

Test Report No.50078317 001

Appendix D: Radiated and Mains Spurious Emission Data

(File: 50078317AppendixD)

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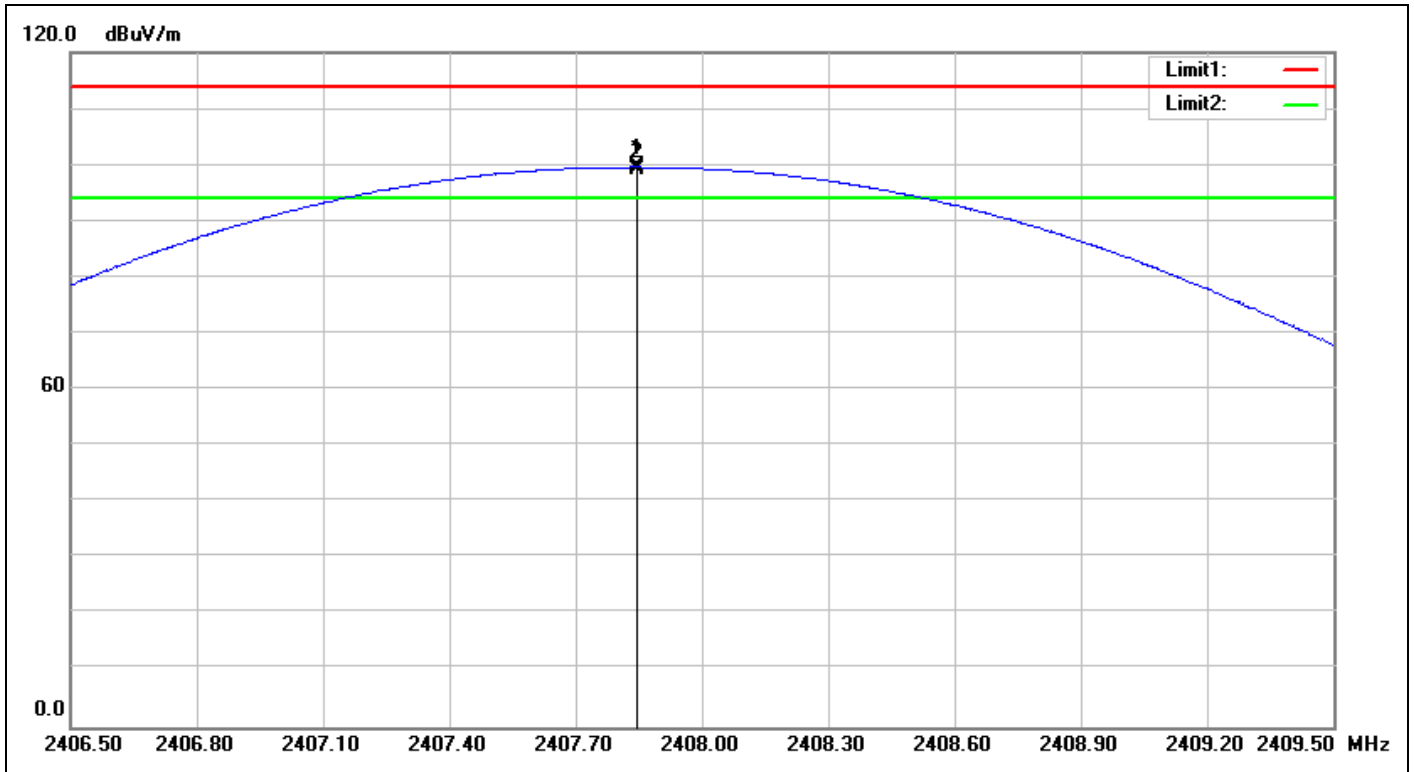
Radiated Emissions, Fundamental and Band Edges



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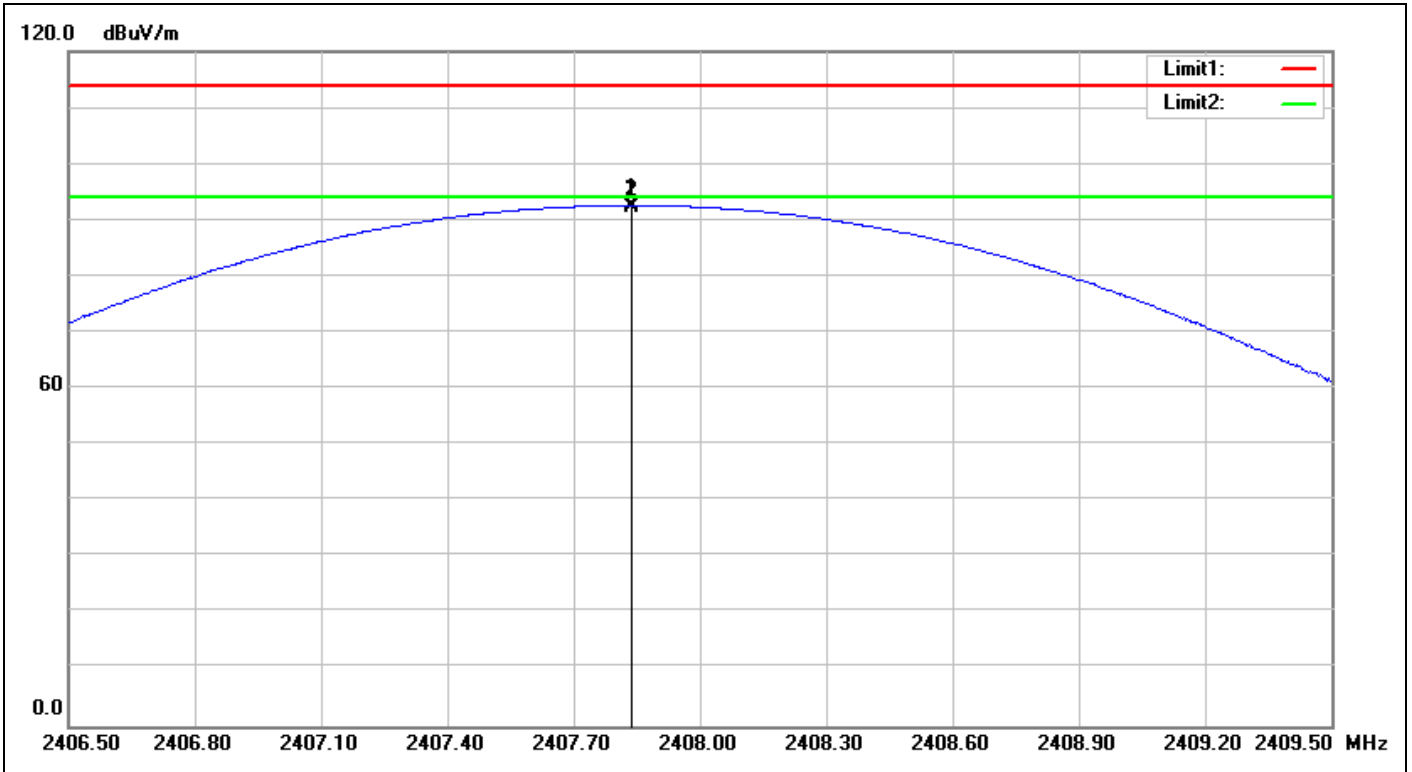
Tel:+886-2172-7000 fax:+886-2528-0018



Service No.:	114061321	Test Distance:	3m
Test Standard:	FCC 15.249_2.4-2.5G_3m PK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2017/3/15 10:26:01
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Luxon IoT Node for wireless control of luminaires operating on 2.45 GHz	Temp.(°C)/Hum.(%):	19.5(°C)/58%
Model No.:	99844976	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	2408-TX X		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	2407.847	-7.97	107.59	99.62	114.00	-14.38	peak	100	146	
2	2407.847	-7.97	107.22	99.25	94.00	5.25	AVG	100	146	

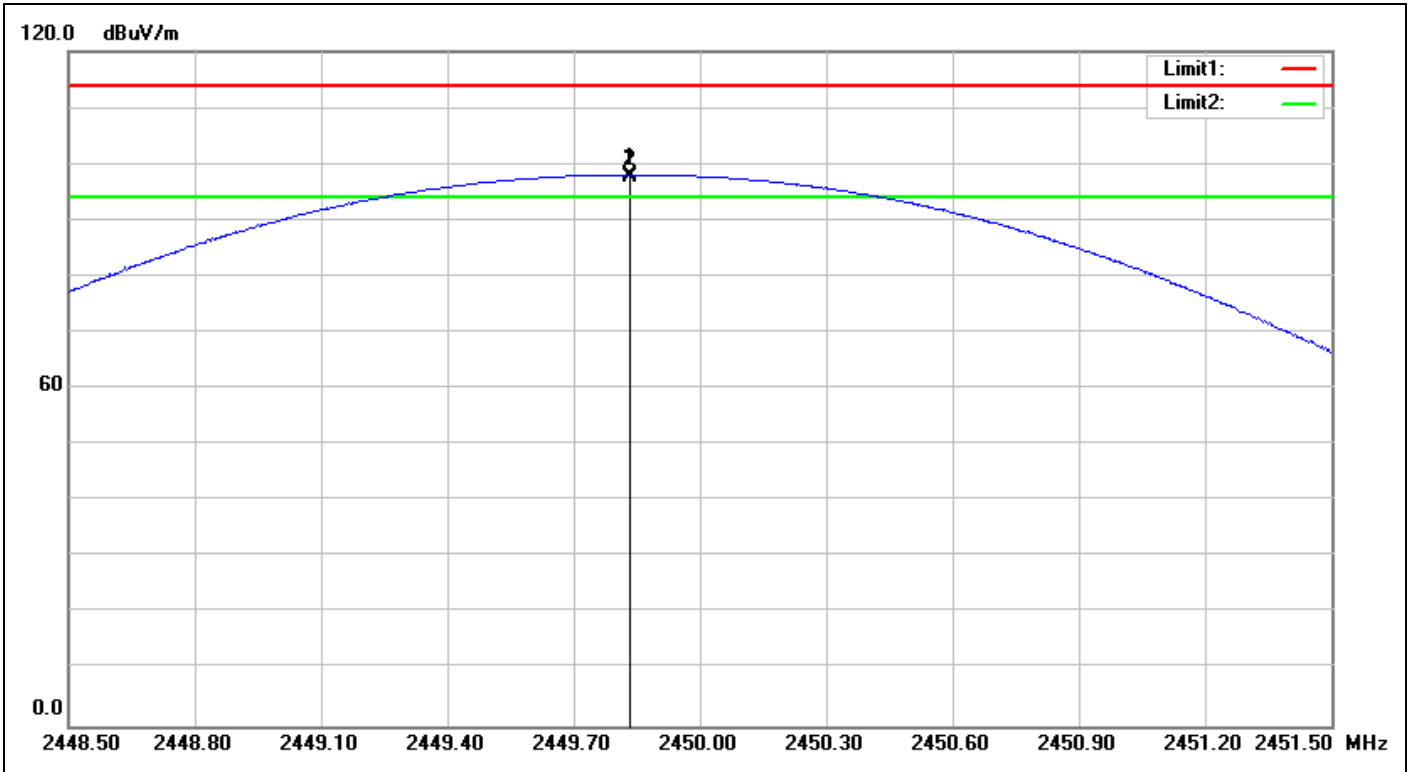
Remark: Duty Factor= -42.62, thus, the average result would be 57dBuV/m



Service No.:	114061321	Test Distance:	3m
Test Standard:	FCC 15.249_2.4-2.5G_3m PK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2017/3/15 10:27:04
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Luxon IoT Node for wireless control of luminaires operating on 2.45 GHz	Temp.(°C)/Hum.(%):	19.5(°C)/58%
Model No.:	99844976	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	2408-TX X		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	2407.838	-7.97	100.59	92.62	114.00	-21.38	peak	100	123	
2	2407.838	-7.97	100.10	92.13	94.00	-1.87	AVG	100	123	

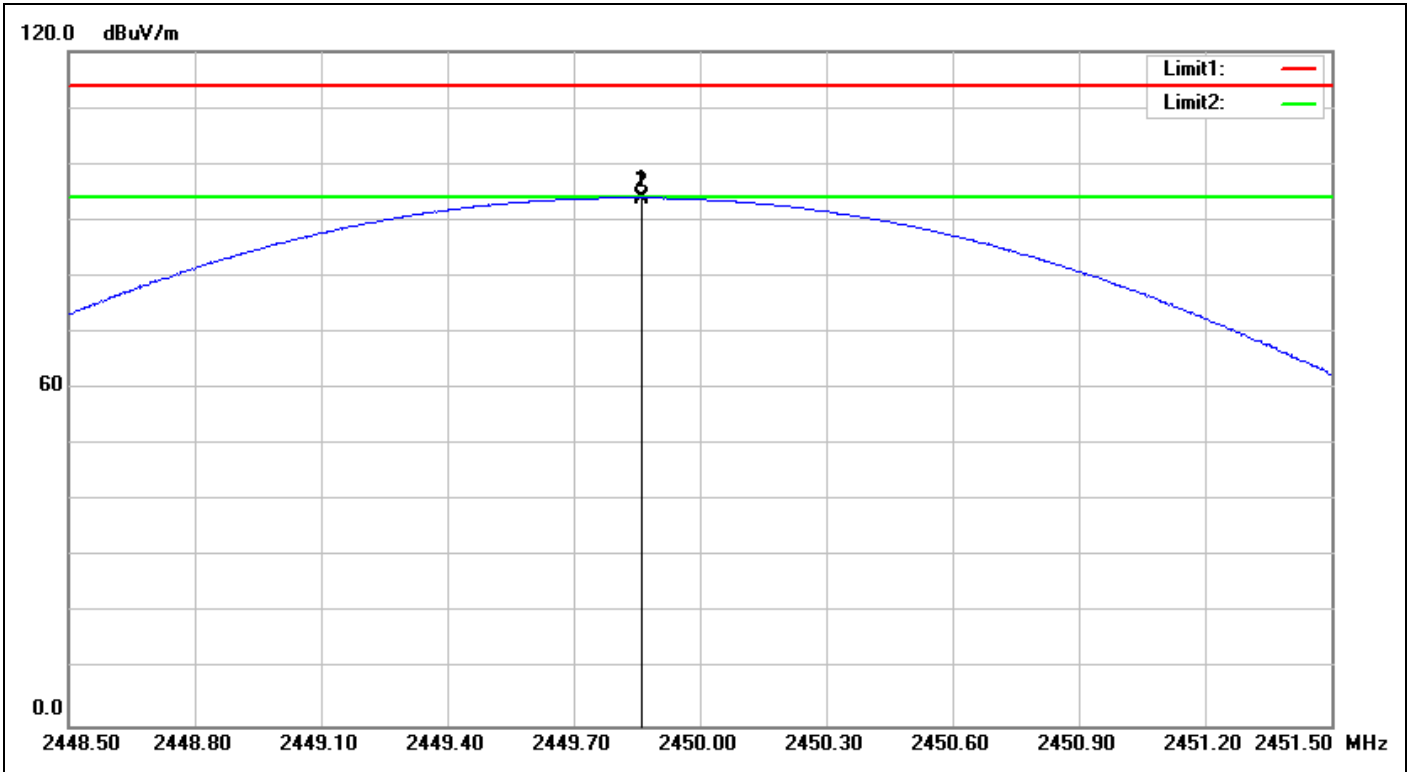
Remark: Duty Factor= -42.62, thus, the average result would be 50dBuV/m



Service No.:	114061321	Test Distance:	3m
Test Standard:	FCC 15.249_2.4-2.5G_3m PK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2017/3/15 10:58:22
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Luxon IoT Node for wireless control of luminaires operating on 2.45 GHz	Temp.(°C)/Hum.(%):	20.3(°C)/52%
Model No.:	99844976	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	2450-TX		
	X		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	2449.832	-7.94	105.99	98.05	114.00	-15.95	peak	100	236	
2	2449.832	-7.94	105.64	97.70	94.00	3.70	AVG	100	236	

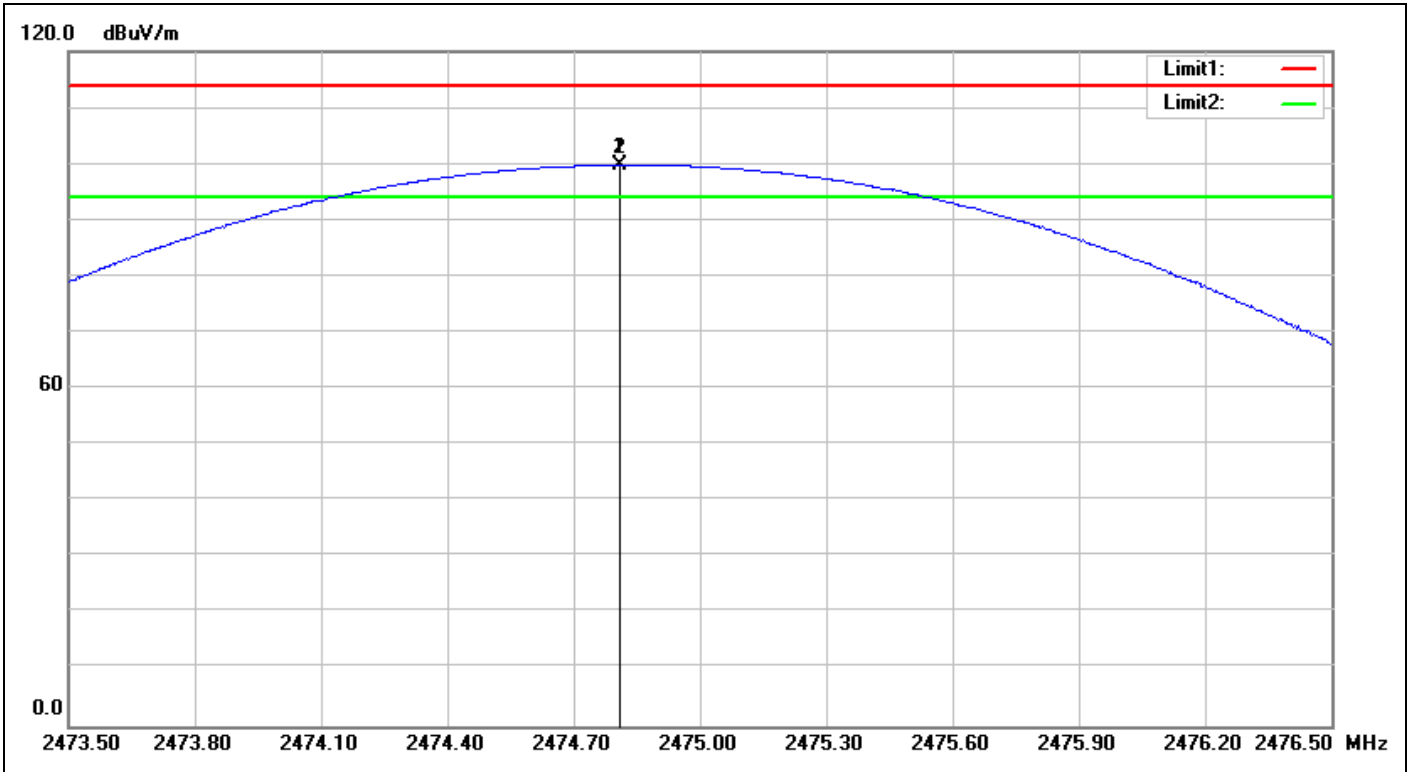
Remark: Duty Factor= -42.62, thus, the average result would be 55.43dBuV/m



Service No.:	114061321	Test Distance:	3m
Test Standard:	FCC 15.249_2.4-2.5G_3m PK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2017/3/15 10:59:25
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Luxon IoT Node for wireless control of luminaires operating on 2.45 GHz	Temp.(°C)/Hum.(%):	20.3(°C)/52%
Model No.:	99844976	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	2450-TX		
	X		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	2449.862	-7.94	101.91	93.97	114.00	-20.03	peak	100	182	
2	2449.862	-7.94	101.80	93.86	94.00	-0.14	AVG	100	182	

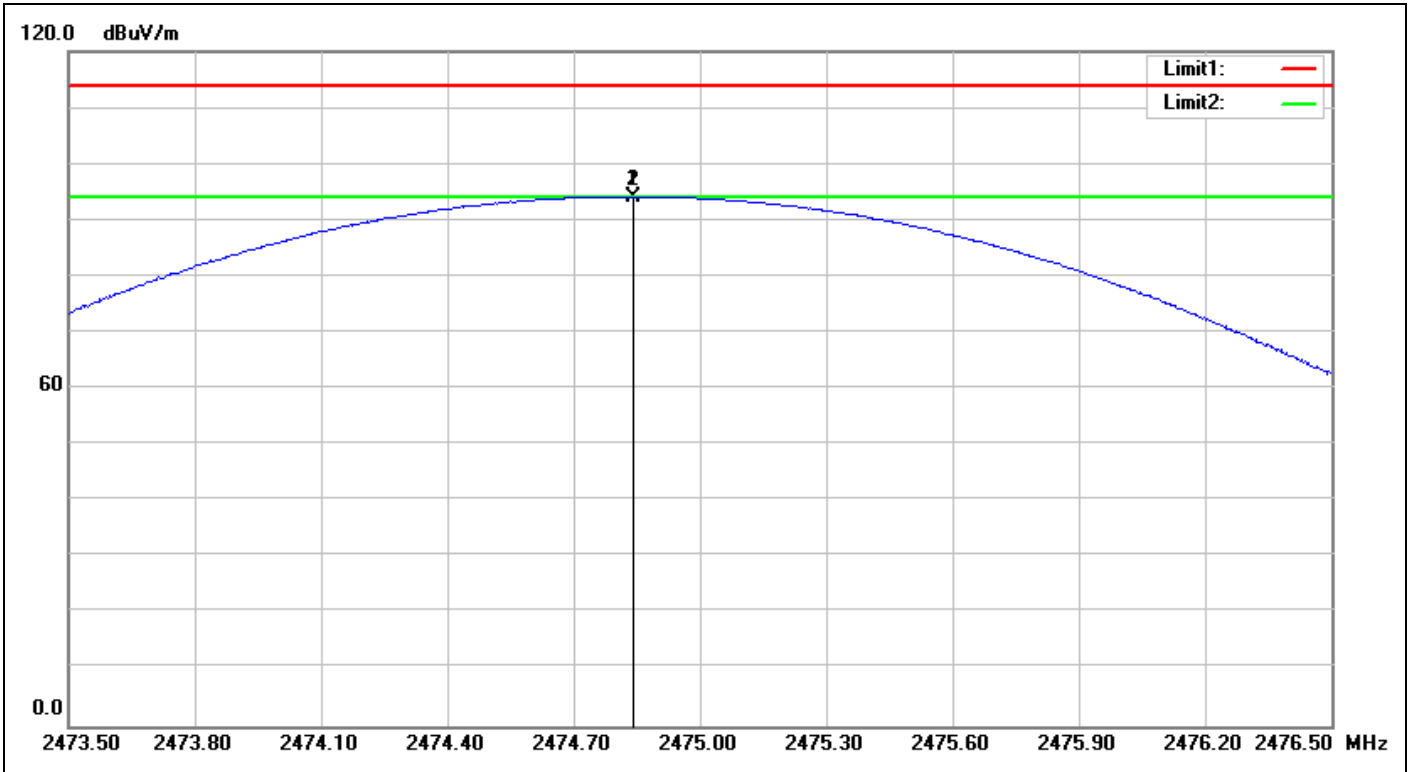
Remark: Duty Factor= -42.62, thus, the average result would be 51.35dBuV/m



Service No.:	114061321	Test Distance:	3m
Test Standard:	FCC 15.249_2.4-2.5G_3m PK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2017/3/15 11:18:52
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Luxon IoT Node for wireless control of luminaires operating on 2.45 GHz	Temp.(°C)/Hum.(%):	20.3(°C)/52%
Model No.:	99844976	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	2475-TX X		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	2474.811	-7.94	107.74	99.80	114.00	-14.20	peak	100	244	
2	2474.811	-7.94	107.74	99.80	94.00	5.80	AVG	100	244	

Remark: Duty Factor= -42.62, thus, the average result would be 57.18dBuV/m



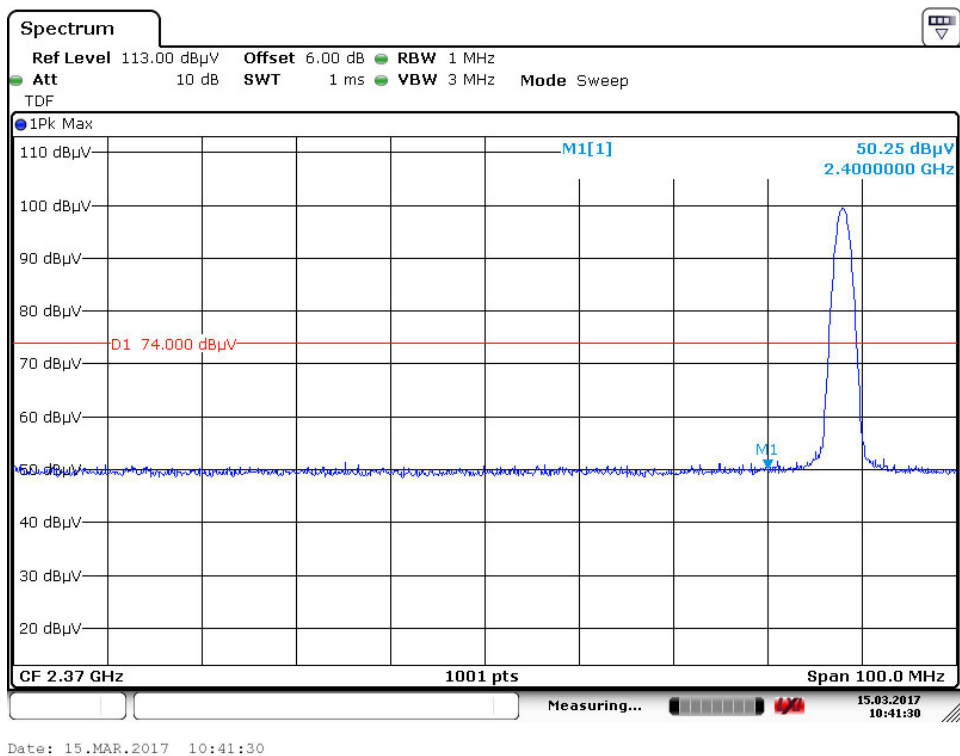
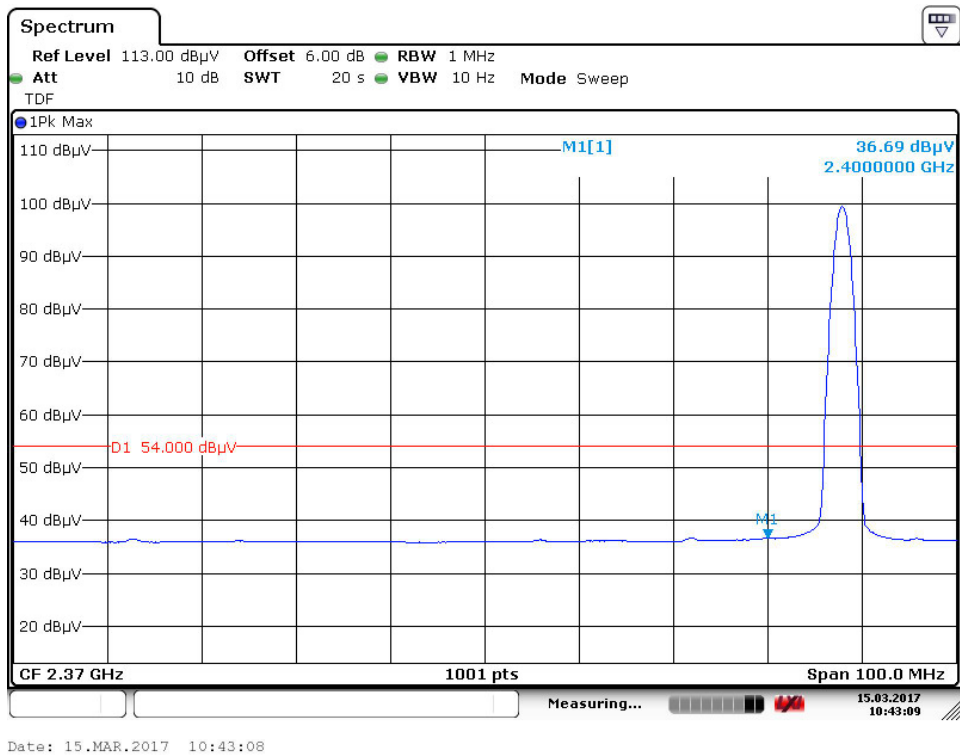
Service No.:	114061321	Test Distance:	3m
Test Standard:	FCC 15.249_2.4-2.5G_3m PK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2017/3/15 11:19:55
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Luxon IoT Node for wireless control of luminaires operating on 2.45 GHz	Temp.(°C)/Hum.(%):	20.3(°C)/52%
Model No.:	99844976	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	2475-TX X		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	2474.841	-7.94	102.13	94.19	114.00	-19.81	peak	100	133	
2	2474.841	-7.94	101.98	94.04	94.00	0.04	AVG	100	133	

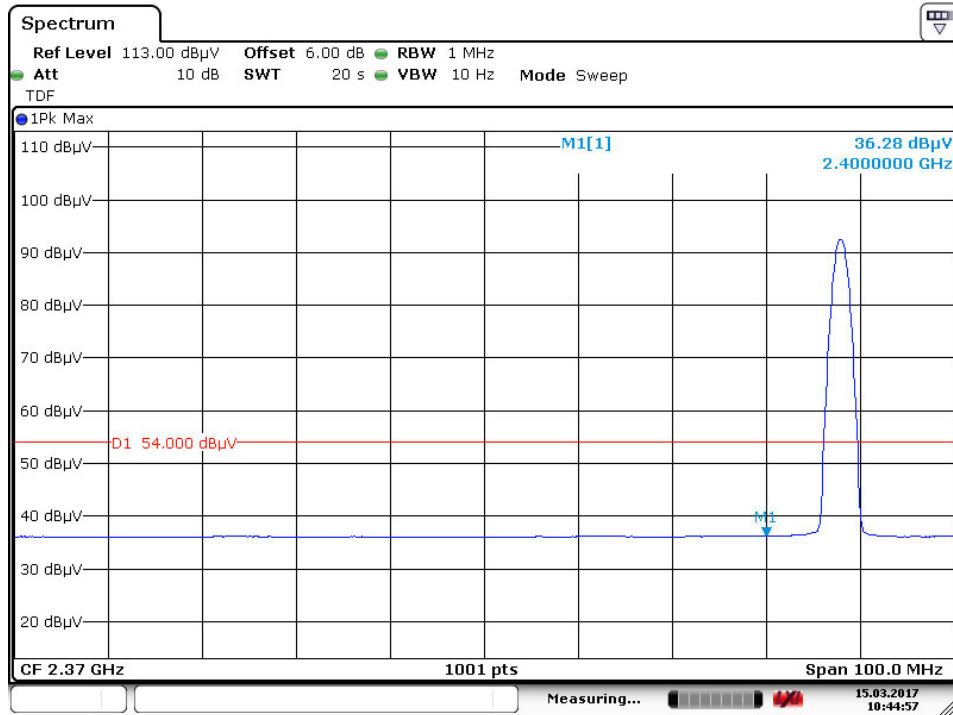
Remark: Duty Factor= -42.62, thus, the average result would be 51.57dBuV/m

Radiated Bandedge

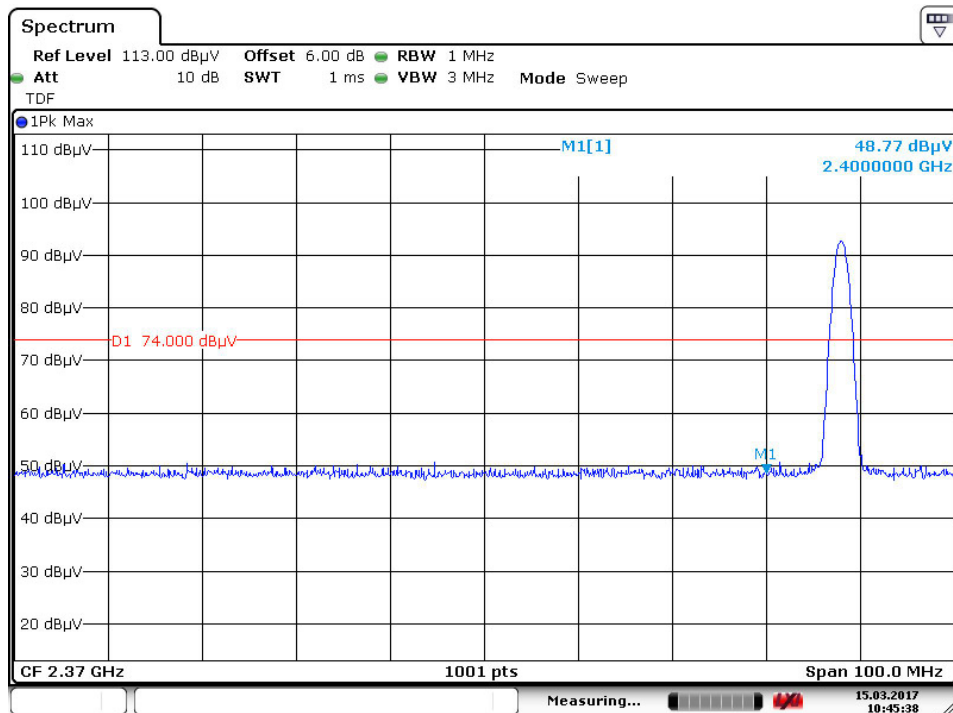
Low Channel (Hor)



Low Channel (Ver)



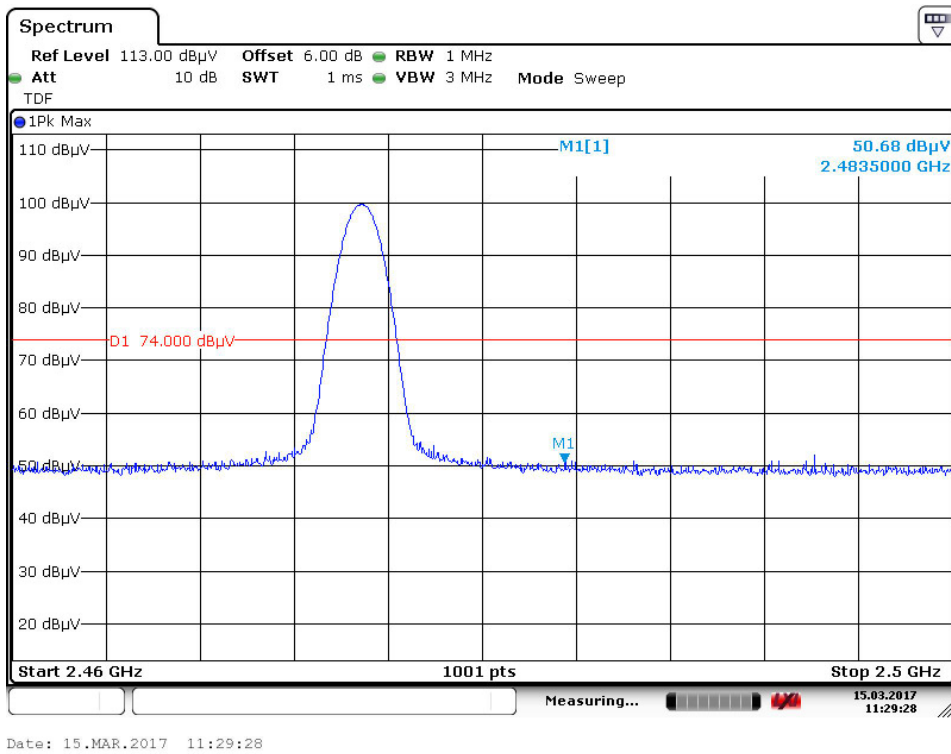
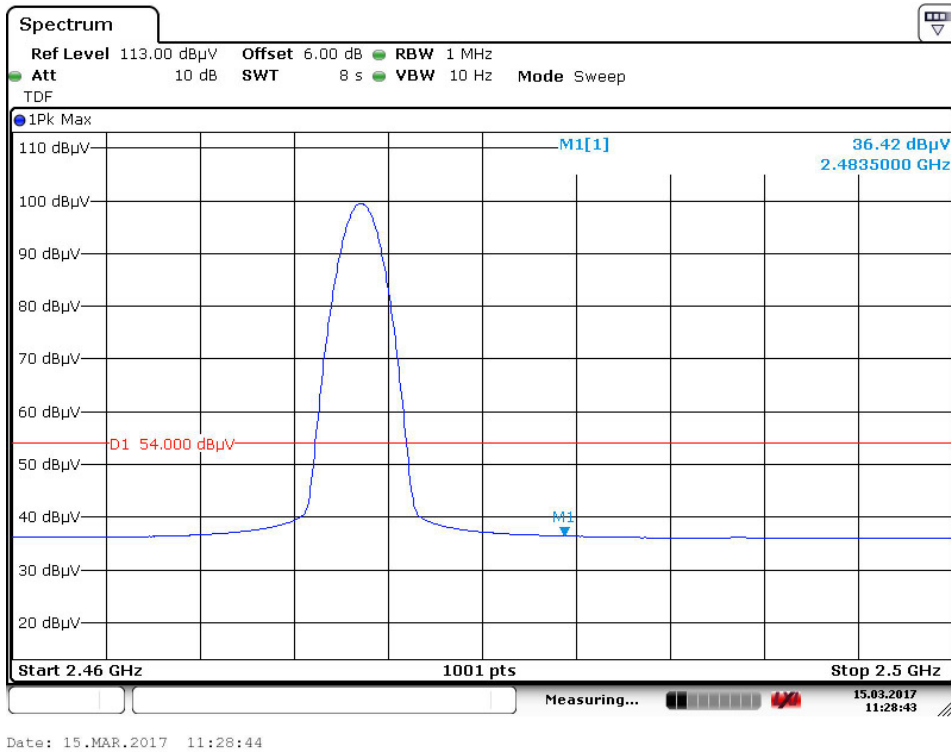
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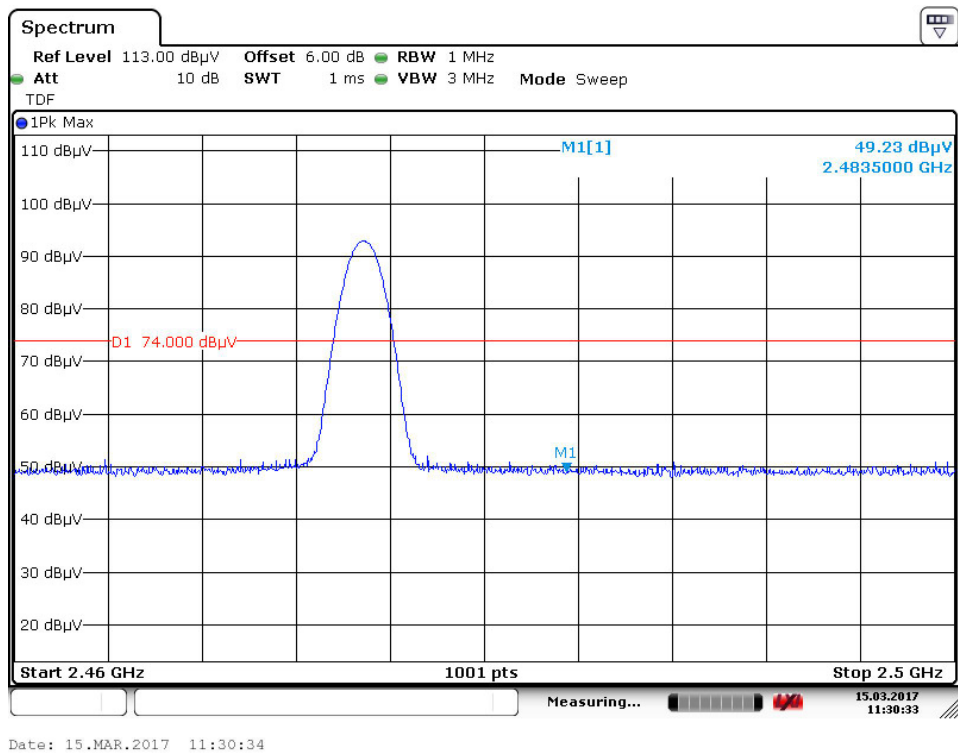
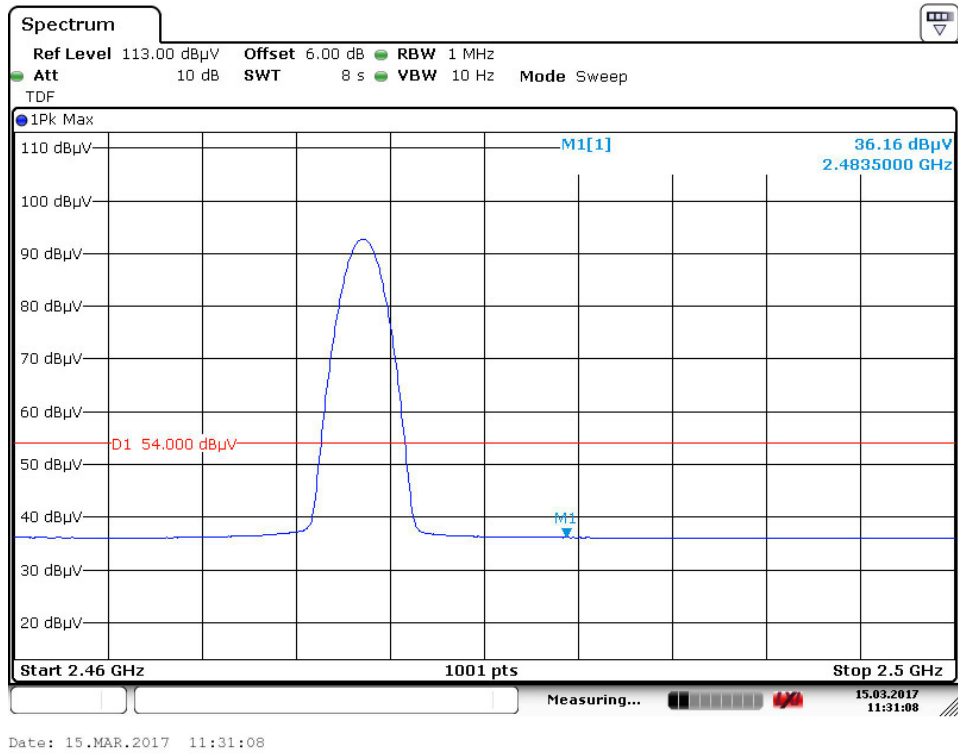
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Radiated Emissions, Fundamental and Band Edges

High Channel (Hor)



High Channel (Ver)



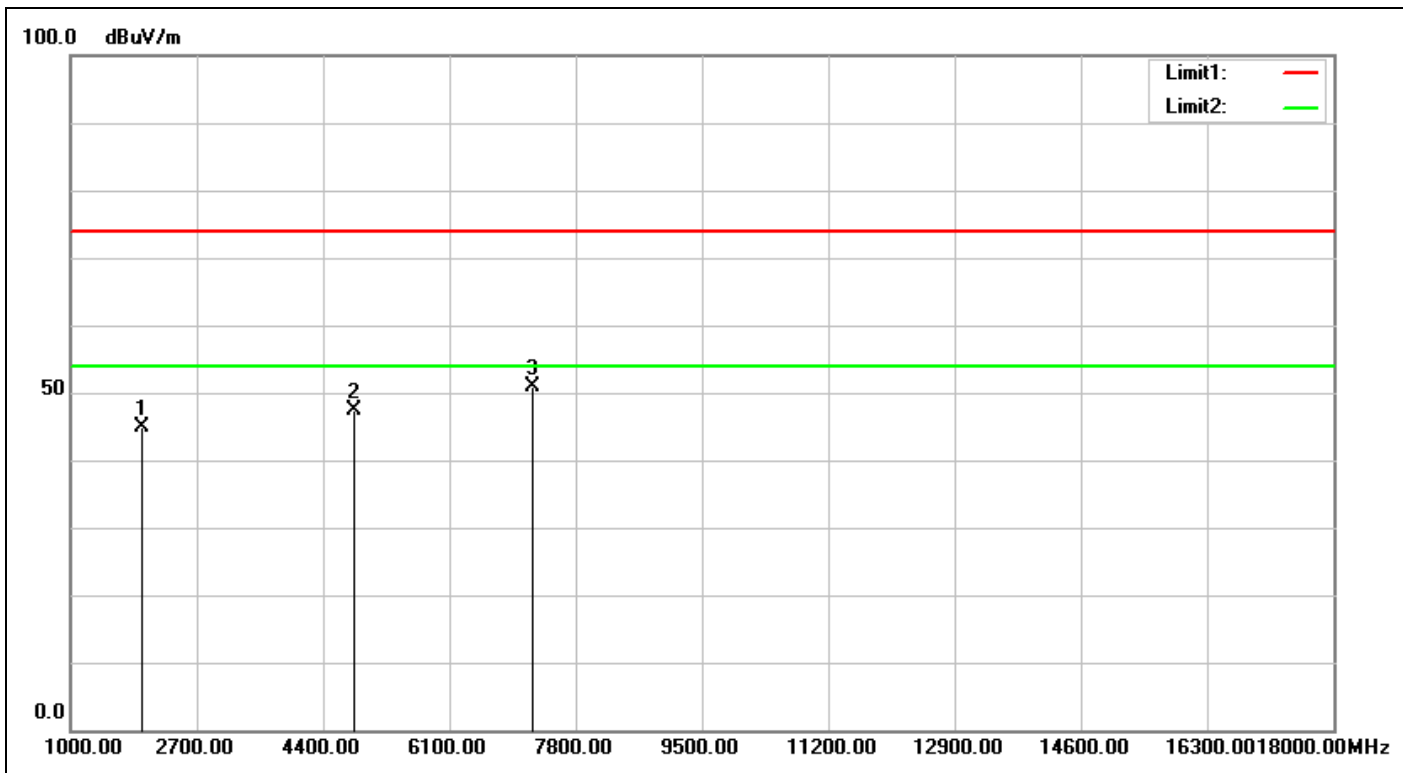
Spurious Emissions, TX Mode, 1-18G



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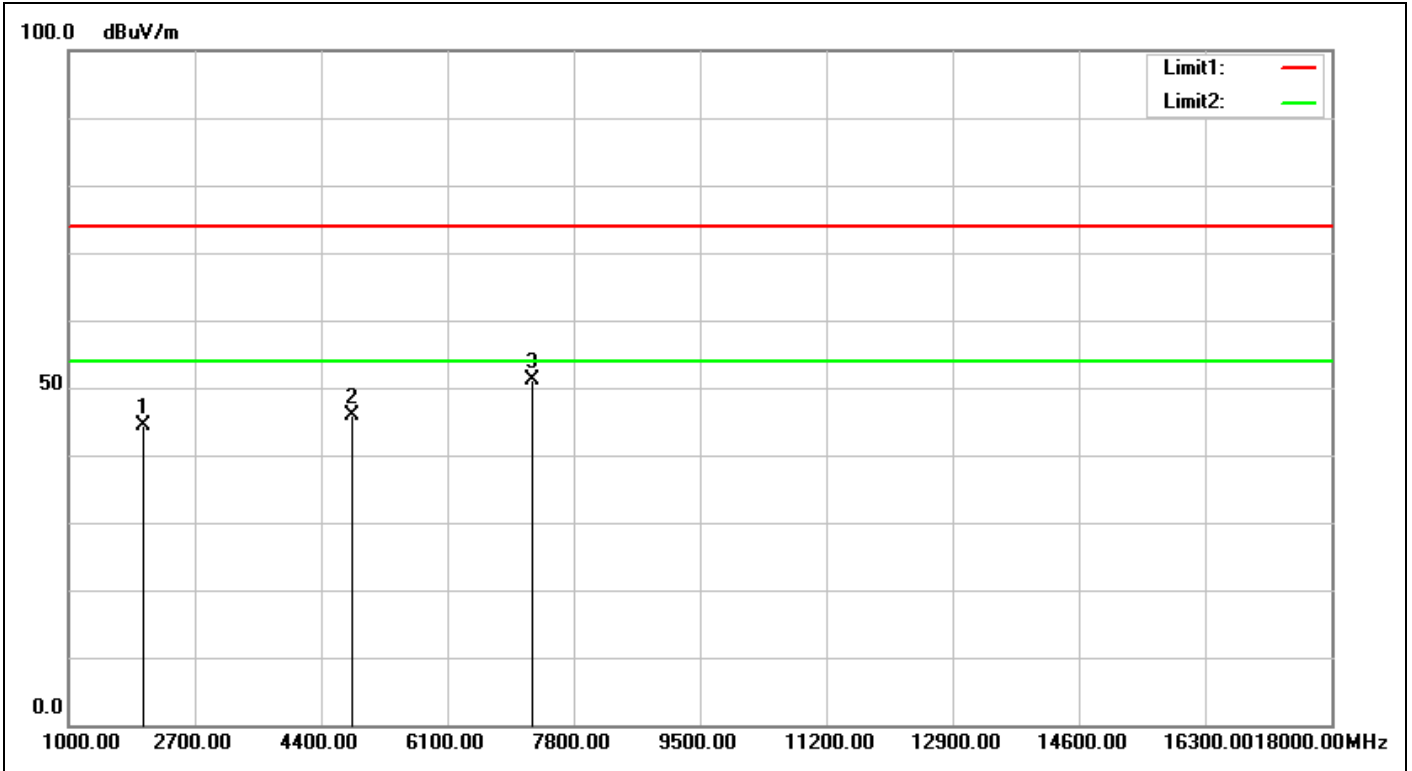
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Service No.:	114061321	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2017/3/15 10:46:09
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Luxon IoT Node for wireless control of luminaires operating on 2.45 GHz	Temp.(°C)/Hum.(%):	20.3(°C)/52%
Model No.:	99844976	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	2408-TX		
	X		

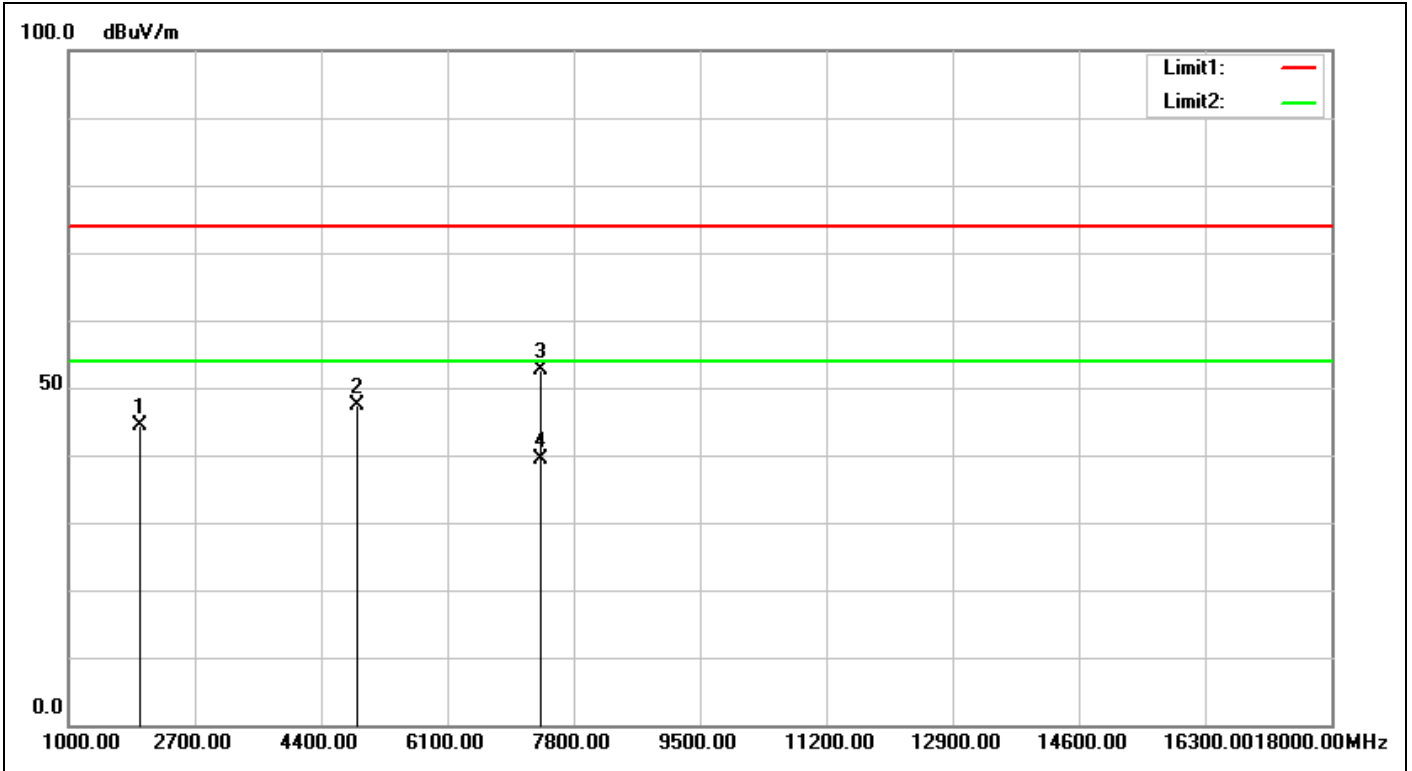
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1969.000	-7.35	52.23	44.88	74.00	-29.12	peak	100	314	
2	4816.000	-2.62	49.93	47.31	74.00	-26.69	peak		0	
3	7224.000	5.64	45.20	50.84	74.00	-23.16	peak		0	

Spurious Emissions, TX Mode, 18-26G



Service No.:	114061321	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2017/3/15 10:47:12
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Luxon IoT Node for wireless control of luminaires operating on 2.45 GHz	Temp.(°C)/Hum.(%):	20.3(°C)/52%
Model No.:	99844976	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	2408-TX		
	X		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	2003.000	-7.15	51.51	44.36	74.00	-29.64	peak	100	84	
2	4816.000	-2.62	48.62	46.00	74.00	-28.00	peak			
3	7224.000	5.64	45.56	51.20	74.00	-22.80	peak			



Service No.:	114061321	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2017/3/15 11:04:19
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Luxon IoT Node for wireless control of luminaires operating on 2.45 GHz	Temp.(°C)/Hum.(%):	20.3(°C)/52%
Model No.:	99844976	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	2450-TX		
	X		

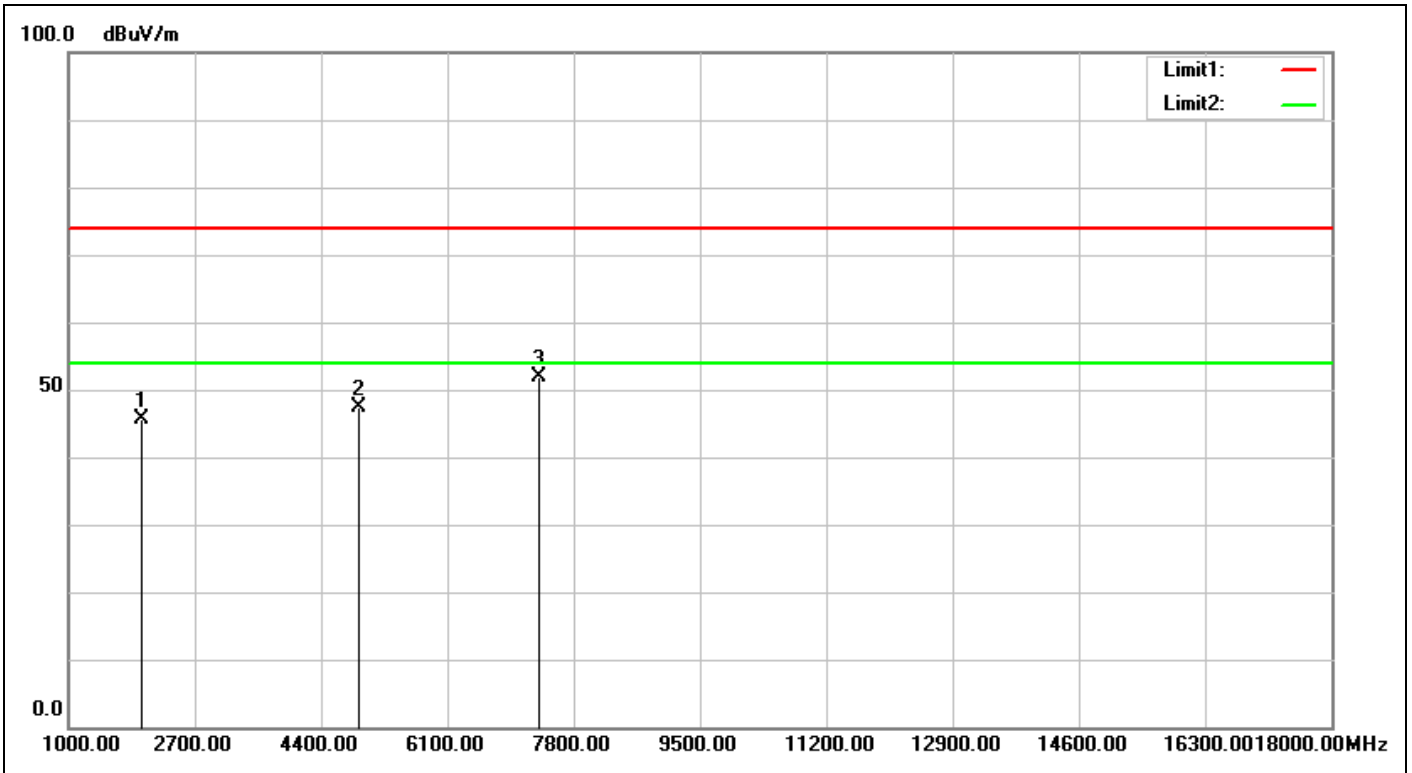
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1969.000	-7.35	51.76	44.41	74.00	-29.59	peak	100	299	
2	4900.000	-2.44	49.94	47.50	74.00	-26.50	peak		0	
3	7350.000	6.01	46.52	52.53	74.00	-21.47	peak		0	
4	7350.000	6.01	33.32	39.33	54.00	-14.67	AVG		0	

Remark: Duty Factor= -42.62, thus, the average result of 3rd harmonic would be 9.91dBuV/m

Spurious Emissions, TX Mode, 18-26G



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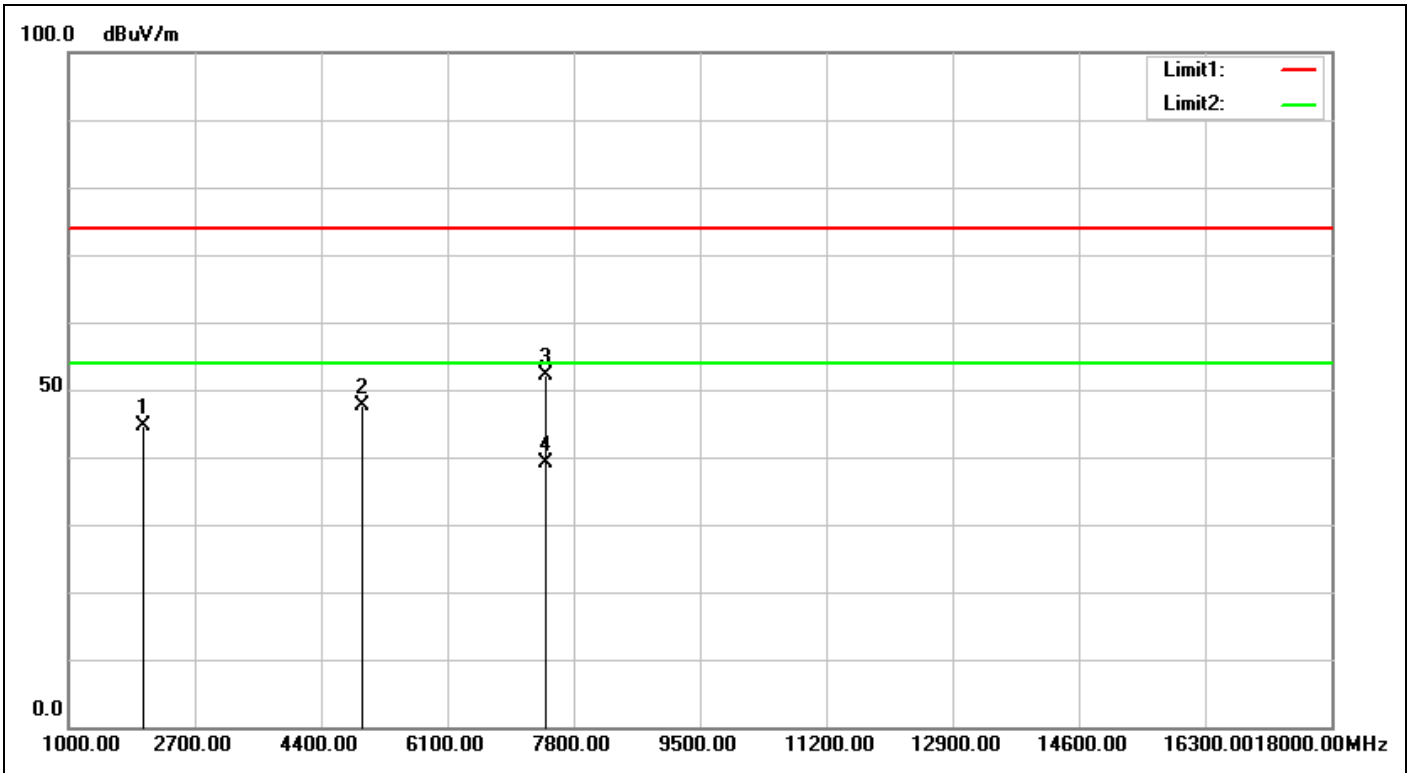
Service No.:	114061321	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2017/3/15 11:05:22
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Luxon IoT Node for wireless control of luminaires operating on 2.45 GHz	Temp.(°C)/Hum.(%):	20.3(°C)/52%
Model No.:	99844976	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	2450-TX		
	X		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1986.000	-7.23	52.96	45.73	74.00	-28.27	peak	100	325	
2	4900.000	-2.44	49.74	47.30	74.00	-26.70	peak			
3	7350.000	6.01	45.78	51.79	74.00	-22.21	peak			

Remark: Duty Factor= -42.62, thus, the average result of 3rd harmonic would be 9.17dBuV/m



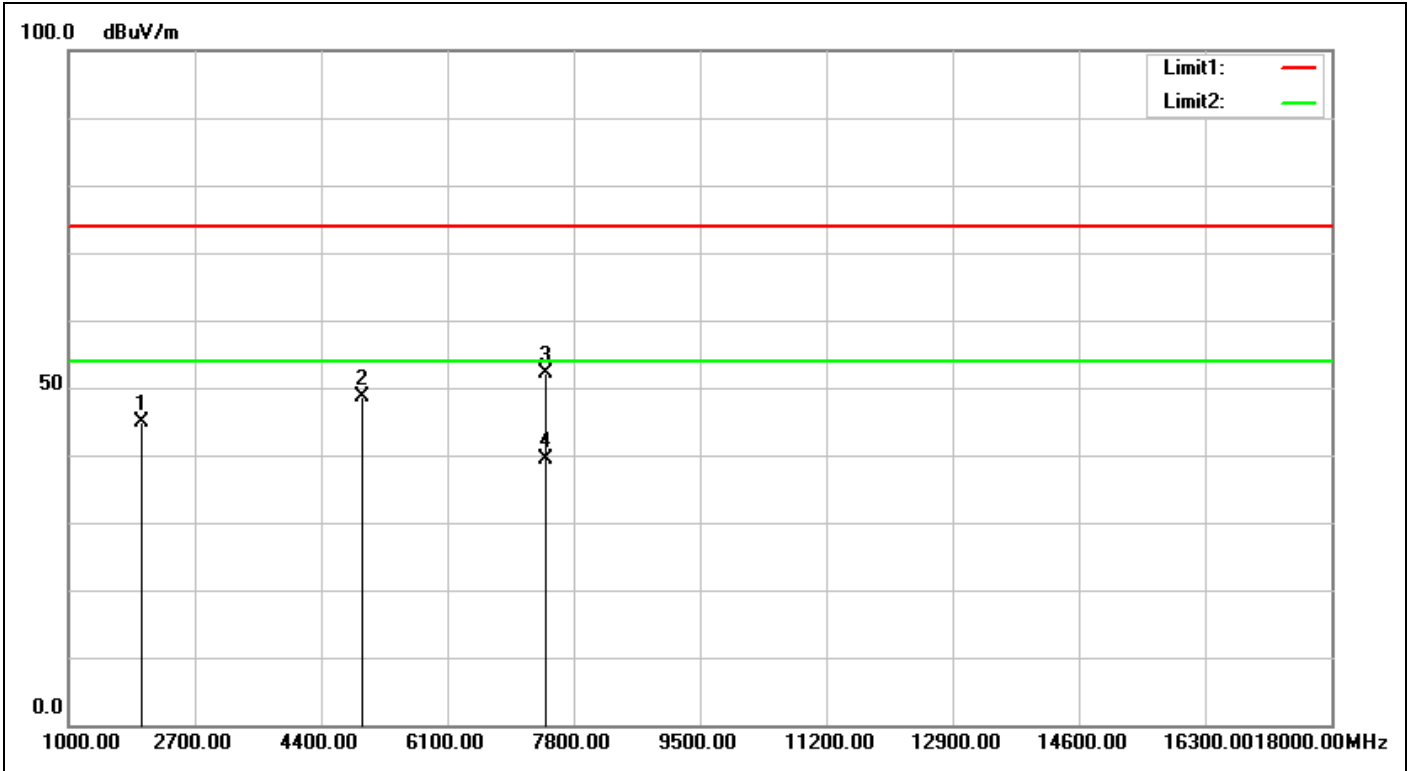
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Service No.:	114061321	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2017/3/15 11:31:16
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Luxon IoT Node for wireless control of luminaires operating on 2.45 GHz	Temp.(°C)/Hum.(%):	20.3(°C)/52%
Model No.:	99844976	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	2475-TX		
	X		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	2003.000	-7.15	51.80	44.65	74.00	-29.35	peak	100	84	
2	4950.000	-2.33	49.97	47.64	74.00	-26.36	peak		0	
3	7425.000	6.24	45.84	52.08	74.00	-21.92	peak		0	
4	7425.000	6.24	33.00	39.24	54.00	-14.76	AVG		0	

Remark: Duty Factor= -42.62, thus, the average result of 3rd harmonic would be 9.46dBuV/m



Service No.:	114061321	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2017/3/15 11:32:19
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Luxon IoT Node for wireless control of luminaires operating on 2.45 GHz	Temp.(°C)/Hum.(%):	20.3(°C)/52%
Model No.:	99844976	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	2475-TX		
	X		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1986.000	-7.23	52.03	44.80	74.00	-29.20	peak	100	80	
2	4950.000	-2.33	50.88	48.55	74.00	-25.45	peak			
3	7425.000	6.24	45.98	52.22	74.00	-21.78	peak			
4	7425.000	6.24	33.05	39.29	54.00	-14.71	AVG			

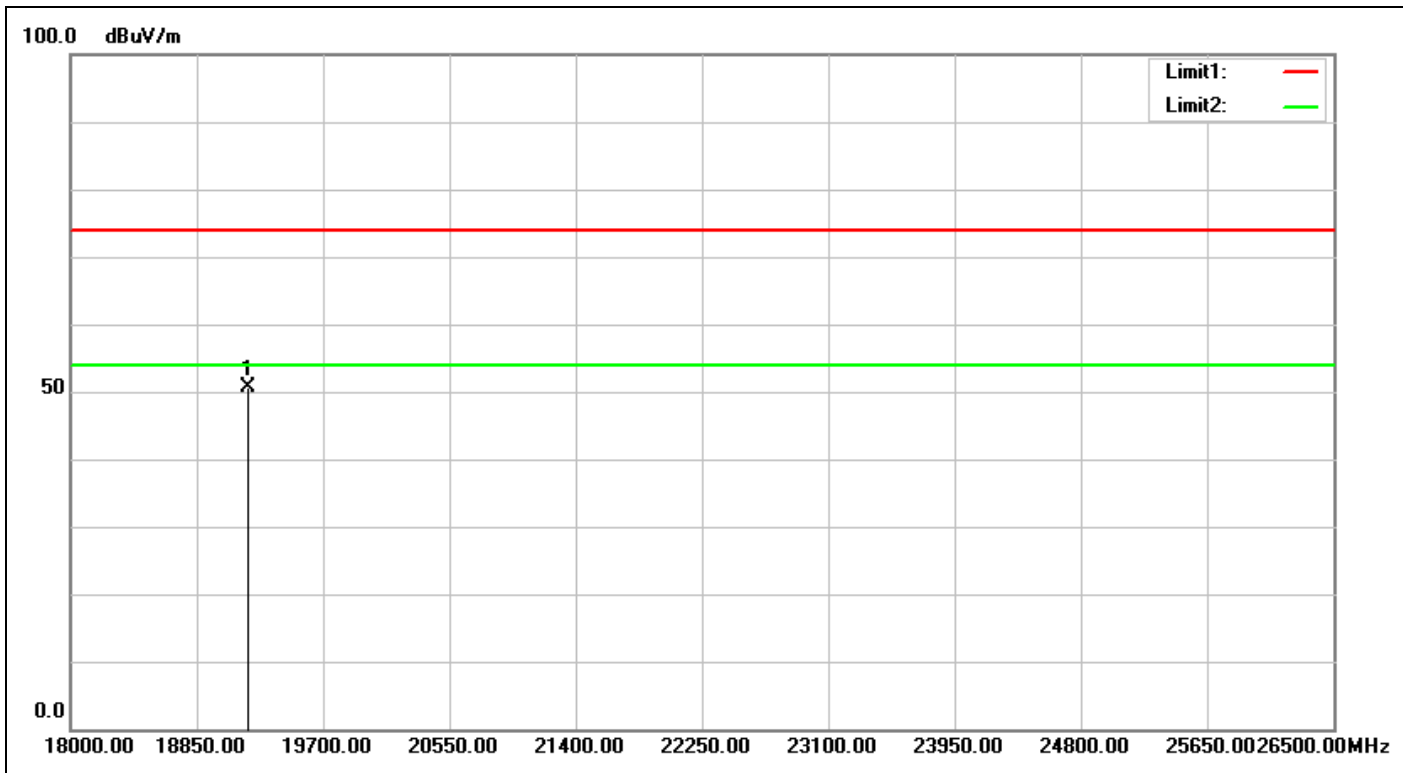
Remark: Duty Factor= -42.62, thus, the average result of 3rd harmonic would be 9.6dBuV/m

Spurious Emissions, TX Mode, 18-26G

Spurious Emissions, TX Mode, 18-26G



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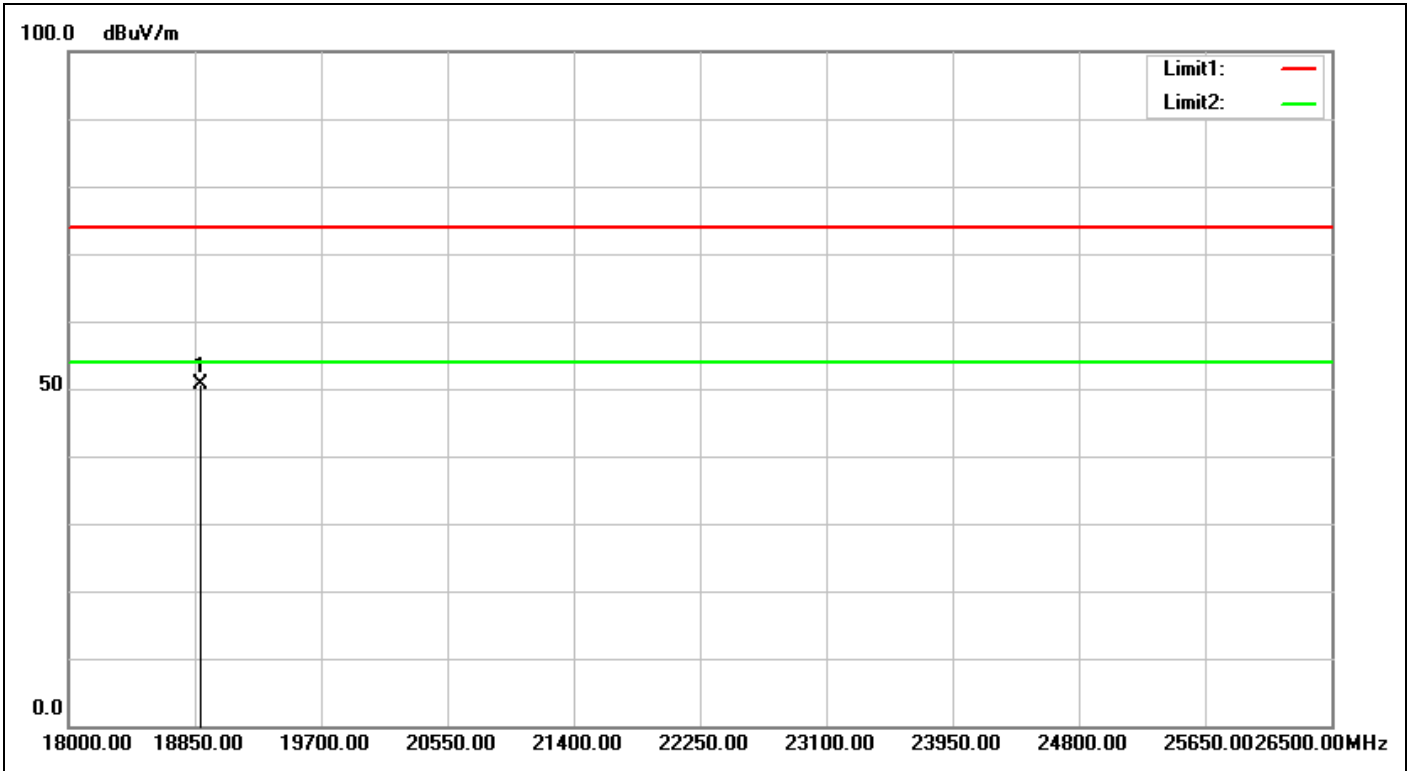


Service No.:	114061321	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2017/3/15 11:44:47
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Luxon IoT Node for wireless control of luminaires operating on 2.45 GHz	Temp.(°C)/Hum.(%):	20.3(°C)/52%
Model No.:	99844976	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	2408-TX		
	X		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	19198.500	30.78	19.76	50.54	74.00	-23.46	peak	100	214	



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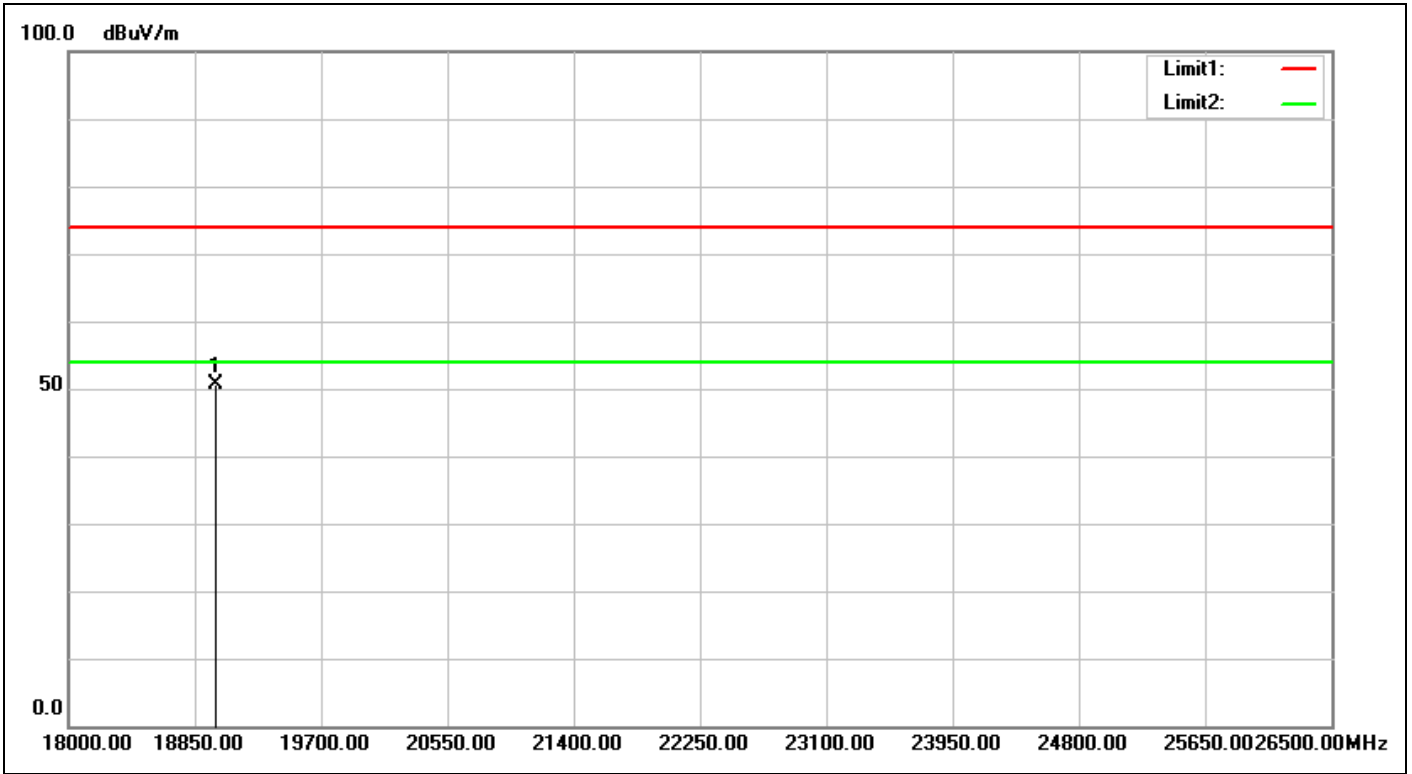


Service No.:	114061321	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2017/3/15 11:45:50
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Luxon IoT Node for wireless control of luminaires operating on 2.45 GHz	Temp.(°C)/Hum.(%):	20.3(°C)/52%
Model No.:	99844976	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	2408-TX		
	X		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	18884.000	30.24	20.42	50.66	74.00	-23.34	peak	100	205	



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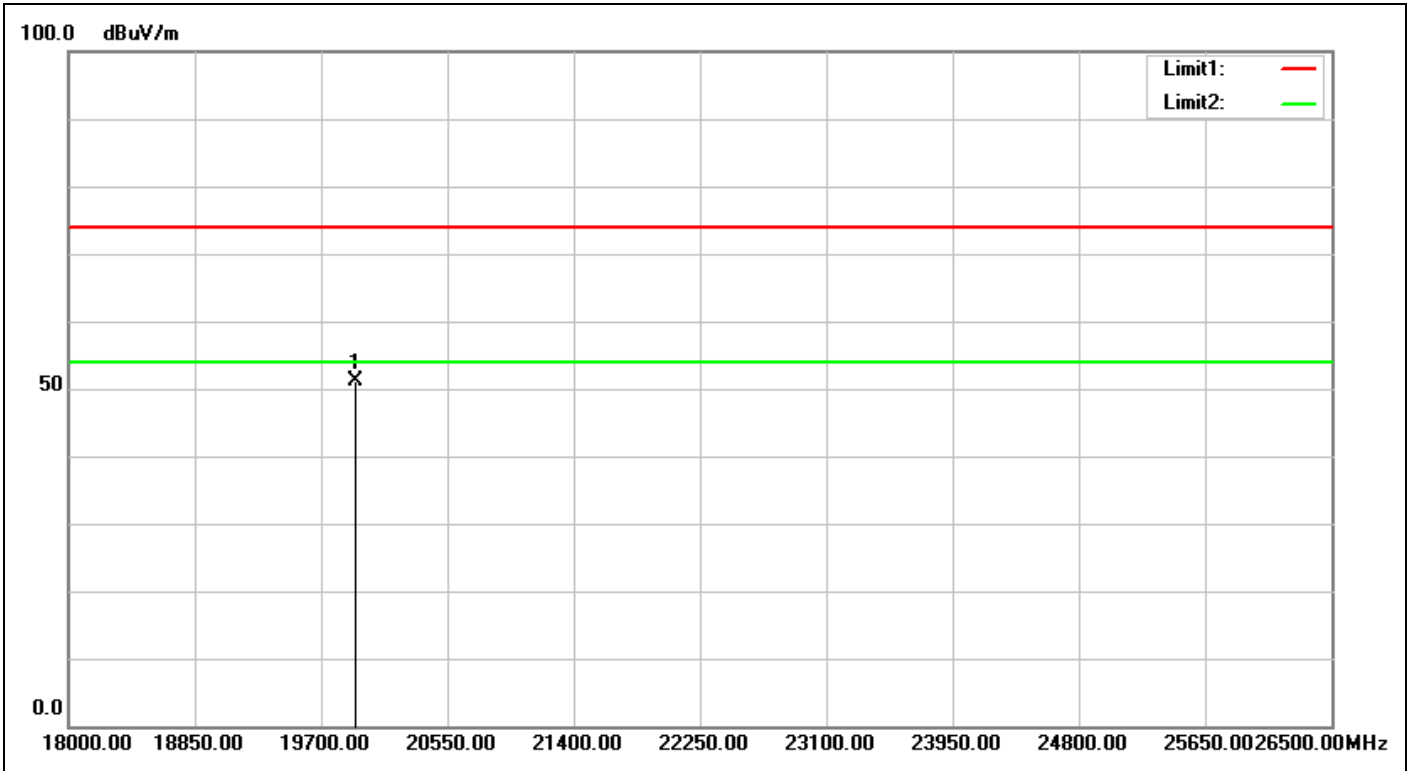


Service No.:	114061321	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2017/3/15 11:47:21
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Luxon IoT Node for wireless control of luminaires operating on 2.45 GHz	Temp.(°C)/Hum.(%):	20.3(°C)/52%
Model No.:	99844976	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	2450-TX		
	X		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	18986.000	30.47	20.22	50.69	74.00	-23.31	peak	100	156	

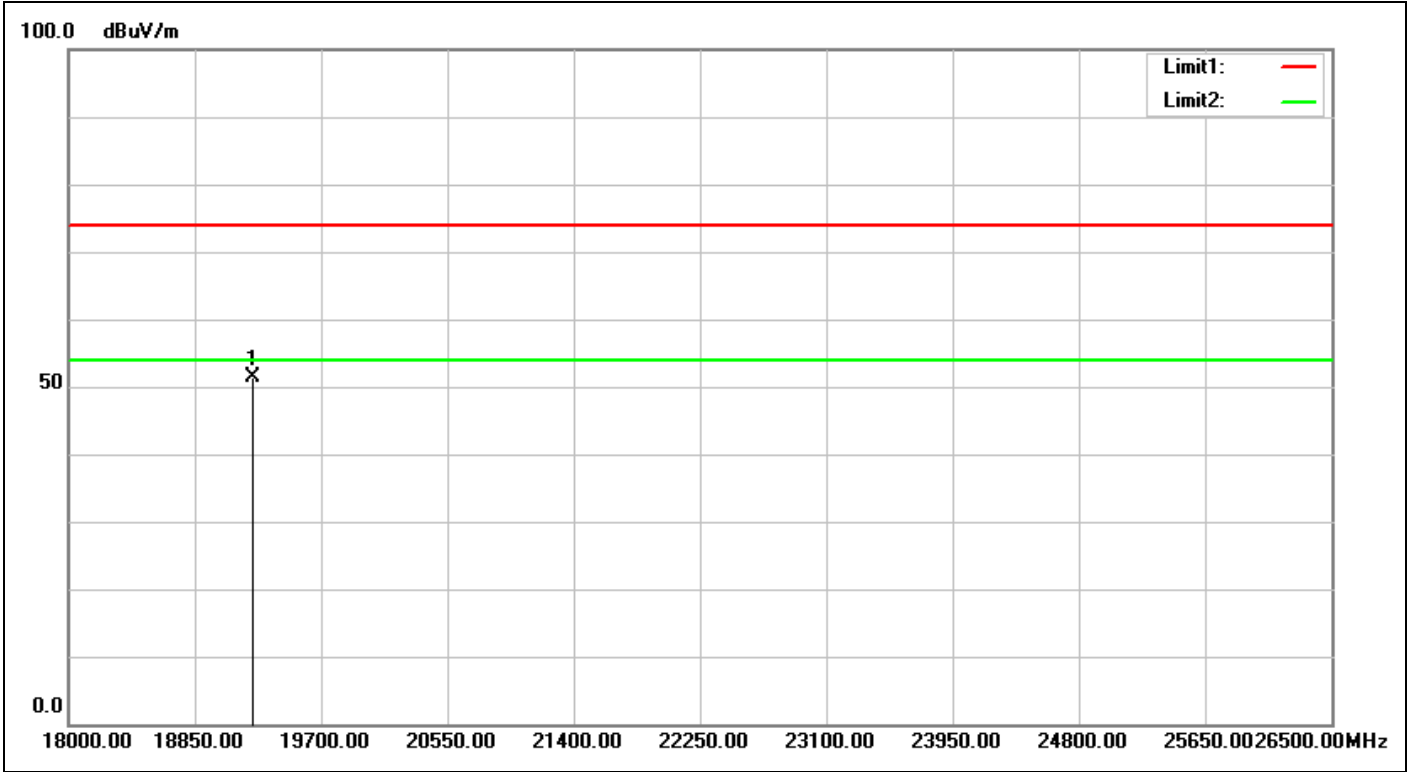


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Service No.:	114061321	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2017/3/15 11:48:24
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Luxon IoT Node for wireless control of luminaires operating on 2.45 GHz	Temp.(°C)/Hum.(%):	20.3(°C)/52%
Model No.:	99844976	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	2450-TX		
	X		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	19929.500	31.44	19.65	51.09	74.00	-22.91	peak	100	304	

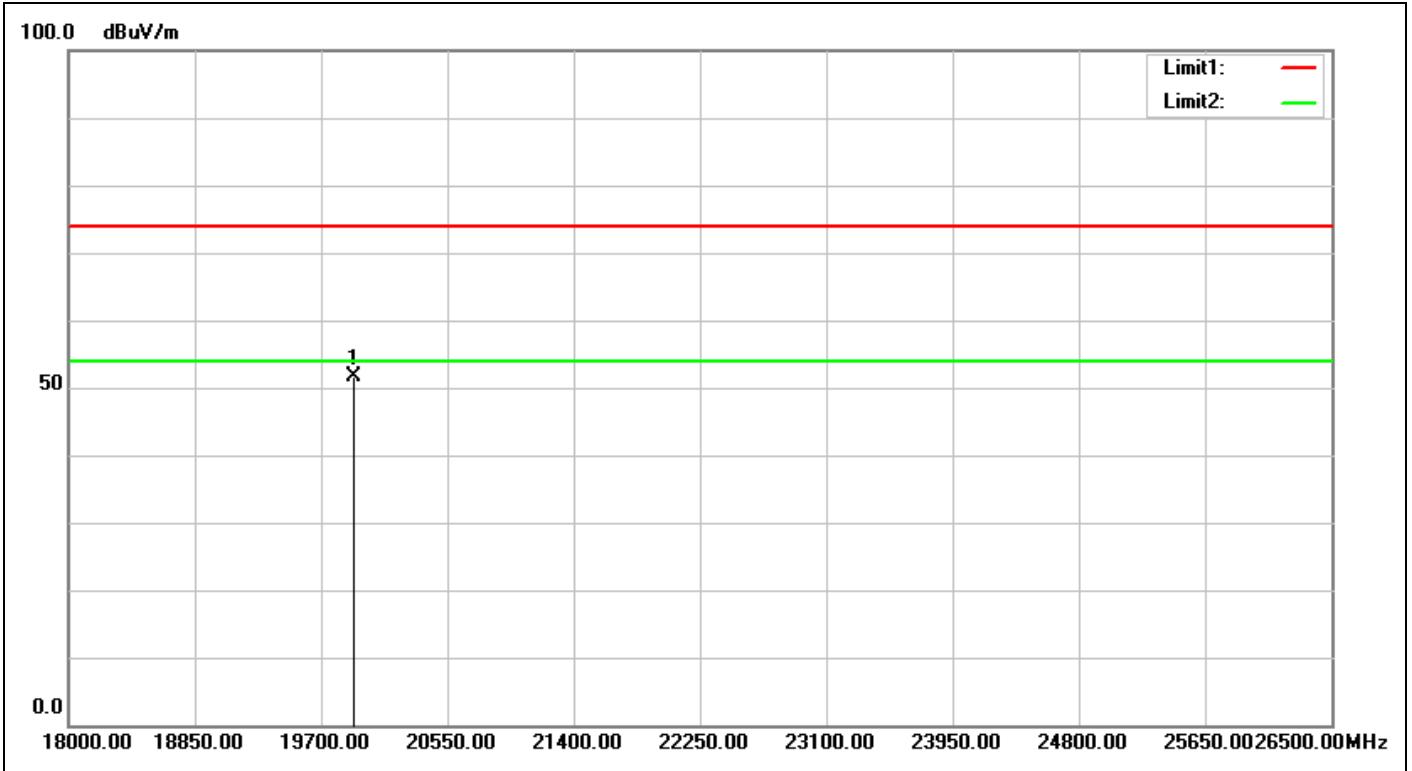


Service No.:	114061321	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2017/3/15 11:49:50
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Luxon IoT Node for wireless control of luminaires operating on 2.45 GHz	Temp.(°C)/Hum.(%):	20.3(°C)/52%
Model No.:	99844976	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	2475-TX		
	X		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	19241.000	30.84	20.54	51.38	74.00	-22.62	peak	100	31	



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



Service No.:	114061321	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2017/3/15 11:50:53
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Luxon IoT Node for wireless control of luminaires operating on 2.45 GHz	Temp.(°C)/Hum.(%):	20.3(°C)/52%
Model No.:	99844976	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	2475-TX		
	X		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	19921.000	31.43	20.09	51.52	74.00	-22.48	peak	100	290	

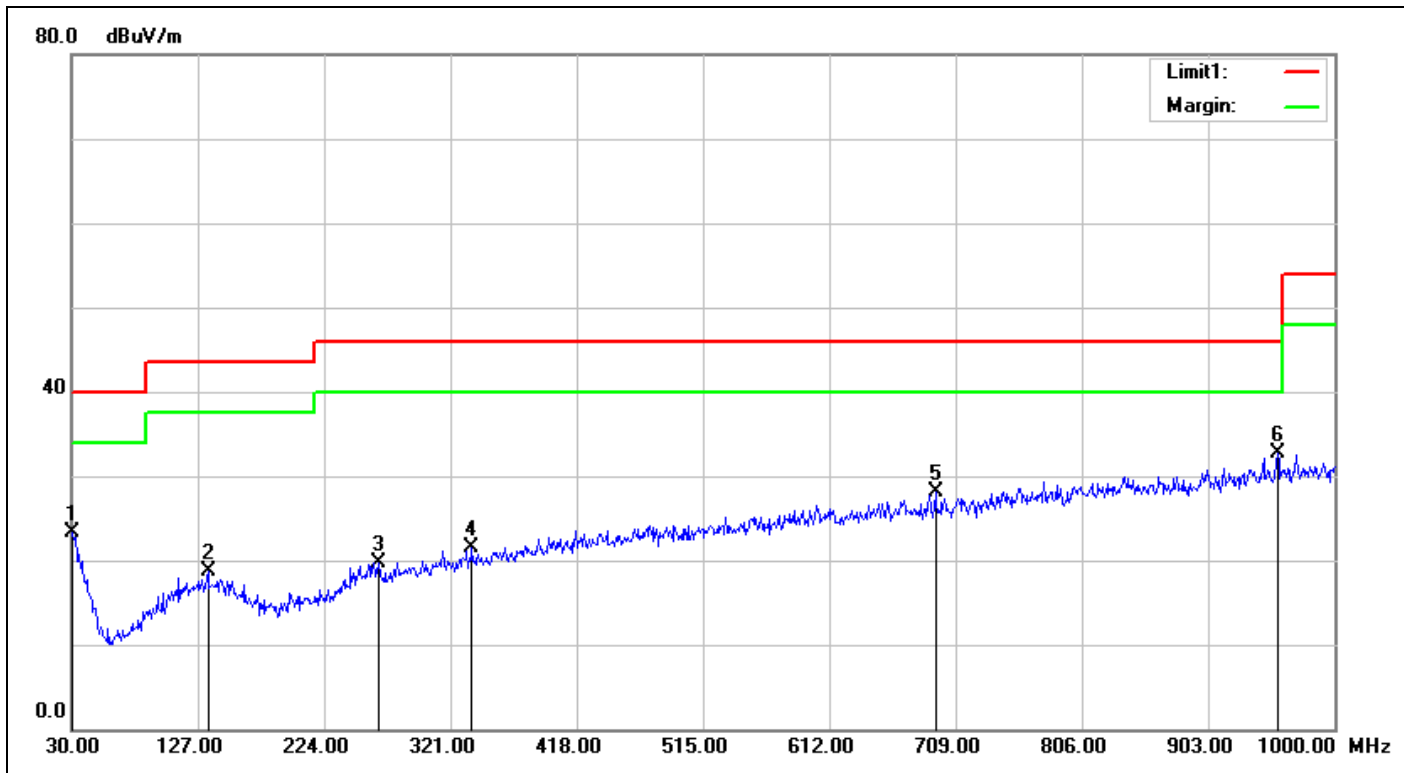
Spurious Emissions, TX Mode, 30M-1G



TUV Taiwan

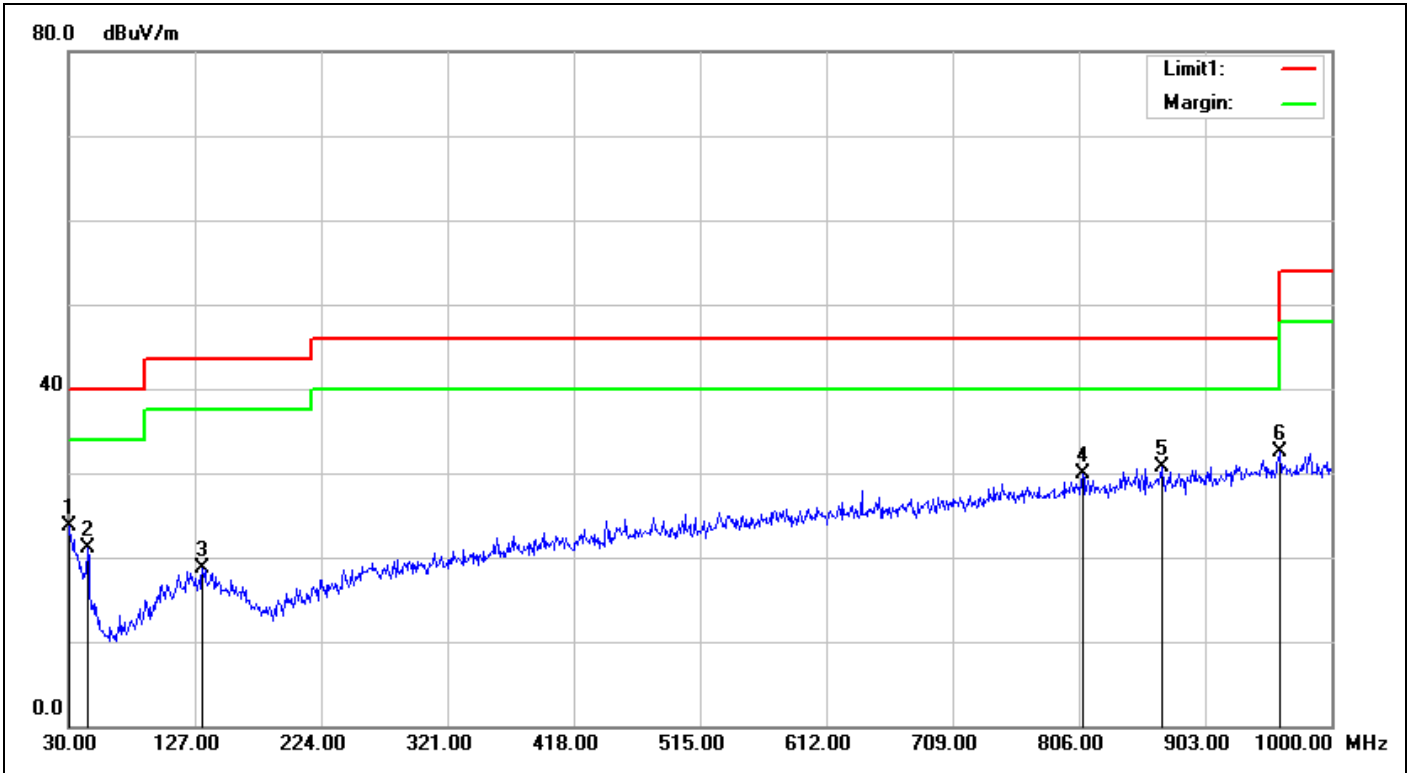
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Tel:+886-2172-7000 fax:+886-2528-0018



Service No.:	114061321	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2017/3/15 13:21:57
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Luxon IoT Node for wireless control of luminaires operating on 2.45 GHz	Temp.(°C)/Hum.(%):	20.3(°C)/52%
Model No.:	99844976	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	2450-TX		
	X		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	-0.07	23.44	23.37	40.00	-16.63	QP	100	283	
2	134.7600	-6.98	25.65	18.67	43.50	-24.83	QP	100	296	
3	265.7100	-5.14	24.89	19.75	46.00	-26.25	QP	100	115	
4	337.4900	-3.71	25.29	21.58	46.00	-24.42	QP	100	70	
5	693.4800	1.00	27.19	28.19	46.00	-17.81	QP	100	179	
6	956.3500	5.45	27.28	32.73	46.00	-13.27	QP	100	59	



Service No.:	114061321	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2017/3/15 13:23:01
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Luxon IoT Node for wireless control of luminaires operating on 2.45 GHz	Temp.(°C)/Hum.(%):	20.3(°C)/52%
Model No.:	99844976	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	2450-TX		
	X		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	-0.07	23.68	23.61	40.00	-16.39	QP	100	322	
2	44.5500	-8.40	29.41	21.01	40.00	-18.99	QP	100	35	
3	132.8200	-6.97	25.62	18.65	43.50	-24.85	QP	100	2	
4	808.9100	2.97	26.84	29.81	46.00	-16.19	QP	100	243	
5	870.0200	3.87	26.79	30.66	46.00	-15.34	QP	100	144	
6	960.2300	5.48	27.02	32.50	54.00	-21.50	QP	100	45	