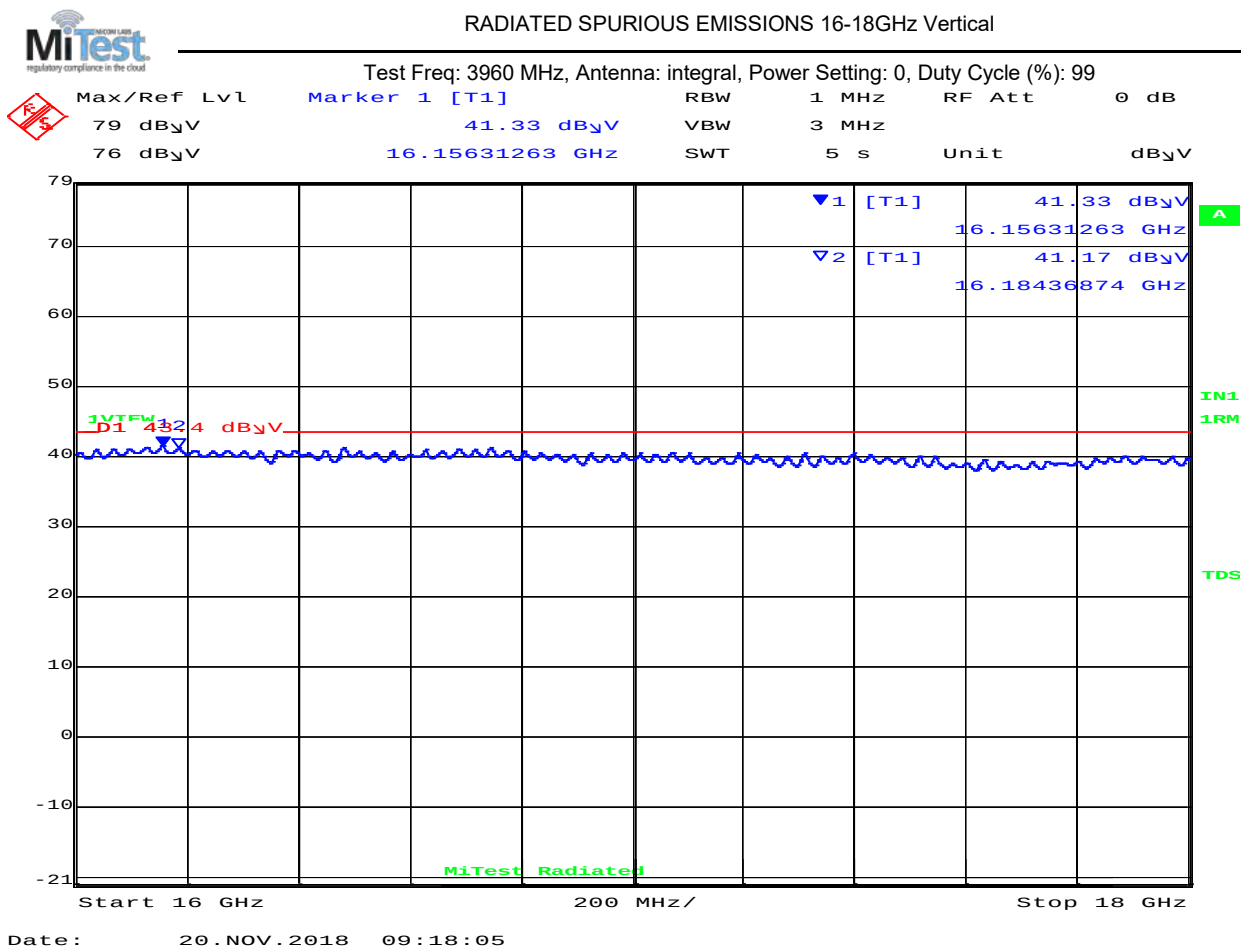


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Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



16000.00 – 18000.00 GHz

Num	Frequency MHz	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	16156.3	40.4	Average	Vertical	150	0	43.4	-3.00	Pass
2	16184.4	40.3	Average	Vertical	150	0	43.4	-3.10	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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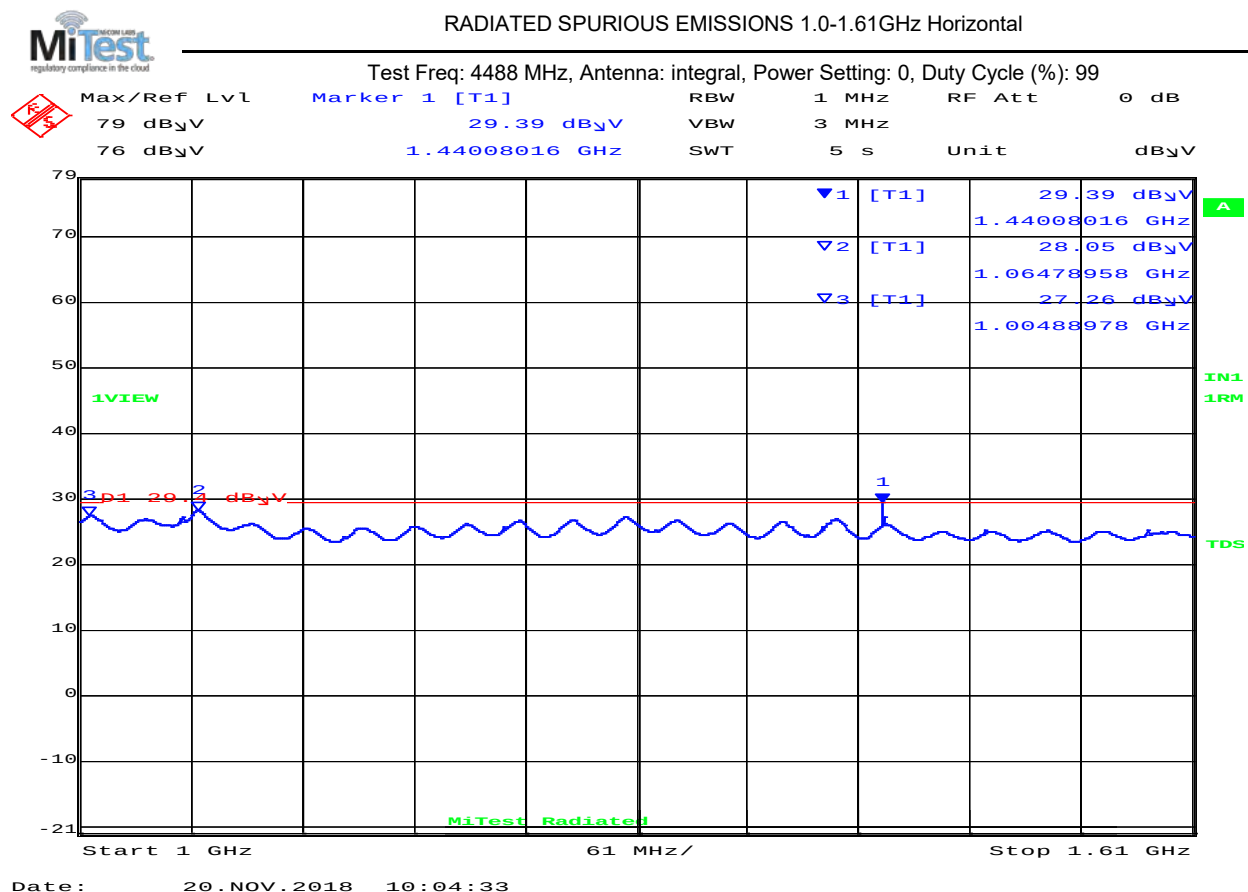
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4488 MHz

Equipment Configuration for Spurious Emissions 1-1.61 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1000.00– 1610.00MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	1440.1	28.9	Average	Horizontal	150	0	29.4	-0.5	Pass
2	1064.8	26.1	Average	Horizontal	150	0	29.4	-3.3	Pass
3	1004.9	25.2	Average	Horizontal	150	0	29.4	-4.2	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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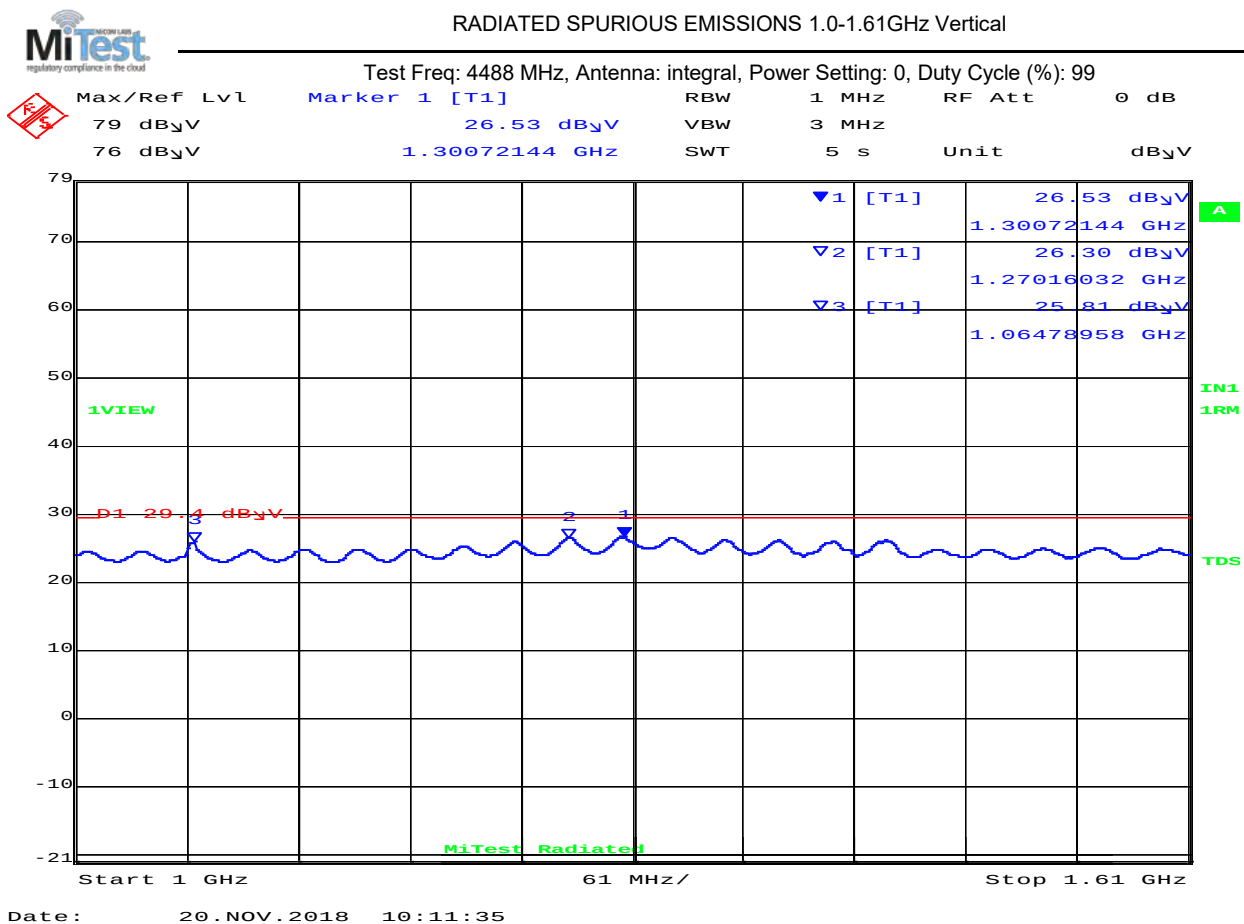


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Equipment Configuration for Spurious Emissions 1-1.61 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1000.00– 1610.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
1	1300.7	24.1	Average	Vertical	150	0	29.4	-5.3	Pass
2	1270.2	24.1	Average	Vertical	150	0	29.4	-5.3	Pass
3	1064.8	23.8	Average	Vertical	150	0	29.4	-5.6	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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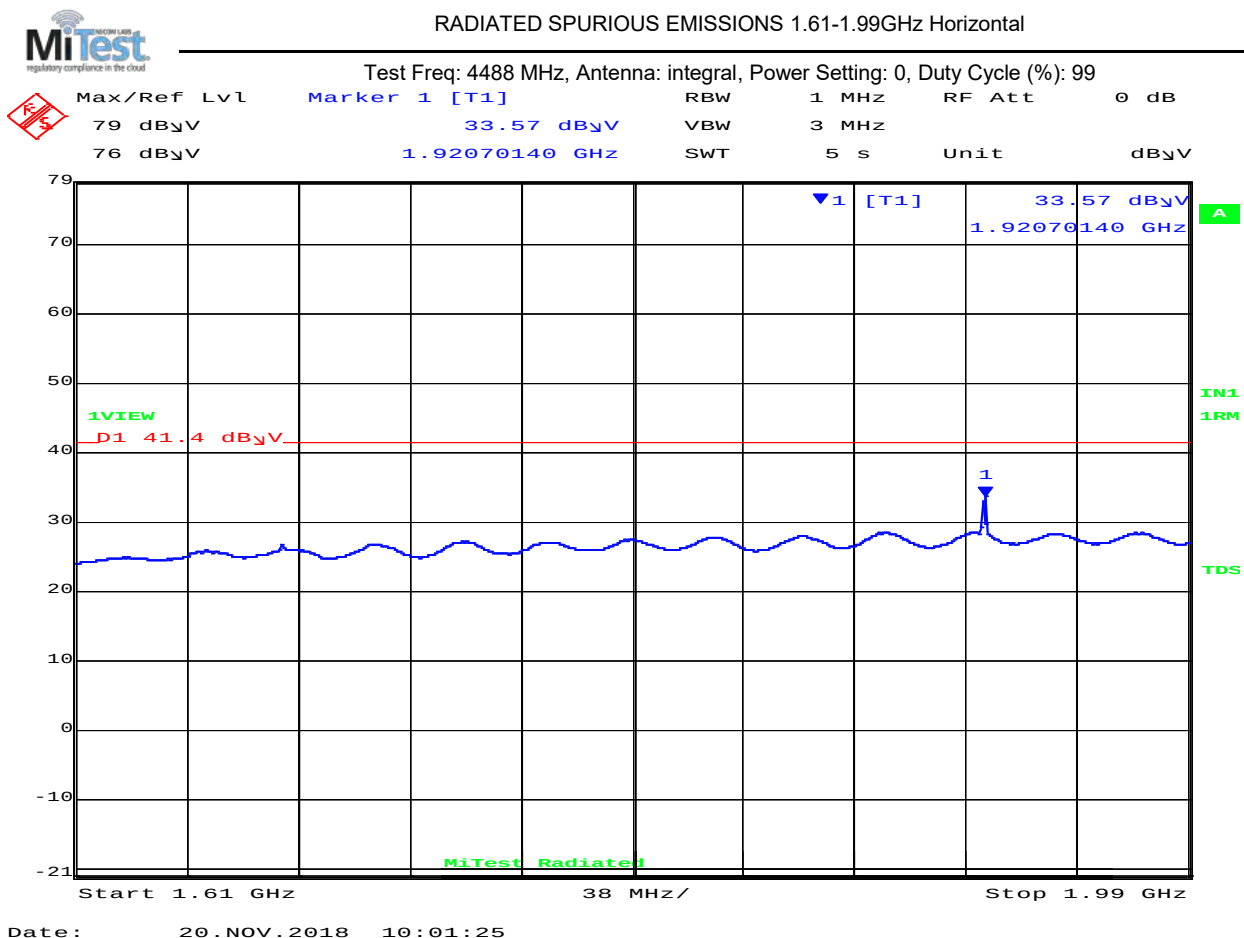


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Equipment Configuration for Spurious Emissions 1.61 - 1.99 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1610.00 – 1990.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals found within 6 dB of limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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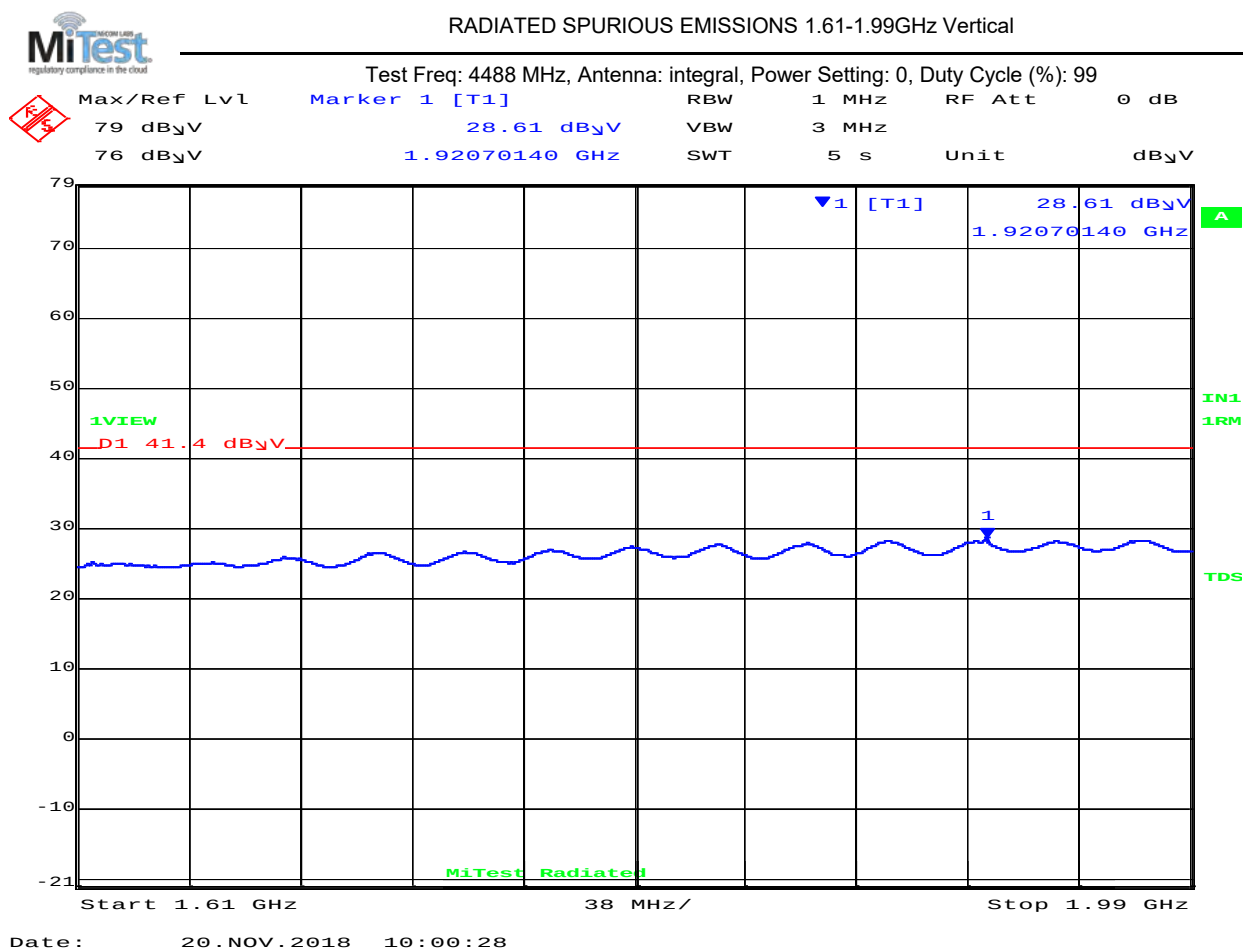


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Equipment Configuration for Spurious Emissions 1.61 – 1.99 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1610.00 – 1990.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals found within 6 dB of limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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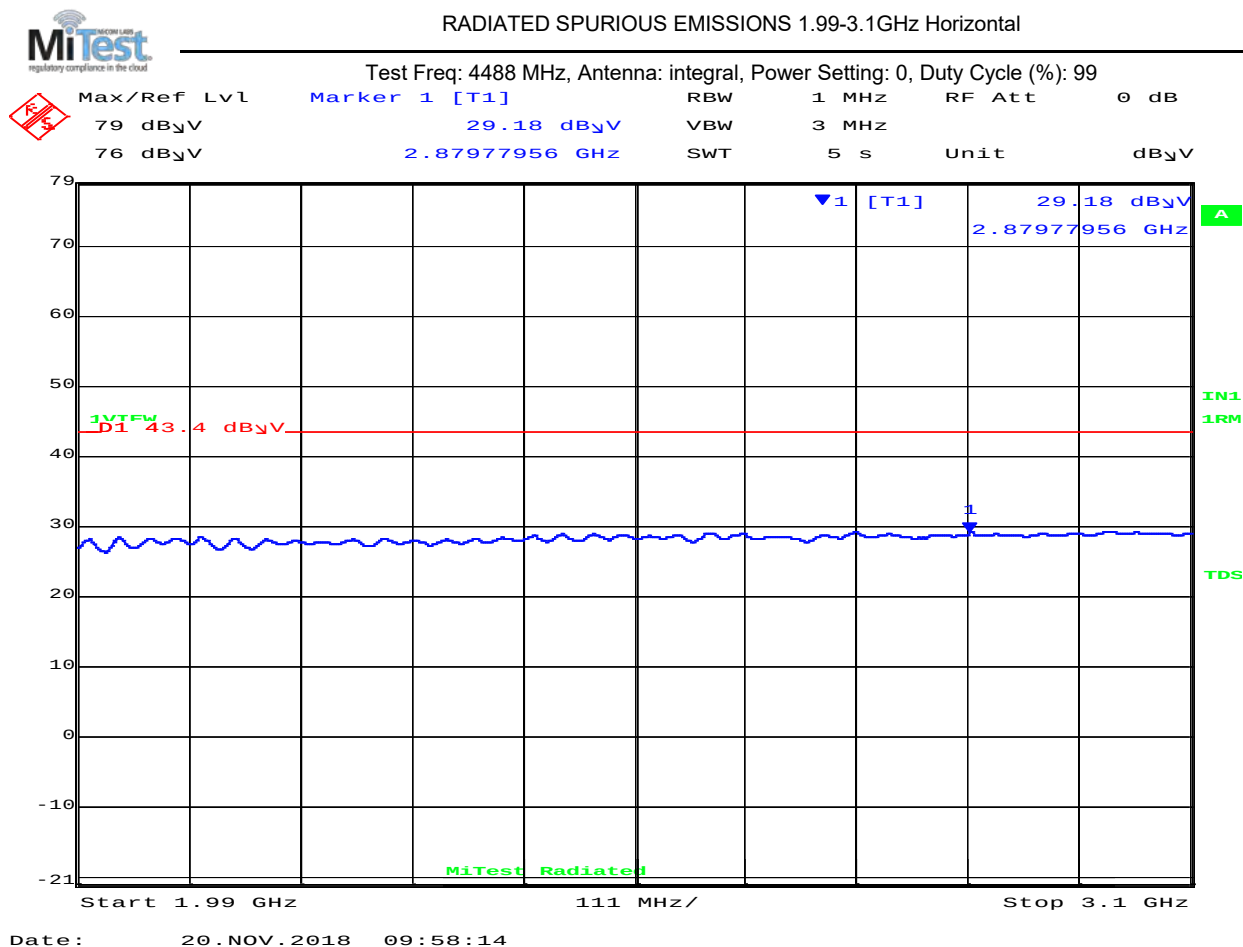


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Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1990.00 – 3100.00 GHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals found within 6 dB of limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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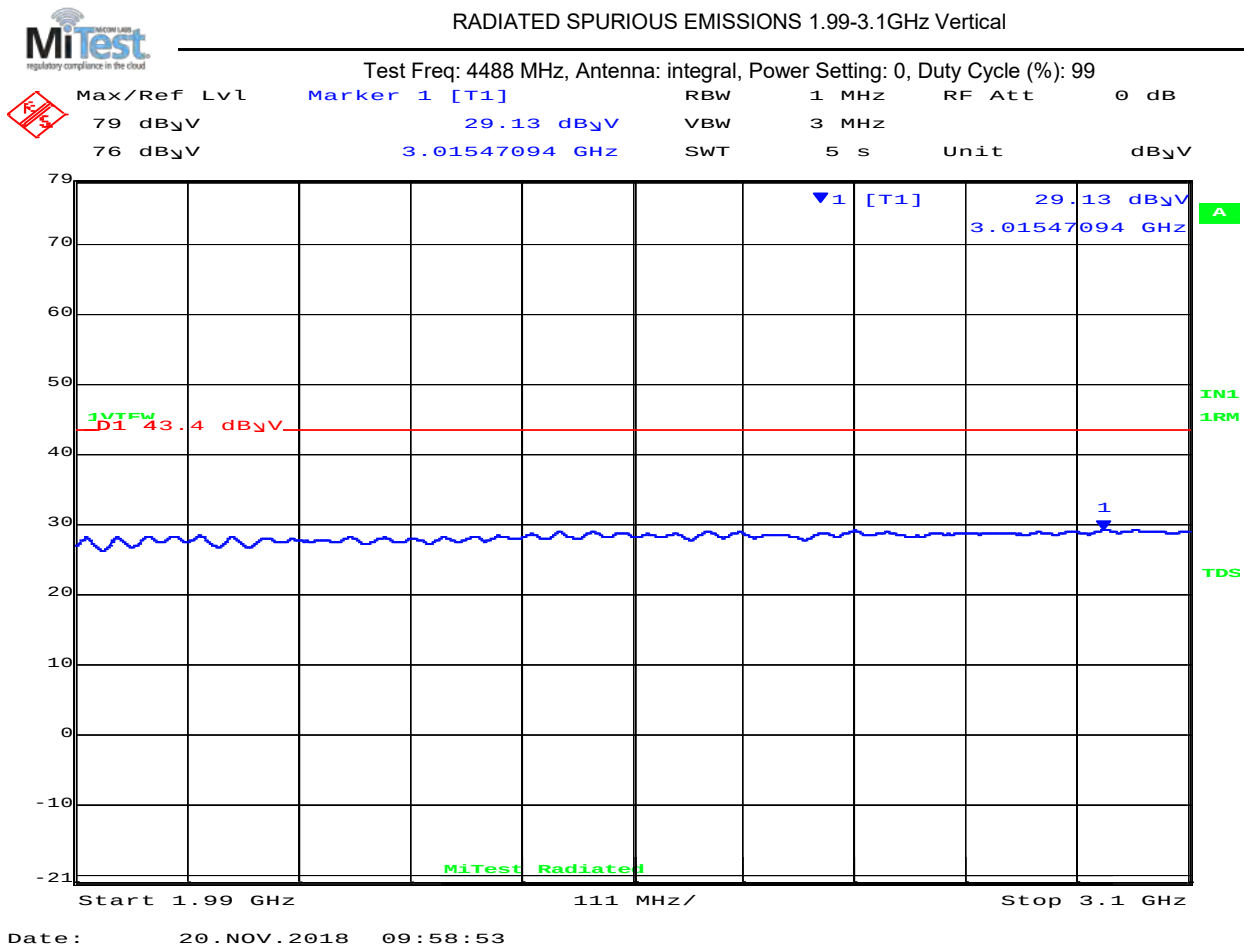


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Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1990.00 – 3100.00 GHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals found within 6 dB of limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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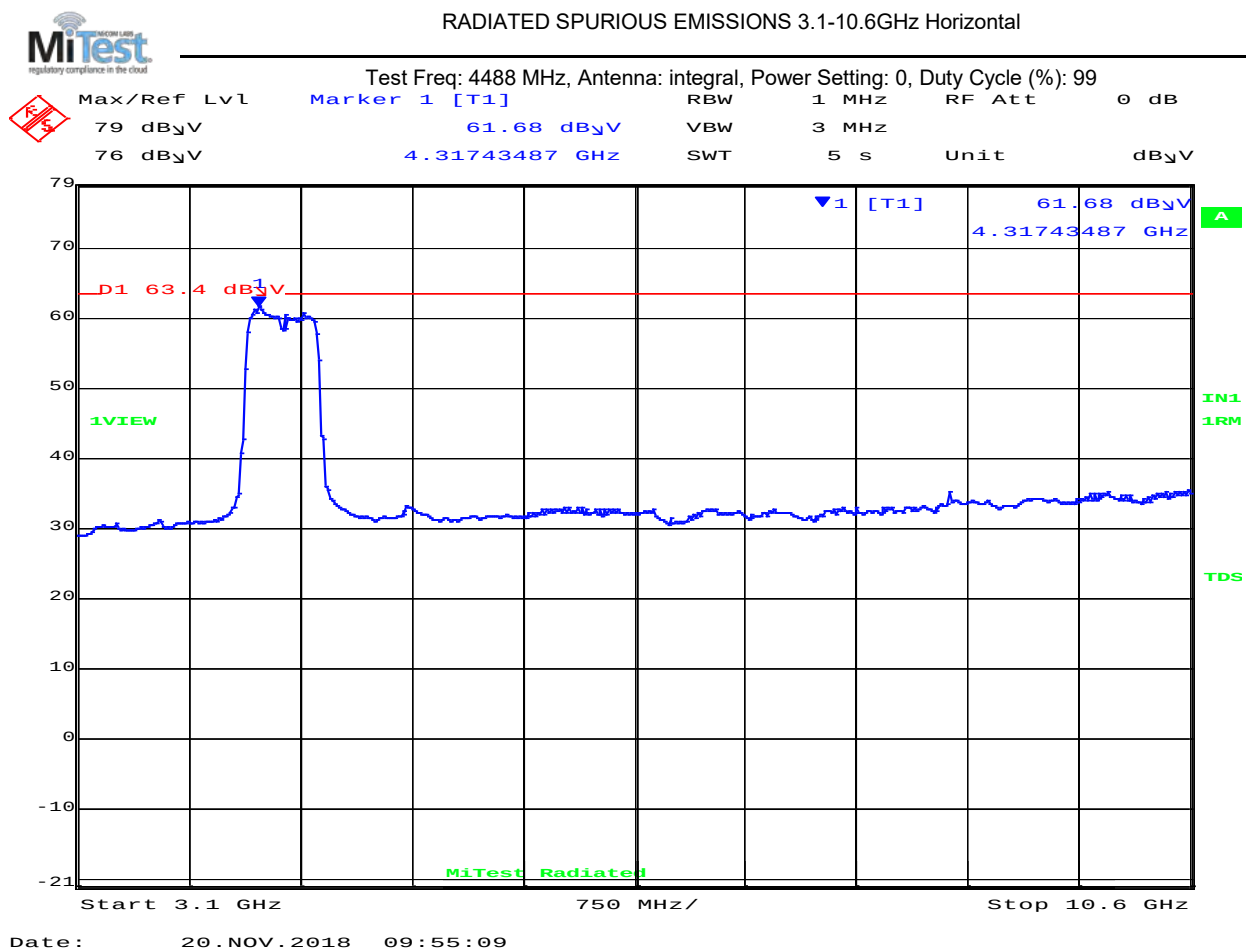


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Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



3100.00 - 10600.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
1	4317.4	59.4	Average	Horizontal	150	0	63.4	-4.0	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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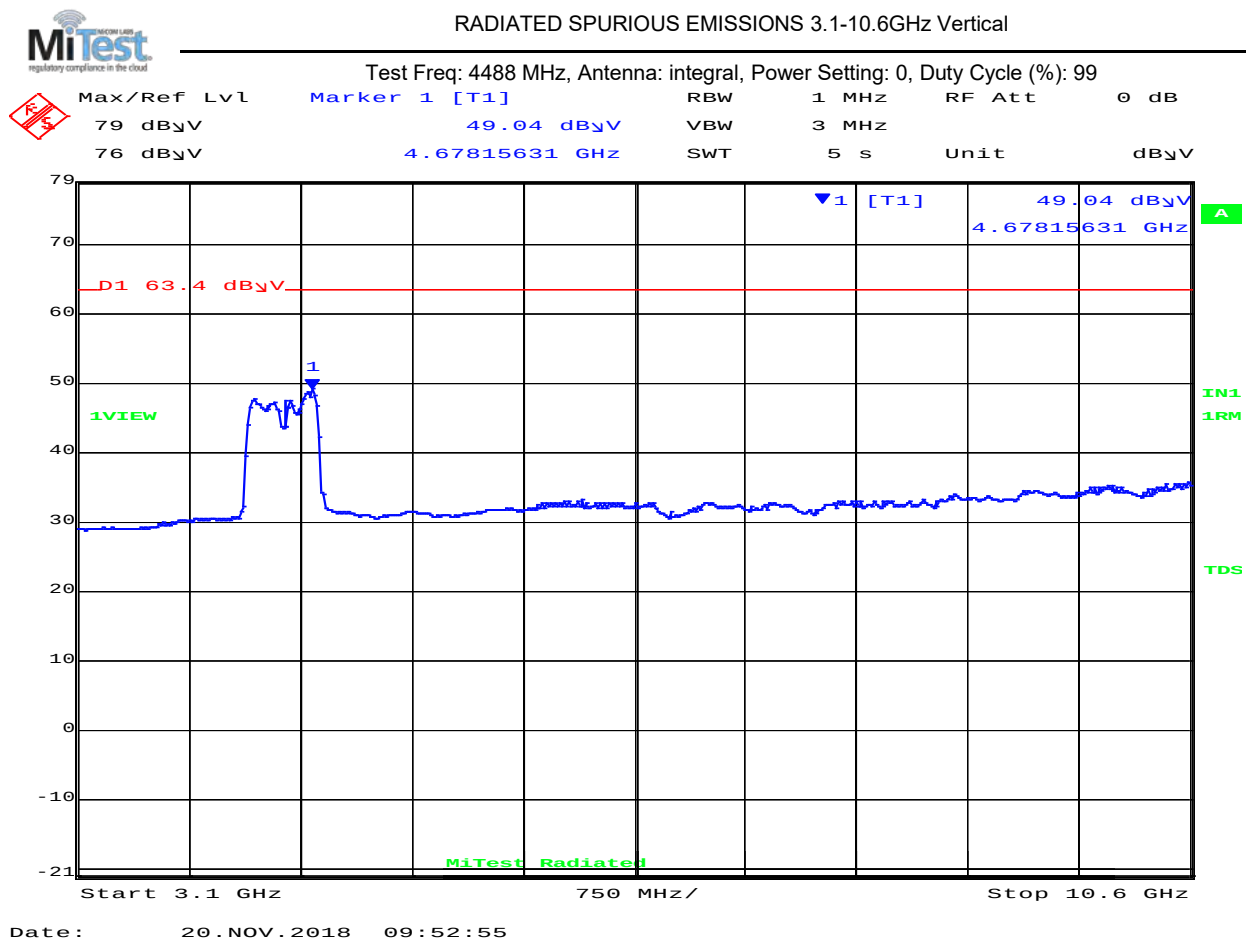


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Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



3100.00 - 10600.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals found within 6 dB of limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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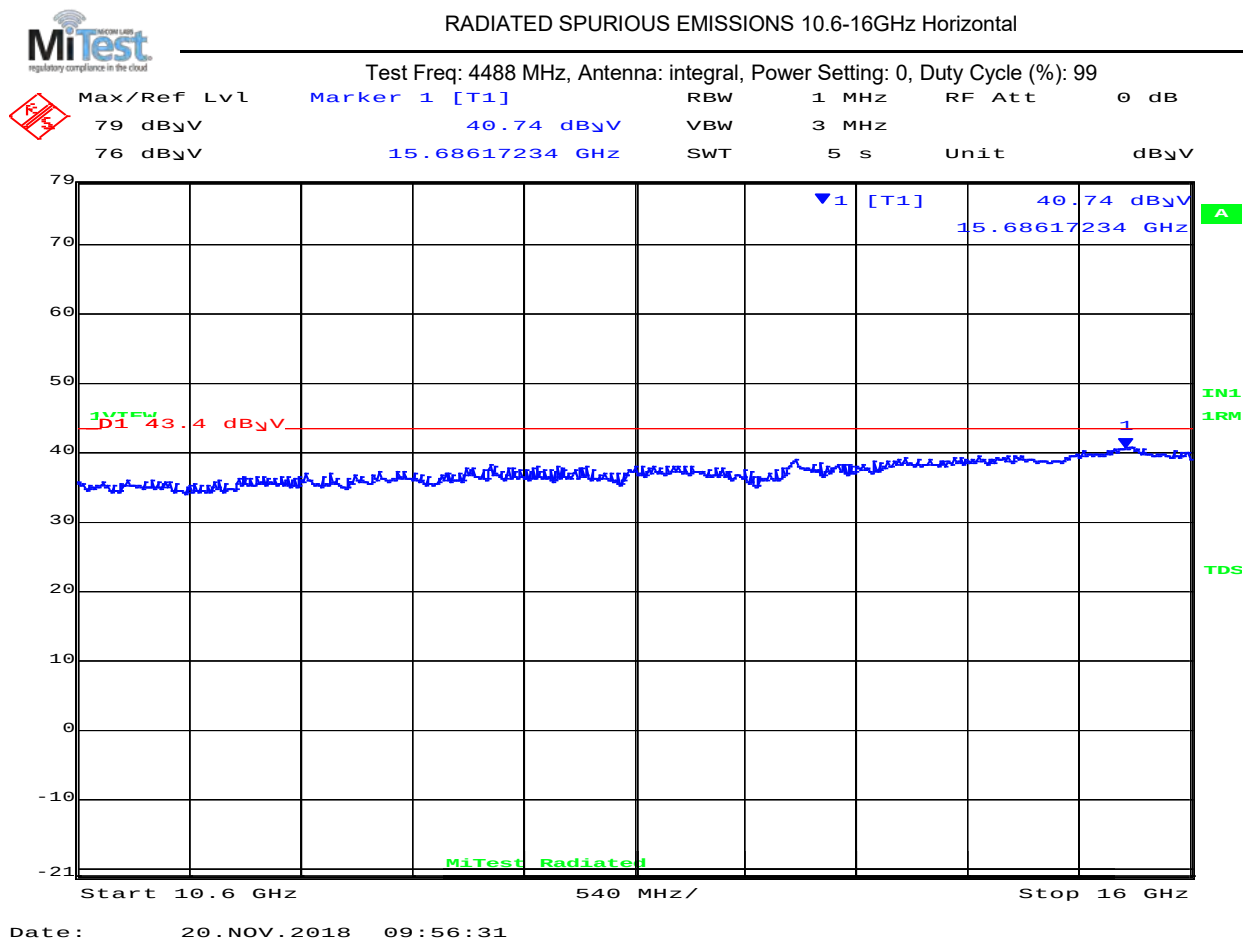


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Equipment Configuration for Spurious Emissions 10.6 – 16.0 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



10600.00 – 16000.00 GHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	15686.2	39.6	Average	Horizontal	150	0	43.4	-3.8	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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Equipment Configuration for Spurious Emissions 10.6 – 16.0 GHz Vertical

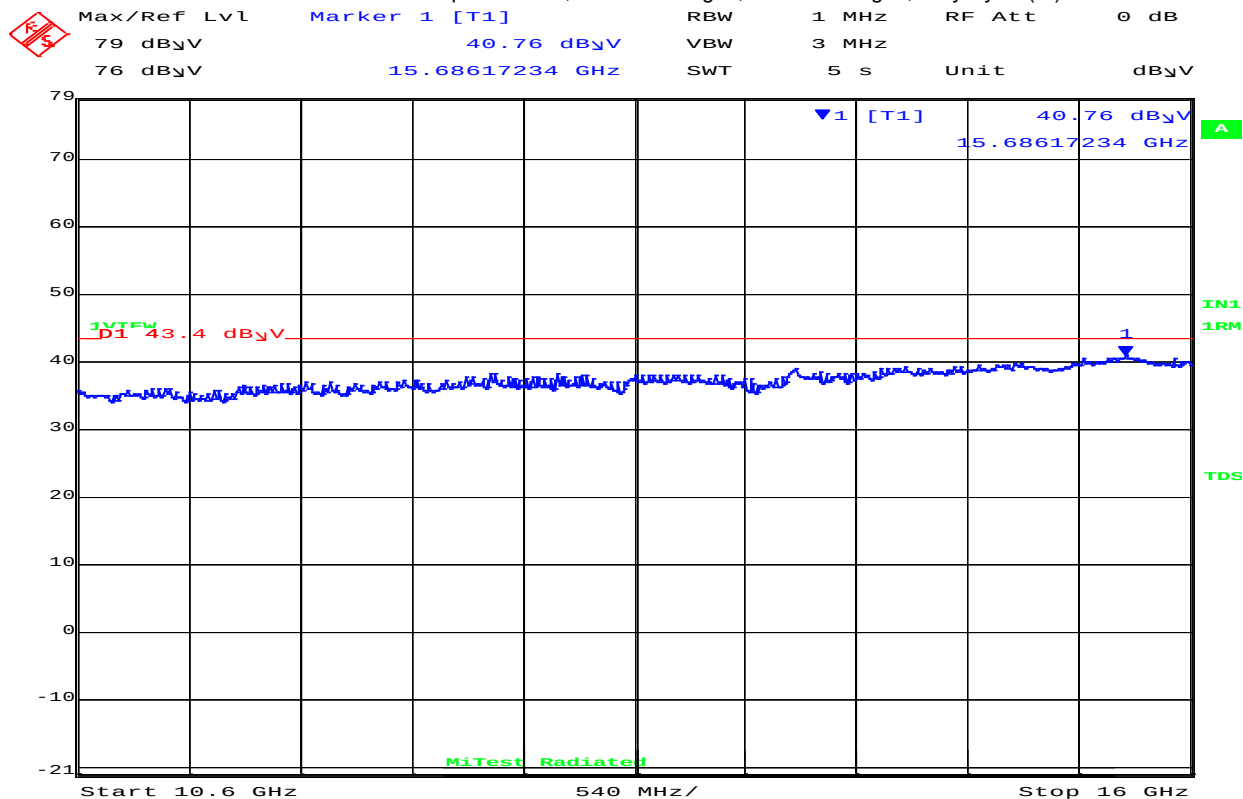
Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



RADIATED SPURIOUS EMISSIONS 10.6-16GHz Vertical

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 09:32:15

10600.00 – 16000.00 GHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	15686.2	39.5	Average	Vertical	150	0	43.4	-3.5	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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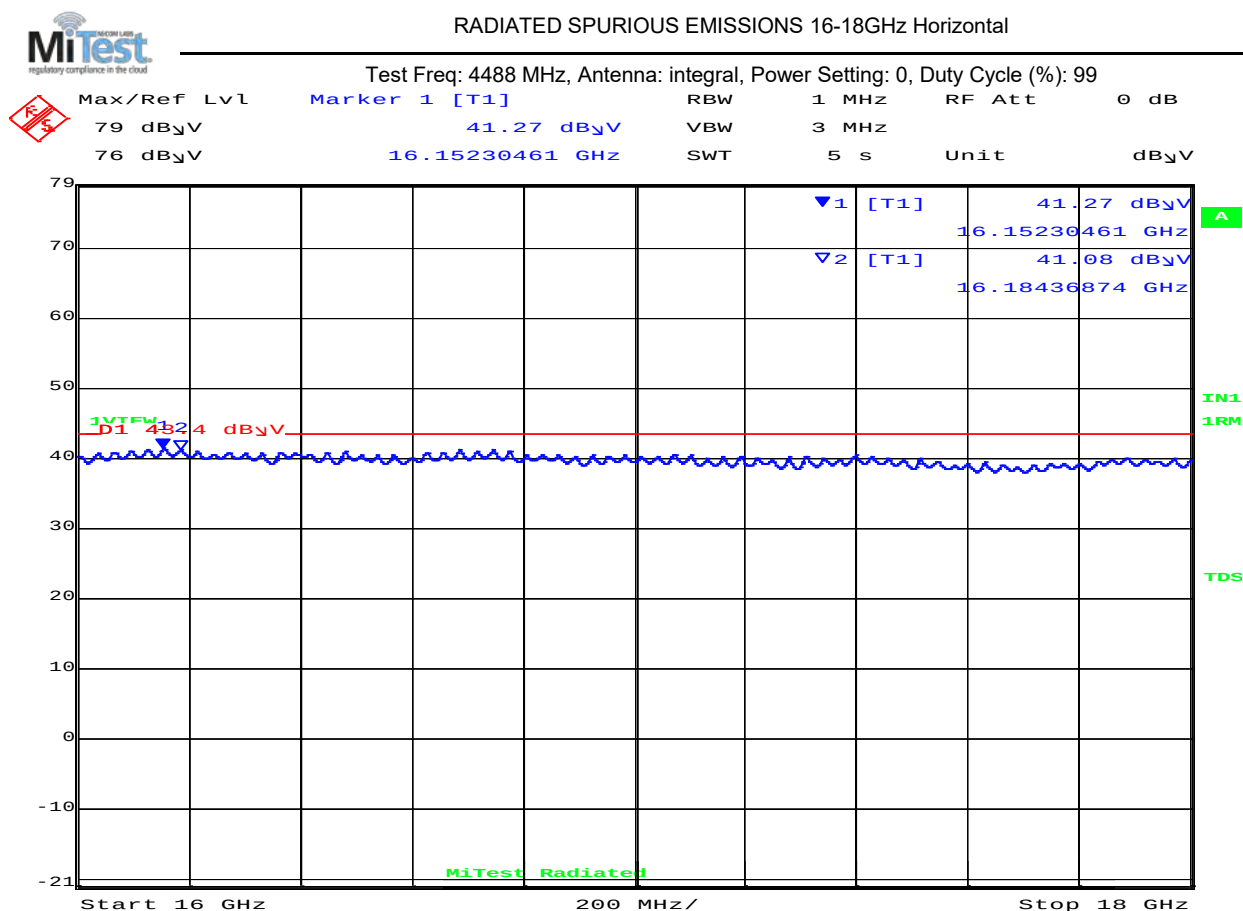


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Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



Date: 20.NOV.2018 09:26:15

16000.00 – 18000.00 GHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	16152.3	40.2	Average	Horizontal	150	0	43.4	-3.2	Pass
2	16184.4	40.2	Average	Horizontal	150	0	43.4	-3.2	Pass
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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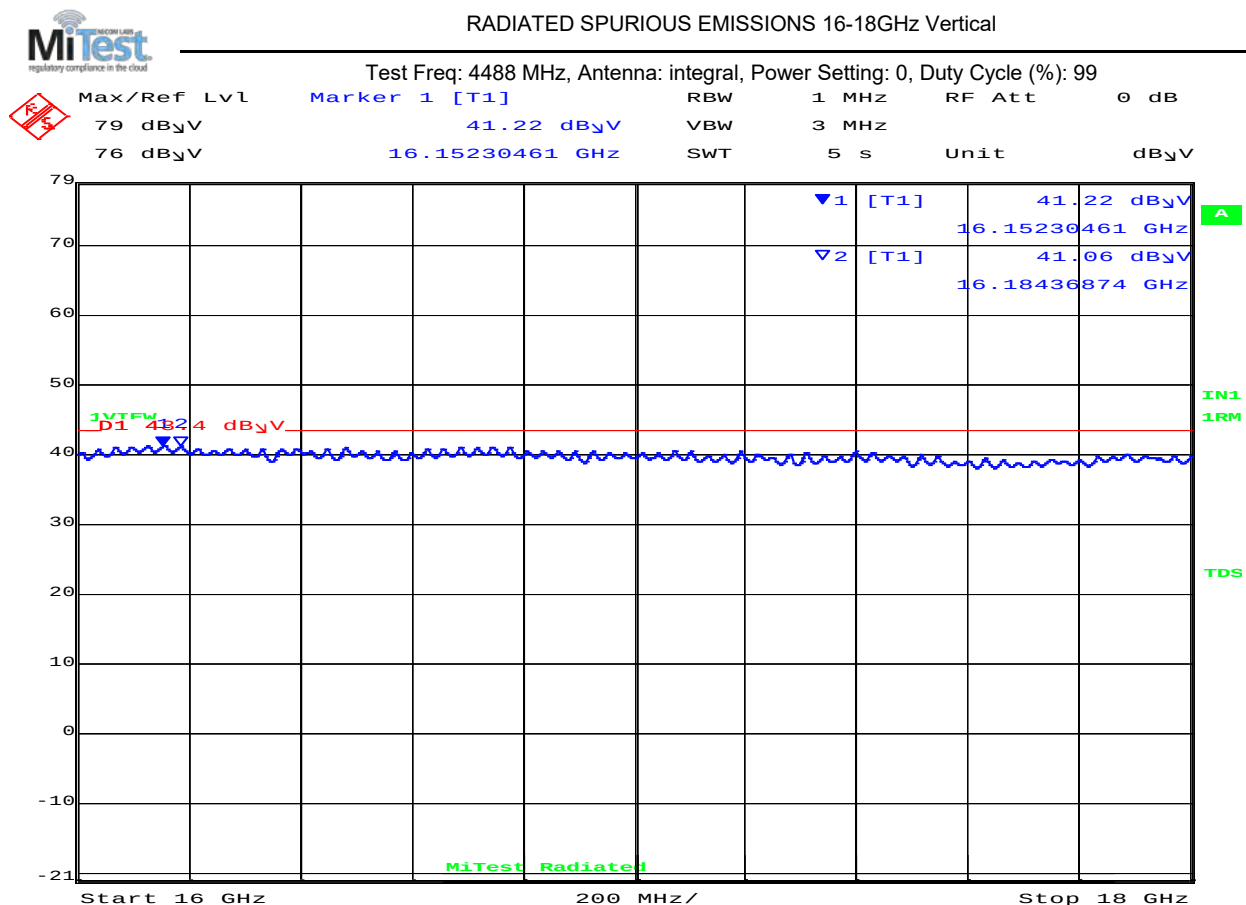


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Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



Date: 20.NOV.2018 09:30:01

16000.00 – 18000.00 GHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	16152.3	40.2	Average	Vertical	150	0	43.4	-3.2	Pass
2	16184.4	40.1	Average	Vertical	150	0	43.4	-3.3	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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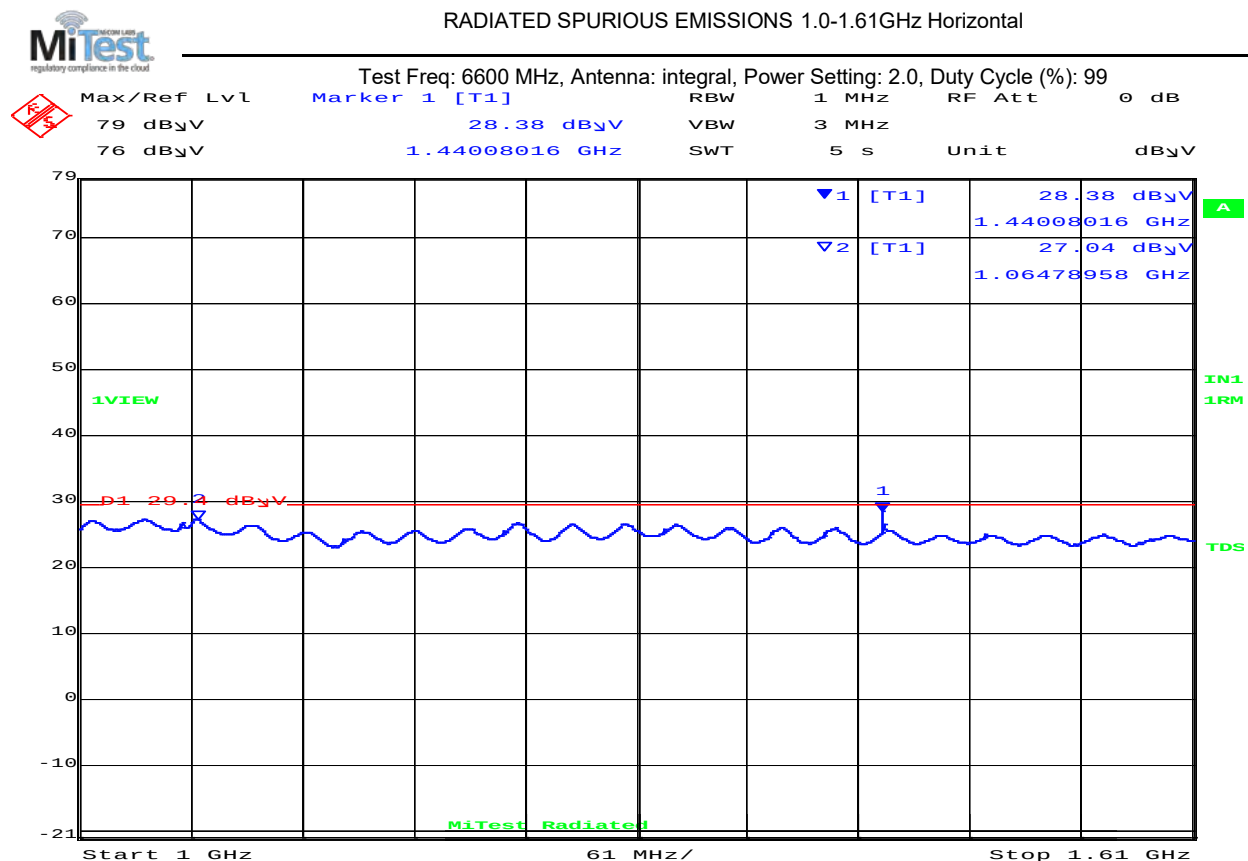
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6600 MHz

Equipment Configuration for Spurious Emissions 1-1.61 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



Date: 20.NOV.2018 11:46:45

1000.00– 1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	1440.1	28.9	Average	Horizontal	150	0	29.4	-0.5	Pass
2	1064.8	25.9	Average	Horizontal	150	0	29.4	-3.5	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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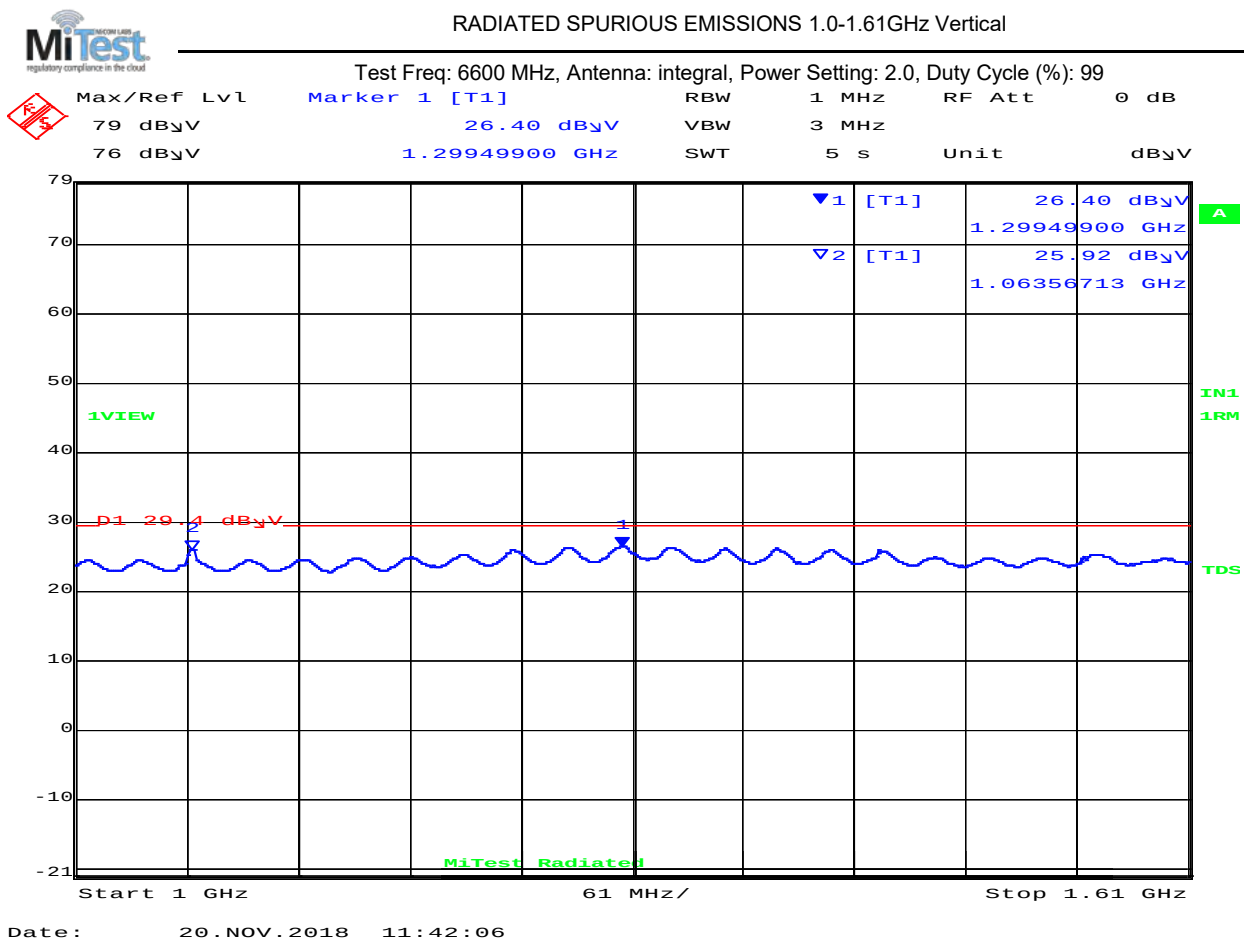


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Equipment Configuration for Spurious Emissions 1-1.61 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



1000.00– 1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	1299.9	24.1	Average	Vertical	150	0	29.4	-5.30	Pass
2	1063.6	23.9	Average	Vertical	150	0	29.4	-5.50	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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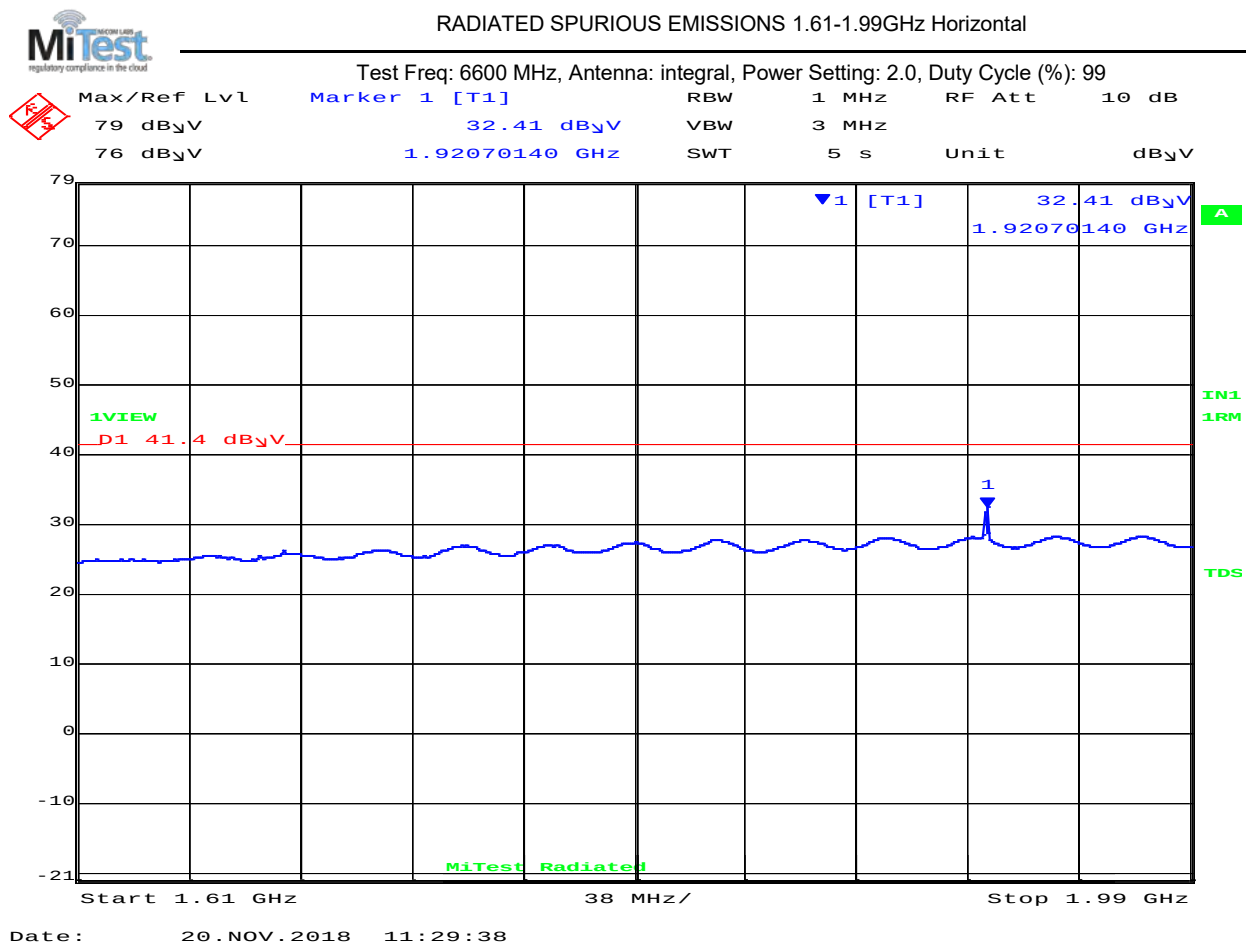


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Equipment Configuration for Spurious Emissions 1.61 - 1.99 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



1610.00 – 1990.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals found within 6 dB of limit.									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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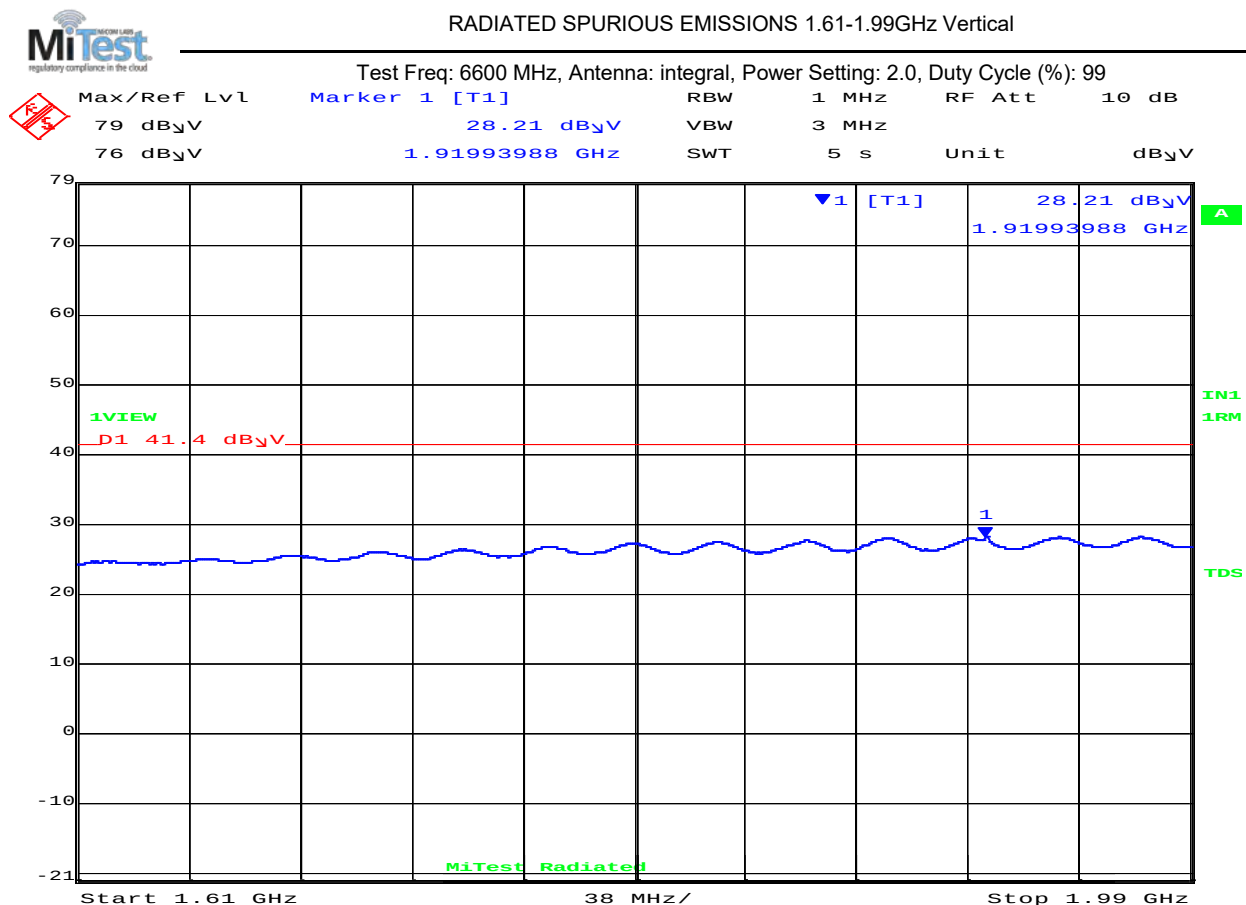


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Equipment Configuration for Spurious Emissions 1.61 – 1.99 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



Date: 20.NOV.2018 11:30:25

1610.00 – 1990.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals found within 6 dB of limit.									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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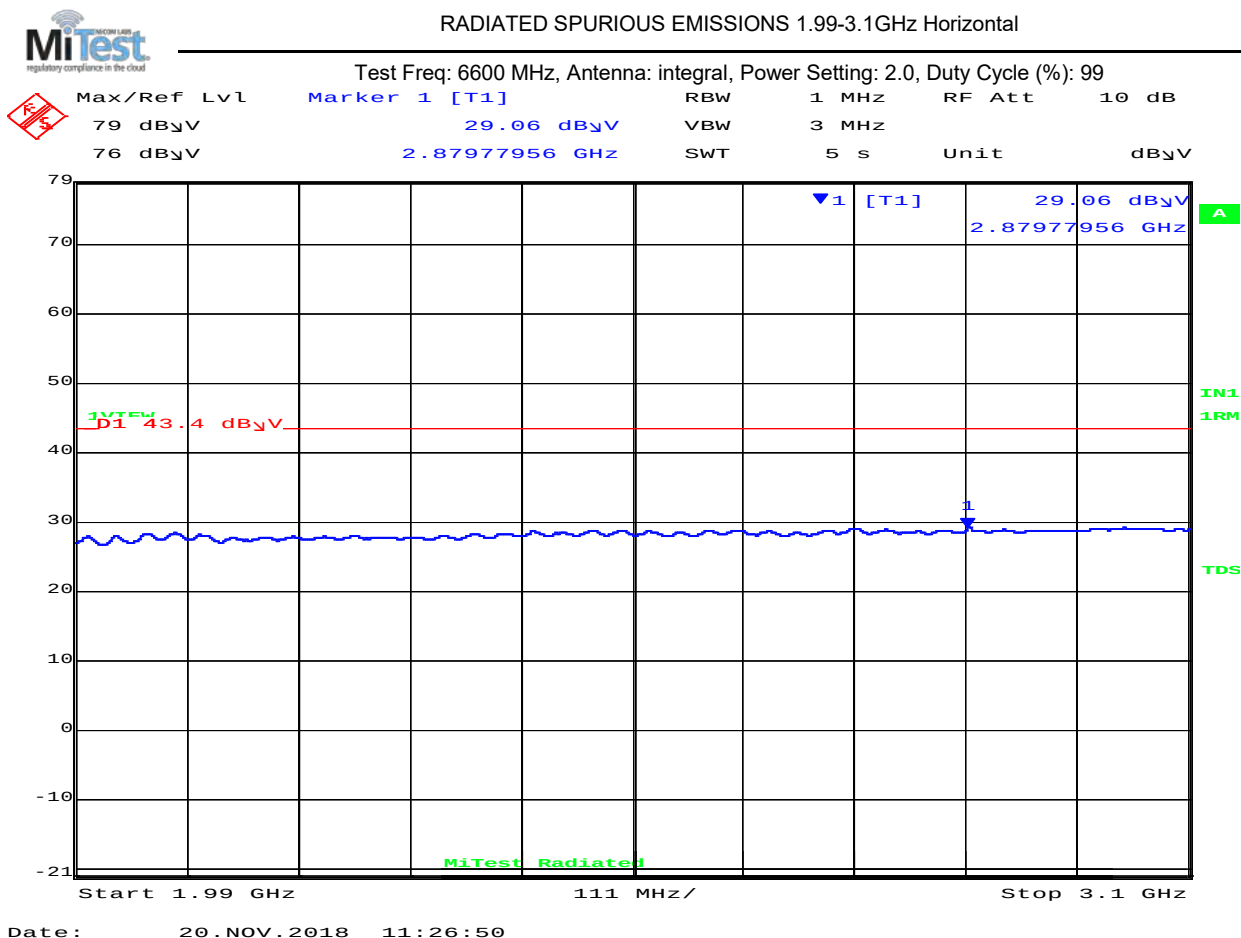


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



1990.00 – 3100.00 GHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals found within 6 dB of limit.									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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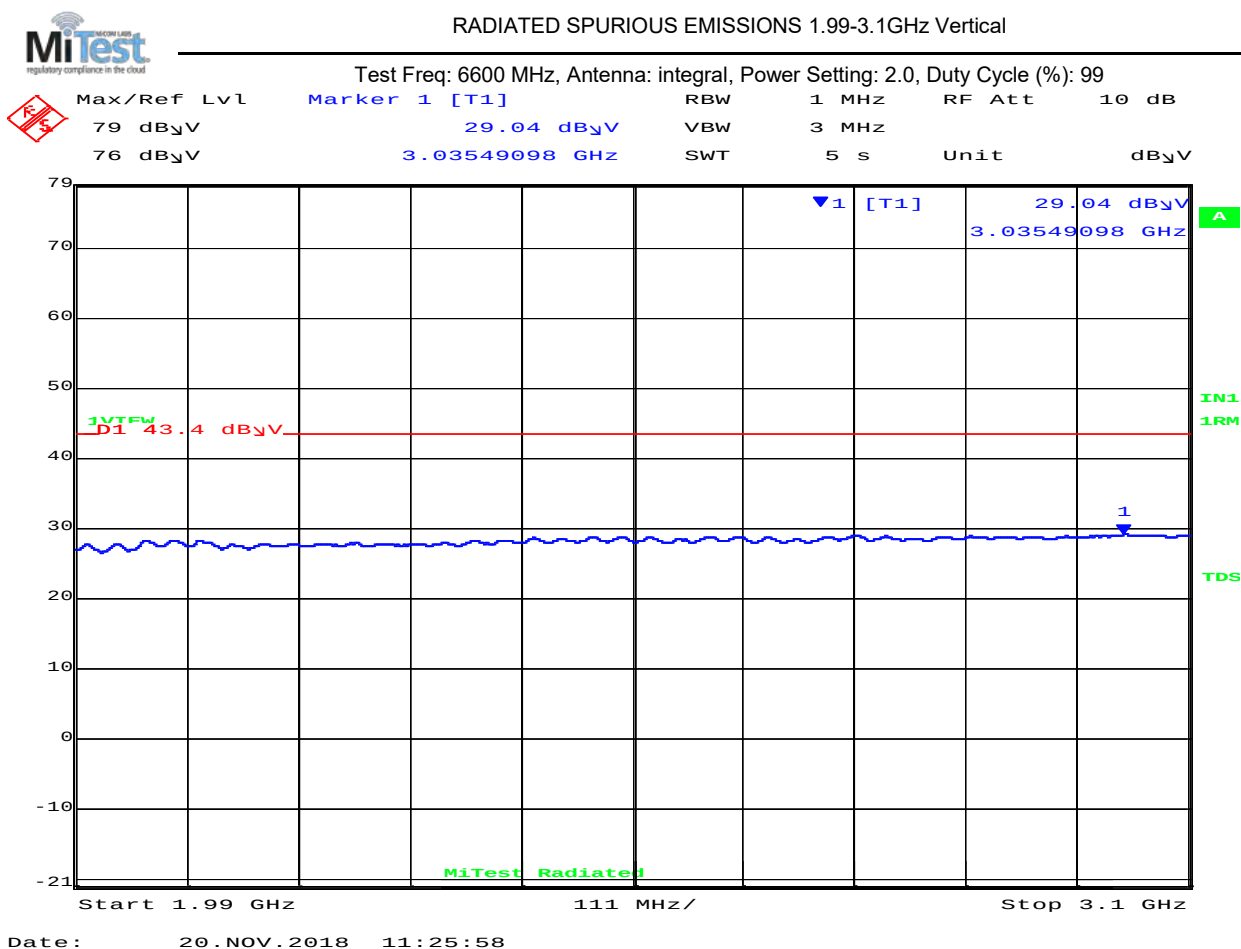


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Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



1990.00 – 3100.00 GHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals found within 6 dB of limit.									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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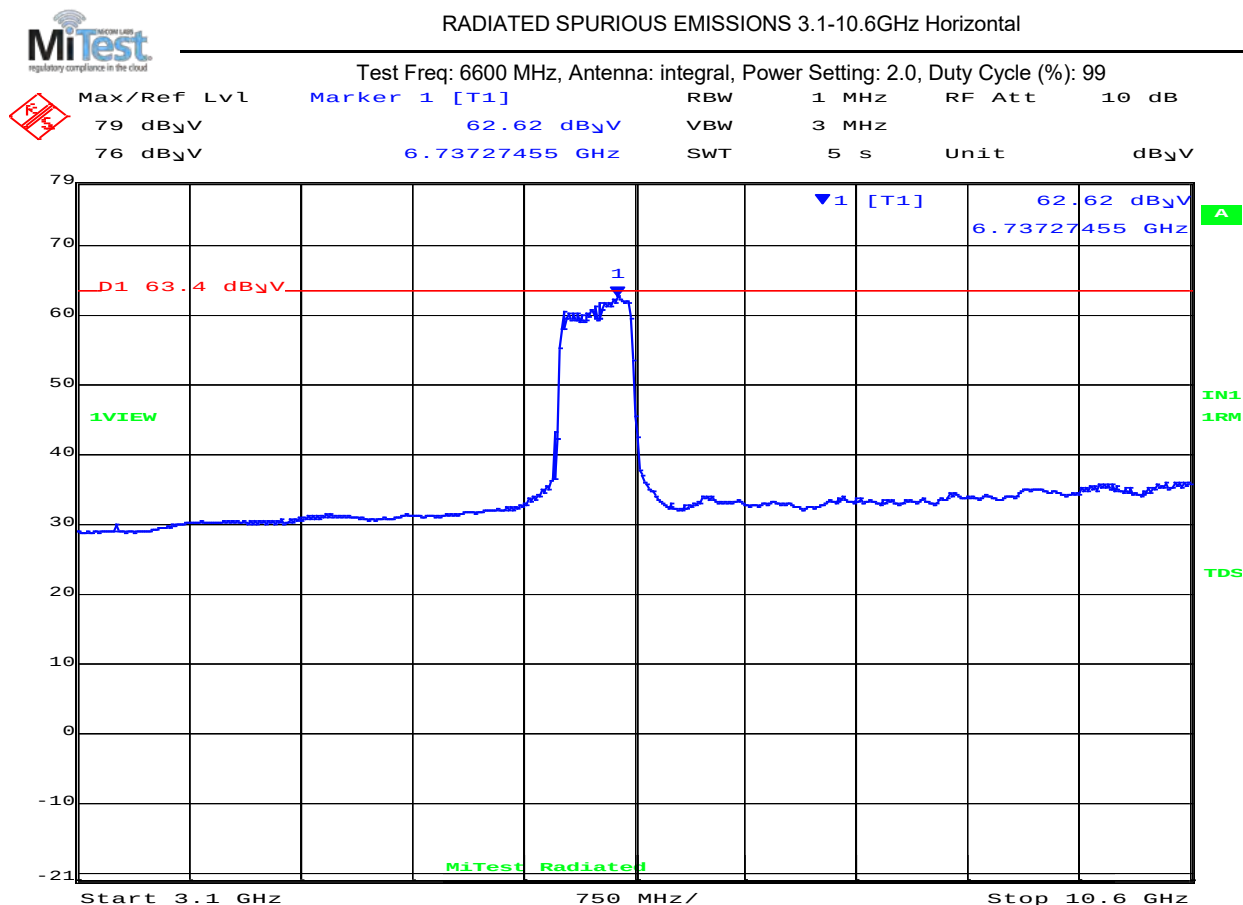


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Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



Date: 20.NOV.2018 11:08:58

3100.00 - 10600.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
1	6737.3	60.5	Average	Horizontal	150	0	63.4	-2.9	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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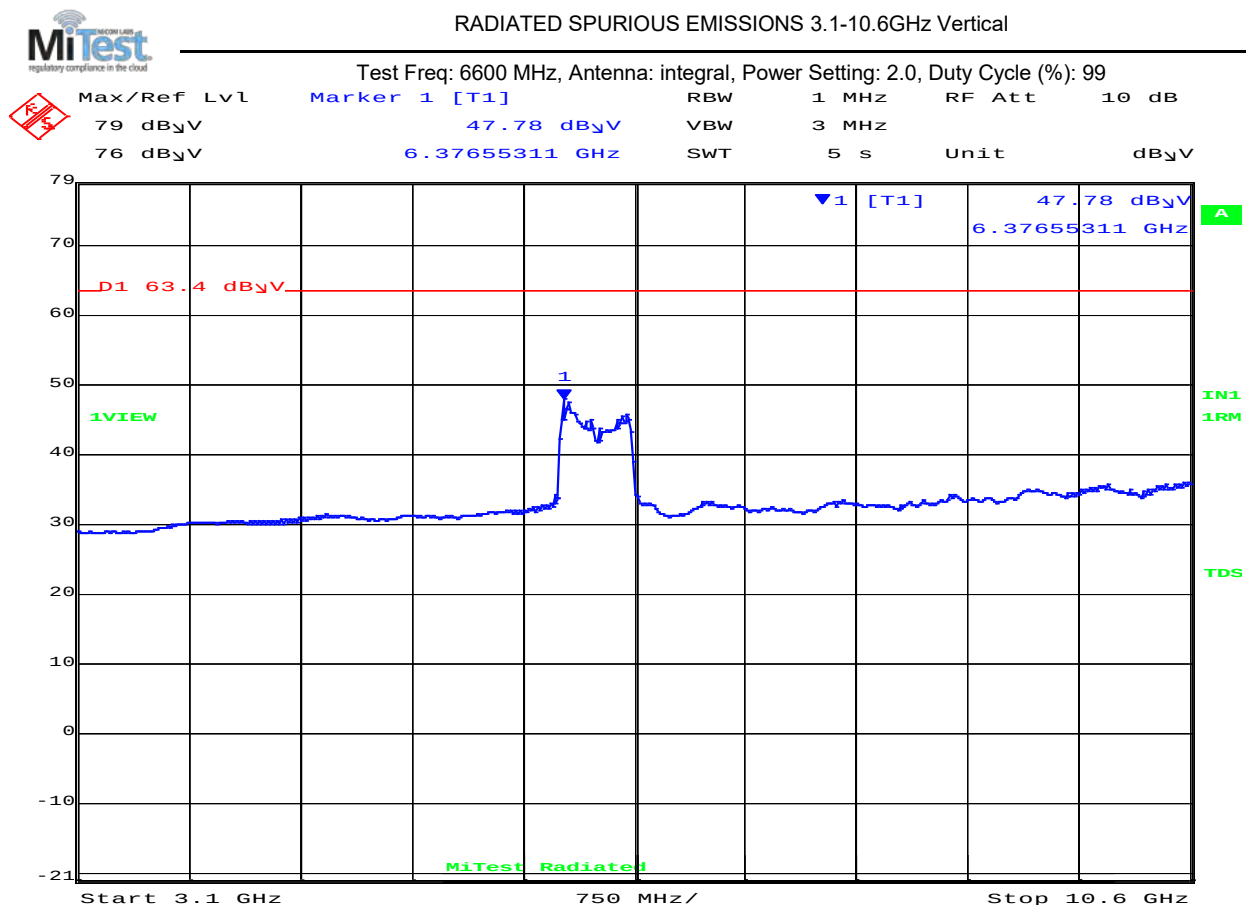


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Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



Date: 20.NOV.2018 11:14:32

3100.00 - 10600.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals found within 6 dB of limit.									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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Equipment Configuration for Spurious Emissions 10.6 – 16.0 GHz Horizontal

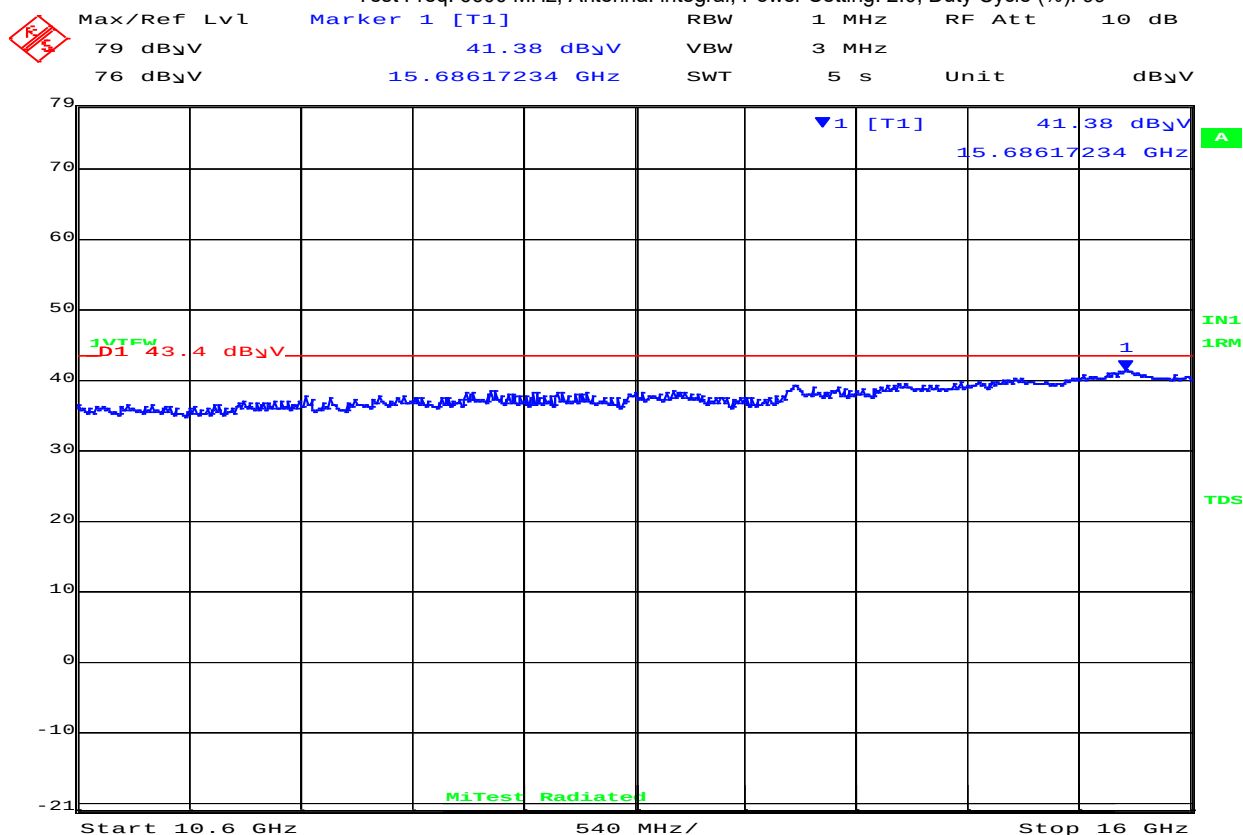
Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



RADIATED SPURIOUS EMISSIONS 10.6-16GHz Horizontal

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 11:18:13

10600.00 – 16000.00 GHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	15686.2	40.1	Average	Horizontal	150	0	43.4	-3.3	Pass

Test Notes:
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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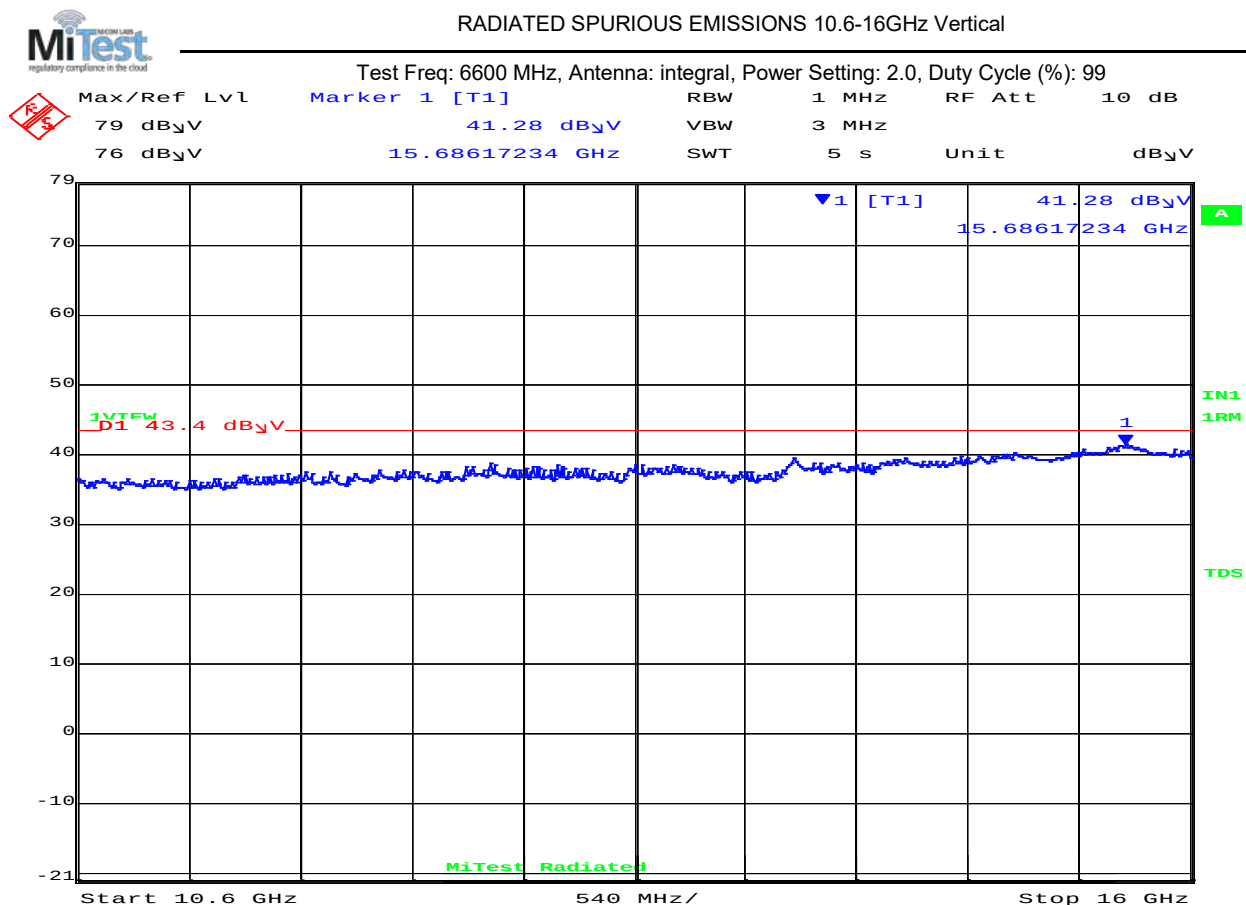


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Equipment Configuration for Spurious Emissions 10.6 – 16.0 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



Date: 20.NOV.2018 11:16:18

10600.00 – 16000.00 GHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	15686.2	40.2	Average	Vertical	150	0	43.4	-3.2	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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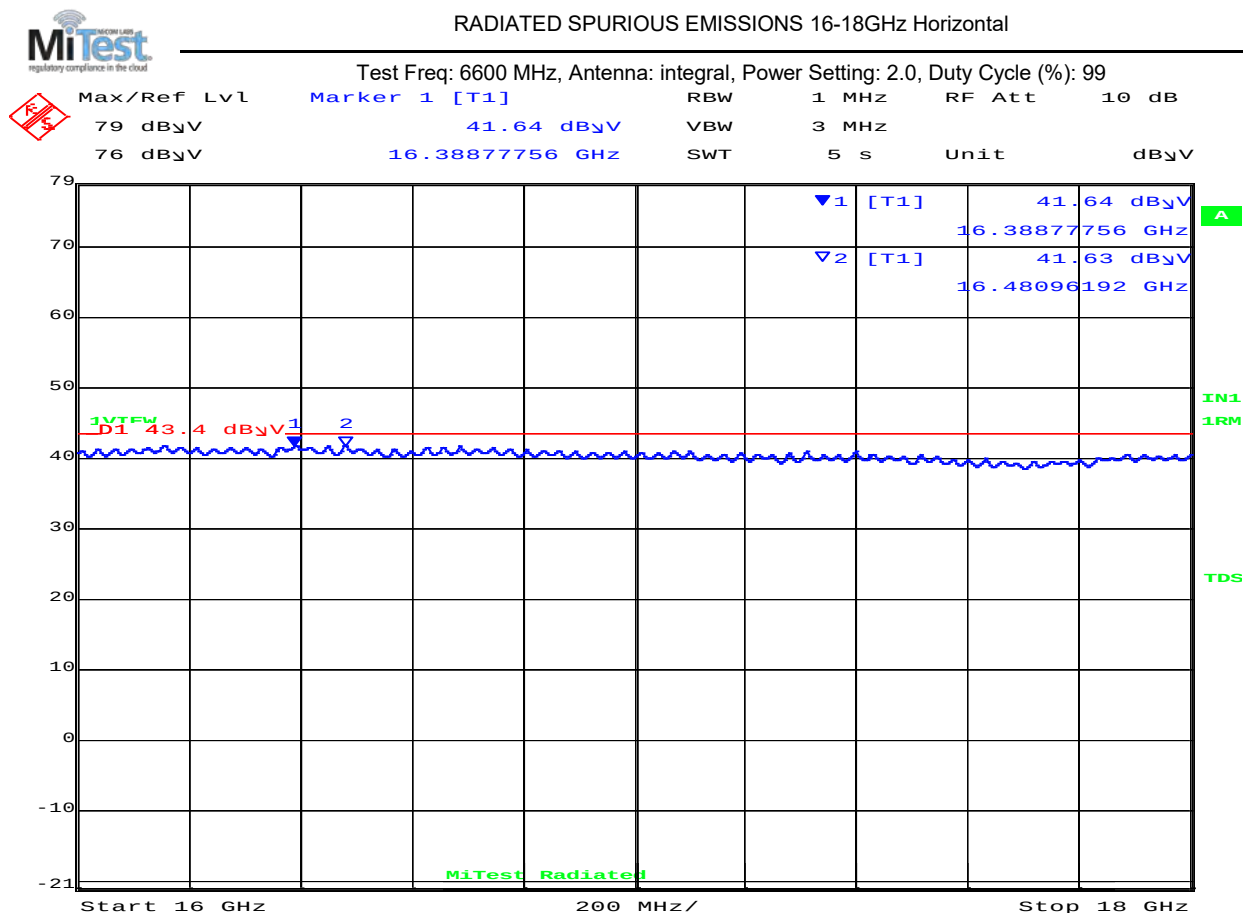


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Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



Date: 20.NOV.2018 11:20:39

16000.00 – 18000.00 GHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	16388.8	40.6	Average	Horizontal	150	0	43.4	-2.80	Pass
2	16481.0	40.5	Average	Horizontal	150	0	43.4	-2.90	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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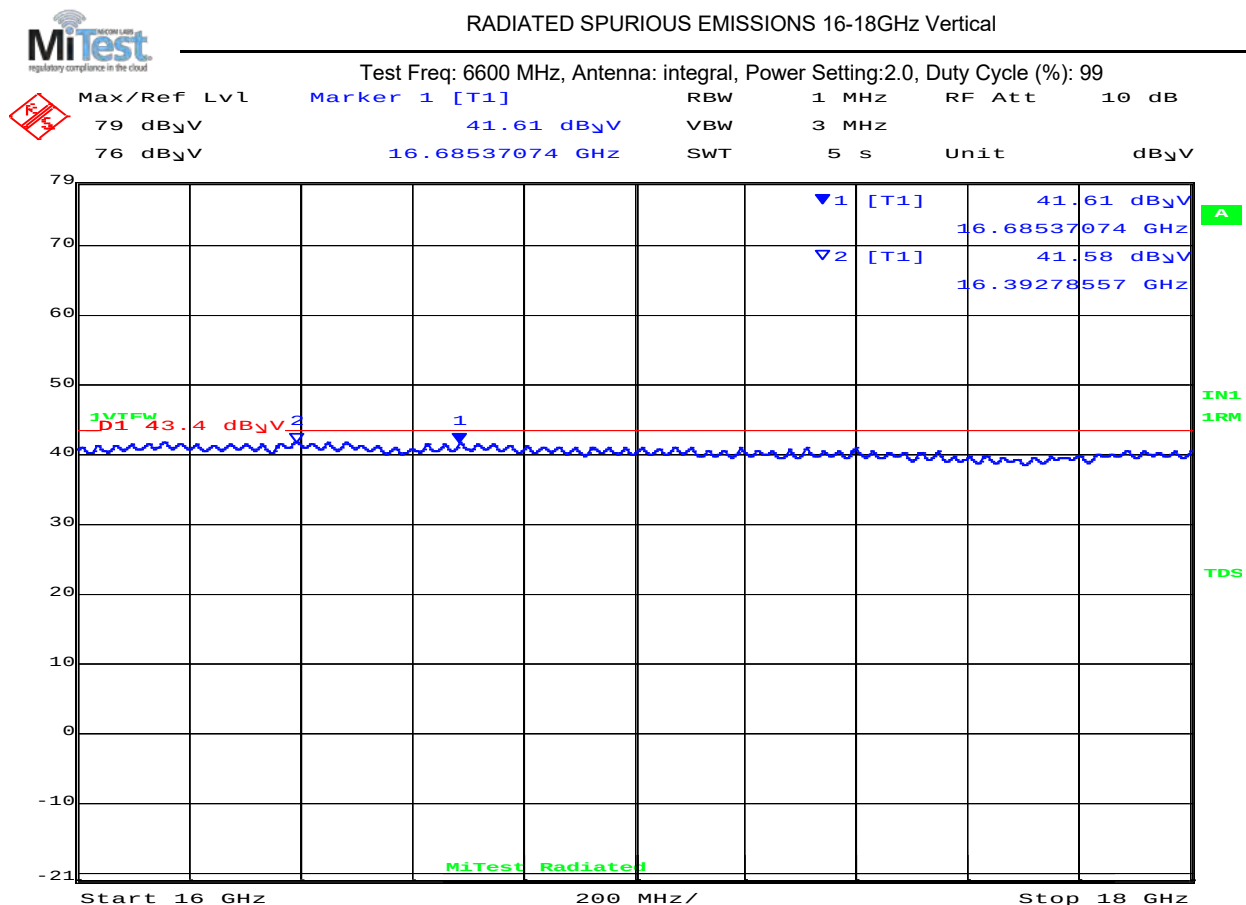


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Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



Date: 20.NOV.2018 11:23:26

16000.00 – 18000.00 GHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
1	16685.4	40.1	Average	Vertical	150	0	43.4	-3.3	Pass
2	16392.8	40.6	Average	Vertical	150	0	43.4	-2.8	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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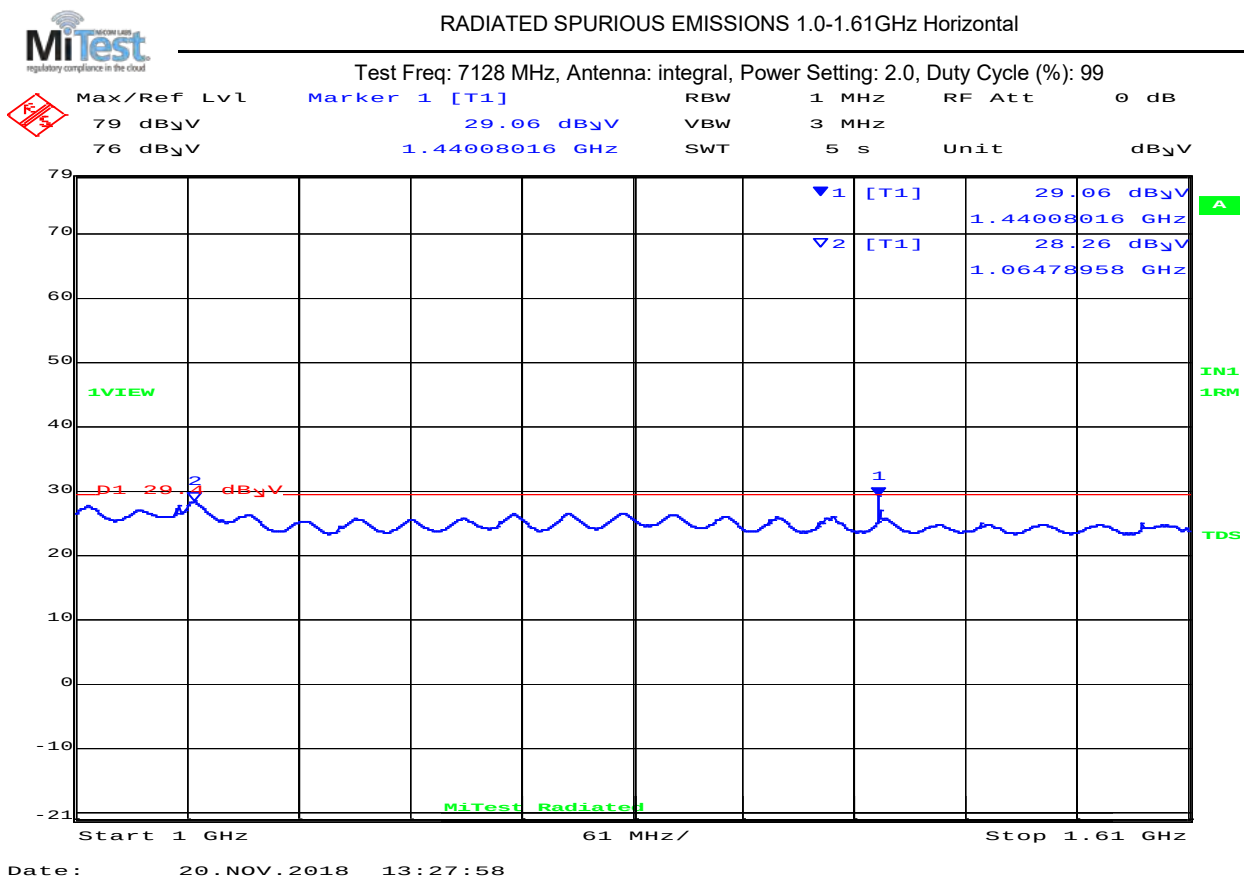
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7128 MHz

Equipment Configuration for Spurious Emissions 1-1.61 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



1000.00– 1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	1440.1	28.8	Average	Horizontal	150	0	29.4	-0.6	Pass
2	1064.8	25.9	Average	Horizontal	150	0	29.4	-3.5	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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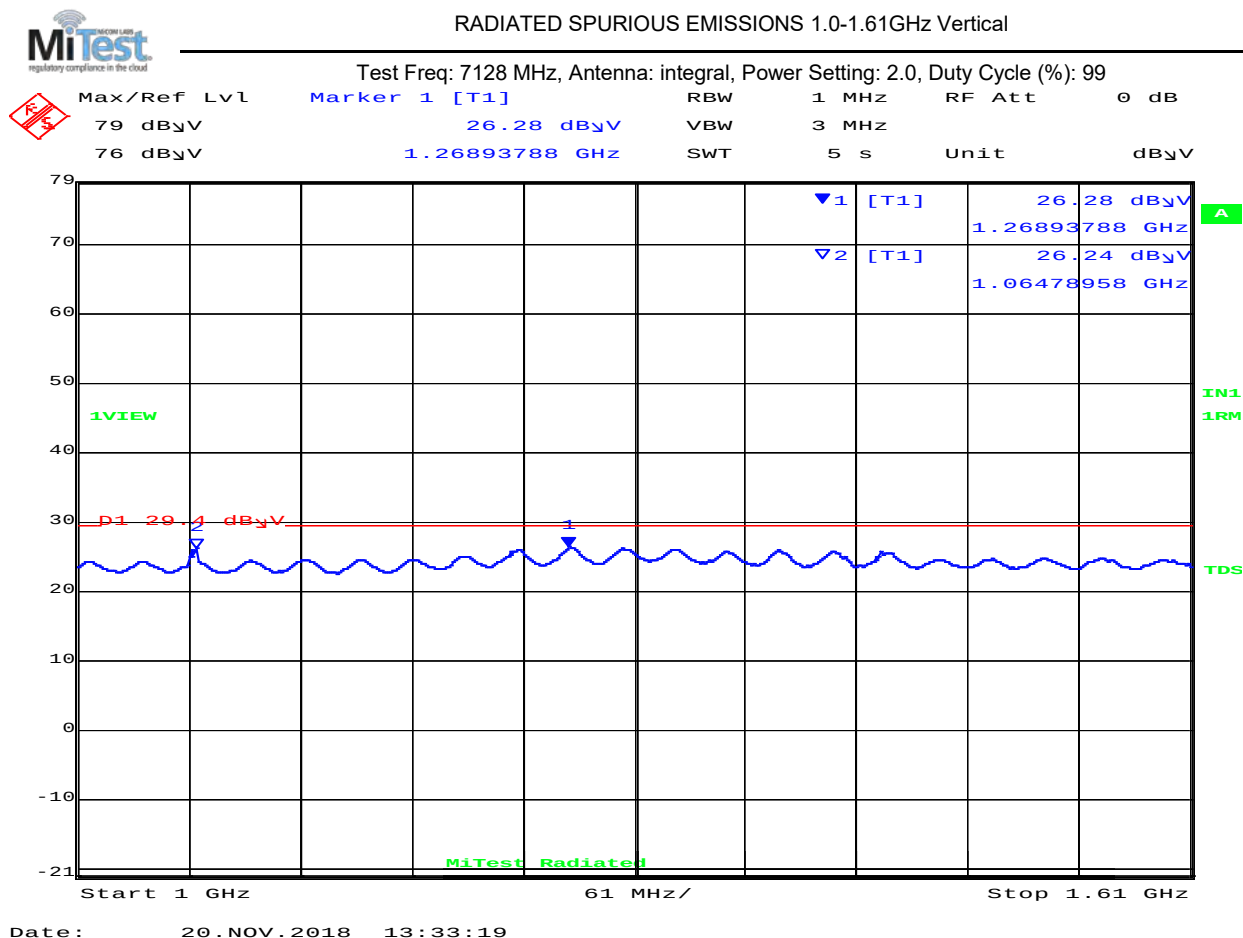


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
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Equipment Configuration for Spurious Emissions 1-1.61 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



1000.00– 1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	1268.9	23.9	Average	Vertical	150	0	29.4	-5.5	Pass
2	1064.8	23.9	Average	Vertical	150	0	29.4	-5.5	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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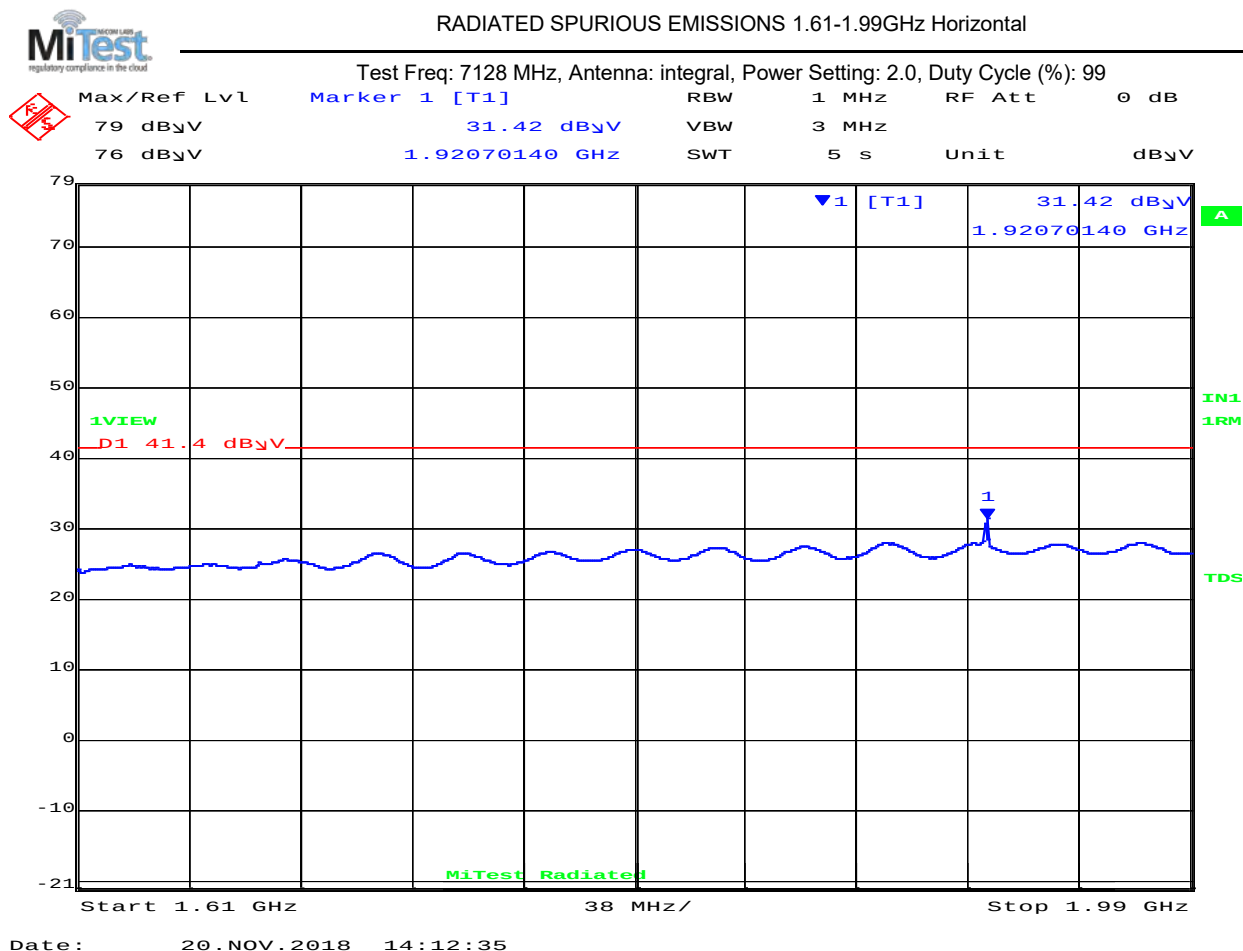


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
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Equipment Configuration for Spurious Emissions 1.61 - 1.99 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



1610.00 – 1990.00 MHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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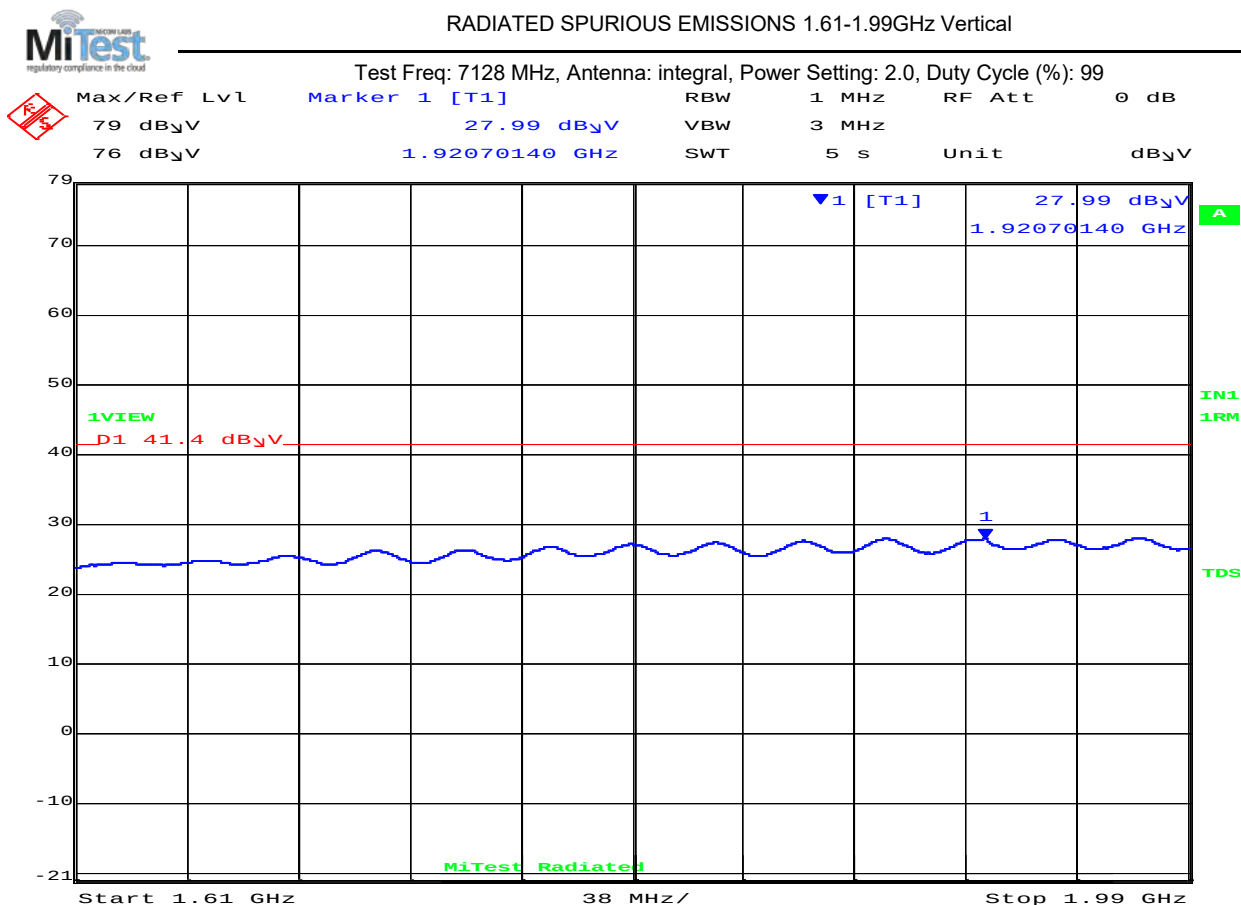


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 1.61 – 1.99 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



Date: 20.NOV.2018 14:07:02

1610.00 – 1990.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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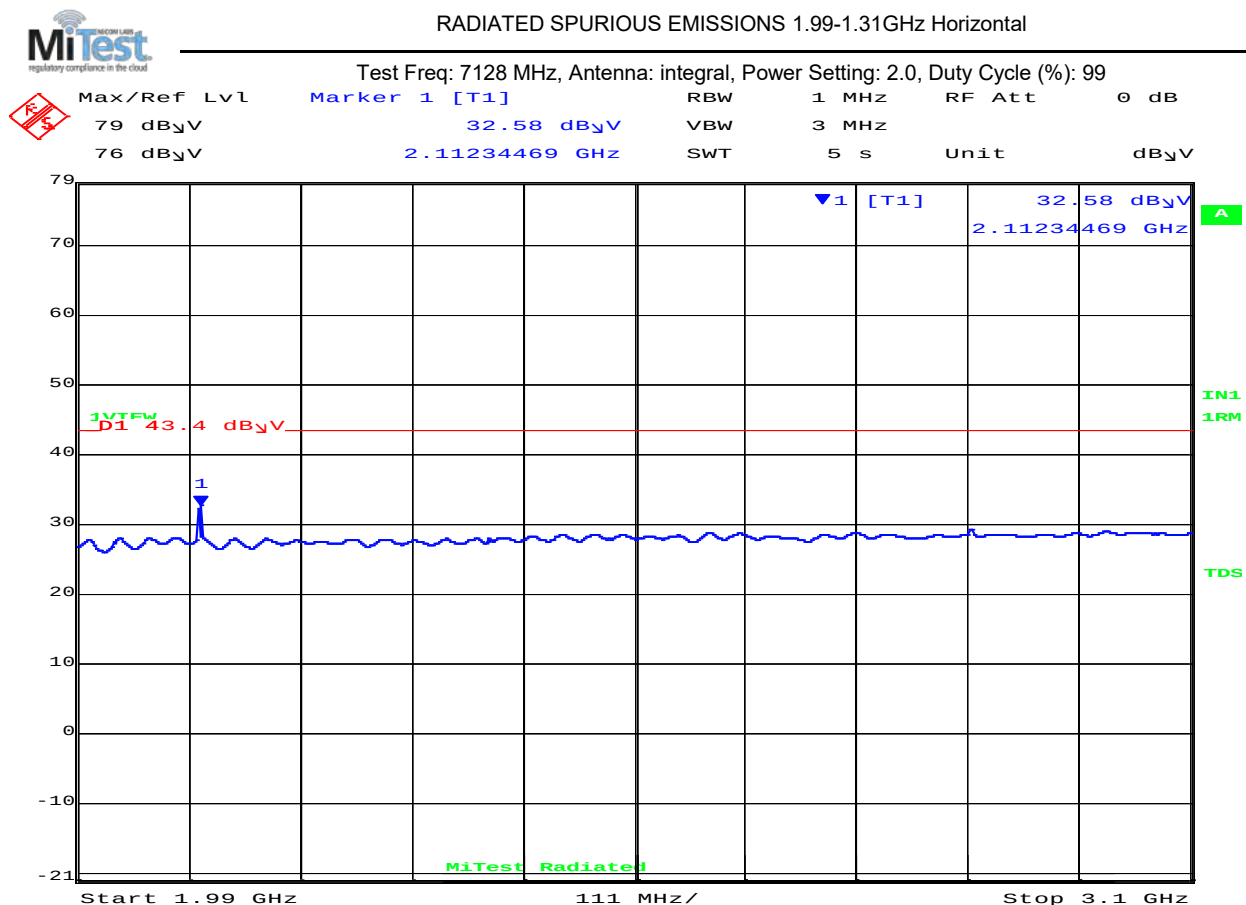


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results

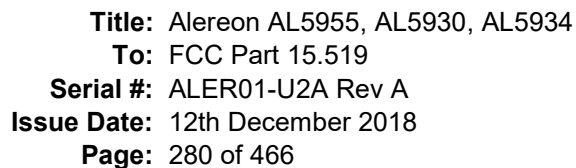


Date: 20.NOV.2018 14:17:51

1990.00 – 3100.00 GHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99

Max/Ref Lvl	Marker 1 [T1]	RBW	RF Att	0 dB
79 dB μ V	28.99 dB μ V	1 MHz		
76 dB μ V	2.11234469 GHz	3 MHz		
		SWT	5 s	Unit
				dB μ V

Start 1.99 GHz 111 MHz/ Stop 3.1 GHz

MiTest Radiated

IN1 1RM

Date: 20.NOV.2018 14:19:27

1990.00 – 3100.00 GHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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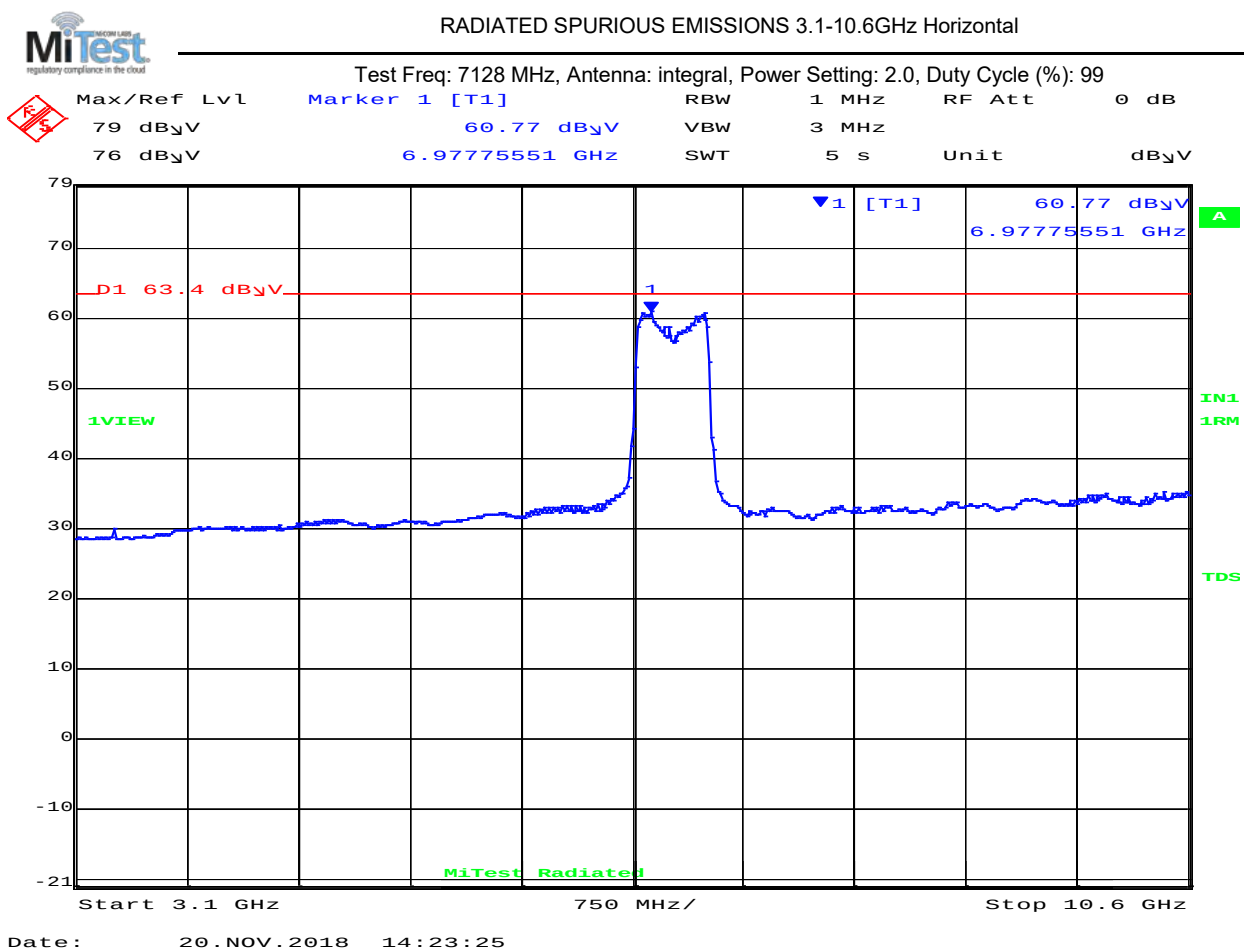


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Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



3100.00 - 10600.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
1	6977.8	58.9	Average	Horizontal	150	0	63.4	-4.5	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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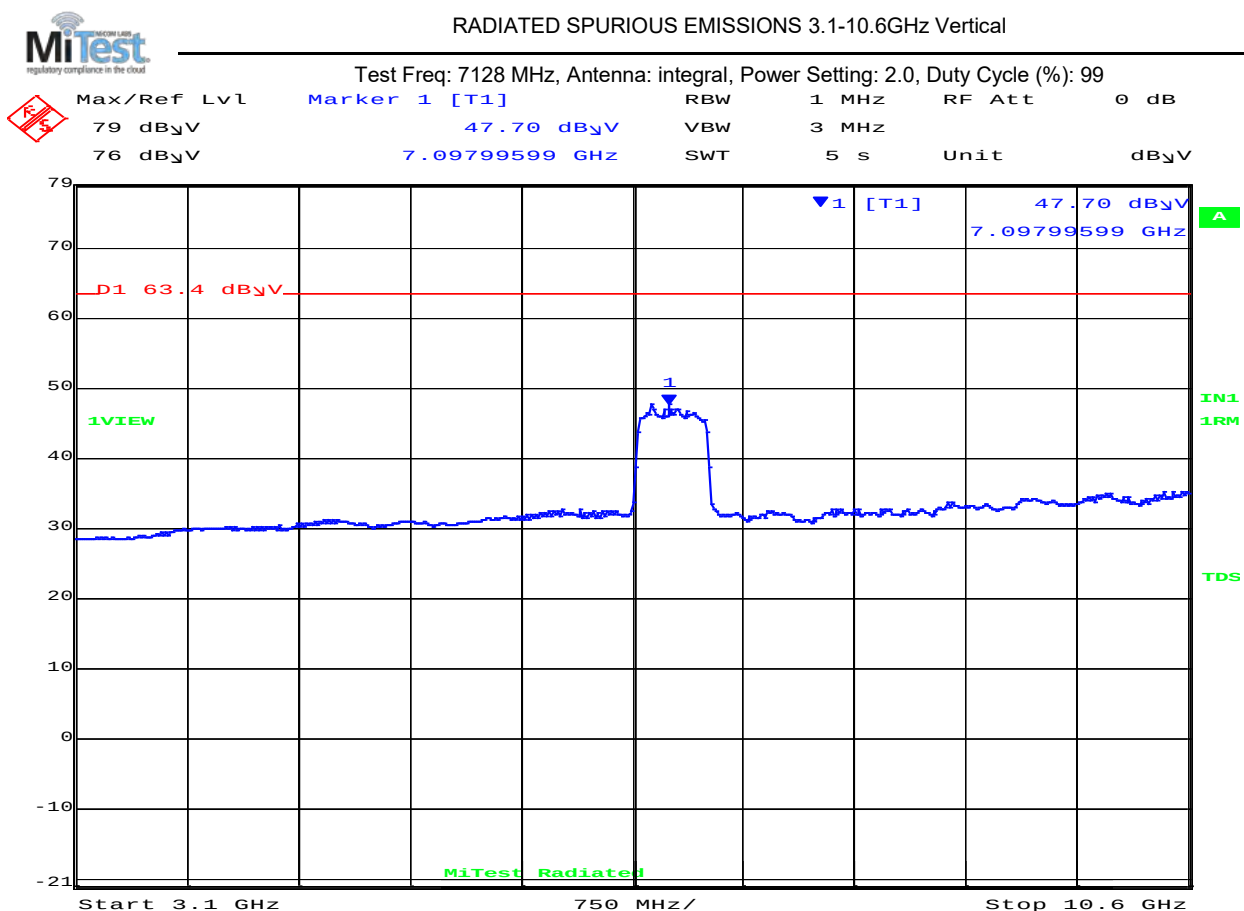


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



Date: 20.NOV.2018 14:21:37

3100.00 - 10600.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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Equipment Configuration for Spurious Emissions 10.6 – 16.0 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

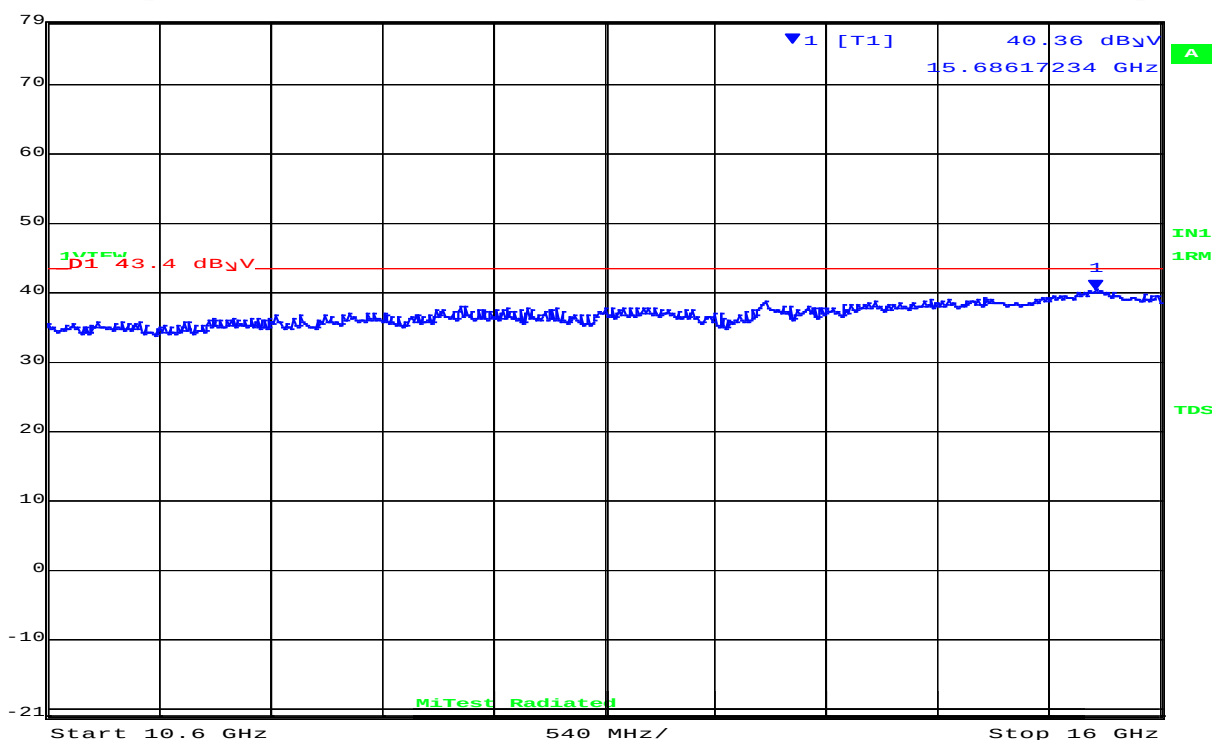
Test Measurement Results



RADIATED SPURIOUS EMISSIONS 10.6-16GHz Horizontal

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99

Max/Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	0 dB
79 dB μ V	40.36 dB μ V	VBW	3 MHz		
76 dB μ V	15.68617234 GHz	SWT	5 s	Unit	dB μ V



Date: 20.NOV.2018 14:26:53

10600.00 – 16000.00 GHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
1	15686.2	39.4	Average	Horizontal	150	0	43.4	-4.0	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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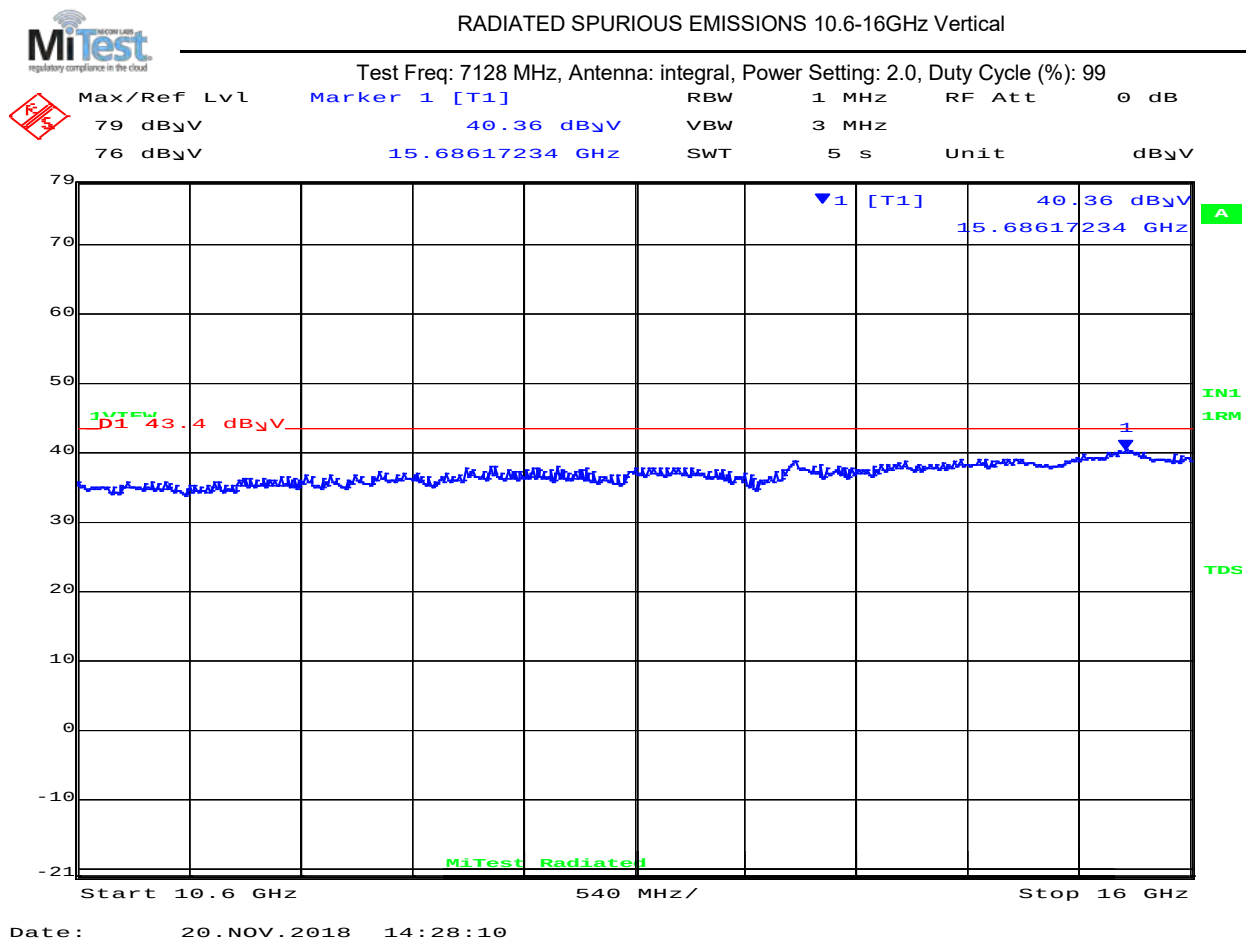


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Equipment Configuration for Spurious Emissions 10.6 – 16.0 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



10600.00 – 16000.00 GHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	15686.2	39.3	Average	Vertical	150	0	43.4	-4.1	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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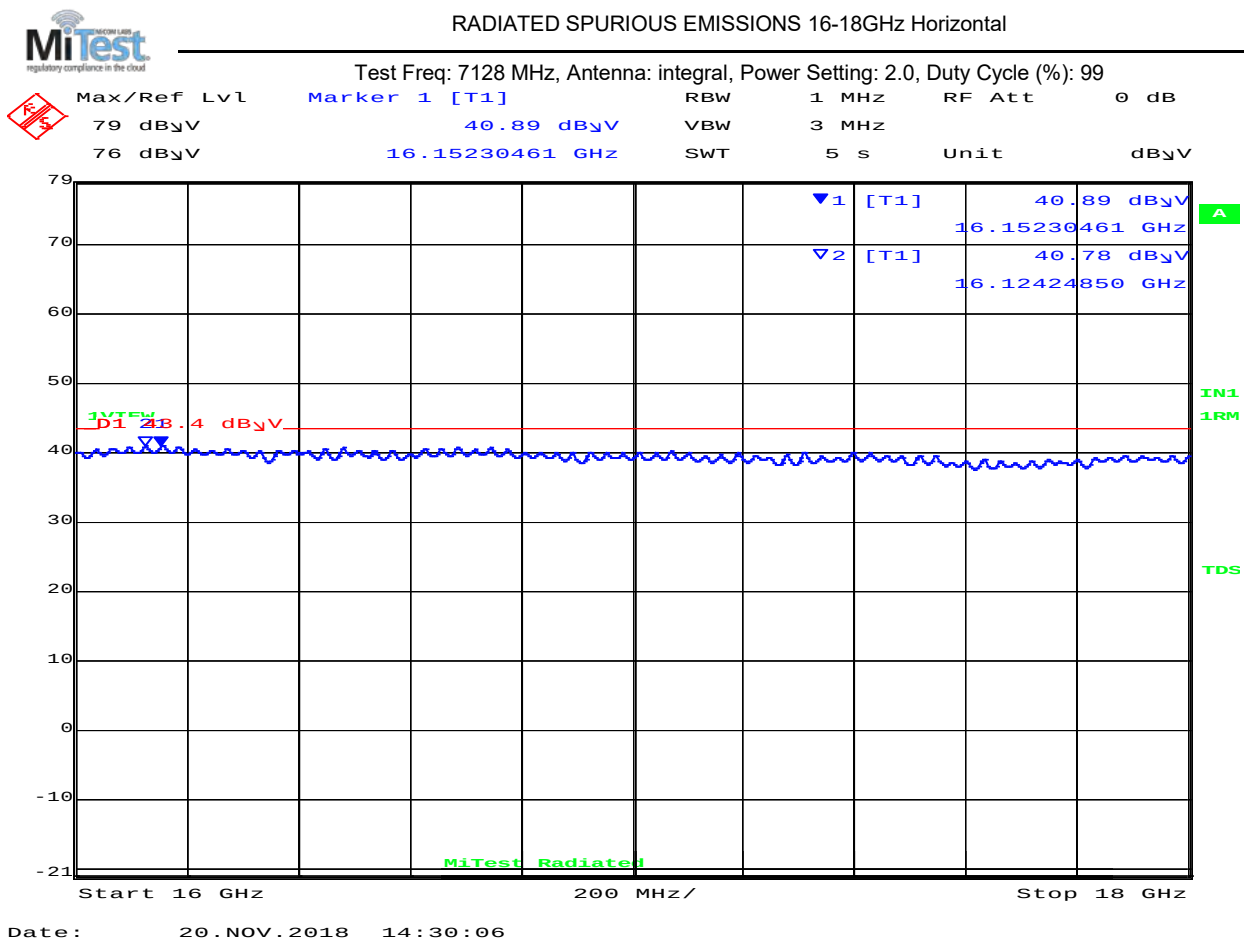


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Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



16000.00 – 18000.00 GHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
1	16152.3	39.9	Average	Horizontal	150	0	43.4	-3.5	Pass
2	16124.2	39.8	Average	Horizontal	150	0	43.4	-3.6	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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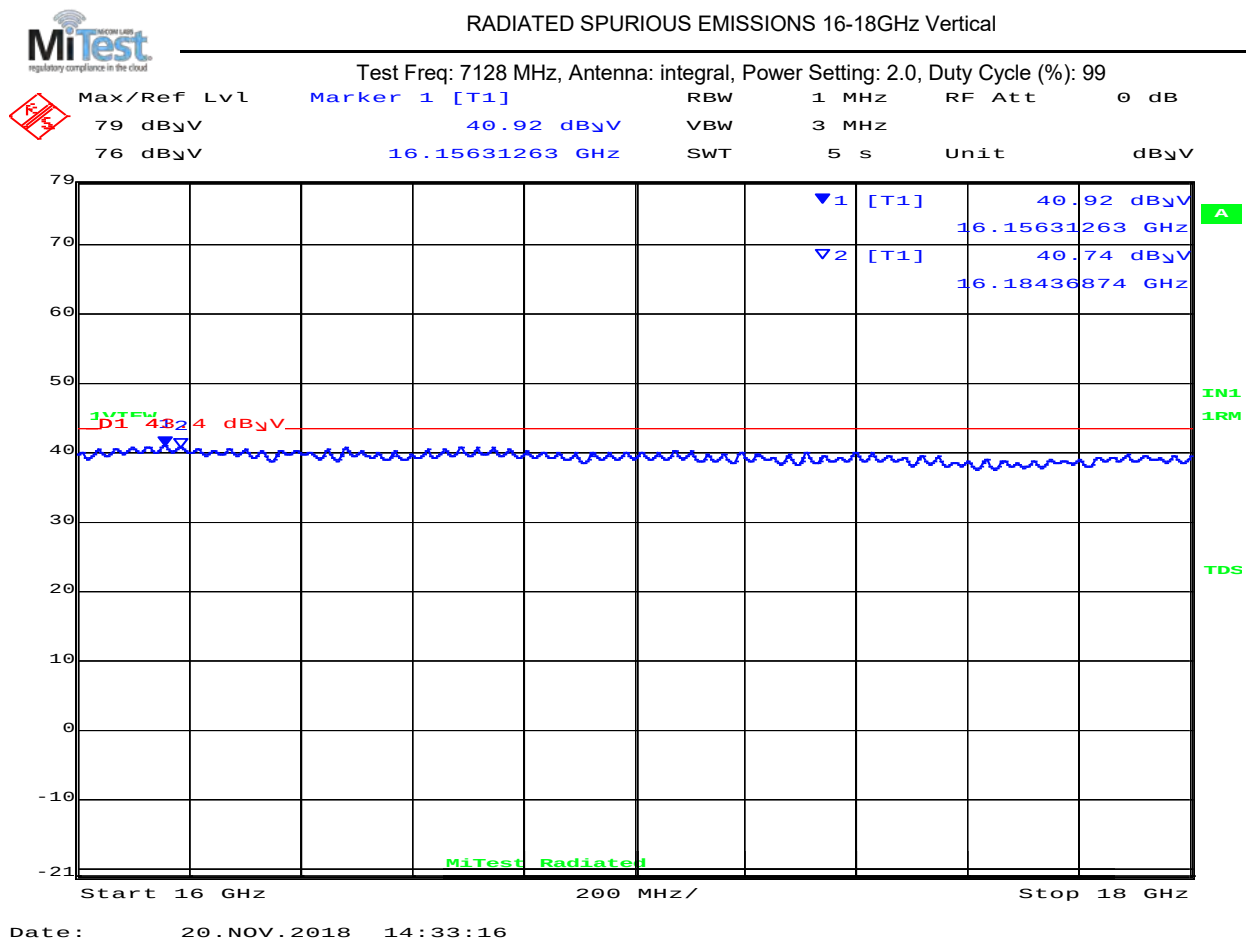


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



16000.00 – 18000.00 GHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	16156.3	39.9	Average	Vertical	150	0	43.4	-3.5	Pass
2	16184.4	39.8	Average	Vertical	150	0	43.4	-3.6	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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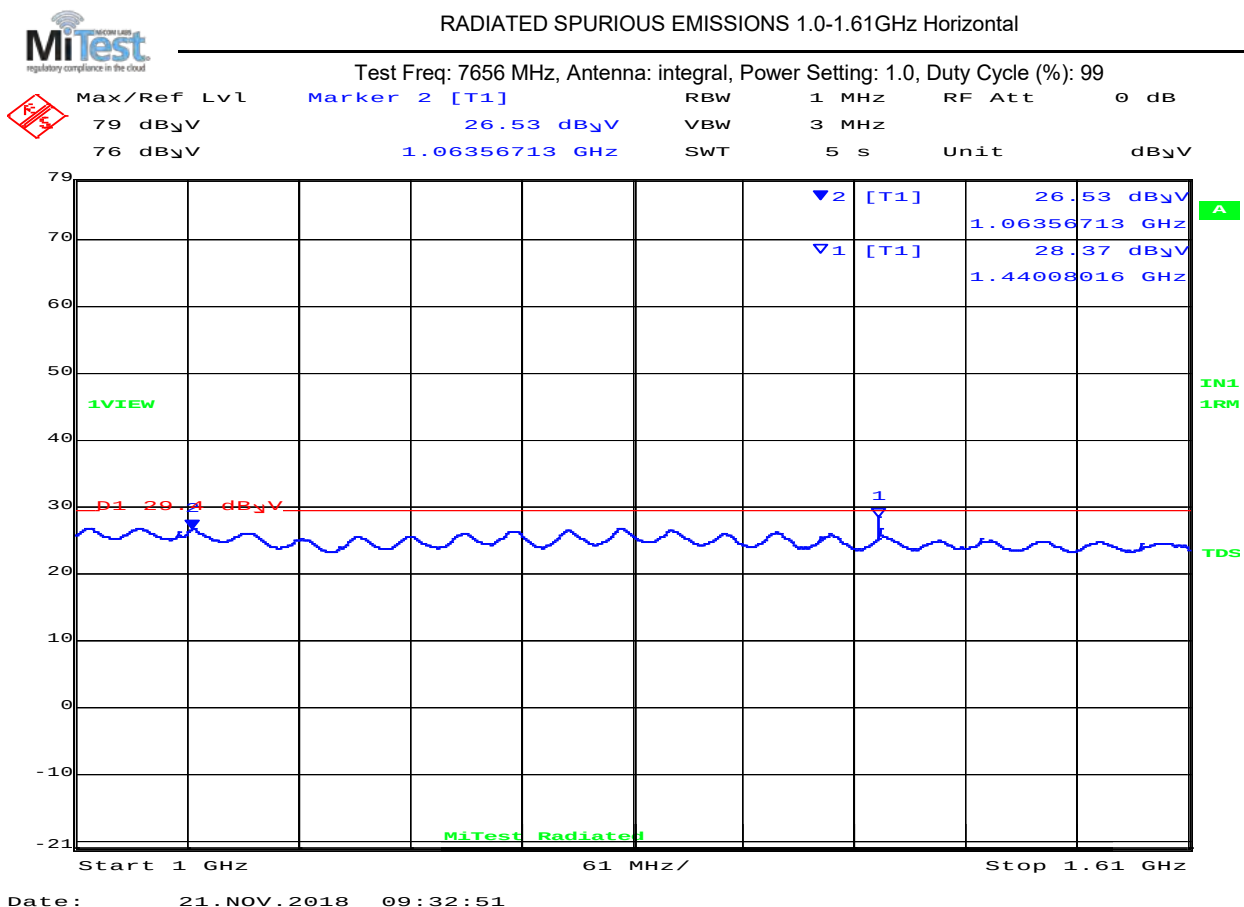
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7656 MHz (Covers Band Group 3 TFC 7 and Band Group 6 TFC 5)

Equipment Configuration for Spurious Emissions 1-1.61 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

Test Measurement Results



1000.00– 1610.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
1	1440.1	28.2	Average	Horizontal	150	0	29.4	-1.2	Pass
2	1063.6	24.5	Average	Horizontal	150	0	29.4	-4.5	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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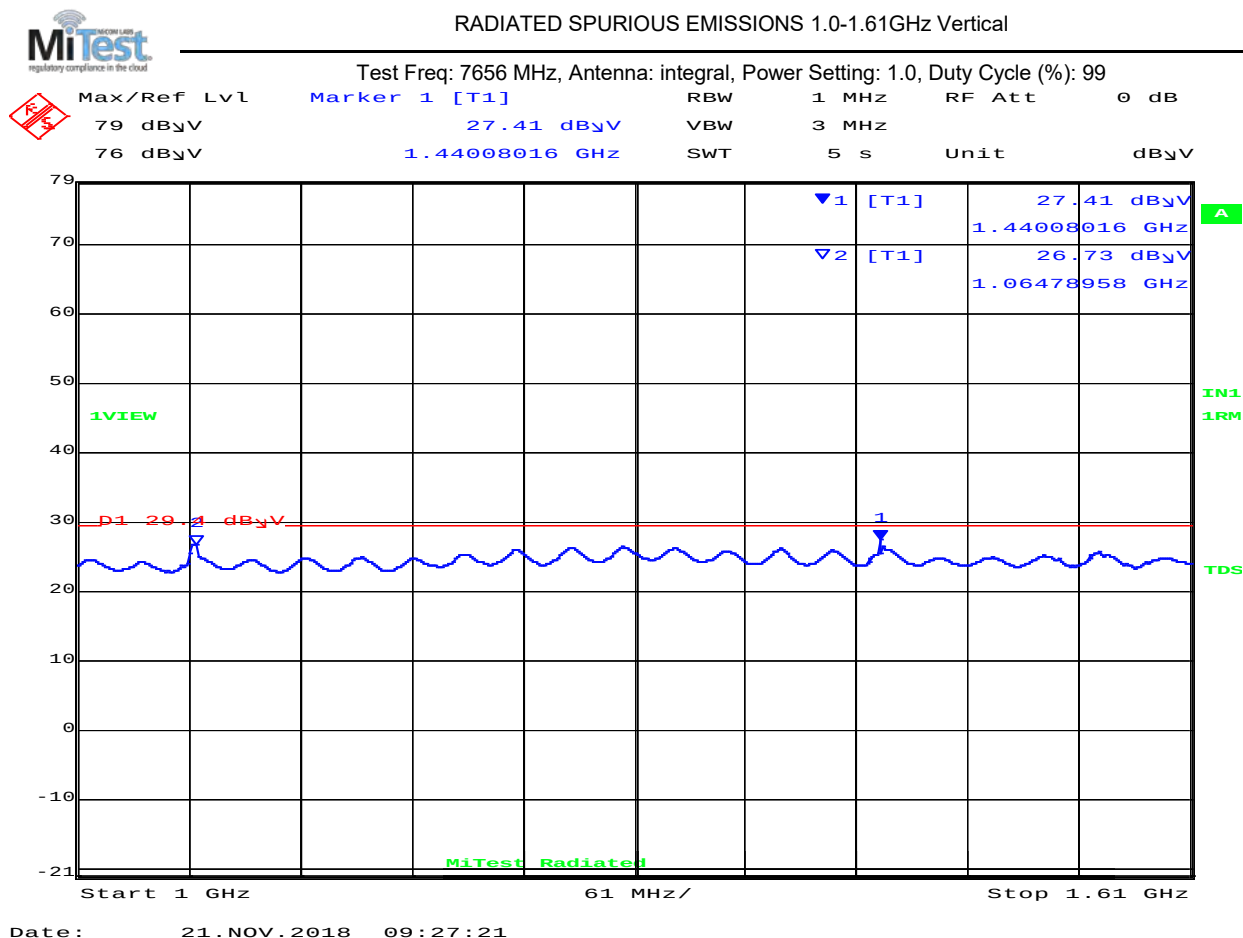


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Equipment Configuration for Spurious Emissions 1-1.61 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

Test Measurement Results



1000.00– 1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	1440.1	26.4	Average	Vertical	150	0	29.4	-3.0	Pass
2	1064.8	24.5	Average	Vertical	150	0	29.4	-4.9	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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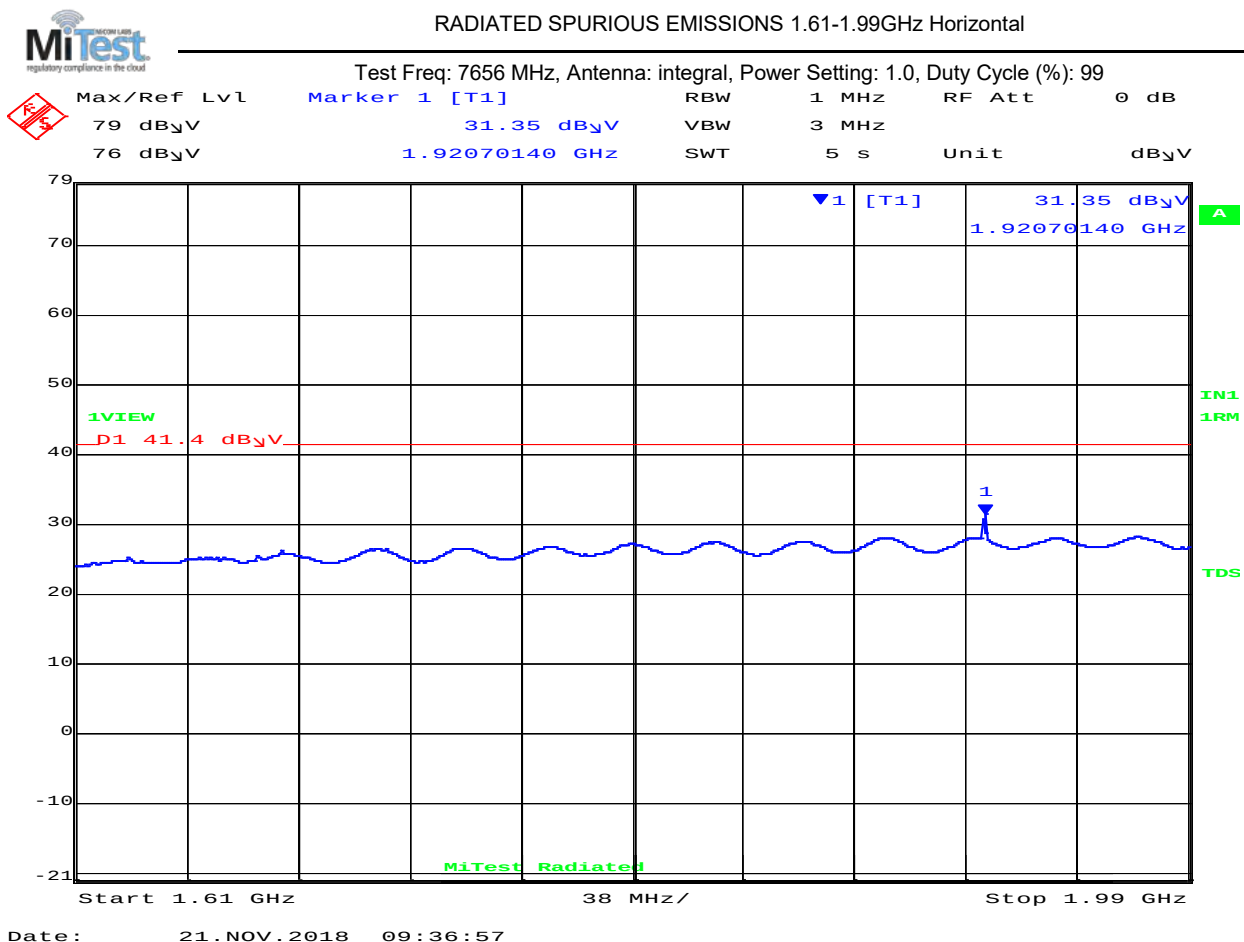


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Equipment Configuration for Spurious Emissions 1.61 - 1.99 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

Test Measurement Results



1610.00 – 1990.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals found within 6 dB of limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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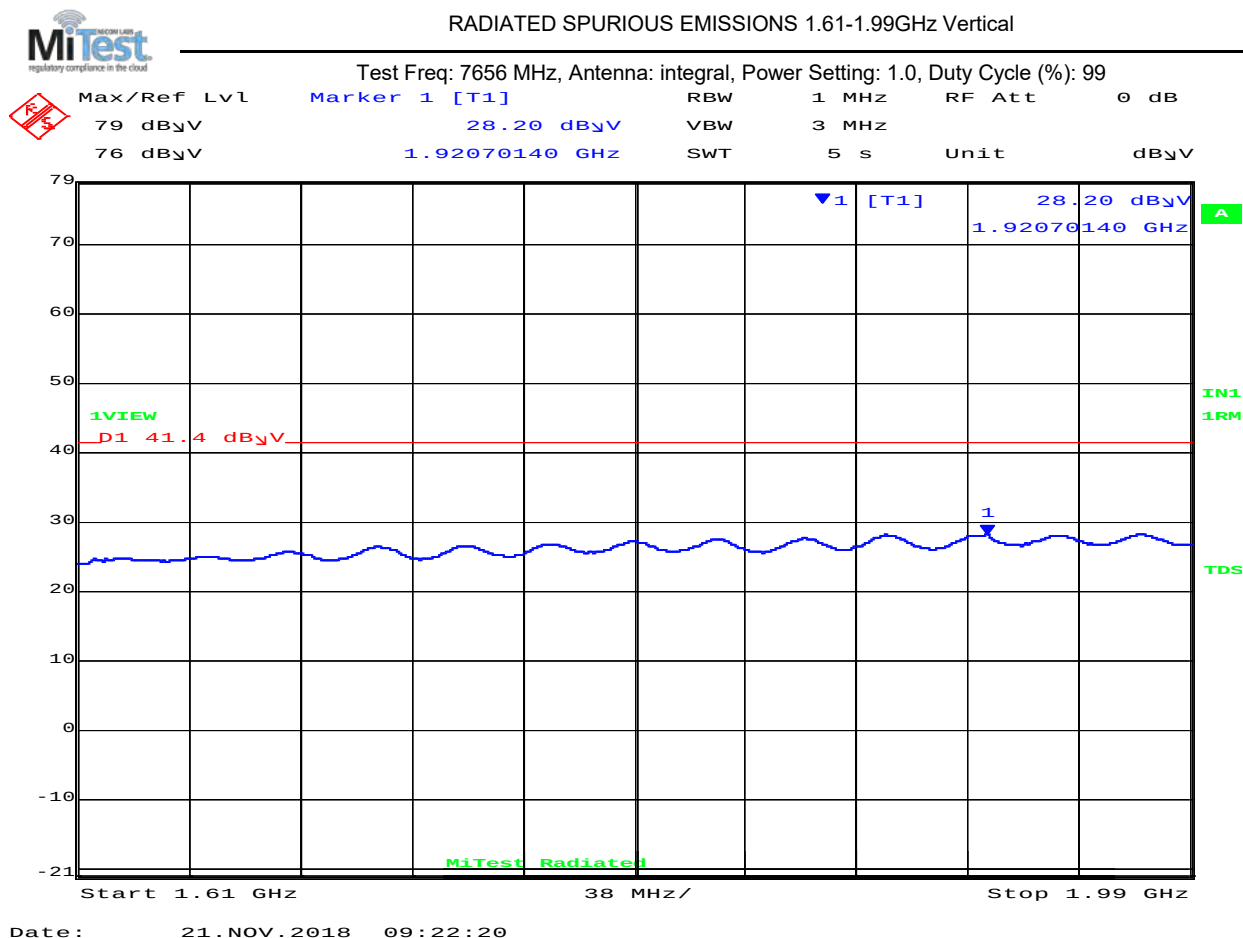


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Equipment Configuration for Spurious Emissions 1.61 – 1.99 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

Test Measurement Results



1610.00 – 1990.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals found within 6 dB of limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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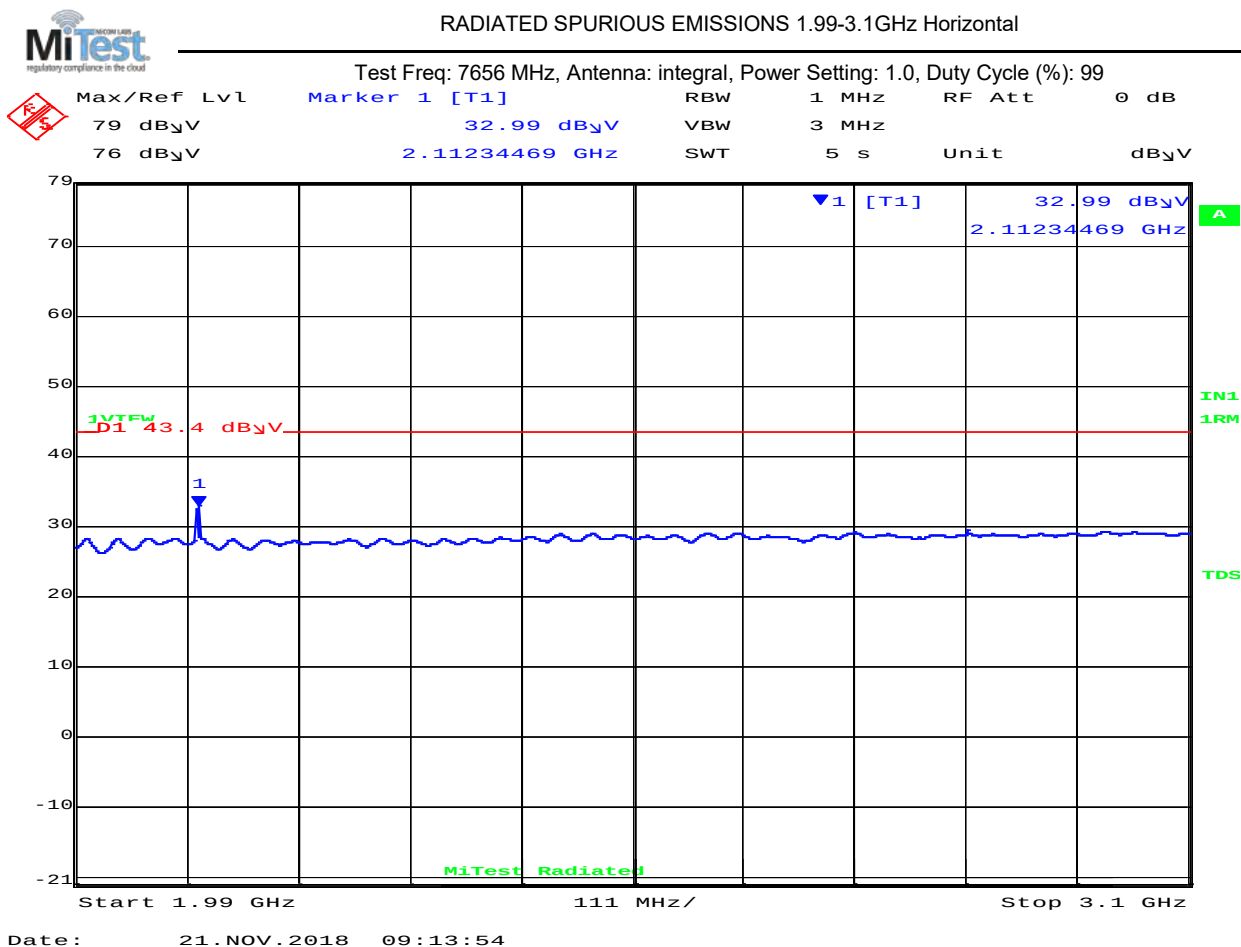


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Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

Test Measurement Results



1990.00 – 3100.00 GHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals found within 6 dB of limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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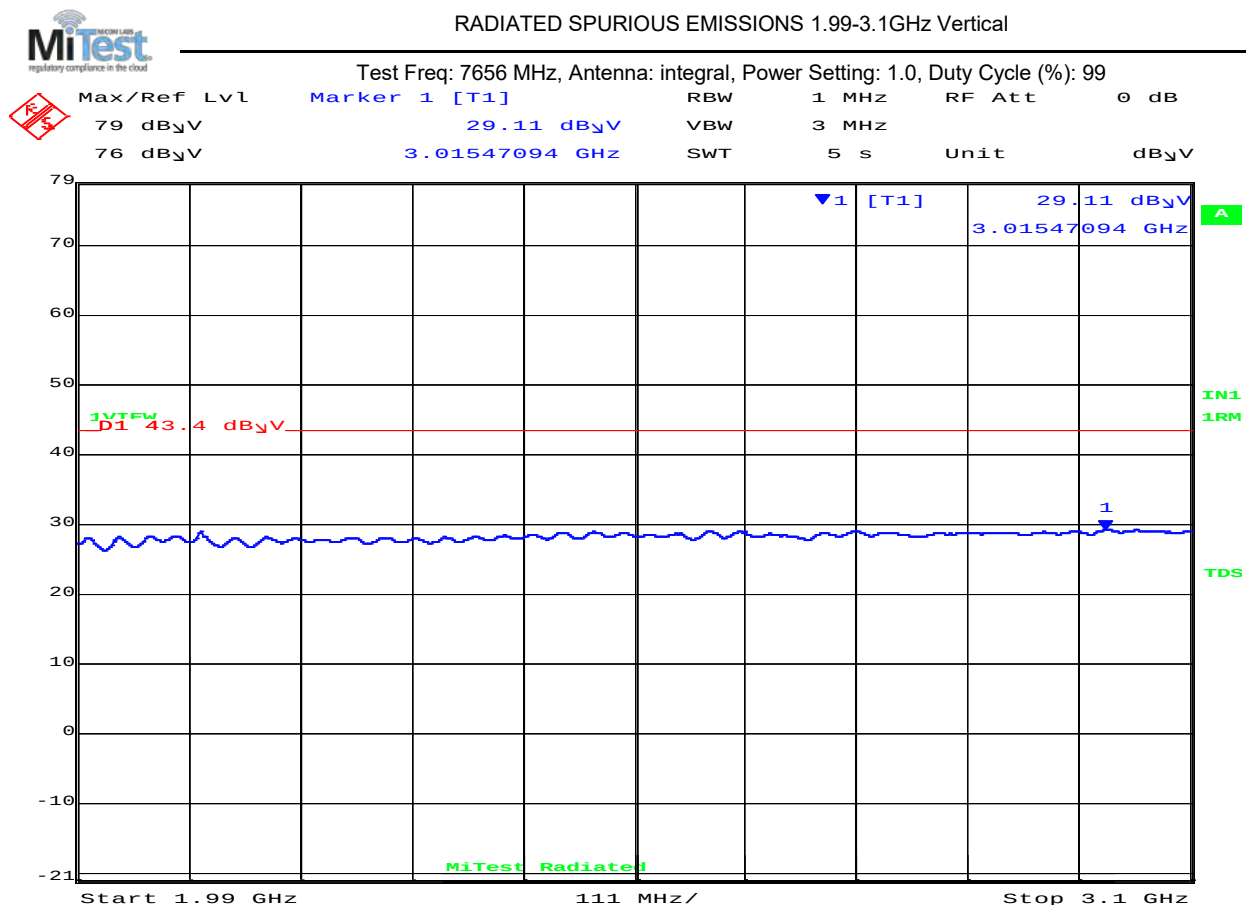


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Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

Test Measurement Results



Date: 21.NOV.2018 09:12:31

1990.00 – 3100.00 GHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals found within 6 dB of limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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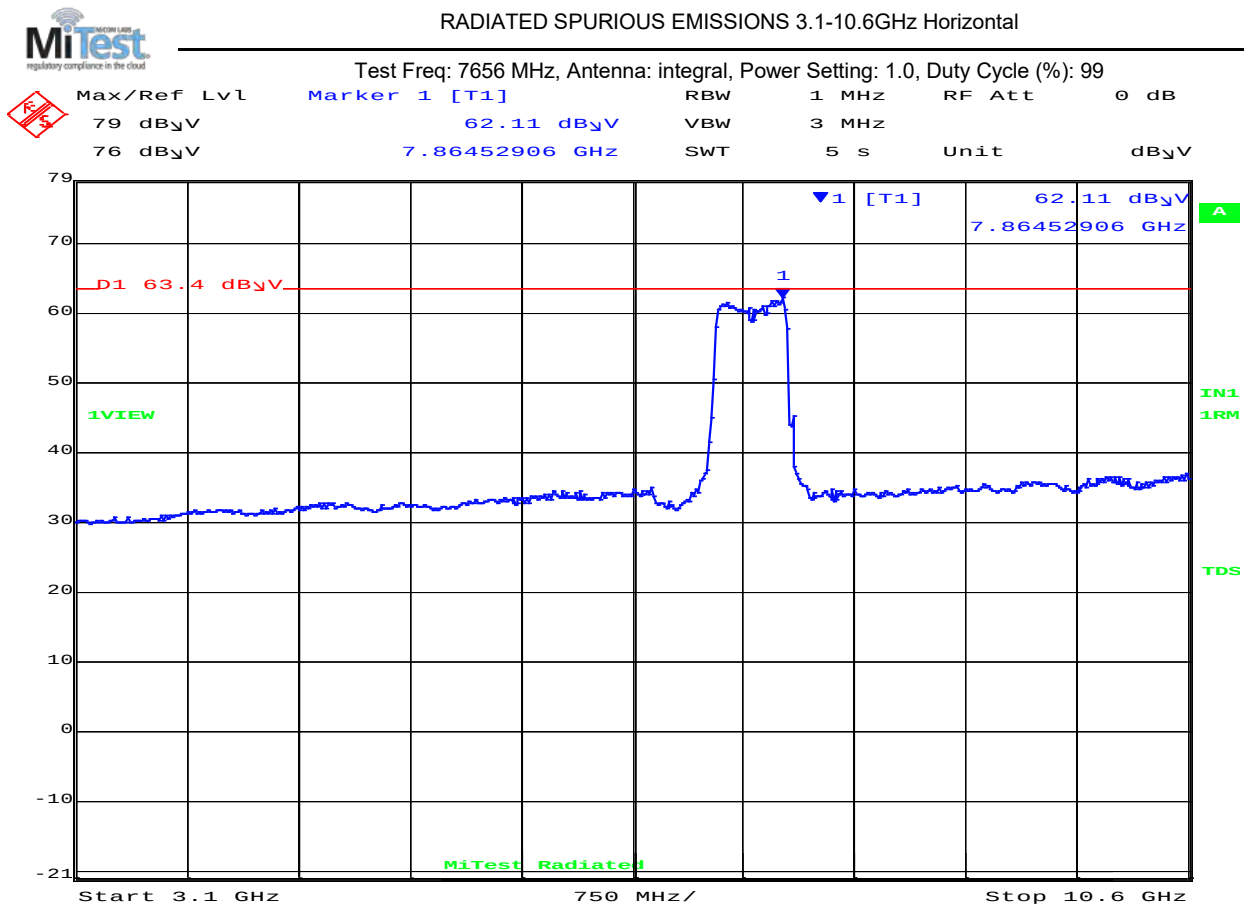


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

Test Measurement Results



Date: 21.NOV.2018 08:45:41

3100.00 - 10600.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
1	7864.5	60.5	Average	Horizontal	150	0	63.4	-2.9	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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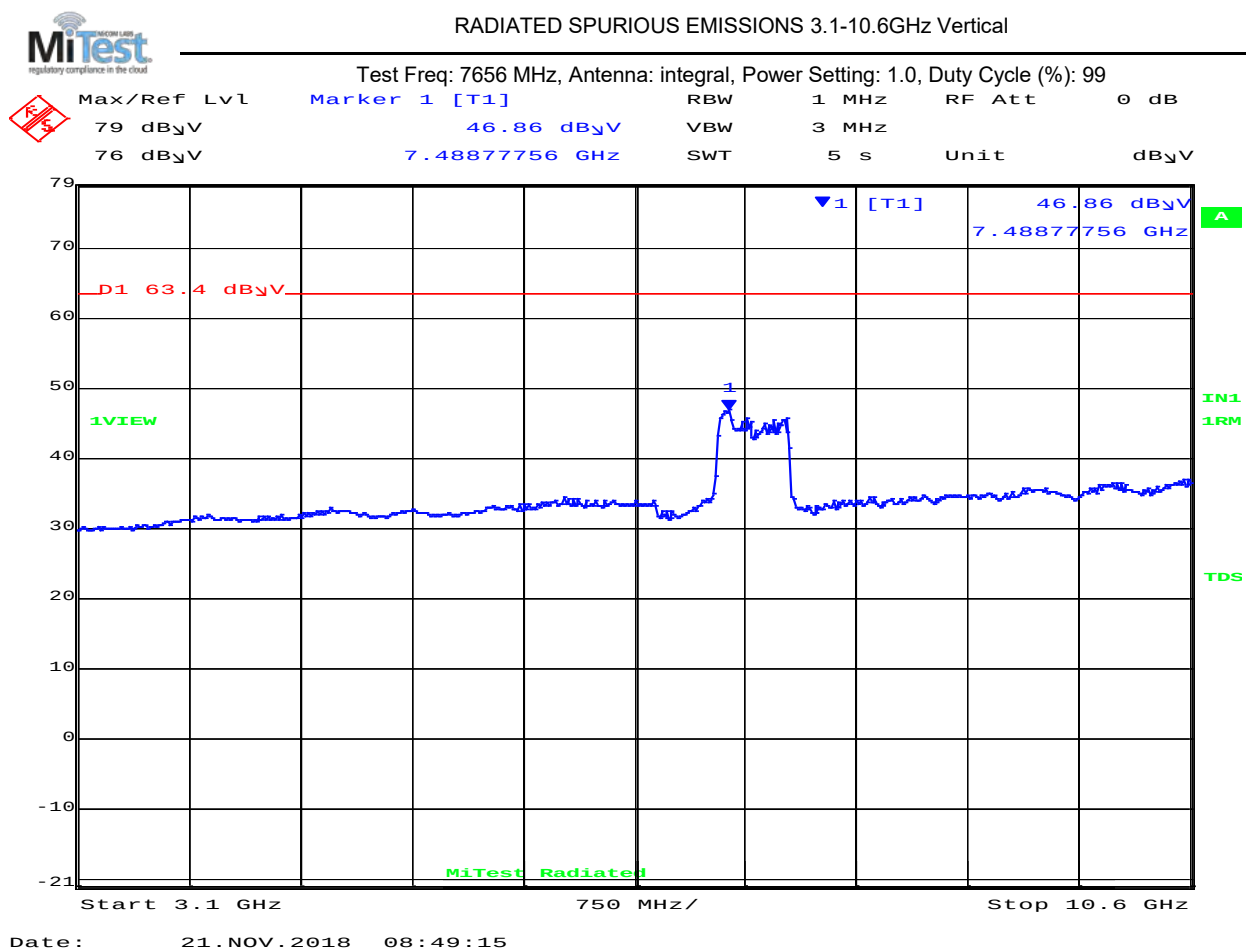


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
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Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

Test Measurement Results



3100.00 - 10600.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals found within 6 dB of limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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Equipment Configuration for Spurious Emissions 10.6 – 16.0 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

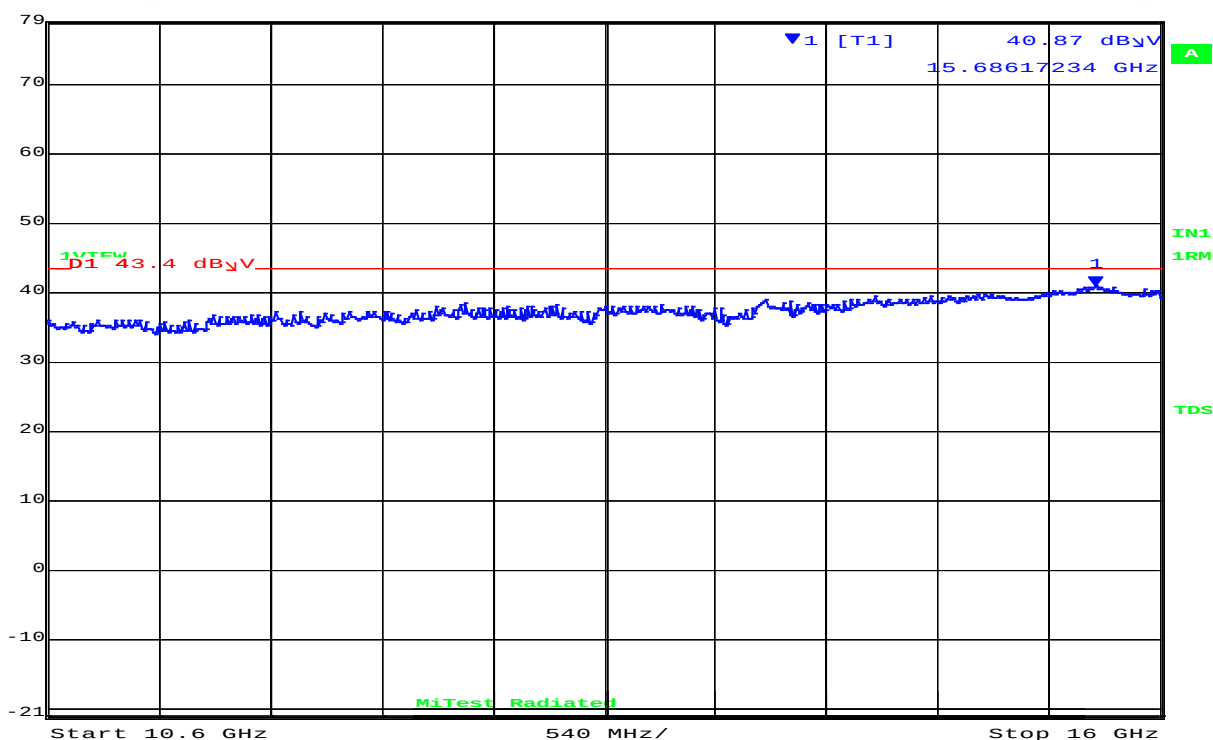
Test Measurement Results



RADIATED SPURIOUS EMISSIONS 10.6-16GHz Horizontal

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99

Max/Ref Lvl Marker 1 [T1] RBW 1 MHz RF Att 0 dB
79 dBμV 40.87 dBμV VBW 3 MHz
76 dBμV 15.68617234 GHz SWT 5 s Unit dBμV



Date: 21.NOV.2018 09:02:36

10600.00 – 16000.00 GHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	15686.2	39.7	Average	Horizontal	150	0	43.4	-3.70	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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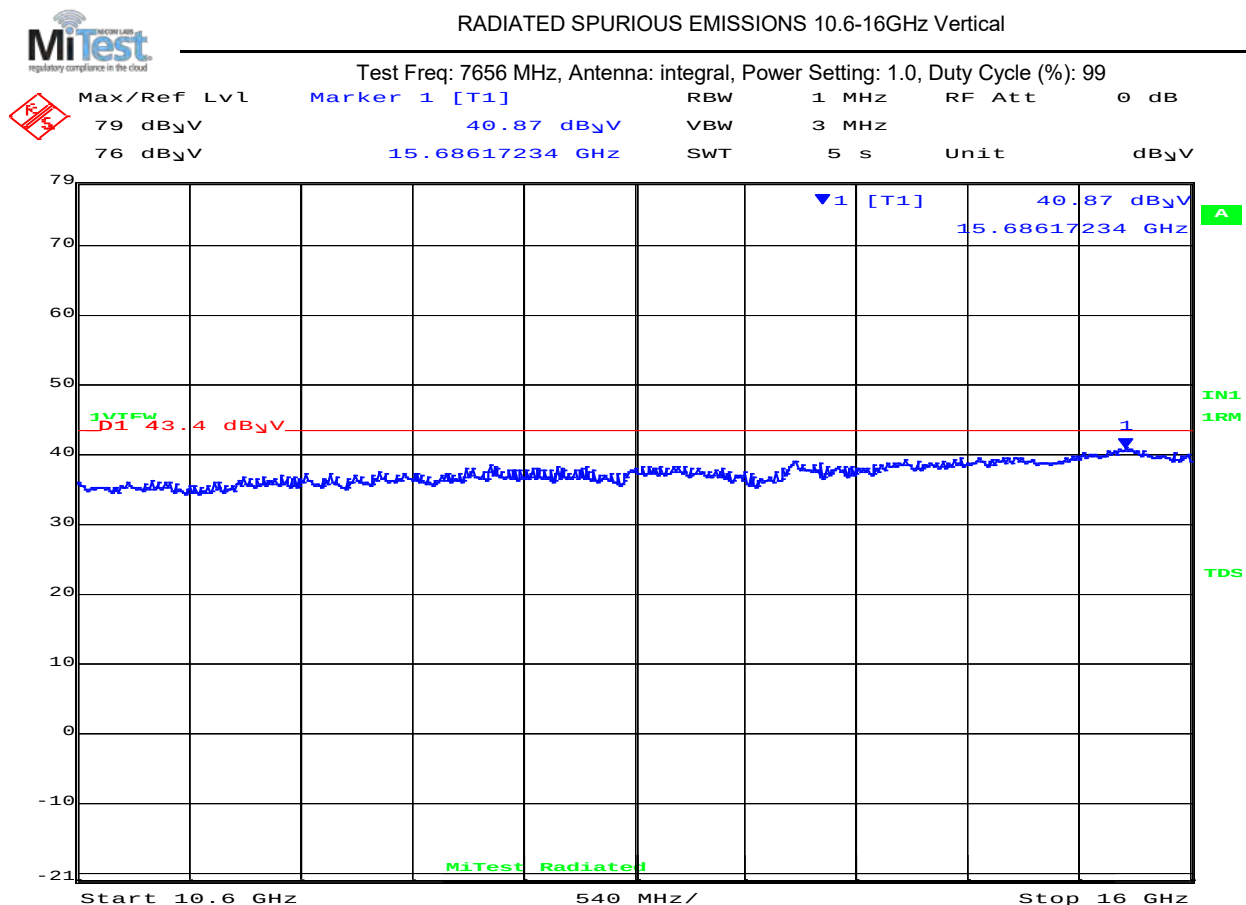


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Equipment Configuration for Spurious Emissions 10.6 – 16.0 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

Test Measurement Results



Date: 21.NOV.2018 08:59:03

10600.00 – 16000.00 GHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
1	15686.2	39.6	Average	Vertical	150	0	43.4	-3.8	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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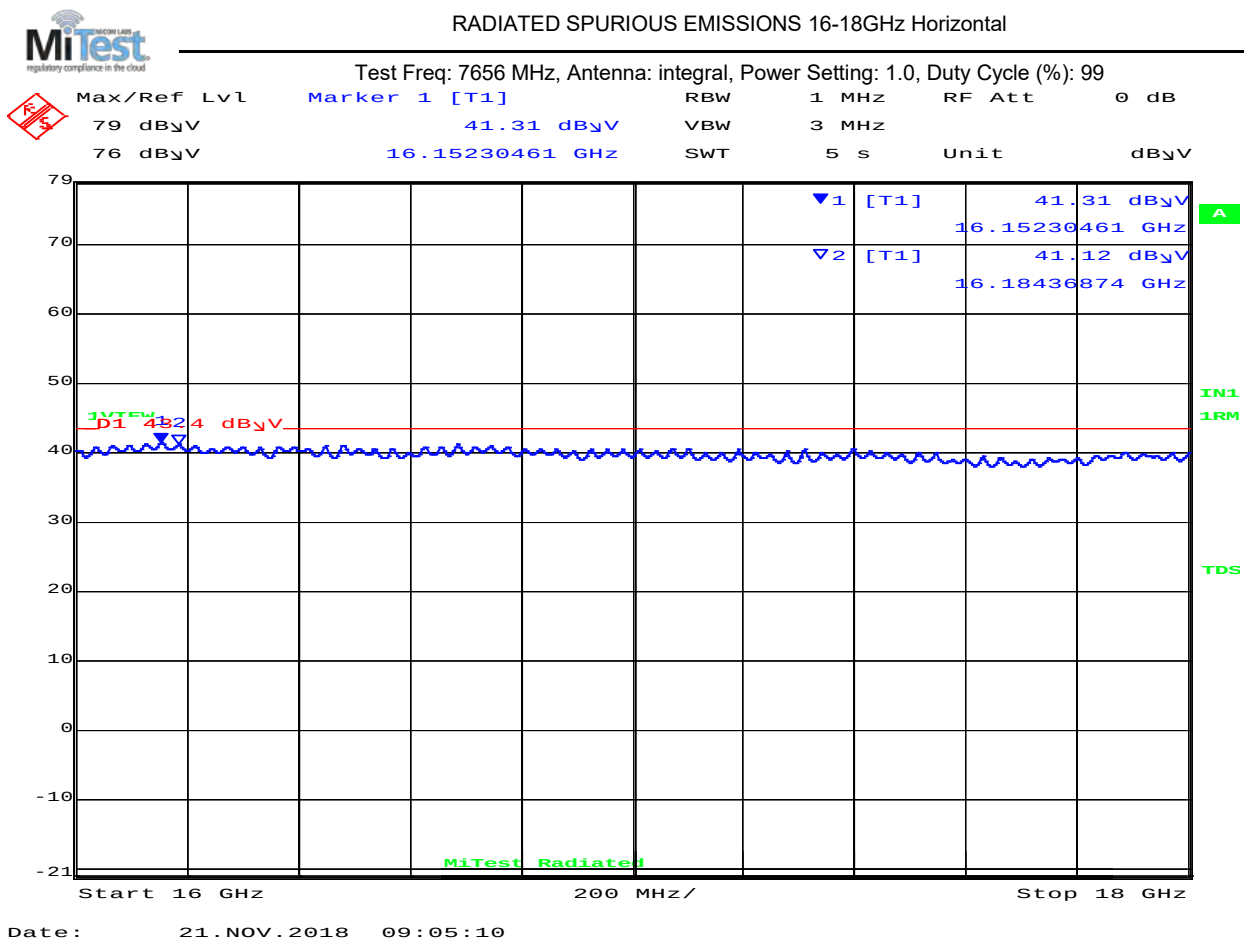


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Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

Test Measurement Results



16000.00 – 18000.00 GHz

Num	Frequency MHz	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	16152.3	40.3	Average	Horizontal	150	0	43.4	-3.1	Pass
2	16184.4	40.2	Average	Horizontal	150	0	43.4	-3.2	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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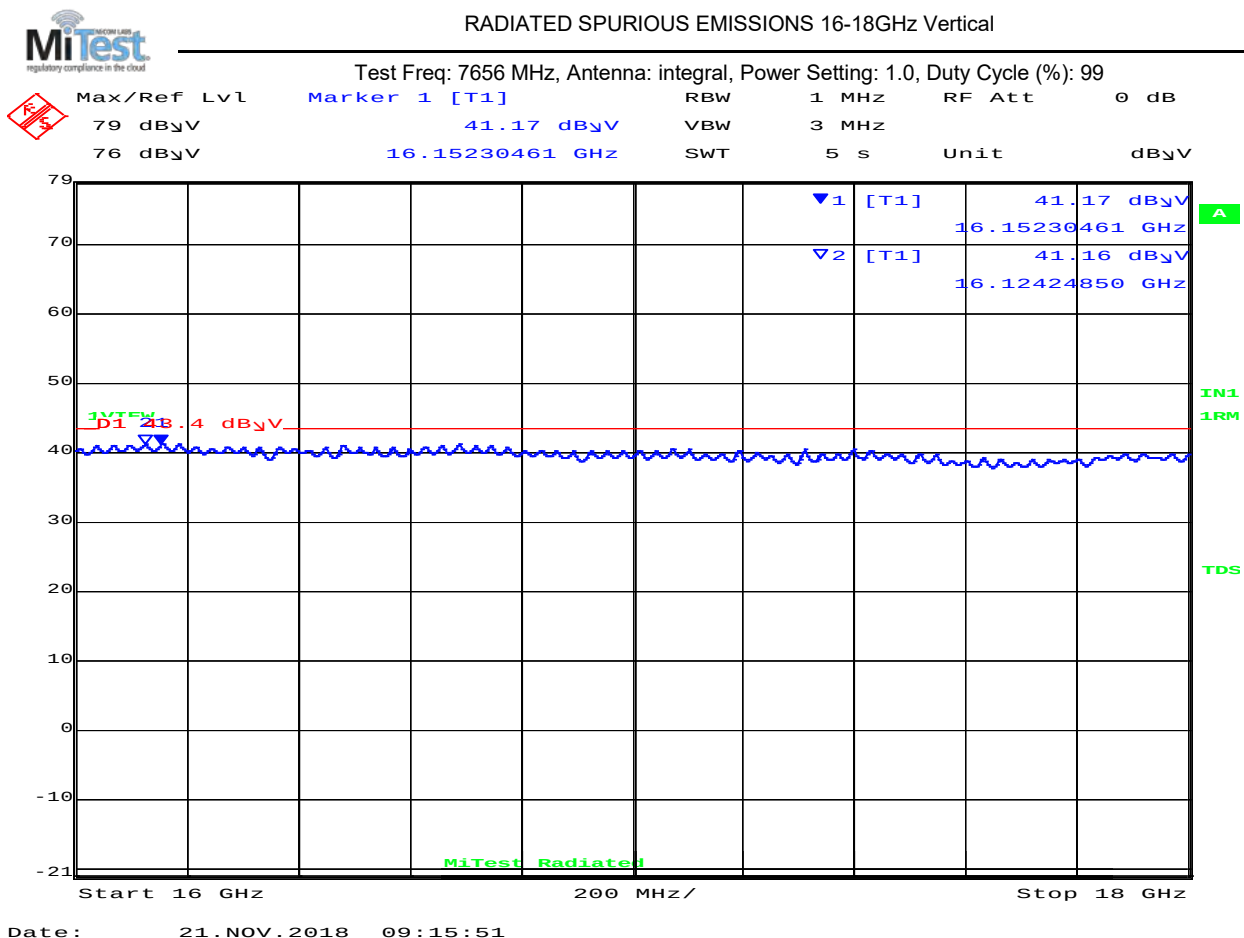


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

Test Measurement Results



16000.00 – 18000.00 GHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	16152.3	40.2	Average	Vertical	150	0	43.4	-3.2	Pass
2	16124.2	40.1	Average	Vertical	150	0	43.4	-3.3	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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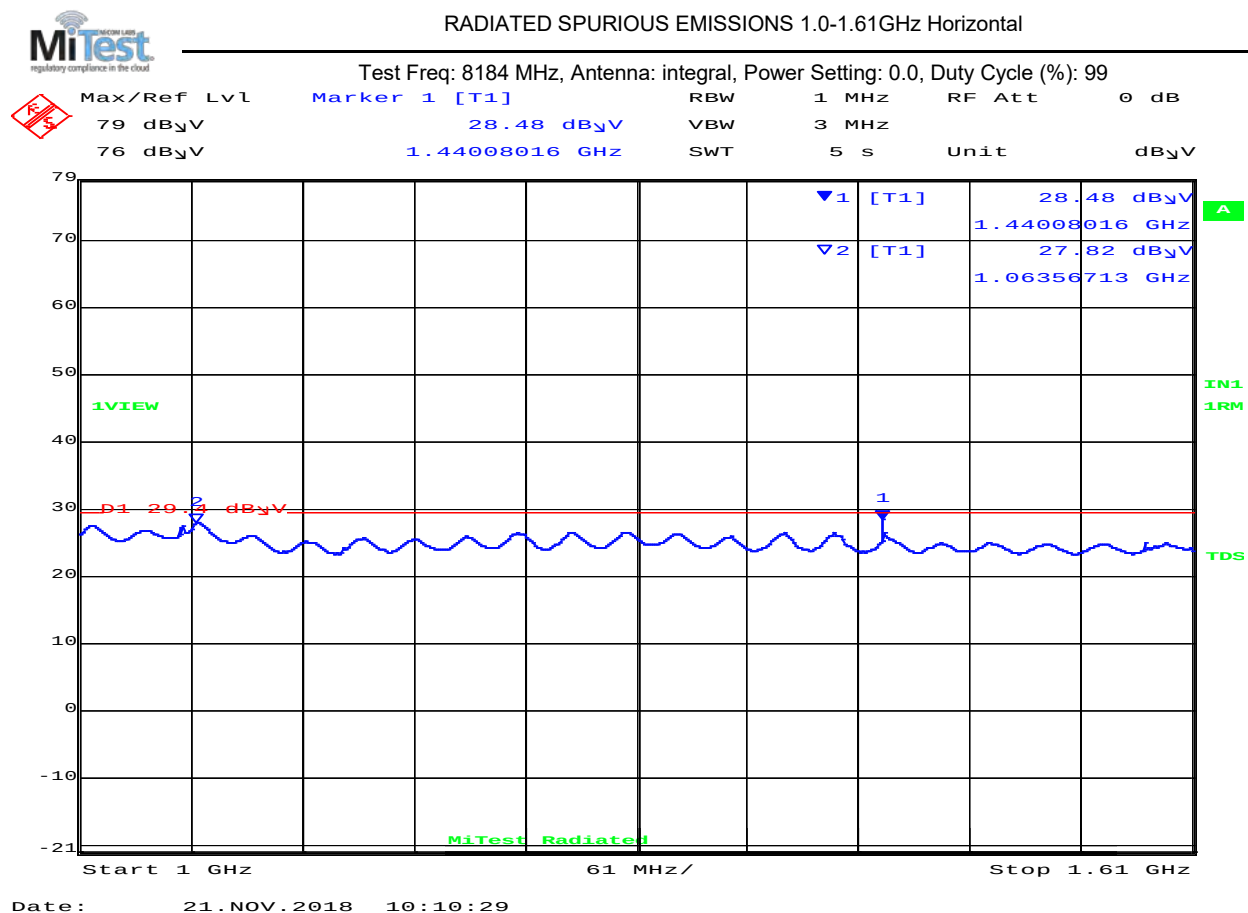
Title: Alereon AL5955, AL5930, AL5934
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8184 MHz

Equipment Configuration for Spurious Emissions 1-1.61 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



1000.00– 1610.00 MHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	1440.1	24.2	Average	Horizontal	150	0	29.4	-5.2	Pass
2	1063.6	25.4	Average	Horizontal	150	0	29.4	-4.0	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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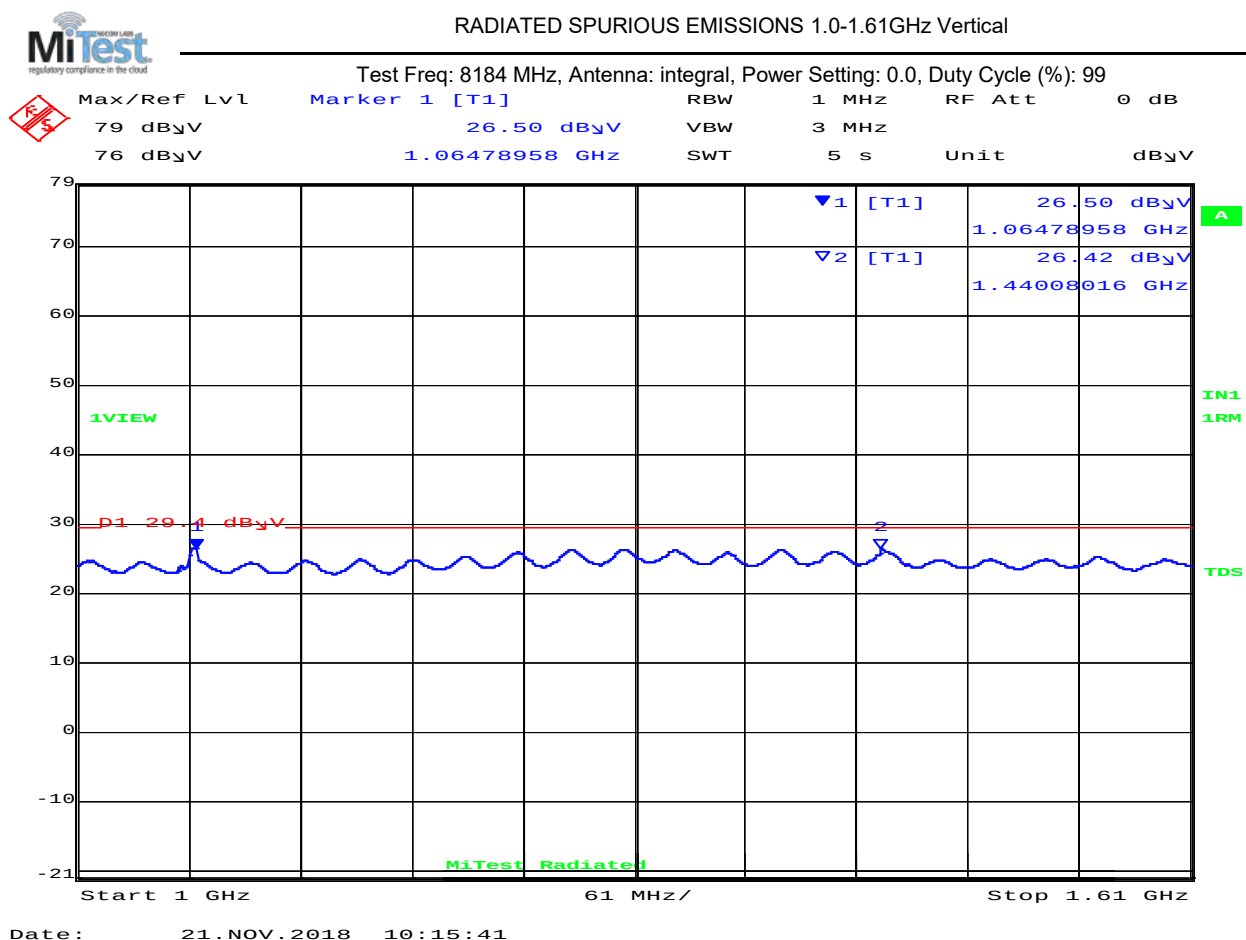


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 1-1.61 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



1000.00– 1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	1064.8	24.3	Average	Vertical	150	0	29.4	-5.1	Pass
2	1440.1	25.3	Average	Vertical	150	0	29.4	-4.1	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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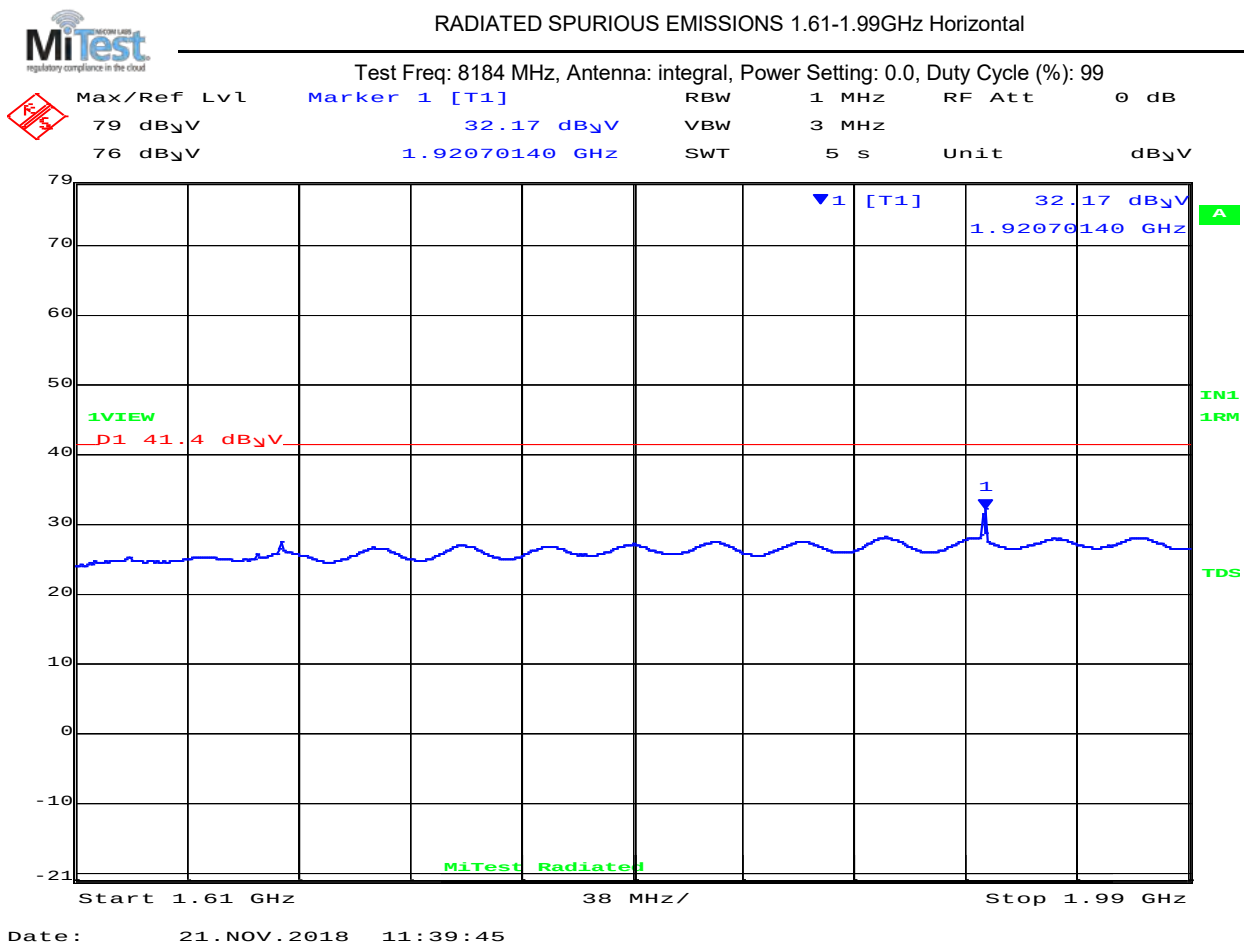


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Equipment Configuration for Spurious Emissions 1.61 - 1.99 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



1610.00 – 1990.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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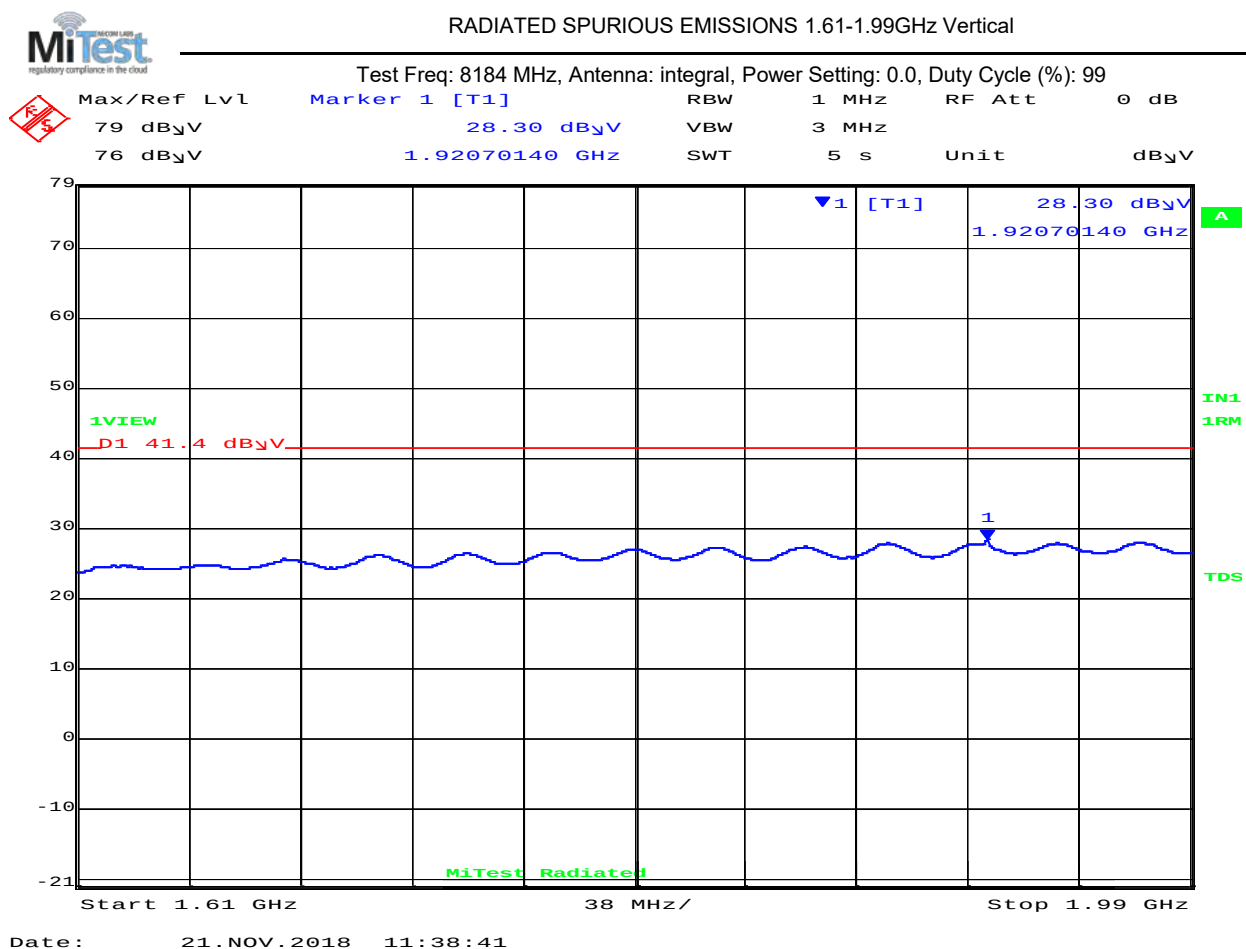


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Equipment Configuration for Spurious Emissions 1.61 – 1.99 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



1610.00 – 1990.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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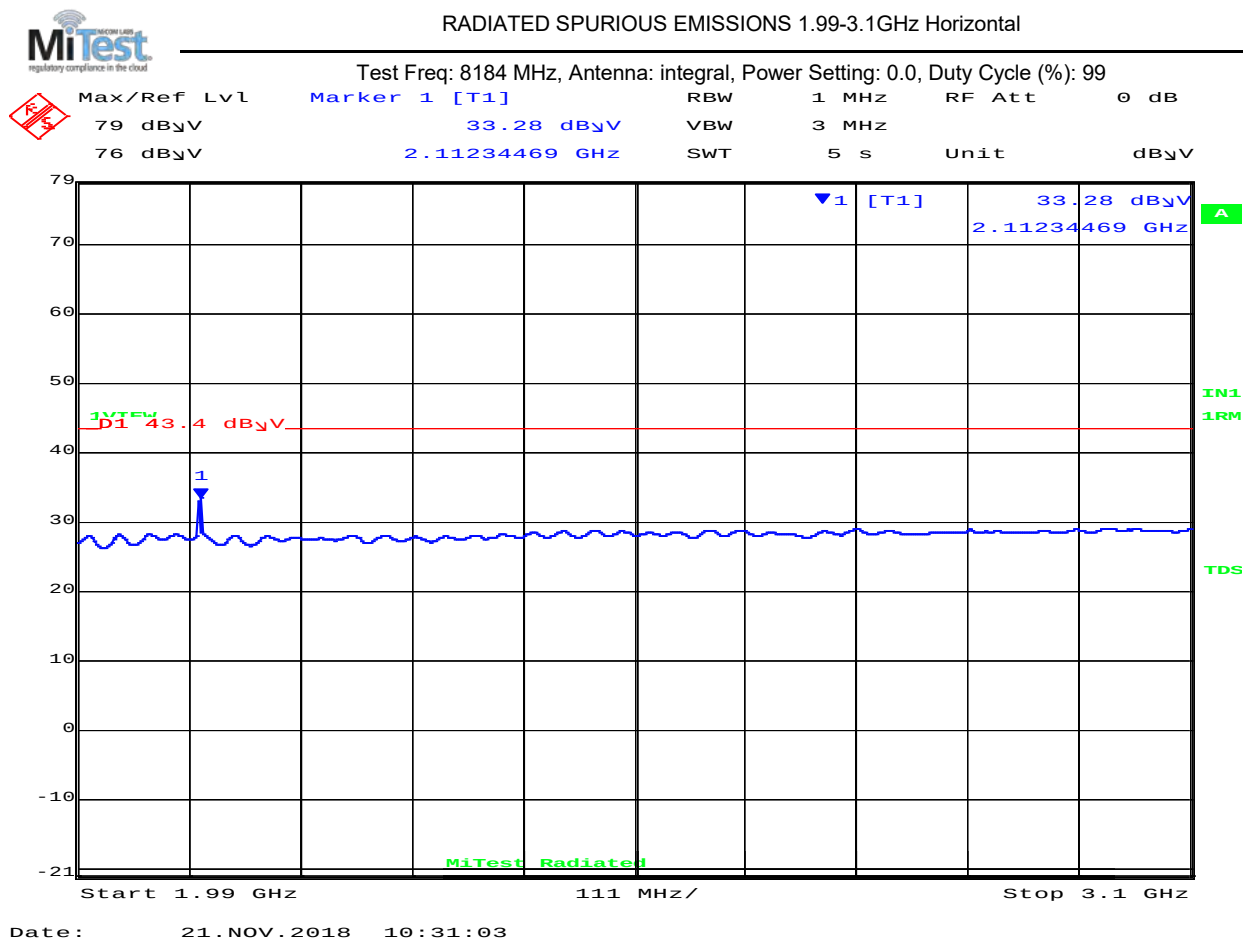


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Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



1990.00 – 3100.00 GHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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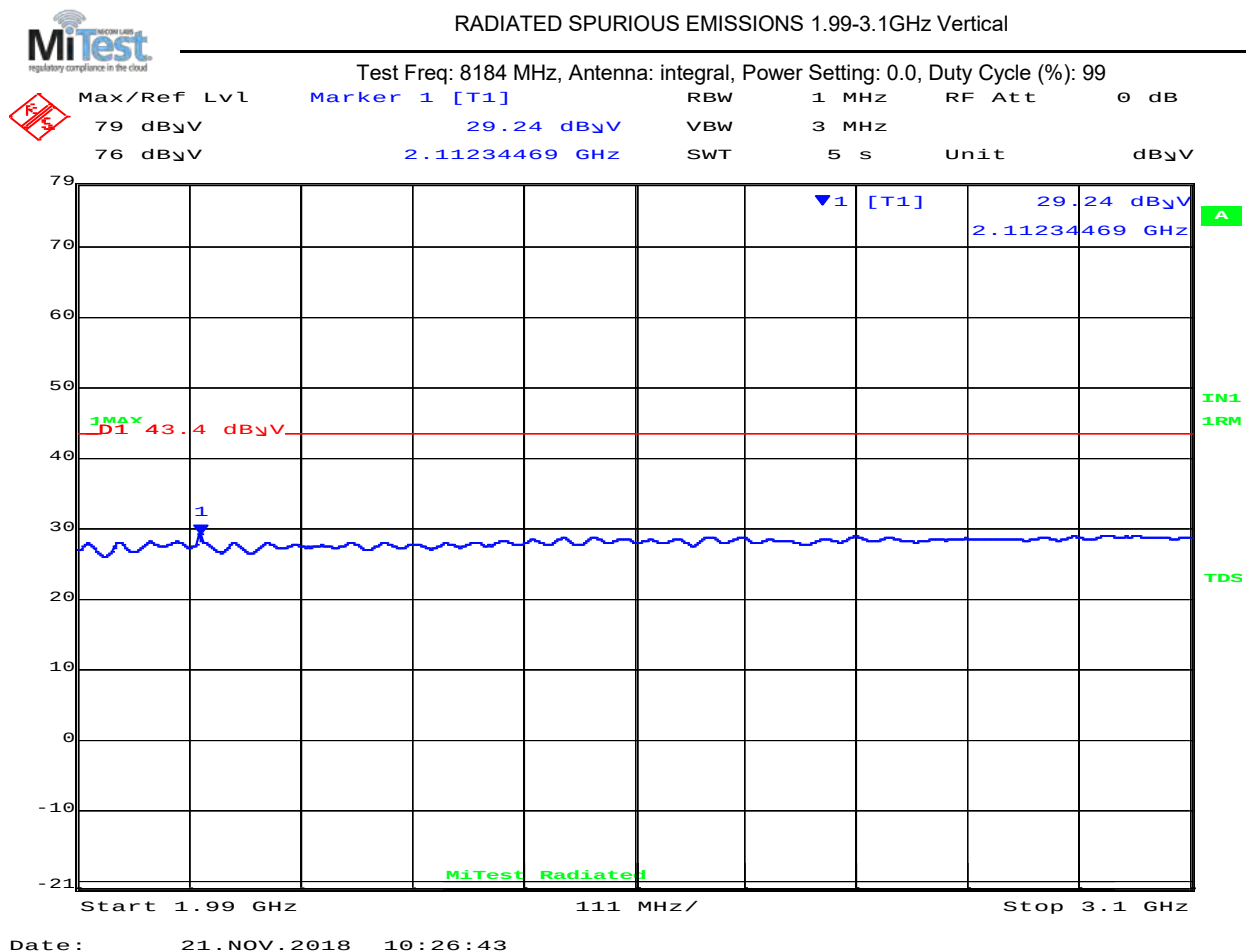


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Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



1990.00 – 3100.00 GHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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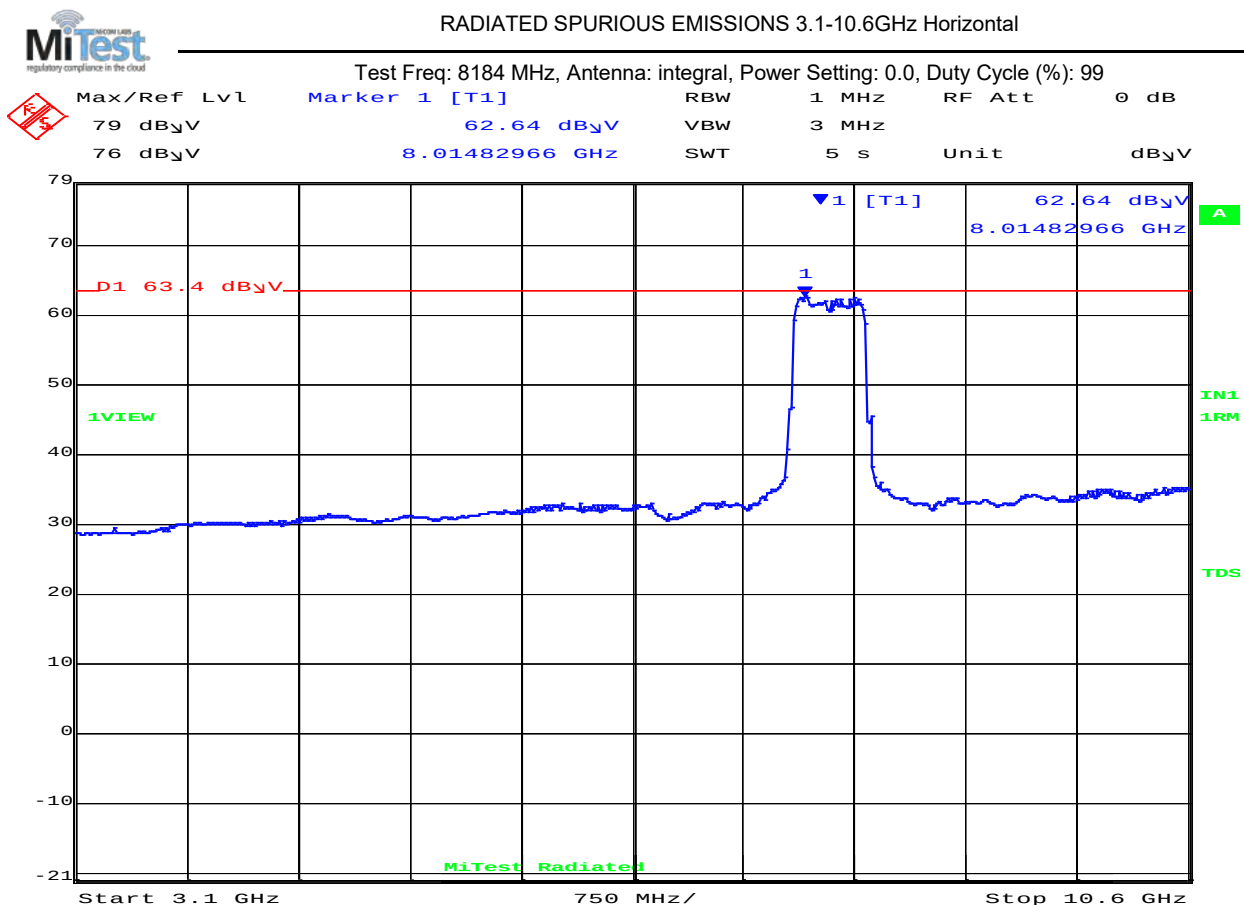


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Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



Date: 21.NOV.2018 10:20:31

3100.00 - 10600.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
1	8014.8	62.2	Average	Horizontal	150	0	63.4	-1.2	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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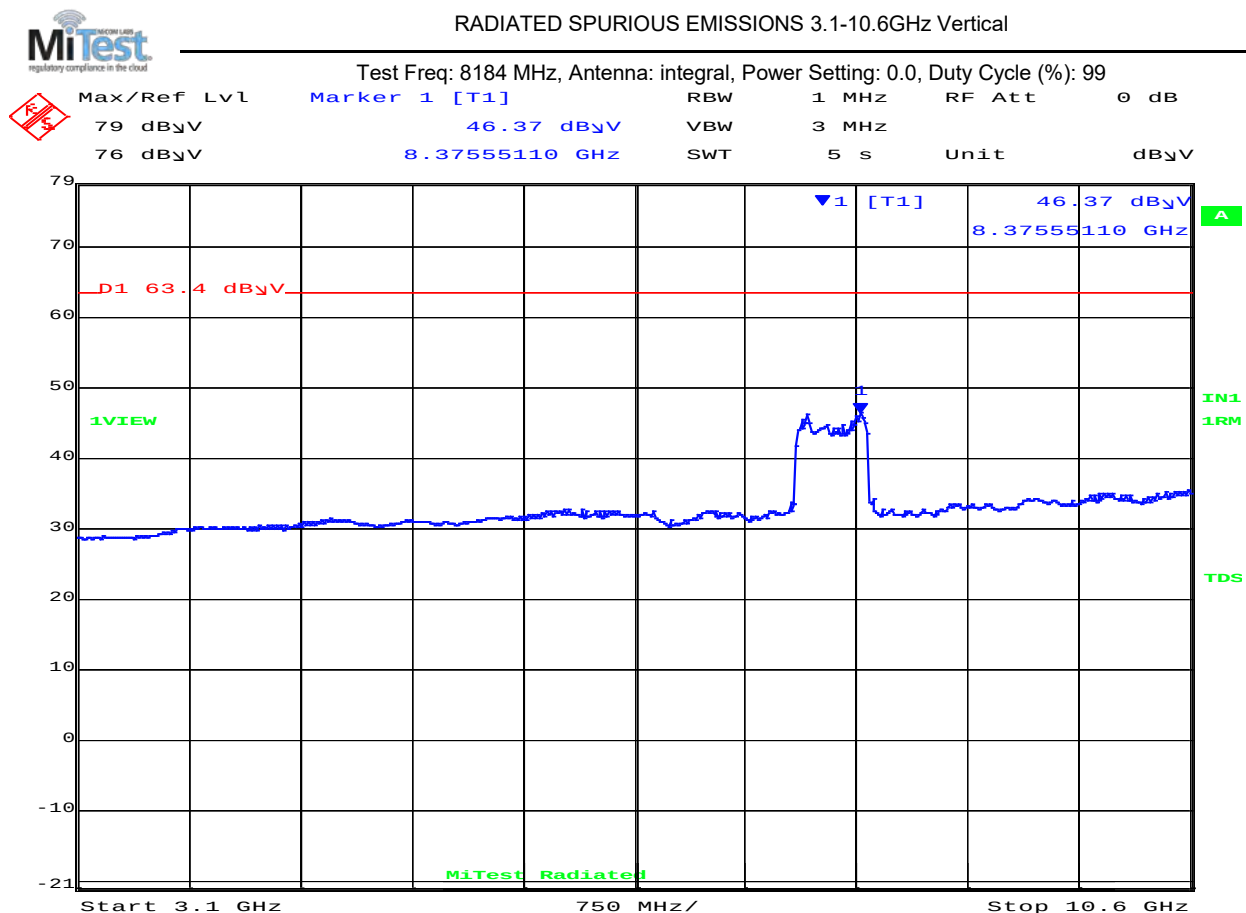


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Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



Date: 21.NOV.2018 10:23:16

3100.00 - 10600.00 MHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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Equipment Configuration for Spurious Emissions 10.6 – 16.0 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

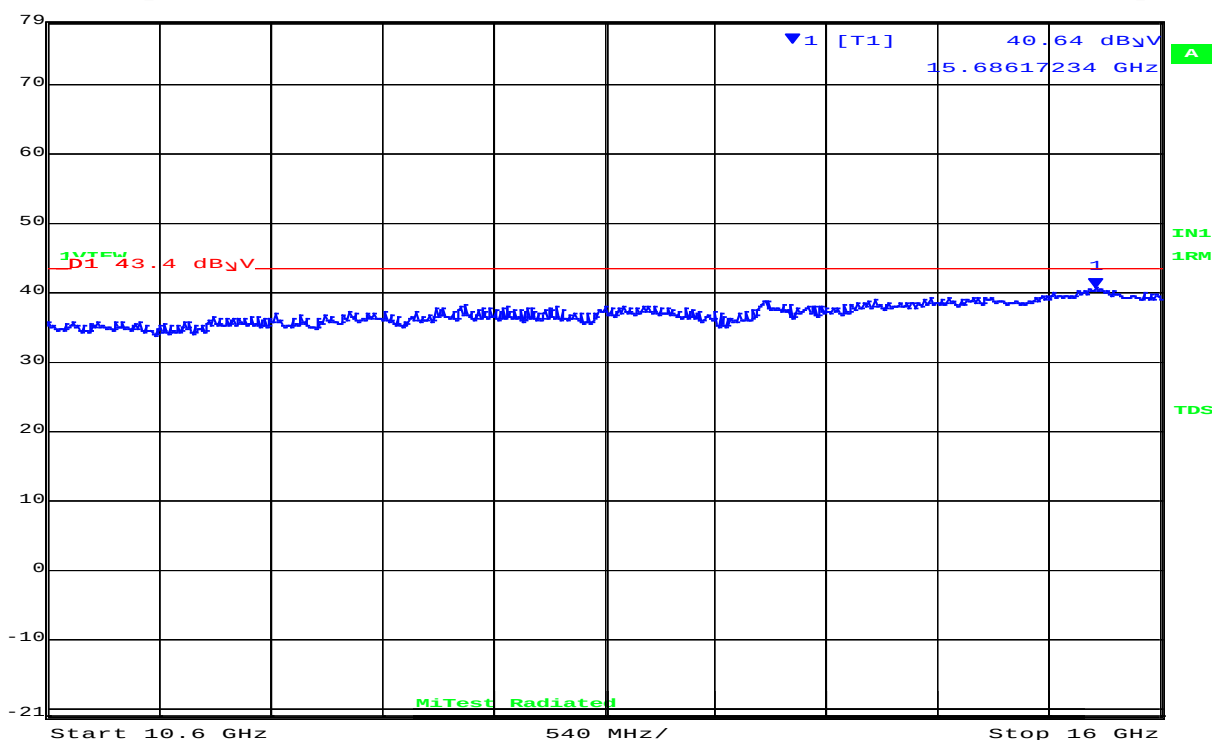
Test Measurement Results



RADIATED SPURIOUS EMISSIONS 10.6-16GHz Horizontal

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99

Max/Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	0 dB
79 dB μ V	40.64 dB μ V	VBW	3 MHz		
76 dB μ V	15.68617234 GHz	SWT	5 s	Unit	dB μ V



Date: 21. NOV. 2018 10:32:45

10600.00 – 16000.00 GHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
1	15686.2	39.5	Average	Horizontal	150	0	43.4	-3.9	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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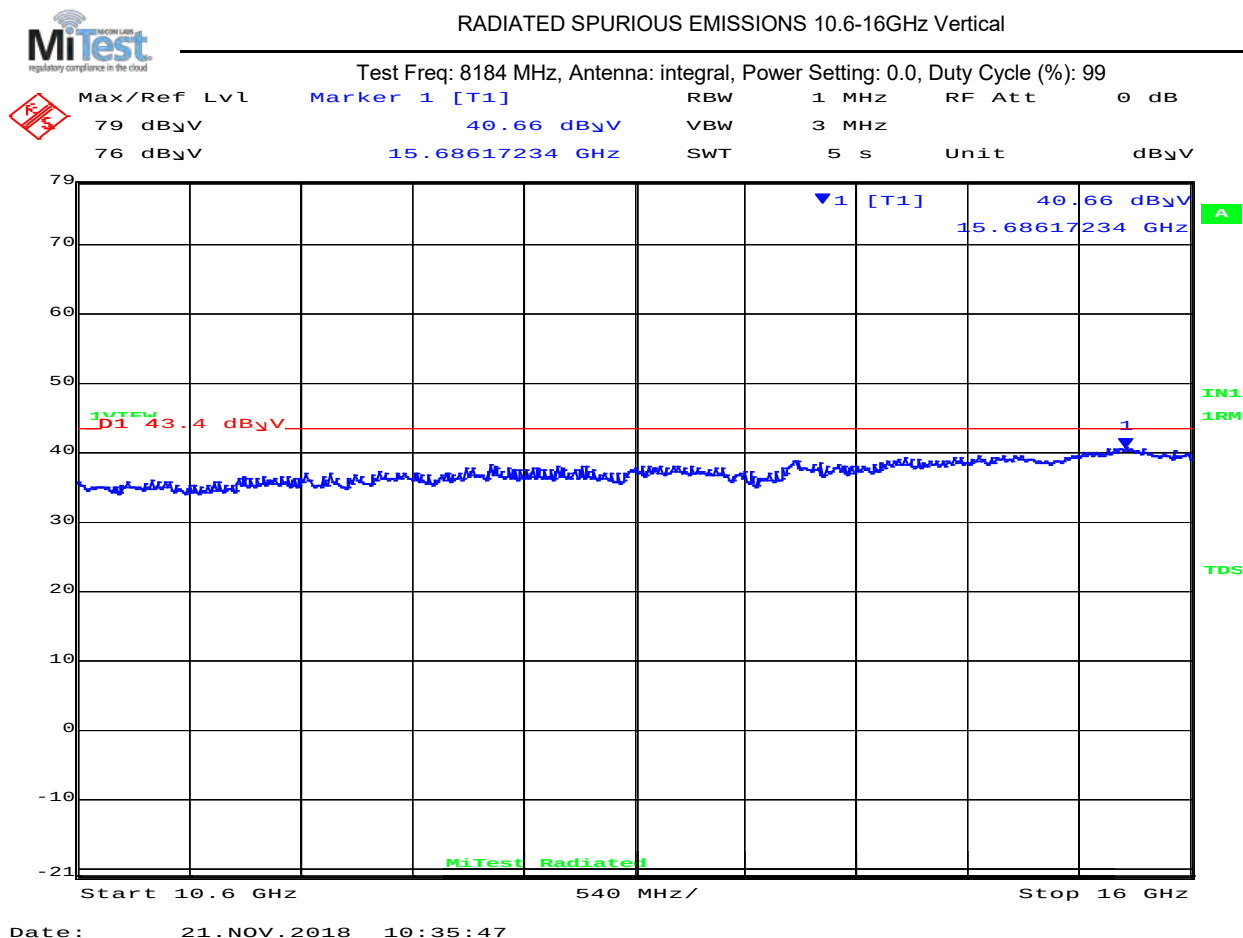


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 10.6 – 16.0 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



10600.00 – 16000.00 GHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	15686.2	39.6	Average	Vertical	150	0	43.4	-3.8	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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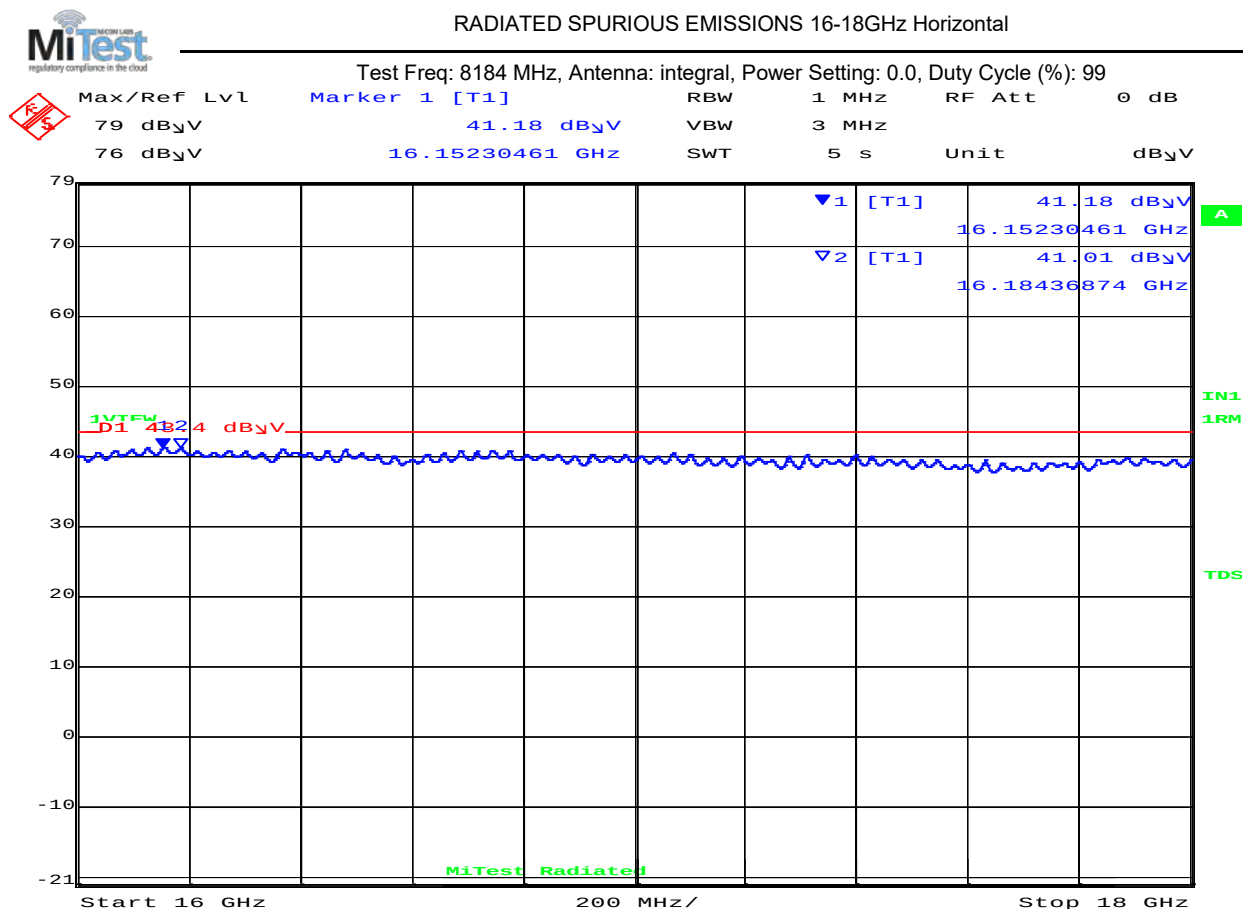


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Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



Date: 21.NOV.2018 10:41:39

16000.00 – 18000.00 GHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	16152.3	40.3	Average	Horizontal	150	0	43.4	-3.1	Pass
2	16184.4	40.1	Average	Horizontal	150	0	43.4	-3.3	Pass

Test Notes:
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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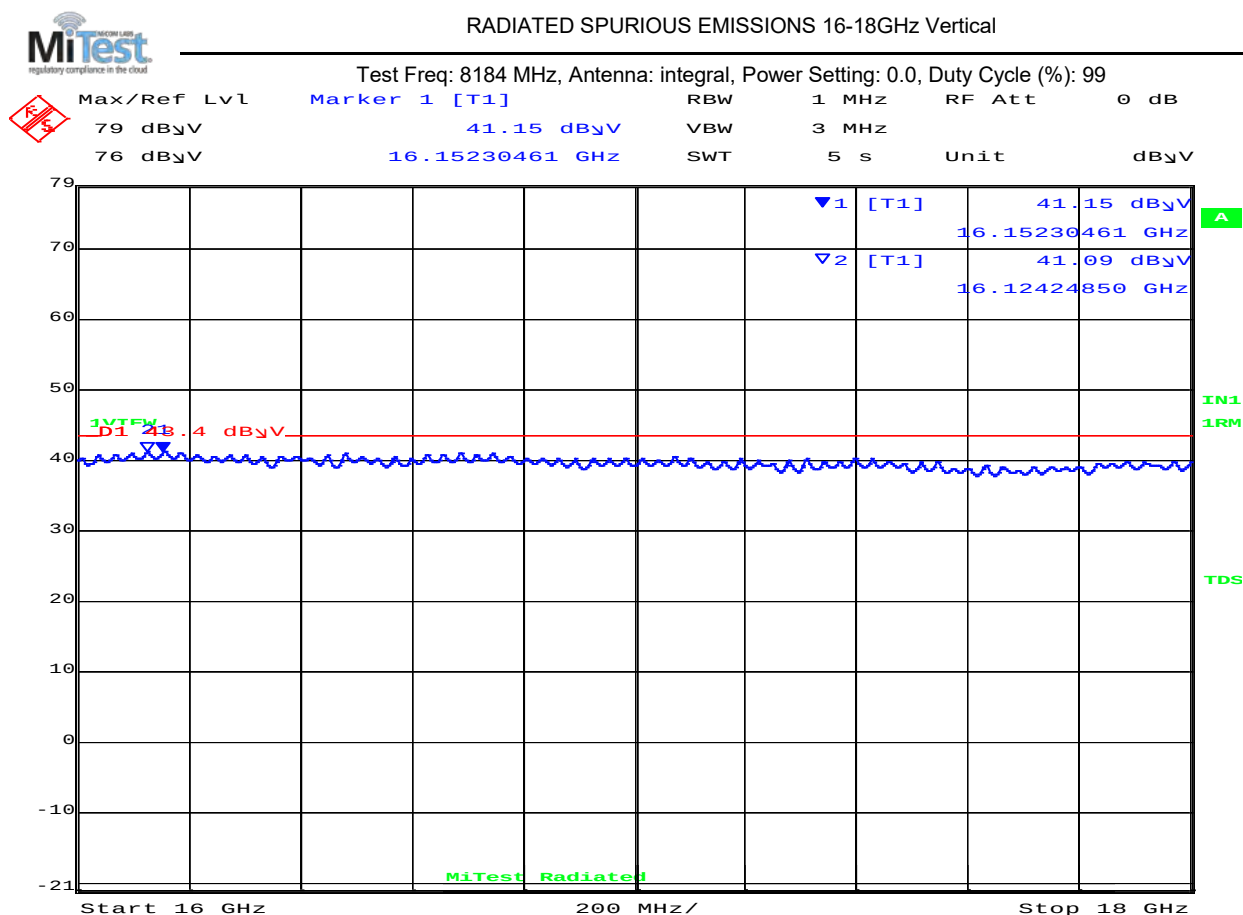


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Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



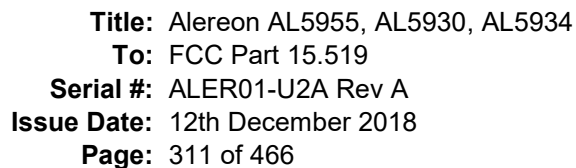
Date: 21.NOV.2018 10:36:53

16000.00 – 18000.00 GHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	16152.3	40.1	Average	Vertical	150	0	43.4	-3.3	Pass
2	16124.2	40.1	Average	Vertical	150	0	43.4	-3.3	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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Equipment Configuration for Spurious Emissions 1-1.61 GHz Horizontal			
Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

RADIATED SPURIOUS EMISSIONS 1.0-1.61GHz Horizontal

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99

Max/Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	0 dB
79 dBμV	28.69 dBμV	VBW	3 MHz		
76 dBμV	1.44008016 GHz	SWT	5 s	Unit	dBμV

Start 1 GHz 61 MHz/ Stop 1.61 GHz

1000.00– 1610.00 MHz									
Num	Frequency MHz	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	1440.1	28.8	Average	Horizontal	150	0	29.4	-0.6	Pass
2	1063.6	25.6	Average	Horizontal	150	0	29.4	-3.8	Pass

Test Notes:
 Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

MiCOM Labs, 575 Boulder Court, Pleasanton, California 94566 USA, Phone: +1 (925) 462 0304, Fax: +1 (925) 462 0306, www.micomlabs.com

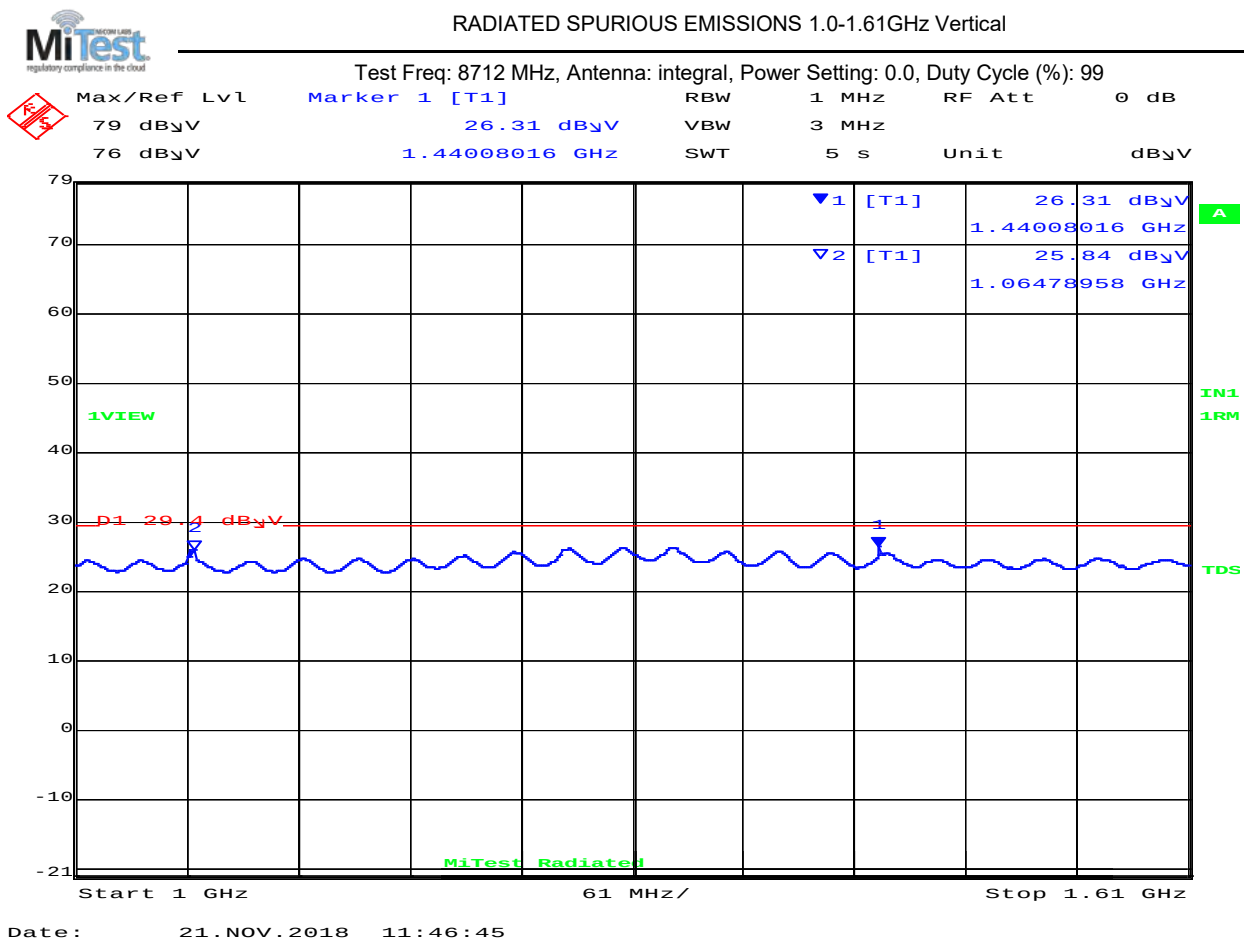


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
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Equipment Configuration for Spurious Emissions 1-1.61 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



1000.00– 1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	1440.1	25.2	Average	Vertical	150	0	29.4	-4.2	Pass
2	1064.8	23.9	Average	Vertical	150	0	29.4	-5.5	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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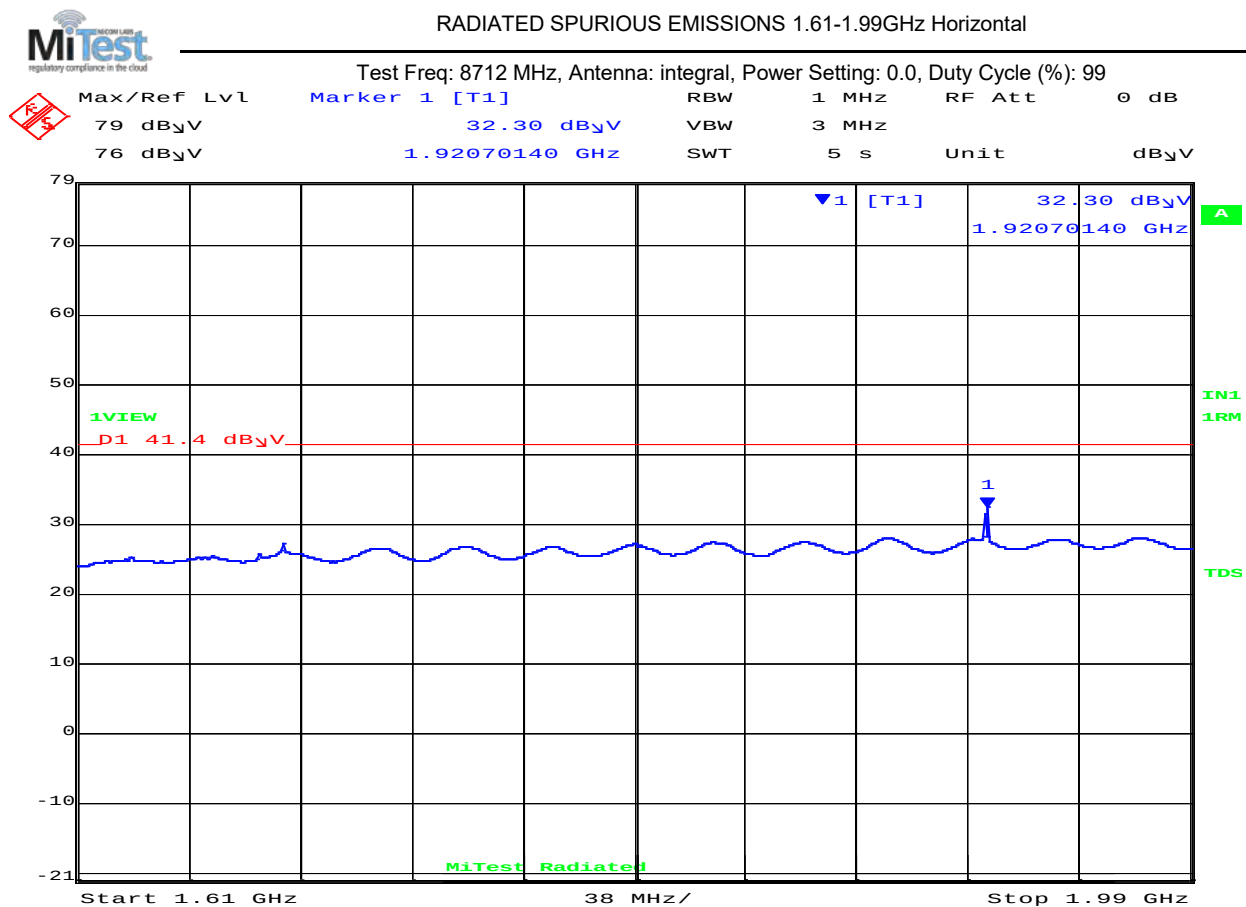


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Equipment Configuration for Spurious Emissions 1.61 - 1.99 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



Date: 21.NOV.2018 11:31:02

1610.00 – 1990.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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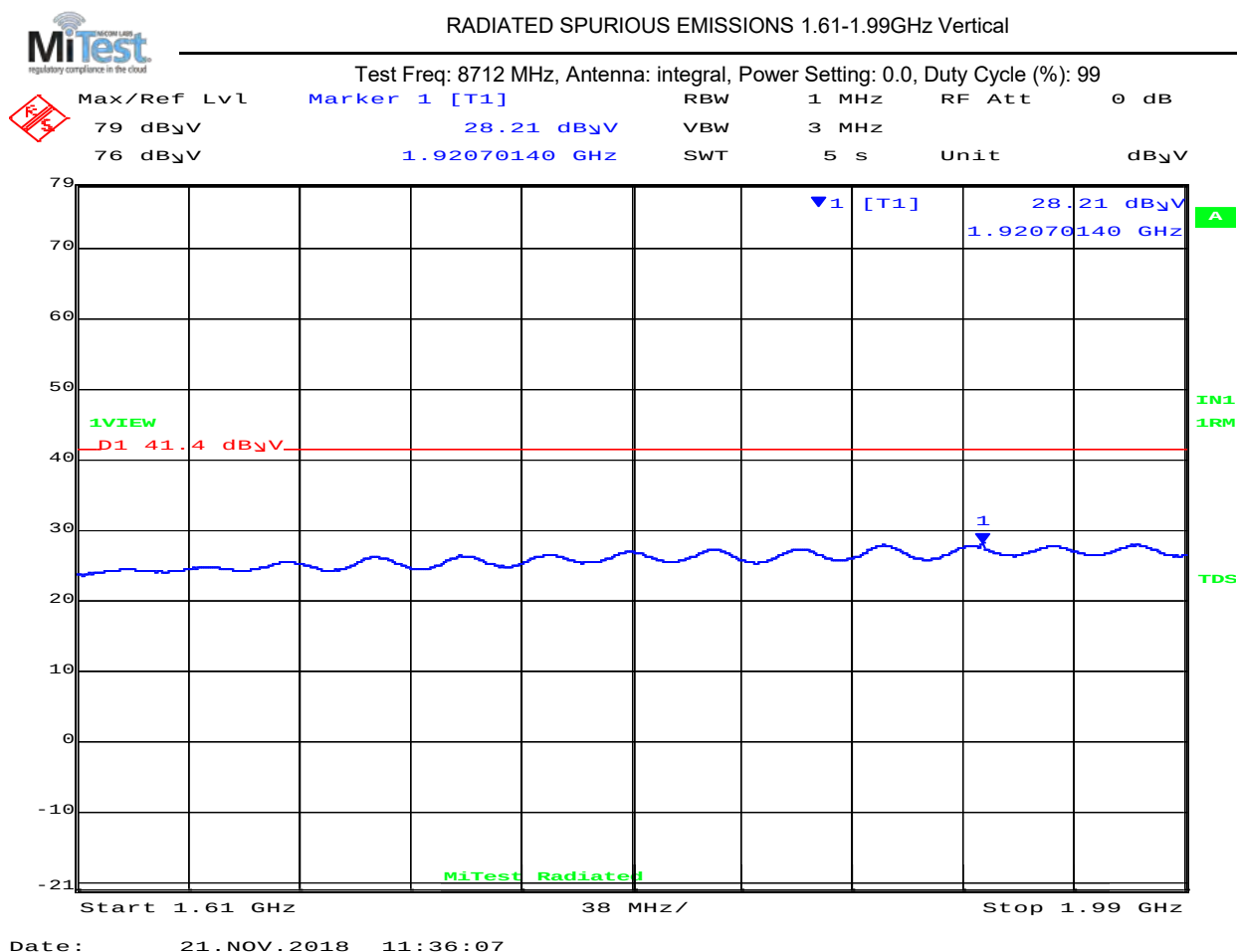


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
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Equipment Configuration for Spurious Emissions 1.61 – 1.99 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

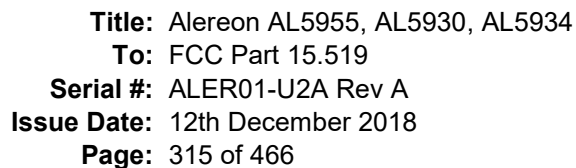
Test Measurement Results



1610.00 – 1990.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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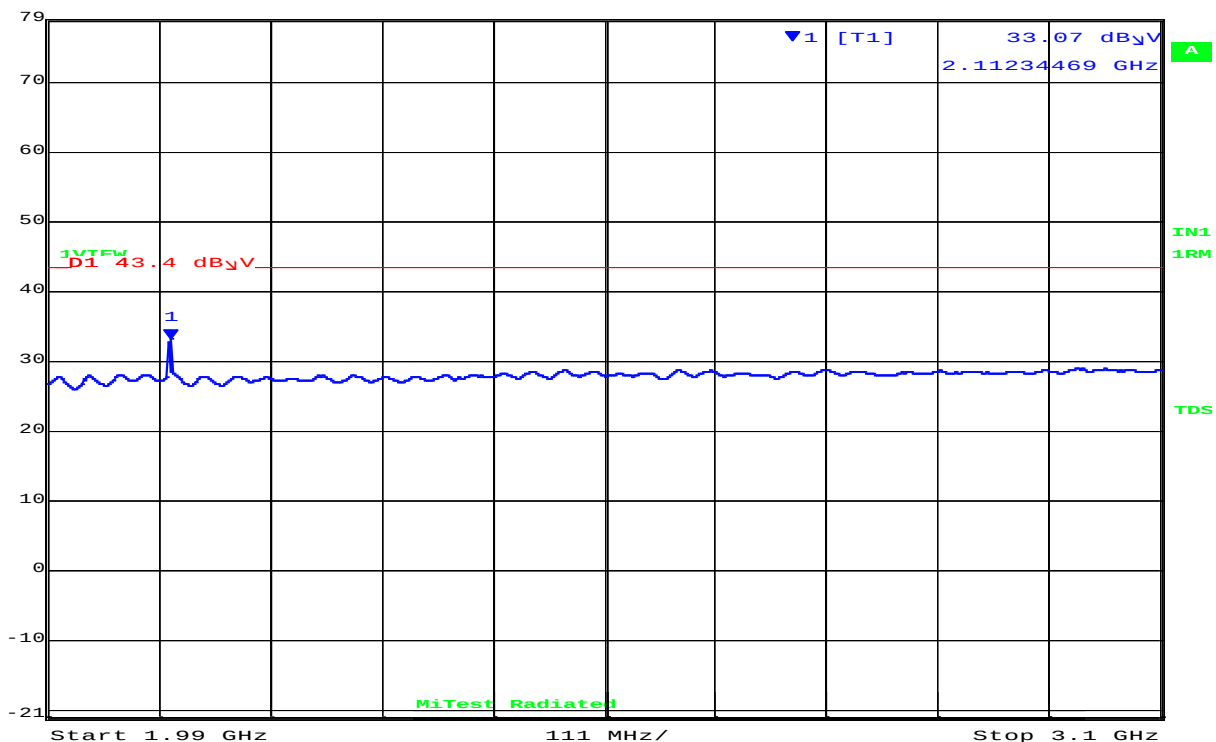


Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

MiTest
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regulatory compliance in the cloud

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99

	Max/Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	0 dB
	79 dB _μ V	33.07 dB _μ V	VBW	3 MHz		
	76 dB _μ V	2.11234469 GHz	SWT	5 s	Unit	dB _μ V



Date: 21.NOV.2018 11:28:41

1990.00 – 3100.00 GHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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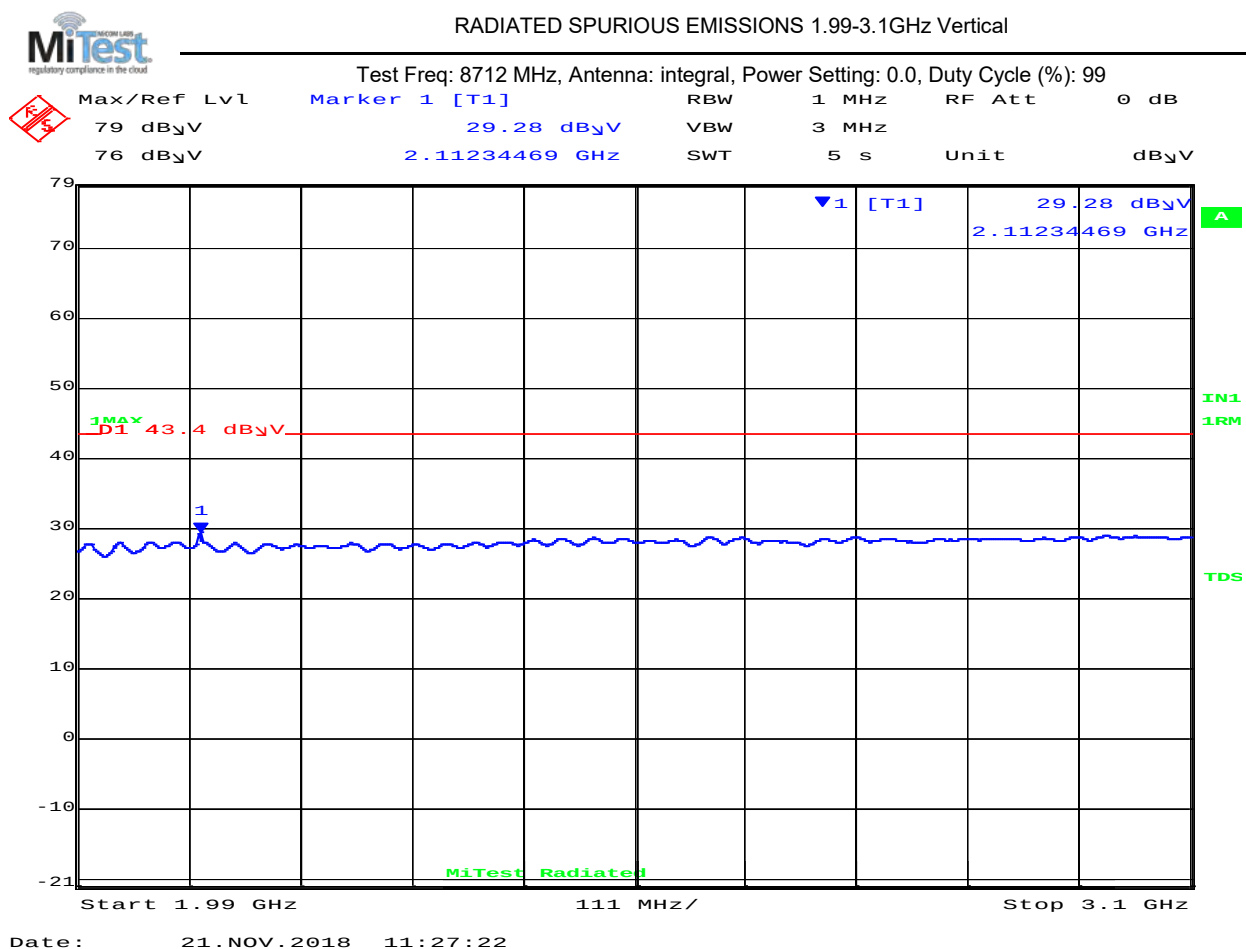


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



1990.00 – 3100.00 GHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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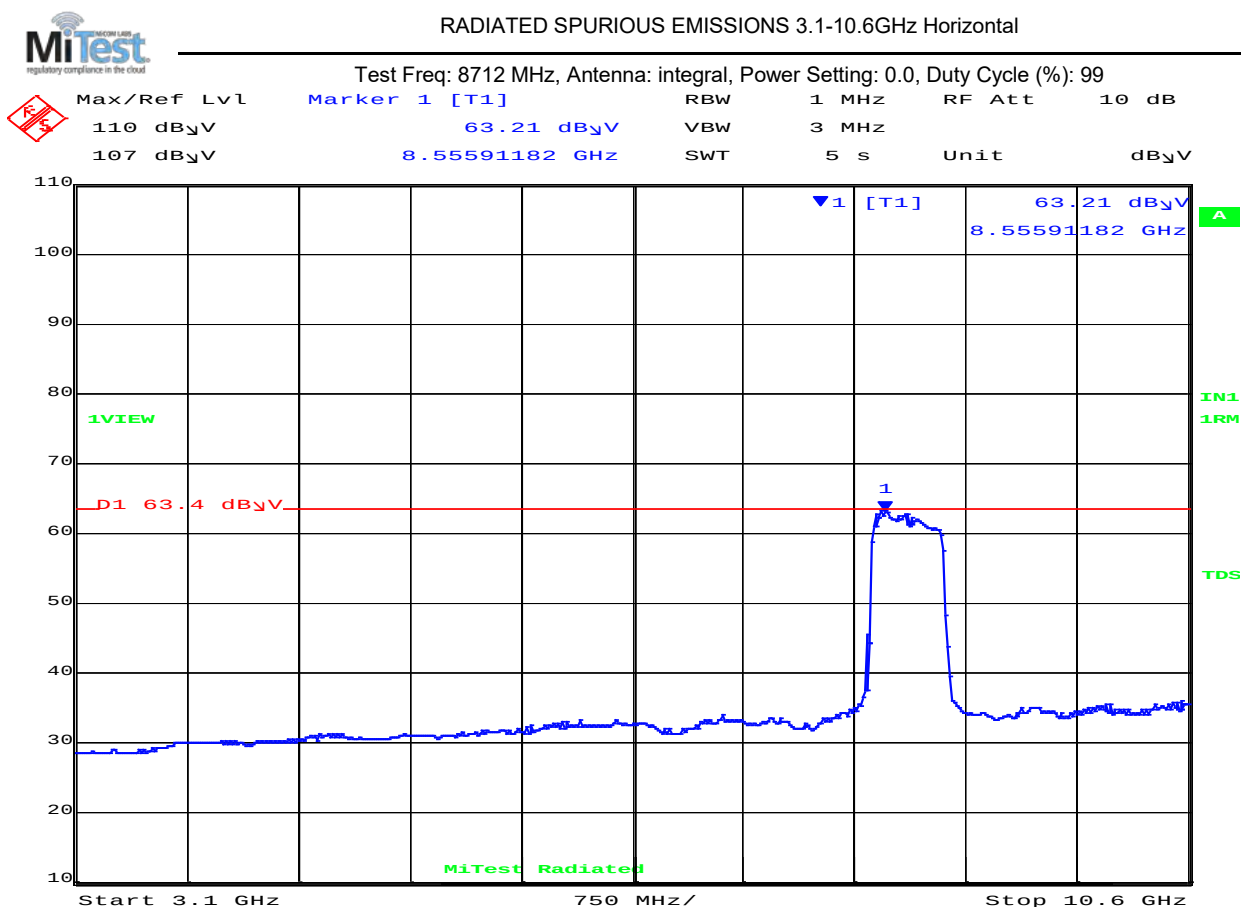


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



Date: 21.NOV.2018 11:06:11

3100.00 - 10600.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
1	8555.9	62.9	Average	Horizontal	150	0	63.4	-0.5	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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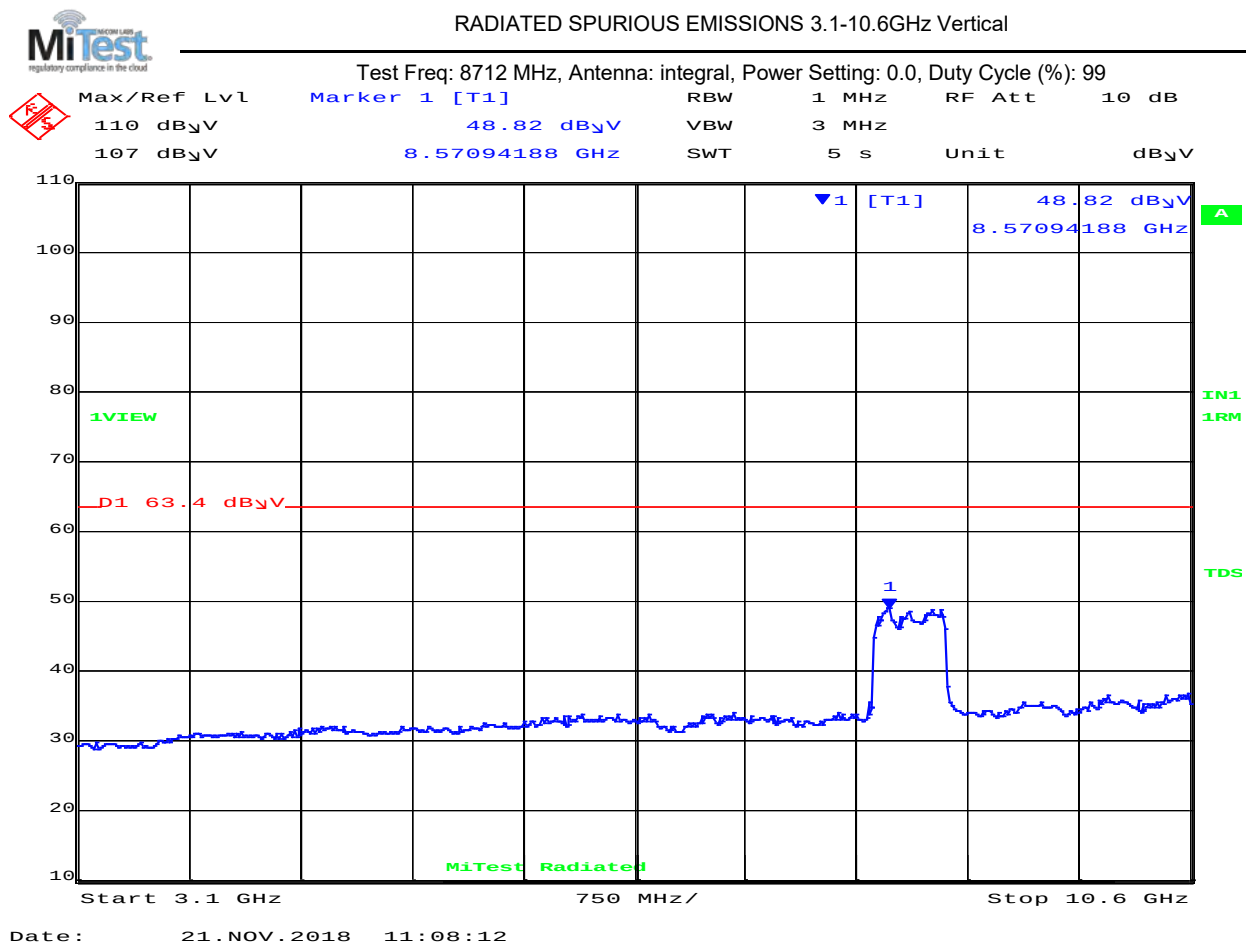


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



3100.00 - 10600.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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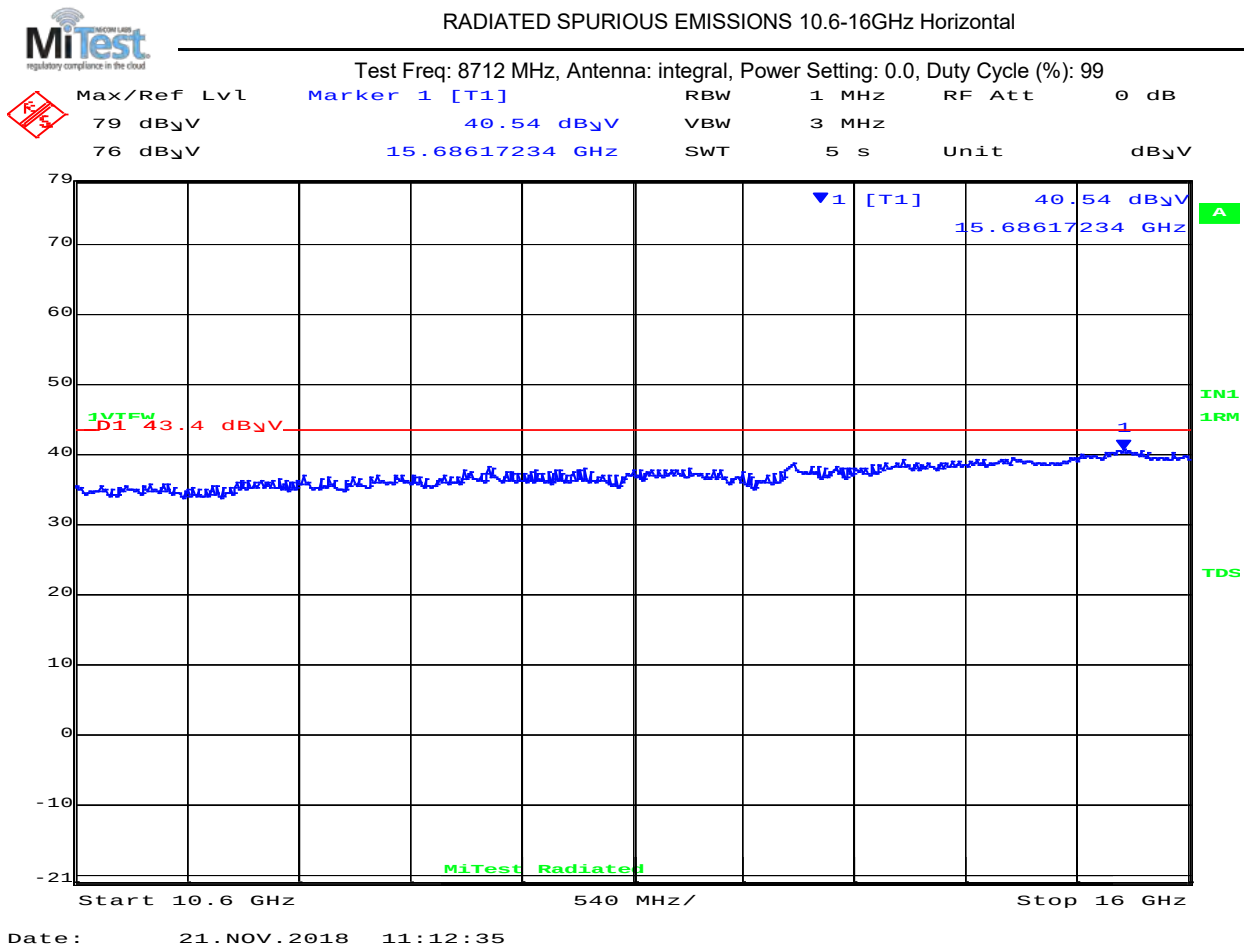


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 10.6 – 16.0 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



10600.00 – 16000.00 GHz									
Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
1	15686.2	39.6	Average	Horizontal	150	0	43.4	-3.80	Pass

Test Notes:
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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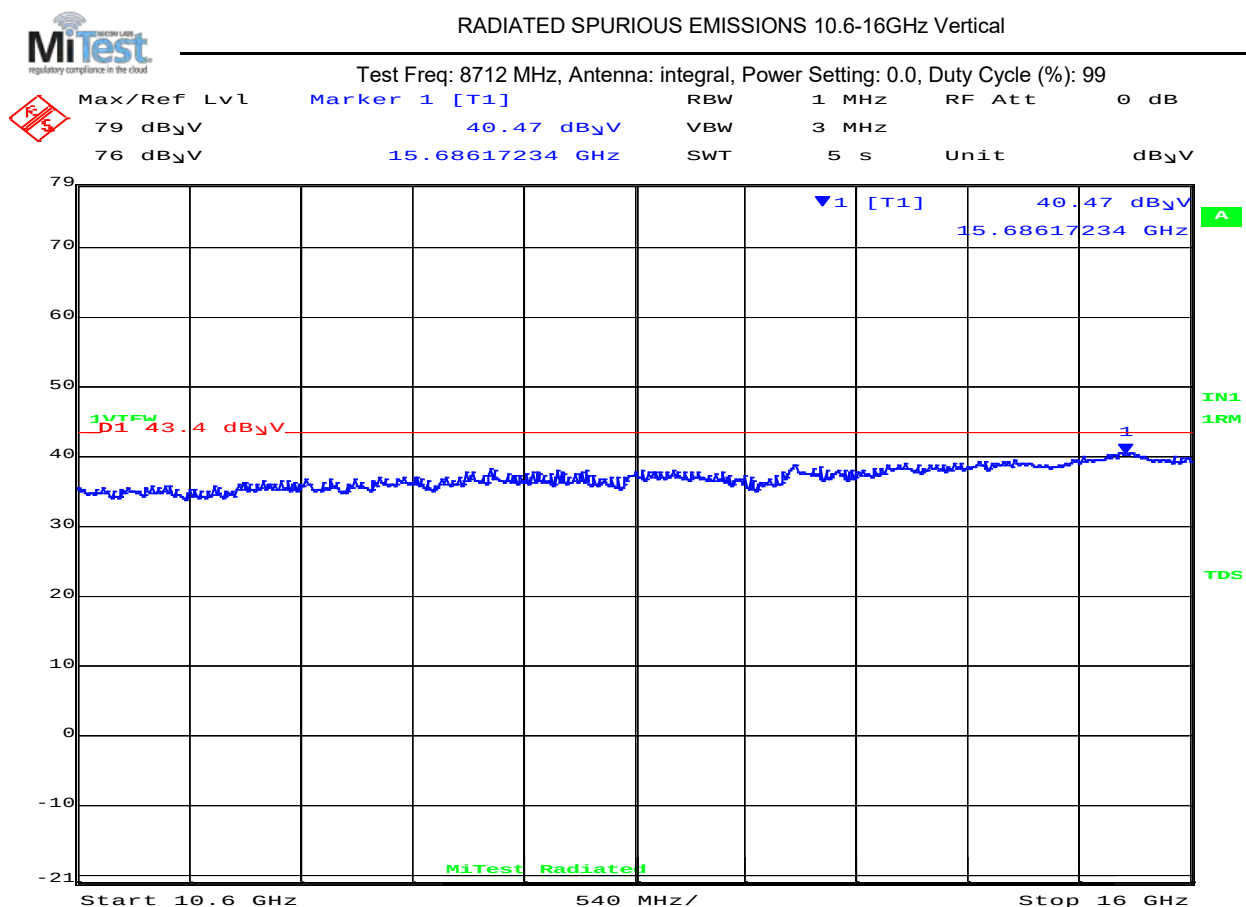


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Equipment Configuration for Spurious Emissions 10.6 – 16.0 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



Date: 21.NOV.2018 11:10:04

10600.00 – 16000.00 GHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
1	15686.2	39.6	Average	Vertical	150	0	43.4	-3.8	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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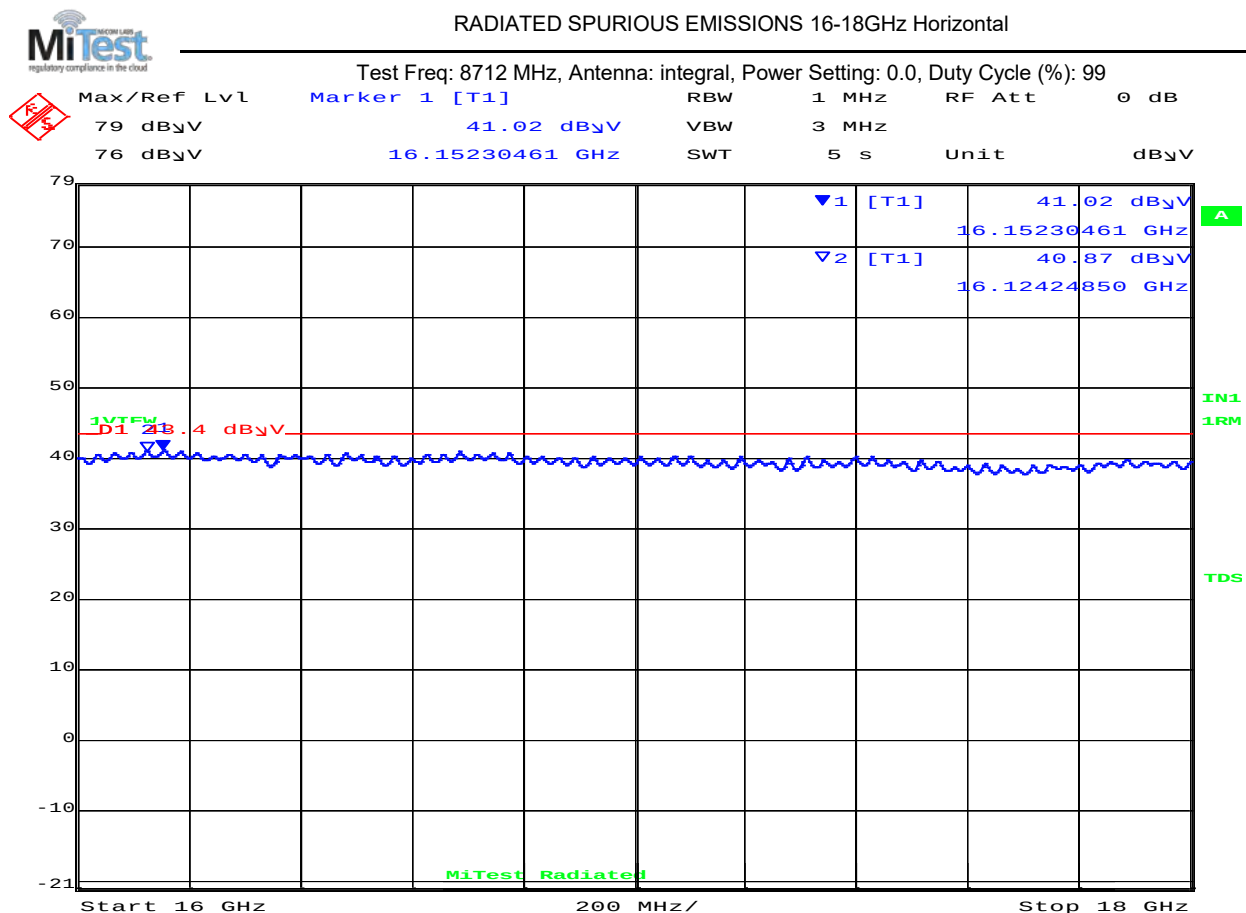


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Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



Date: 21.NOV.2018 11:14:09

16000.00 – 18000.00 GHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	16152.3	40.1	Average	Horizontal	150	0	43.4	-3.3	Pass
2	16124.2	39.9	Average	Horizontal	150	0	43.4	-3.5	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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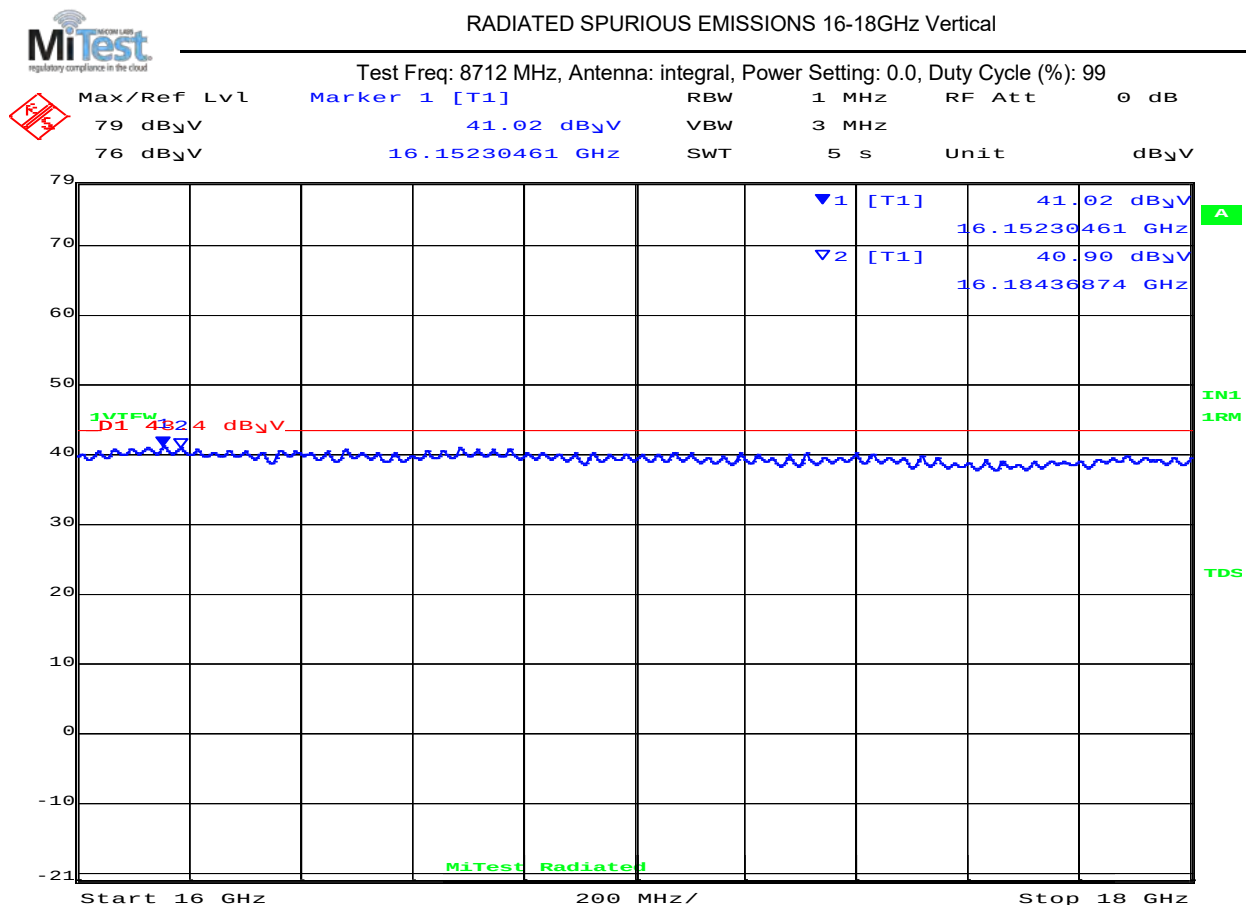


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



Date: 21.NOV.2018 11:16:58

16000.00 – 18000.00 GHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
1	16152.3	40.1	Average	Horizontal	150	0	43.4	-3.3	Pass
2	16184.4	39.9	Average	Horizontal	150	0	43.4	-3.5	Pass

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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9.4.2. GPS Band Emissions

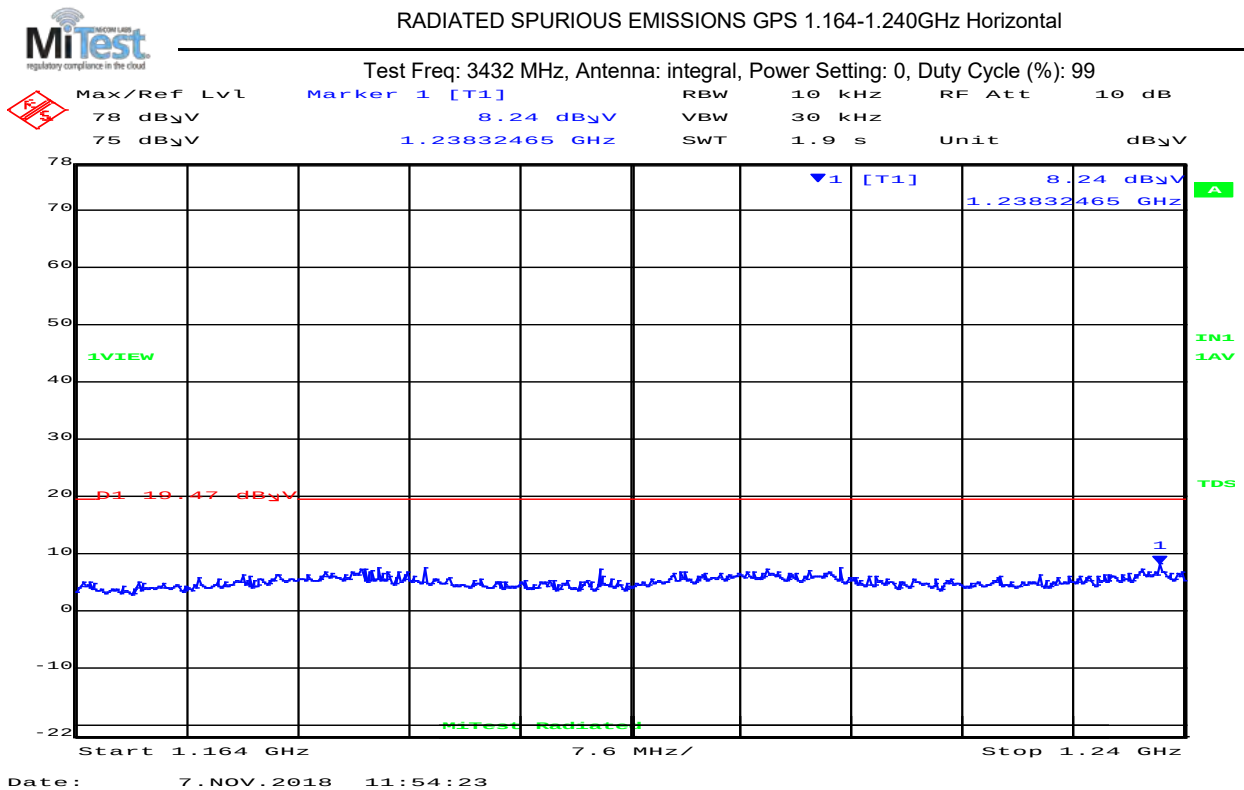
9.4.2.1. Commander AL5930

3432 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	1.0	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3432.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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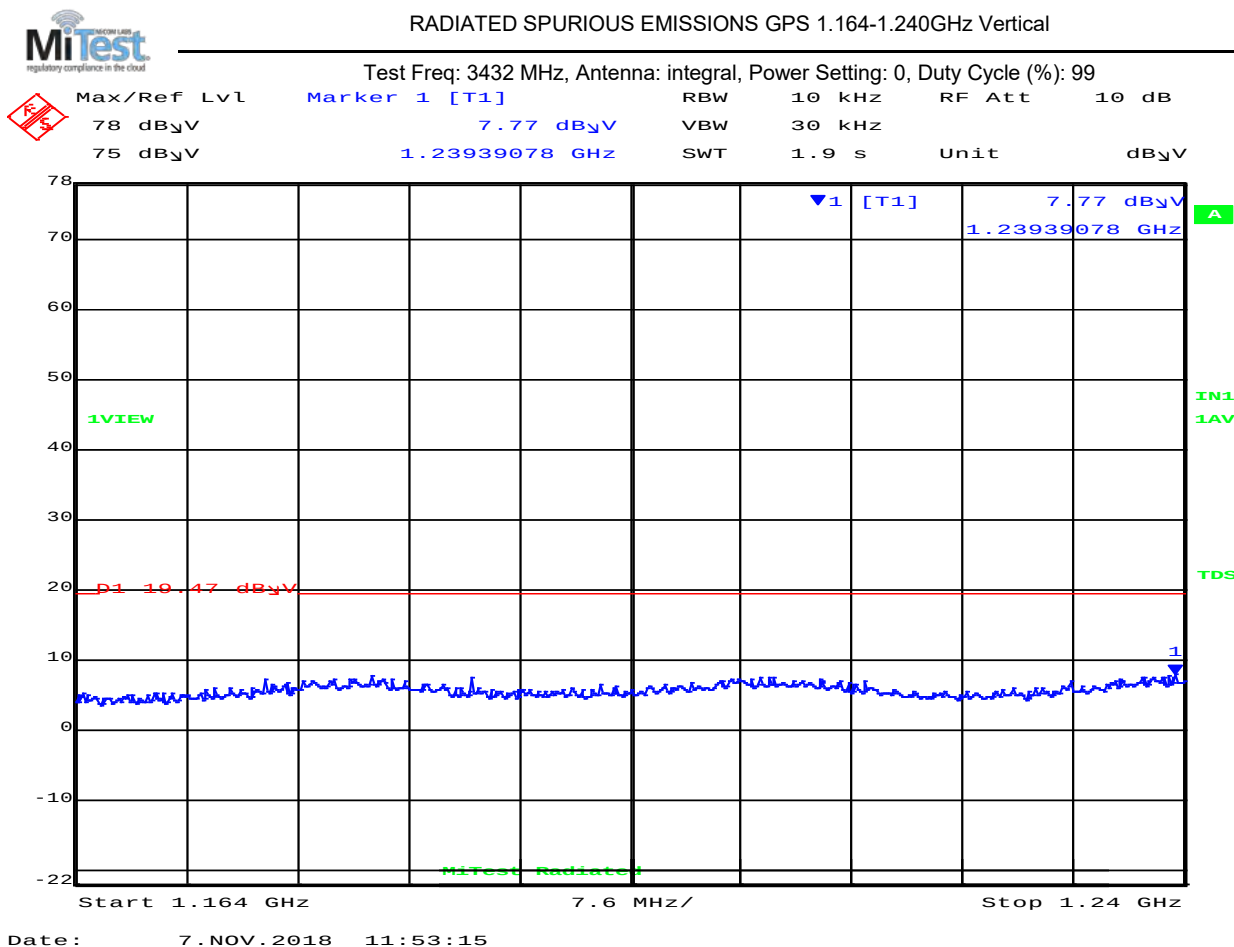


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	1.0	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3432.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

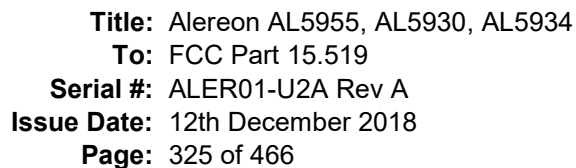
Test Measurement Results



1164.00-1240.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

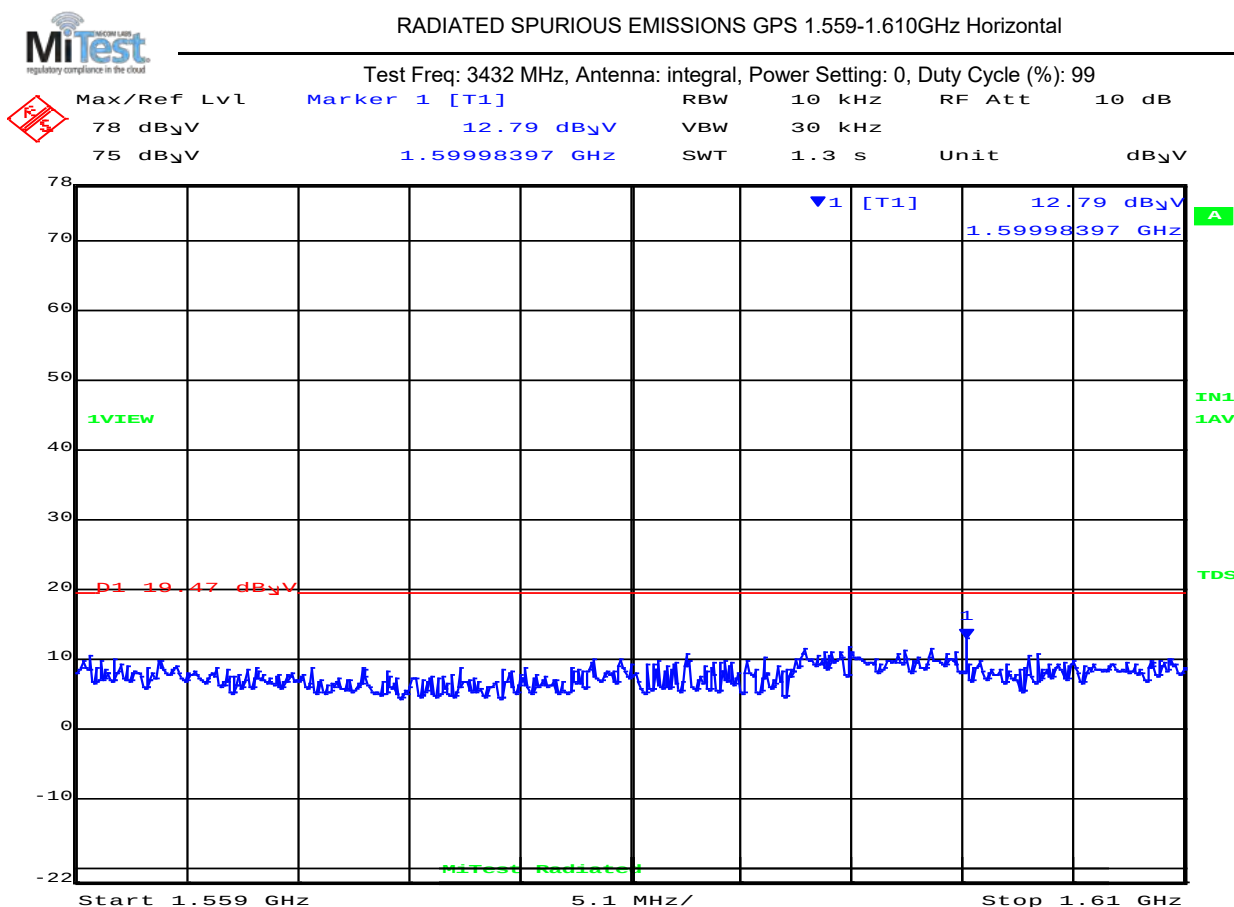
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Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	1.0	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3432.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



Date: 7.NOV.2018 11:55:49

1559.00-1610.00 MHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

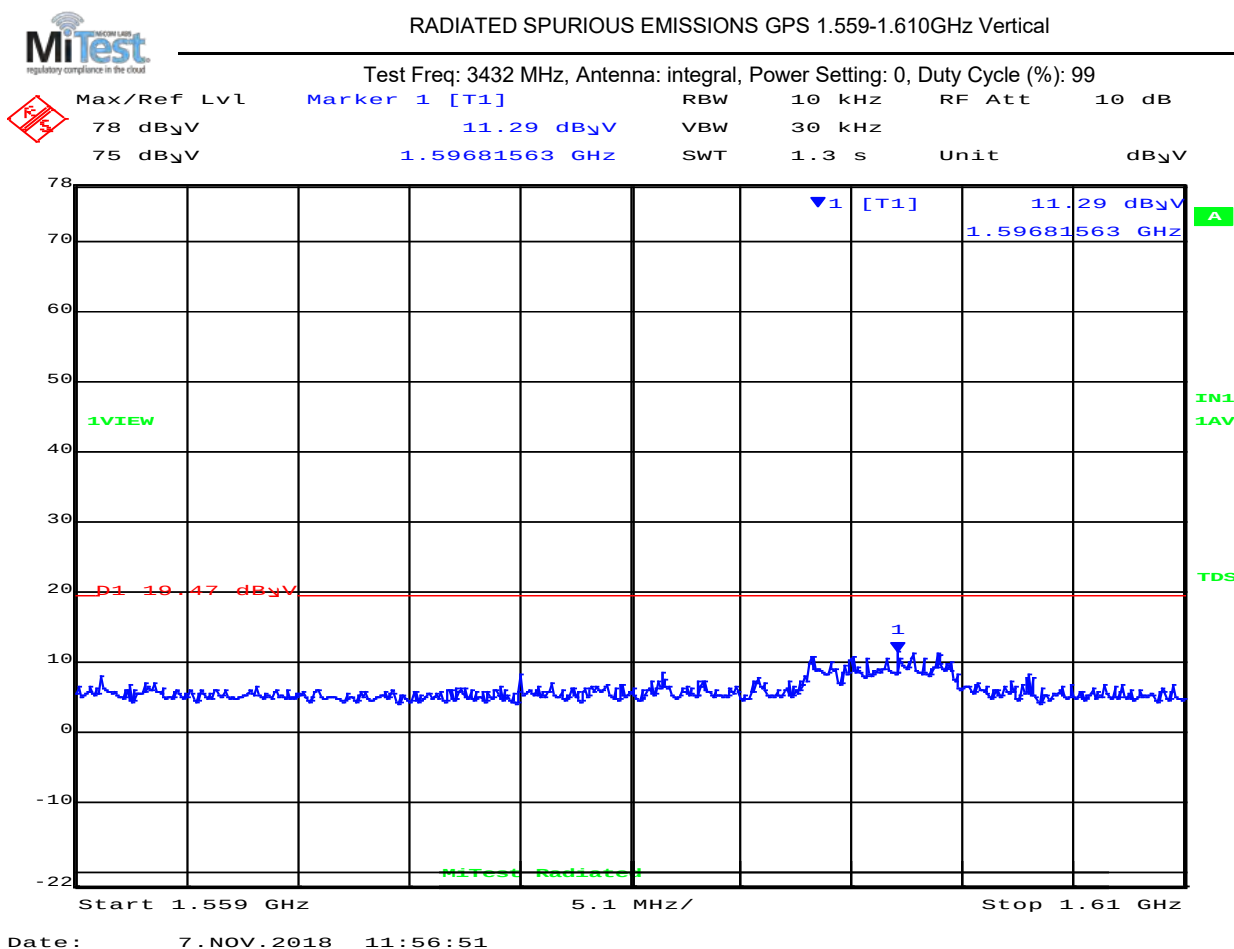


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Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	1.0	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3432.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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3960 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

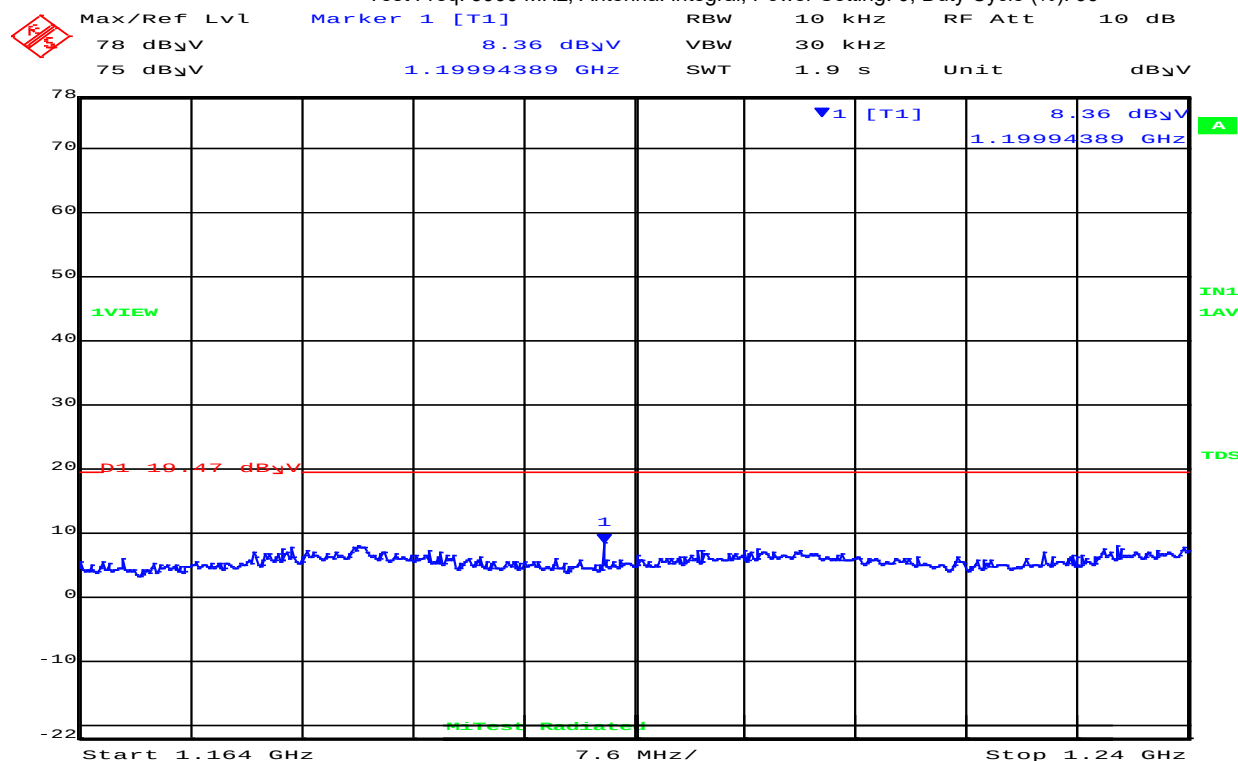
Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Horizontal

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 7.NOV.2018 12:19:07

1164.00-1240.00 MHz

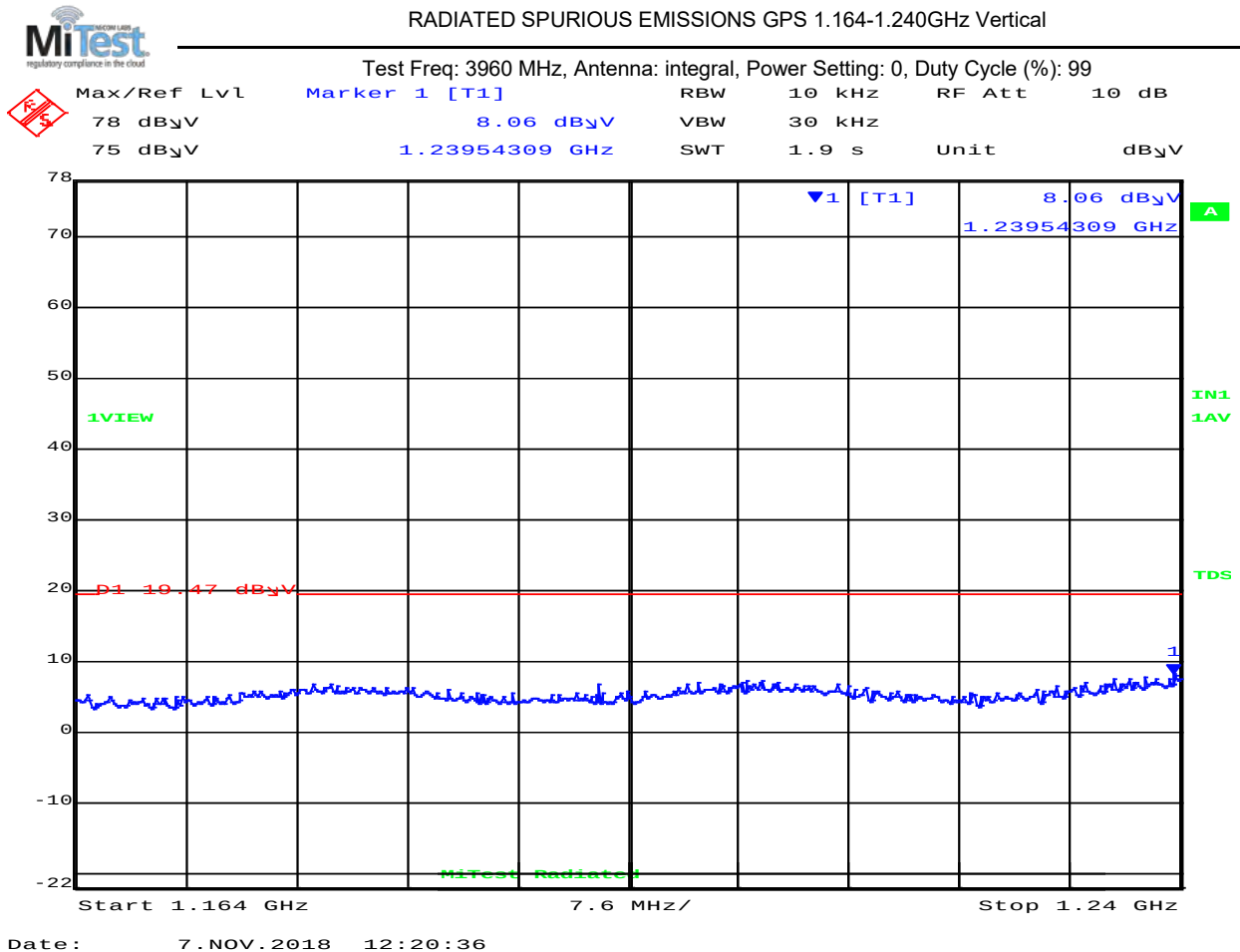
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz									
Num	Frequency MHz	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

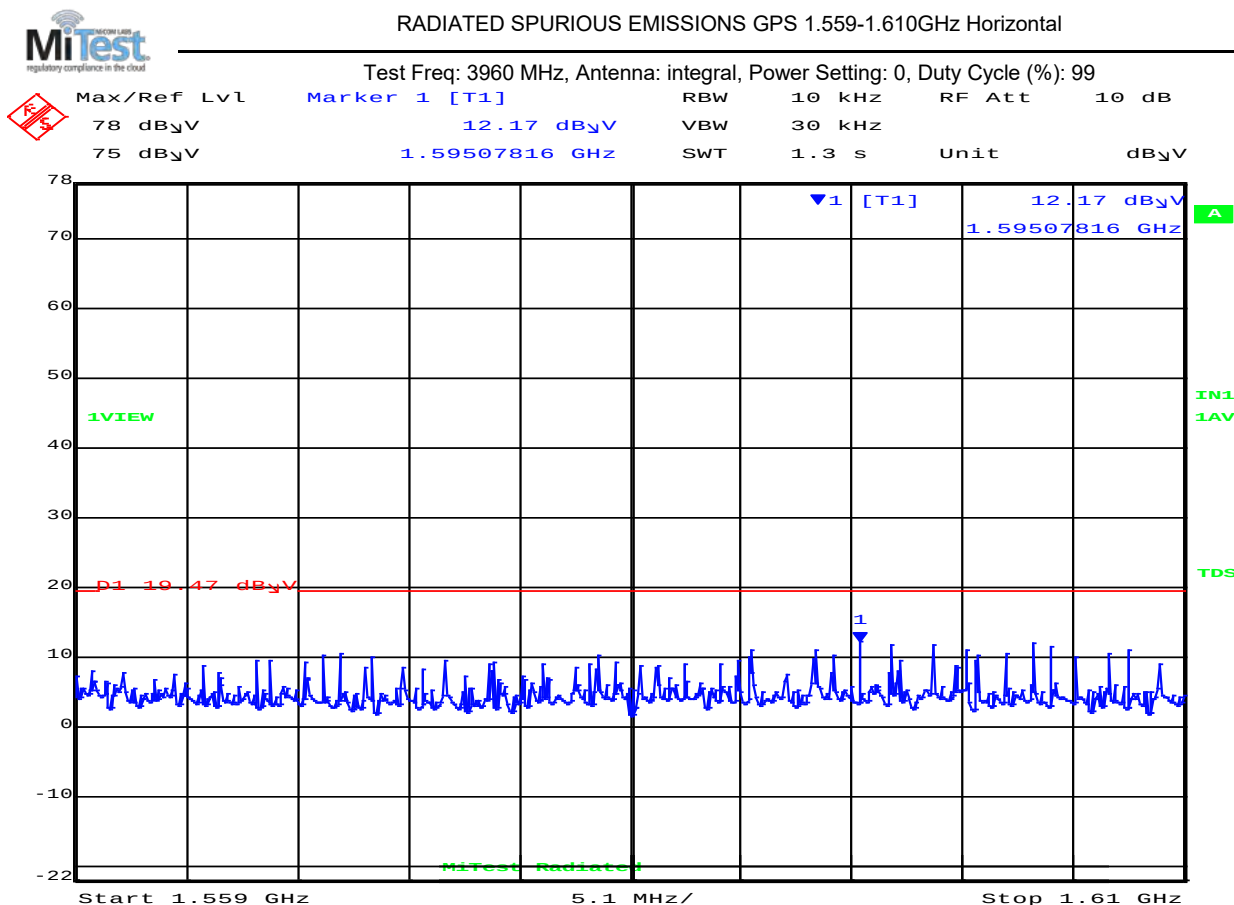


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Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



Date: 7.NOV.2018 12:17:47

1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

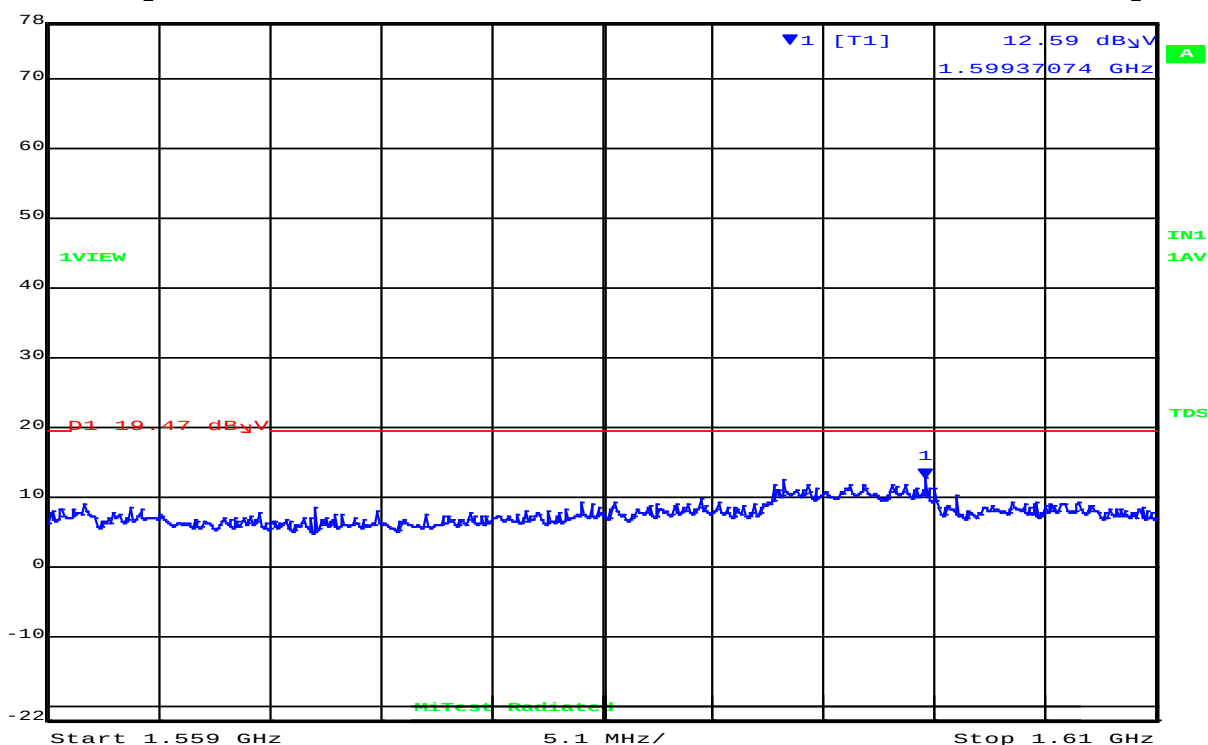
Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99

Max/Ref Lvl	Marker 1 [T1]	RBW	10 kHz	RF Att	10 dB
78 dB μ V	12.59 dB μ V	VBW	30 kHz		
75 dB μ V	1.59937074 GHz	SWT	1.3 s	Unit	dB μ V



Date: 7.NOV.2018 12:14:28

1559.00-1610.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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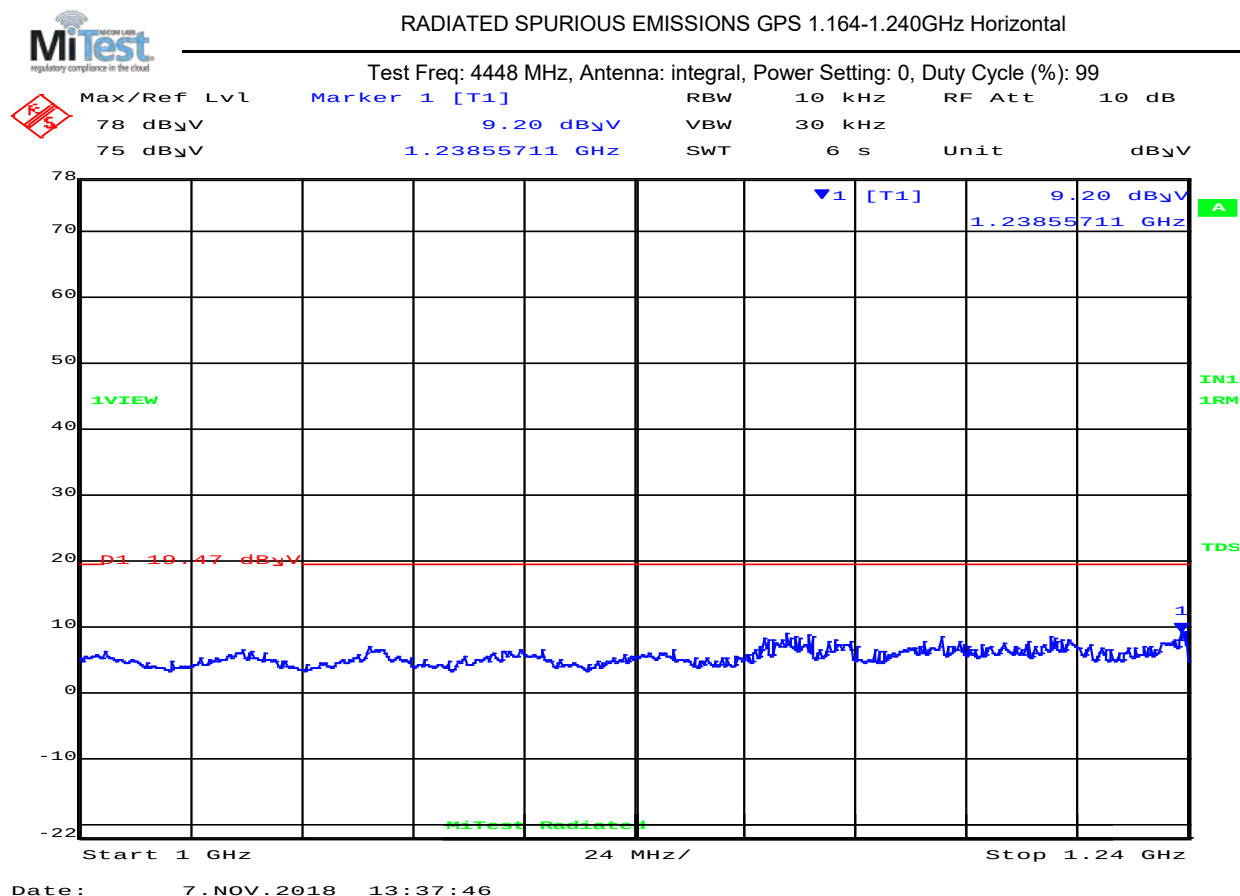
Title: Alereon AL5955, AL5930, AL5934
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4488 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz

Num	Frequency MHz	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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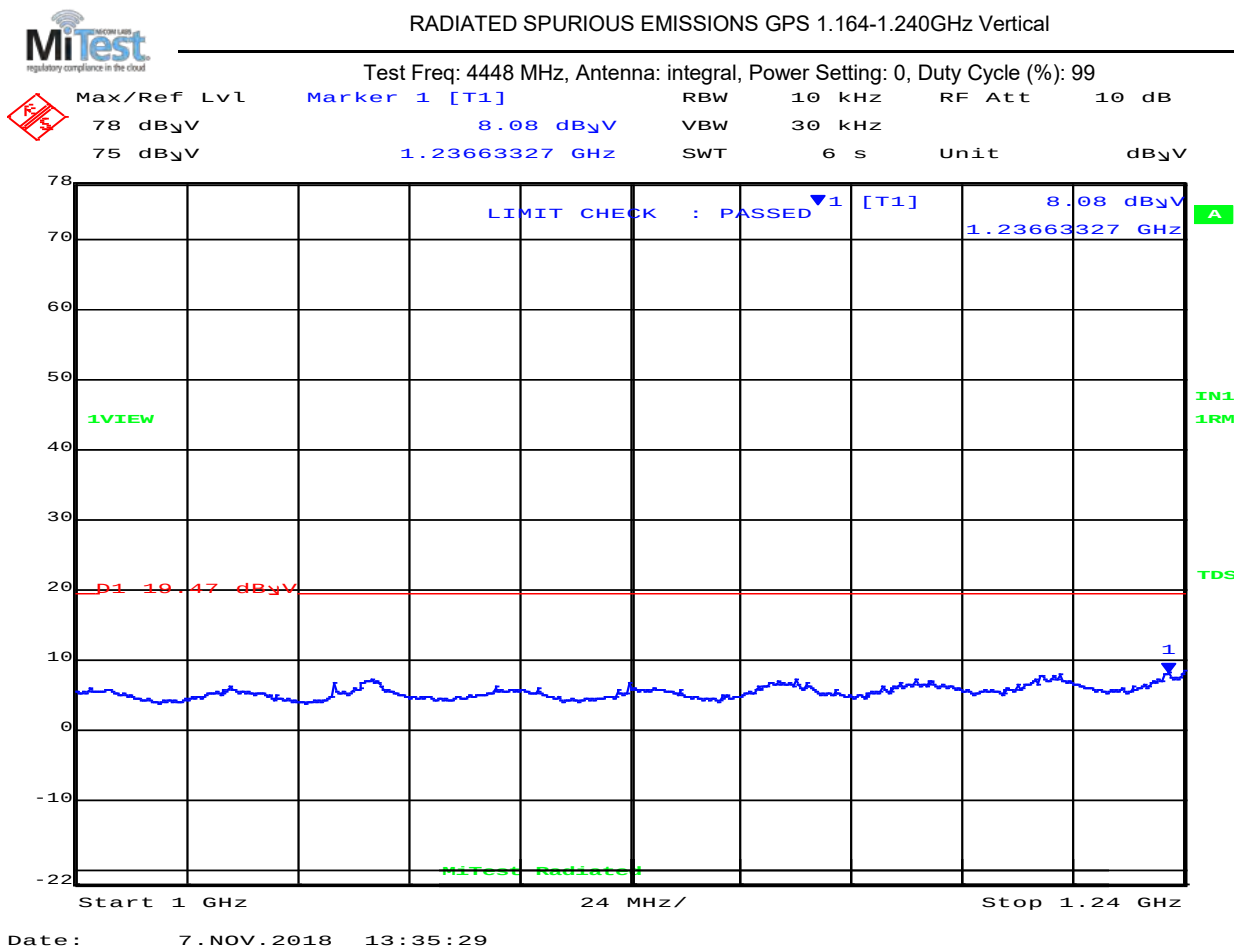


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Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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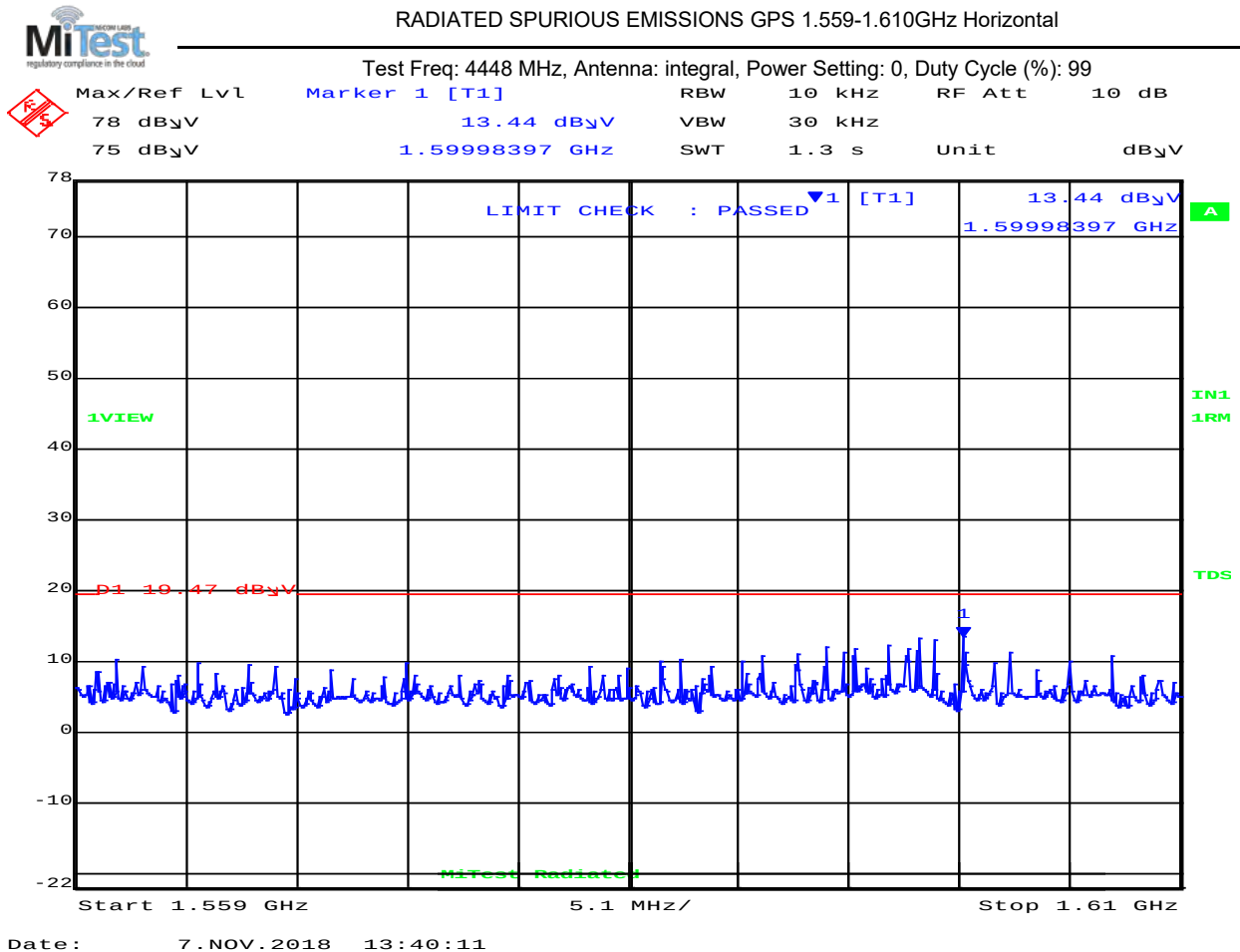


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Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1559.00-1610.00 MHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
2	1599.98	1.9*	Average	Horizontal	150	0	19.47	-17.6	Pass
Test Notes: Final Average measurements done with 1 KHz Receiver Bandwidth per standard									

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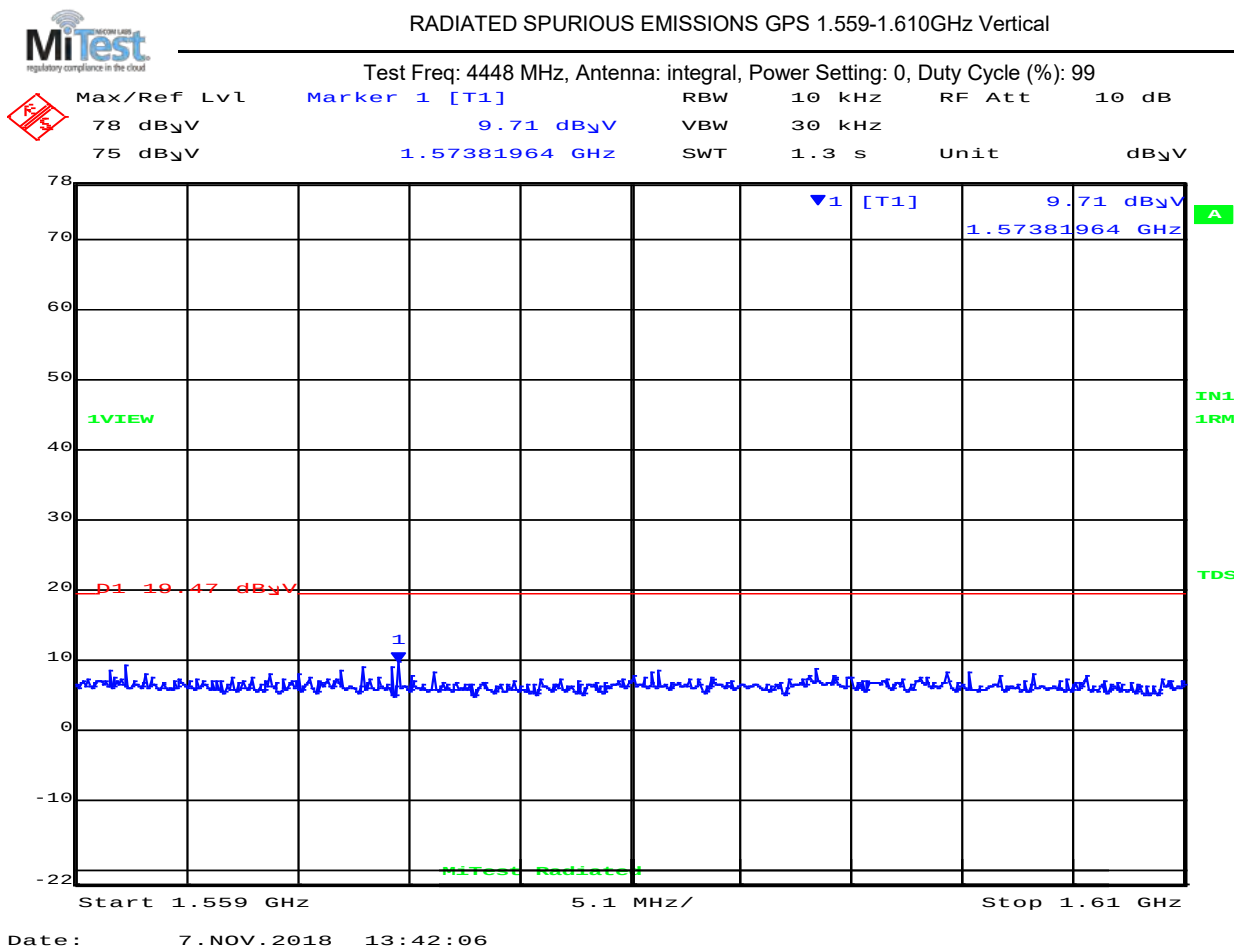


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Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1559.00-1610.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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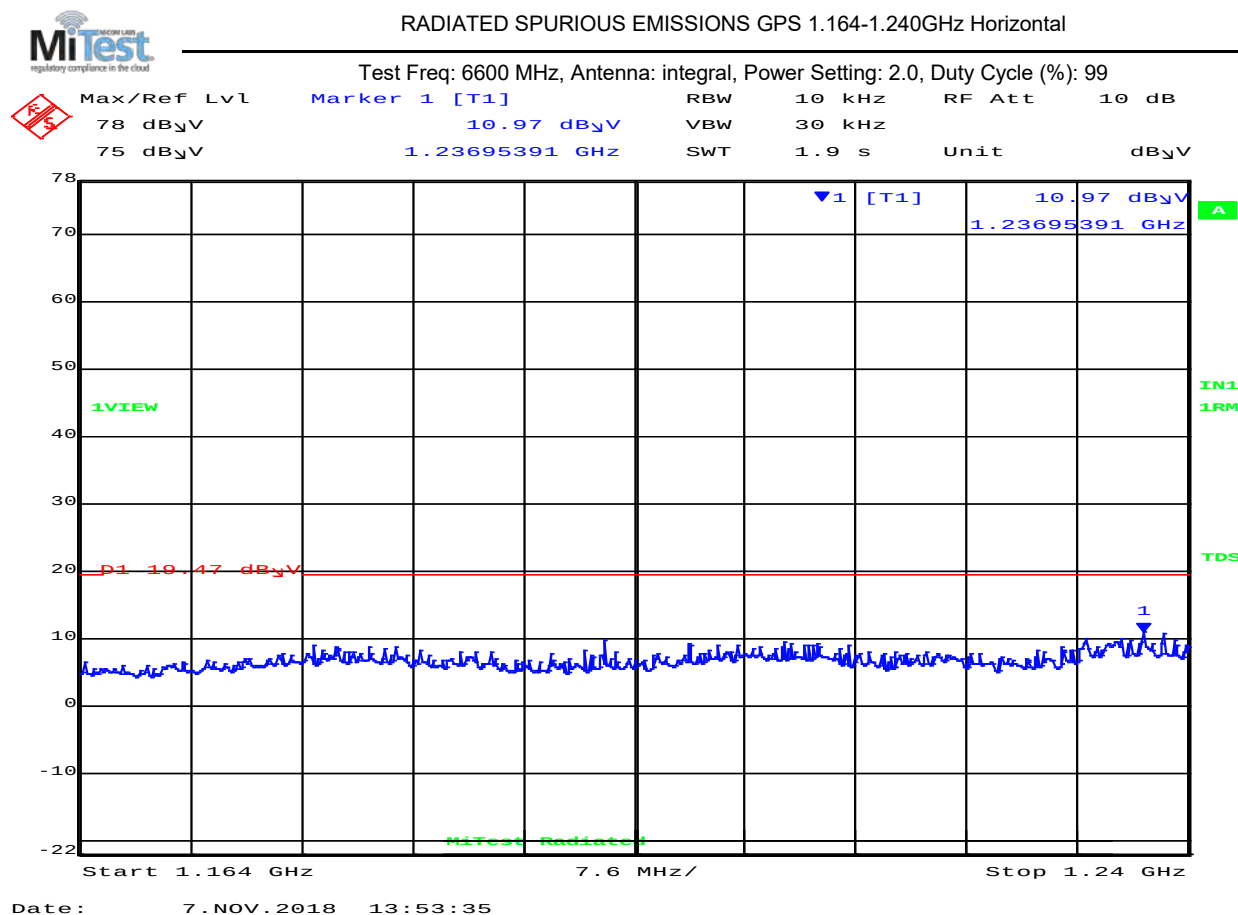
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6600 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

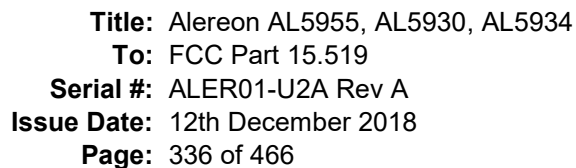
Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz									
Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

MiTest
regulatory compliance in the cloud

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99

Date: 7.NOV.2018 13:55:05

1164.00-1240.00 MHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

MiCOM Labs, 575 Boulder Court, Pleasanton, California 94566 USA, Phone: +1 (925) 462 0304, Fax: +1 (925) 462 0306, www.micomlabs.com



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Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

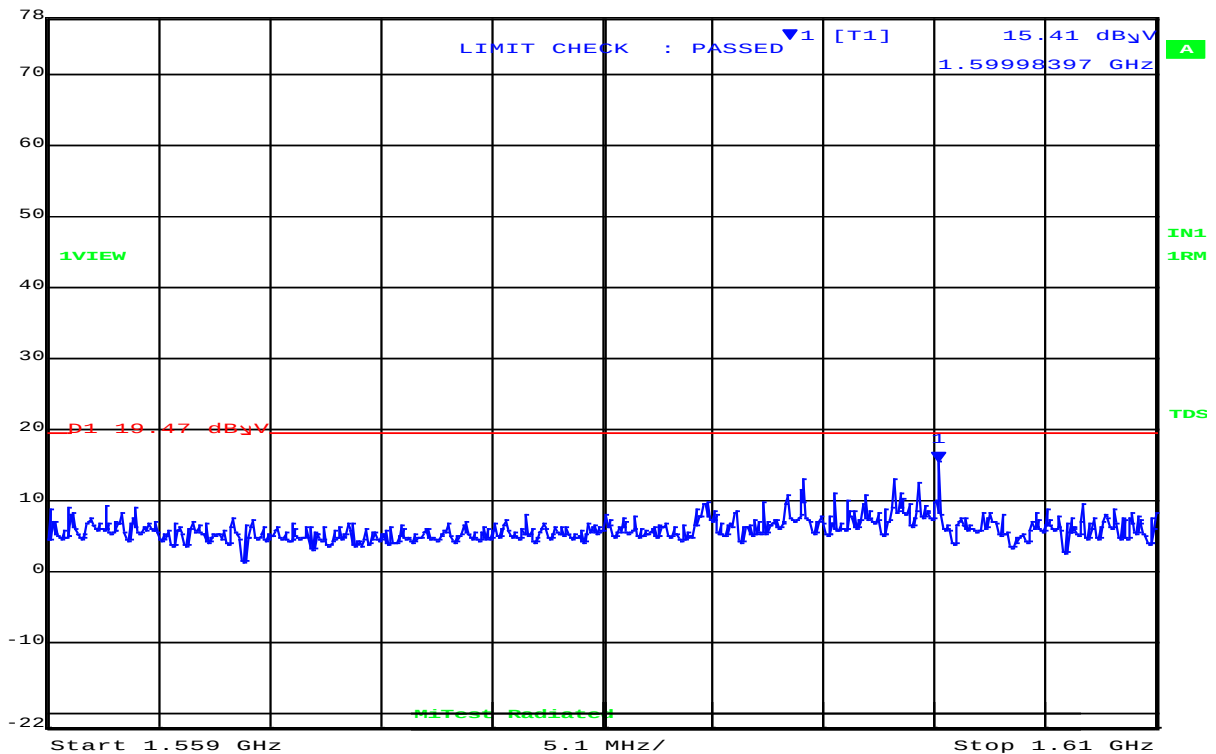
Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Horizontal

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99

Max/Ref Lvl	Marker 1 [T1]	RBW	10 kHz	RF Att	10 dB
78 dB μ V	15.41 dB μ V	VBW	30 kHz		
75 dB μ V	1.59998397 GHz	SWT	1.3 s	Unit	dB μ V



Date: 7.NOV.2018 13:49:17

1559.00-1610.00 MHz									
Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
2	1599.98	2.0*	Average	Horizontal	150	0	19.47	-17.5	Pass
Test Notes: Final Average measurements done with 1 KHz Receiver Bandwidth per standard									

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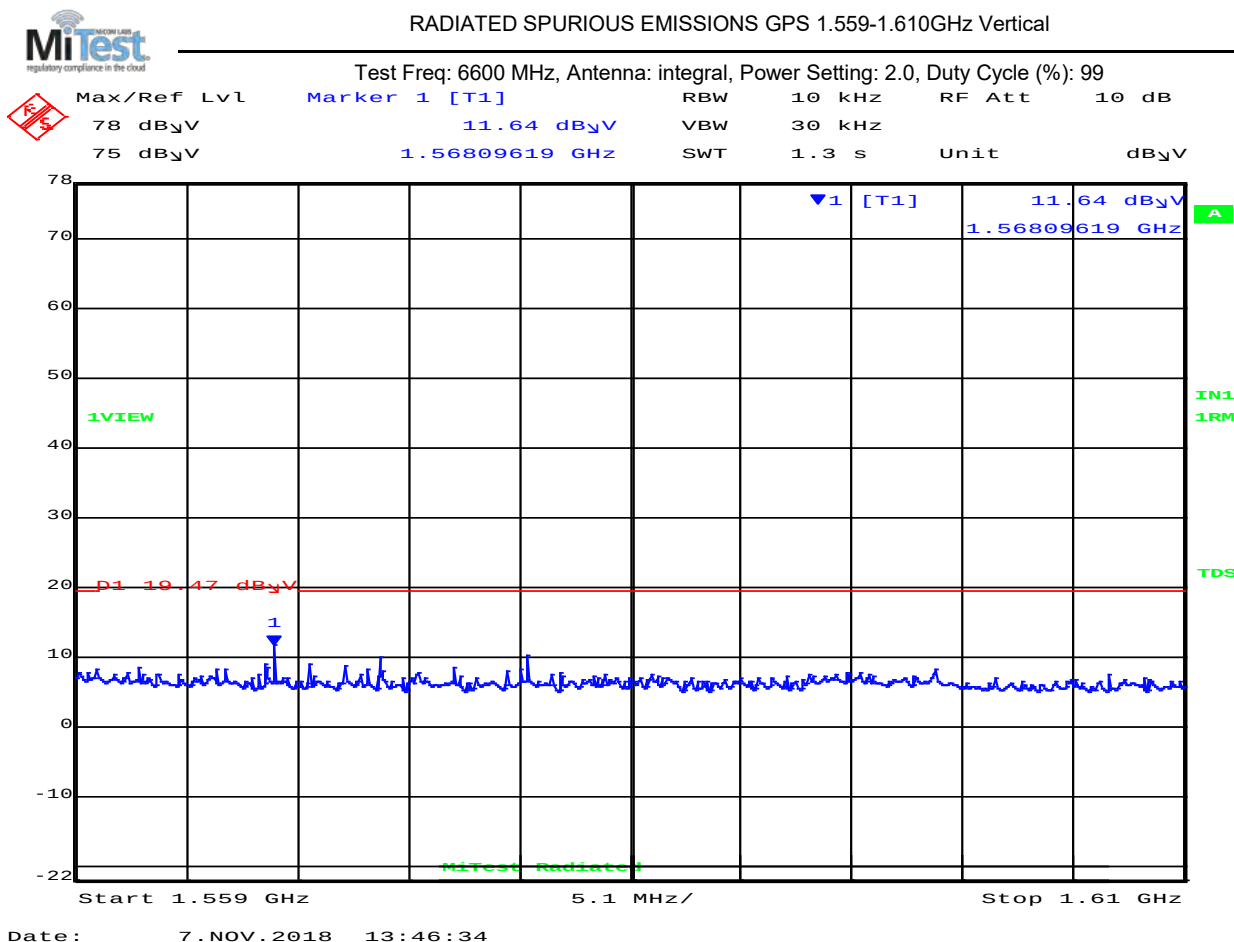


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Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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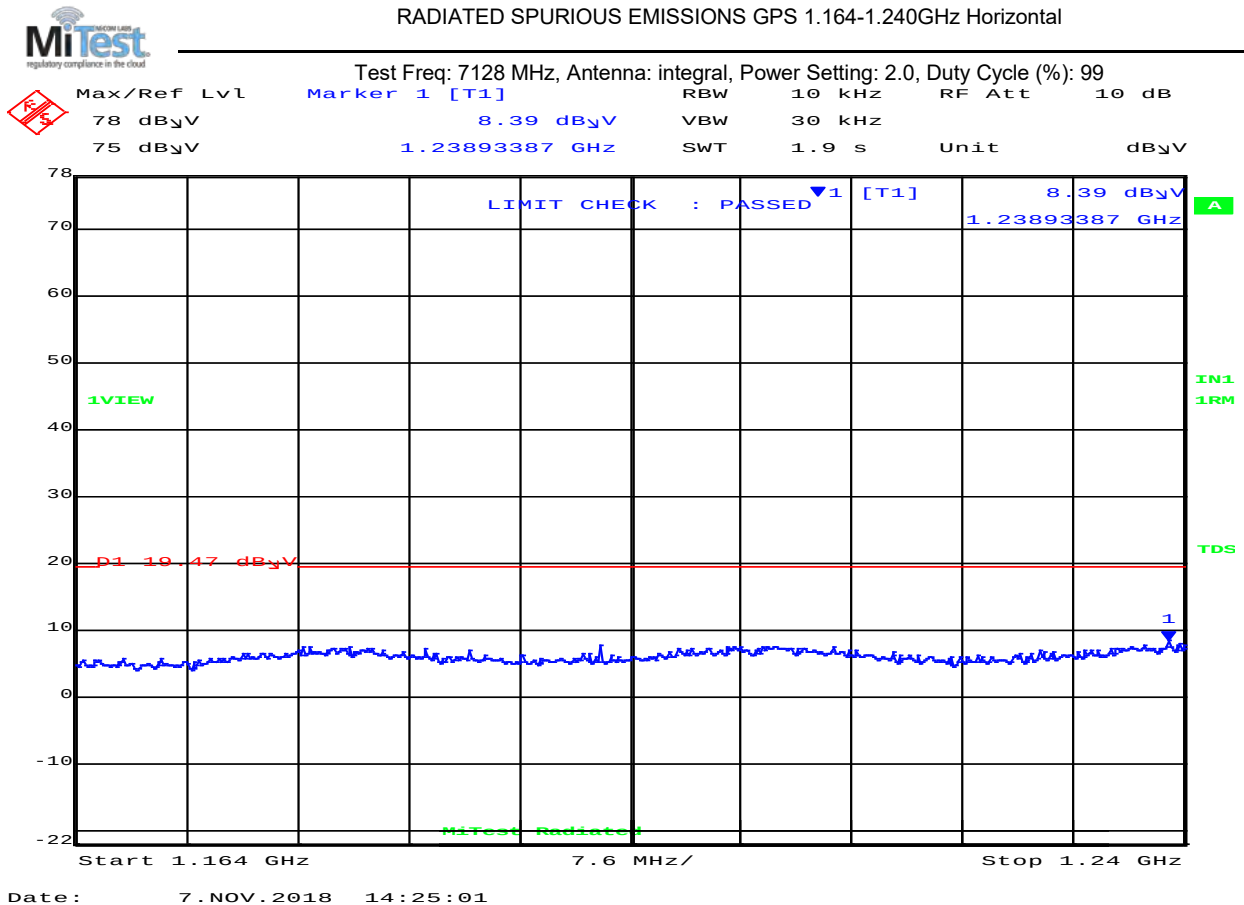
Title: Alereon AL5955, AL5930, AL5934
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7128 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz									
Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

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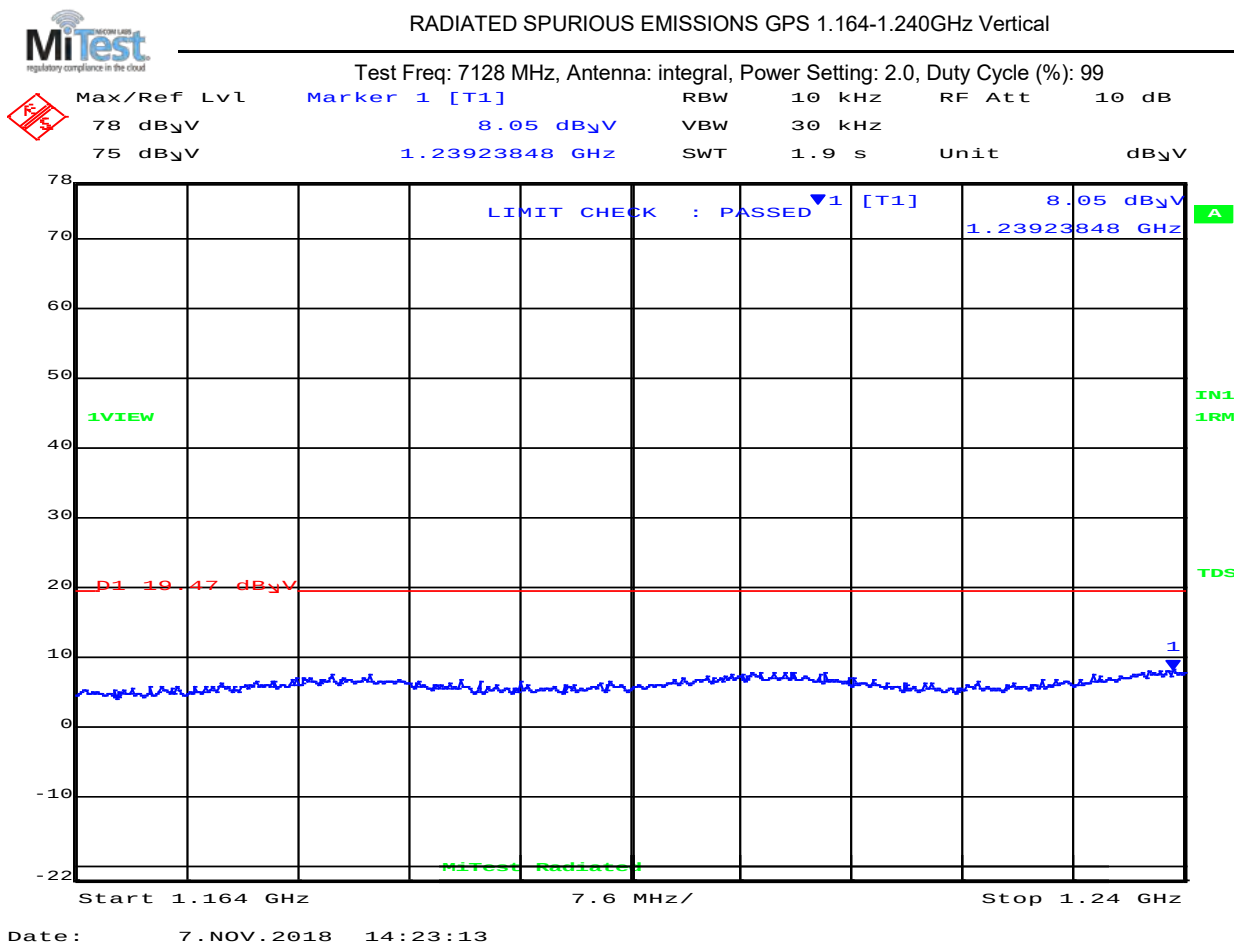


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Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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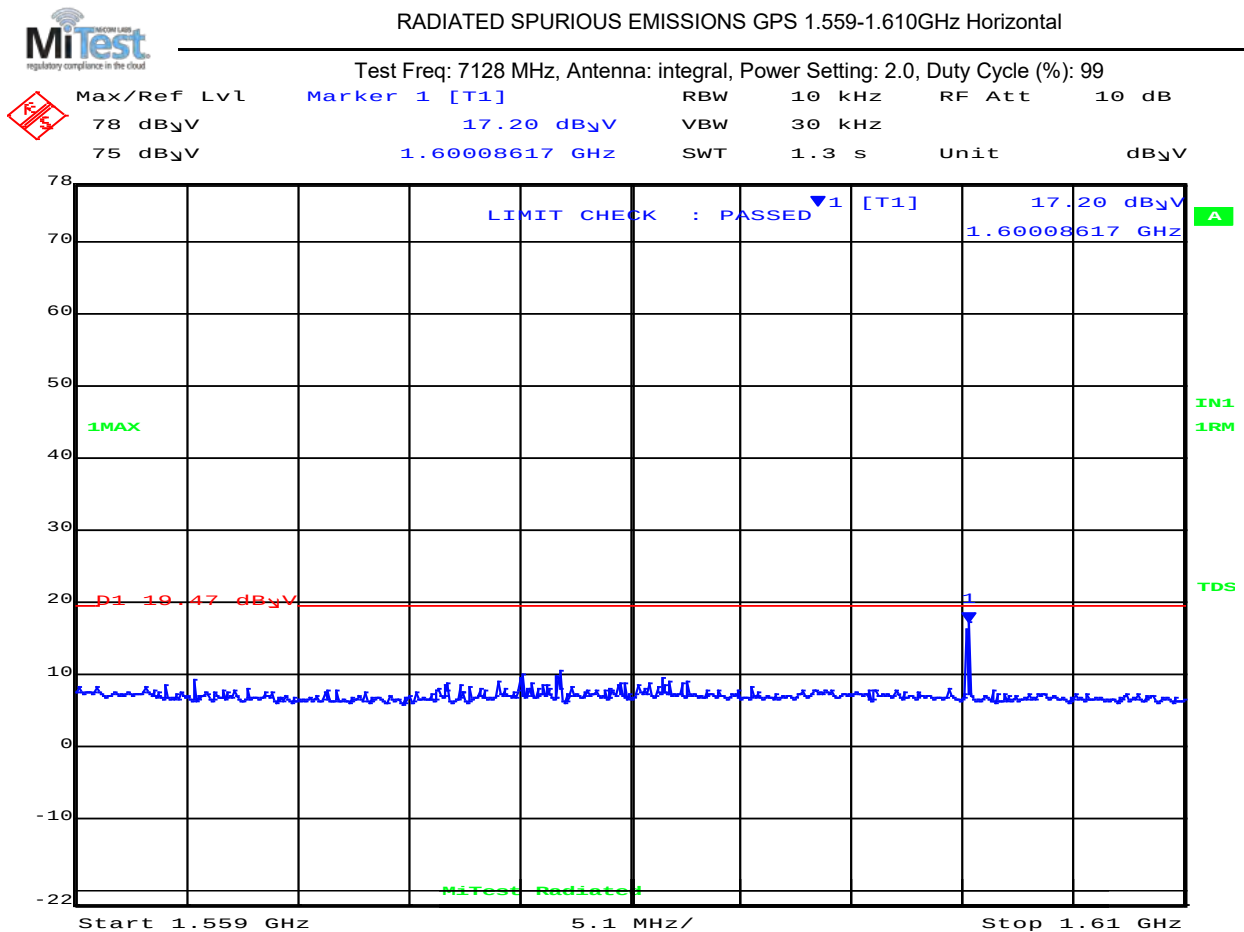


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Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



Date: 7.NOV.2018 14:27:39

1559.00-1610.00 MHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
2	1600.08	16.5	Average	Horizontal	150	0	19.47	-3.0	Pass

Test Notes:

Final Average measurements done with 1 KHz Receiver Bandwidth per standard

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Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

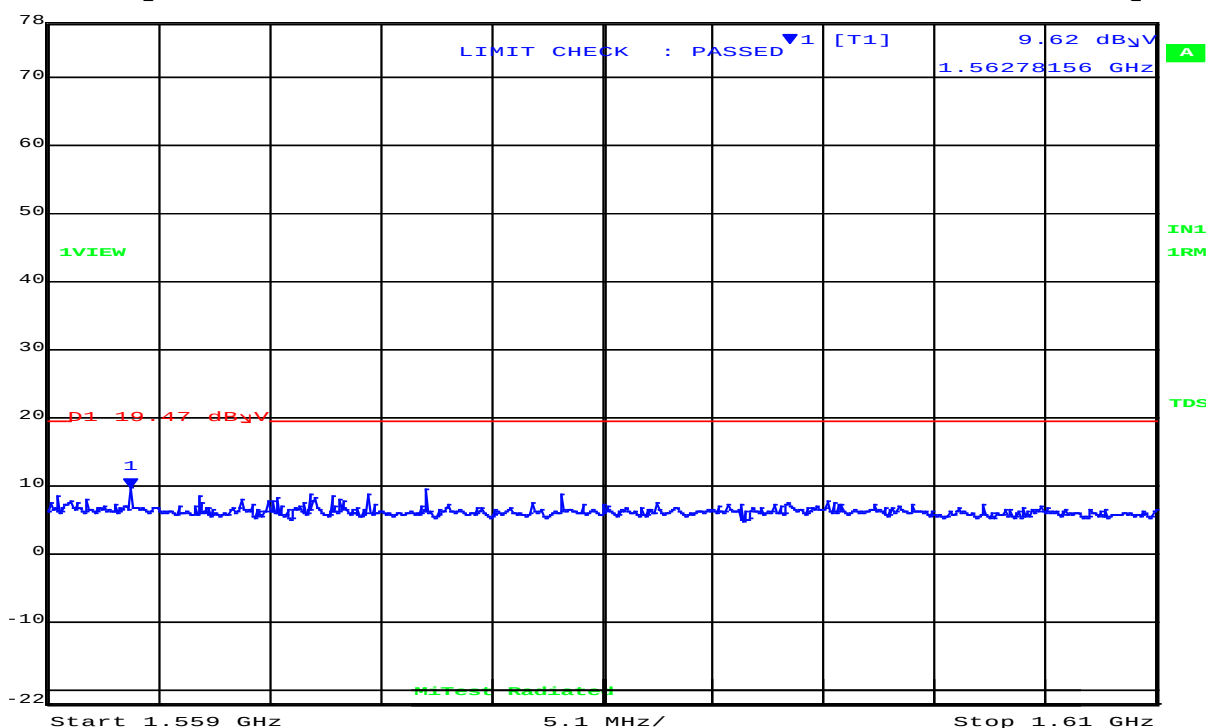
Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99

Max/Ref Lvl	Marker 1 [T1]	RBW	10 kHz	RF Att	10 dB
78 dB μ V	9.62 dB μ V	VBW	30 kHz		
75 dB μ V	1.56278156 GHz	SWT	1.3 s	Unit	dB μ V



Date: 7.NOV.2018 14:30:23

1559.00-1610.00 MHz									
Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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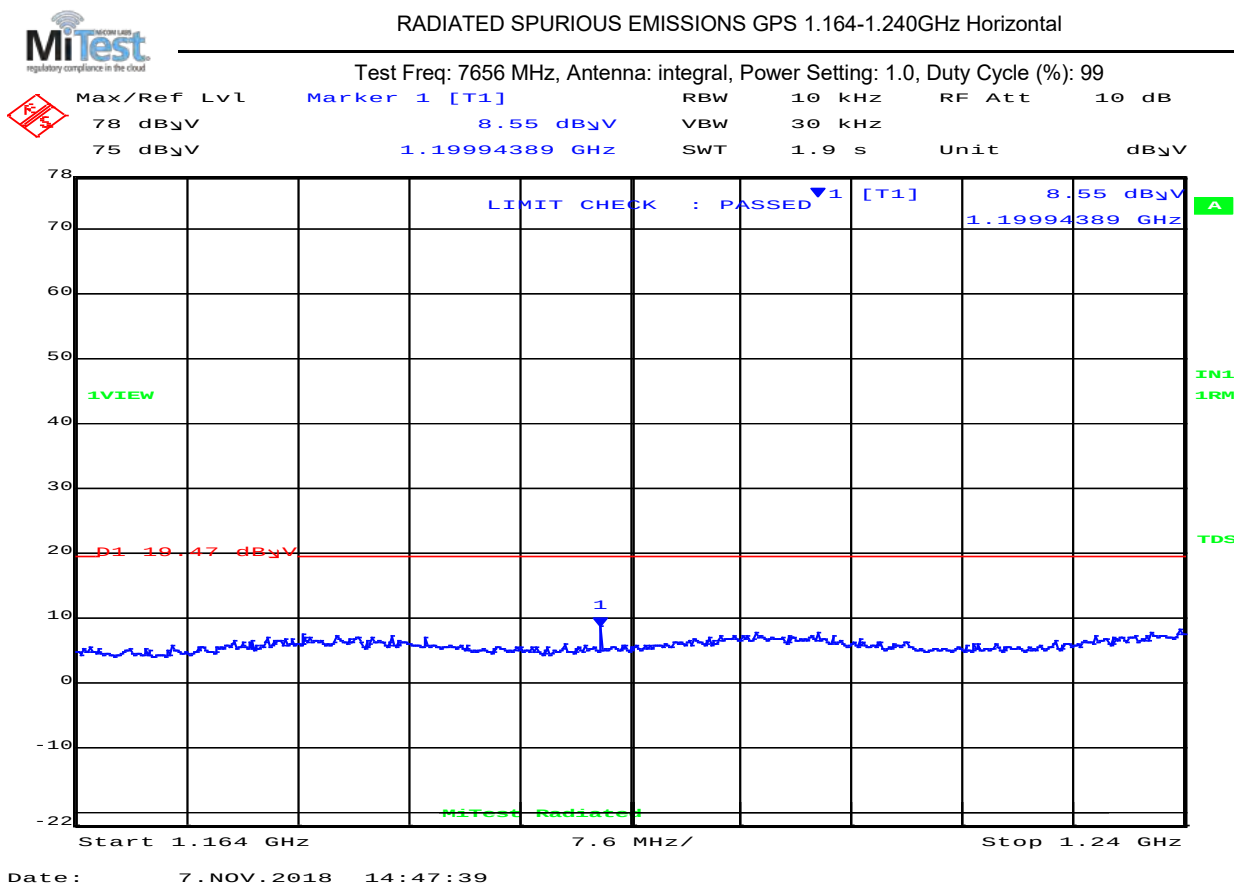
Title: Alereon AL5955, AL5930, AL5934
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7656 MHz (Covers Band Group 3 TFC 7 and Band Group 6 TFC 5)

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

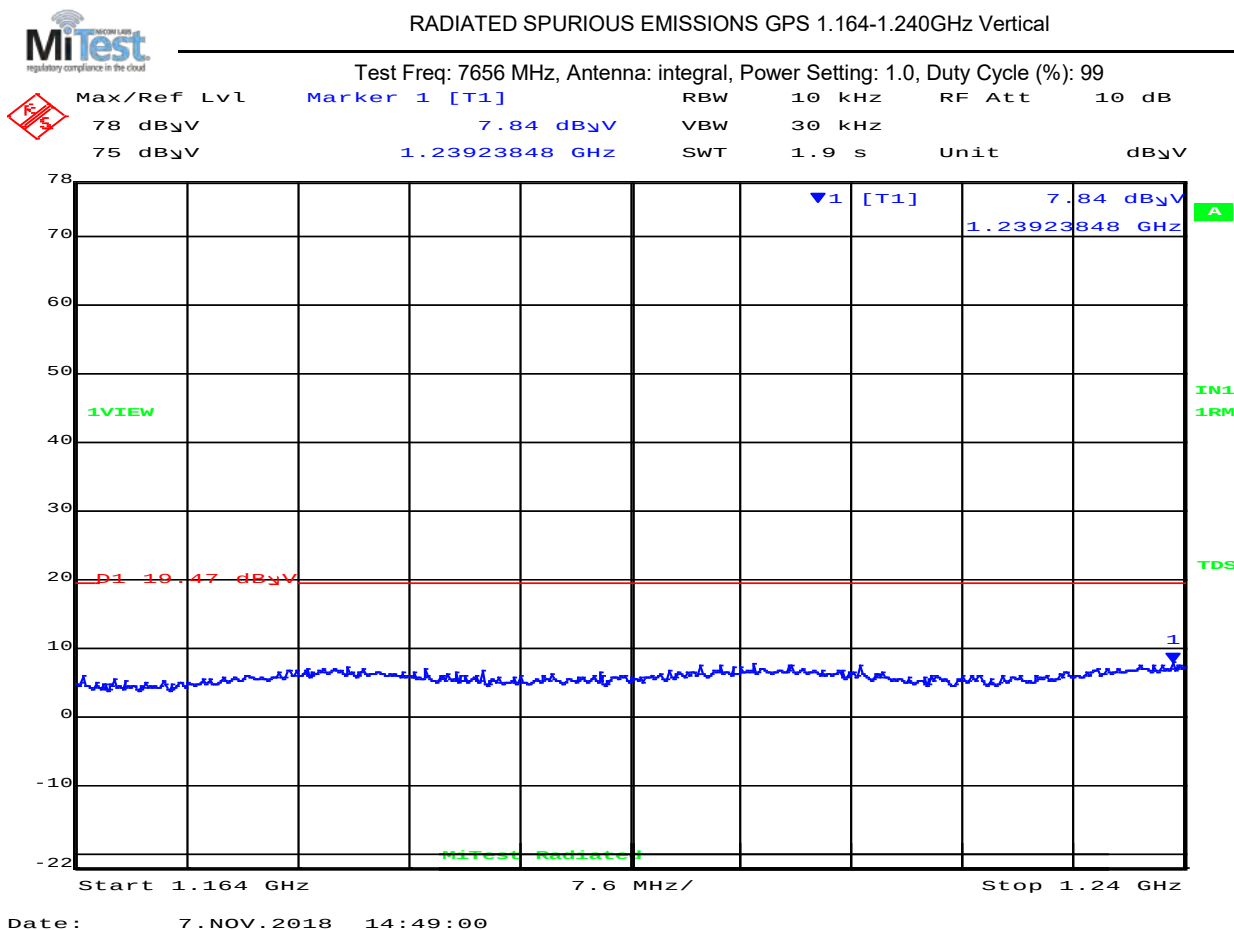


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Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

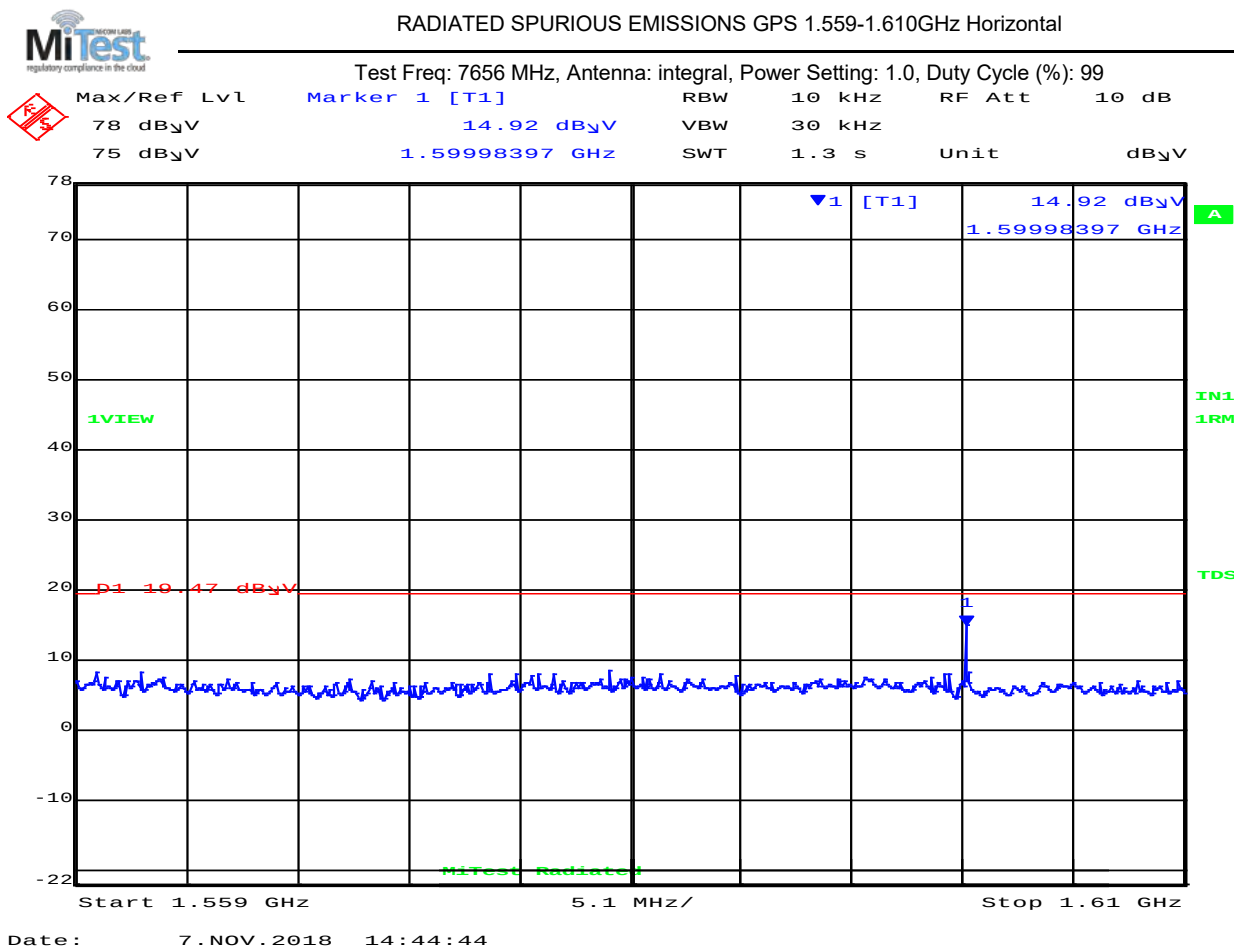


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Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

Test Measurement Results



1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
2	1599.98	4.8	Average	Horizontal	150	0	19.47	-14.7	Pass

Test Notes:

Final Average measurements done with 1 KHz Receiver Bandwidth per standard

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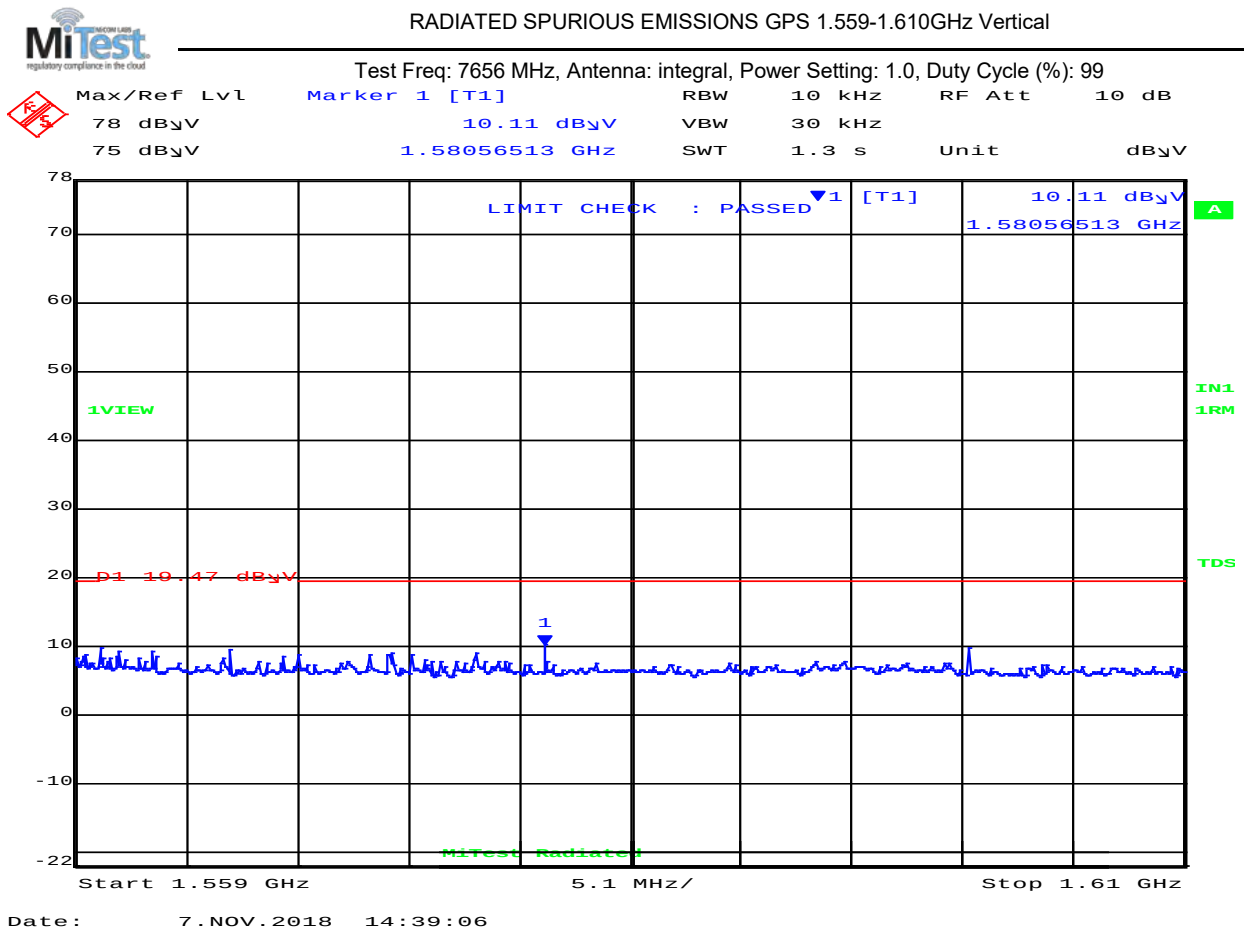


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Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

Test Measurement Results



1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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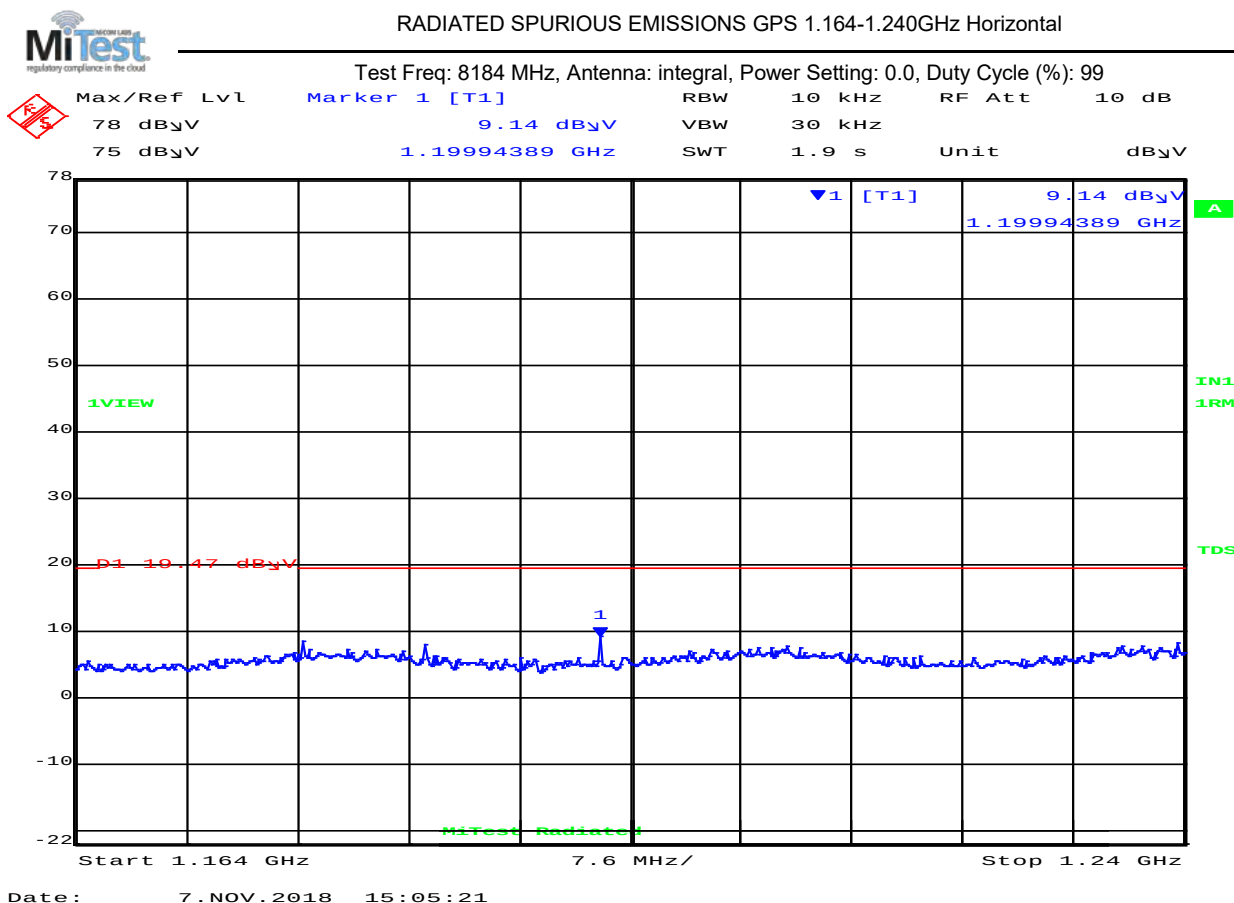
Title: Alereon AL5955, AL5930, AL5934
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8184 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz

Num	Frequency MHz	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

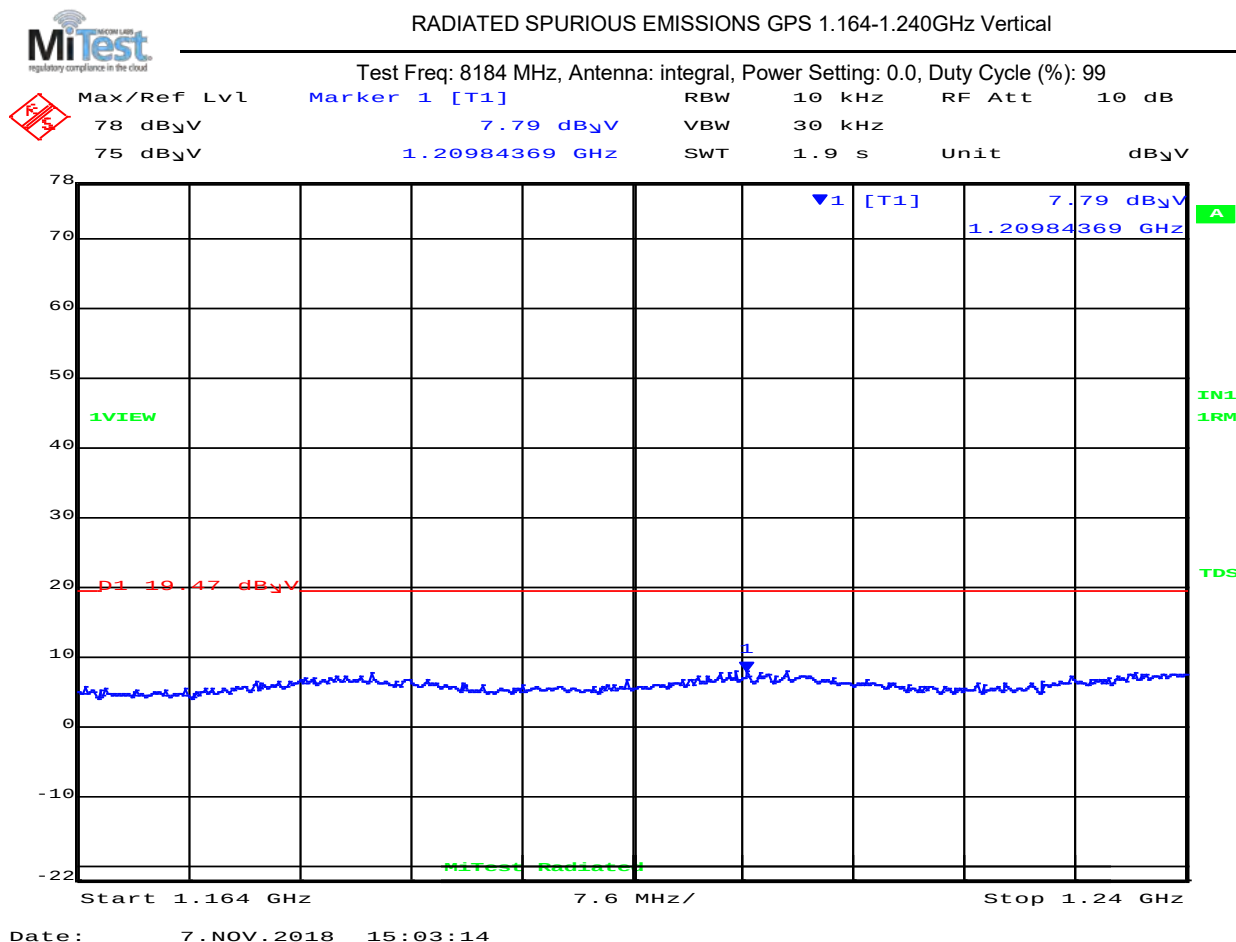


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Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

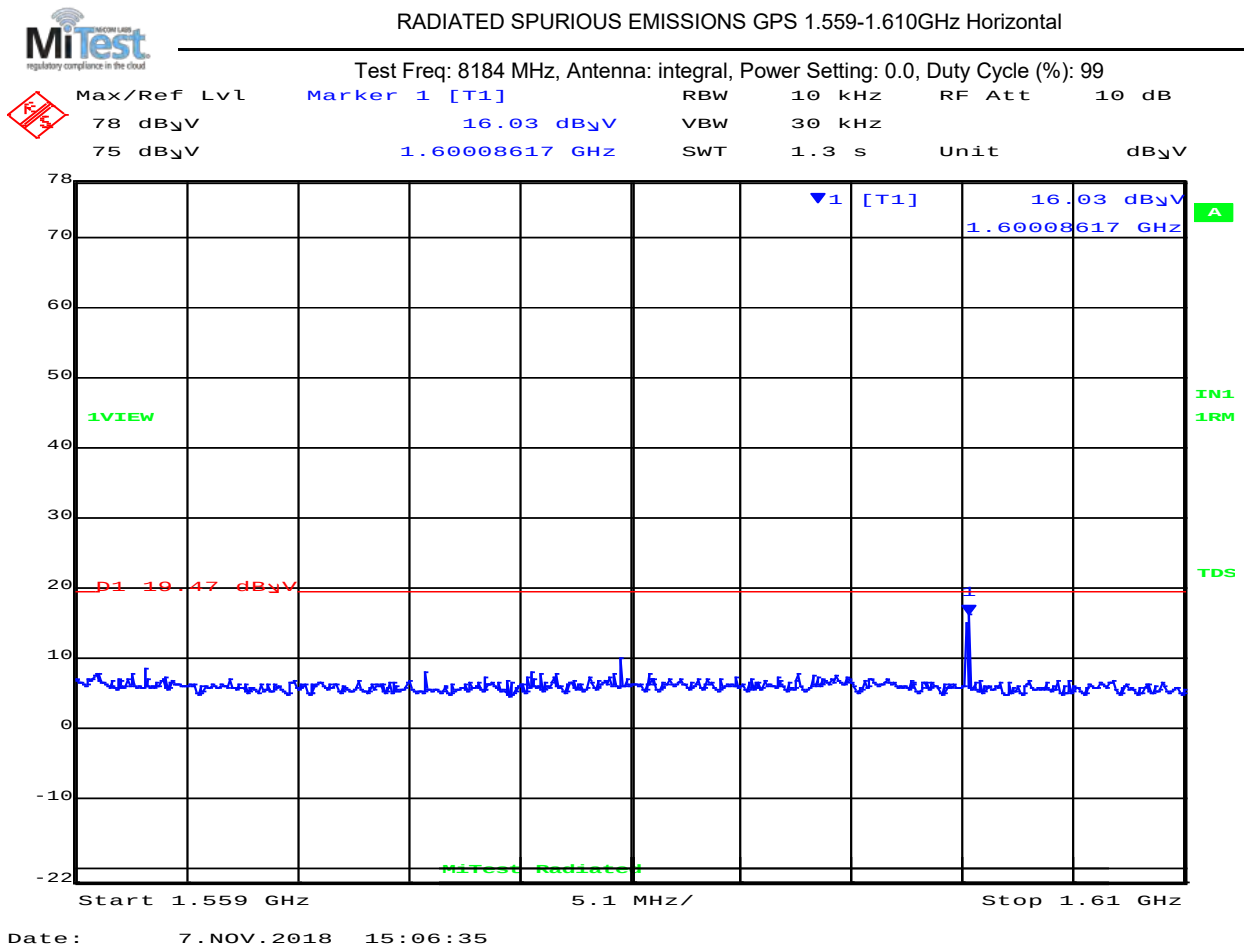


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Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
2	1600.08	5.6*	Average	Horizontal	150	0	19.47	-13.9	Pass

Test Notes:

Final Average measurements done with 1 KHz Receiver Bandwidth per standard

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Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

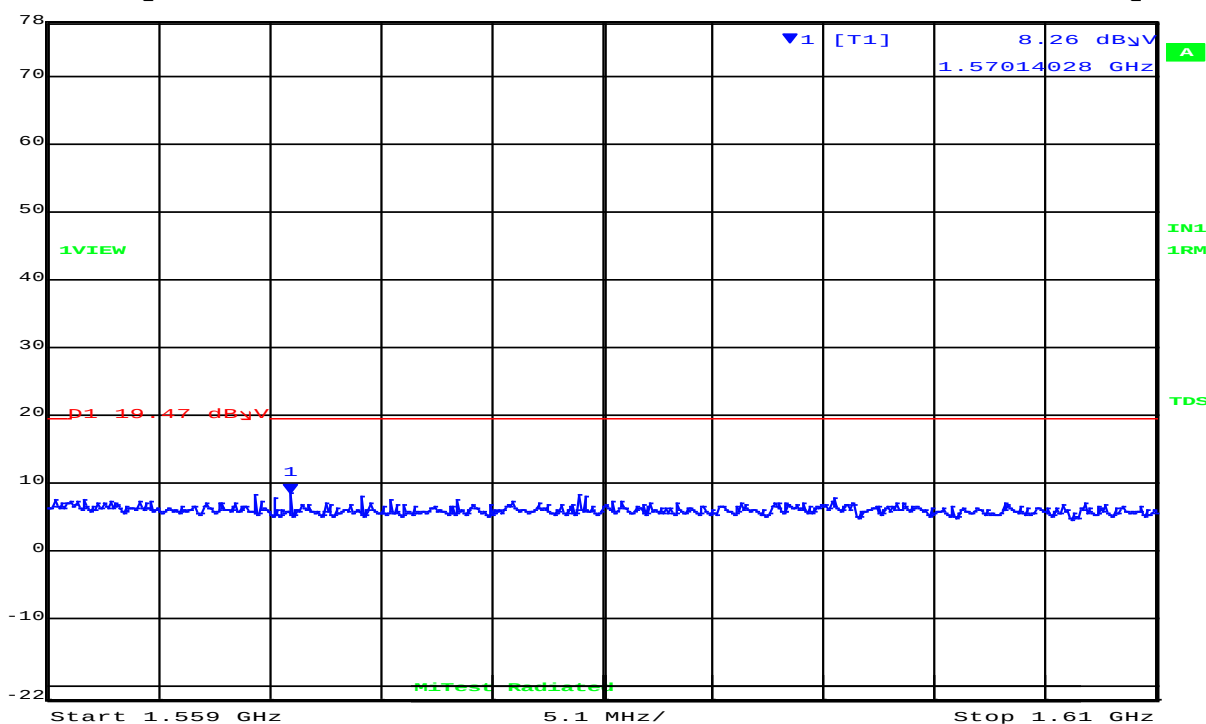
Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99

Max/Ref Lvl	Marker 1 [T1]	RBW	10 kHz	RF Att	10 dB
78 dBμV	8.26 dBμV	VBW	30 kHz		
75 dBμV	1.57014028 GHz	SWT	1.3 s	Unit	dBμV



Date: 7.NOV.2018 15:09:44

1559.00-1610.00 MHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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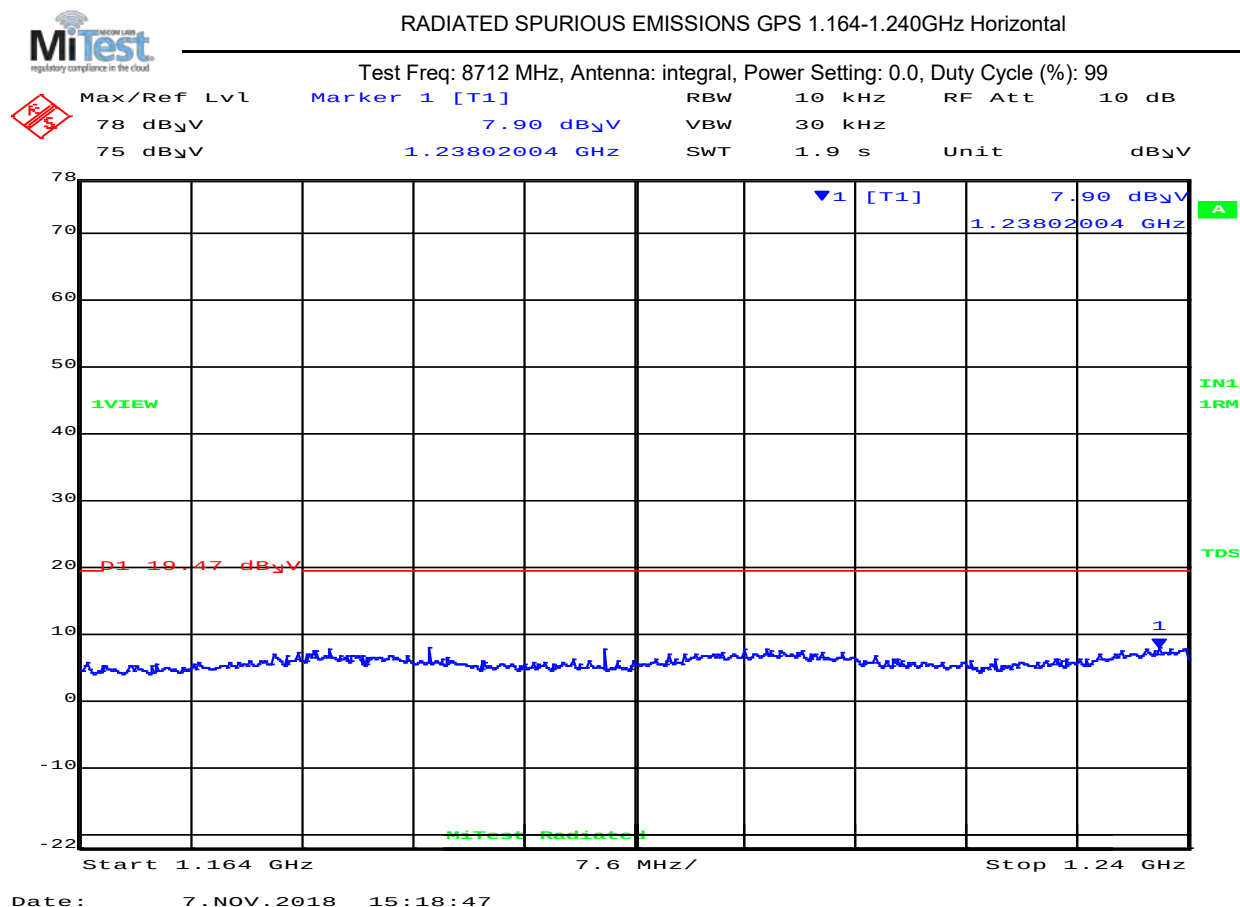
Title: Alereon AL5955, AL5930, AL5934
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8712 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

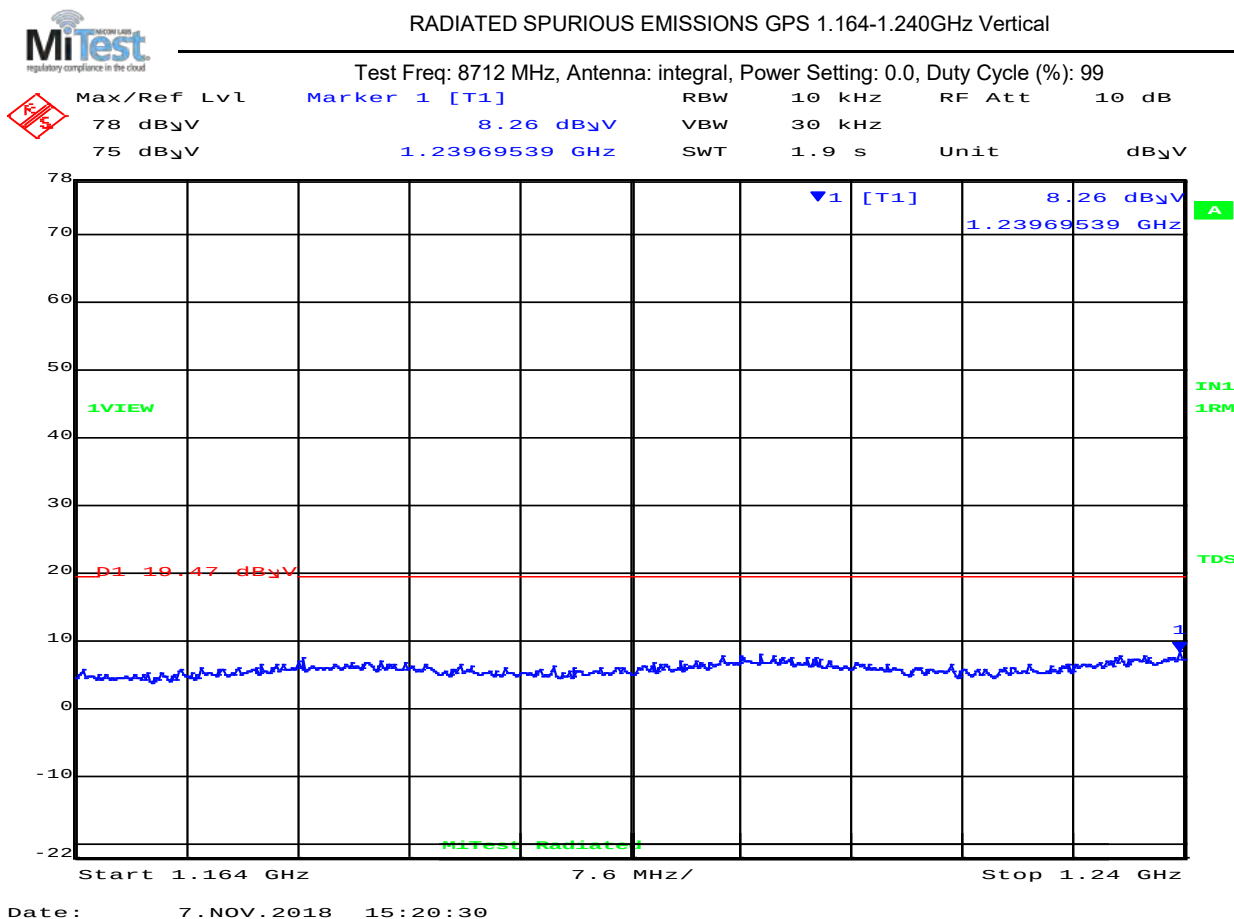


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Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

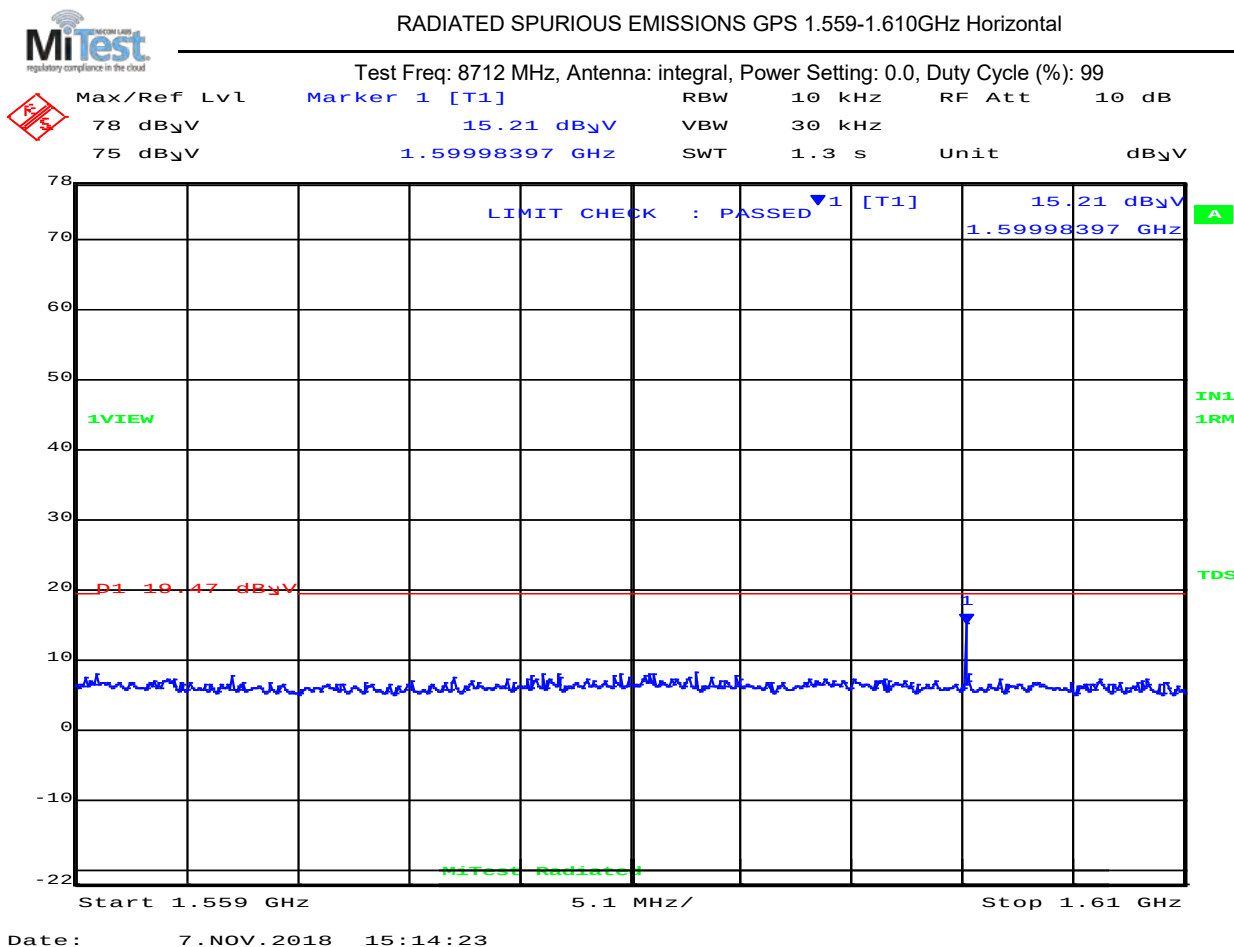


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



1559.00-1610.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
2	1599.98	12.2*	Average	Horizontal	150	0	19.47	-7.3	Pass

Test Notes:

Final Average measurements done with 1 KHz Receiver Bandwidth per standard

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

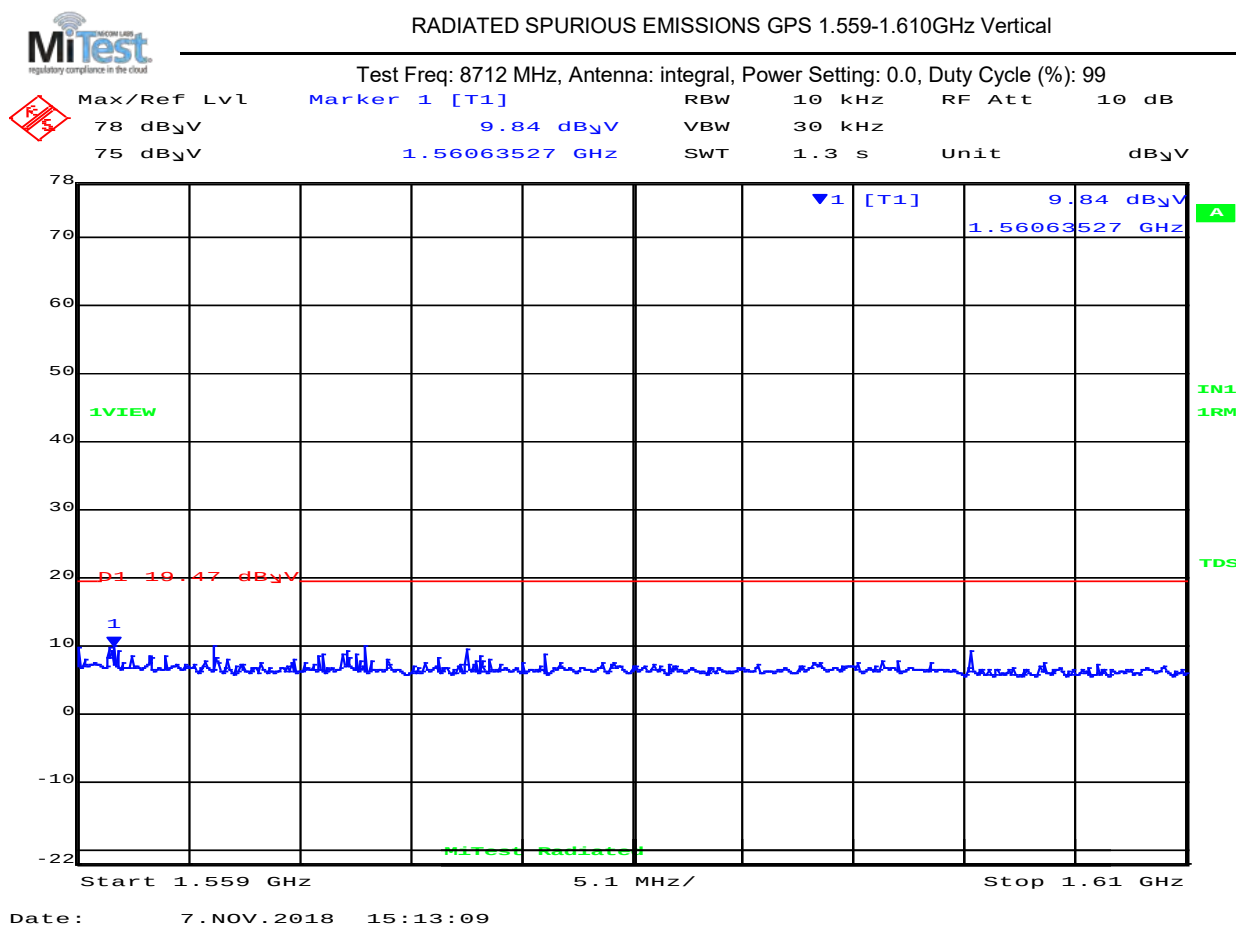


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Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



1559.00-1610.00 MHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



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9.4.2.2. Camouflage AL5955

3432 MHz

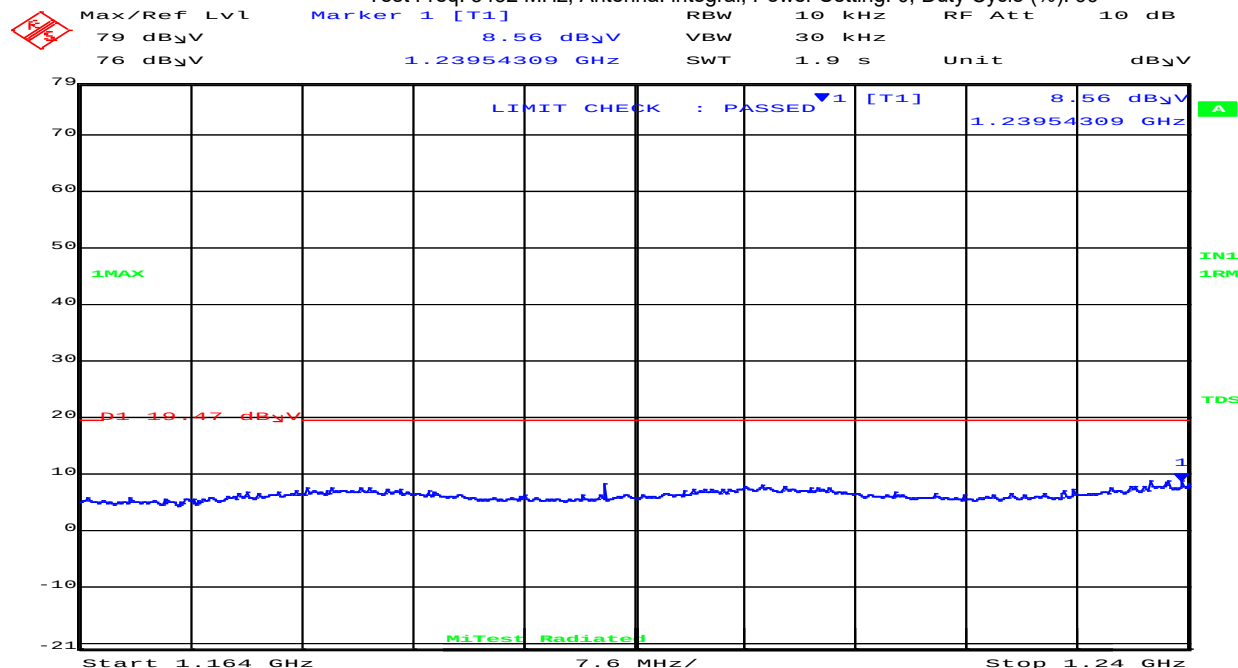
Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	1.0	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3432.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH



RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Horizontal

Test Freq: 3432 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Test Measurement Results

1164.00-1240.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
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No Signals Found within 6 dB of Limit

Test Notes:

Laptop Removed

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Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

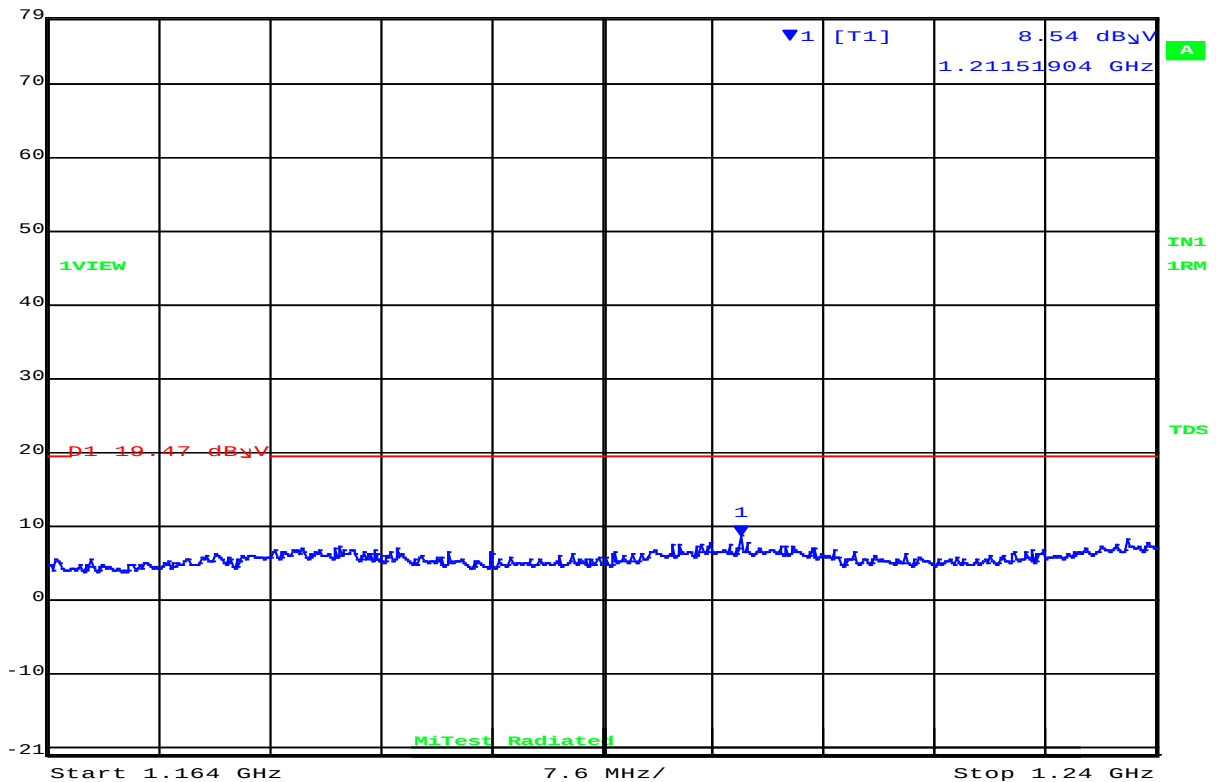
Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	1.0	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3432.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH



RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical

Test Freq: 3432 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99

Max/Ref Lvl Marker 1 [T1] RBW 10 kHz RF Att 10 dB
79 dBμV 8.54 dBμV VBW 30 kHz
76 dBμV 1.21151904 GHz SWT 1.9 s Unit dBμV



Date: 7.NOV.2018 16:02:00

Test Measurement Results

1164.00-1240.00 MHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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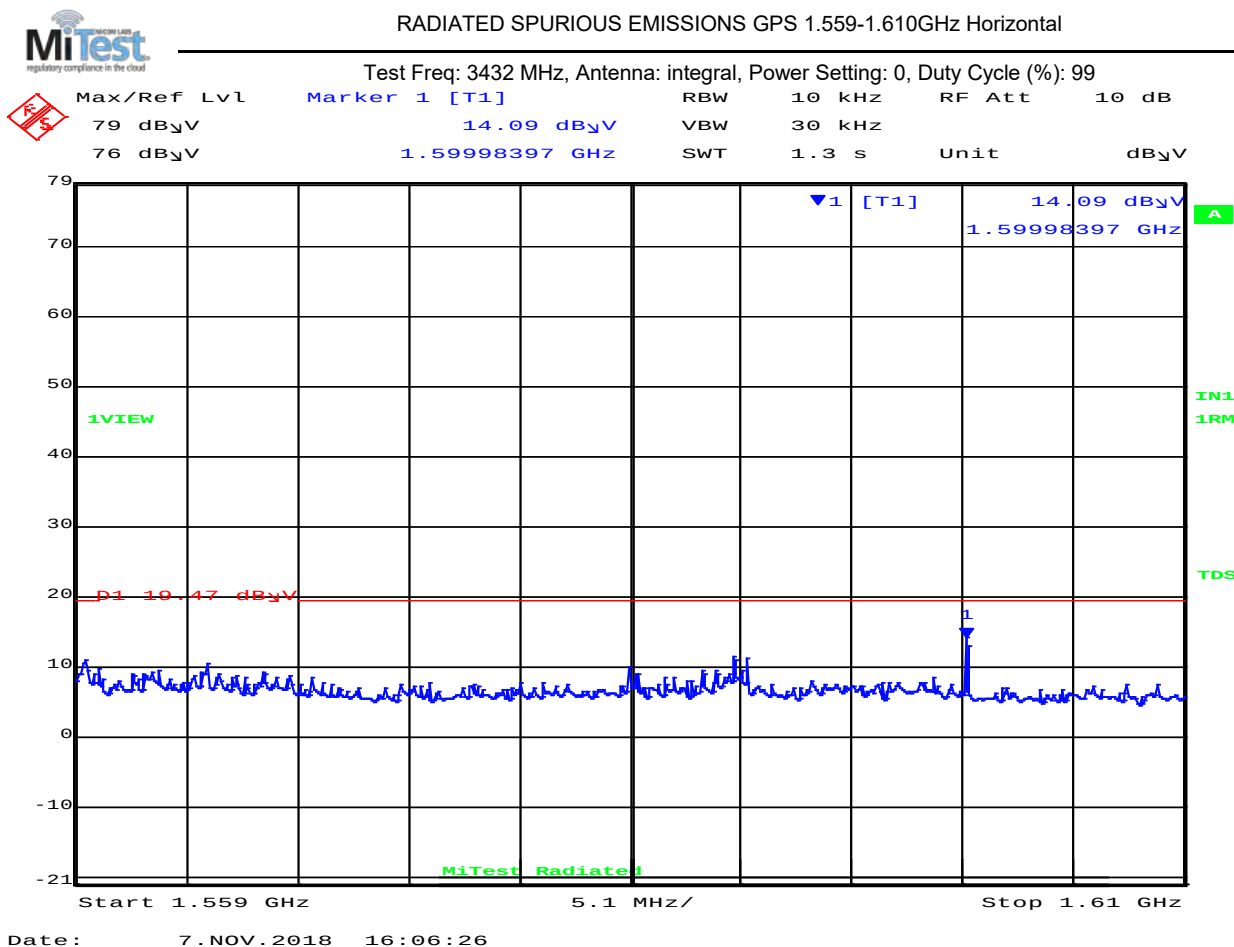


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 1.559-1.610GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	1.0	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3432.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	1599.98	3.2*	Average	Horizontal	150	0	19.47	-16.27	Pass

Test Notes:

Final Average measurements done with 1 KHz Receiver Bandwidth per standard.

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Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	1.0	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3432.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

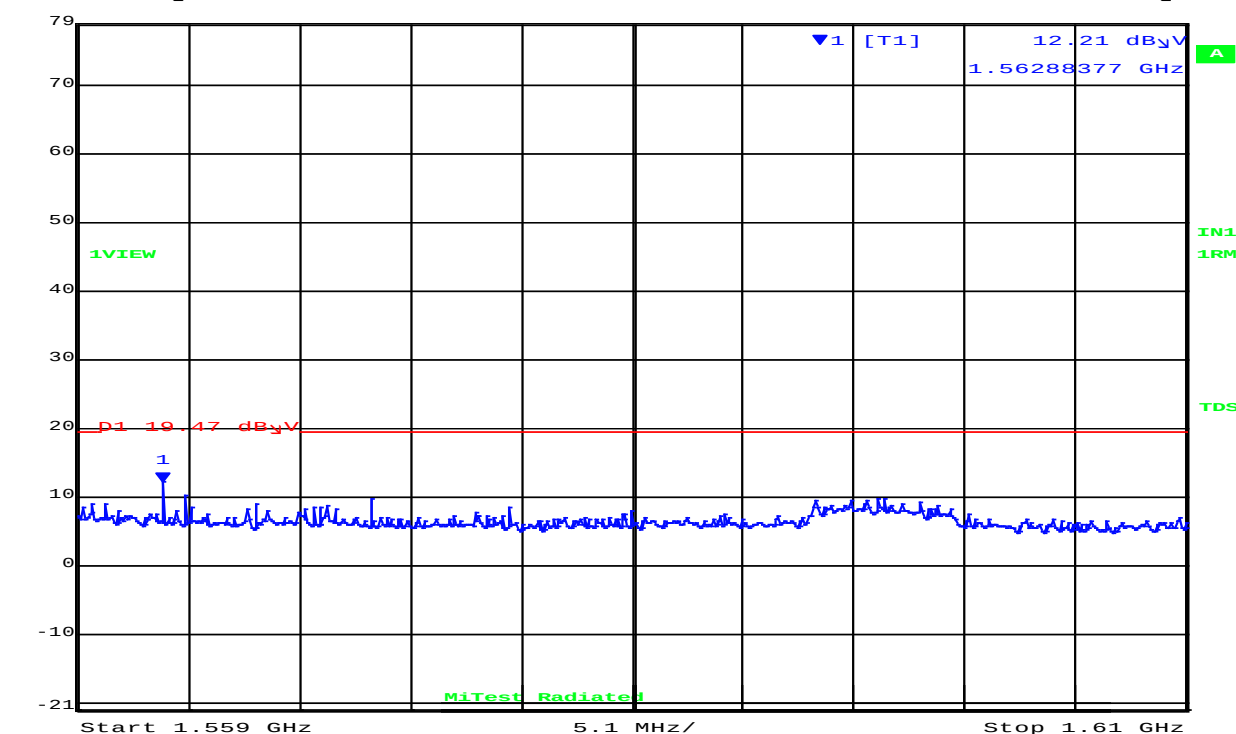
Test Measurement Results

RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical



Test Freq: 3432 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99

Max/Ref Lvl	Marker 1 [T1]	RBW	10 kHz	RF Att	10 dB
79 dBμV	12.21 dBμV	VBW	30 kHz		
76 dBμV	1.56288377 GHz	SWT	1.3 s	Unit	dBμV



Date: 7. NOV. 2018 16:09:53

1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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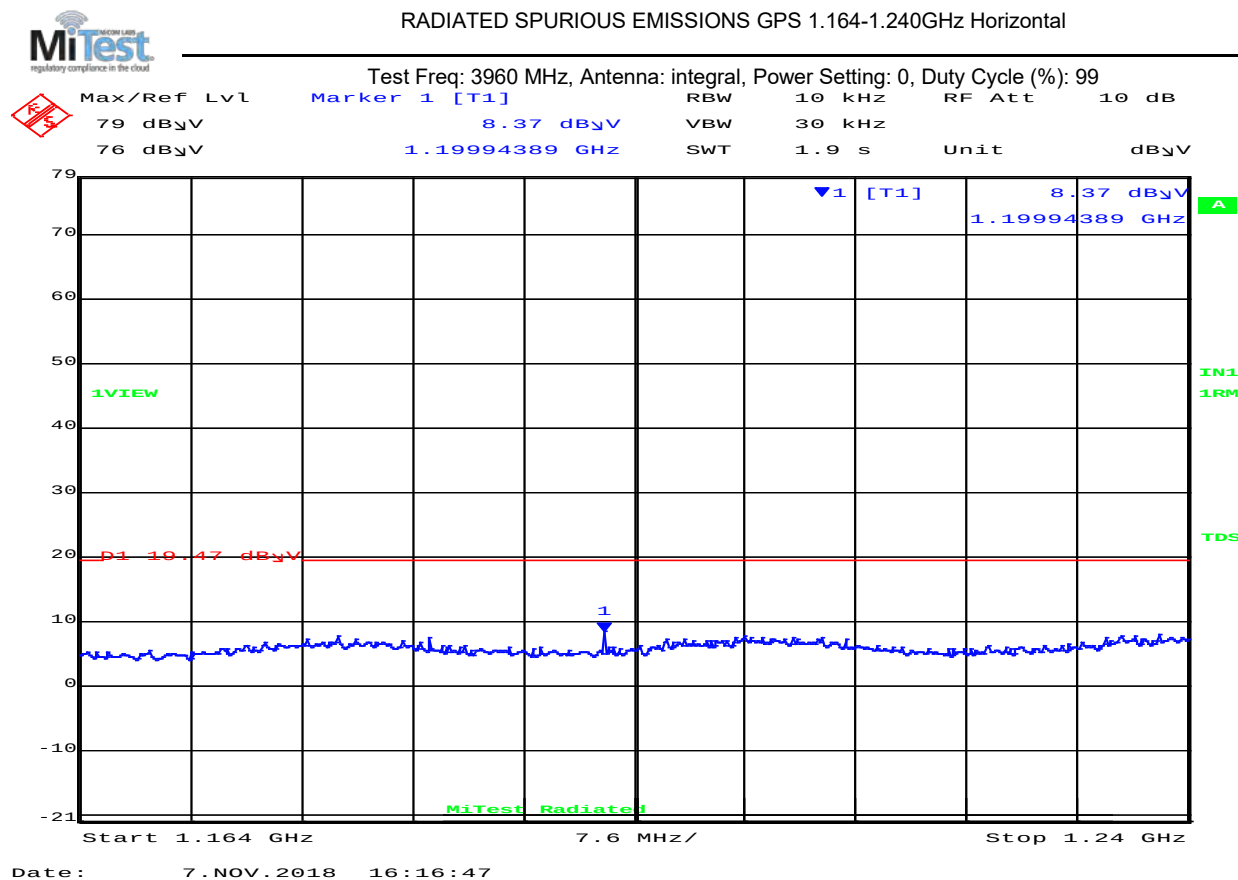
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
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3960 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

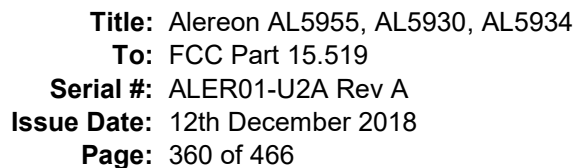
Test Measurement Results



1164.00-1240.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99

Max/Ref Lvl	Marker 1 [T1]	RBW	10 kHz	RF Att	10 dB
79 dBμV	8.31 dBμV	VBW	30 kHz		
76 dBμV	1.23756313 GHz	SWT	1.9 s	Unit	dBμV

1VIEW

19.47 dBμV

8.31 dBμV

1.23756313 GHz

1

MiTest Radiated

Start 1.164 GHz 7.6 MHz/ Stop 1.24 GHz

Date: 7.NOV.2018 16:17:53

1164.00-1240.00 MHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

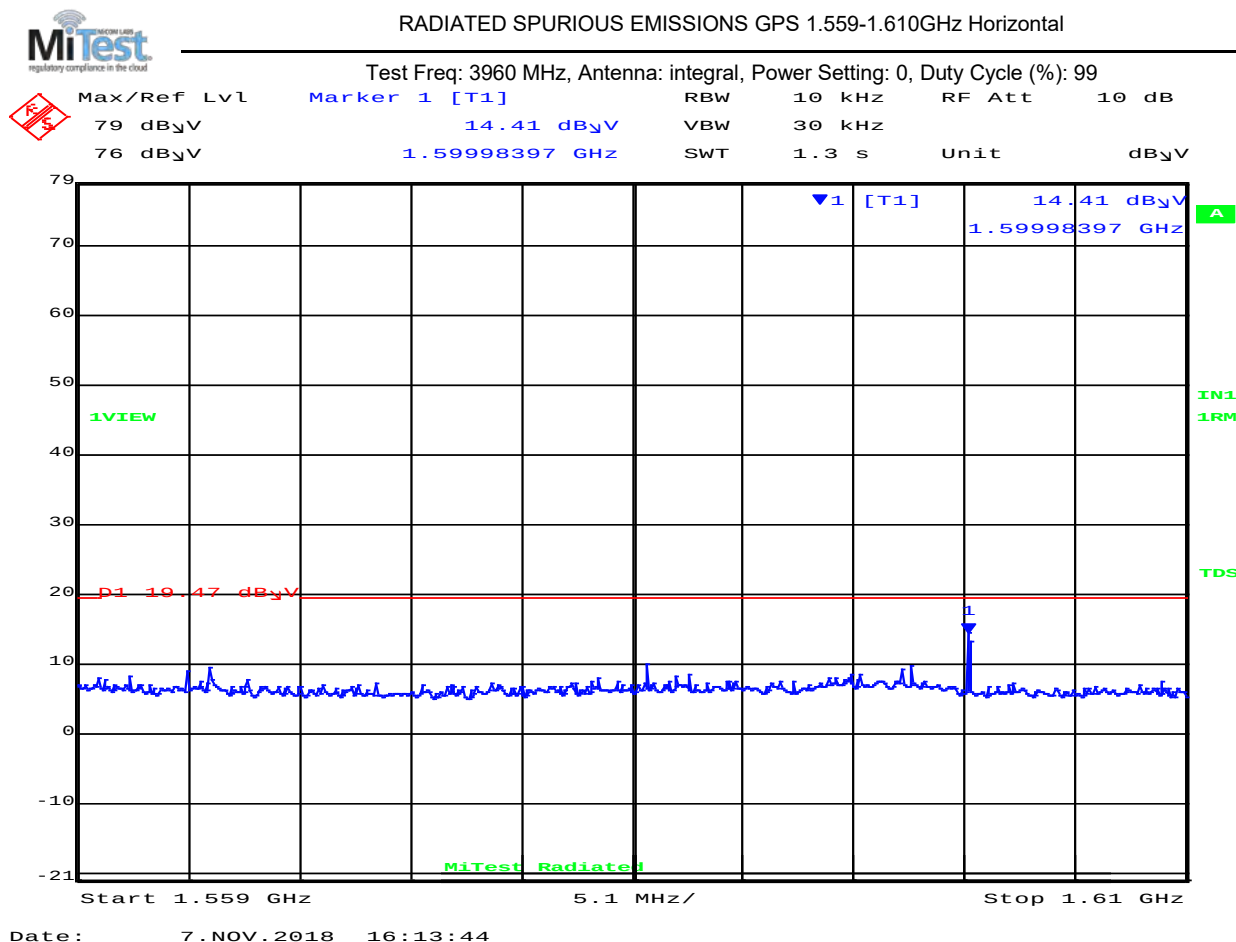


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1559.00-1610.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
2	1599.99	2.8*	Average	Horizontal	150	0	19.47	-16.67	Pass

Test Notes:

Final Average measurements done with 1 KHz Receiver Bandwidth per standard

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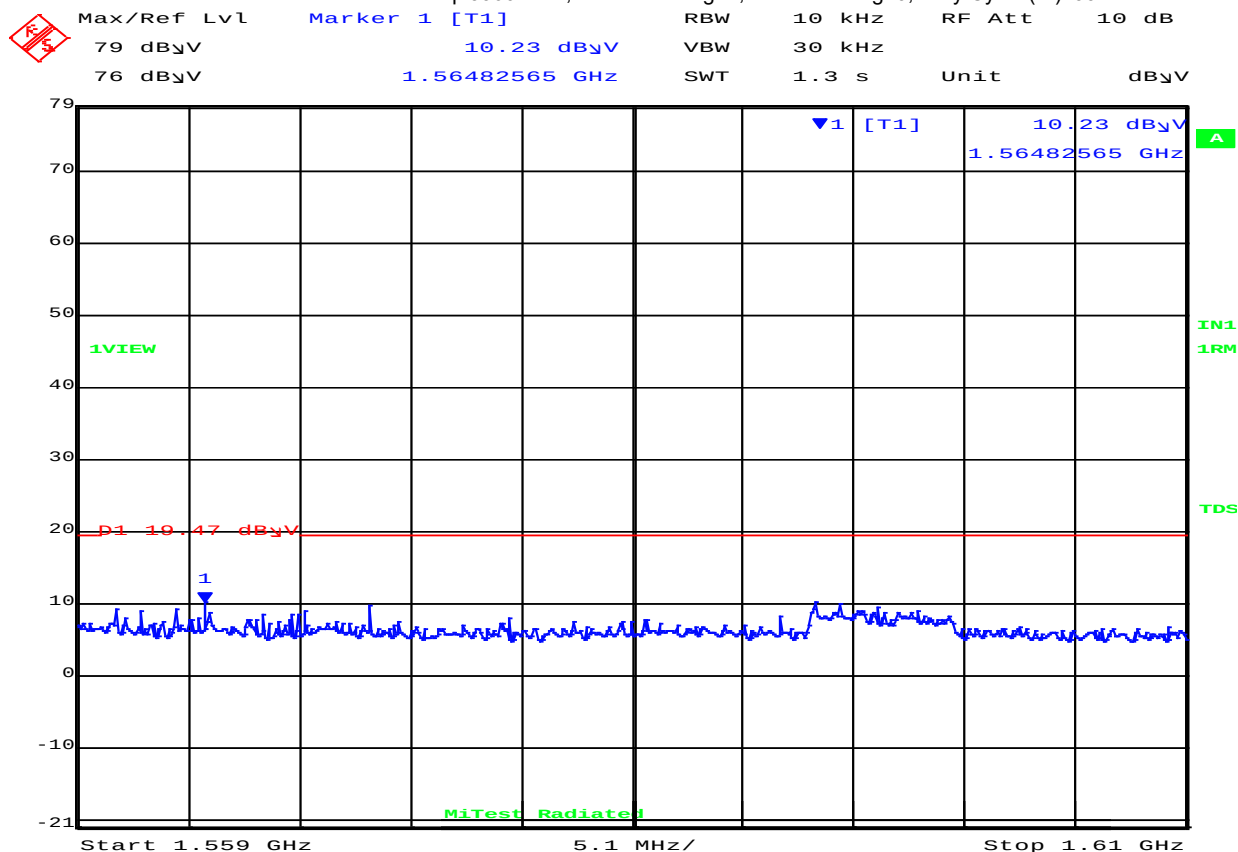
Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH



RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 7.NOV.2018 16:12:47

Test Measurement Results

1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
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No Signals Found within 6 dB of Limit

Test Notes:

Laptop Removed

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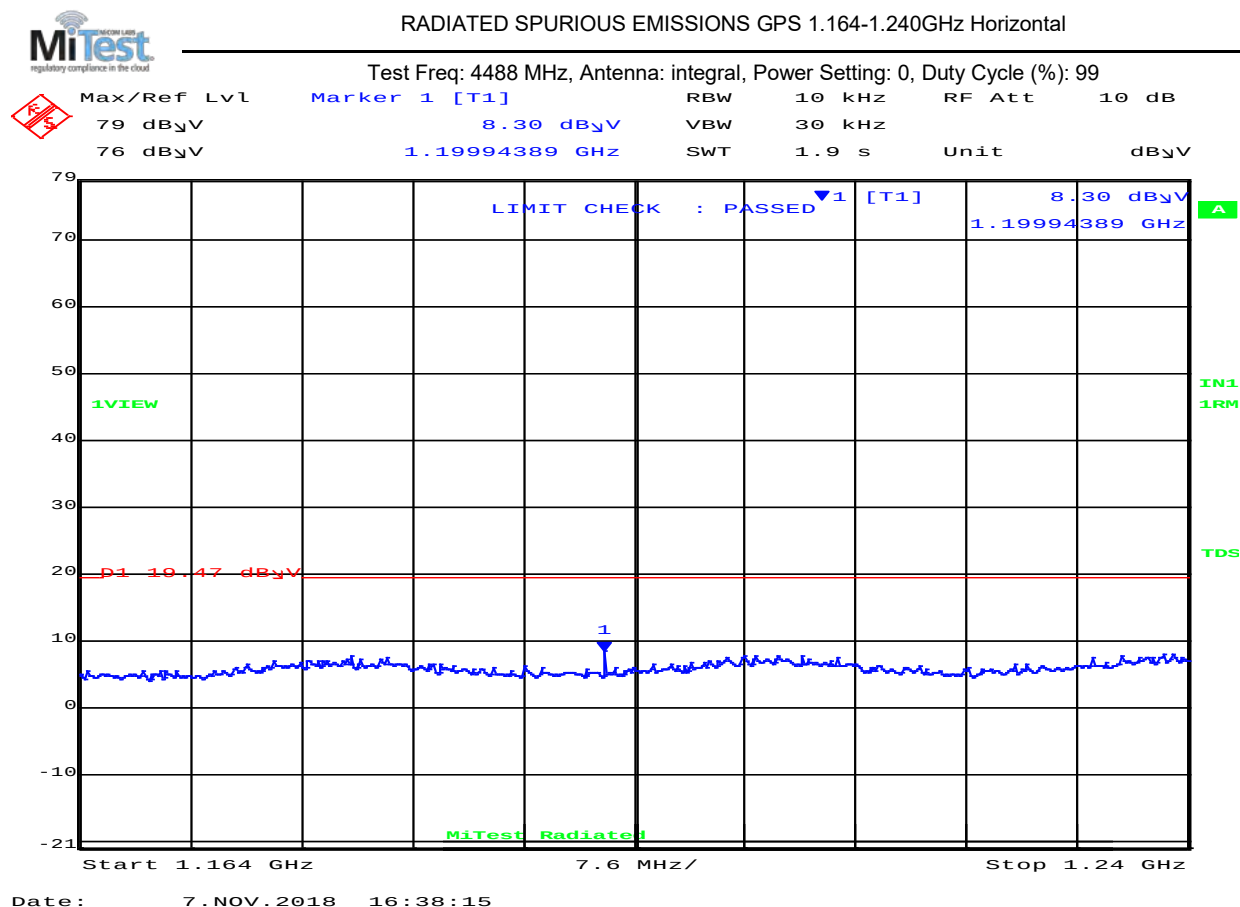
Title: Alereon AL5955, AL5930, AL5934
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4488 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz									
Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

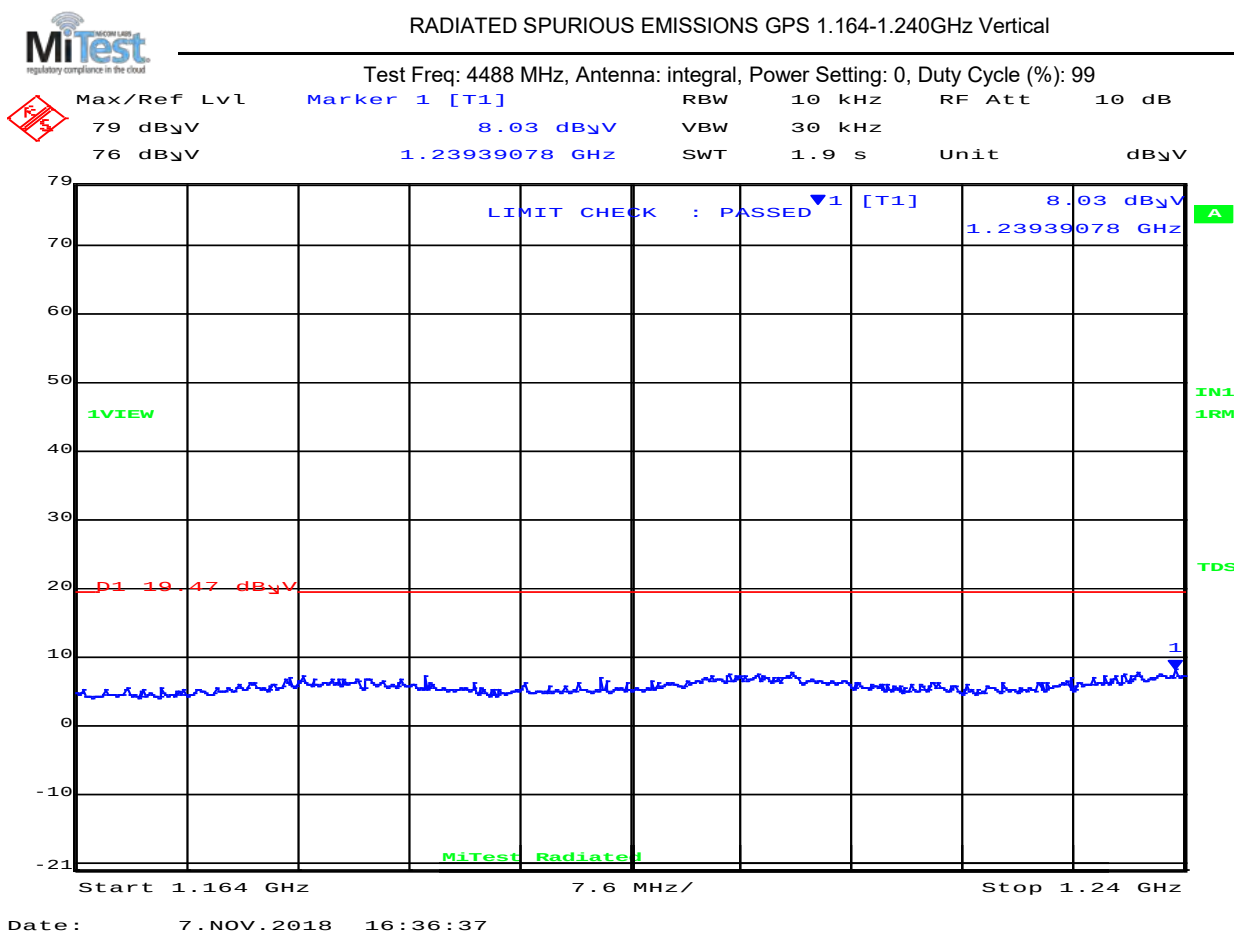


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

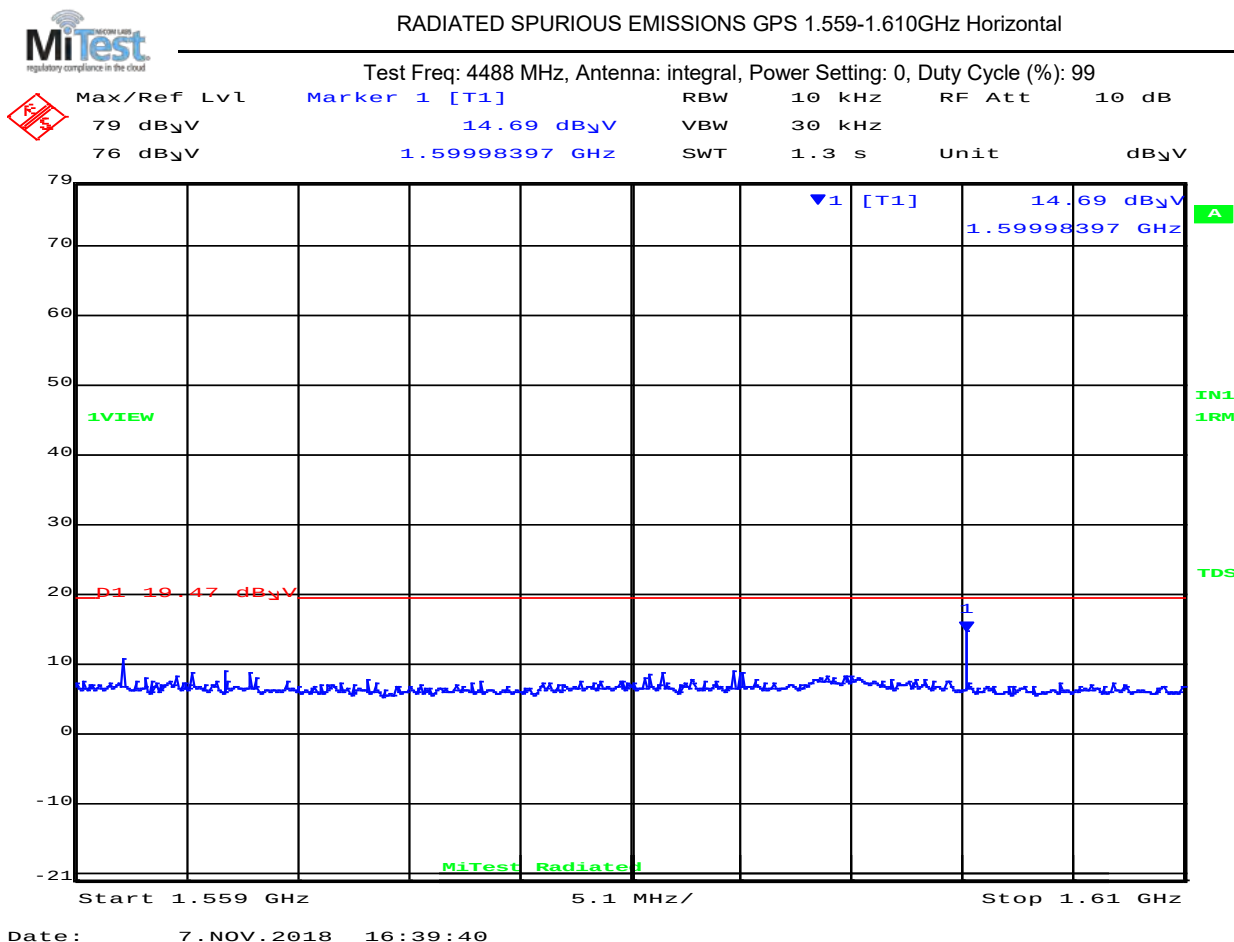


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1559.00-1610.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
2	1599.98	2.1*	Average	Horizontal	150	0	19.47	-17.4	Pass

Test Notes:

Final Average measurements done with 1 KHz Receiver Bandwidth per standard

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



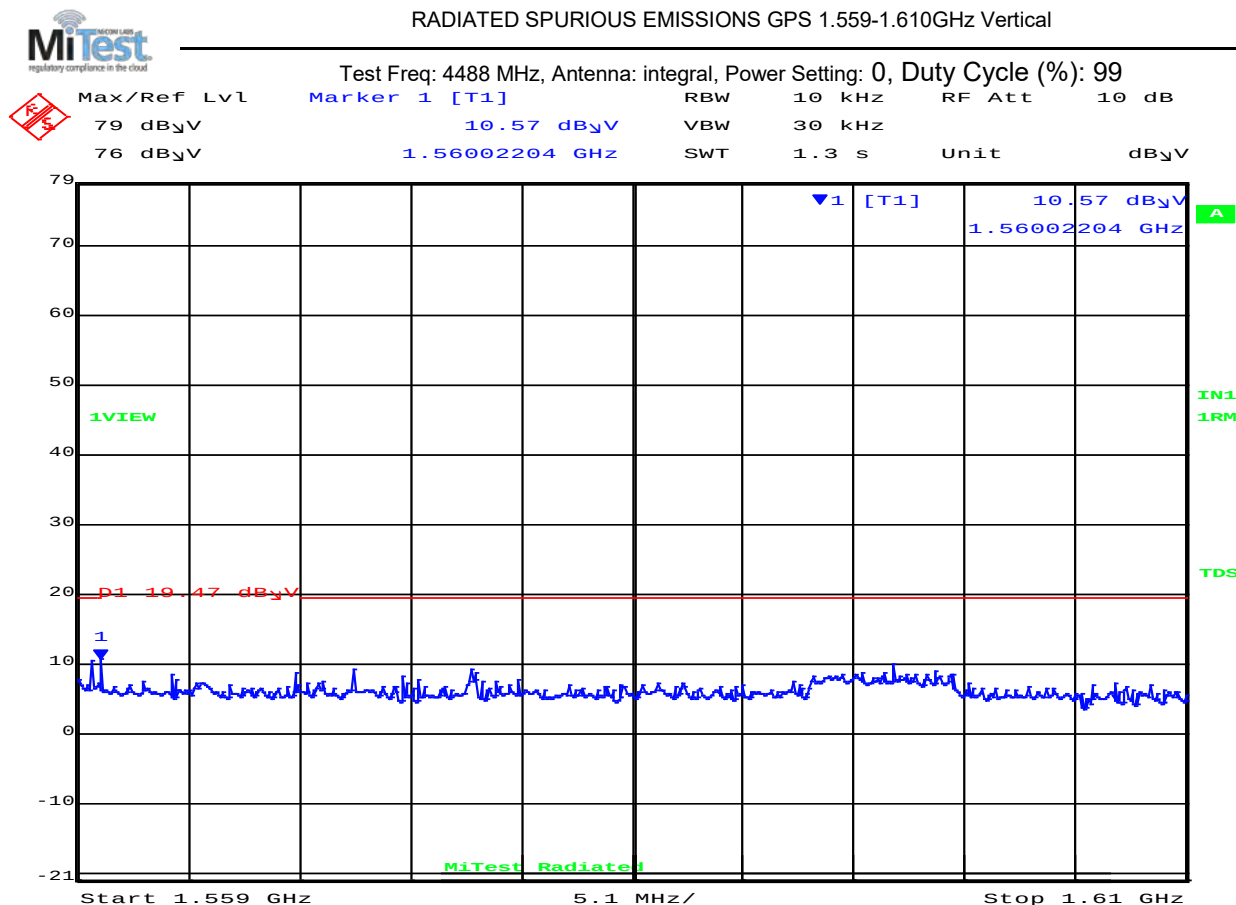
Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results

RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical



Date: 7.NOV.2018 16:43:24

1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



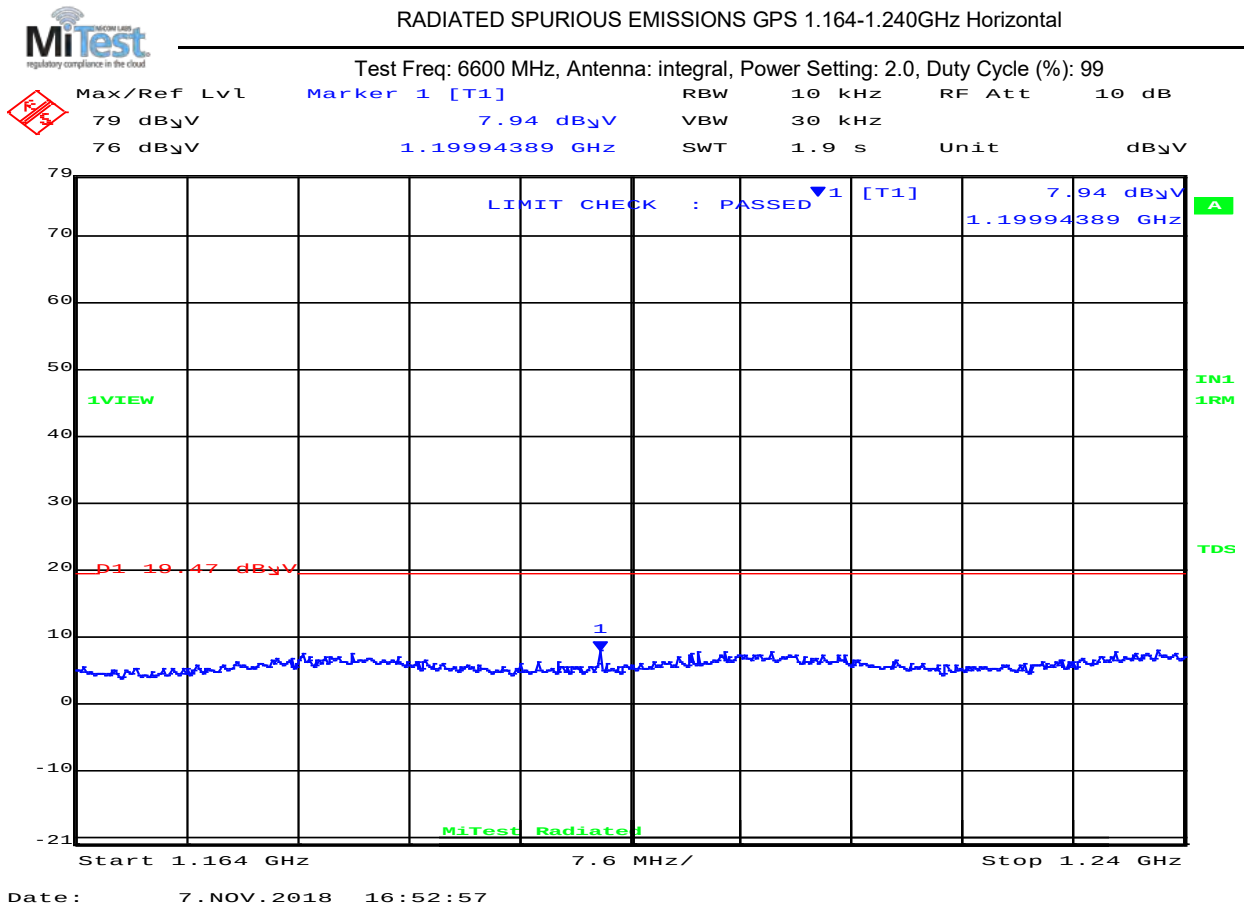
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
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6600 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz									
Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

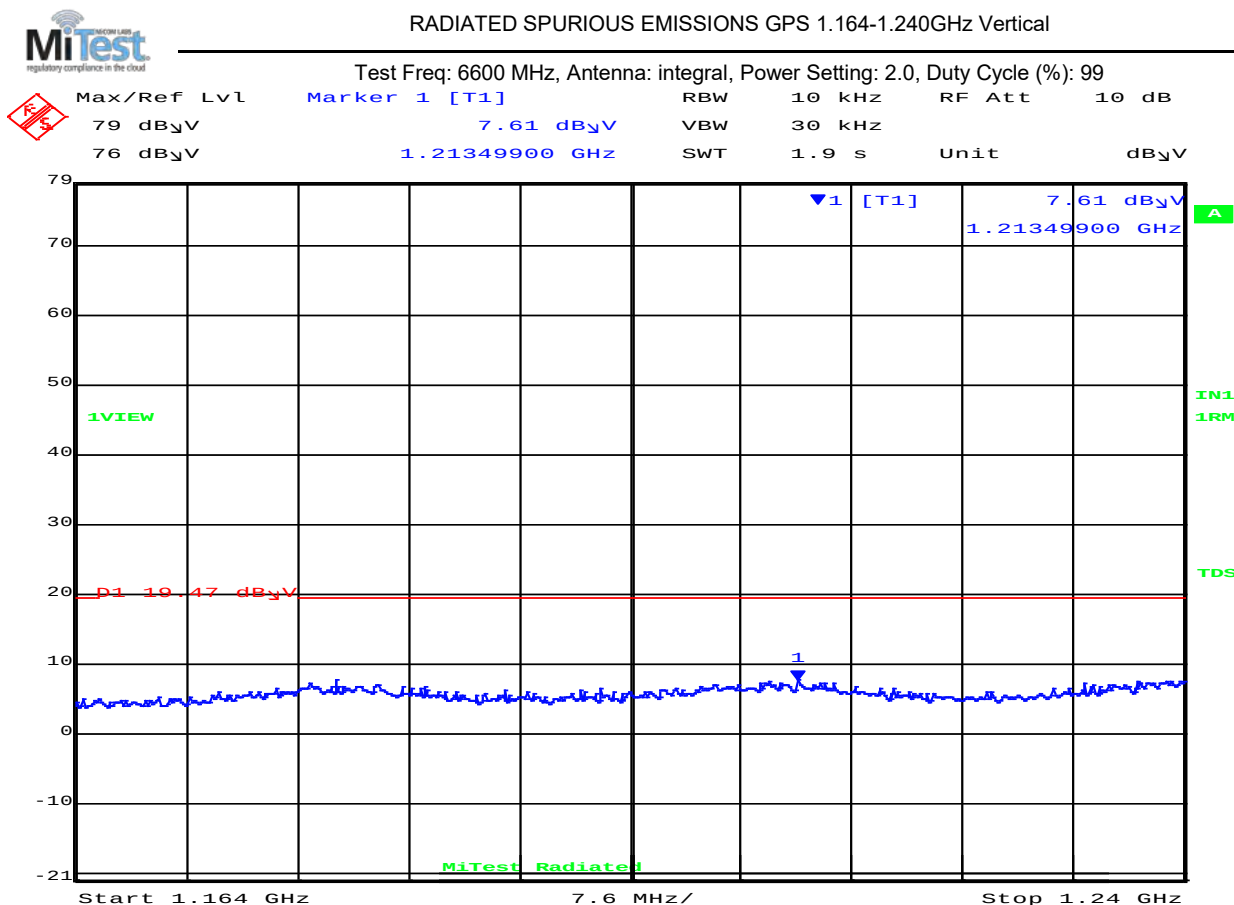


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



Date: 7.NOV.2018 16:54:33

1164.00-1240.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

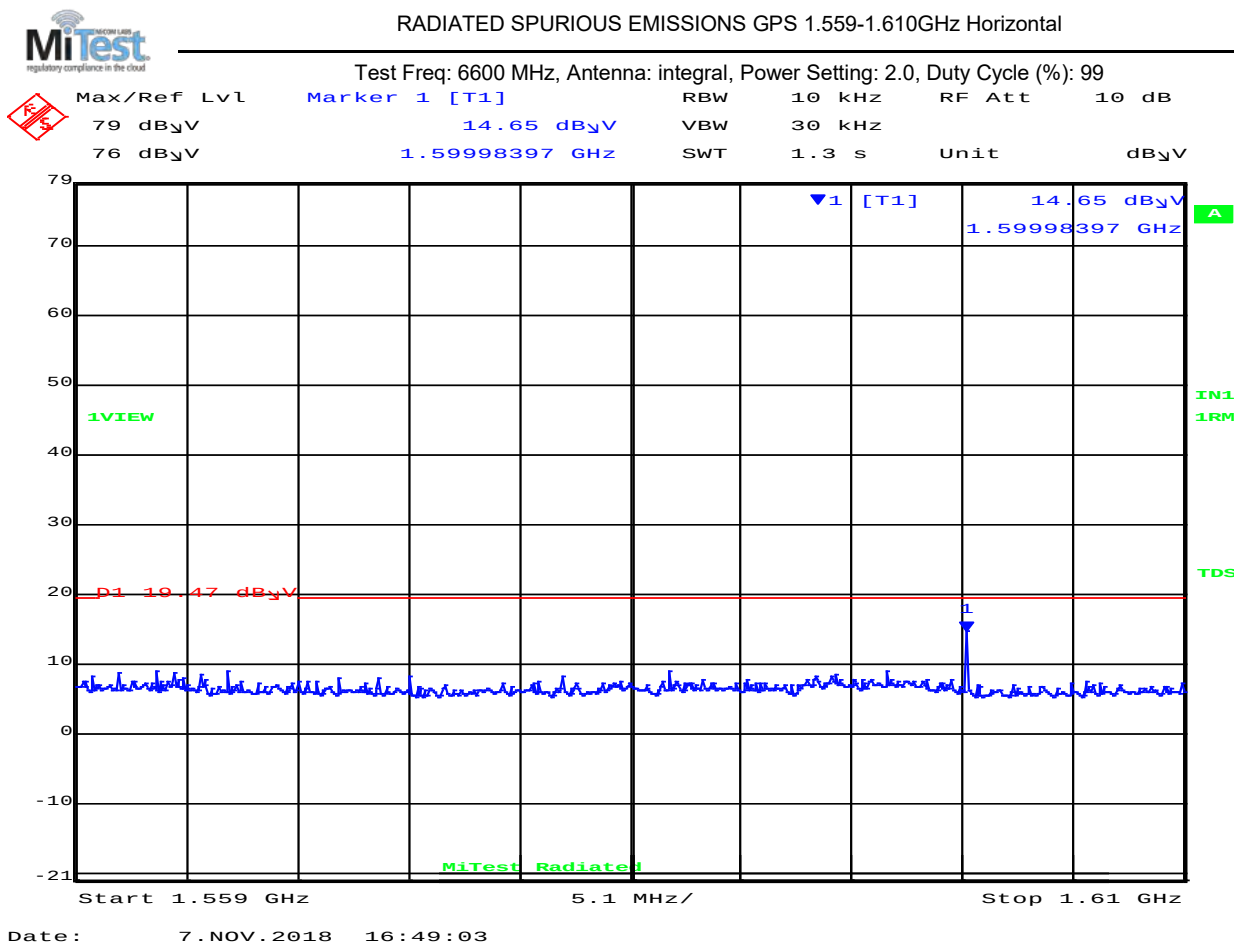


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



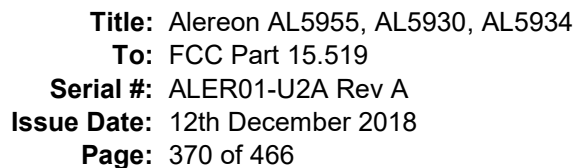
1559.00-1610.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
2	1599.98	1.9*	Average	Horizontal	150	0	29.4	-3.8	Pass

Test Notes:

Final Average measurements done with 1 KHz Receiver Bandwidth per standard

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Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

MiTest
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regulatory compliance in the cloud

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99

▼1 [T1] 10.57 dB μ V
1.5593661 GHz

1VIEW

D1 19.47 dB μ V

1

MiTest Radiated

Start 1.559 GHz 5.1 MHz/ Stop 1.61 GHz

Date: 7.NOV.2018 16:45:43

1559.00-1610.00 MHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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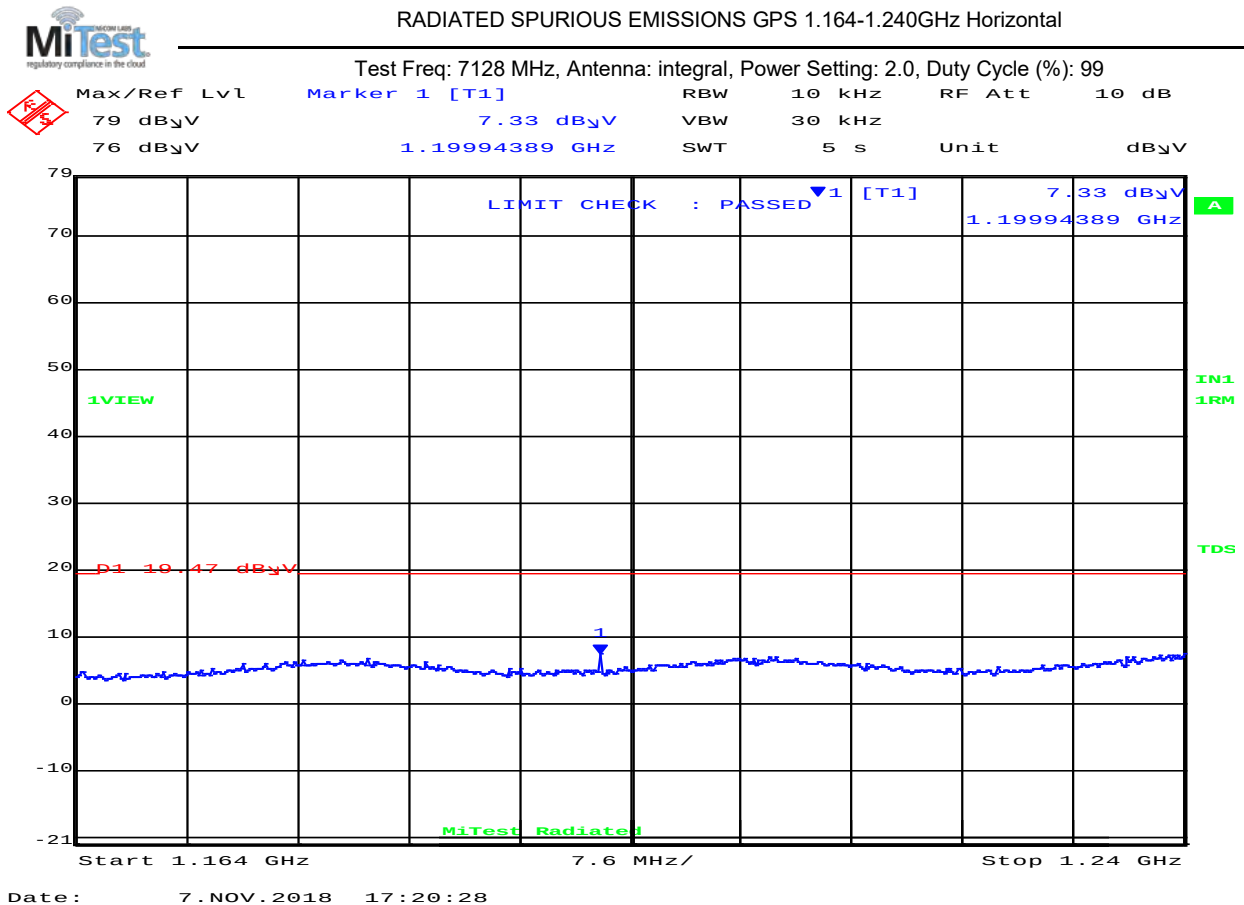
Title: Alereon AL5955, AL5930, AL5934
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7128 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz									
Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

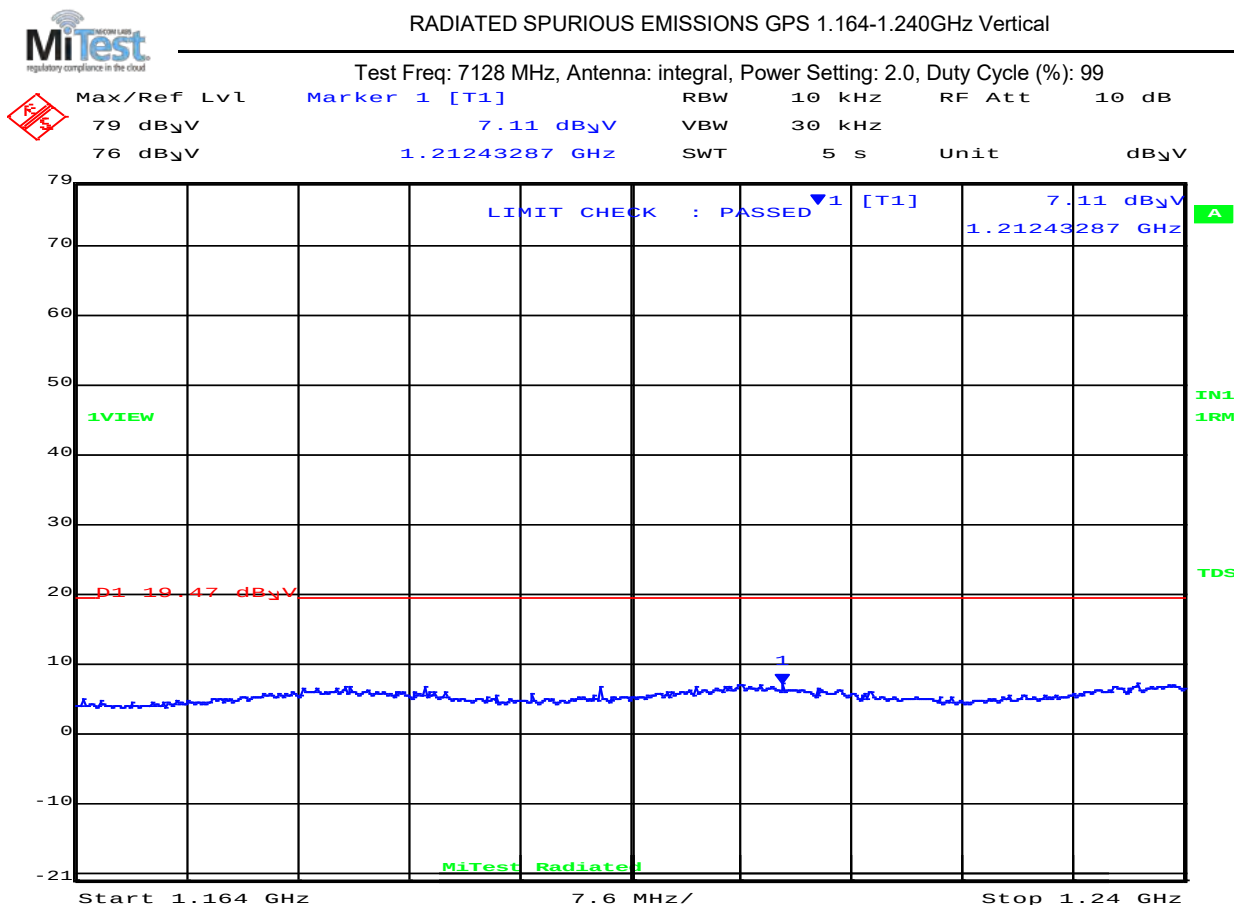


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



Date: 7.NOV.2018 17:18:56

1164.00-1240.00 MHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

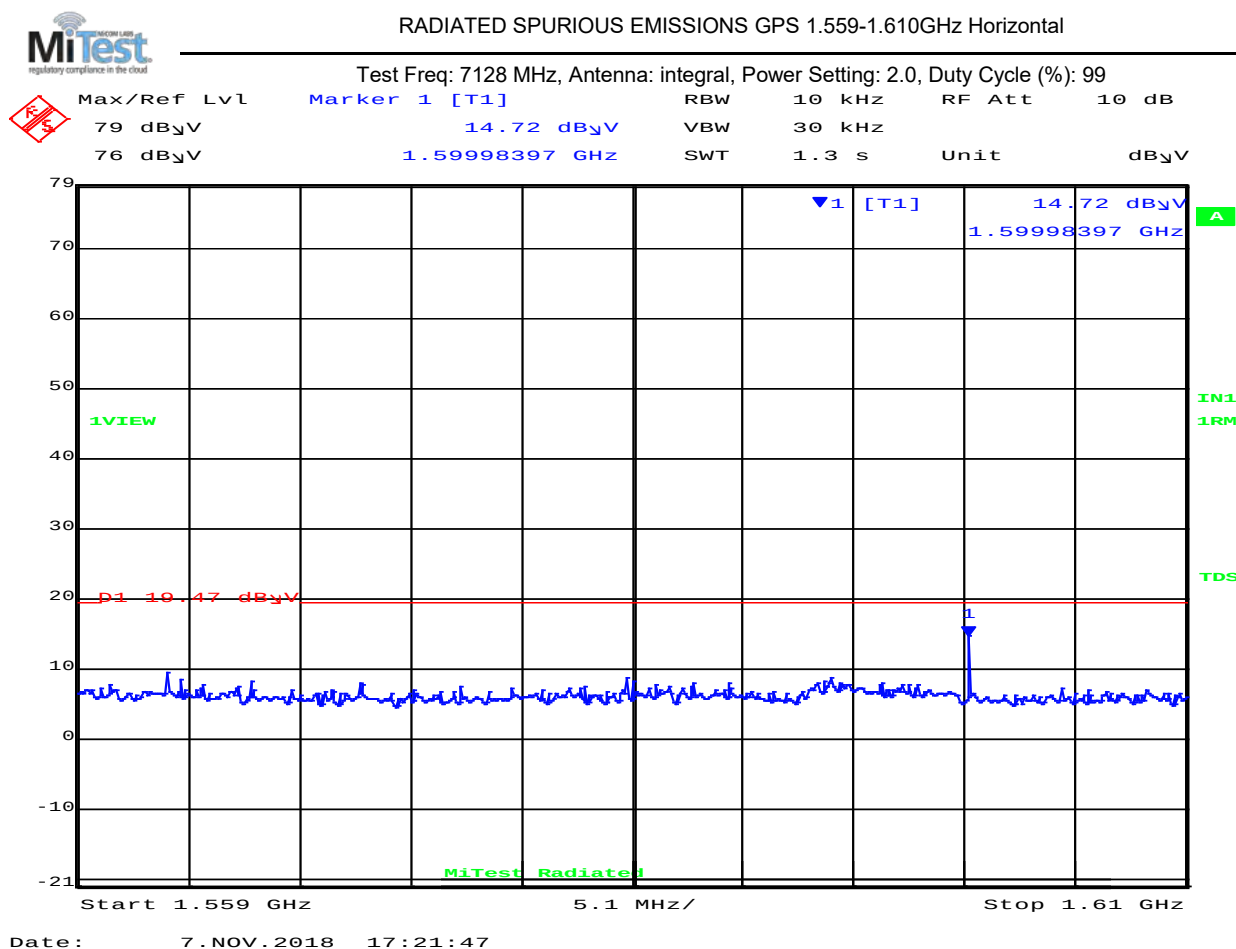


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



1559.00-1610.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
2	1599.98	1.8*	Average	Horizontal	150	0	19.47	-3.8	Pass

Test Notes:

Final Average measurements done with 1 KHz Receiver Bandwidth per standard

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

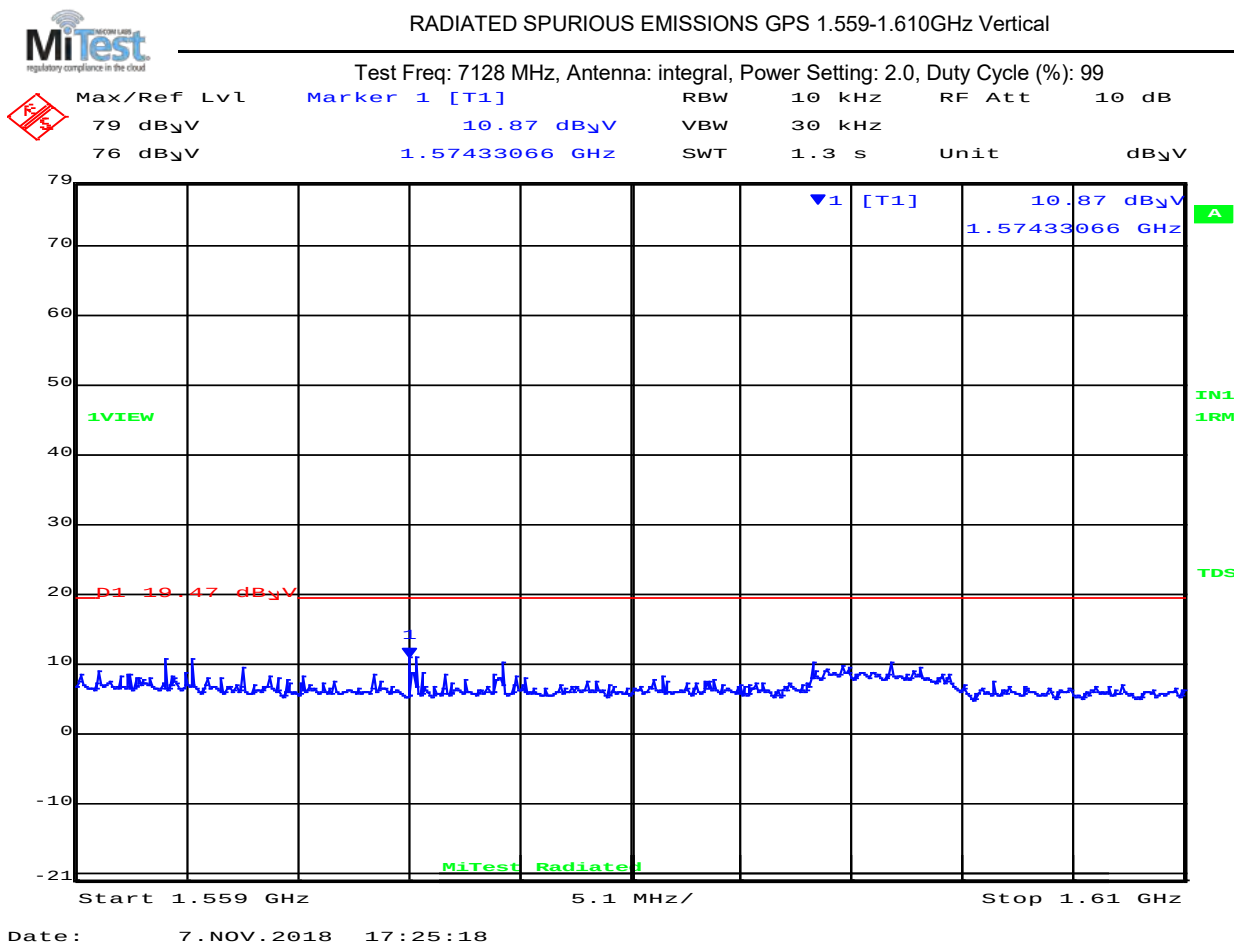


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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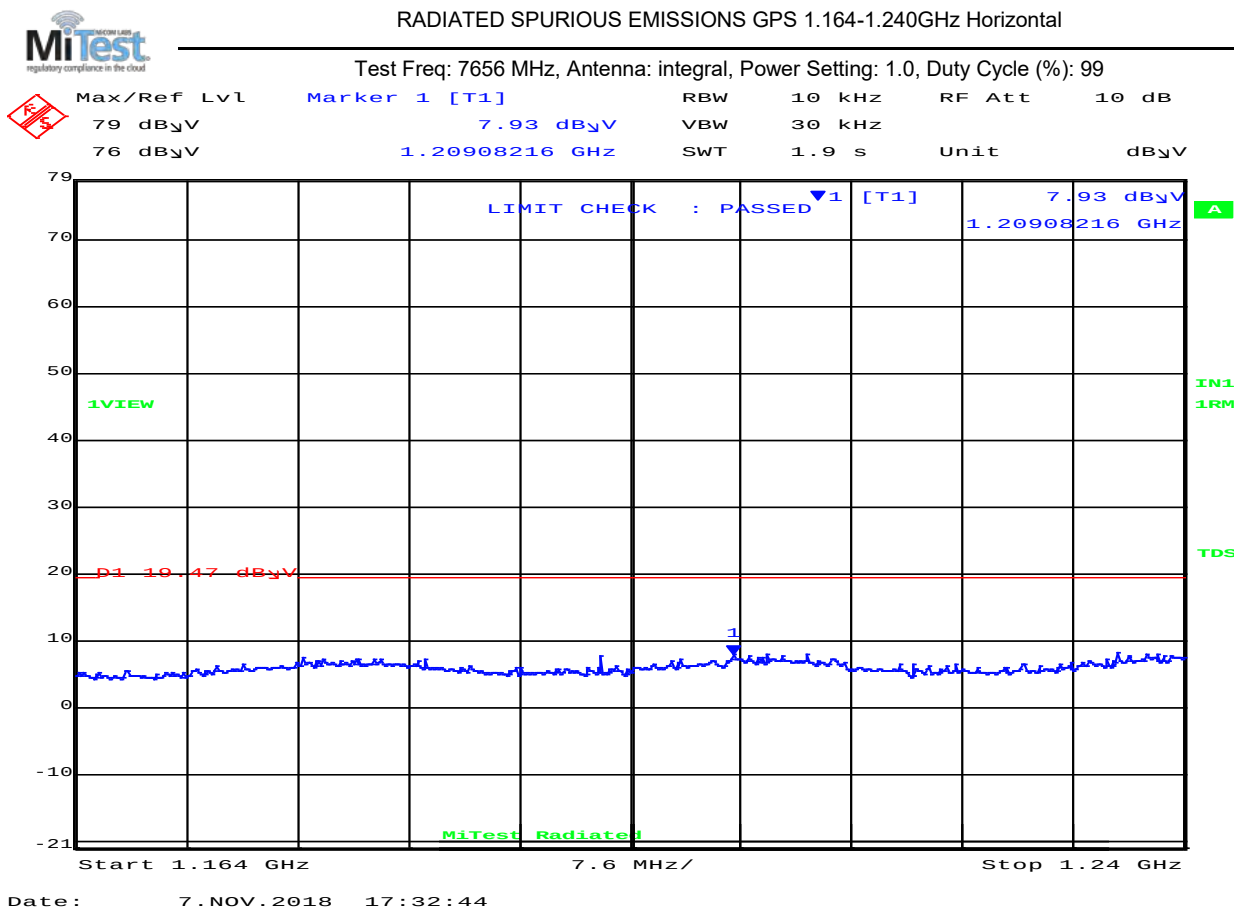
Title: Alereon AL5955, AL5930, AL5934
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7656 MHz (Covers Band Group 3 TFC 7 and Band Group 6 TFC 5)

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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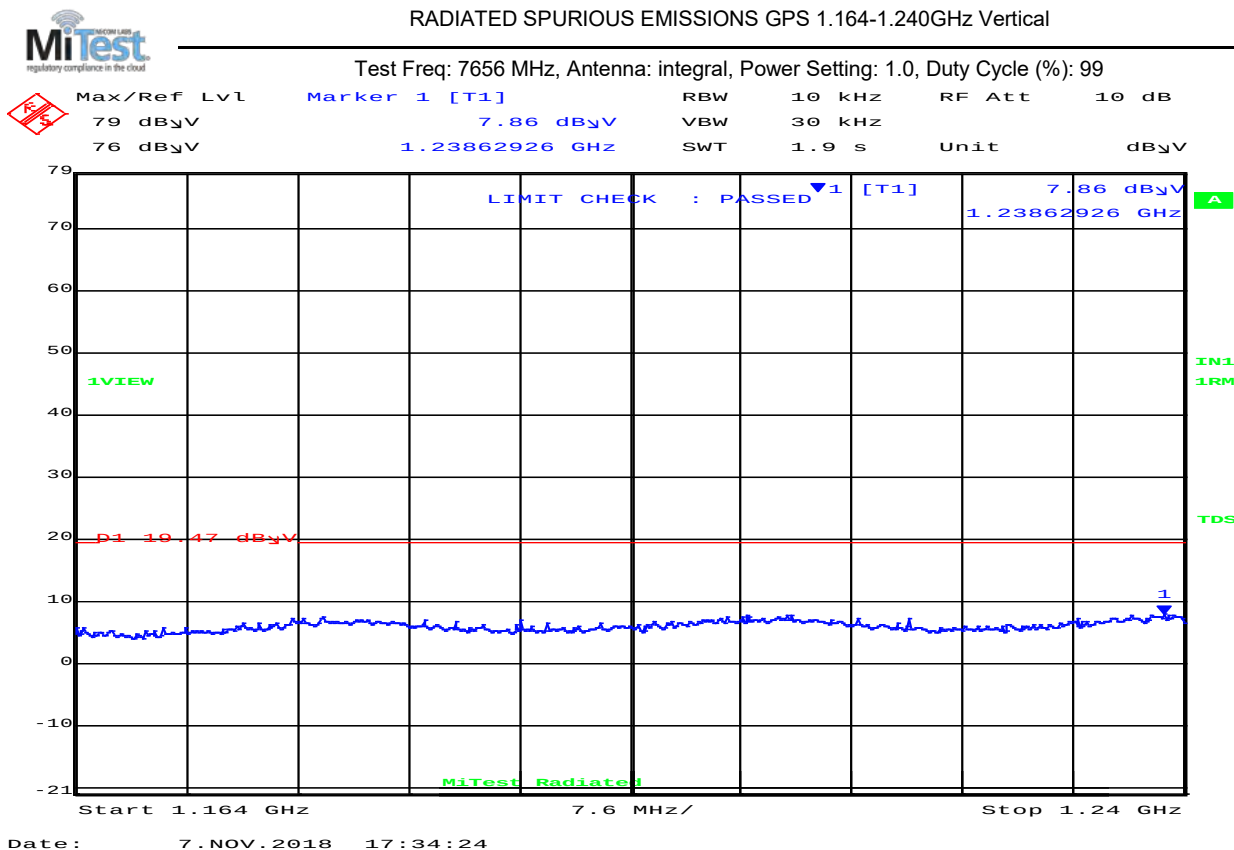
Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

Test Measurement Results

RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical



1164.00-1240.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

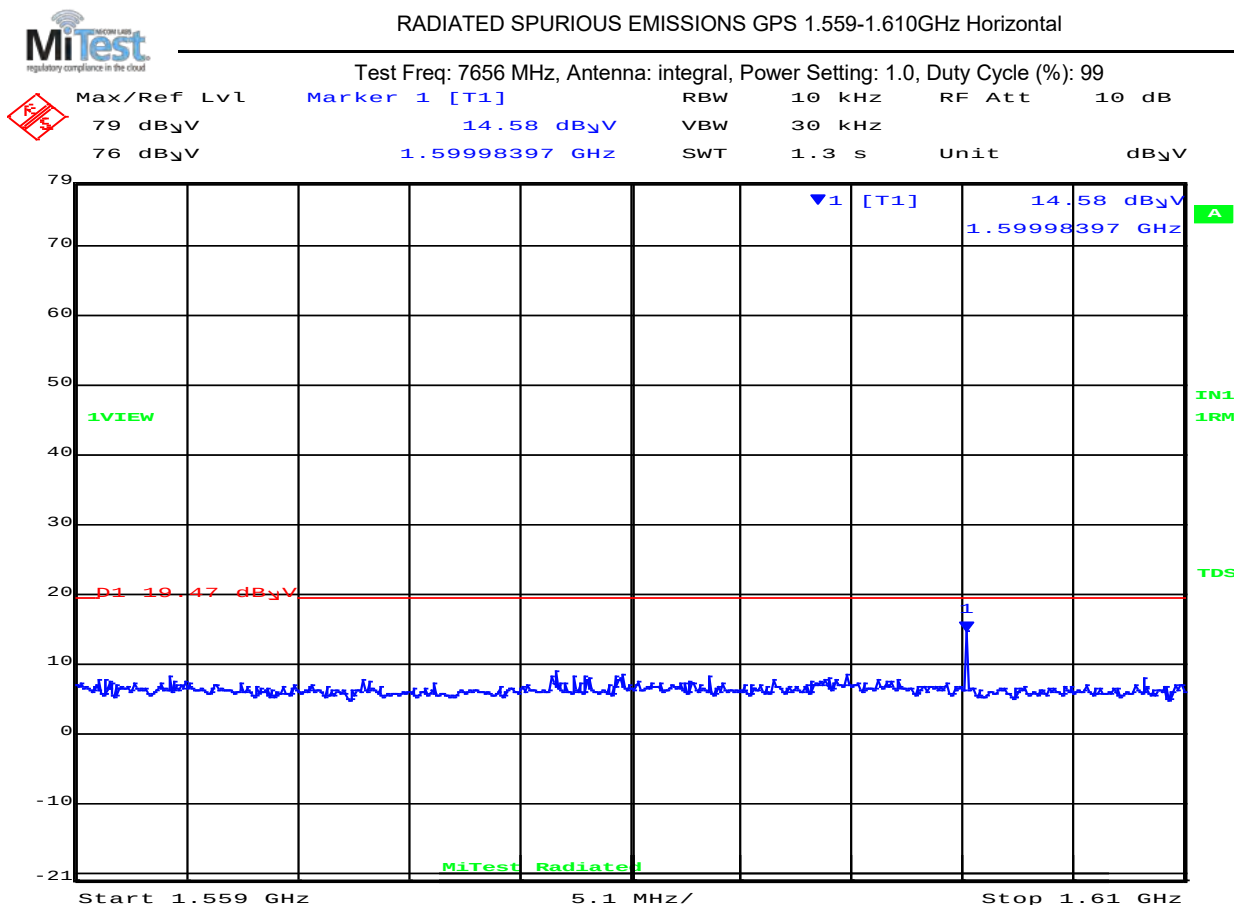


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

Test Measurement Results



Date: 7.NOV.2018 17:30:23

1559.00-1610.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
2	1599.98	1.7*	Average	Horizontal	150	0	29.4	-3.8	Pass

Test Notes:

Final Average measurements done with 1 KHz Receiver Bandwidth per standard

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Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

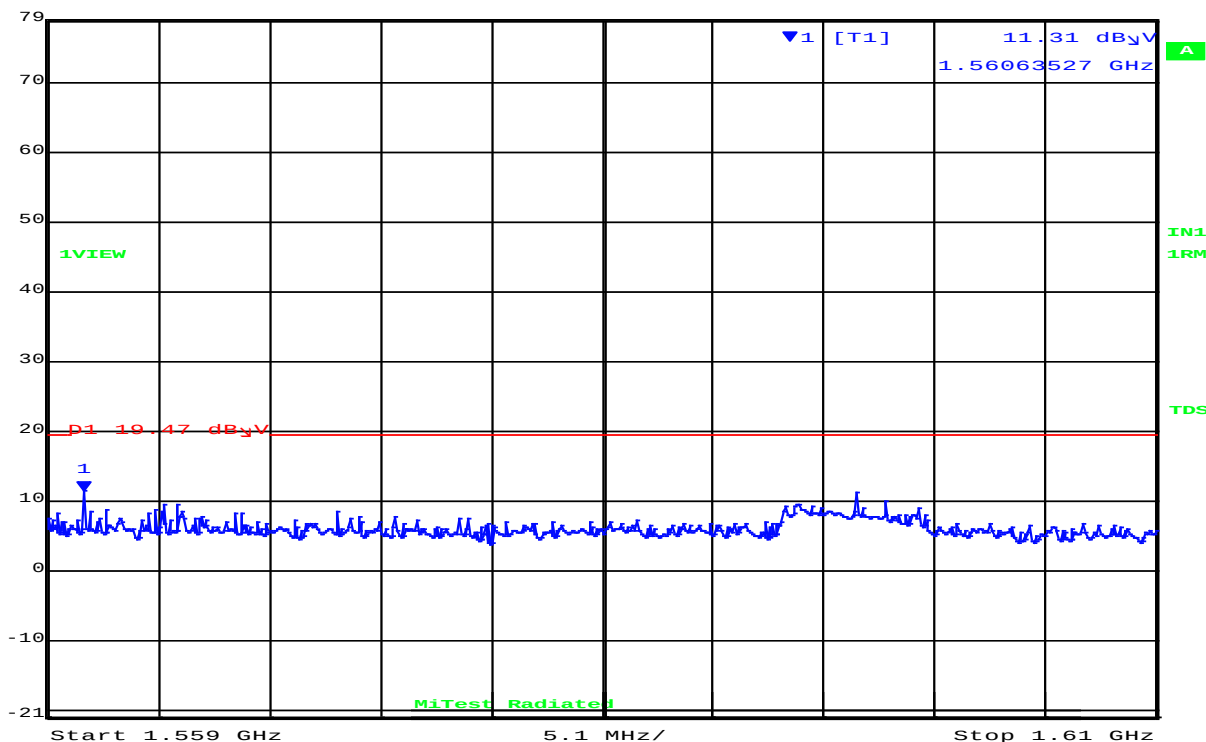
Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99

Max/Ref Lvl	Marker 1 [T1]	RBW	10 kHz	RF Att	10 dB
79 dB μ V	11.31 dB μ V	VBW	30 kHz		
76 dB μ V	1.56063527 GHz	SWT	1.3 s	Unit	dB μ V



Date: 7.NOV.2018 17:28:31

1559.00-1610.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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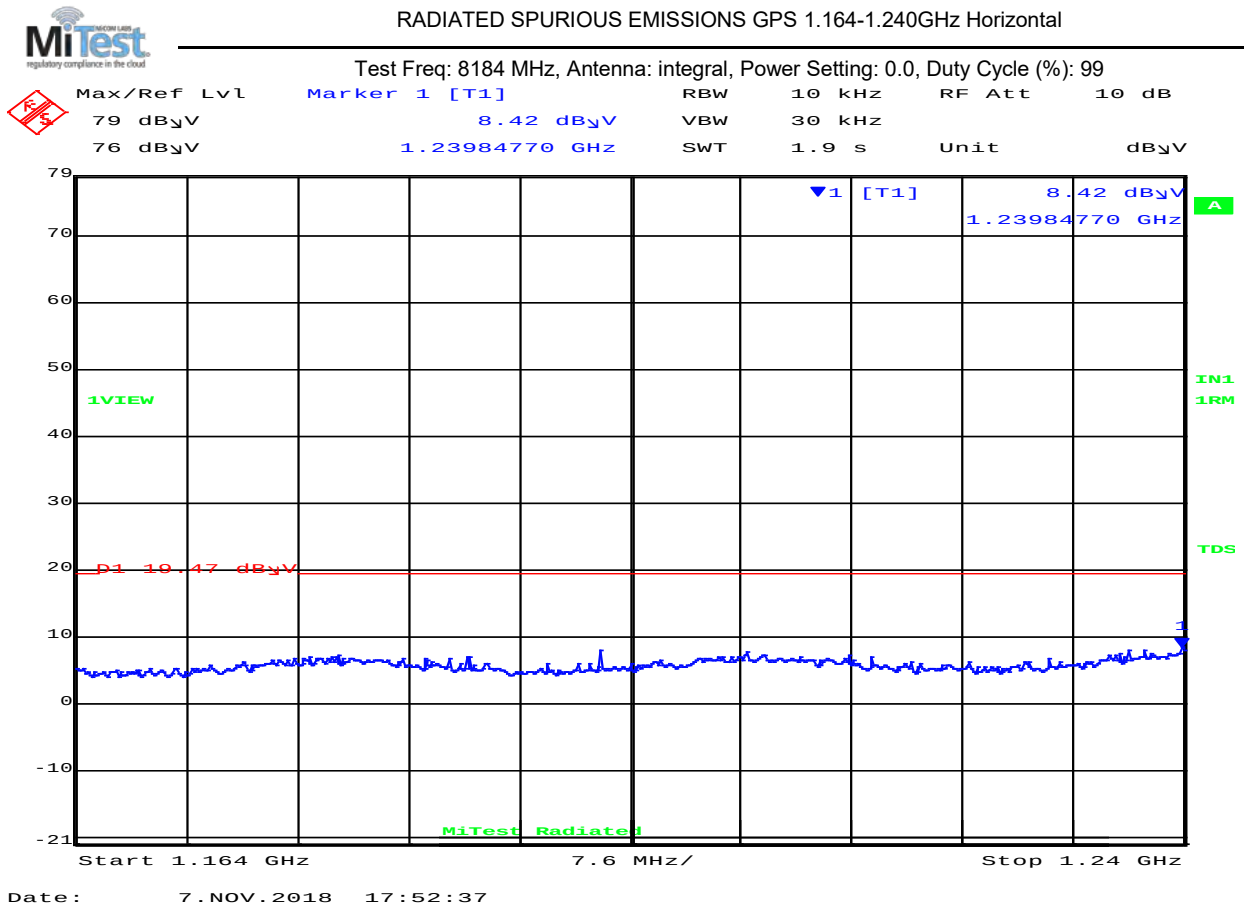
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
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8184 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz									
Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

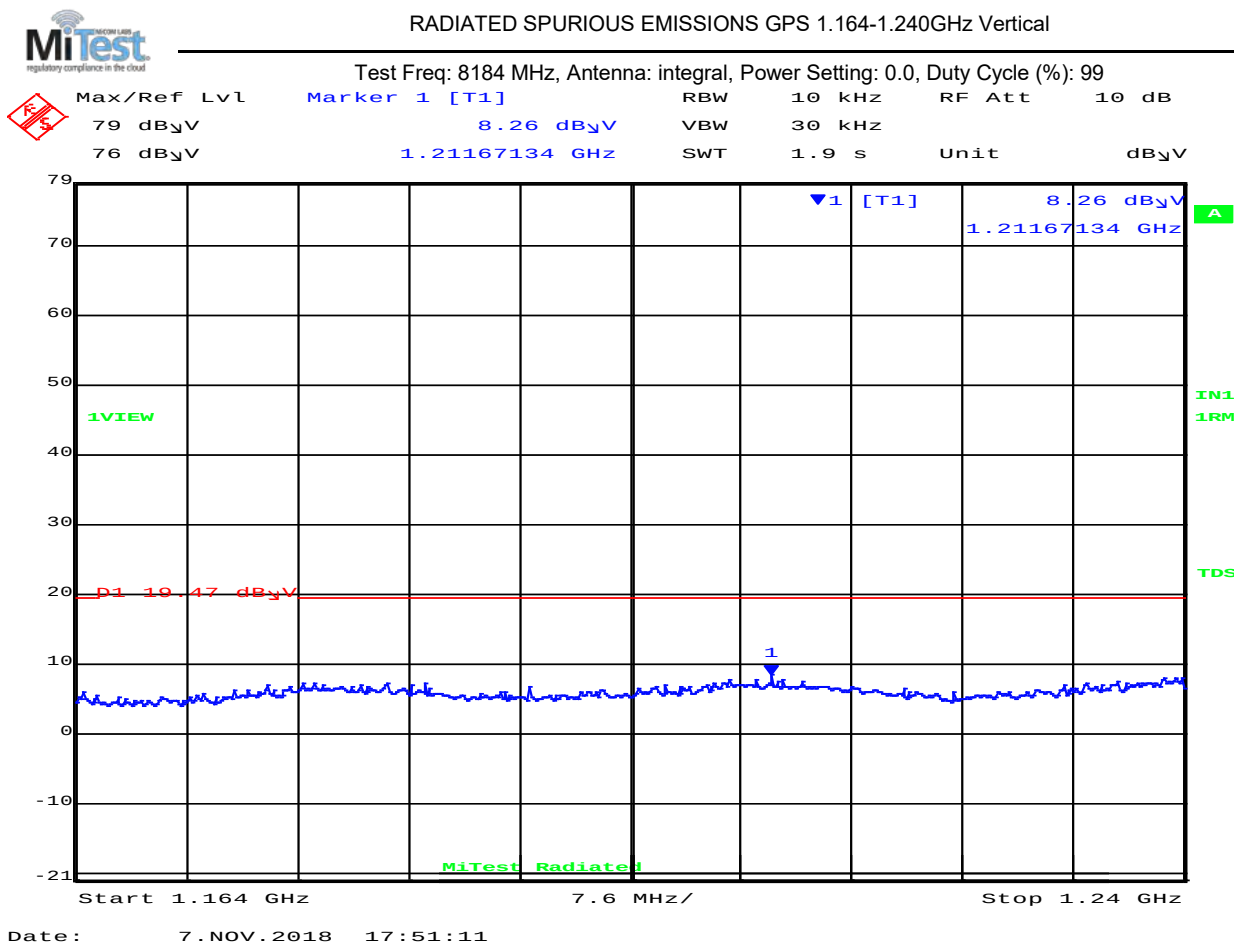


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Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

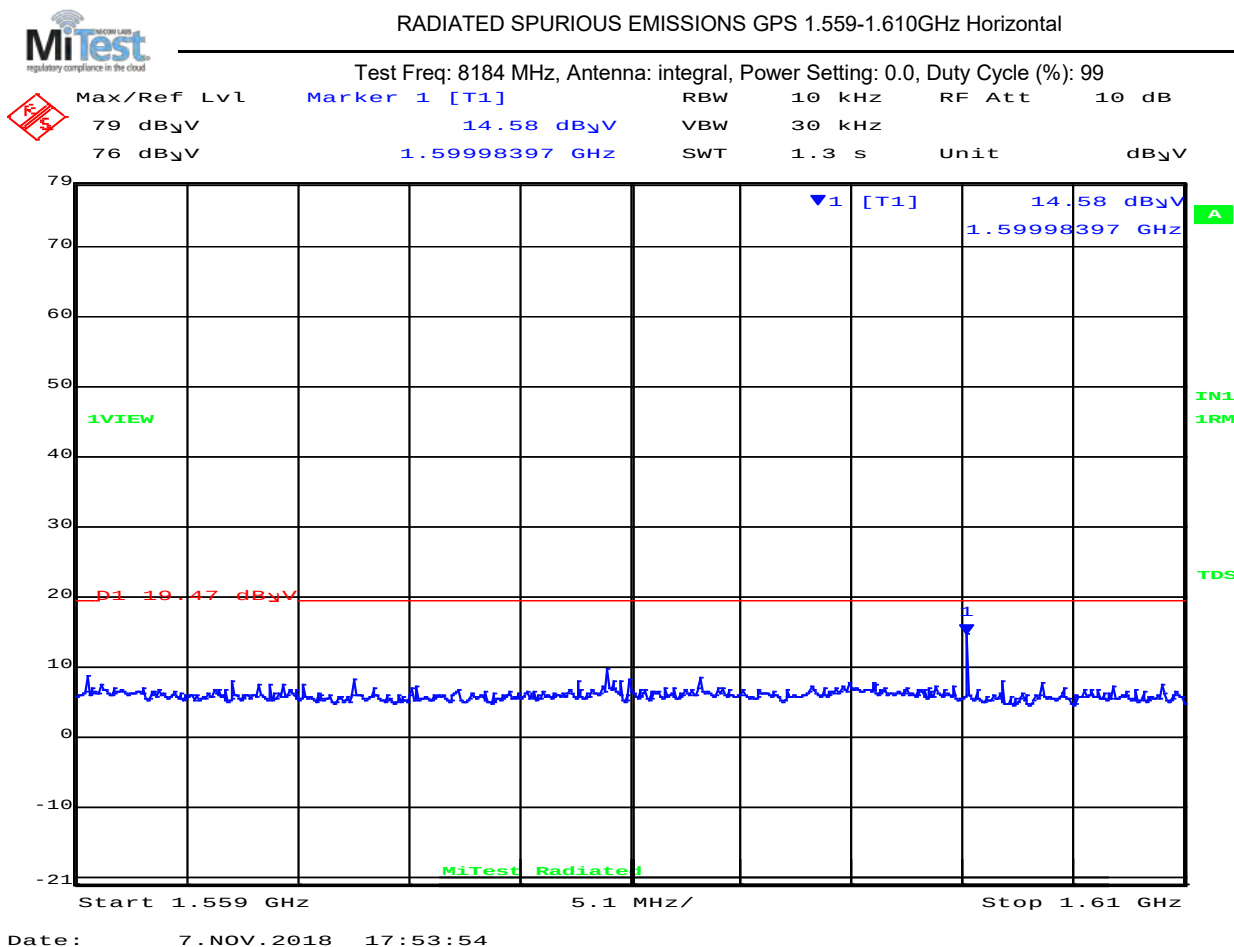


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Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



1559.00-1610.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
2	1599.98	2.0*	Average	Horizontal	150	0	19.47	-17.5	Pass

Test Notes:

Final Average measurements done with 1 KHz Receiver Bandwidth per standard

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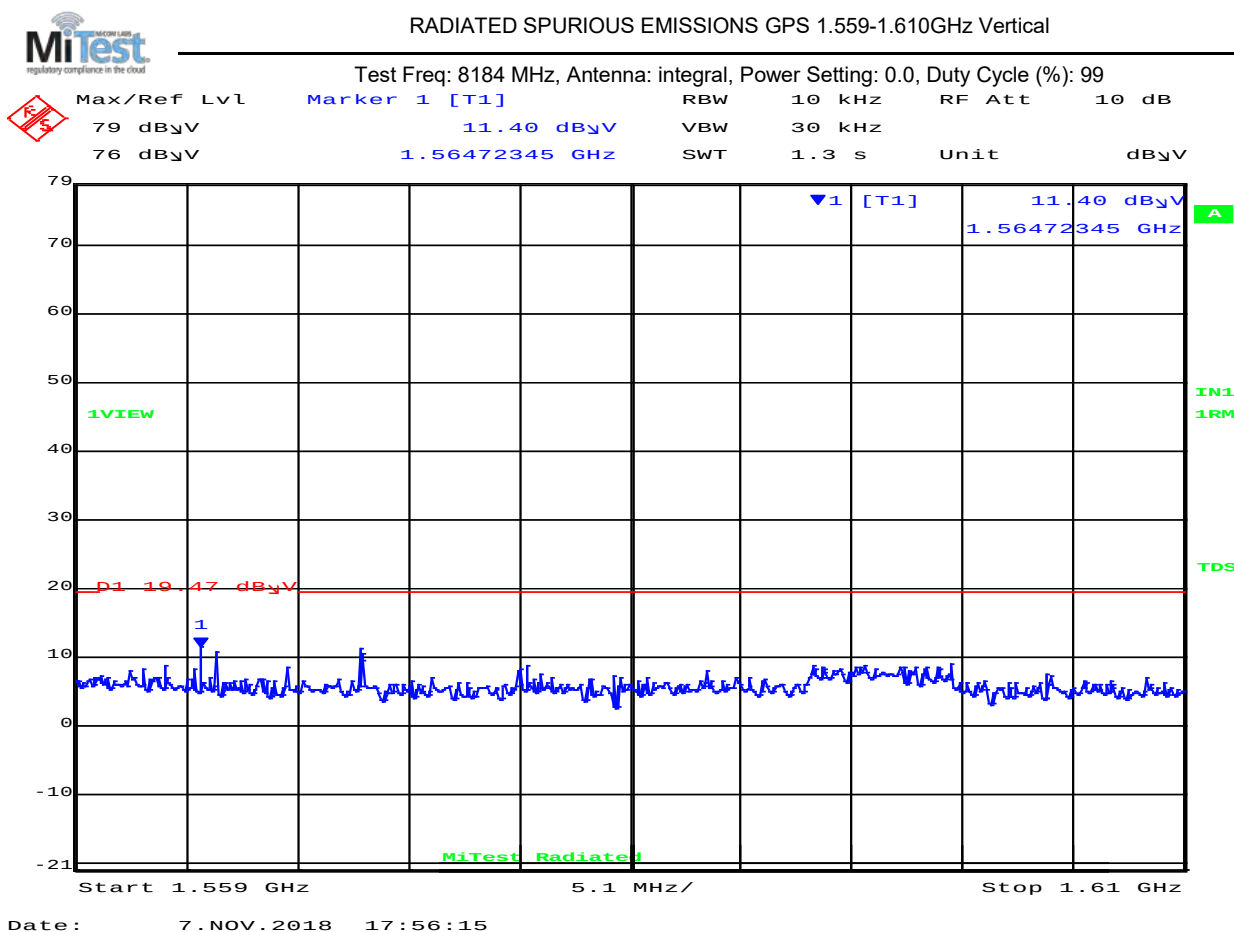


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Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

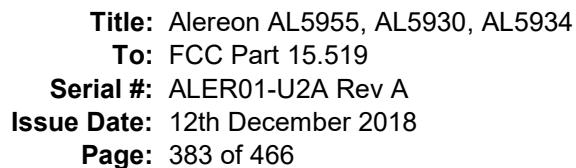
Test Measurement Results



1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal			
Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

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RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Horizontal

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99

Max/Ref Lvl Marker 1 [T1] RBW 10 kHz RF Att 10 dB
79 dBμV 7.93 dBμV VBW 30 kHz
76 dBμV 1.23756313 GHz SWT 1.9 s Unit dBμV

▼1 [T1] 7.93 dBμV
1.23756313 GHz

1VIEW

IN1
1RM

TDS

1

MiTest Radiate!

Start 1.164 GHz 7.6 MHz/ Stop 1.24 GHz

Date: 7.NOV.2018 18:02:22

1164.00-1240.00 MHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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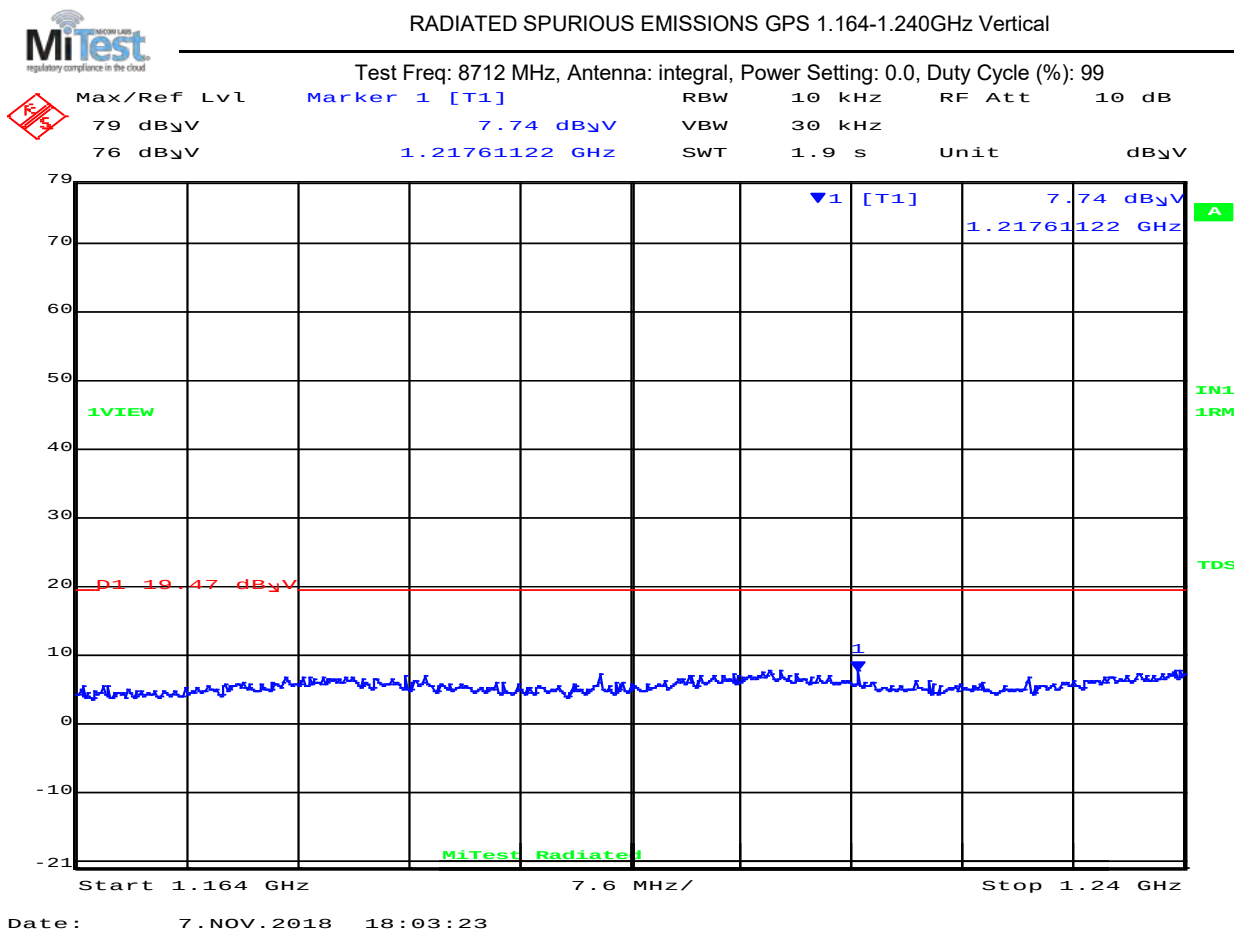


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Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

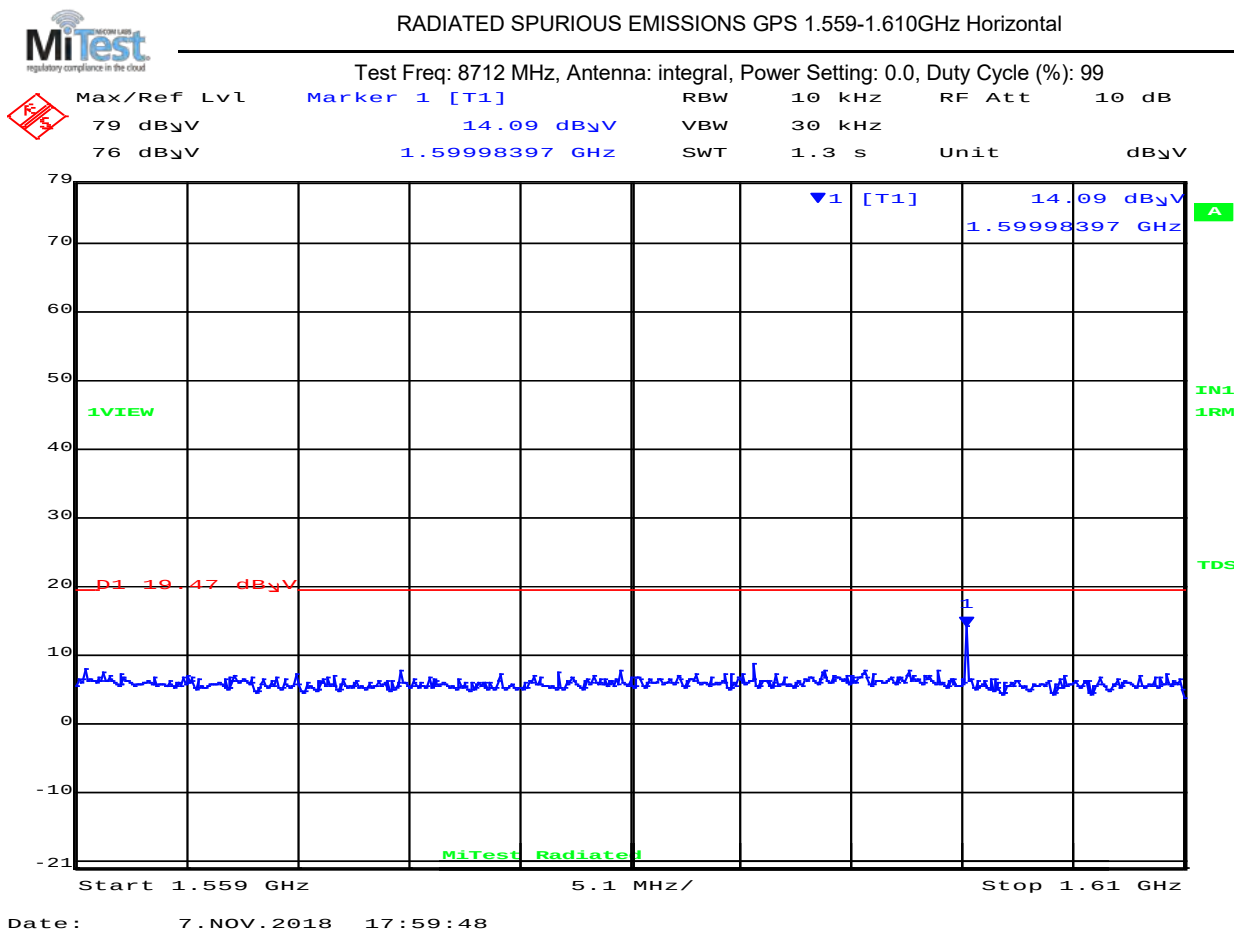


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Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
2	1599.98	2.1*	Average	Horizontal	150	0	19.47	-17.4	Pass

Test Notes:

Final Average measurements done with 1 KHz Receiver Bandwidth per standard

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

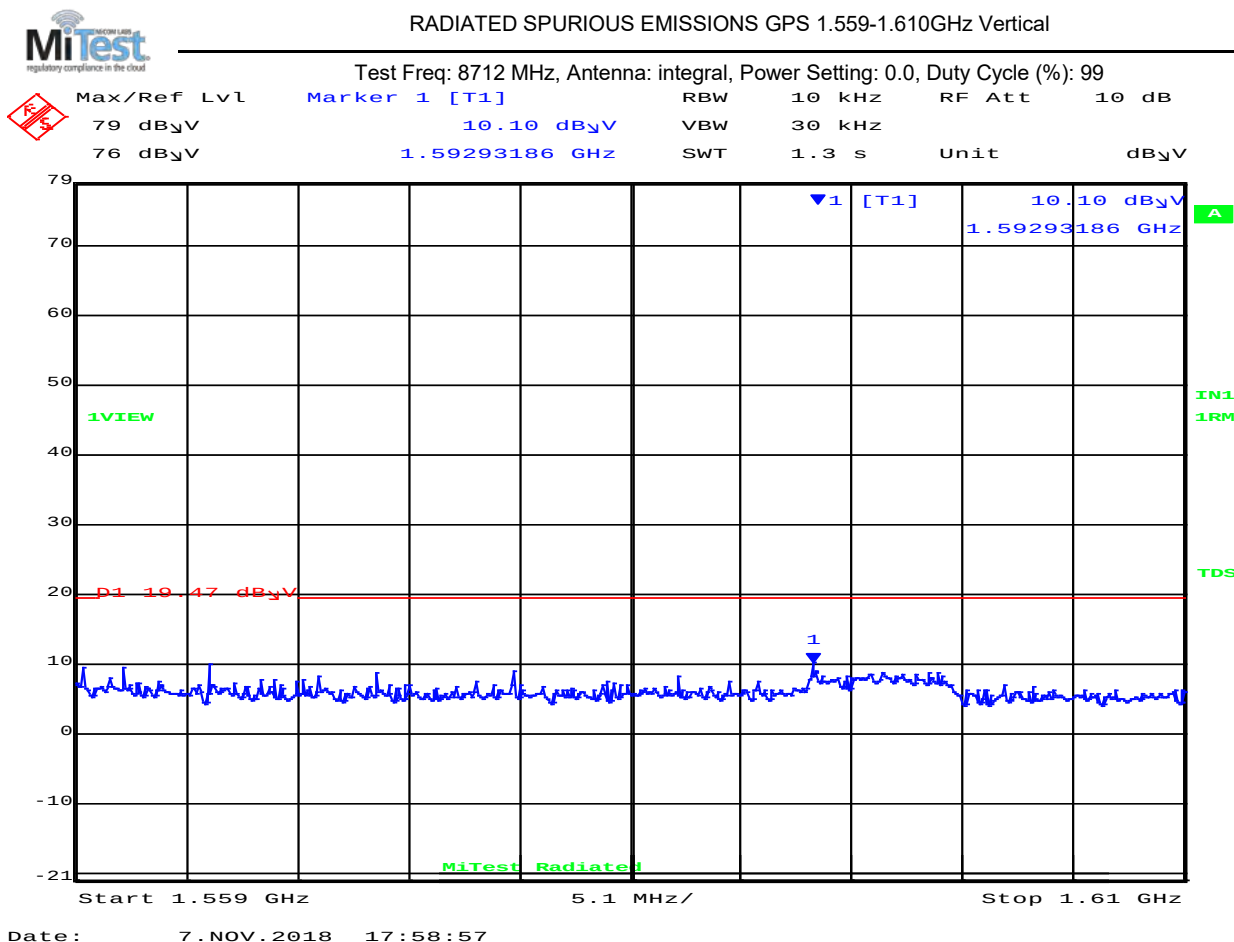


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Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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9.4.2.3. Combat AL5934

3432 MHz

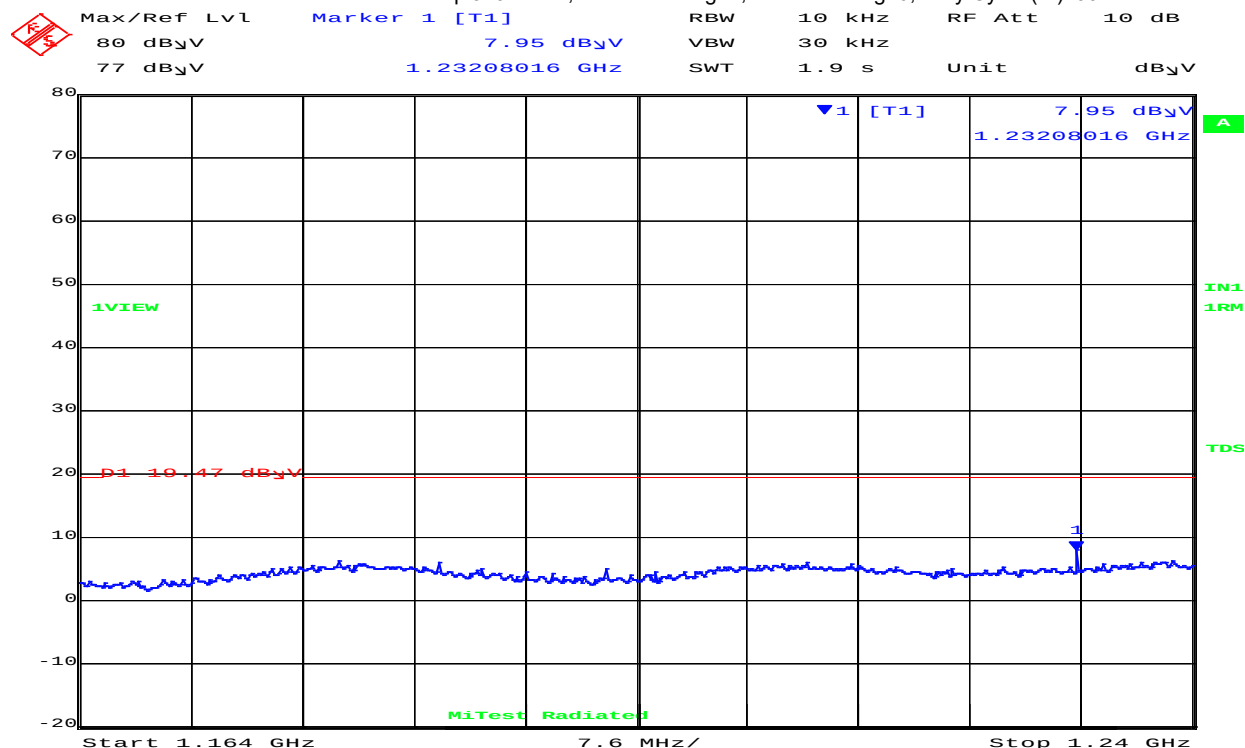
Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	1.0	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3432.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH



RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Horizontal

Test Freq: 3432 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 19.NOV.2018 15:54:33

Test Measurement Results

1164.00-1240.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
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No Signals Found within 6 dB of Limit

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

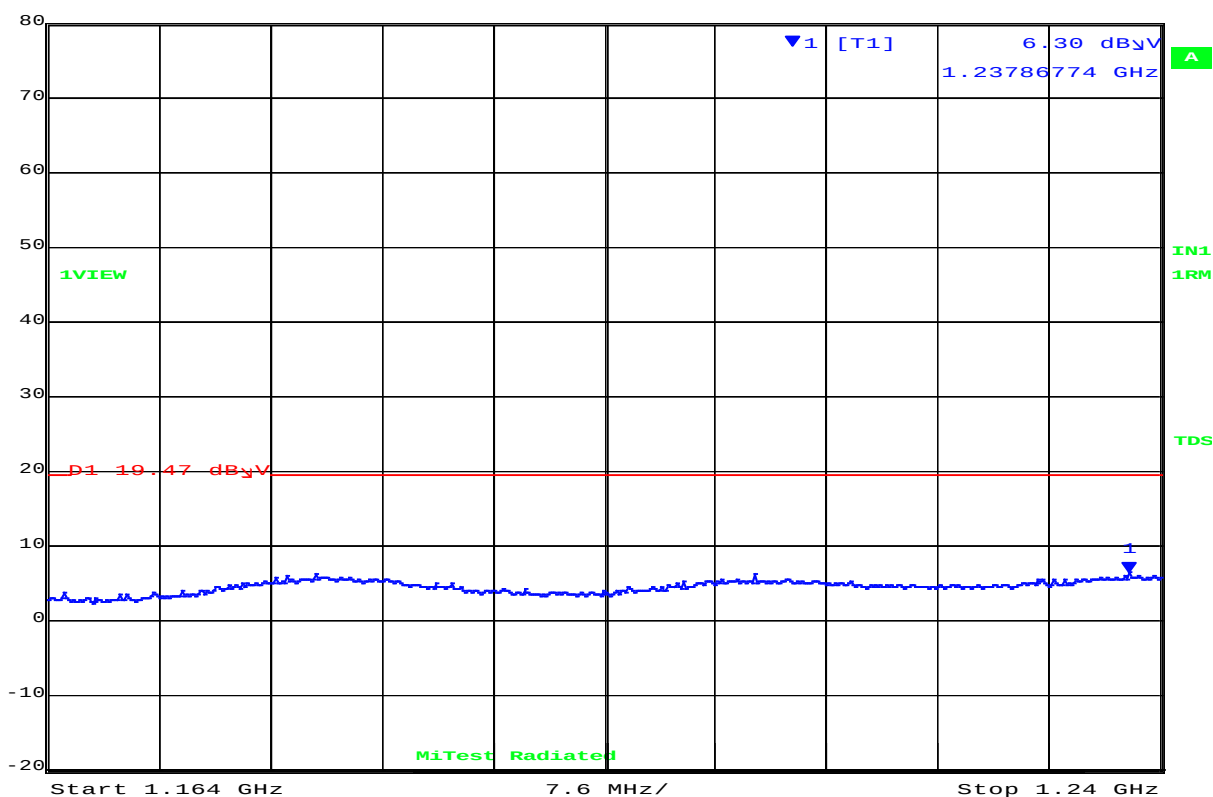
Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	1.0	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3432.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH



RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical

Test Freq: 3432 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99

Max/Ref Lvl Marker 1 [T1] RBW 10 kHz RF Att 10 dB
80 dB μ V 6.30 dB μ V VBW 30 kHz
77 dB μ V 1.23786774 GHz SWT 1.9 s Unit dB μ V



Date: 19.NOV.2018 16:06:00

Test Measurement Results

1164.00-1240.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
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No Signals Found within 6 dB of Limit

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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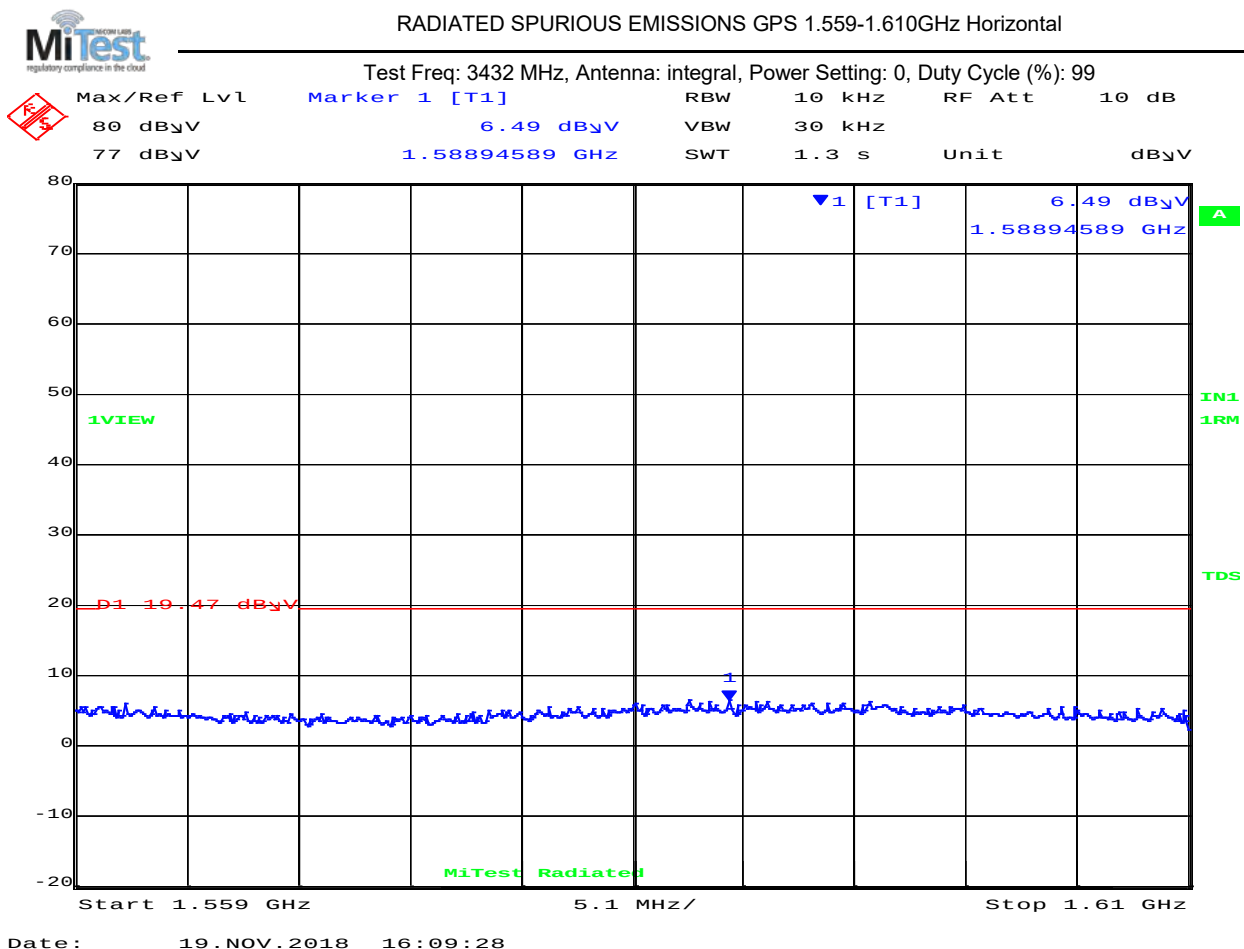


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
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Equipment Configuration for Spurious Emissions 1.559-1.610GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	1.0	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3432.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1559.00-1610.00 MHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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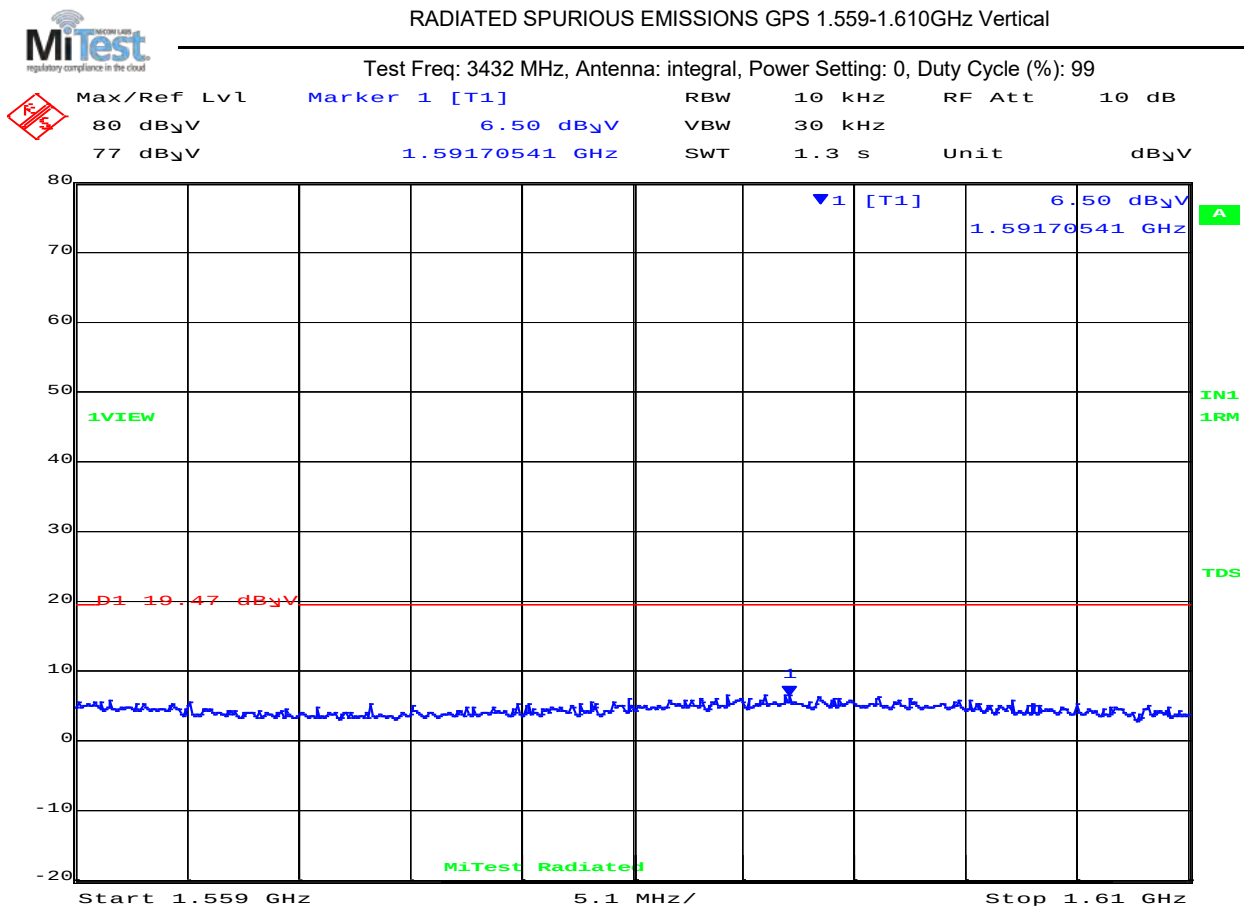
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
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Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	1.0	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3432.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results

RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical



Date: 19.NOV.2018 16:08:22

1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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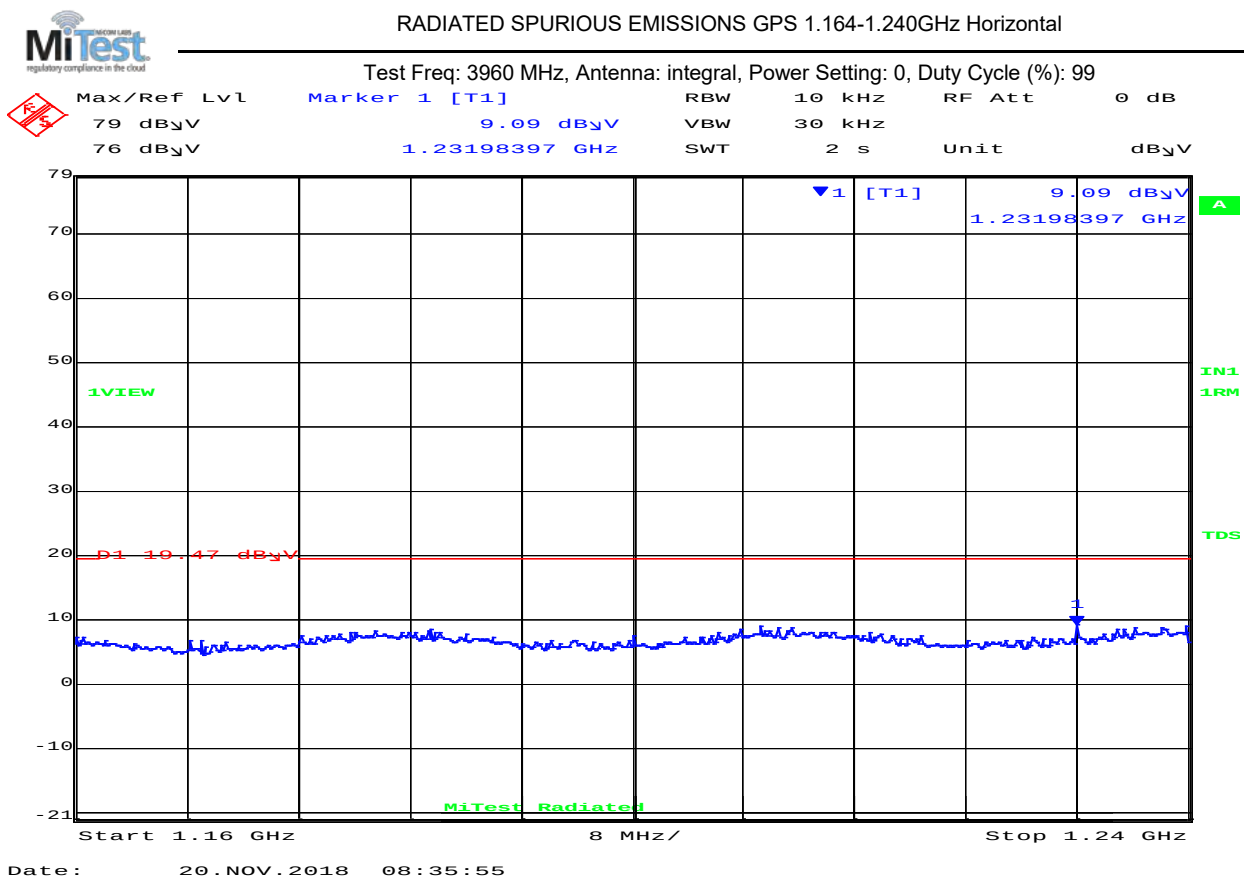
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
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3960 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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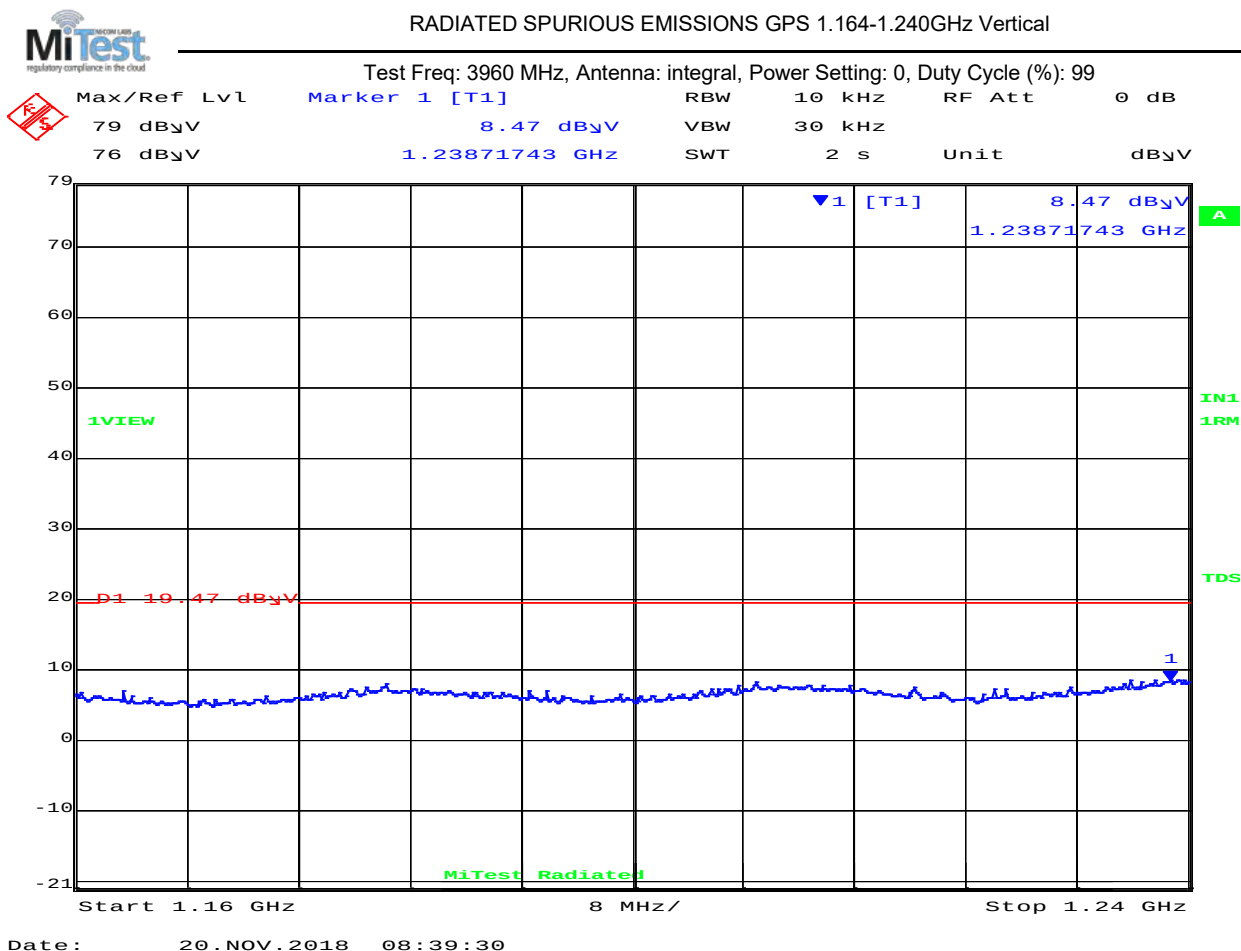


Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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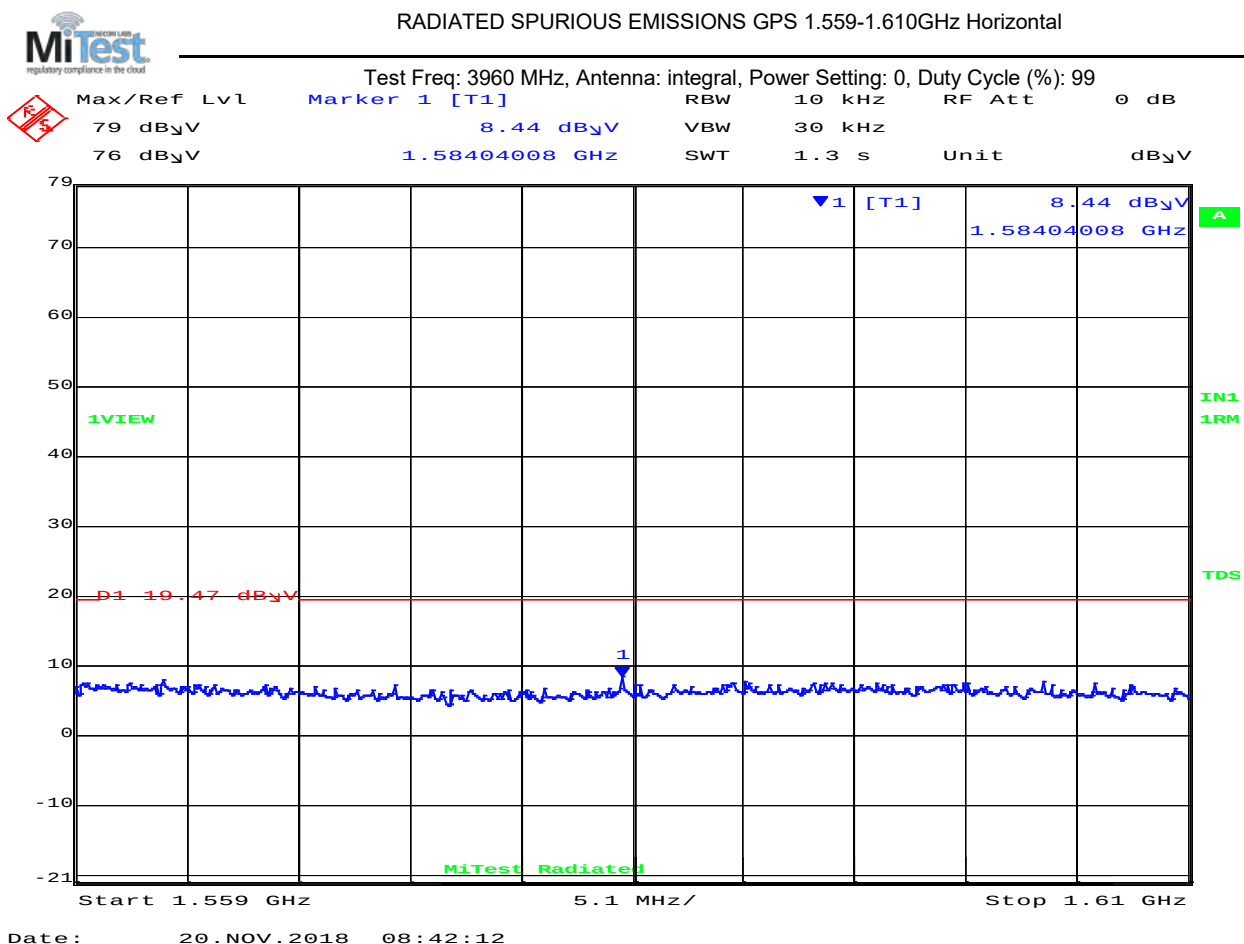


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
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Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

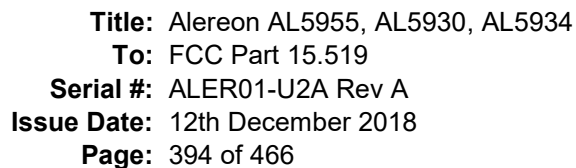
Test Measurement Results



1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

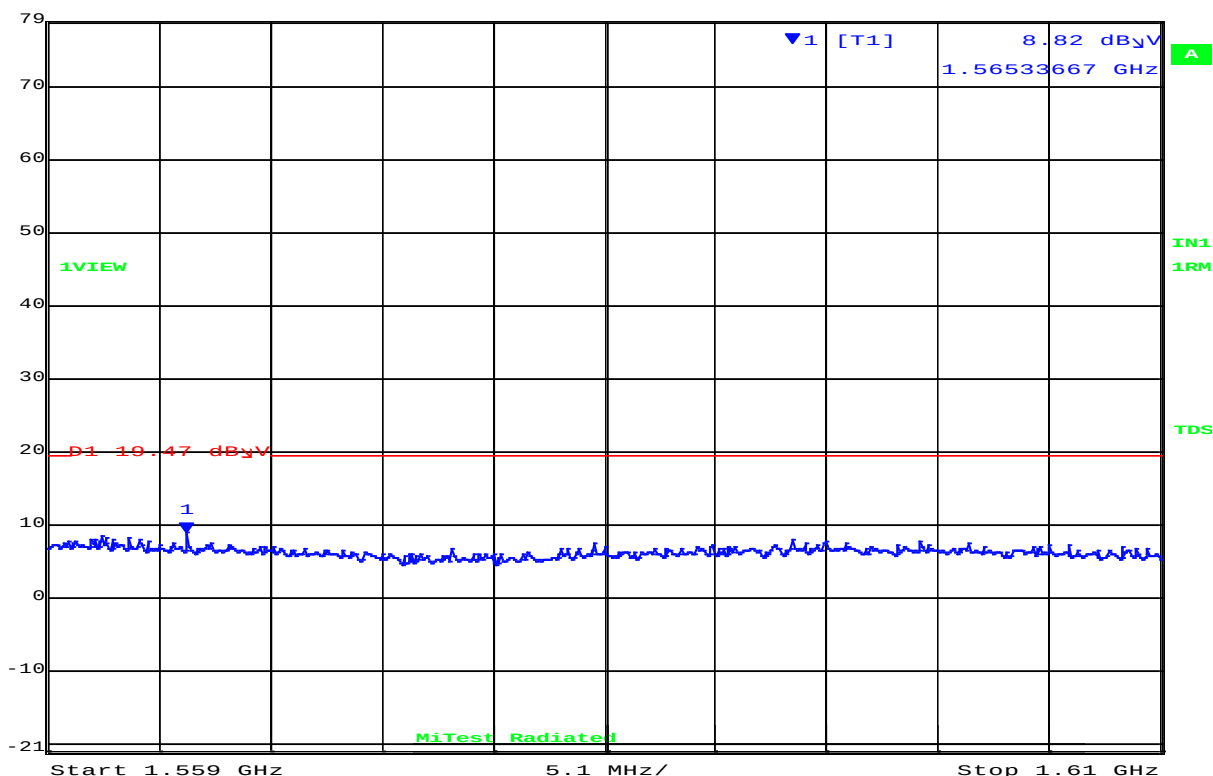
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH



Max/Ref	Lvl	Marker 1 [T1]	RBW	10 kHz	RF Att	0 dB
79 dB _μ V		8.82 dB _μ V	VBW	30 kHz		
76 dB _μ V		1.56533667 GHz	SWT	1.3 s	Unit	dB _μ V



Date: 20.NOV.2018 08:41:07

1559.00-1610.00 MHz									
Num	Frequency MHz	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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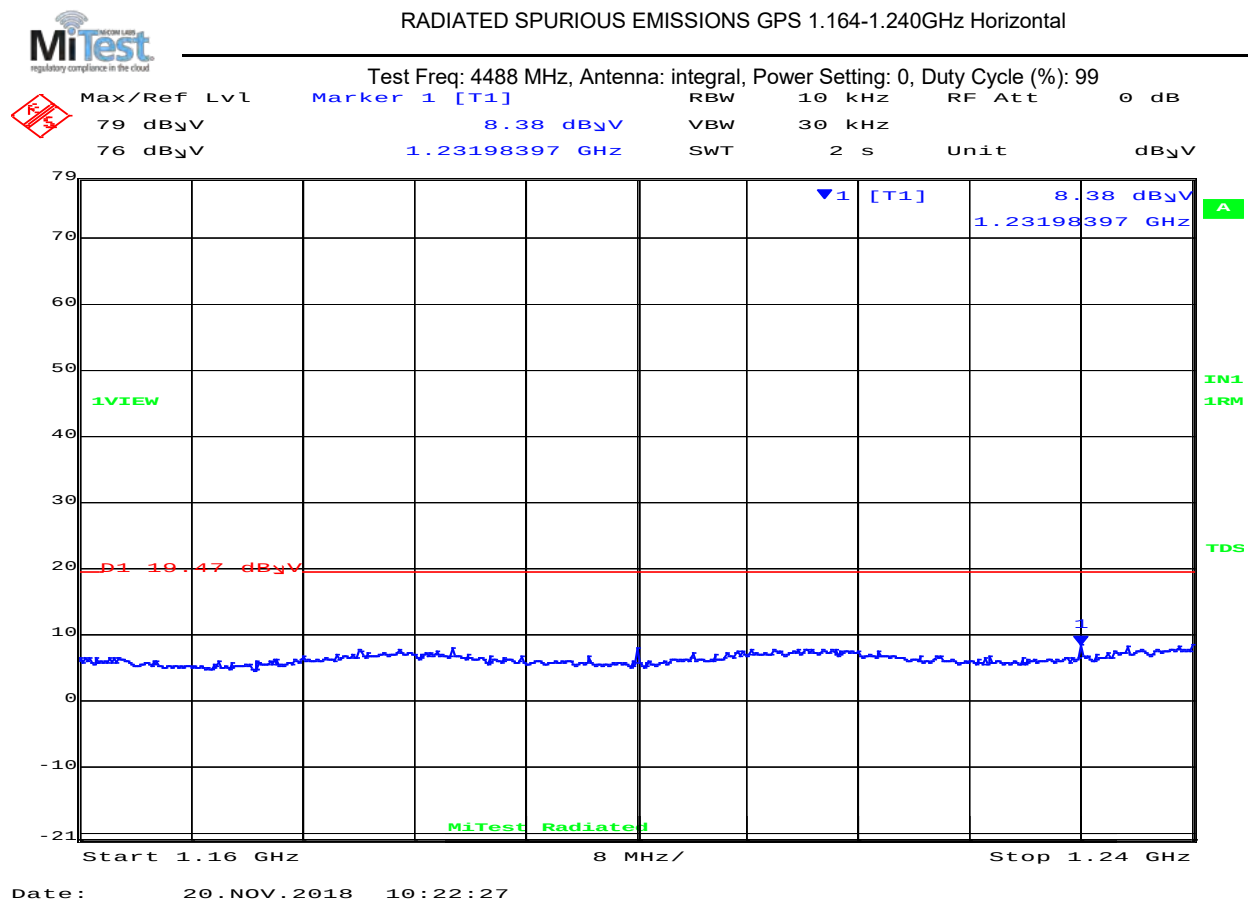
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
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4488 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

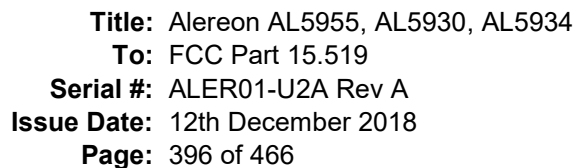
Test Measurement Results



1164.00-1240.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

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regulatory compliance in the cloud

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



1164.00-1240.00 MHz									
Num	Frequency MHz	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

MiCOM Labs, 575 Boulder Court, Pleasanton, California 94566 USA, Phone: +1 (925) 462 0304, Fax: +1 (925) 462 0306, www.micomlabs.com

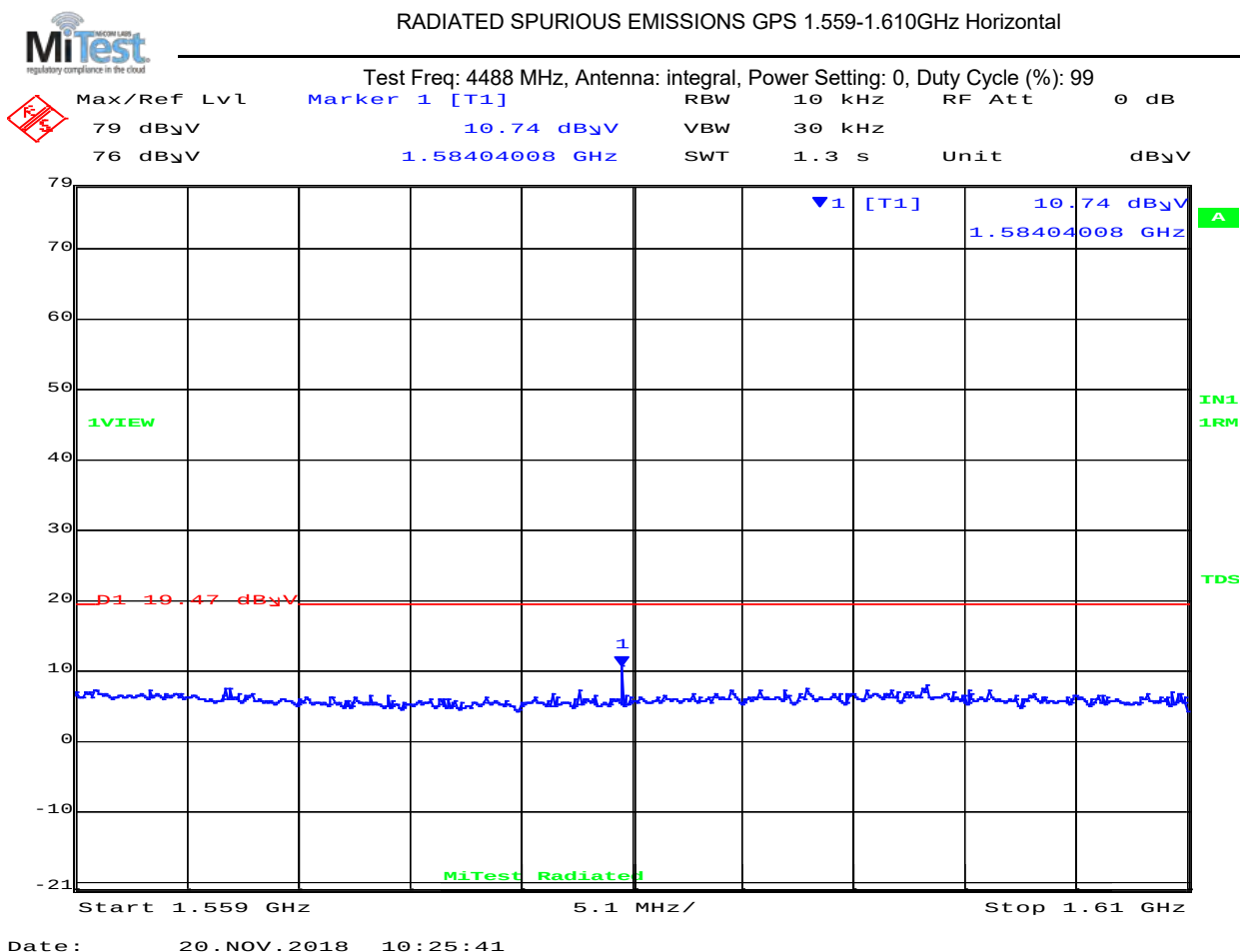


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
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Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



1559.00-1610.00 MHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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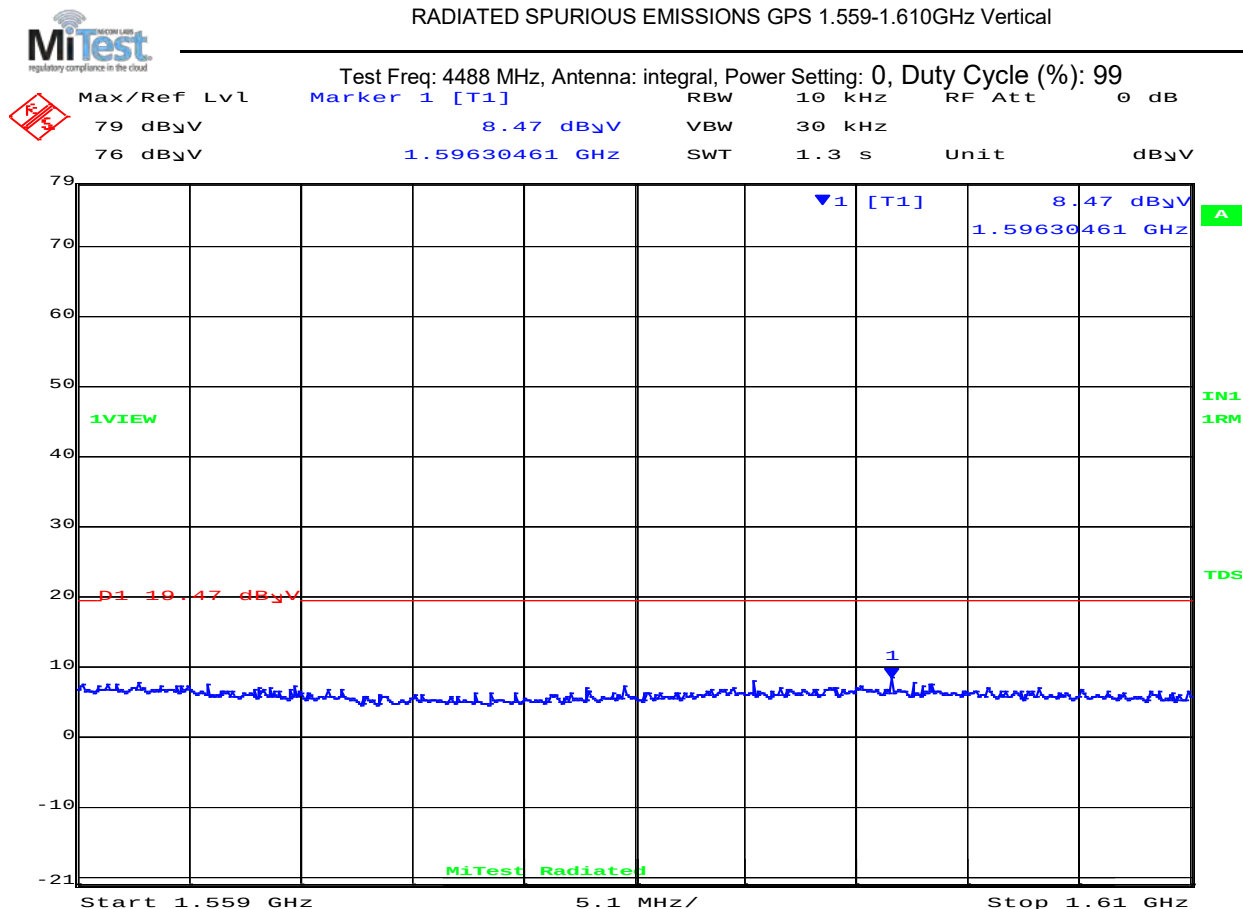
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
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Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results

RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical



Date: 20.NOV.2018 10:26:54

1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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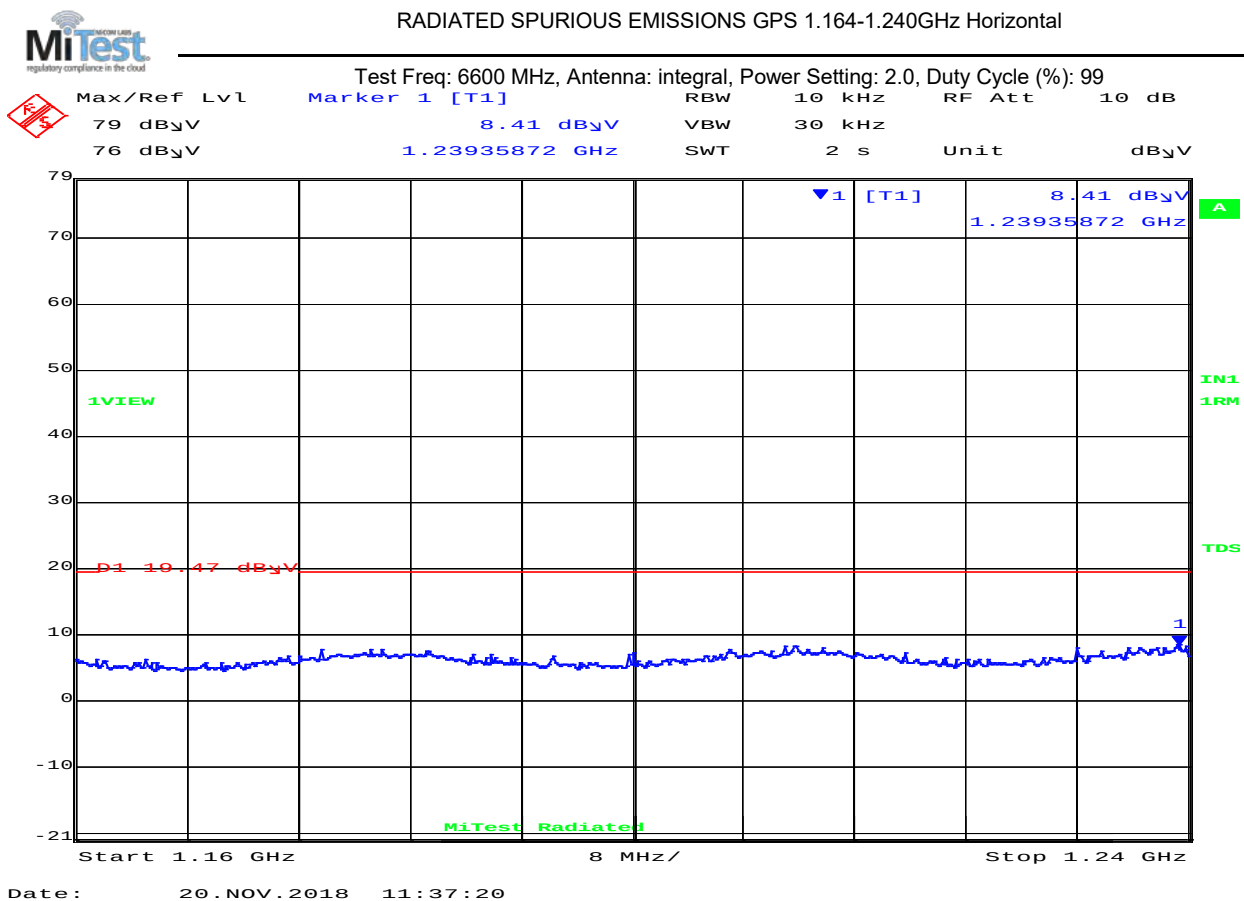
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
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6600 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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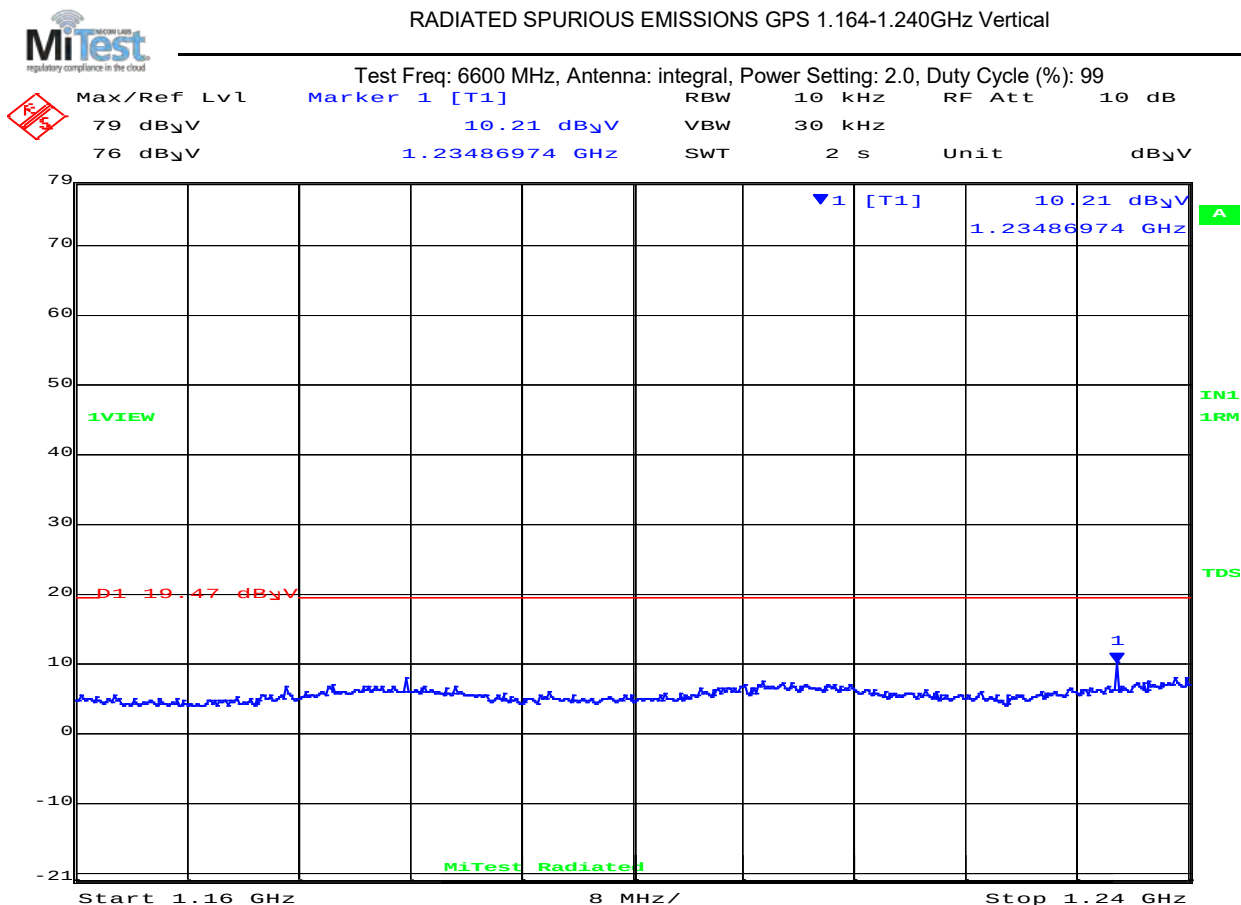
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
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Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results

RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical



Date: 20.NOV.2018 11:38:52

1164.00-1240.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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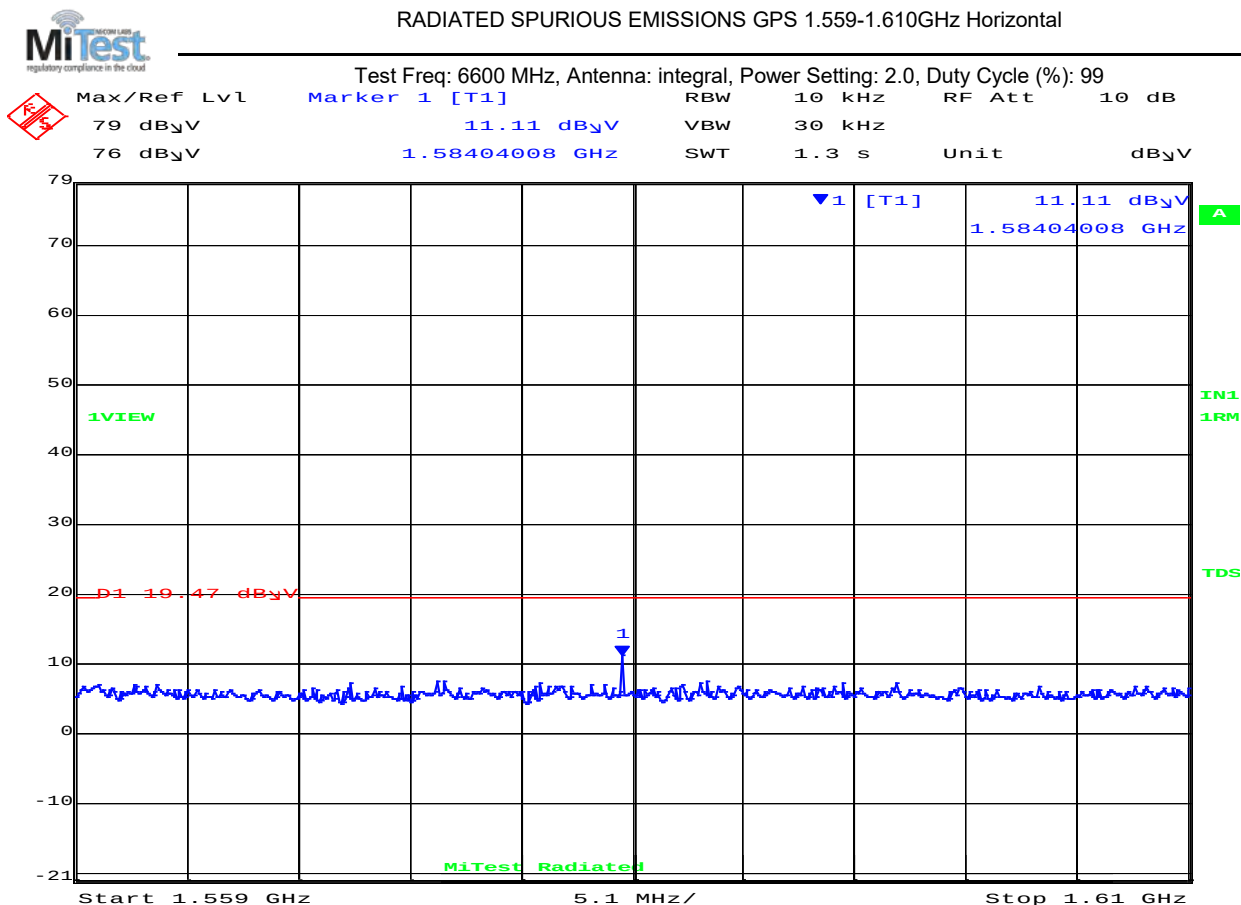
Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results

RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Horizontal



Date: 20.NOV.2018 11:36:02

1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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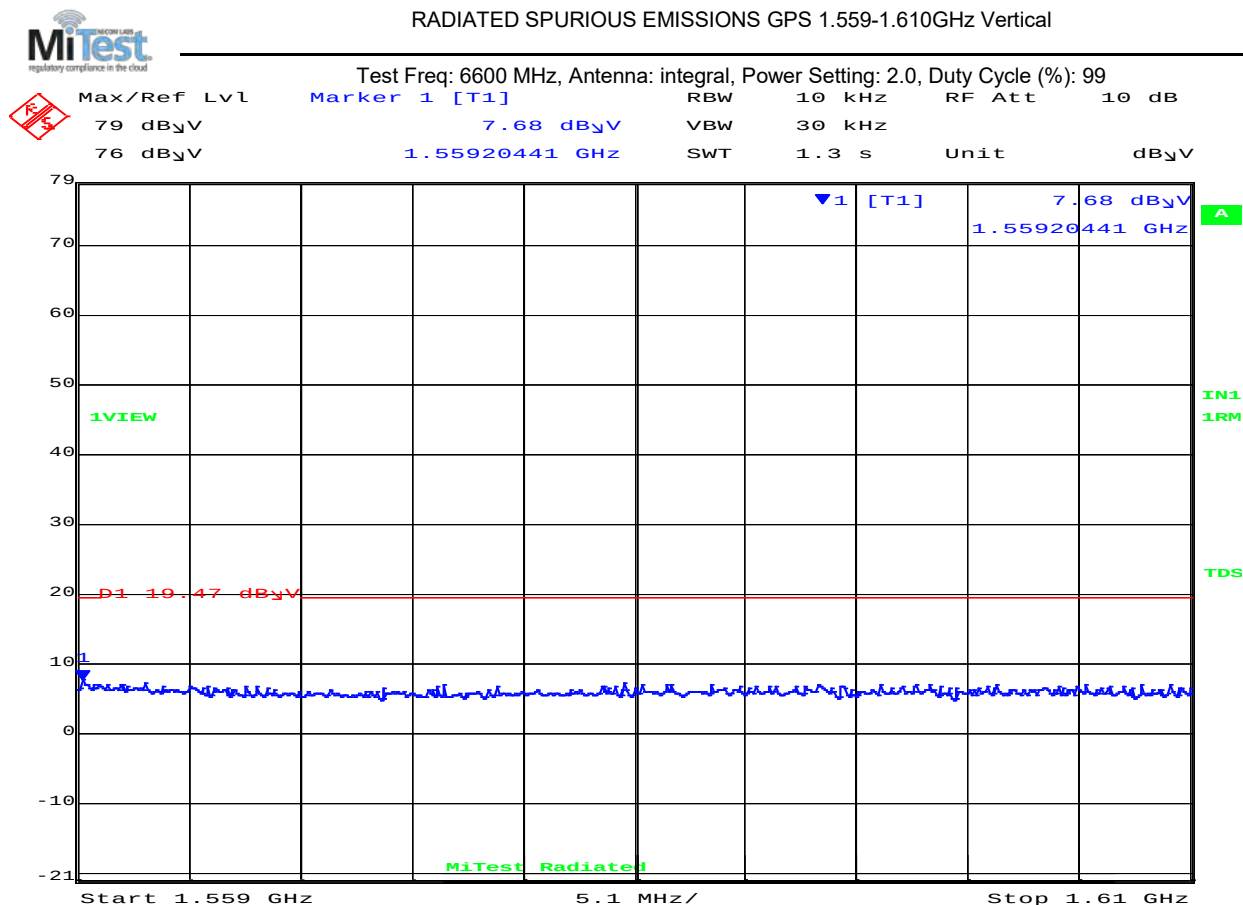
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
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Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results

RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical



Date: 20.NOV.2018 11:33:52

1559.00-1610.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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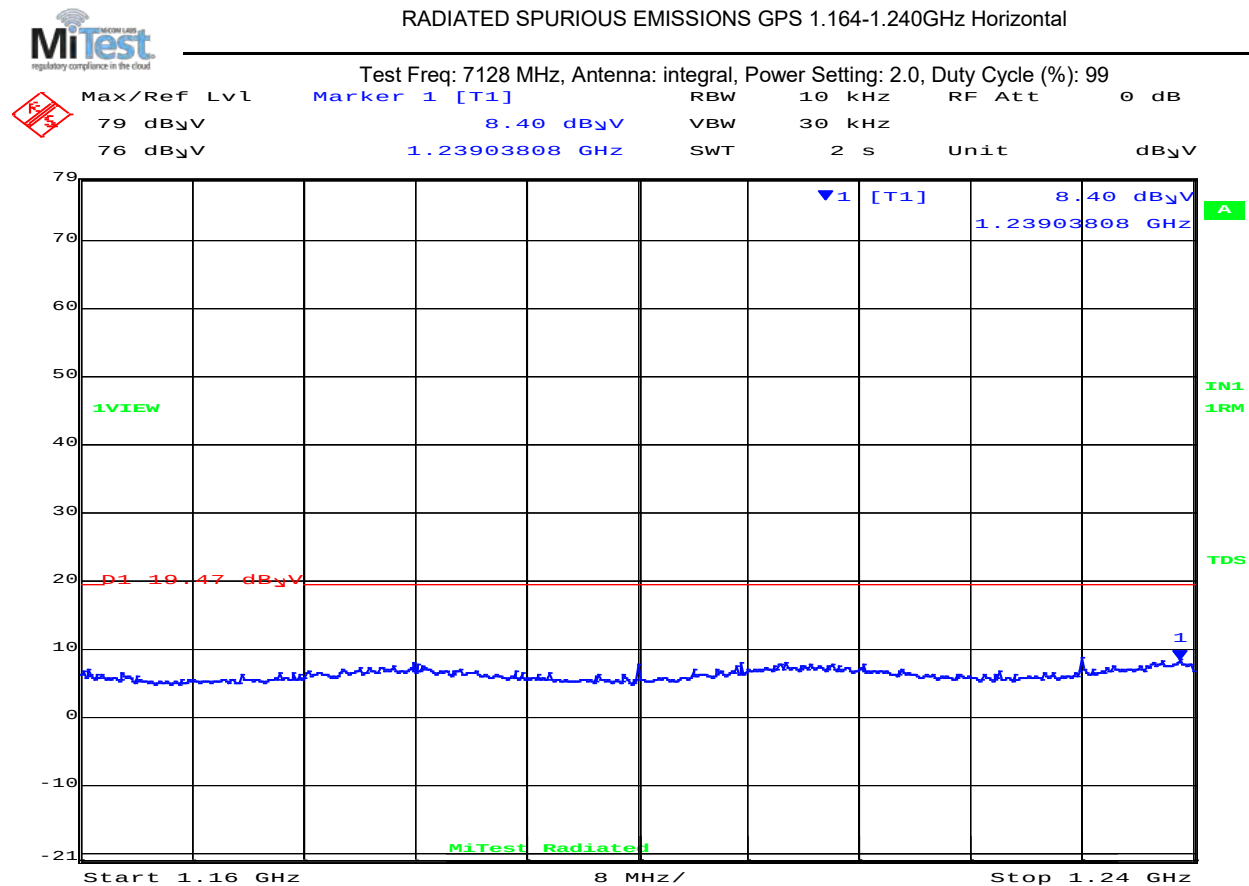
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
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7128 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



Date: 20.NOV.2018 13:41:34

1164.00-1240.00 MHz									
Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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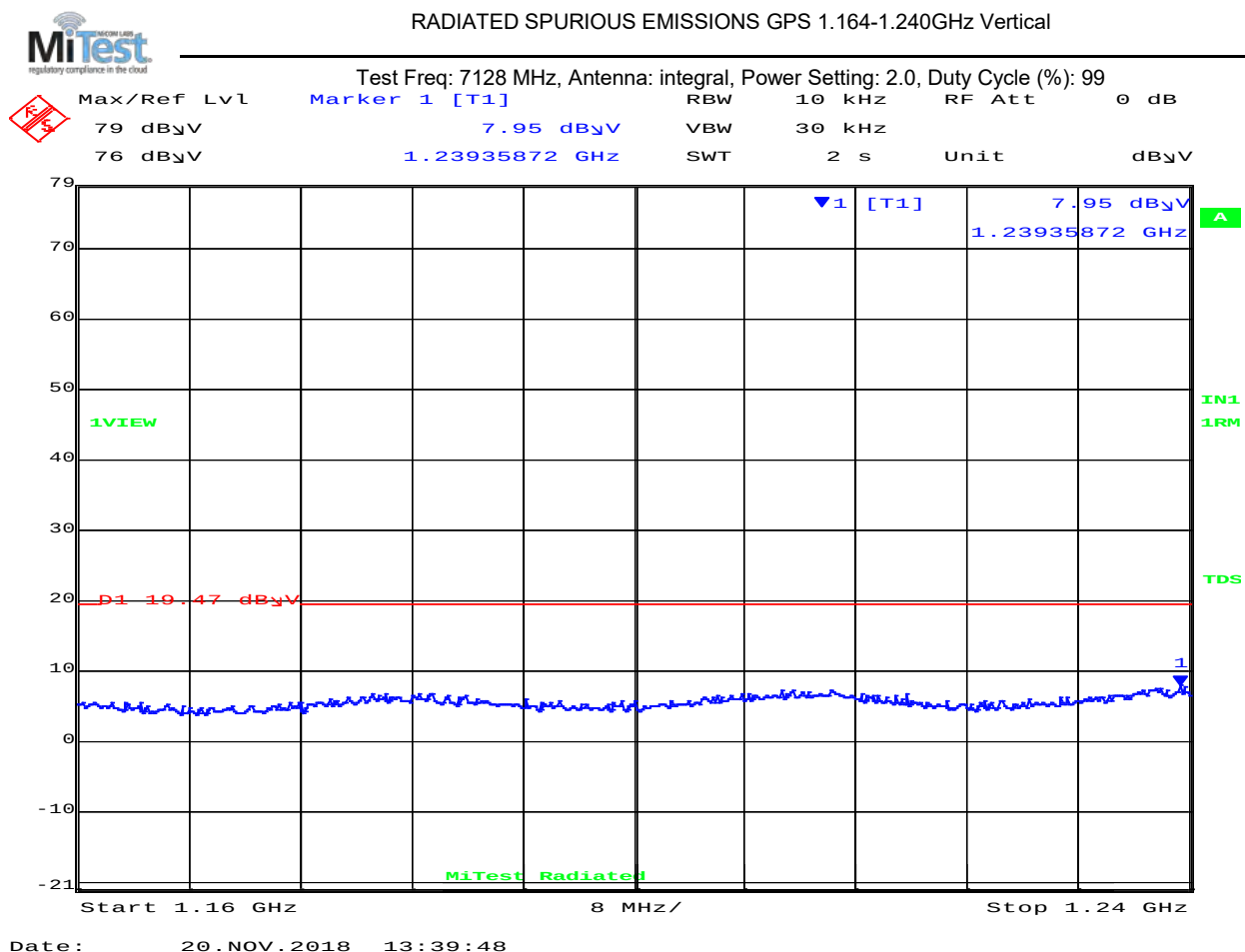


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
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Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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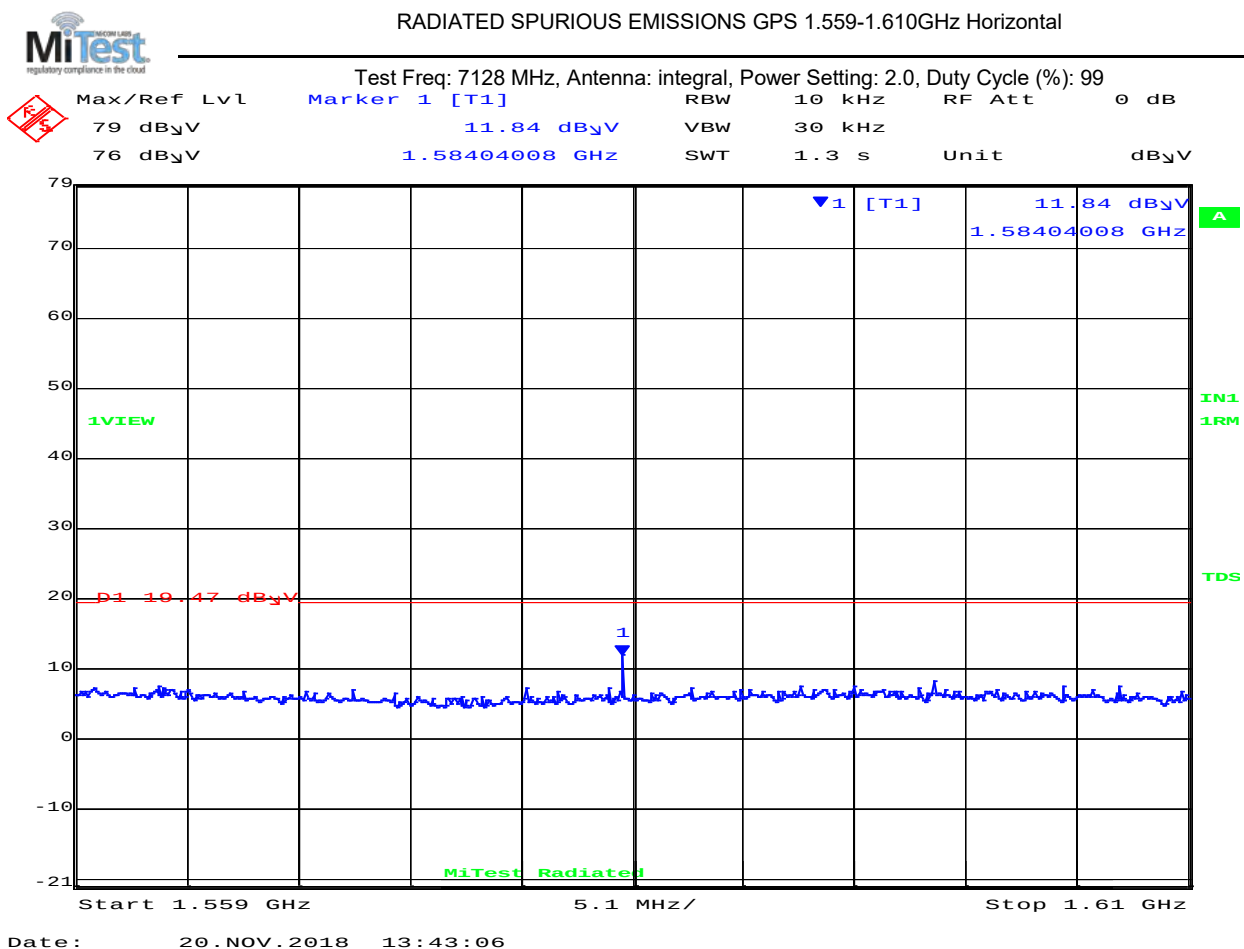


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Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

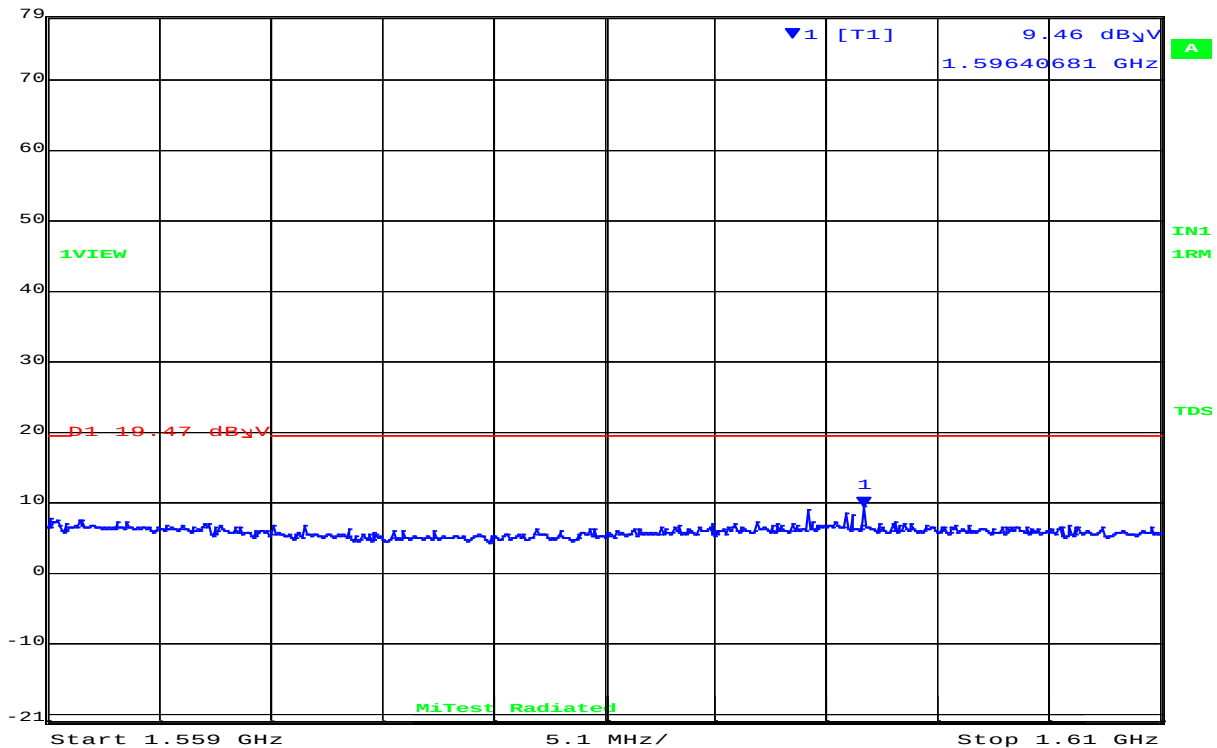
Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99

Max/Ref Lvl Marker 1 [T1] RBW 10 kHz RF Att 0 dB
79 dBμV 9.46 dBμV VBW 30 kHz
76 dBμV 1.59640681 GHz SWT 1.3 s Unit dBμV



Date: 20.NOV.2018 13:46:37

1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
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No Signals Found within 6 dB of Limit

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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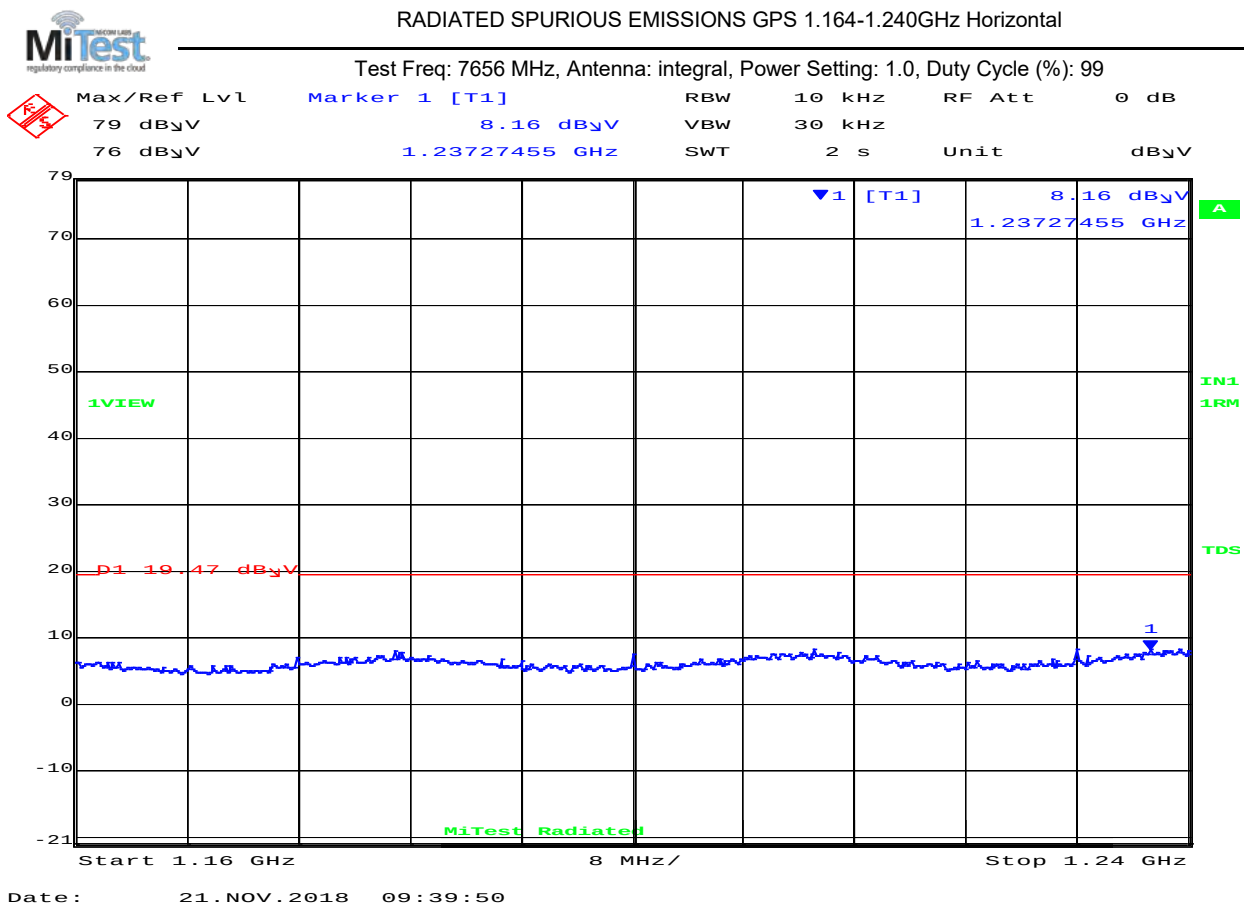
Title: Alereon AL5955, AL5930, AL5934
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7656 MHz (Covers Band Group 3 TFC 7 and Band Group 6 TFC 5)

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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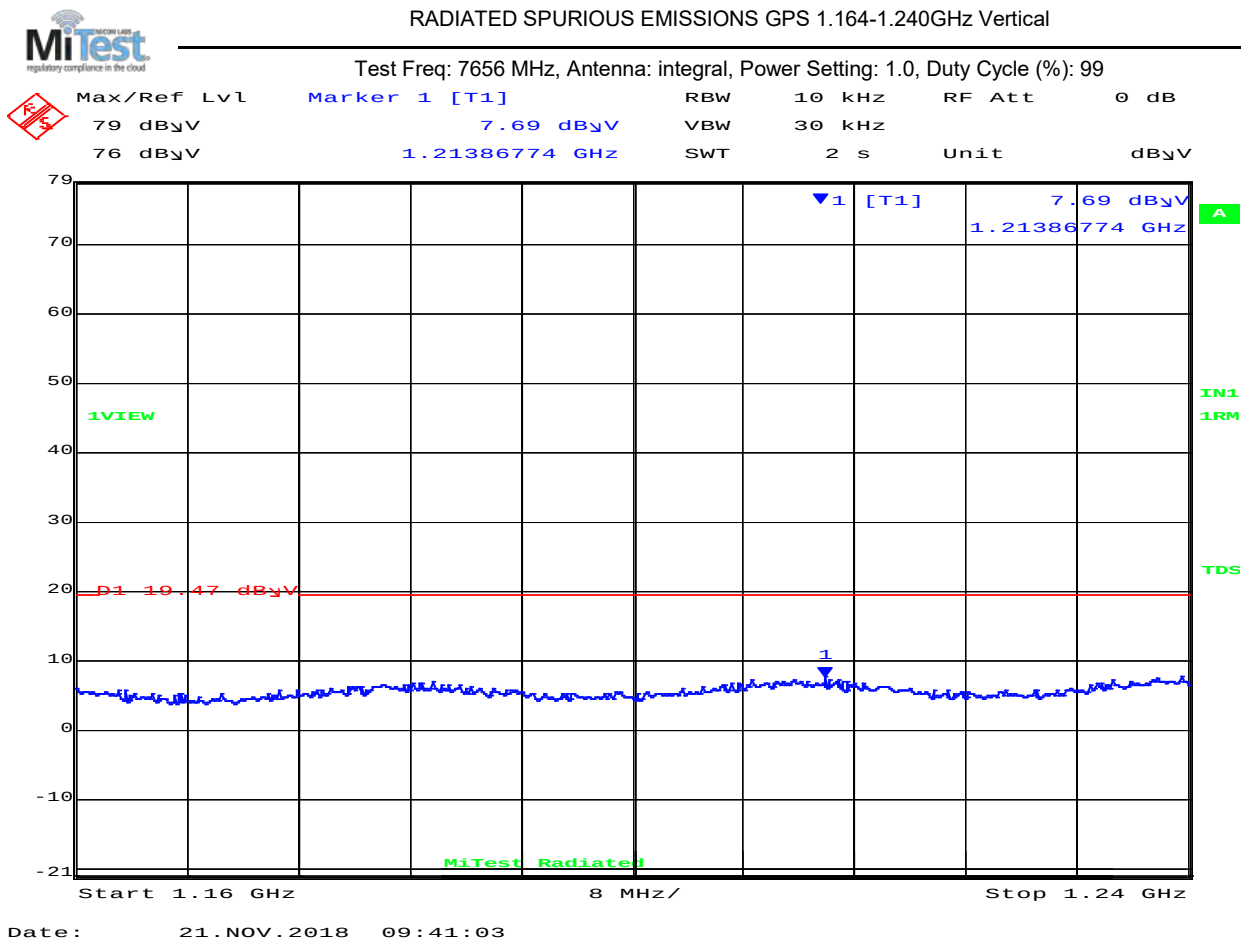
Title: Alereon AL5955, AL5930, AL5934
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Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

Test Measurement Results

RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical



1164.00-1240.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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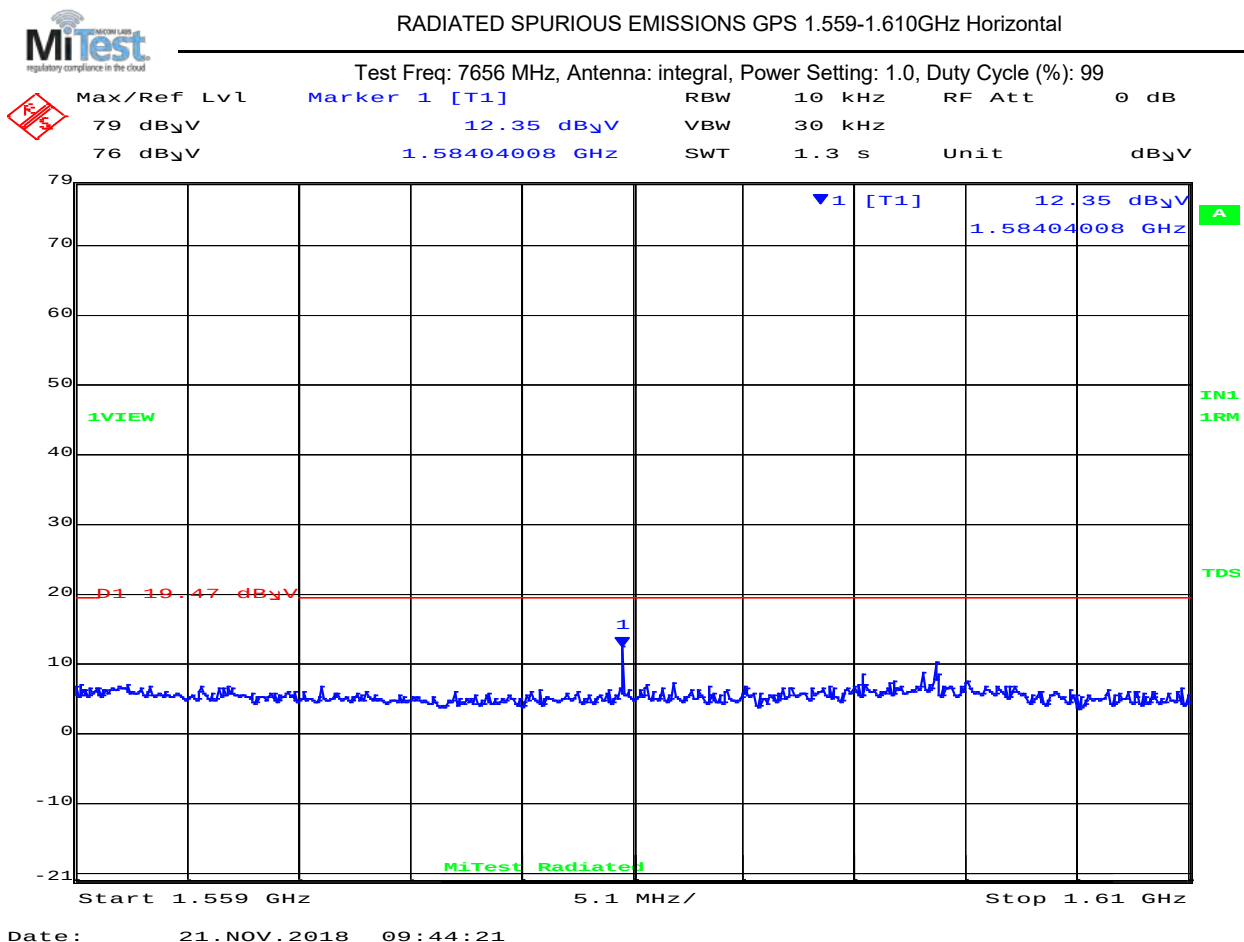


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Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

Test Measurement Results



1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

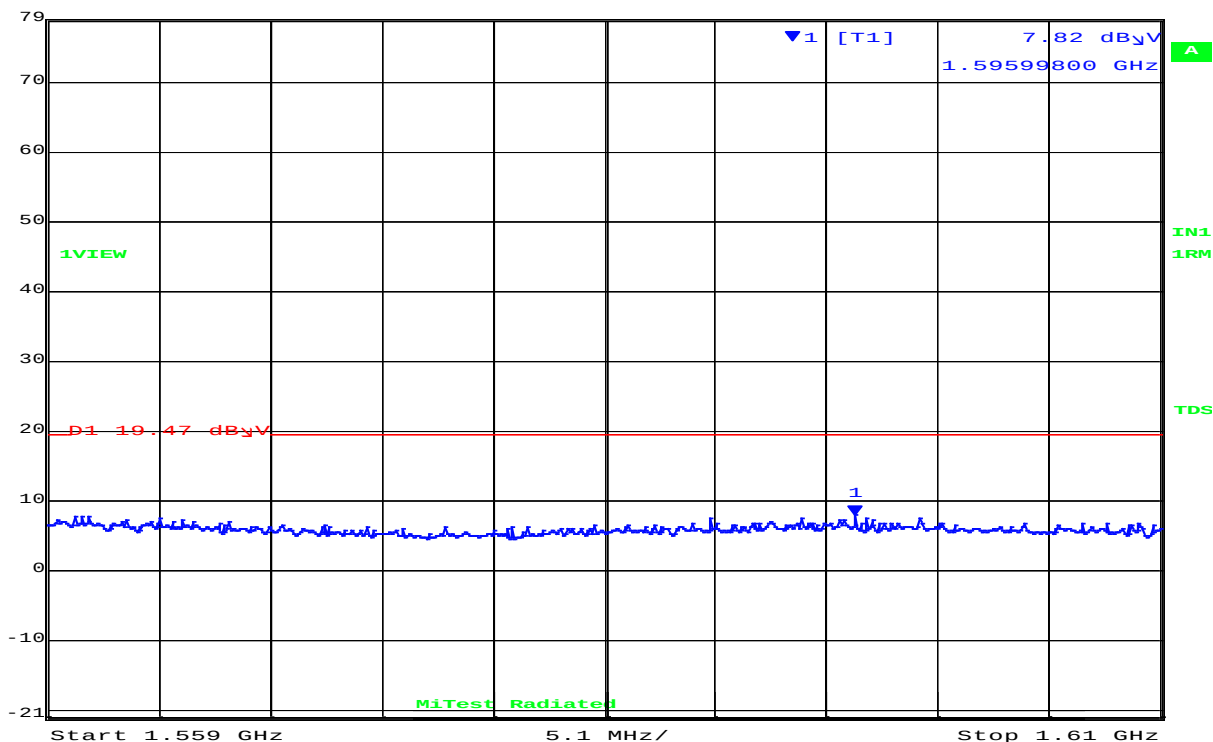
Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99

Max/Ref Lvl	Marker 1 [T1]	RBW	10 kHz	RF Att	0 dB
79 dBμV	7.82 dBμV	VBW	30 kHz		
76 dBμV	1.59599800 GHz	SWT	1.3 s	Unit	dBμV



Date: 21.NOV.2018 09:42:47

1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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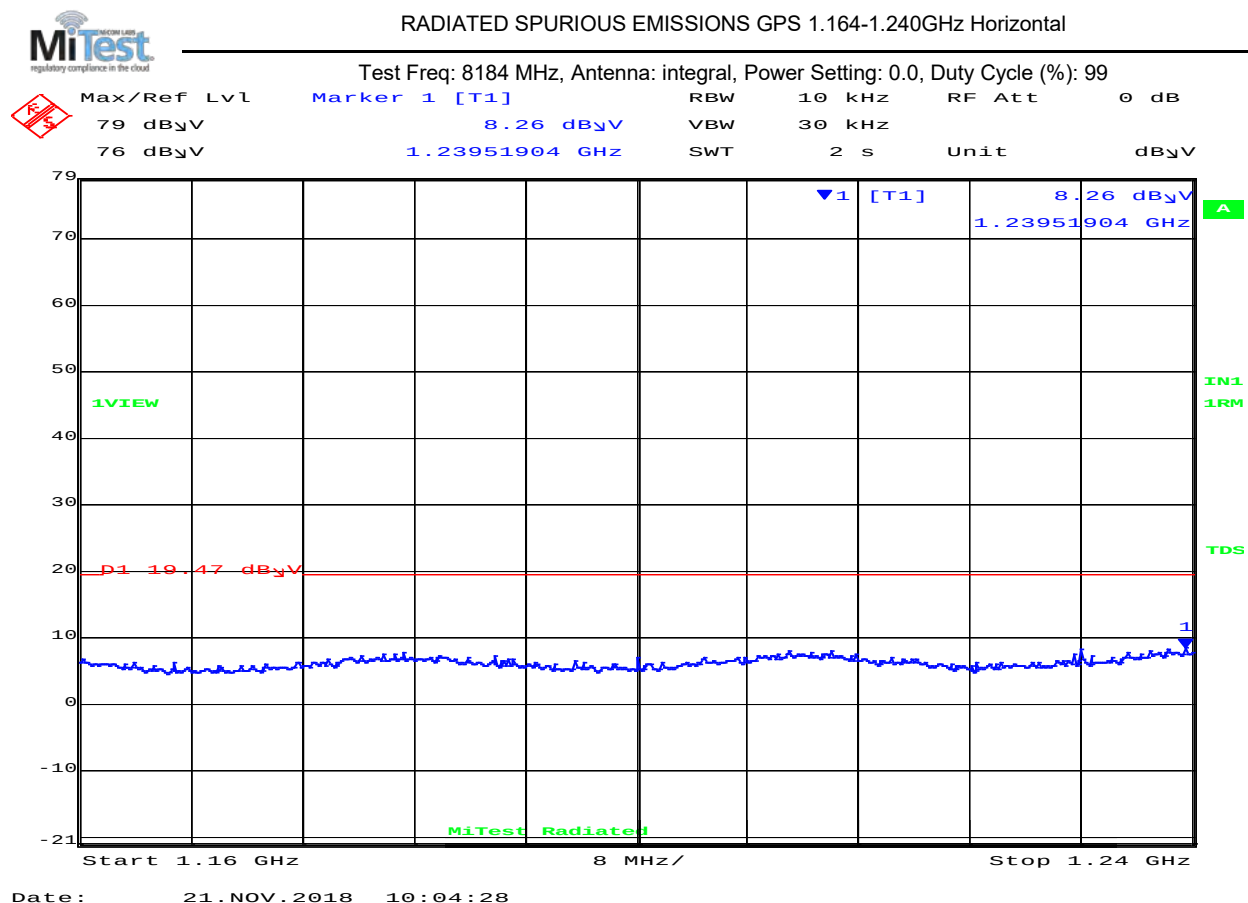
Title: Alereon AL5955, AL5930, AL5934
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8184 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

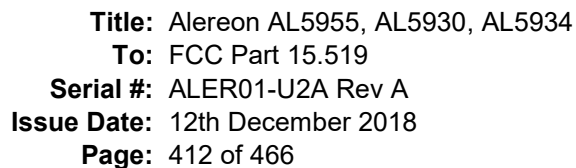
Test Measurement Results



1164.00-1240.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

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regulatory compliance in the cloud

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



1164.00-1240.00 MHz									
Num	Frequency MHz	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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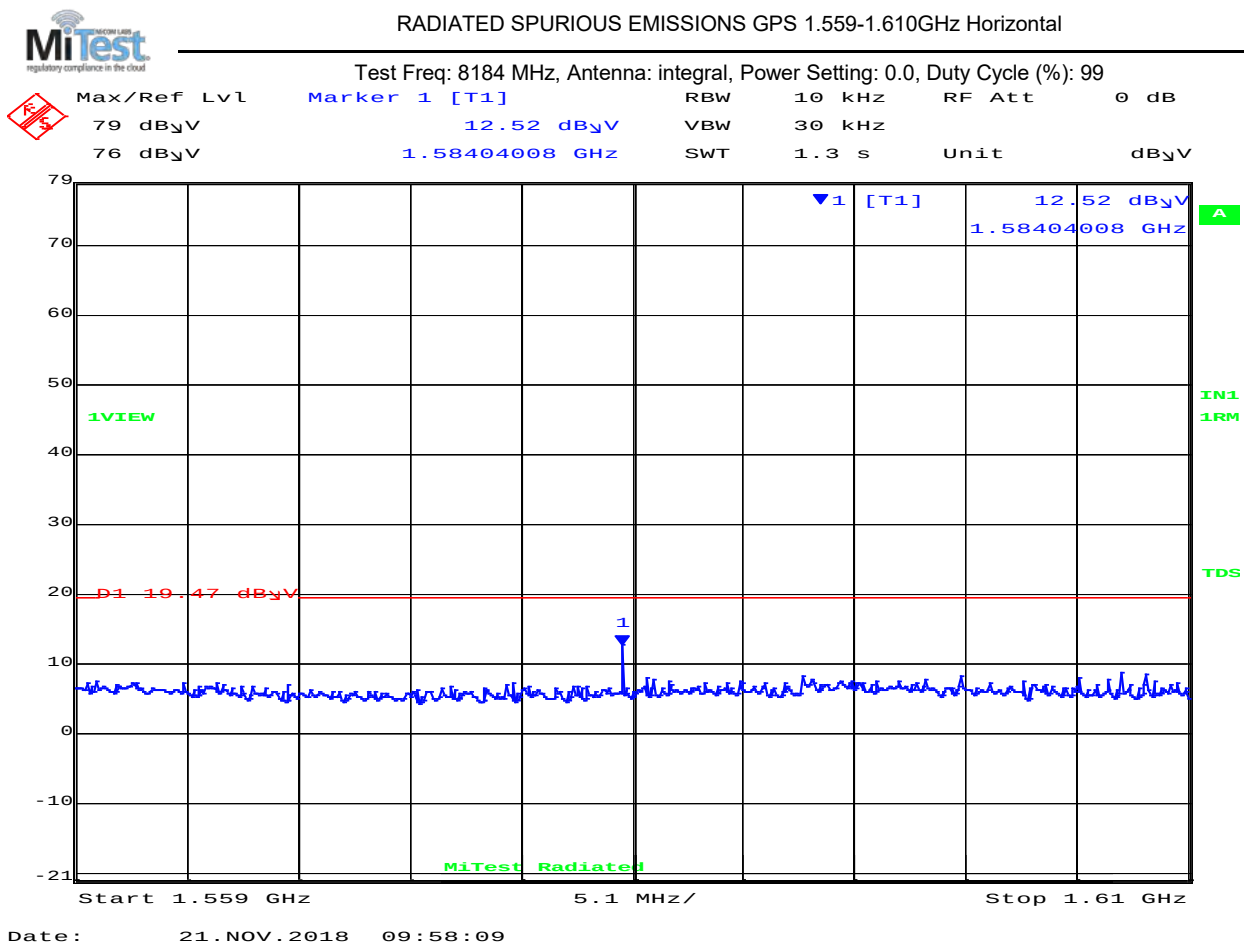


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Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

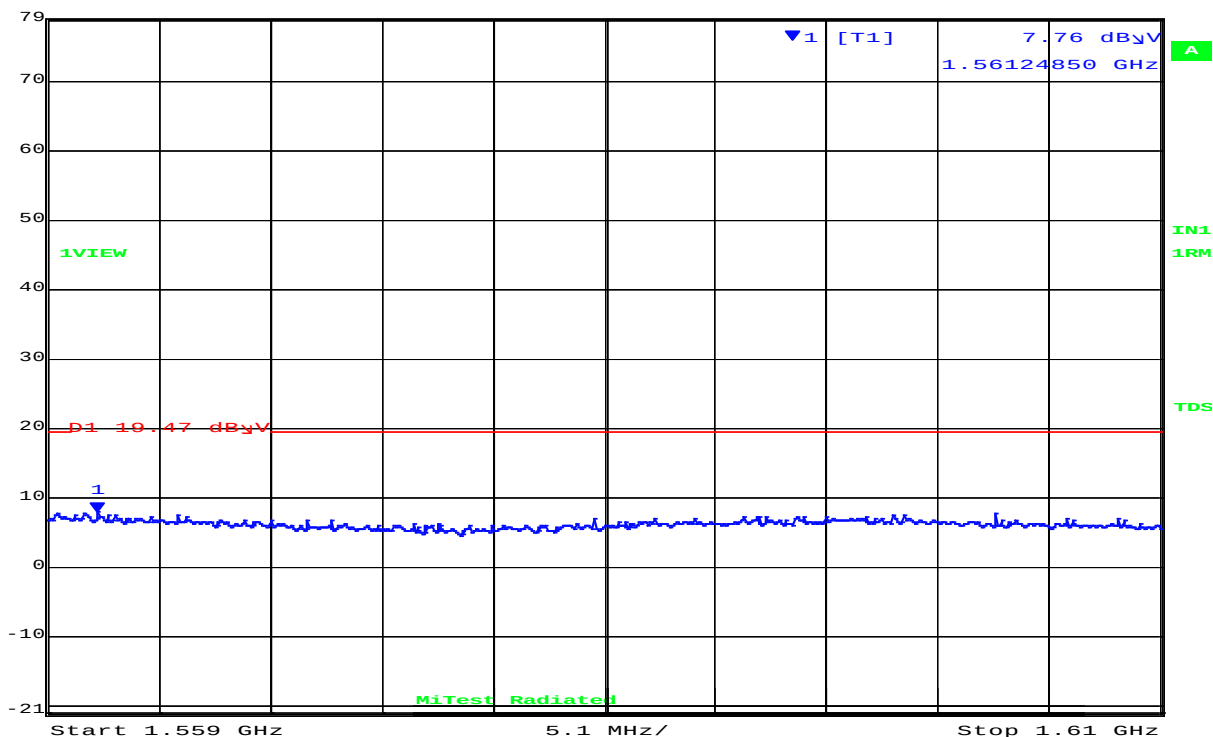
Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99

Max/Ref Lvl	Marker 1 [T1]	RBW	10 kHz	RF Att	0 dB
79 dBμV	7.76 dBμV	VBW	30 kHz		
76 dBμV	1.56124850 GHz	SWT	1.3 s	Unit	dBμV



Date: 21.NOV.2018 10:01:09

1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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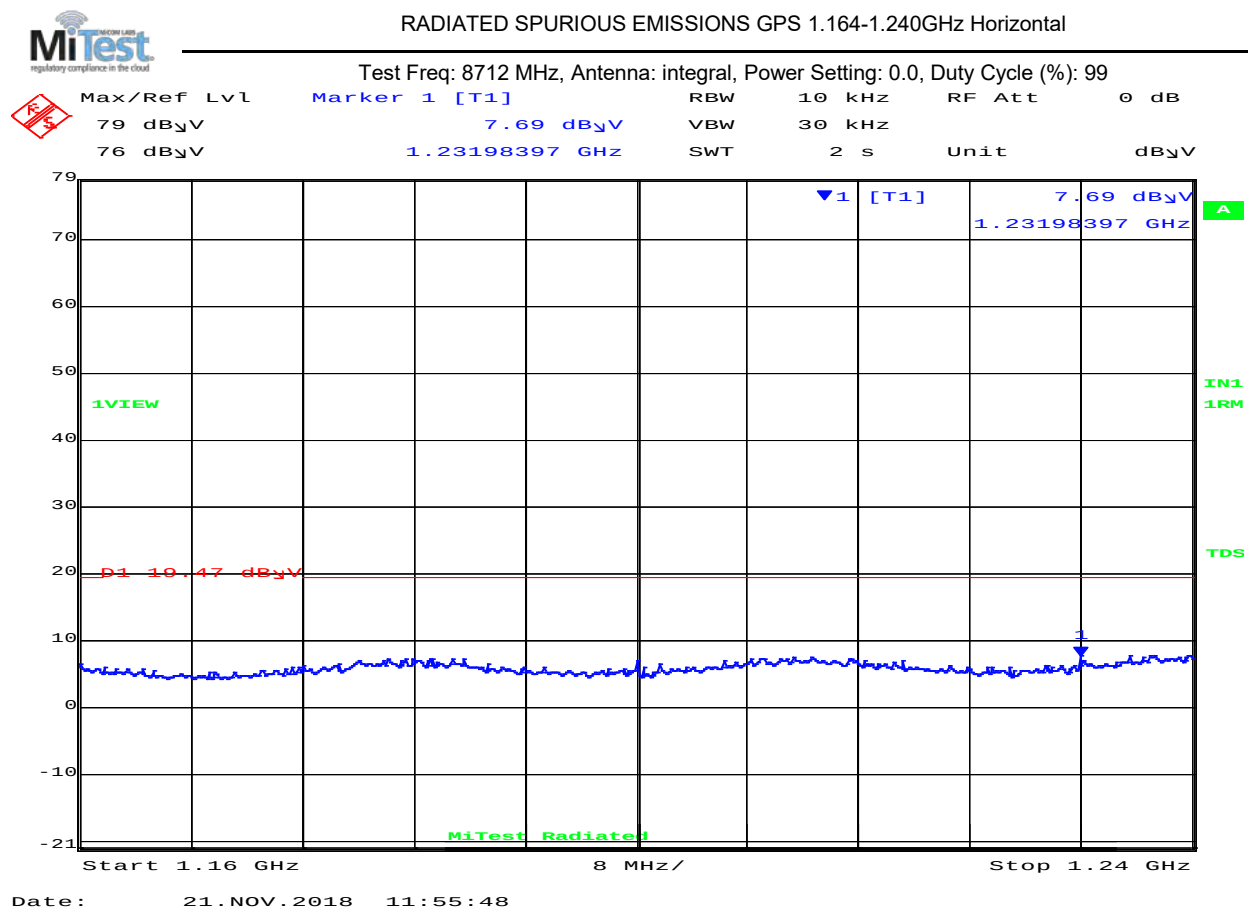
Title: Alereon AL5955, AL5930, AL5934
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8712 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



1164.00-1240.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

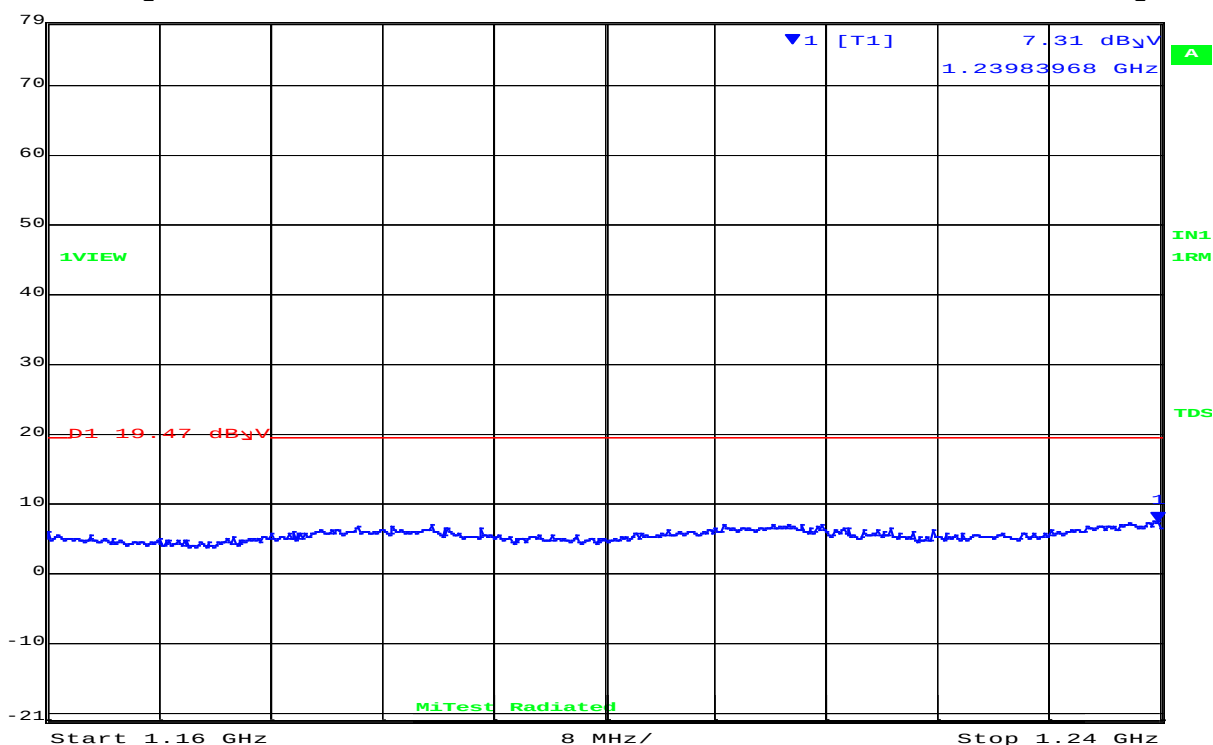
Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99

Max/Ref Lvl	Marker 1 [T1]	RBW	10 kHz	RF Att	0 dB
79 dB μ V	7.31 dB μ V	VBW	30 kHz		
76 dB μ V	1.23983968 GHz	SWT	2 s	Unit	dB μ V



Date: 21.NOV.2018 11:57:05

1164.00-1240.00 MHz

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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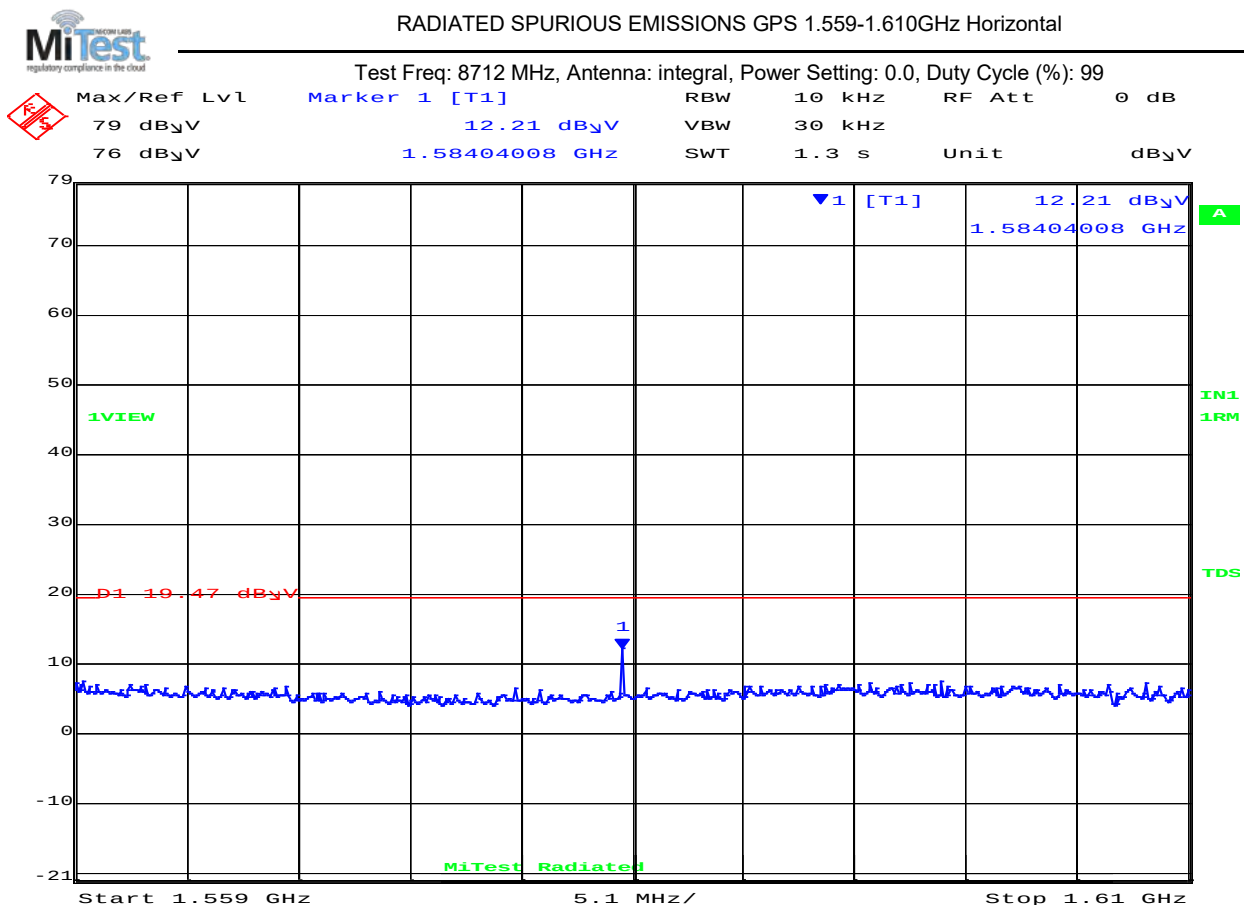


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Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



Date: 21.NOV.2018 11:54:14

1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

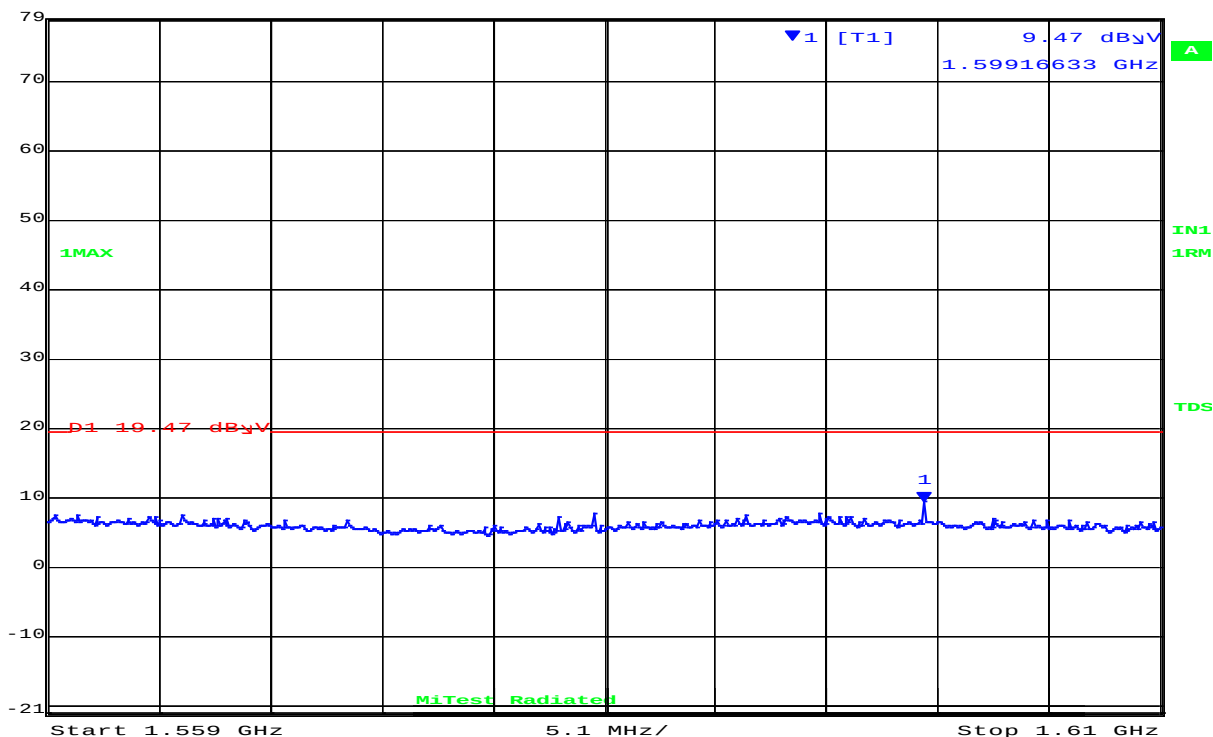
Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99

Max/Ref Lvl	Marker 1 [T1]	RBW	10 kHz	RF Att	0 dB
79 dBμV	9.47 dBμV	VBW	30 kHz		
76 dBμV	1.59916633 GHz	SWT	1.3 s	Unit	dBμV



Date: 21.NOV.2018 11:52:32

1559.00-1610.00 MHz

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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9.4.3. 50 MHz Bandwidth Peak Emissions

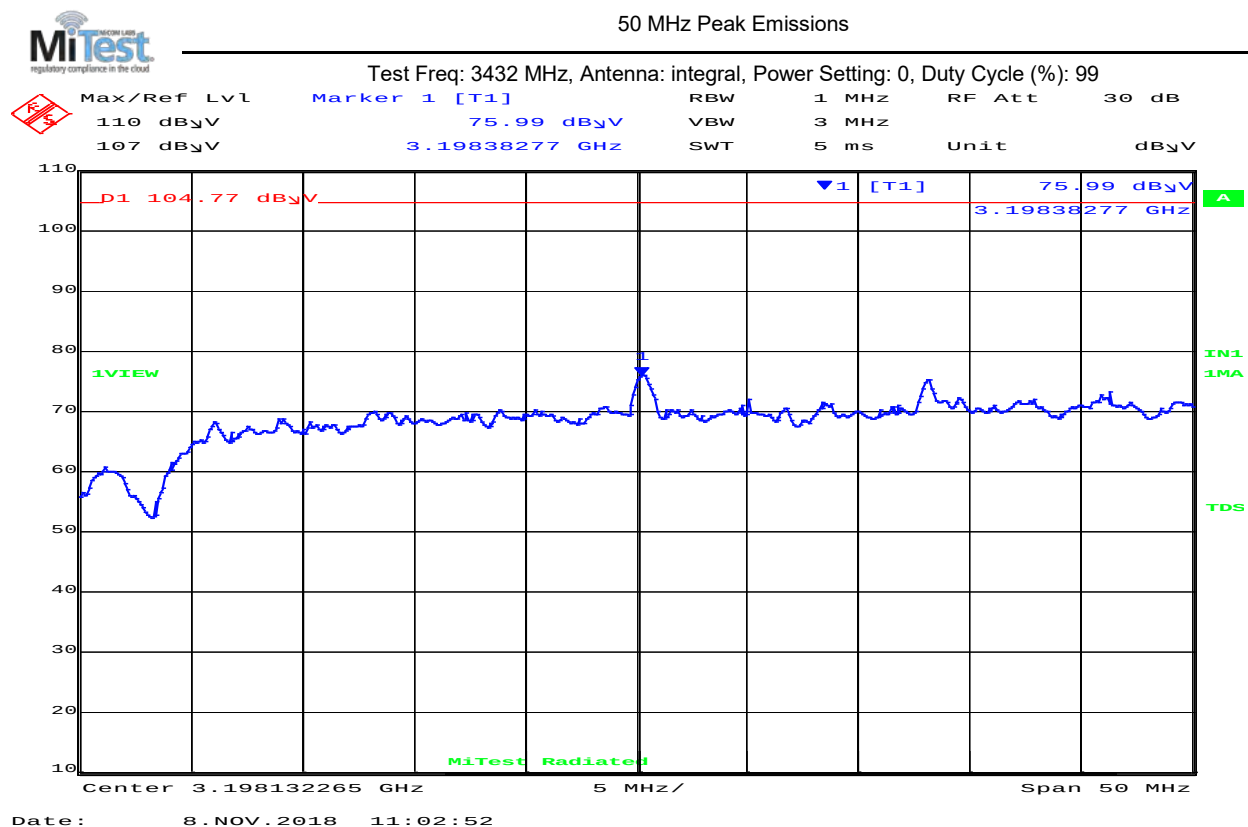
9.4.3.1. Commander AL5930

3432 MHz

Equipment Configuration for 50 MHz Peak Emissions

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	1.0	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3432.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



50 MHz Peak Emissions

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

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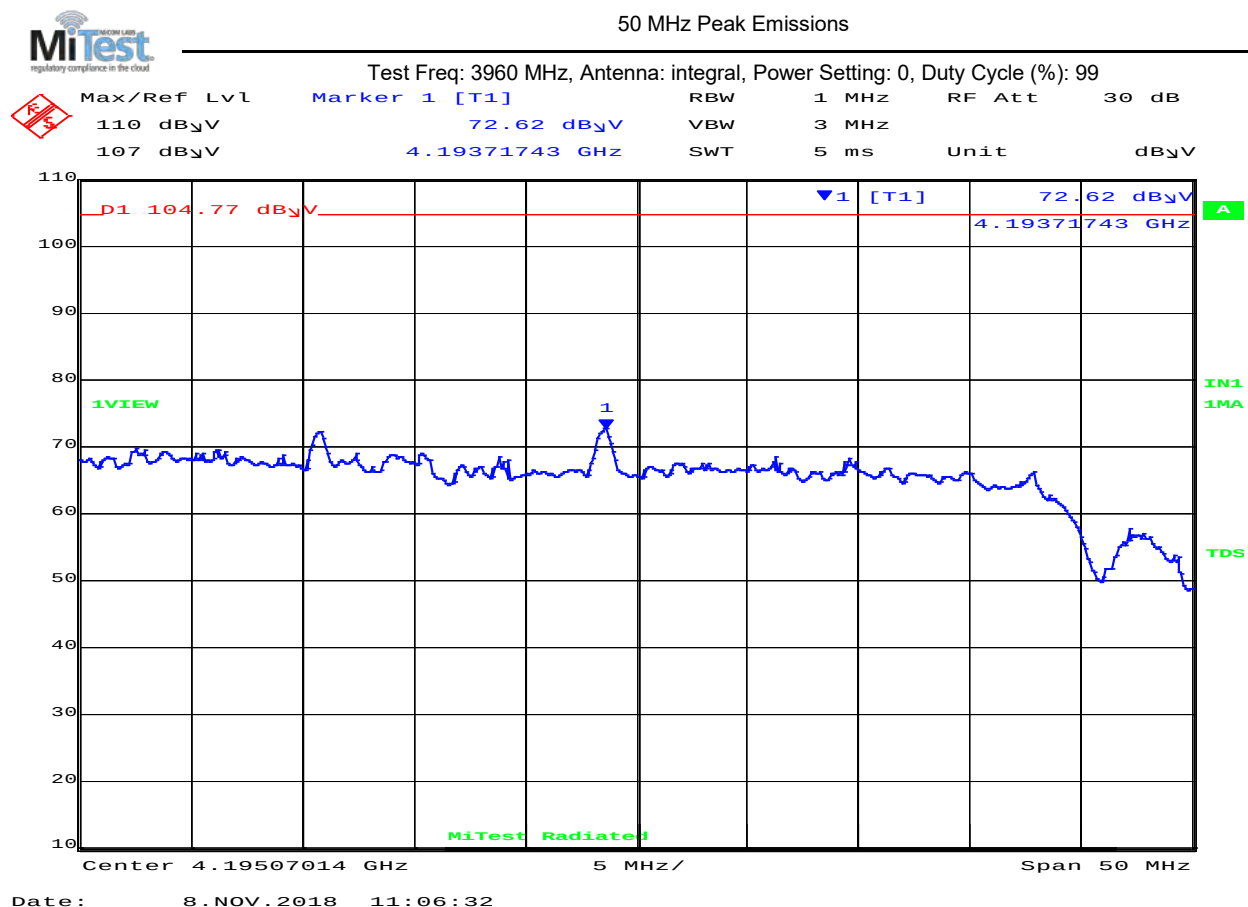
Title: Alereon AL5955, AL5930, AL5934
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3960 MHz

Equipment Configuration for 50 MHz Peak Emissions

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



50 MHz Peak Emissions

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

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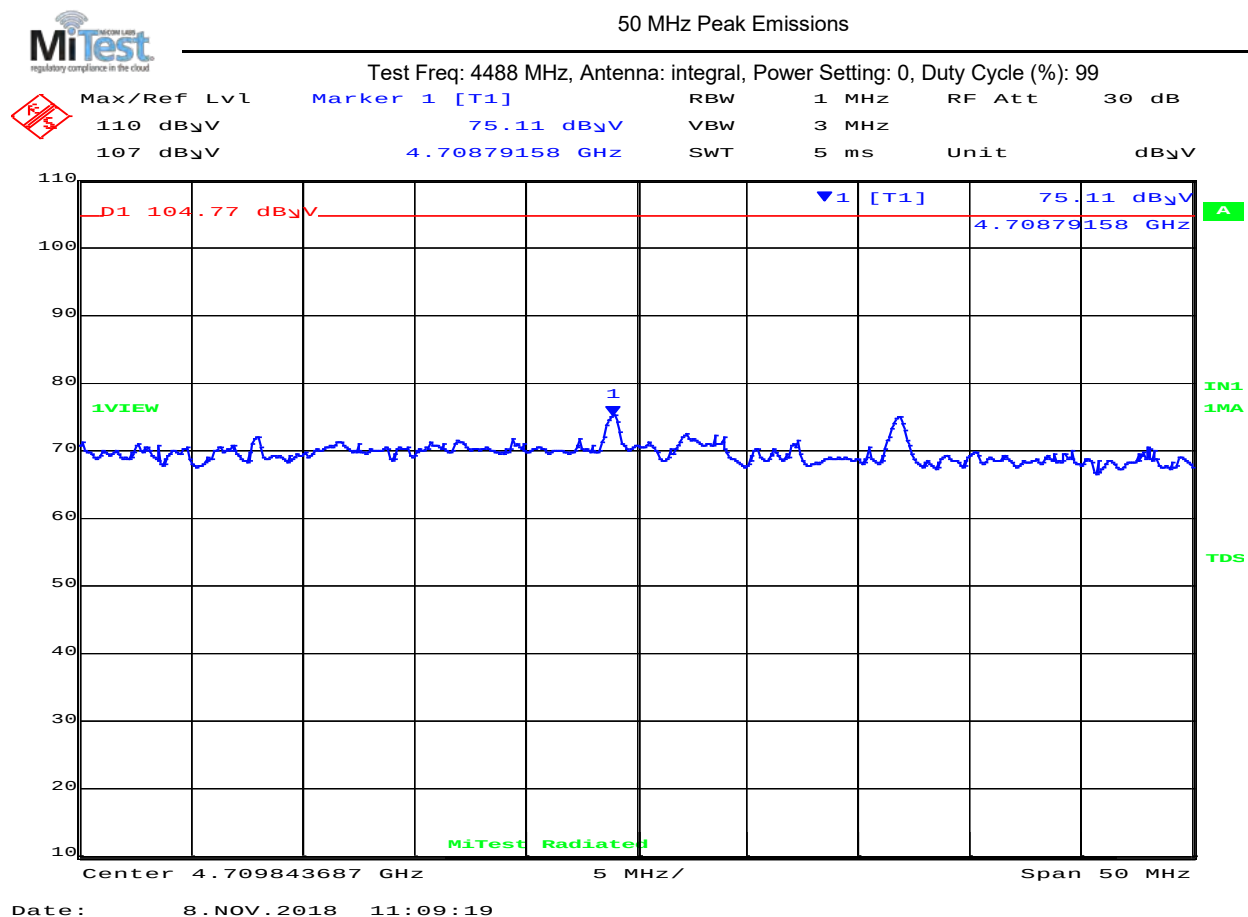
Title: Alereon AL5955, AL5930, AL5934
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4488 MHz

Equipment Configuration for 50 MHz Peak Emissions

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



50 MHz Peak Emissions

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

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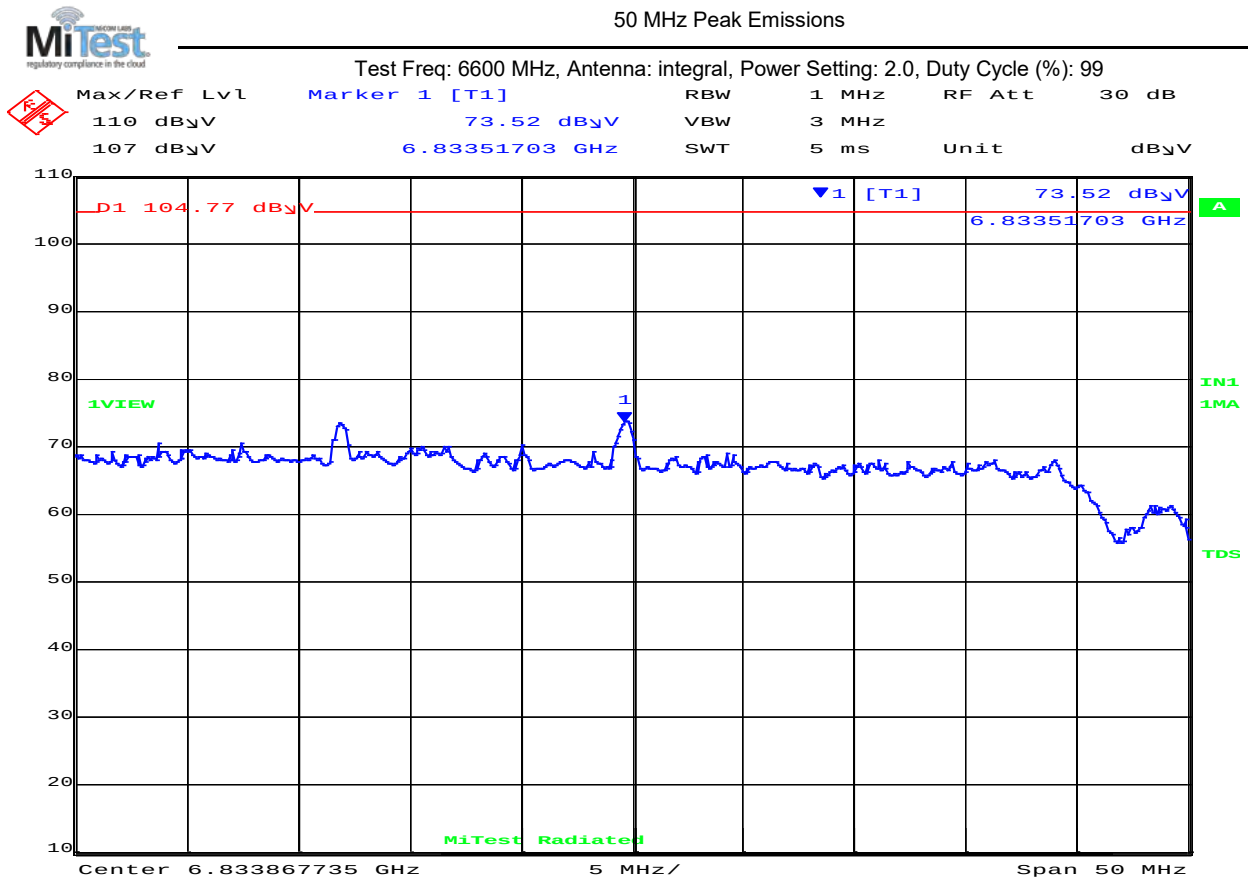
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6600 MHz

Equipment Configuration for 50 MHz Peak Emissions

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



Date: 8.NOV.2018 11:12:23

50 MHz Peak Emissions

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

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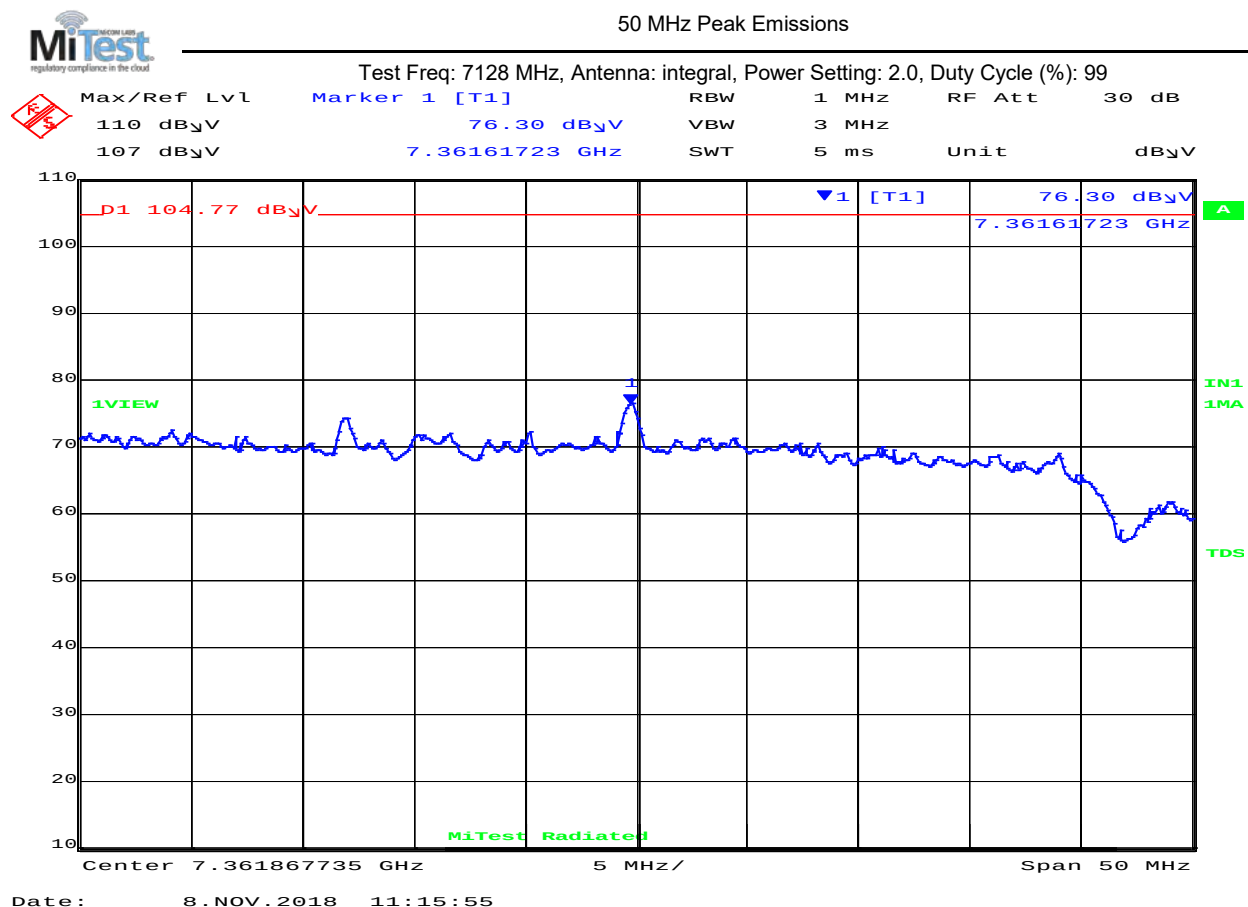
Title: Alereon AL5955, AL5930, AL5934
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7128 MHz

Equipment Configuration for 50 MHz Peak Emissions

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



50 MHz Peak Emissions

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

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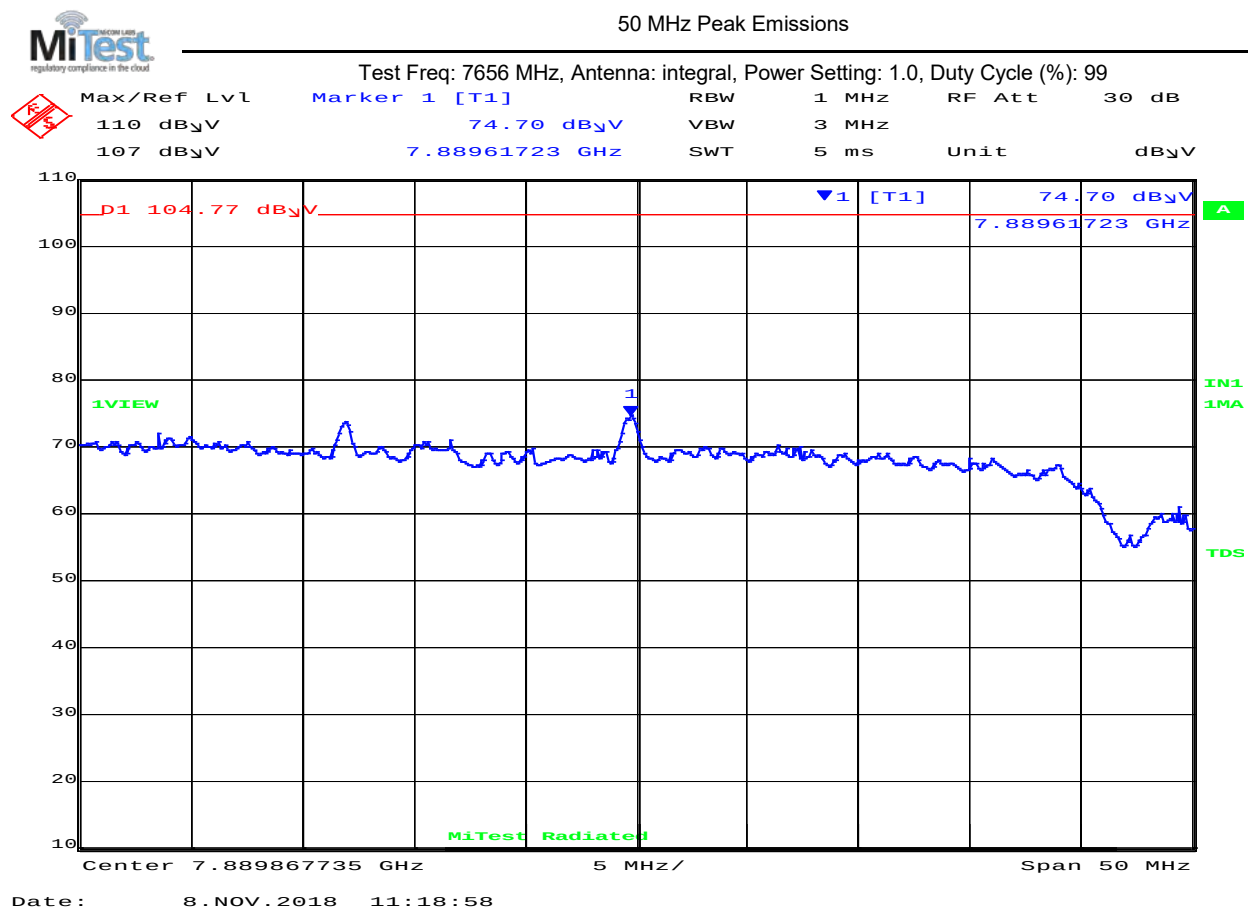
Title: Alereon AL5955, AL5930, AL5934
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7656 MHz (Covers Band Group 3 TFC 7 and Band Group 6 TFC 5)

Equipment Configuration for 50 MHz Peak Emissions

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

Test Measurement Results



50 MHz Peak Emissions

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

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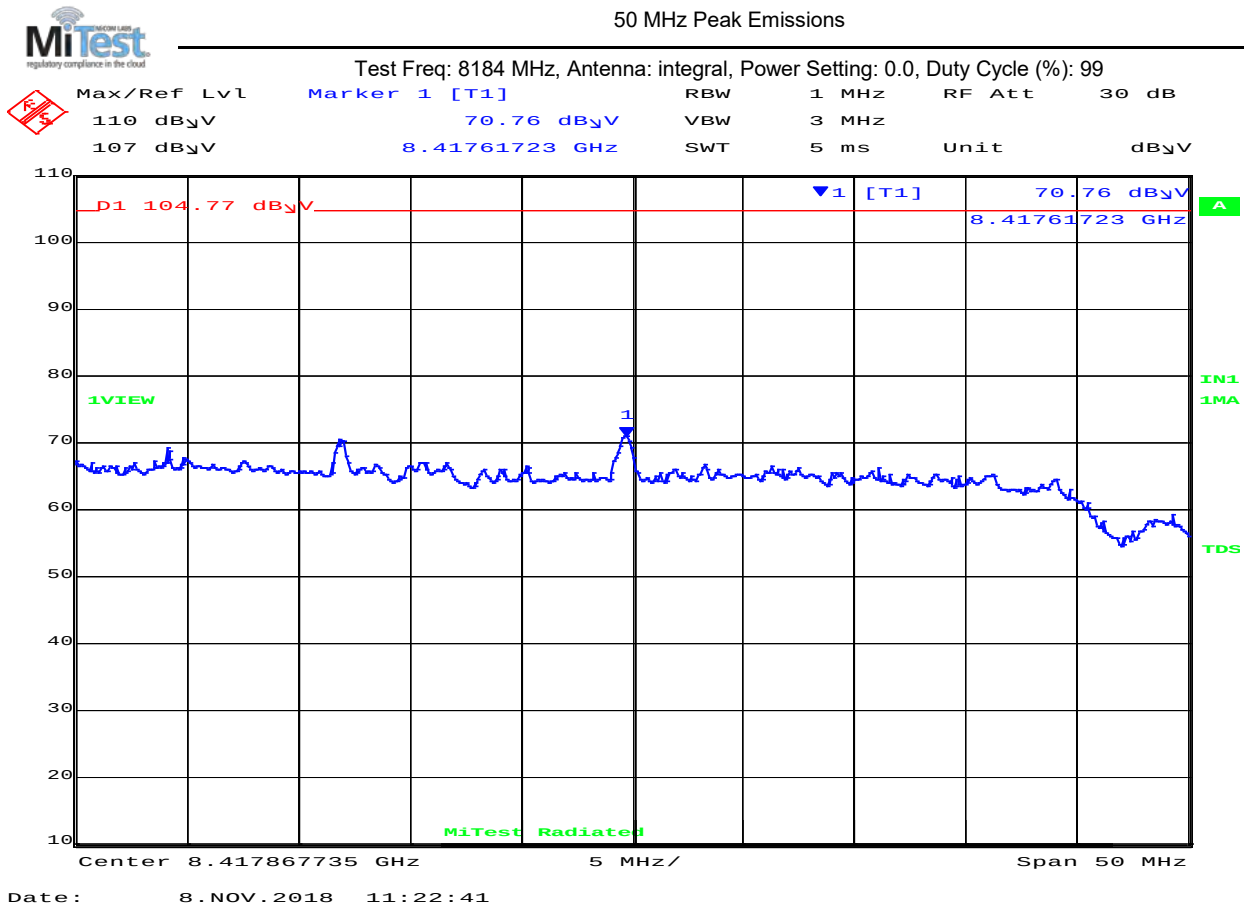
Title: Alereon AL5955, AL5930, AL5934
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8184 MHz

Equipment Configuration for 50 MHz Peak Emissions

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



50 MHz Peak Emissions

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

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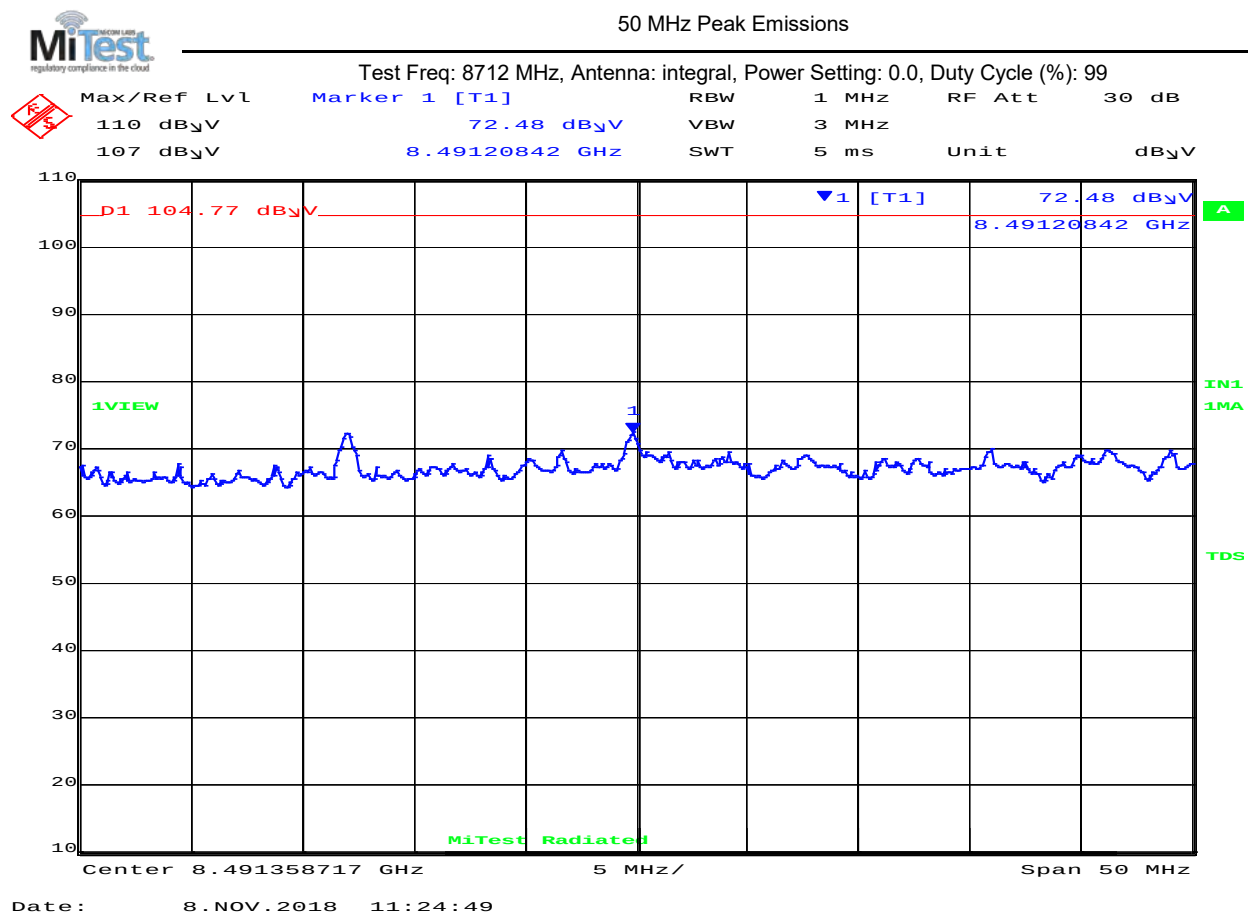
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8712 MHz

Equipment Configuration for 50 MHz Peak Emissions

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



50 MHz Peak Emissions

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
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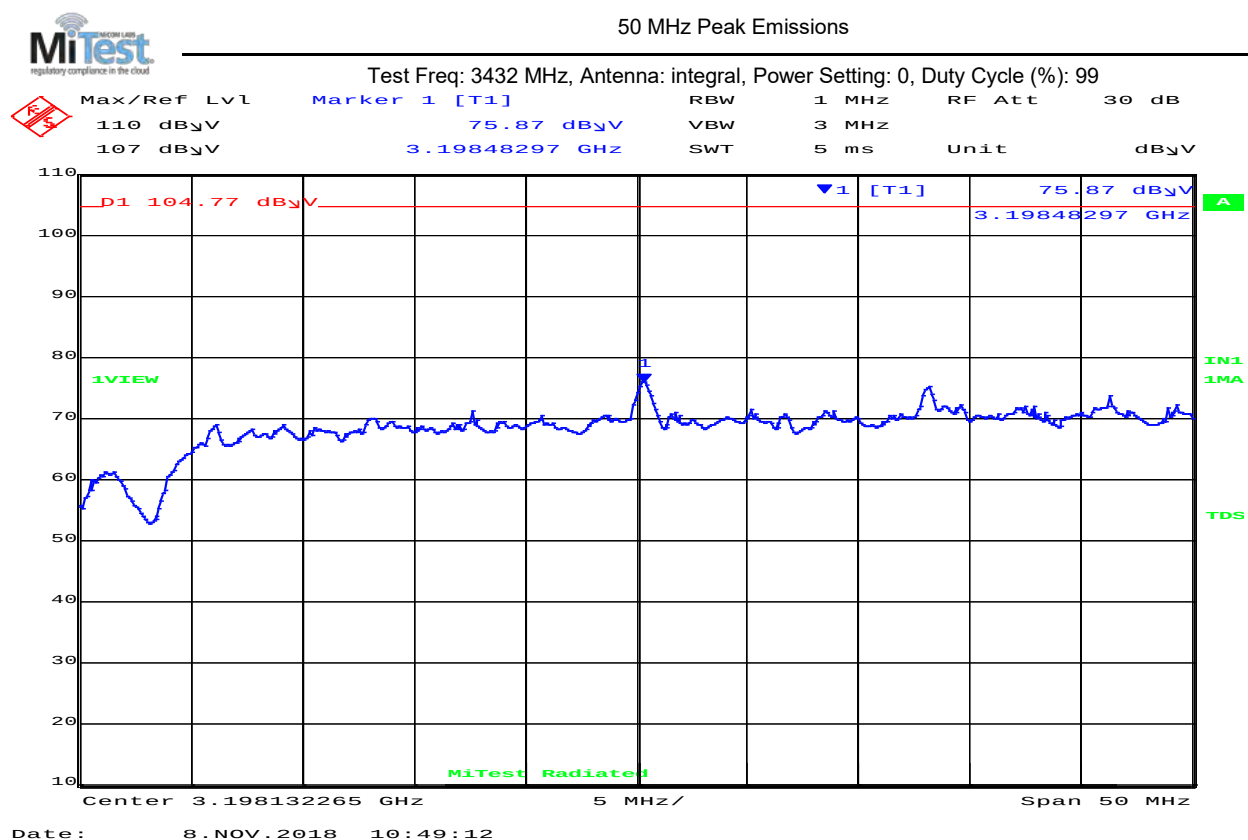
9.4.3.2. Camouflage AL5955

3432 MHz

Equipment Configuration for 50 MHz Peak Emissions

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	1.0	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3432.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



50 MHz Peak Emissions

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



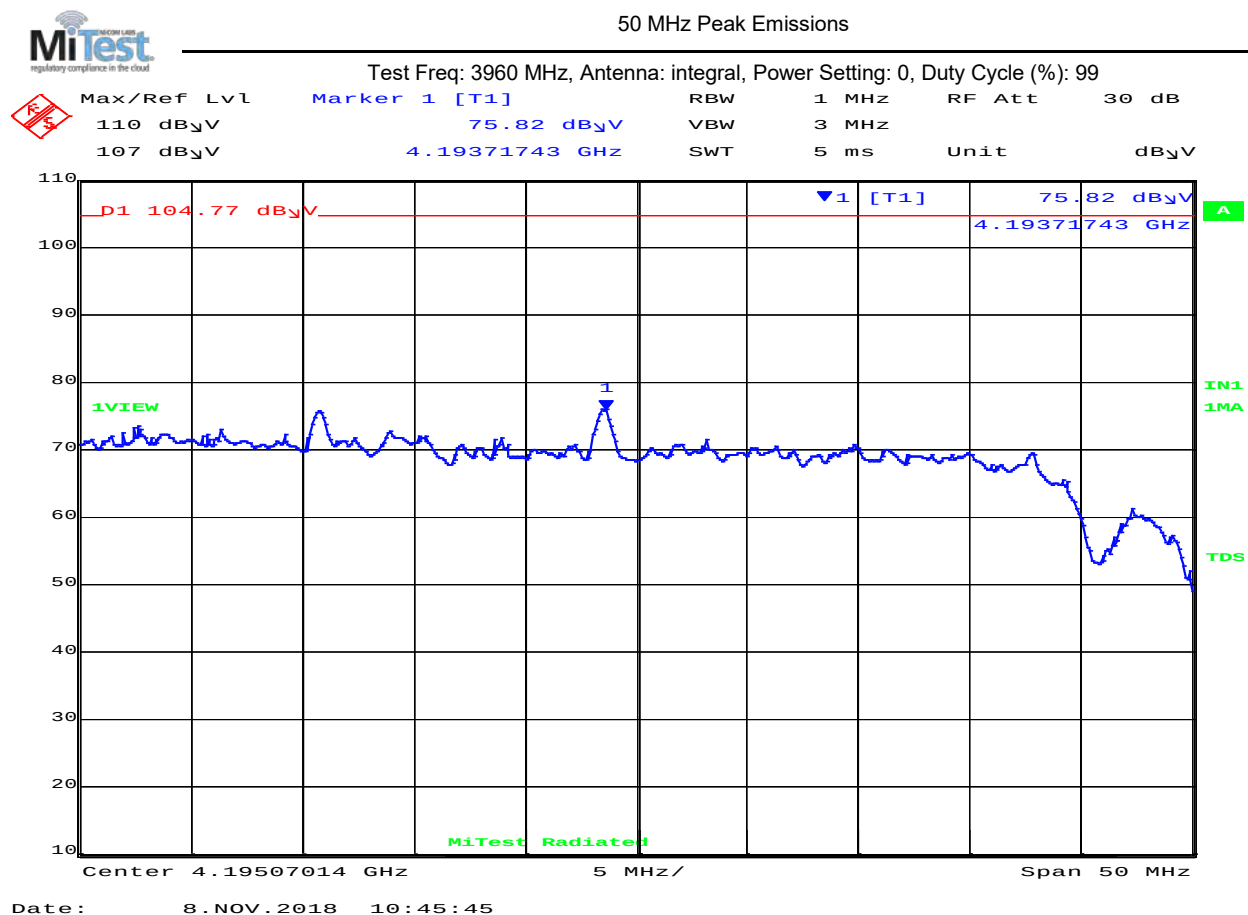
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
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3960 MHz

Equipment Configuration for 50 MHz Peak Emissions

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



50 MHz Peak Emissions

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



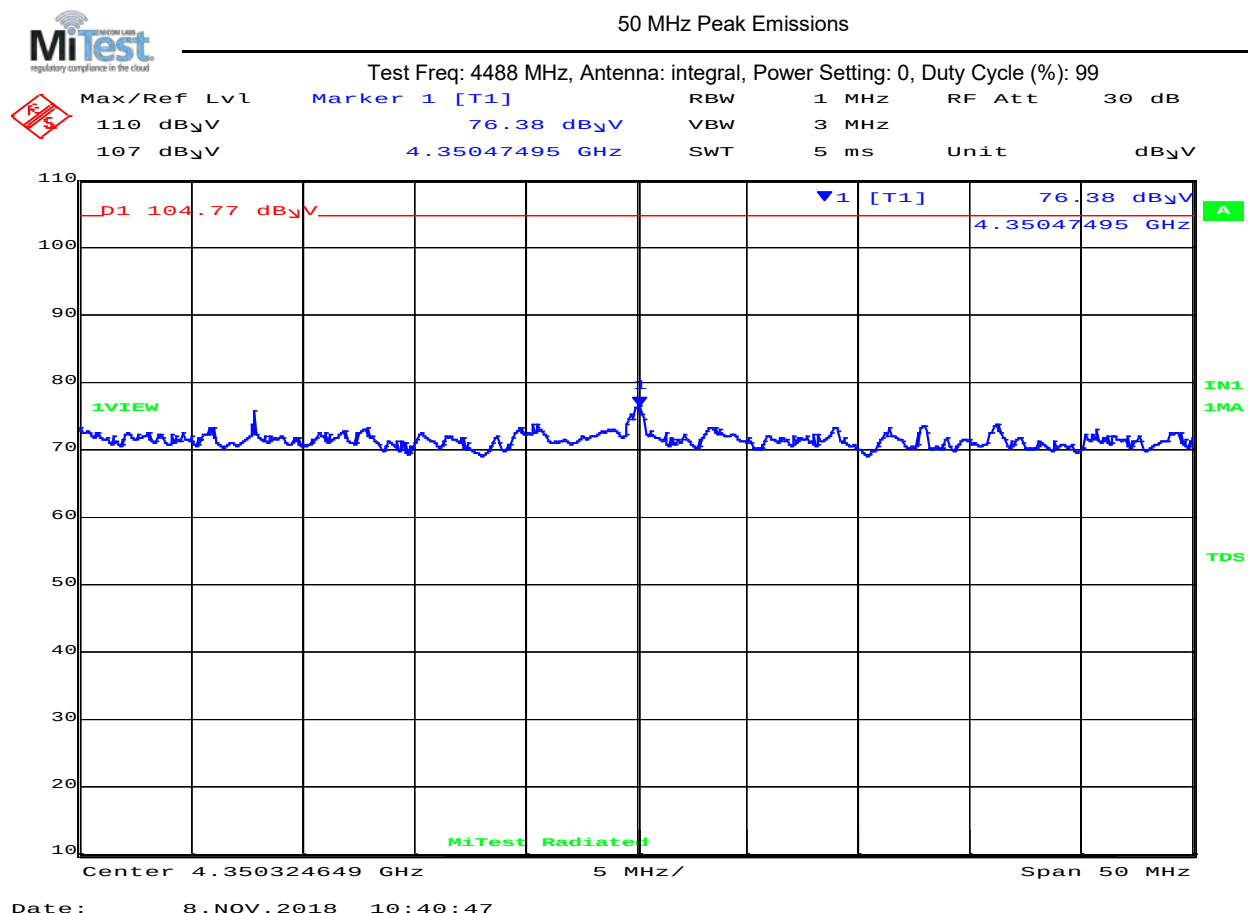
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
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4488 MHz

Equipment Configuration for 50 MHz Peak Emissions

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



50 MHz Peak Emissions

Num	Frequency MHz	Level dB μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB μ V/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



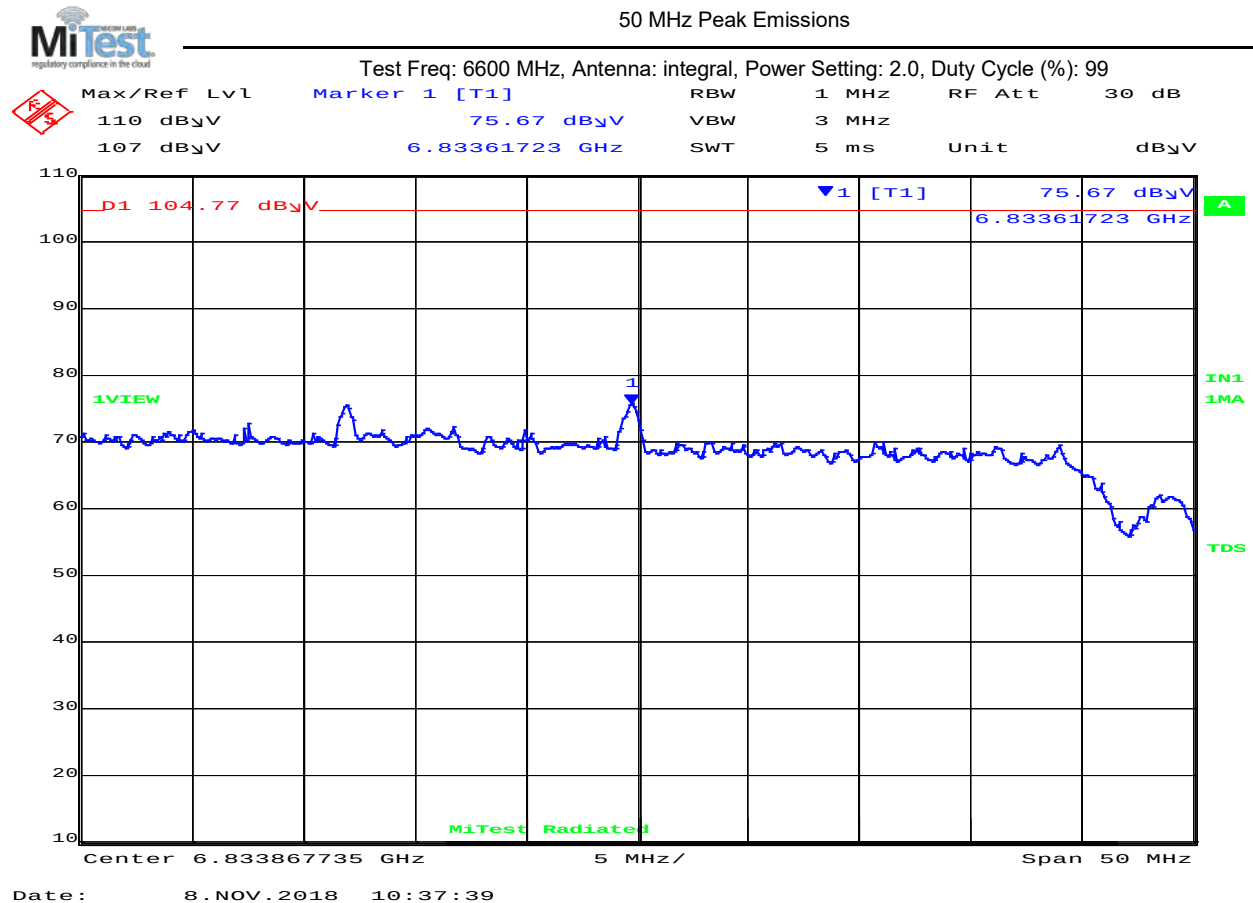
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
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6600 MHz

Equipment Configuration for 50 MHz Peak Emissions

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



50 MHz Peak Emissions

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



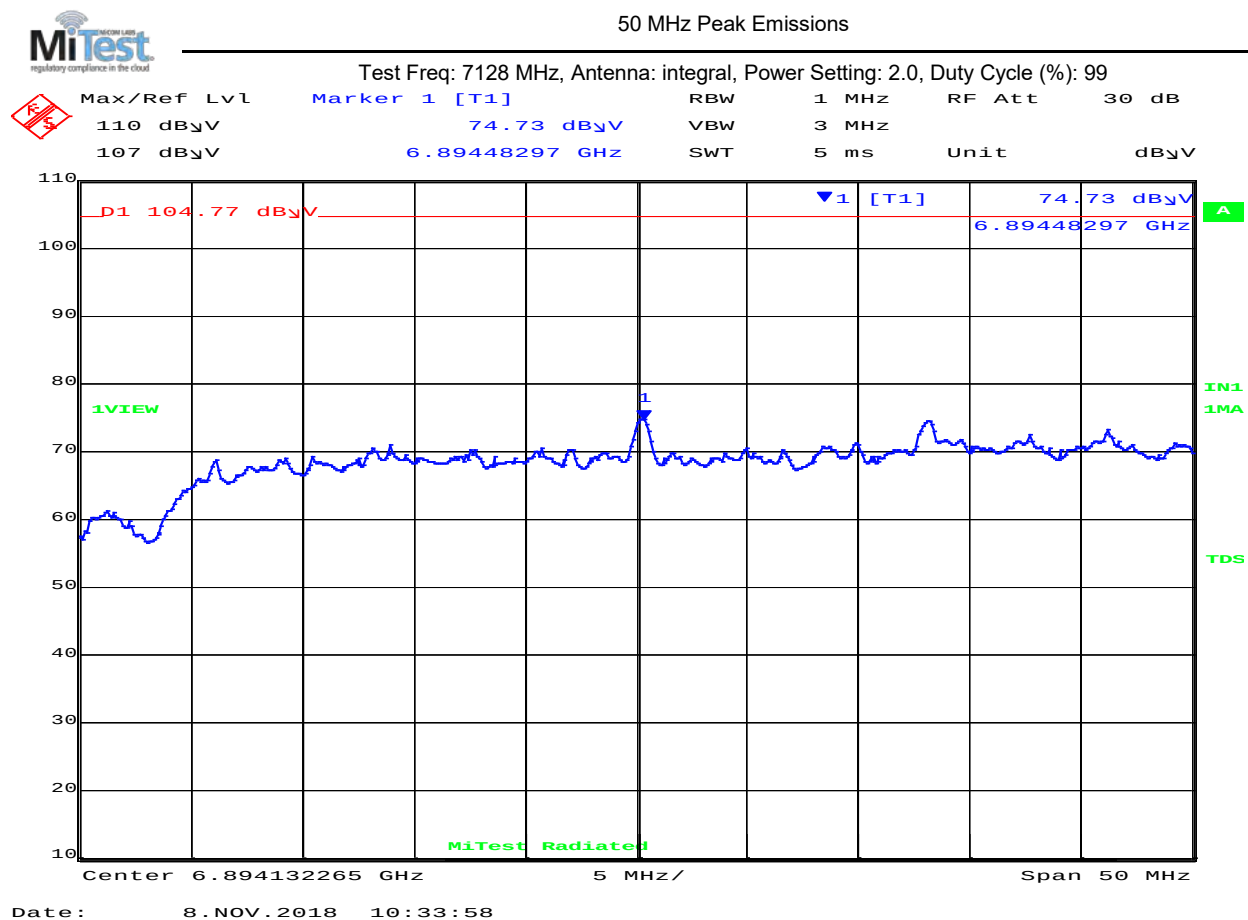
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
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7128 MHz

Equipment Configuration for 50 MHz Peak Emissions

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



50 MHz Peak Emissions

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



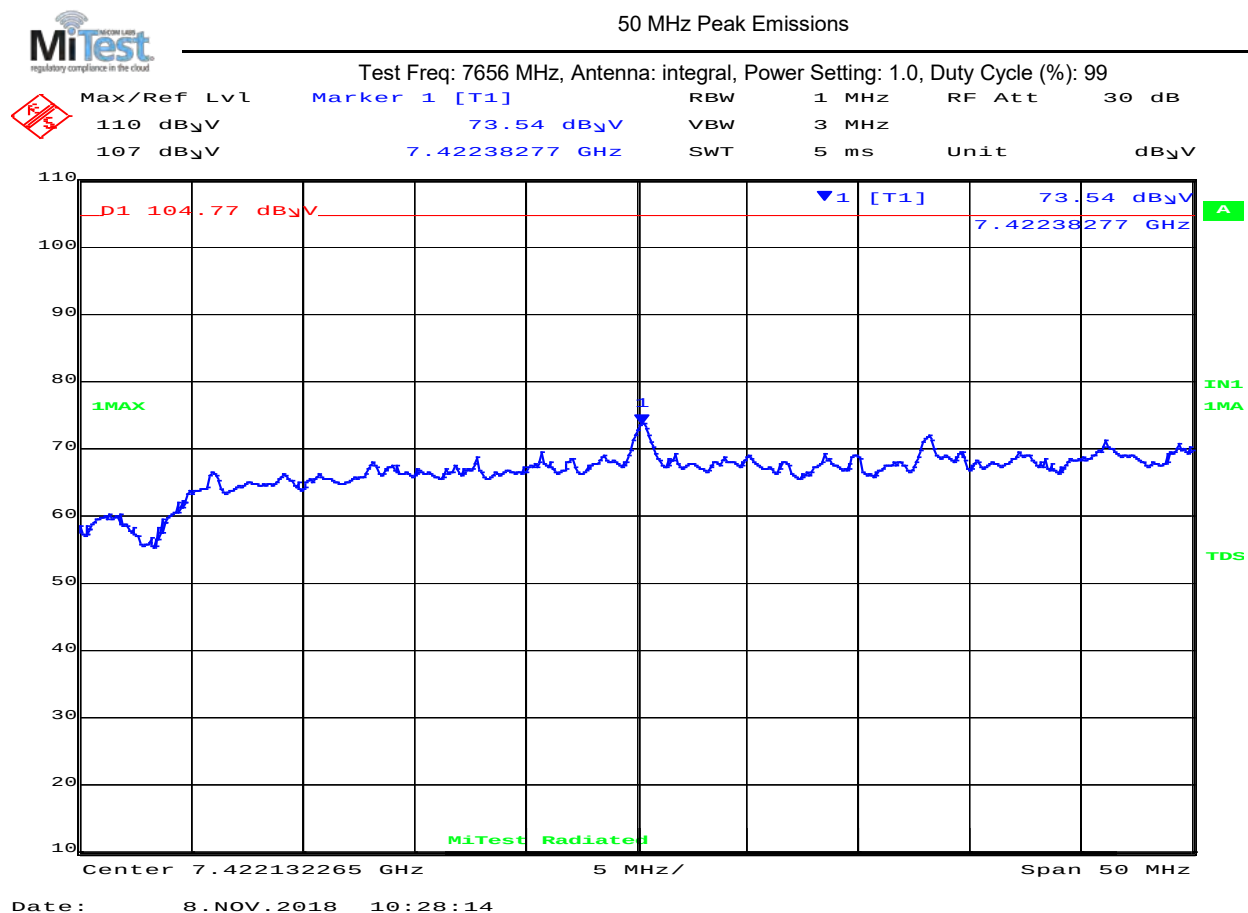
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
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7656 MHz (Covers Band Group 3 TFC 7 and Band Group 6 TFC 5)

Equipment Configuration for 50 MHz Peak Emissions

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

Test Measurement Results



50 MHz Peak Emissions

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



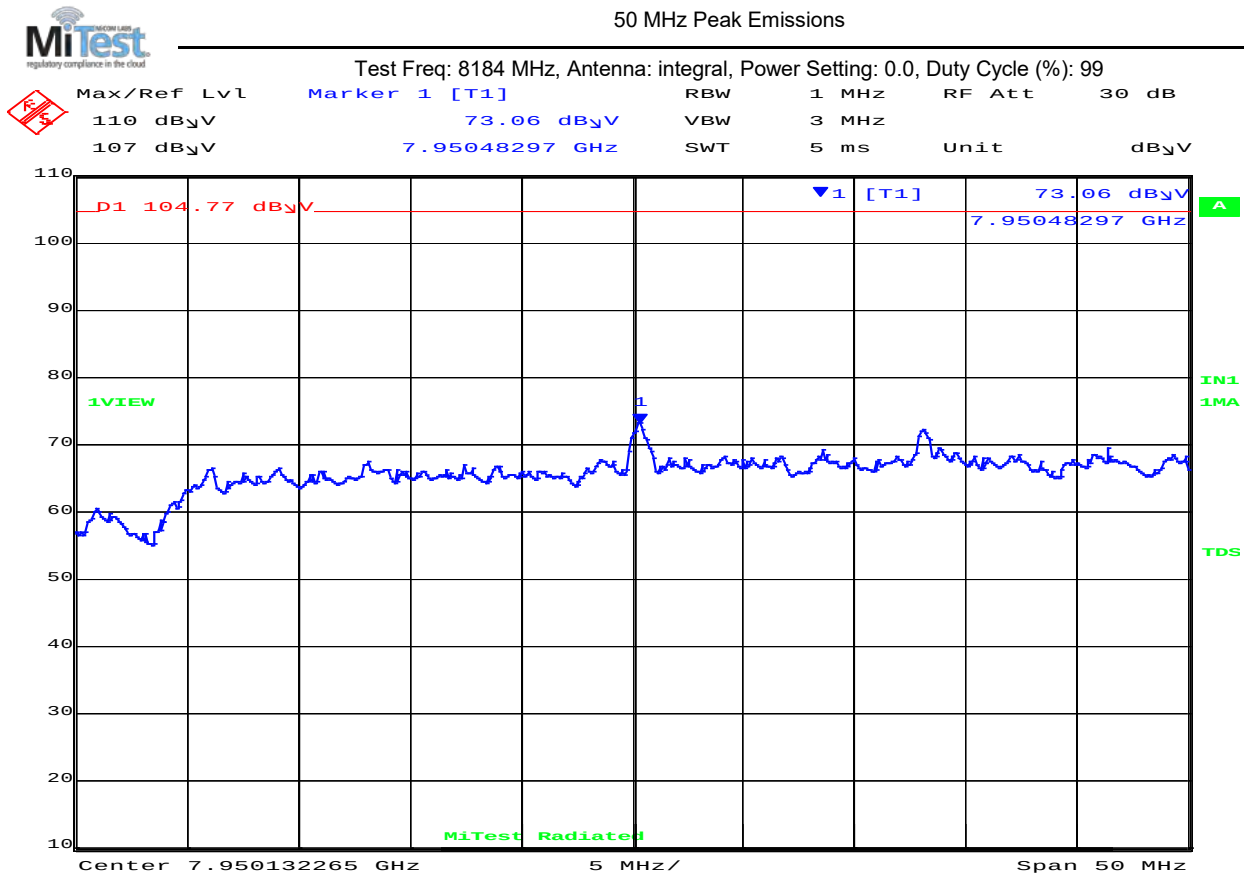
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
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Page: 433 of 466

8184 MHz

Equipment Configuration for 50 MHz Peak Emissions

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



Date: 8.NOV.2018 10:52:53

50 MHz Peak Emissions

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



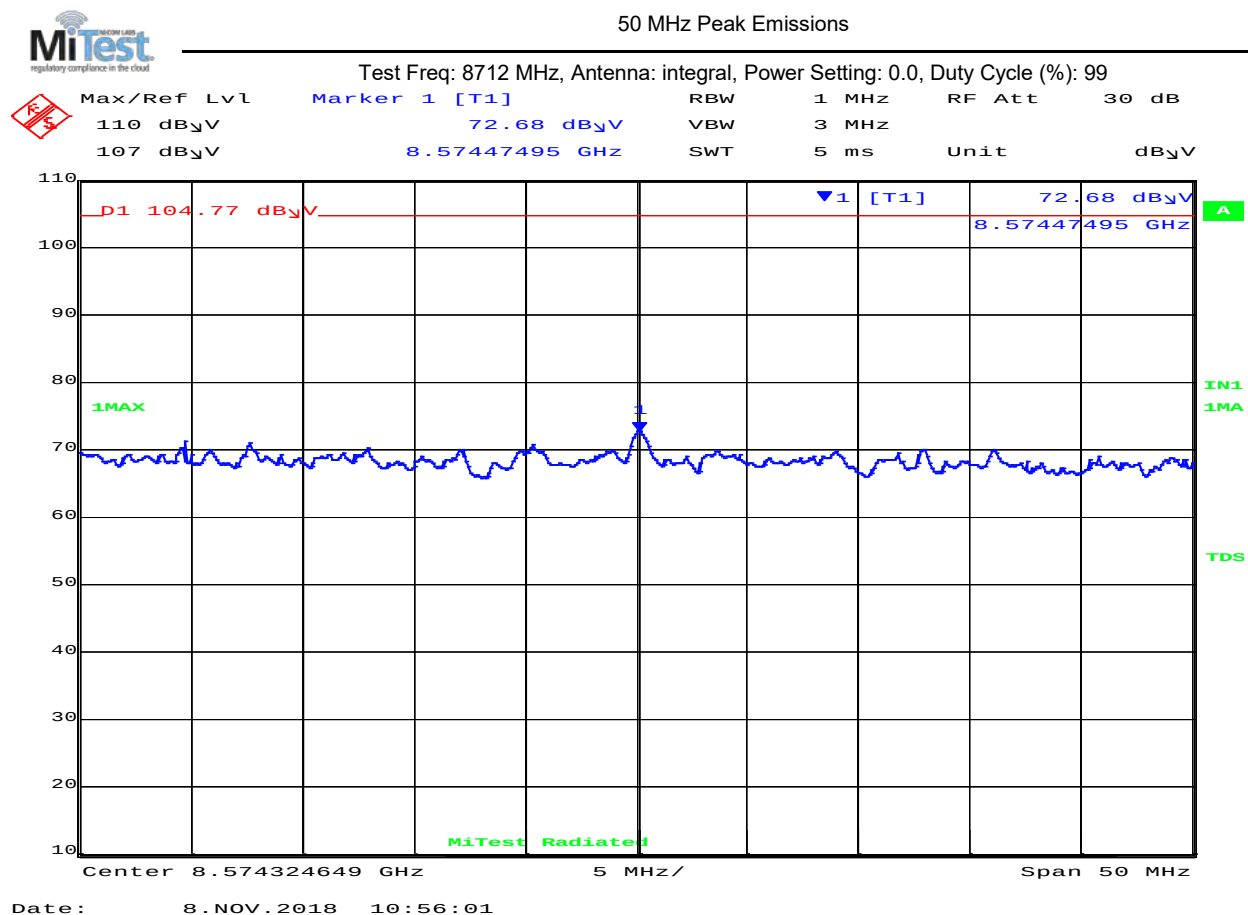
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
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8712 MHz

Equipment Configuration for 50 MHz Peak Emissions

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



50 MHz Peak Emissions

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

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Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
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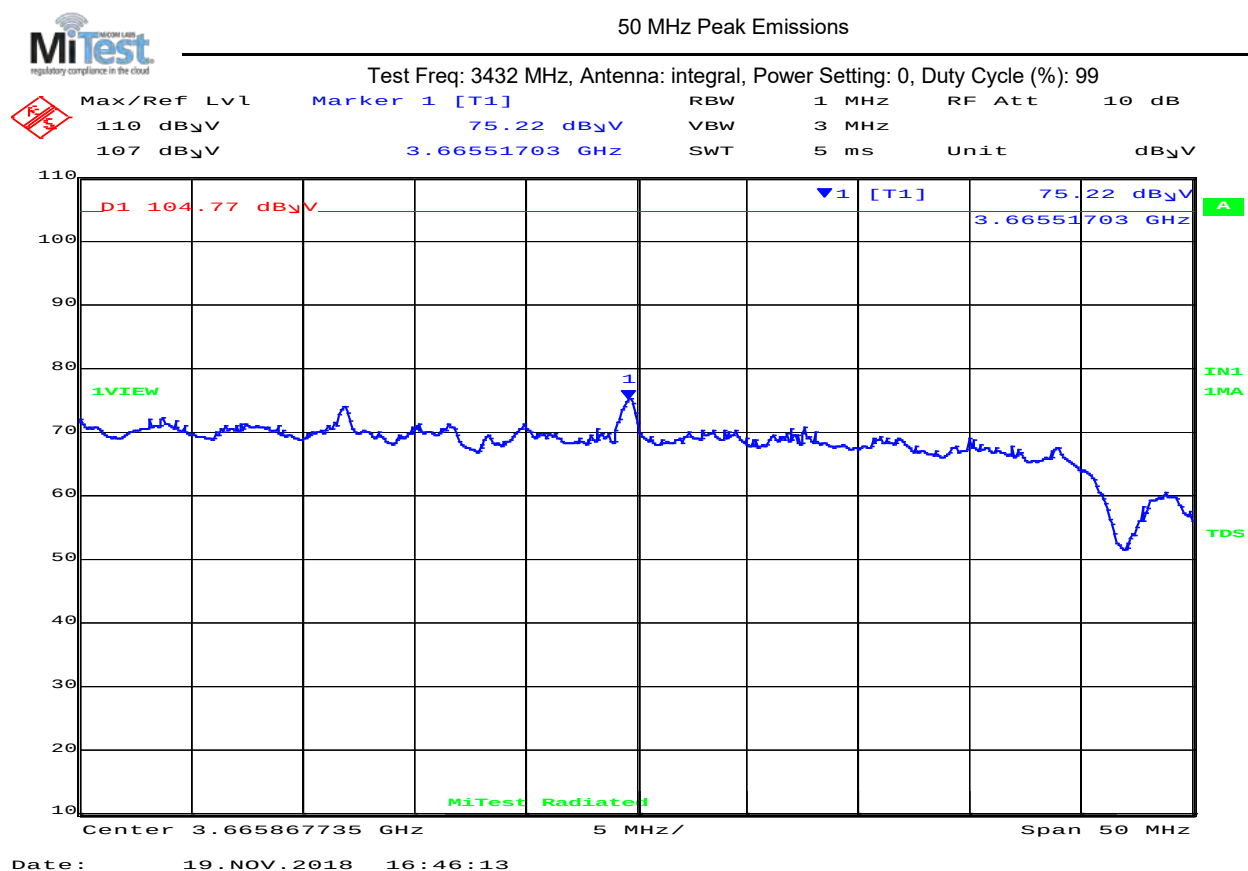
9.4.3.3. Combat AL5934

3432 MHz

Equipment Configuration for 50 MHz Peak Emissions

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	1.0	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3432.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



50 MHz Peak Emissions

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



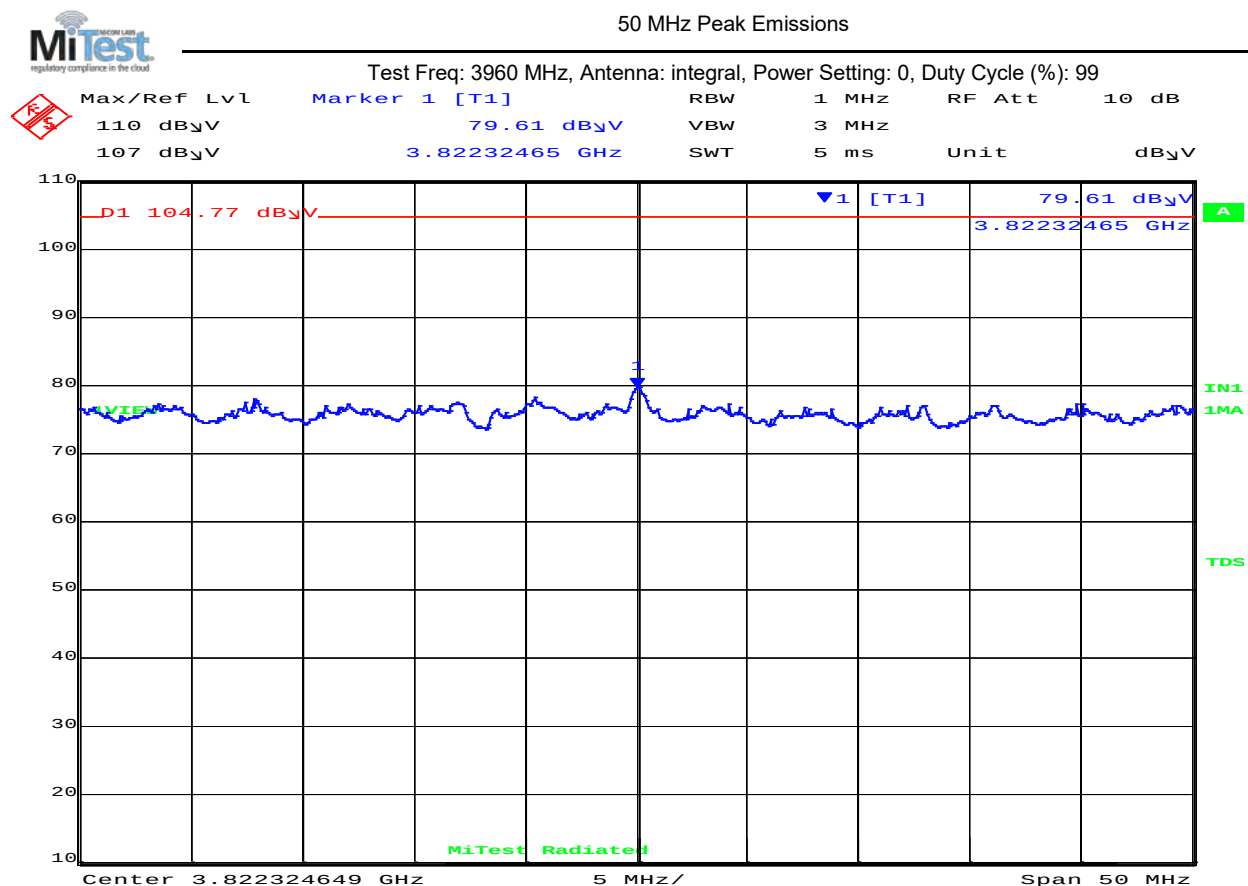
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
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3960 MHz

Equipment Configuration for 50 MHz Peak Emissions

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	3960.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



Date: 20.NOV.2018 08:31:44

50 MHz Peak Emissions

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



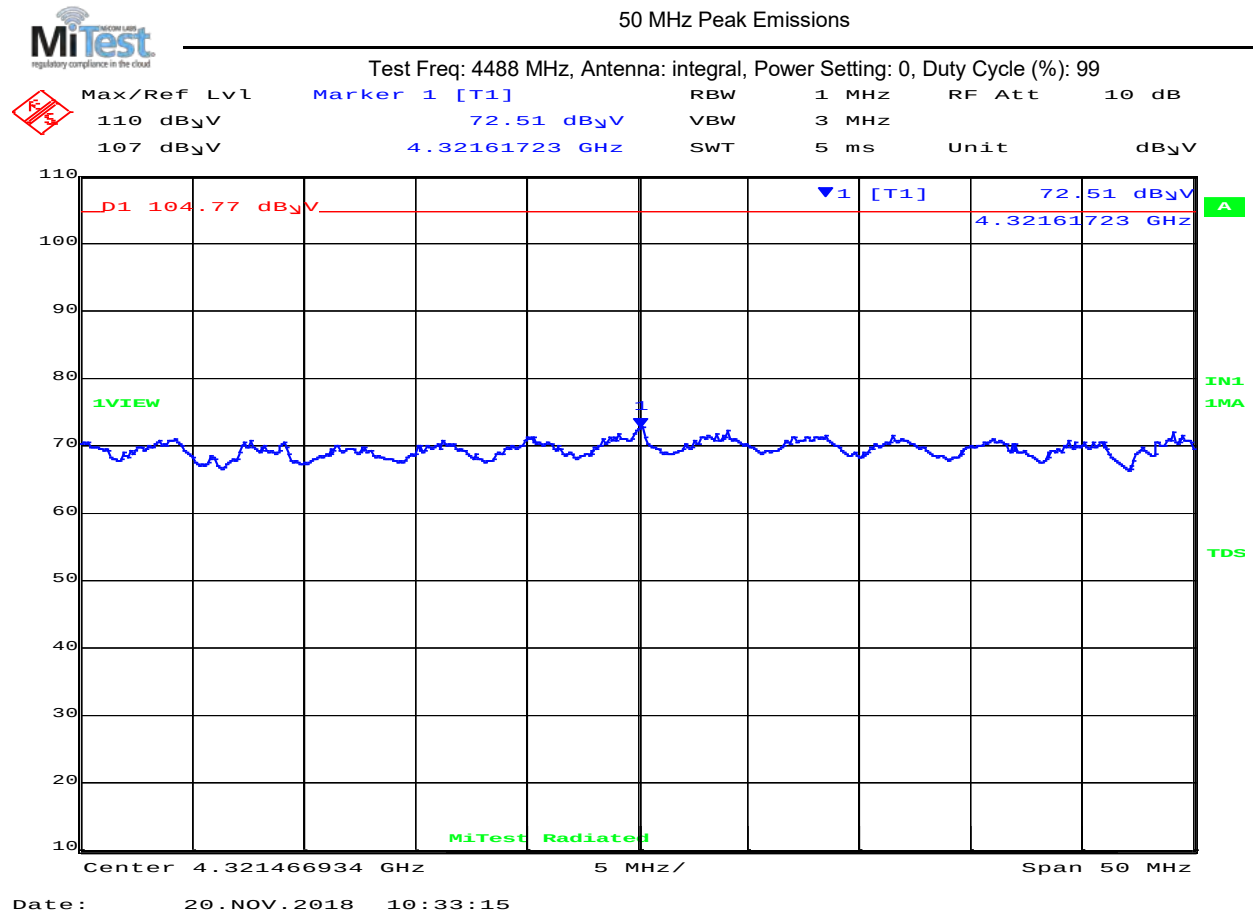
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
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4488 MHz

Equipment Configuration for 50 MHz Peak Emissions

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	4488.00	Data Rate:	
Power Setting:	Max	Tested By:	JMH

Test Measurement Results



50 MHz Peak Emissions

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



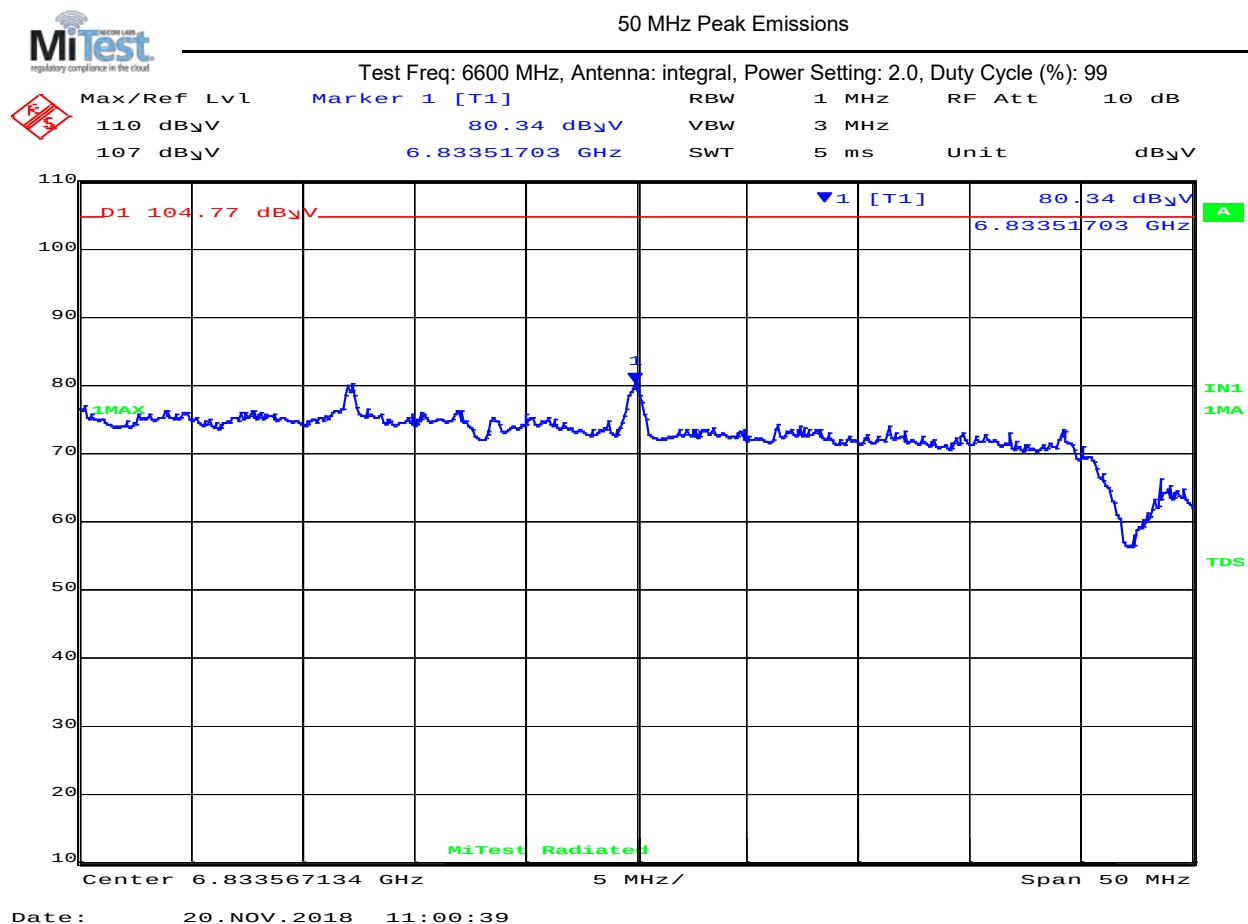
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
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6600 MHz

Equipment Configuration for 50 MHz Peak Emissions

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	6600.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



50 MHz Peak Emissions

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



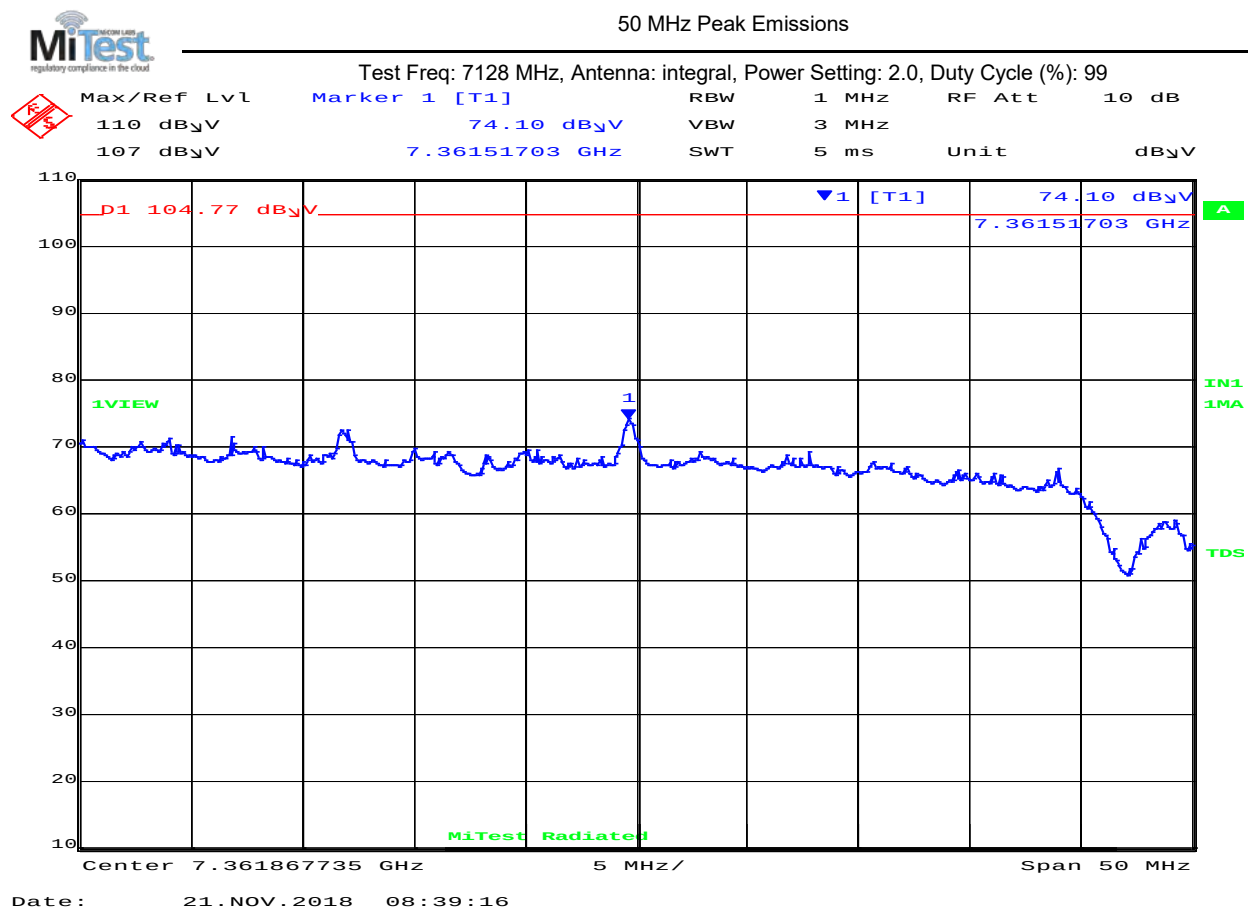
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
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7128 MHz

Equipment Configuration for 50 MHz Peak Emissions

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-0.2	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7128.00	Data Rate:	
Power Setting:	2.0	Tested By:	JMH

Test Measurement Results



50 MHz Peak Emissions

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



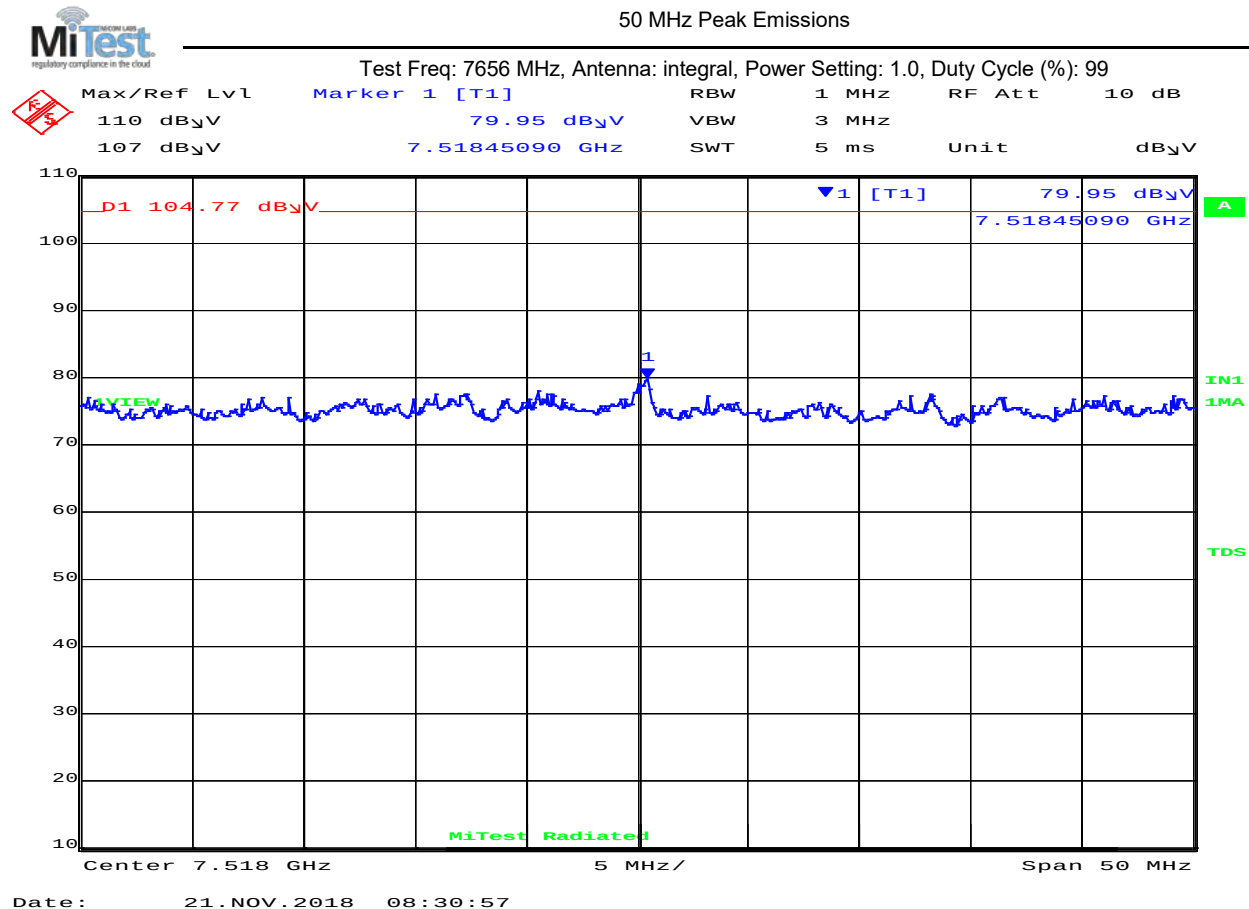
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
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7656 MHz (Covers Band Group 3 TFC 7 and Band Group 6 TFC 5)

Equipment Configuration for 50 MHz Peak Emissions

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	0.1	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	7656.00	Data Rate:	
Power Setting:	1.0	Tested By:	JMH

Test Measurement Results



50 MHz Peak Emissions

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



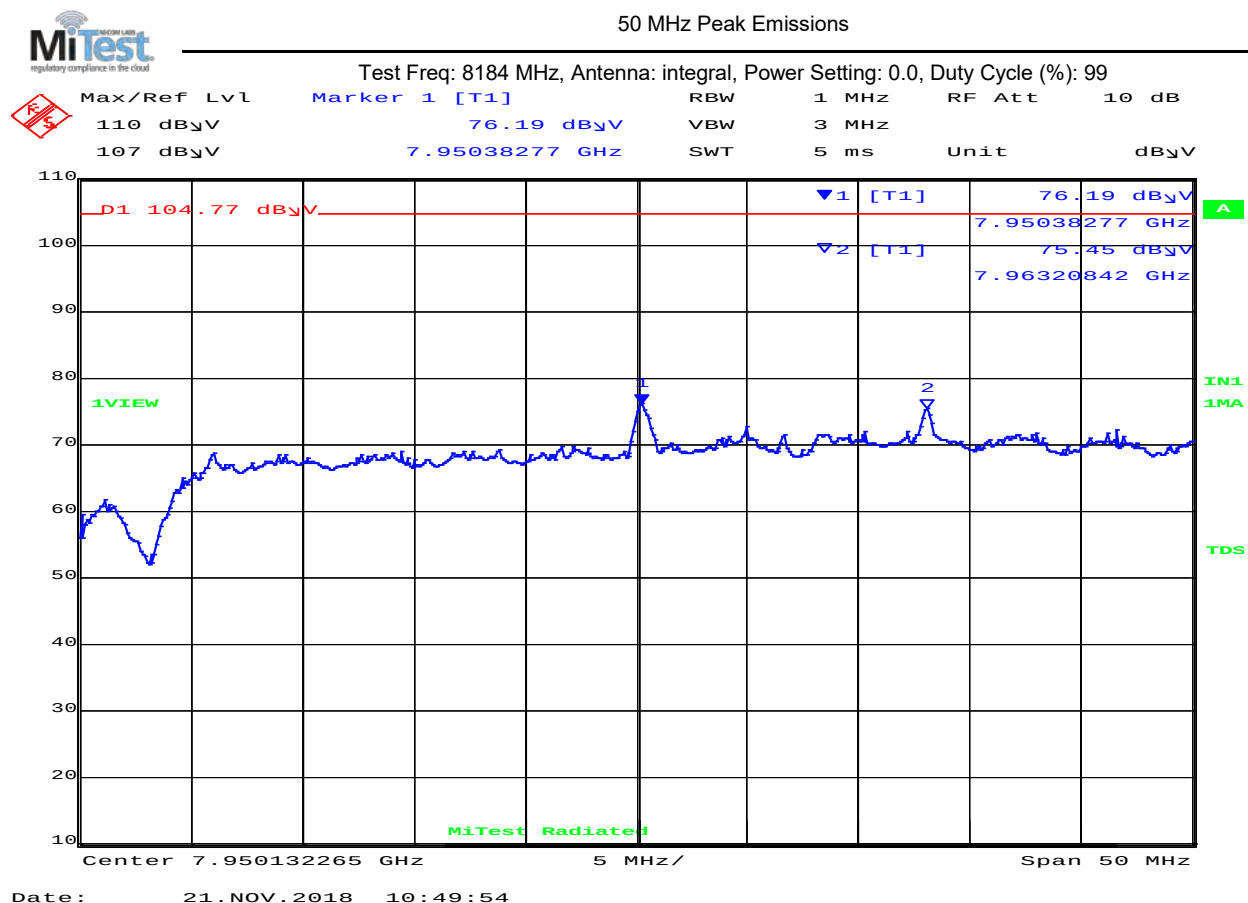
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
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8184 MHz

Equipment Configuration for 50 MHz Peak Emissions

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8184.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



50 MHz Peak Emissions

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



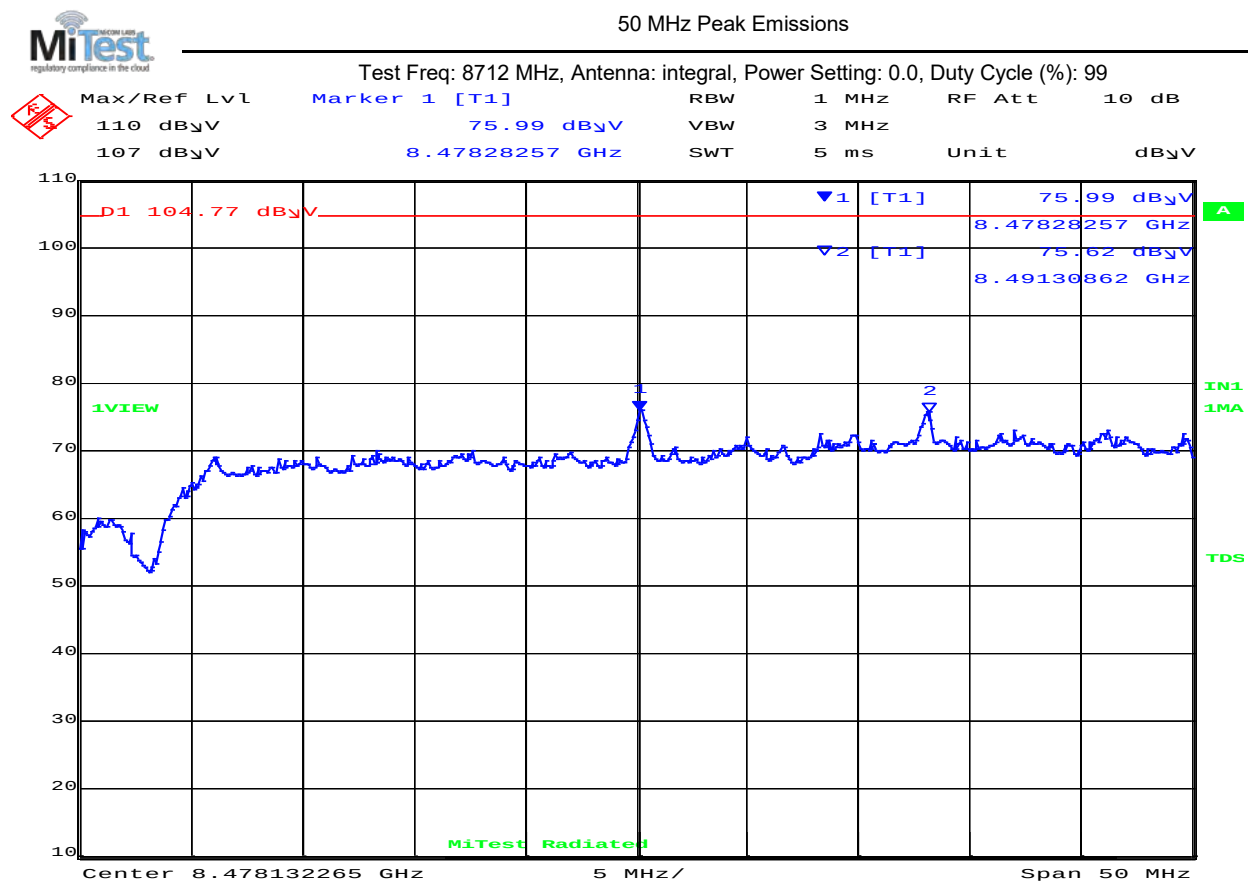
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
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8712 MHz

Equipment Configuration for 50 MHz Peak Emissions

Antenna:	Chip	Variant:	500 MHz Bandwidth
Antenna Gain (dBi):	-1.8	Modulation:	BPM/BPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99%
Channel Frequency (MHz):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



Date: 21. NOV. 2018 10:56:58

50 MHz Peak Emissions

Num	Frequency MHz	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes:									

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Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
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9.5. Shutoff Timing Requirements

Radiated Test Conditions for Shutoff Timing Requirements			
Standard:	FCC CFR 47:15.519 (a)(1)	Ambient Temp. (°C):	24.0 - 27.5
Test Heading:	Shutoff Timing Requirements	Rel. Humidity (%):	32 - 45
Standard Section(s):	ANSI C63.10 Section 10.3.6	Pressure (mBars):	999 - 1001
Reference Document(s):	None		
Test Procedure for UWB Transmission Testing was performed under ambient conditions at nominal voltage. Test configuration and setup used for the measurement was per the Radiated Test Set-up section specified in this document. Operating Frequency Band: 3100-10600 MHz Limits The UWB intentional radiator shall cease transmission within 10 seconds unless it receives an acknowledgement from the associated receiver that its transmission is being received.			

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Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
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Equipment Configuration for Shutdown Timing Requirements

Variant:	Band Group 6	Duty Cycle (%):	99
Data Rate:	-	Antenna Gain (dBi):	Client Info Required
Modulation:	BPM/BPSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:	1. Timing behavior is identical in all 3 models. Testing performed on the USB variant and is representative of all 3 models.		

Test Measurement Results

Frequency (MHz)	Shutdown Time	Limit	Margin	EUT Power Setting
	(s)	(s)	(s)	Numeric
8712.00	<u>2.120</u>	10	-7.88	1

Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Uncertainty:	±1.33 dB

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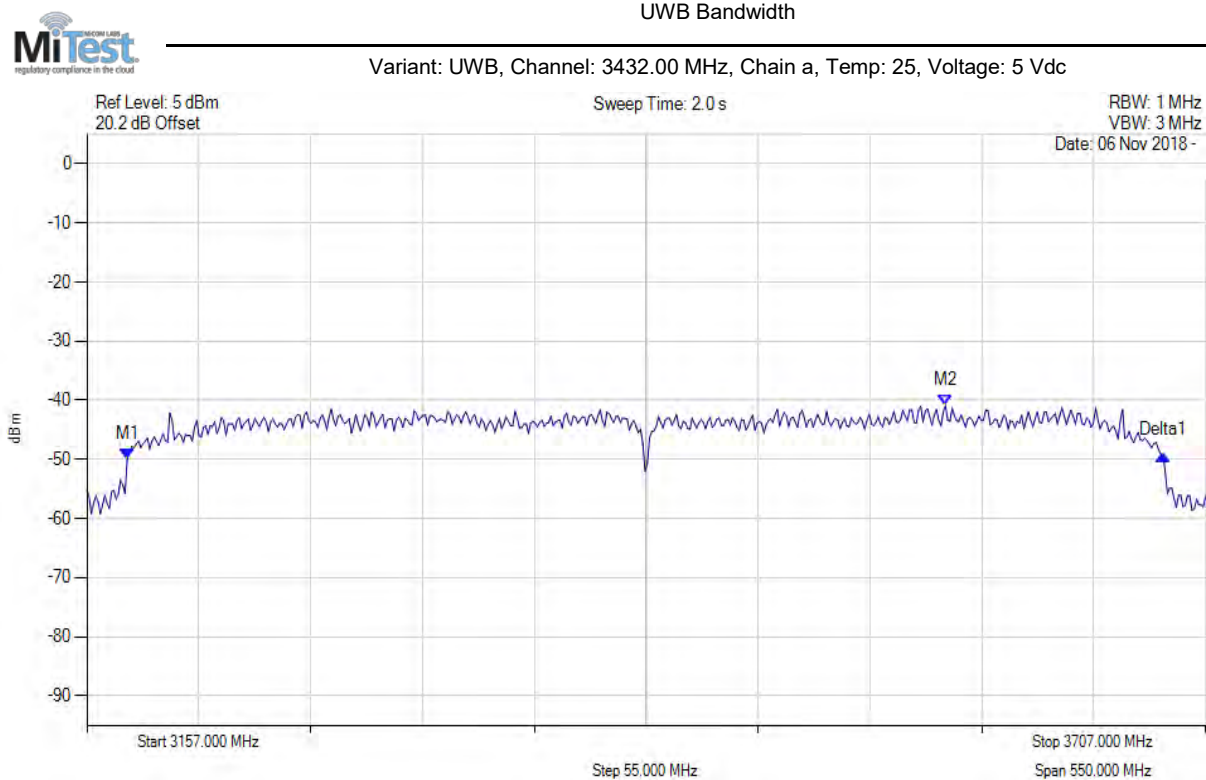


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
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A. APPENDIX - GRAPHICAL IMAGES

This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

A.1. UWB Bandwidth



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = CLR/WRITE	M1 : 3176.884 MHz : -49.962 dBm M2 : 3579.144 MHz : -40.865 dBm Delta1 : 509.174 MHz : 0.787 dB	Channel Frequency: 3432.00 MHz

[back to matrix](#)

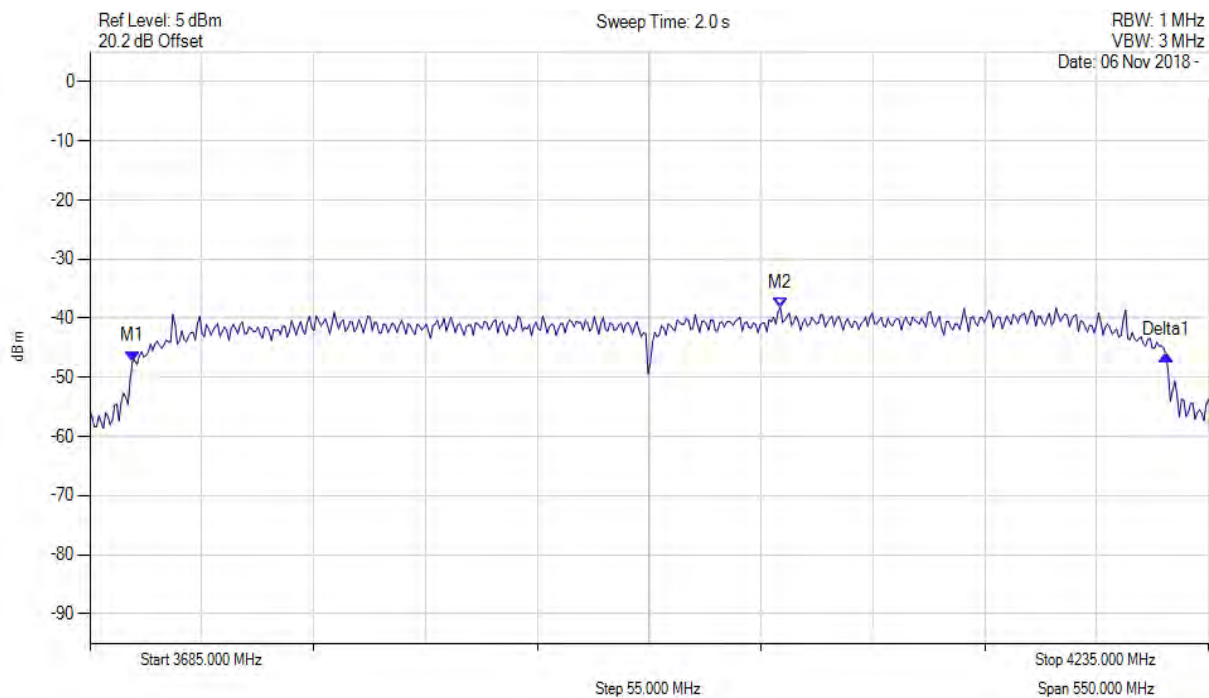
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



UWB Bandwidth



Variant: UWB, Channel: 3960.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = CLR/WRITE	M1 : 3705.942 MHz : -47.255 dBm M2 : 4024.479 MHz : -38.193 dBm Delta1 : 508.116 MHz : 1.092 dB	Channel Frequency: 3960.00 MHz

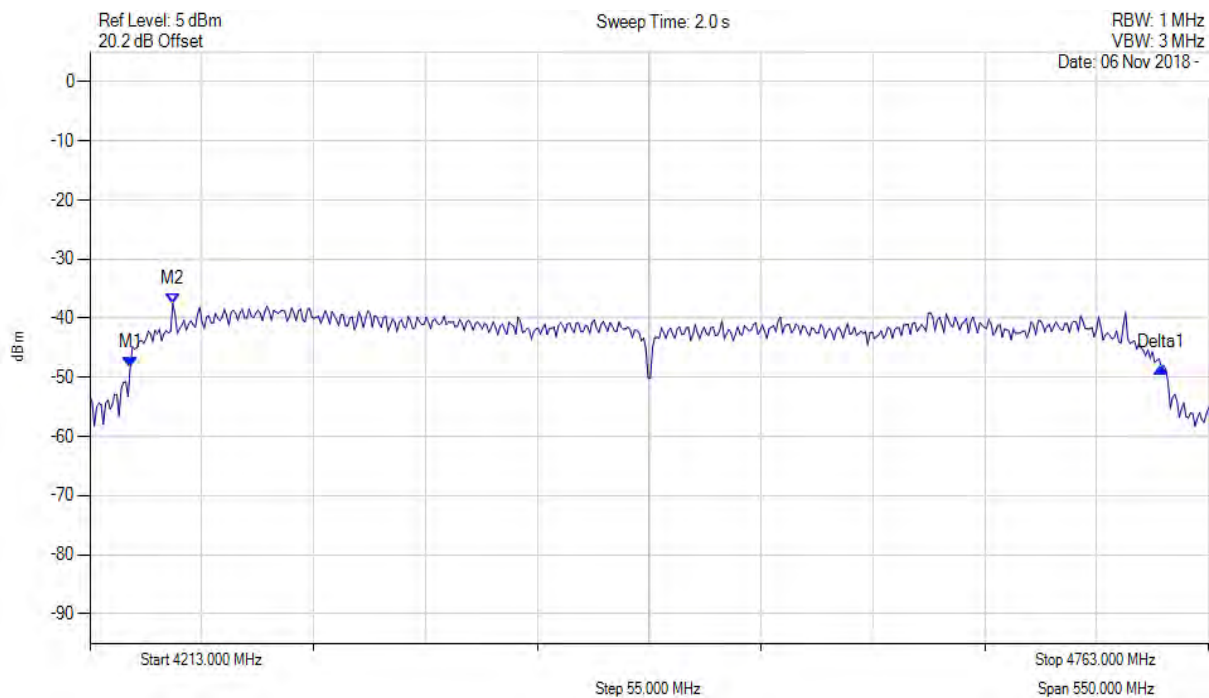
[back to matrix](#)

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UWB Bandwidth



Variant: UWB, Channel: 4488.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = CLR/WRITE	M1 : 4232.840 MHz : -48.343 dBm M2 : 4253.782 MHz : -37.497 dBm Delta1 : 507.014 MHz : 0.014 dB	Channel Frequency: 4488.00 MHz

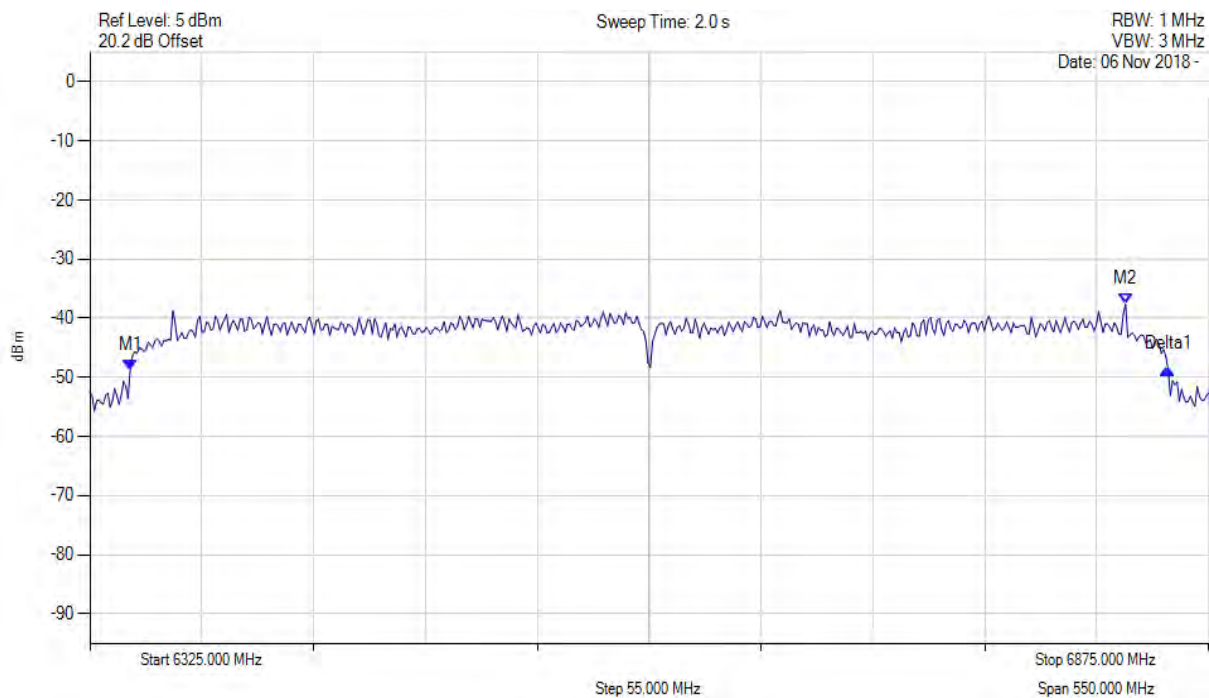
[back to matrix](#)

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UWB Bandwidth



Variant: UWB, Channel: 6600.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = CLR/WRITE	M1 : 6344.840 MHz : -48.727 dBm M2 : 6834.218 MHz : -37.625 dBm Delta1 : 510.321 MHz : 0.205 dB	Channel Frequency: 6600.00 MHz

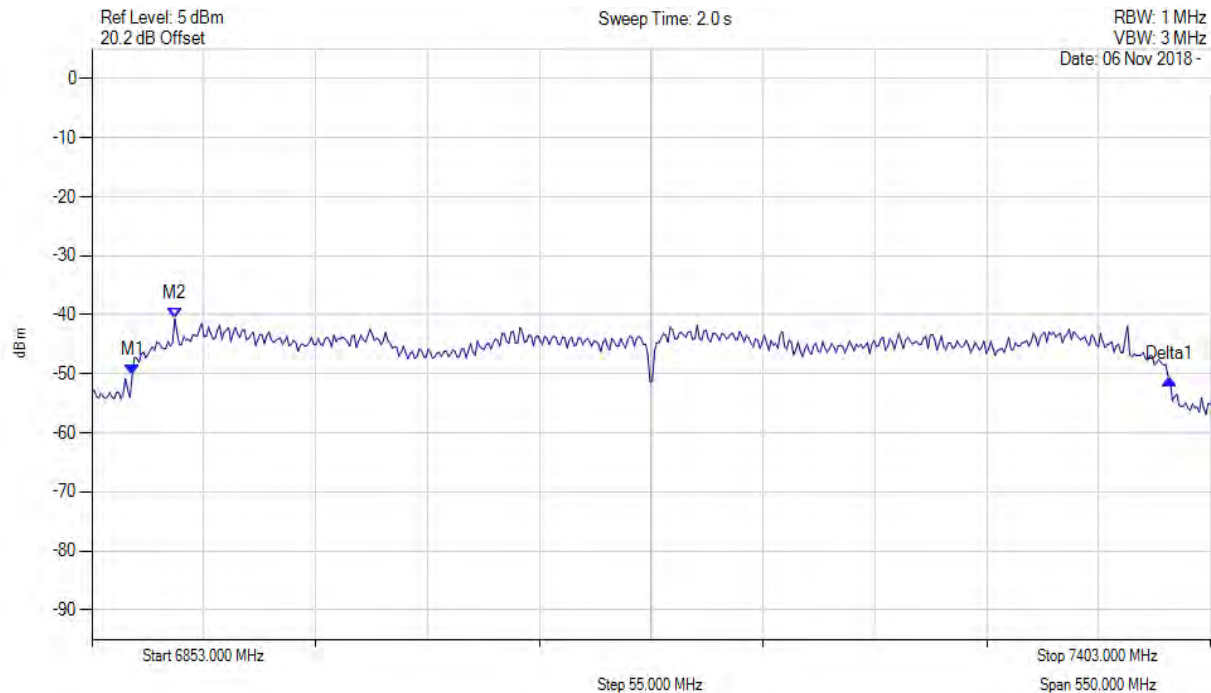
[back to matrix](#)

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UWB Bandwidth



Variant: UWB, Channel: 7128.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = CLR/WRITE	M1 : 6872.840 MHz : -50.171 dBm M2 : 6893.782 MHz : -40.658 dBm Delta1 : 509.920 MHz : -0.687 dB	Channel Frequency: 7128.00 MHz

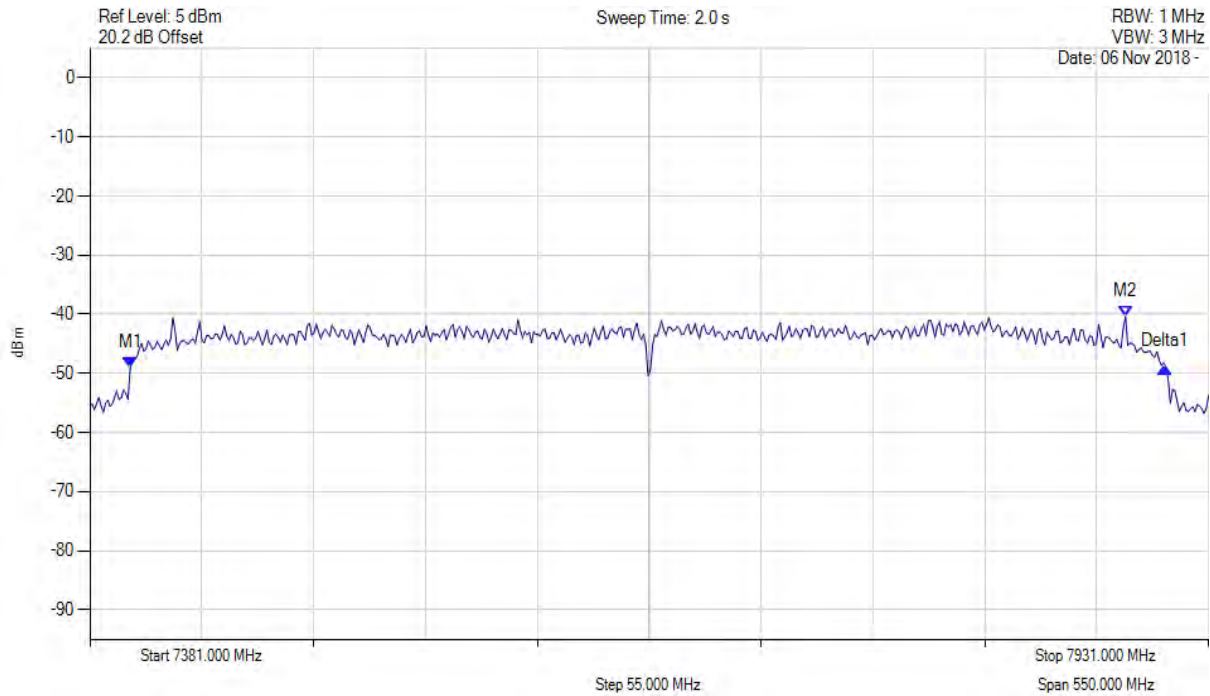
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UWB Bandwidth



Variant: UWB, Channel: 7656.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = CLR/WRITE	M1 : 7400.840 MHz : -49.106 dBm M2 : 7890.218 MHz : -40.409 dBm Delta1 : 508.818 MHz : 0.214 dB	Channel Frequency: 7656.00 MHz

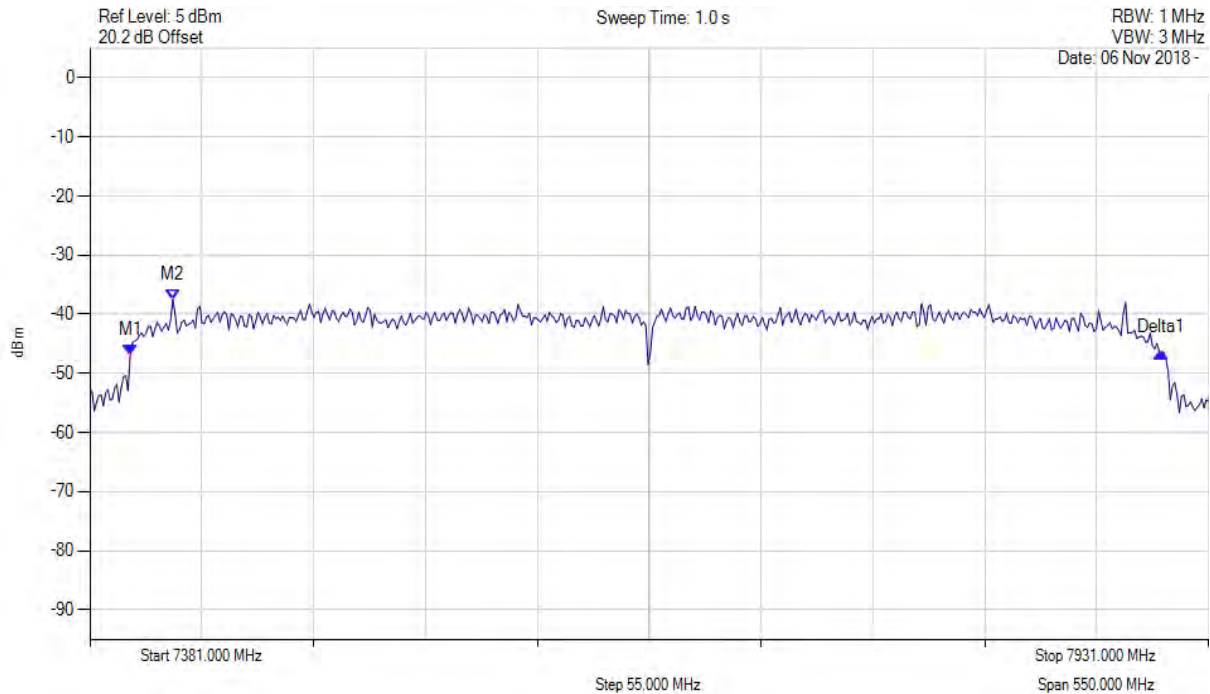
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UWB Bandwidth



Variant: UWB, Channel: 7656.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = CLR/WRITE	M1 : 7400.840 MHz : -46.810 dBm M2 : 7421.782 MHz : -37.489 dBm Delta1 : 506.613 MHz : 0.307 dB	Channel Frequency: 0 Hz

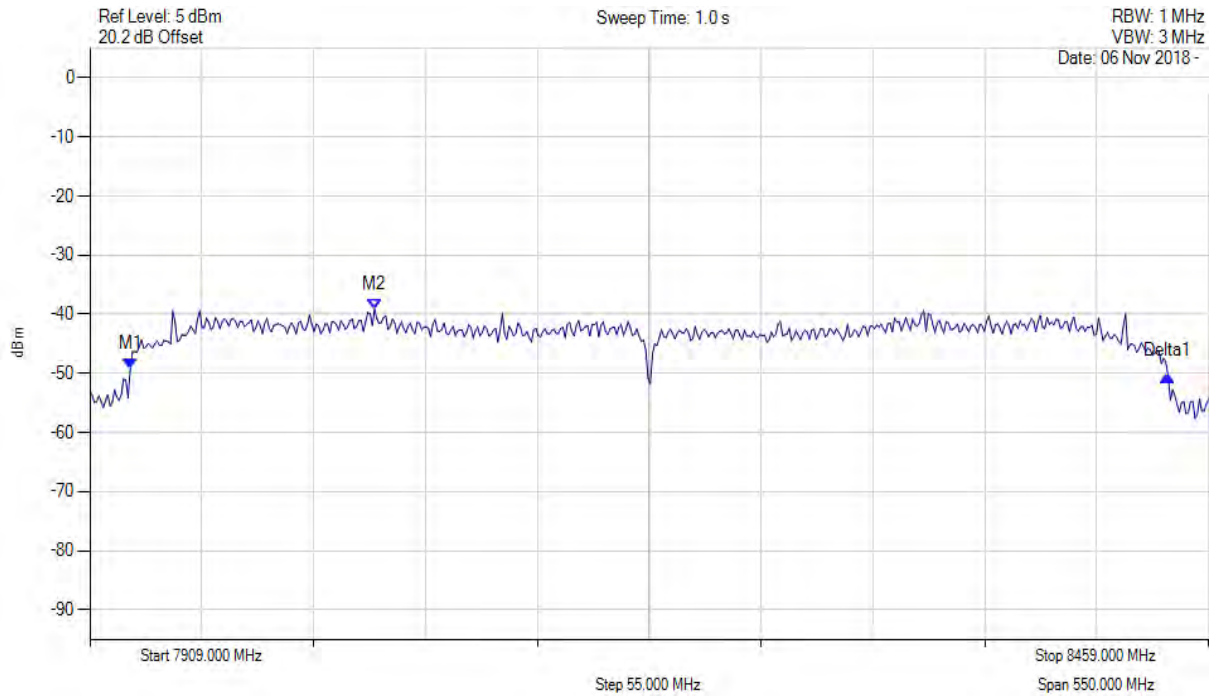
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UWB Bandwidth



Variant: UWB, Channel: 8184.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = CLR/WRITE	M1 : 7928.840 MHz : -49.315 dBm M2 : 8048.980 MHz : -39.169 dBm Delta1 : 509.920 MHz : -1.074 dB	Channel Frequency: 8184.00 MHz

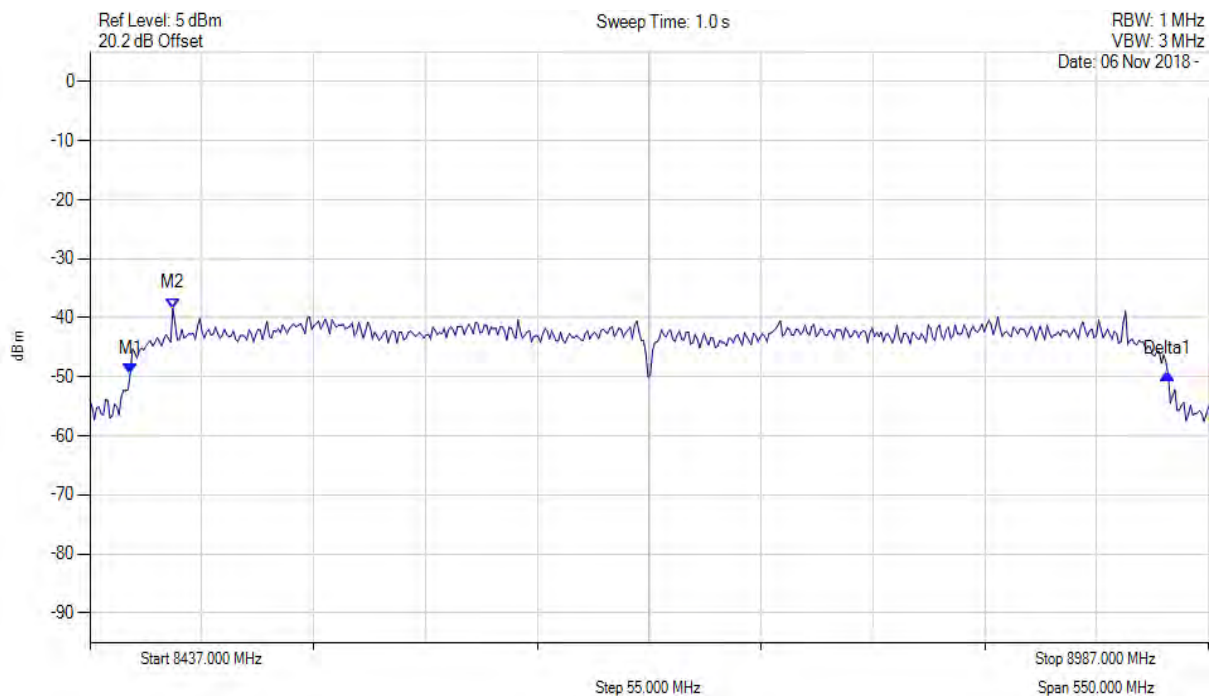
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UWB Bandwidth



Variant: UWB, Channel: 8712.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc

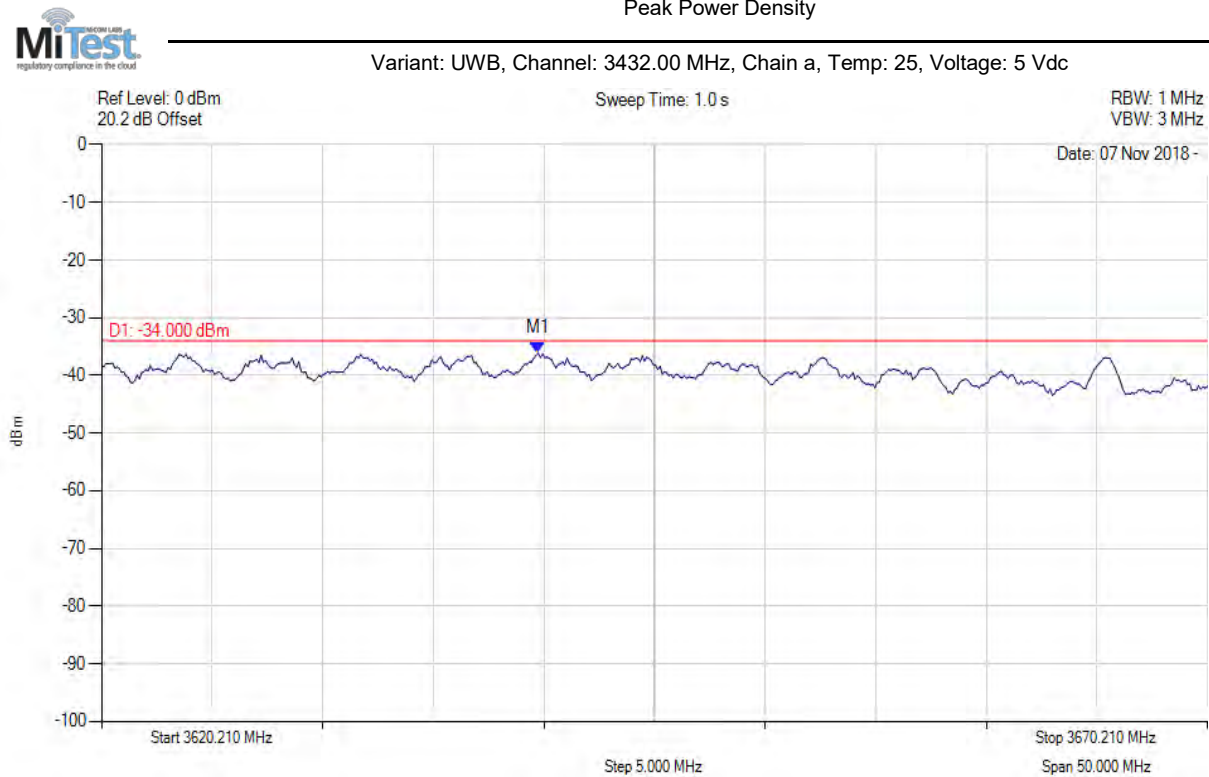


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = CLR/WRITE	M1 : 8456.840 MHz : -49.468 dBm M2 : 8477.782 MHz : -38.388 dBm Delta1 : 509.920 MHz : -0.057 dB	Channel Frequency: 8712.00 MHz

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A.2. Peak Power Density



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = CLR/WRITE	M1 : 3639.950 MHz : -36.101 dBm	Channel Frequency: 3432.00 MHz

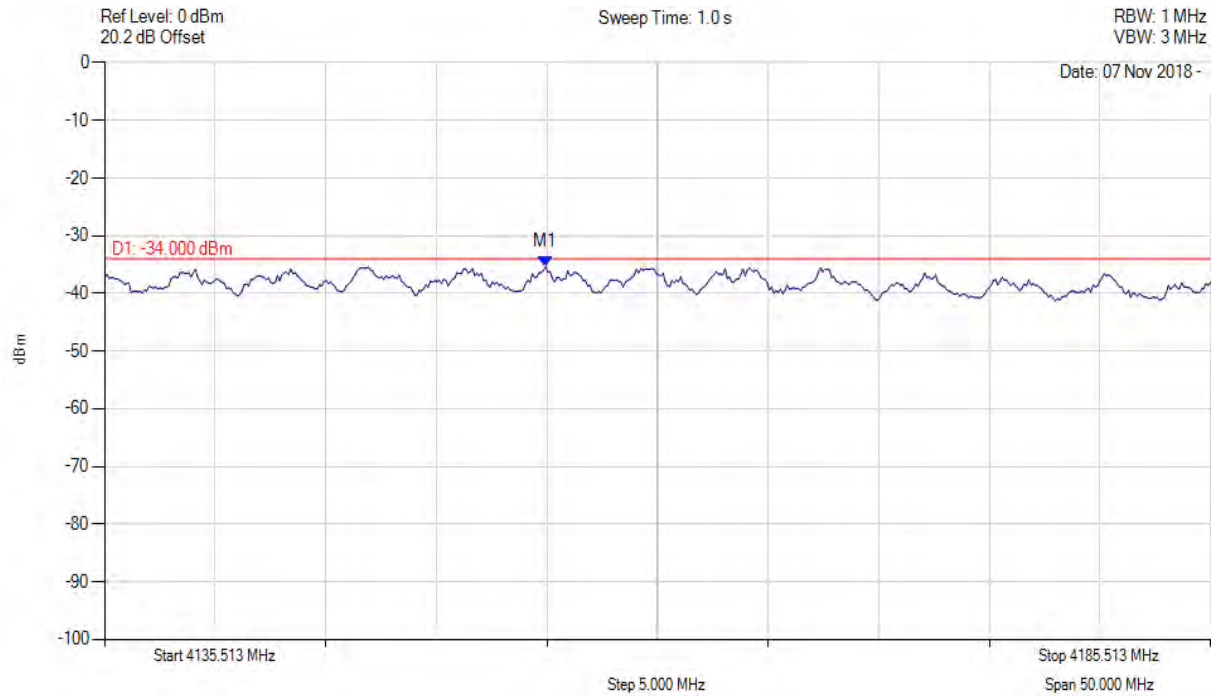
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Peak Power Density

Variant: UWB, Channel: 3690.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = CLR/WRITE	M1 : 4155.453 MHz : -35.379 dBm	Channel Frequency: 3690.00 MHz

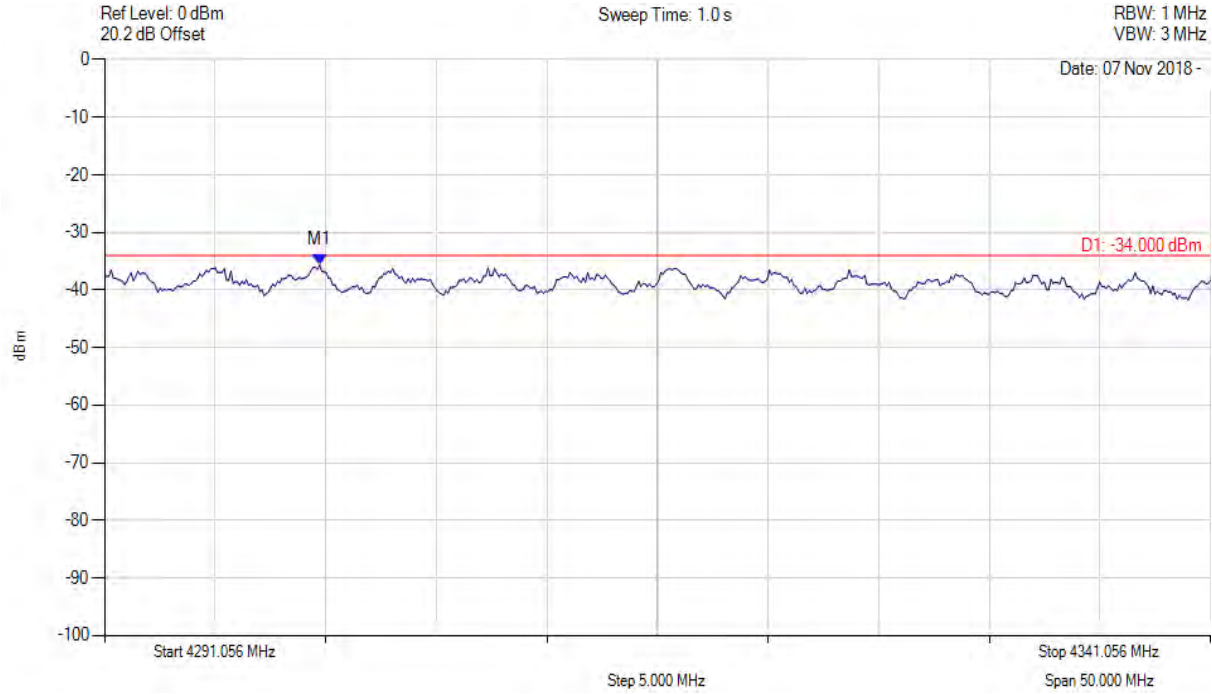
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Peak Power Density

Variant: UWB, Channel: 4488.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = CLR/WRITE	M1 : 4300.776 MHz : -35.635 dBm	Channel Frequency: 4488.00 MHz

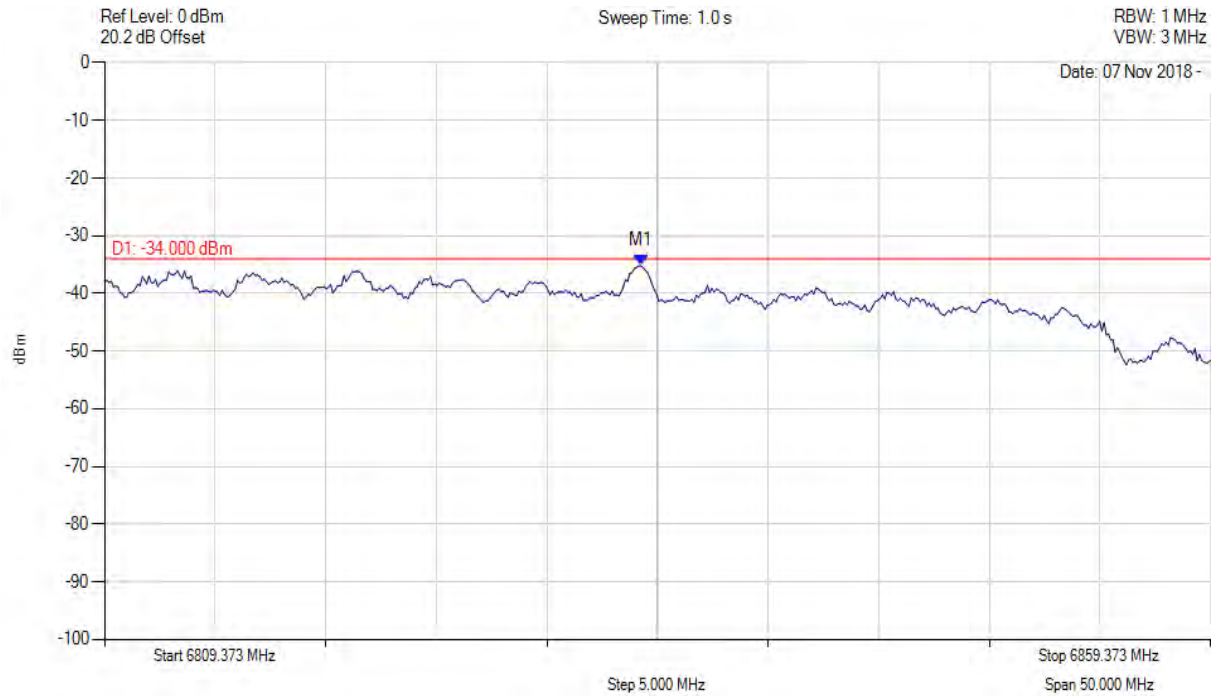
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Peak Power Density

Variant: UWB, Channel: 6600.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = CLR/WRITE	M1 : 6833.621 MHz : -35.220 dBm	Channel Frequency: 6600.00 MHz

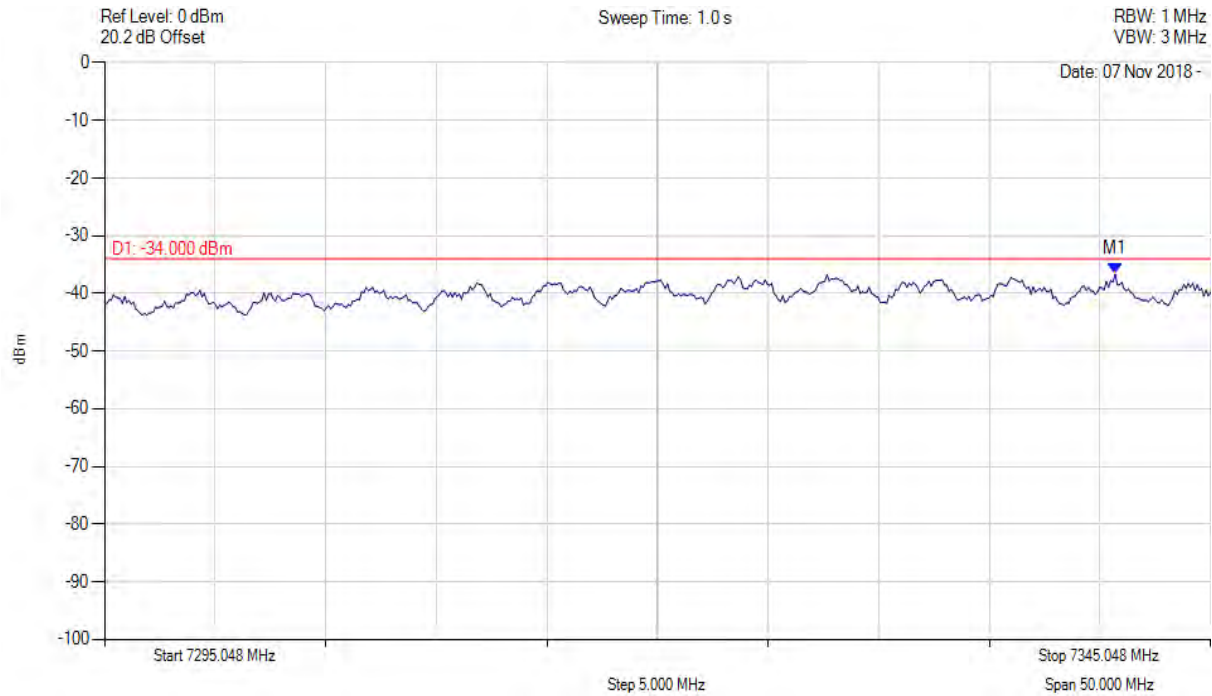
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Peak Power Density

Variant: UWB, Channel: 7128.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = CLR/WRITE	M1 : 7340.739 MHz : -36.648 dBm	Channel Frequency: 7128.00 MHz

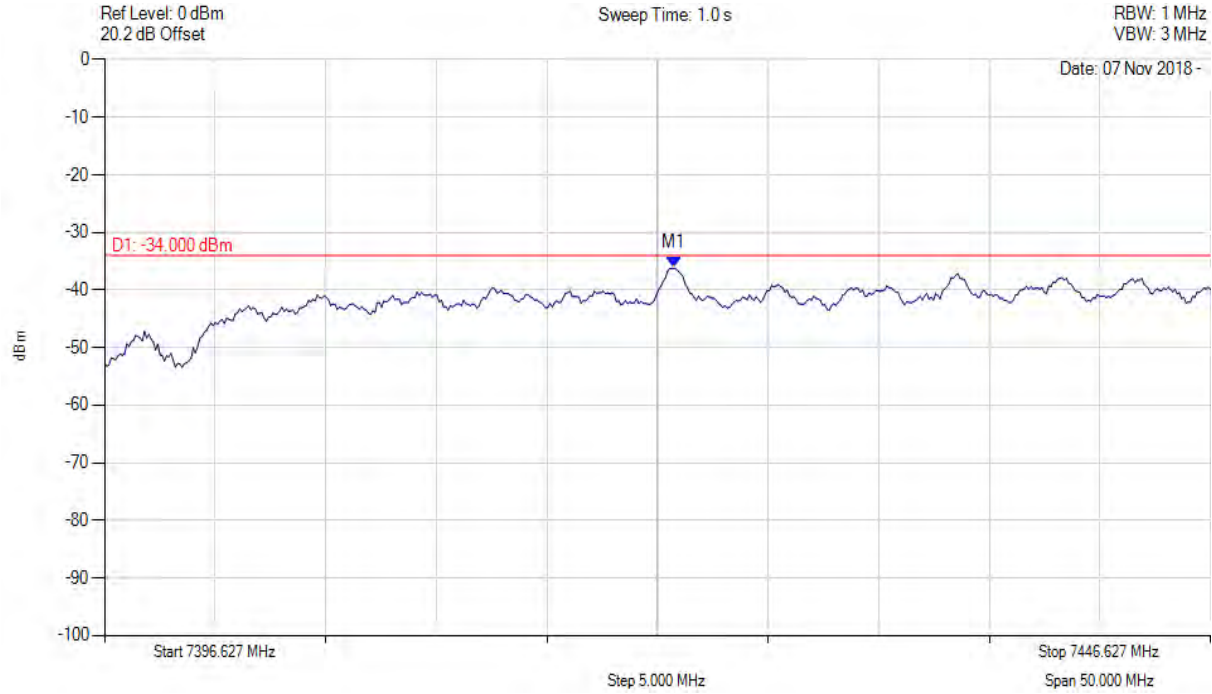
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Peak Power Density

Variant: UWB, Channel: 7656.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = CLR/WRITE	M1 : 7422.379 MHz : -36.188 dBm	Channel Frequency: 7656.00 MHz

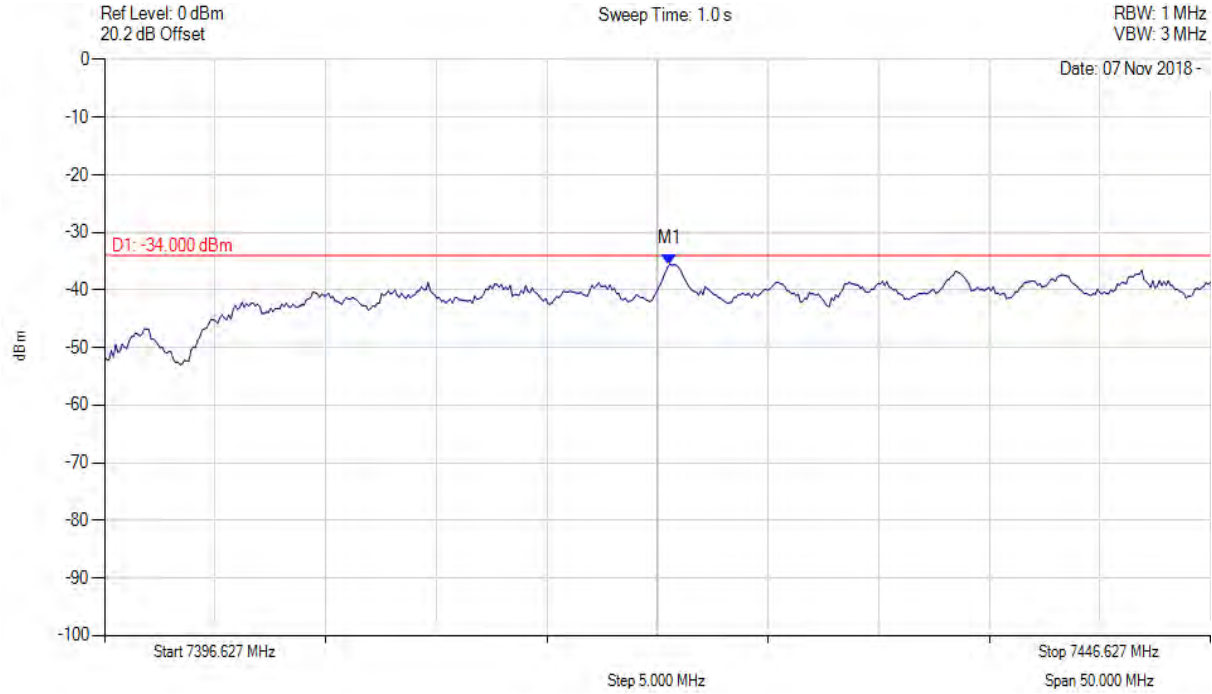
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Peak Power Density

Variant: UWB, Channel: 7656 Hz, Chain a, Temp: 25, Voltage: 5 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = CLR/WRITE	M1 : 7422.178 MHz : -35.495 dBm	Channel Frequency: 0 Hz

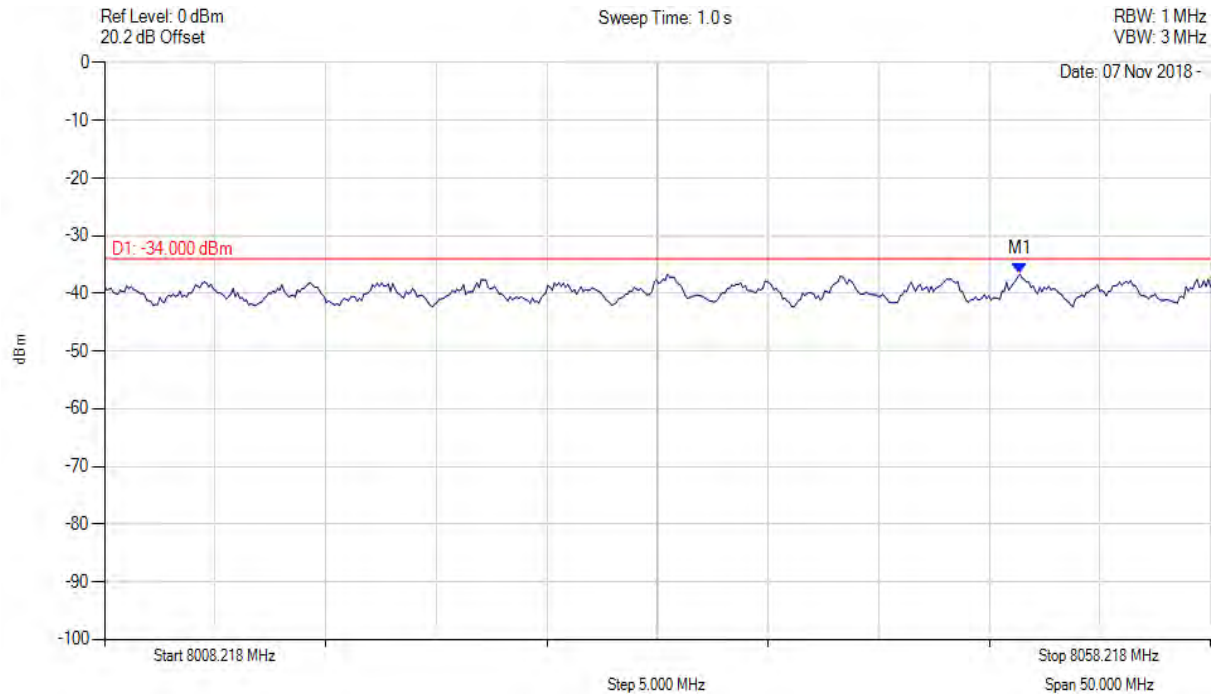
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Peak Power Density

Variant: UWB, Channel: 8184.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = CLR/WRITE	M1 : 8049.601 MHz : -36.648 dBm	Channel Frequency: 8184.00 MHz

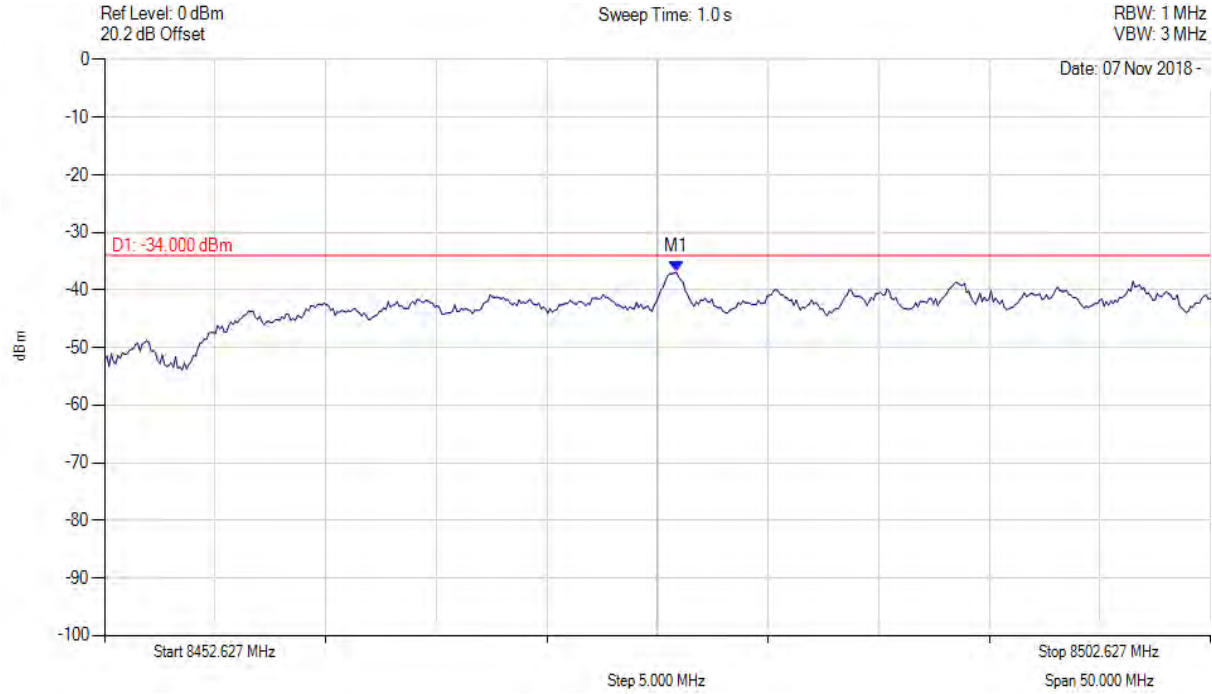
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Peak Power Density

Variant: UWB, Channel: 8712.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc

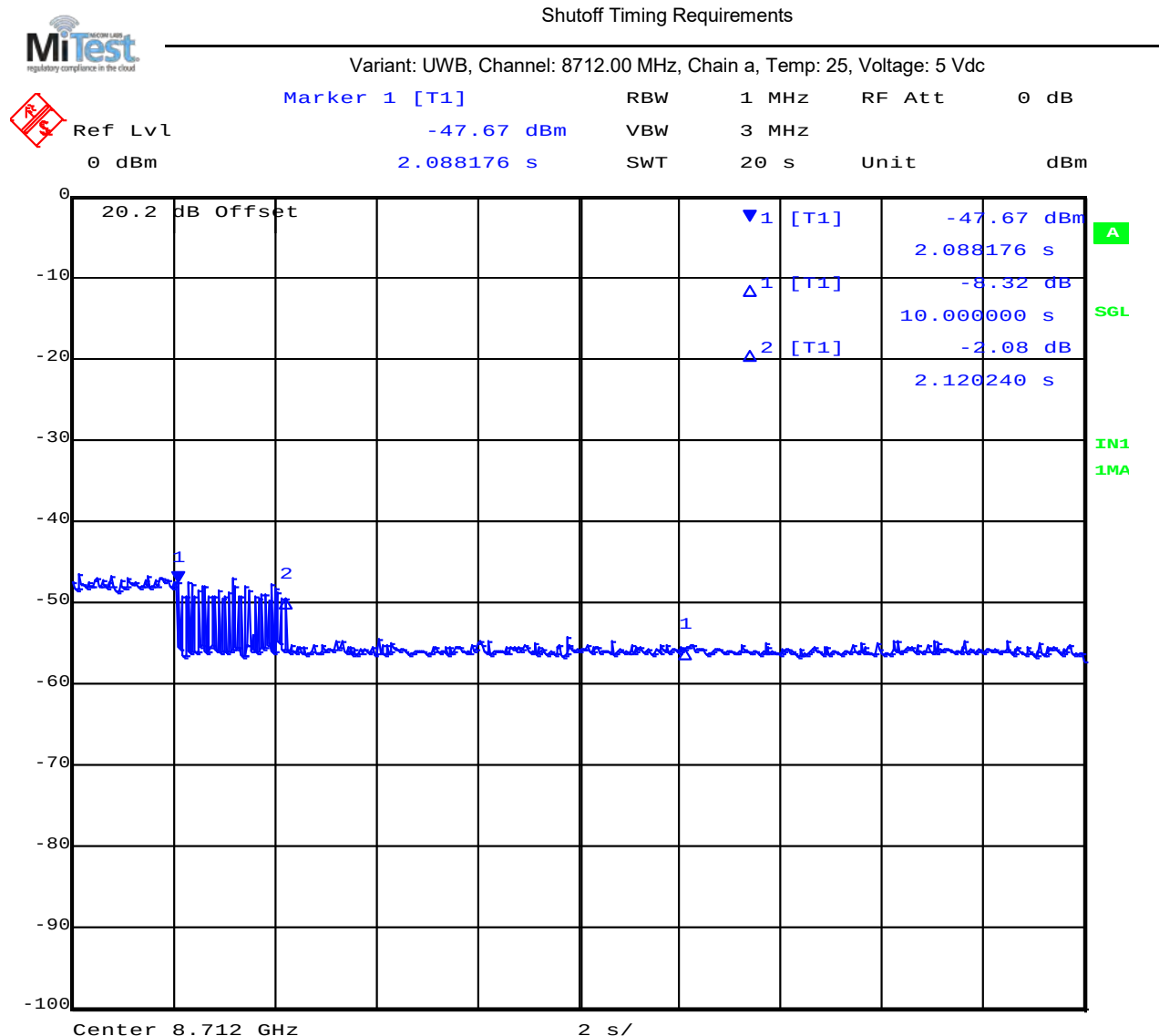


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = CLR/WRITE	M1 : 8478.479 MHz : -36.858 dBm	Channel Frequency: 8712.00 MHz

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A.3. Shutoff Timing Requirements



Date: 7.NOV.2018 15:35:53

Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = CLR/WRITE	M1 : 8712.00 MHz : 2.088 s Delta 1 : 8712.00 MHz : -10 s Delta 2 : 8712.00 MHz : 2.120 s	Channel Frequency: 8712.00 MHz

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B. APPENDIX – Manufacturer Declaration on Similarity of Models

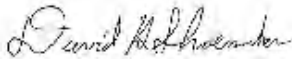


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To whom it may concern,

The AL5934 Combat, AL5930 Commander and the AL5955 Camouflage all use the exact same Alereon radio chipset (AL5100 and AL5350). The only difference between the boards is the interface connector, so for the conducted tests, testing just the AL5934 Combat should be adequate.

Thanks,



David Shoemaker
CEO
Alereon, Inc.

12/6/2018

12/6/2018

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