



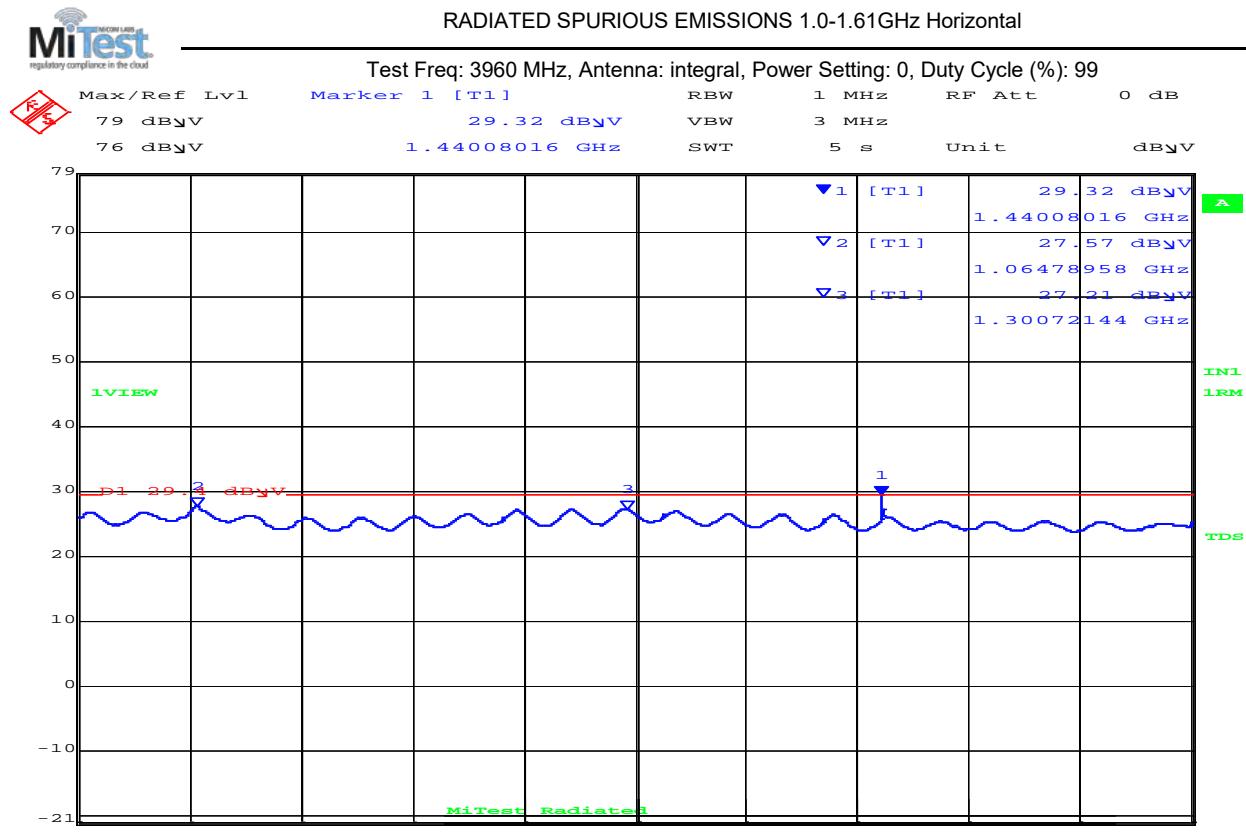
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 239 of 466

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



Date: 20.NOV.2018 08:45:37

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:

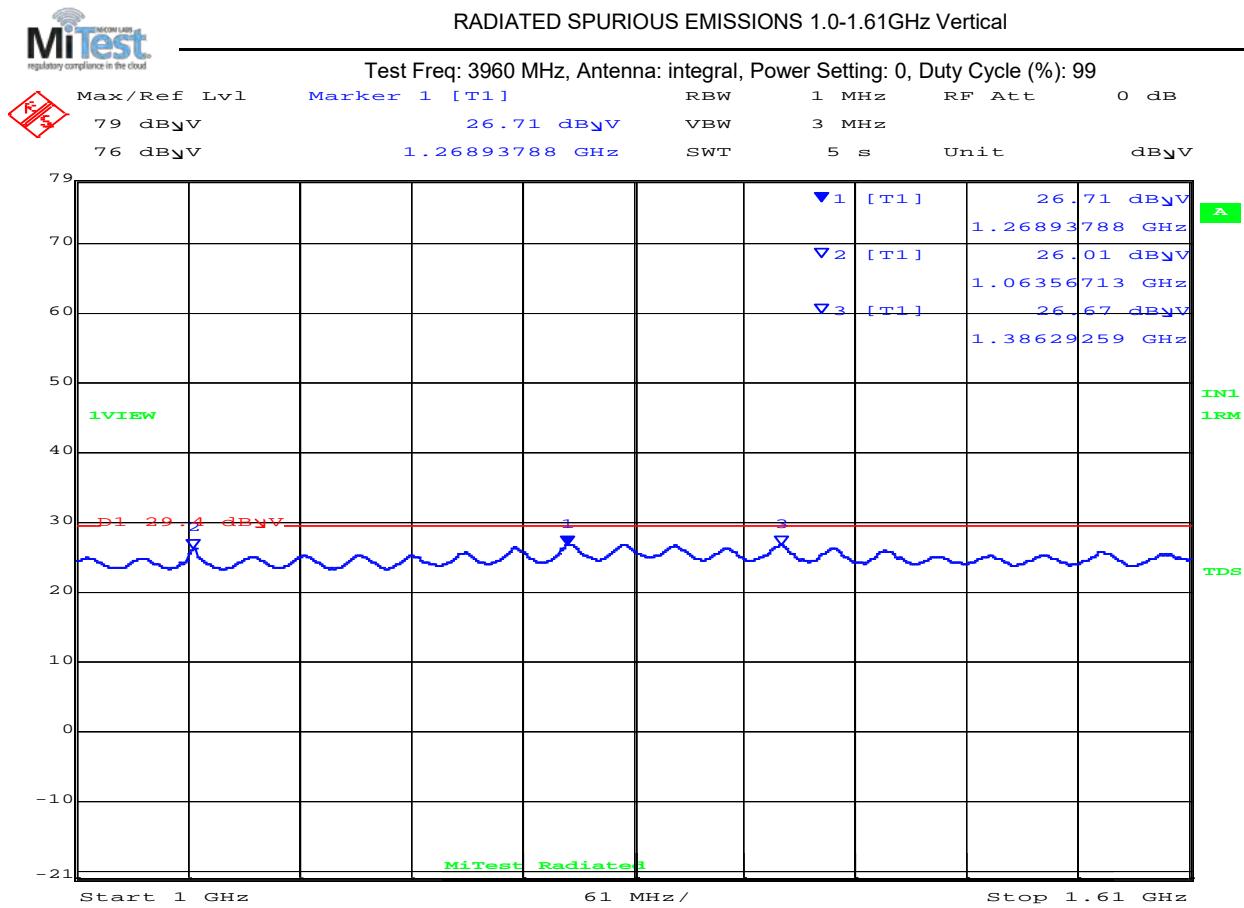
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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.

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 _{μV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{μV/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:

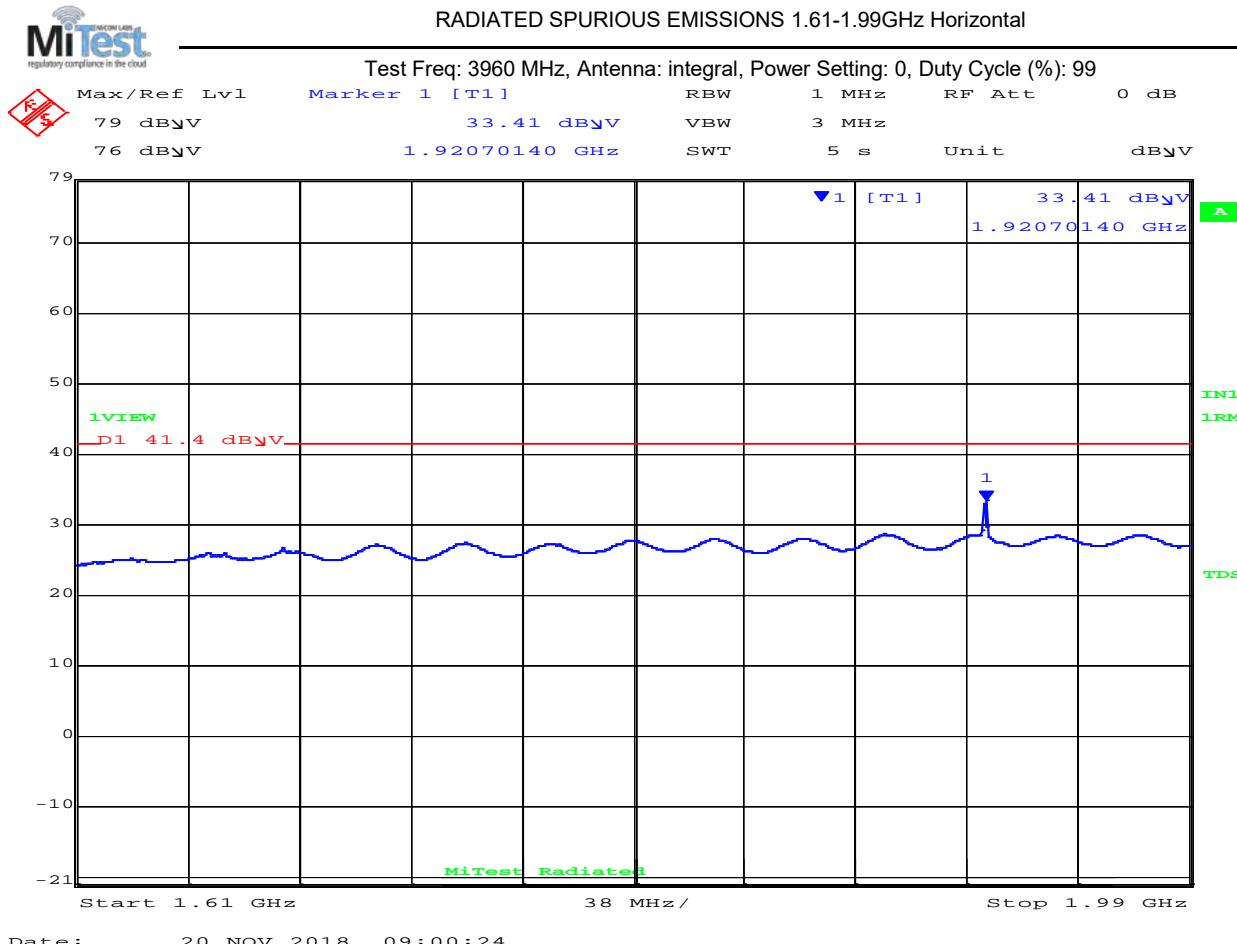
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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.

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



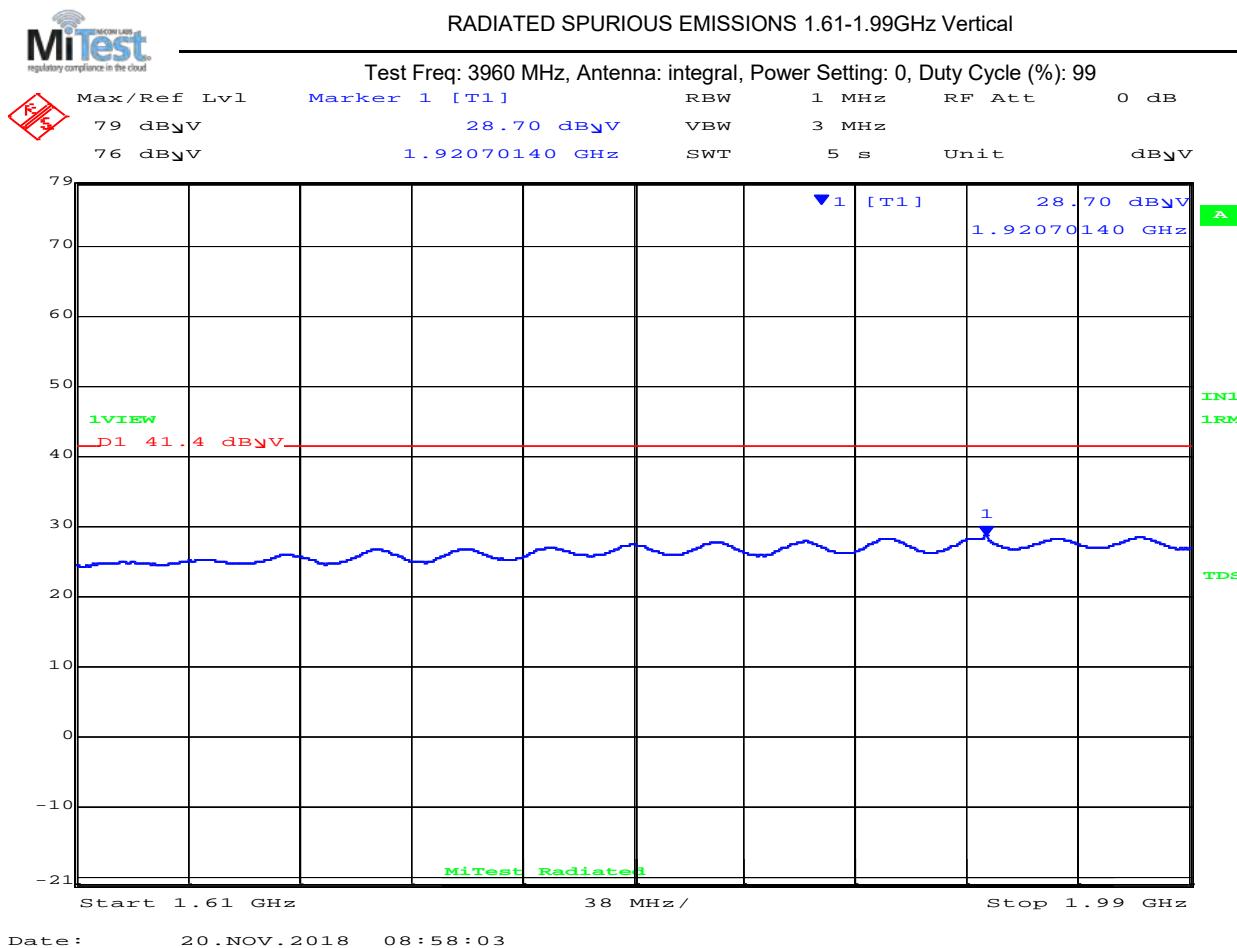
1610.00 – 1990.00 MHz									
Num	Frequency MHz	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
No Signals found within 6 dB of limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each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

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.

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



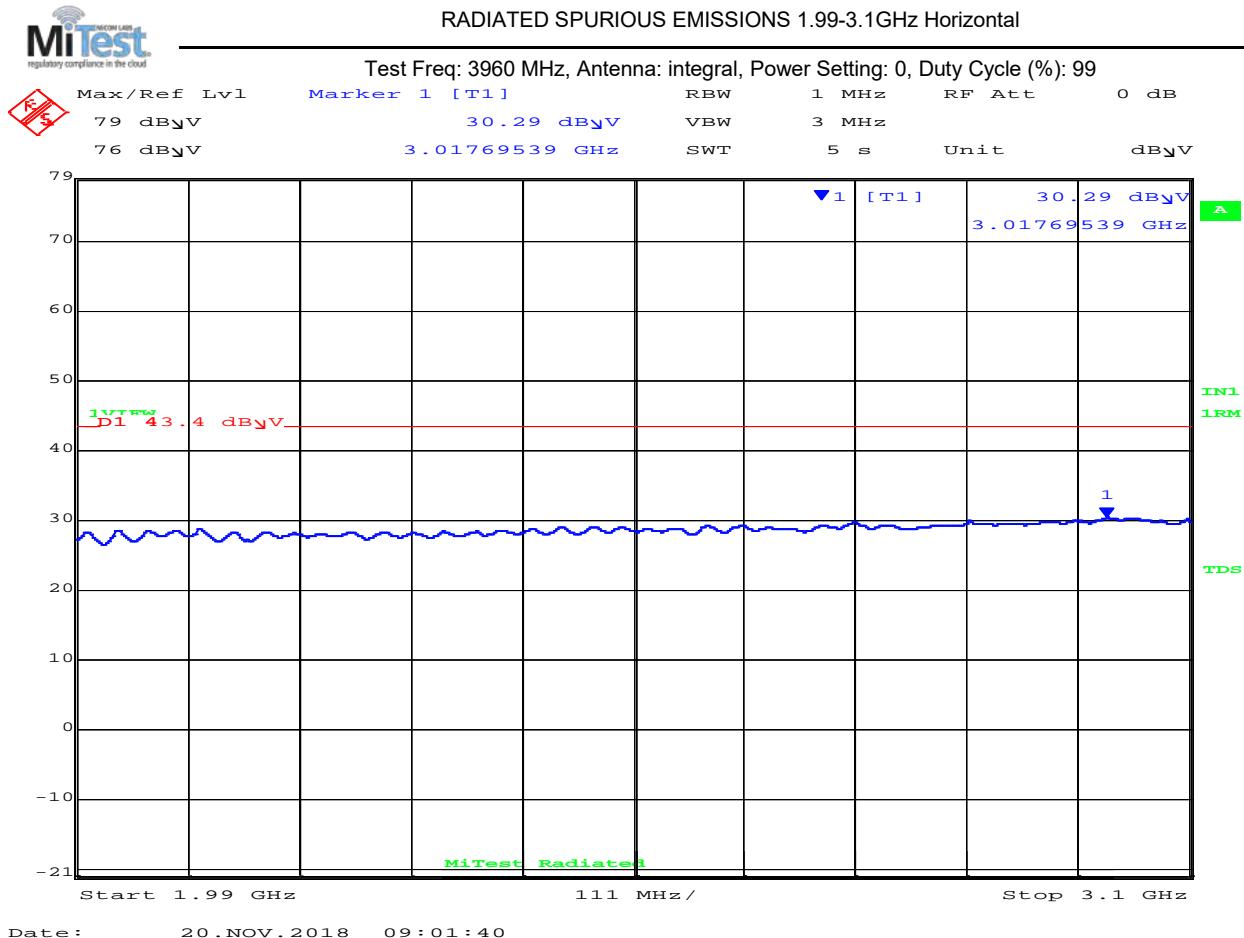
1610.00 – 1990.00 MHz										
Num	Frequency MHz	Level dB _μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _μ V/m	Margin dB	Pass /Fail	
No Signals found within 6 dB of limit										
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn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

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.

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 _{µV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{µV/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.

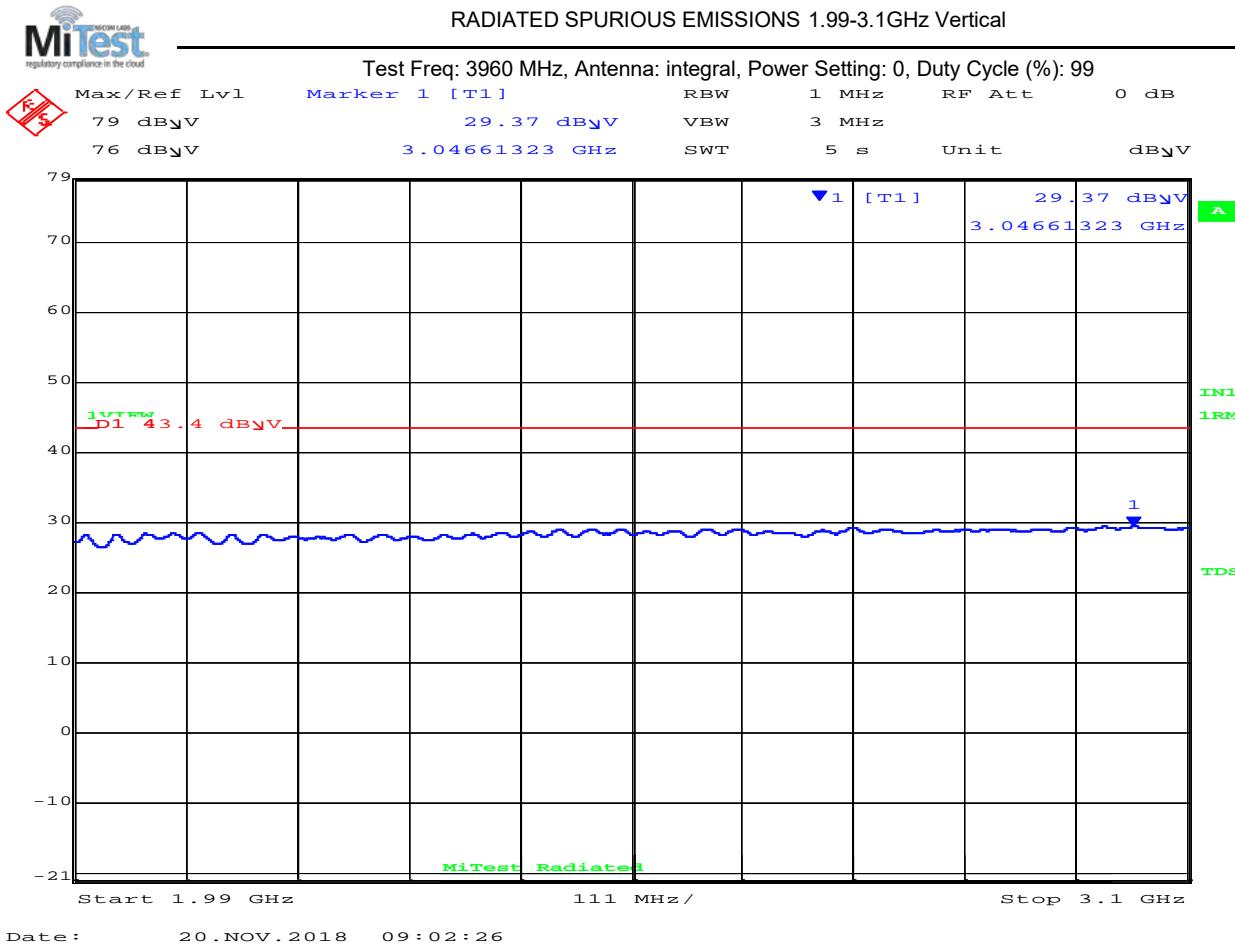


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 244 of 466

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



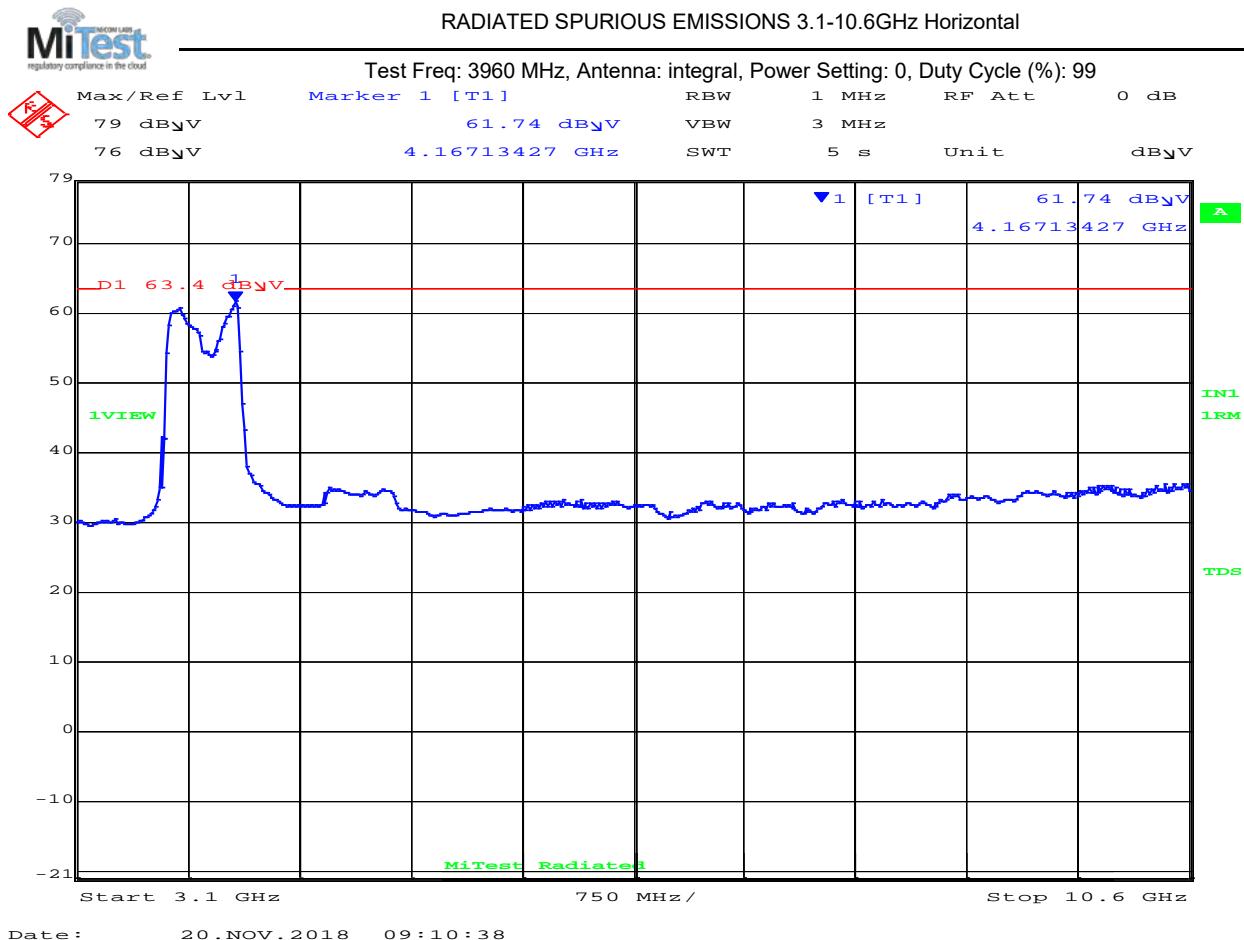
1990.00 – 3100.00 GHz										
Num	Frequency MHz	Level dB _µ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _µ V/m	Margin dB	Pass /Fail	
No Signals found within 6 dB of limit										
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn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

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.

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



3100.00 - 10600.00 MHz

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

Test Notes:

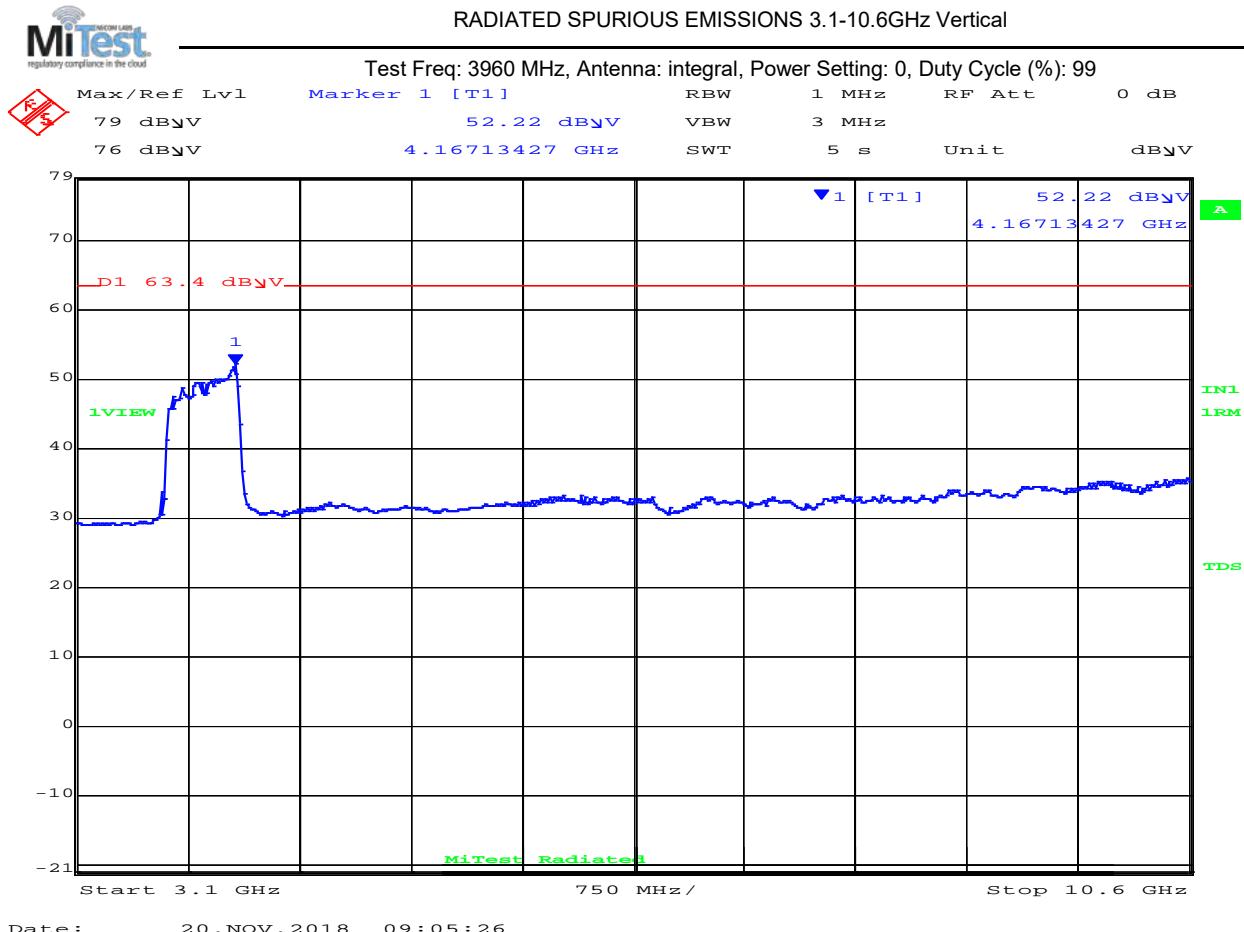
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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.

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 dB _{μV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{μV/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.

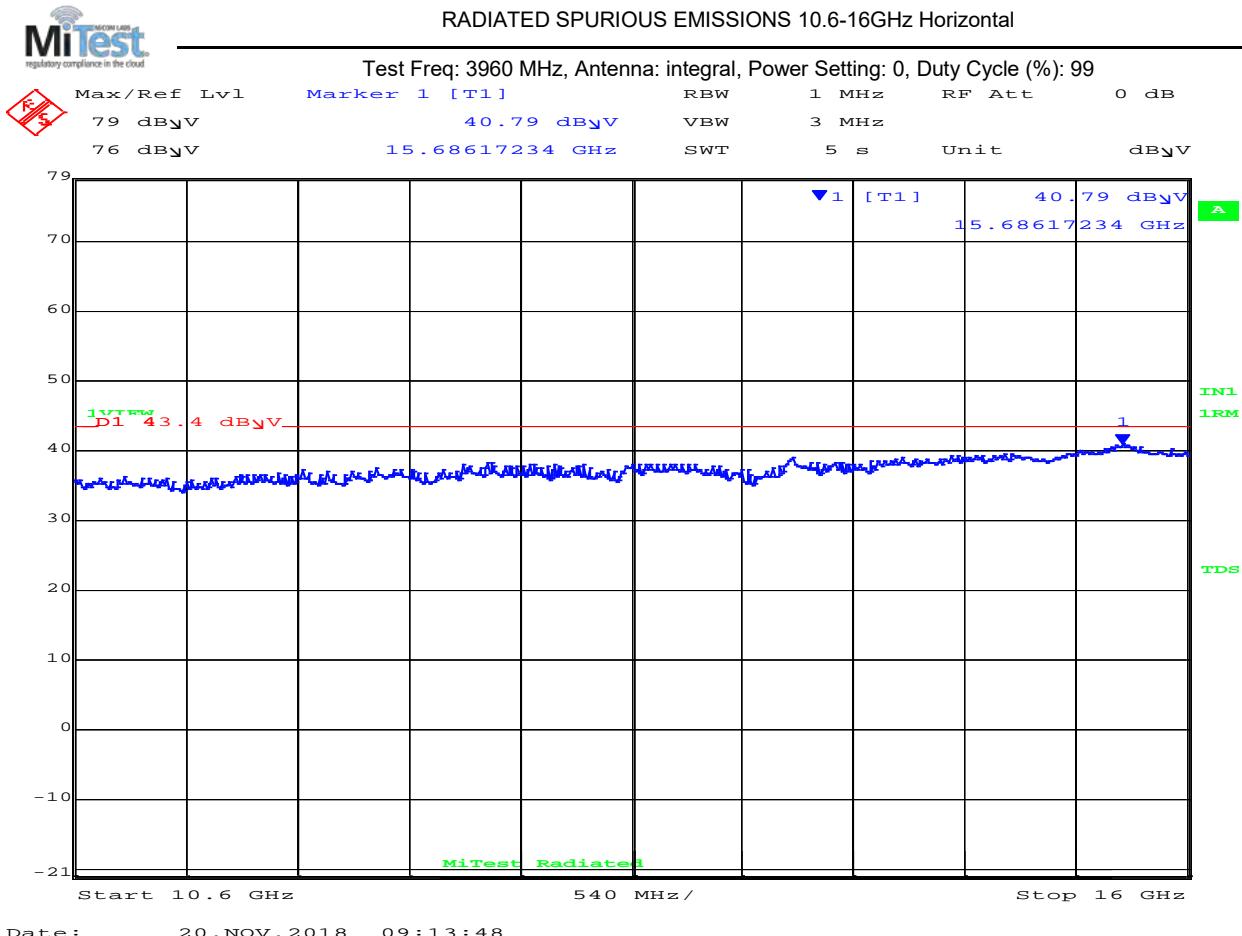


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 247 of 466

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



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)

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.

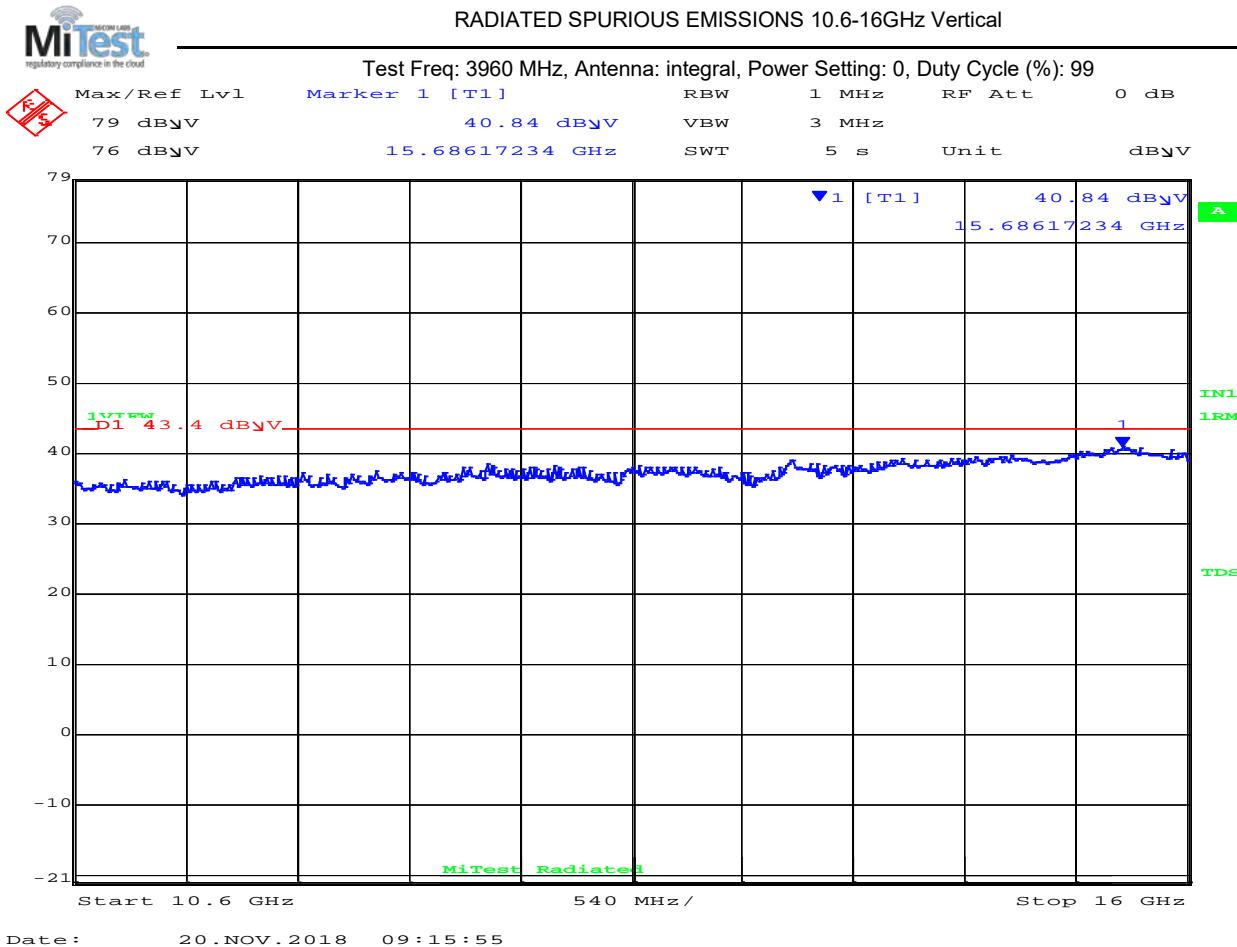


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 248 of 466

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



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	39.8	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)

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.

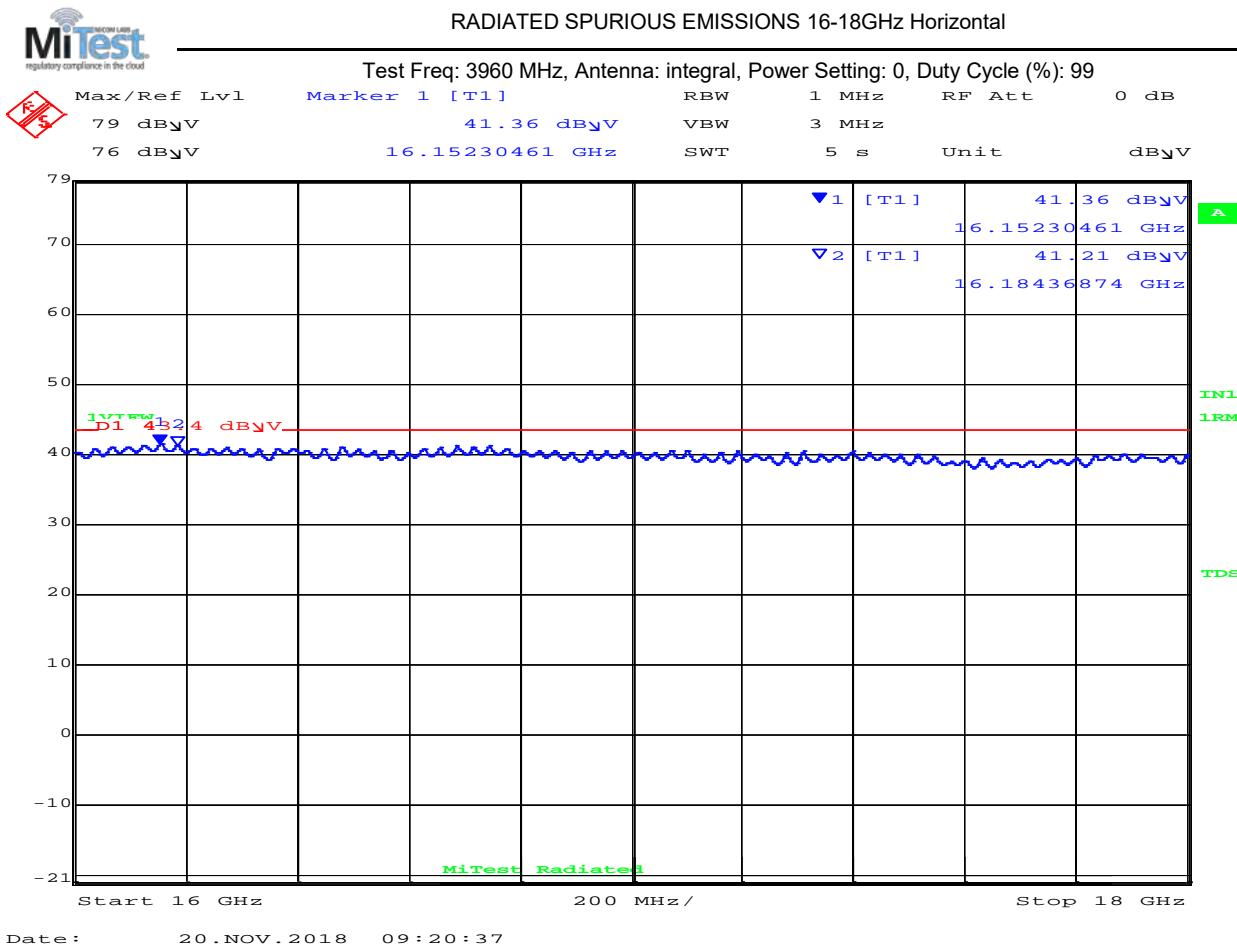


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 249 of 466

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



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	40.3	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)

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

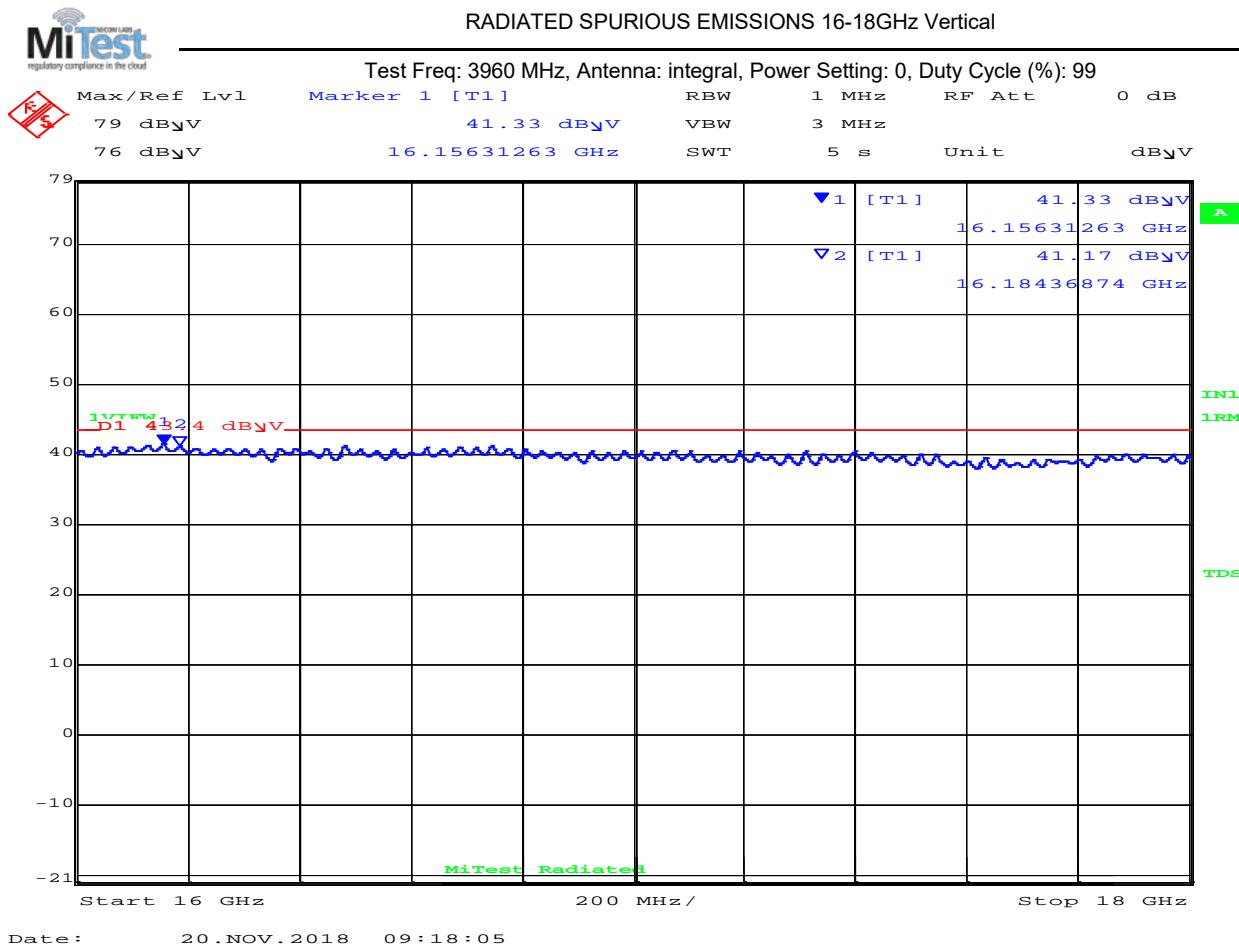
Issue Date: 12th December 2018

Page: 250 of 466

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 dB _μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _μ V/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)

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.



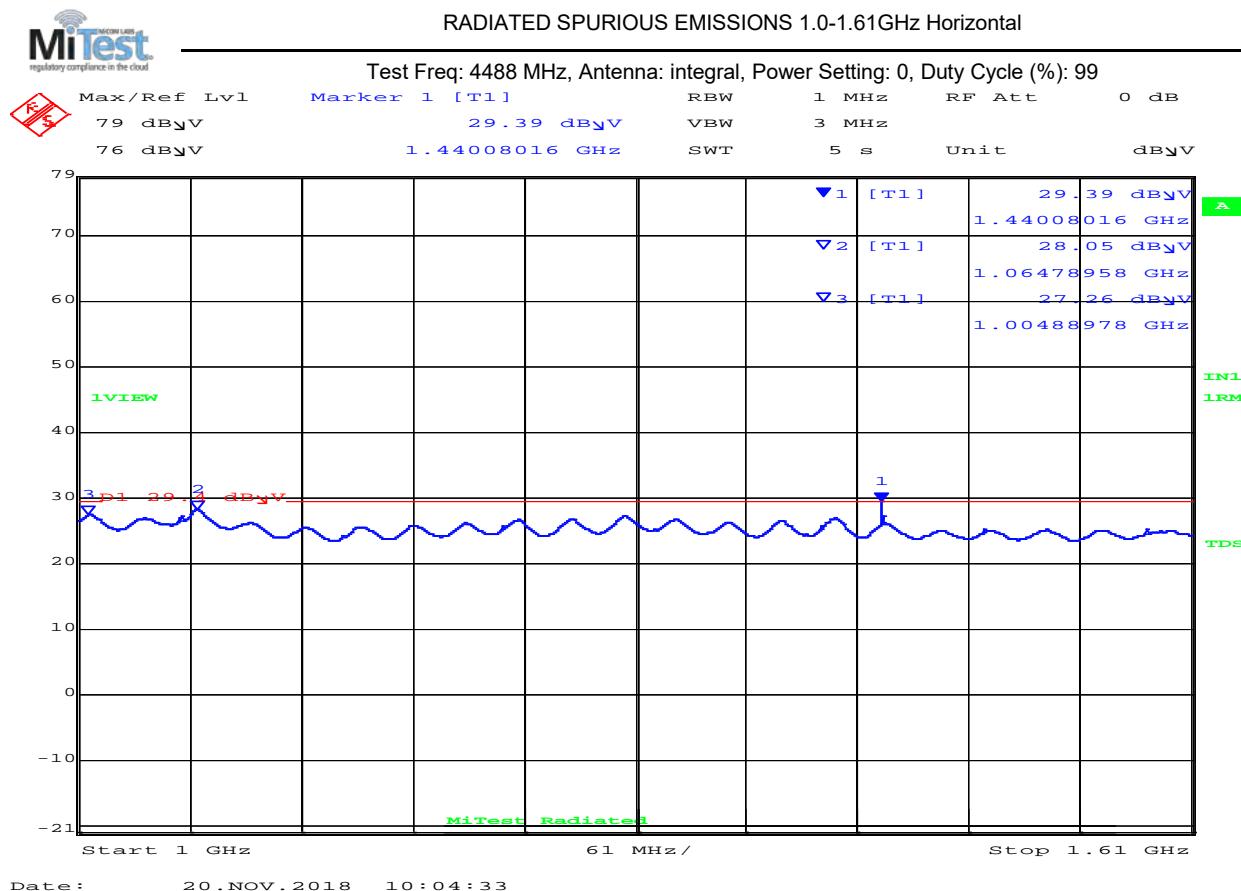
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 251 of 466

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:

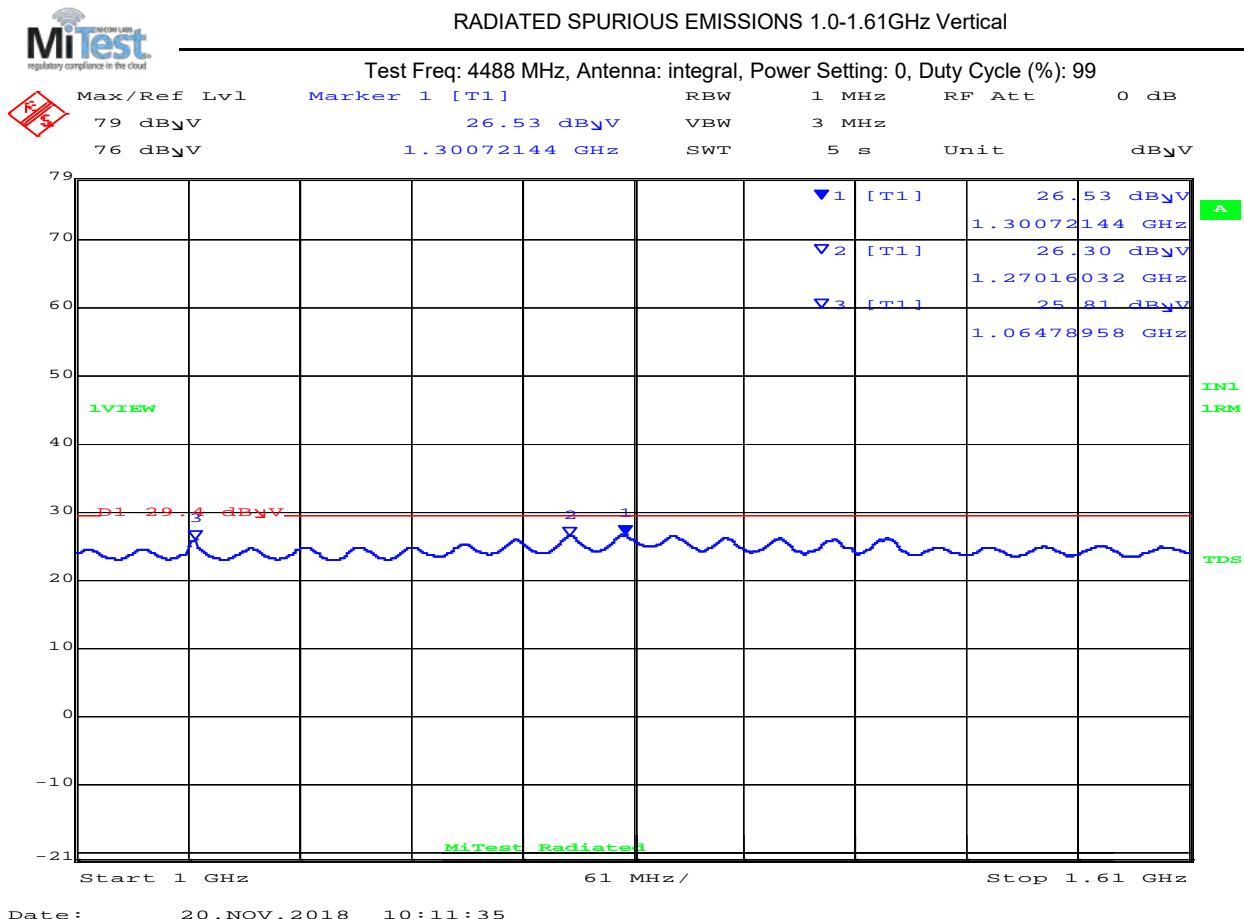
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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.

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



Date: 20.NOV.2018 10:11:35

1000.00– 1610.00 MHz

Num	Frequency MHz	Level dB _{µV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{µV/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)

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.

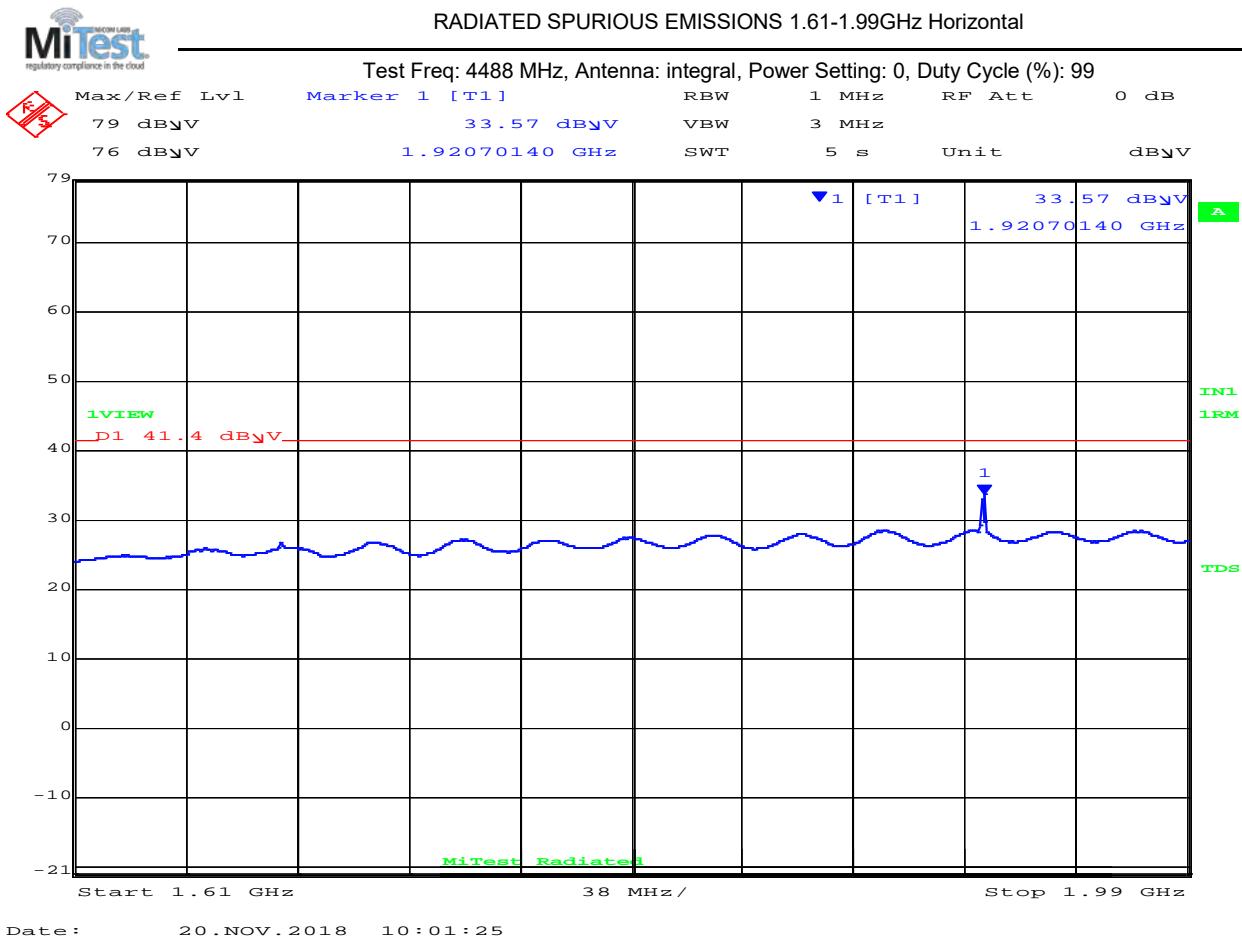


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 253 of 466

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 dB _{μV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{μV/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.

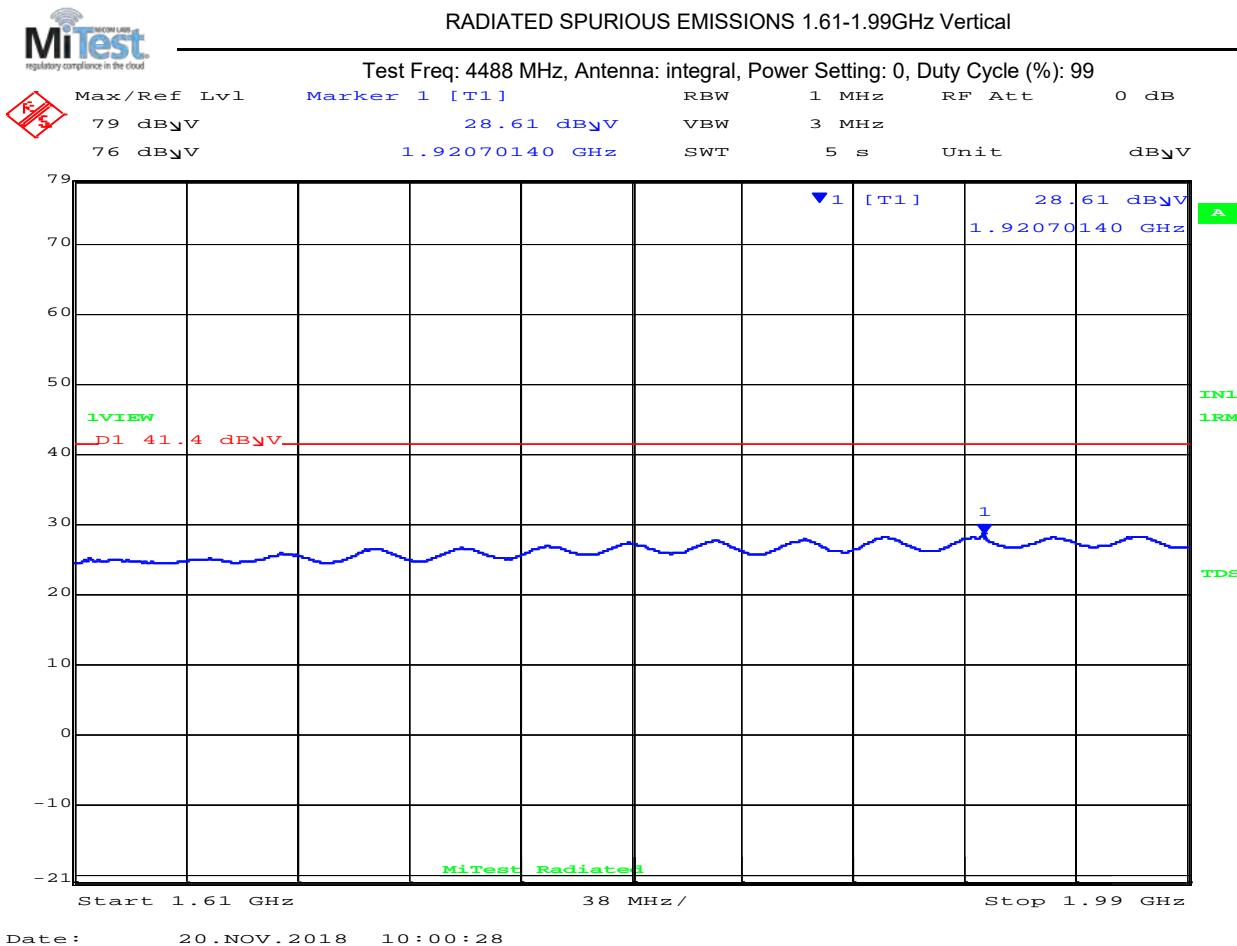


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 254 of 466

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)										

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.

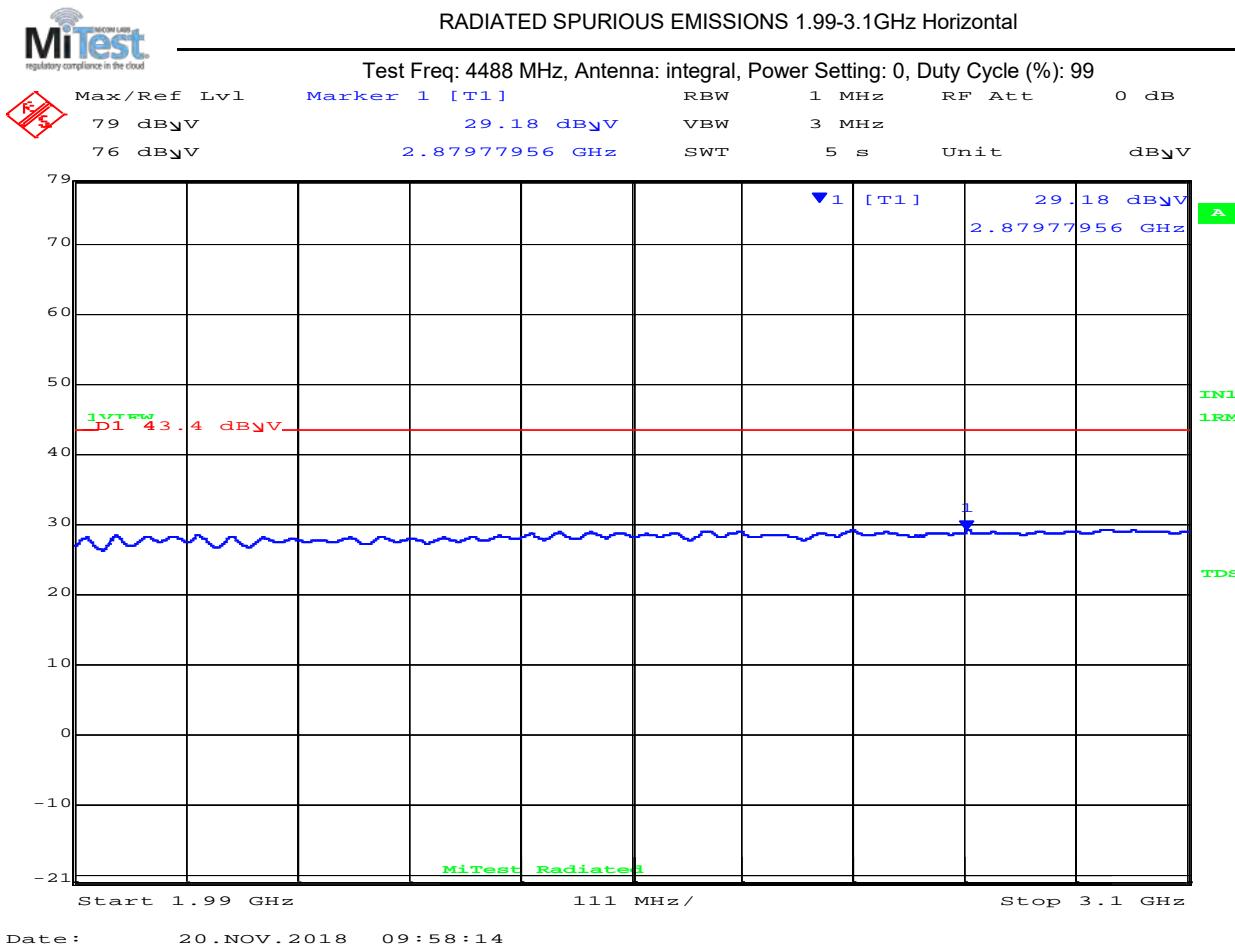


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 255 of 466

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 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)									

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.

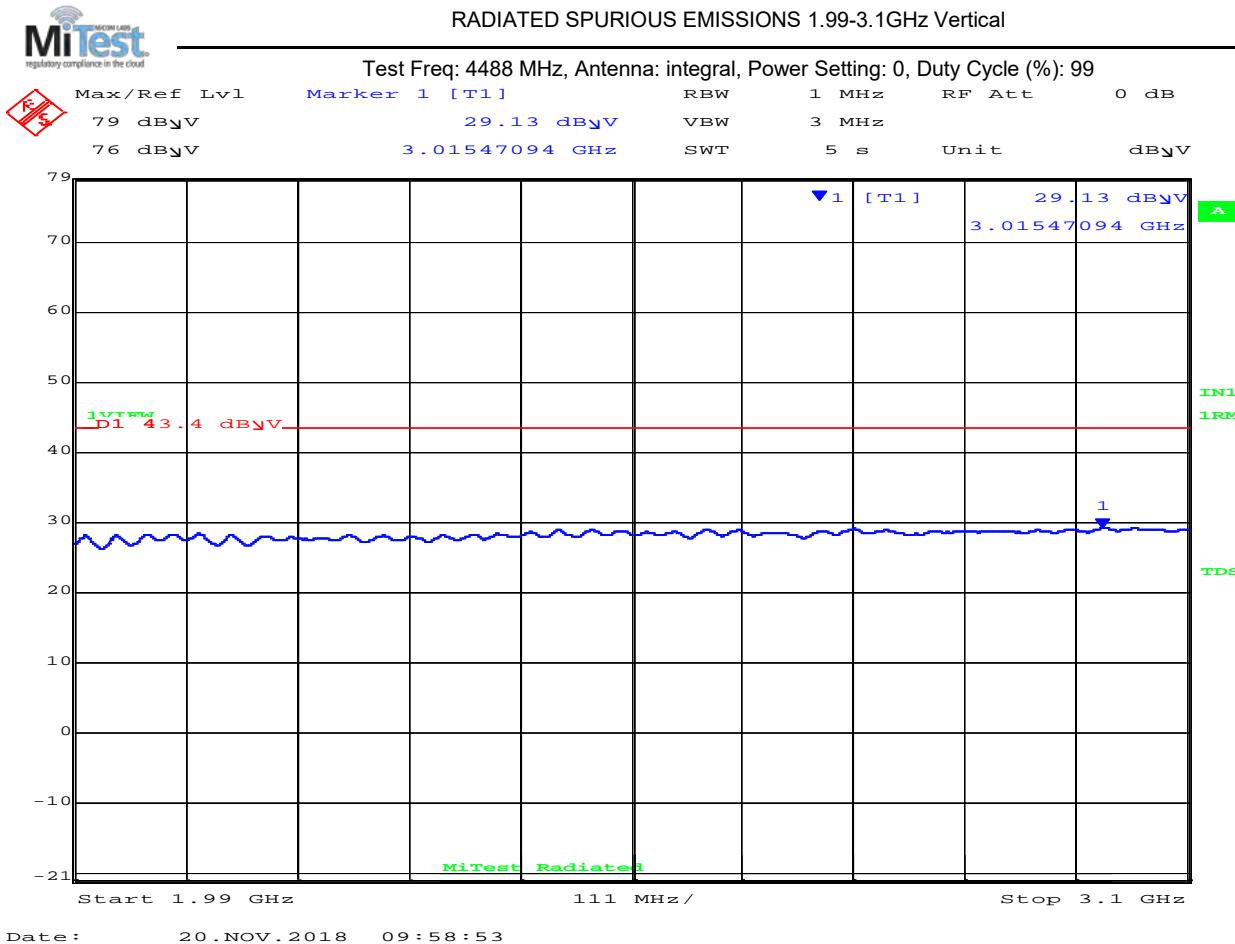


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 256 of 466

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



Date: 20.NOV.2018 09:58:53

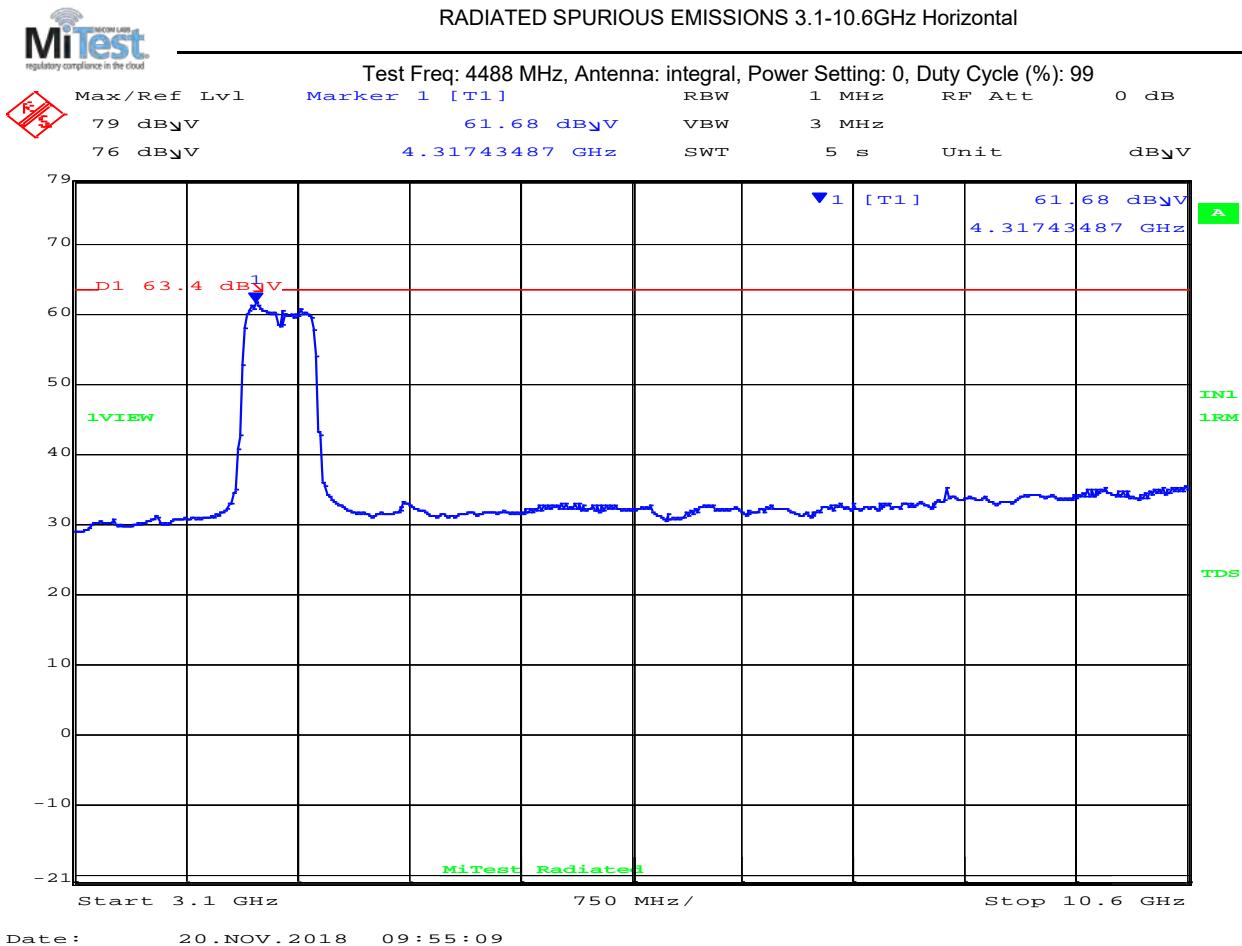
1990.00 – 3100.00 GHz										
Num	Frequency MHz	Level dB _µ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _µ V/m	Margin dB	Pass /Fail	
No Signals found within 6 dB of limit										
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn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

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.

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:

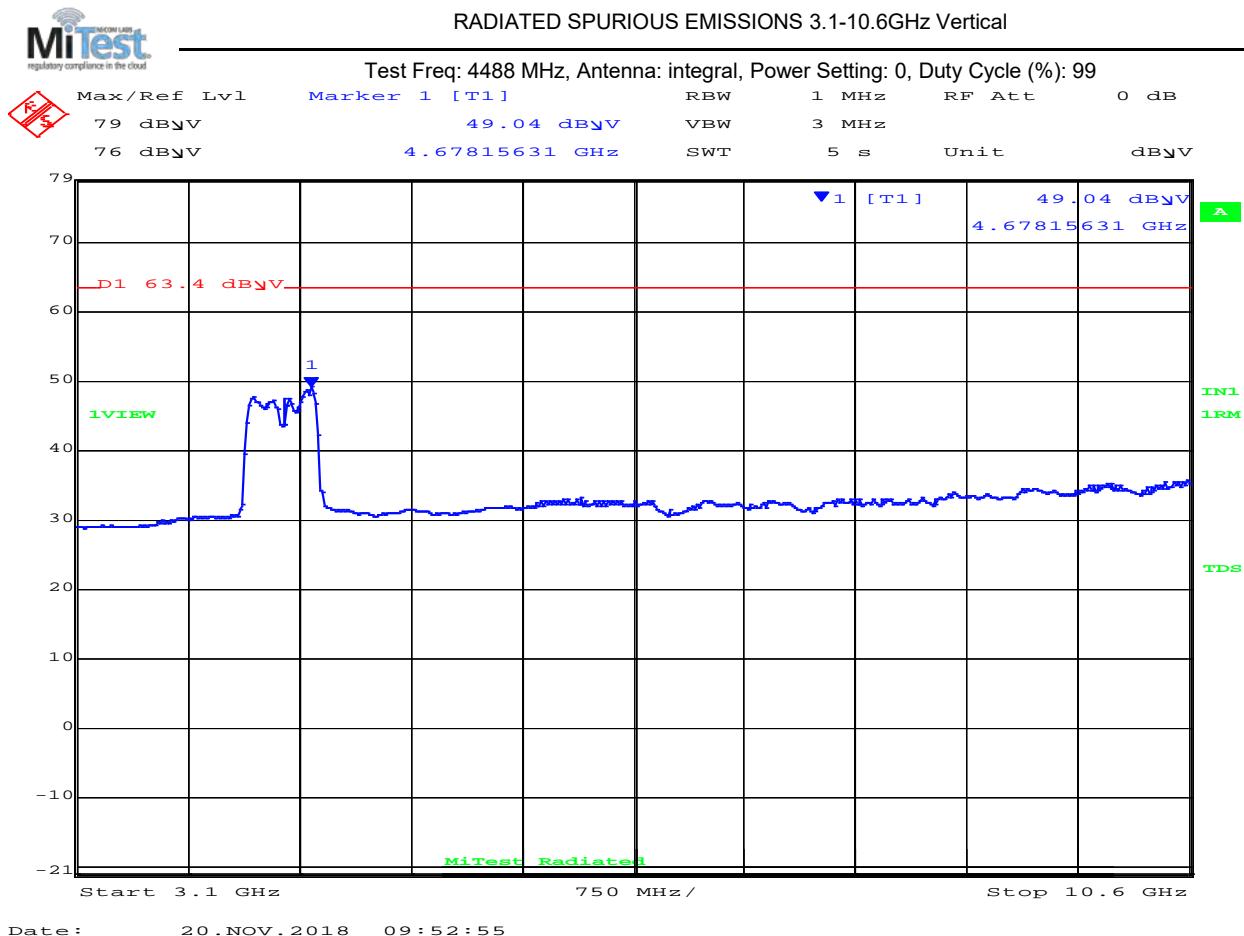
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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.

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 dB _{μV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{μV/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.

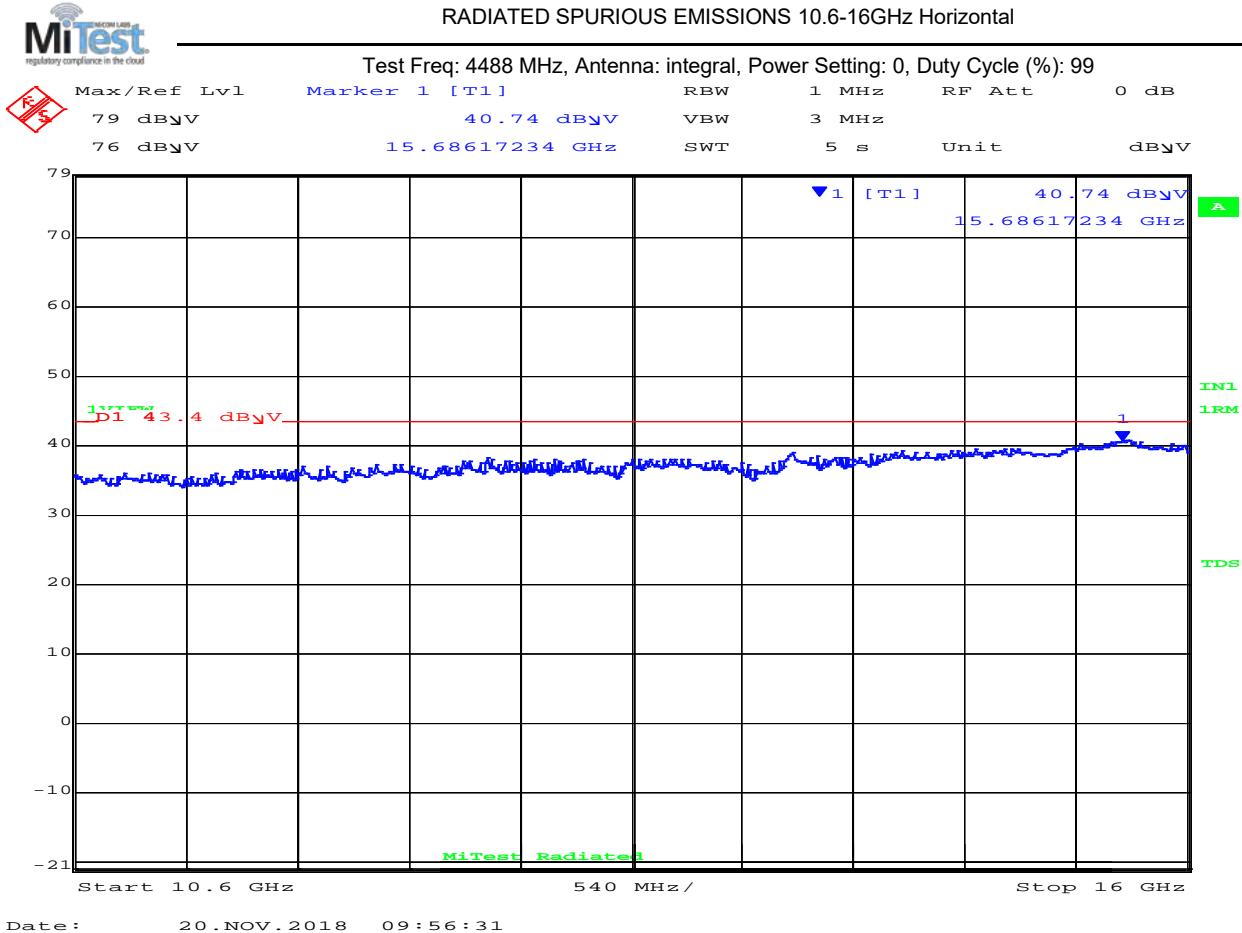


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 259 of 466

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 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	-3.8	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)

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.

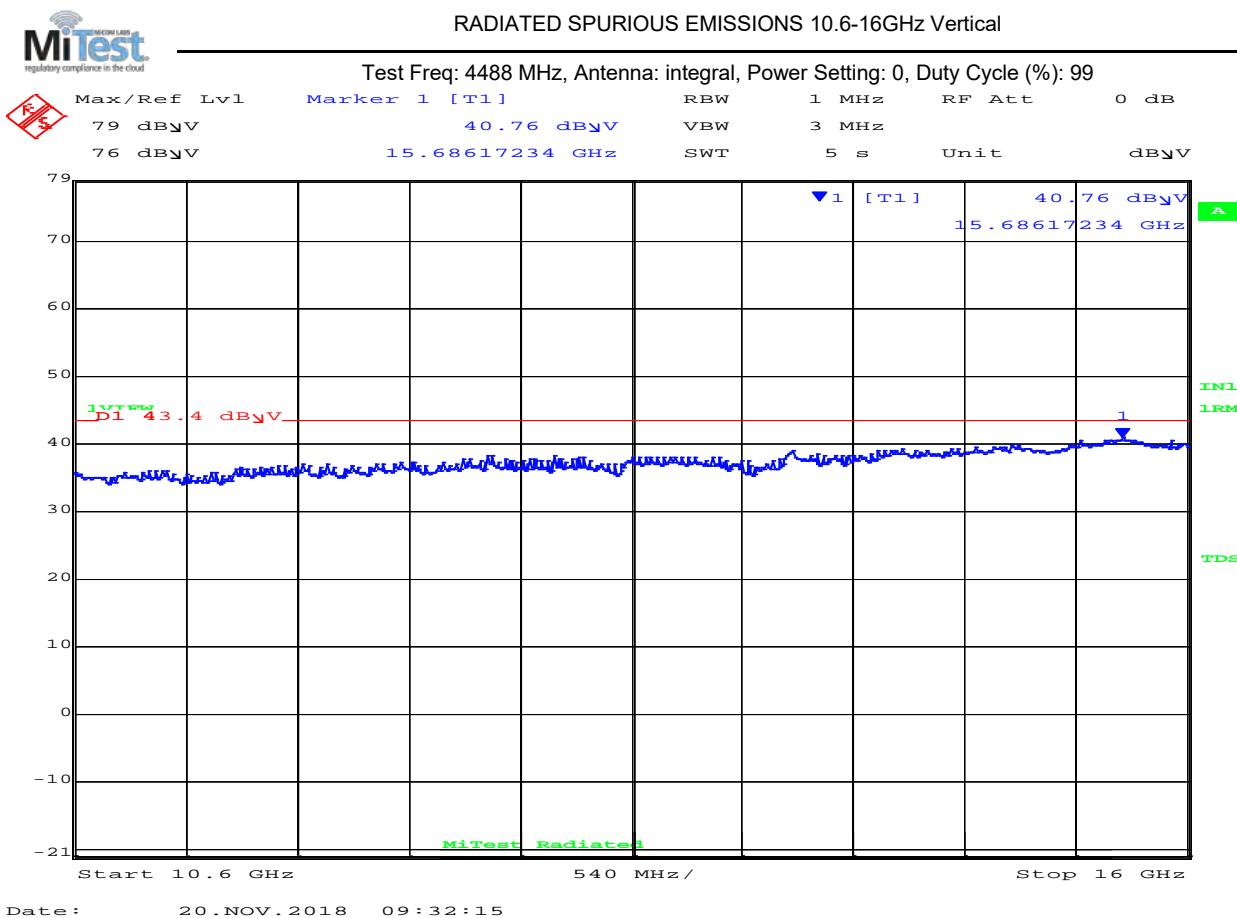


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 260 of 466

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



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	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)

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.

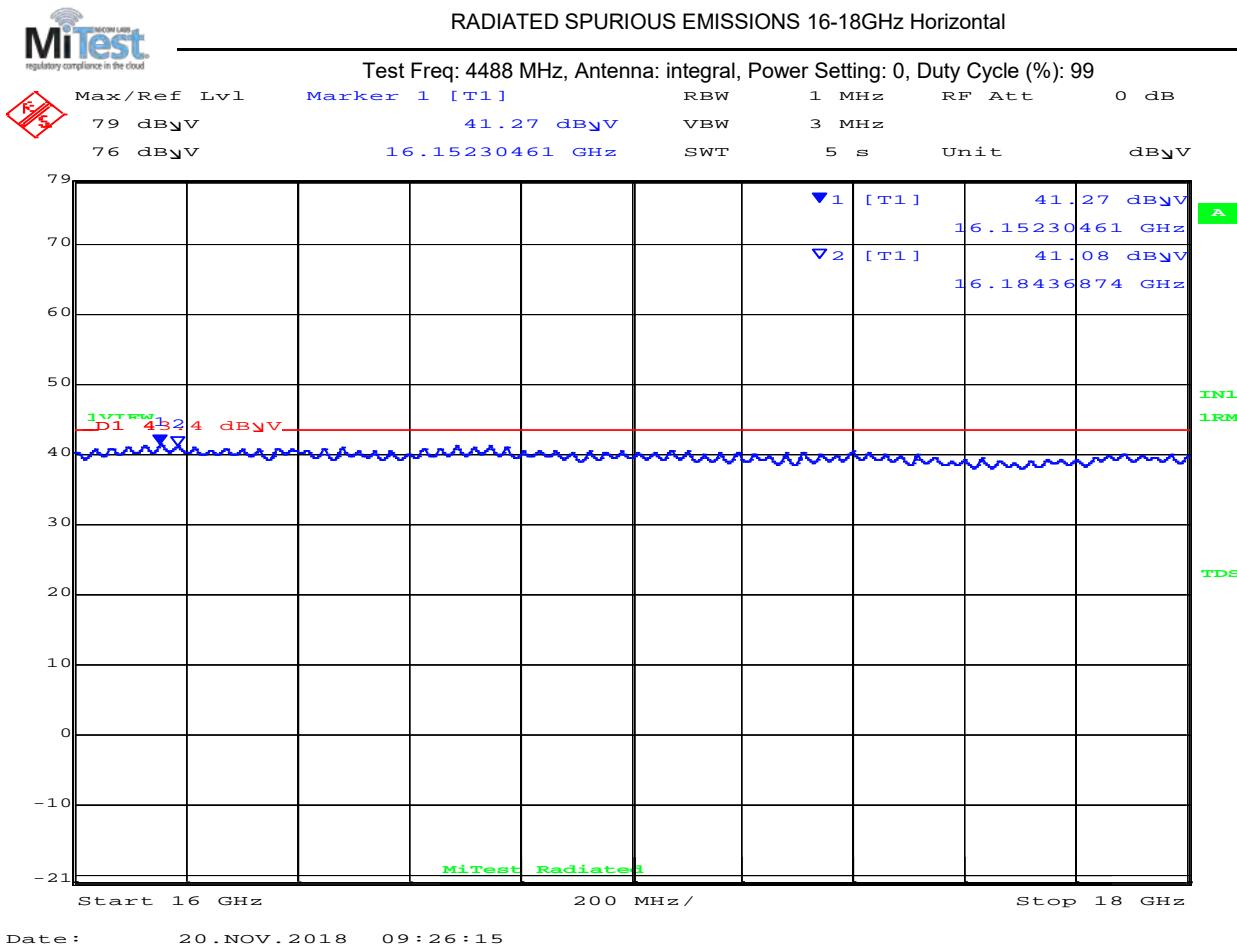


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 261 of 466

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 dB _μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _μ V/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)

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.

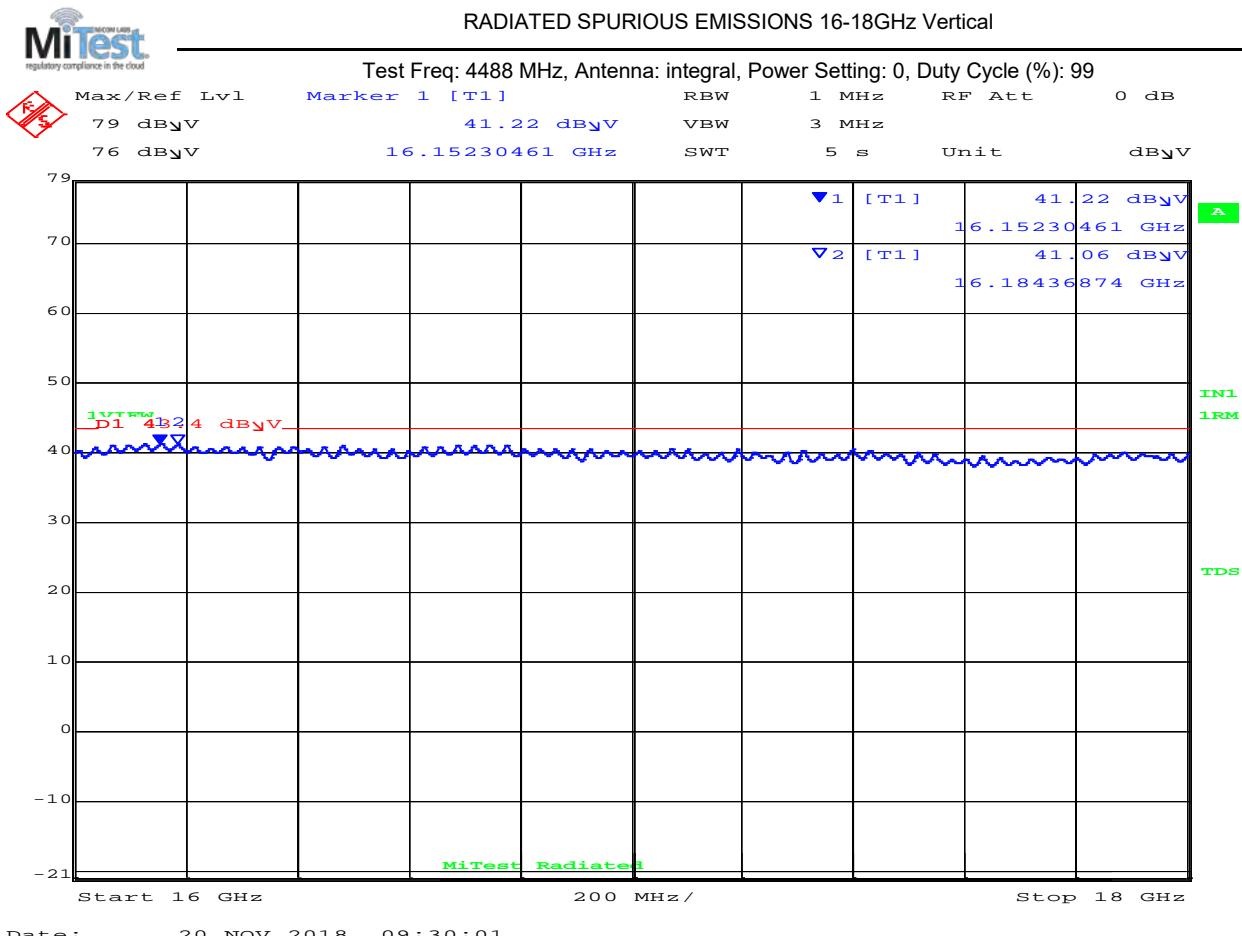


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 262 of 466

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



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	40.2	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)

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.



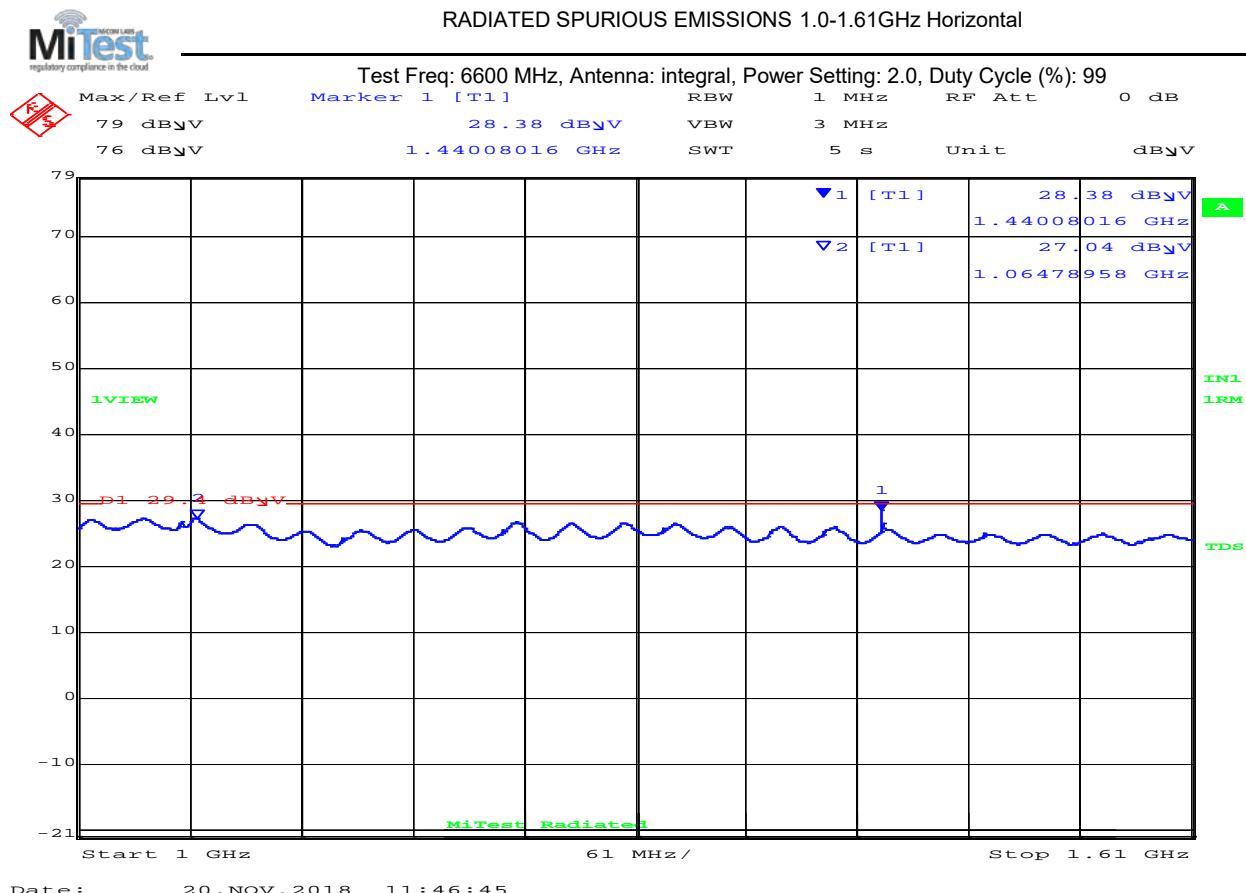
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 263 of 466

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



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)

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.

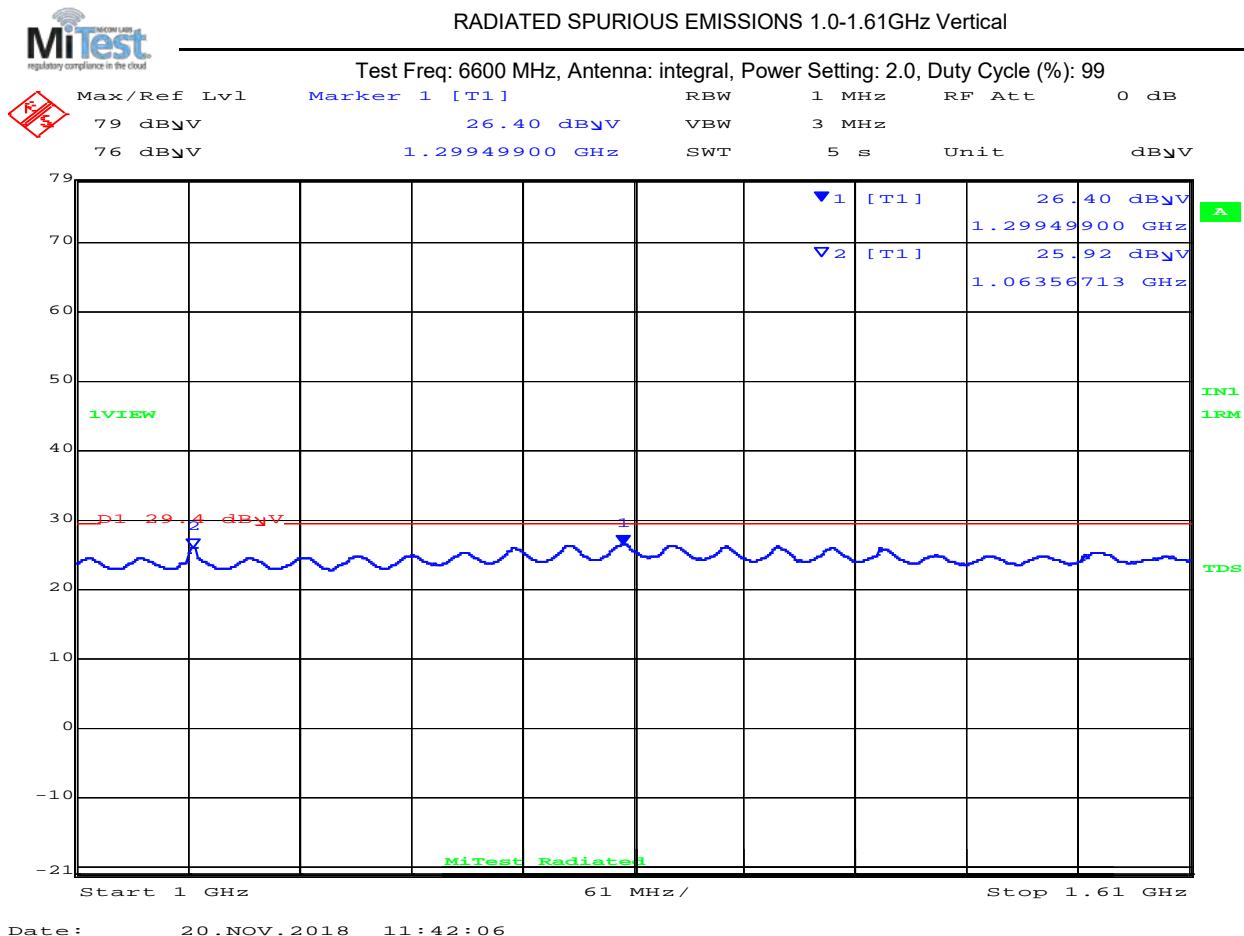


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 264 of 466

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 dB _μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _μ V/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)

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.

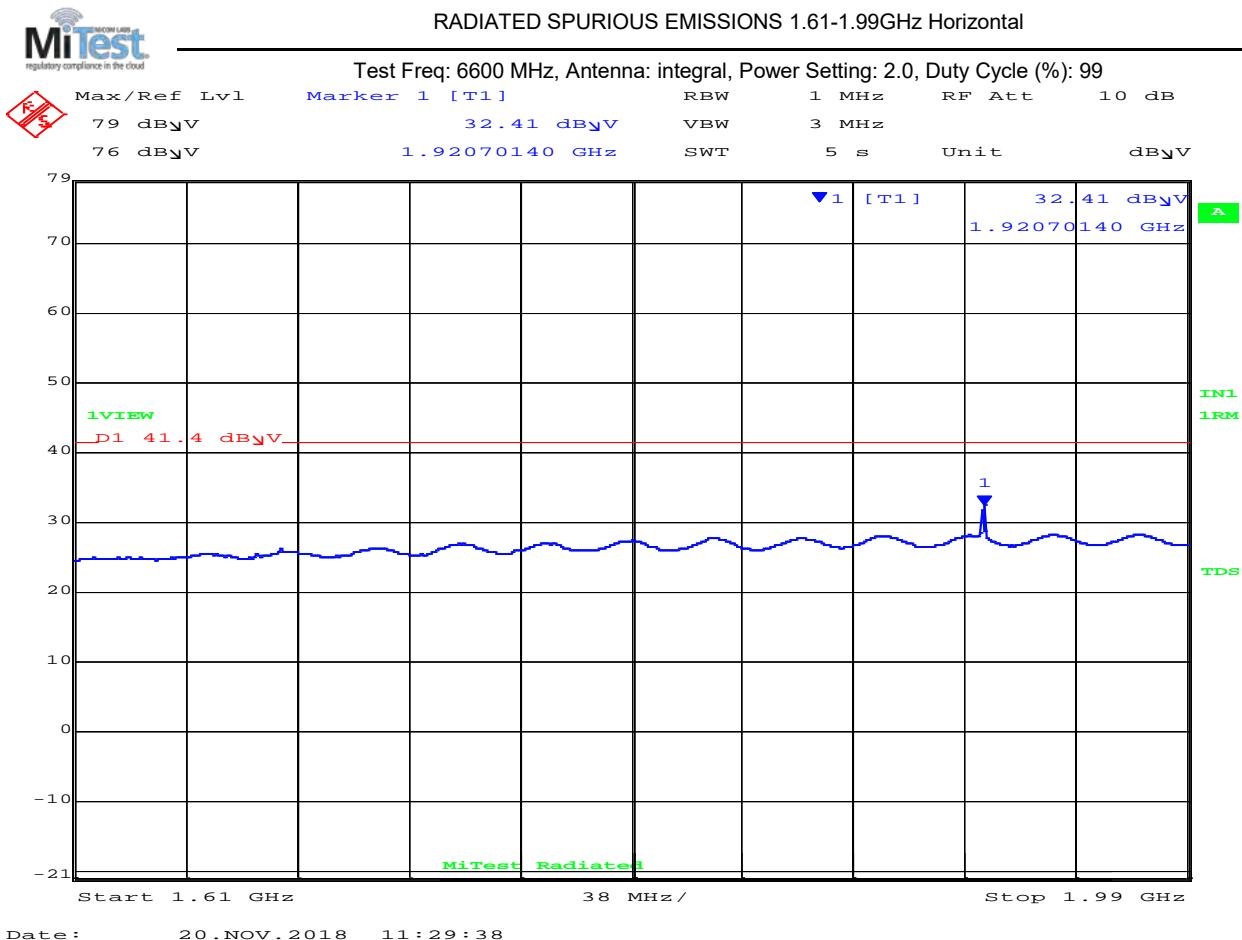


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 265 of 466

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 _{µV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{µV/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.

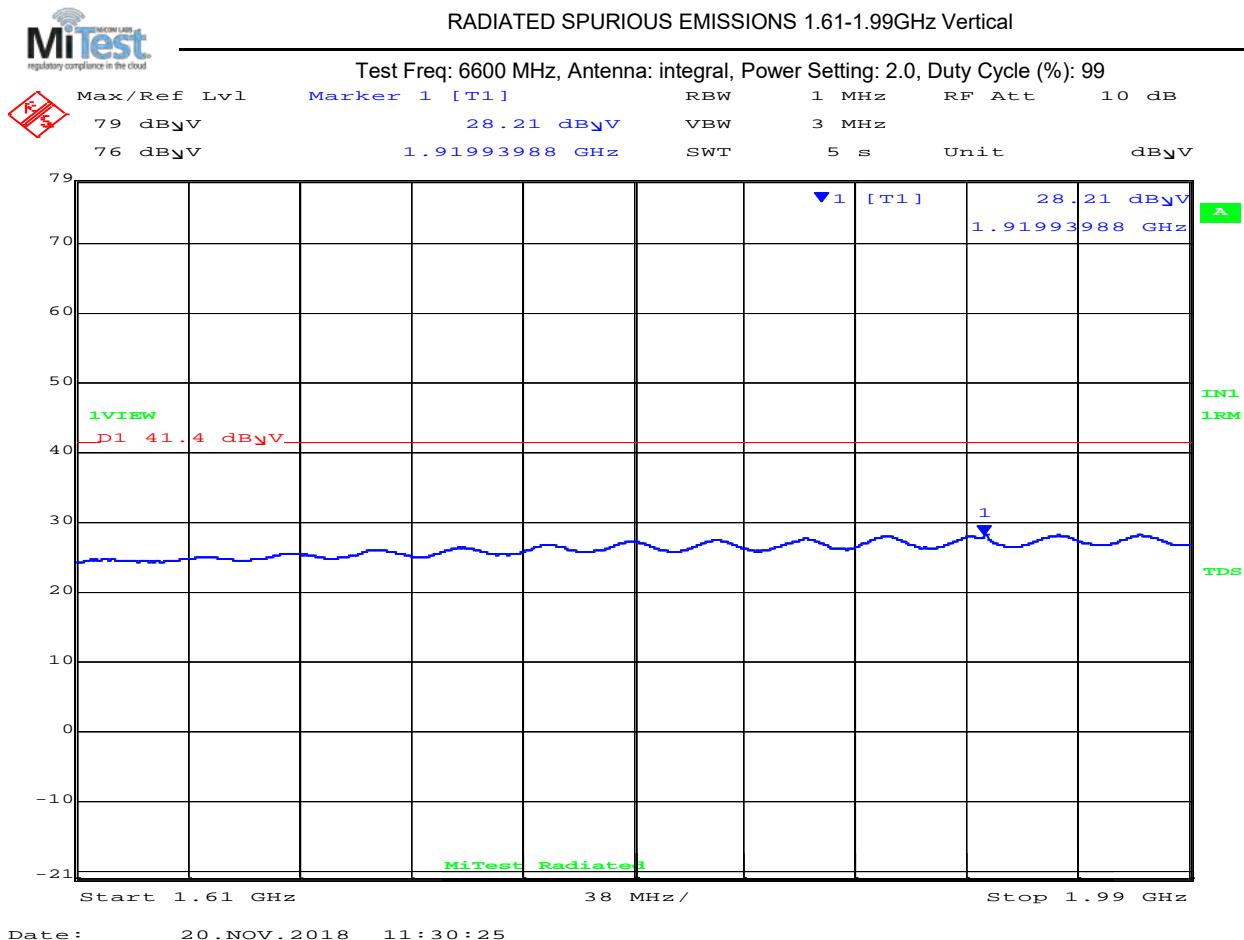


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 266 of 466

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



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)									

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.

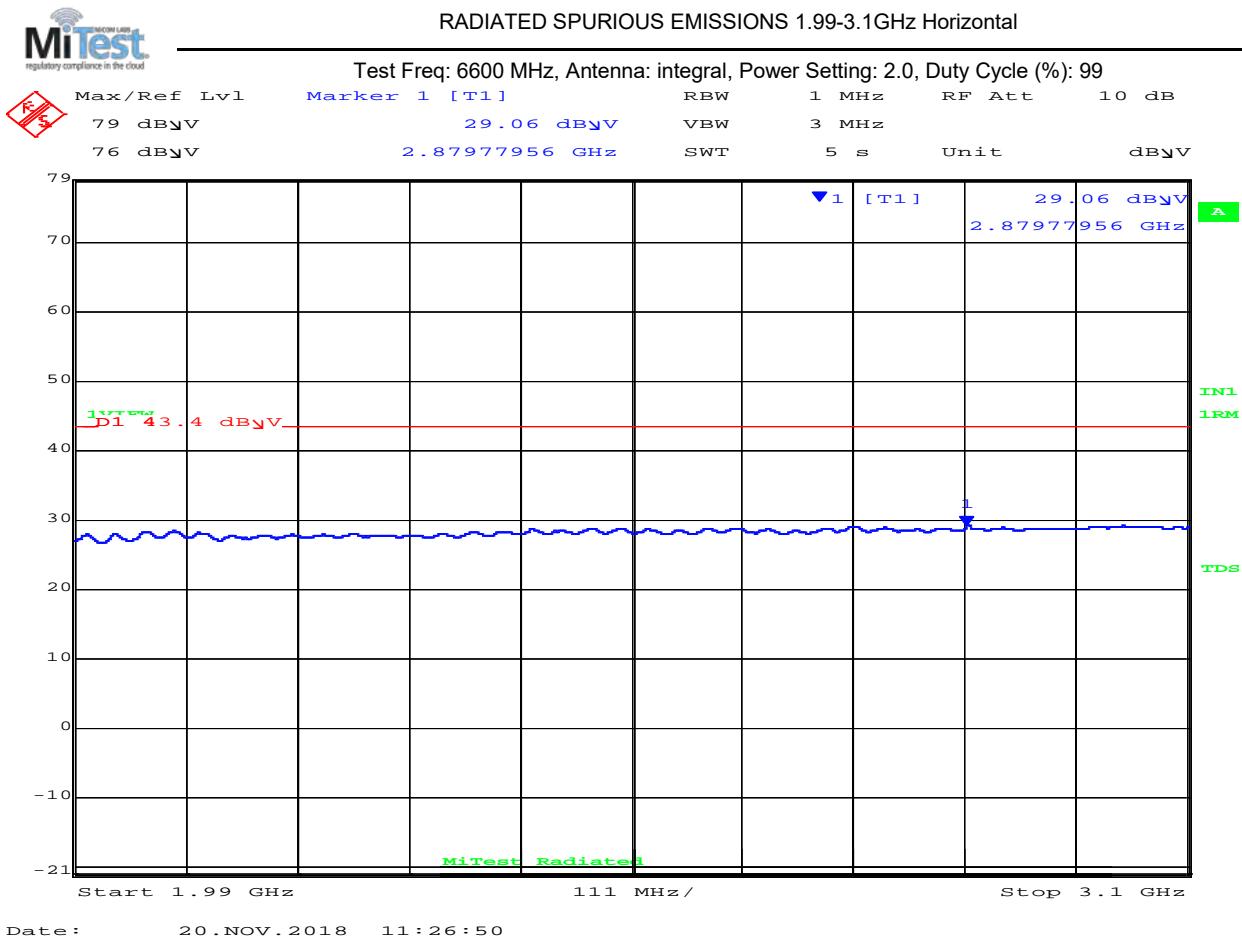


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 267 of 466

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 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)

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.

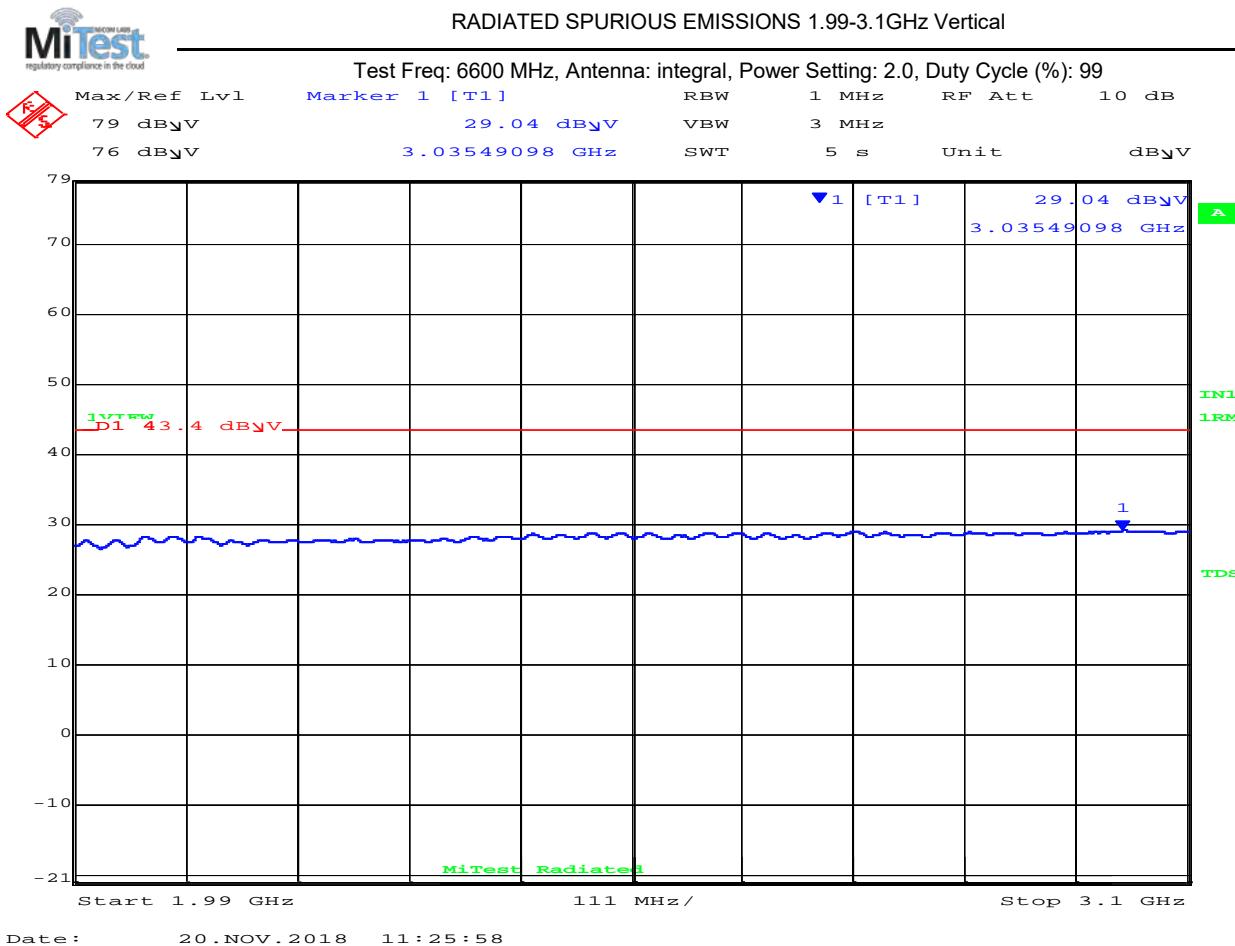


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 268 of 466

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 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.										

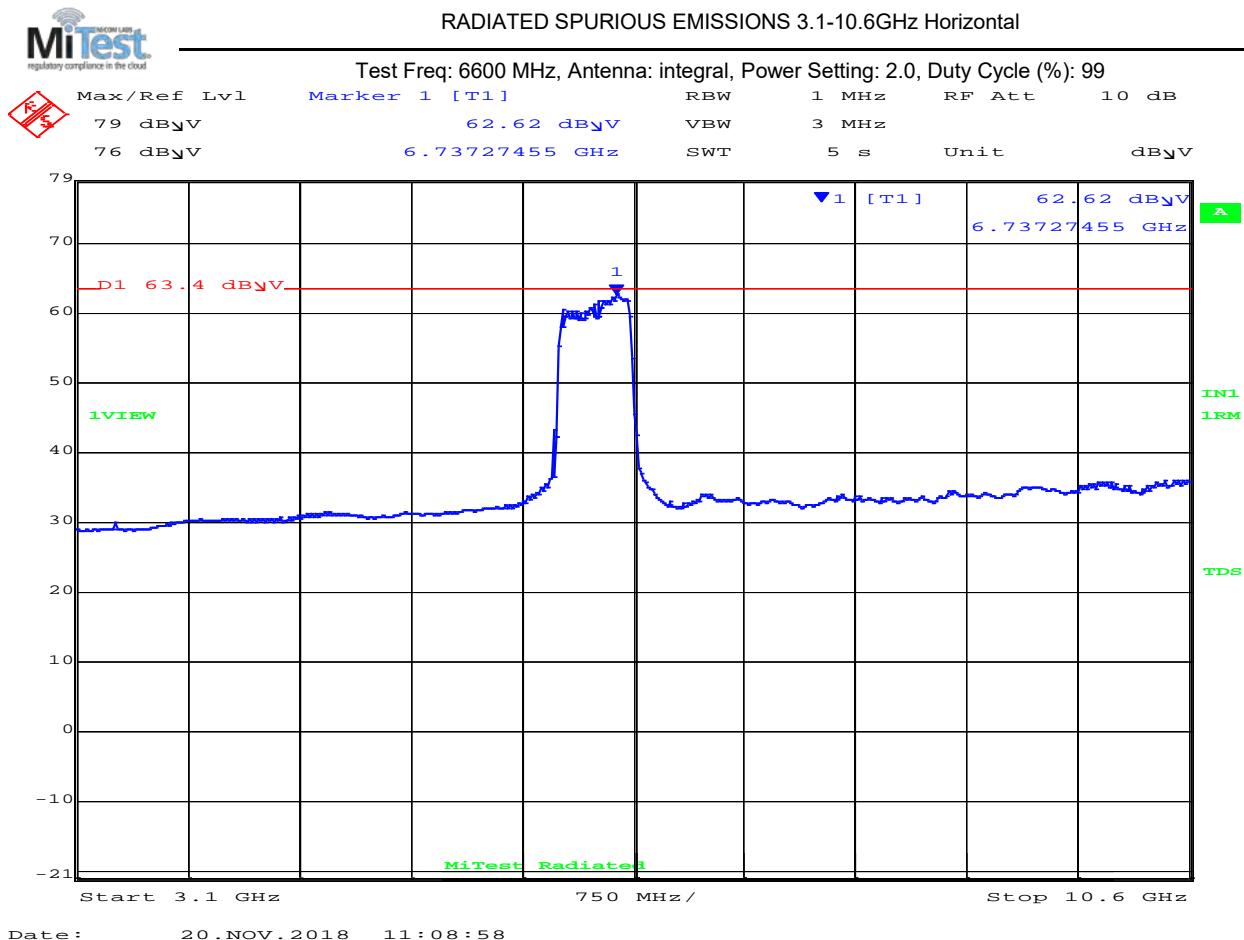
Test Notes:
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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.

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



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)

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.

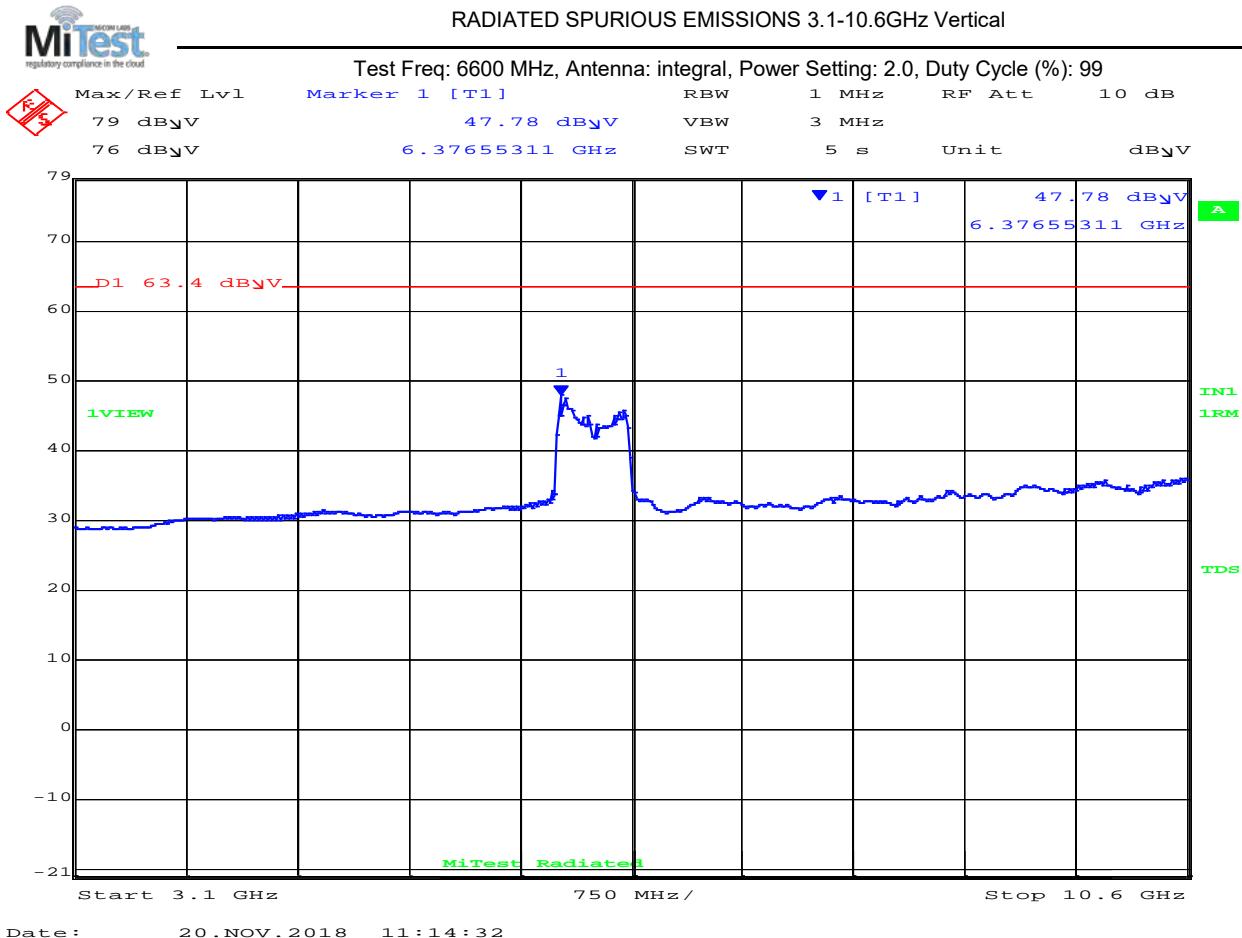


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 270 of 466

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



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)										

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.

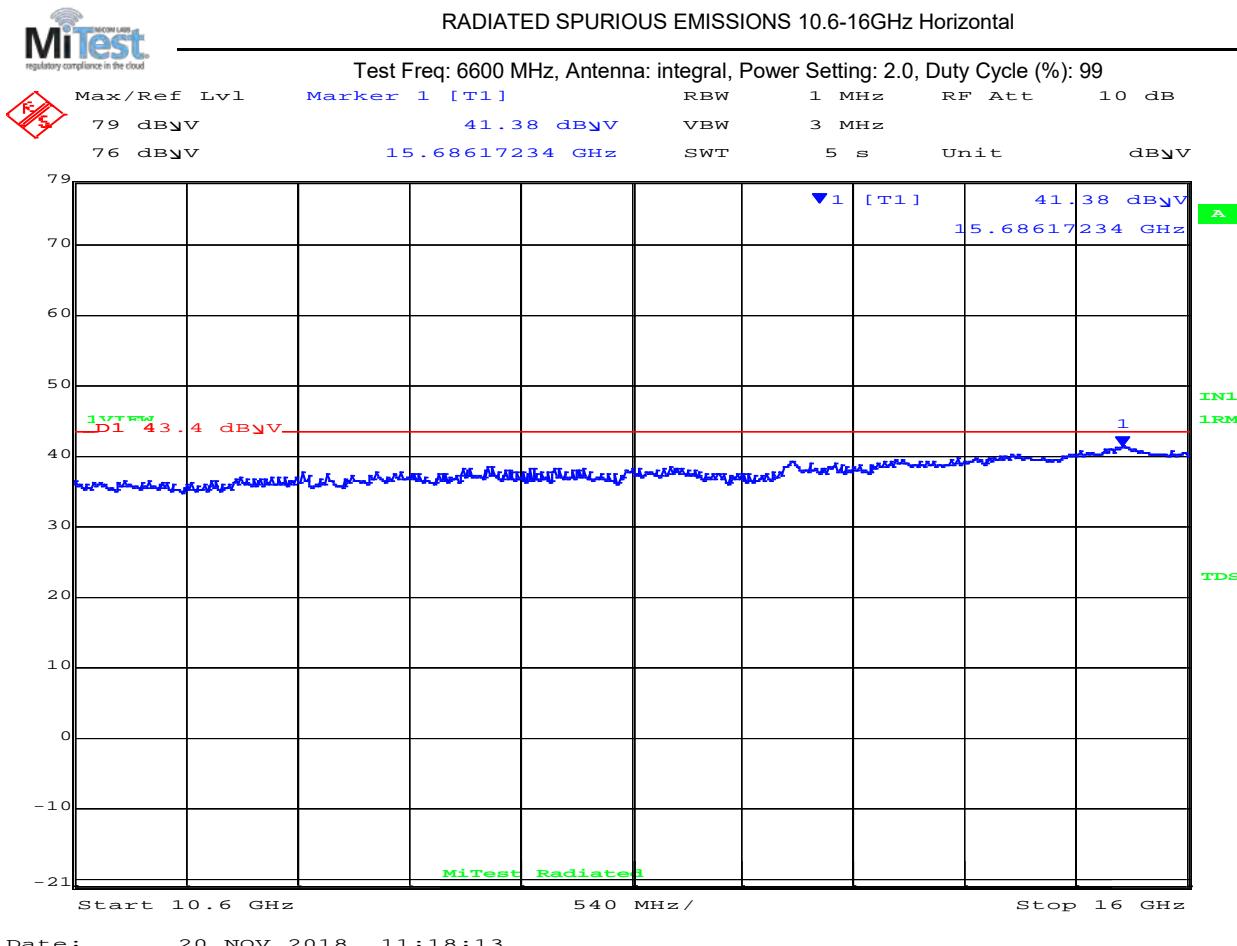


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 271 of 466

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



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	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)

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.

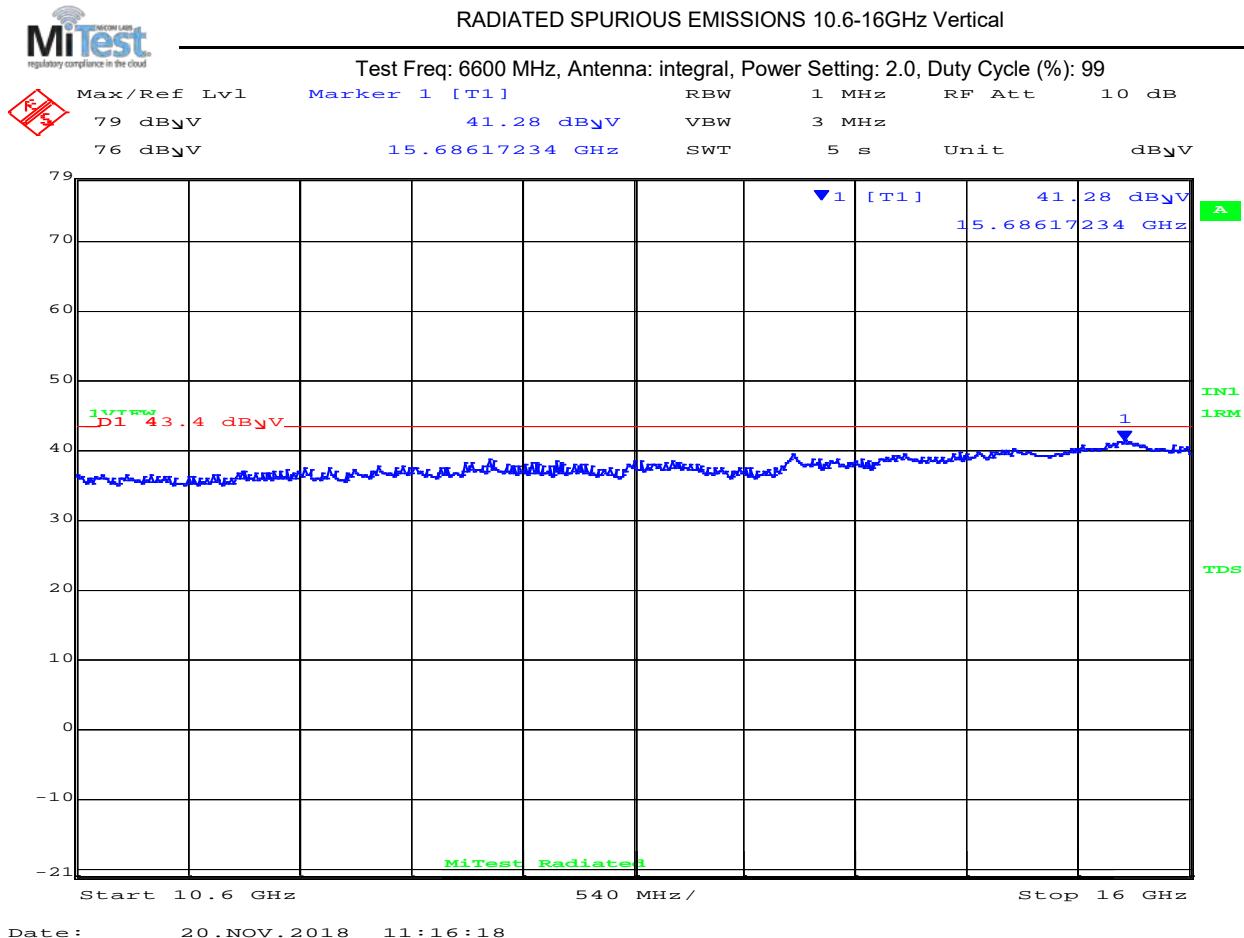


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 272 of 466

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



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	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)

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.

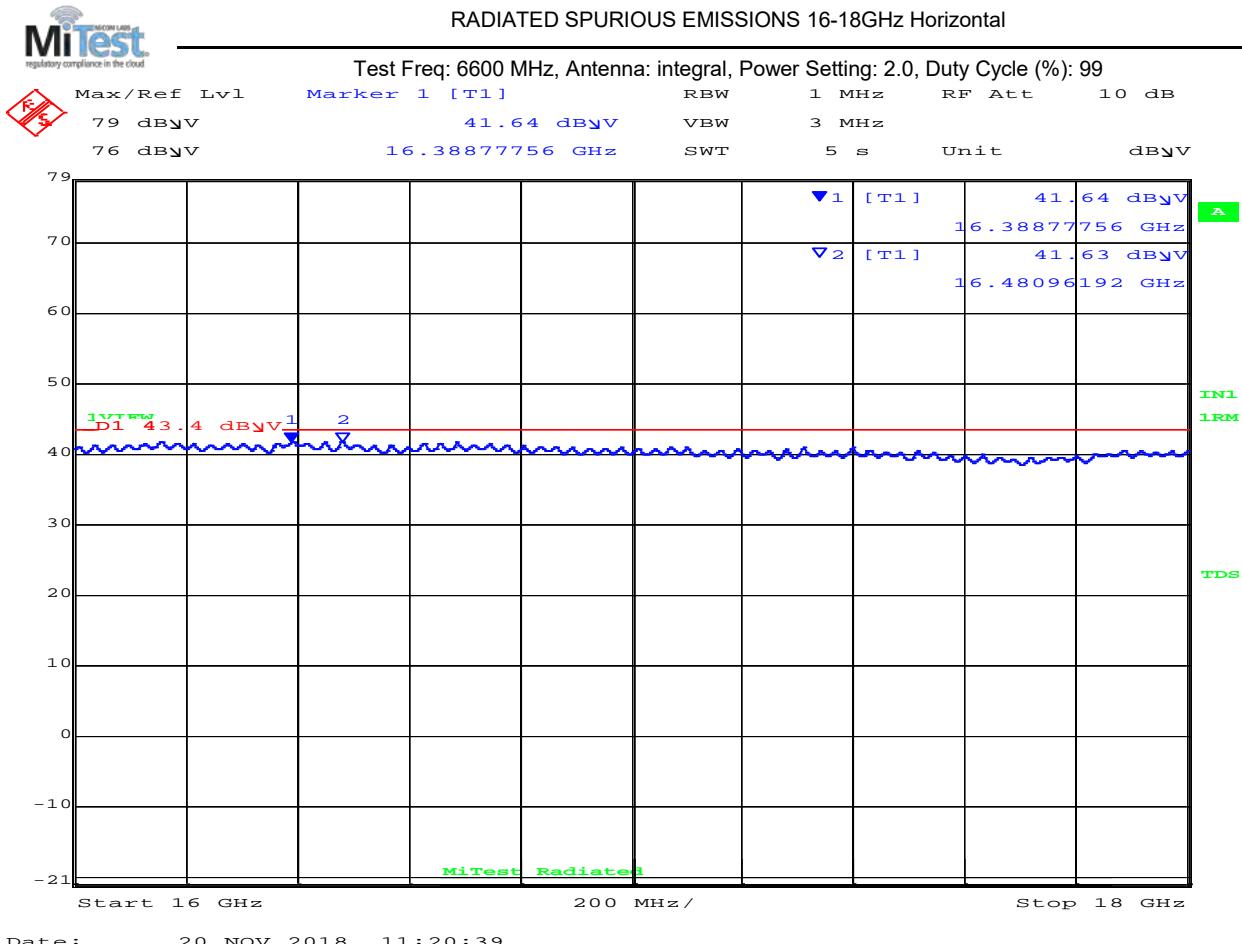


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 273 of 466

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



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	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:

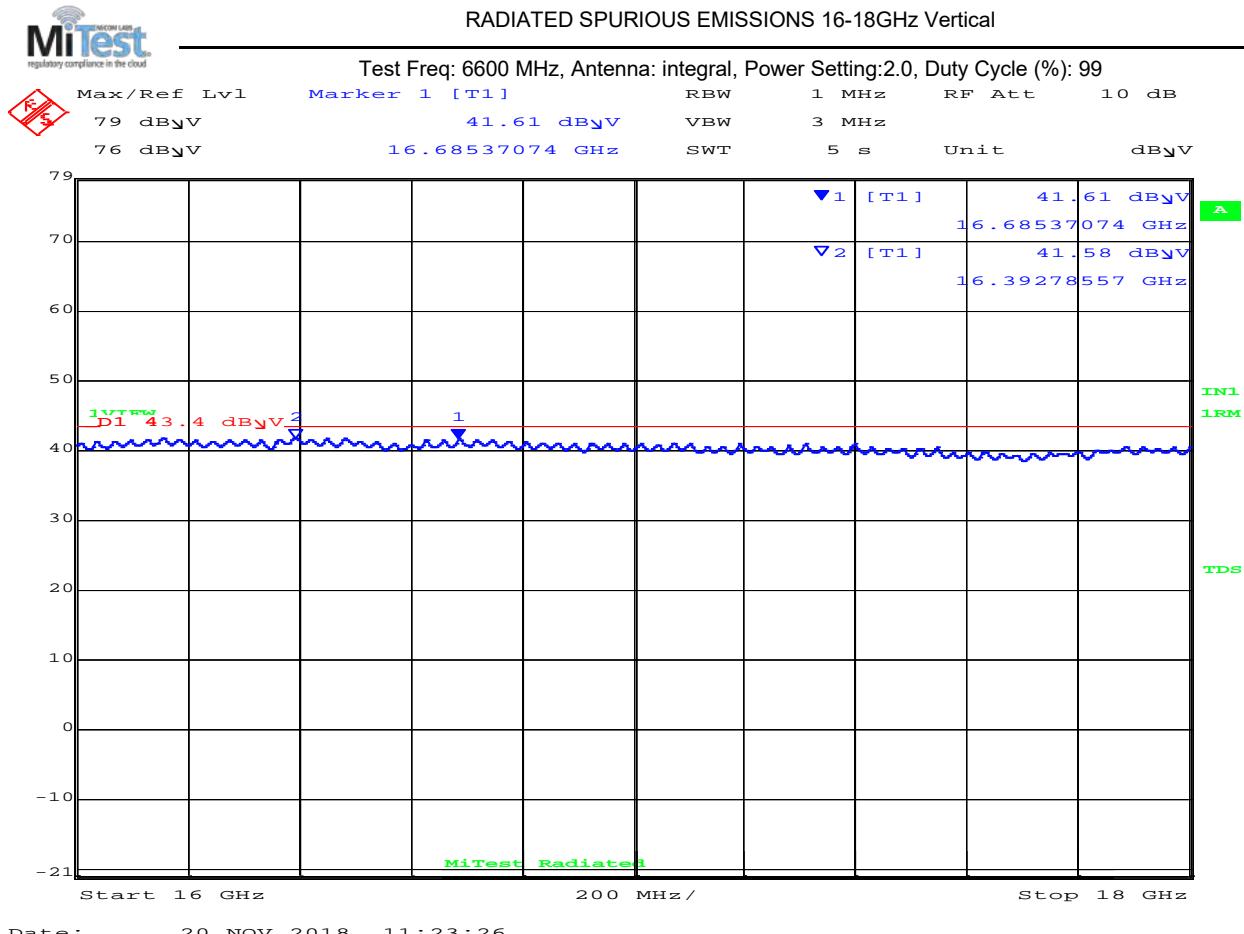
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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.

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



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)

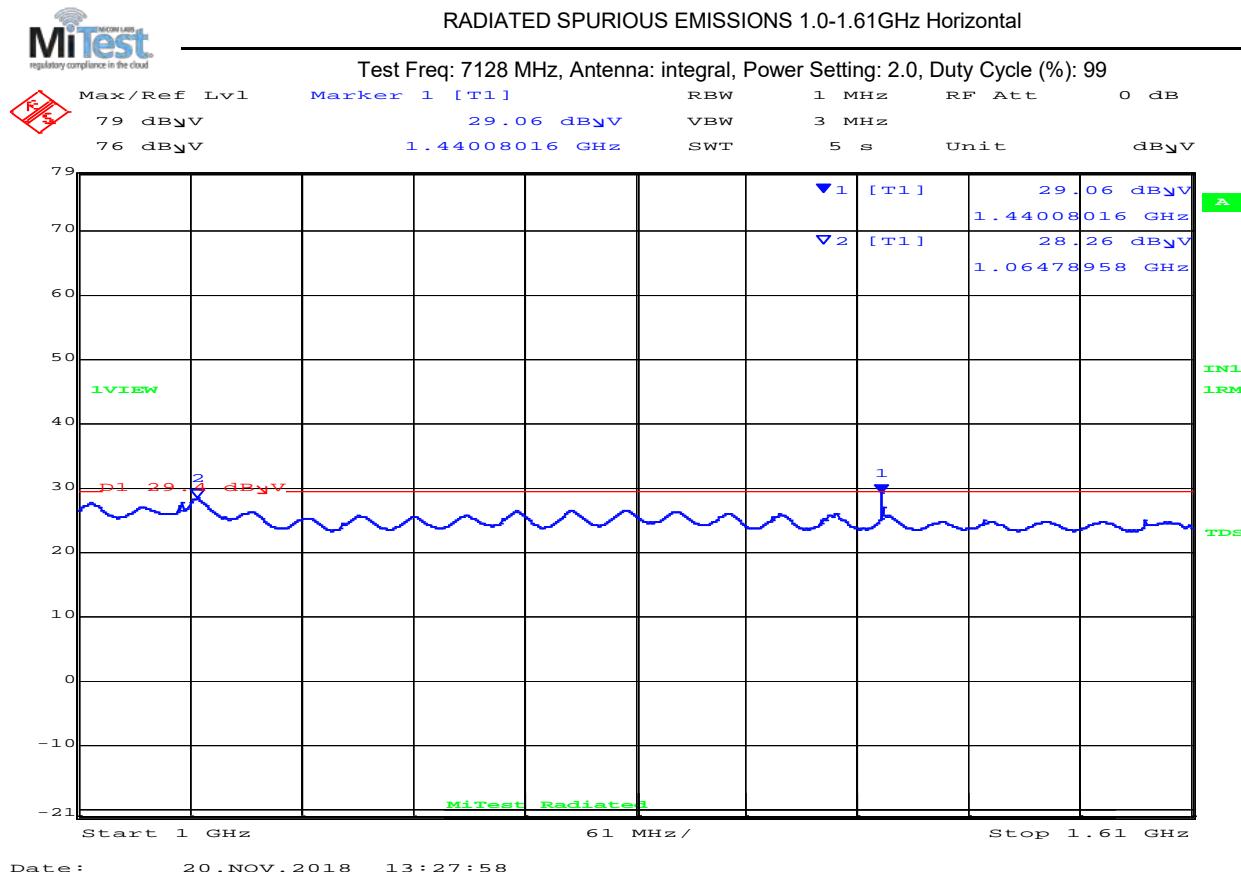
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

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 dB _{µV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{µV/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)

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.

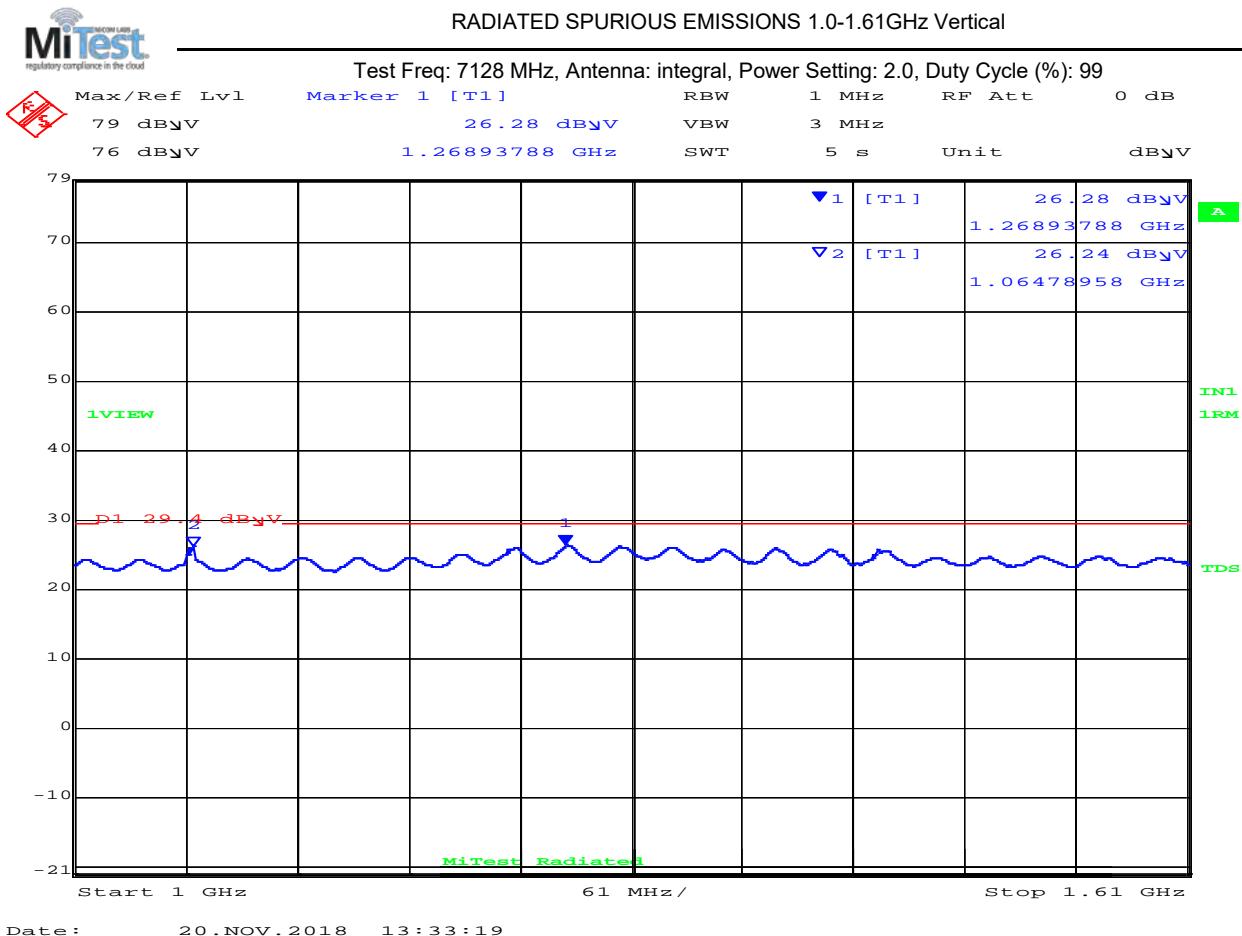


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 276 of 466

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 dB _μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _μ V/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)

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.

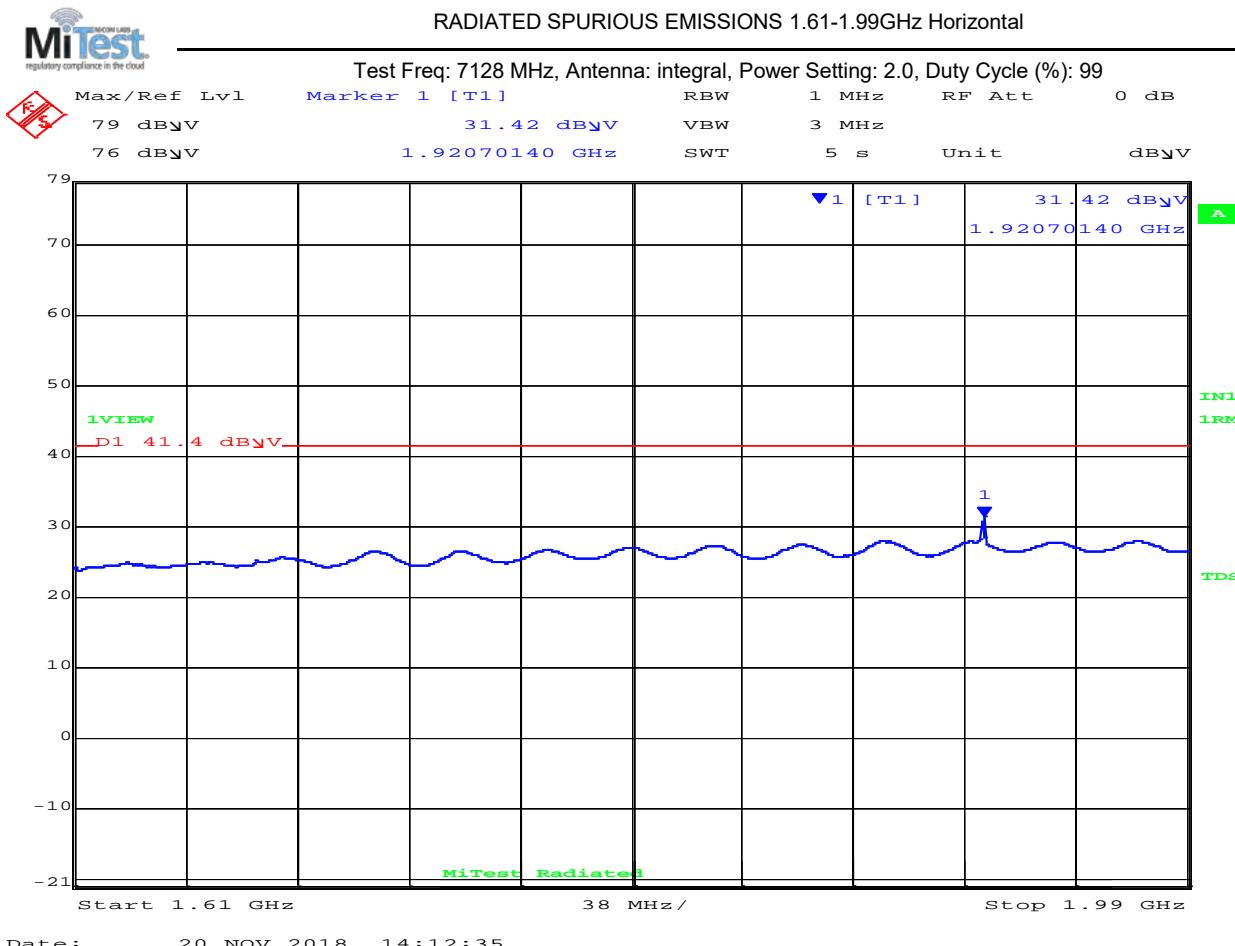


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 277 of 466

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 dB _{µV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{µV/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.

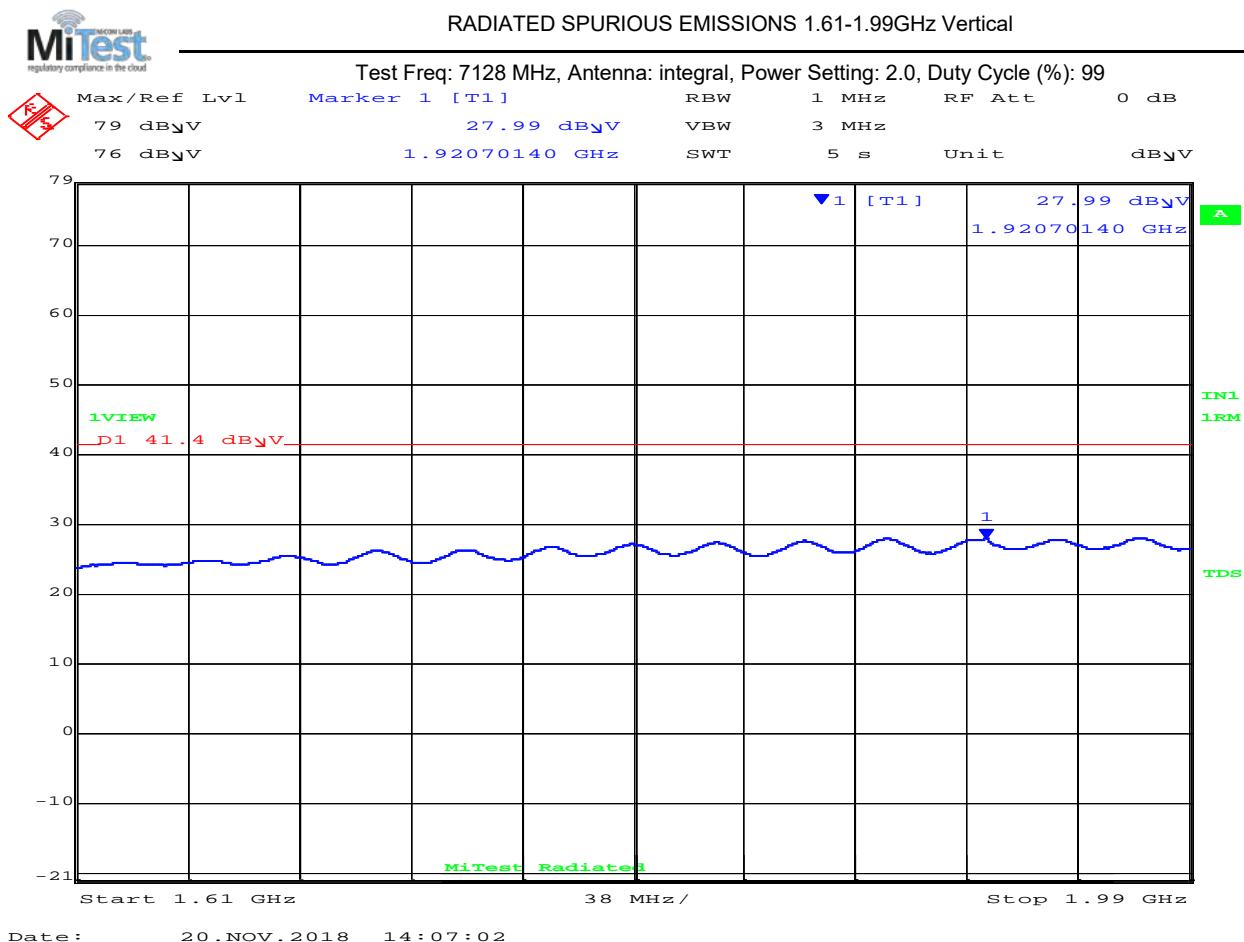


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 278 of 466

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



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)										

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.

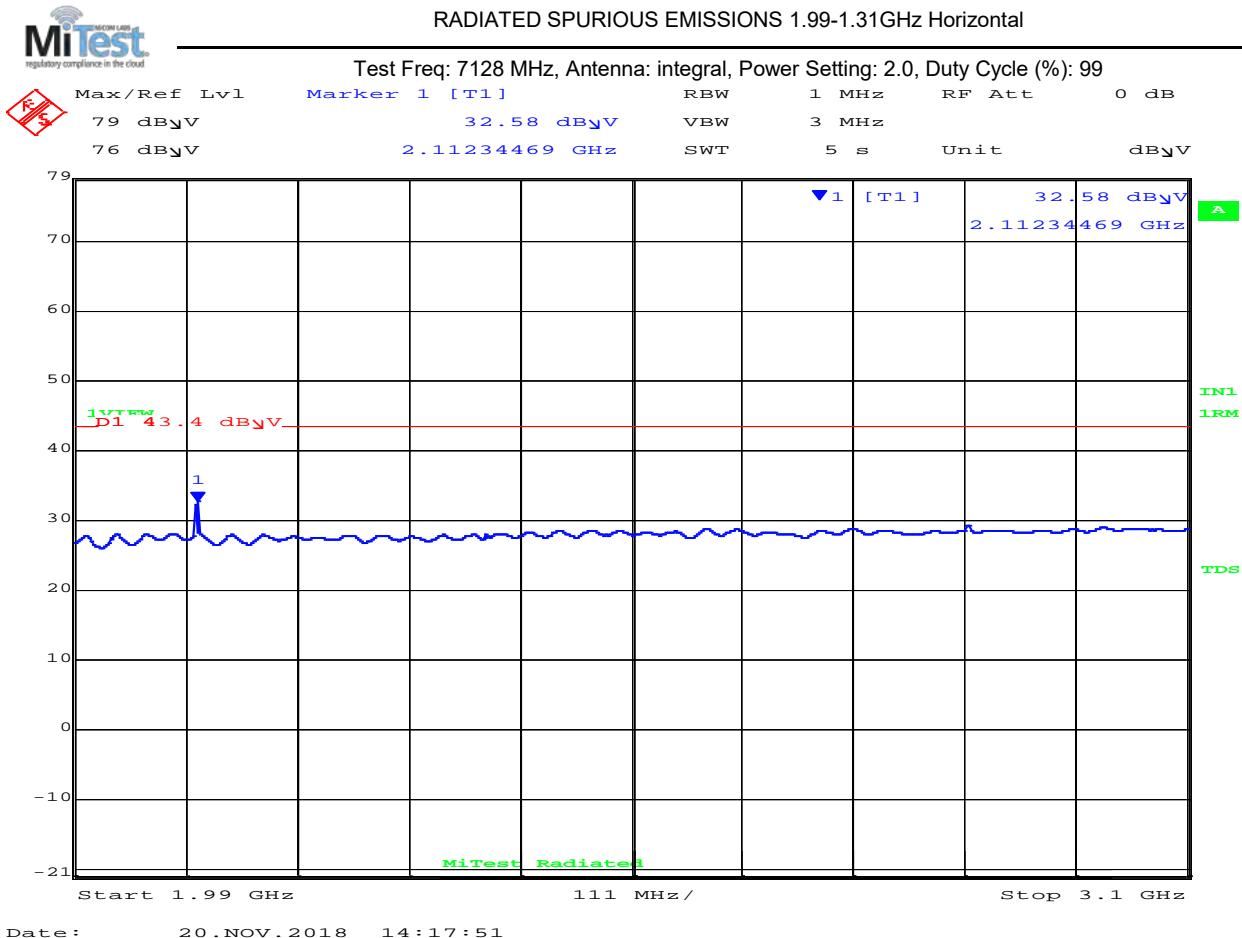


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 279 of 466

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



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)										

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.

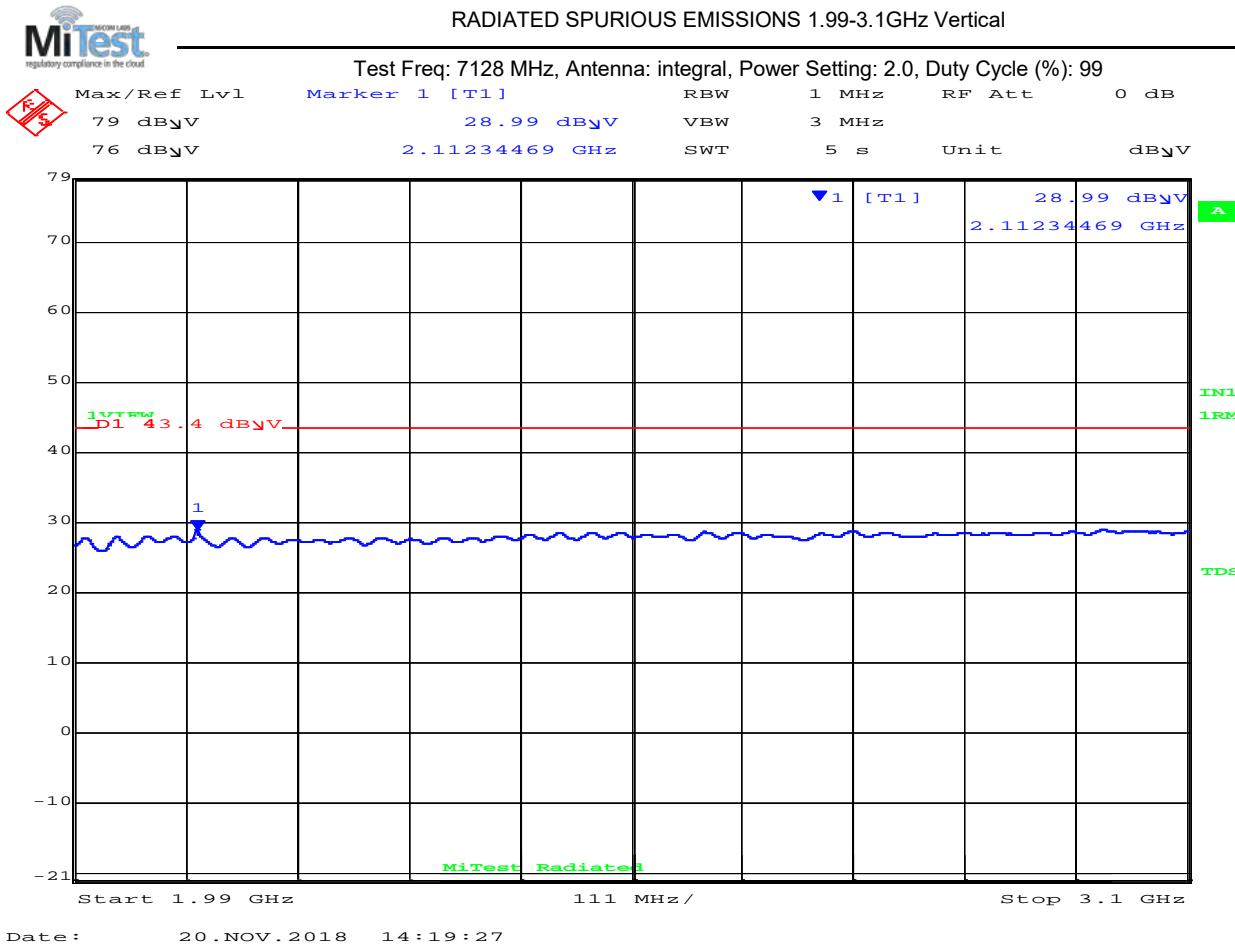


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 280 of 466

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):	7128.00	Data Rate:	
Power Setting:	2.0	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										

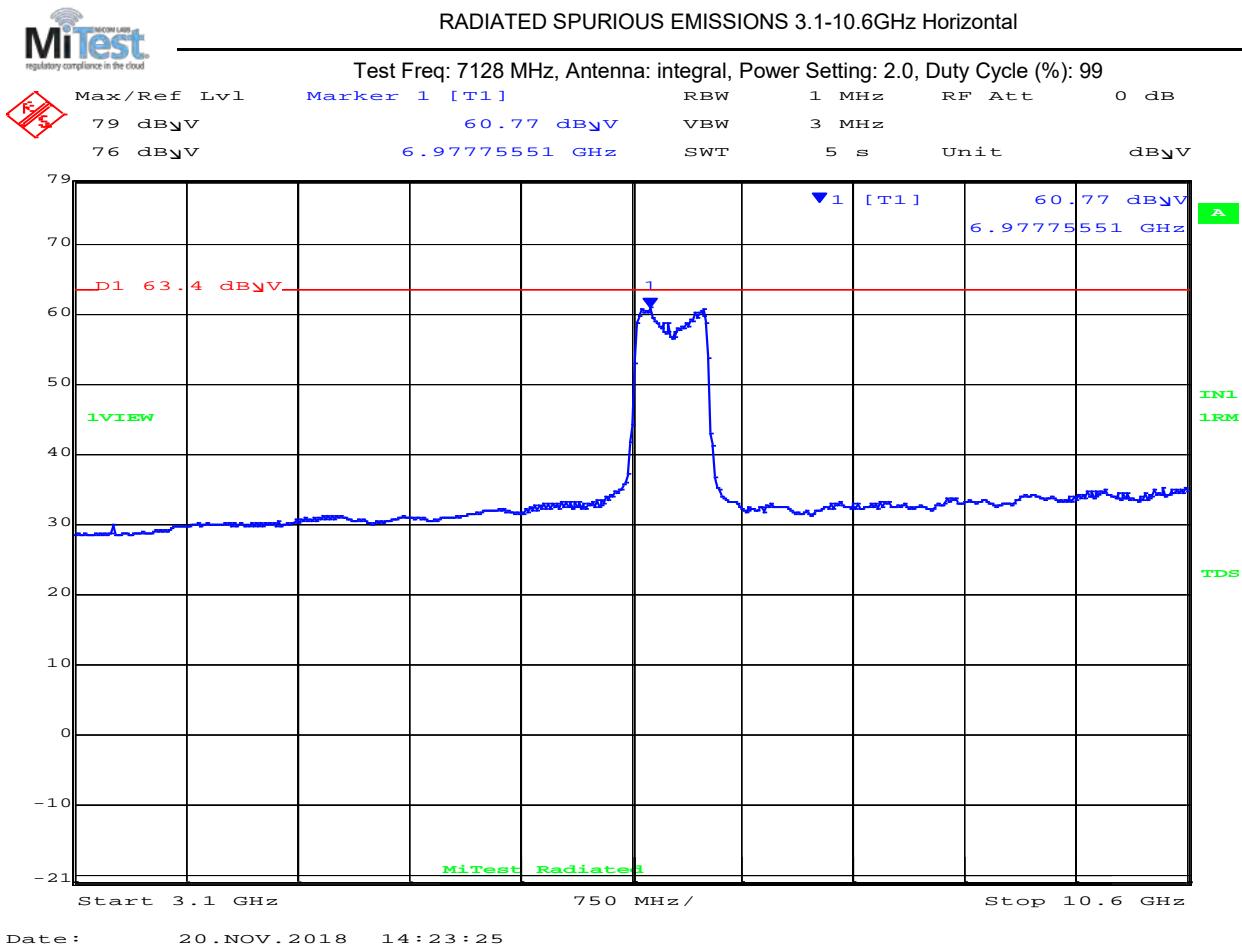
Test Notes:
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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.

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)

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.

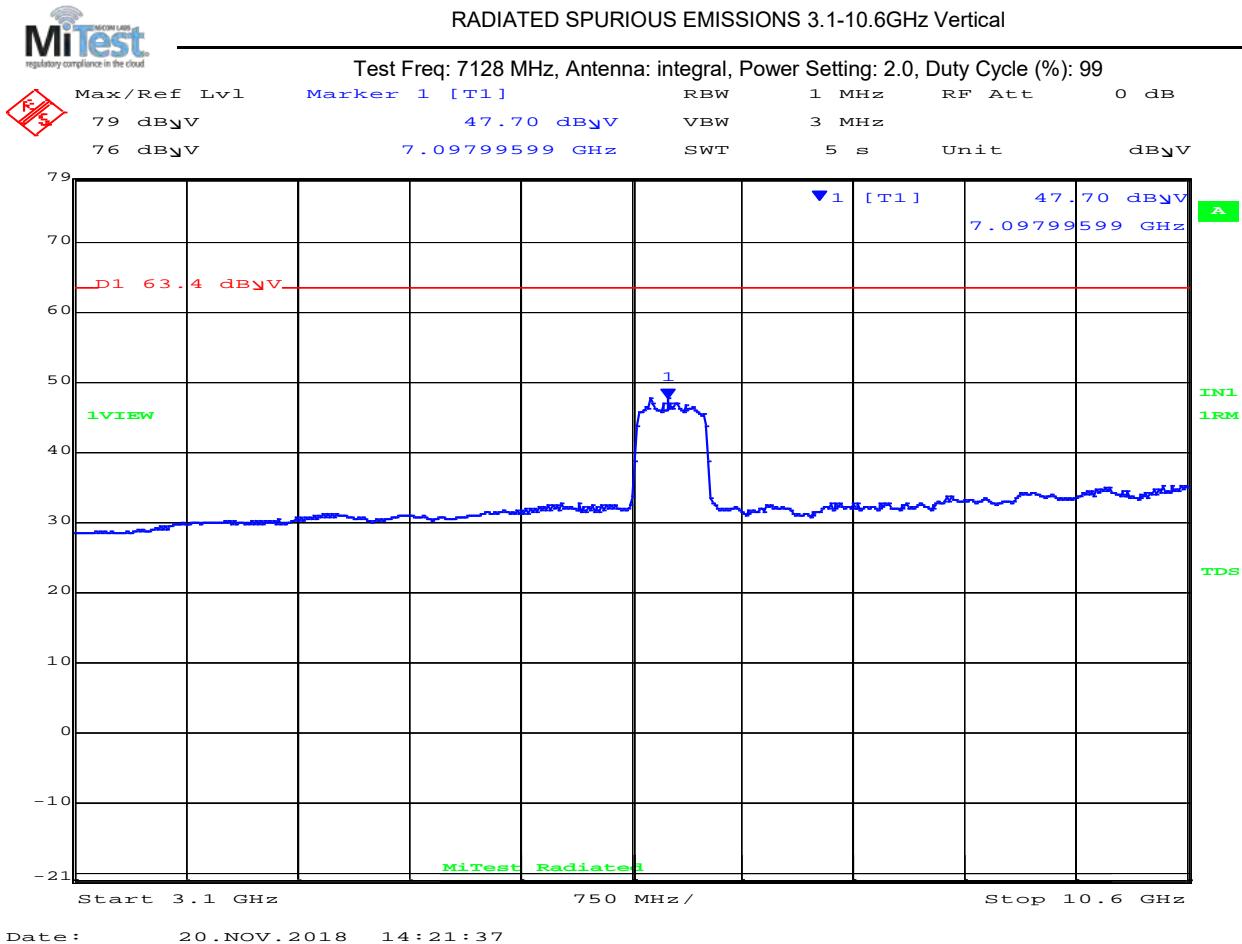


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 282 of 466

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)										

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

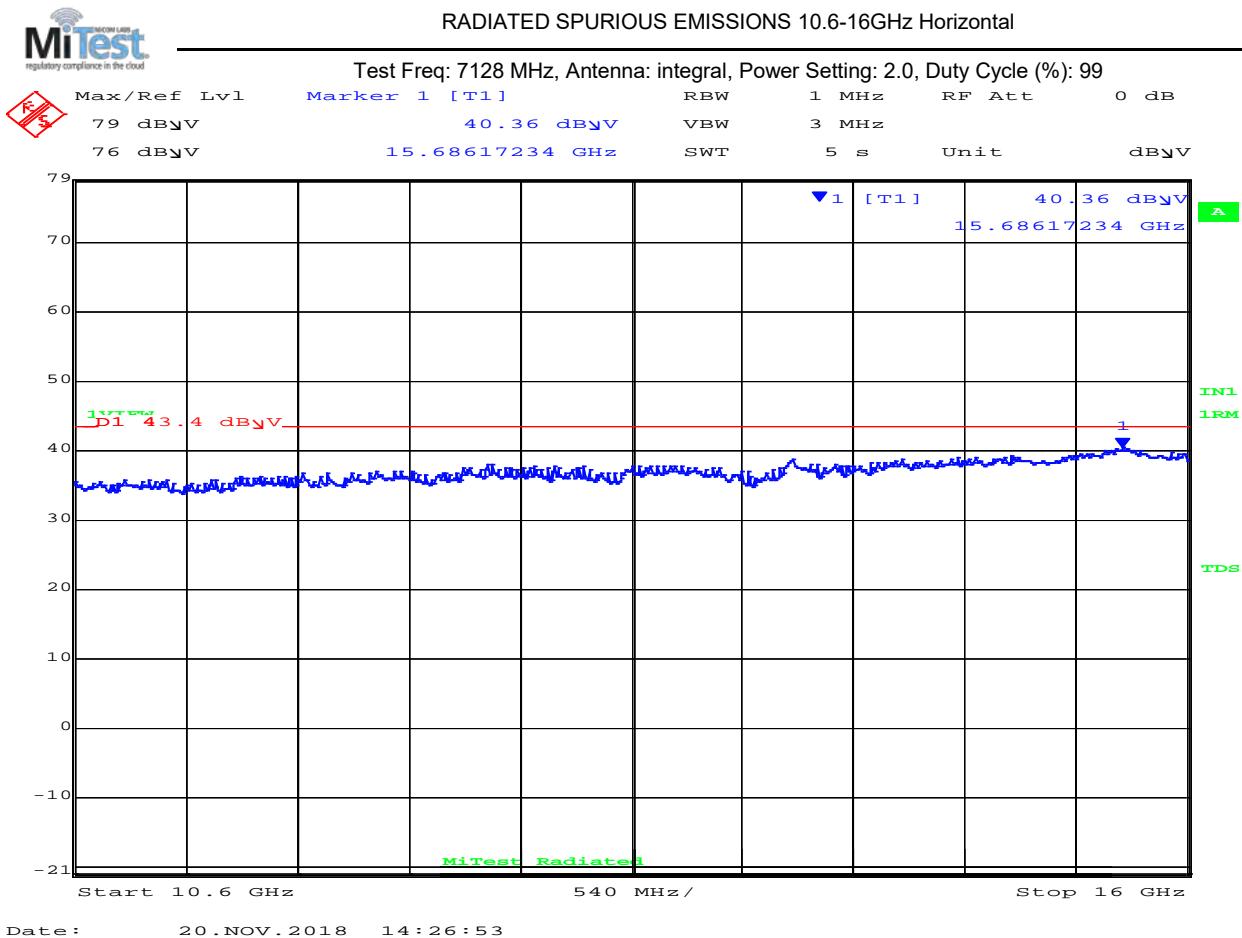
Issue Date: 12th December 2018

Page: 283 of 466

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



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)

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.

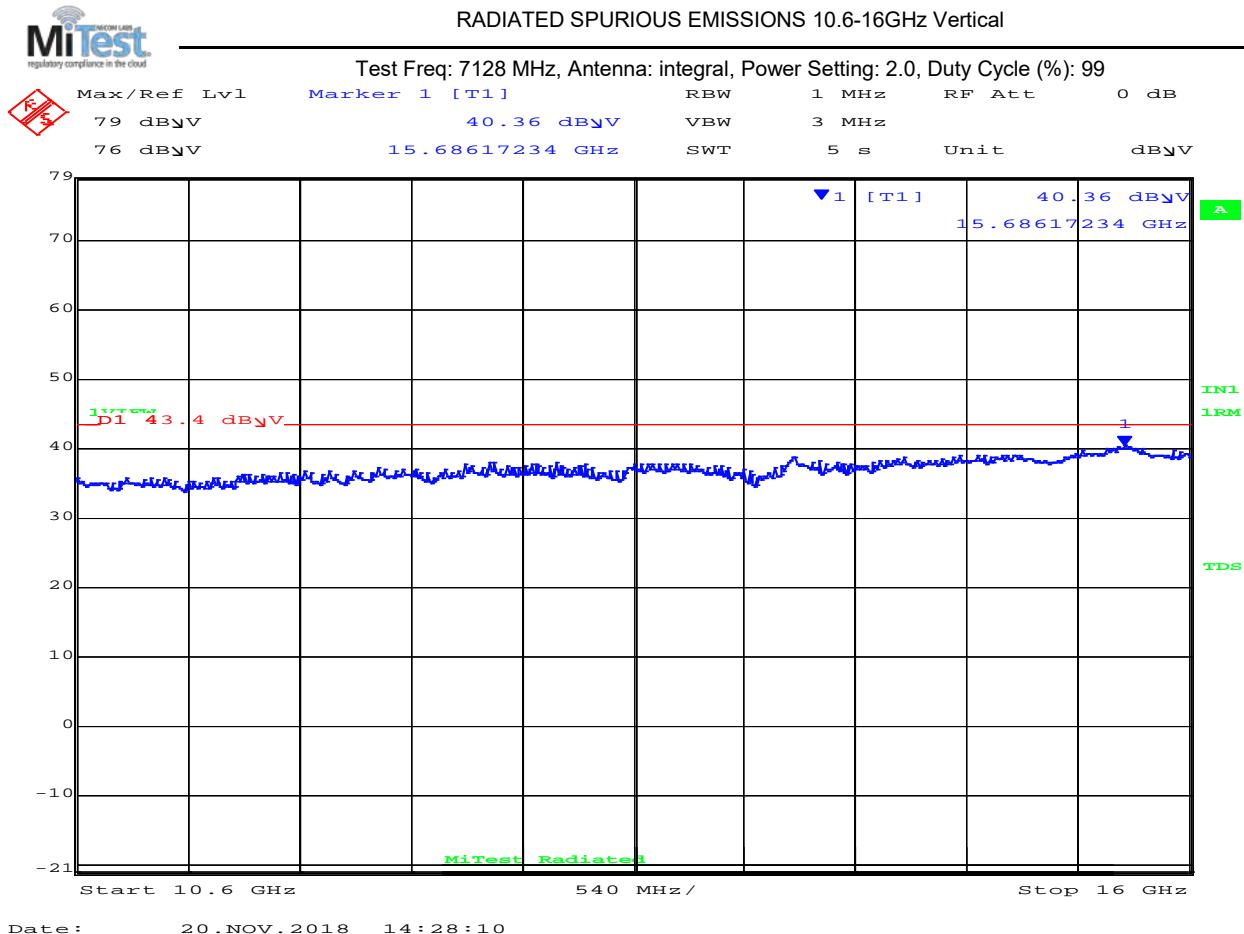


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 284 of 466

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 dB _μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _μ V/m	Margin dB	Pass /Fail
1	15686.2	39.3	Average	Vertical	150	0	43.4	-4.1	Pass

Test Notes:

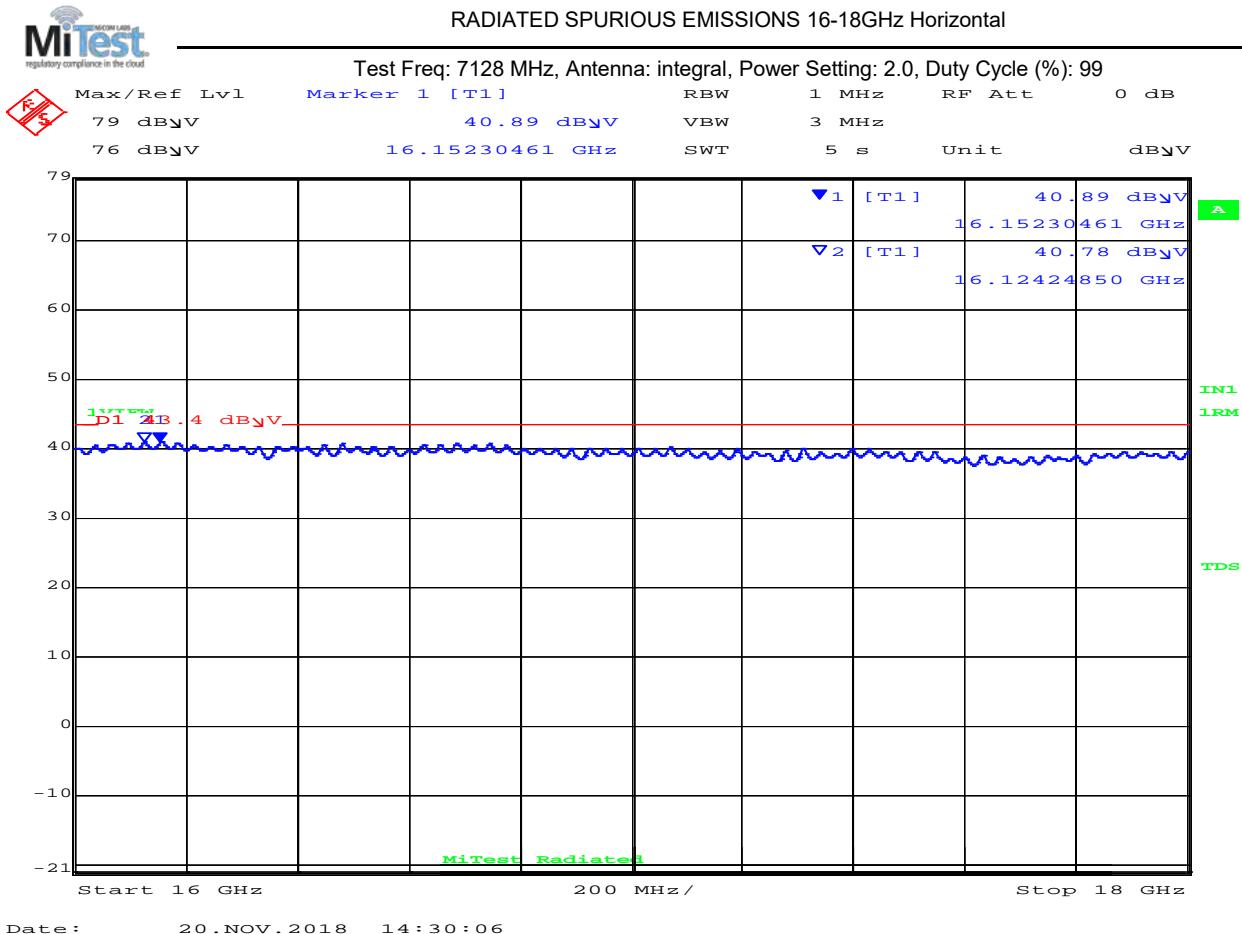
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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.

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)

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.

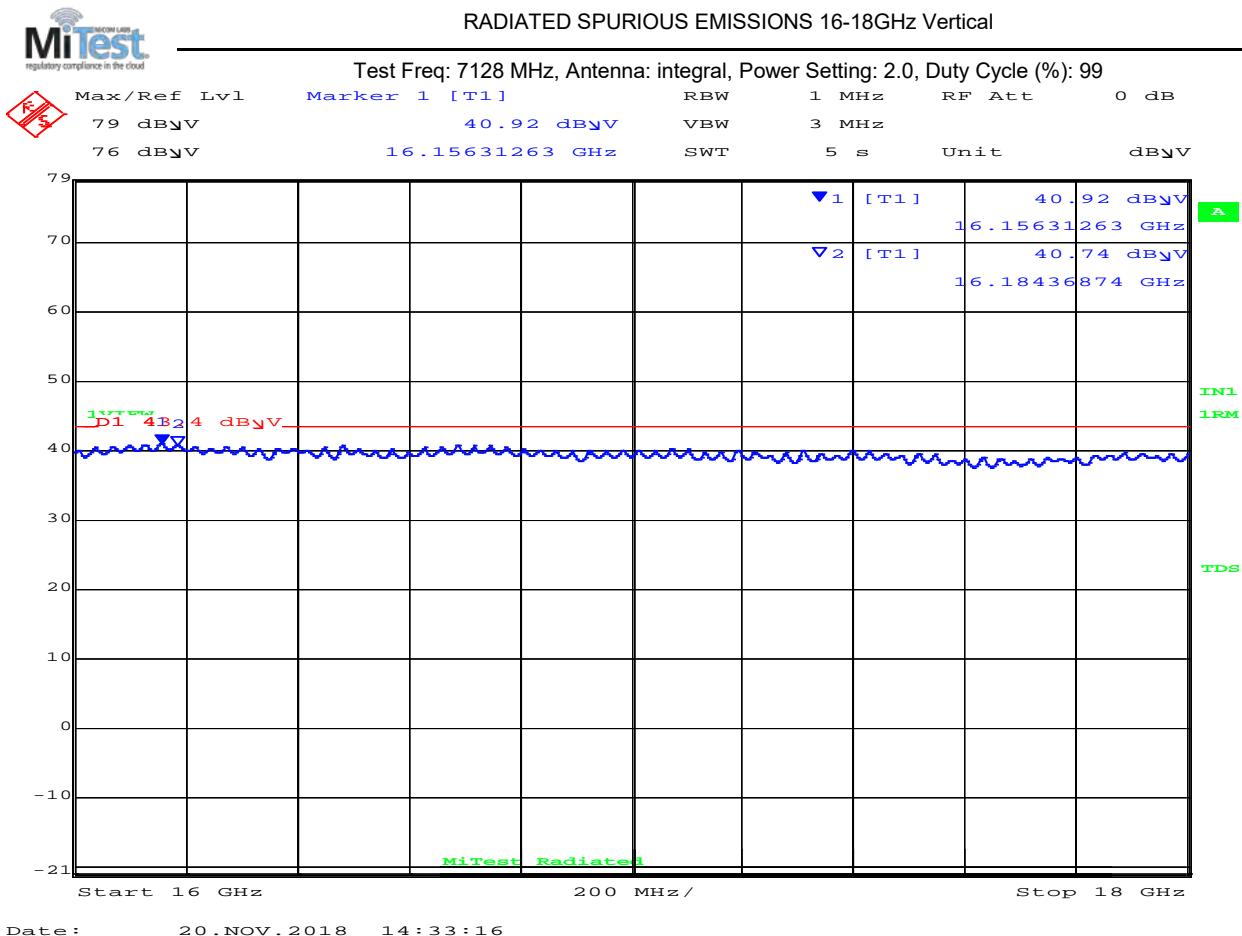


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 286 of 466

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 dB _μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _μ V/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)

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.



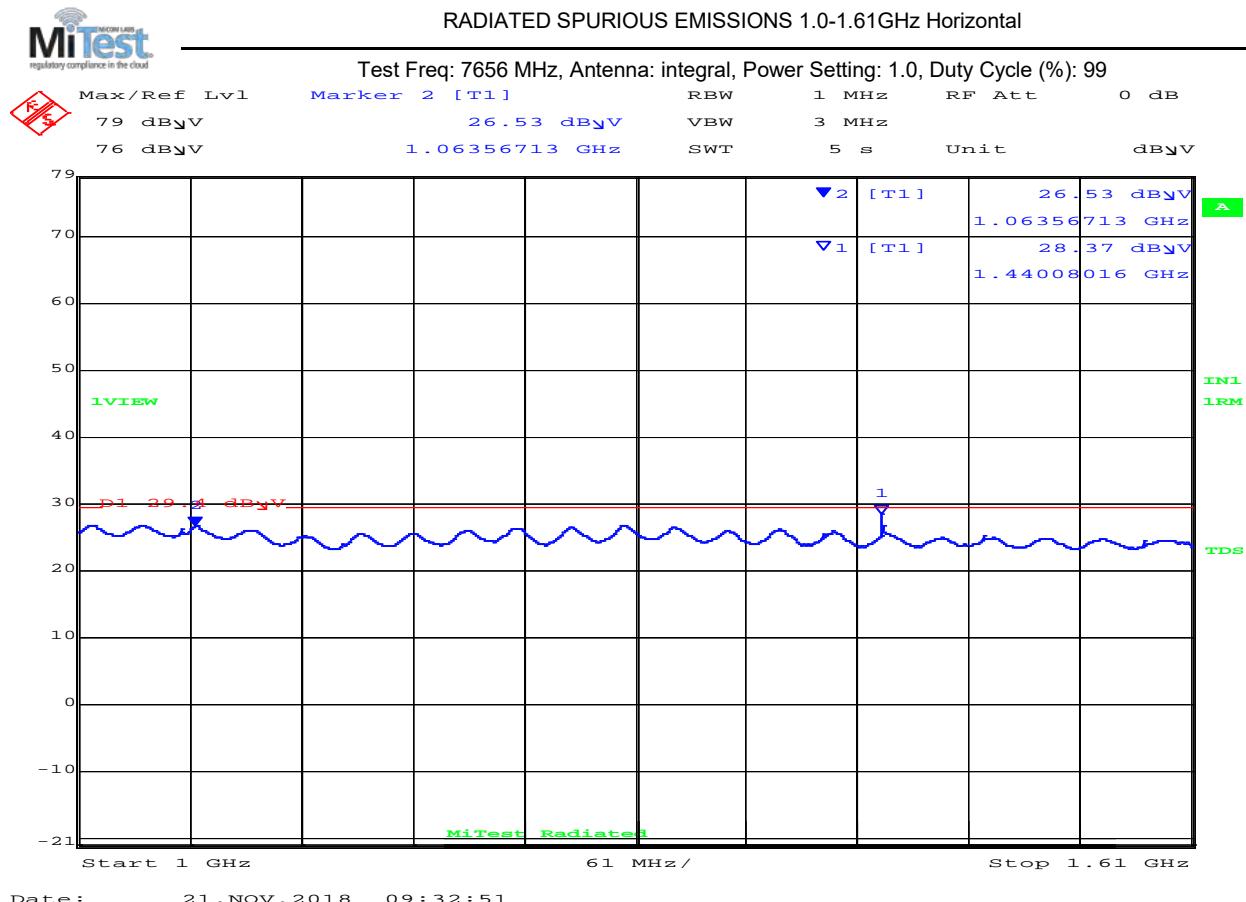
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 287 of 466

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 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	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)

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.

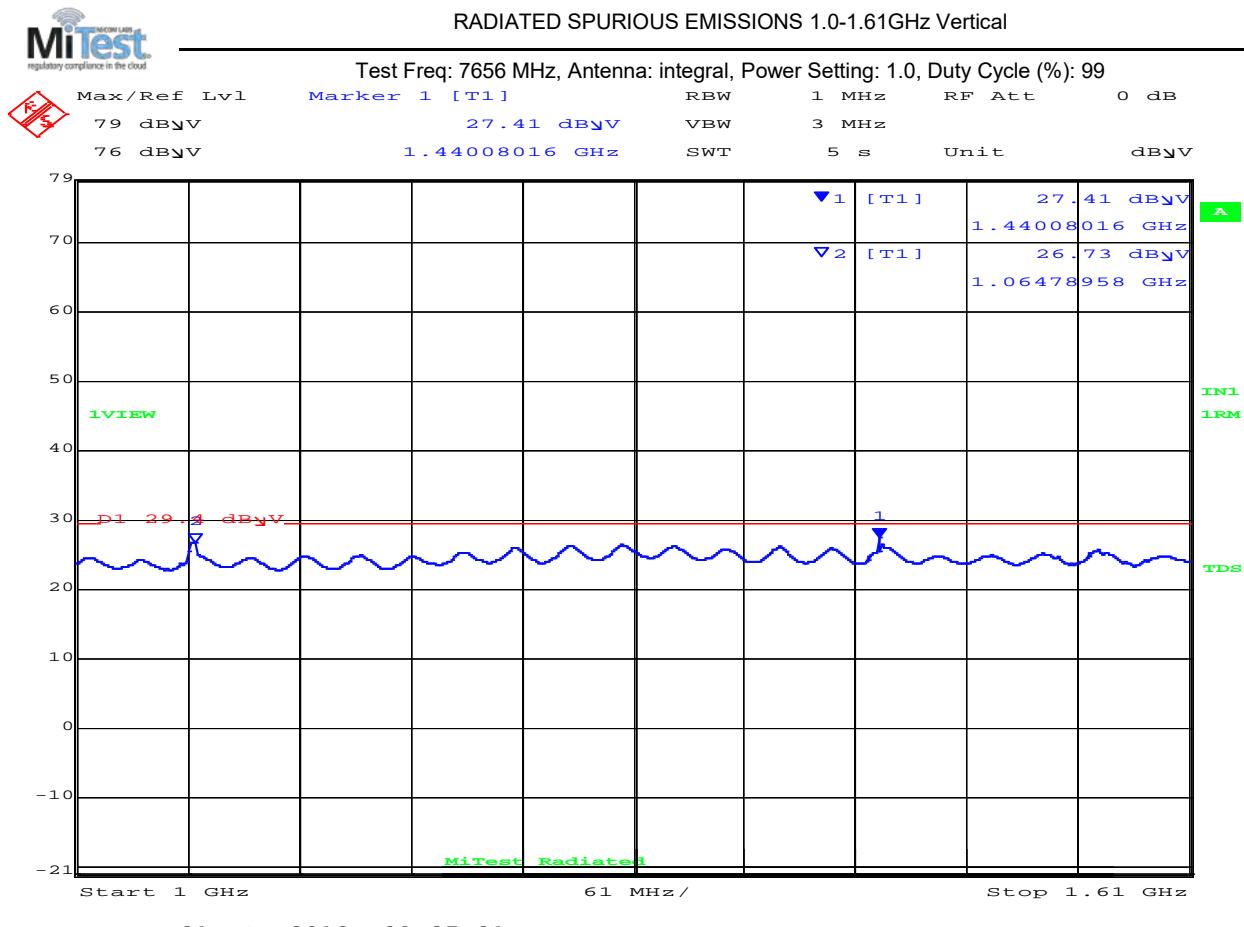


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 288 of 466

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



Date: 21.NOV.2018 09:27:21

1000.00–1610.00 MHz

Num	Frequency MHz	Level dB _{μV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{μV/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:

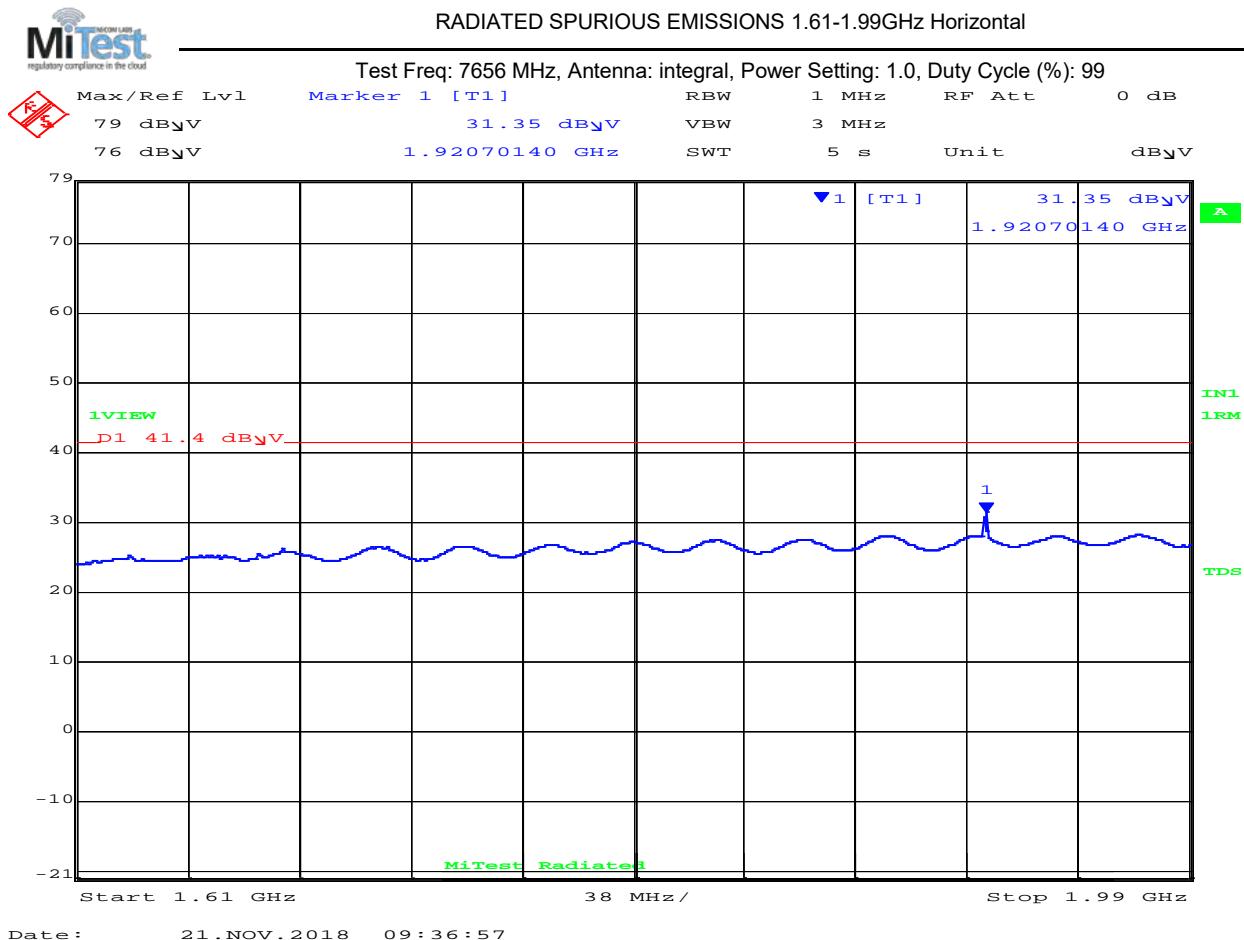
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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.

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



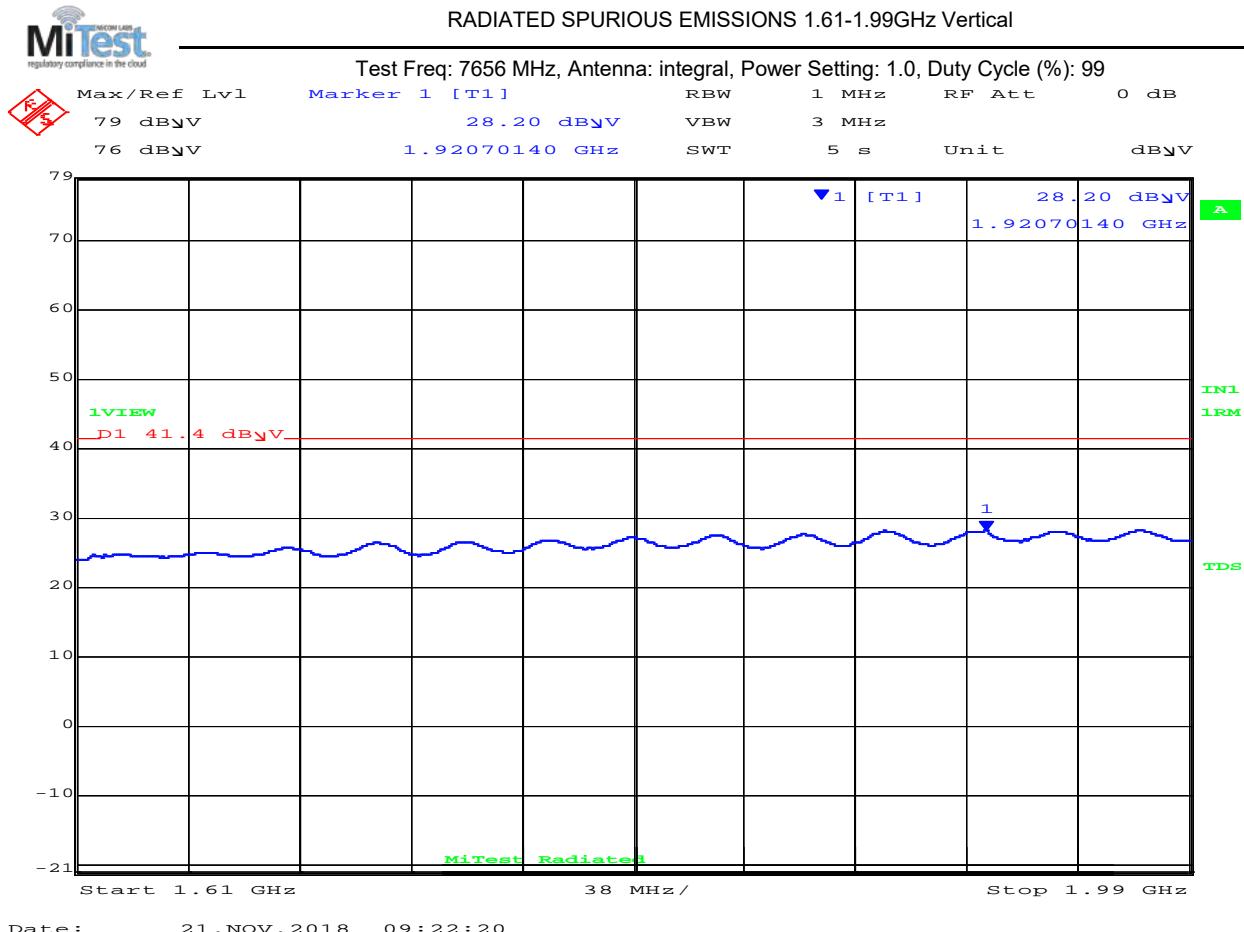
1610.00 – 1990.00 MHz										
Num	Frequency MHz	Level dB _{µV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{µV/m}	Margin dB	Pass /Fail	
No Signals found within 6 dB of limit										
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one 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.

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 dB _{μV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{μV/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.

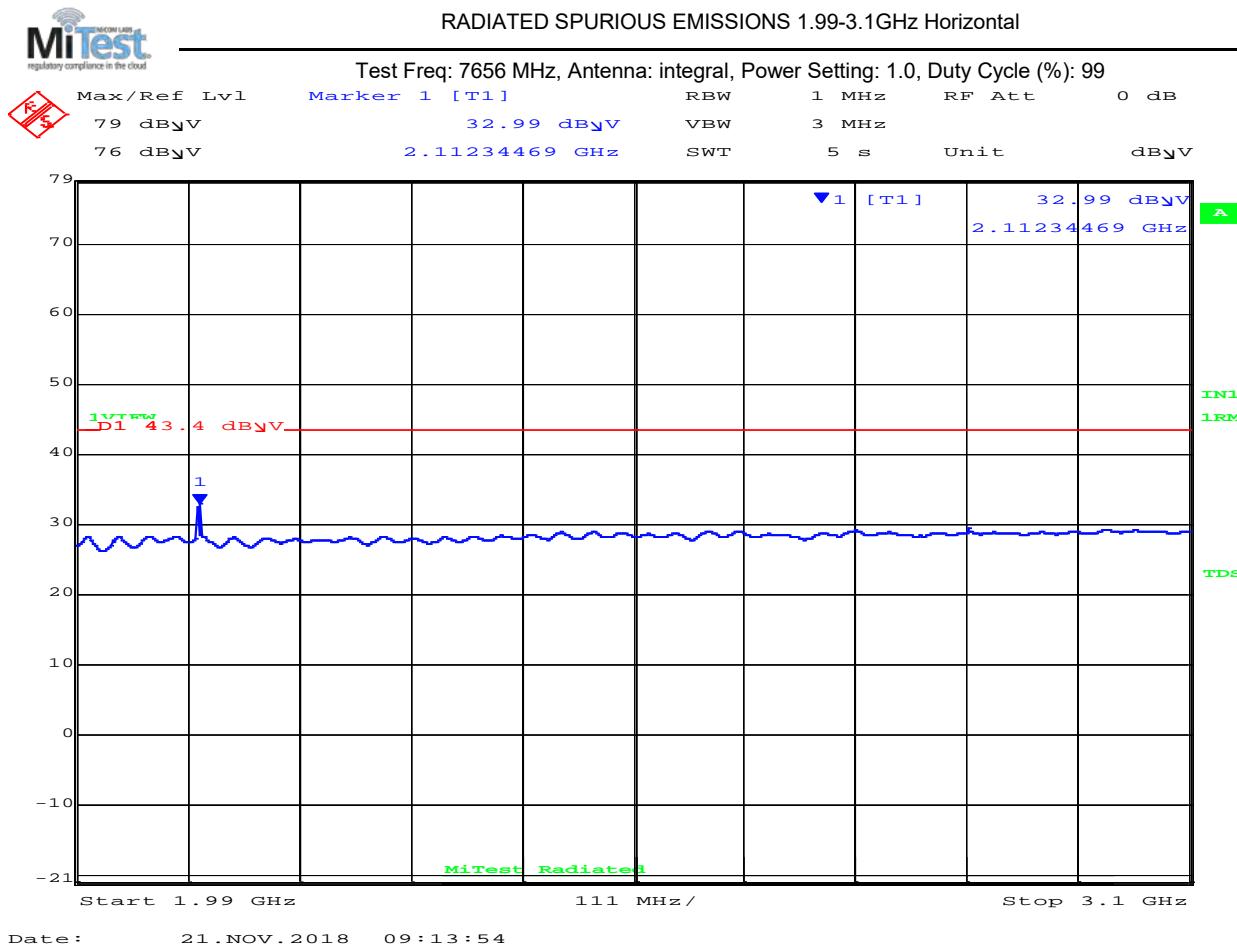


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 291 of 466

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 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)									

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.

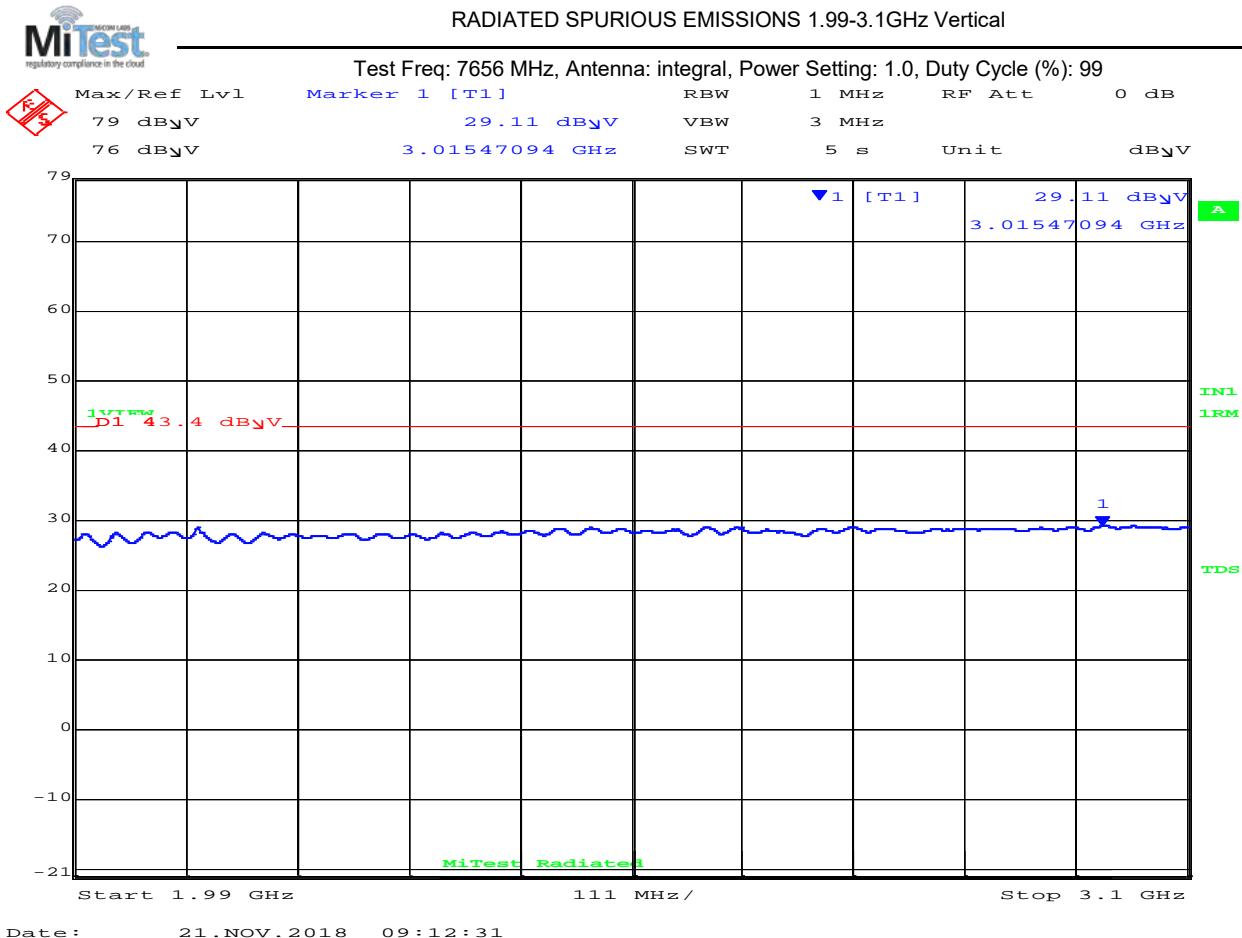


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 292 of 466

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



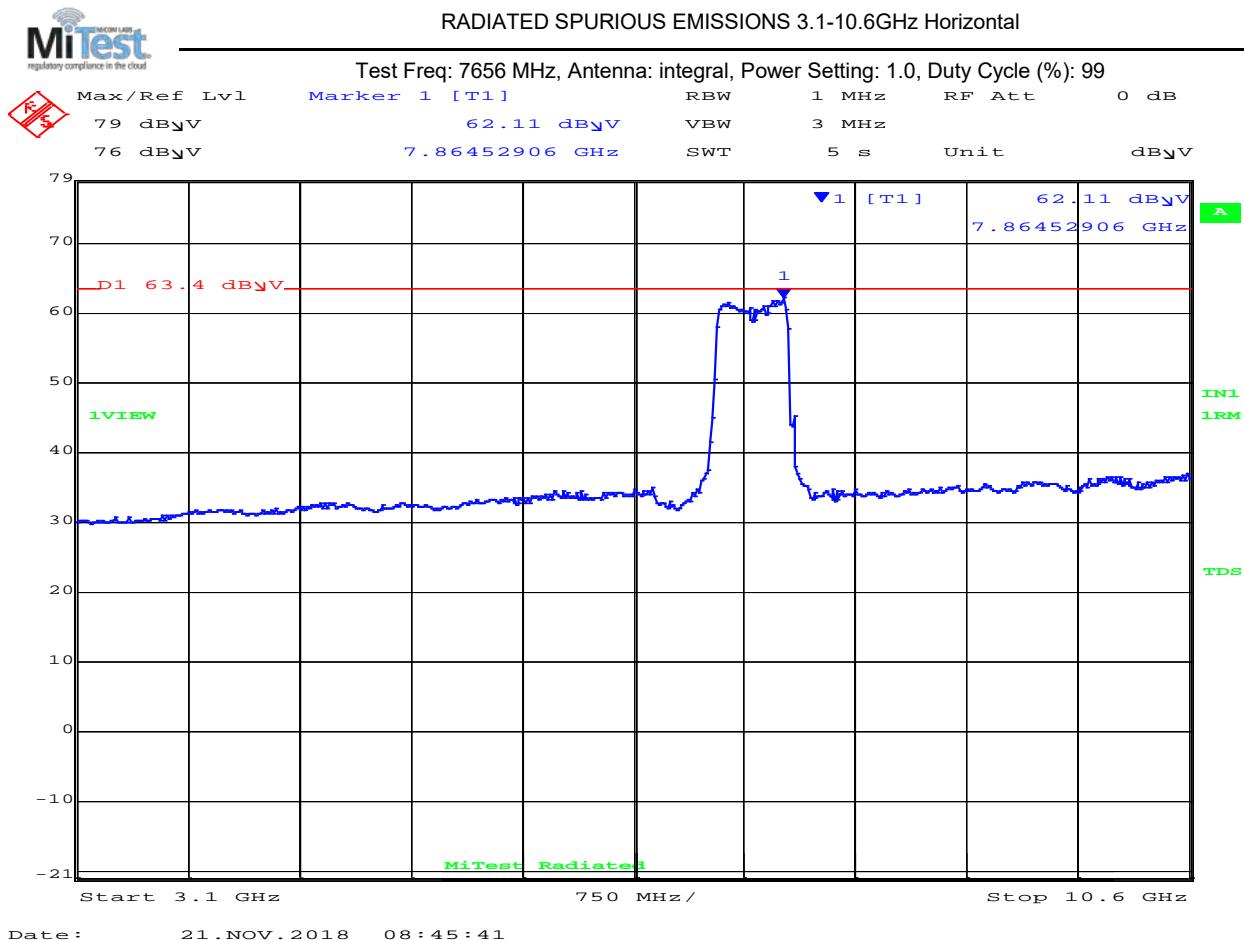
1990.00 – 3100.00 GHz										
Num	Frequency MHz	Level dB _{µV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{µV/m}	Margin dB	Pass /Fail	
No Signals found within 6 dB of limit										
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one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

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



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:

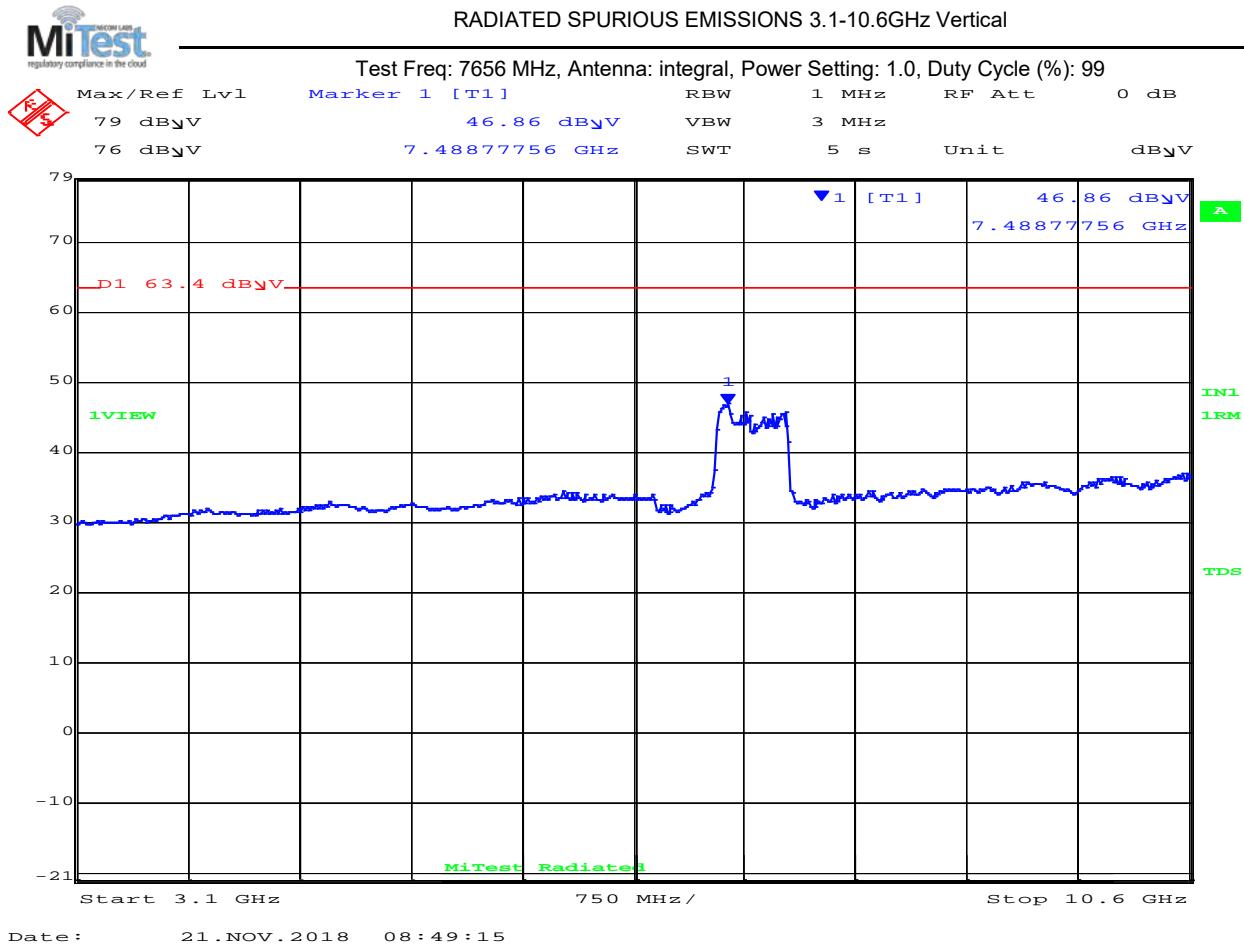
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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.

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 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)										

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.

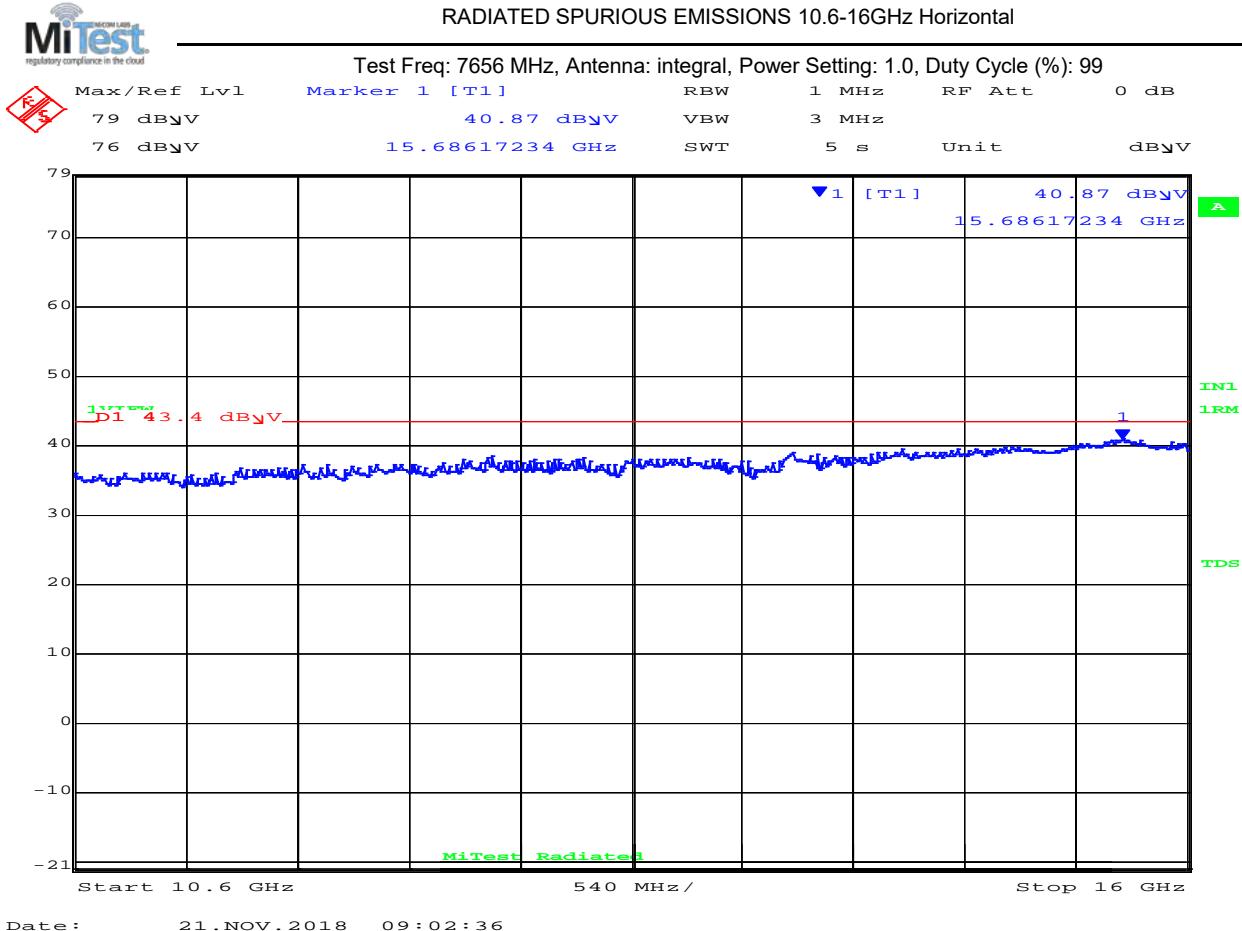


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 295 of 466

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



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)

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.

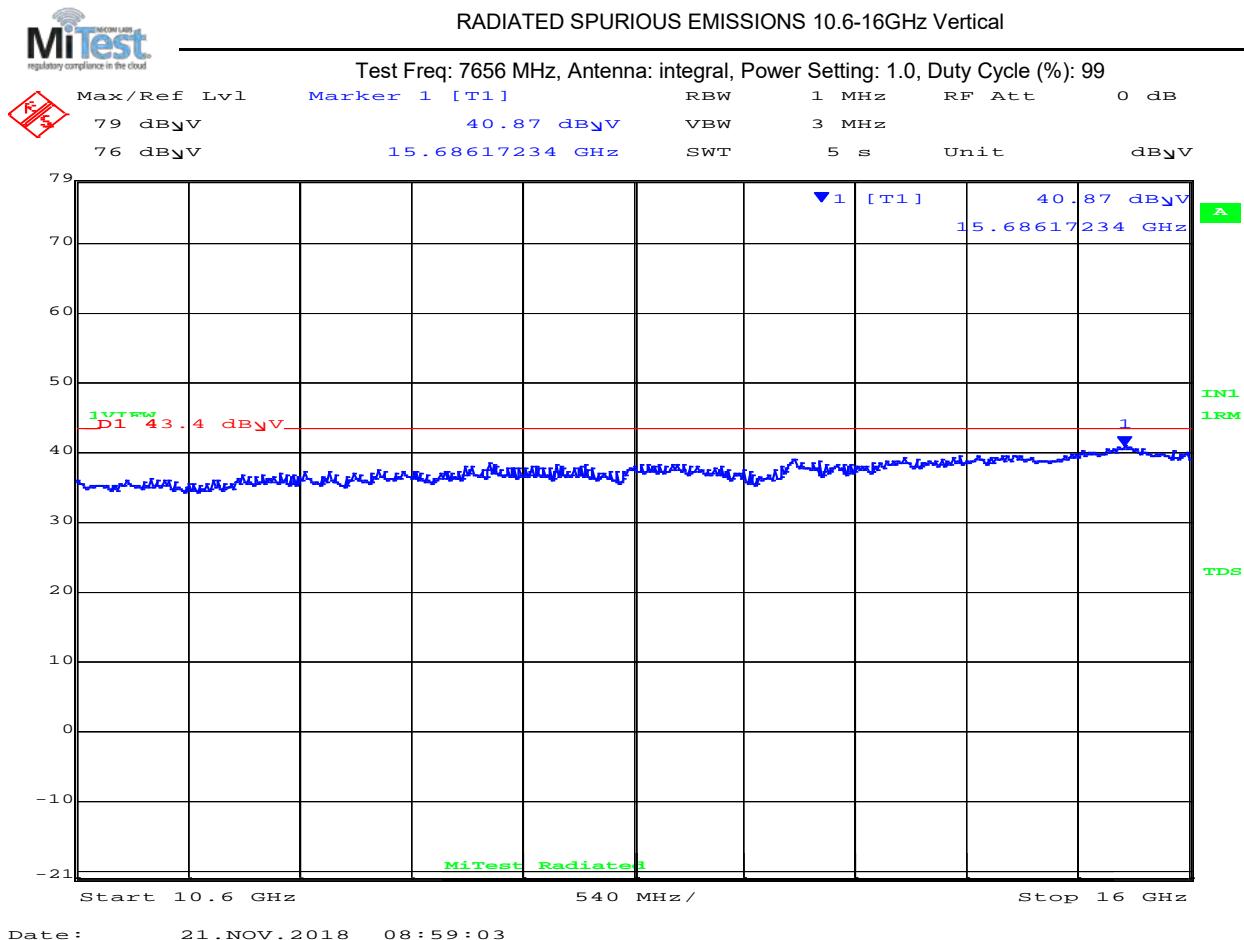


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 296 of 466

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



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)

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.

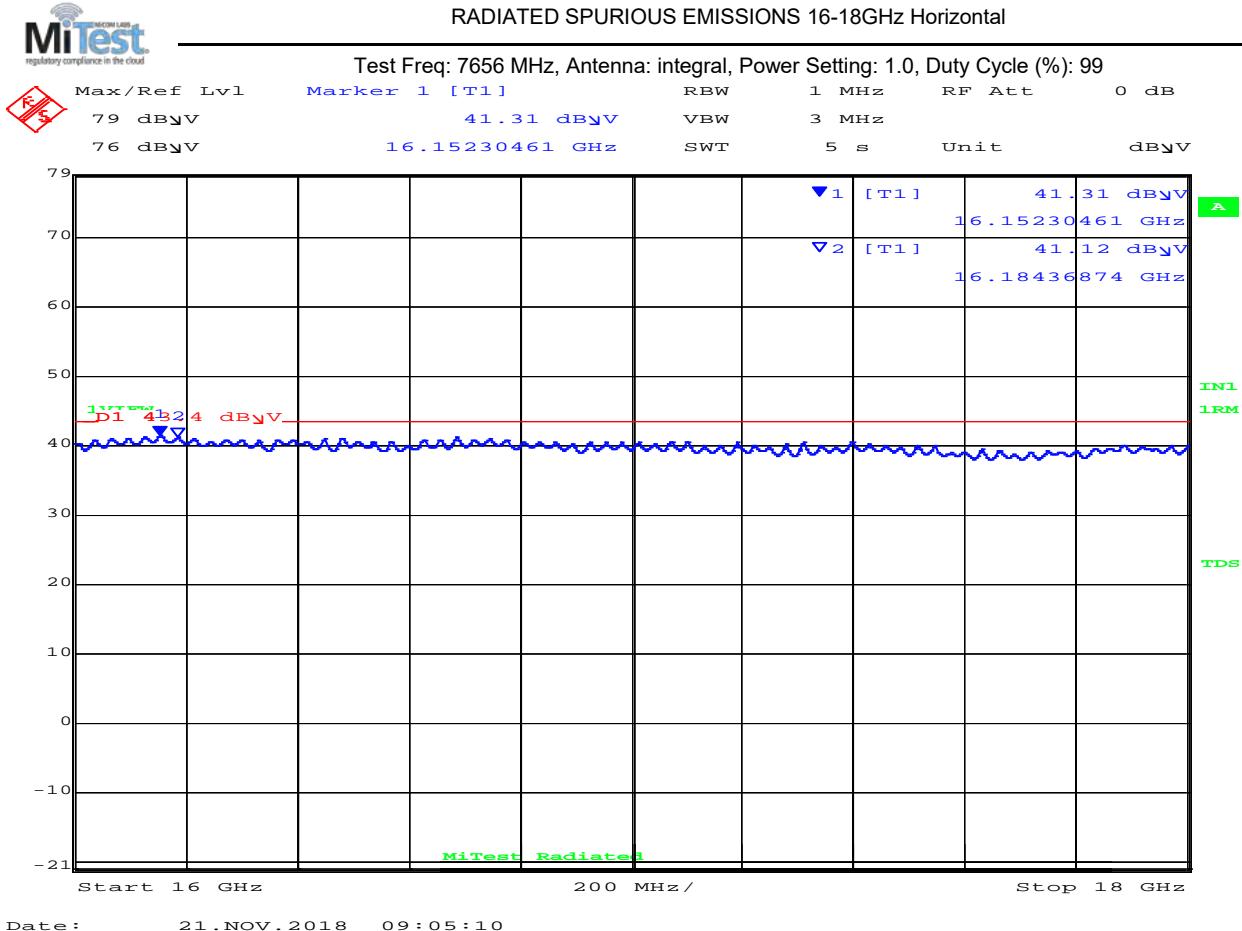


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 297 of 466

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 dB _μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _μ V/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:

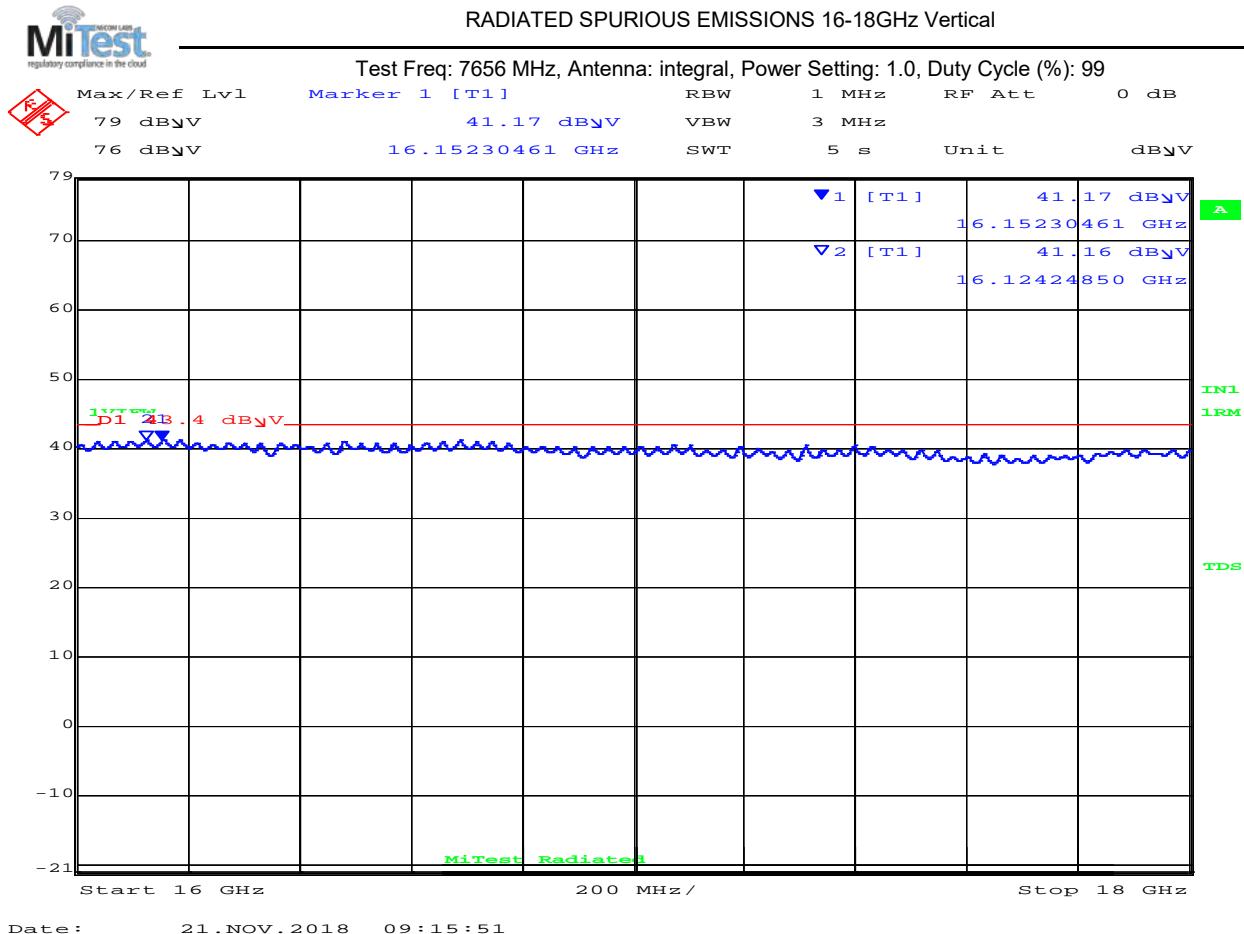
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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.

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 dB _μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _μ V/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)

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.



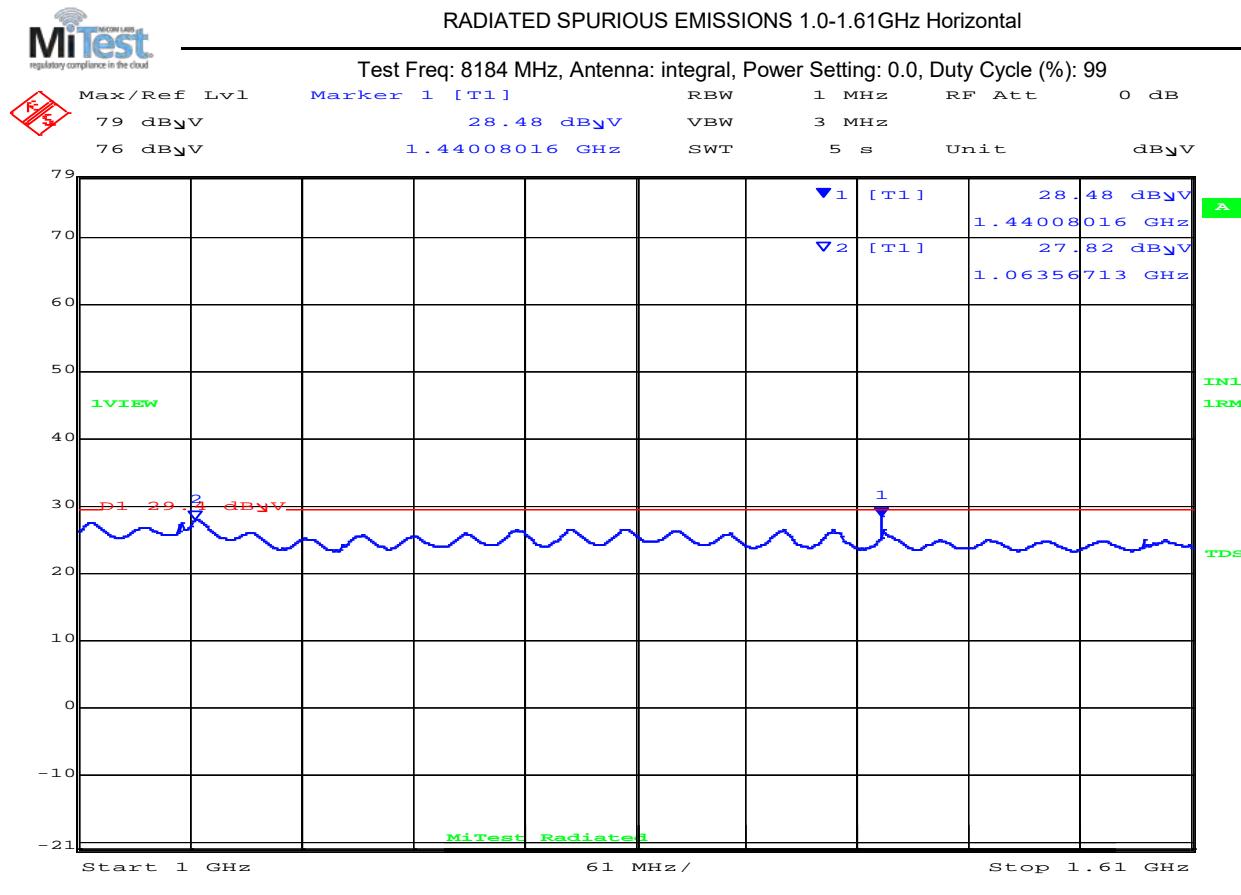
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 299 of 466

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 dB _µ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _µ V/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:

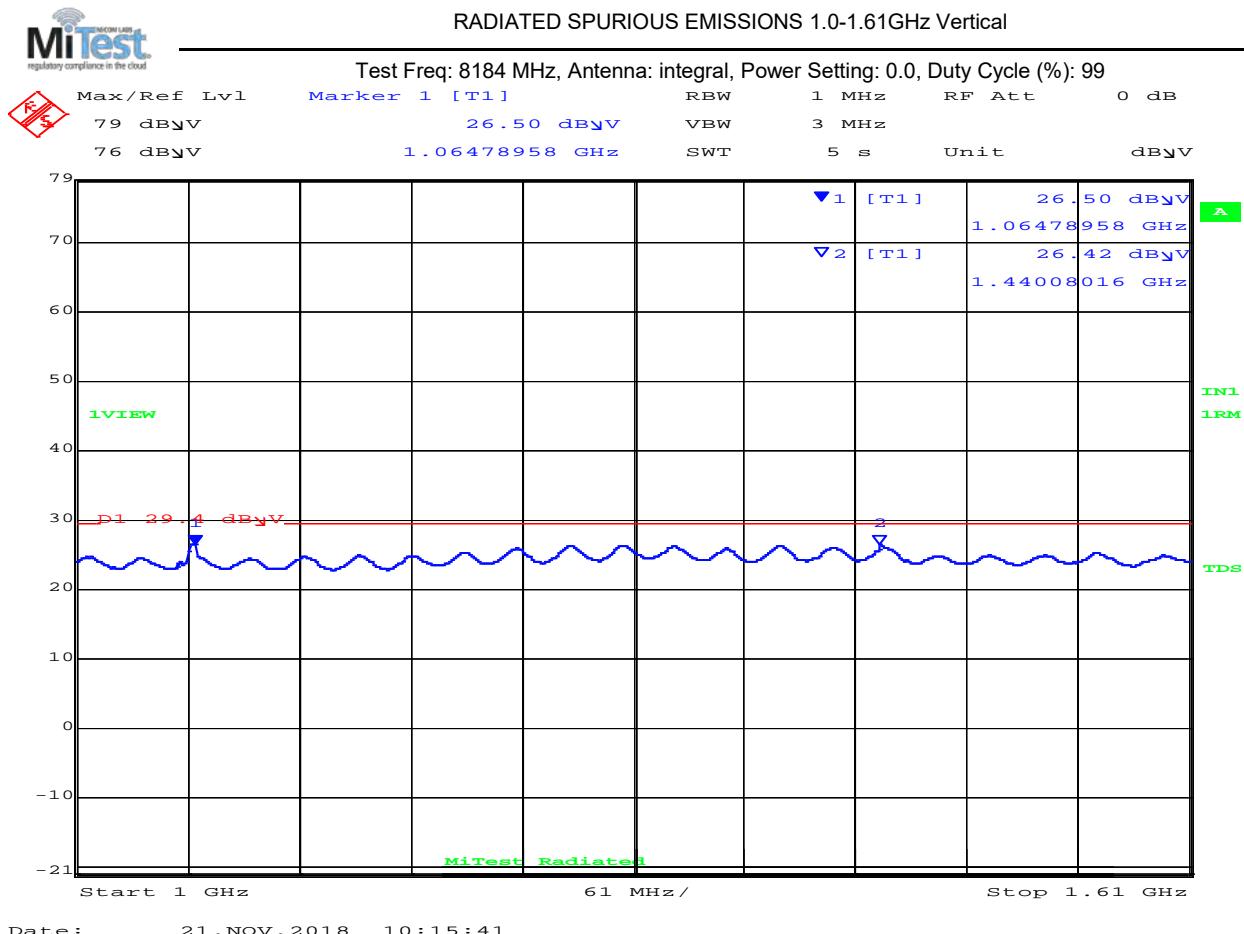
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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.

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 dB _{μV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{μV/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:

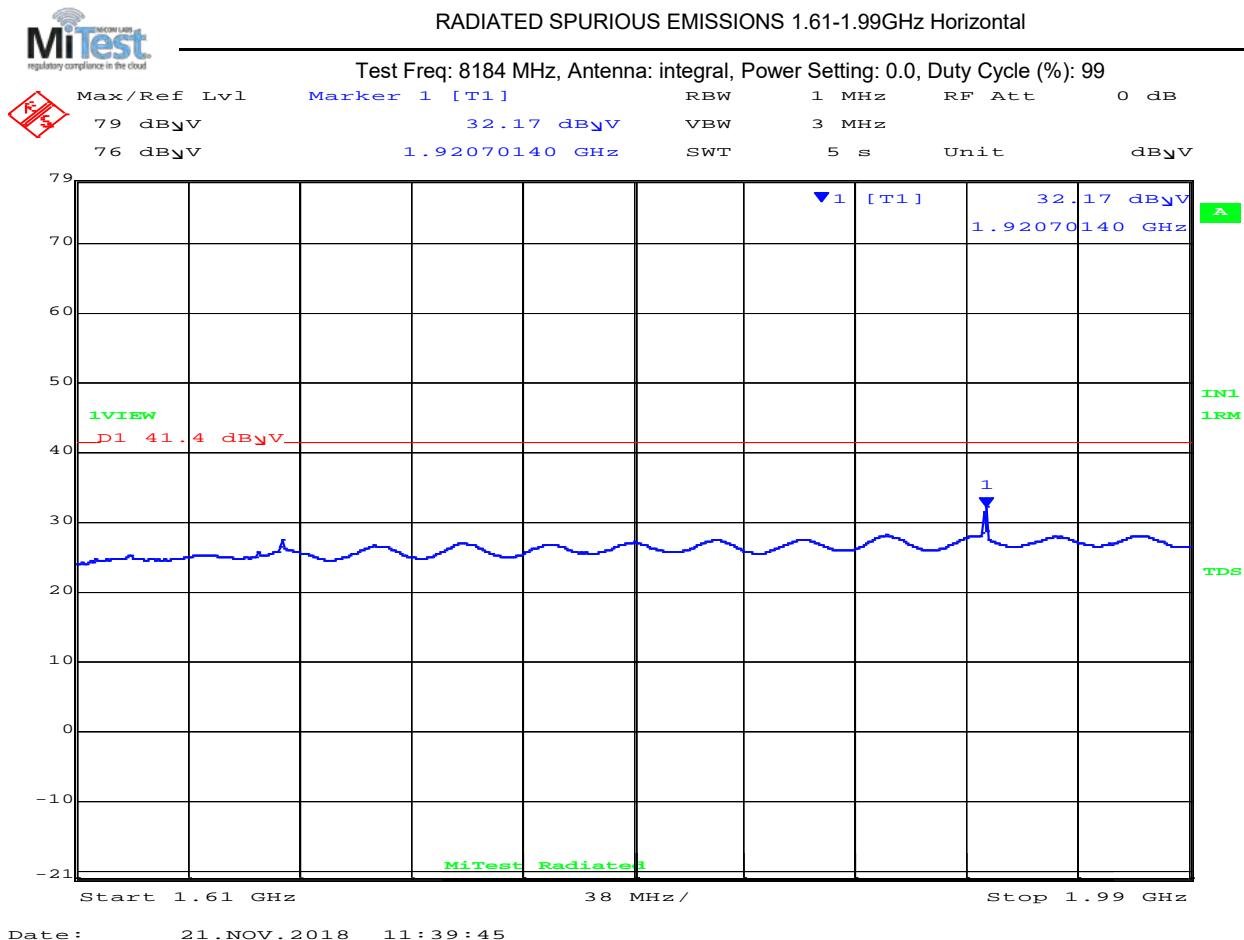
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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.

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



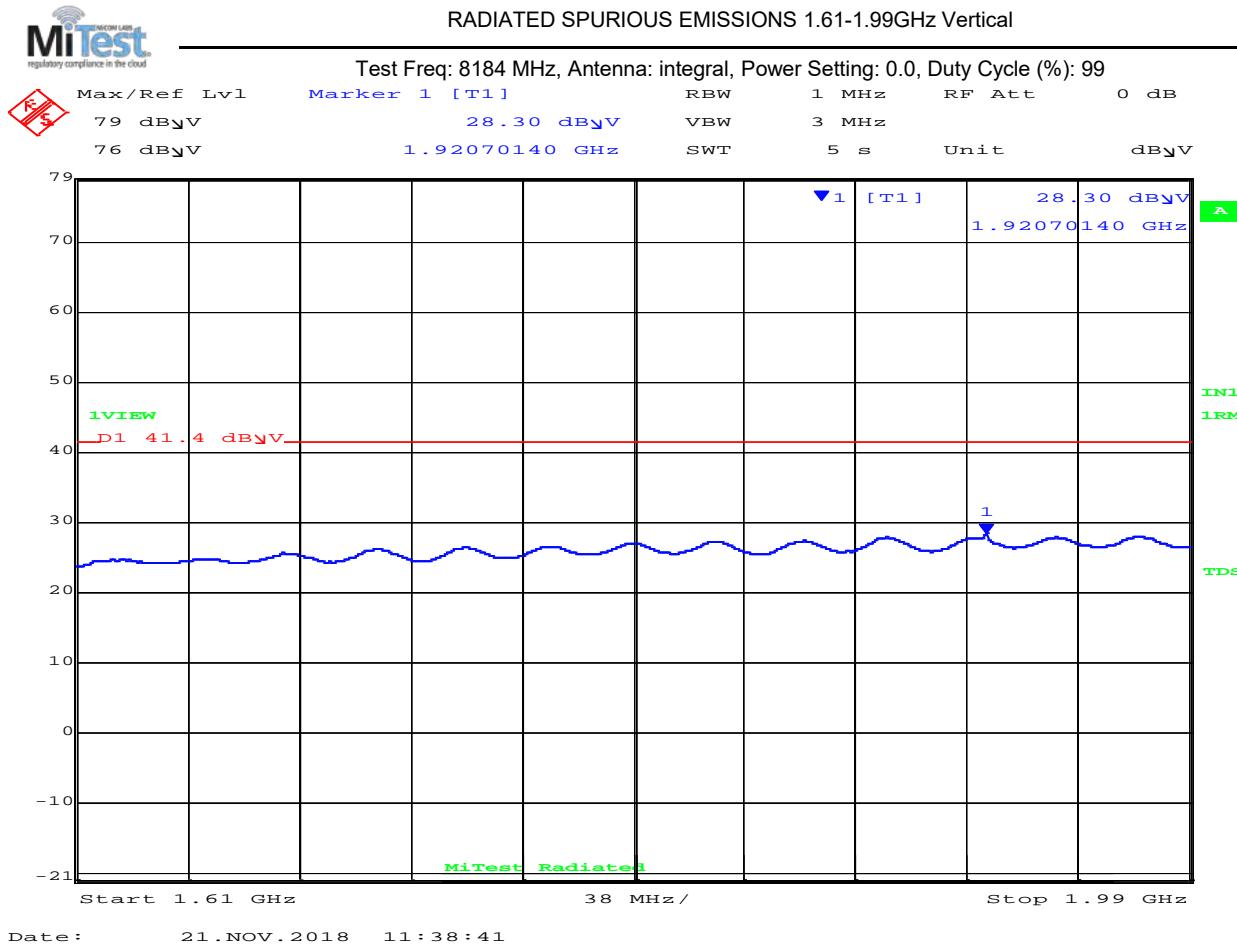
1610.00 – 1990.00 MHz										
Num	Frequency MHz	Level dB _{µV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{µV/m}	Margin dB	Pass /Fail	
No Signals found within 6 dB of Limit										
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one 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.

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 _{μV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{μV/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.

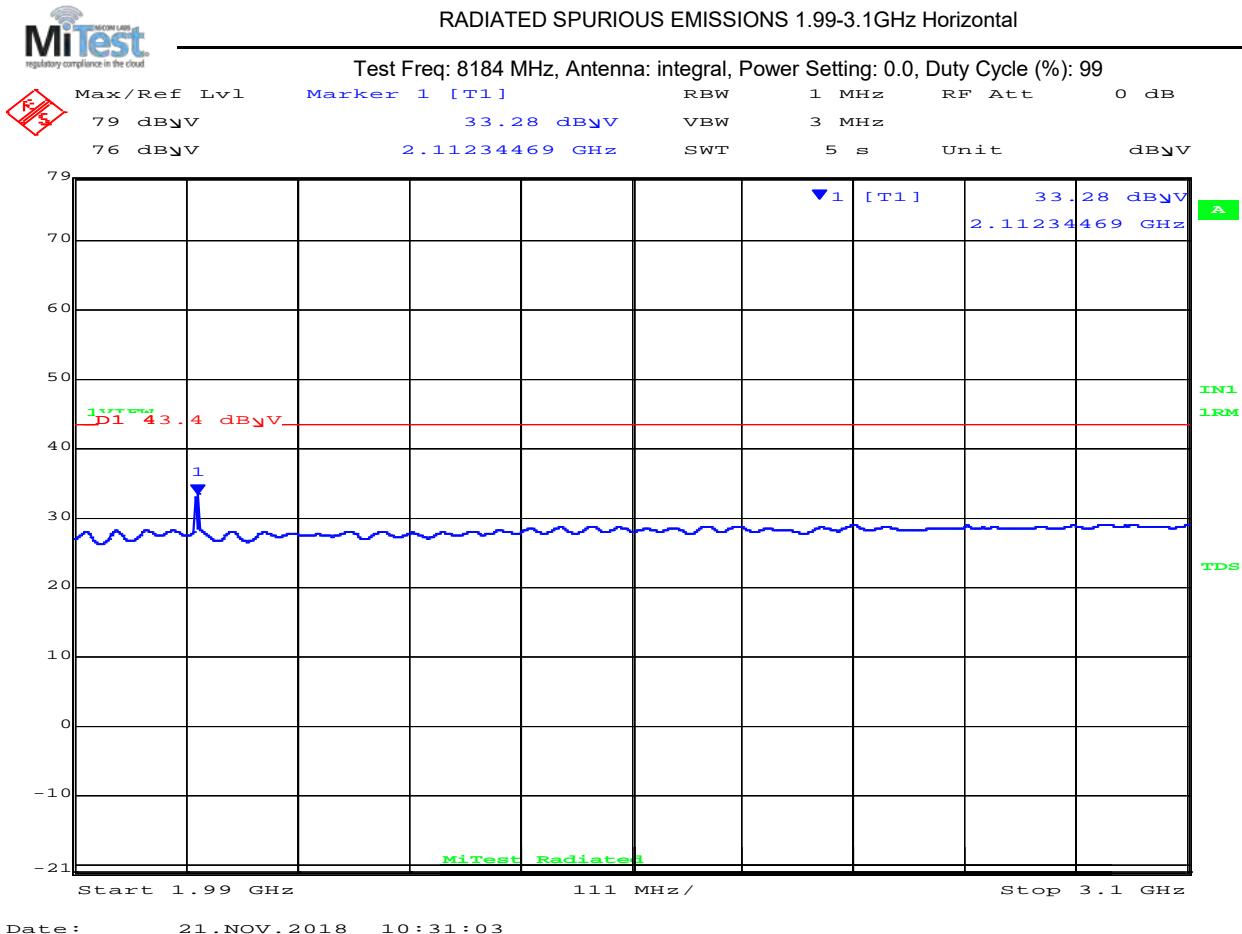


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 303 of 466

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 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:

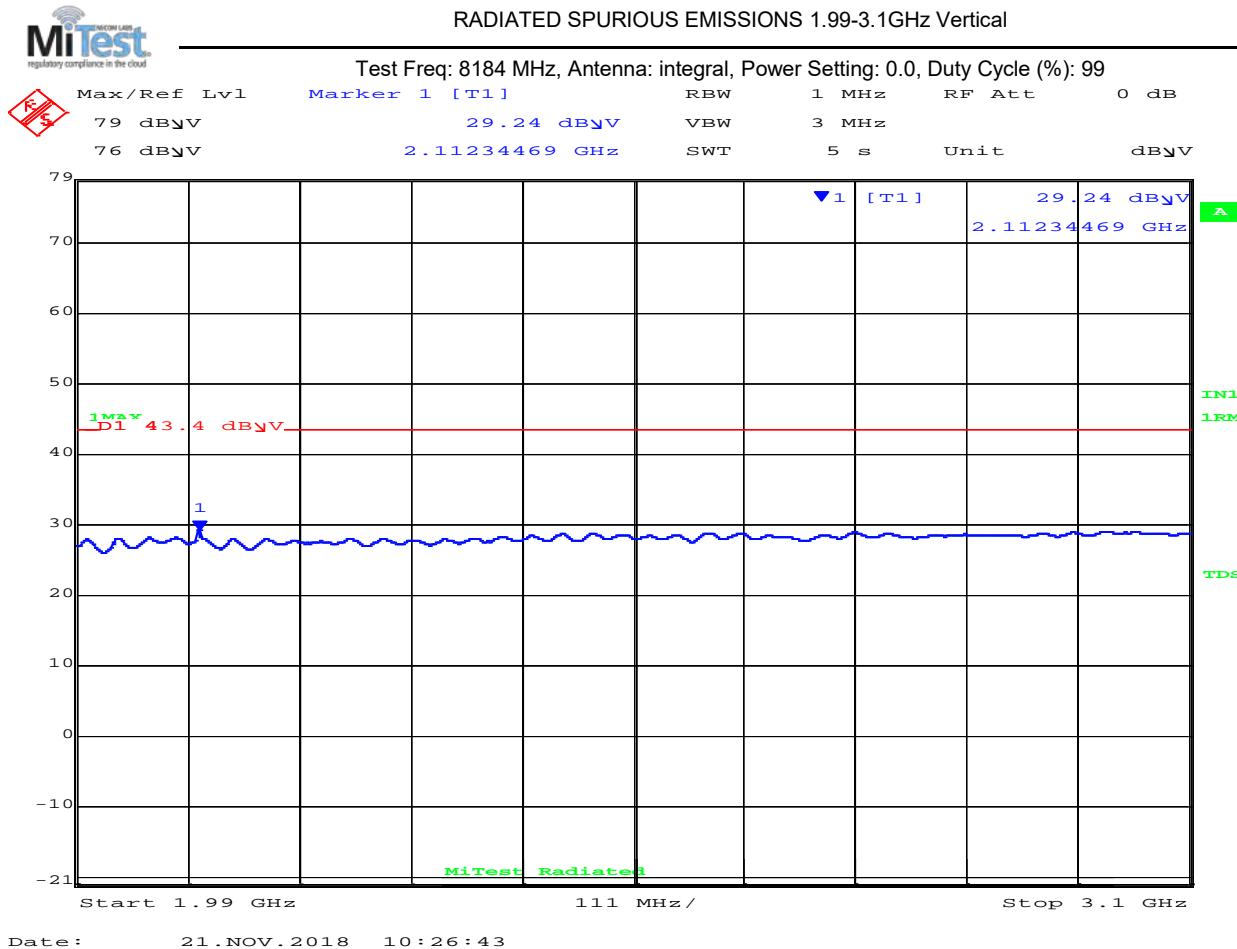
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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.

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



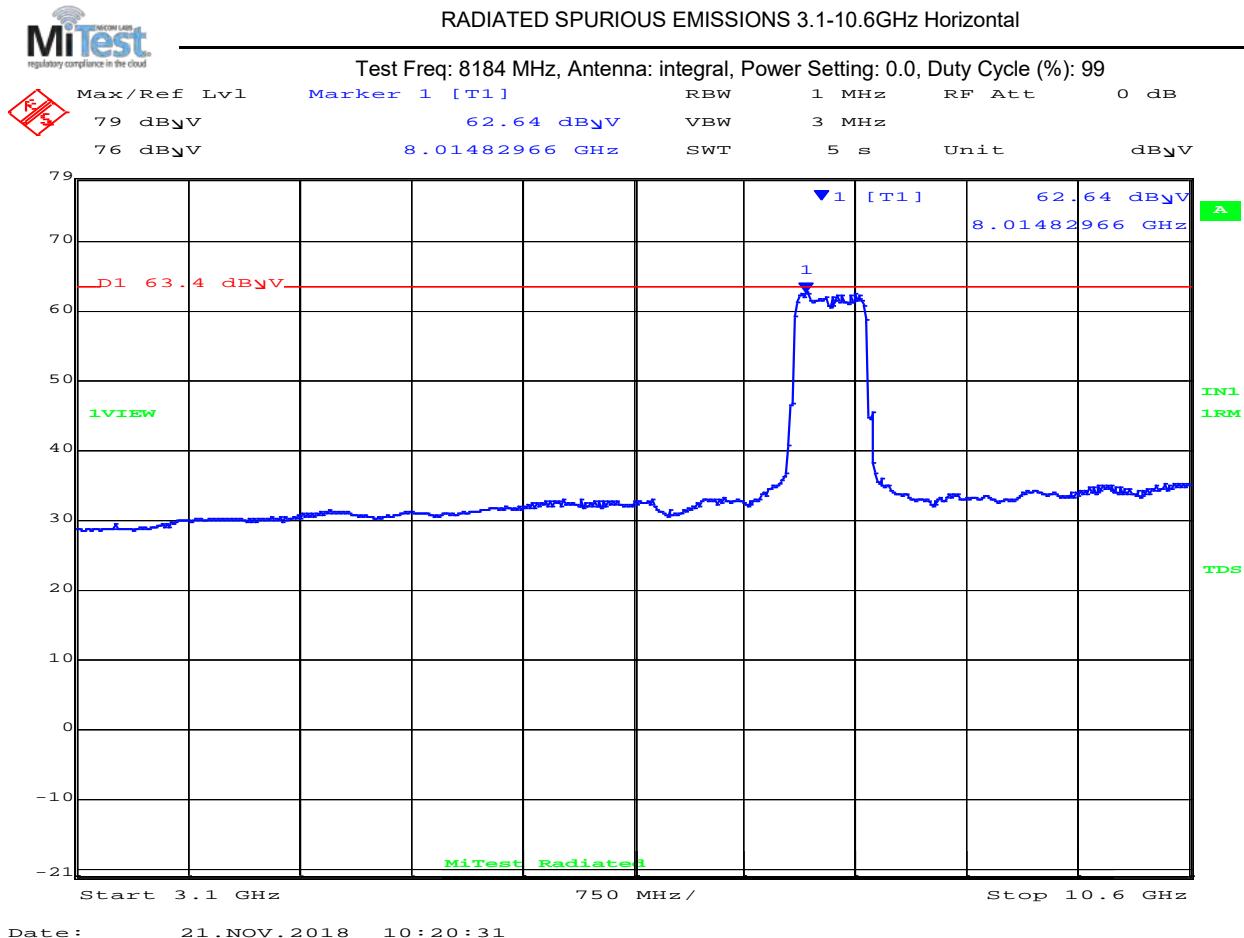
1990.00 – 3100.00 GHz									
Num	Frequency MHz	Level dB _μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _μ V/m	Margin dB	Pass /Fail
No Signals found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn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

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.

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



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
1	8014.8	62.2	Average	Horizontal	150	0	63.4	-1.2	Pass

Test Notes:

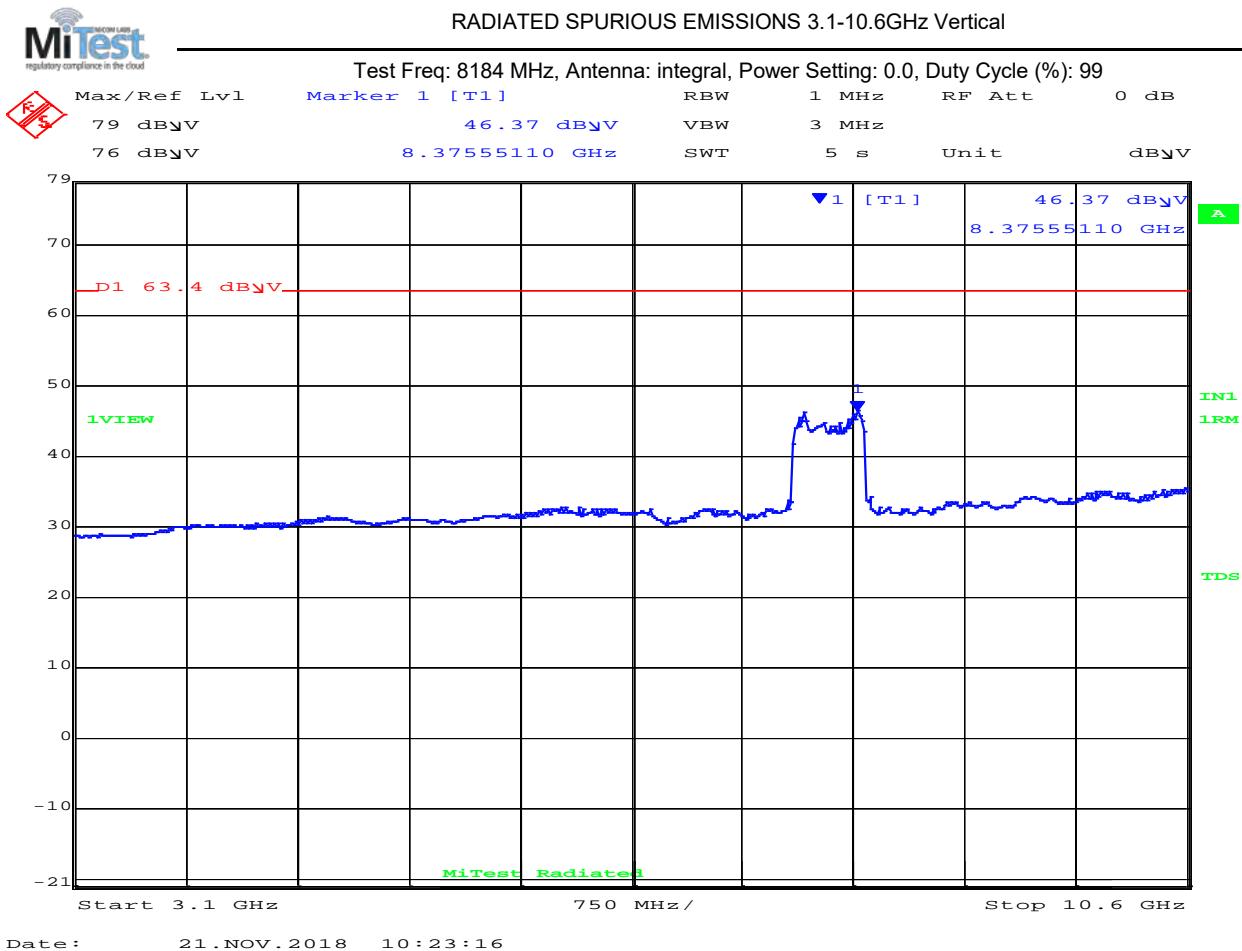
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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.

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



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)										

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.

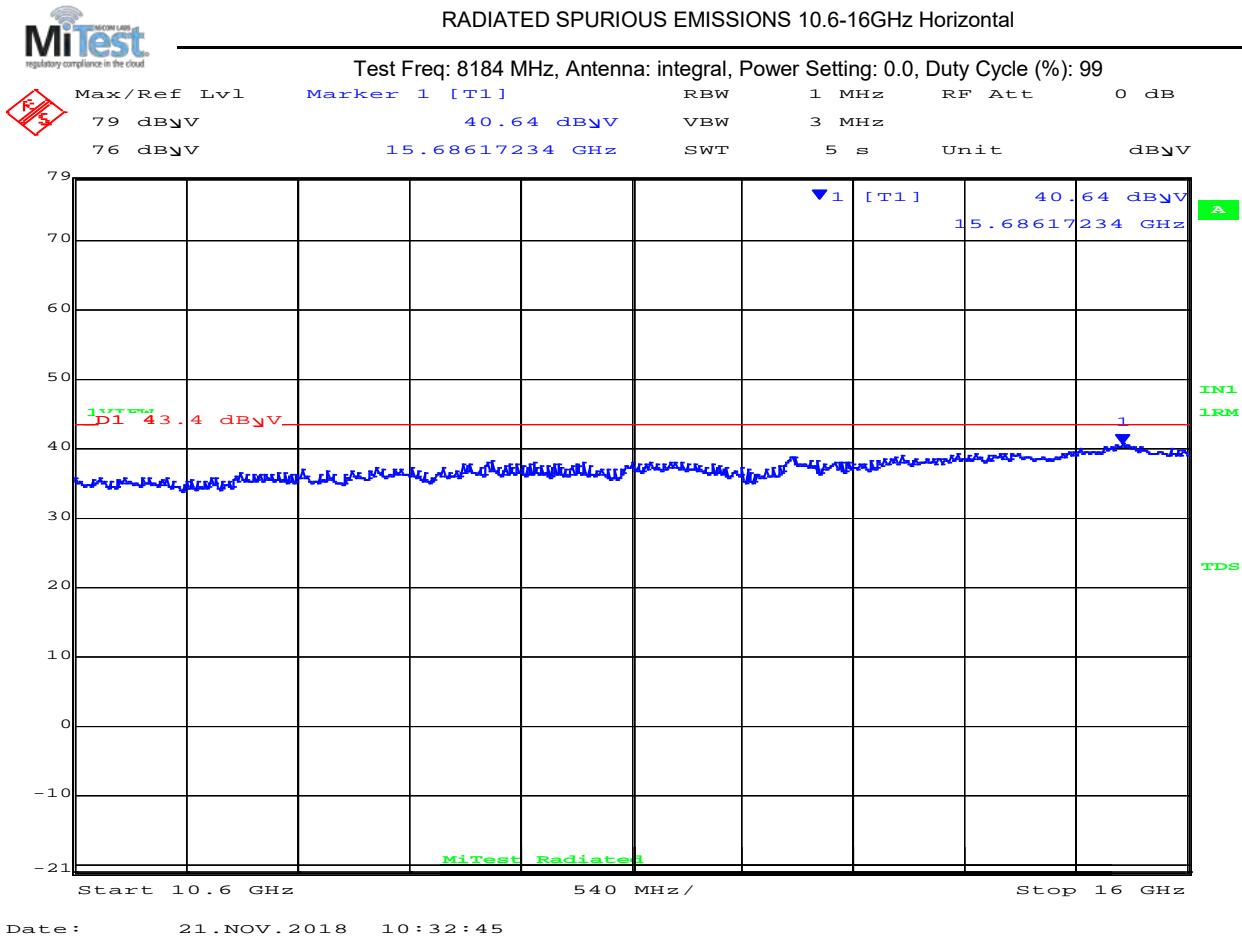


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 307 of 466

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



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)

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.

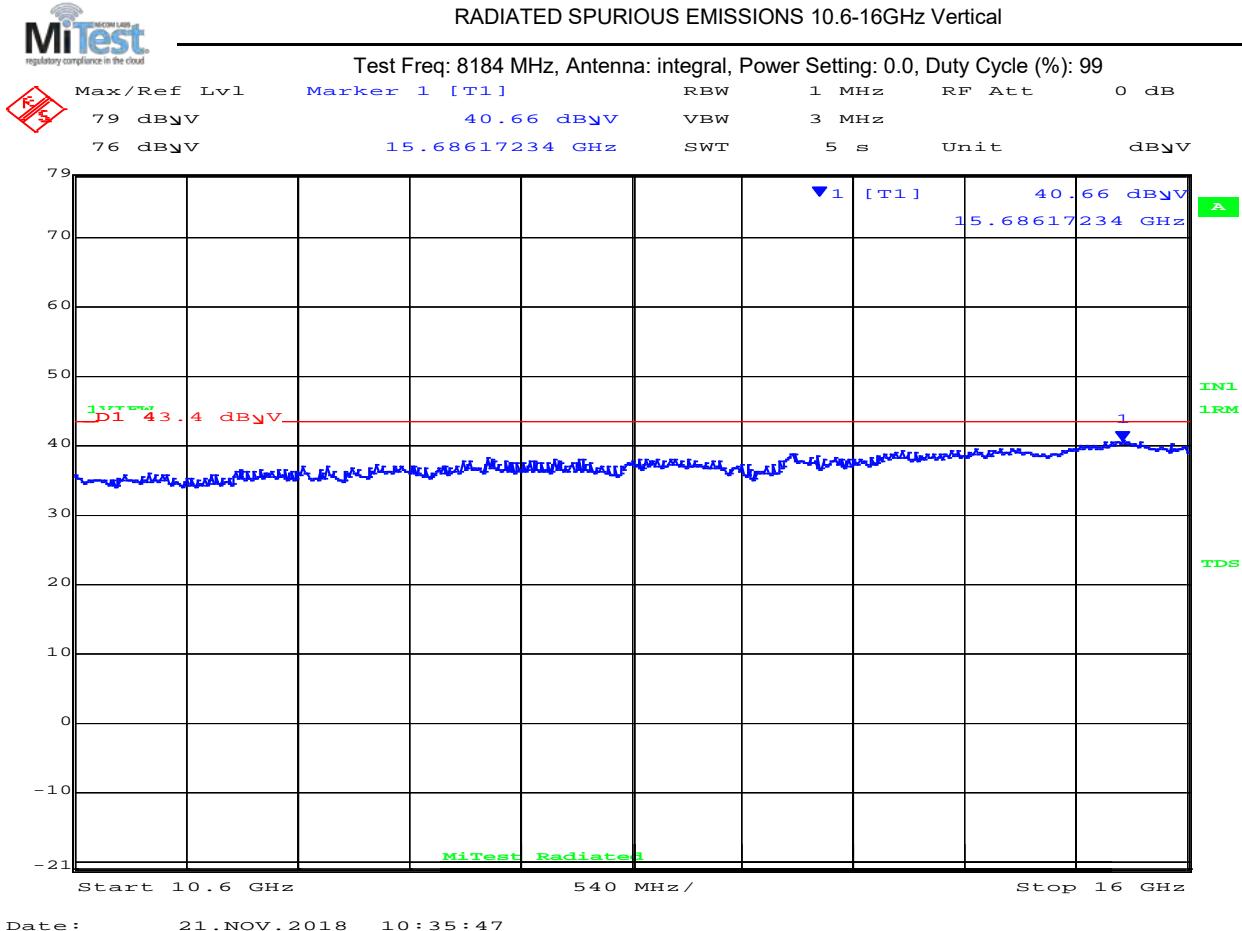


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 308 of 466

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 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)

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.

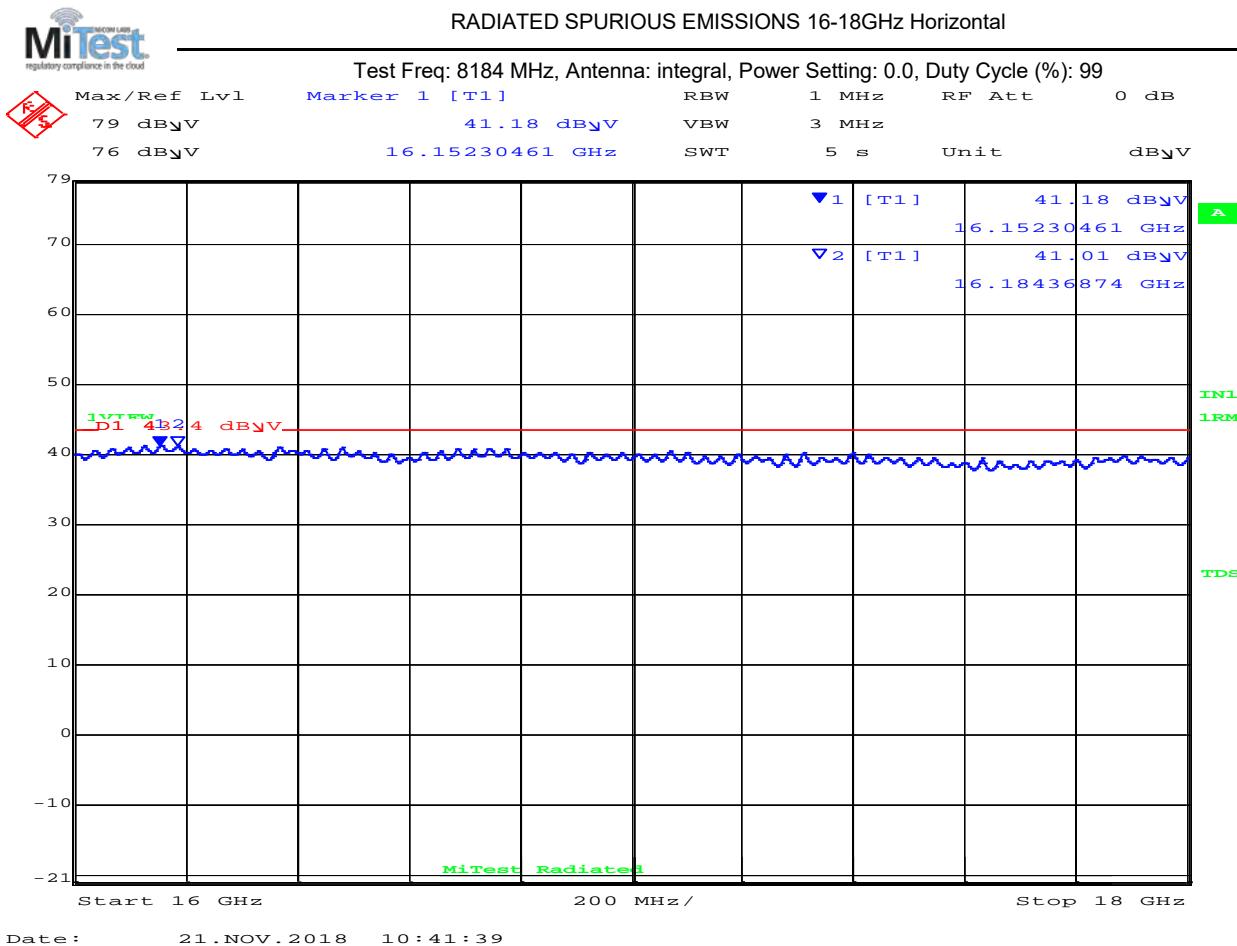


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 309 of 466

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



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	40.3	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)

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.

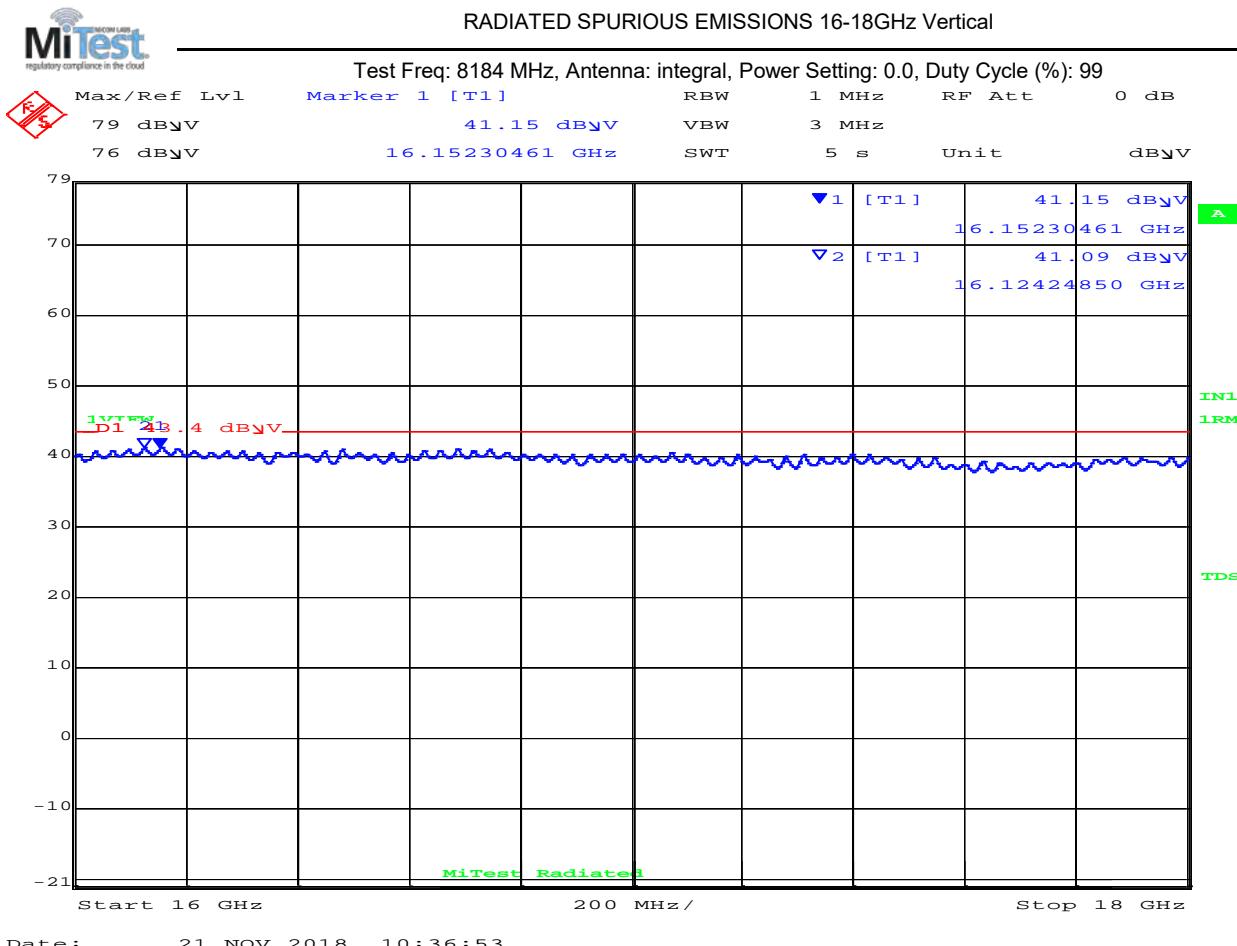


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 310 of 466

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 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	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)

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.



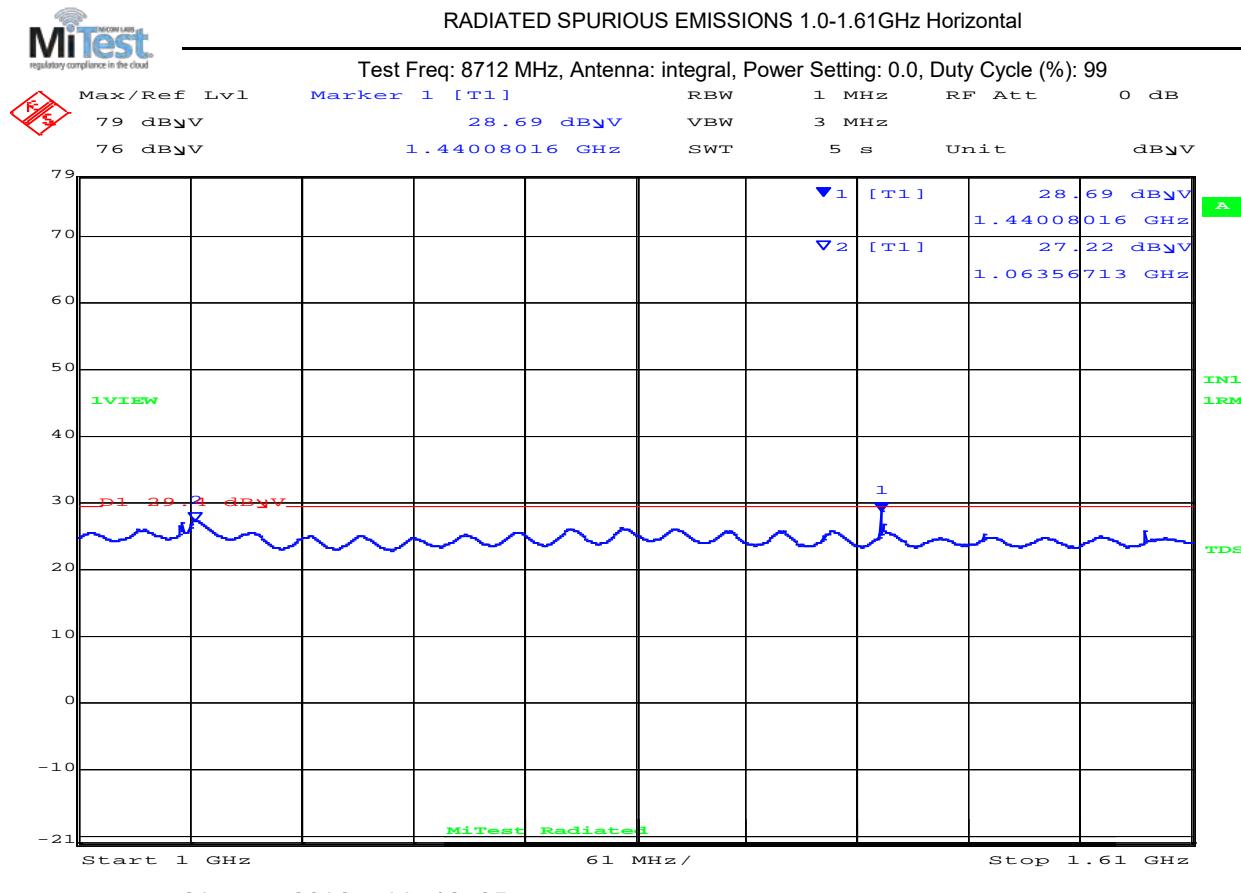
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 311 of 466

8712 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):	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	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:

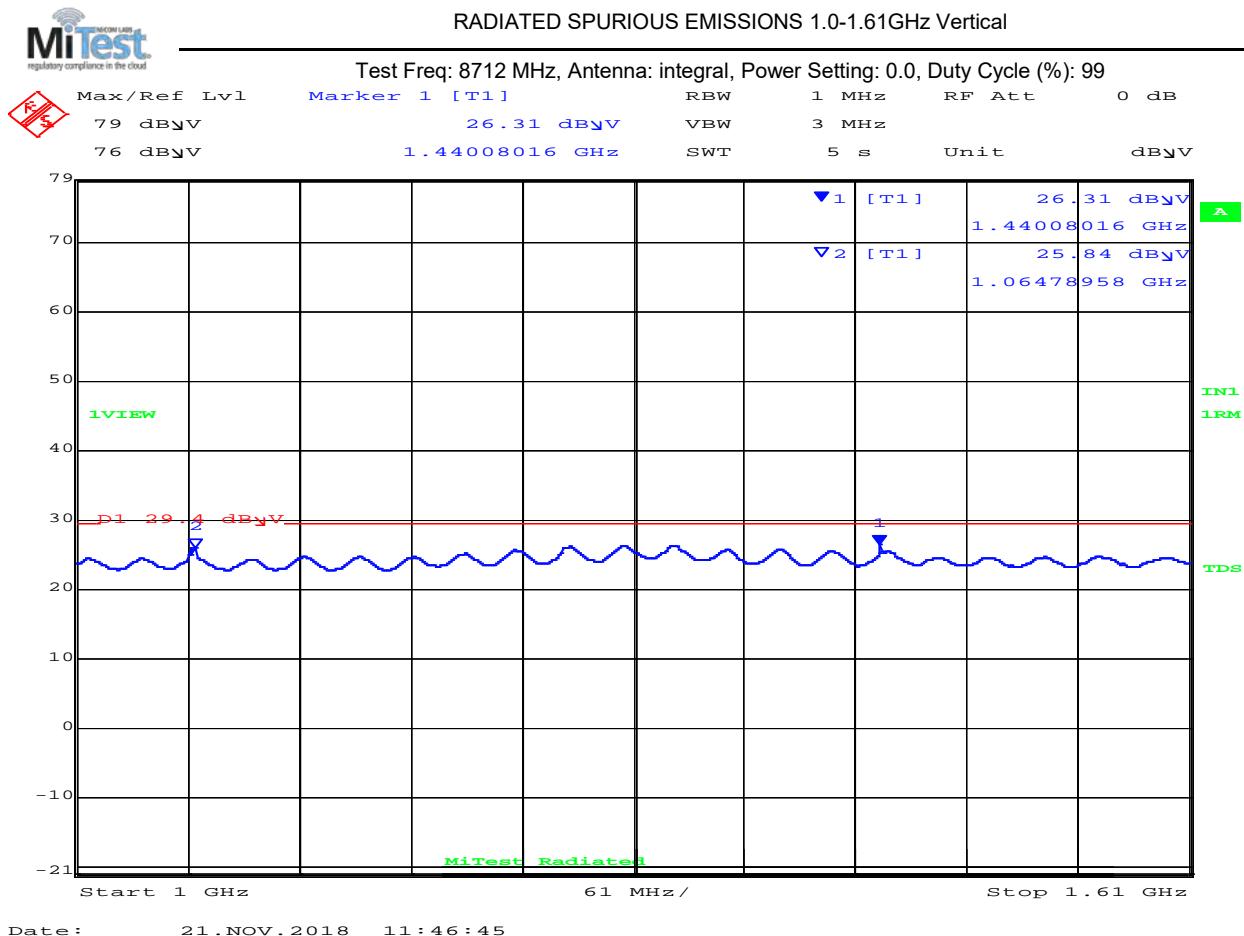
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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.

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 dB _{μV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{μV/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:

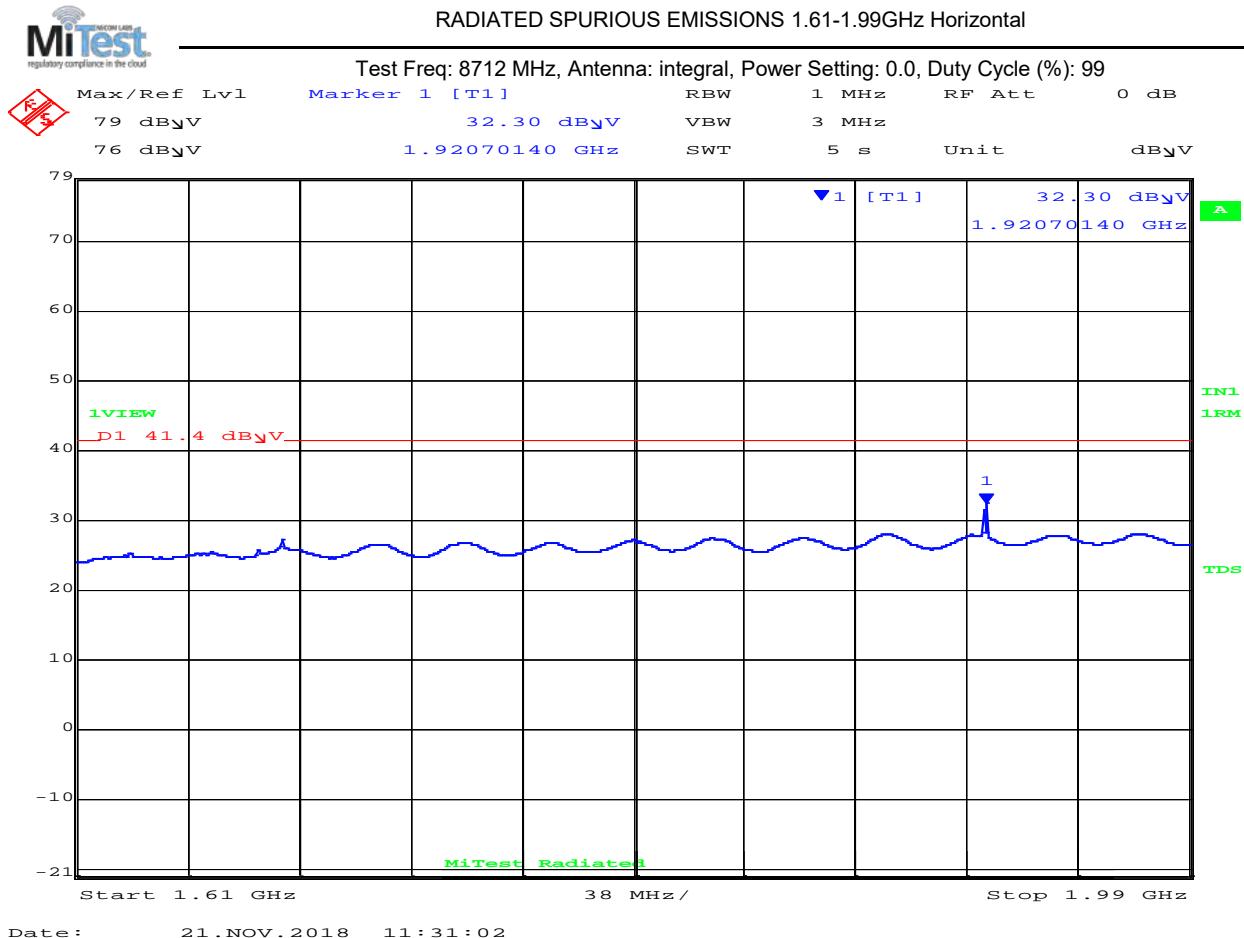
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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.

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



1610.00 – 1990.00 MHz										
Num	Frequency MHz	Level dB _{µV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{µV/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.

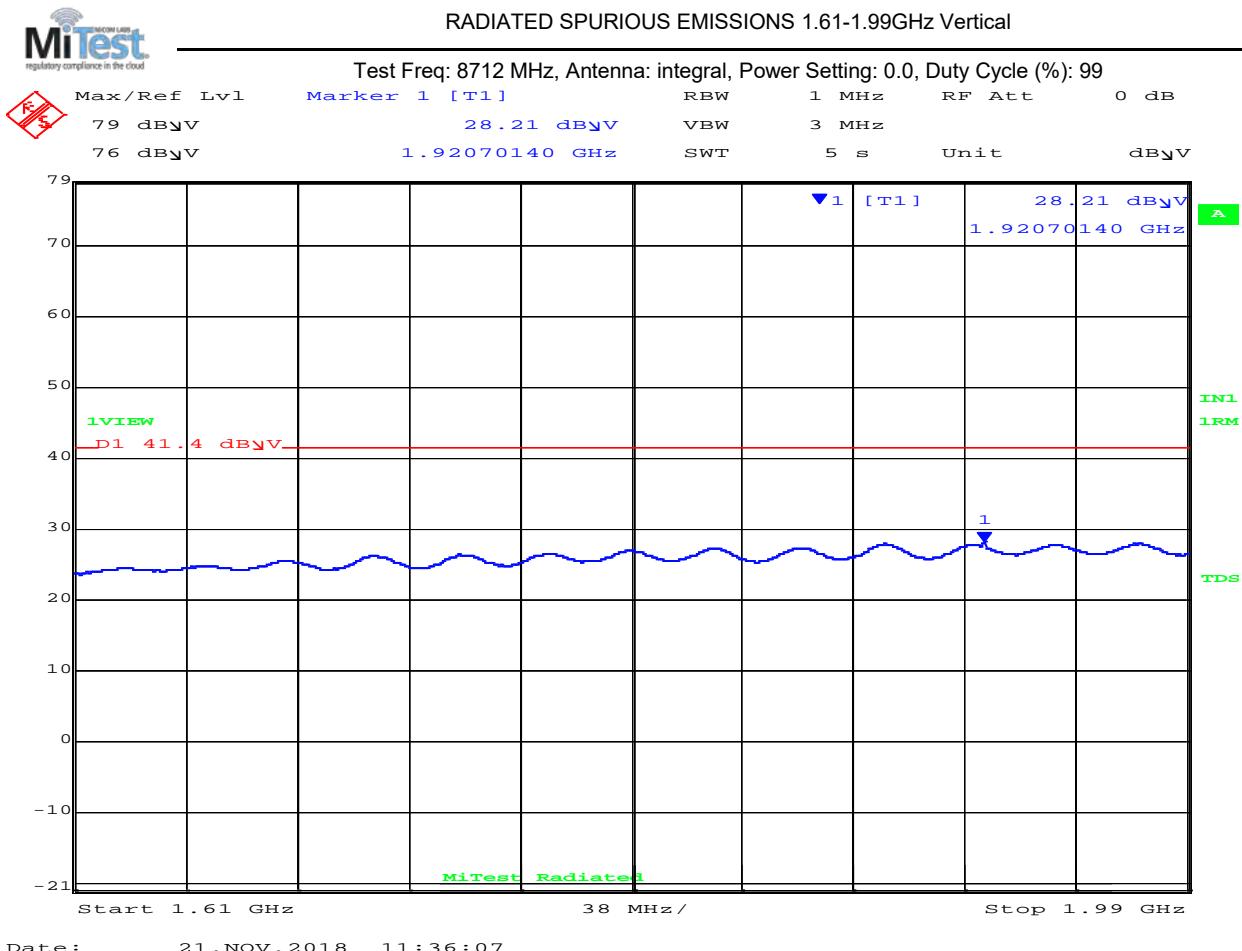


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 314 of 466

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



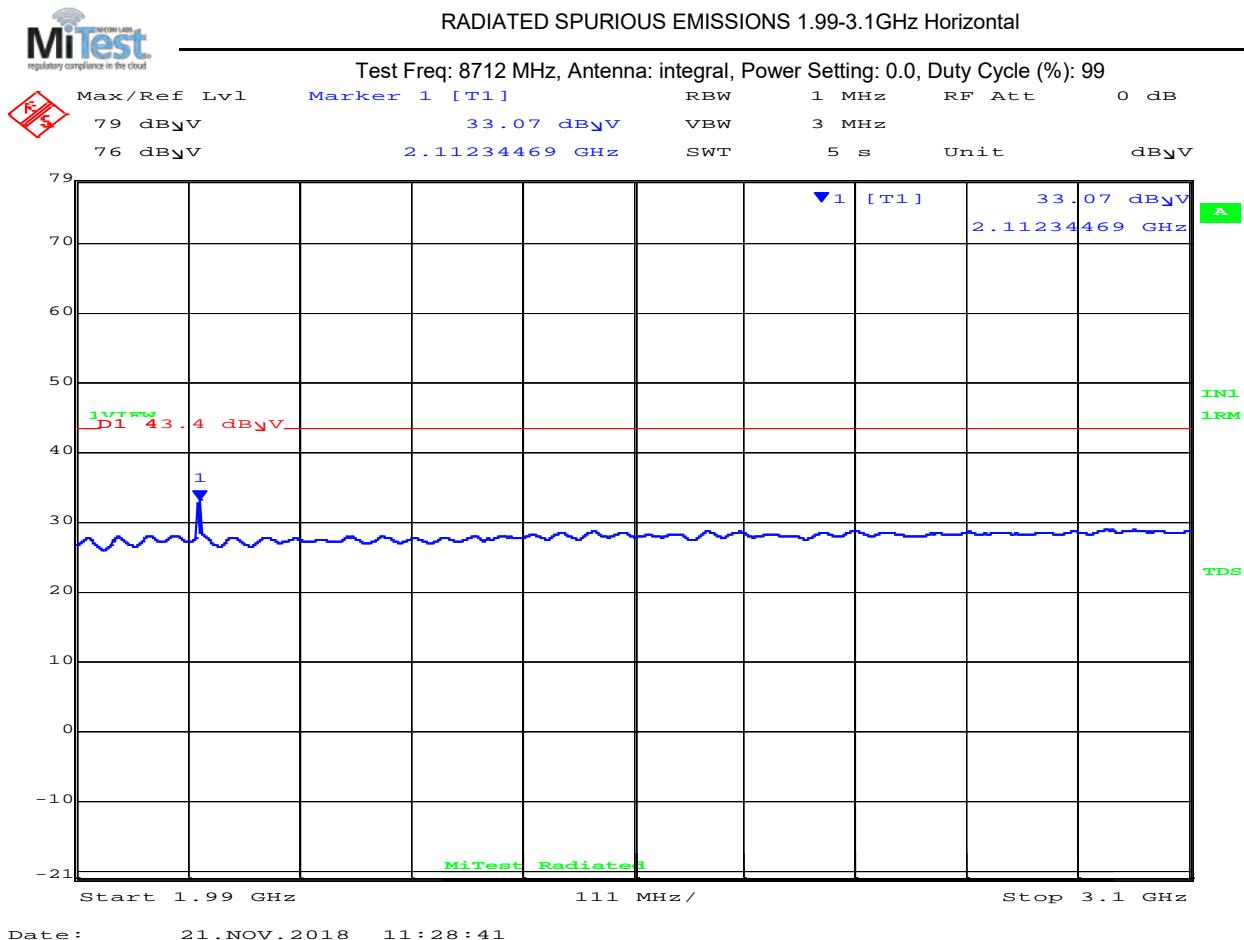
1610.00 – 1990.00 MHz									
Num	Frequency MHz	Level dB _μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _μ V/m	Margin dB	Pass /Fail
No Signals found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn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

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.

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):	8712.00	Data Rate:	
Power Setting:	0.0	Tested By:	JMH

Test Measurement Results



1990.00 – 3100.00 GHz										
Num	Frequency MHz	Level dB _{μV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{μV/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.

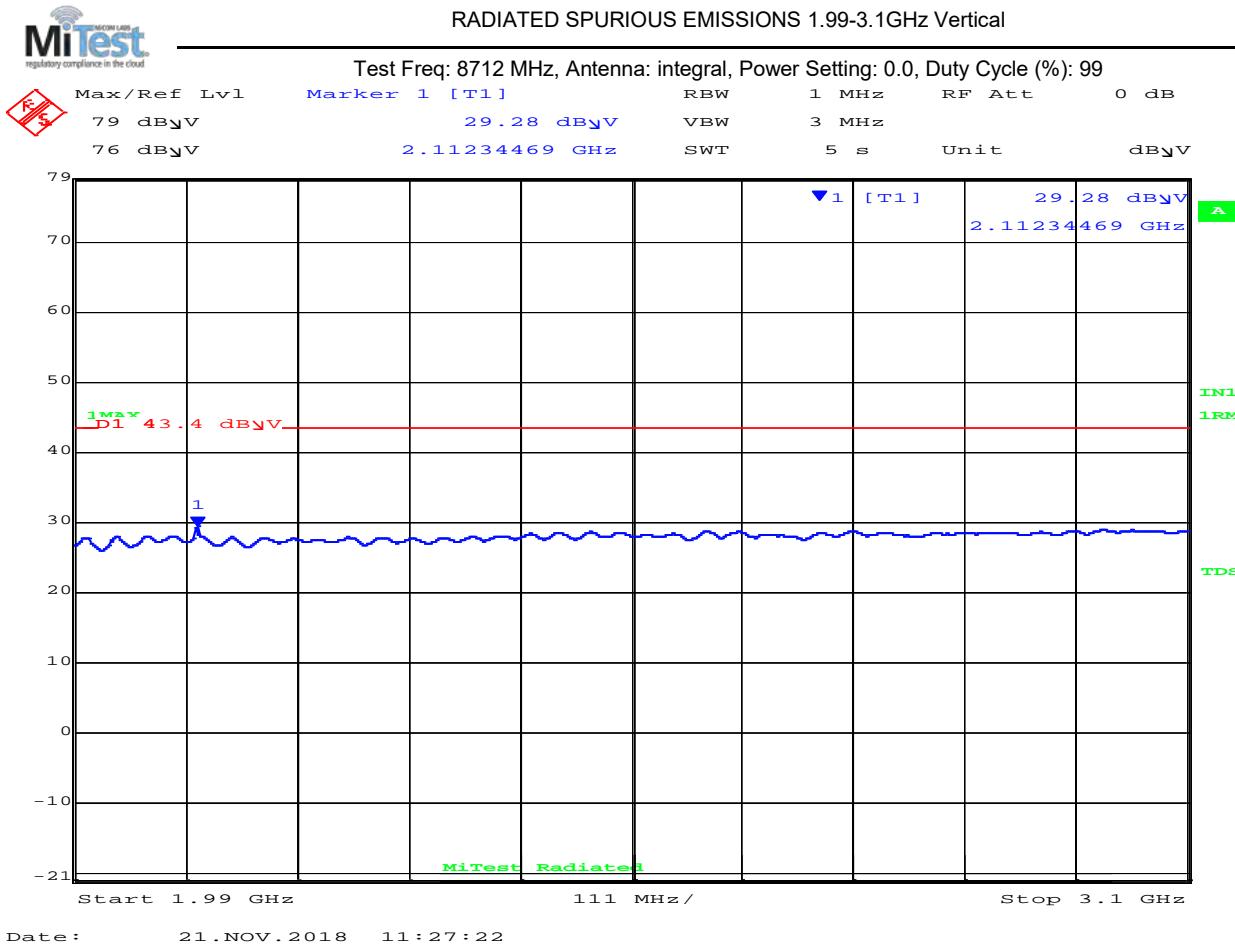


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 316 of 466

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 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										

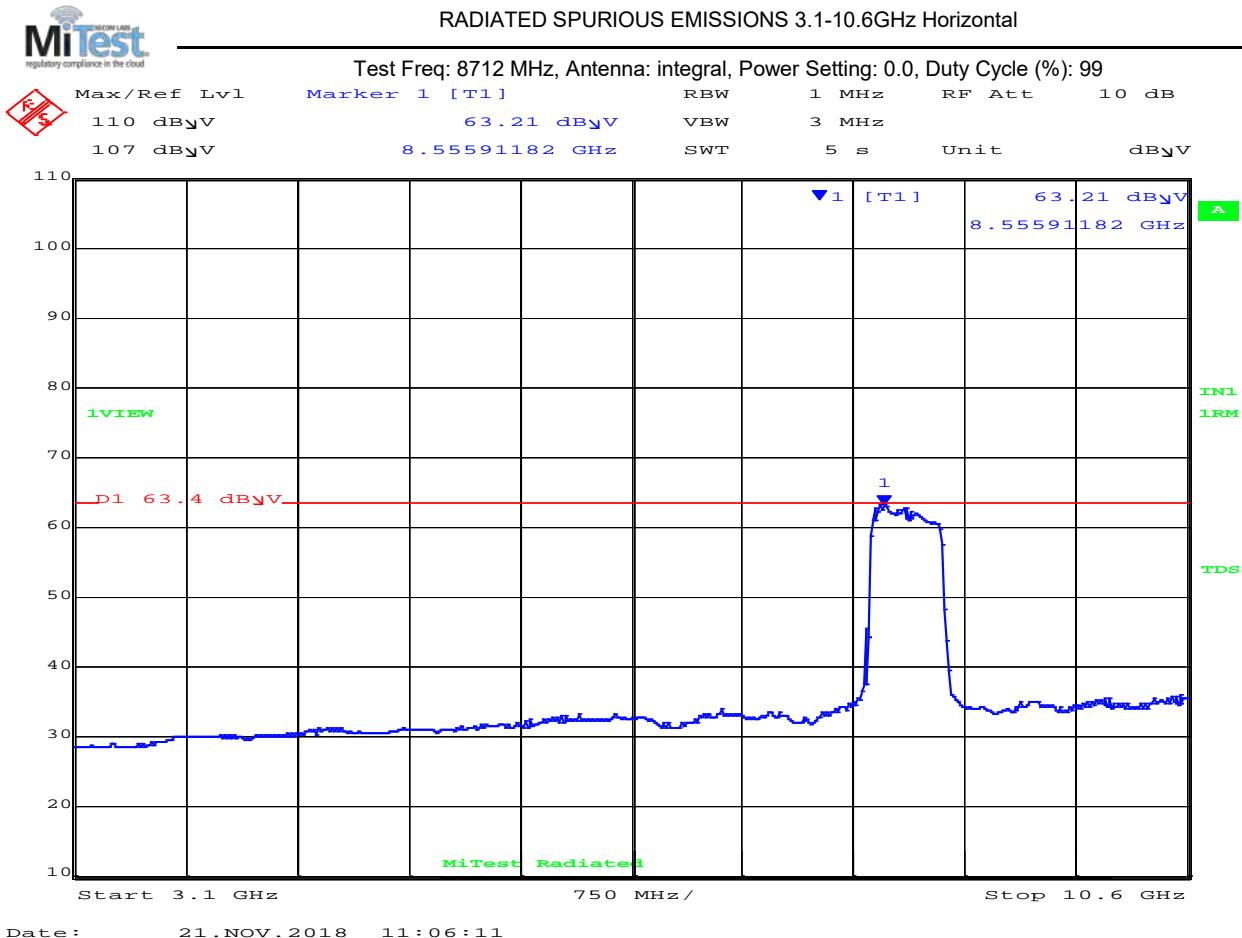
Test Notes:
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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.

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



3100.00 - 10600.00 MHz

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

Test Notes:

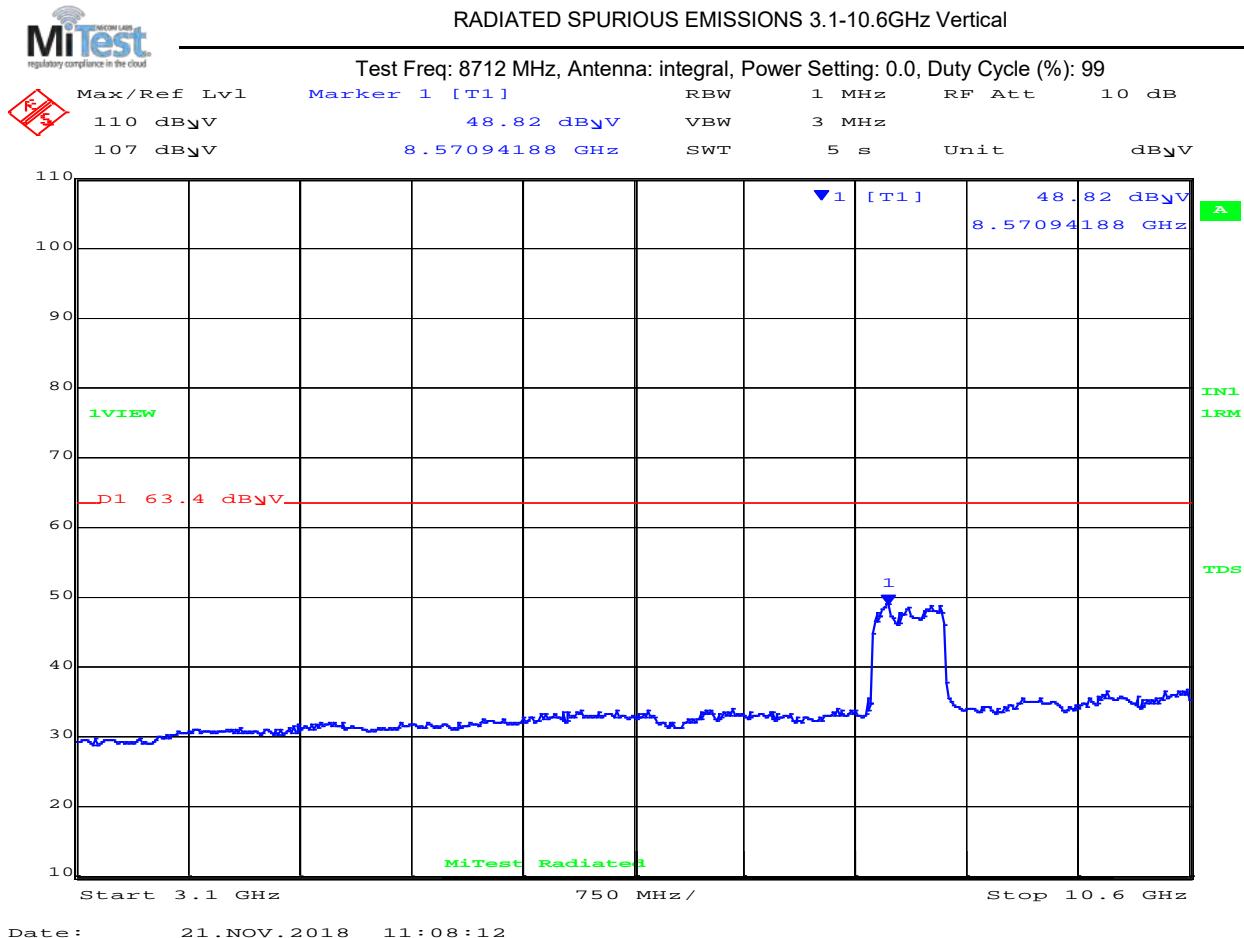
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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.

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 _{µV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{µV/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.

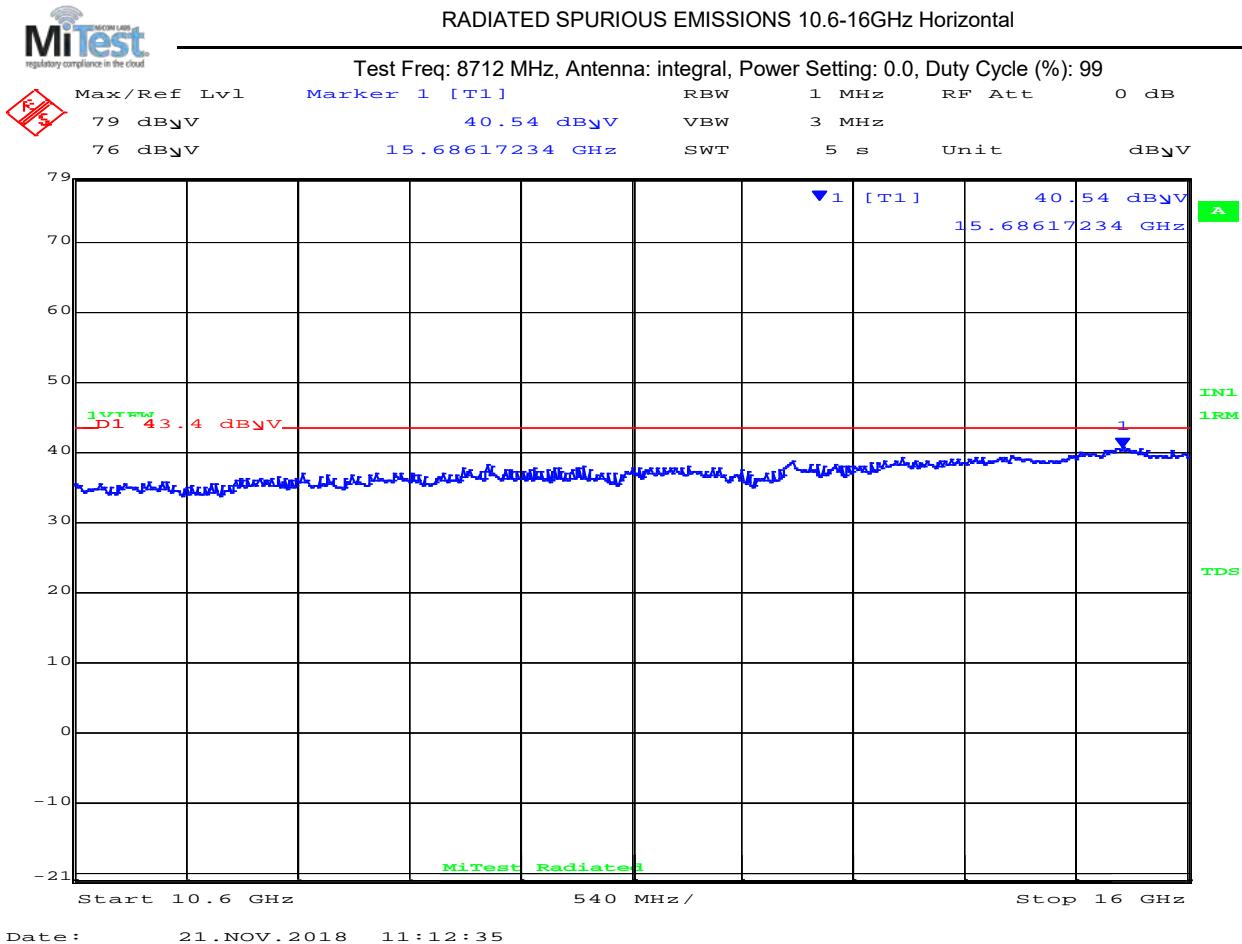


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 319 of 466

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)

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.

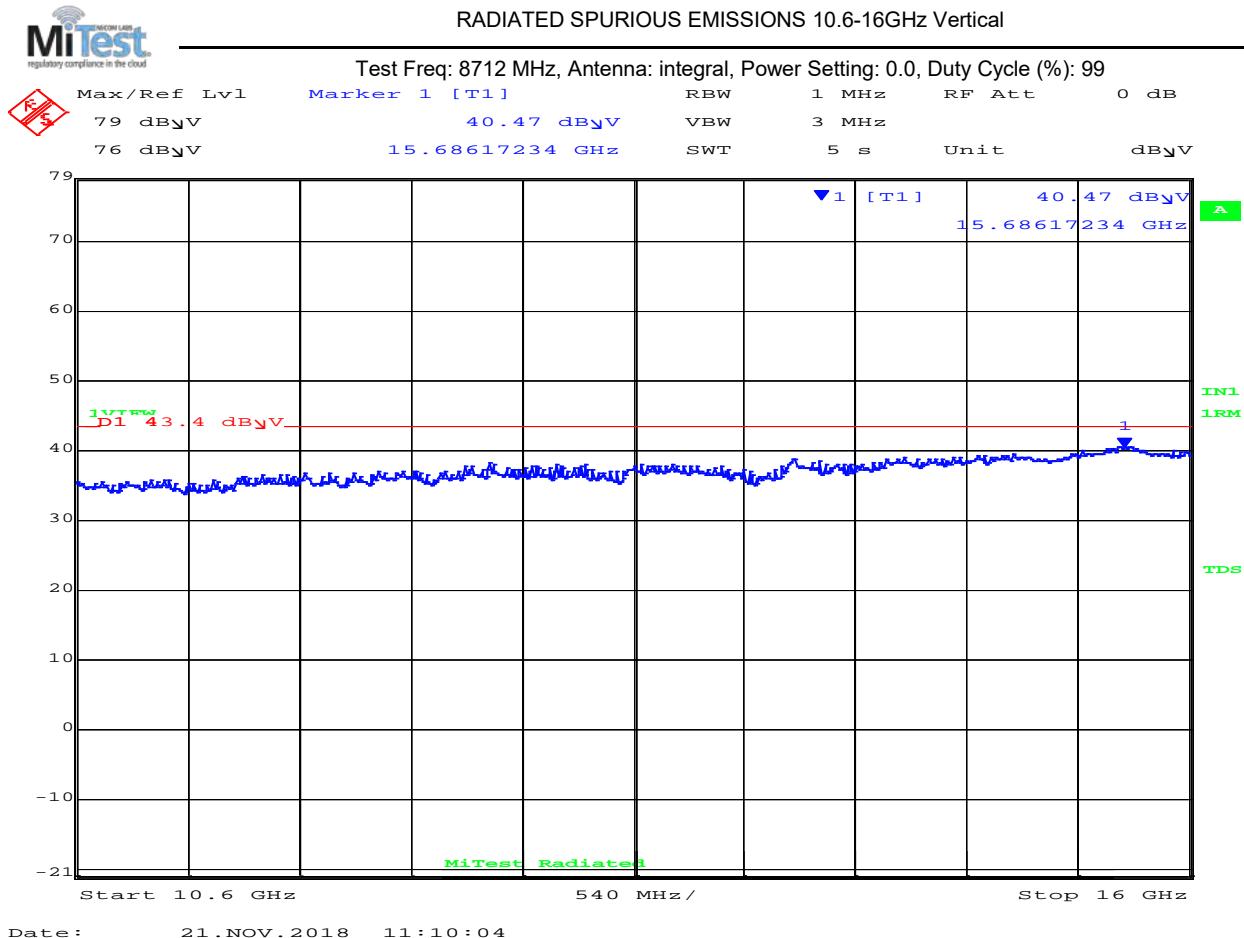


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 320 of 466

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



10600.00 – 16000.00 GHz

Num	Frequency MHz	Level dB _{μV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{μV/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)

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.

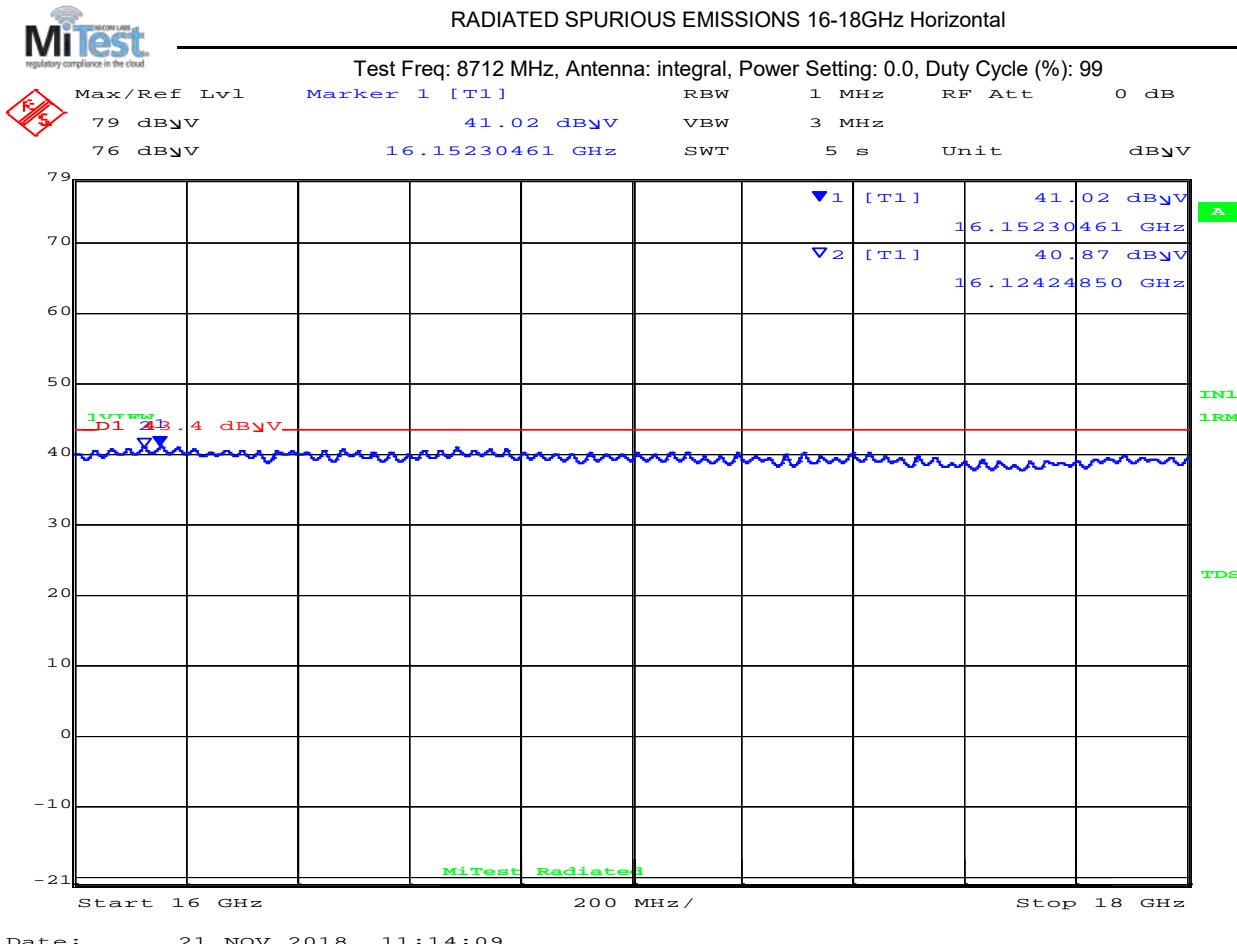


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 321 of 466

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



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	16124.2	39.9	Average	Horizontal	150	0	43.4	-3.5	Pass

Test Notes:

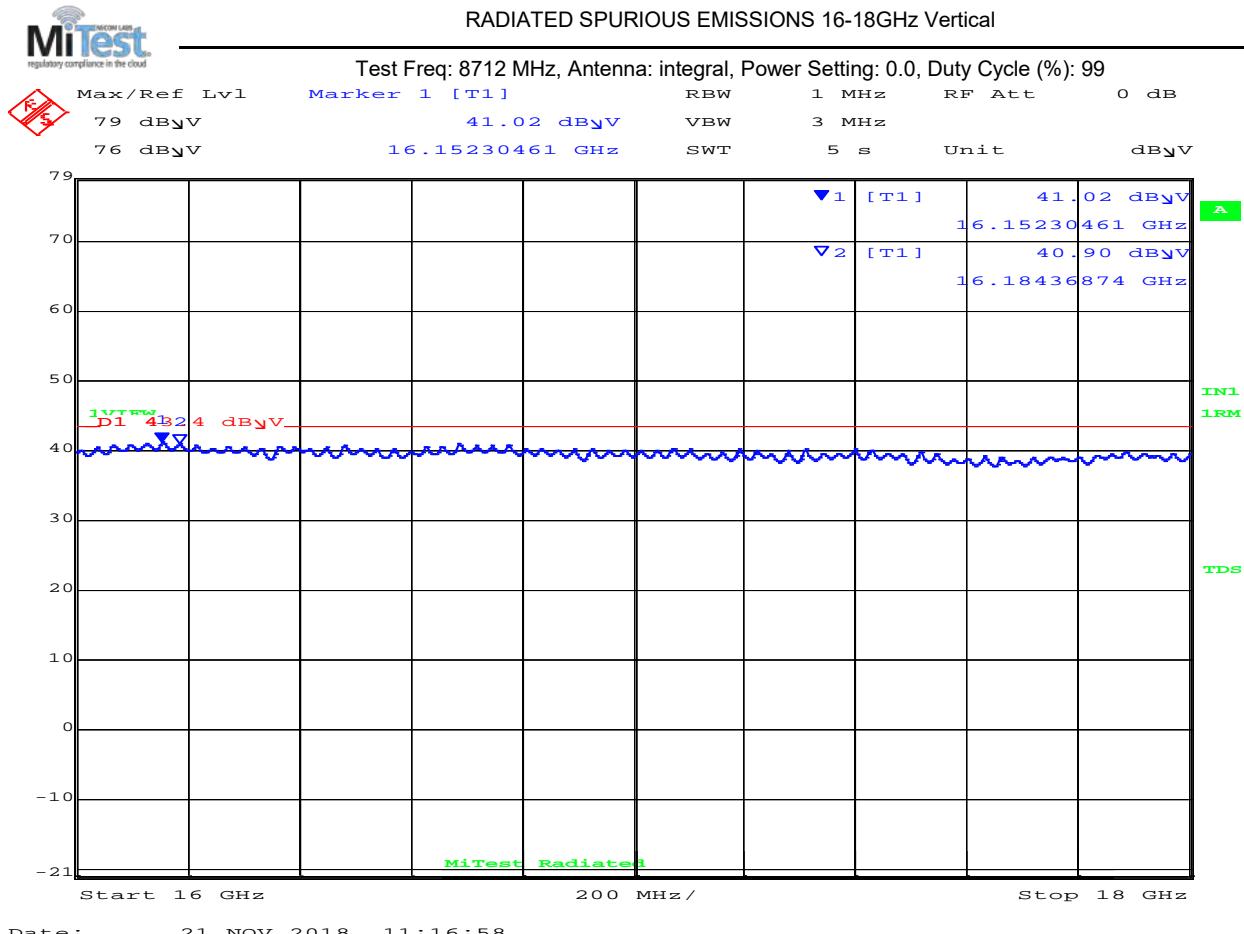
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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.

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



16000.00 – 18000.00 GHz

Num	Frequency MHz	Level dB _{µV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{µV/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)

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.

9.4.2. GPS Band Emissions

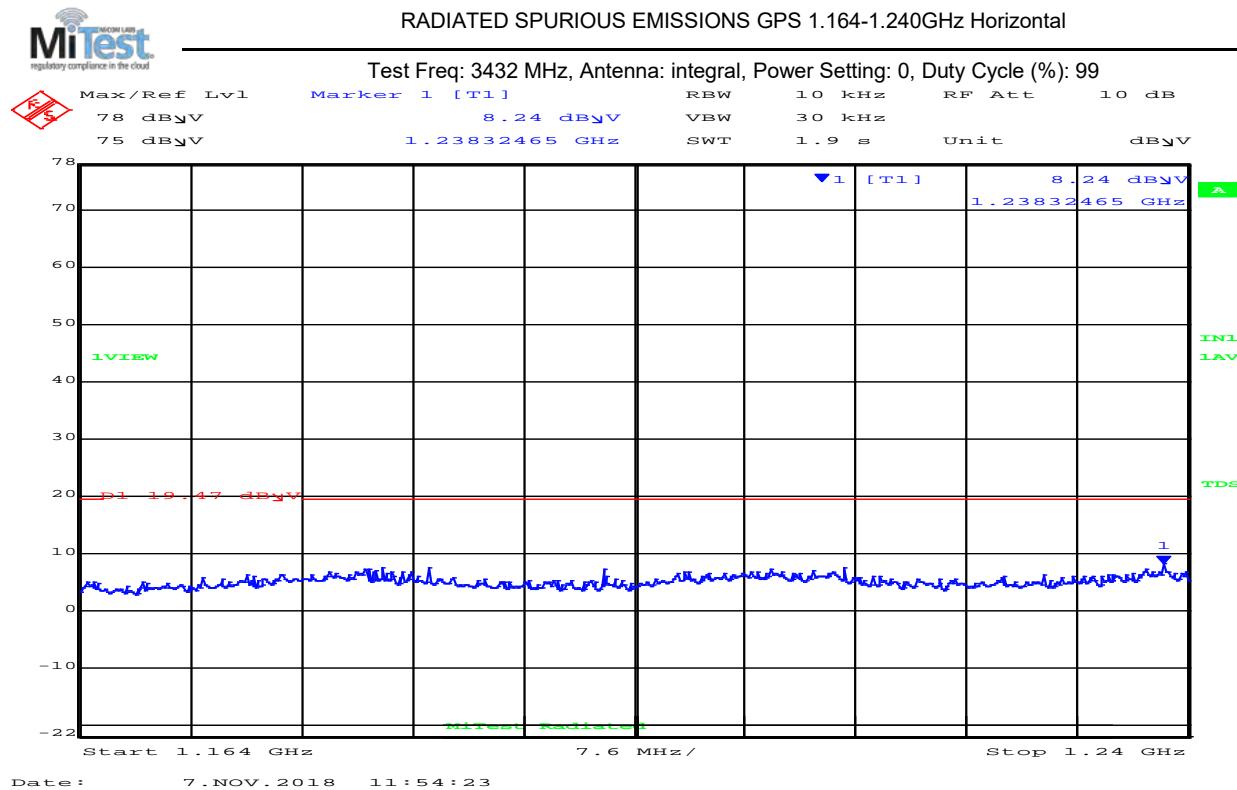
9.4.2.1. Commander AL5930

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 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.

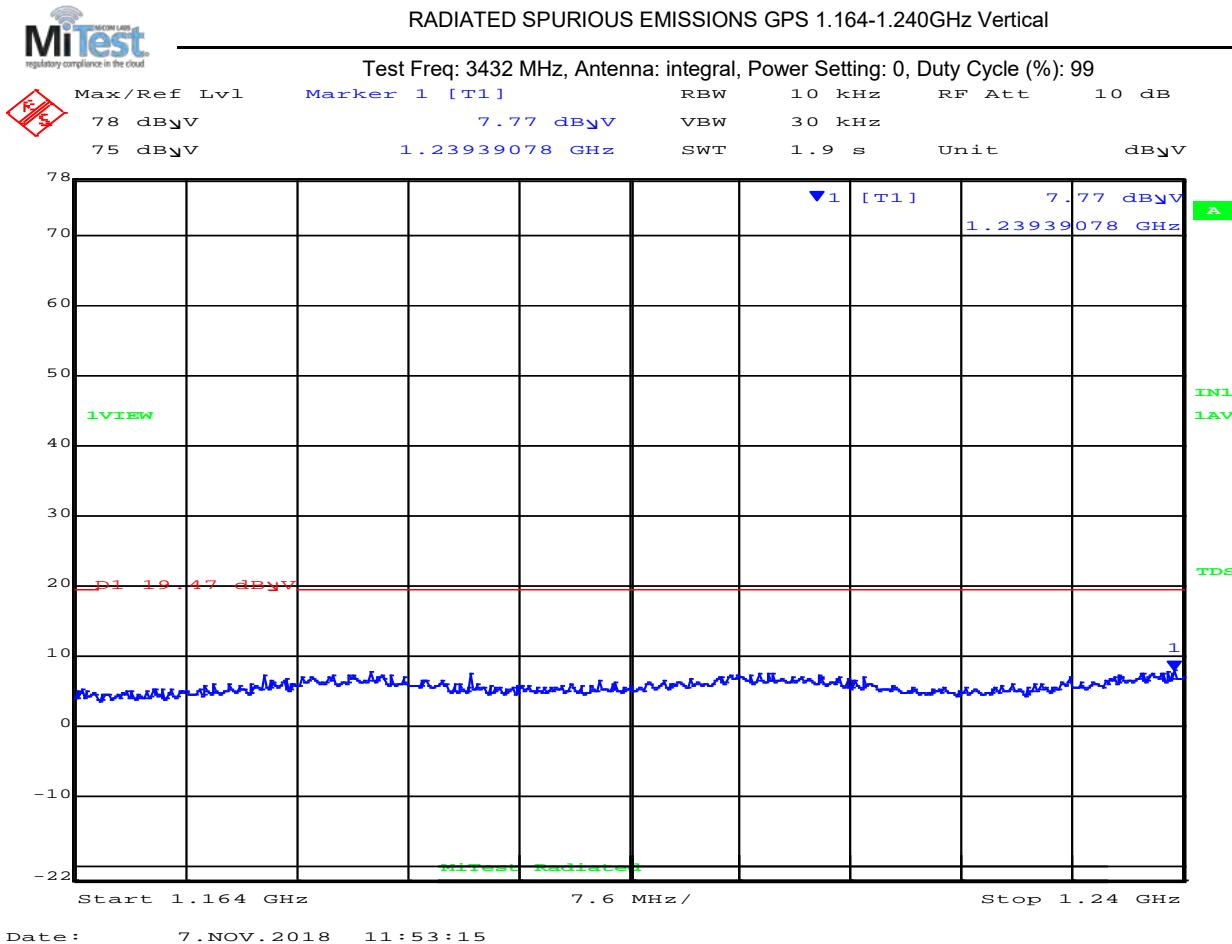


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 324 of 466

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									

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.

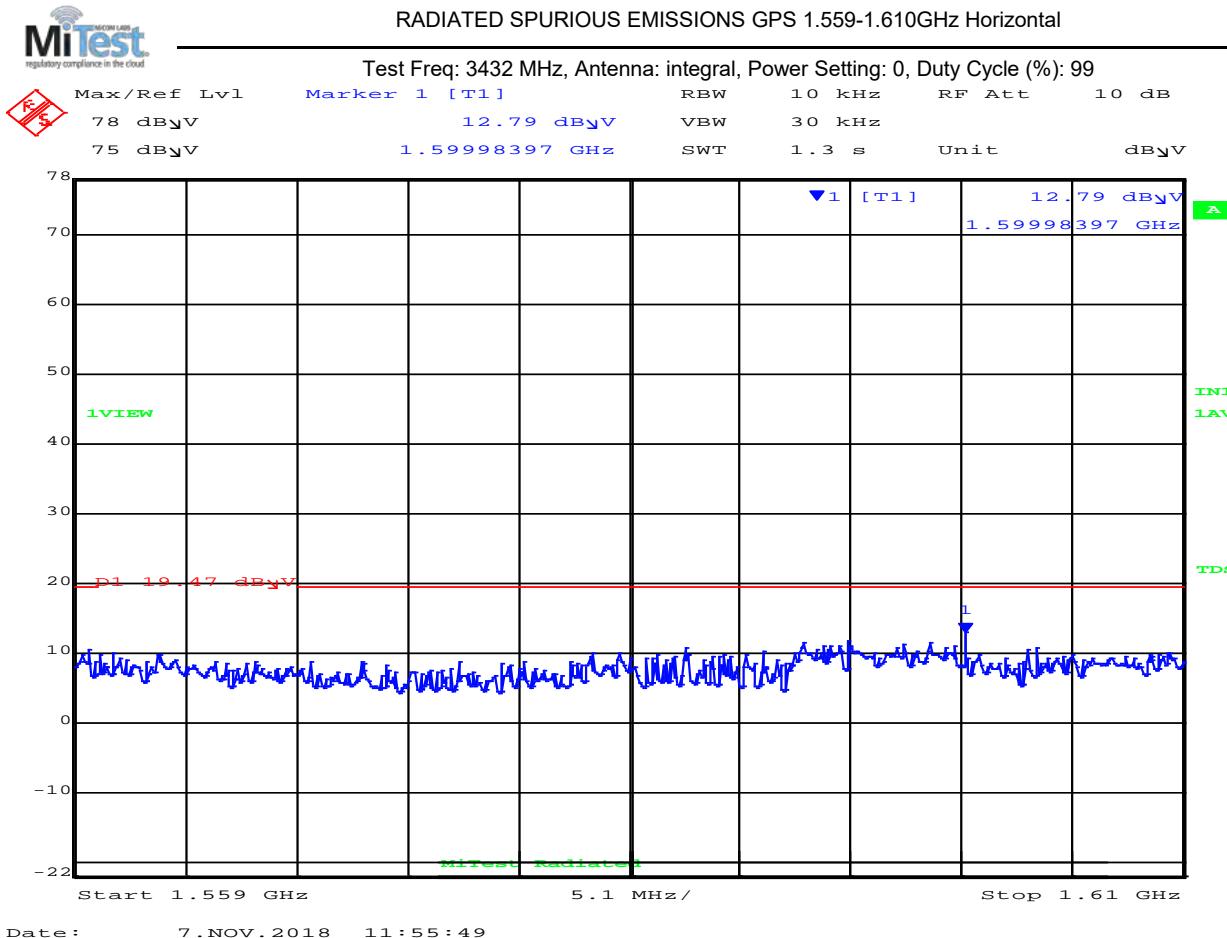


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 325 of 466

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



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										

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.

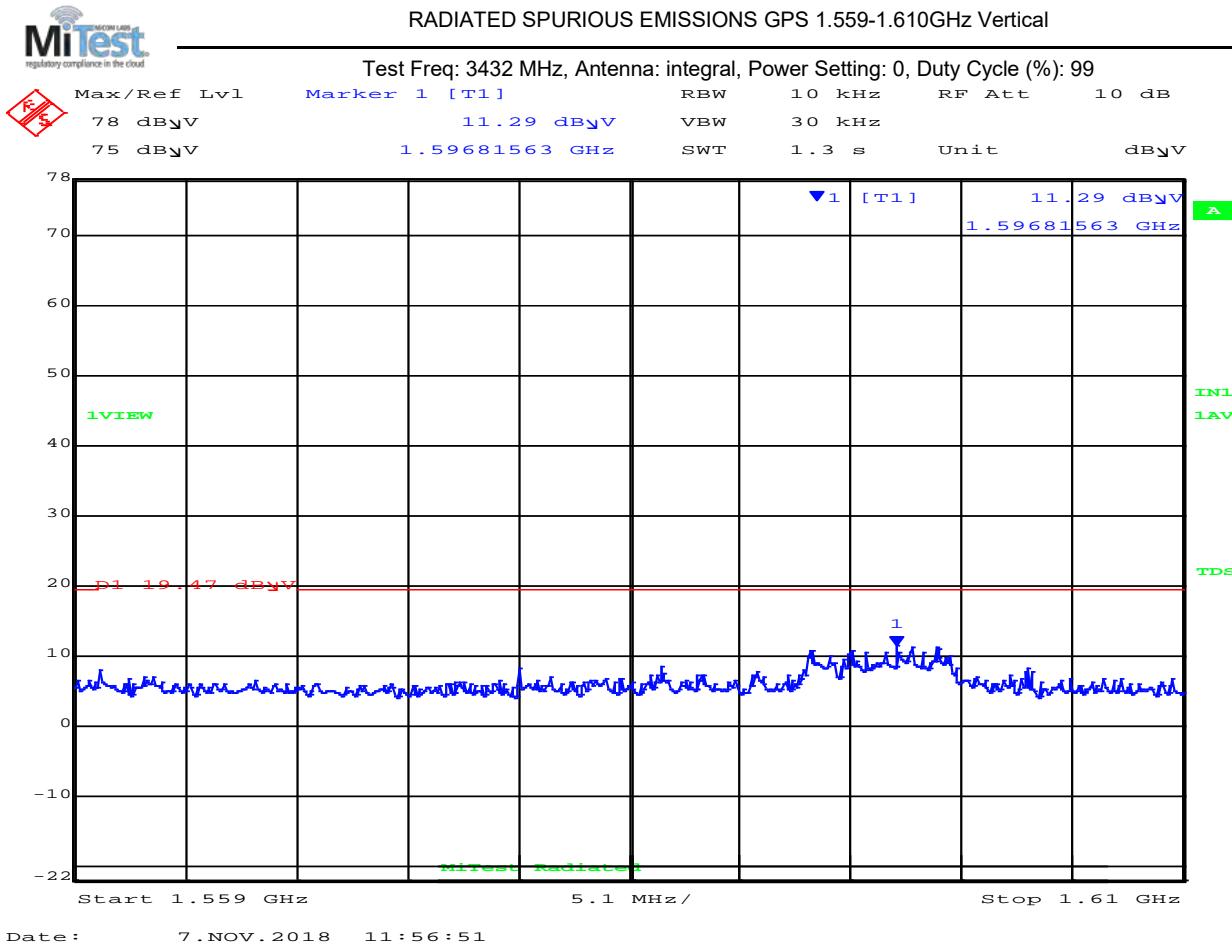


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 326 of 466

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 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.



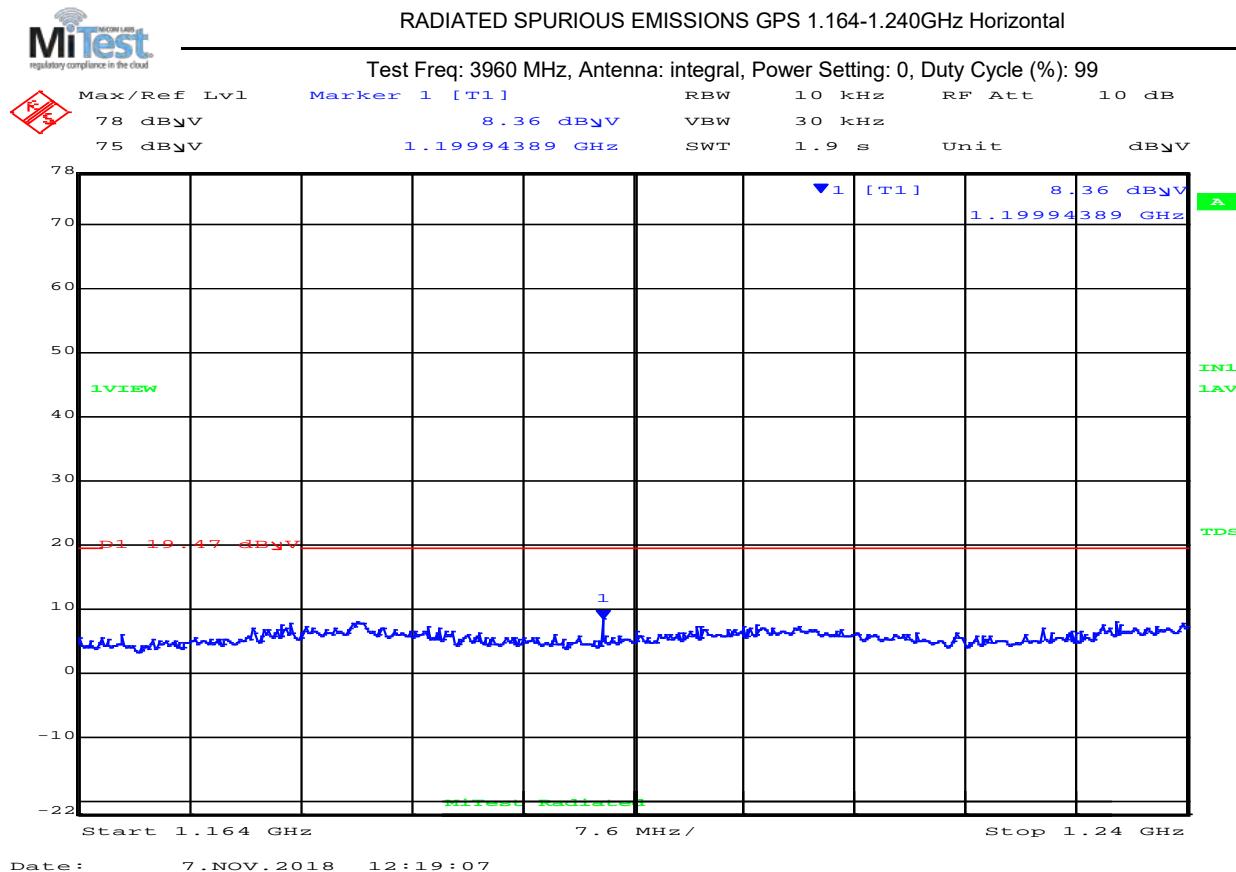
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 327 of 466

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 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.

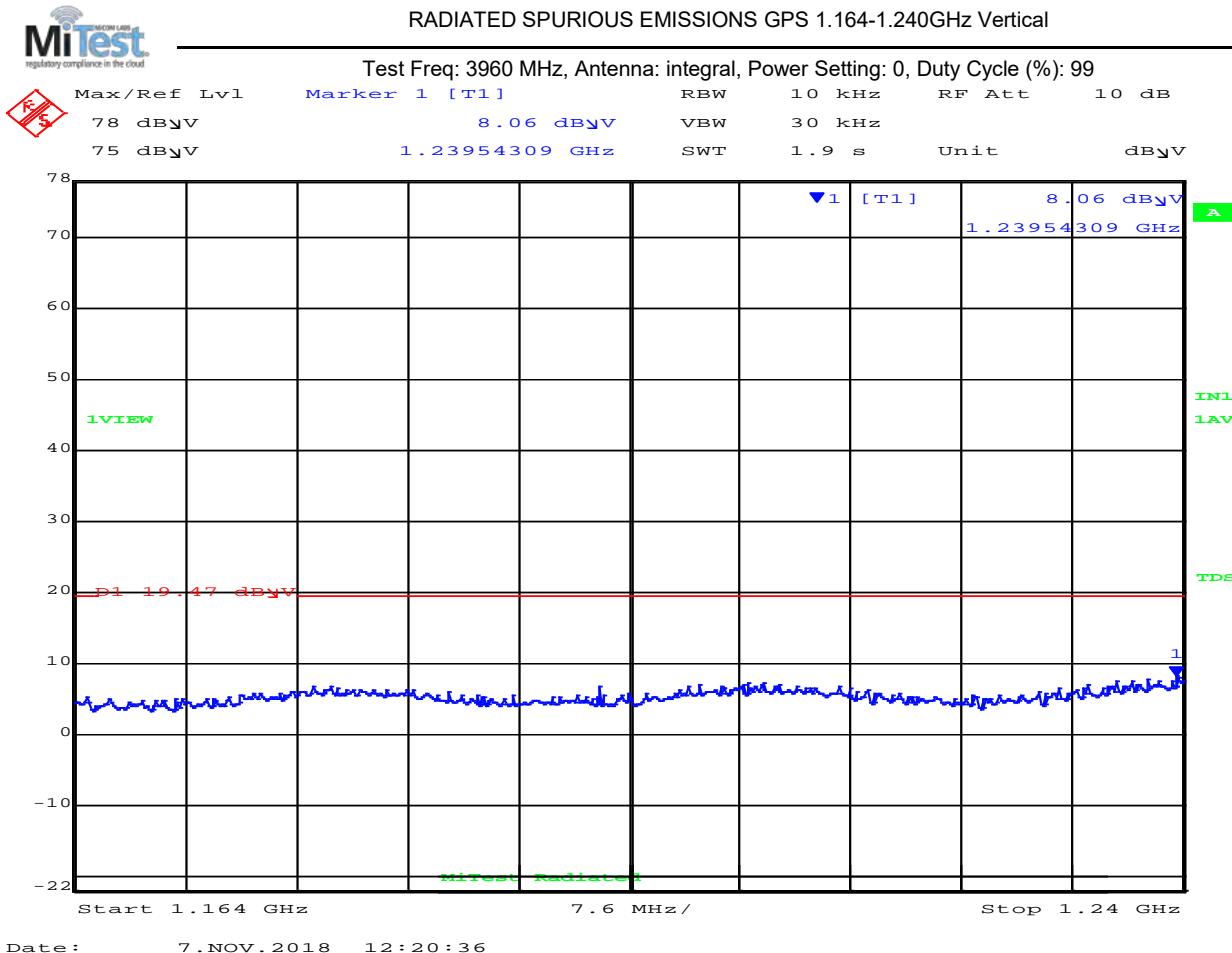


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 328 of 466

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 dB _V /m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _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.

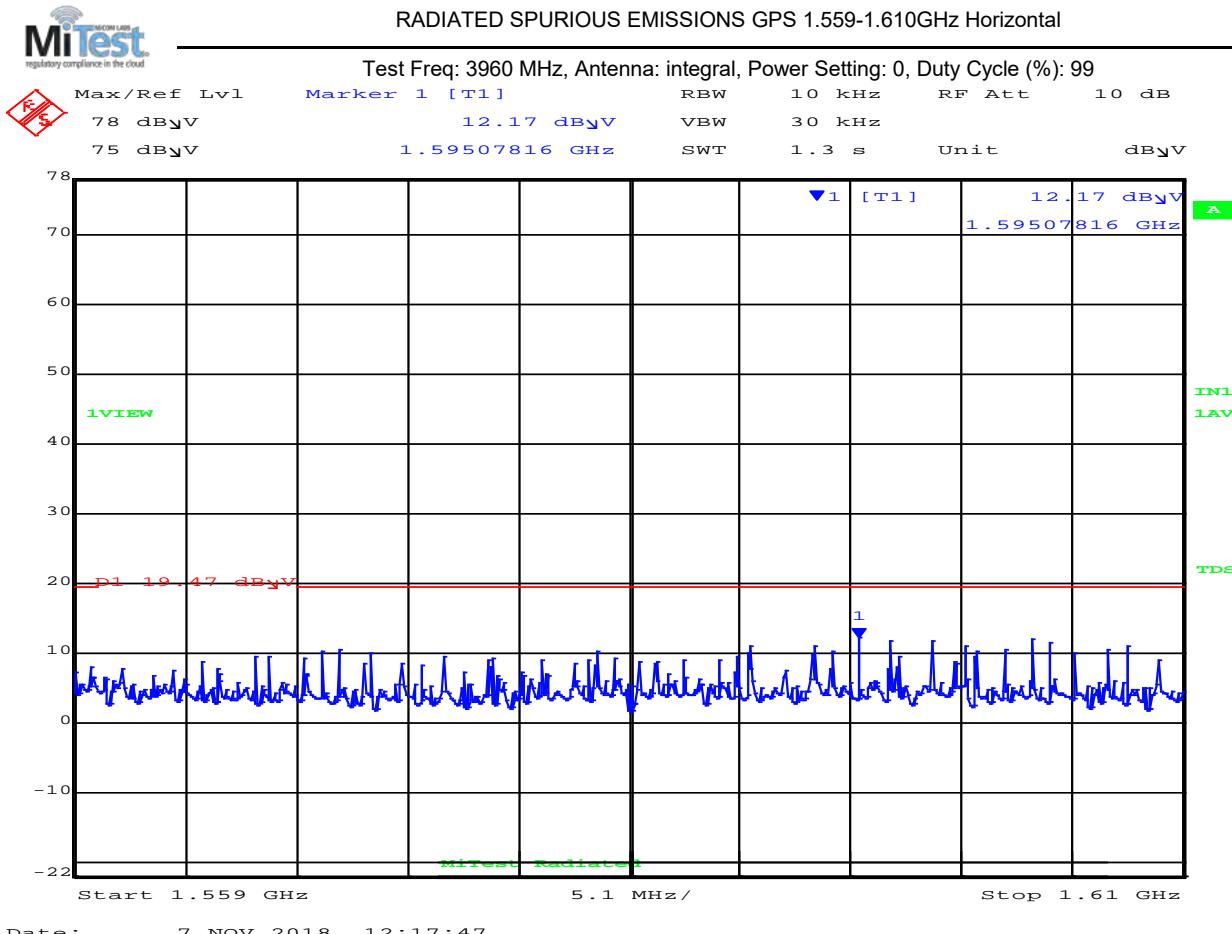


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 329 of 466

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



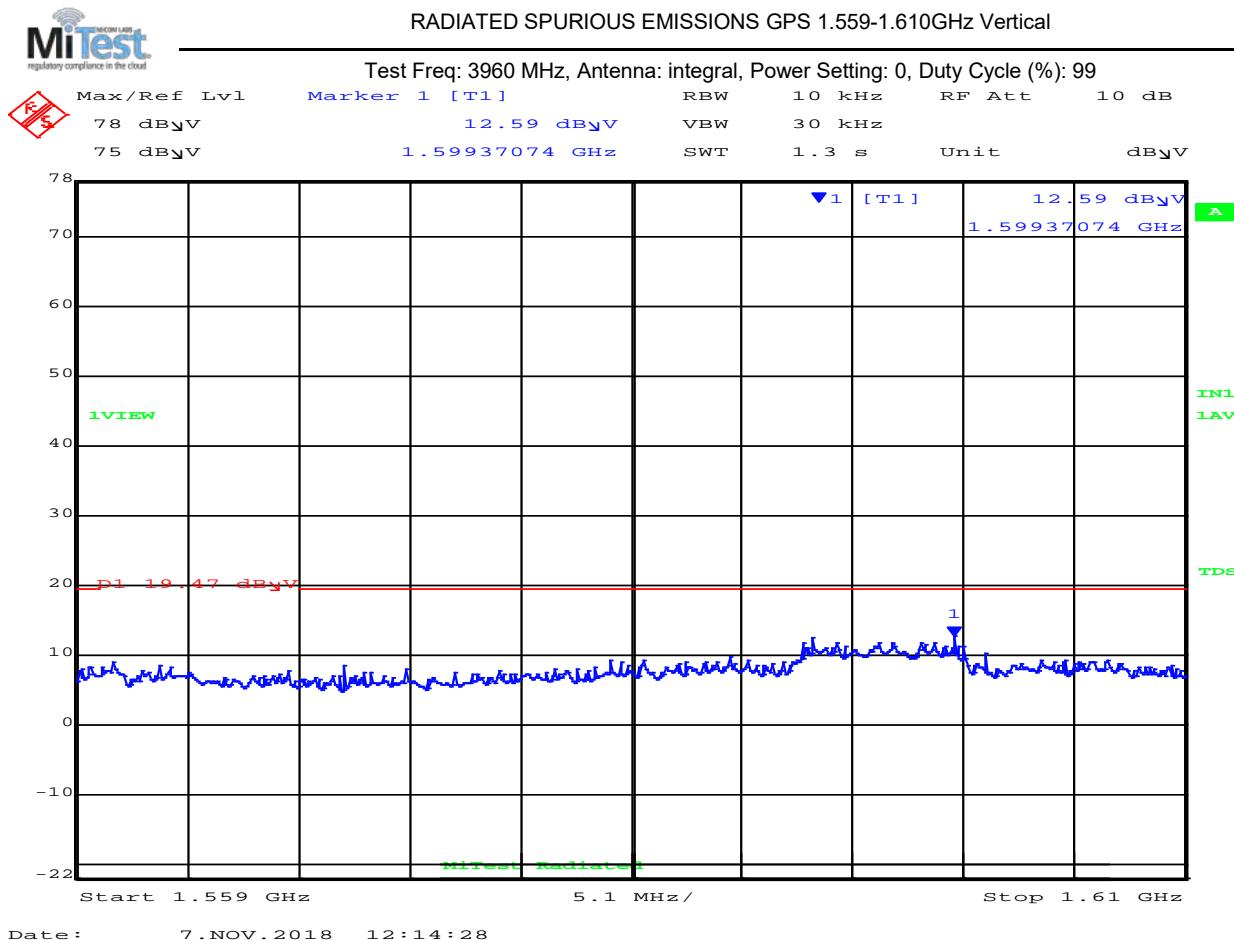
1559.00-1610.00 MHz									
Num	Frequency MHz	Level dB _µ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _µ V/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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.

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



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

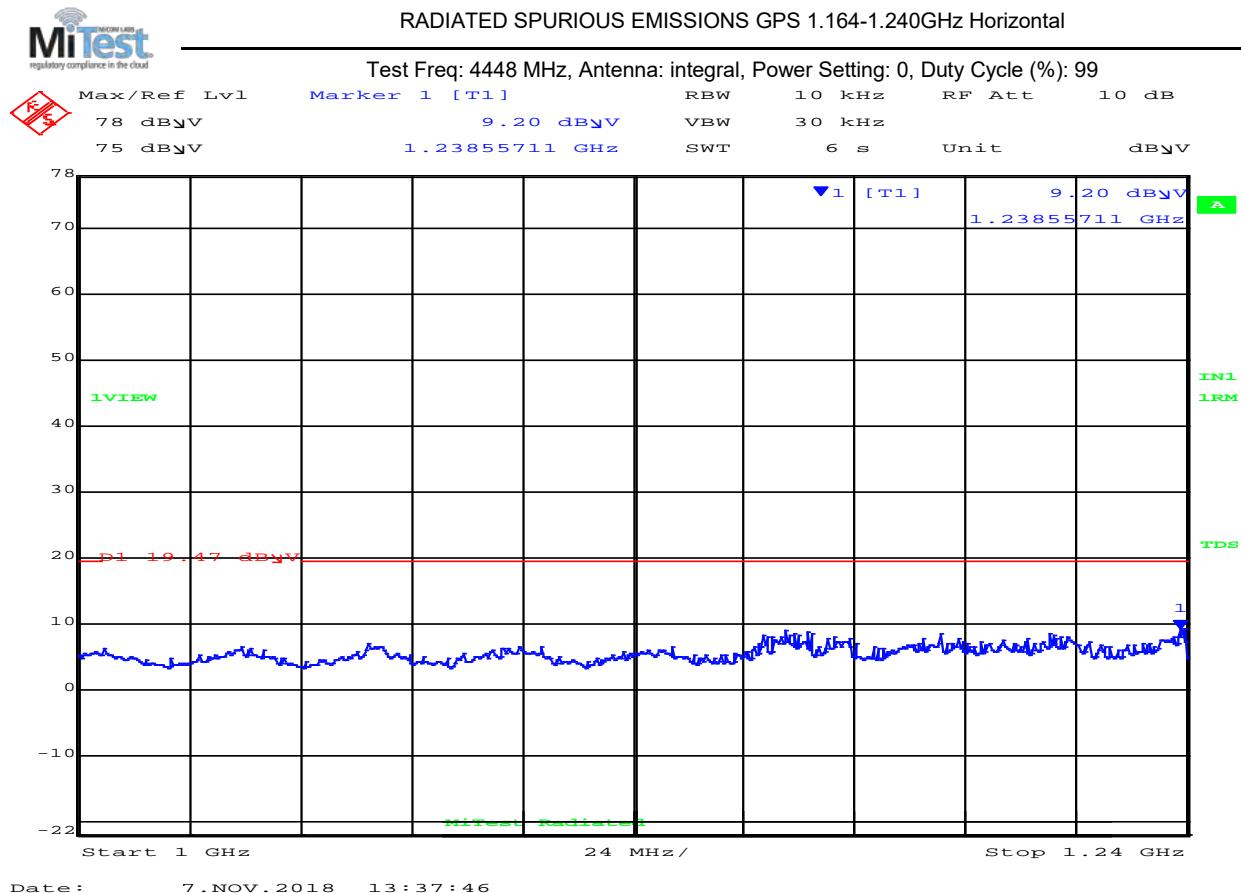
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

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.

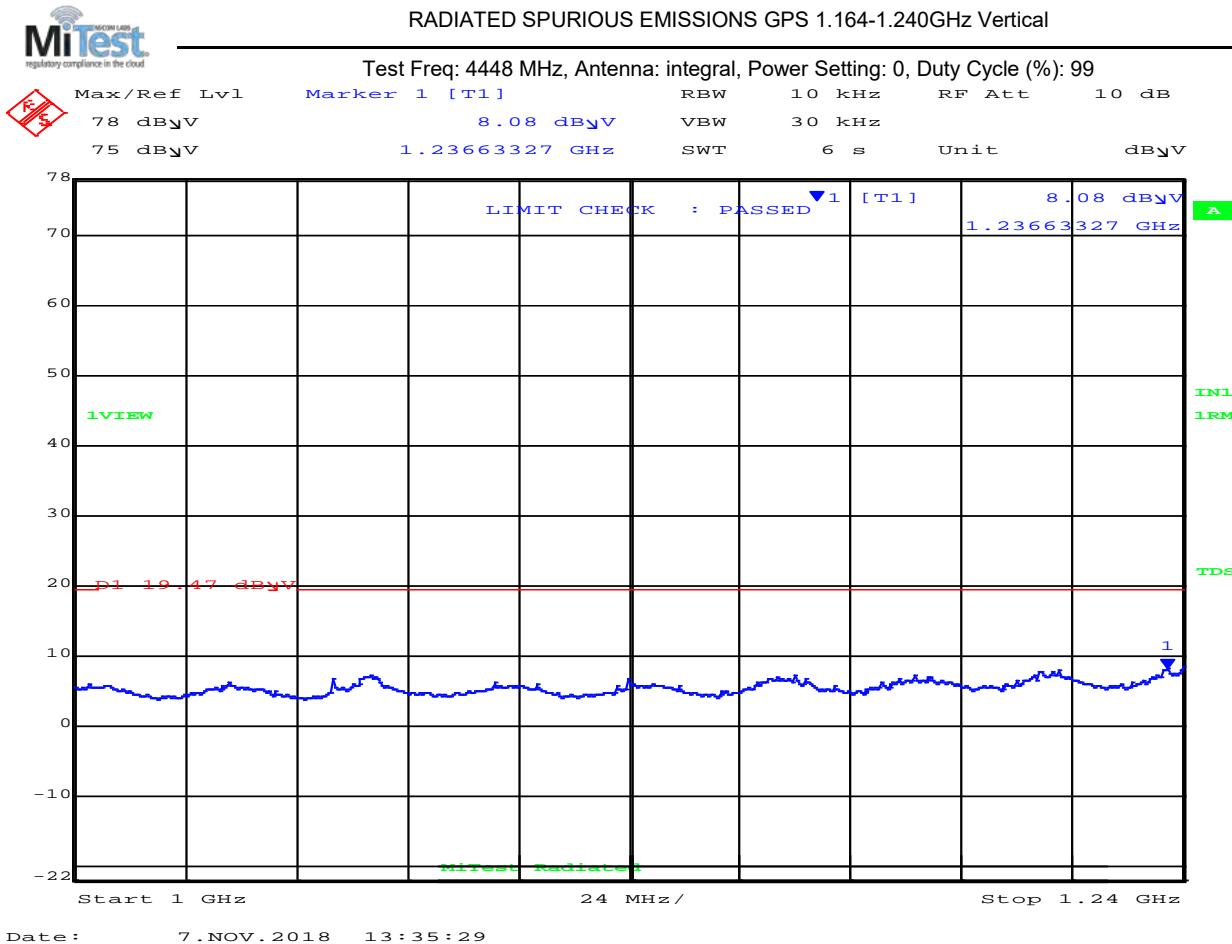


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 332 of 466

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 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.

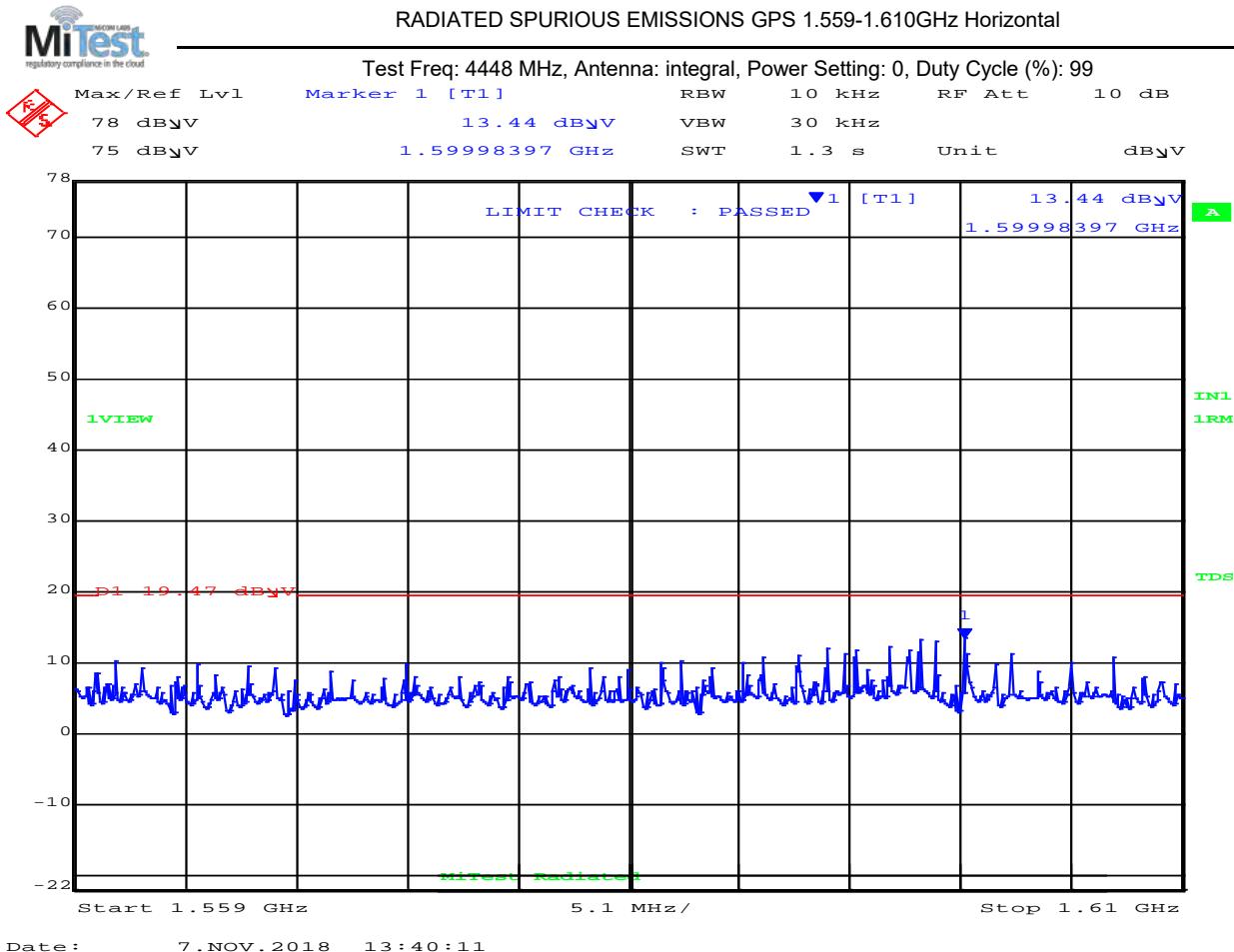


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 333 of 466

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	1.9*	Average	Horizontal	150	0	19.47	-17.6	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.

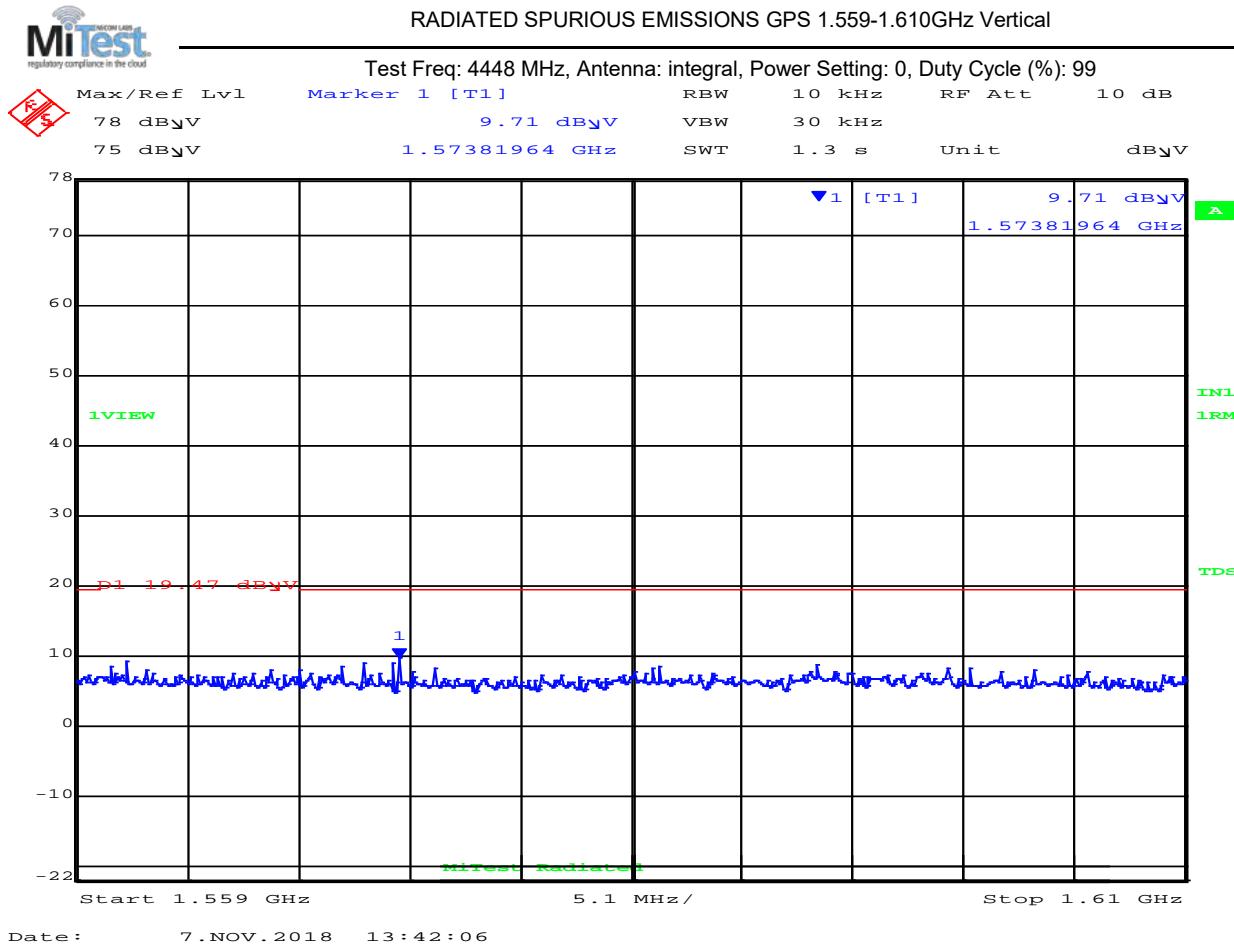


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 334 of 466

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									

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.



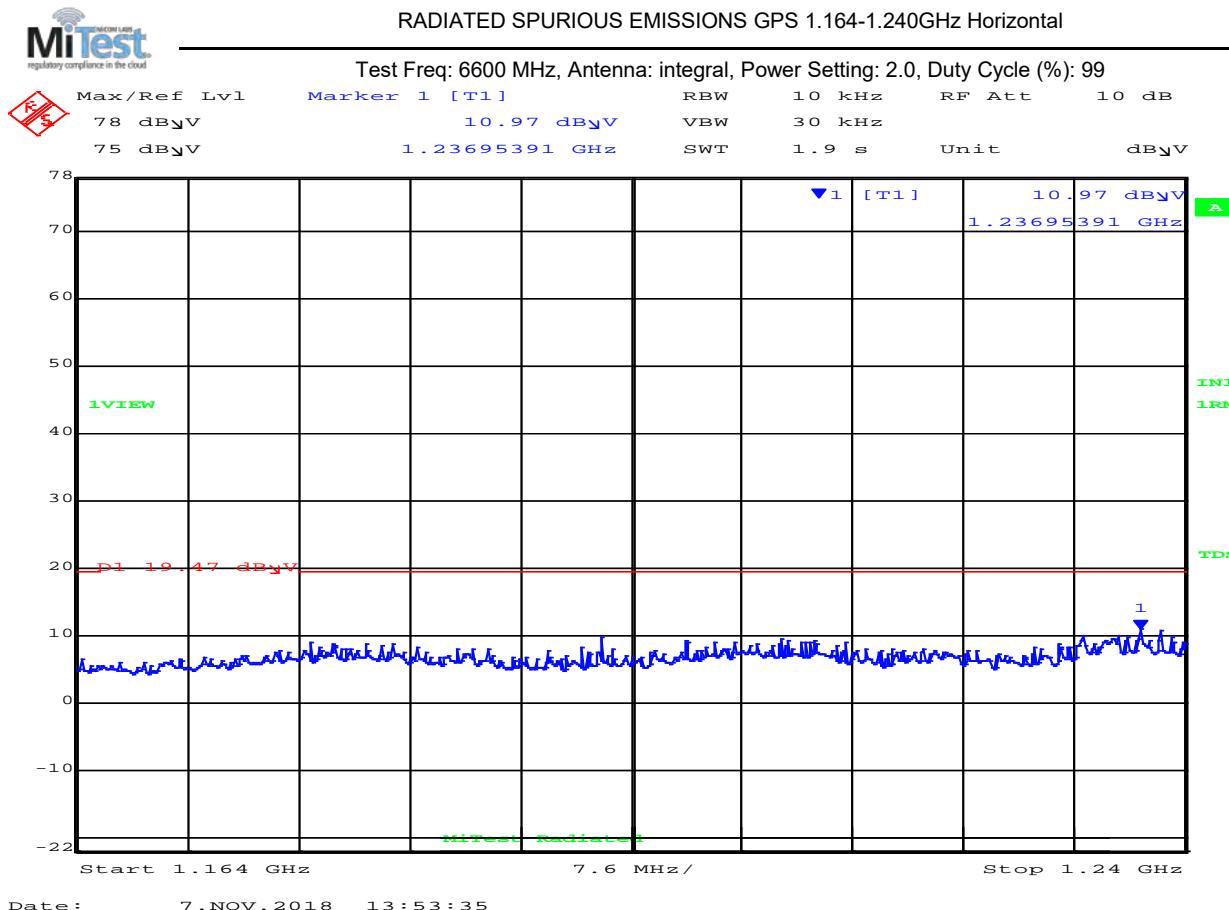
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 335 of 466

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.

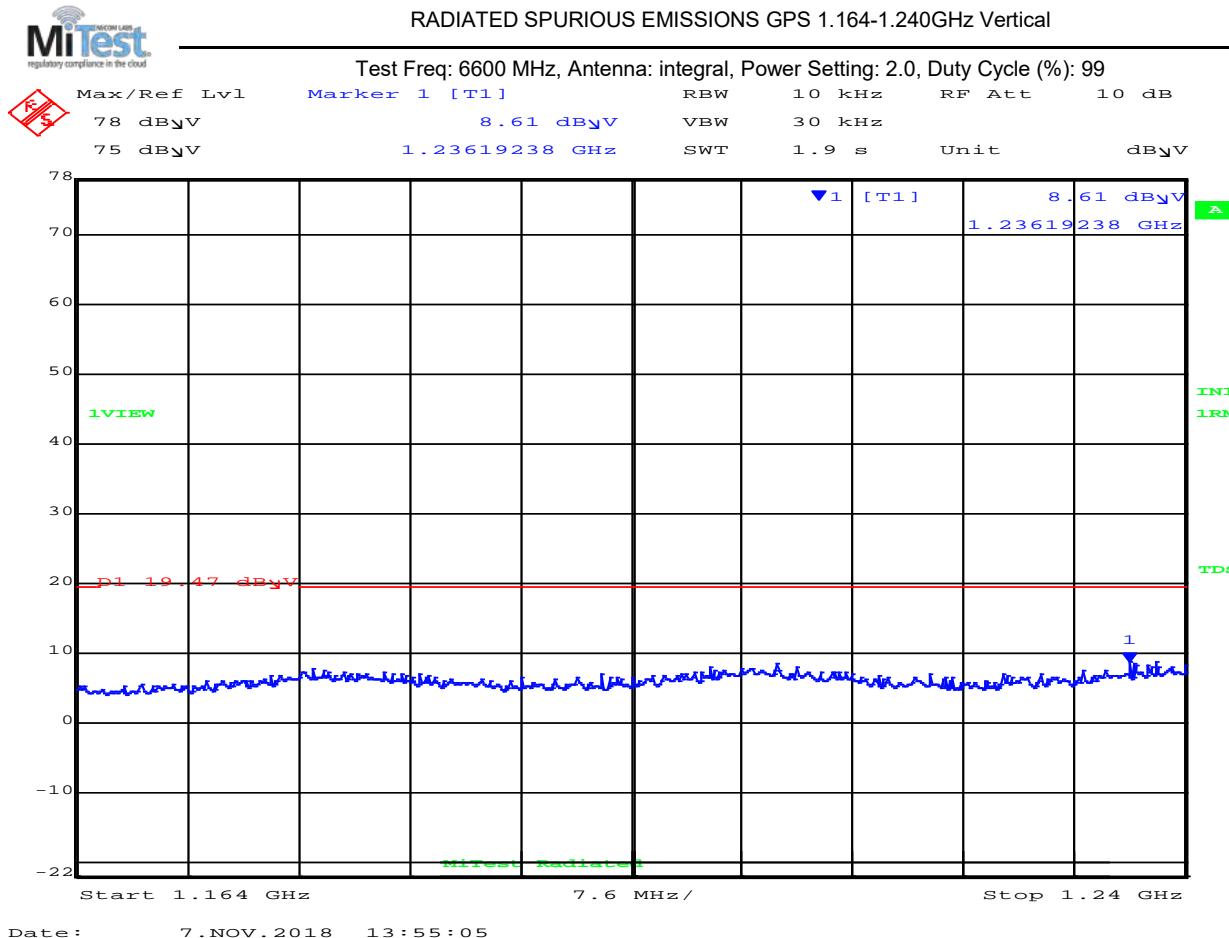


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 336 of 466

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



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.

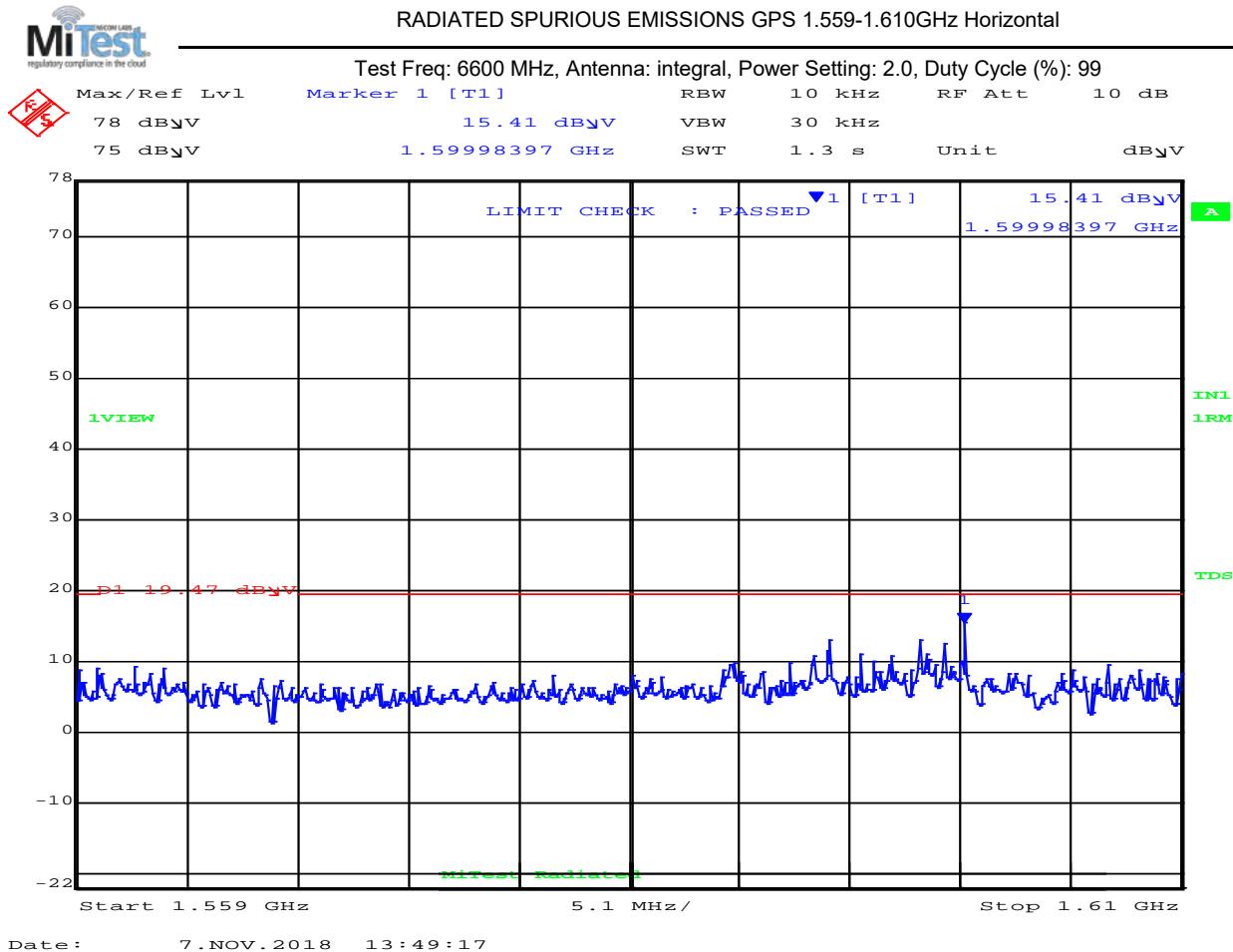


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 337 of 466

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	2.0*	Average	Horizontal	150	0	19.47	-17.5	Pass

Test Notes:

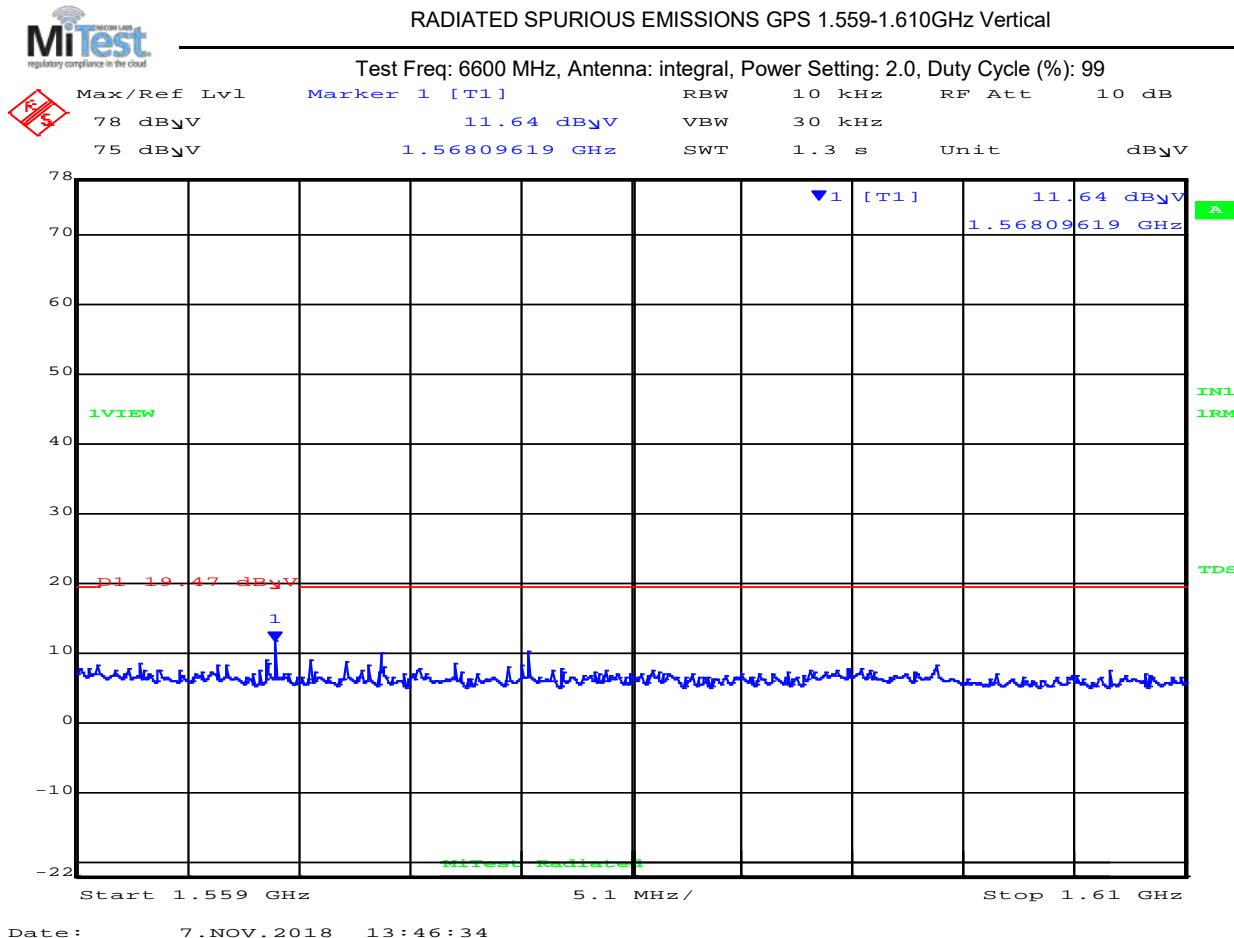
Final Average measurements done with 1 KHz Receiver Bandwidth per standard

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.

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 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										

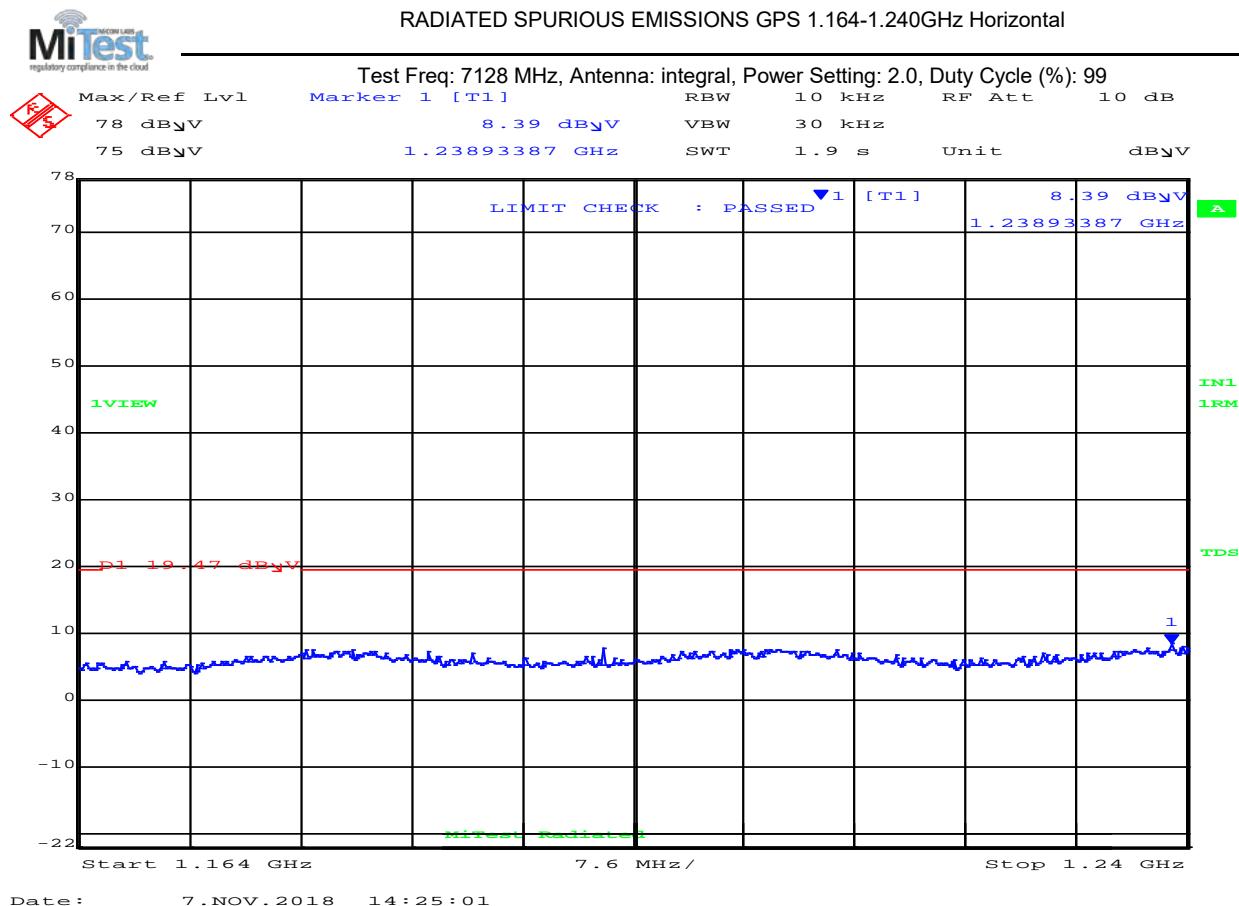
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

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 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.

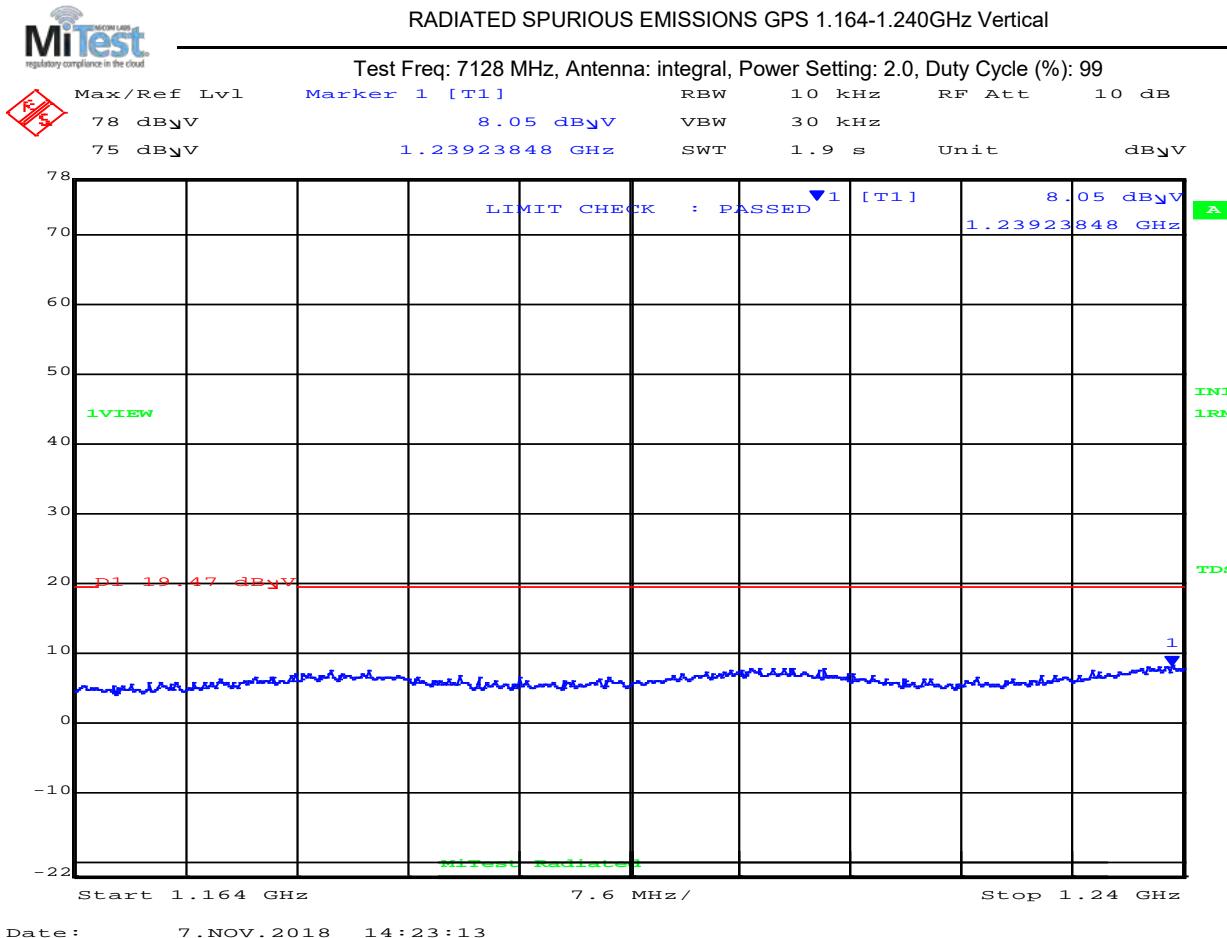


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 340 of 466

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 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.

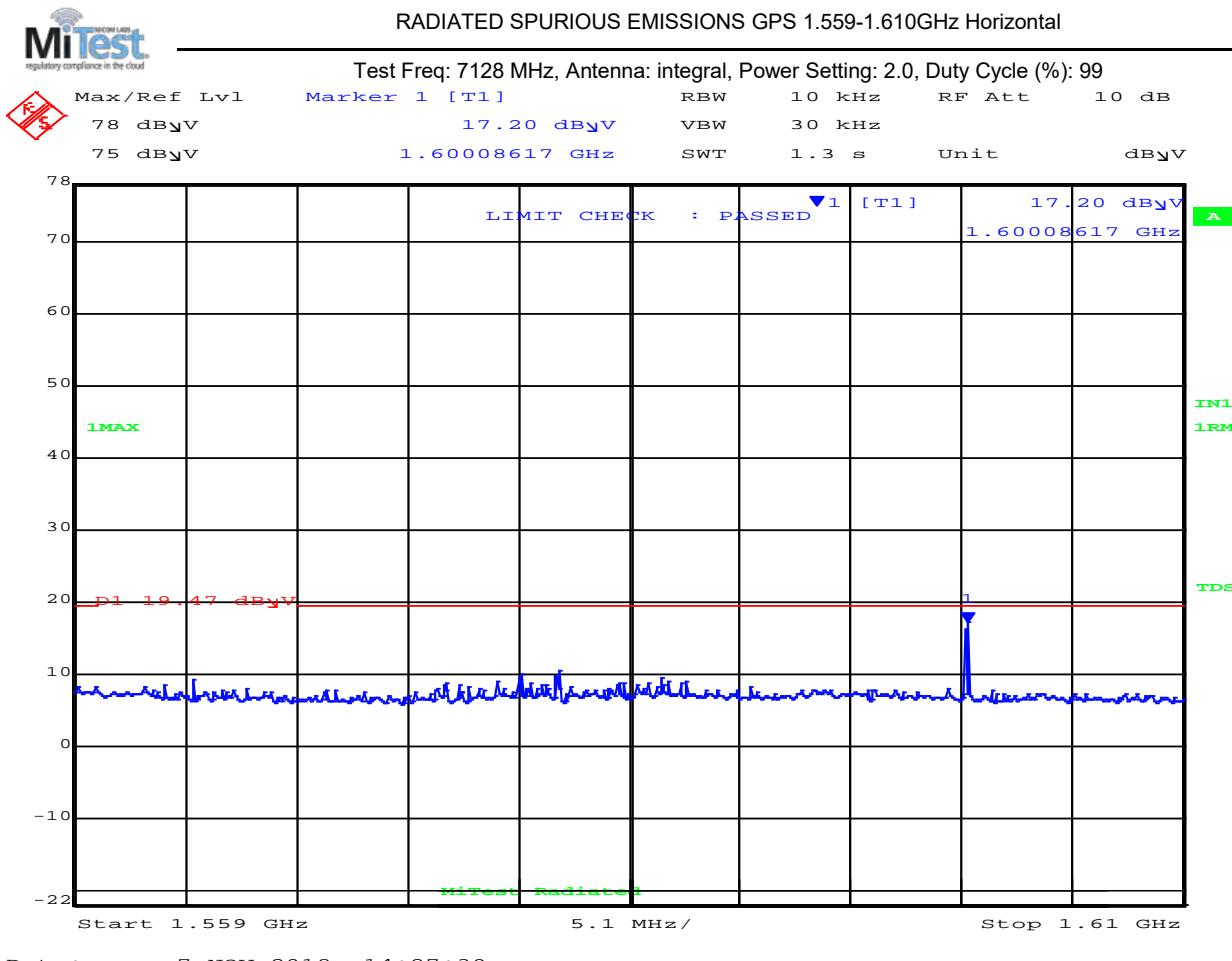


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 341 of 466

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	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

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.

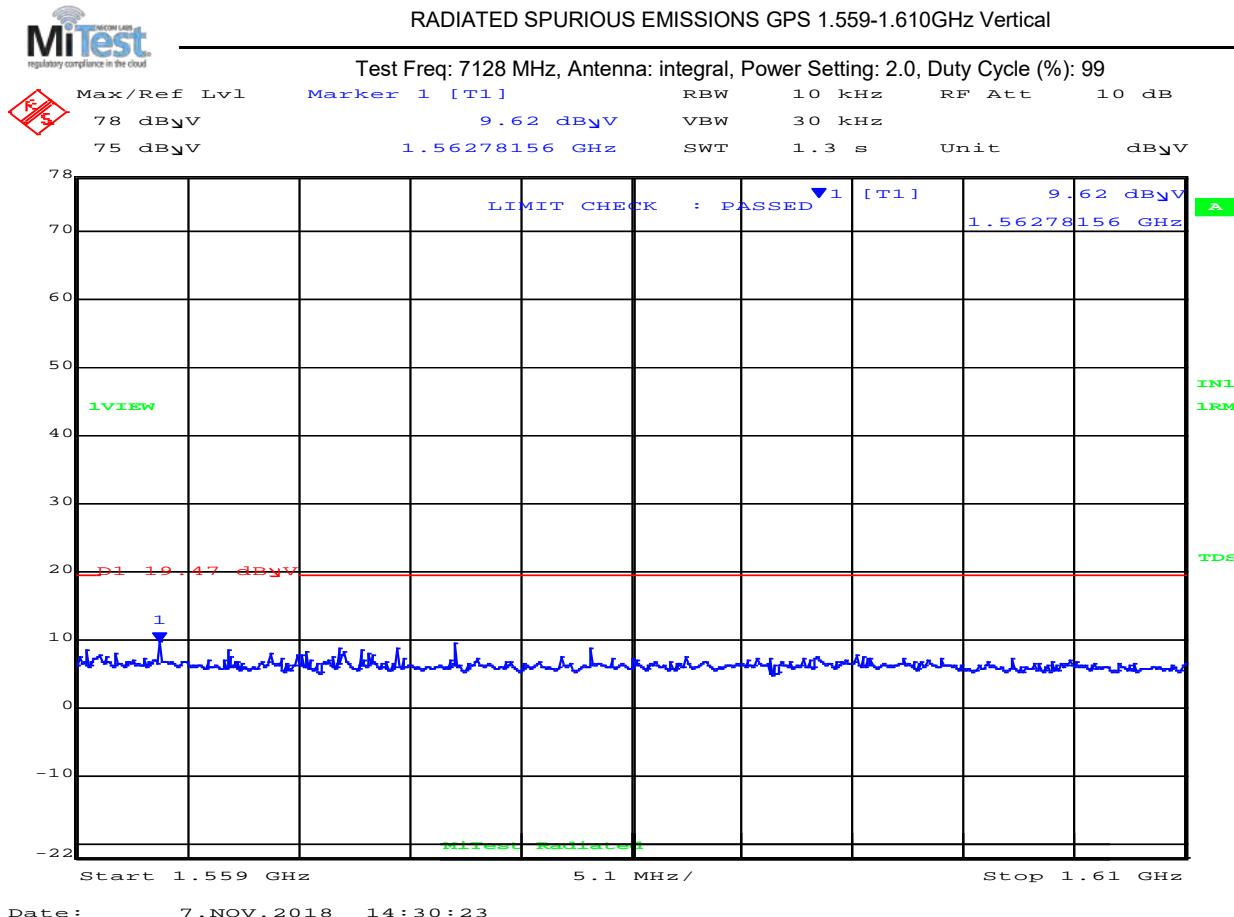


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 342 of 466

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 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.



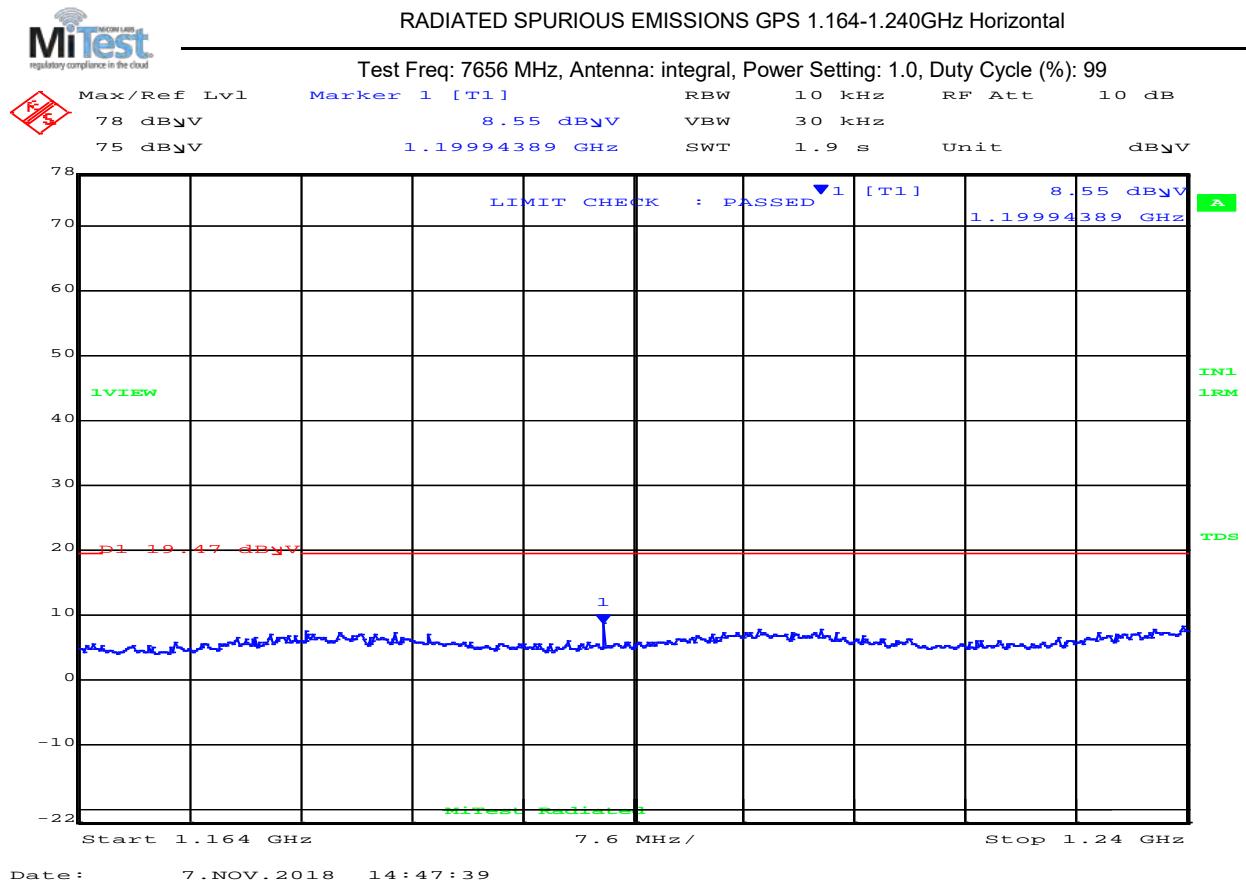
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 343 of 466

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 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.

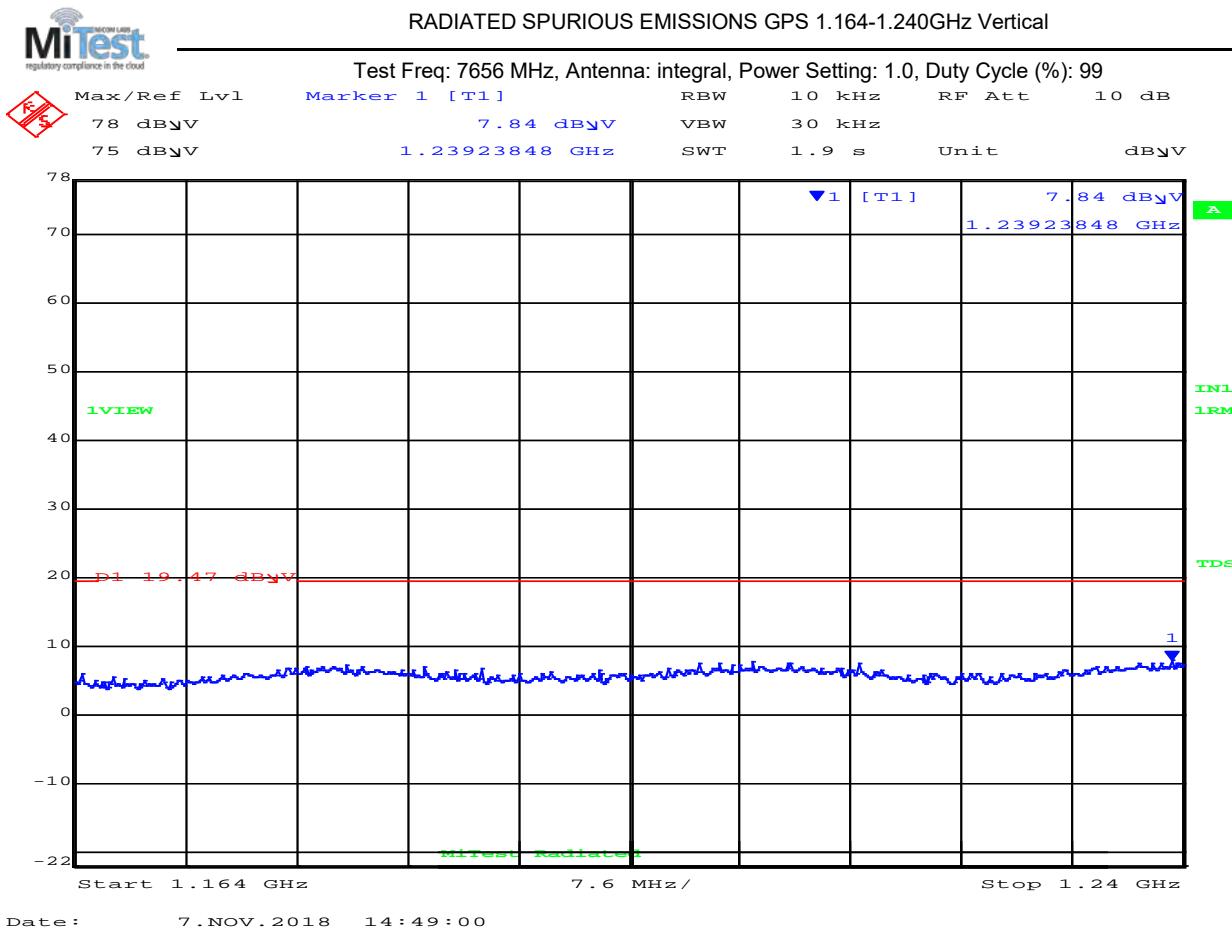


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 344 of 466

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 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

To: FCC Part 15.519

Serial #: ALER01-U2A Rev A

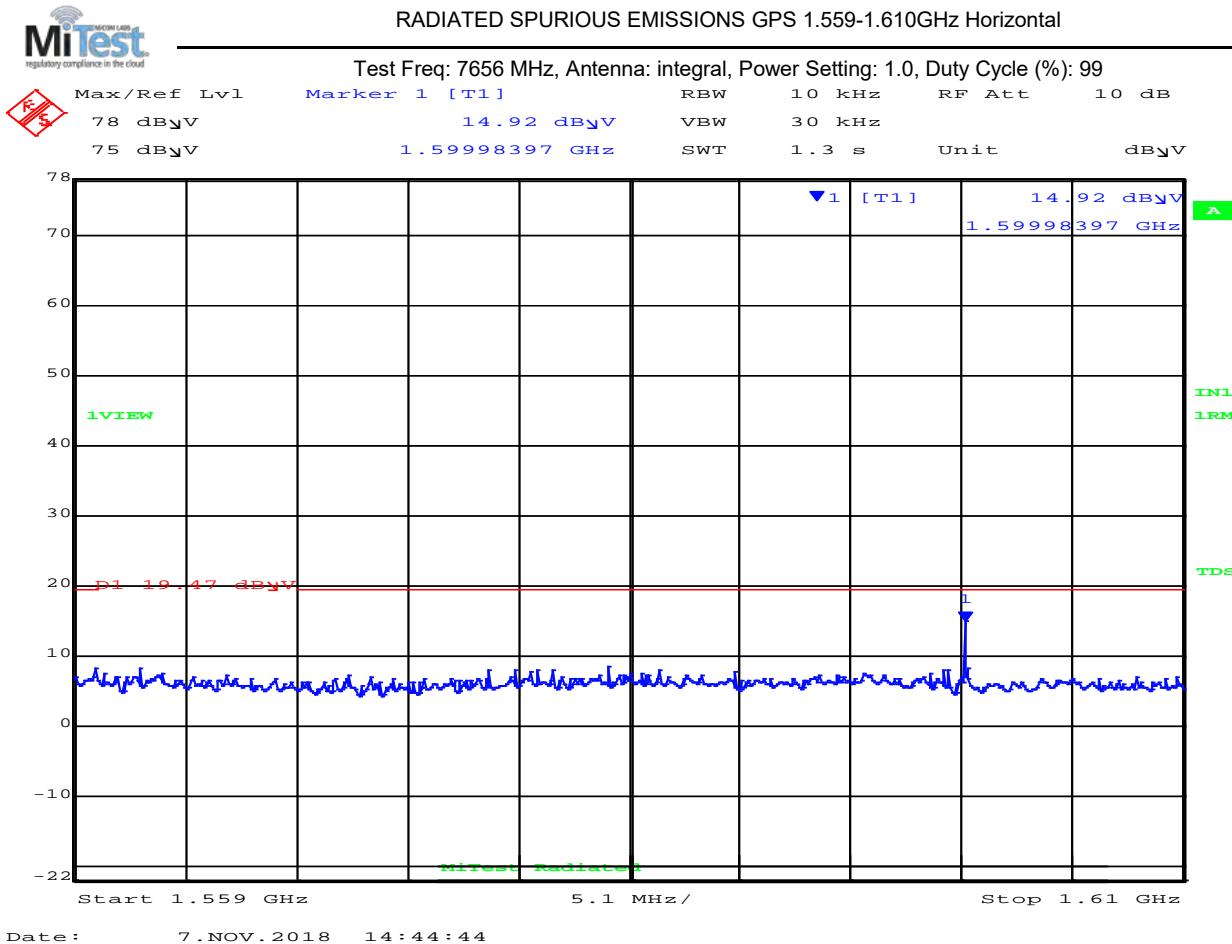
Issue Date: 12th December 2018

Page: 345 of 466

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 dB _µ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _µ V/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

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.

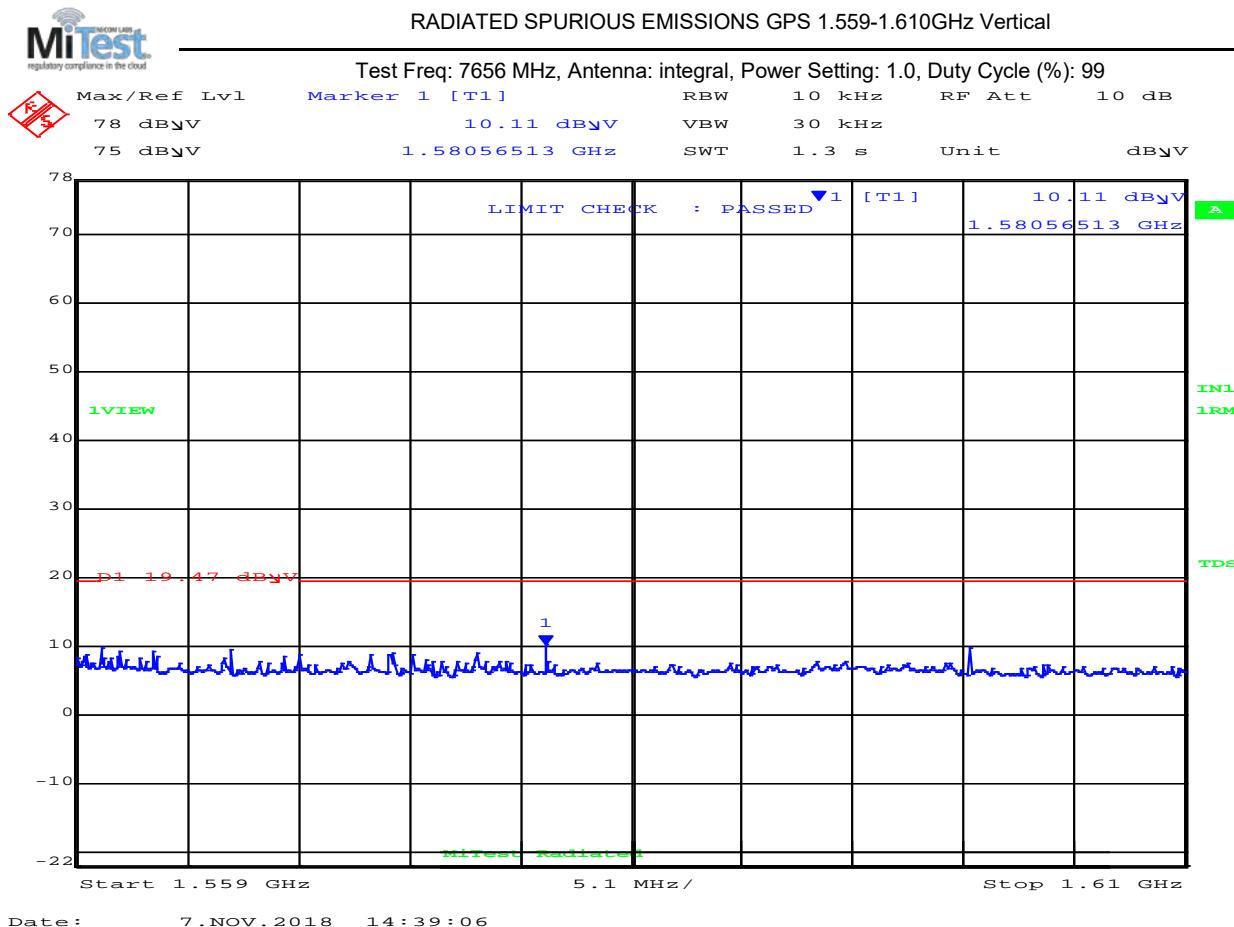


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 346 of 466

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 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									

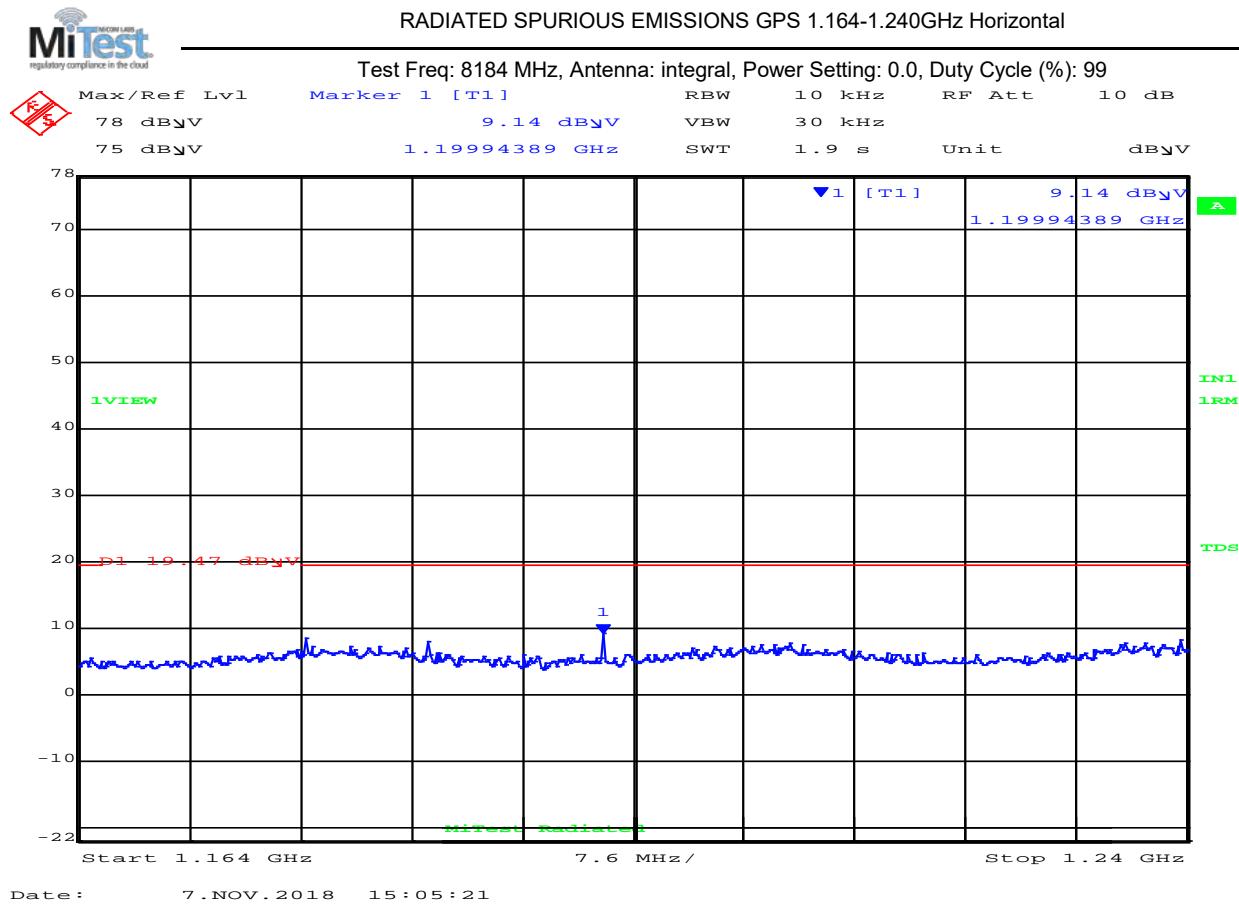
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

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.

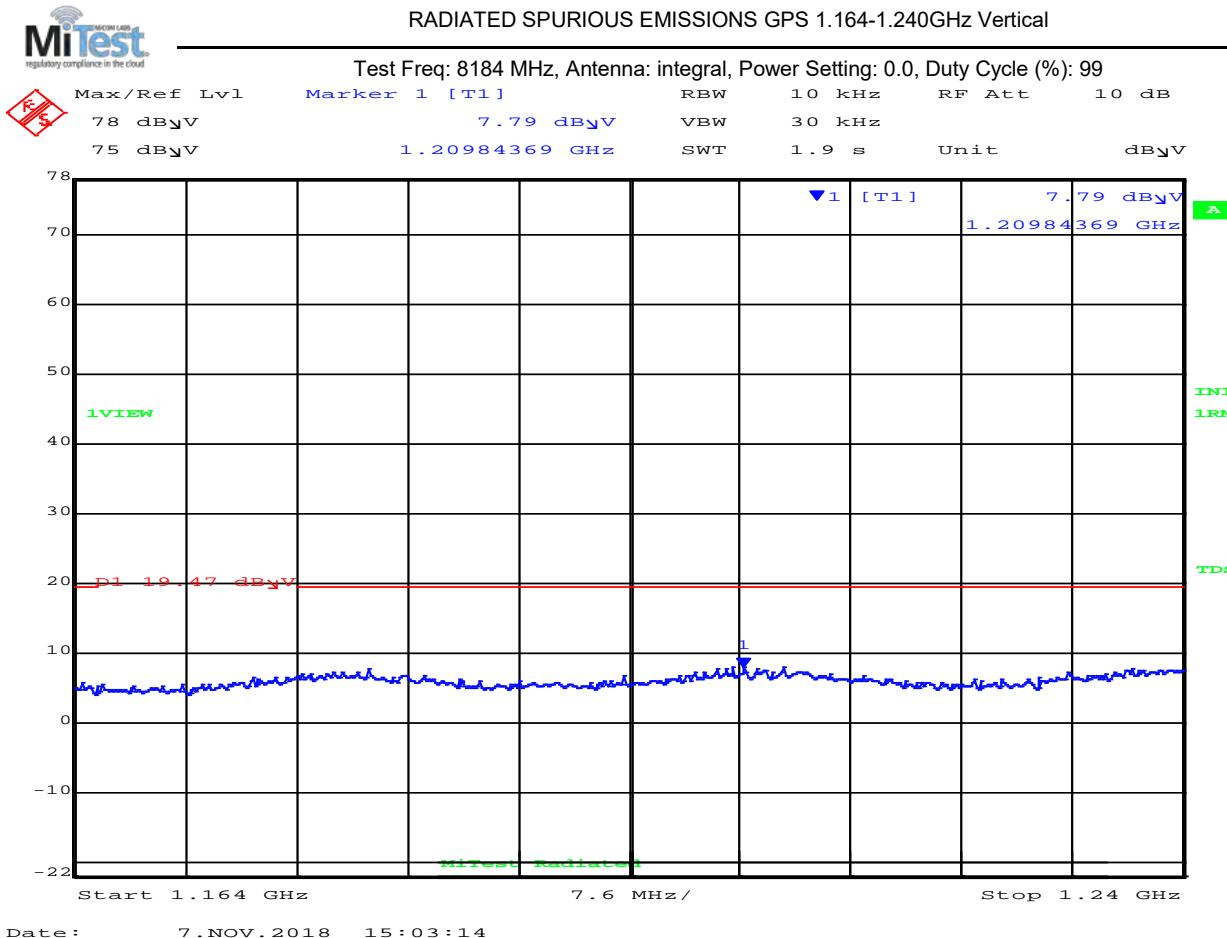


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 348 of 466

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



Date: 7.NOV.2018 15:03:14

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

To: FCC Part 15.519

Serial #: ALER01-U2A Rev A

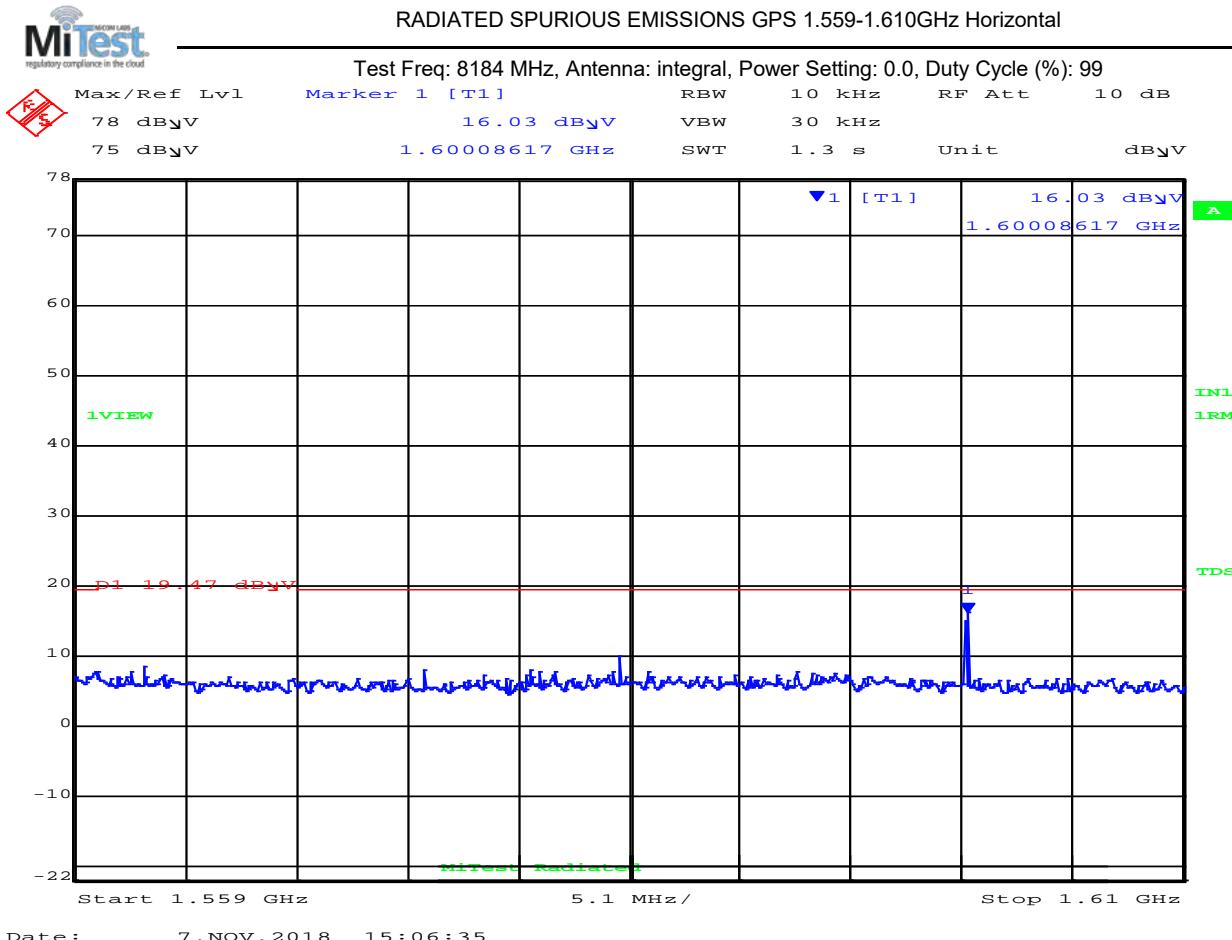
Issue Date: 12th December 2018

Page: 349 of 466

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	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

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.

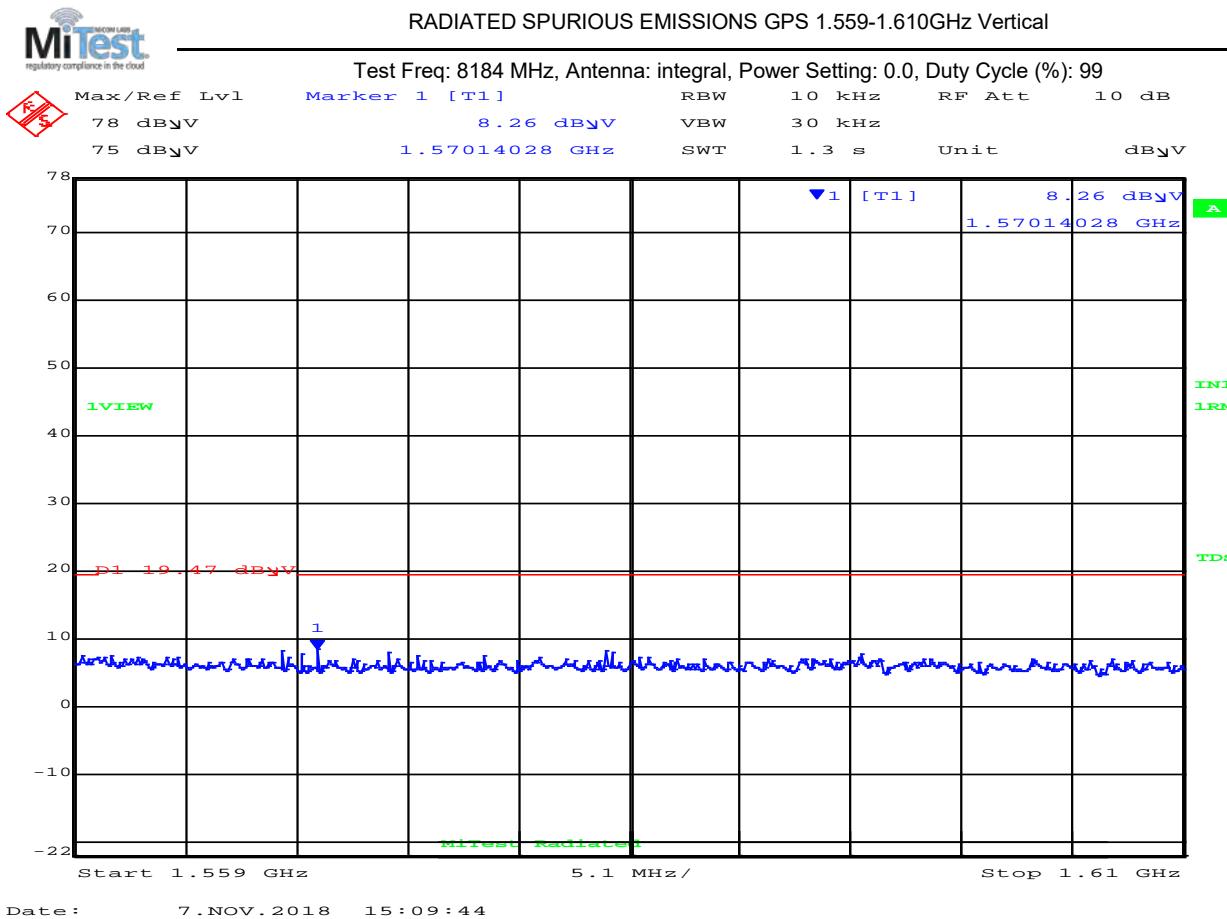


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 350 of 466

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 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									

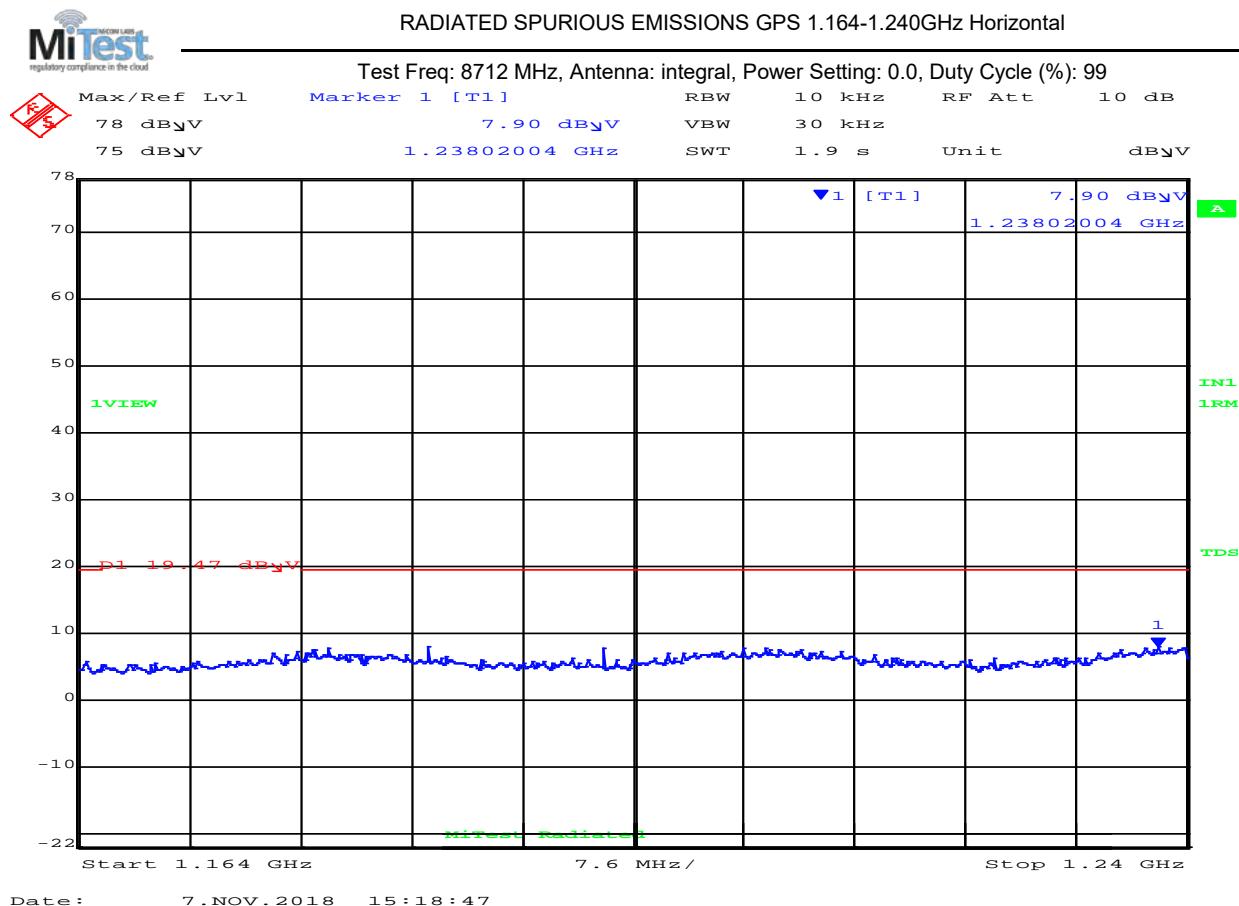
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

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.

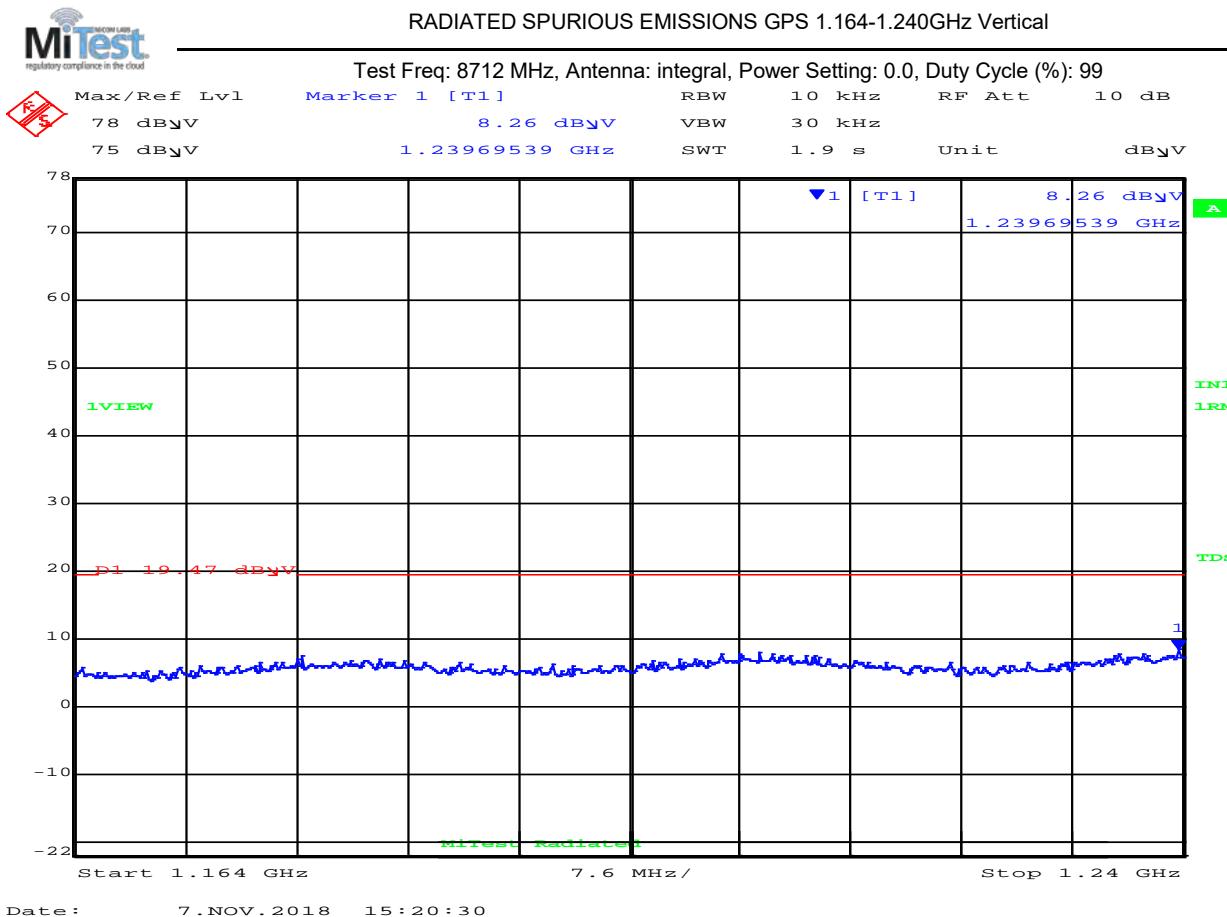


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 352 of 466

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 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.

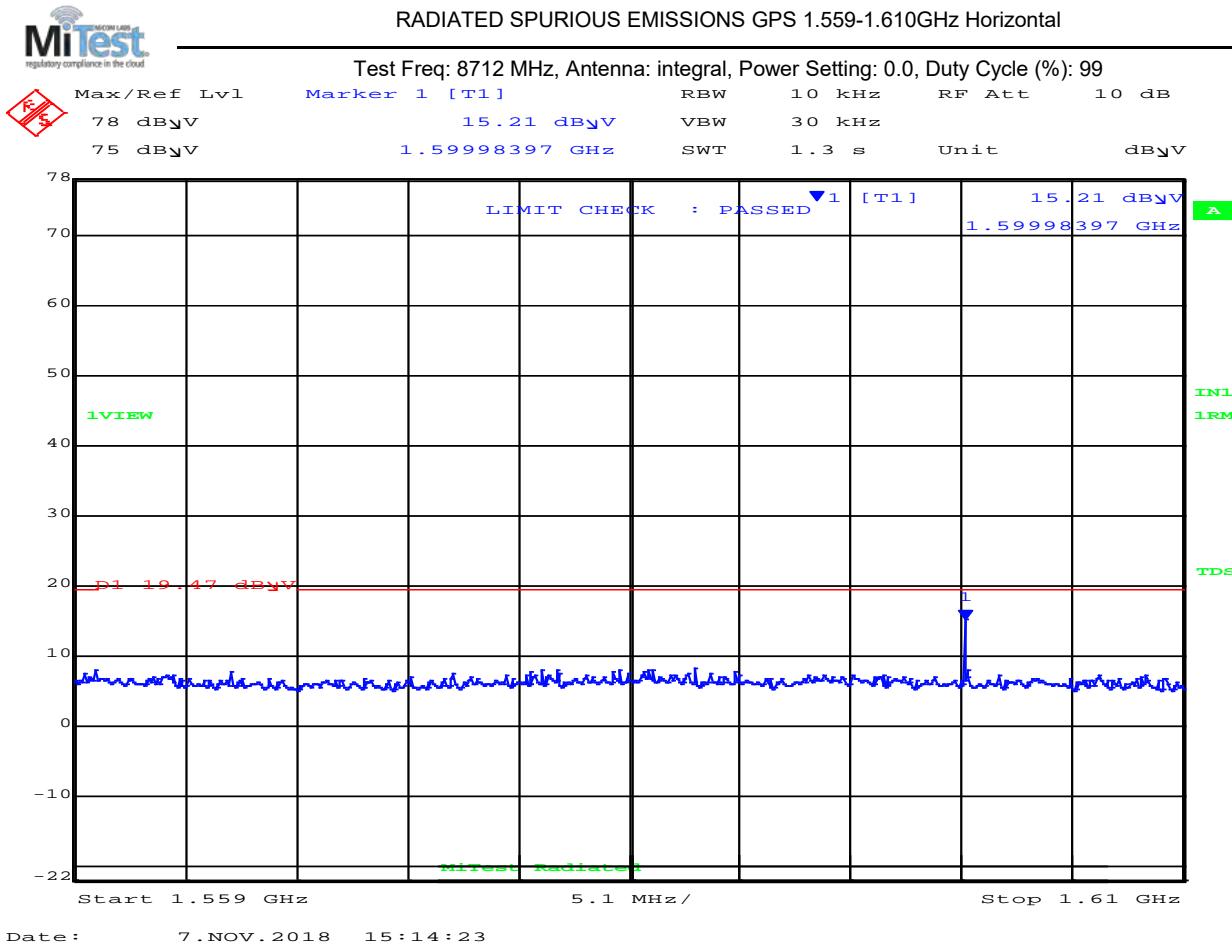


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 353 of 466

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.

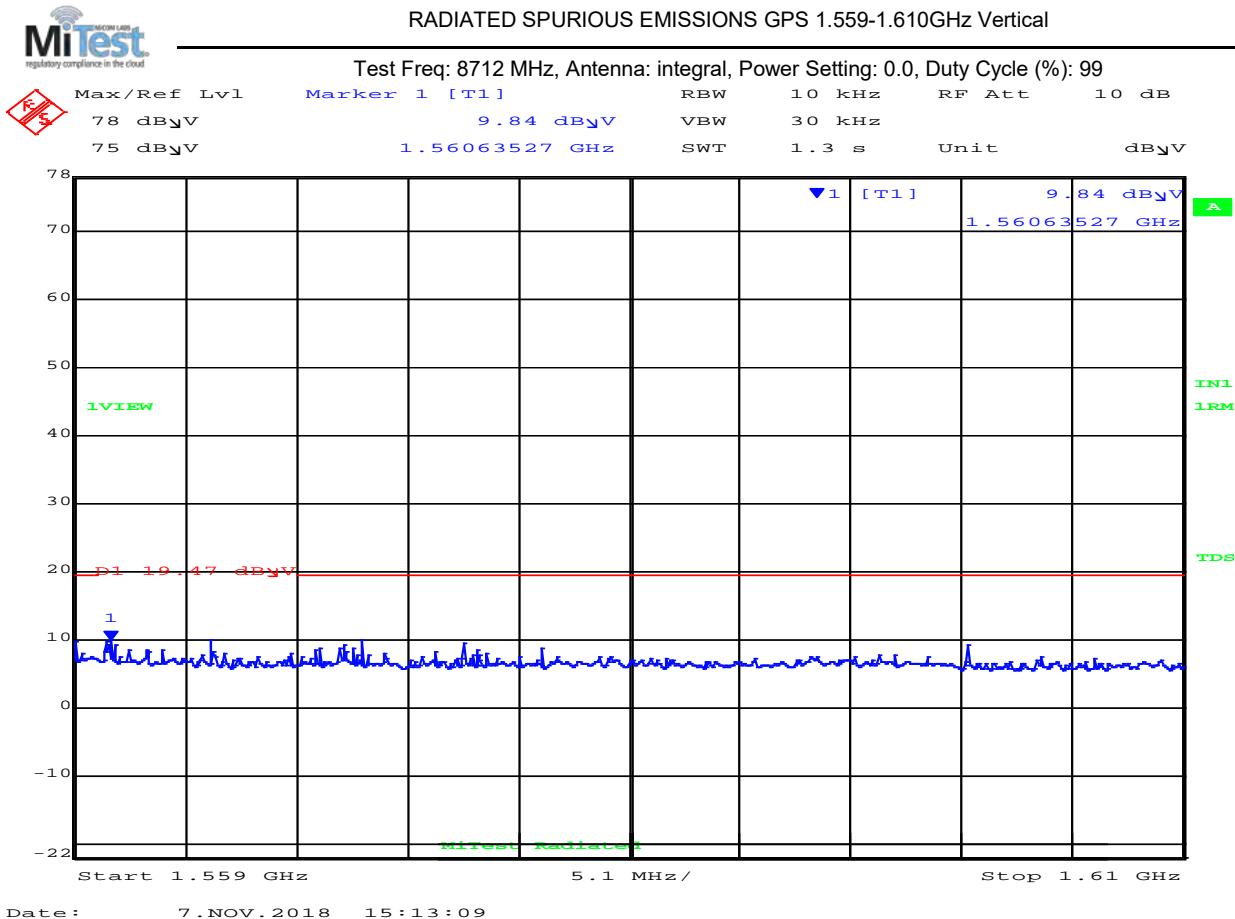


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 354 of 466

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 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									

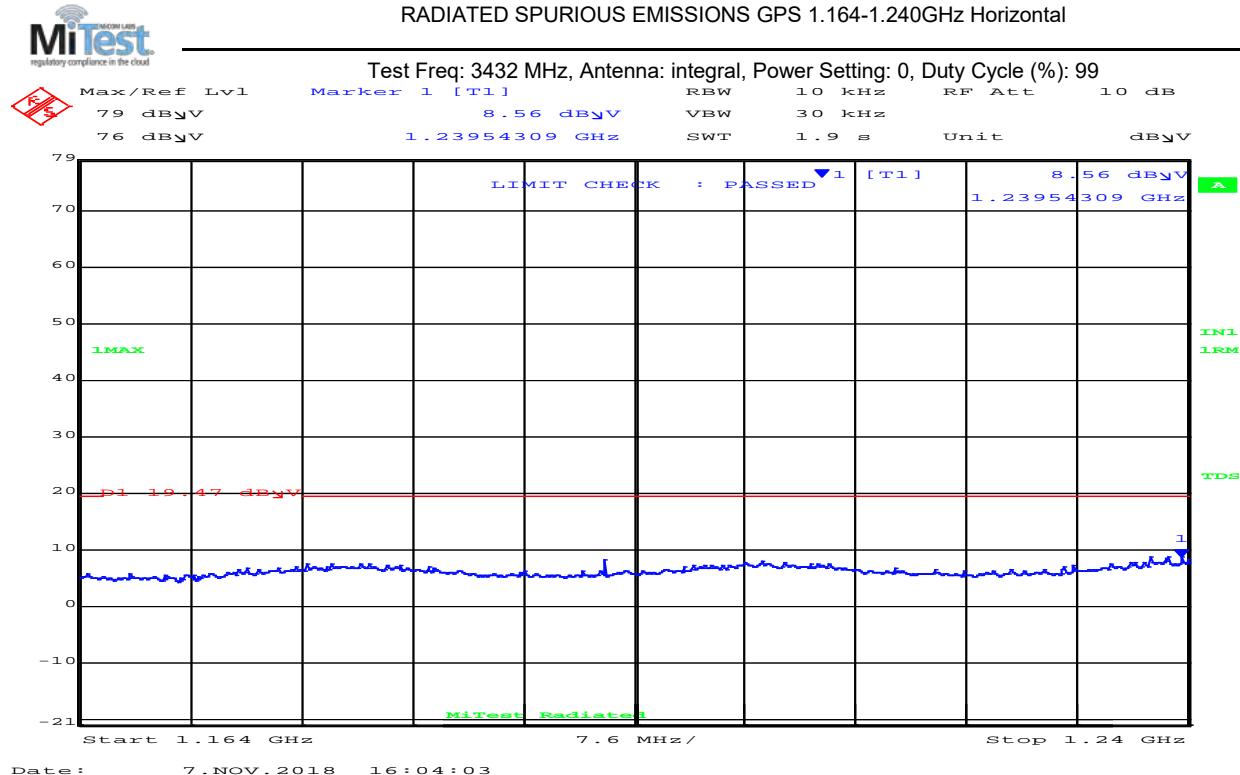
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

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 Measurement Results

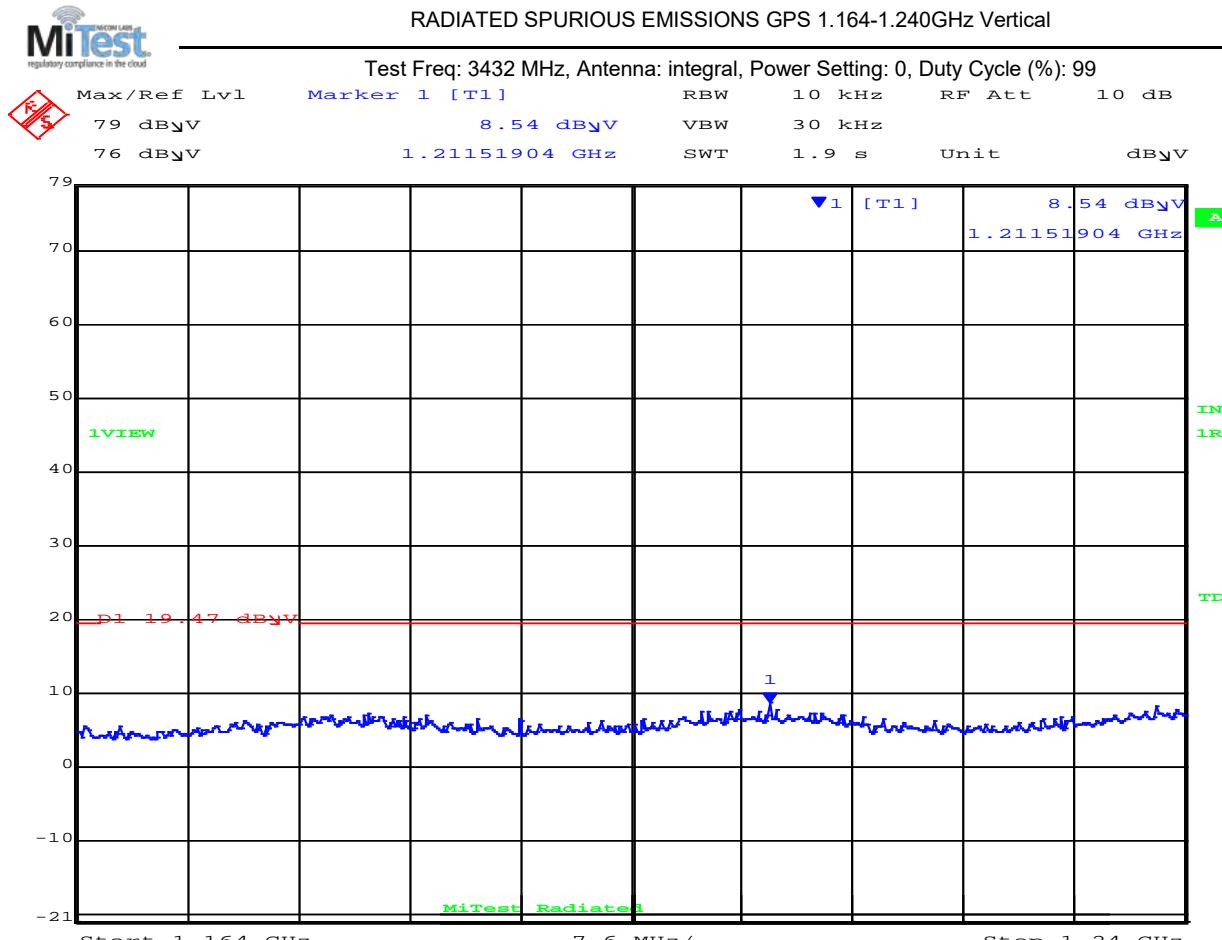
1164.00-1240.00 MHz

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.

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



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									

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.

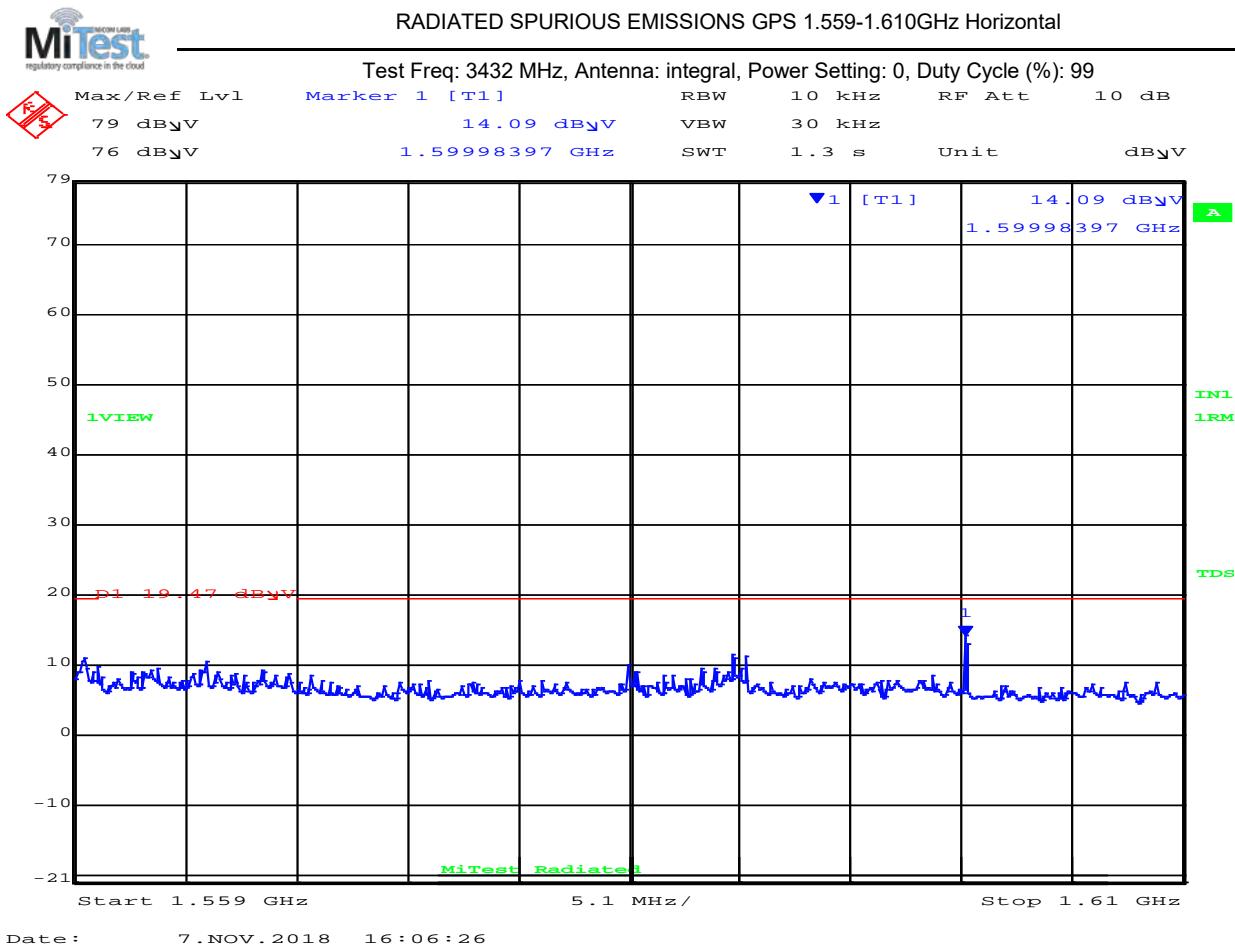


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 357 of 466

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 dB _µ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _µ V/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.

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.

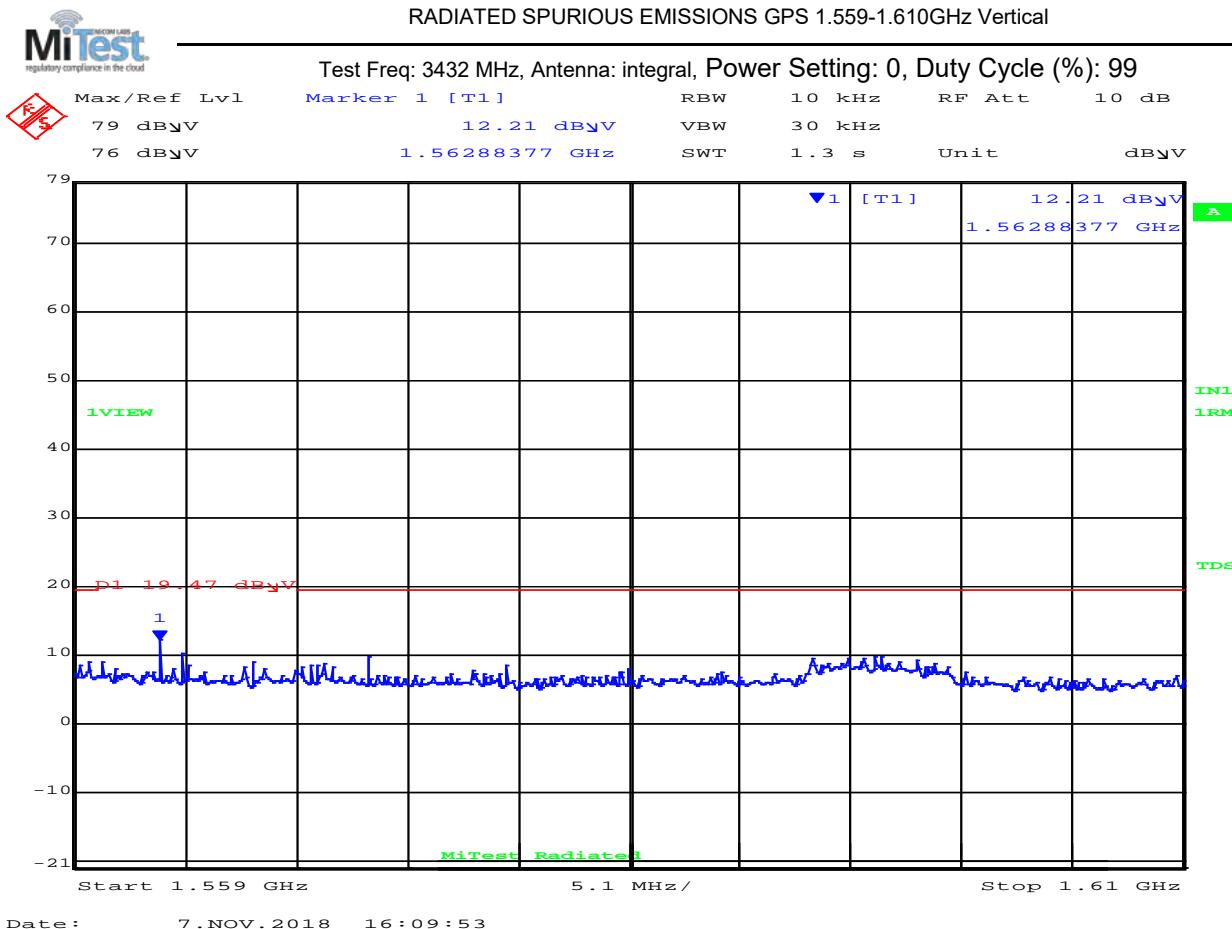


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 358 of 466

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



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

1559.00-1610.00 MHz									
Num	Frequency MHz	Level dB _V /m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _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.



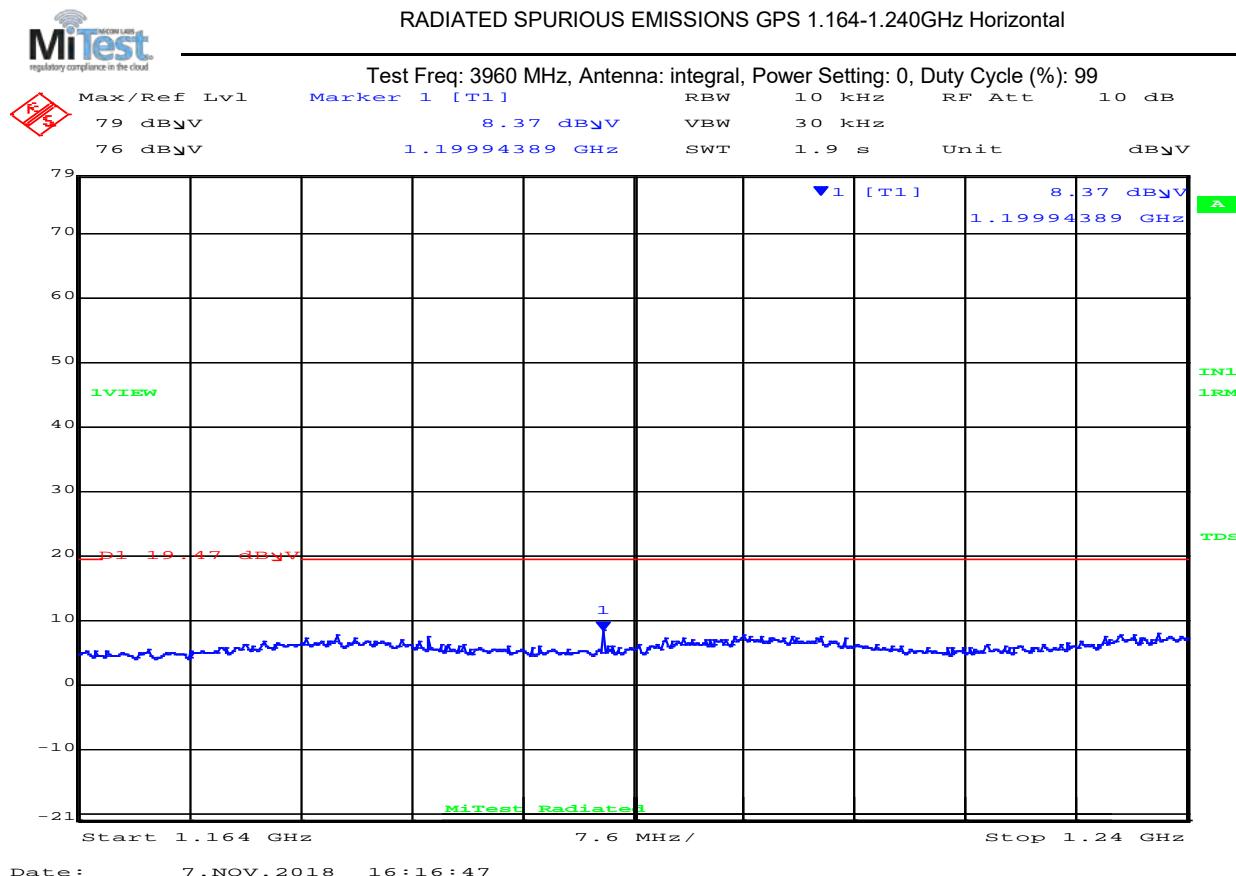
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 359 of 466

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



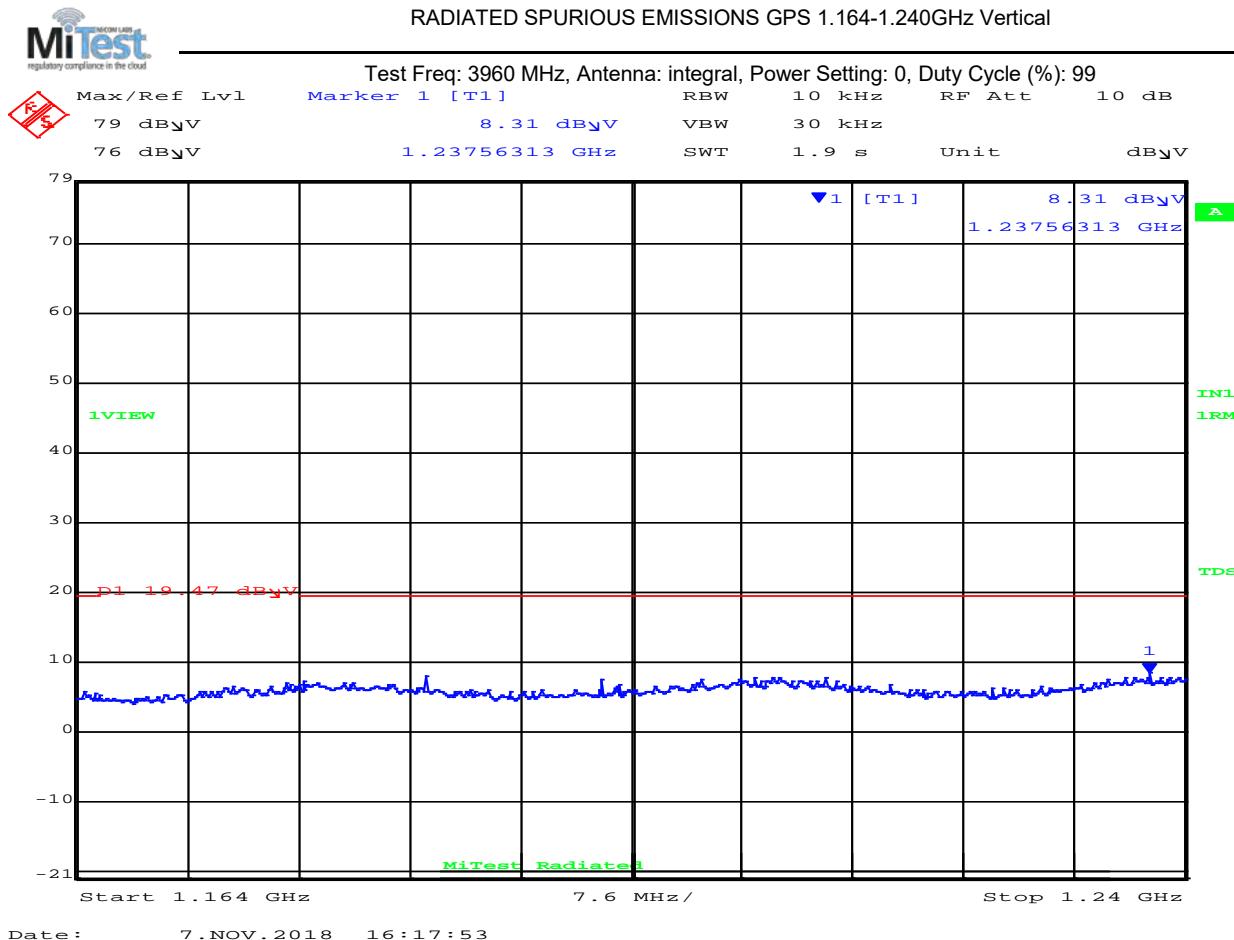
1164.00-1240.00 MHz									
Num	Frequency MHz	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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.

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 dB _{µV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{µV/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.

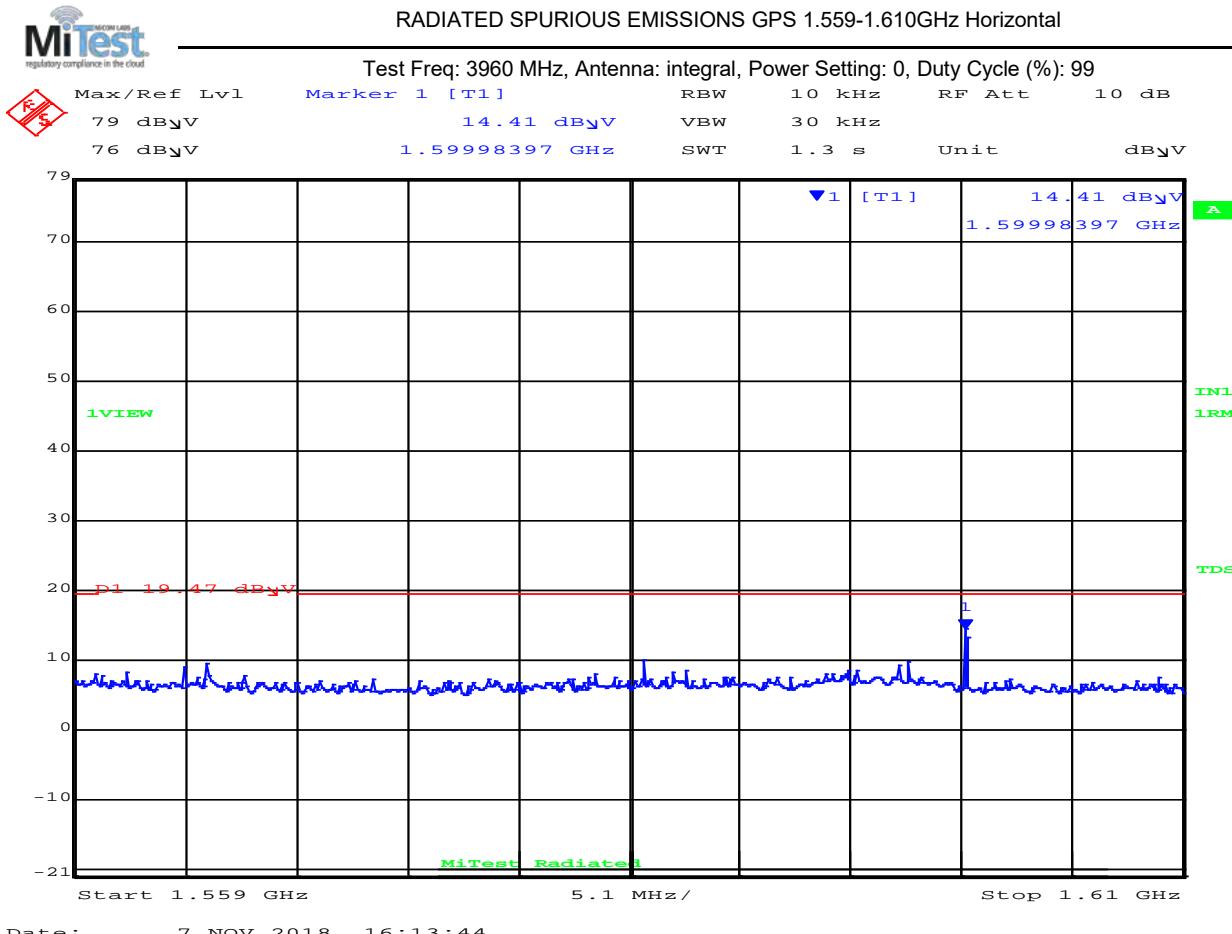


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 361 of 466

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

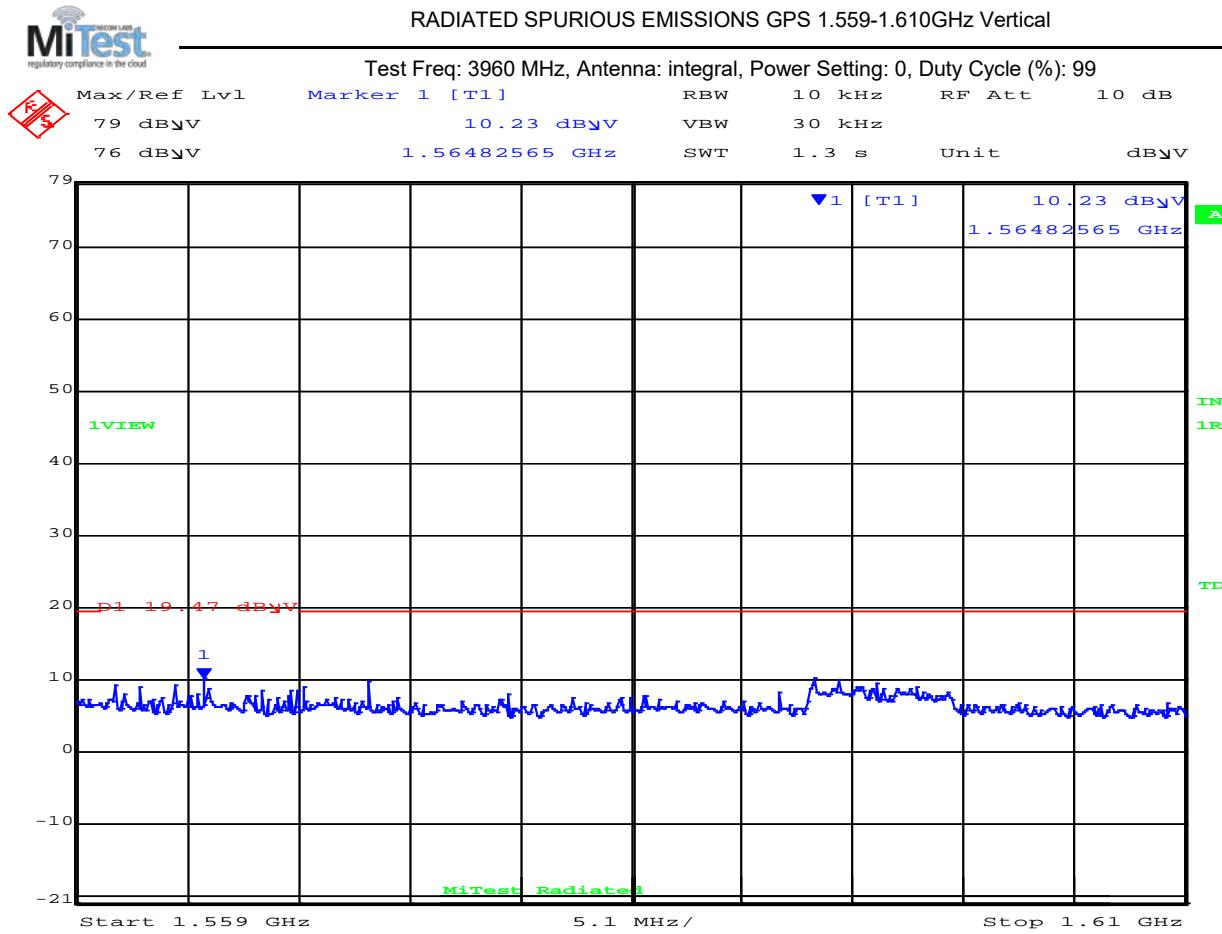
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 362 of 466

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									
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									

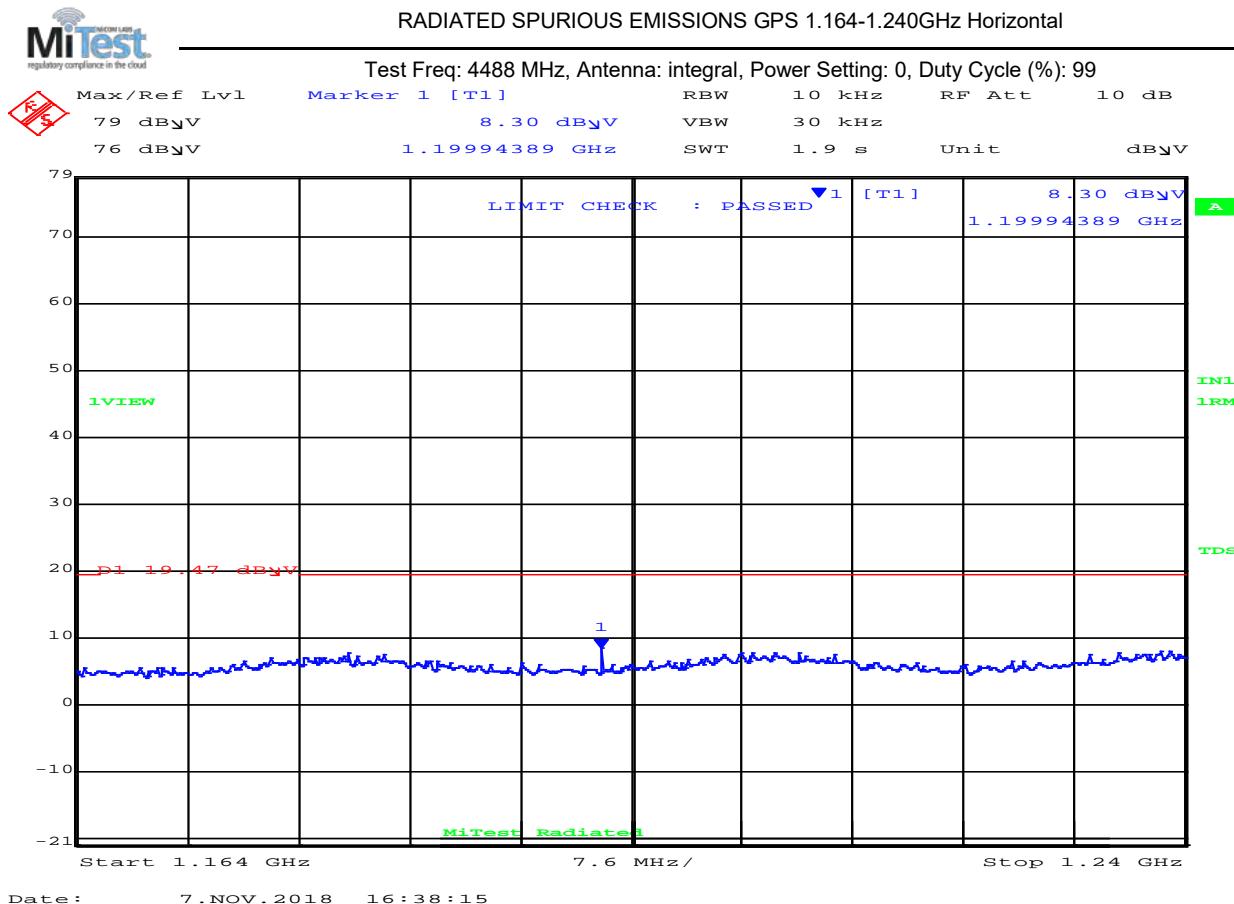
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

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										

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.

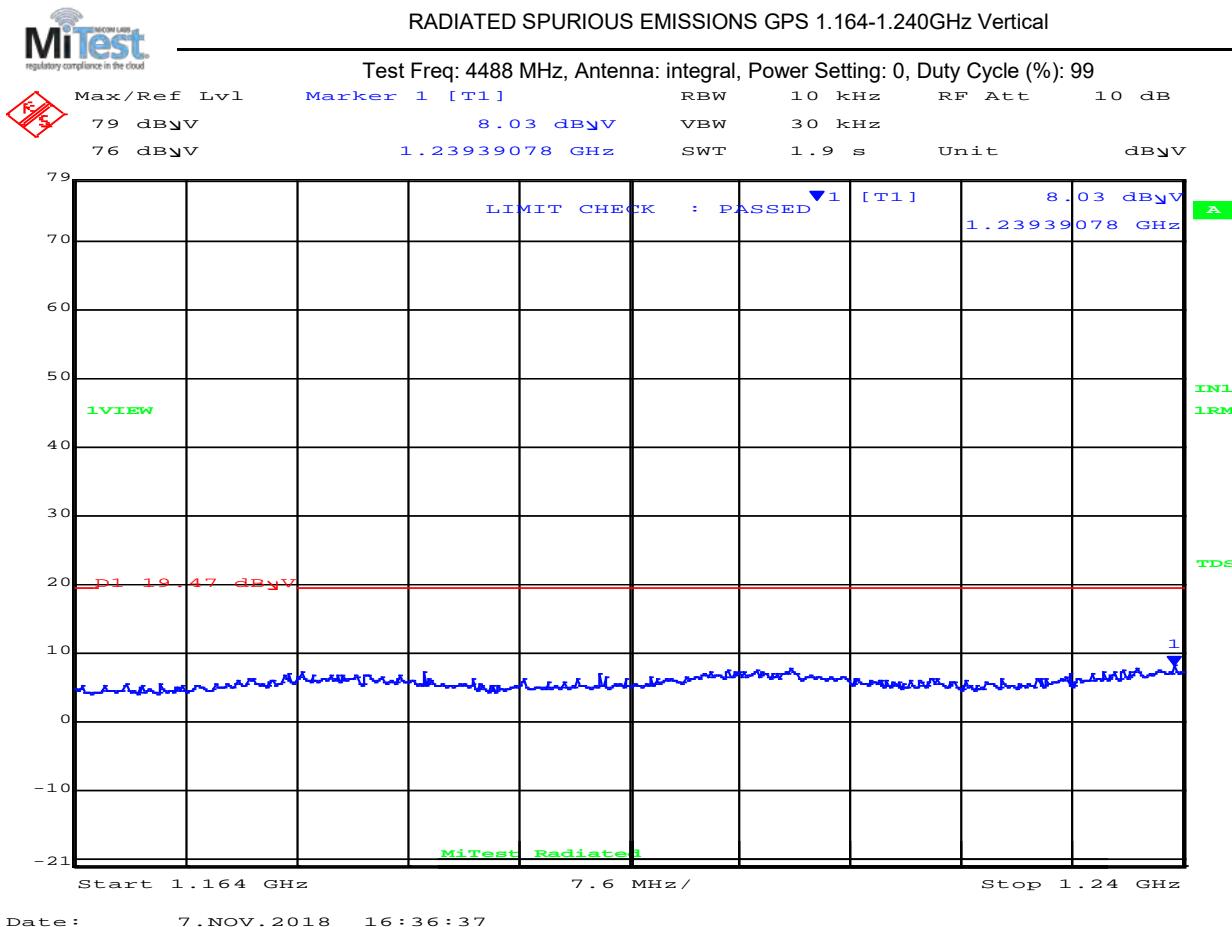


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 364 of 466

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 dB _V /m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _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.

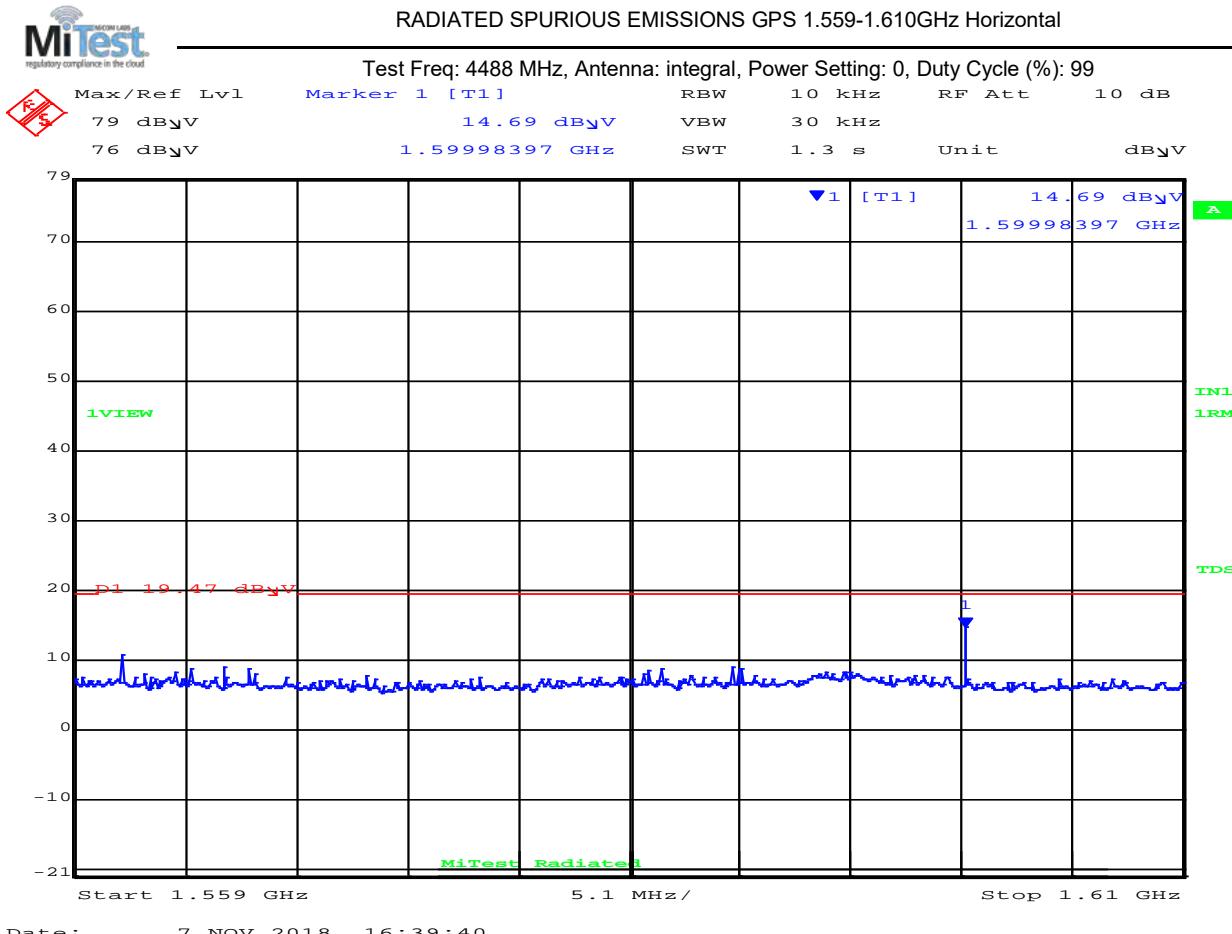


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 365 of 466

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.

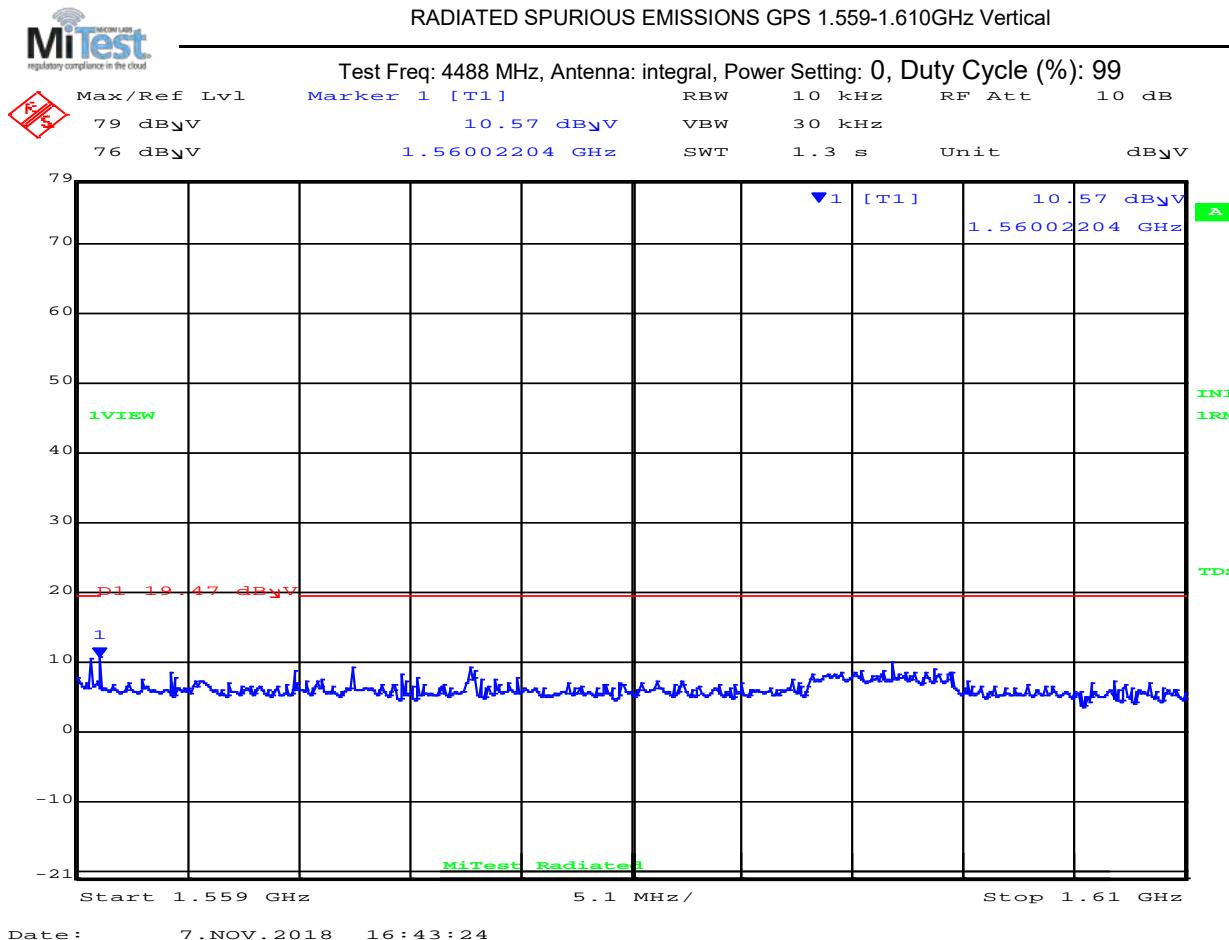


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 366 of 466

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										

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.



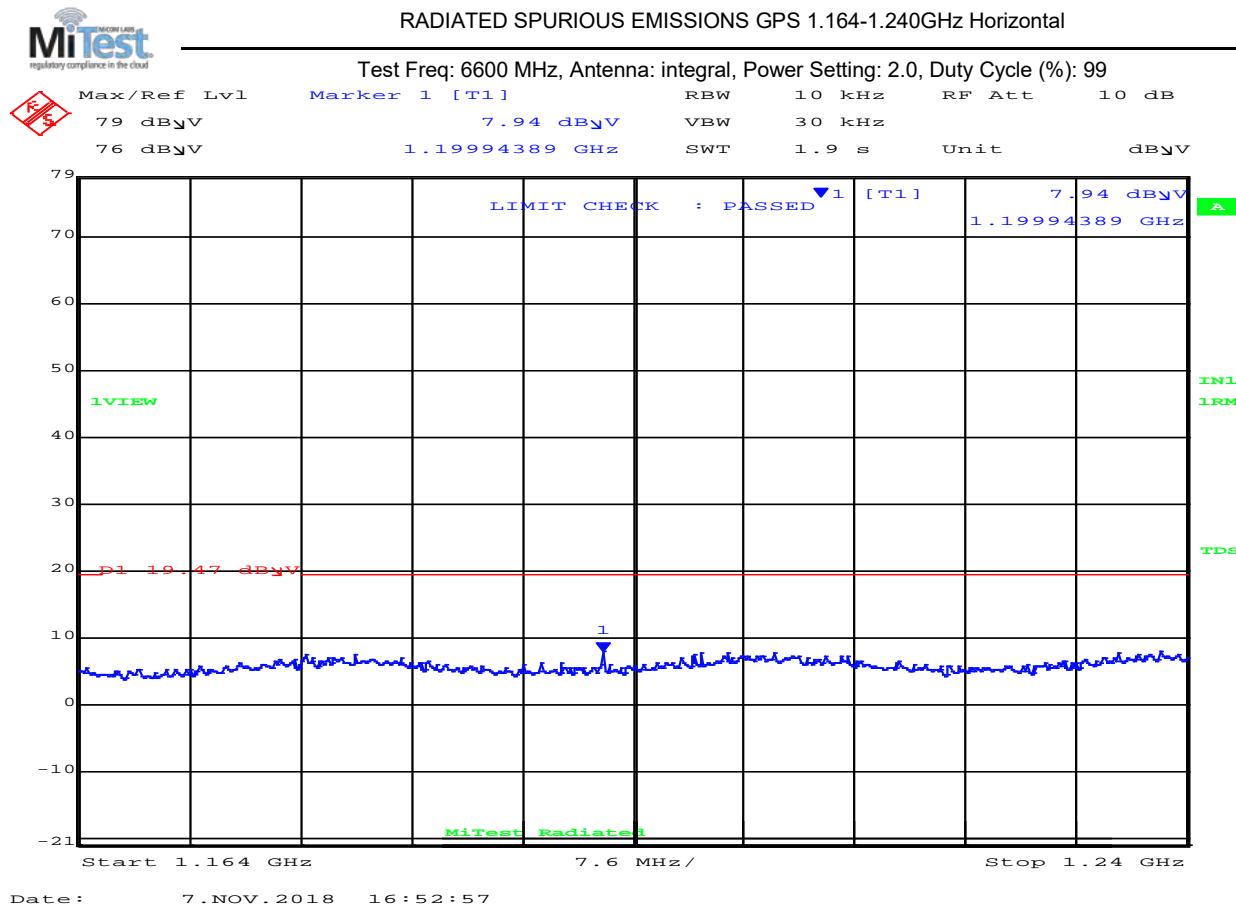
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 367 of 466

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 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.

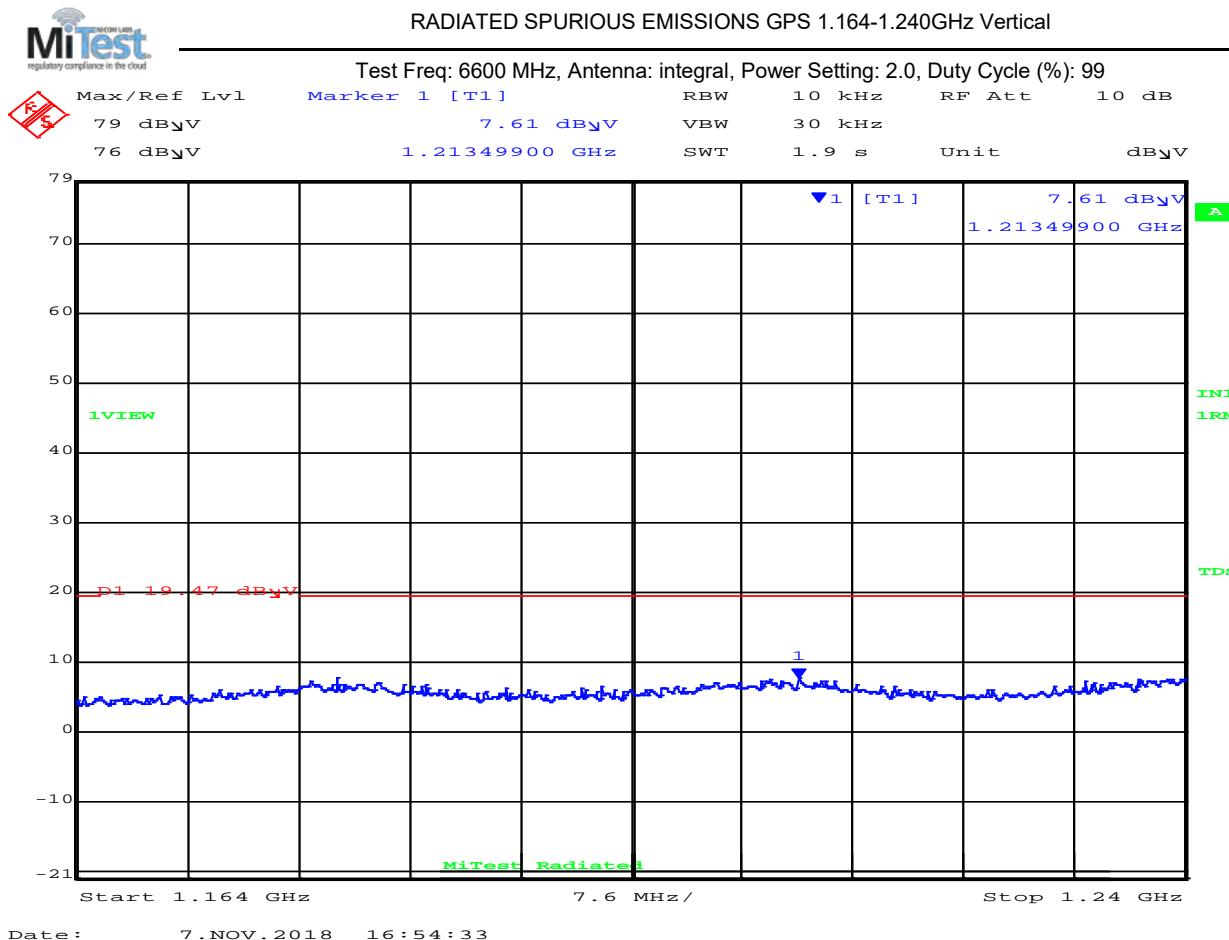


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 368 of 466

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



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.

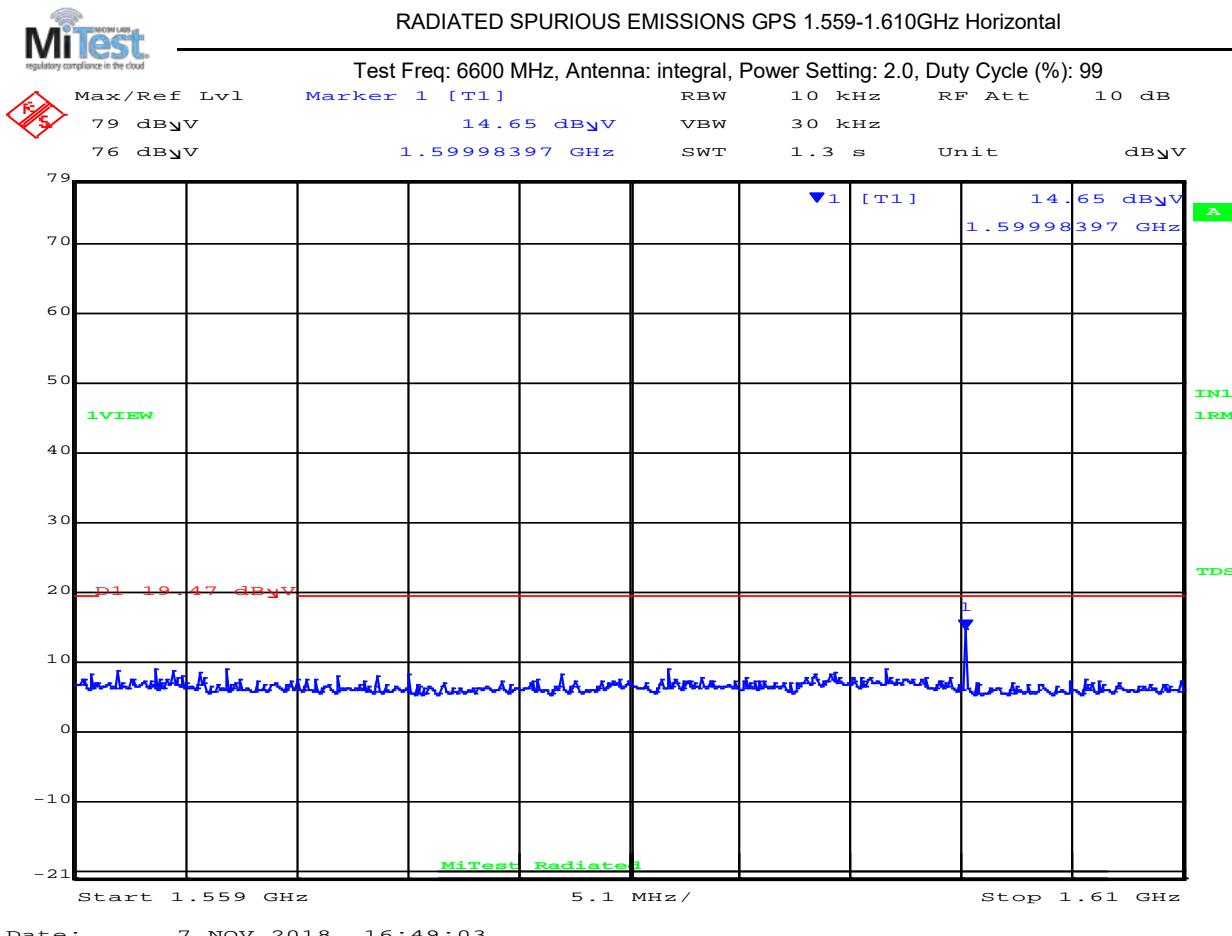


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 369 of 466

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 _{uV} /m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{uV} /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

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.

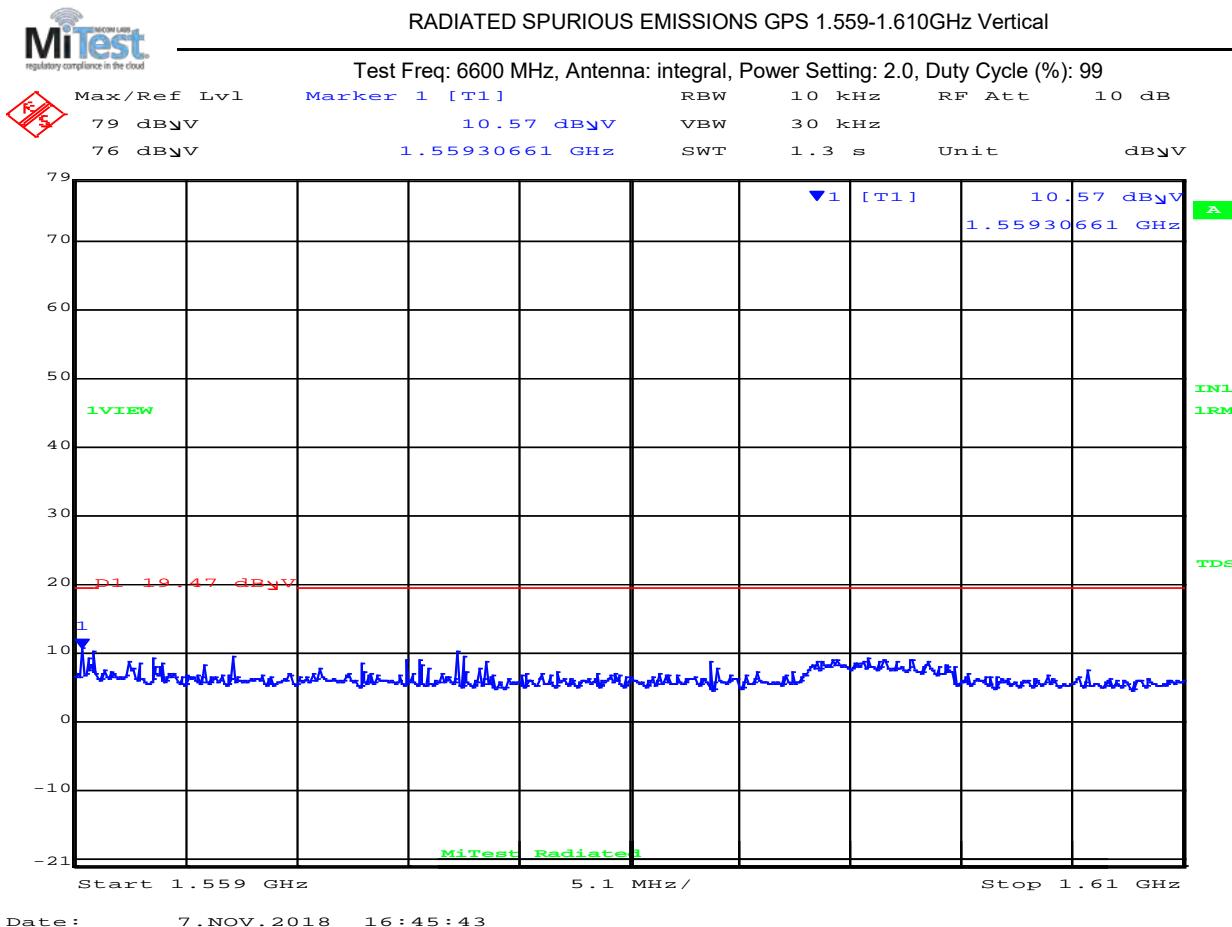


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 370 of 466

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

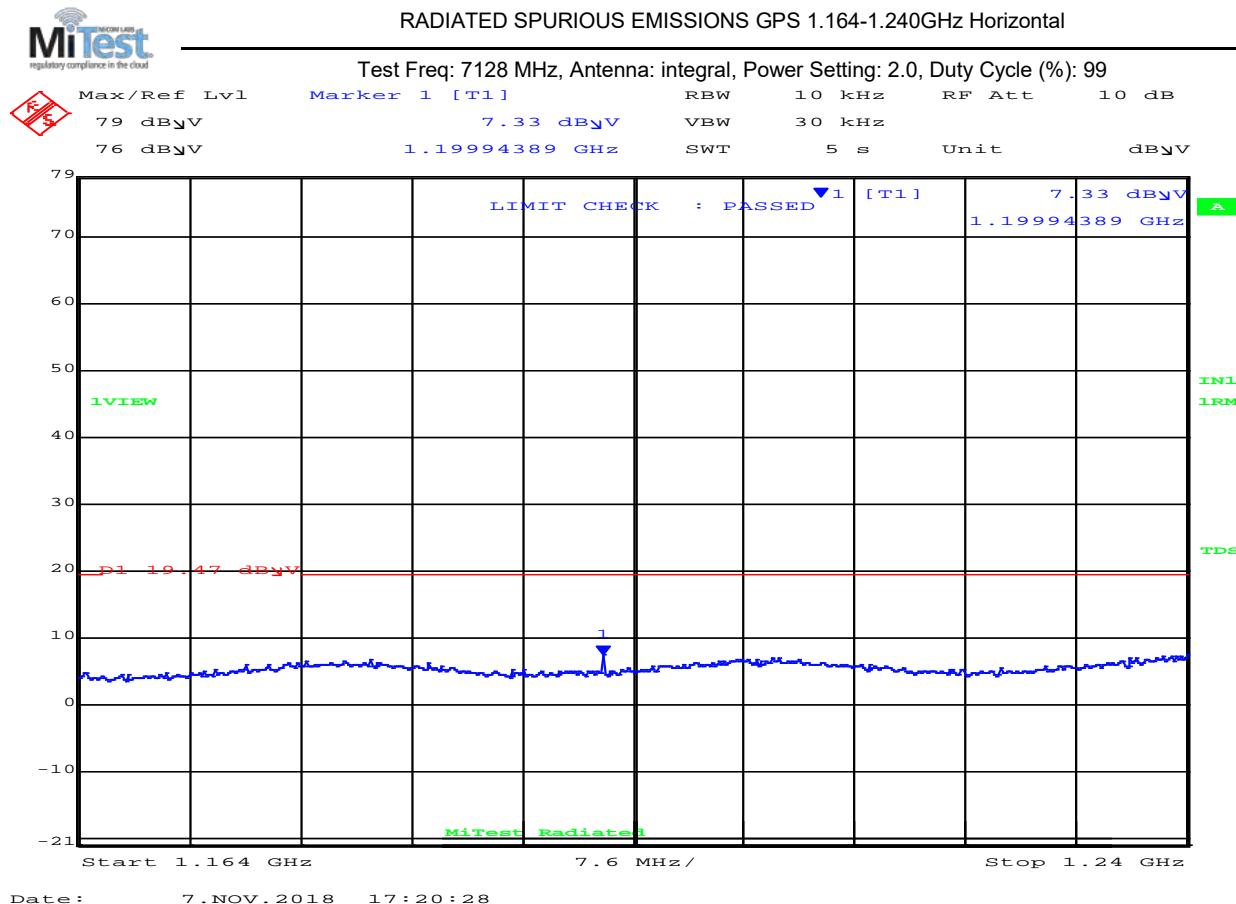
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

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



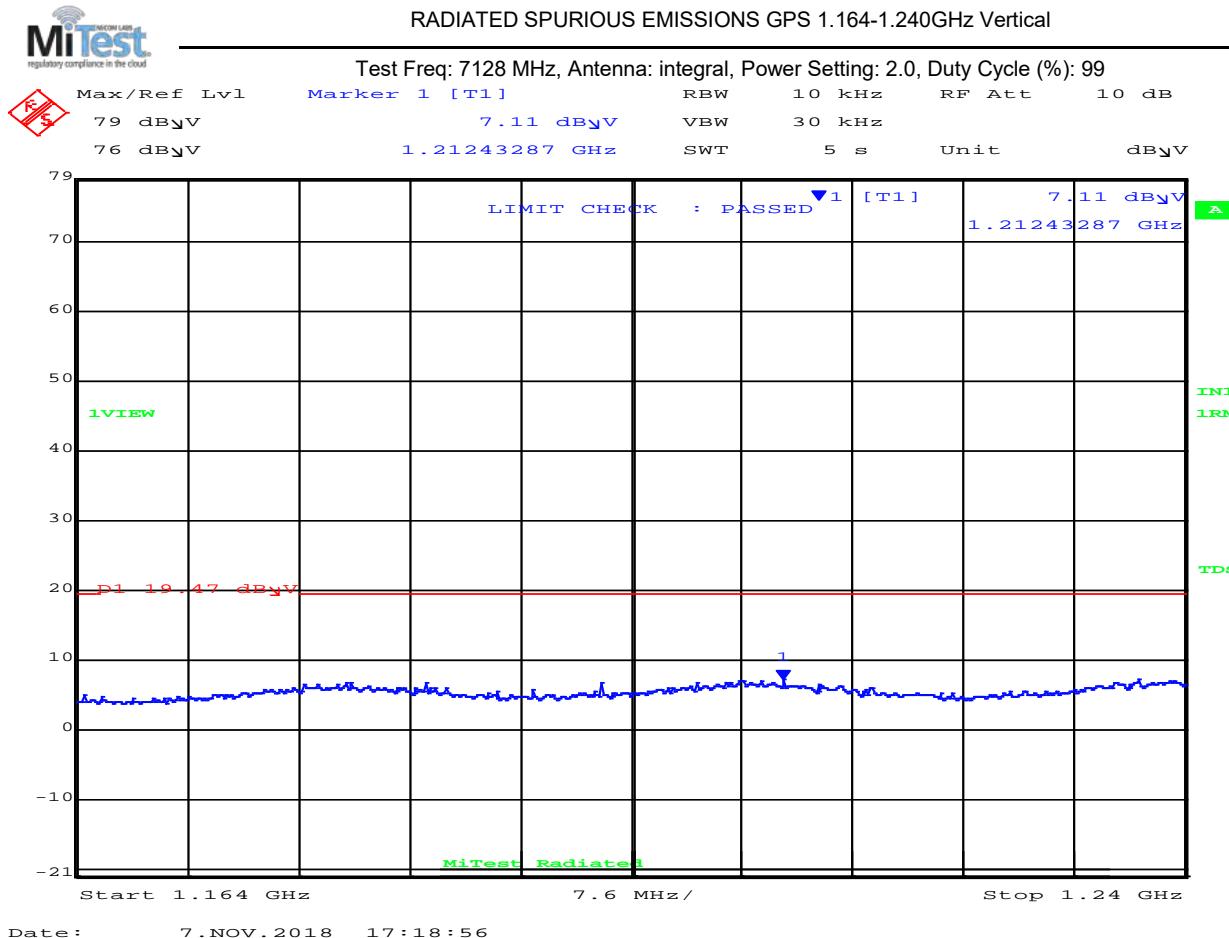
1164.00-1240.00 MHz										
Num	Frequency MHz	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail	
No Signals Found within 6 dB of Limit										
Test Notes: Laptop Removed										

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.

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 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.

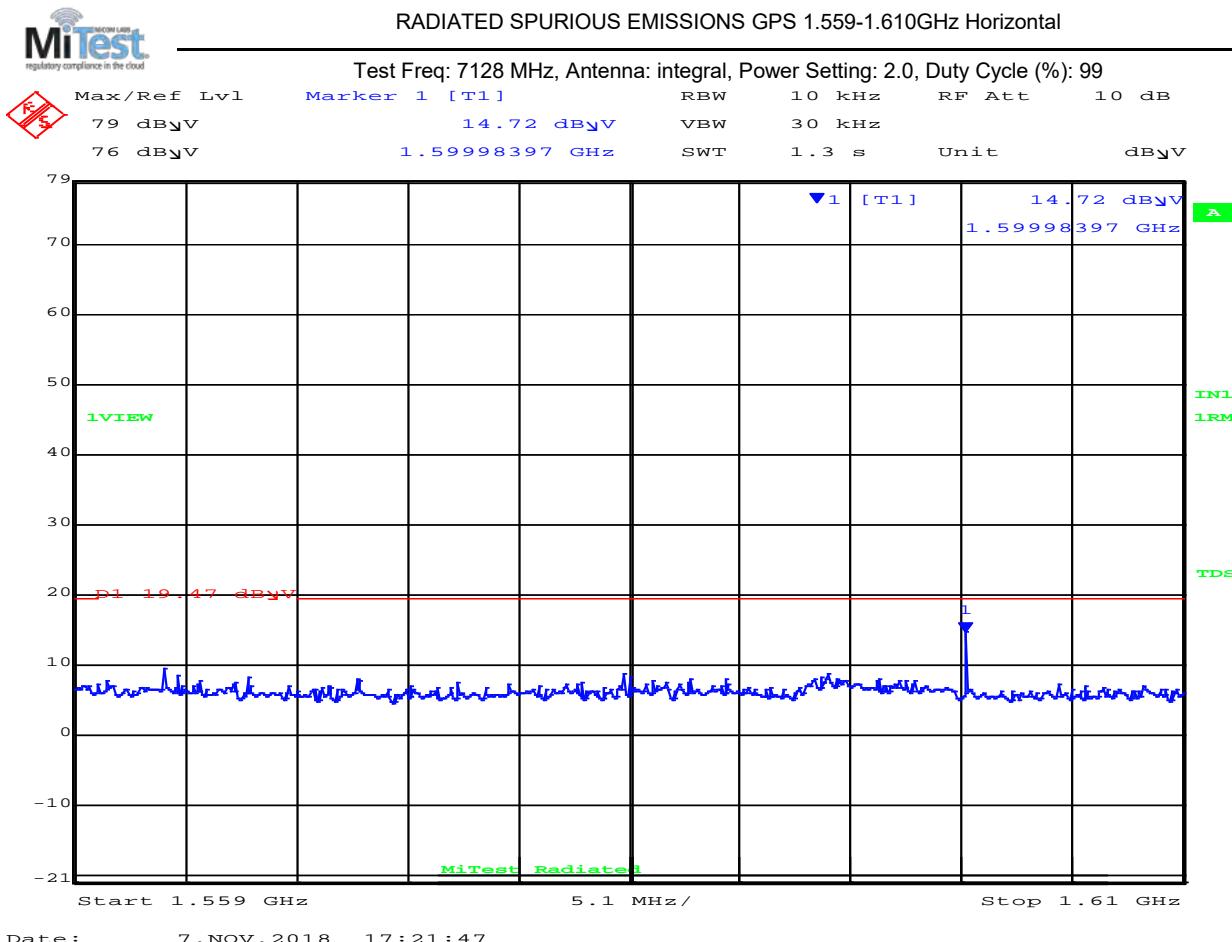


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 373 of 466

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.

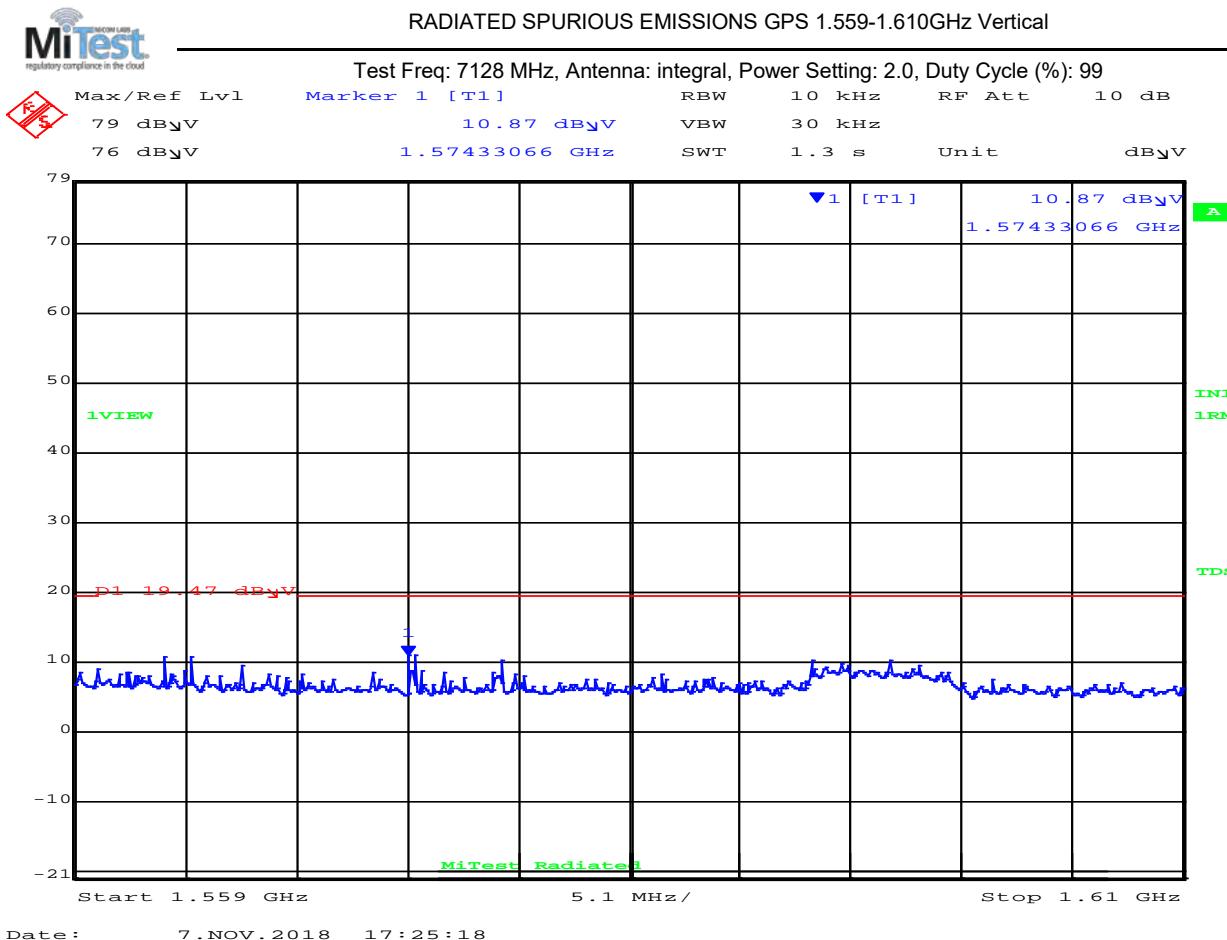


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 374 of 466

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 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.



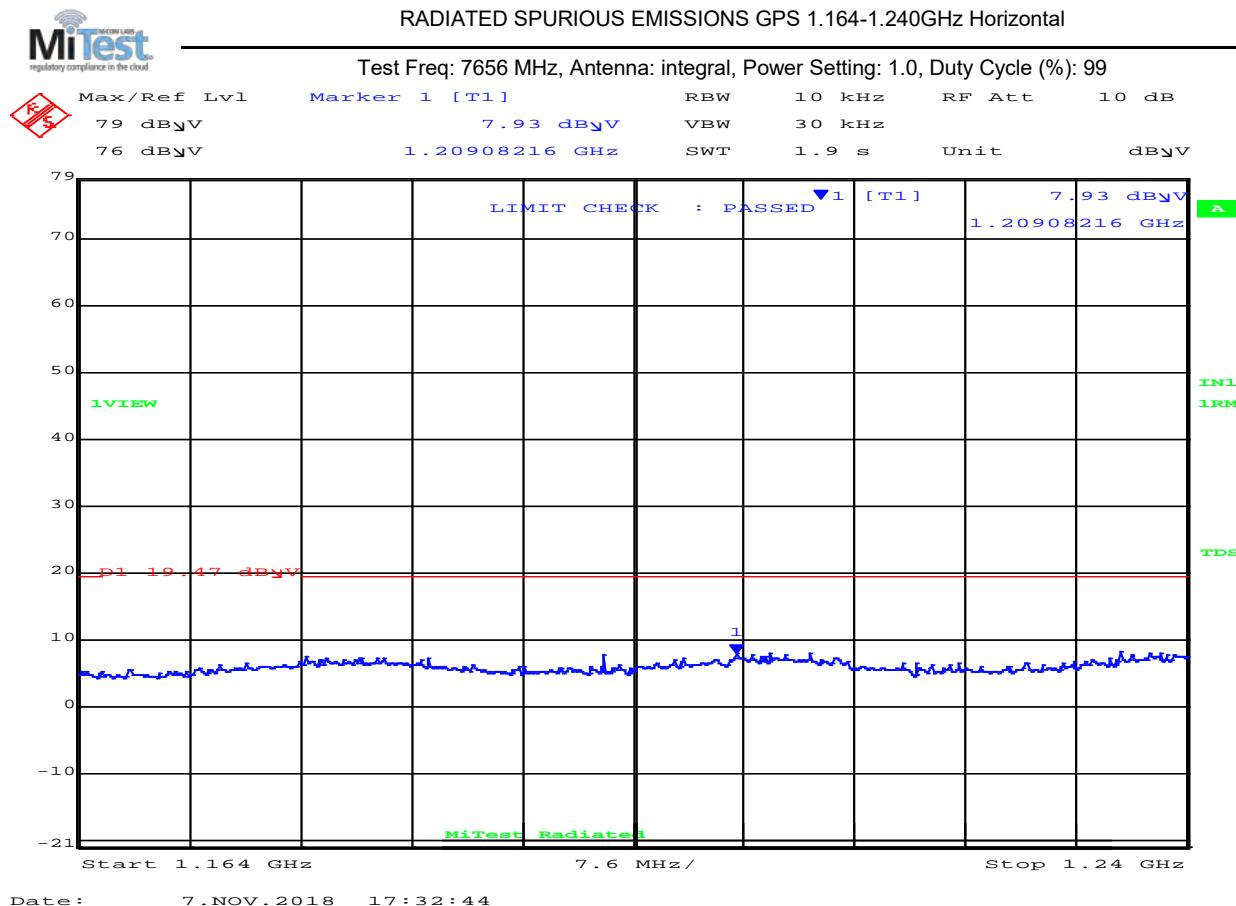
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 375 of 466

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 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.

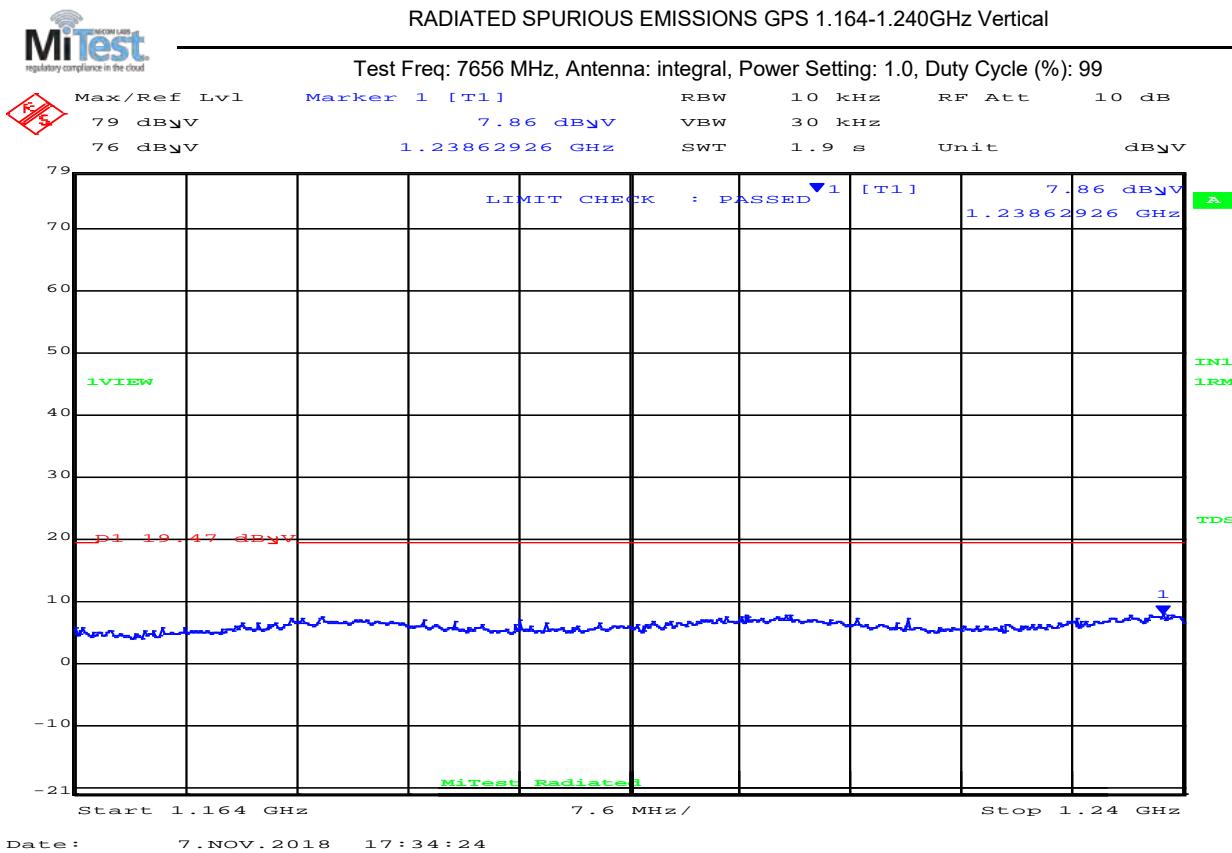


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 376 of 466

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 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.

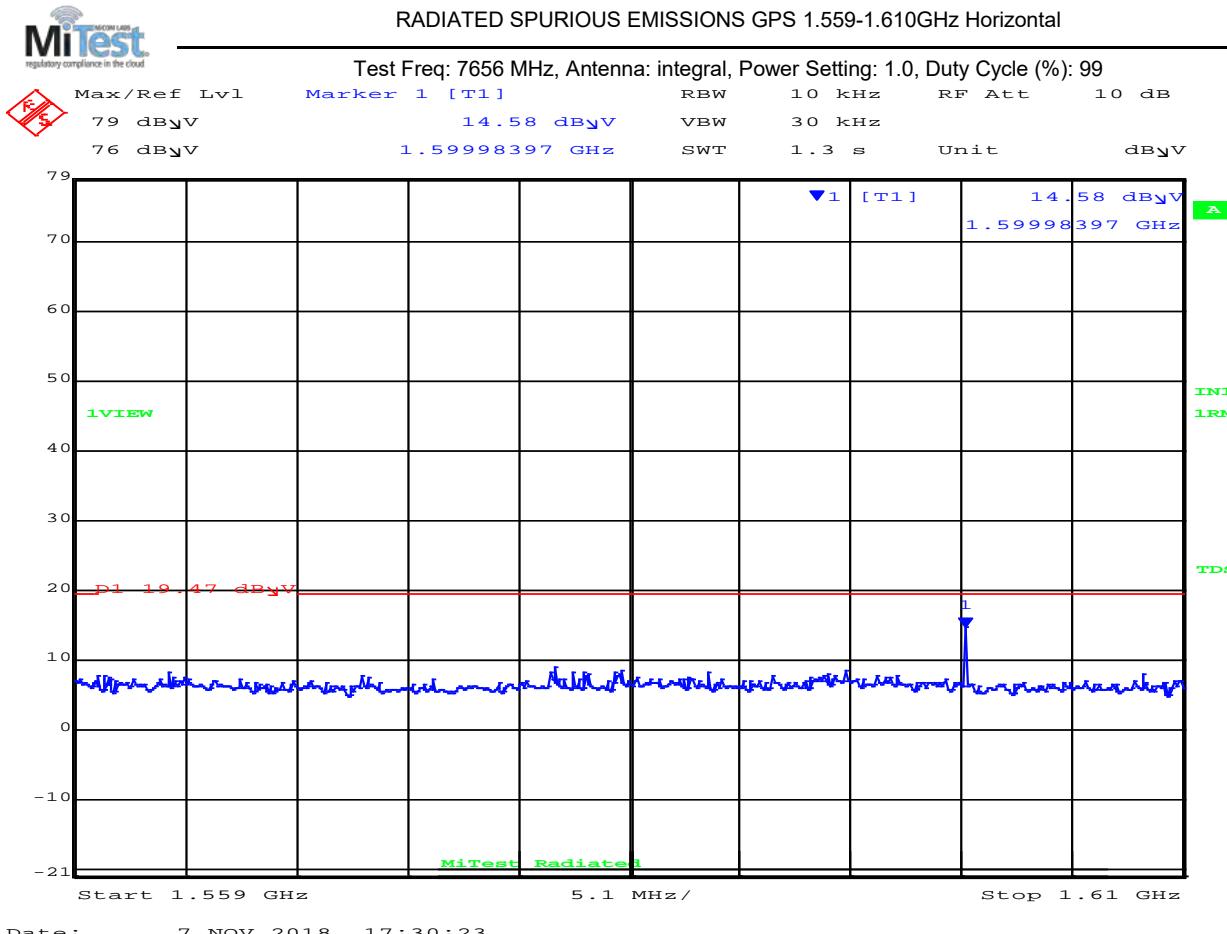


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 377 of 466

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 dB _{uV} /m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{uV} /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

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.

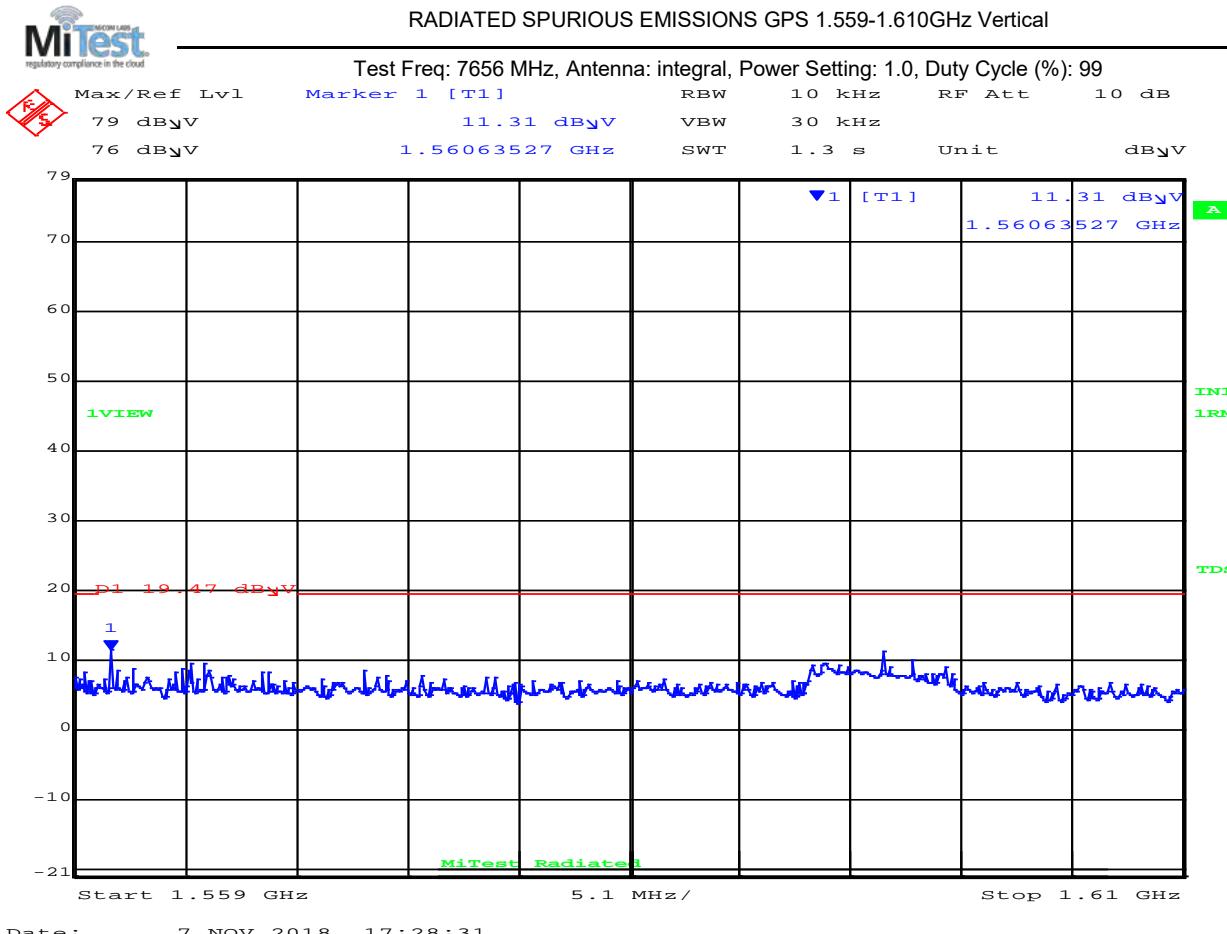


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 378 of 466

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 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										

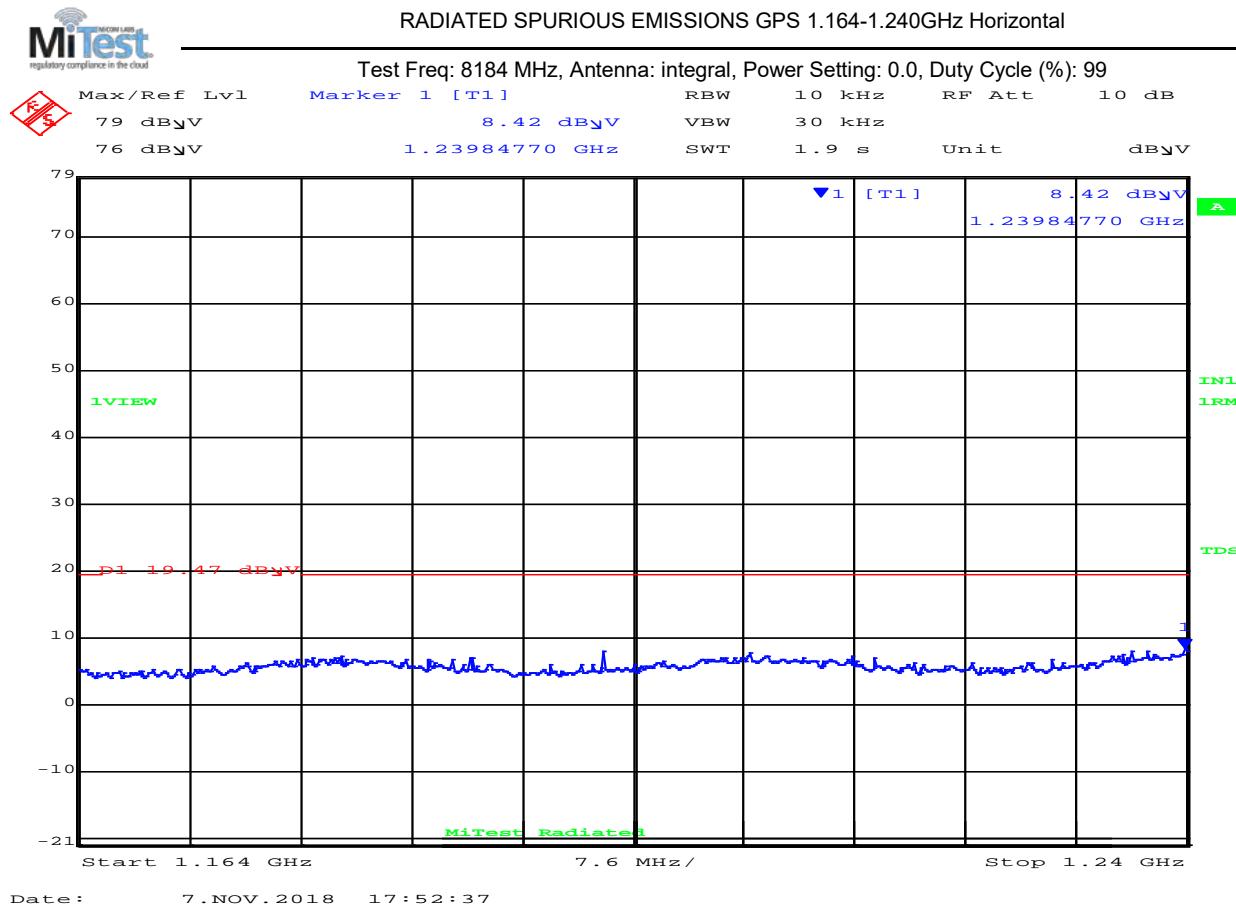
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

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



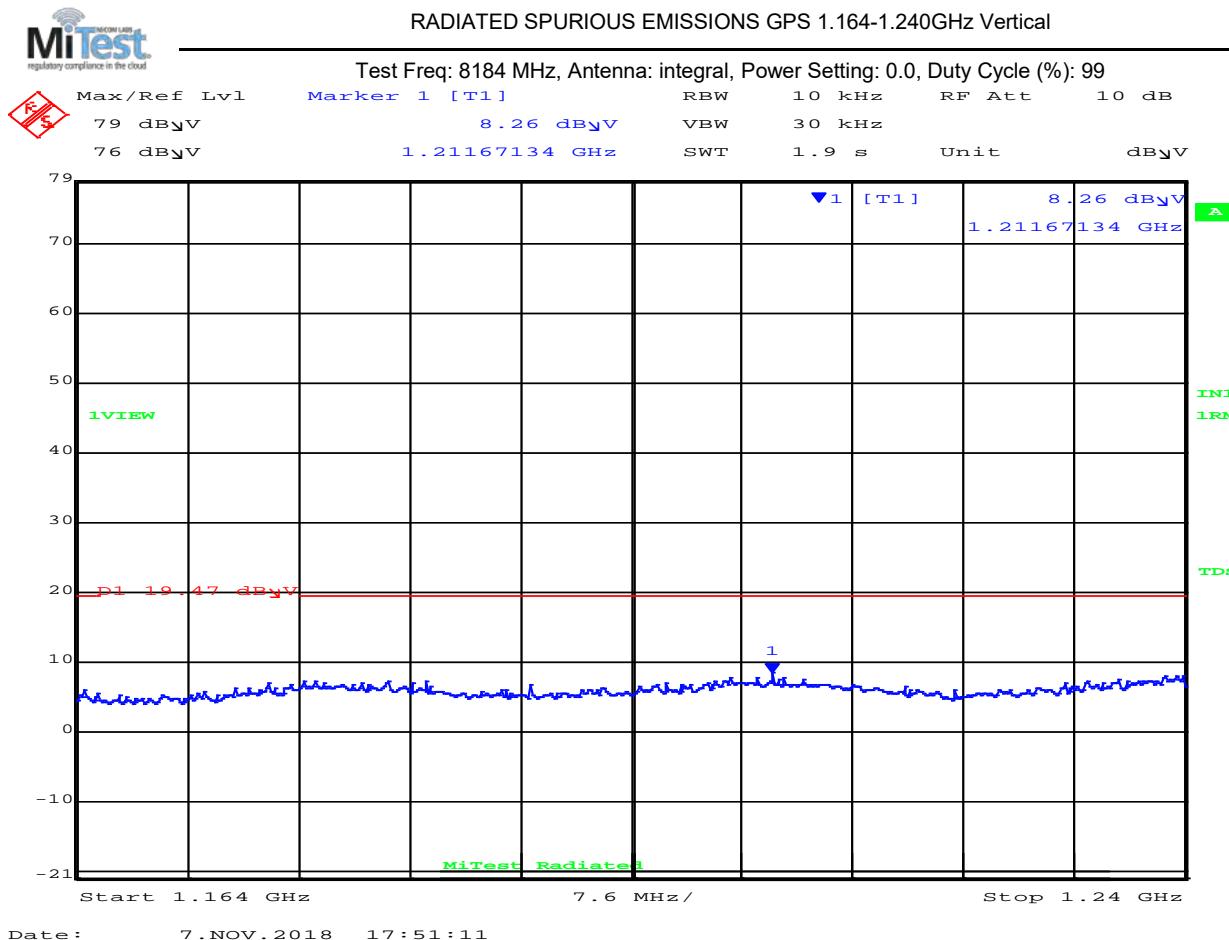
1164.00-1240.00 MHz									
Num	Frequency MHz	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop Removed									

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.

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 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.

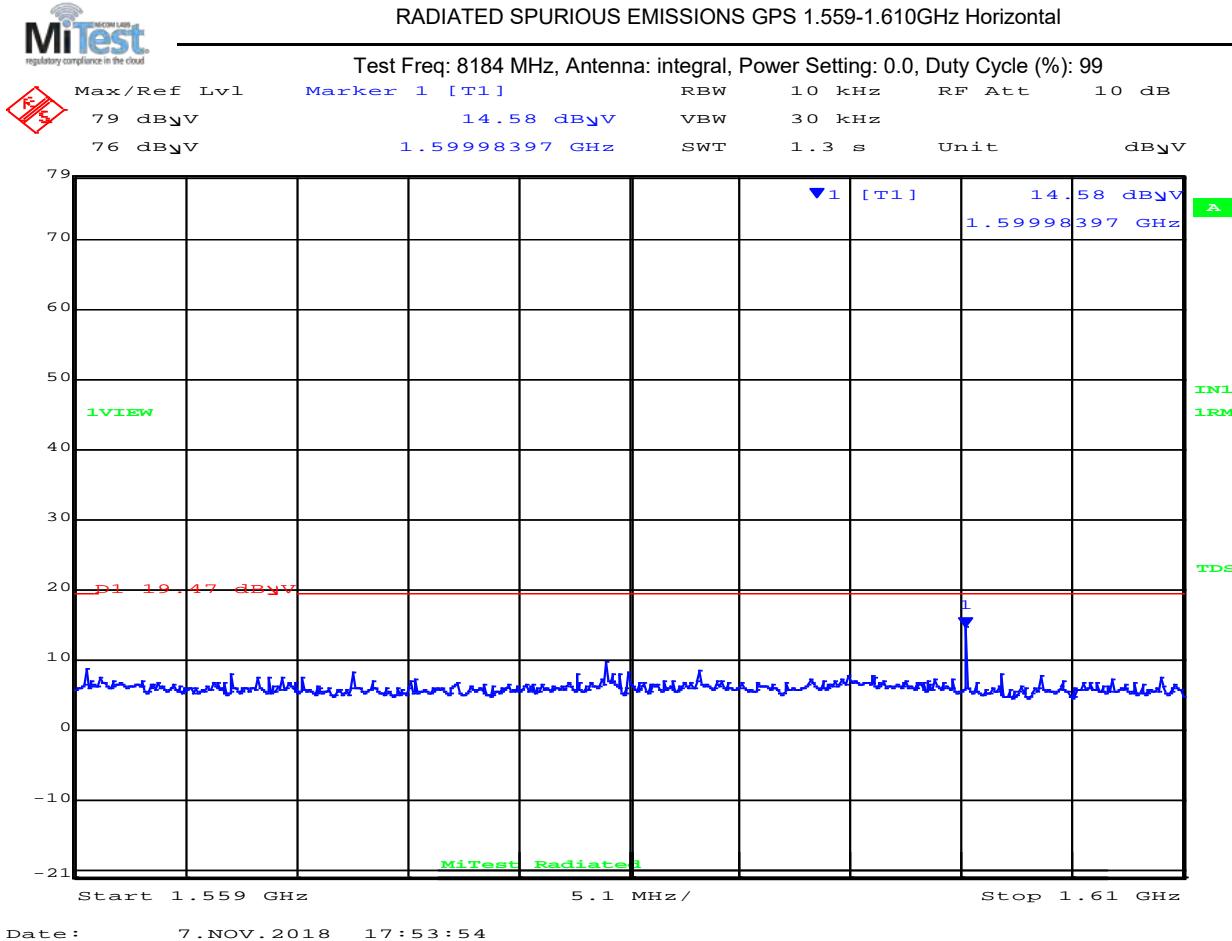


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 381 of 466

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 _{μV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{μV/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

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.

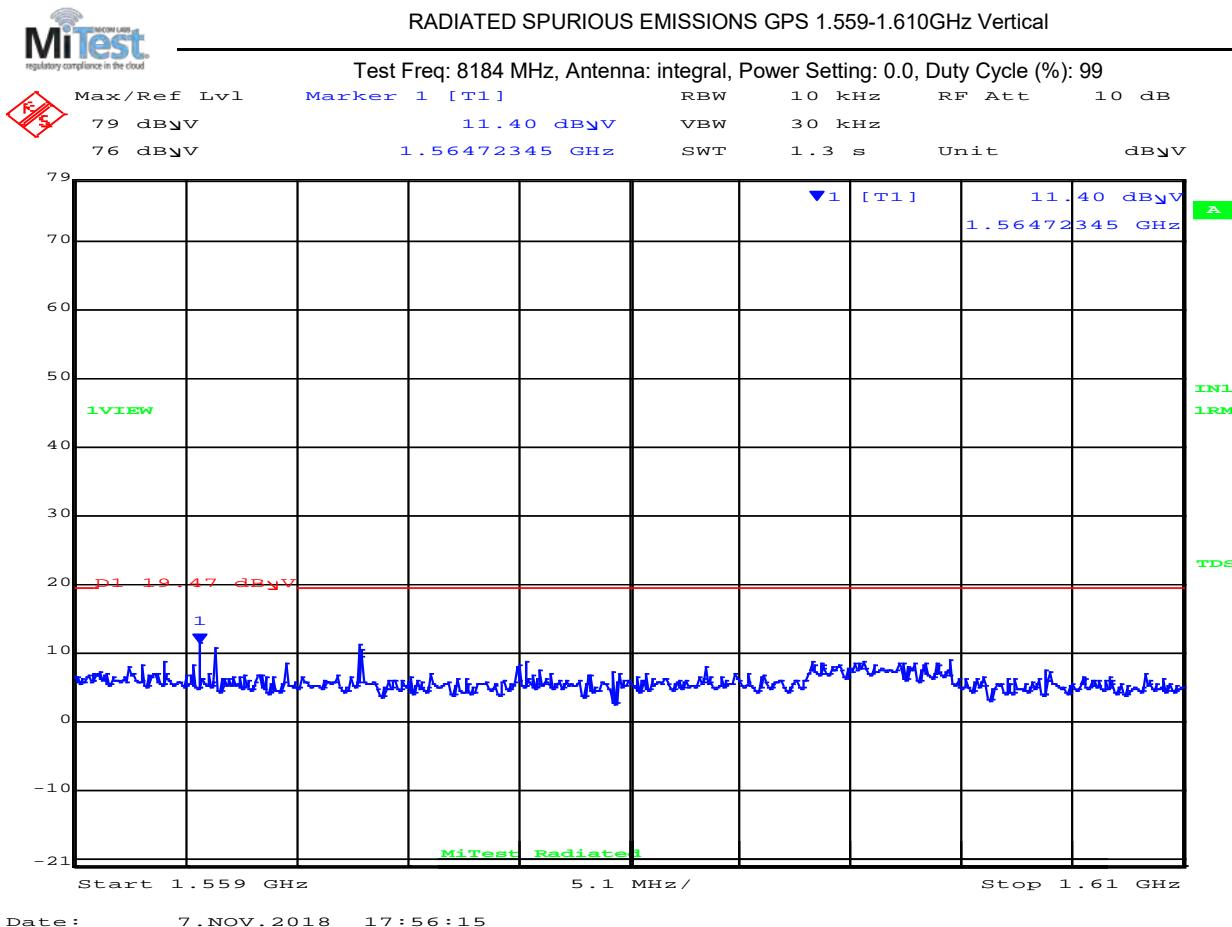


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 382 of 466

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 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.



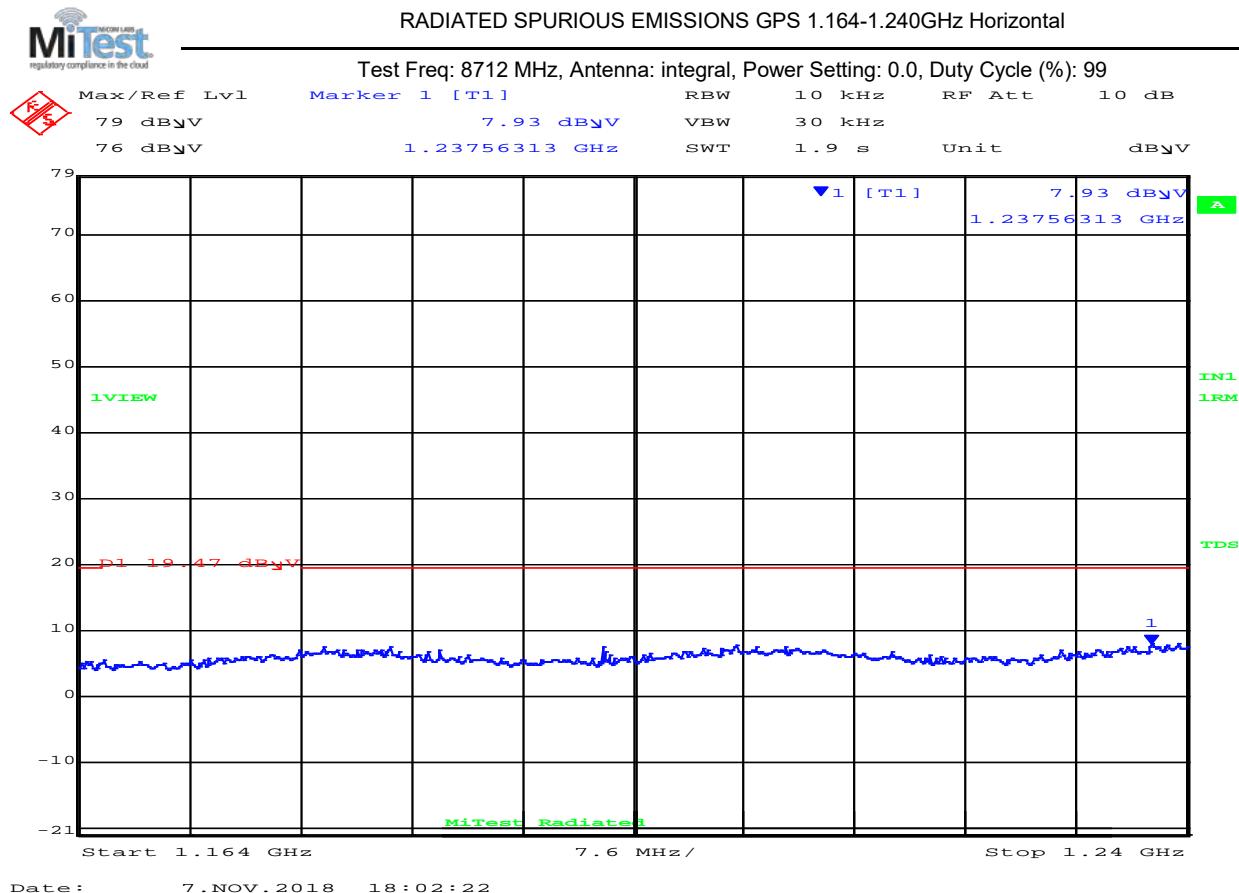
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 383 of 466

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.

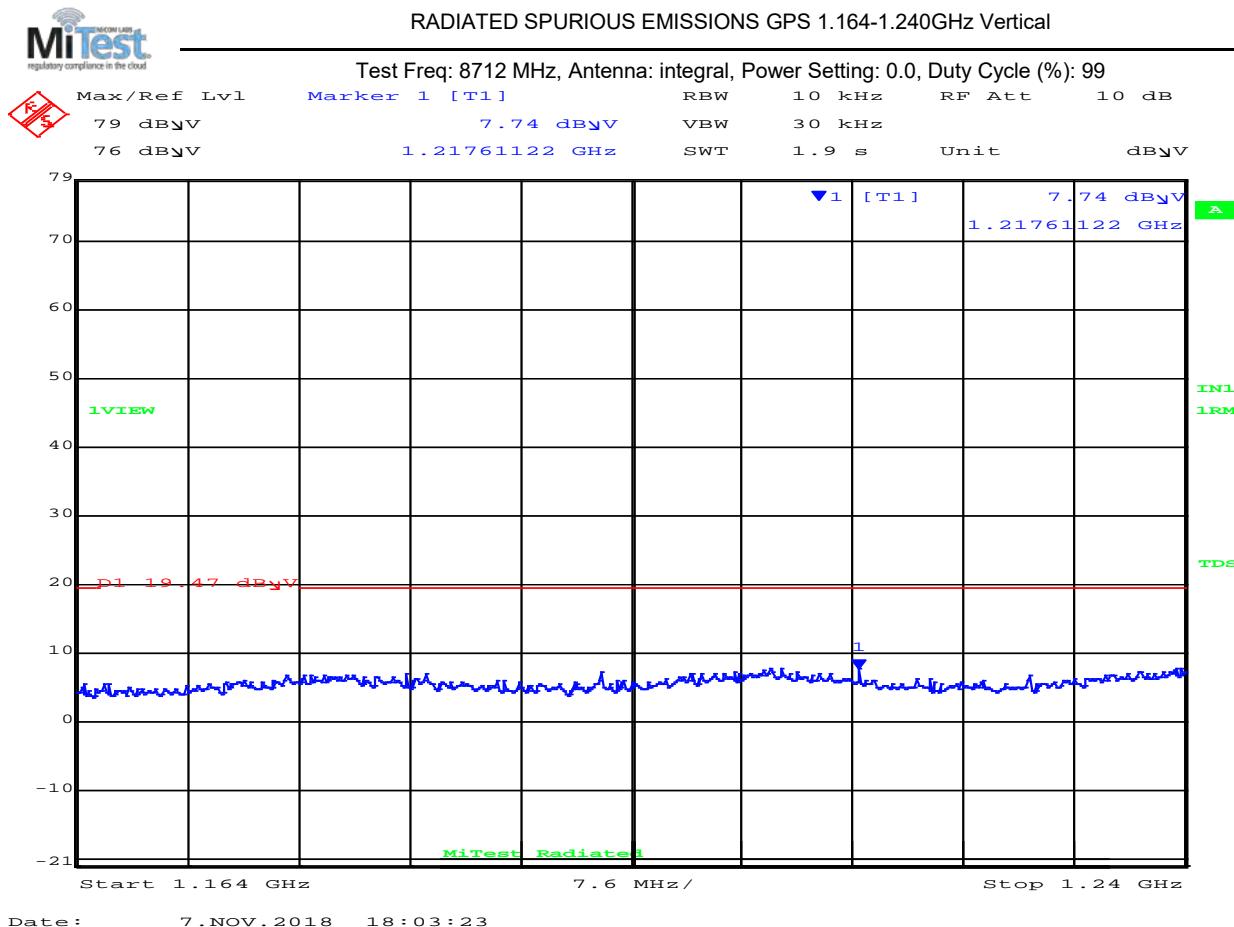


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 384 of 466

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 dB _V /m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _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

To: FCC Part 15.519

Serial #: ALER01-U2A Rev A

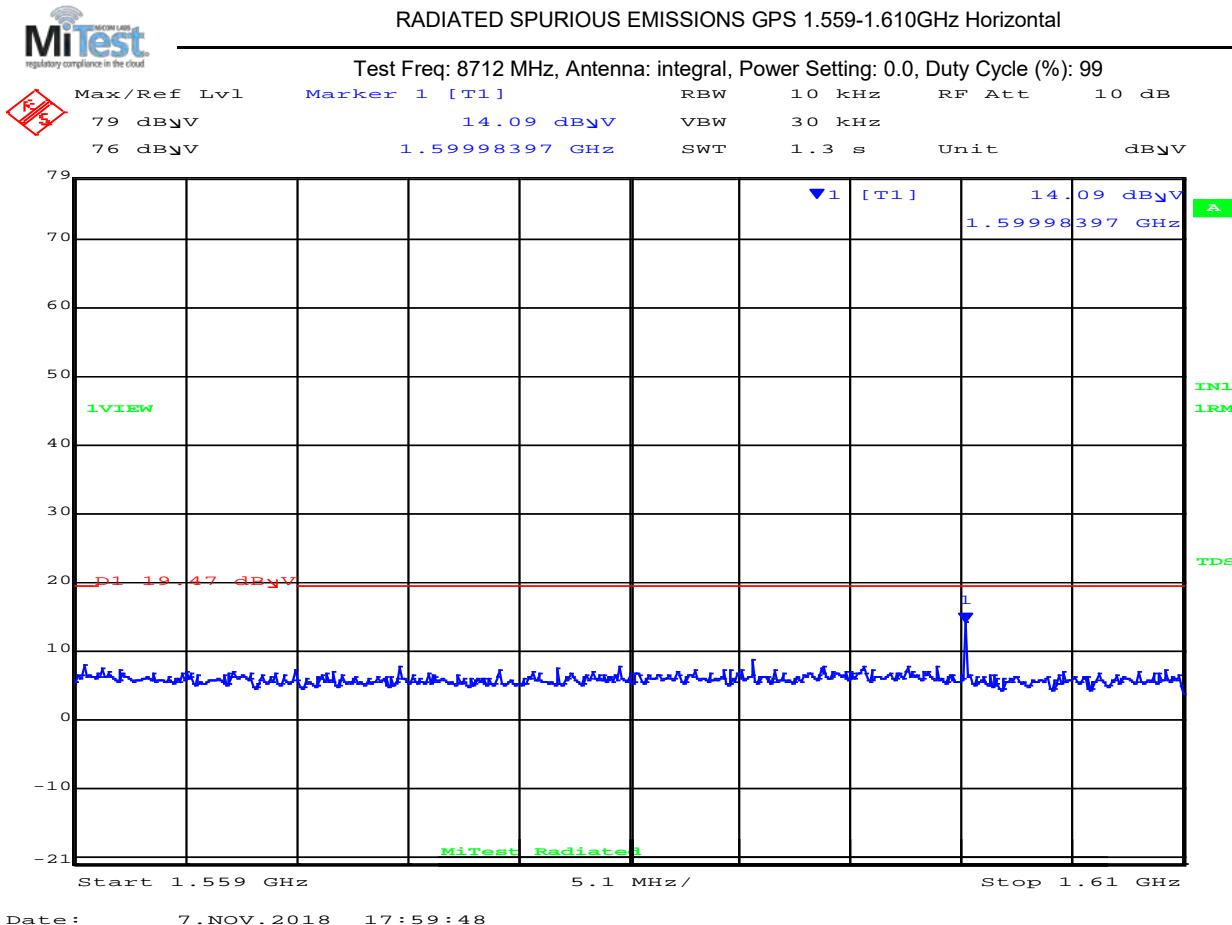
Issue Date: 12th December 2018

Page: 385 of 466

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	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.

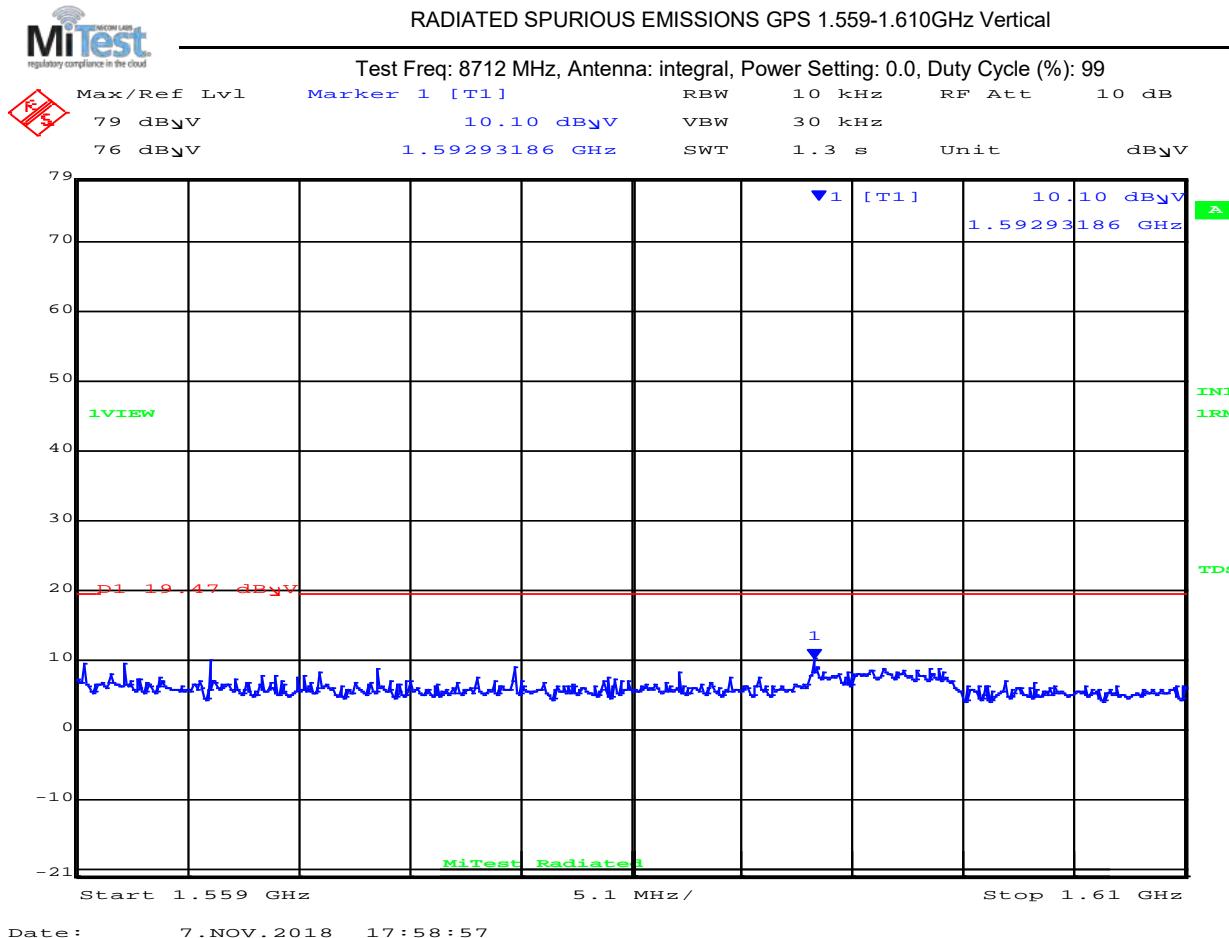


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 386 of 466

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 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										

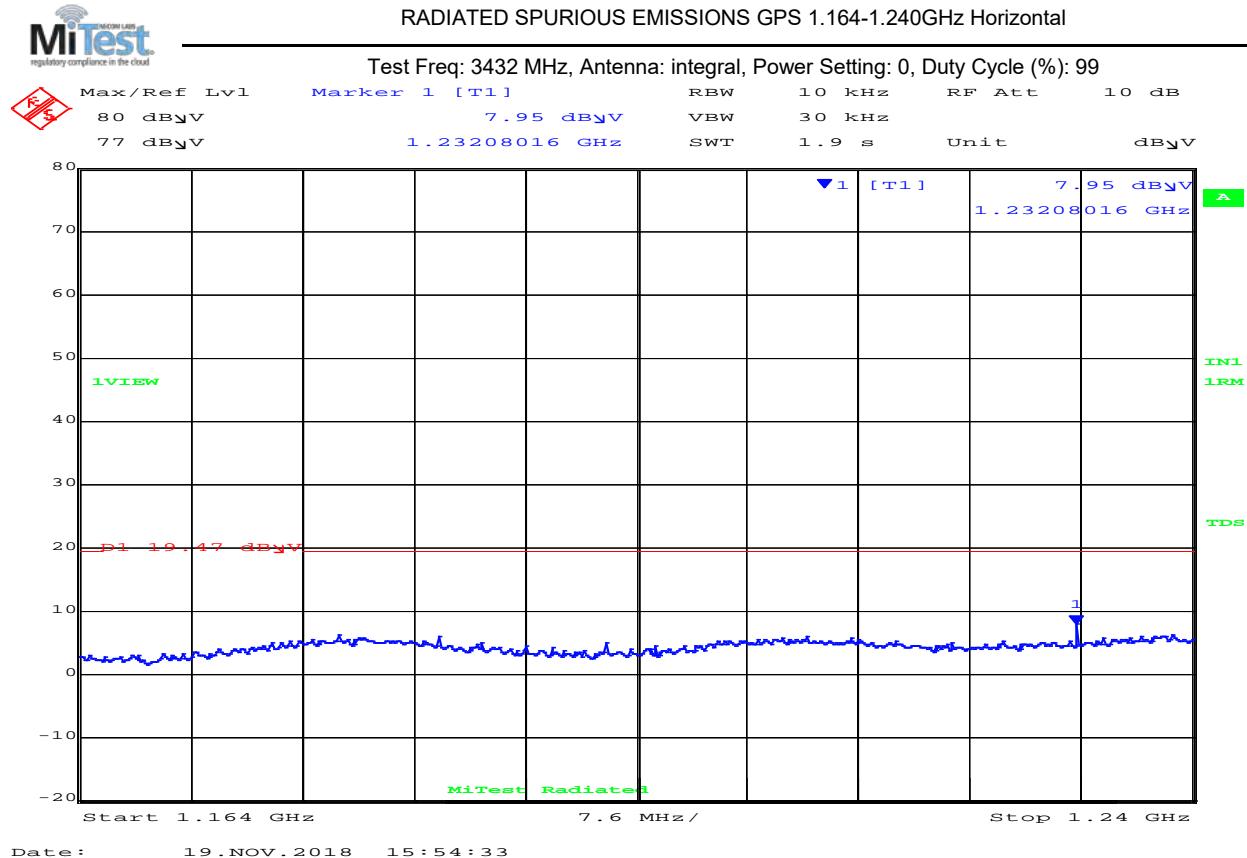
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

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

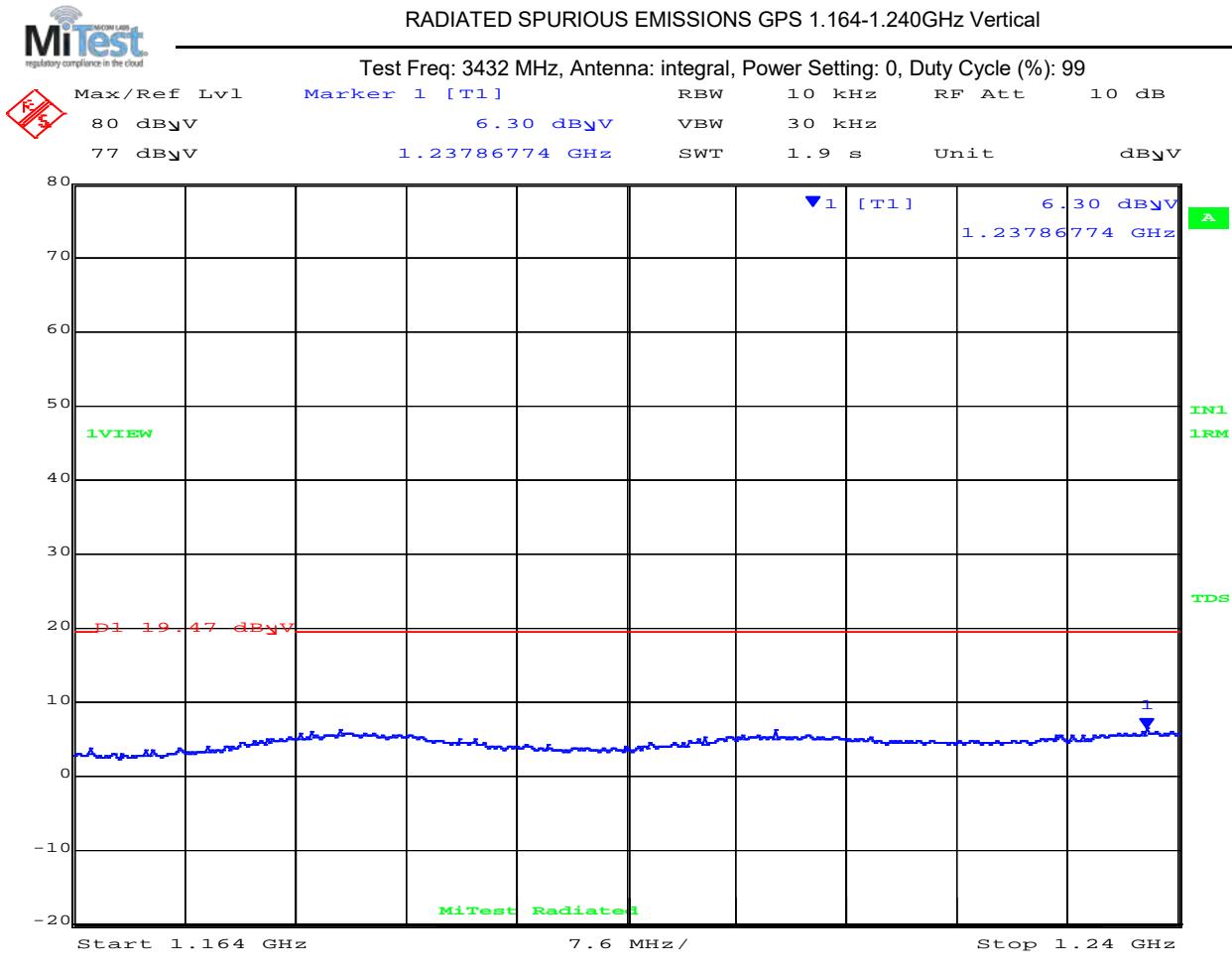
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



Title: Aleron AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 388 of 466

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 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.

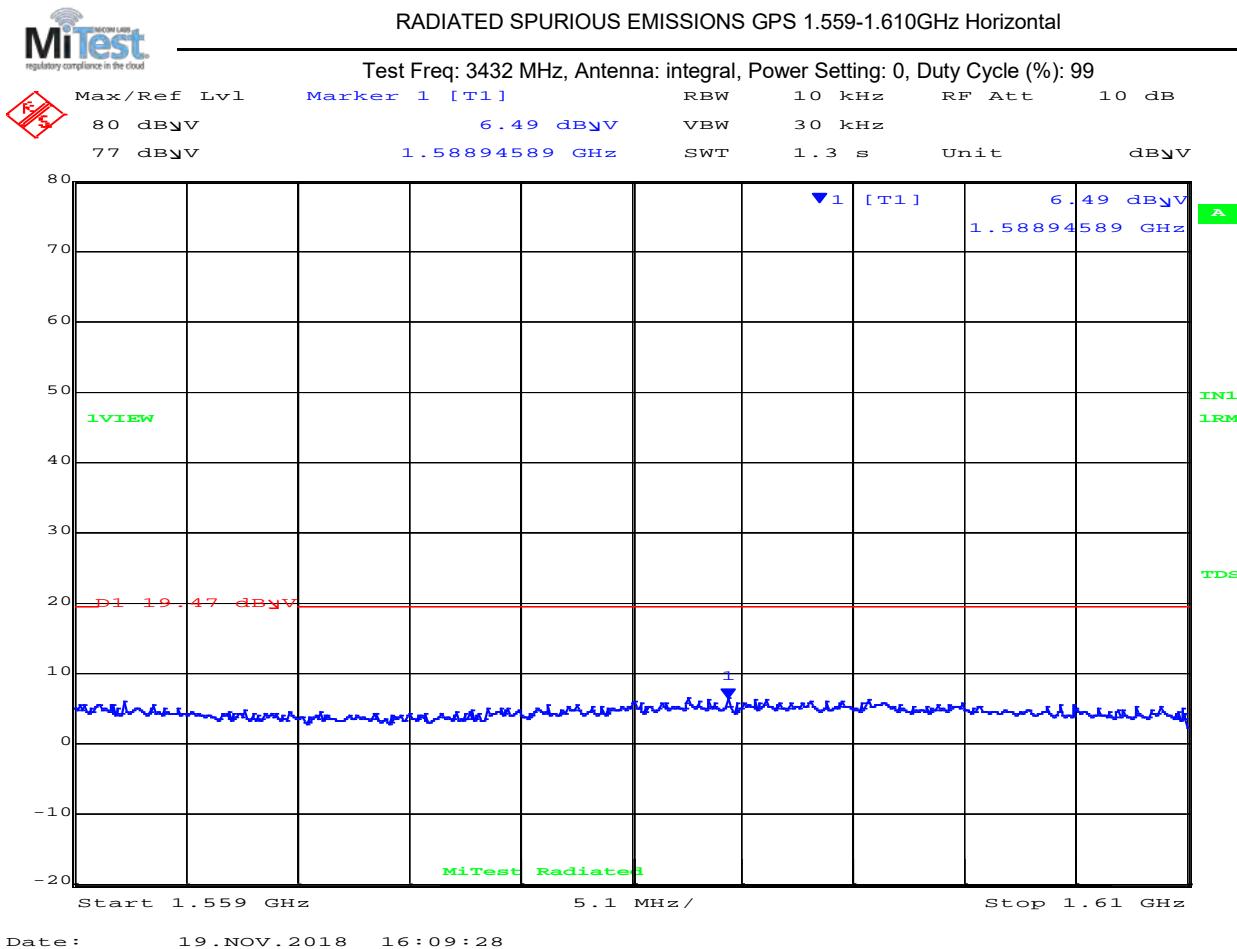


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 389 of 466

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



Date: 19.NOV.2018 16:09:28

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 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.

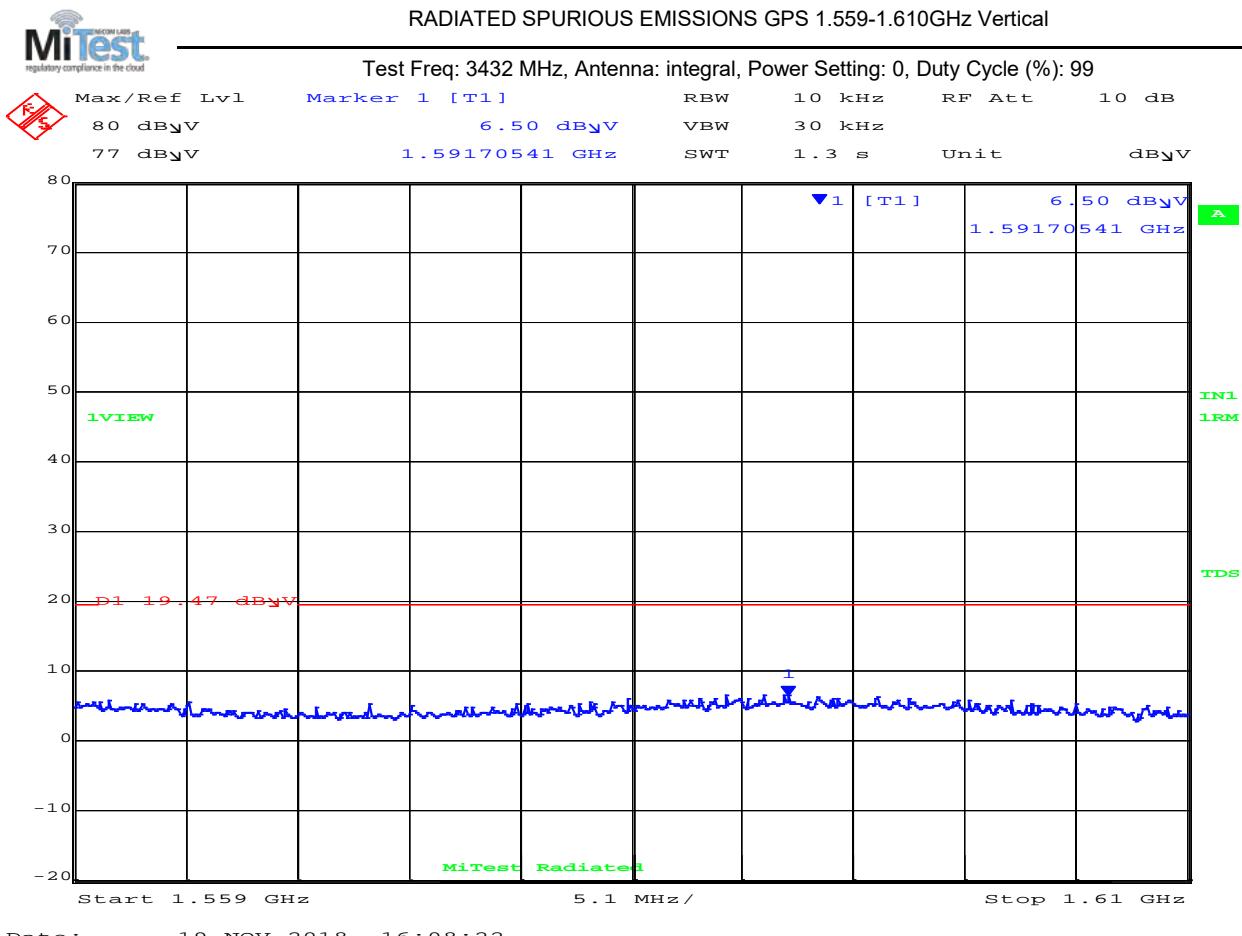


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 390 of 466

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 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)									

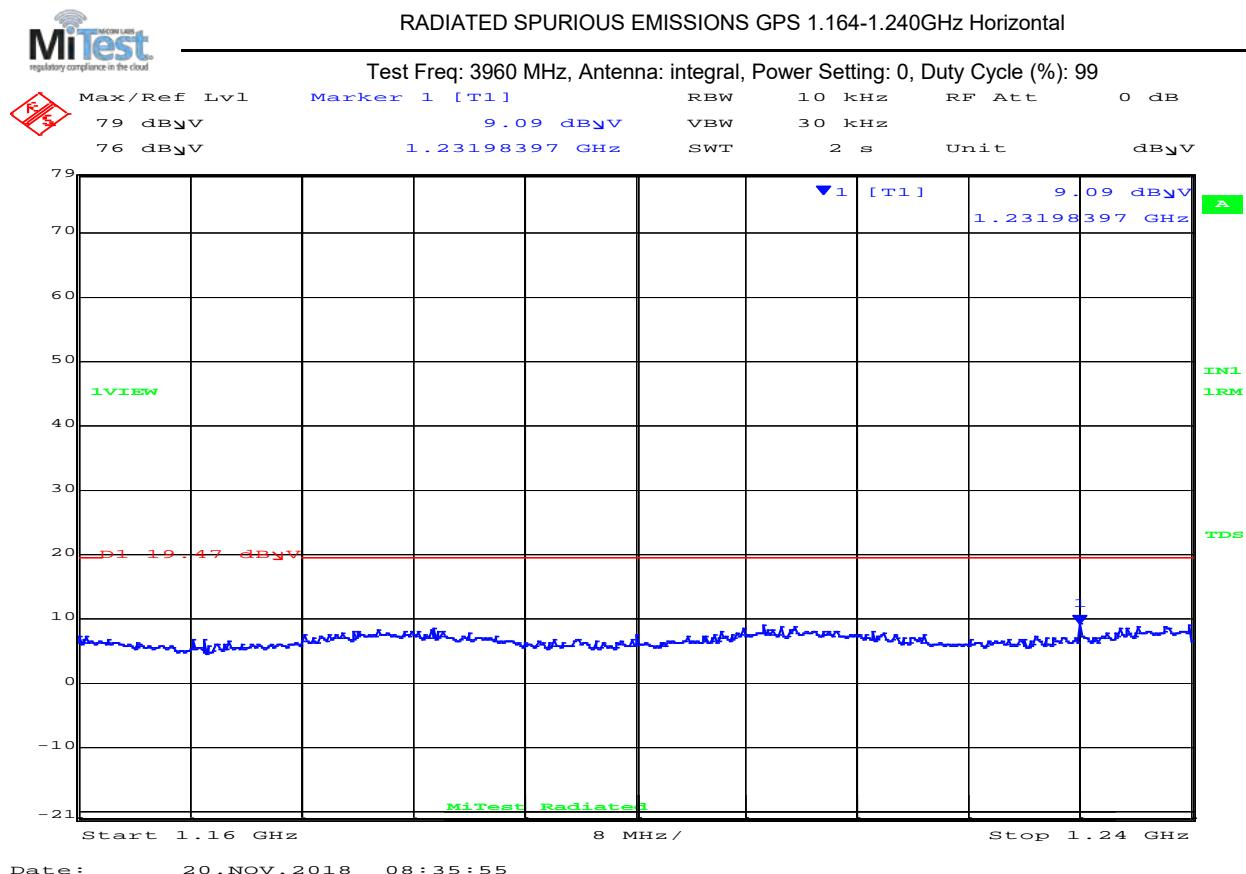
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

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



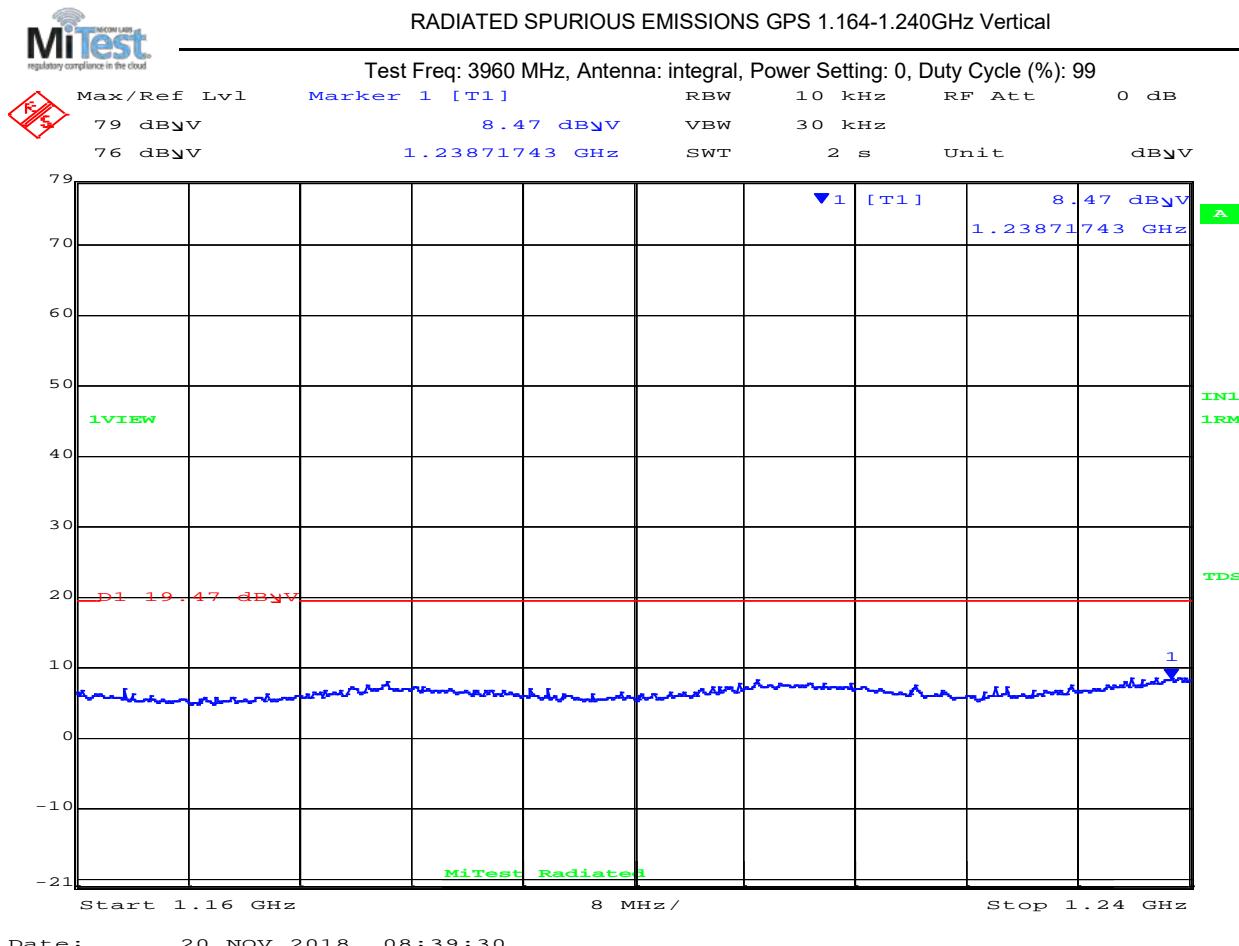
1164.00-1240.00 MHz									
Num	Frequency MHz	Level dB _μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _μ V/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at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

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.

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 dB _{µV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{µV/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.

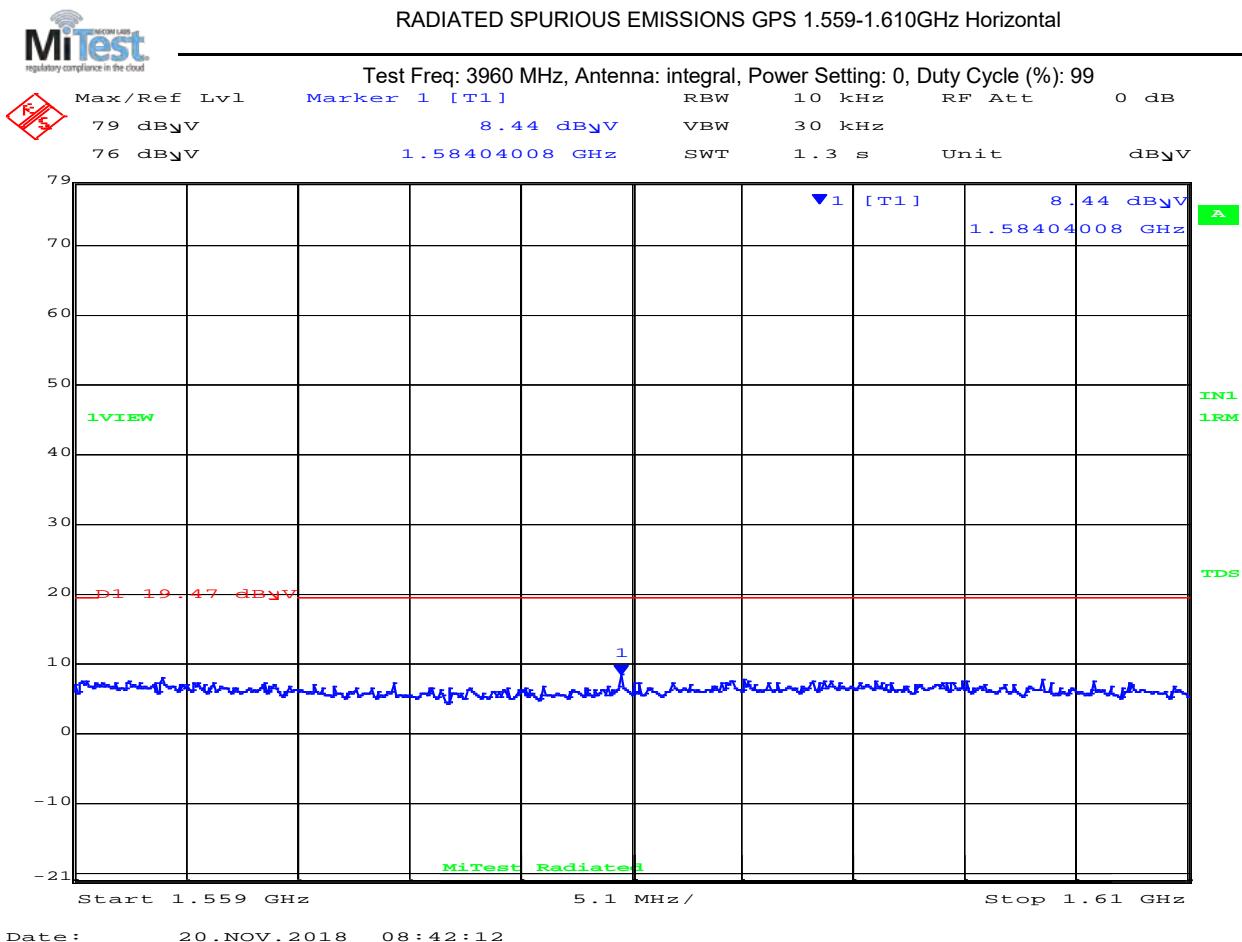


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 393 of 466

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 _u V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _u 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)									

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.

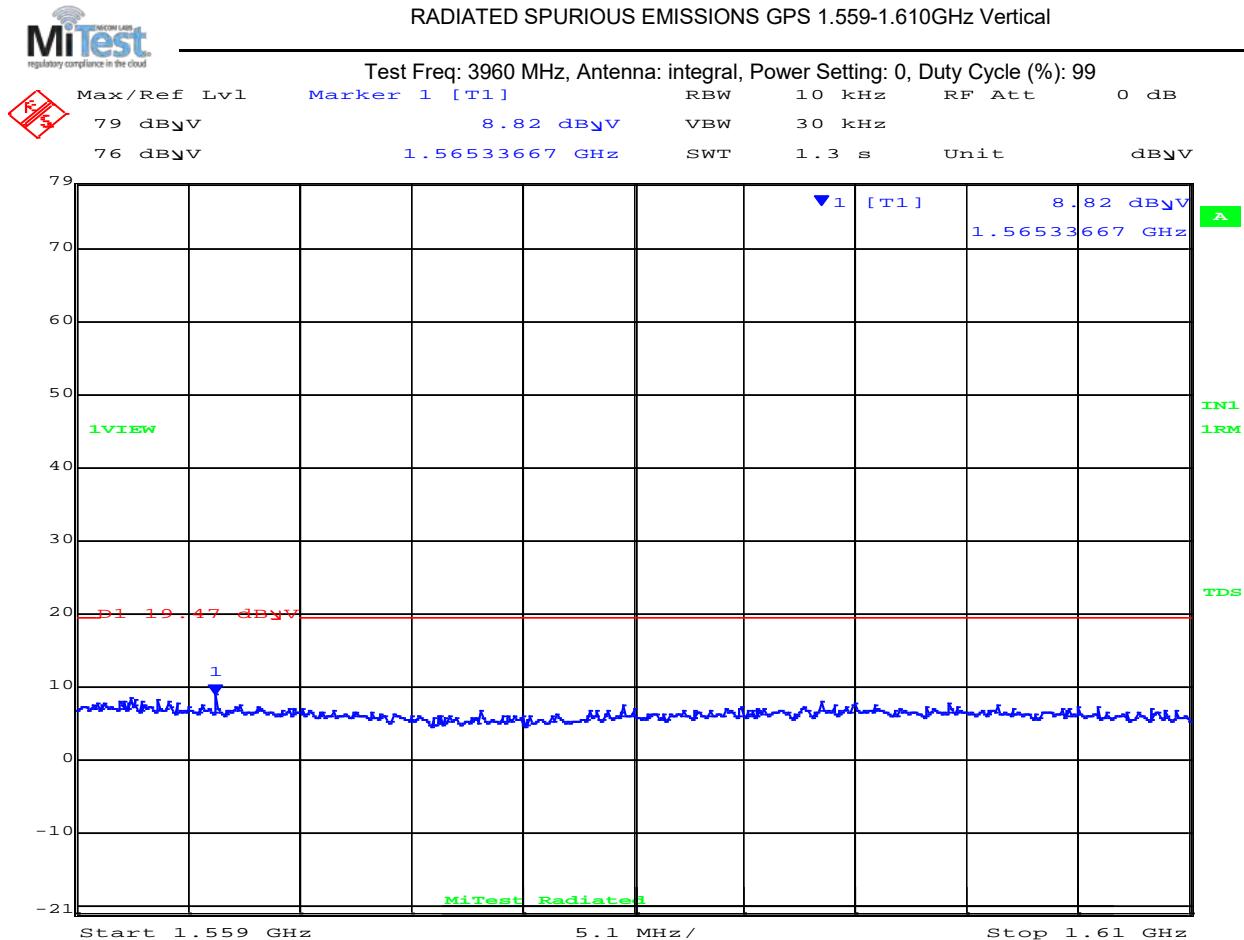


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 394 of 466

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



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

Test Measurement Results										
1559.00-1610.00 MHz										
Num	Frequency MHz	Level dB _P U/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _P U/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.



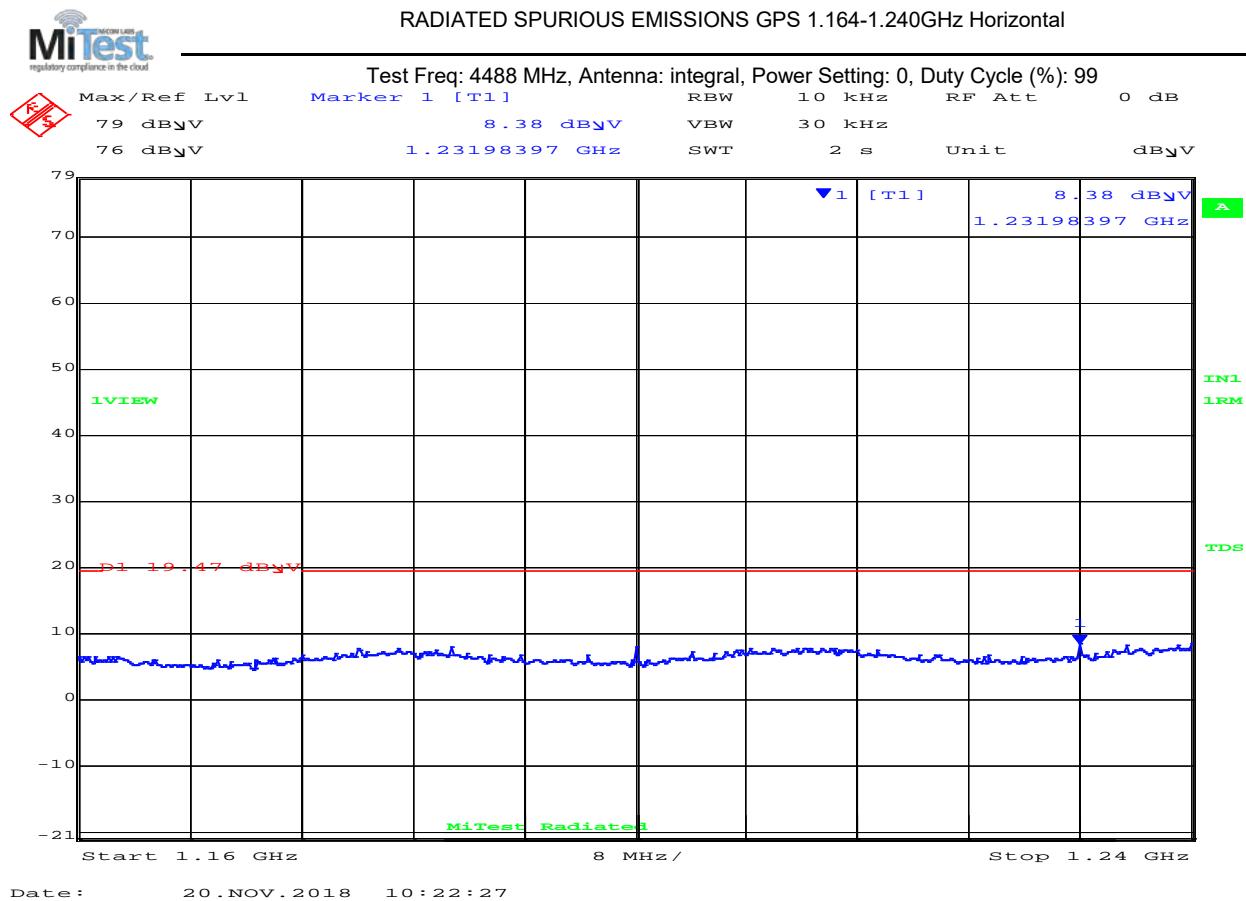
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 395 of 466

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)									

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.

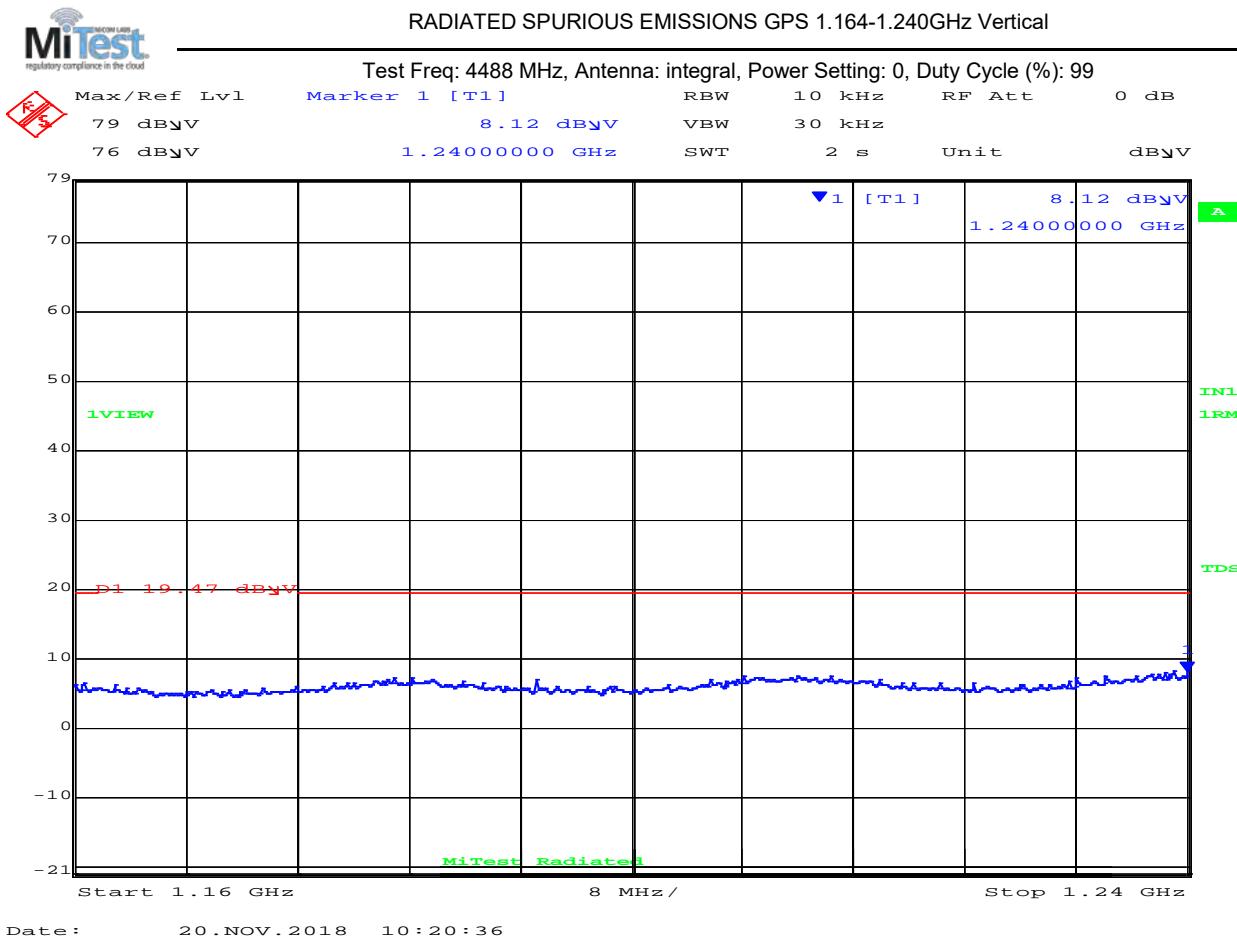


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 396 of 466

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 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)

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.

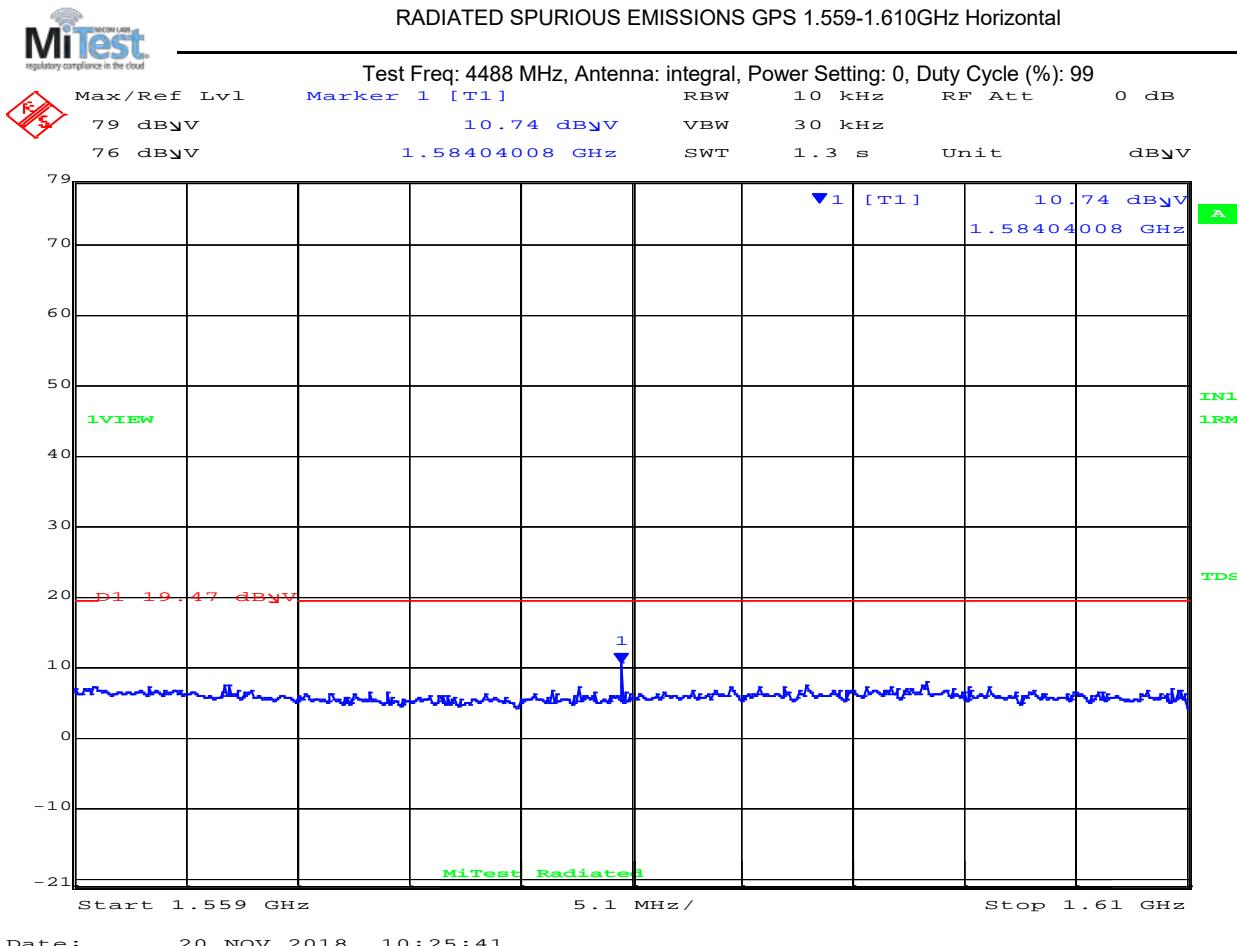


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 397 of 466

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 _{µV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{µV/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.

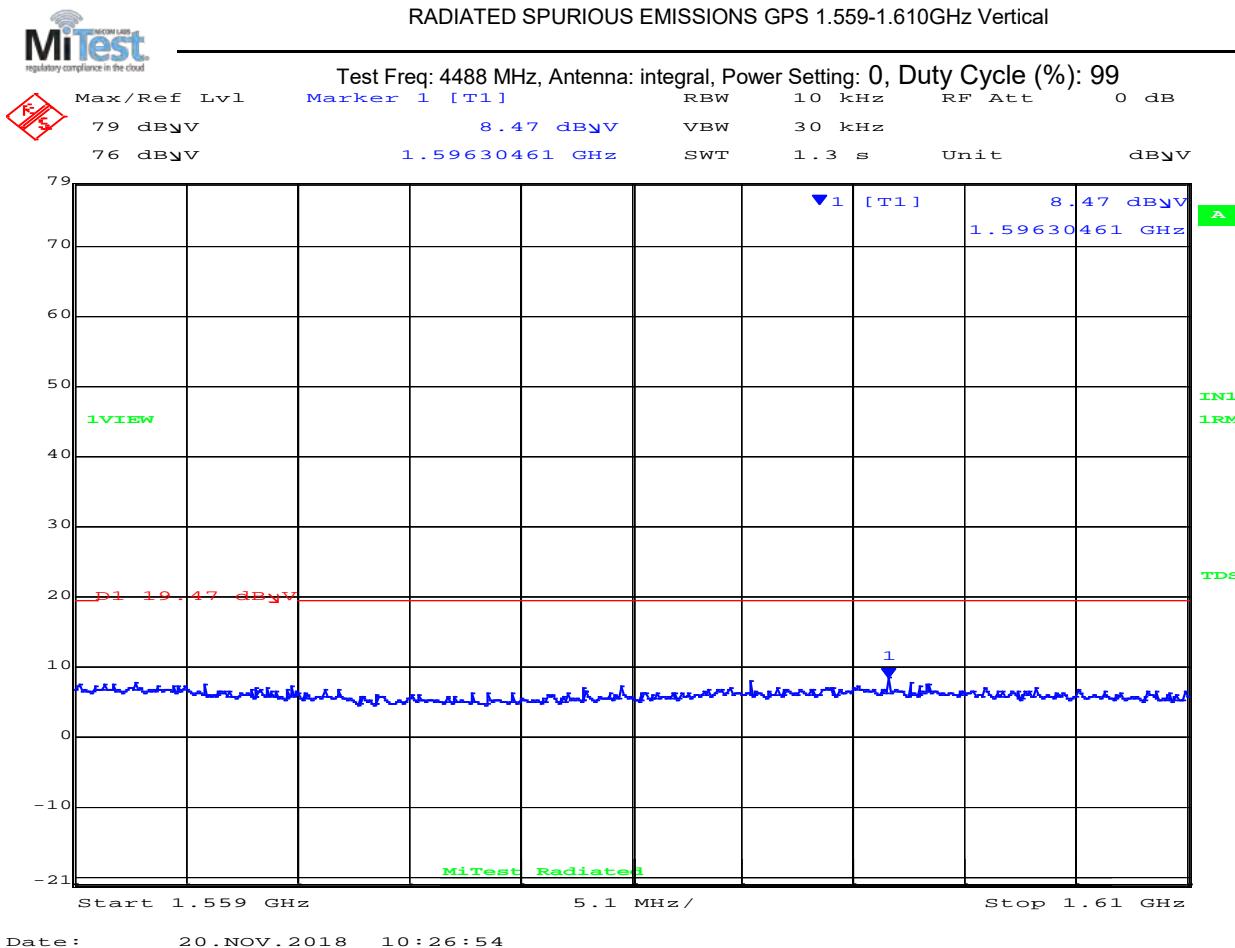


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 398 of 466

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



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

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)										

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.



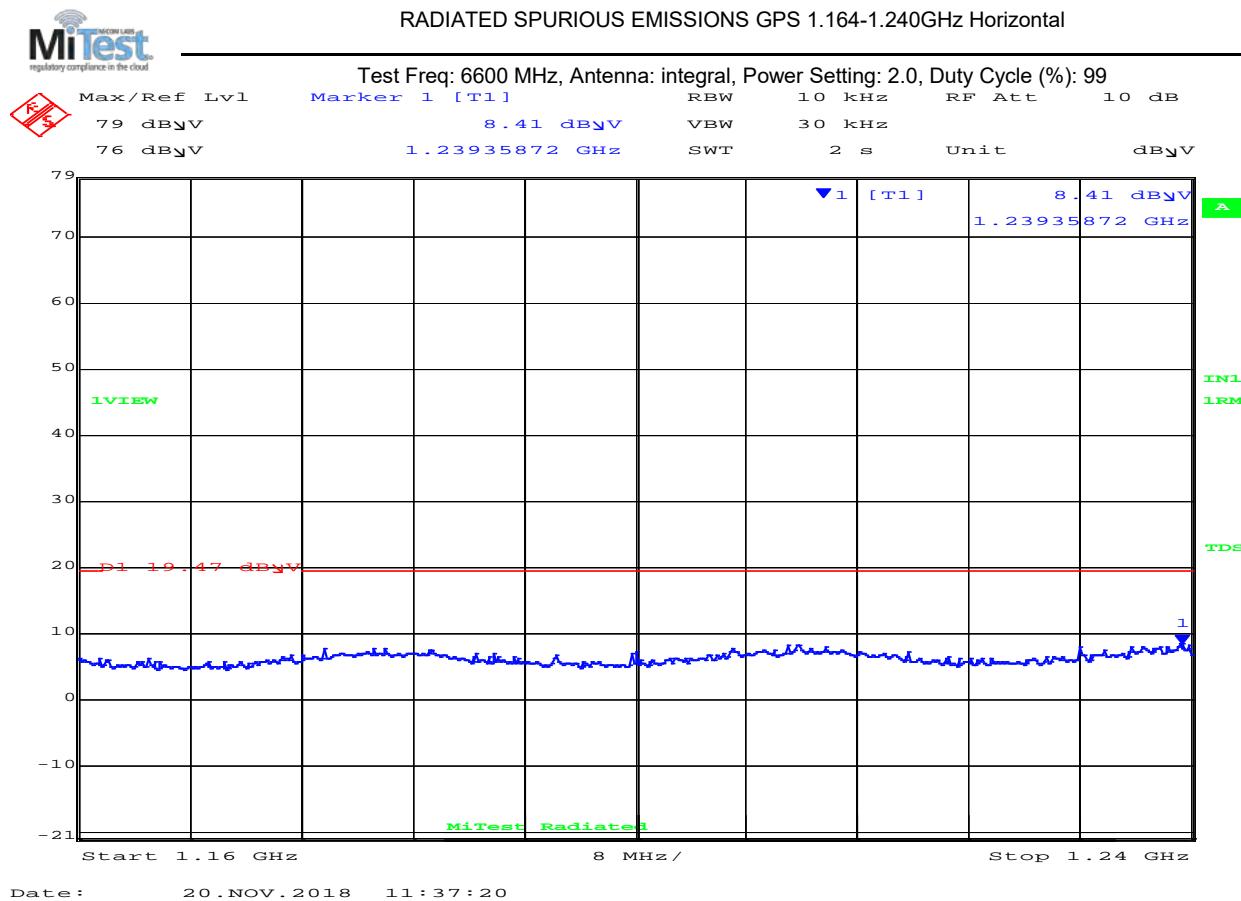
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 399 of 466

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



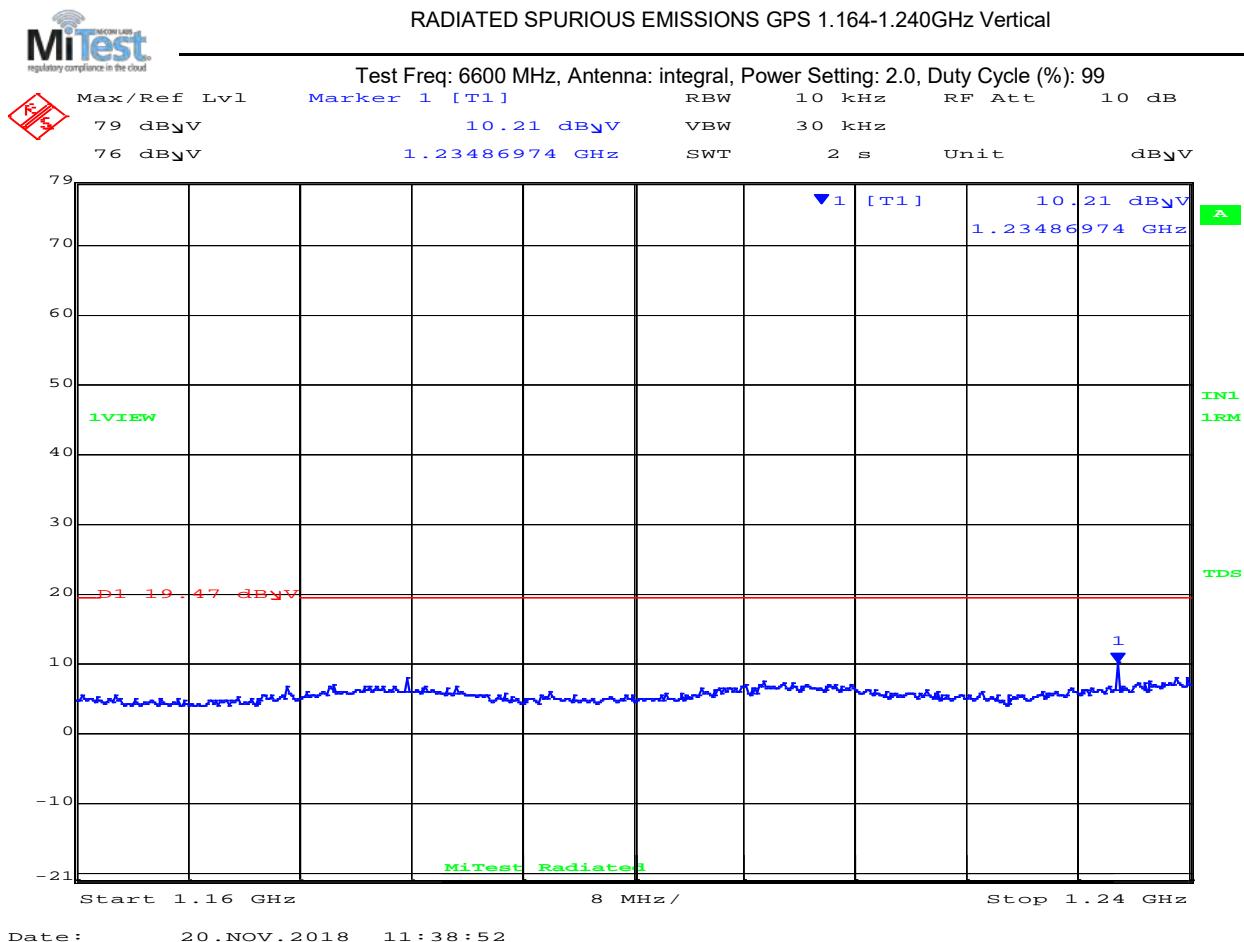
1164.00-1240.00 MHz									
Num	Frequency MHz	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each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

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.

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



1164.00-1240.00 MHz

Num	Frequency MHz	Level dB _{µV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{µV/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.

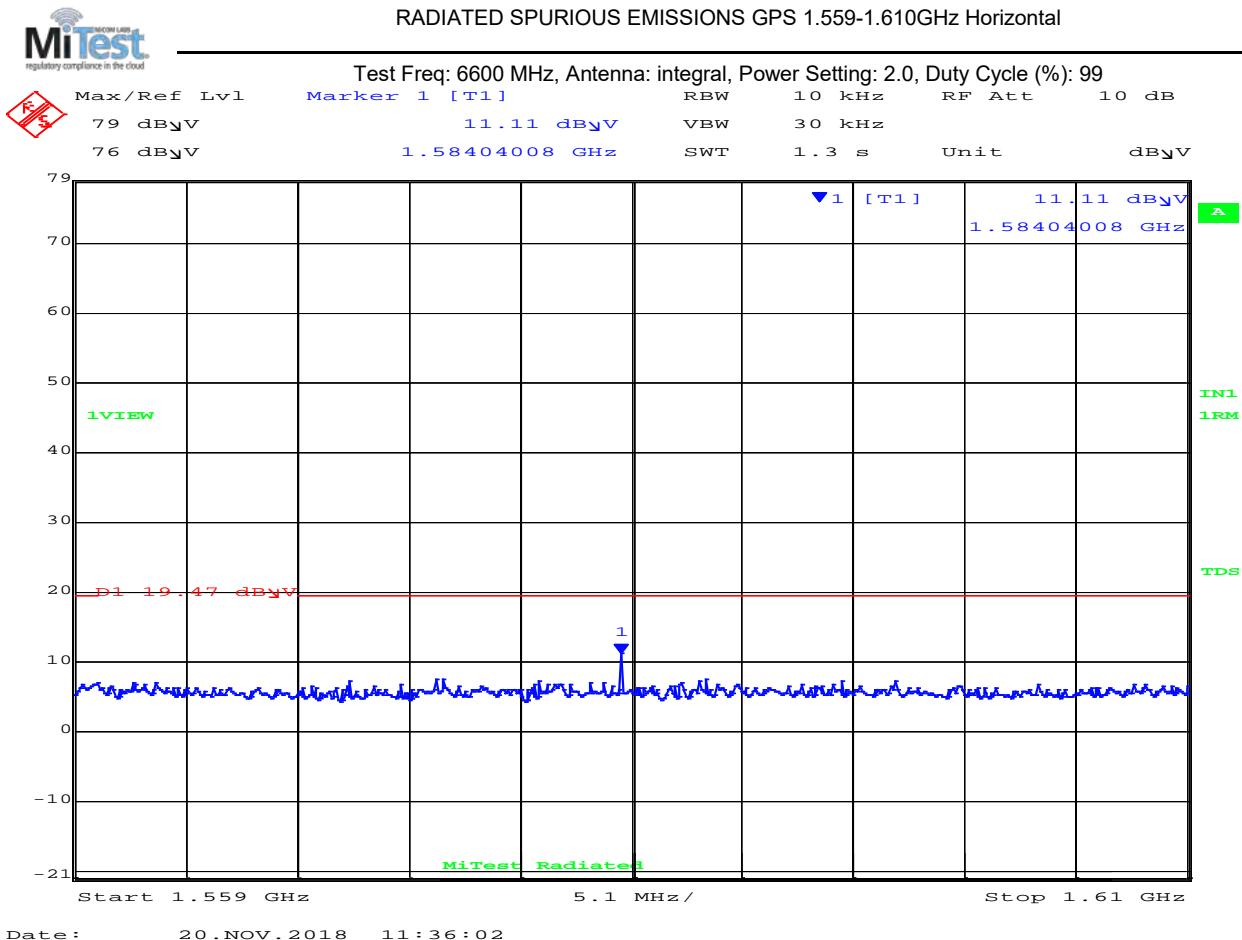


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 401 of 466

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

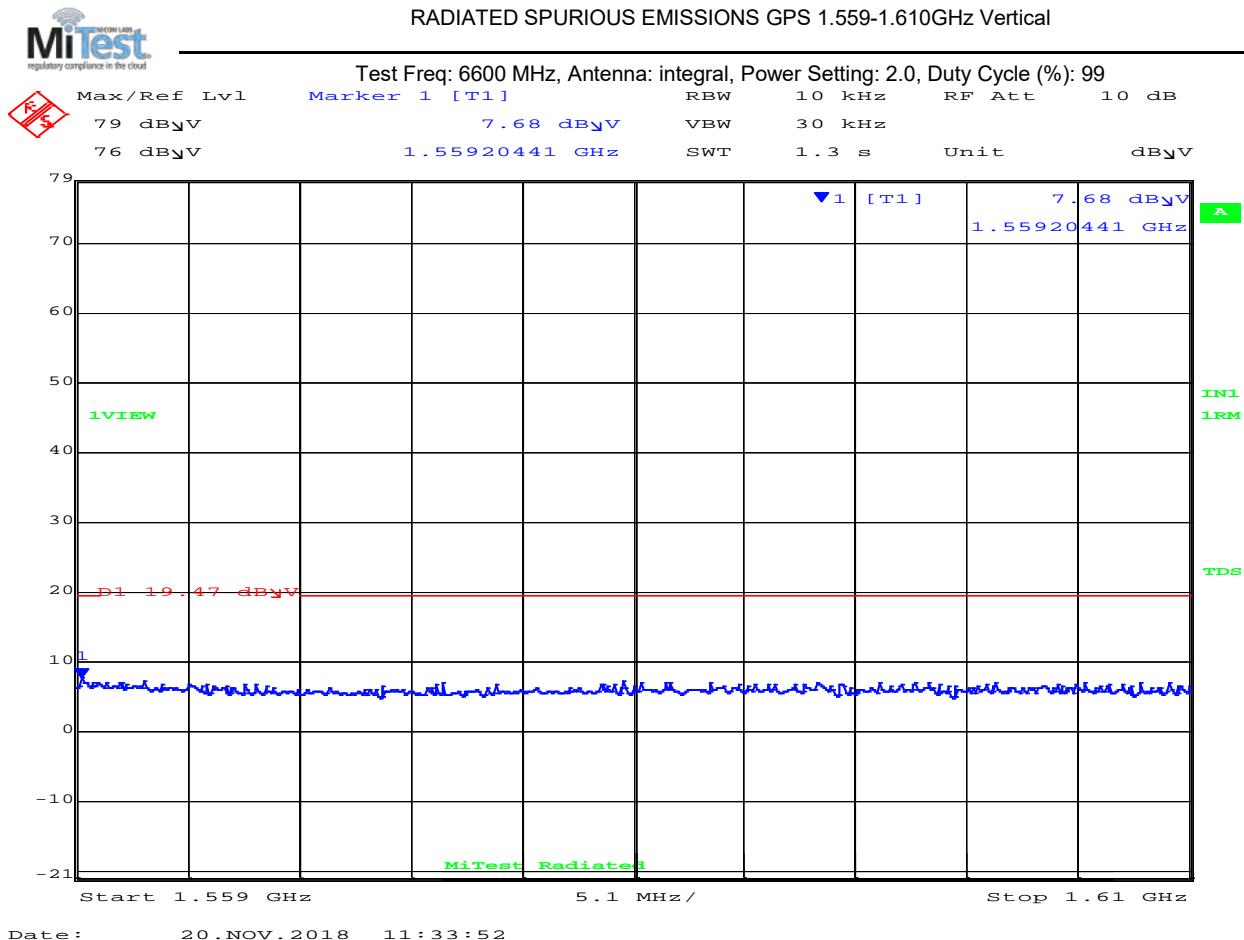
Num	Frequency MHz	Level dB _µ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _µ V/m	Margin dB	Pass /Fail
No Signals Found within 6 dB of Limit									
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)									

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.

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 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)									

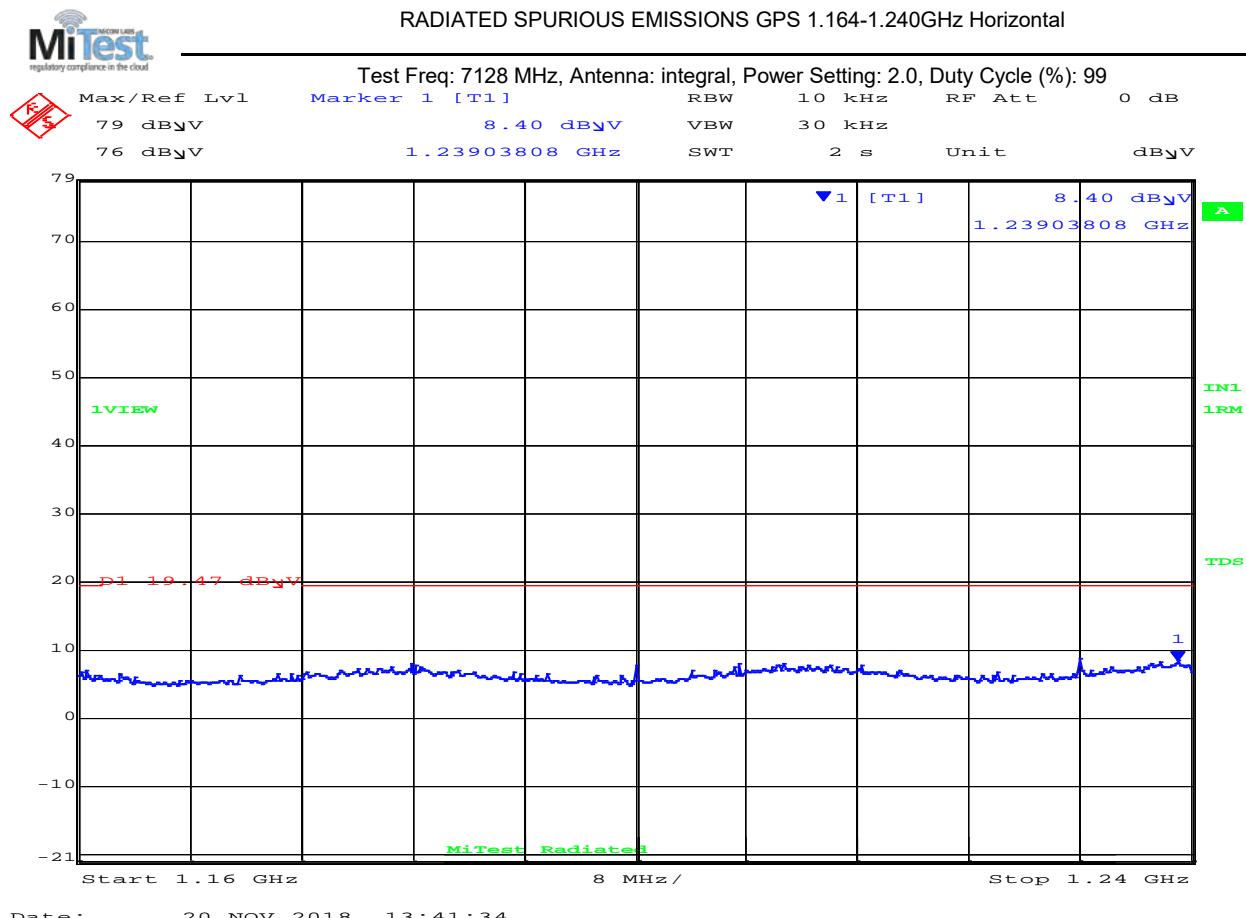
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

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 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.

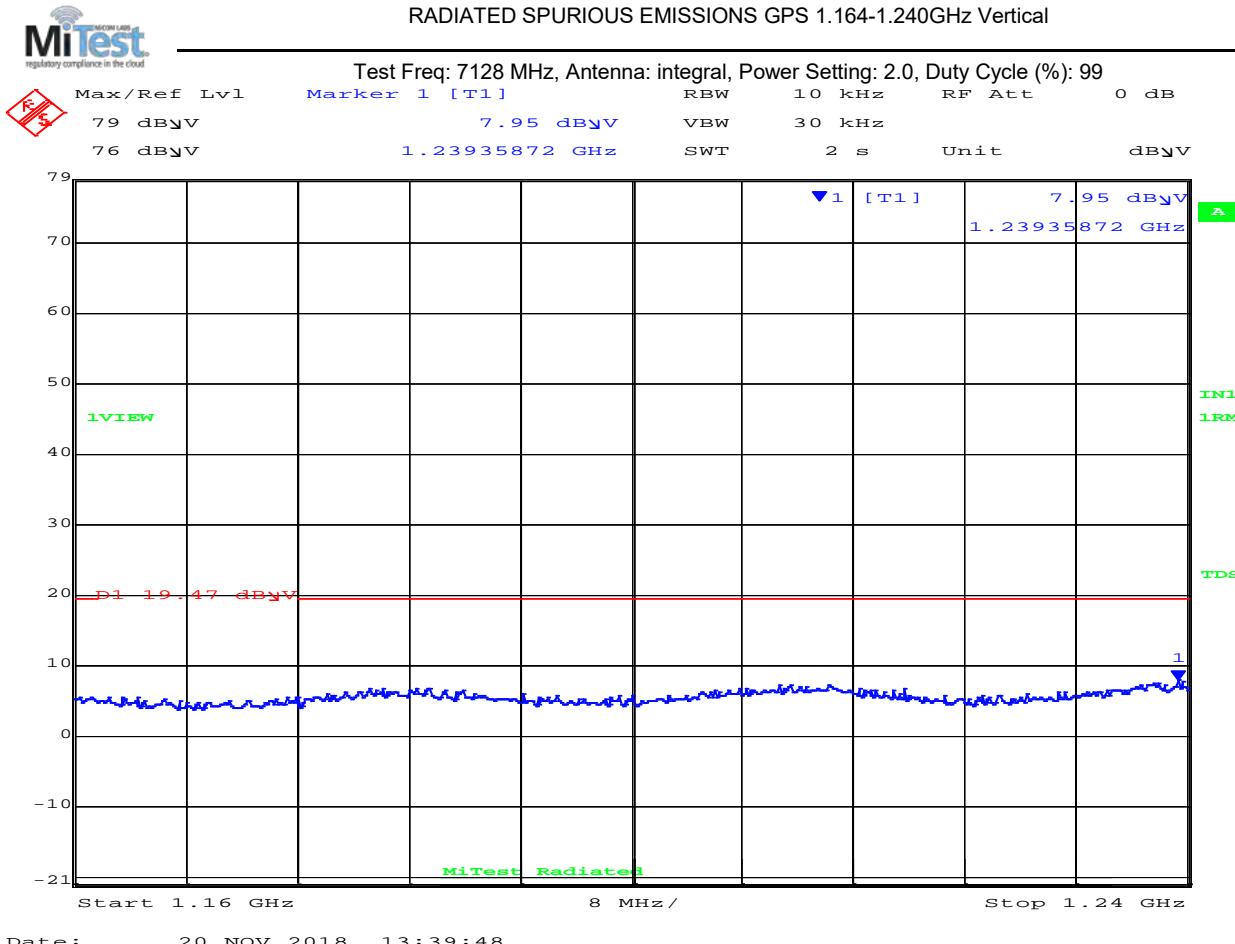


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 404 of 466

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 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)									

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.

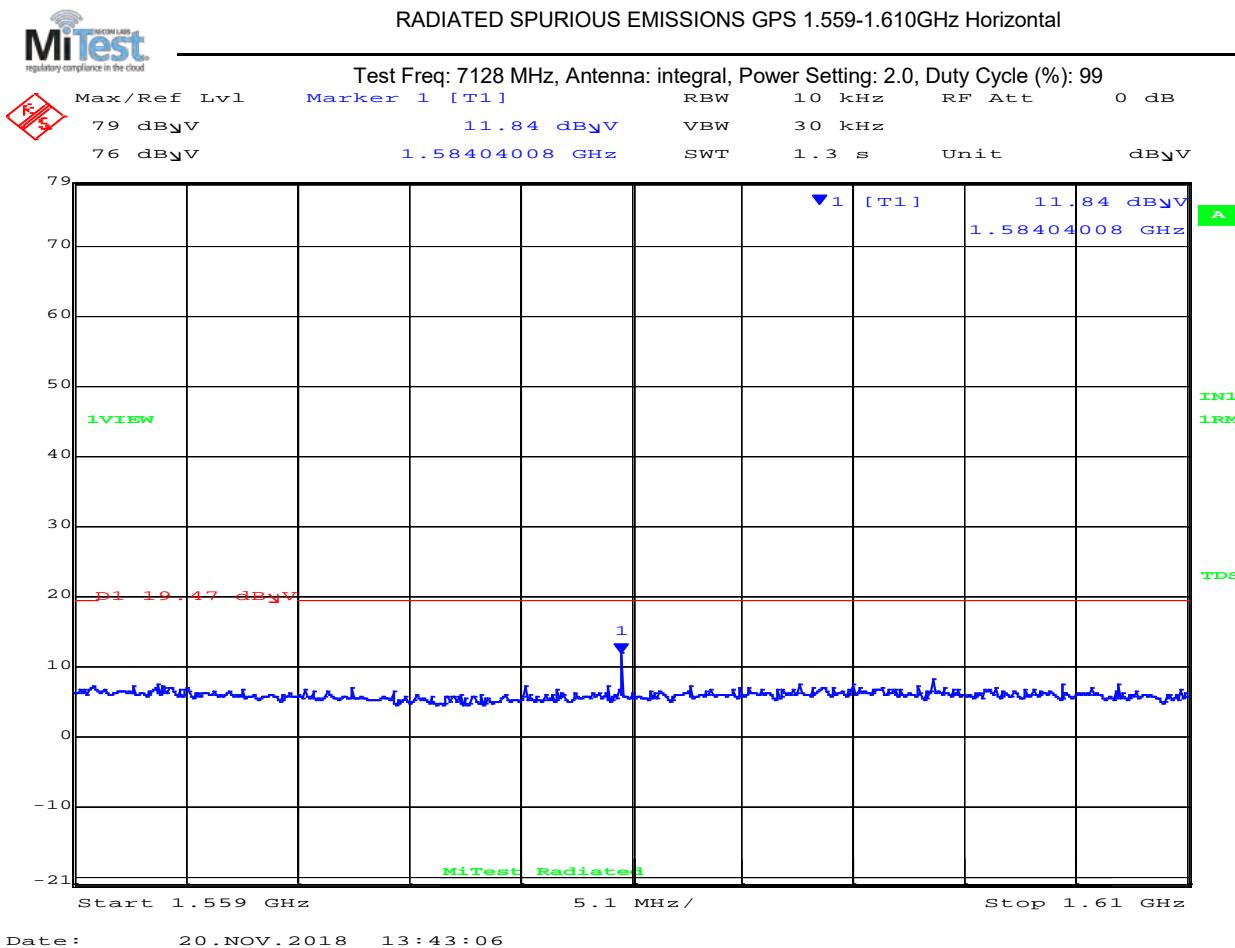


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 405 of 466

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



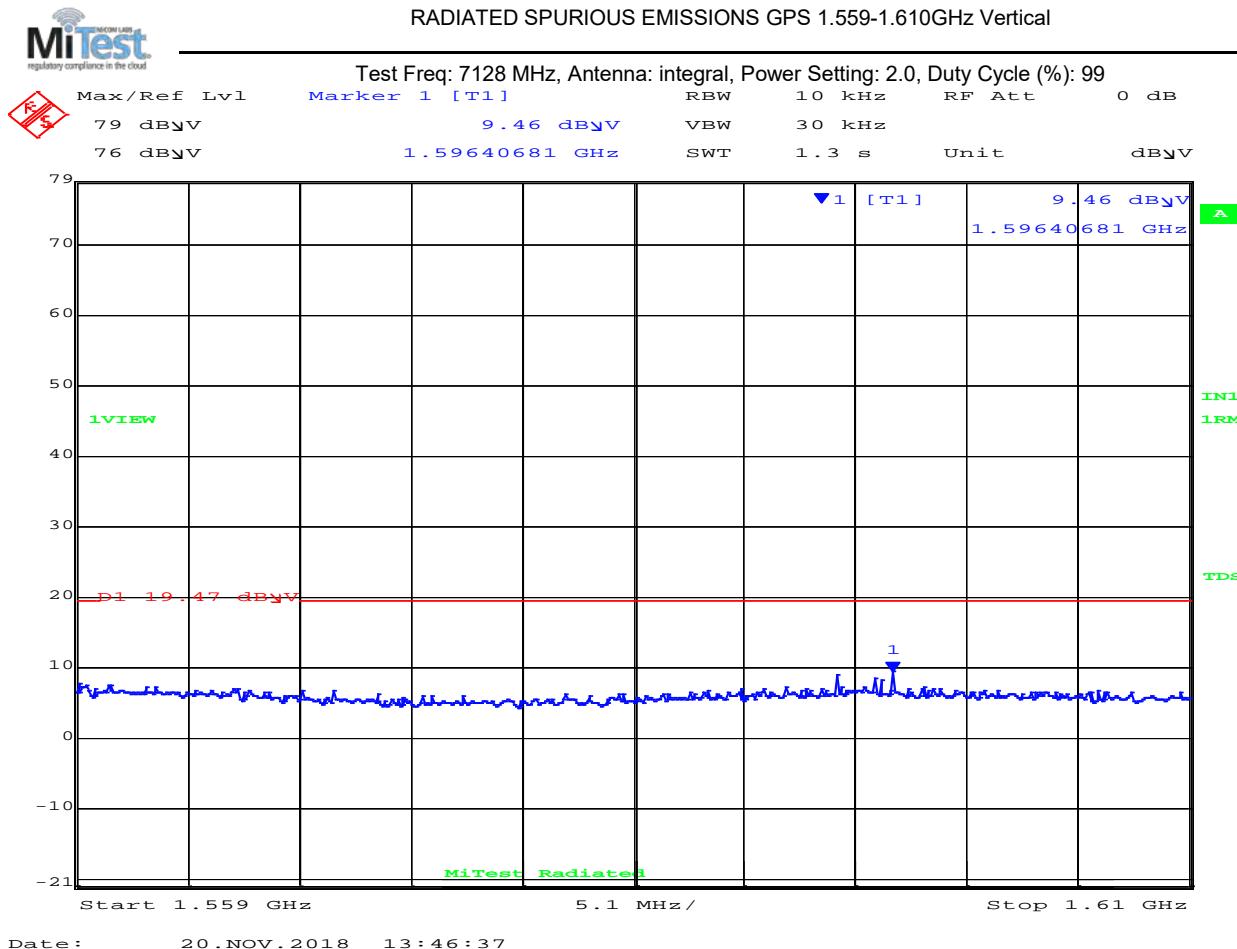
1559.00-1610.00 MHz										
Num	Frequency MHz	Level dB _μ V/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _μ V/m	Margin dB	Pass /Fail	
No Signals Found within 6 dB of Limit										
Test Notes: Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn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

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 dB _{µV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{µV/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.



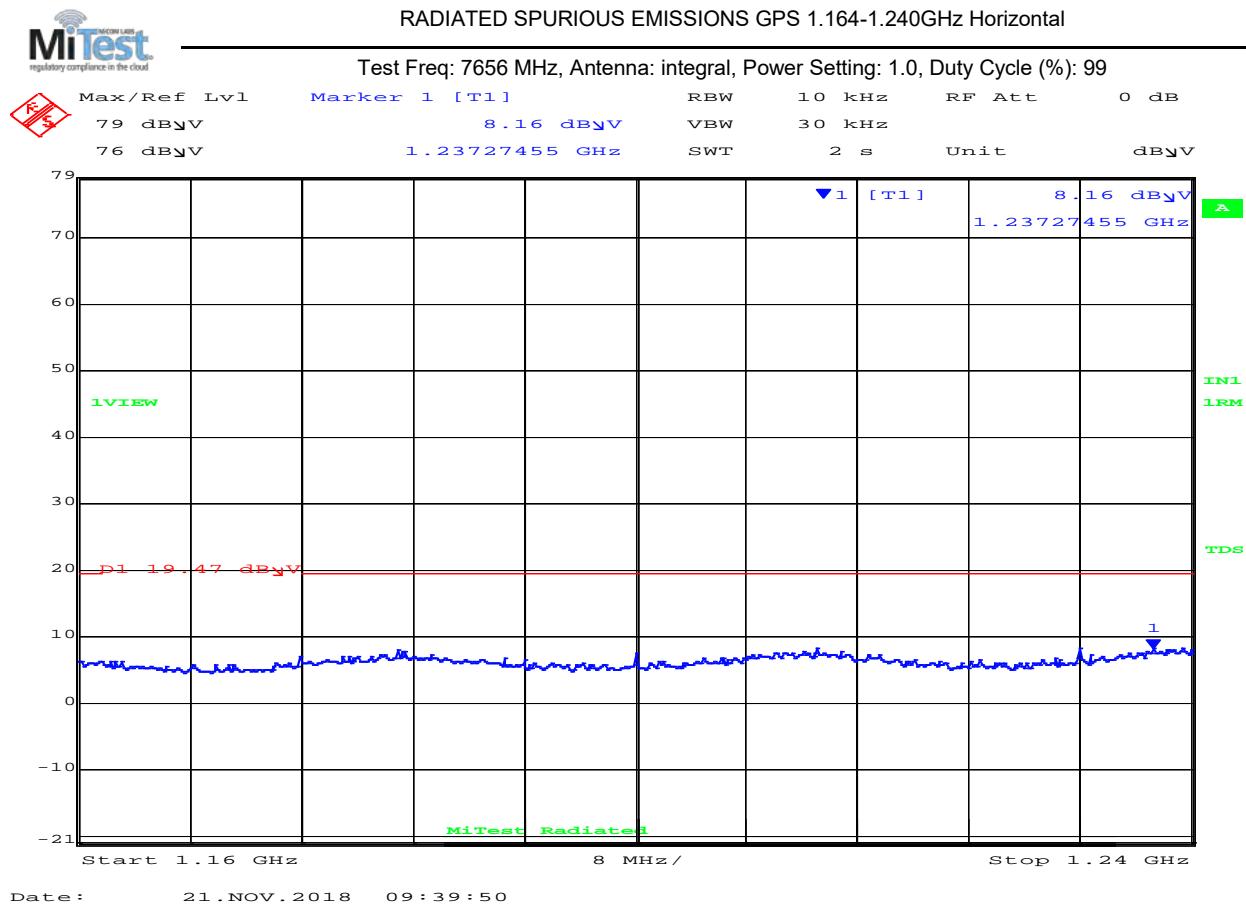
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 407 of 466

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)									

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.

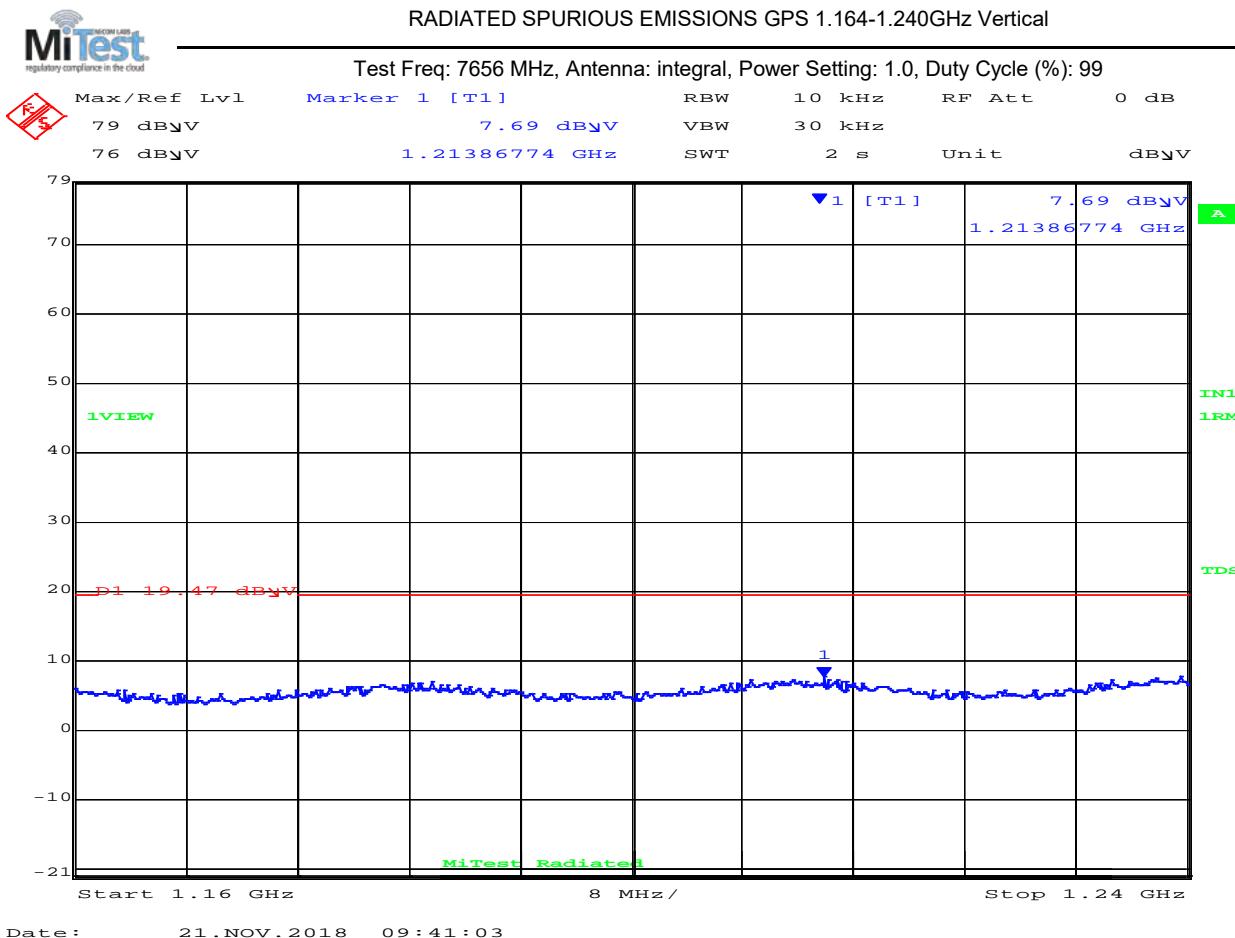


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 408 of 466

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 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)

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.

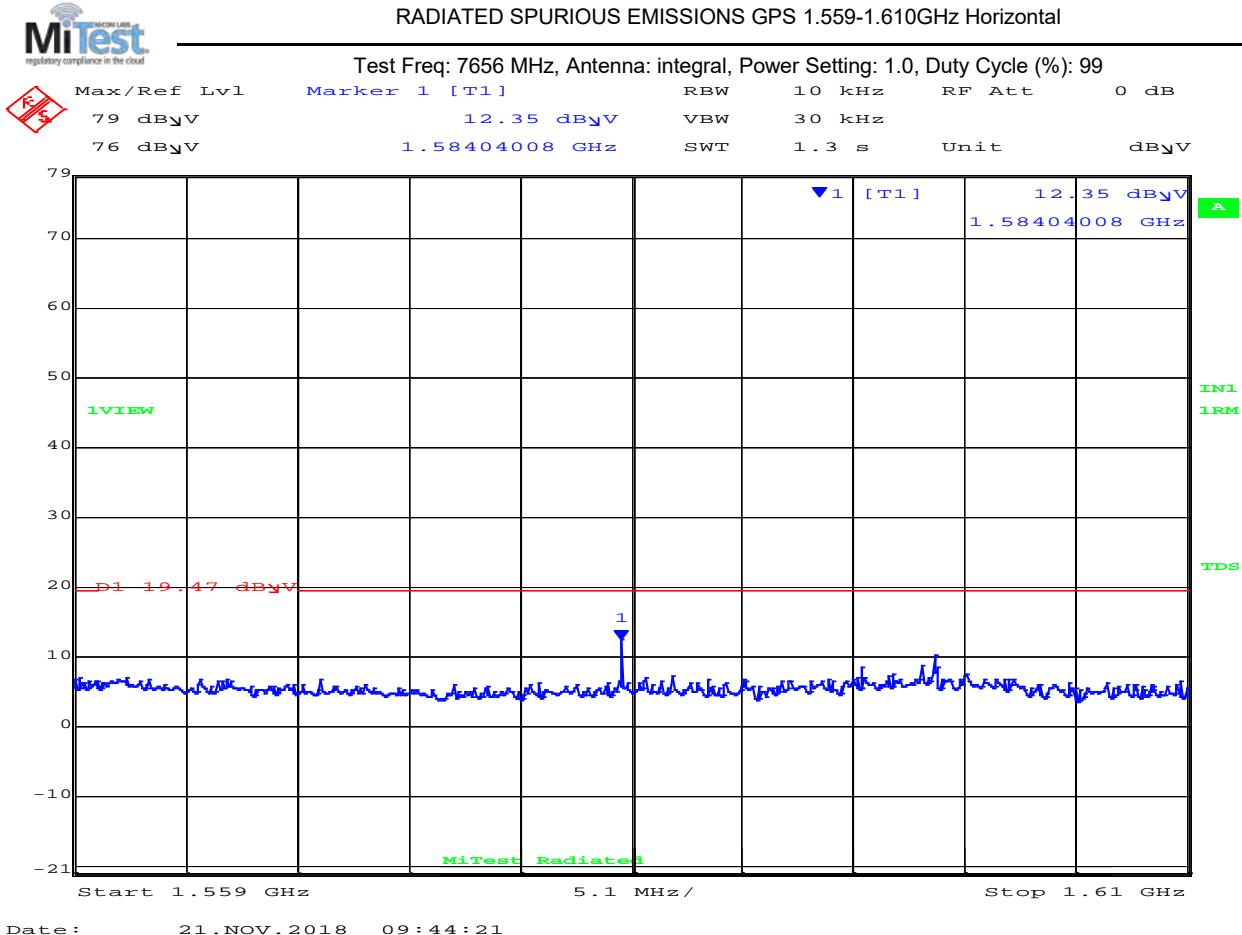


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 409 of 466

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: 21.NOV.2018 09:44:21

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:

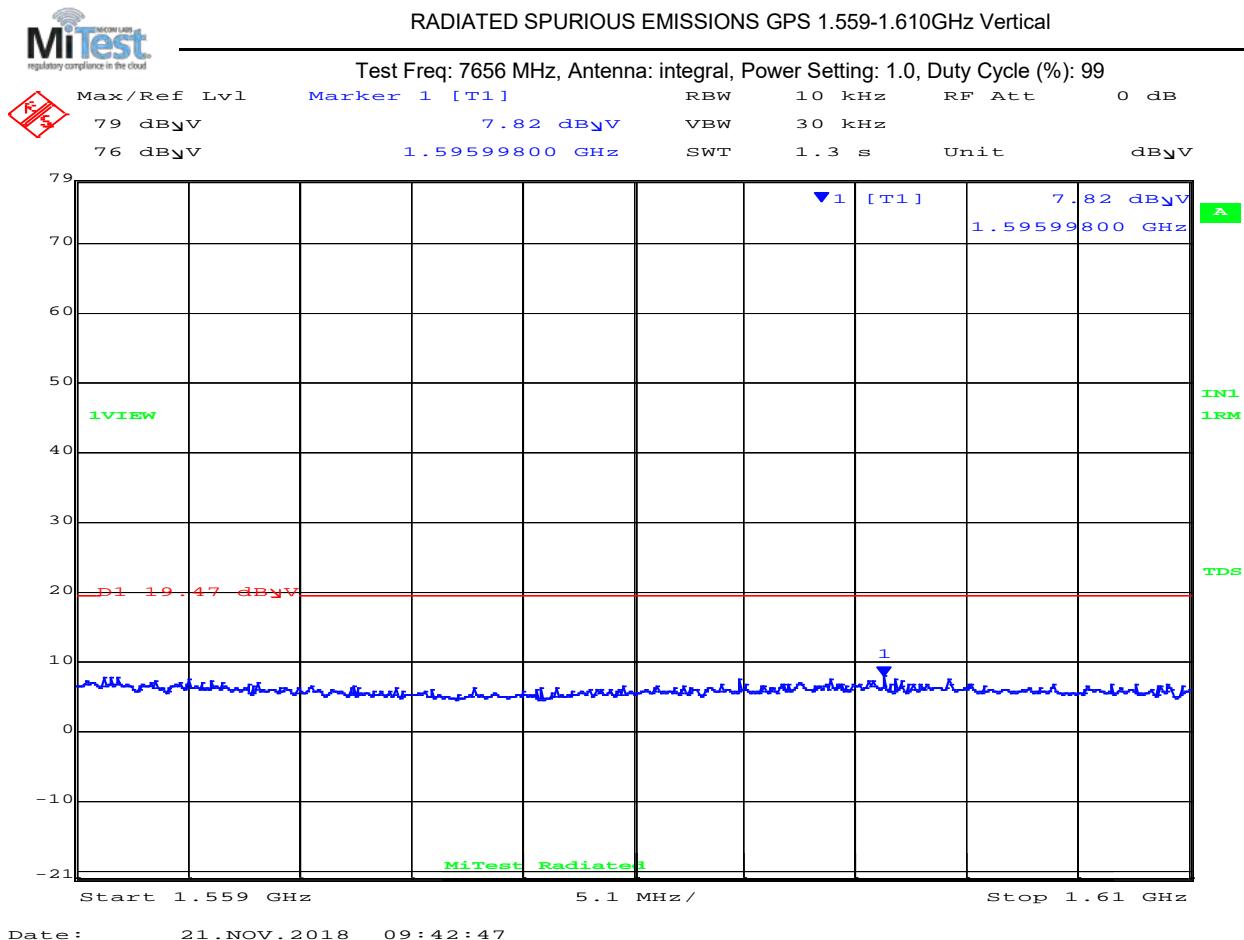
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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.

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 dB _{µV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{µV/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.



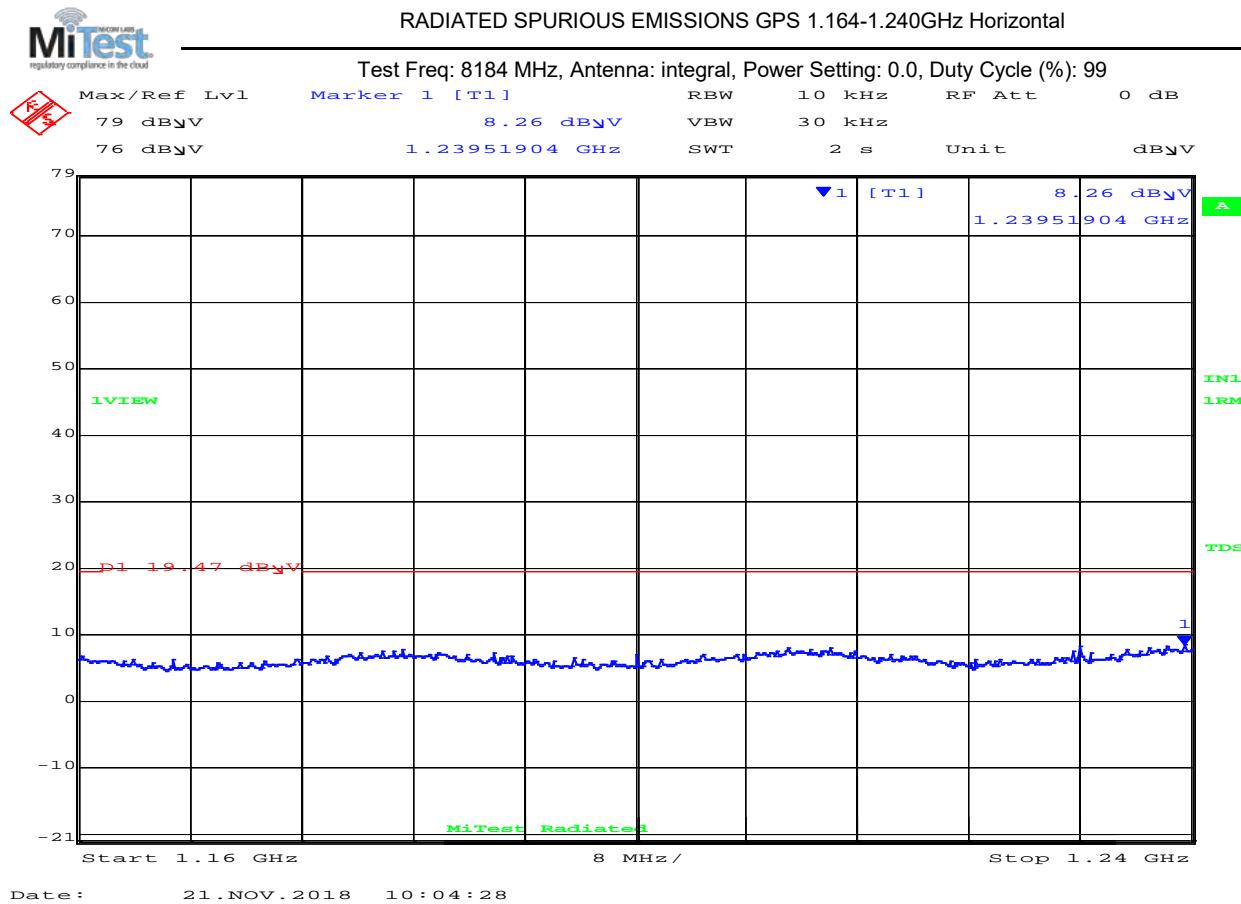
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 411 of 466

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 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.

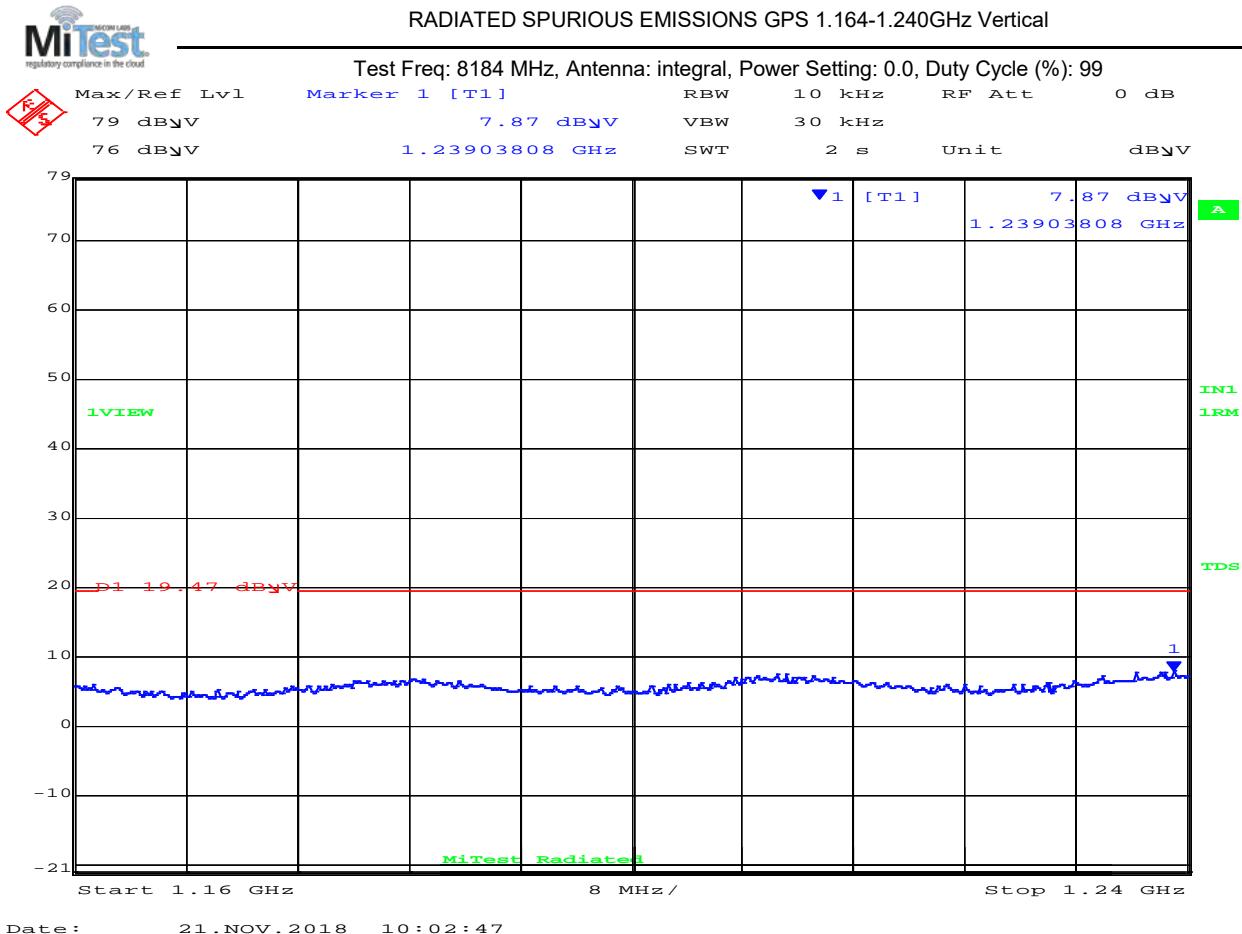


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 412 of 466

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 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)

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.

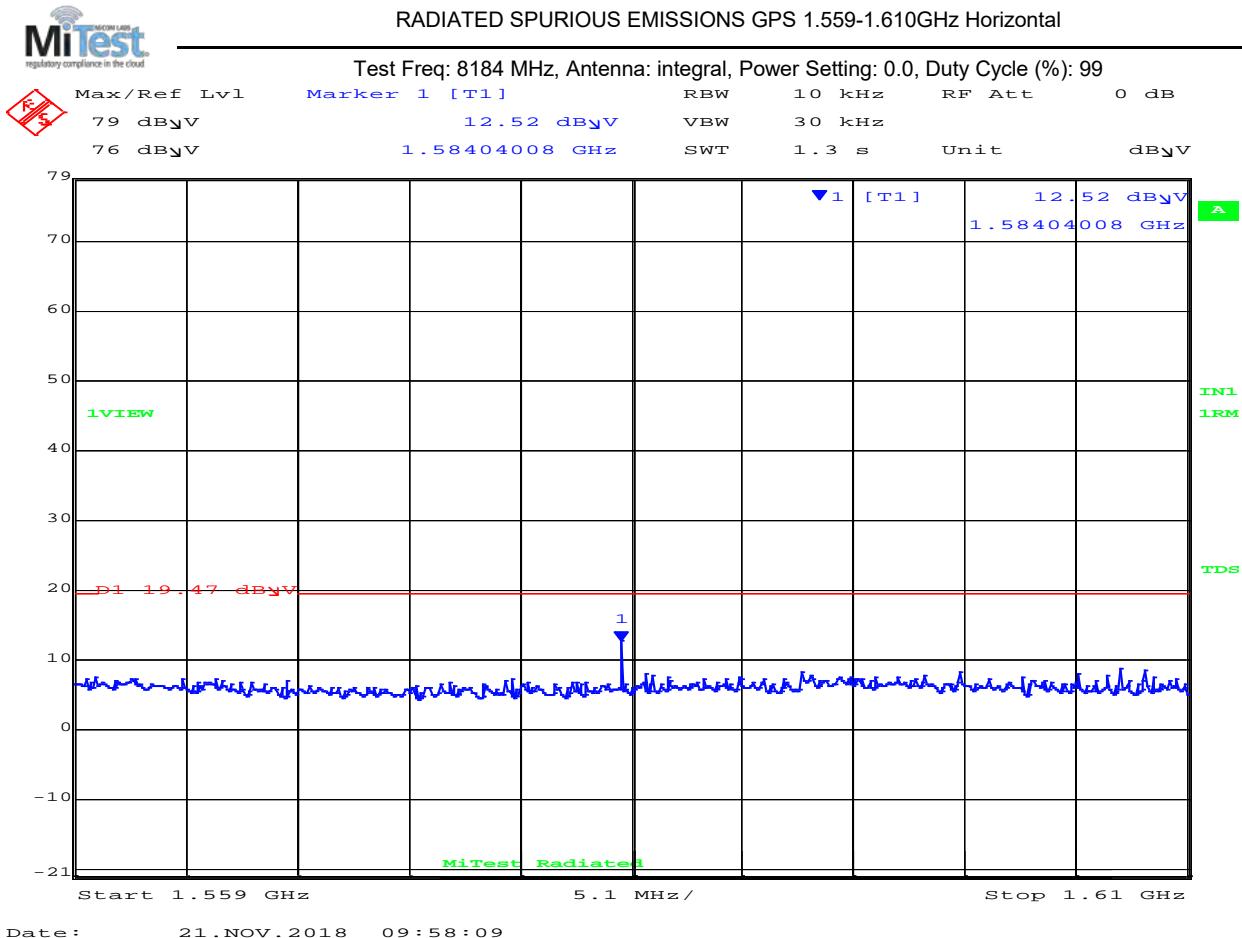


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 413 of 466

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
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.

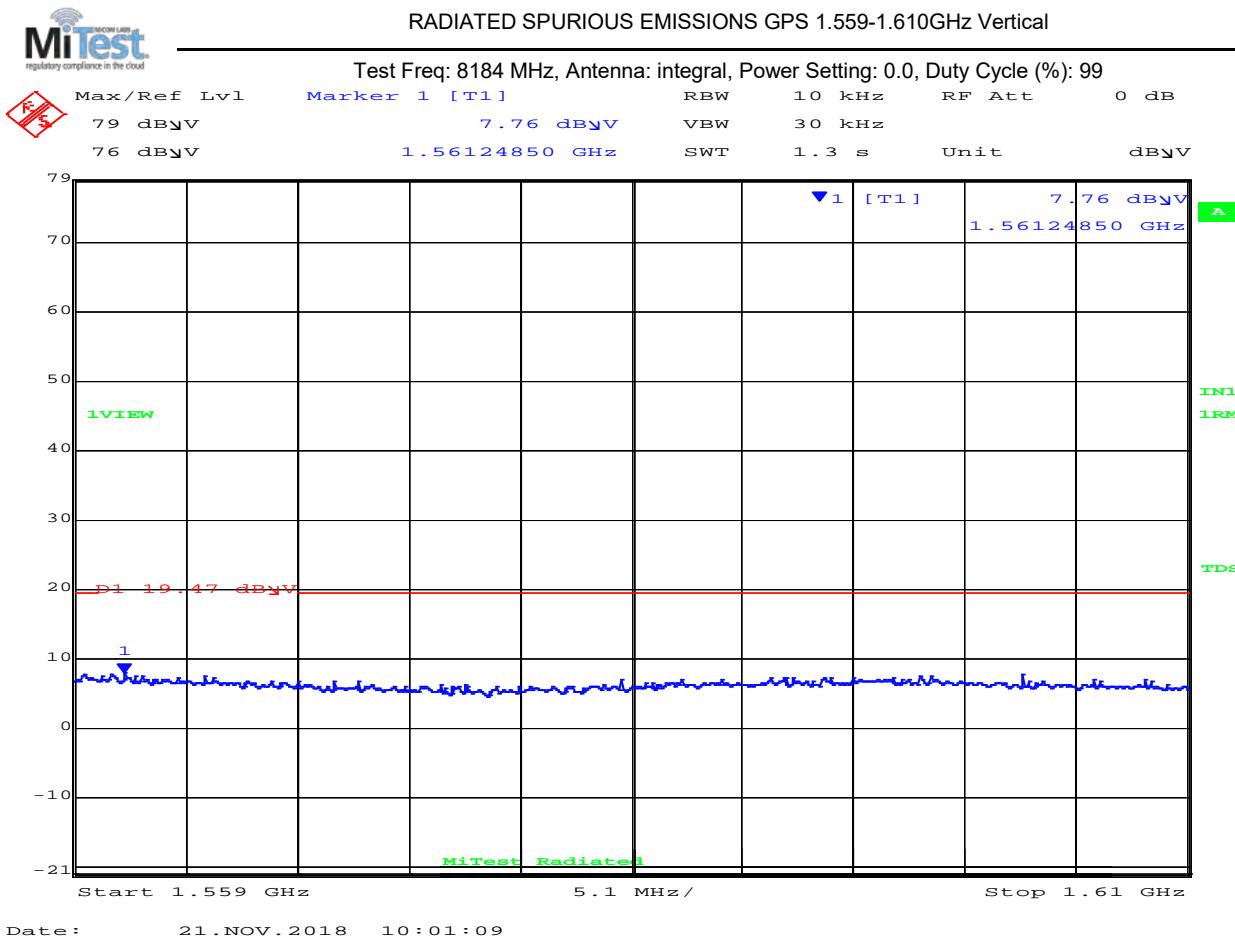


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 414 of 466

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 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)

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.



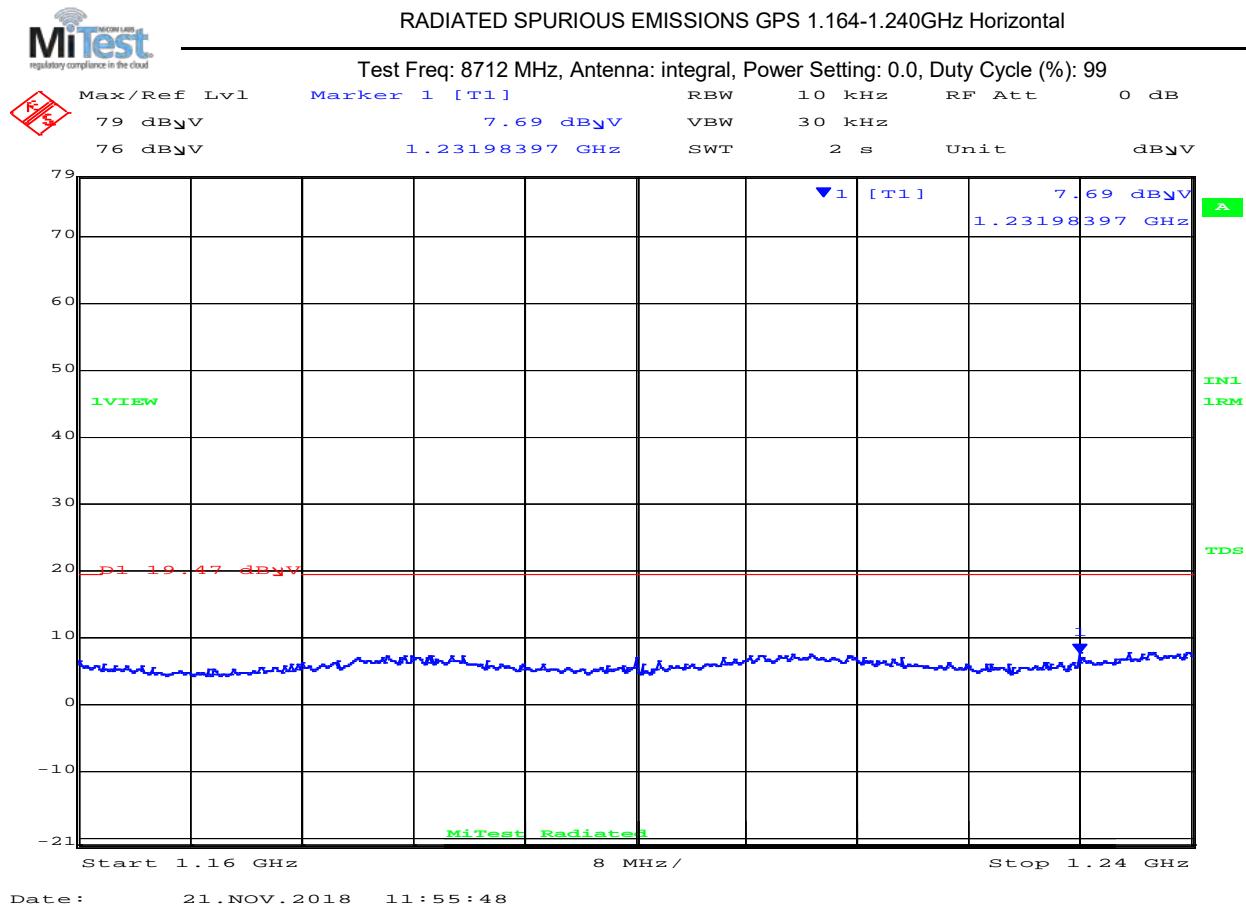
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 415 of 466

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)									

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.

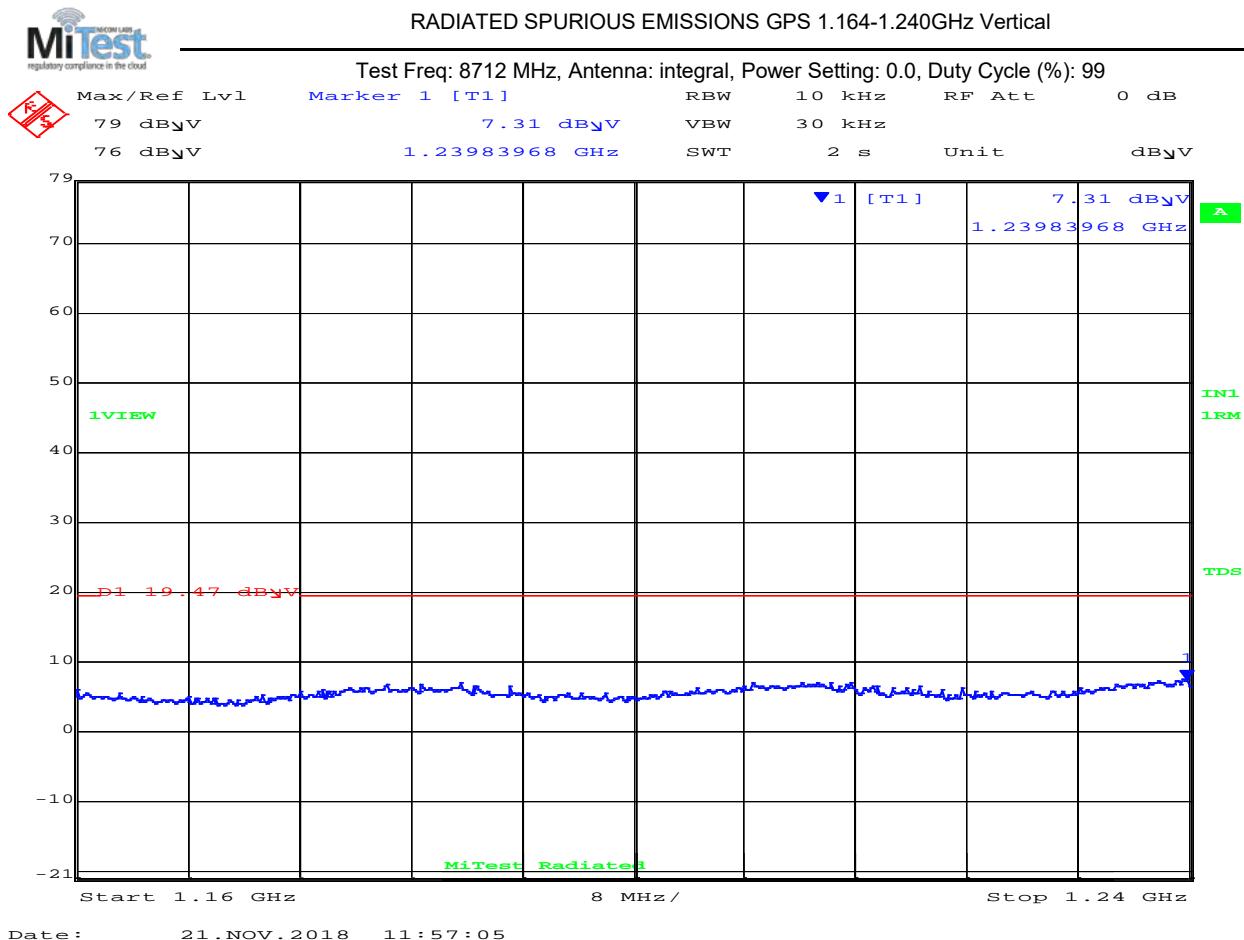


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 416 of 466

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 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)										

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.

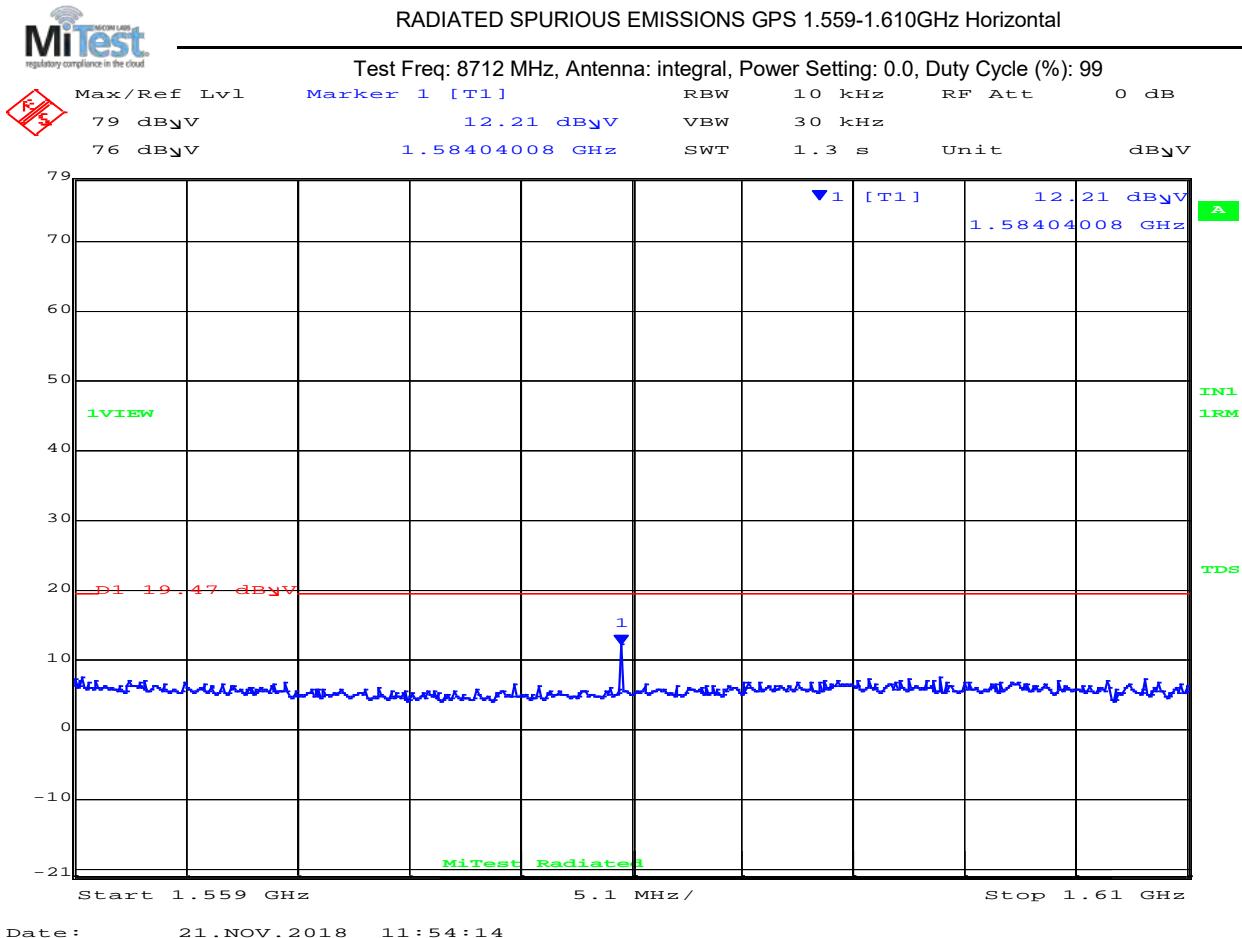


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 417 of 466

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
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.

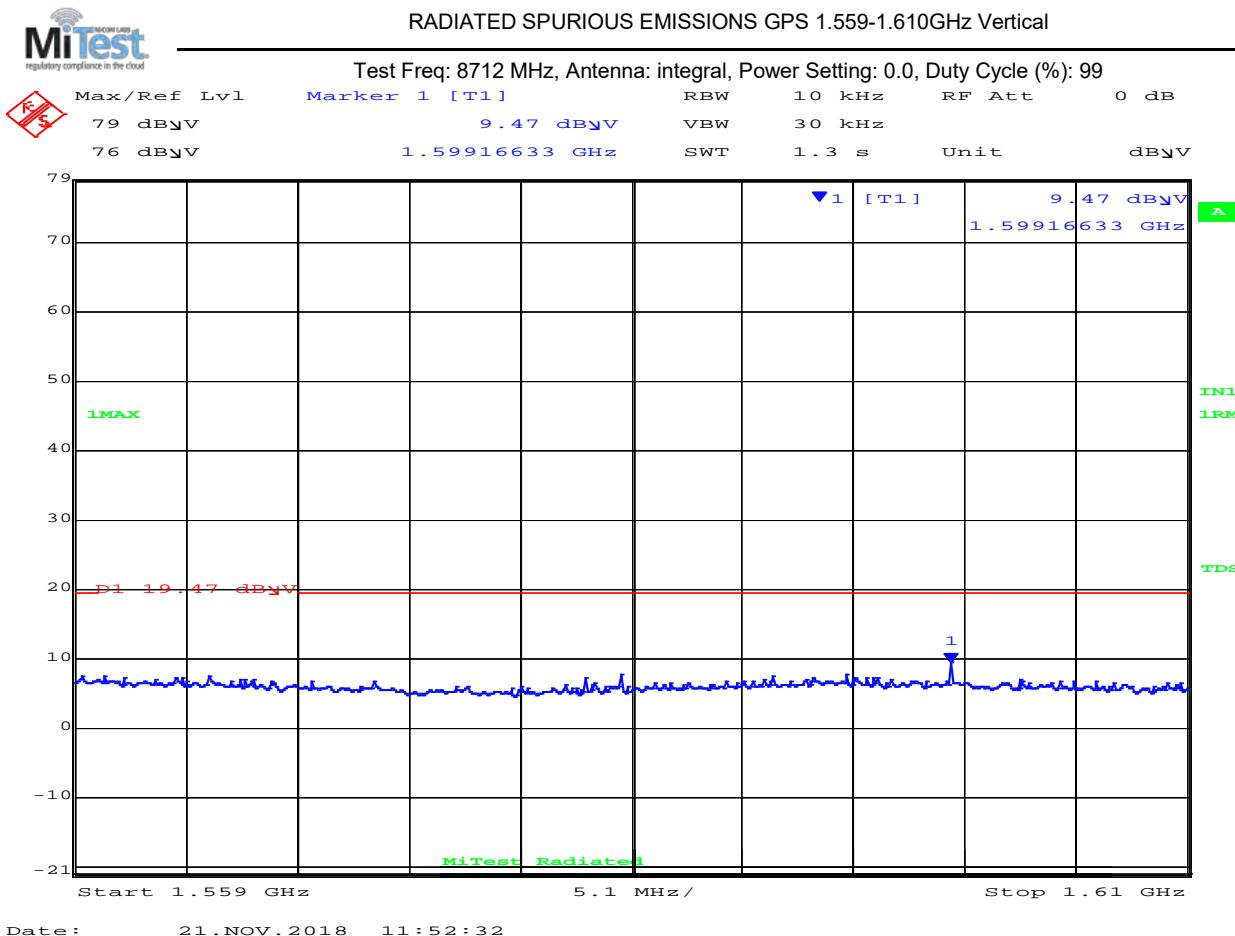


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 418 of 466

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 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)

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.

9.4.3. 50 MHz Bandwidth Peak Emissions

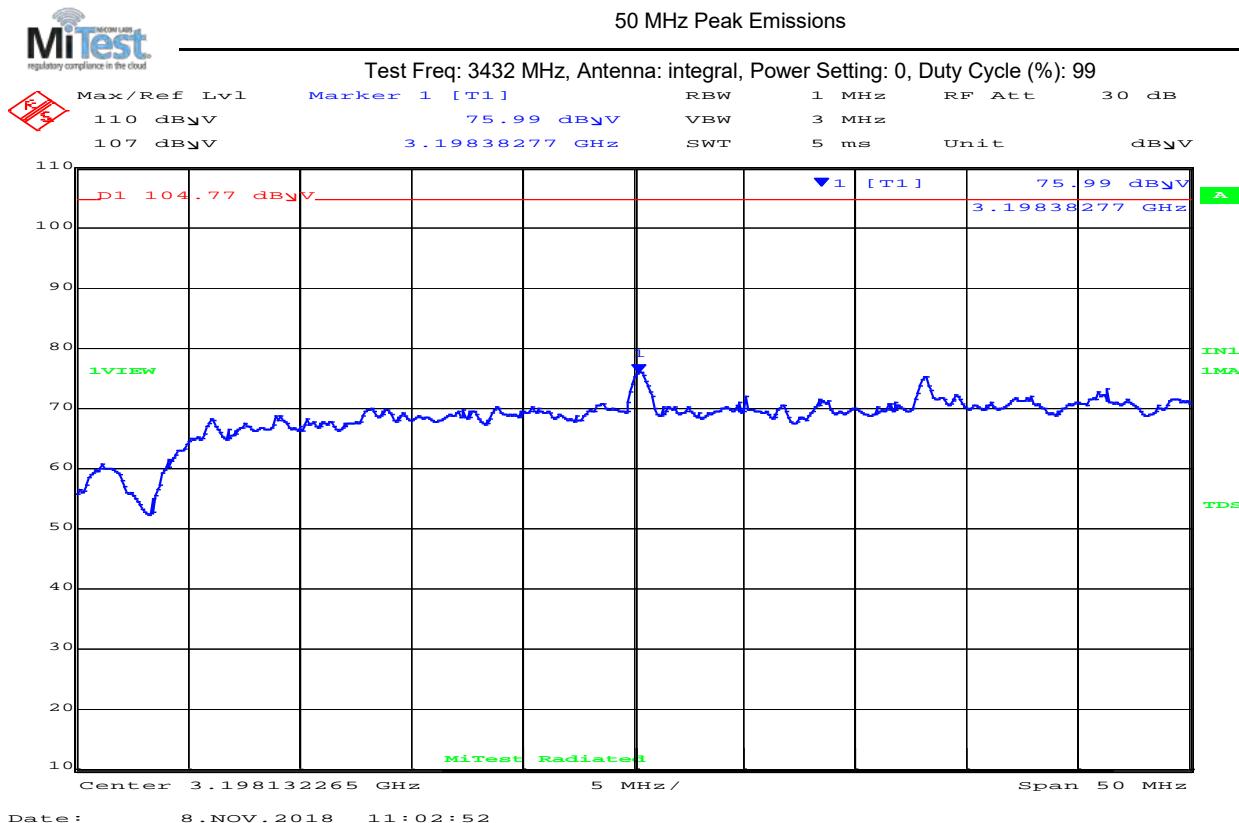
9.4.3.1. Commander AL5930

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:									

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.



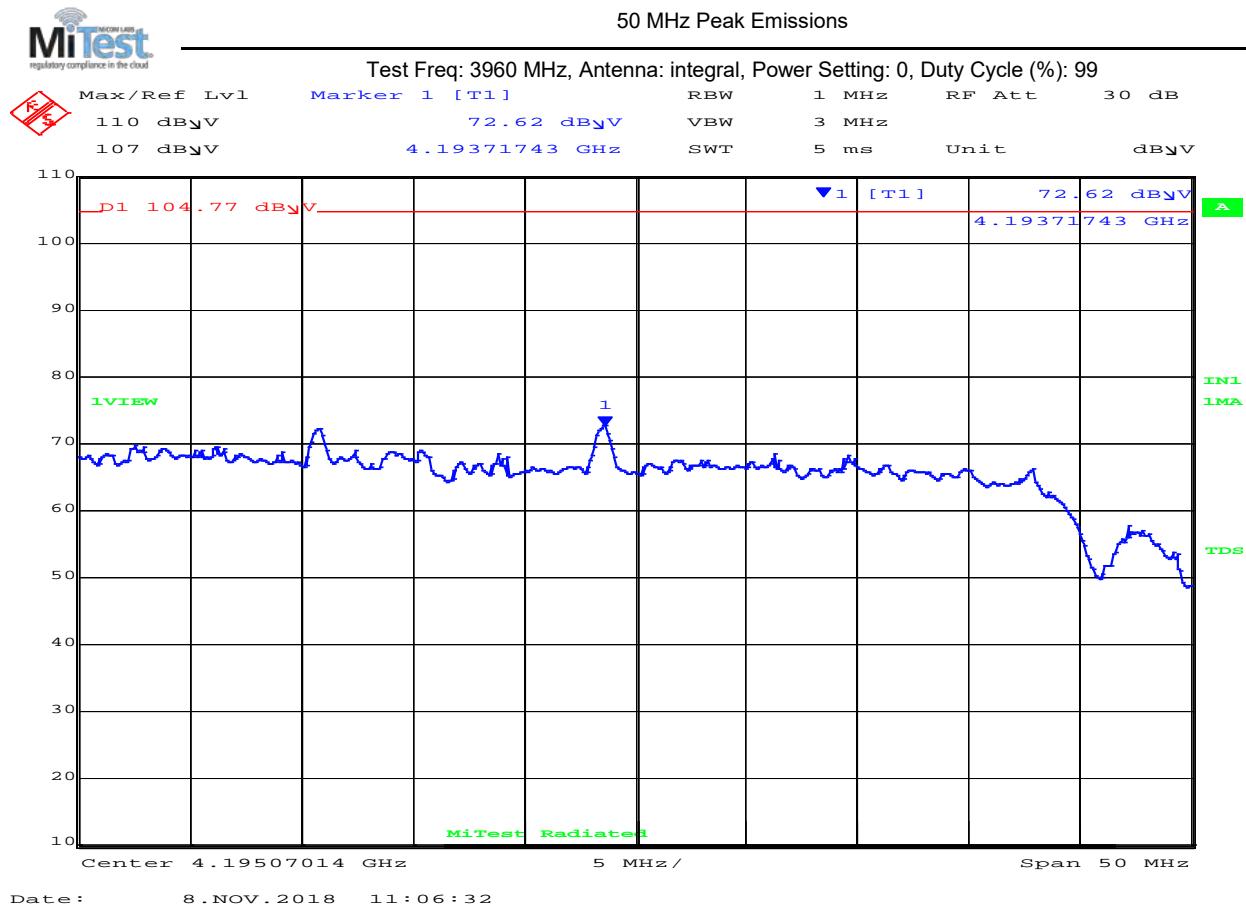
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 420 of 466

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:									

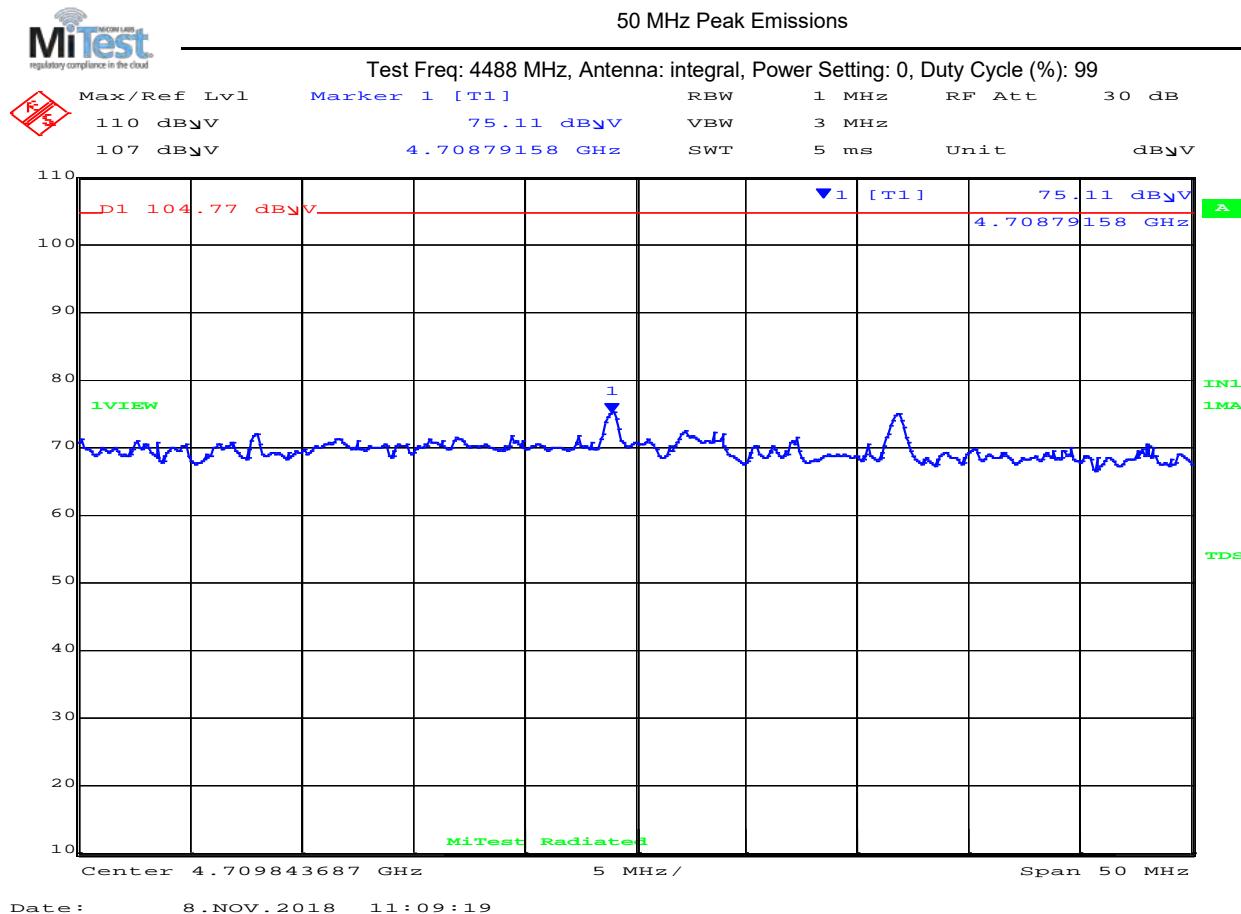
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

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.



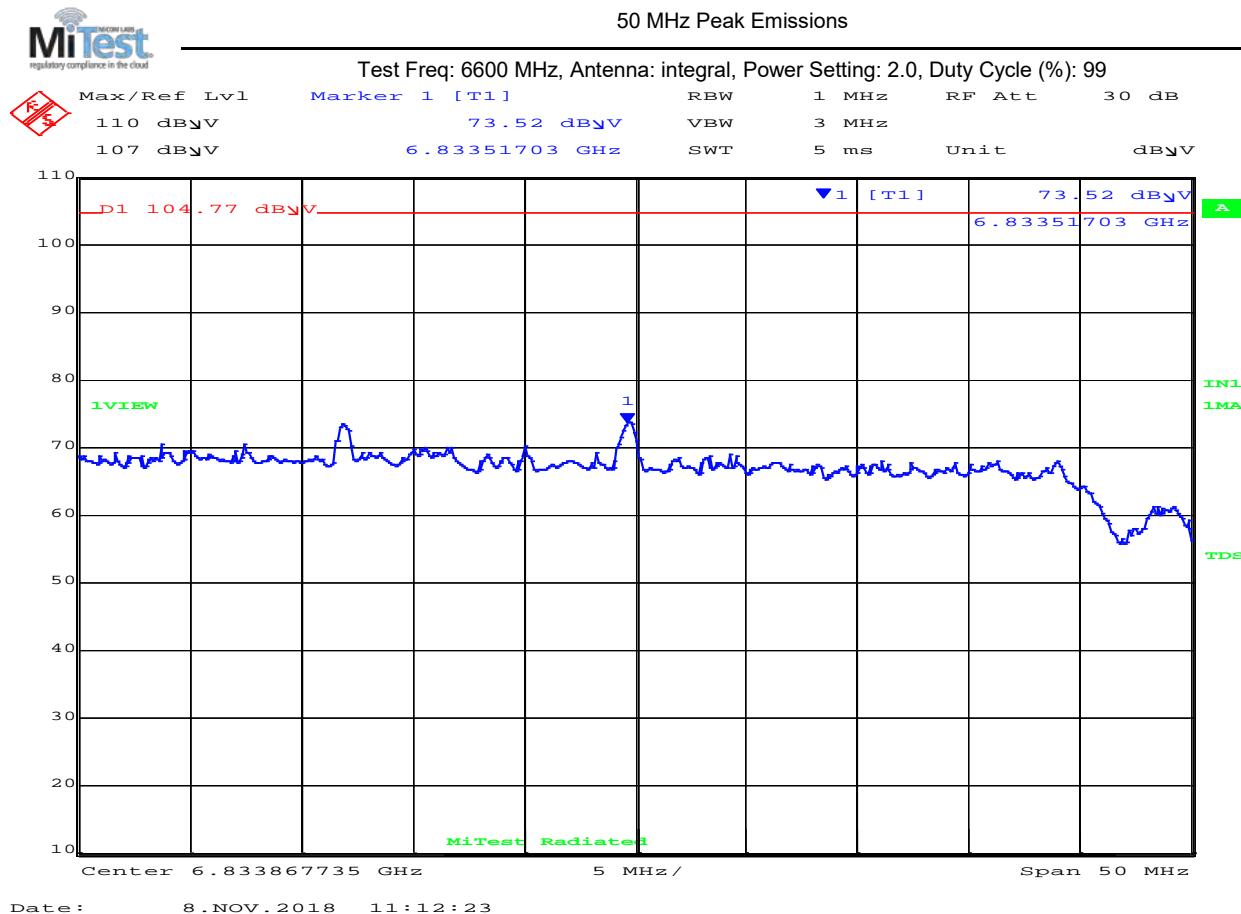
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 422 of 466

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:									

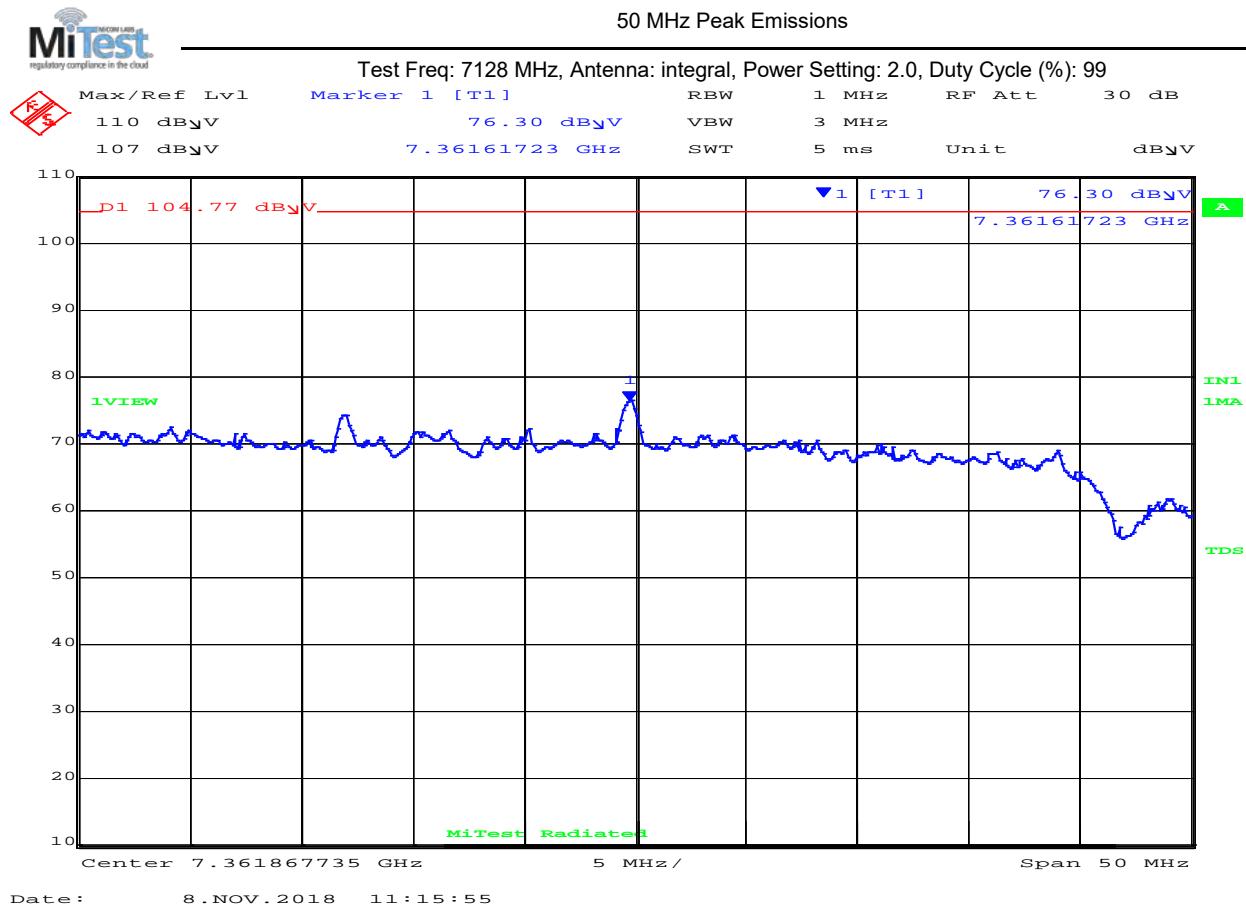
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

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 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

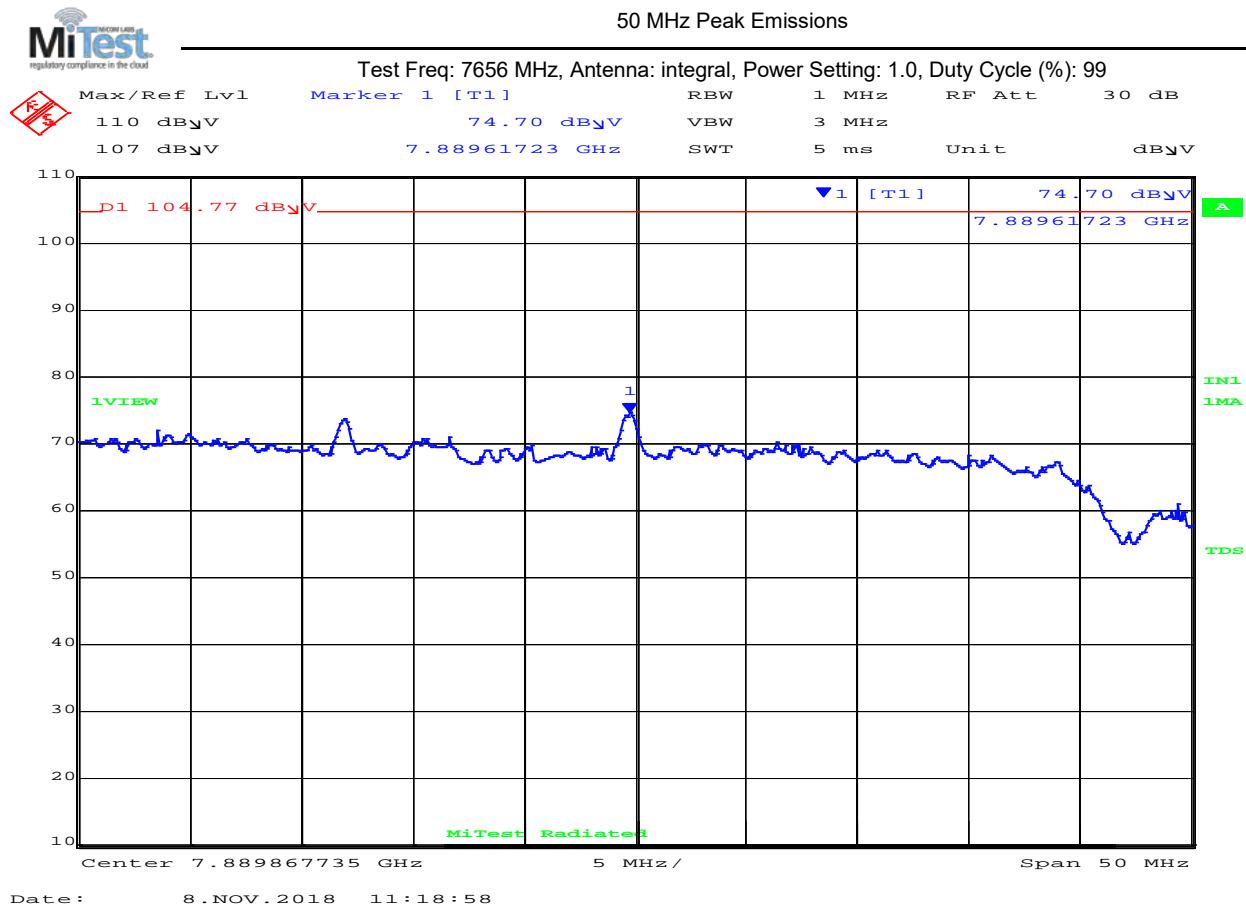
Page: 424 of 466

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 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:									

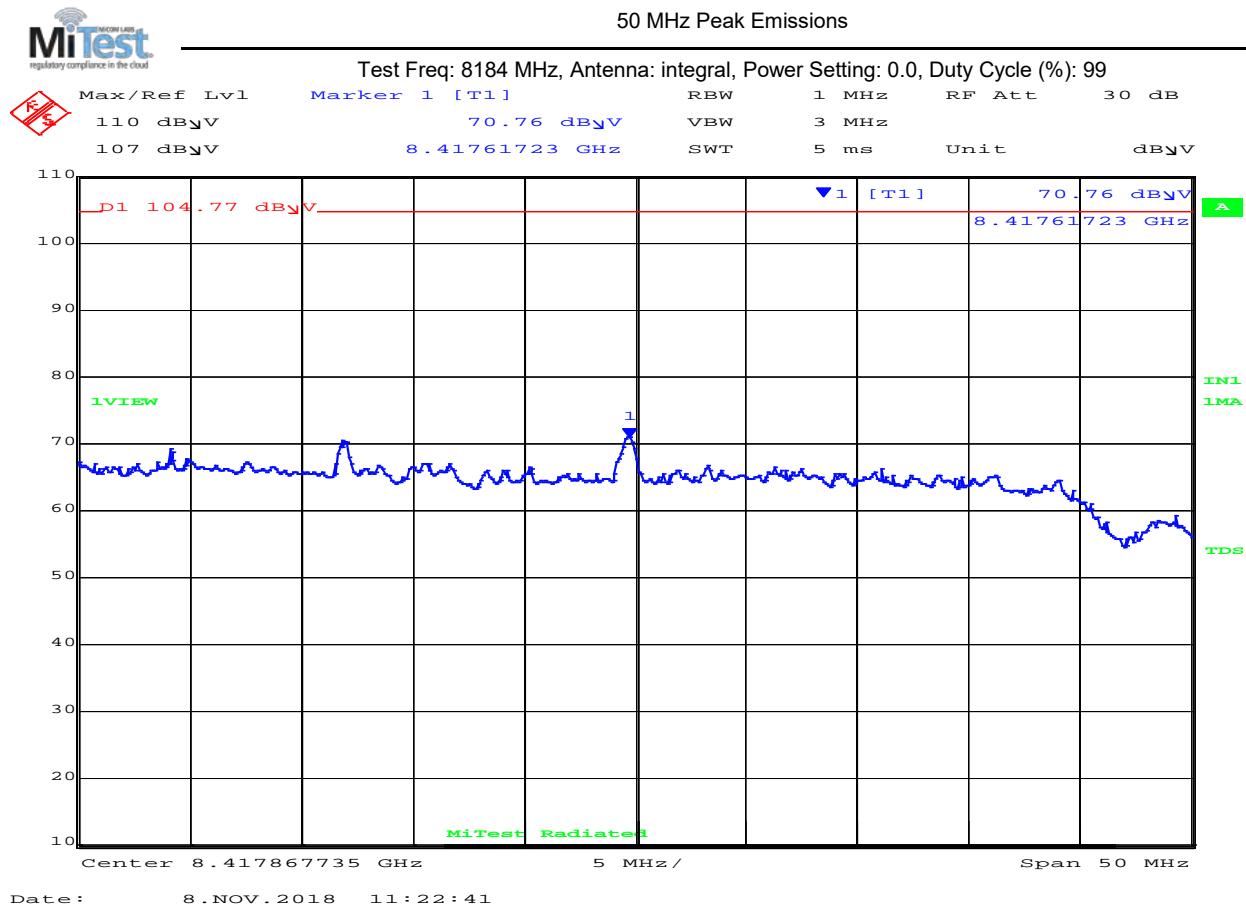
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

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.



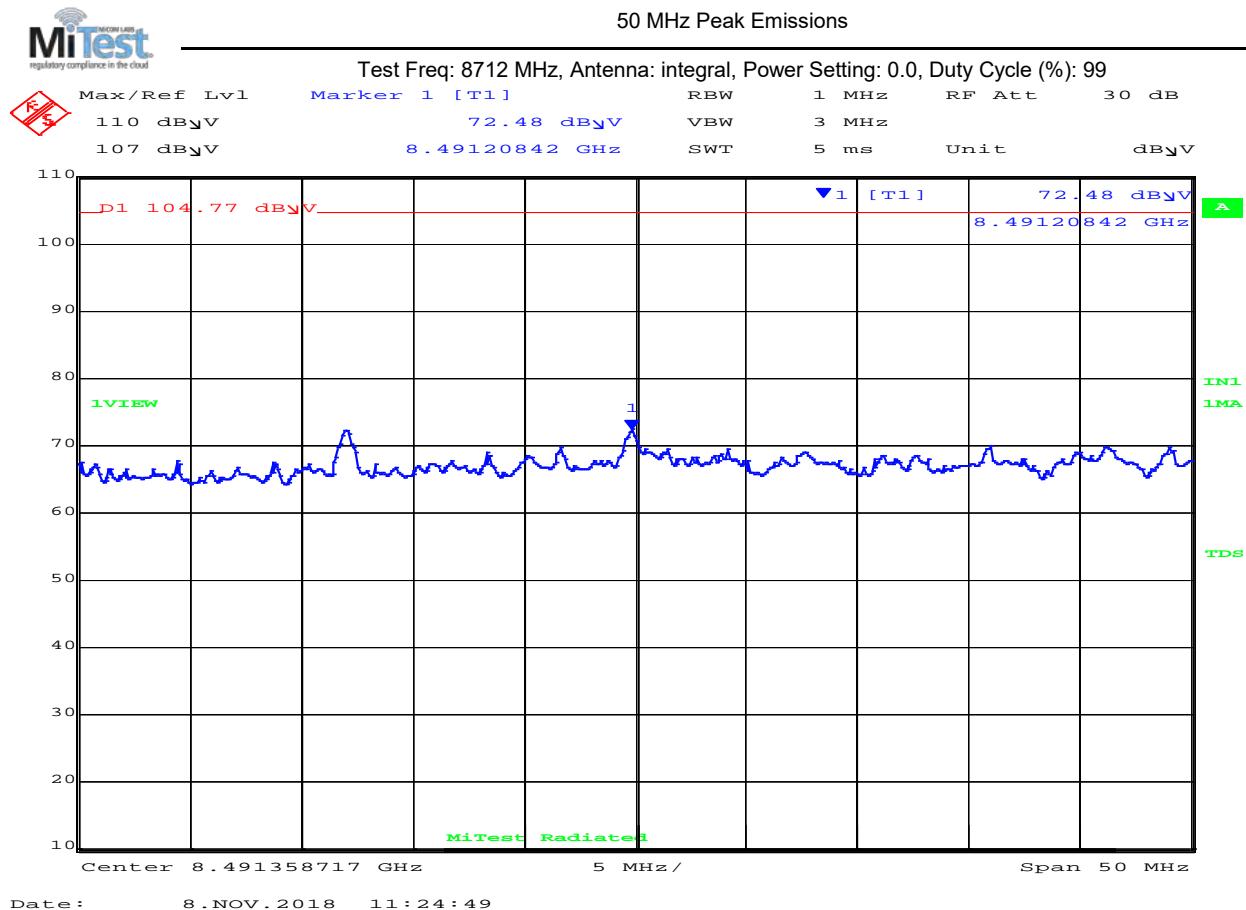
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 426 of 466

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 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.

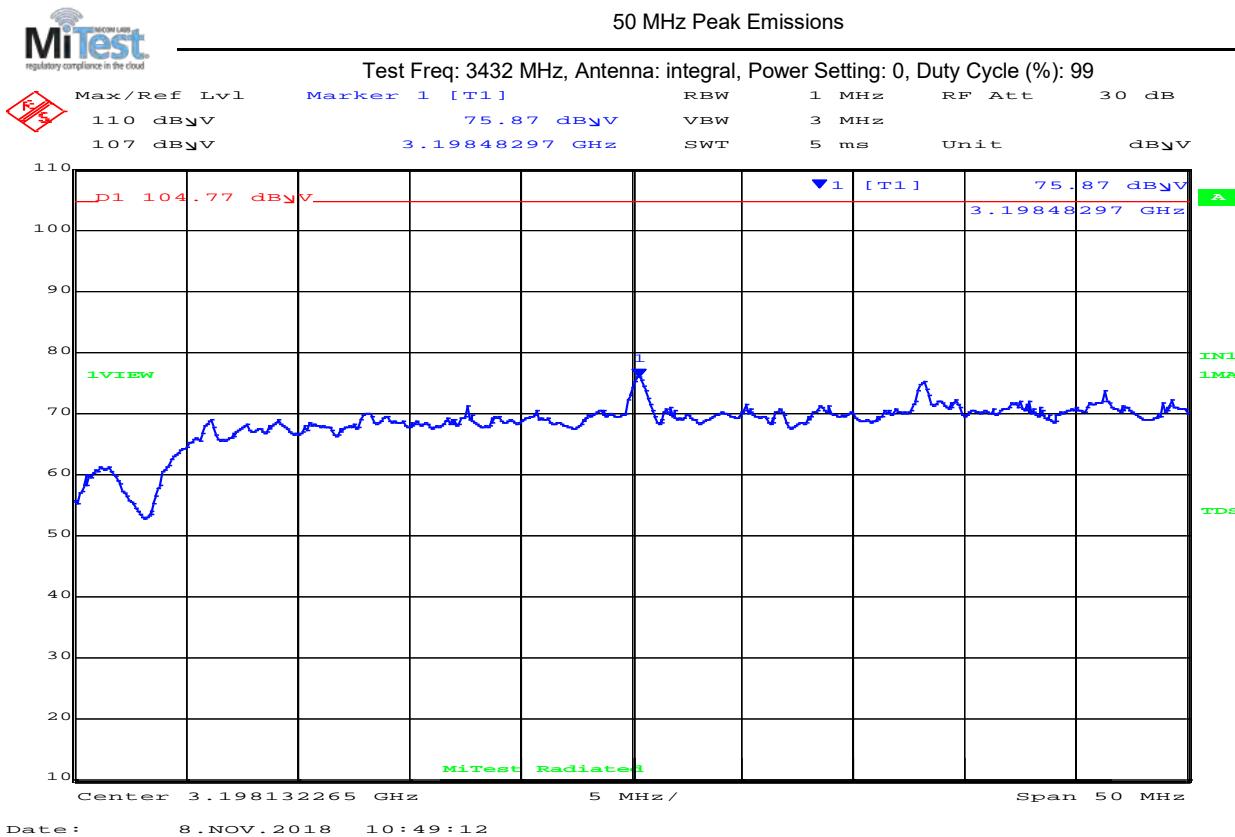
9.4.3.2. Camouflage AL5955

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 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.



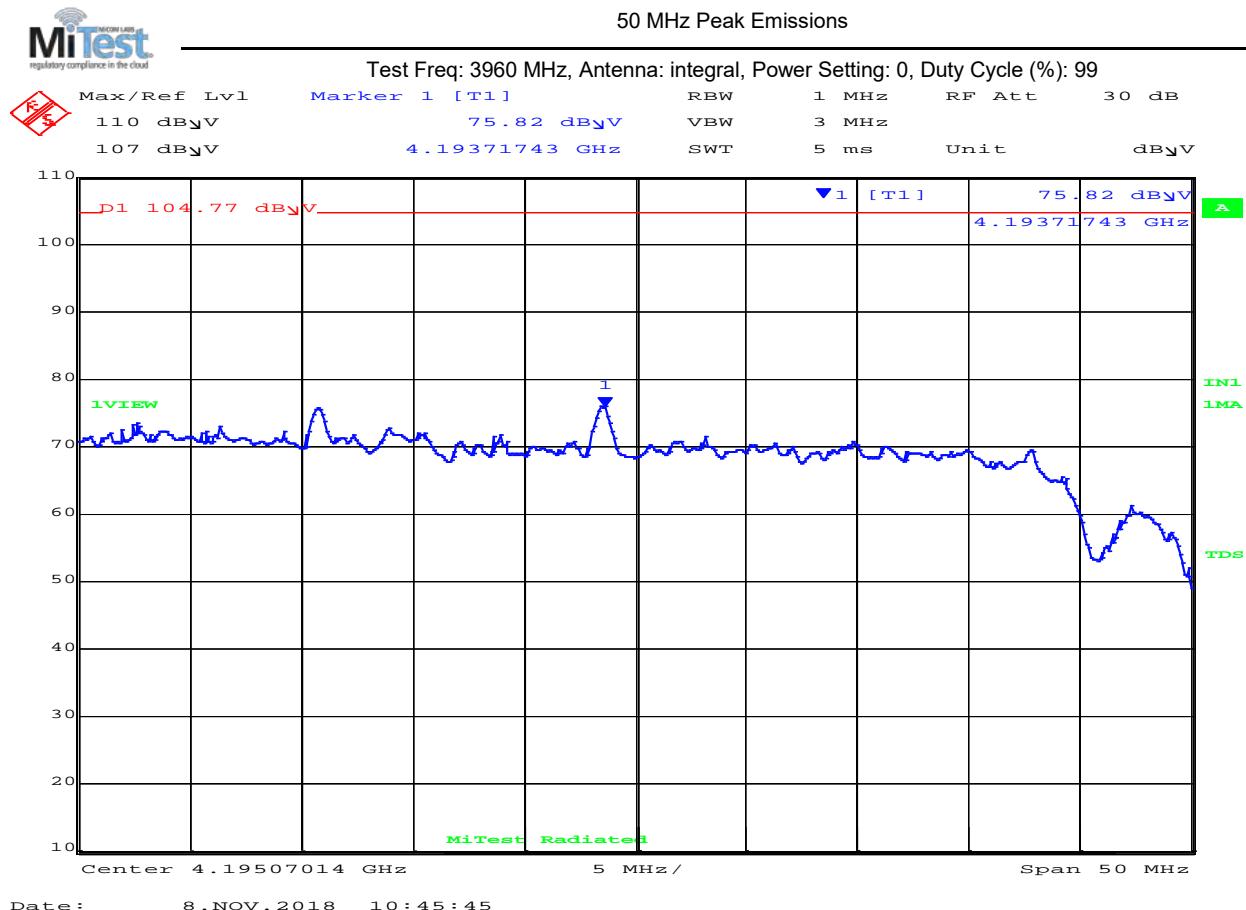
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 428 of 466

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:									

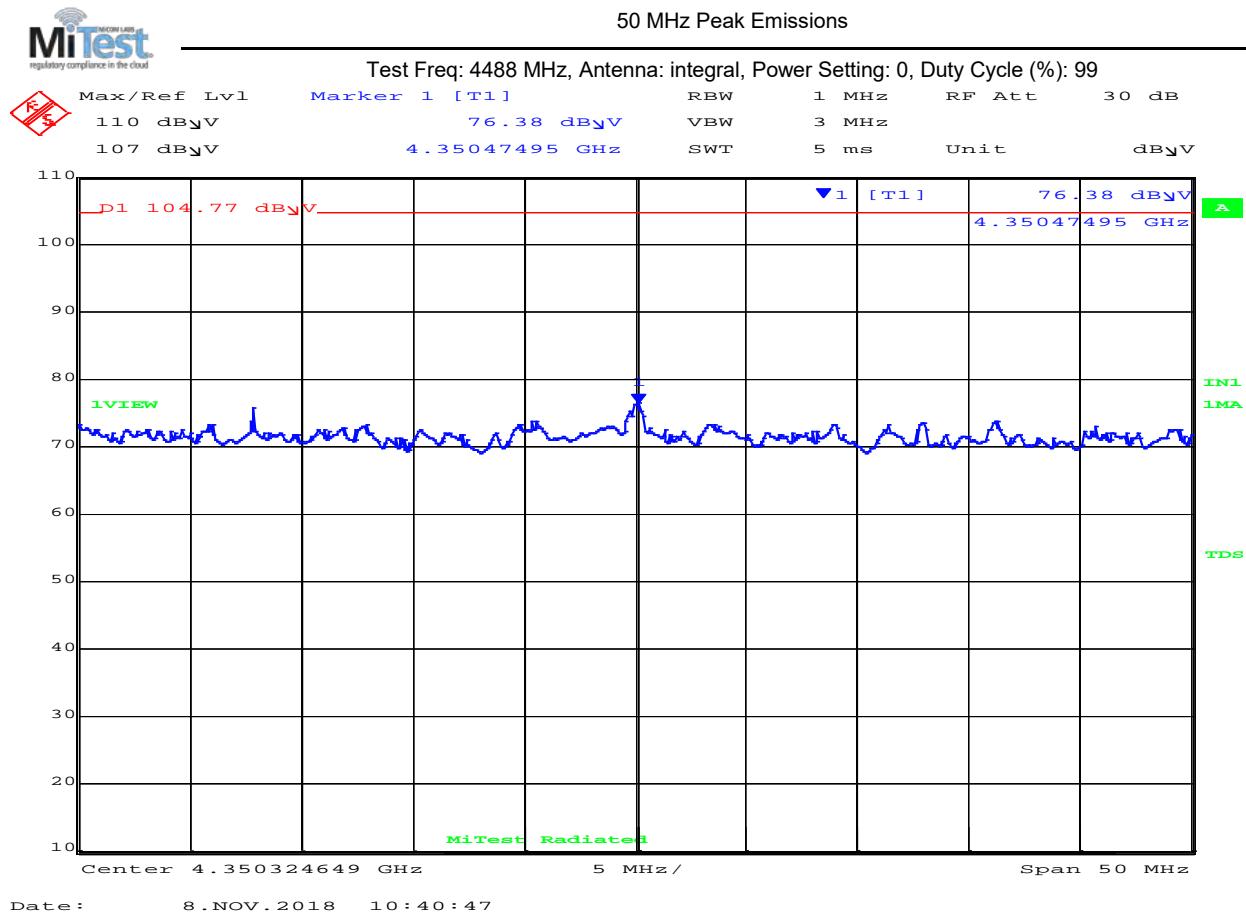
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

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:									

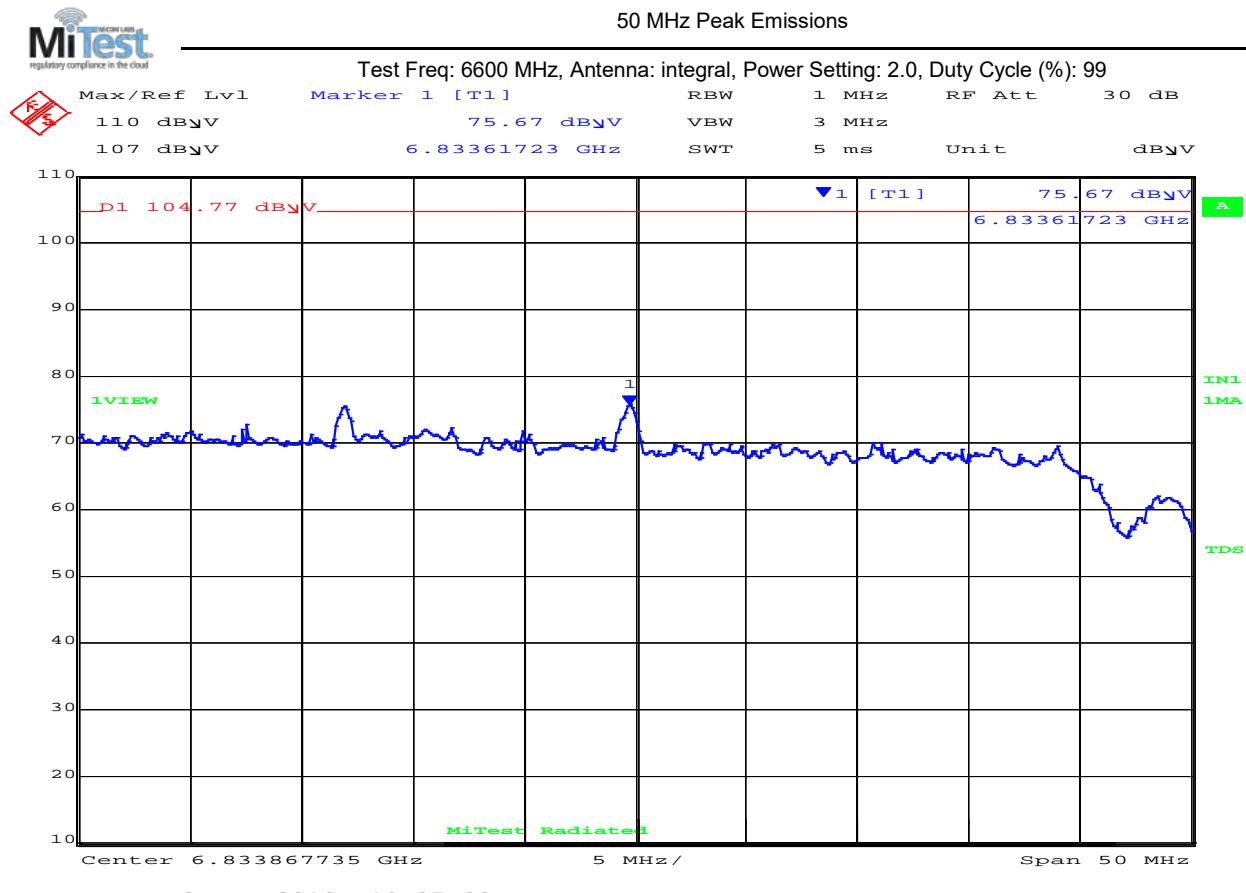
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

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 10:37:39

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.



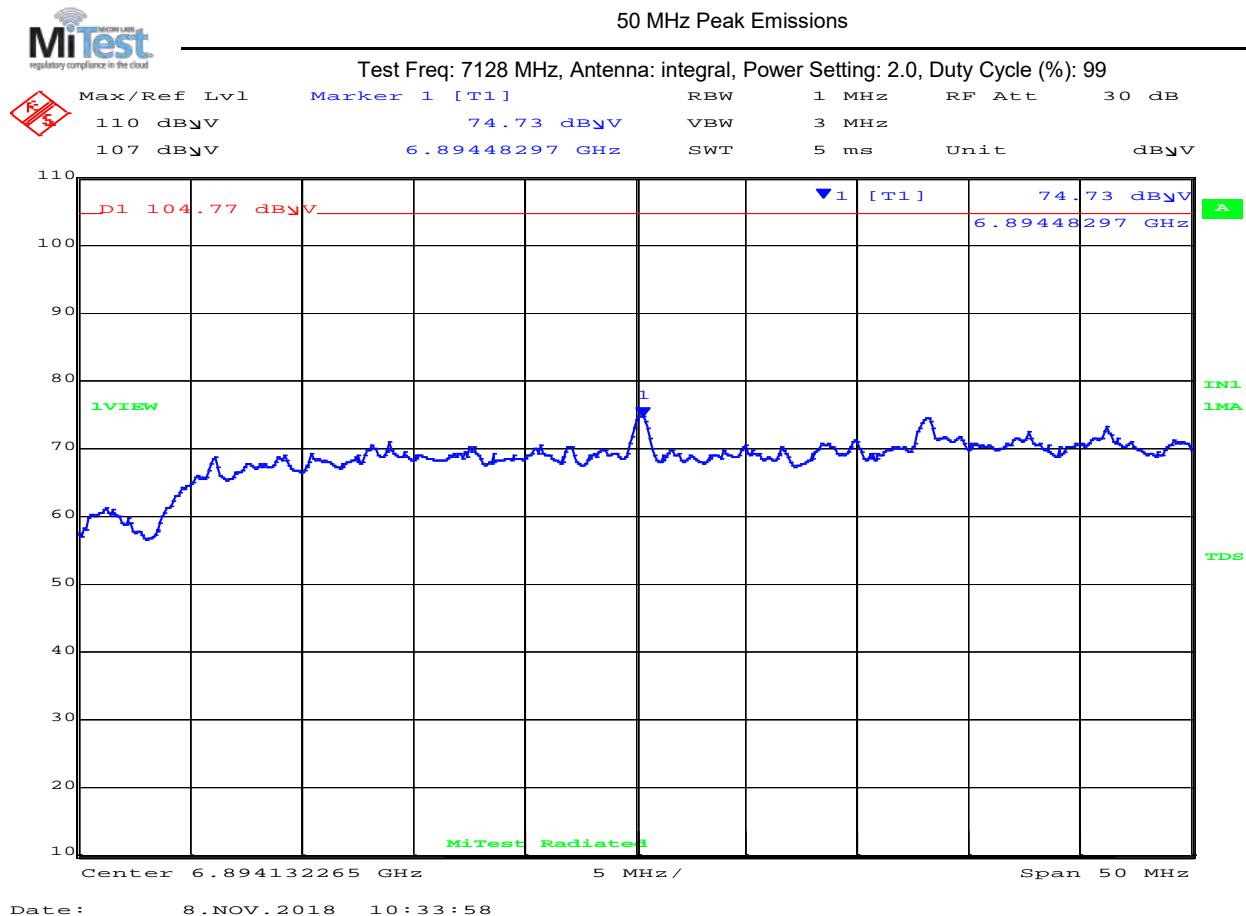
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 431 of 466

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 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

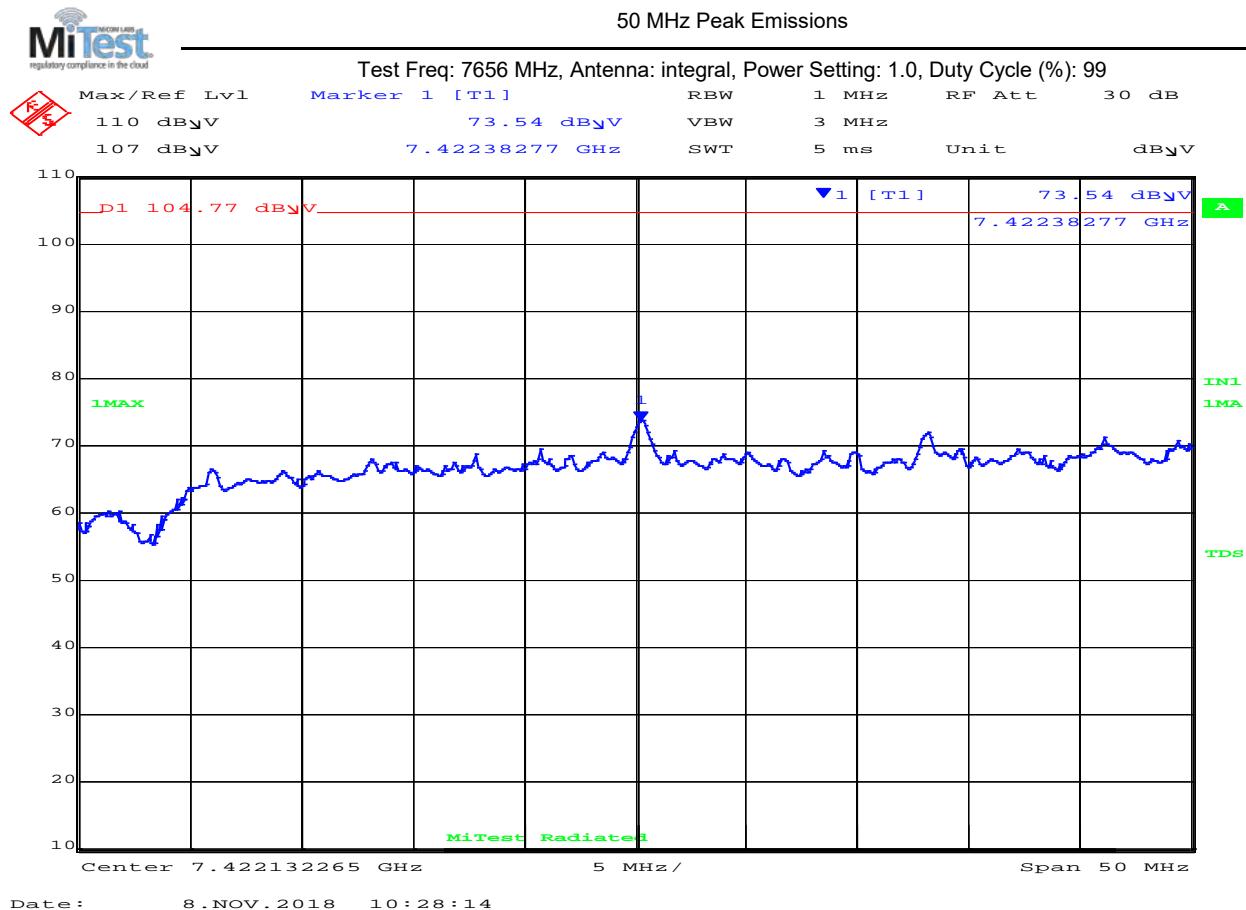
Page: 432 of 466

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 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.



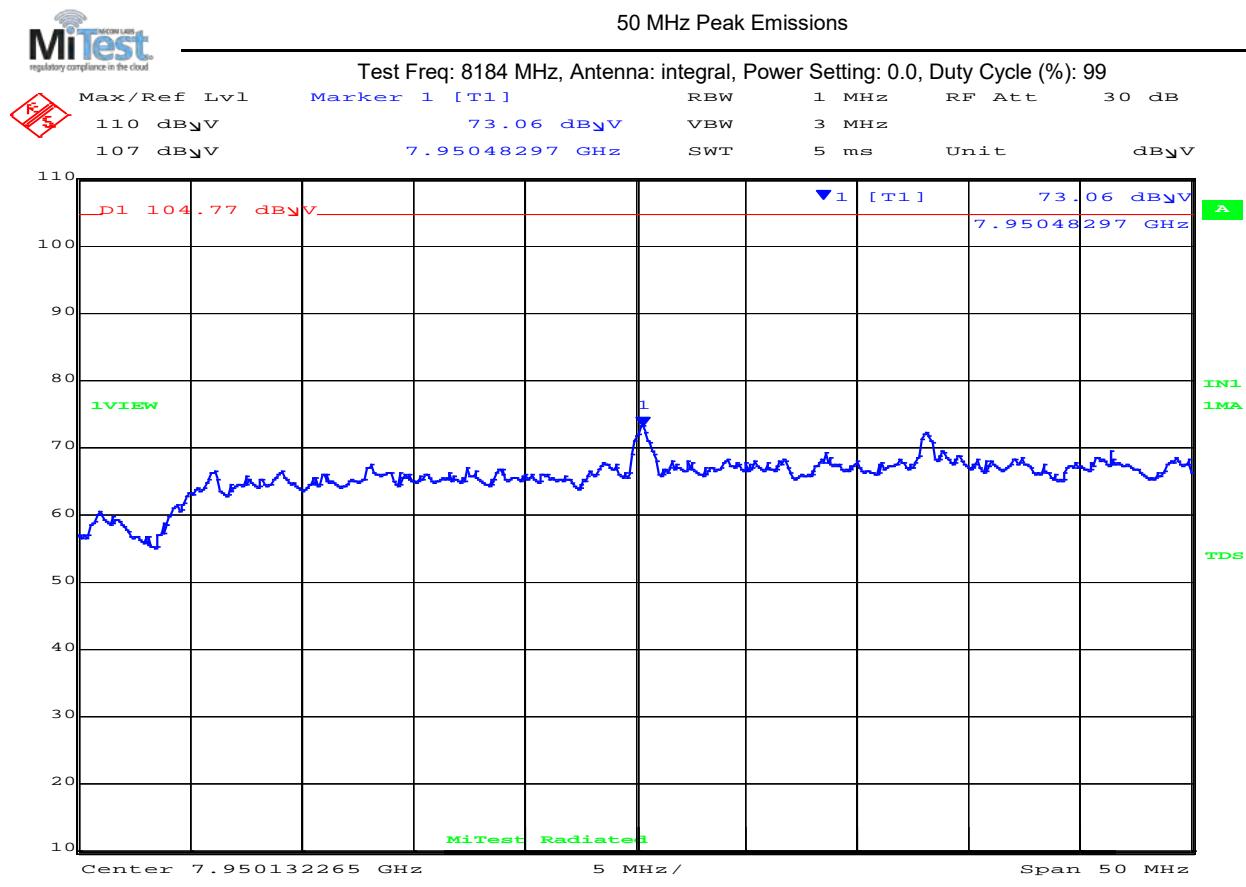
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 433 of 466

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 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.



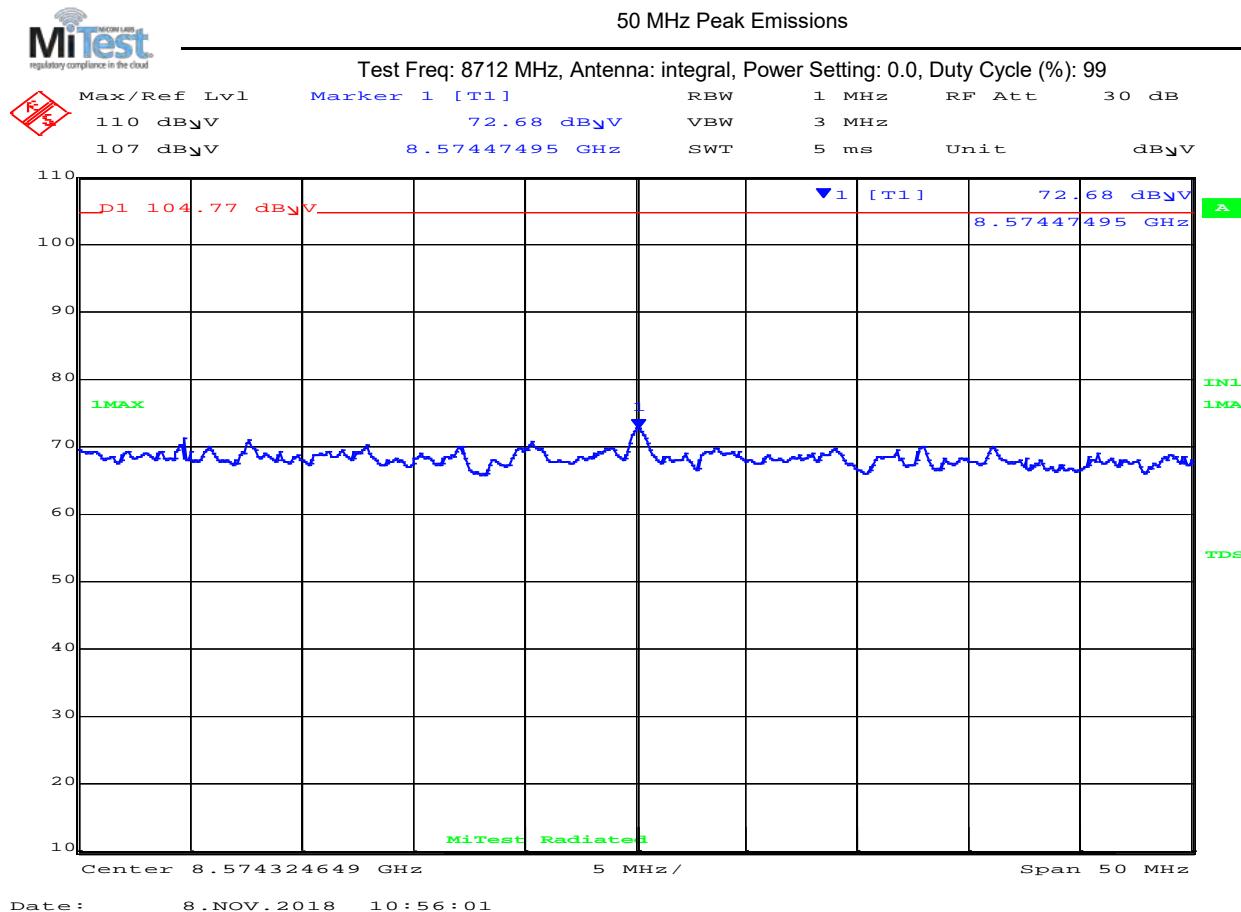
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 434 of 466

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 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.

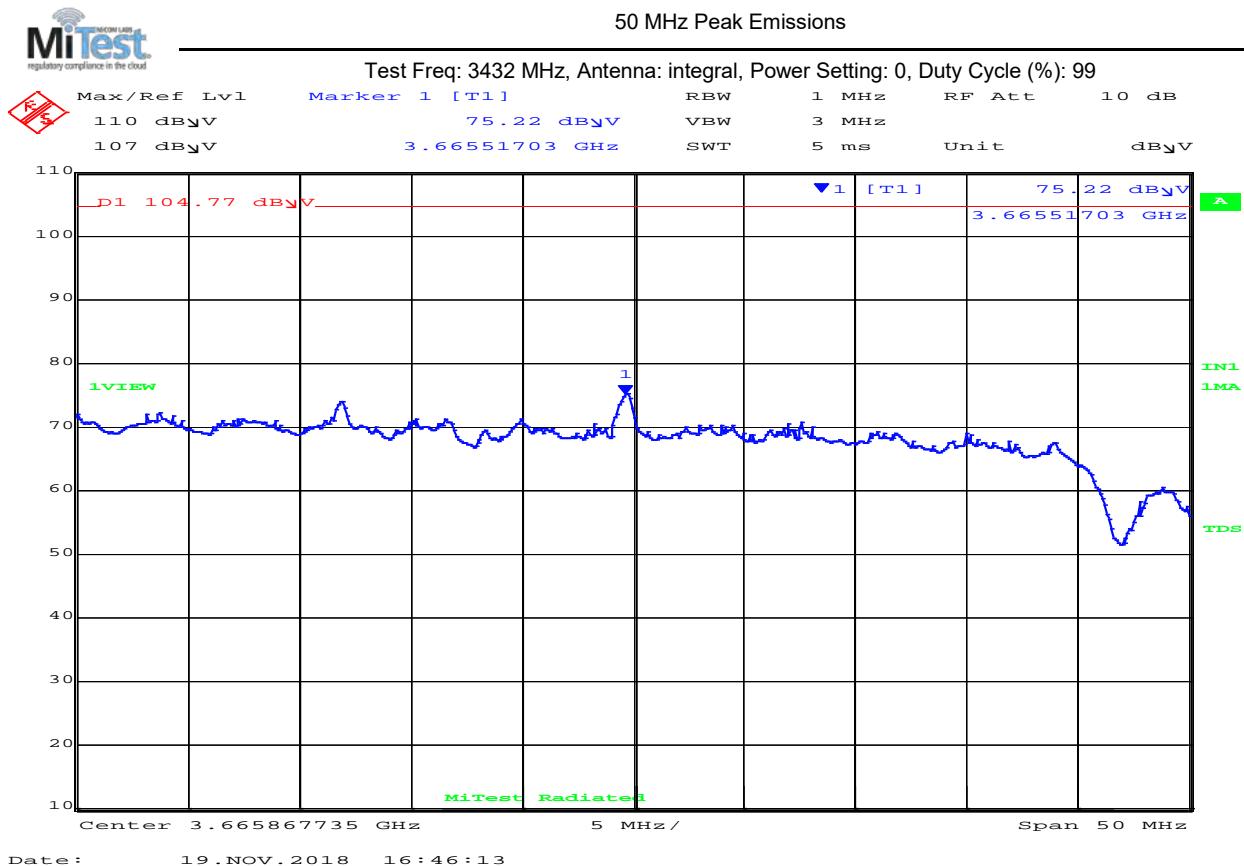
9.4.3.3. Combat AL5934

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 dB _V /m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _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.



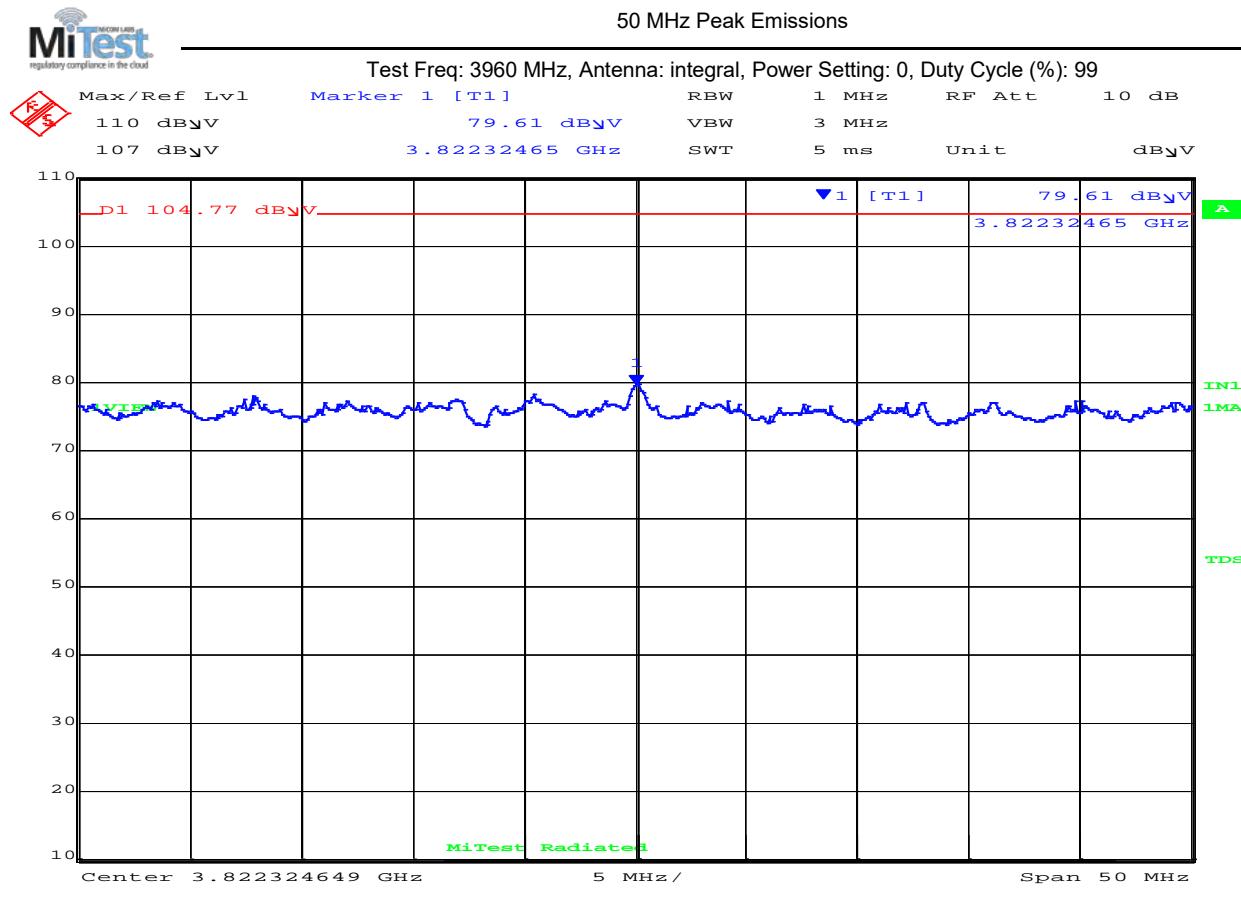
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 436 of 466

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:									

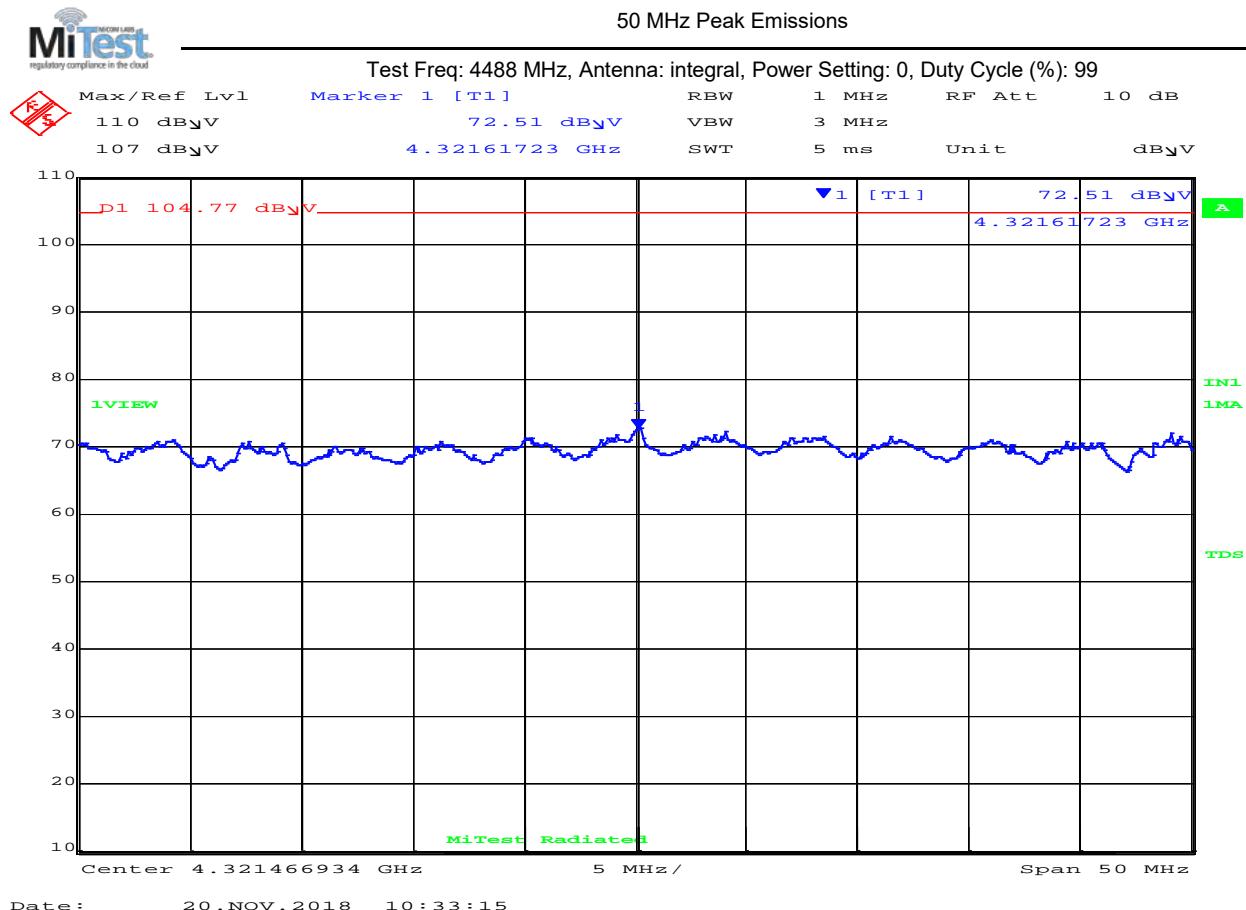
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

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.



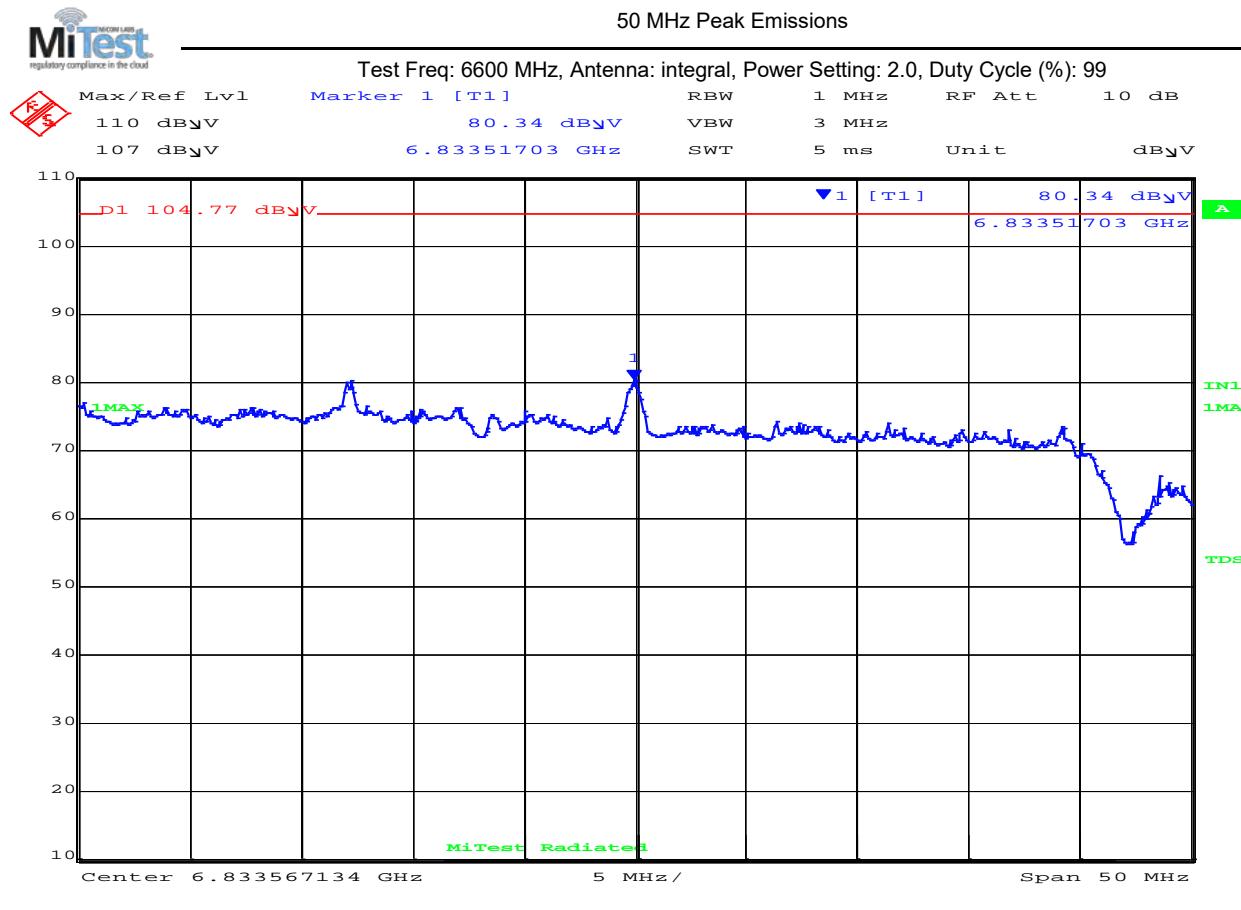
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 438 of 466

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 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:									

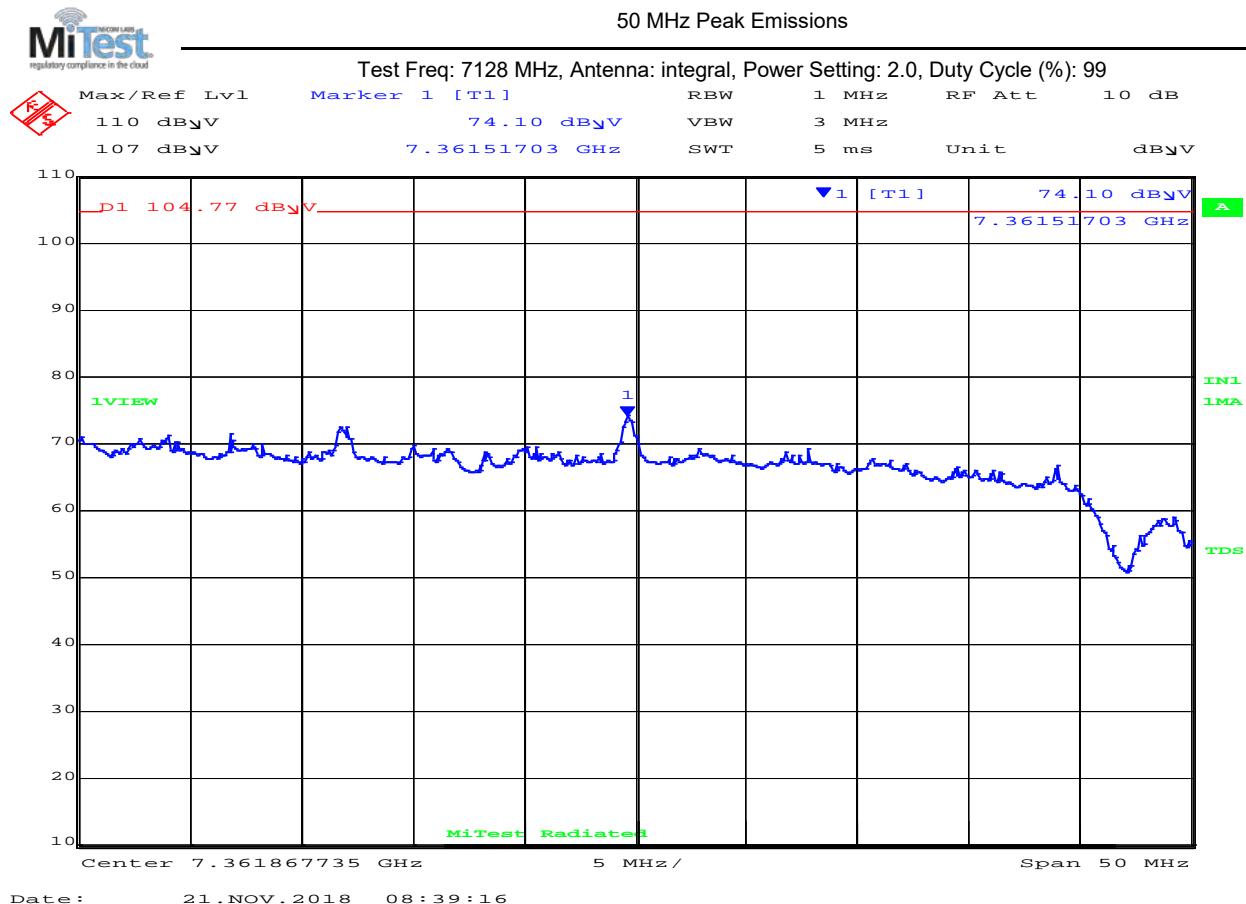
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

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

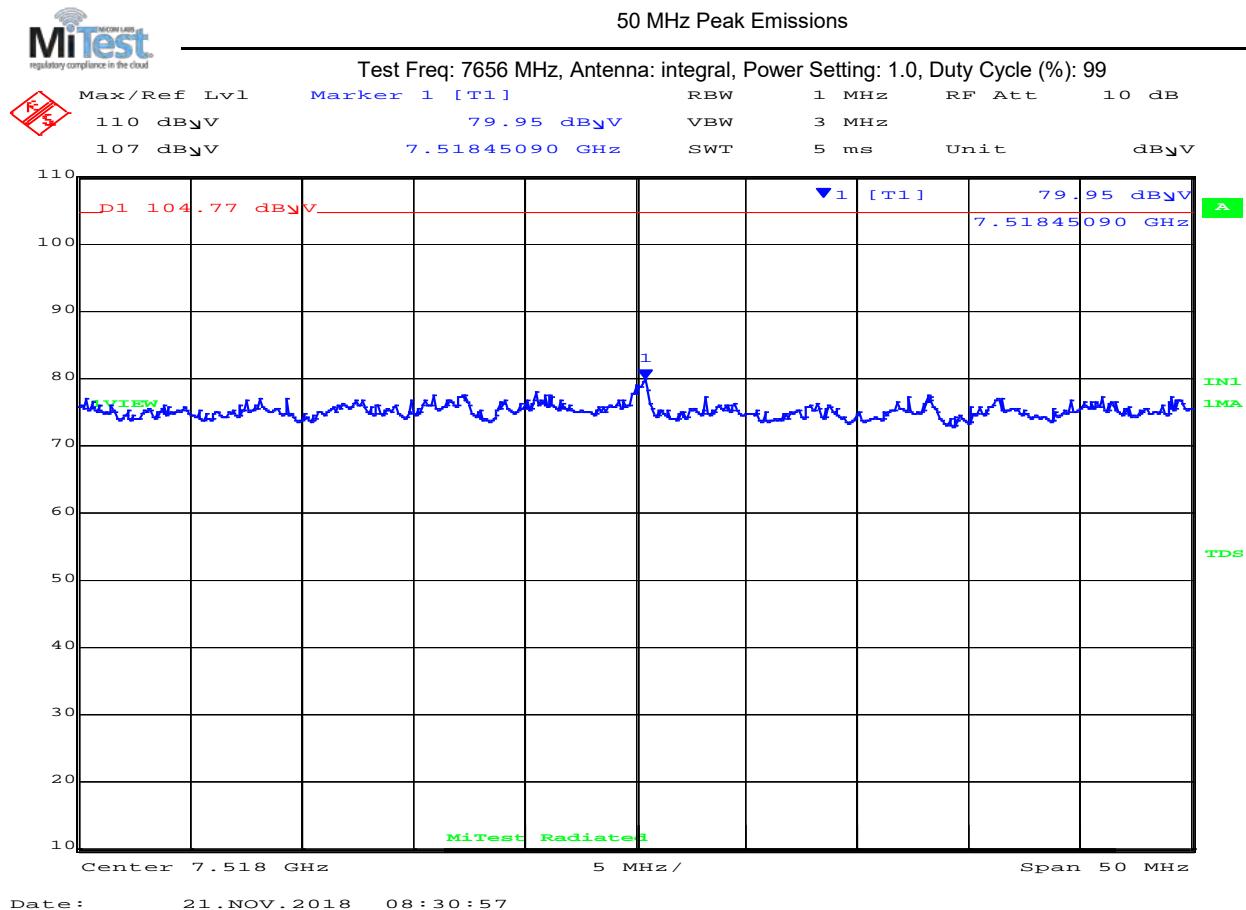
Page: 440 of 466

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 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.



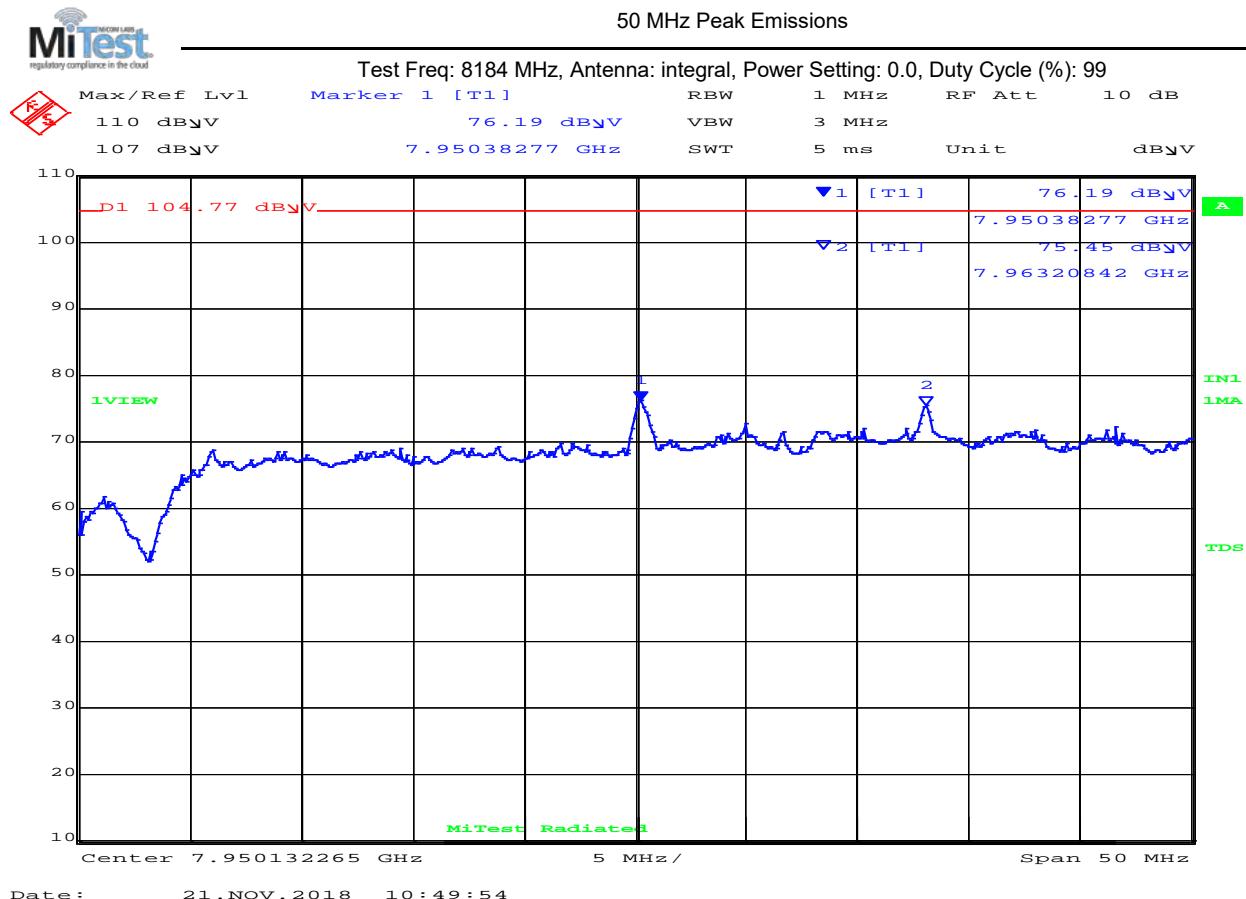
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 441 of 466

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



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.



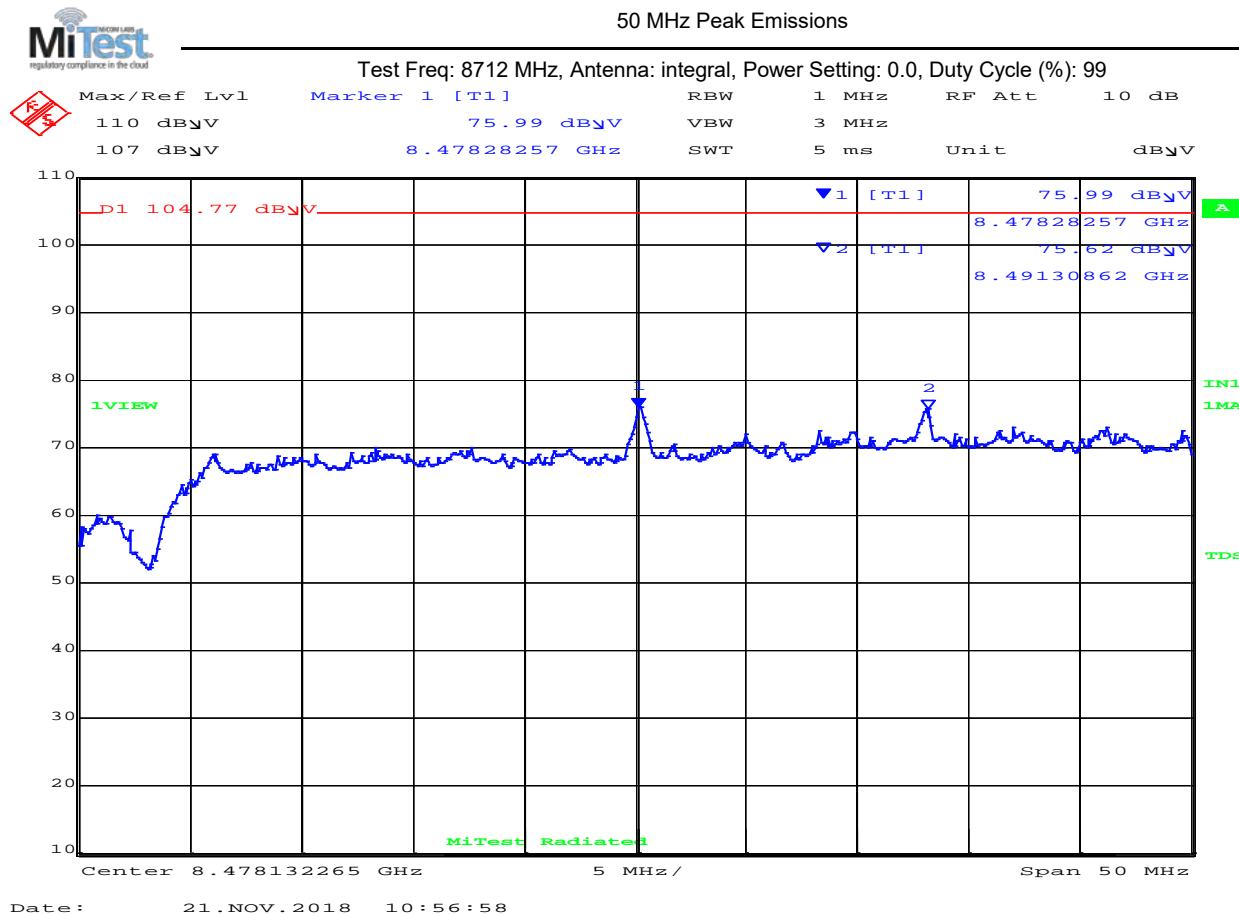
Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 442 of 466

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 dB _{μV/m}	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dB _{μV/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.

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.



Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 444 of 466

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

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.

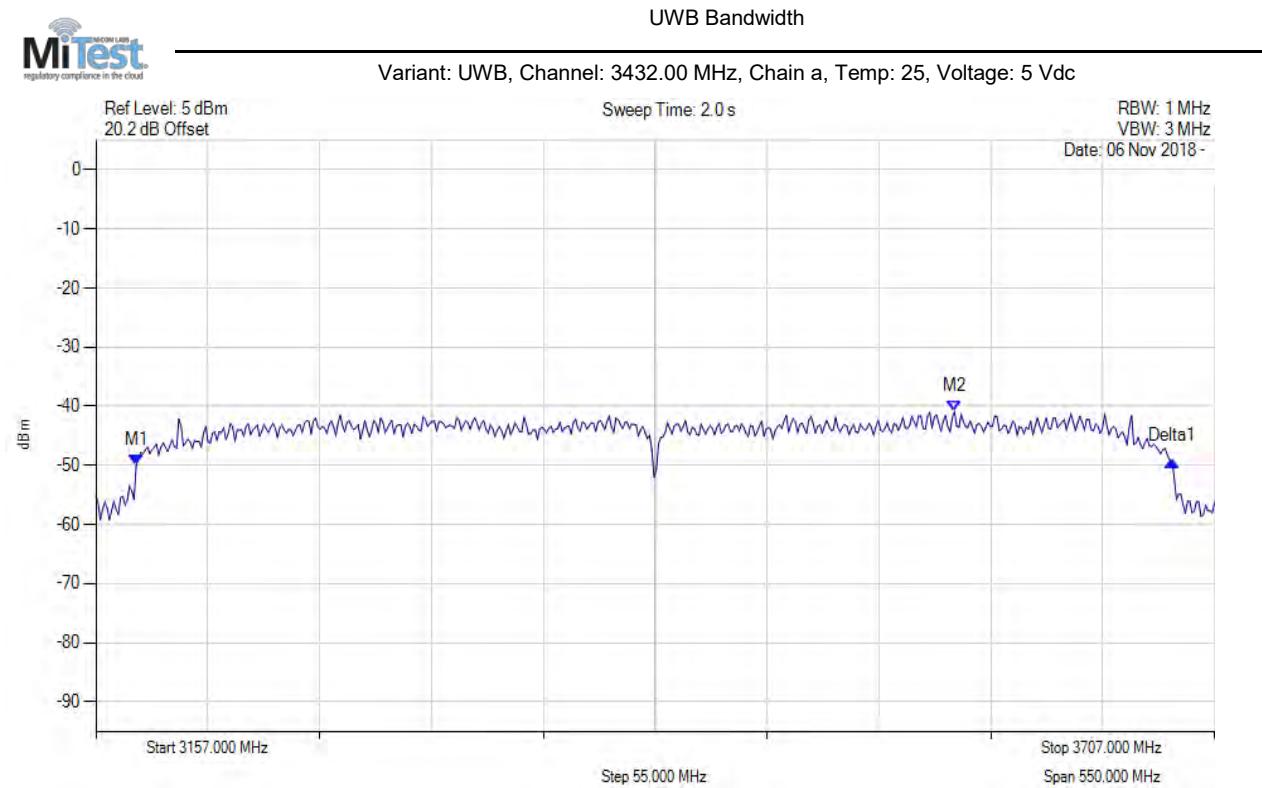


Title: Alereon AL5955, AL5930, AL5934
To: FCC Part 15.519
Serial #: ALER01-U2A Rev A
Issue Date: 12th December 2018
Page: 445 of 466

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.

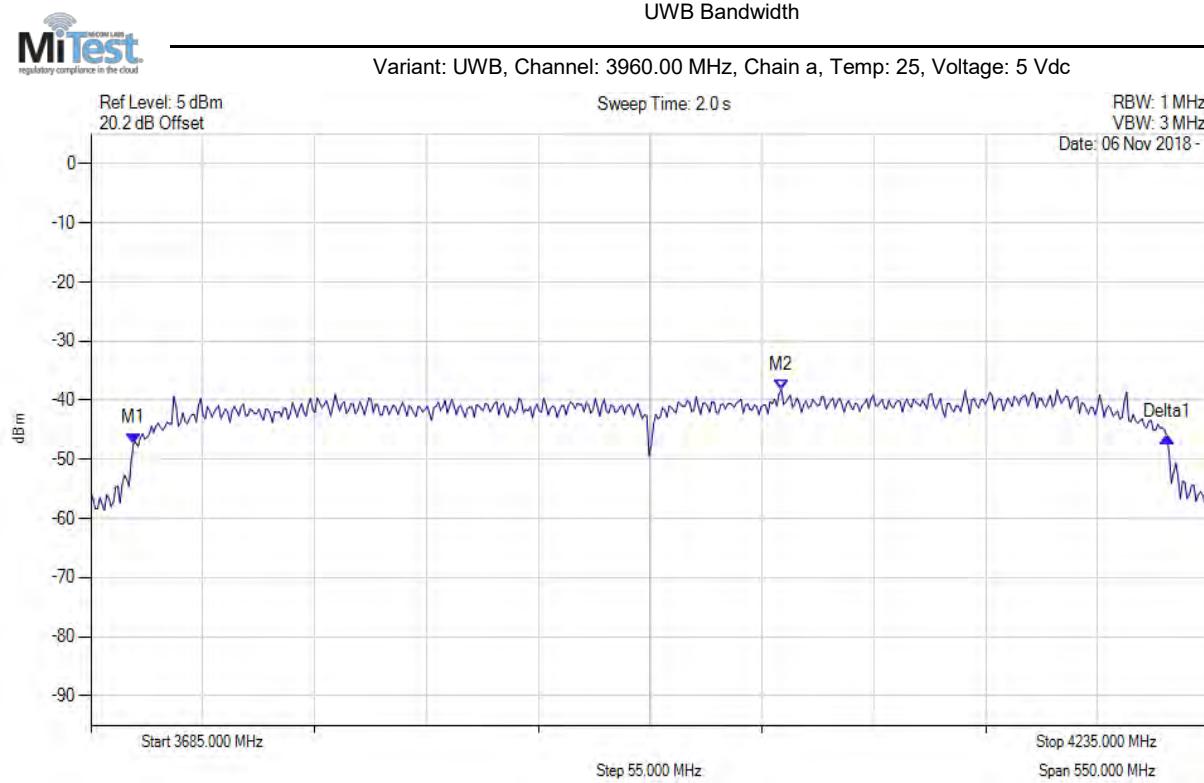
A.1. UWB Bandwidth



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](#)

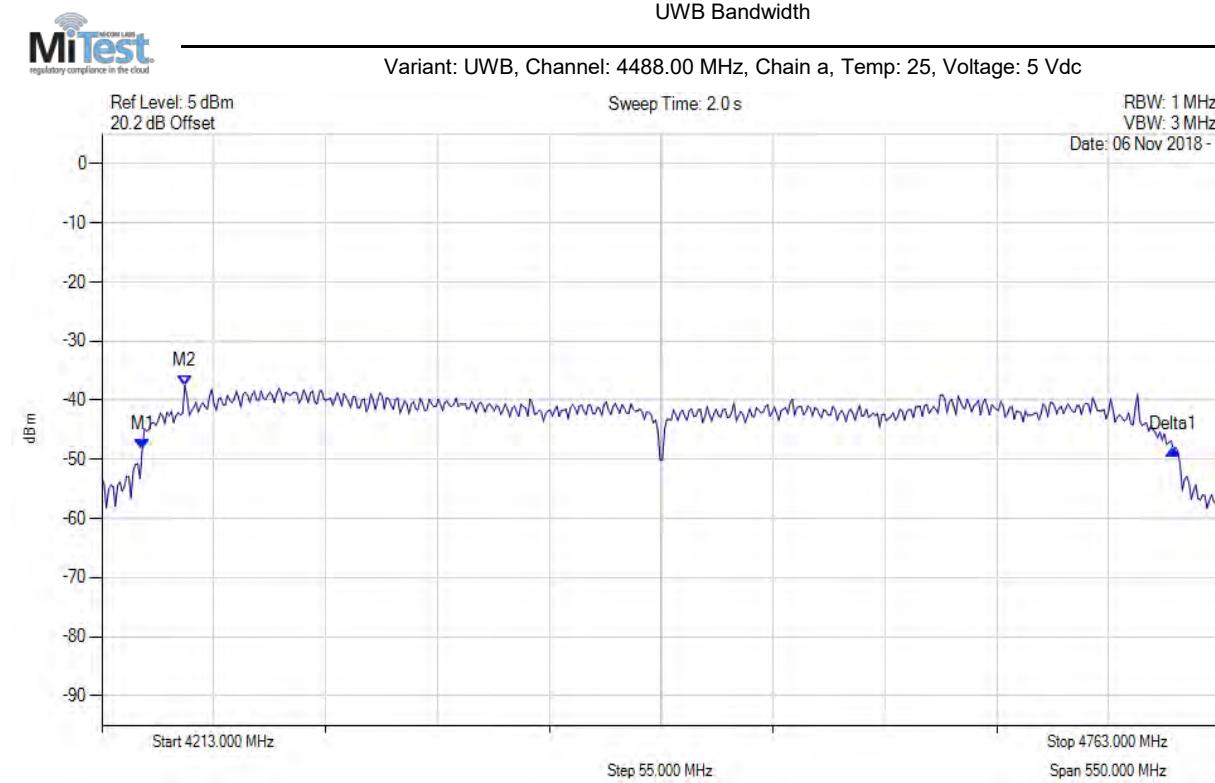
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



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](#)

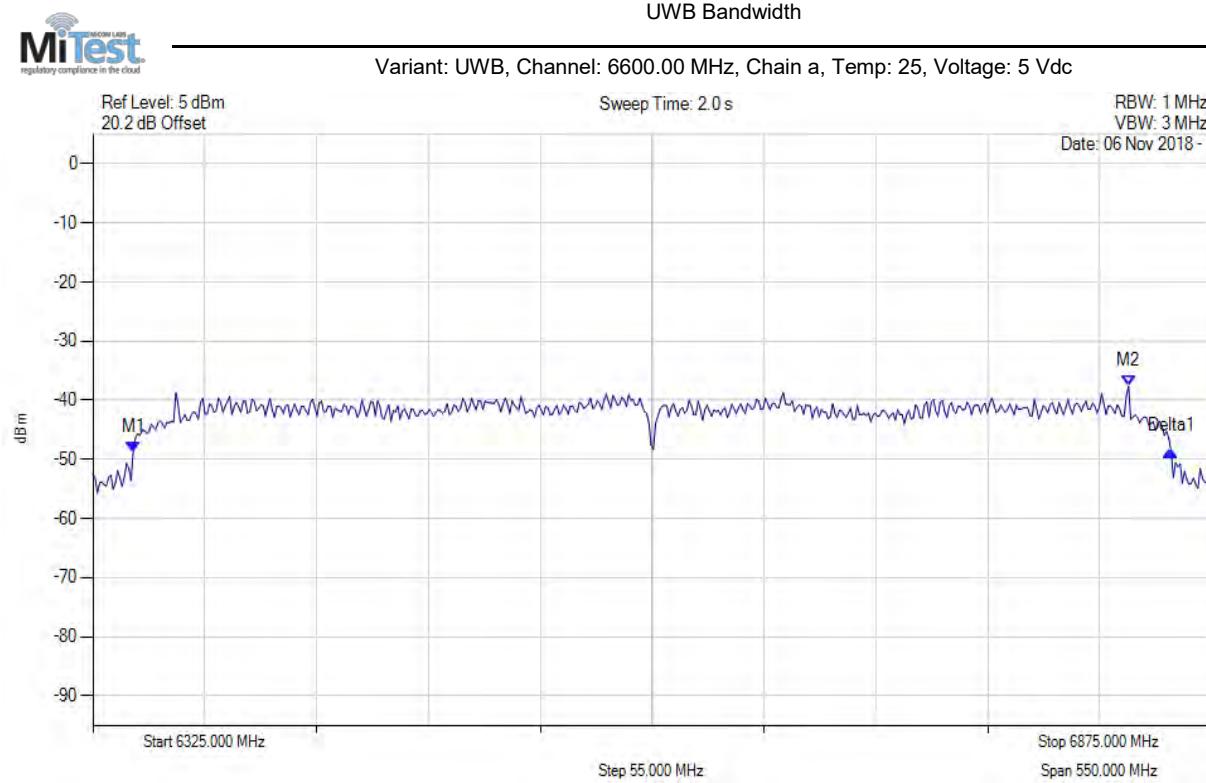
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



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](#)

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.

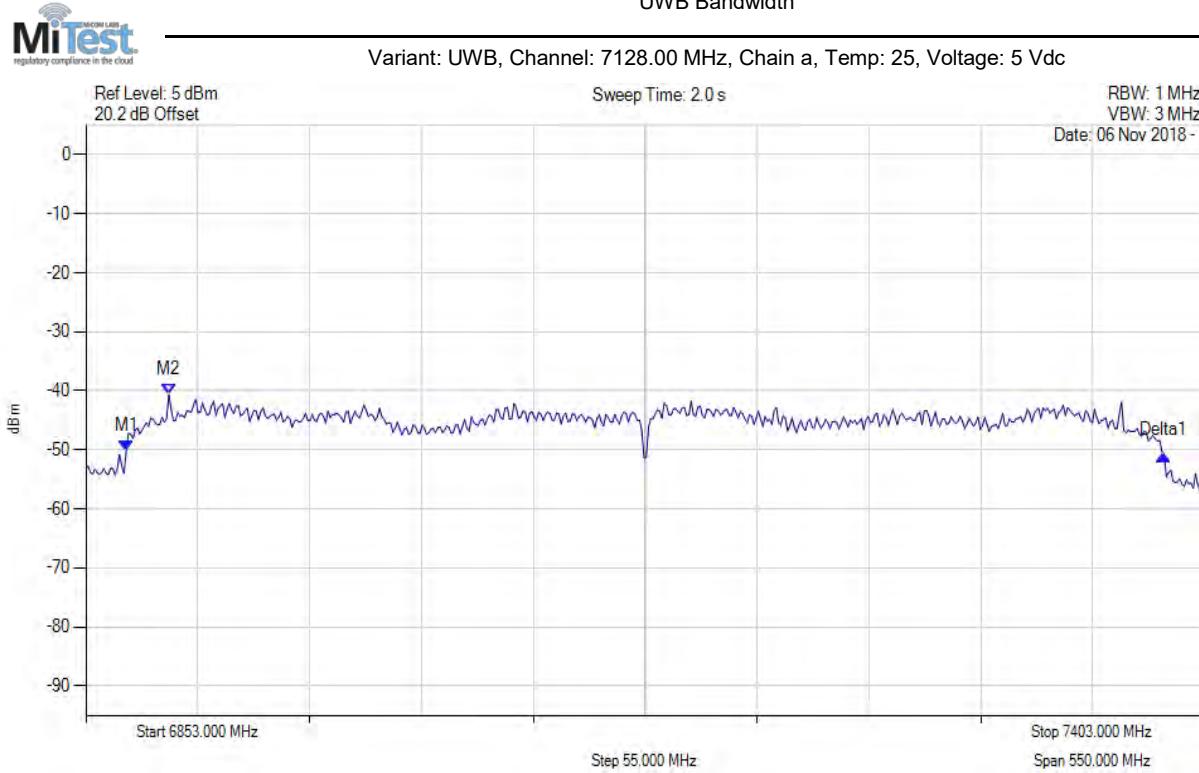


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = CLR/WRITE	M1 : 6344.840 MHz : -48.727 dBm M2 : 6834.218 MHz : -37.625 dBm Delta1 : 510.321 MHz : 0.205 dB	Channel Frequency: 6600.00 MHz

[back to matrix](#)

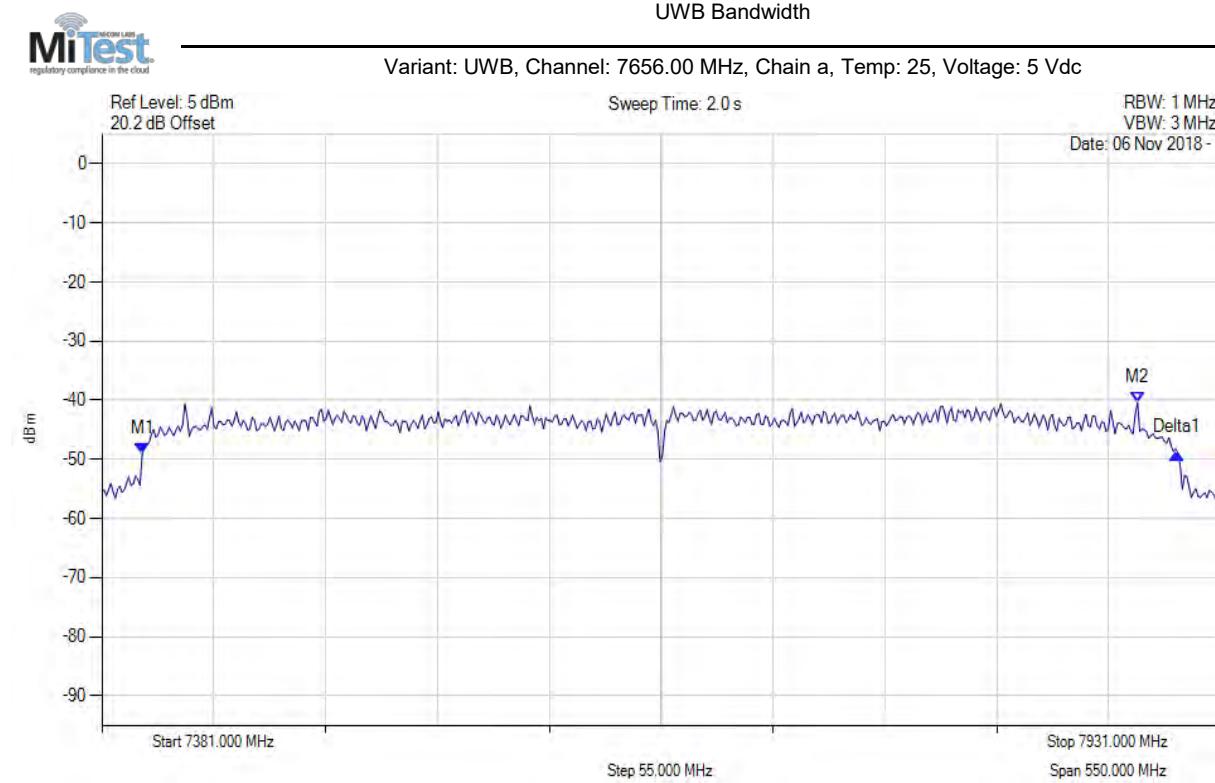
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.

UWB Bandwidth



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 dBm	Channel Frequency: 7128.00 MHz

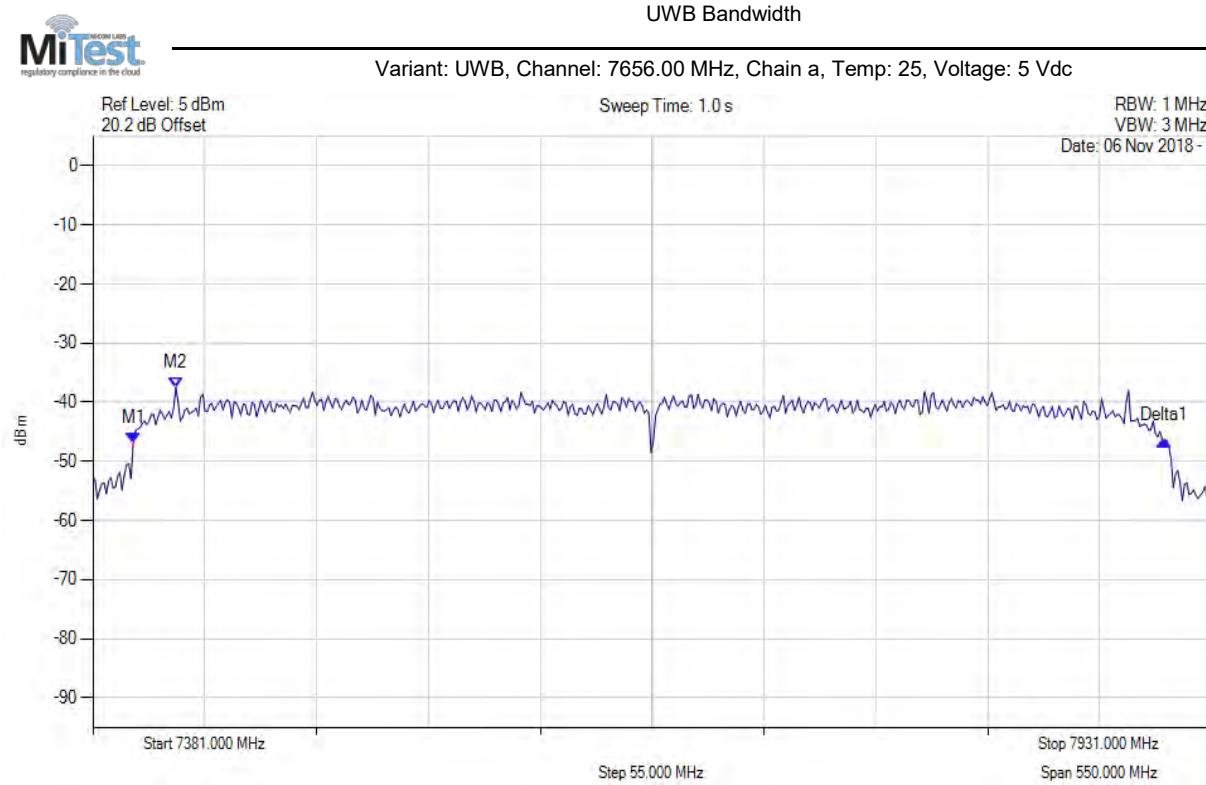
[back to matrix](#)



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

[back to matrix](#)

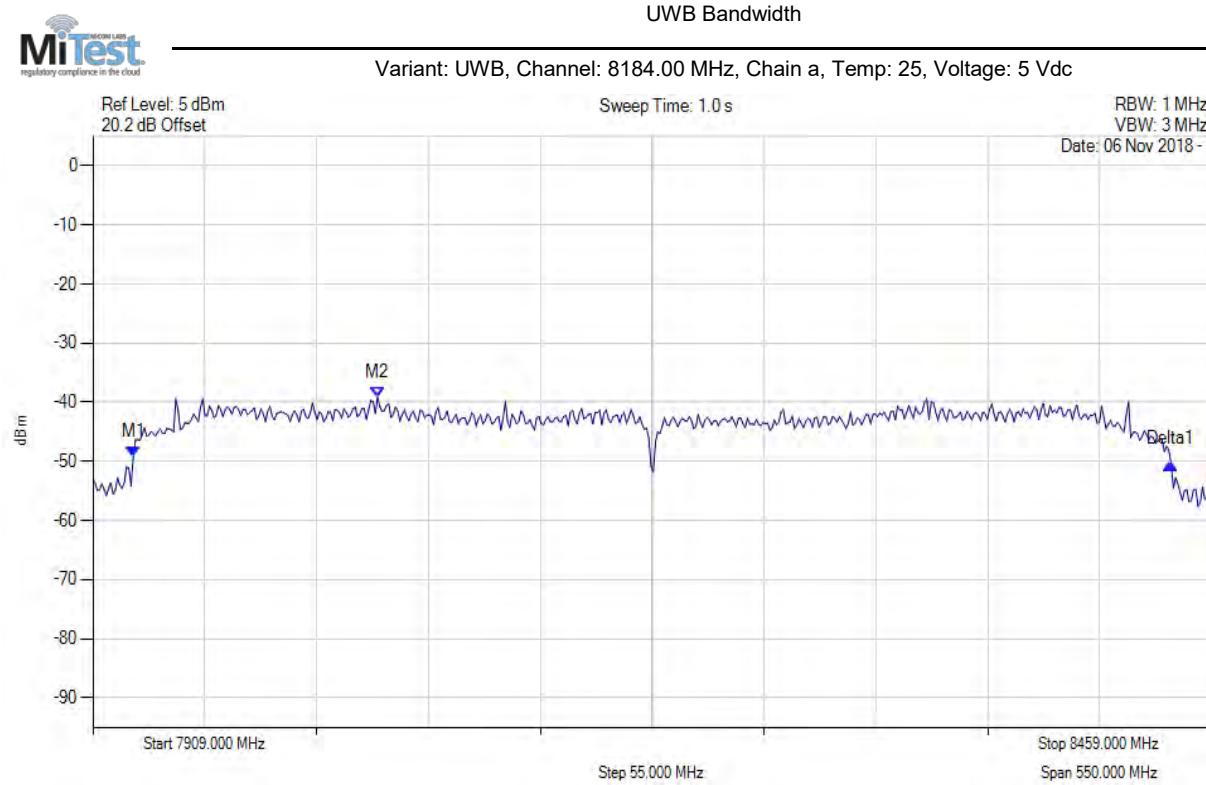
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



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

[back to matrix](#)

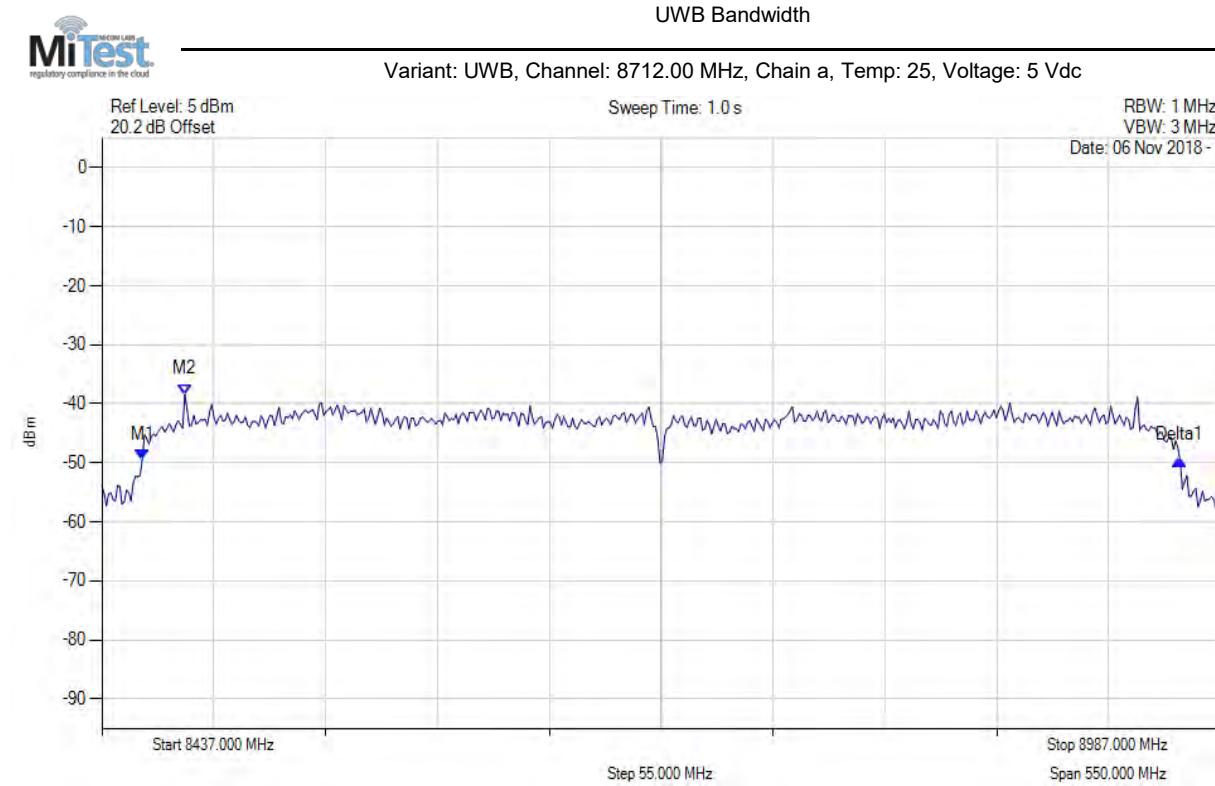
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



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 dBm	Channel Frequency: 8184.00 MHz

[back to matrix](#)

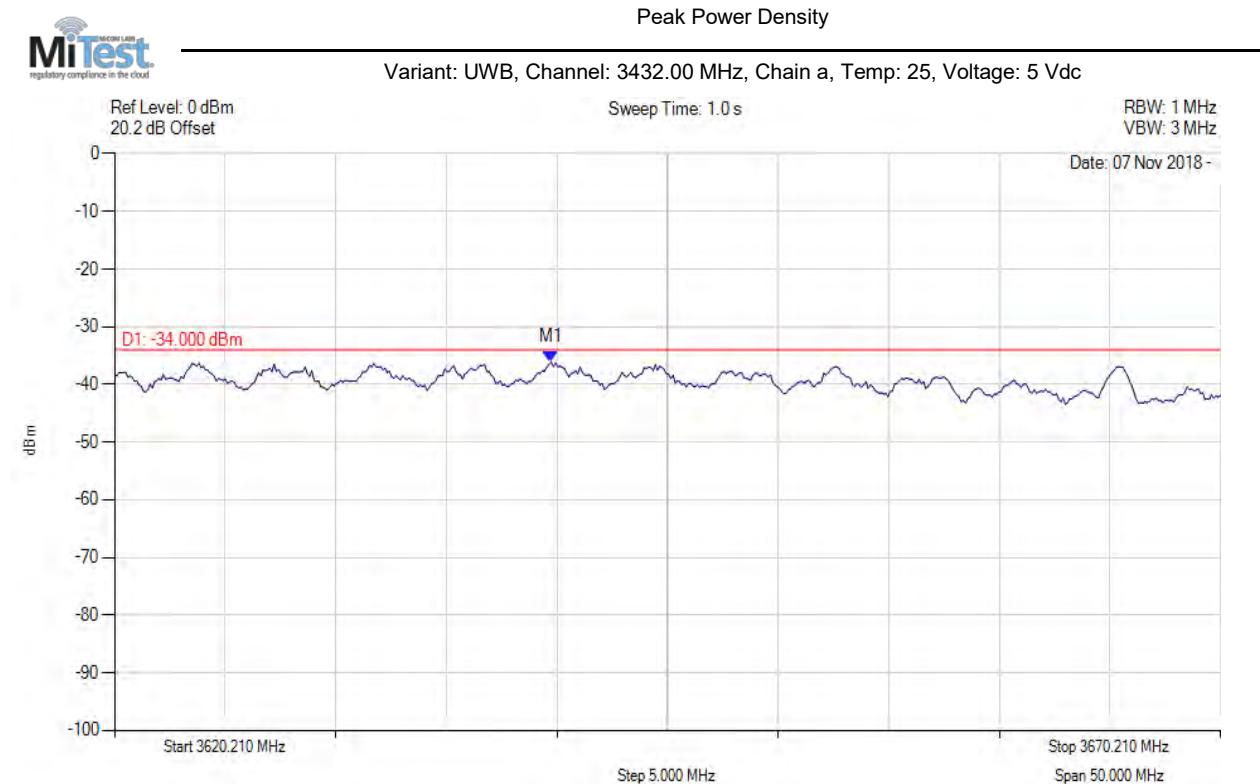
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



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 dBm	Channel Frequency: 8712.00 MHz

[back to matrix](#)

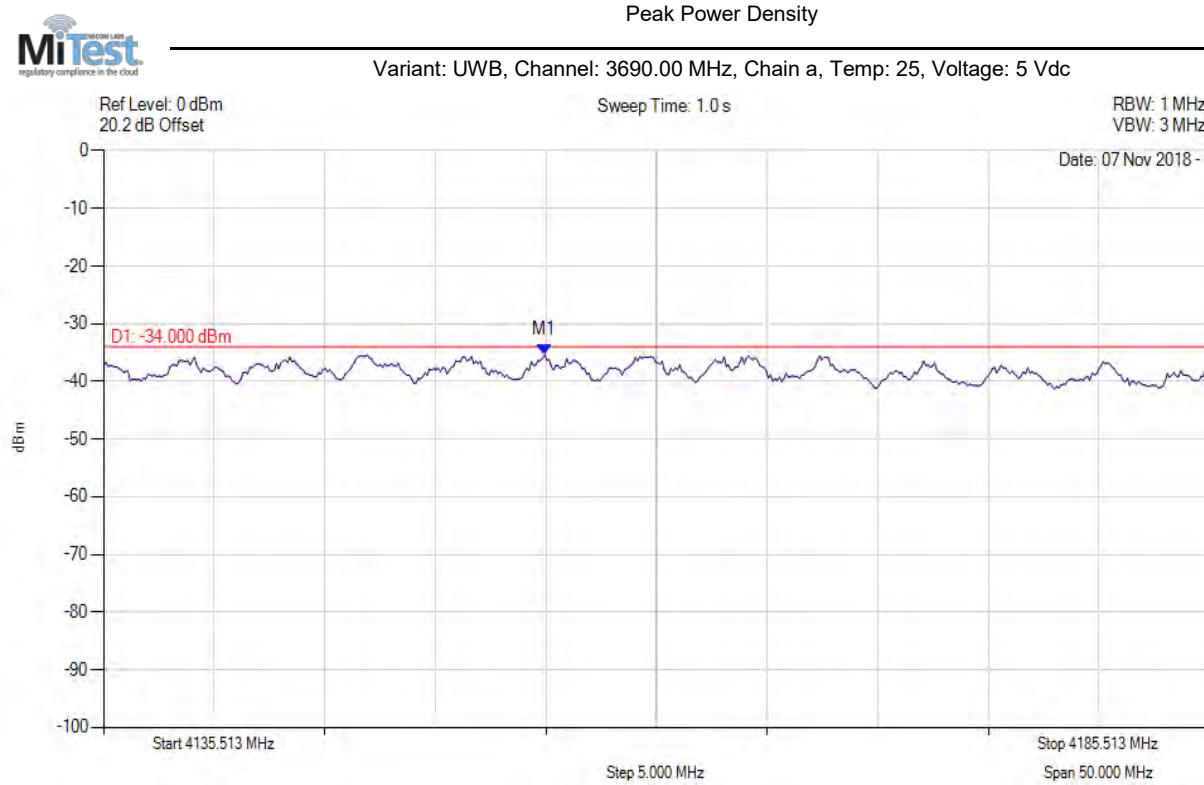
A.2. Peak Power Density



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

[back to matrix](#)

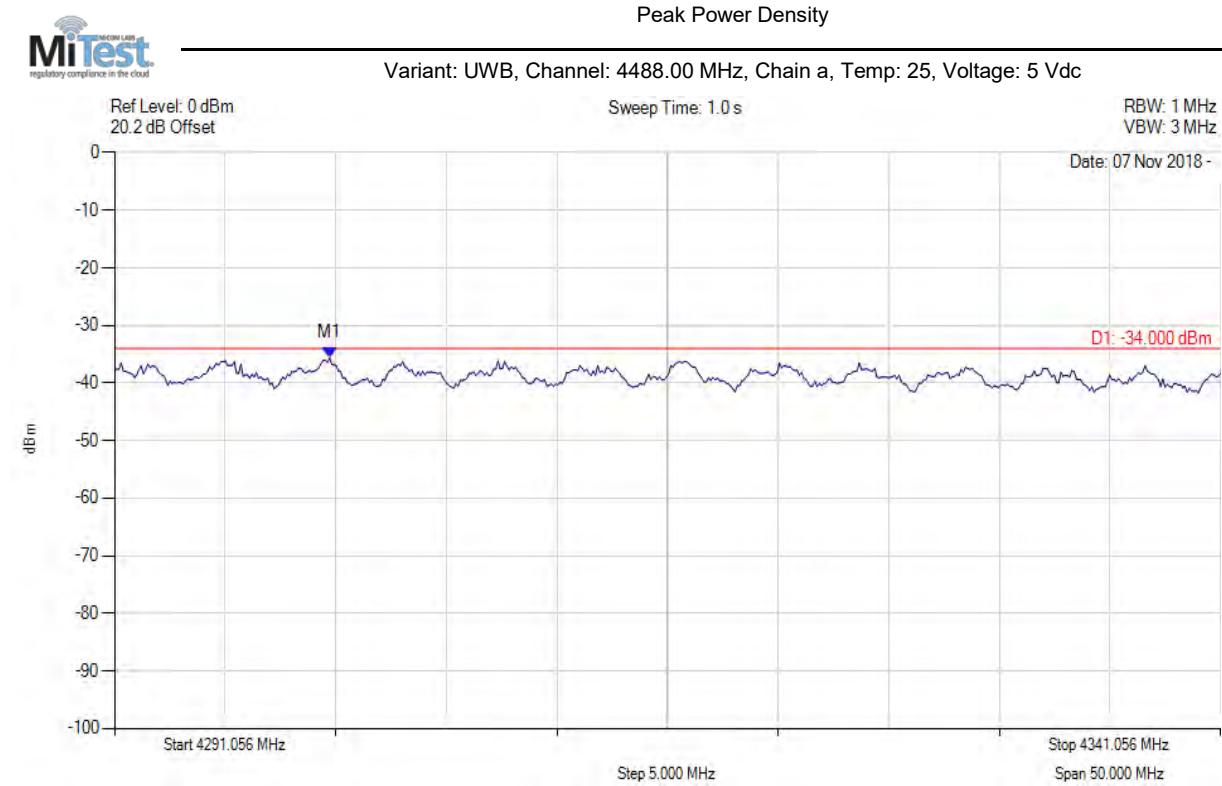
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



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

[back to matrix](#)

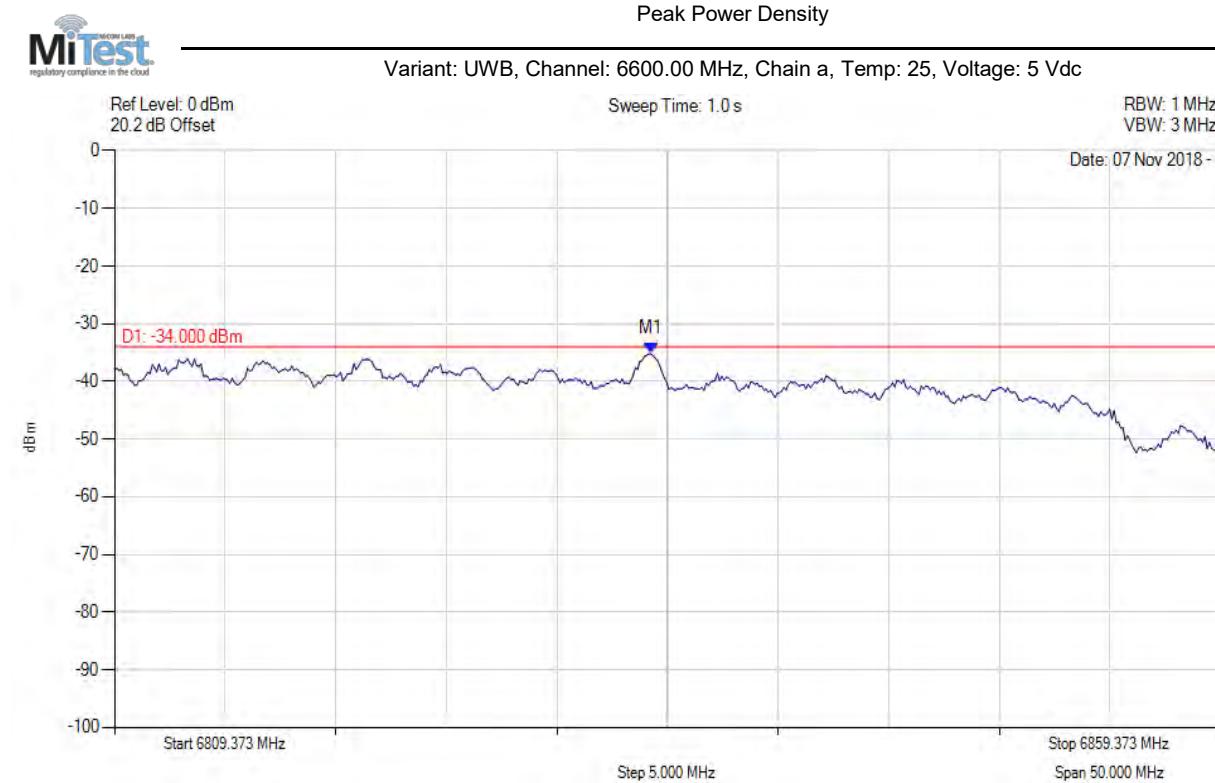
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



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

[back to matrix](#)

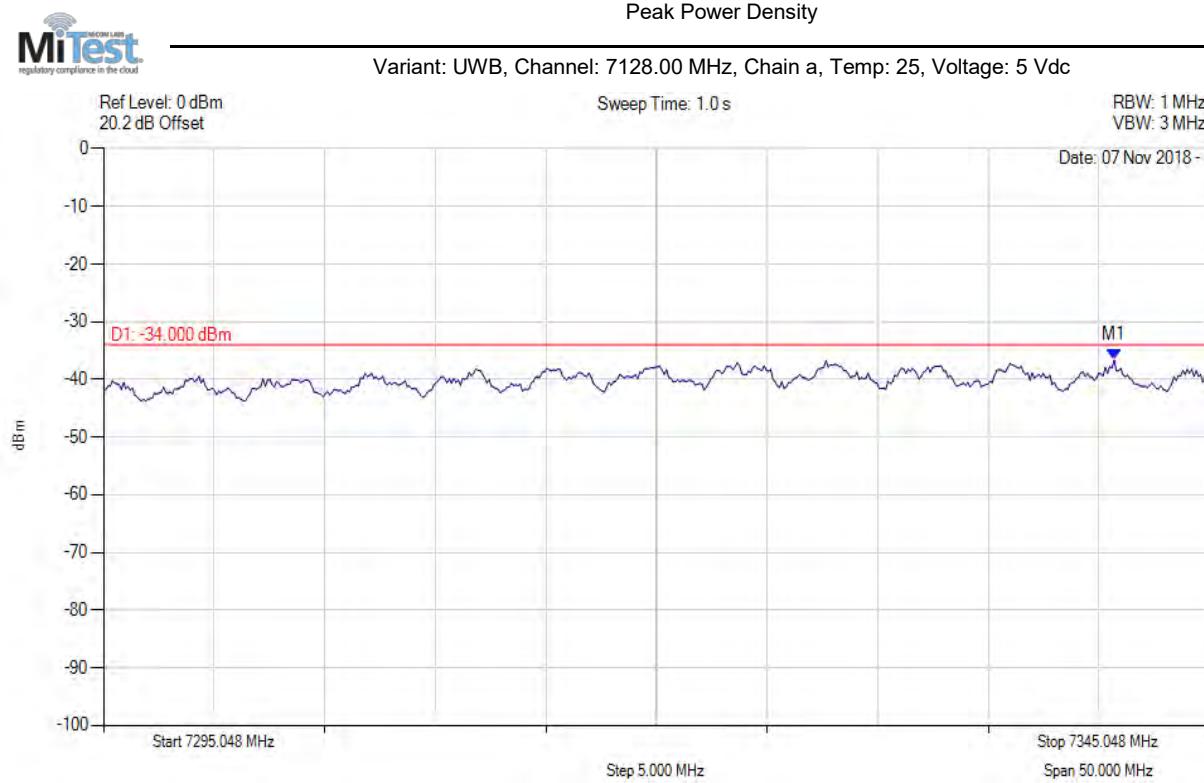
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



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

[back to matrix](#)

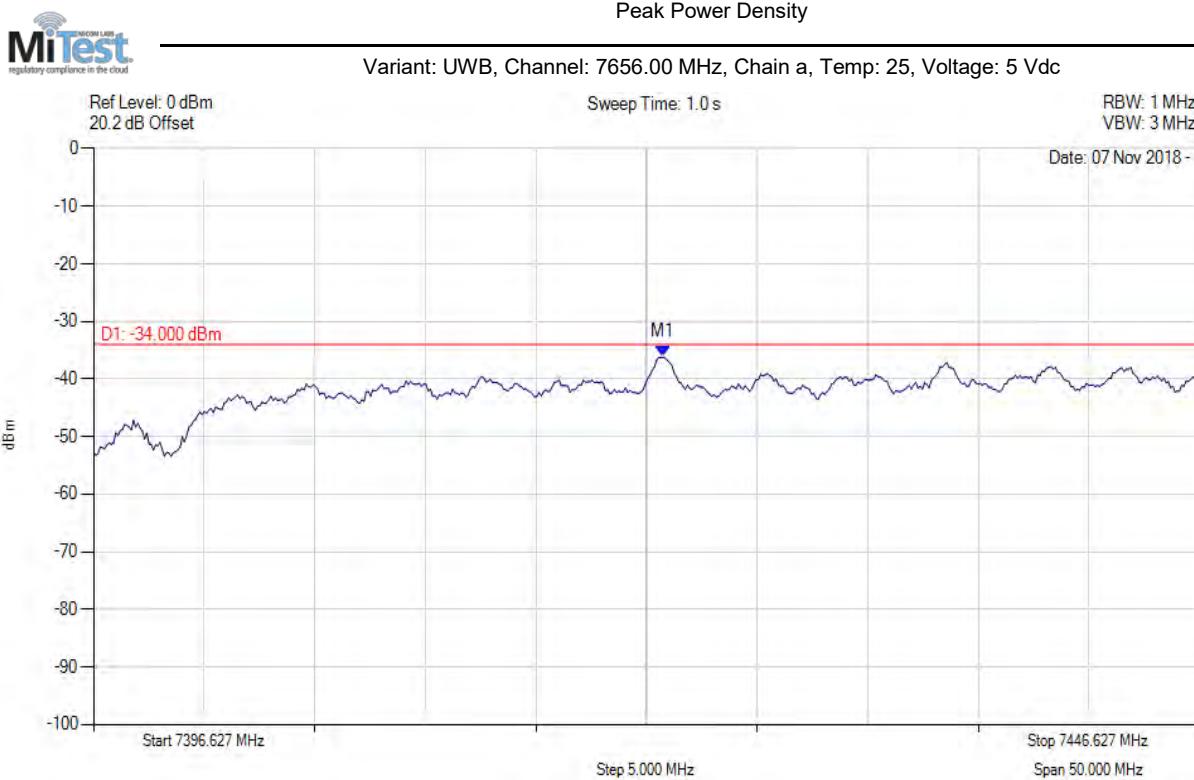
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



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

[back to matrix](#)

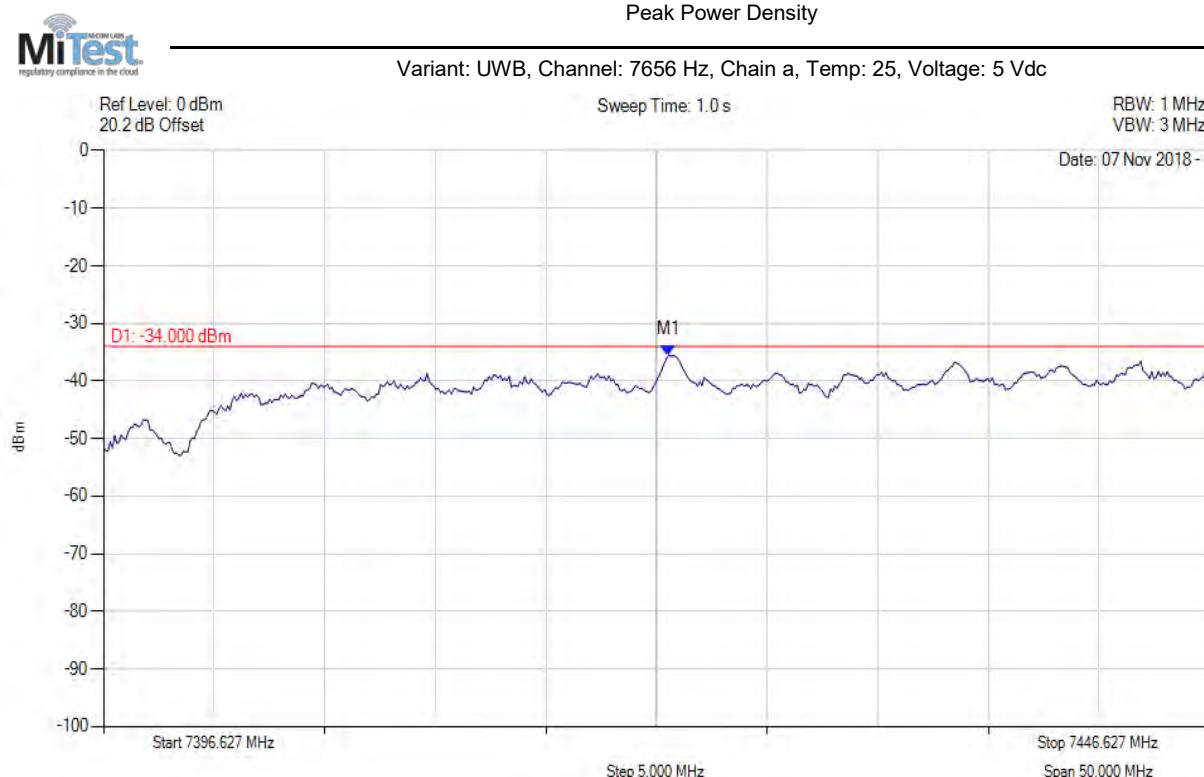
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



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

[back to matrix](#)

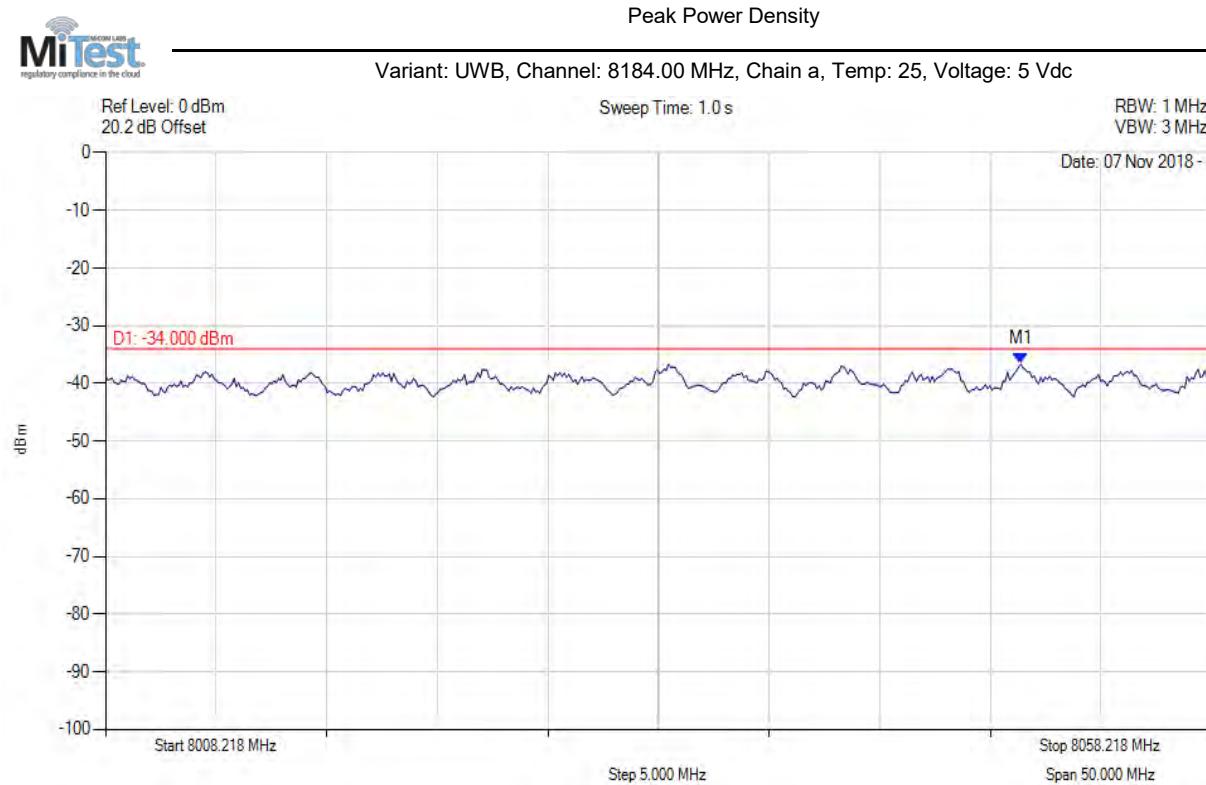
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



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

[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.



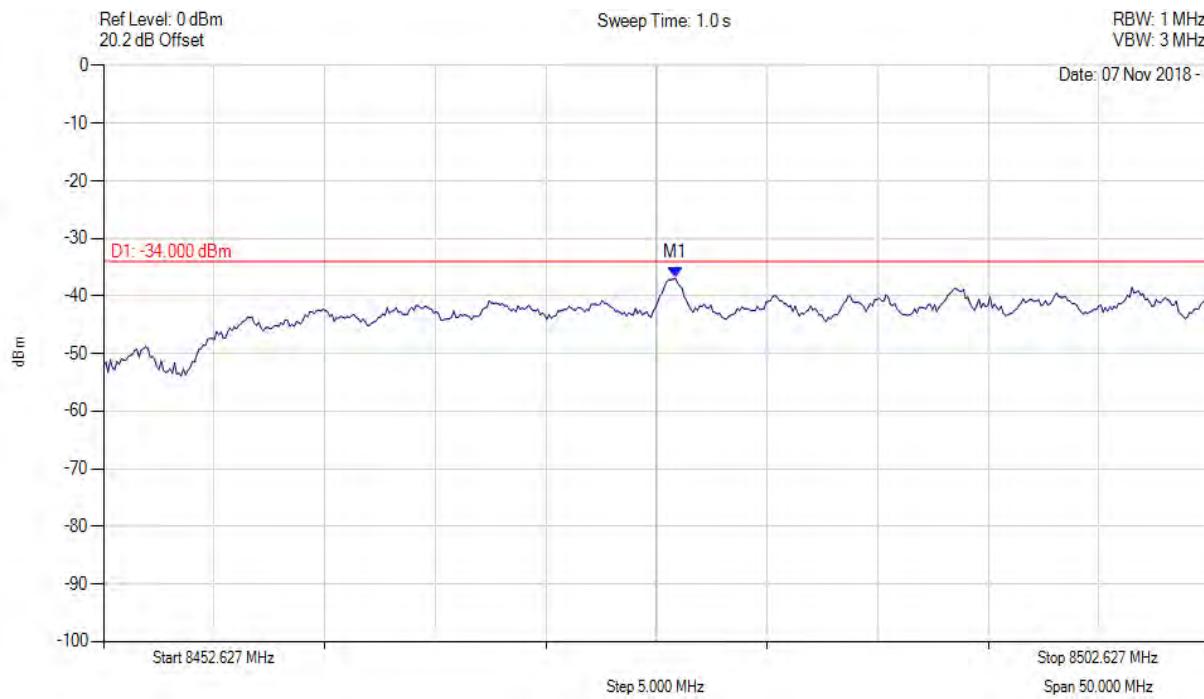
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = CLR/WRITE	M1 : 8049.601 MHz : -36.648 dBm	Channel Frequency: 8184.00 MHz

[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.



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

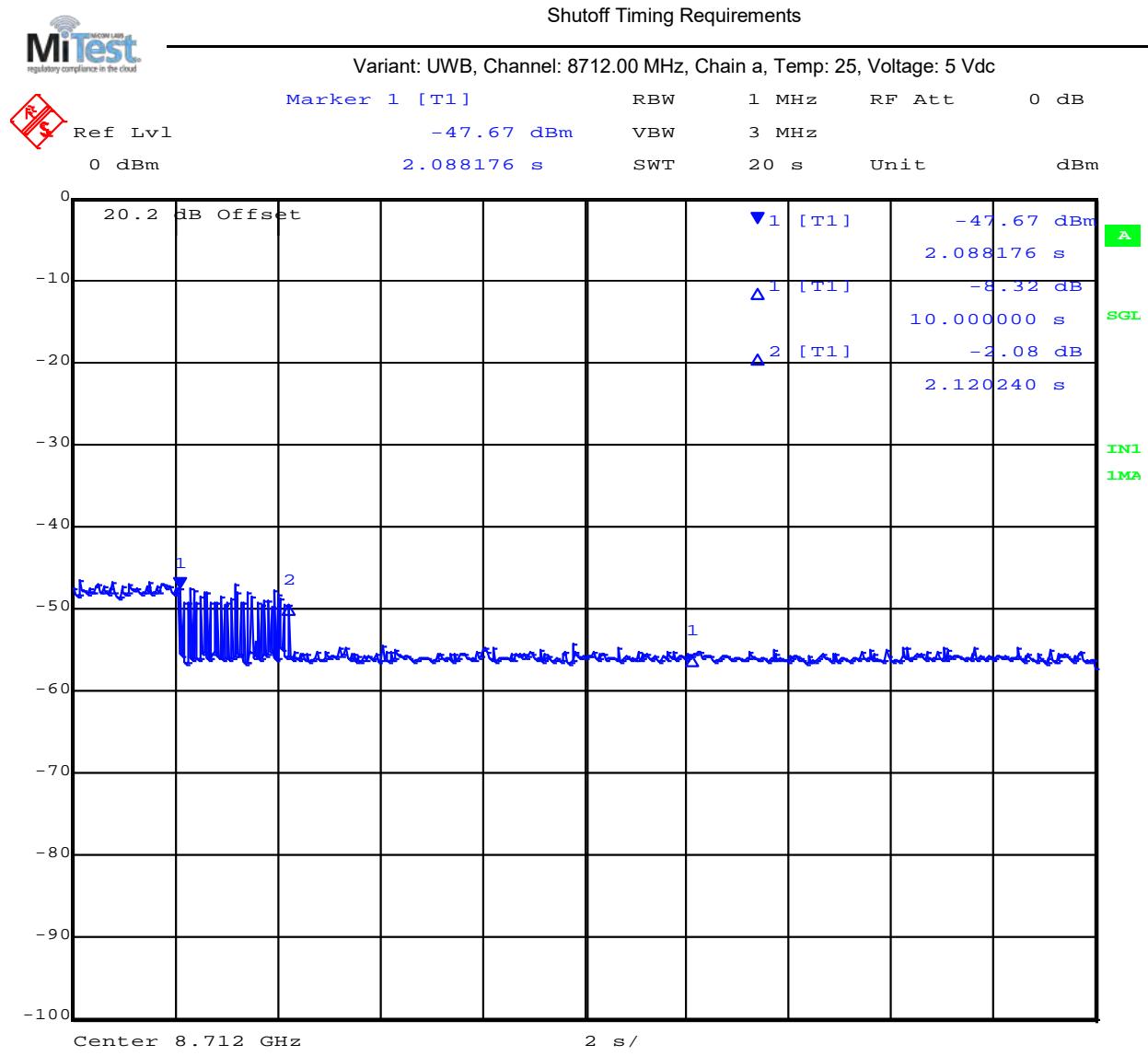


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 0 Trace Mode = CLR/WRITE	M1 : 8478.479 MHz : -36.858 dBm	Channel Frequency: 8712.00 MHz

[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.

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

[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.

B. APPENDIX – Manufacturer Declaration on Similarity of Models

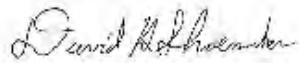


www.alereon.com | 10900 Preston Park Blvd. | Suite 100 | Austin, TX 78750 | 812.343.4250 | 812.343.4201

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

CONFIDENTIAL

1 of 1



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.



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