

Test Report No.50096491 001

Appendix D: Radiated and Mains Spurious Emission Data

(File: 50096491AppendixD)

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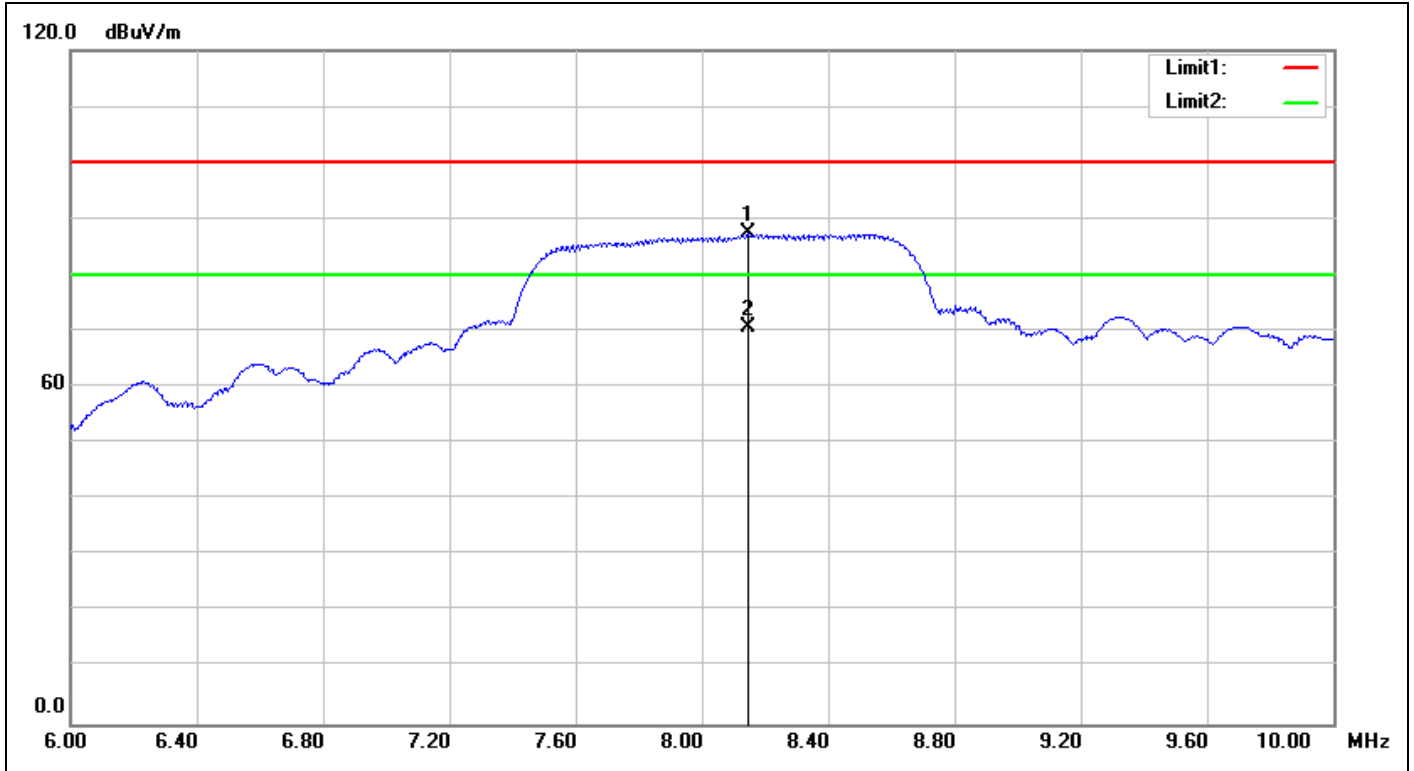
Emissions, Fundamental



TUV Rheinland Taiwan Ltd.

11F., No.758, Sec.4 Bade Road, Songshan Dist, Taipei City 105

Tel:+886-2172-7000 fax:+886-2528-0018



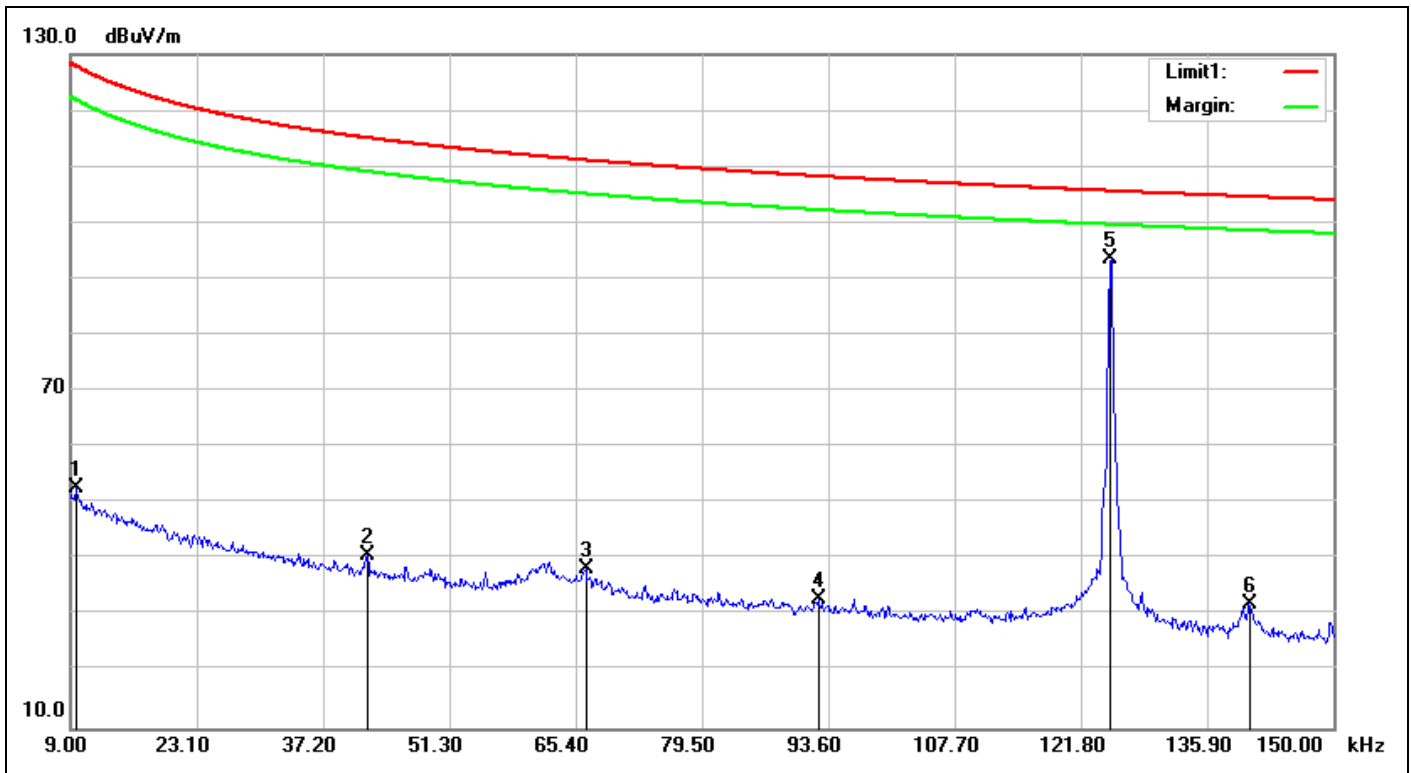
Service No.:	114067578-22(ASSY AD46R RF+MD)_FCC	Test Distance:	3m
Test Standard:	FCC 15.223_Fundmtl_PK_3m(dBuV/m)	Ant. Polarization:	
Test item:	Radiation Emission	Test Time:	2017/8/8 11:31:22
Applicant:	Nedap	Test Rating:	AC 120V/60Hz
Product:	Lumen iL45	Temp.(°C)/Hum.(%):	24.5(°C)/48%
Model No.:	ASSY AD46R RF+MD	Test Engineer:	Kai Wang
Test Mode:	7565k~8571.25k-Tx		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	8.1440	20.05	67.27	87.32	100.00	-12.68	peak	100	136	Tx
2	8.1440	20.05	50.54	70.59	80.00	-9.41	AVG	100	136	

Spurious Emissions, TX Mode, 9-150 kHz



TUV Rheinland Taiwan Ltd.
 11F., No.758, Sec.4 Bade Road, Songshan Dist, Taipei City 105
 Tel:+886-2172-7000 fax:+886-2528-0018



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

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	

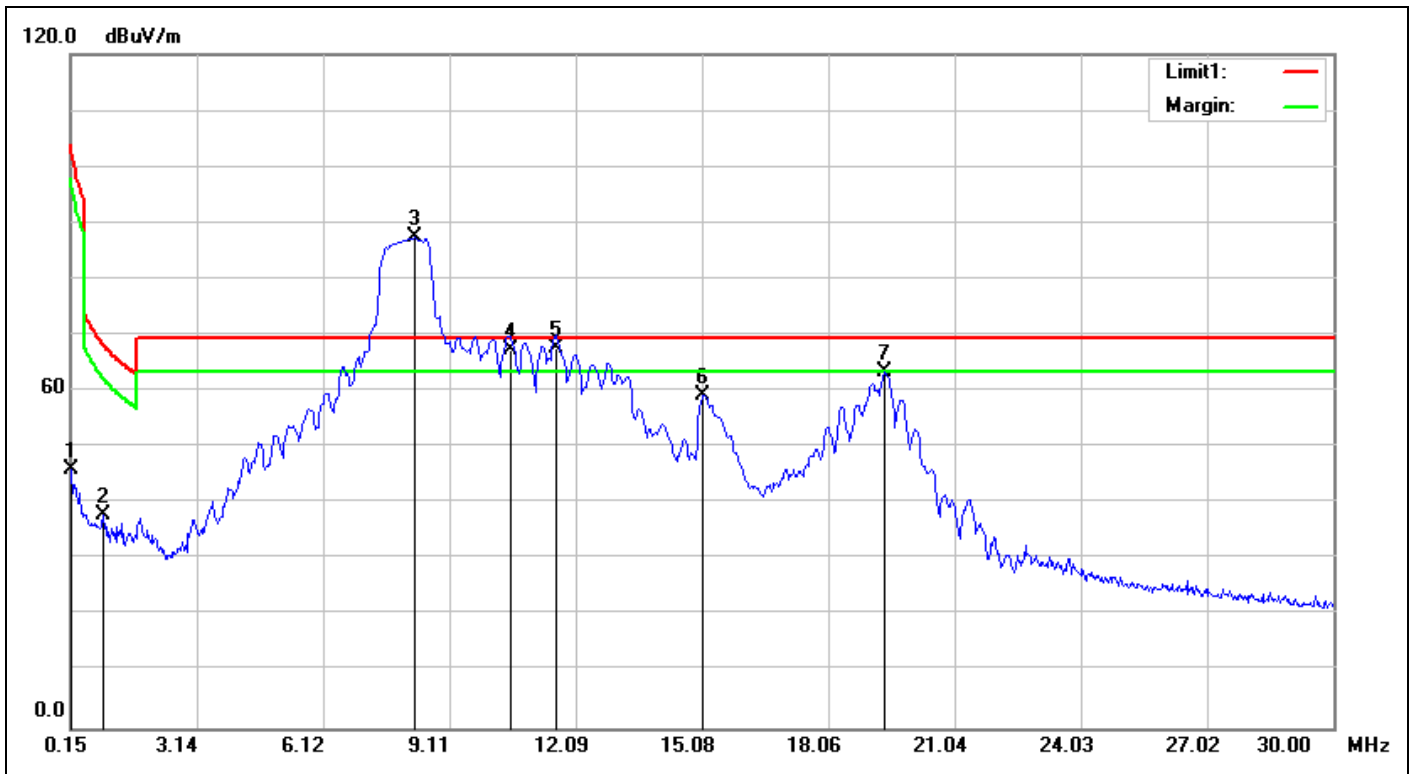
Spurious Emissions, TX Mode, 150 kHz -30MHz



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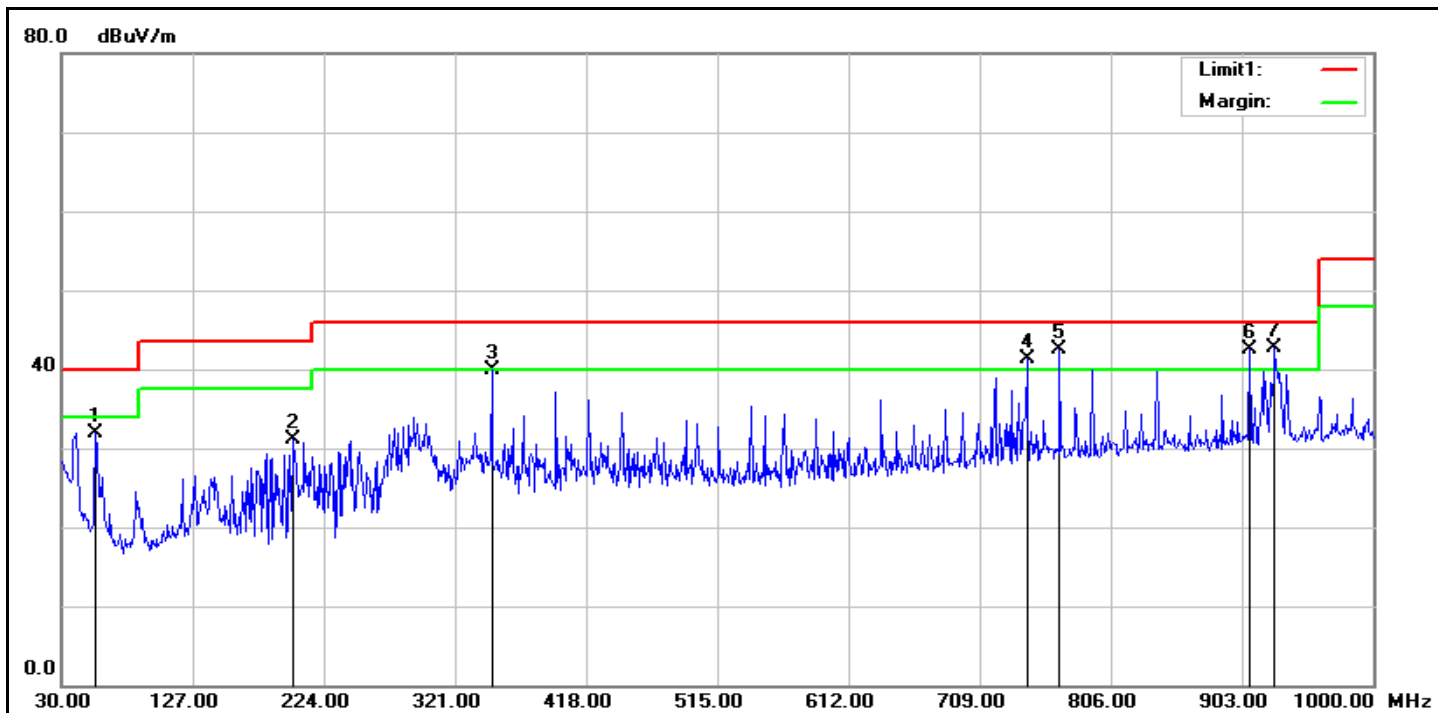
Tel:+886-2172-7000 fax:+886-2528-0018



Service No.:	114067578-22(ASSY AD46R RF+MD)_FCC	Test Distance:	3m
Test Standard:	FCC15.209_9k-1G_3m	Ant. Polarization:	
Test item:	Radiation Emission	Test Time:	2017/8/8 10:54:48
Applicant:	Nedap	Test Rating:	AC 120V/60Hz
Product:	Lumen iL45	Temp.(°C)/Hum.(%):	24.5(°C)/48%
Model No.:	ASSY AD46R RF+MD	Test Engineer:	Kai Wang
Test Mode:	125k-Tx		
Remark:			

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)

Test Standard: FCC Class B/C 3M Radiation Test Distance: 3m

Test item: Radiation Emission Ant. Polarization: Horizontal

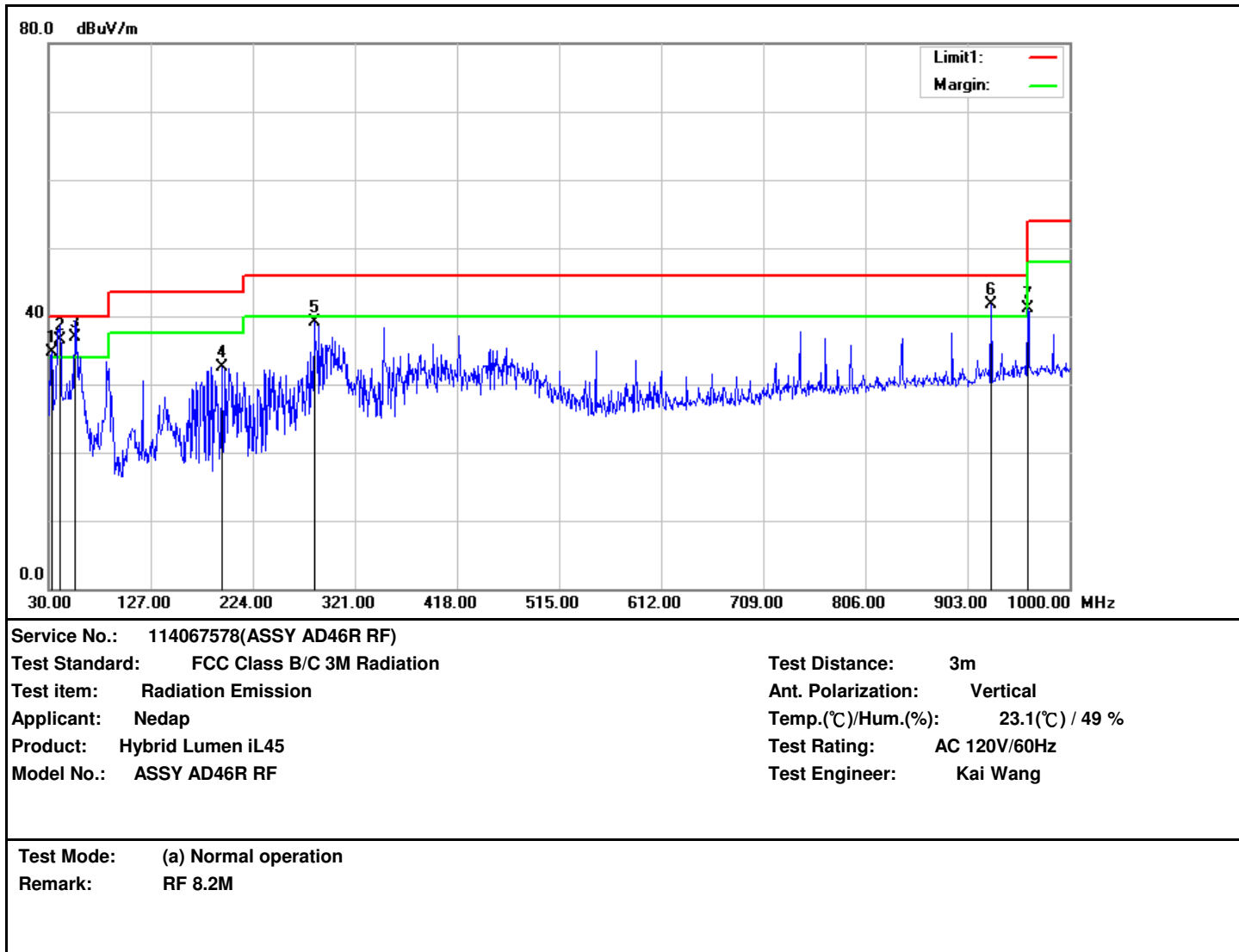
Applicant: Nedap Temp.(°C)/Hum.(%): 23.1(°C) / 49 %

Product: Hybrid Lumen iL45 Test Rating: AC 120V/60Hz

Test Mode: (a) Normal operation

Remark: RF 8.2M

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (°)	P/F	Remark
1	55.2200	-12.51	44.51	32.00	40.00	-8.00	QP	400	168	P	
2	200.7200	-8.90	40.03	31.13	43.50	-12.37	QP	100	280	P	
3	348.1600	-3.47	43.45	39.98	46.00	-6.02	QP	300	232	P	
4	743.9200	2.21	39.09	41.30	46.00	-4.70	QP	200	349	P	
5	768.1700	2.55	39.94	42.49	46.00	-3.51	QP	100	229	P	
6	908.8200	4.39	38.12	42.51	46.00	-3.49	QP	200	301	P	
7	927.2500	4.83	37.86	42.69	46.00	-3.31	QP	200	133	P	



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (°)	P/F	Remark
1	32.9100	-1.74	36.50	34.76	40.00	-5.24	QP	100	187	P	
2	40.6700	-6.17	42.67	36.50	40.00	-3.50	QP	100	162	P	
3	55.2200	-12.51	49.43	36.92	40.00	-3.08	QP	100	256	P	
4	194.9000	-9.26	41.83	32.57	43.50	-10.93	QP	100	336	P	
5	282.2000	-5.05	44.18	39.13	46.00	-6.87	QP	109	360	P	
6	925.3100	4.79	36.82	41.61	46.00	-4.39	QP	100	234	P	
7	960.2300	5.46	35.56	41.02	54.00	-12.98	QP	100	229	P	

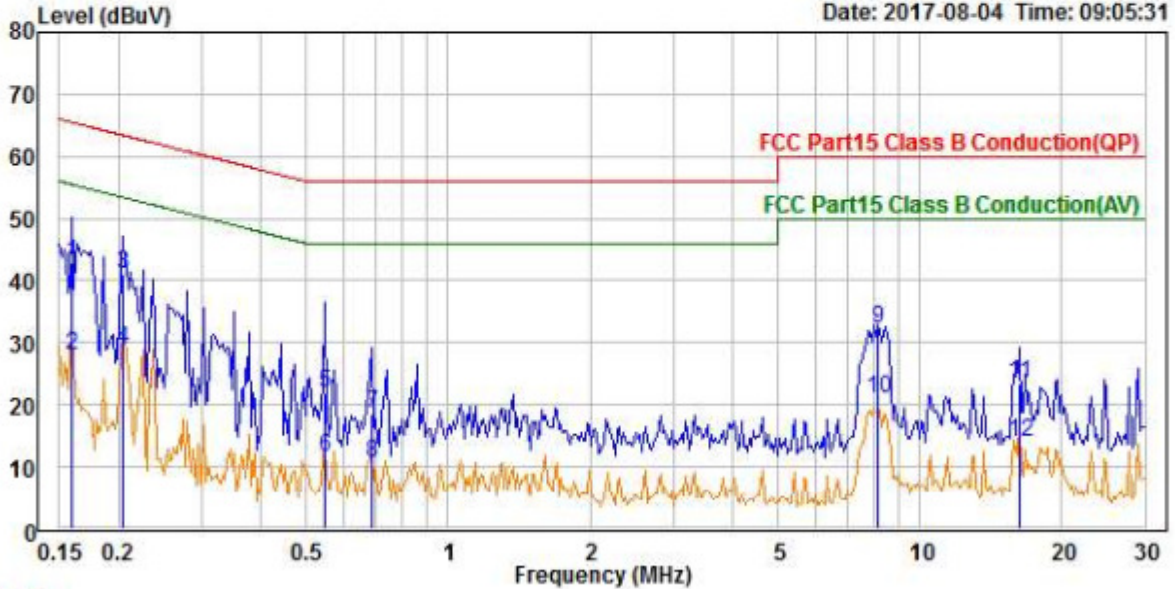
Mains Spurious Emissions



TUV Rheinland Taiwan Ltd.
 11F., No. 758, Sec. 4 Bade Road, Songshan Dist, Taipei City 105
 Tel:+886-2172-7000 Fax:+886-2528-0018

File: C:\EMC\Report\2017\Nedap\114067578(ASSY AD46R RF)\114067578(ASSY AD46R RF)_00001.EMI

Date: 2017-08-04 Time: 09:05:31



Trace: 1

Site : Conduction room
 Condition : FCC Part15 Class B Conduction(QP) line1
 Test Engineer: Kai Wang
 Applicant : Nedap
 Product : ASSY AD46R RF
 Model No. : Hybrid Lumen iL45
 Test Rating : 120Vac/60Hz
 Tmp/Hum : 25.7 °C / 42 %
 Memo : (a) Normal operation
 Remark : RF 8.2M

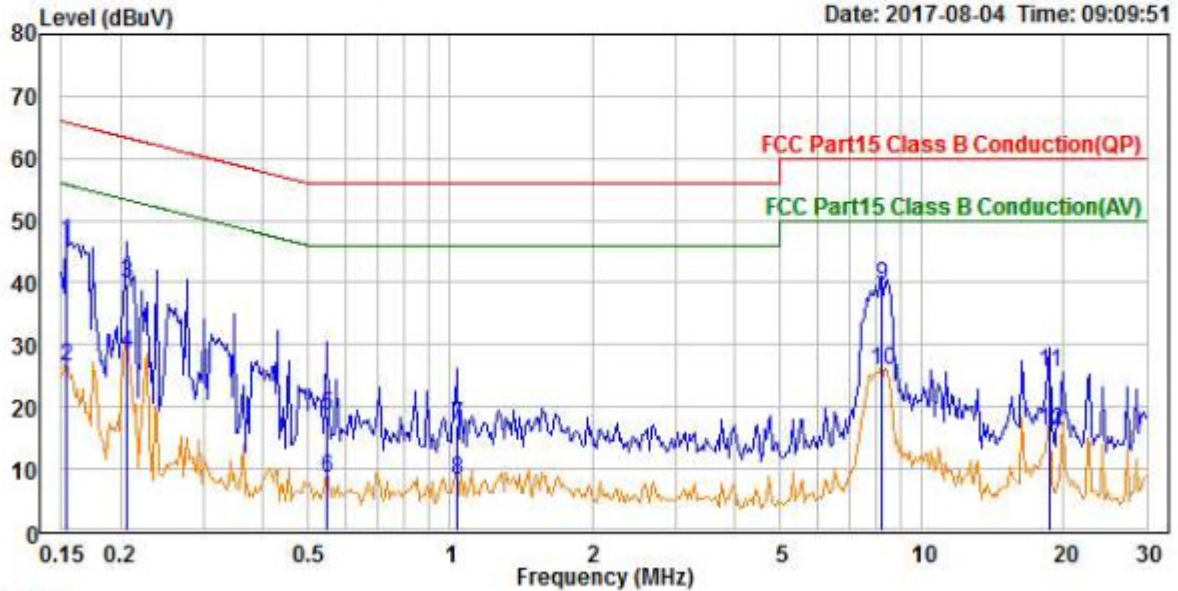
	Freq	Level	Read Level	LISN Factor	Cable Loss	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dB	dBuV	dB	
1	0.159	42.97	33.31	9.64	0.02	9.66	65.50	-22.53	QP
2	0.159	28.05	18.39	9.64	0.02	9.66	55.50	-27.45	Average
3	0.204	41.02	31.36	9.64	0.02	9.66	63.44	-22.42	QP
4	0.204	28.95	19.29	9.64	0.02	9.66	53.44	-24.49	Average
5	0.546	21.97	12.31	9.64	0.02	9.66	56.00	-34.03	QP
6	0.546	11.42	1.76	9.64	0.02	9.66	46.00	-34.58	Average
7	0.686	18.62	8.96	9.64	0.02	9.66	56.00	-37.38	QP
8	0.686	10.74	1.08	9.64	0.02	9.66	46.00	-35.26	Average
9	8.158	32.33	22.56	9.70	0.07	9.77	60.00	-27.67	QP
10	8.158	20.92	11.15	9.70	0.07	9.77	50.00	-29.08	Average
11	16.198	23.50	13.70	9.70	0.10	9.80	60.00	-36.50	QP
12	16.198	14.13	4.33	9.70	0.10	9.80	50.00	-35.87	Average



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 11F., No. 758, Sec. 4 Bade Road, Songshan Dist, Taipei City 105
 Tel:+886-2172-7000 Fax:+886-2528-0018

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Date: 2017-08-04 Time: 09:09:51



Trace: 1

Site : Conduction room
 Condition : FCC Part15 Class B Conduction(QP) neutral
 Test Engineer: Kai Wang
 Applicant : Nedap
 Product : ASSY AD46R RF
 Model No. : Hybrid Lumen iL45
 Test Rating : 120Vac/60Hz
 Tmp/Hum : 25.7 °C / 42 %
 Memo : (a) Normal operation
 Remark : RF 8.2M

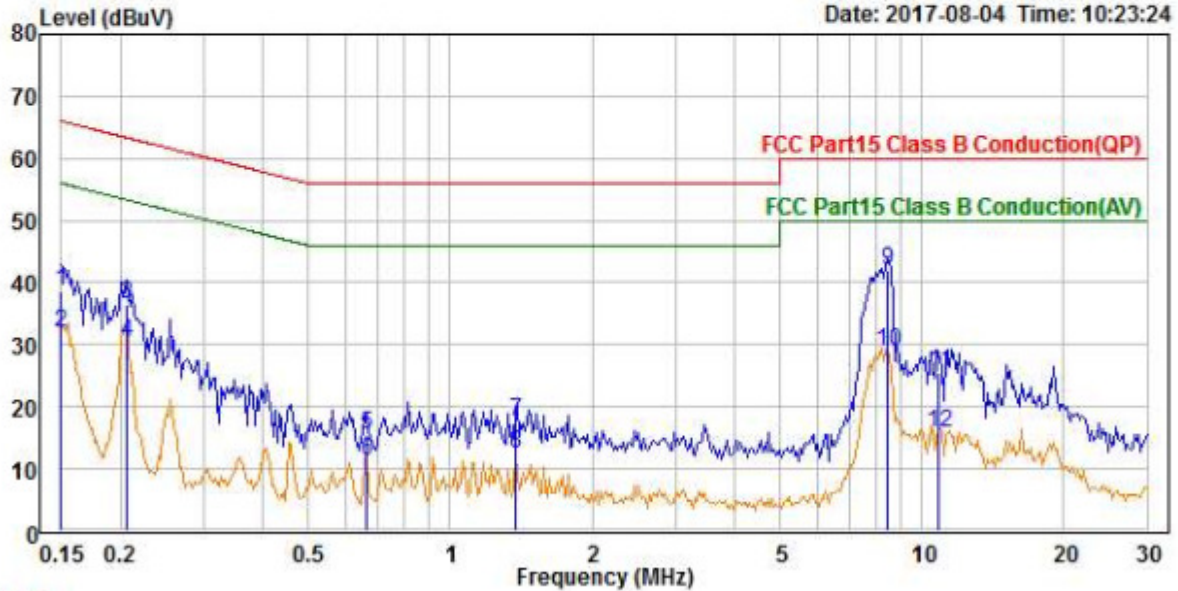
	Freq	Level	Read Level	LISN Factor	Cable Loss	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dB	dBuV	dB	
1	0.153	46.41	36.74	9.65	0.02	9.67	65.83	-19.42	QP
2	0.153	26.48	16.81	9.65	0.02	9.67	55.83	-29.35	Average
3	0.206	39.93	30.26	9.65	0.02	9.67	63.36	-23.43	QP
4	0.206	28.58	18.91	9.65	0.02	9.67	53.36	-24.78	Average
5	0.546	18.69	9.03	9.64	0.02	9.66	56.00	-37.31	QP
6	0.546	8.54	-1.12	9.64	0.02	9.66	46.00	-37.46	Average
7	1.032	17.17	7.49	9.65	0.03	9.68	56.00	-38.83	QP
8	1.032	8.36	-1.32	9.65	0.03	9.68	46.00	-37.64	Average
9	8.239	39.53	29.74	9.72	0.07	9.79	60.00	-20.47	QP
10	8.239	25.96	16.17	9.72	0.07	9.79	50.00	-24.04	Average
11	18.617	25.48	15.60	9.77	0.11	9.88	60.00	-34.52	QP
12	18.617	16.19	6.31	9.77	0.11	9.88	50.00	-33.81	Average



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 11F., No. 758, Sec. 4 Bade Road, Songshan Dist, Taipei City 105
 Tel:+886-2172-7000 Fax:+886-2528-0018

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Date: 2017-08-04 Time: 10:23:24



Trace: 1

Site : Conduction room
 Condition : FCC Part15 Class B Conduction(QP) line1
 Test Engineer: Kai Wang
 Applicant : Nedap
 Product : ASSY AD46R RF
 Model No. : Hybrid Lumen iL45
 Test Rating : 240Vac/60Hz
 Tmp/Hum : 25.7 °C / 42 %
 Memo : (a) Normal operation
 Remark : RF 8.2M

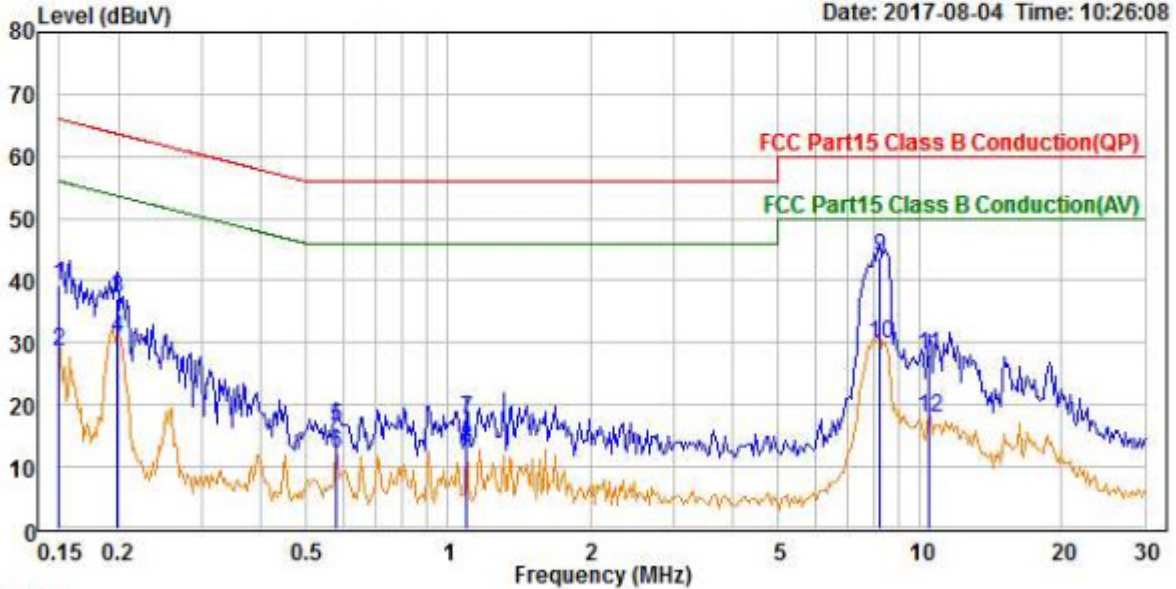
	Freq	Level	Read Level	LISN Factor	Cable Loss	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dB	dBuV	dB	
1	0.150	38.69	29.03	9.64	0.02	9.66	66.00	-27.31	QP
2	0.150	31.94	22.28	9.64	0.02	9.66	56.00	-24.06	Average
3	0.206	36.64	26.98	9.64	0.02	9.66	63.36	-26.72	QP
4	0.206	30.39	20.73	9.64	0.02	9.66	53.36	-22.97	Average
5	0.666	15.46	5.80	9.64	0.02	9.66	56.00	-40.54	QP
6	0.666	11.13	1.47	9.64	0.02	9.66	46.00	-34.87	Average
7	1.377	17.71	8.04	9.64	0.03	9.67	56.00	-38.29	QP
8	1.377	12.60	2.93	9.64	0.03	9.67	46.00	-33.40	Average
9	8.489	42.07	32.30	9.70	0.07	9.77	60.00	-17.93	QP
10	8.489	28.95	19.18	9.70	0.07	9.77	50.00	-21.05	Average
11	10.884	25.46	15.67	9.71	0.08	9.79	60.00	-34.54	QP
12	10.884	15.90	6.11	9.71	0.08	9.79	50.00	-34.10	Average



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 Tel:+886-2172-7000 Fax:+886-2528-0018

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Date: 2017-08-04 Time: 10:26:08



Trace: 1

Site : Conduction room
 Condition : FCC Part15 Class B Conduction(QP) neutral
 Test Engineer: Kai Wang
 Applicant : Nedap
 Product : ASSY AD46R RF
 Model No. : Hybrid Lumen iL45
 Test Rating : 240Vac/60Hz
 Tmp/Hum : 25.7 °C / 42 %
 Memo : (a) Normal operation
 Remark : RF 8.2M

	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	39.35	29.68	9.65	0.02	9.67	66.00	-26.65	QP
2	0.150	28.74	19.07	9.65	0.02	9.67	56.00	-27.26	Average
3	0.198	37.10	27.43	9.65	0.02	9.67	63.69	-26.59	QP
4	0.198	30.80	21.13	9.65	0.02	9.67	53.69	-22.89	Average
5	0.580	16.34	6.68	9.64	0.02	9.66	56.00	-39.66	QP
6	0.580	12.13	2.47	9.64	0.02	9.66	46.00	-33.87	Average
7	1.095	17.68	8.00	9.65	0.03	9.68	56.00	-38.32	QP
8	1.095	13.10	3.42	9.65	0.03	9.68	46.00	-32.90	Average
9	8.239	43.68	33.89	9.72	0.07	9.79	60.00	-16.32	QP
10	8.239	29.94	20.15	9.72	0.07	9.79	50.00	-20.06	Average
11	10.459	28.03	18.22	9.73	0.08	9.81	60.00	-31.97	QP
12	10.459	17.93	8.12	9.73	0.08	9.81	50.00	-32.07	Average