

Test Report No.50096221 001

Appendix D: Radiated and Mains Spurious Emission Data

(File: 50096221AppendixD)

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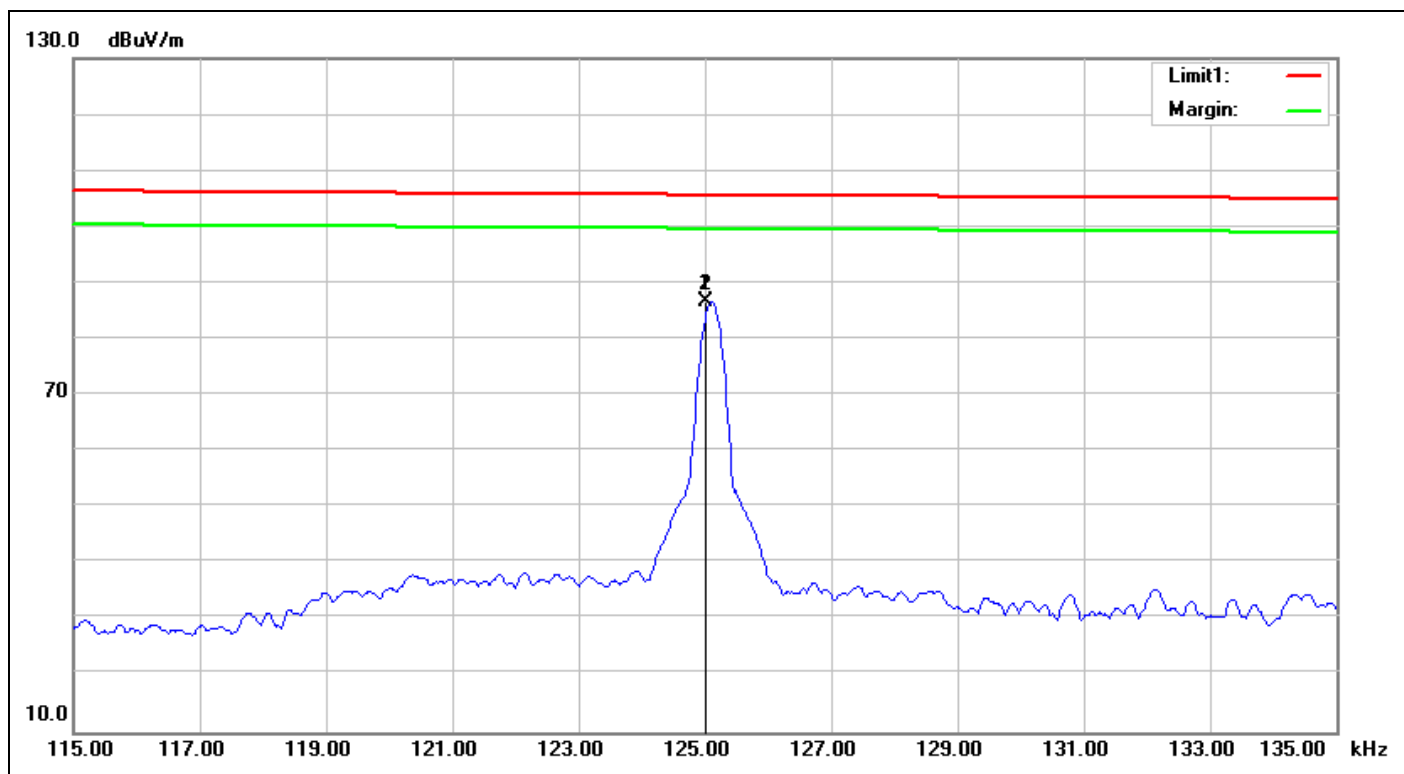
Emissions, Fundamental



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Service No.:	114067578-10(ASSY T325R RF+MD)	Test Distance:	3m
Test Standard:	FCC15.209_9k-1G_3m	Ant. Polarization:	
Test item:	Radiation Emission	Test Time:	2017/8/4 15:38:58
Applicant:	Nedap	Test Rating:	AC 120V/60Hz
Product:	Lumen iL33	Temp.(°C)/Hum.(%)	22.5(°C)/50%
Model No.:	ASSY T325R RF+MD	Test Engineer:	Kai Wang
Test Mode:	(a) Normal operation		
Remark:	125k-Tx		

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	67.53	86.64	105.66	-19.02	peak	100	254	Tx
2	0.1250	19.11	67.41	86.52	105.66	-19.14	AVG	100	254	

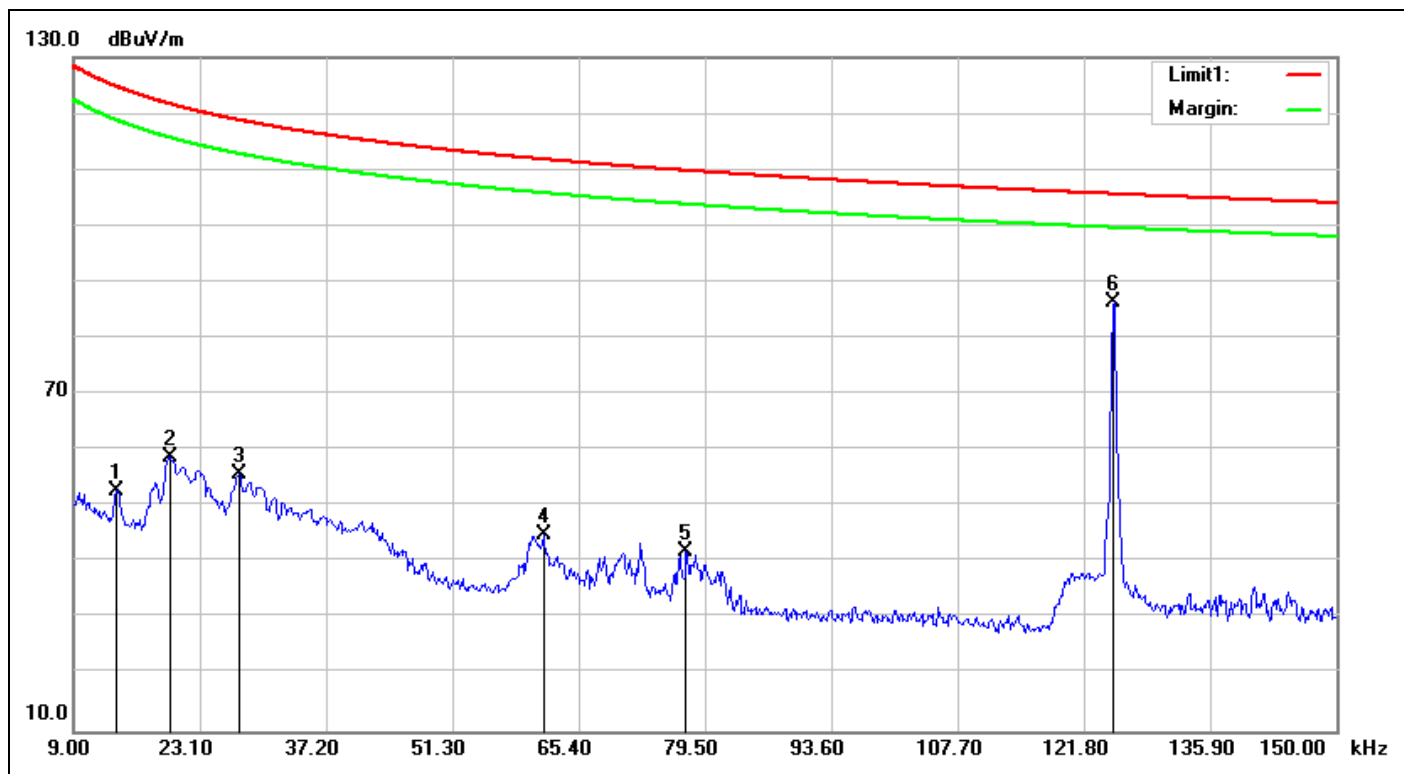
Spurious Emissions, TX Mode, 9-150 kHz



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Service No.: 114067578-10(ASSY T325R RF+MD)

Test Distance: 3m

Test Standard: FCC15.209_9k-1G_3m

Ant. Polarization:

Test item: Radiation Emission

Test Time: 2017/8/4 15:08:34

Applicant: Nedap

Test Rating: AC 120V/60Hz

Product: Lumen iL33

Temp.(°C)/Hum.(%): 22.5(°C)/50%

Model No.: ASSY T325R RF+MD

Test Engineer: Kai Wang

Test Mode: (a) Normal operation

Remark: 125k-Tx

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0138	19.97	32.85	52.82	124.79	-71.97	QP	100	178	
2	0.0197	20.03	38.85	58.88	121.70	-62.82	QP	100	132	
3	0.0275	20.11	35.63	55.74	118.80	-63.06	QP	100	110	
4	0.0615	19.36	25.63	44.99	111.82	-66.83	QP	100	157	
5	0.0774	19.27	22.62	41.89	109.82	-67.93	QP	100	204	
6	0.1250	19.11	67.39	86.50	105.66	-19.16	QP	100	254	Tx

Spurious Emissions, TX Mode 9-150 kHz

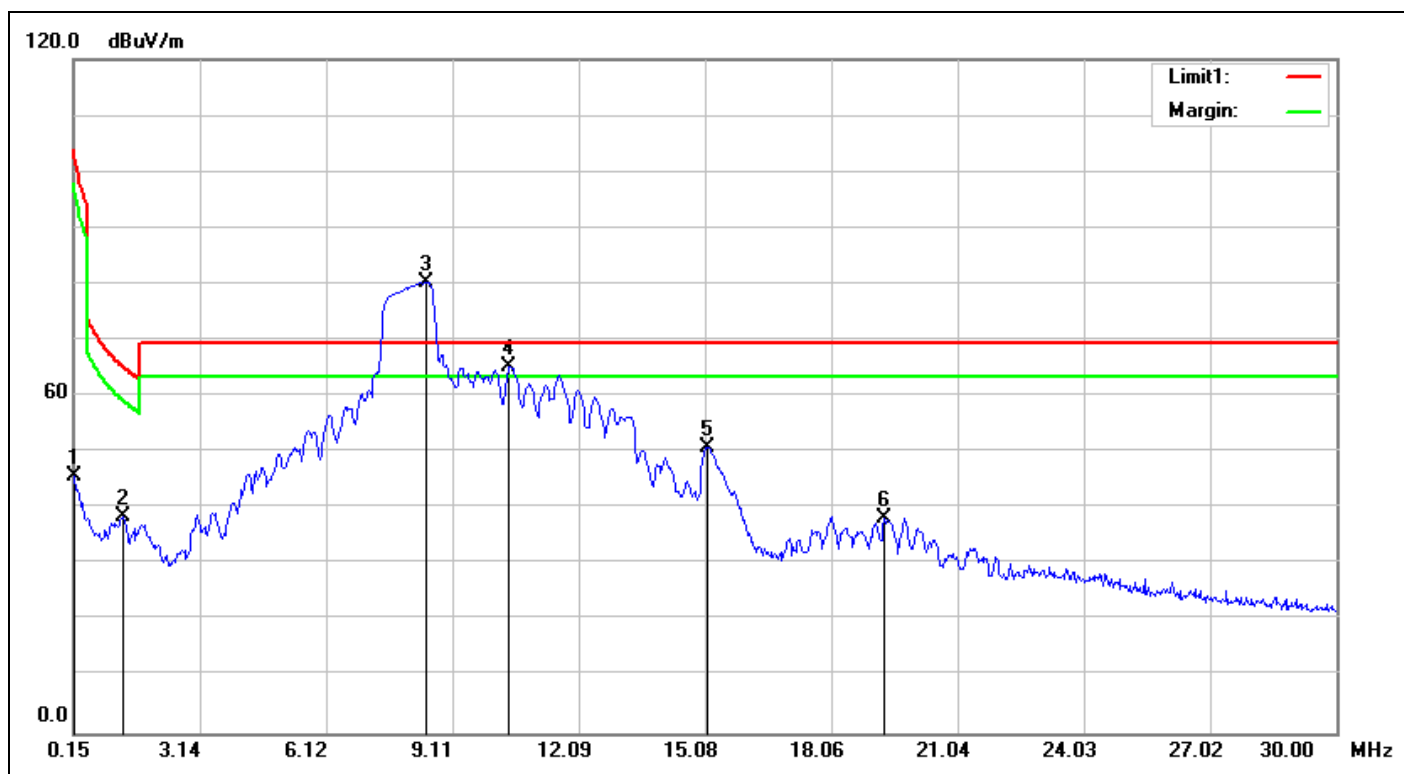
Spurious Emissions, TX Mode, 150 kHz -30MHz



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Service No.:	114067578-10(ASSY T325R RF+MD)	Test Distance:	3m
Test Standard:	FCC15.209_9k-1G_3m	Ant. Polarization:	
Test item:	Radiation Emission	Test Time:	2017/8/4 15:11:10
Applicant:	Nedap	Test Rating:	AC 120V/60Hz
Product:	Lumen iL33	Temp.(°C)/Hum.(%)	22.5(°C)/50%
Model No.:	ASSY T325R RF+MD	Test Engineer:	Kai Wang
Test Mode:	(a) Normal operation		
Remark:	125k-Tx		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.1799	19.06	26.82	45.88	102.50	-56.62	QP	100	205	
2	1.3142	18.91	19.66	38.57	65.25	-26.68	QP	100	198	
3	8.4782	20.08	60.20	80.28	69.50	10.78	QP	100	128	Tx
4	10.4483	20.30	45.01	65.31	69.50	-4.19	QP	100	247	
5	15.1347	21.12	29.86	50.98	69.50	-18.52	QP	100	318	
6	19.3137	21.86	16.36	38.22	69.50	-31.28	QP	100	165	

Spurious Emissions, TX Mode 150 kHz -30MHz

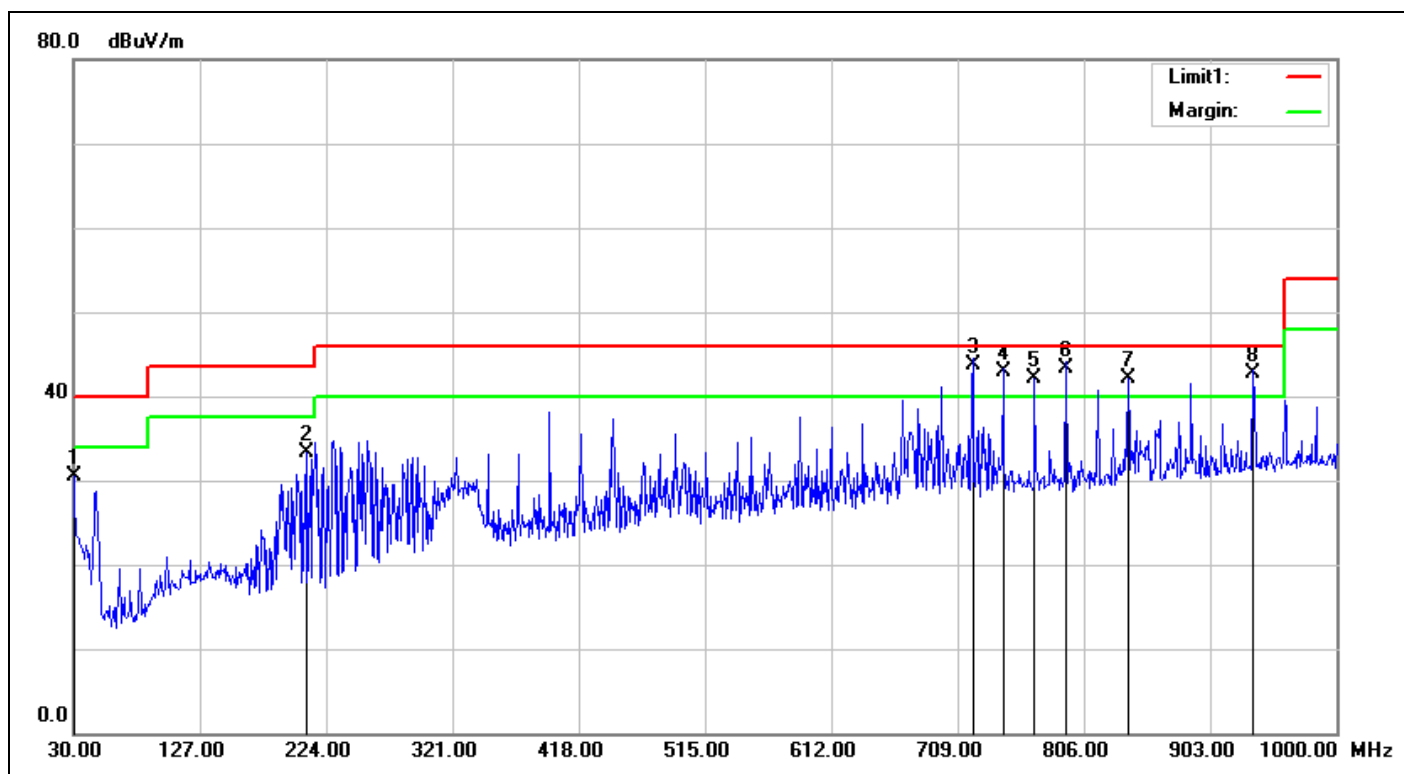
Spurious Emissions, TX Mode, 30MHz-1GHz



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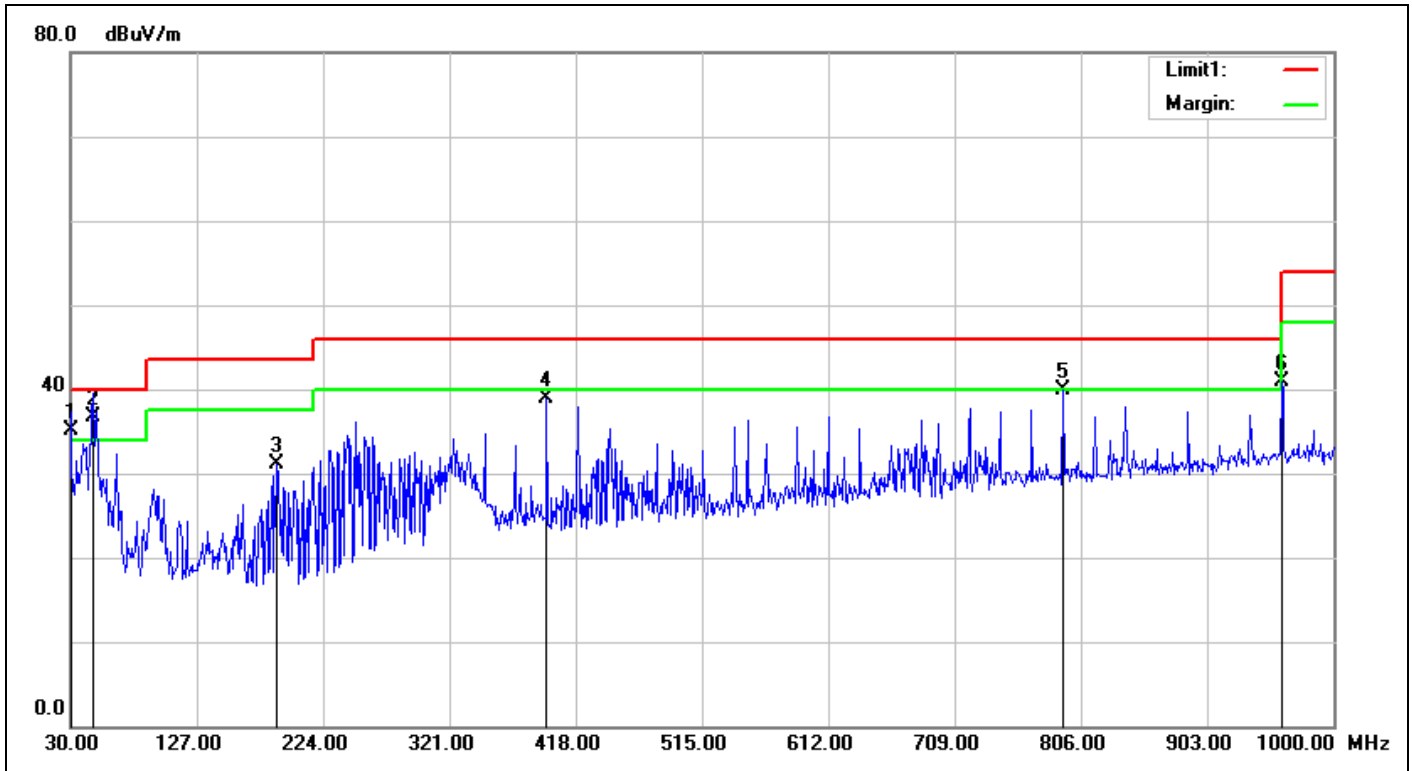
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Service No.:	114067578-10(ASSY T325R RF+MD)	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2017/8/4 16:14:57
Applicant:	Nedap	Test Rating:	AC 120V/60Hz
Product:	Lumen iL33	Temp.(°C)/Hum.(%)	22.5(°C)/50%
Model No.:	ASSY T325R RF+MD	Test Engineer:	Kai Wang
Test Mode:	(a) Normal operation		
Remark:	125k-Tx		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	-0.08	30.63	30.55	40.00	-9.45	QP	200	117	
2	209.4500	-8.59	41.81	33.22	43.50	-10.28	QP	200	34	
3	720.6400	1.61	42.09	43.70	46.00	-2.30	QP	100	299	
4	743.9200	2.21	40.69	42.90	46.00	-3.10	QP	100	251	
5	768.1700	2.55	39.51	42.06	46.00	-3.94	QP	100	259	
6	792.4200	2.78	40.62	43.40	46.00	-2.60	QP	100	264	
7	839.9500	3.55	38.56	42.11	46.00	-3.89	QP	100	89	
8	935.9800	5.04	37.76	42.80	46.00	-3.20	QP	100	133	

Spurious Emissions, TX Mode, 30M-1GHz

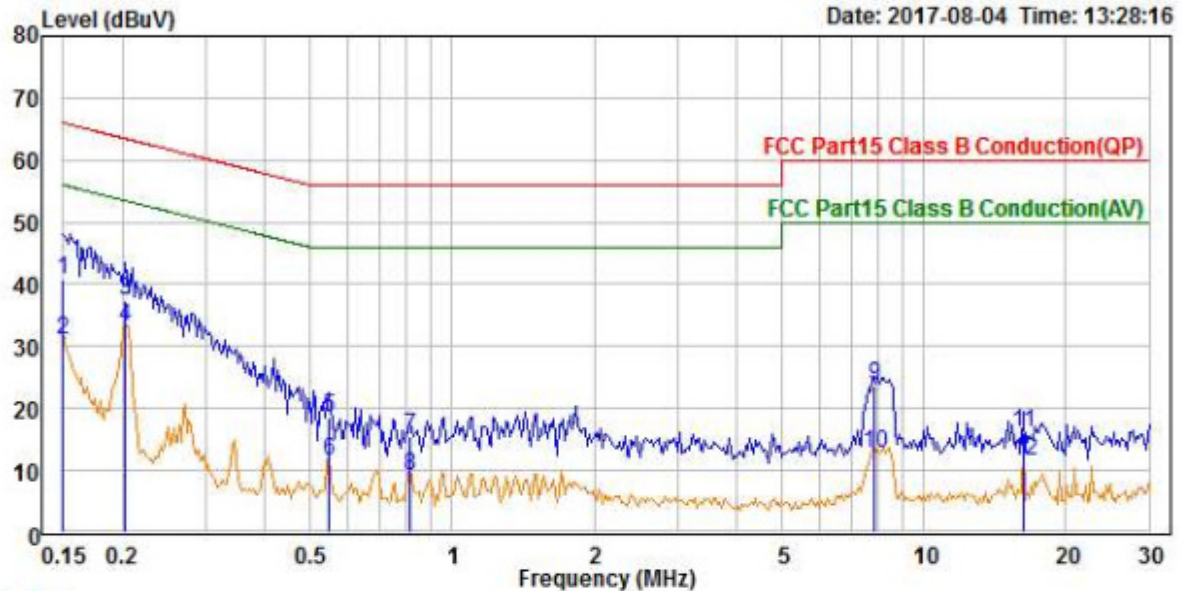


Service No.:	114067578-10(ASSY T325R RF+MD)	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2017/8/4 16:19:33
Applicant:	Nedap	Test Rating:	AC 120V/60Hz
Product:	Lumen iL33	Temp.(°C)/Hum.(%)	22.5(°C)/50%
Model No.:	ASSY T325R RF+MD	Test Engineer:	Kai Wang
Test Mode:	(a) Normal operation		
Remark:	125k-Tx		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	-0.08	35.18	35.10	40.00	-4.90	QP	100	160	
2	47.4600	-9.89	46.69	36.80	40.00	-3.20	QP	100	173	
3	188.1100	-9.60	40.61	31.01	43.50	-12.49	QP	100	248	
4	395.6900	-2.60	41.50	38.90	46.00	-7.10	QP	100	93	
5	792.4200	2.78	37.22	40.00	46.00	-6.00	QP	100	208	
6	960.2300	5.46	35.35	40.81	54.00	-13.19	QP	100	136	

Mains Spurious Emissions

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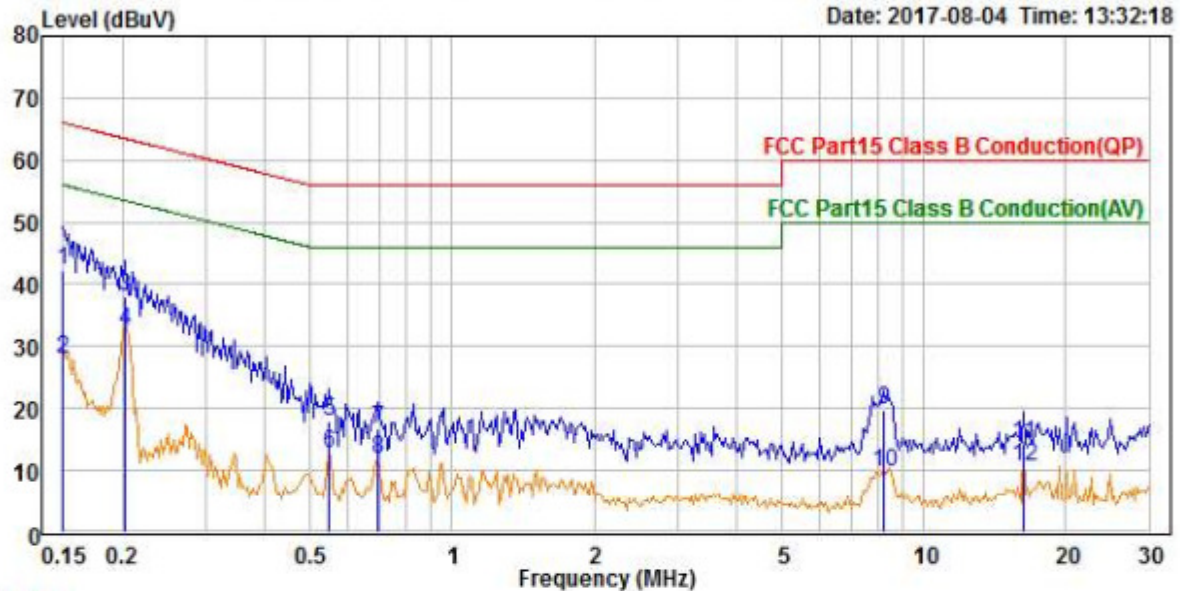


Trace: 1

Site : Conduction room
Condition : FCC Part15 Class B Conduction(QP) line1
Test Engineer: Kai Wang
Applicant : Nedap
Product : ASSY T325R RF+MD
Model No. : Lumen iL33
Test Rating : 120Vac/60Hz
Tmp/Hum : 21.1 °C / 45 %
Memo : (a) Normal operation
Remark : Metal + RF Tag

	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	40.91	31.25	9.64	0.02	9.66	66.00	-25.09	QP
2	0.150	31.05	21.39	9.64	0.02	9.66	56.00	-24.95	Average
3	0.202	37.46	27.80	9.64	0.02	9.66	63.52	-26.06	QP
4	0.202	33.01	23.35	9.64	0.02	9.66	53.52	-20.51	Average
5	0.546	18.70	9.04	9.64	0.02	9.66	56.00	-37.30	QP
6	0.546	11.58	1.92	9.64	0.02	9.66	46.00	-34.42	Average
7	0.813	15.53	5.87	9.64	0.02	9.66	56.00	-40.47	QP
8	0.813	9.14	-0.52	9.64	0.02	9.66	46.00	-36.86	Average
9	7.840	23.84	14.07	9.70	0.07	9.77	60.00	-36.16	QP
10	7.840	12.84	3.07	9.70	0.07	9.77	50.00	-37.16	Average
11	16.198	16.17	6.37	9.70	0.10	9.80	60.00	-43.83	QP
12	16.198	11.62	1.82	9.70	0.10	9.80	50.00	-38.38	Average

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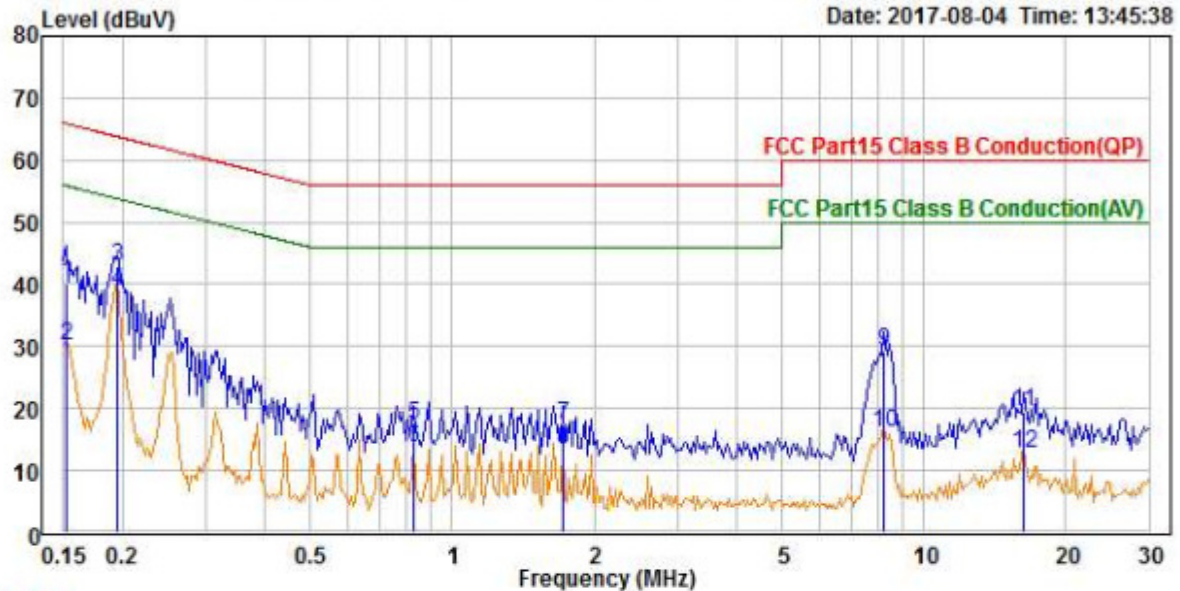


Trace: 1

Site : Conduction room
Condition : FCC Part15 Class B Conduction(QP) neutral
Test Engineer: Kai Wang
Applicant : Nedap
Product : ASSY T325R RF+MD
Model No. : Lumen iL33
Test Rating : 120Vac/60Hz
Tmp/Hum : 21.1 °C / 45 %
Memo : (a) Normal operation
Remark : Metal + RF Tag

	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	42.38	32.71	9.65	0.02	9.67	66.00	-23.62	QP
2	0.150	28.09	18.42	9.65	0.02	9.67	56.00	-27.91	Average
3	0.202	37.97	28.30	9.65	0.02	9.67	63.52	-25.55	QP
4	0.202	32.61	22.94	9.65	0.02	9.67	53.52	-20.91	Average
5	0.546	17.84	8.18	9.64	0.02	9.66	56.00	-38.16	QP
6	0.546	12.79	3.13	9.64	0.02	9.66	46.00	-33.21	Average
7	0.693	16.60	6.93	9.65	0.02	9.67	56.00	-39.40	QP
8	0.693	11.89	2.22	9.65	0.02	9.67	46.00	-34.11	Average
9	8.239	19.64	9.85	9.72	0.07	9.79	60.00	-40.36	QP
10	8.239	9.78	-0.01	9.72	0.07	9.79	50.00	-40.22	Average
11	16.198	14.38	4.52	9.76	0.10	9.86	60.00	-45.62	QP
12	16.198	10.58	0.72	9.76	0.10	9.86	50.00	-39.42	Average

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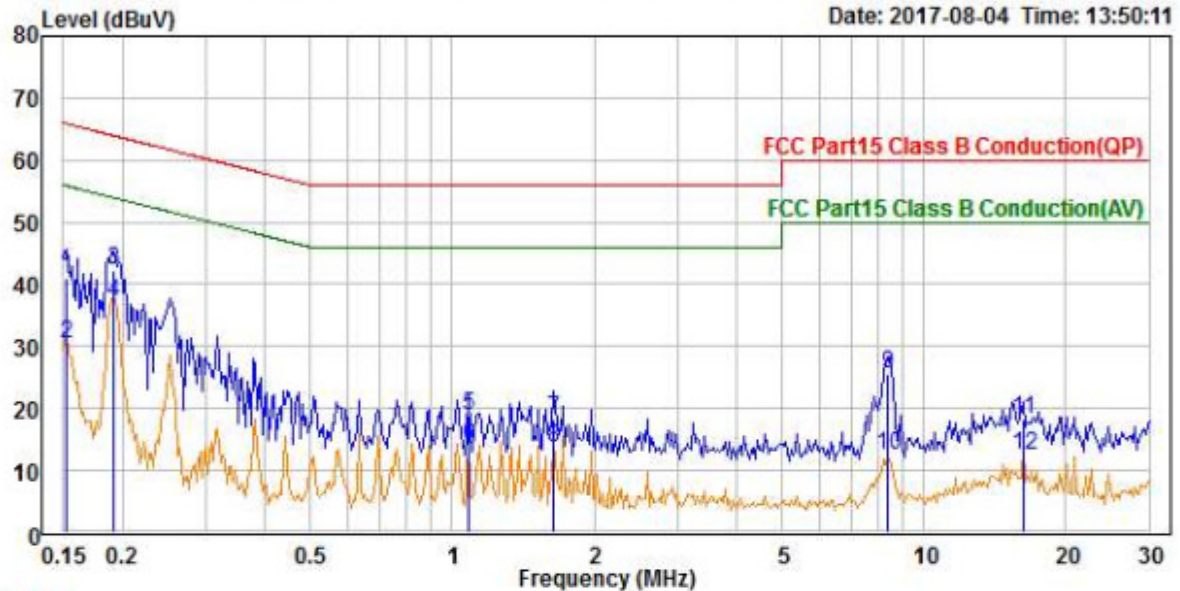


Trace: 1

Site : Conduction room
Condition : FCC Part15 Class B Conduction(QP) line1
Test Engineer: Kai Wang
Applicant : Nedap
Product : ASSY T325R RF+MD
Model No. : Lumen iL33
Test Rating : 240Vac/60Hz
Tmp/Hum : 21.1 °C / 45 %
Memo : (a) Normal operation
Remark : Metal + RF Tag

	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	40.29	30.63	9.64	0.02	9.66	65.92	-25.63	QP
2	0.151	29.98	20.32	9.64	0.02	9.66	55.92	-25.94	Average
3	0.194	42.94	33.28	9.64	0.02	9.66	63.85	-20.91	QP
4	0.194	38.81	29.15	9.64	0.02	9.66	53.85	-15.04	Average
5	0.829	17.19	7.53	9.64	0.02	9.66	56.00	-38.81	QP
6	0.829	13.60	3.94	9.64	0.02	9.66	46.00	-32.40	Average
7	1.713	17.42	7.73	9.65	0.04	9.69	56.00	-38.58	QP
8	1.713	13.43	3.74	9.65	0.04	9.69	46.00	-32.57	Average
9	8.239	29.10	19.33	9.70	0.07	9.77	60.00	-30.90	QP
10	8.239	16.21	6.44	9.70	0.07	9.77	50.00	-33.79	Average
11	16.198	19.56	9.76	9.70	0.10	9.80	60.00	-40.44	QP
12	16.198	12.73	2.93	9.70	0.10	9.80	50.00	-37.27	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 T325R RF+MD
Model No. : Lumen iL33
Test Rating : 240Vac/60Hz
Tmp/Hum : 21.1 °C / 45 %
Memo : (a) Normal operation
Remark : Metal + RF Tag

	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	41.18	31.51	9.65	0.02	9.67	65.92	-24.74	QP
2	0.151	30.31	20.64	9.65	0.02	9.67	55.92	-25.61	Average
3	0.192	42.15	32.48	9.65	0.02	9.67	63.94	-21.79	QP
4	0.192	37.01	27.34	9.65	0.02	9.67	53.94	-16.93	Average
5	1.084	18.77	9.09	9.65	0.03	9.68	56.00	-37.23	QP
6	1.084	13.89	4.21	9.65	0.03	9.68	46.00	-32.11	Average
7	1.646	18.40	8.70	9.66	0.04	9.70	56.00	-37.60	QP
8	1.646	13.73	4.03	9.66	0.04	9.70	46.00	-32.27	Average
9	8.405	25.47	15.68	9.72	0.07	9.79	60.00	-34.53	QP
10	8.405	12.42	2.63	9.72	0.07	9.79	50.00	-37.58	Average
11	16.198	18.31	8.45	9.76	0.10	9.86	60.00	-41.69	QP
12	16.198	12.43	2.57	9.76	0.10	9.86	50.00	-37.57	Average