

# Test Report No.50096489 001

## Appendix D: Radiated and Mains Spurious Emission Data

(File: 50096489AppendixD)

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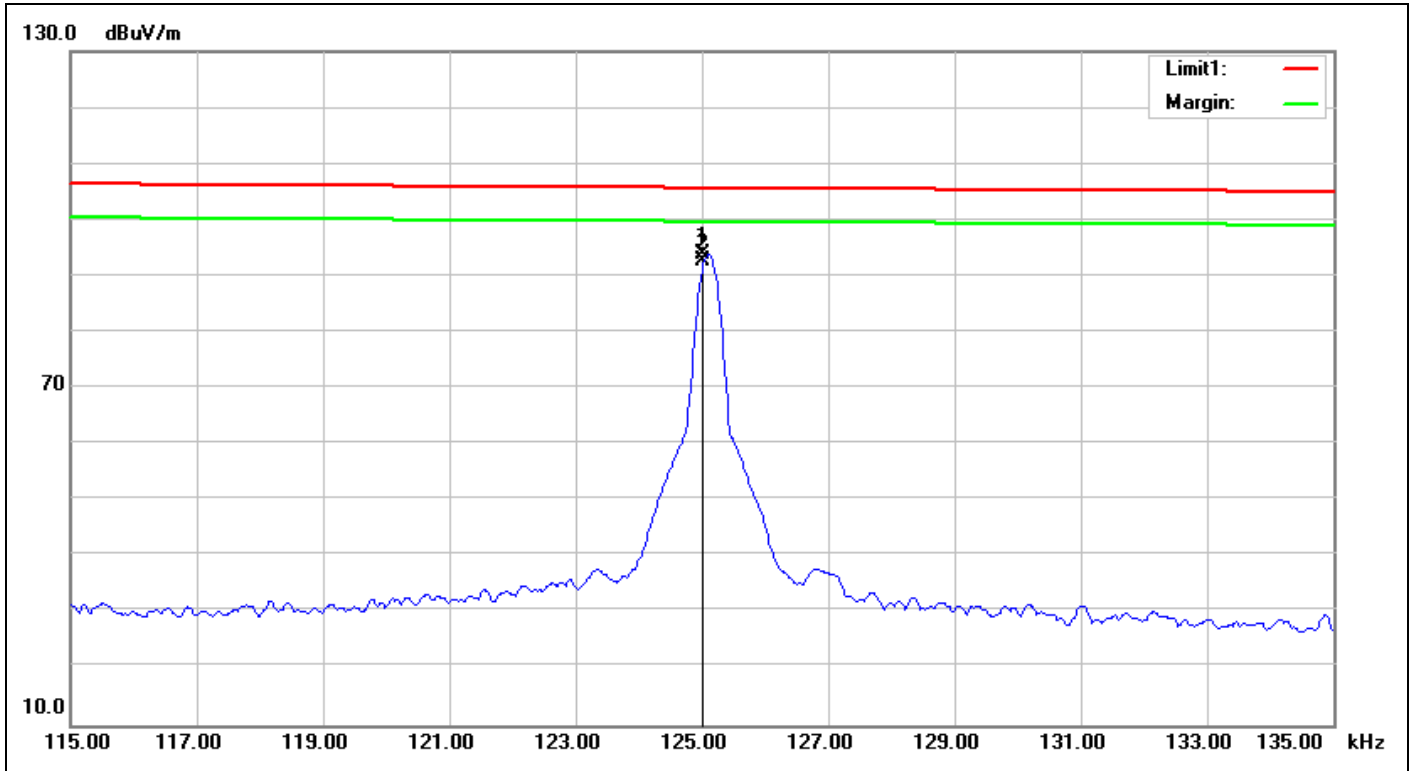
# Emissions, Fundamental



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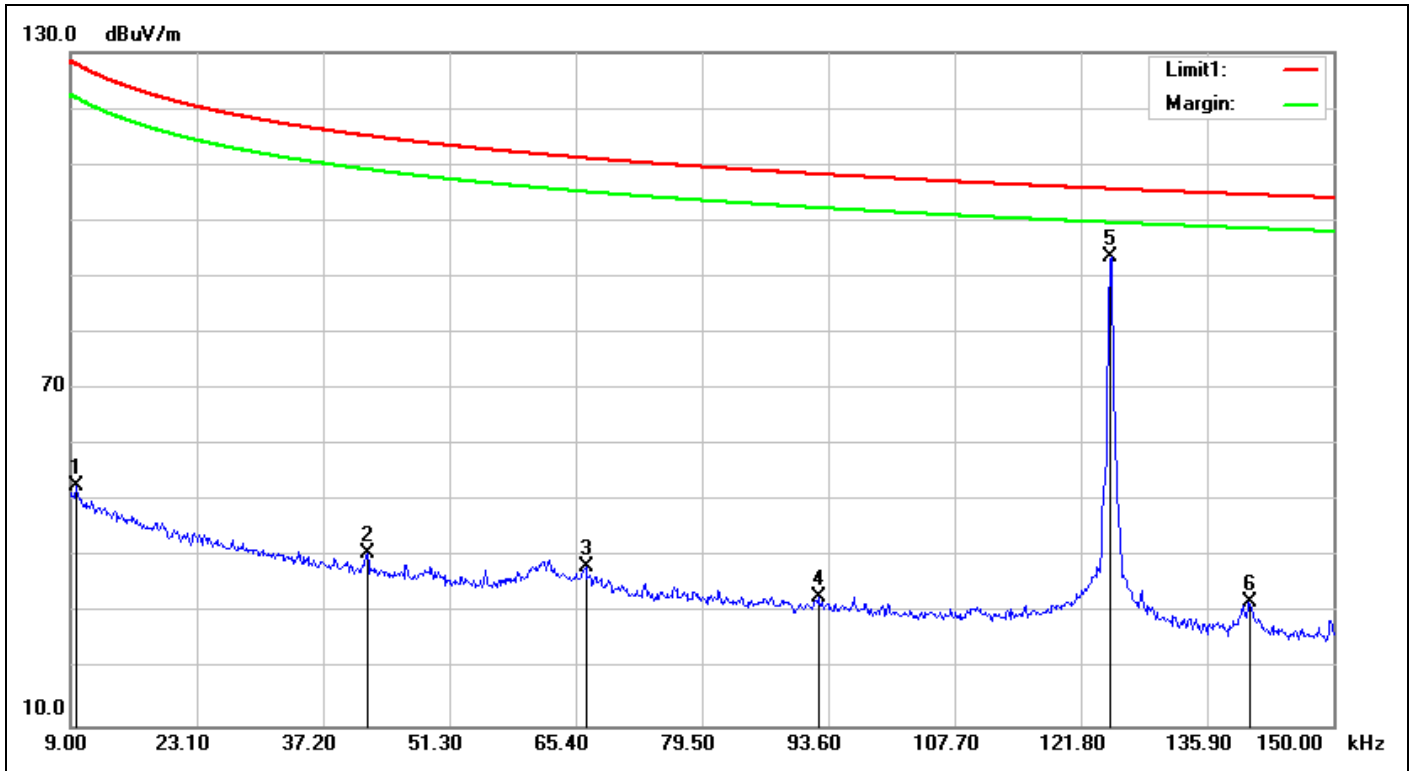
<b>Service No.:</b>	114067578-22(ASSY AD46R RF+MD)_FCC	<b>Test Distance:</b>	3m
<b>Test Standard:</b>	FCC15.209_9k-1G_3m	<b>Ant. Polarization:</b>	
<b>Test item:</b>	Radiation Emission	<b>Test Time:</b>	2017/8/8 11:00:34
<b>Applicant:</b>	Nedap	<b>Test Rating:</b>	AC 120V/60Hz
<b>Product:</b>	Lumen iL45	<b>Temp.(°C)/Hum.(%):</b>	24.5(°C)/48%
<b>Model No.:</b>	ASSY AD46R RF+MD	<b>Test Engineer:</b>	Kai Wang
<b>Test Mode:</b>	125k-Tx		
<b>Remark:</b>			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.1250	19.11	74.72	93.83	105.66	-11.83	peak	100	251	Tx
2	0.1250	19.11	73.60	92.71	105.66	-12.95	AVG	100	251	

# Spurious Emissions, TX Mode, 9-150 kHz



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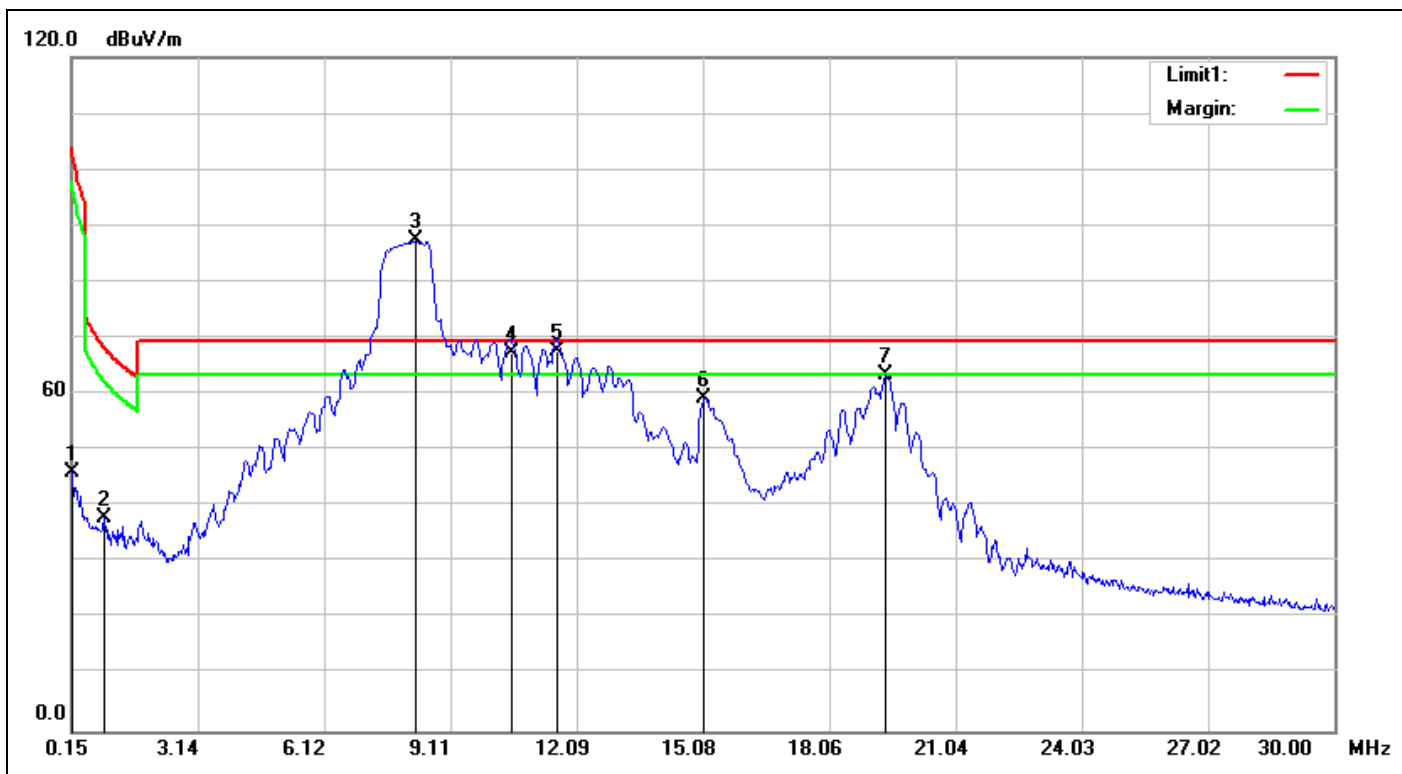
<b>Service No.:</b>	114067578-22(ASSY AD46R RF+MD)_FCC	<b>Test Distance:</b>	3m
<b>Test Standard:</b>	FCC15.209_9k-1G_3m	<b>Ant. Polarization:</b>	
<b>Test item:</b>	Radiation Emission	<b>Test Time:</b>	2017/8/8 10:51:18
<b>Applicant:</b>	Nedap	<b>Test Rating:</b>	AC 120V/60Hz
<b>Product:</b>	Lumen iL45	<b>Temp.(°C)/Hum.(%):</b>	24.5(°C)/48%
<b>Model No.:</b>	ASSY AD46R RF+MD	<b>Test Engineer:</b>	Kai Wang
<b>Test Mode:</b>	125k-Tx		
<b>Remark:</b>			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0096	19.77	32.85	52.62	127.94	-75.32	QP	100	240	
2	0.0421	19.71	21.16	40.87	115.11	-74.24	QP	100	137	
3	0.0665	19.33	18.96	38.29	111.14	-72.85	QP	100	69	
4	0.0925	19.18	13.91	33.09	108.27	-75.18	QP	100	295	
5	0.1250	19.11	74.54	93.65	105.66	-12.01	QP	100	251	Tx
6	0.1406	19.09	12.82	31.91	104.64	-72.73	QP	100	184	

# Spurious Emissions, TX Mode, 150 kHz -30MHz

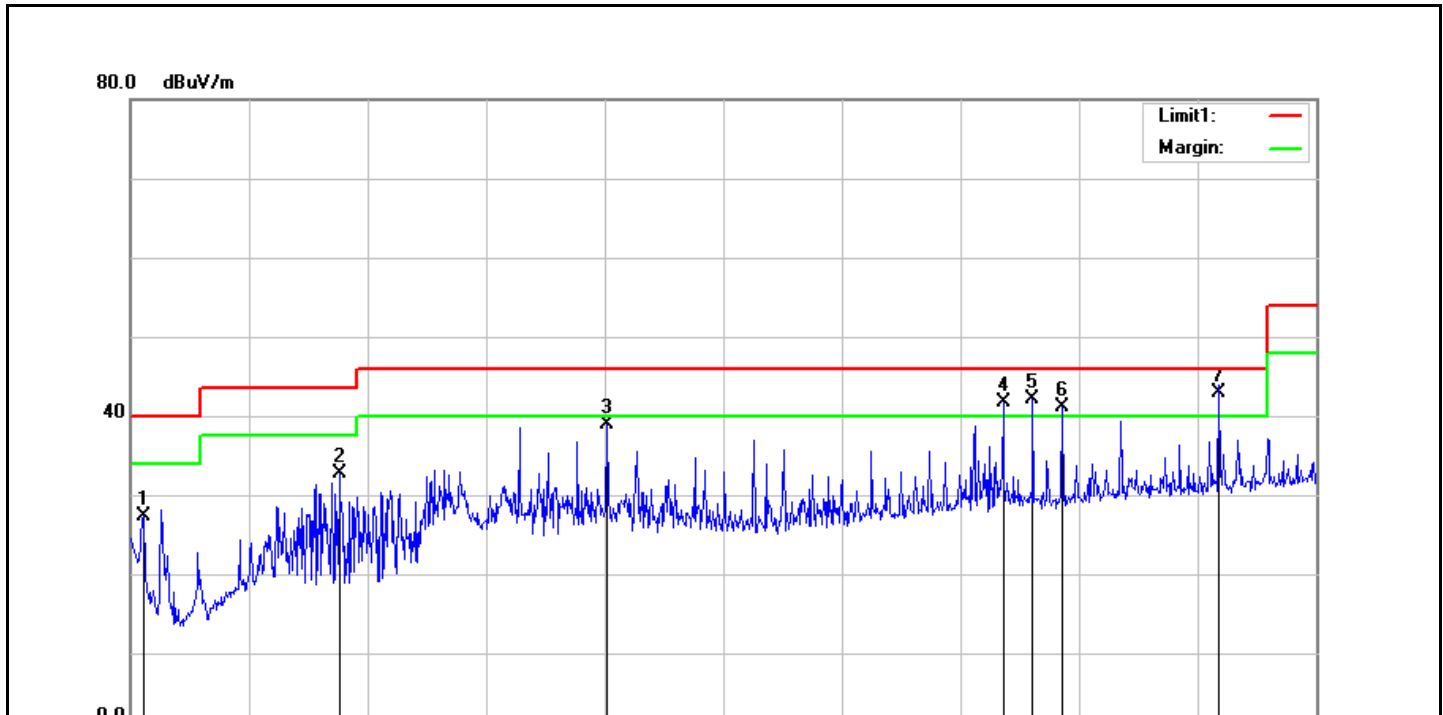


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<b>Service No.:</b>	114067578-22(ASSY AD46R RF+MD)_FCC		<b>Test Distance:</b>	3m						
<b>Test Standard:</b>	FCC15.209_9k-1G_3m		<b>Ant. Polarization:</b>							
<b>Test item:</b>	Radiation Emission		<b>Test Time:</b>	2017/8/8 10:54:48						
<b>Applicant:</b>	Nedap		<b>Test Rating:</b>	AC 120V/60Hz						
<b>Product:</b>	Lumen iL45		<b>Temp.(°C)/Hum.(%):</b>	24.5(°C)/48%						
<b>Model No.:</b>	ASSY AD46R RF+MD		<b>Test Engineer:</b>	Kai Wang						
<b>Test Mode:</b>	125k-Tx									
<b>Remark:</b>										
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.1500	19.08	26.89	45.97	104.08	-58.11	QP	100	259	
2	0.9261	18.97	18.92	37.89	68.29	-30.40	QP	100	267	
3	8.2991	20.06	67.27	87.33	69.50	17.83	QP	100	135	Tx
4	10.5378	20.31	46.90	67.21	69.50	-2.29	QP	100	128	
5	11.6124	20.50	47.04	67.54	69.50	-1.96	QP	100	175	
6	15.1049	21.12	38.22	59.34	69.50	-10.16	QP	100	84	
7	19.4033	21.88	41.48	63.36	69.50	-6.14	QP	100	312	

# Spurious Emissions, TX Mode, 30MHz-1GHz



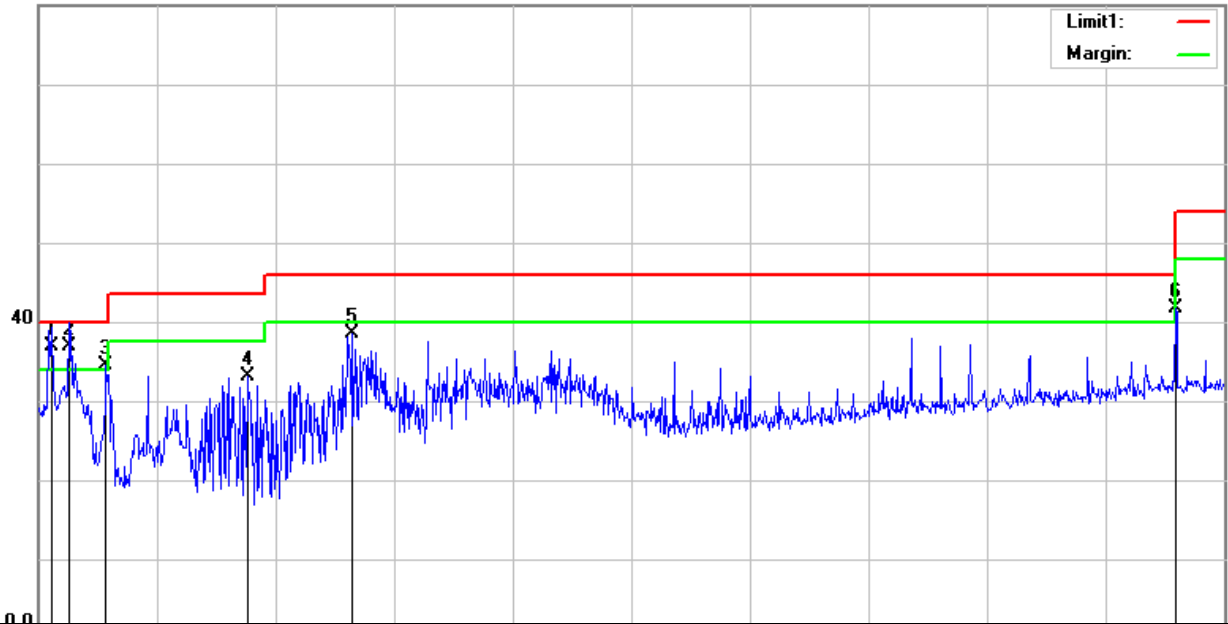
Service No.: 114067578(ASSY AD46R RF+MD)  
 Test Standard: FCC Class B/C 3M Radiation  
 Test item: Radiation Emission  
 Applicant: Nedap  
 Product: Hybrid Lumen iL45  
 Model No.: ASSY AD46R RF+MD

Test Distance: 3m  
 Ant. Polarization: Horizontal  
 Temp.(°C)/Hum.(%): 23.1(°C) / 49 %  
 Test Rating: AC 120V/60Hz  
 Test Engineer: Kai Wang

Test Mode: (a) Normal operation  
 Remark: RF 8.2M + MD 125k

No.	Frequency	Factor	Reading	Level	Limit	Margin	Detector	Height	Azimuth (°)	P/F	Remark
1	40.6700	-6.17	33.44	27.27	40.00	-12.73	QP	300	144	P	
2	200.7200	-8.90	41.55	32.65	43.50	-10.85	QP	310	99	P	
3	419.9400	-2.28	41.17	38.89	46.00	-7.11	QP	120	240	P	
4	743.9200	2.21	39.48	41.69	46.00	-4.31	QP	100	346	P	
5	768.1700	2.55	39.63	42.18	46.00	-3.82	QP	200	218	P	
6	792.4200	2.78	38.34	41.12	46.00	-4.88	QP	100	186	P	
7	920.4600	4.66	38.24	42.90	46.00	-3.10	QP	168	45	P	

80.0 dBuV/m



Service No.: 114067578(ASSY AD46R RF+MD)  
 Test Standard: FCC Class B/C 3M Radiation  
 Test item: Radiation Emission  
 Applicant: Nedap  
 Product: Hybrid Lumen iL45  
 Model No.: ASSY AD46R RF+MD

Test Distance: 3m  
 Ant. Polarization: Vertical  
 Temp.(°C)/Hum.(%): 23.1(°C) / 49 %  
 Test Rating: AC 120V/60Hz  
 Test Engineer: Kai Wang

Test Mode: (a) Normal operation  
 Remark: RF 8.2M + MD 125k

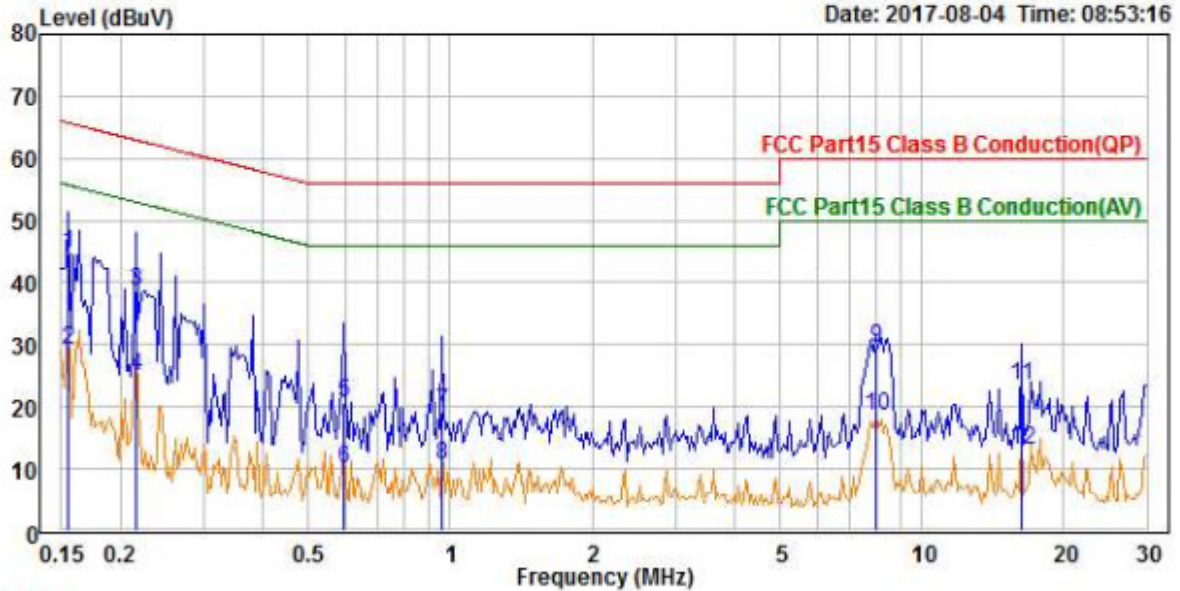
No.	Frequency	Factor	Reading	Level	Limit	Margin	Detector	Height	Azimuth (°)	P/F	Remark
1	40.6700	-6.17	42.99	36.82	40.00	-3.18	QP	100	323	P	
2	55.2200	-12.51	49.41	36.90	40.00	-3.10	QP	100	80	P	
3	85.2900	-11.41	45.94	34.53	40.00	-5.47	QP	100	301	P	
4	200.7200	-8.90	42.03	33.13	43.50	-10.37	QP	100	285	P	
5	287.0500	-4.88	43.44	38.56	46.00	-7.44	QP	100	124	P	
6	960.2300	5.46	36.17	41.63	54.00	-12.37	QP	100	227	P	

# Mains Spurious Emissions



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Trace: 1  
 Site : Conduction room  
 Condition : FCC Part15 Class B Conduction(QP) line1  
 Test Engineer: Kai Wang  
 Applicant : Nedap  
 Product : ASSY AD46R RF+MD  
 Model No. : Hybrid Lumen iL45  
 Test Rating : 120Vac/60Hz  
 Tmp/Hum : 26.1 °C / 45 %  
 Memo : (a) Normal operation  
 Remark : RF 8.2M + MD 125k

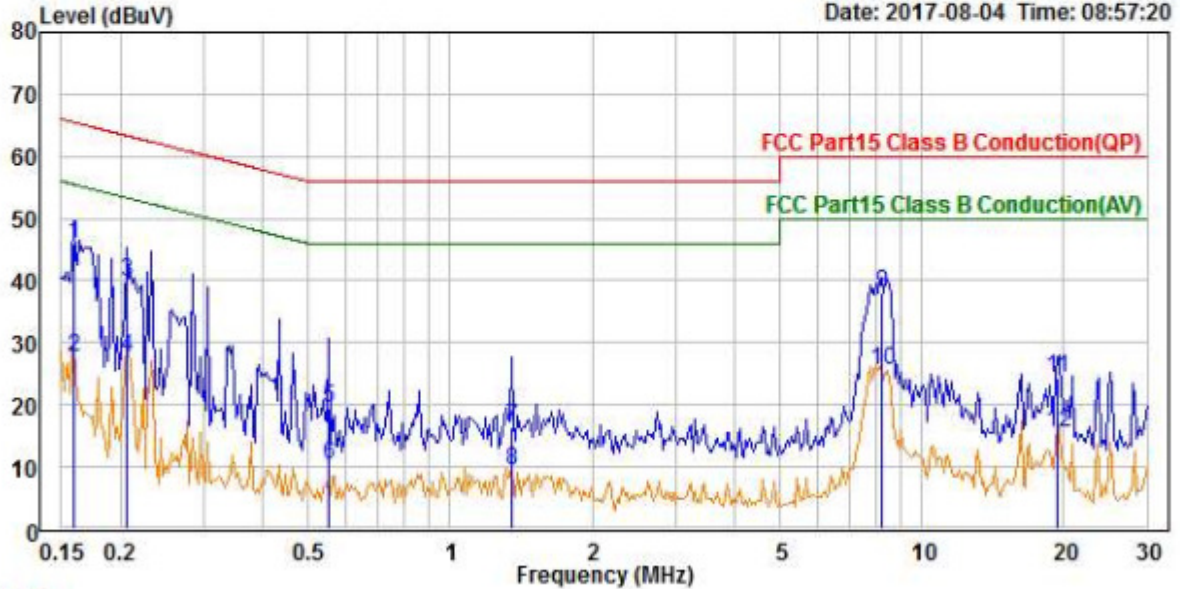
	Freq	Level	Read Level	LISN Factor	Cable Loss	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dB	dBuV	dB	
1	0.155	44.61	34.95	9.64	0.02	9.66	65.75	-21.14	QP
2	0.155	29.17	19.51	9.64	0.02	9.66	55.75	-26.58	Average
3	0.217	38.75	29.09	9.64	0.02	9.66	62.95	-24.20	QP
4	0.217	24.89	15.23	9.64	0.02	9.66	52.95	-28.06	Average
5	0.597	20.65	10.99	9.64	0.02	9.66	56.00	-35.35	QP
6	0.597	9.99	0.33	9.64	0.02	9.66	46.00	-36.01	Average
7	0.962	19.17	9.50	9.64	0.03	9.67	56.00	-36.83	QP
8	0.962	10.80	1.13	9.64	0.03	9.67	46.00	-35.20	Average
9	7.997	29.52	19.75	9.70	0.07	9.77	60.00	-30.48	QP
10	7.997	18.48	8.71	9.70	0.07	9.77	50.00	-31.52	Average
11	16.198	23.33	13.53	9.70	0.10	9.80	60.00	-36.67	QP
12	16.198	12.97	3.17	9.70	0.10	9.80	50.00	-37.03	Average





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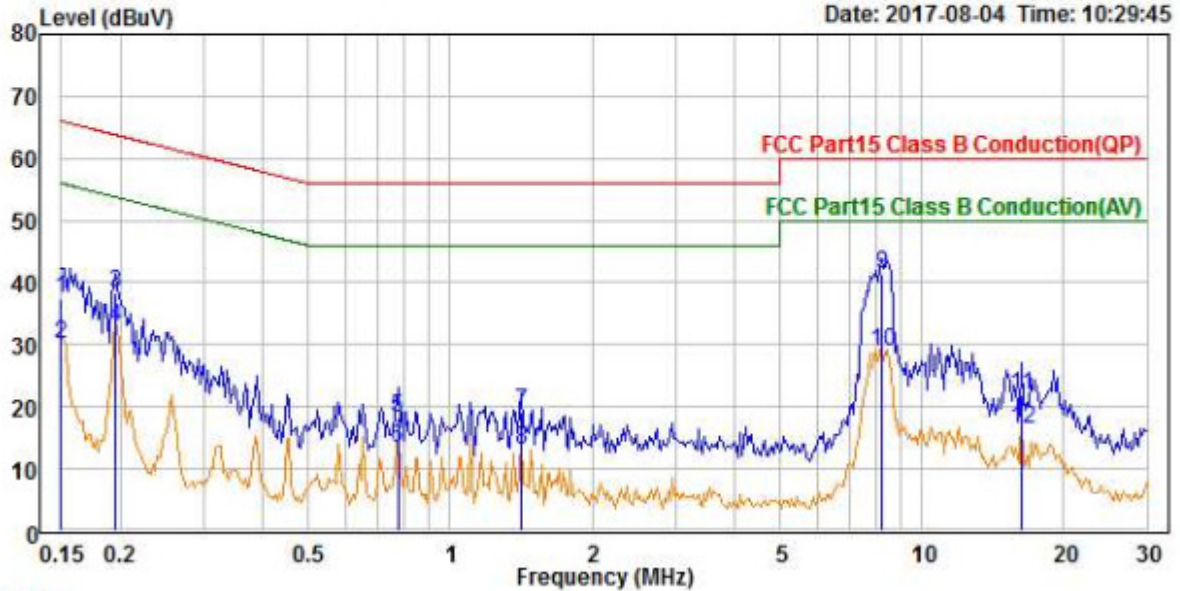
Trace: 1

Site : Conduction room  
 Condition : FCC Part15 Class B Conduction(QP) neutral  
 Test Engineer: Kai Wang  
 Applicant : Nedap  
 Product : ASSY AD46R RF+MD  
 Model No. : Hybrid Lumen iL45  
 Test Rating : 120Vac/60Hz  
 Tmp/Hum : 26.1 °C / 45 %  
 Memo : (a) Normal operation  
 Remark : RF 8.2M + MD 125k

	Freq	Level	Read Level	LISN Factor	Cable Loss	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dB	dBuV	dB	
1	0.159	45.97	36.30	9.65	0.02	9.67	65.50	-19.53	QP
2	0.159	27.60	17.93	9.65	0.02	9.67	55.50	-27.90	Average
3	0.206	39.89	30.22	9.65	0.02	9.67	63.36	-23.47	QP
4	0.206	27.54	17.87	9.65	0.02	9.67	53.36	-25.82	Average
5	0.552	19.37	9.71	9.64	0.02	9.66	56.00	-36.63	QP
6	0.552	10.44	0.78	9.64	0.02	9.66	46.00	-35.56	Average
7	1.350	16.56	6.88	9.65	0.03	9.68	56.00	-39.44	QP
8	1.350	9.43	-0.25	9.65	0.03	9.68	46.00	-36.57	Average
9	8.239	38.13	28.34	9.72	0.07	9.79	60.00	-21.87	QP
10	8.239	25.57	15.78	9.72	0.07	9.79	50.00	-24.43	Average
11	19.372	24.30	14.41	9.77	0.12	9.89	60.00	-35.70	QP
12	19.372	15.38	5.49	9.77	0.12	9.89	50.00	-34.62	Average



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Trace: 1

Site : Conduction room  
 Condition : FCC Part15 Class B Conduction(QP) line1  
 Test Engineer: Kai Wang  
 Applicant : Nedap  
 Product : ASSY AD46R RF+MD  
 Model No. : Hybrid Lumen iL45  
 Test Rating : 240Vac/60Hz  
 Tmp/Hum : 26.1 °C / 45 %  
 Memo : (a) Normal operation  
 Remark : RF 8.2M + MD 125k

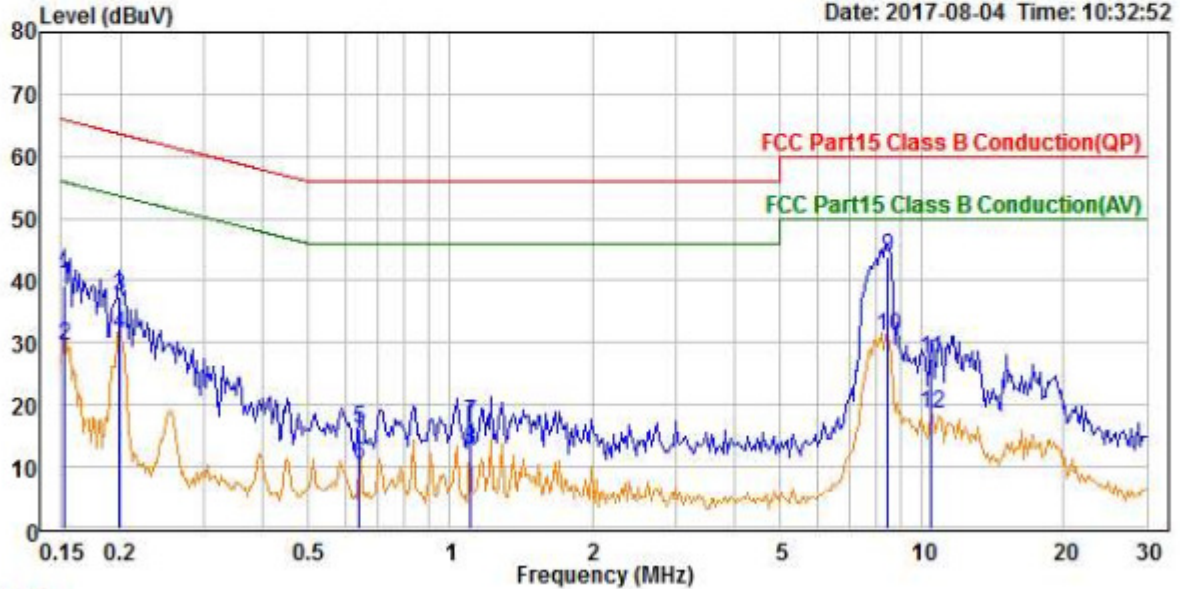
	Freq	Level	Read Level	LISN Factor	Cable Loss	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dB	dBuV	dB	
1	0.150	37.42	27.76	9.64	0.02	9.66	66.00	-28.58	QP
2	0.150	30.09	20.43	9.64	0.02	9.66	56.00	-25.91	Average
3	0.194	38.23	28.57	9.64	0.02	9.66	63.85	-25.62	QP
4	0.194	32.81	23.15	9.64	0.02	9.66	53.85	-21.04	Average
5	0.773	18.36	8.70	9.64	0.02	9.66	56.00	-37.64	QP
6	0.773	13.38	3.72	9.64	0.02	9.66	46.00	-32.62	Average
7	1.418	19.10	9.42	9.65	0.03	9.68	56.00	-36.90	QP
8	1.418	13.14	3.46	9.65	0.03	9.68	46.00	-32.86	Average
9	8.239	41.41	31.64	9.70	0.07	9.77	60.00	-18.59	QP
10	8.239	28.89	19.12	9.70	0.07	9.77	50.00	-21.11	Average
11	16.198	22.05	12.25	9.70	0.10	9.80	60.00	-37.95	QP
12	16.198	16.54	6.74	9.70	0.10	9.80	50.00	-33.46	Average





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Trace: 1

Site : Conduction room  
 Condition : FCC Part15 Class B Conduction(QP) neutral  
 Test Engineer: Kai Wang  
 Applicant : Nedap  
 Product : ASSY AD46R RF+MD  
 Model No. : Hybrid Lumen iL45  
 Test Rating : 240Vac/60Hz  
 Tmp/Hum : 26.1 °C / 45 %  
 Memo : (a) Normal operation  
 Remark : RF 8.2M + MD 125k

	Freq	Level	Read Level	LISN Factor	Cable Loss	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dB	dBuV	dB	
1	0.151	39.32	29.65	9.65	0.02	9.67	65.92	-26.60	QP
2	0.151	29.65	19.98	9.65	0.02	9.67	55.92	-26.27	Average
3	0.198	37.51	27.84	9.65	0.02	9.67	63.69	-26.18	QP
4	0.198	31.23	21.56	9.65	0.02	9.67	53.69	-22.46	Average
5	0.640	15.99	6.32	9.65	0.02	9.67	56.00	-40.01	QP
6	0.640	10.47	0.80	9.65	0.02	9.67	46.00	-35.53	Average
7	1.106	16.93	7.25	9.65	0.03	9.68	56.00	-39.07	QP
8	1.106	12.89	3.21	9.65	0.03	9.68	46.00	-33.11	Average
9	8.489	43.95	34.16	9.72	0.07	9.79	60.00	-16.05	QP
10	8.489	30.91	21.12	9.72	0.07	9.79	50.00	-19.09	Average
11	10.459	27.47	17.66	9.73	0.08	9.81	60.00	-32.53	QP
12	10.459	18.42	8.61	9.73	0.08	9.81	50.00	-31.58	Average