

Test Report No.50053072 001

Appendix D: Radiated and Mains Spurious Emission Data

(File: 50053072AppendixD)

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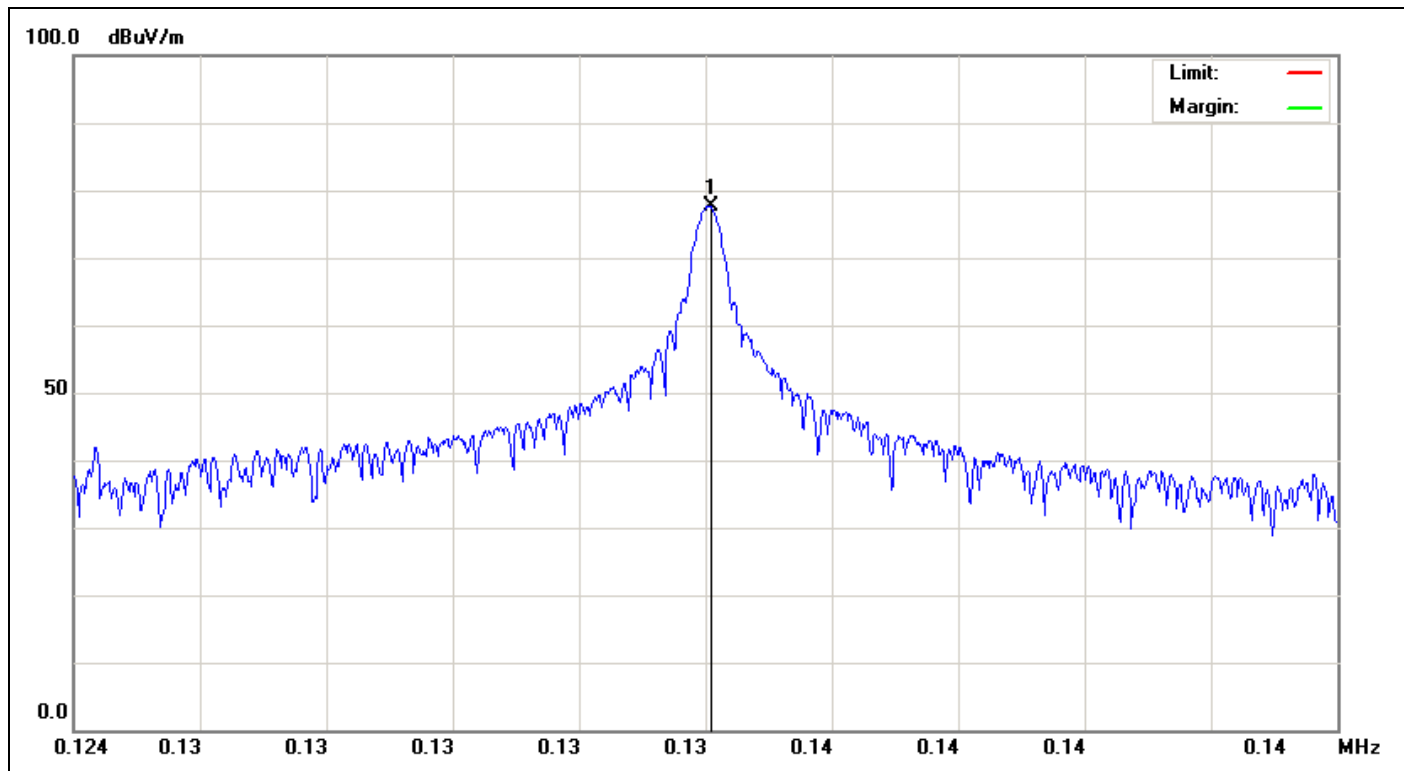
Emissions, Fundamental



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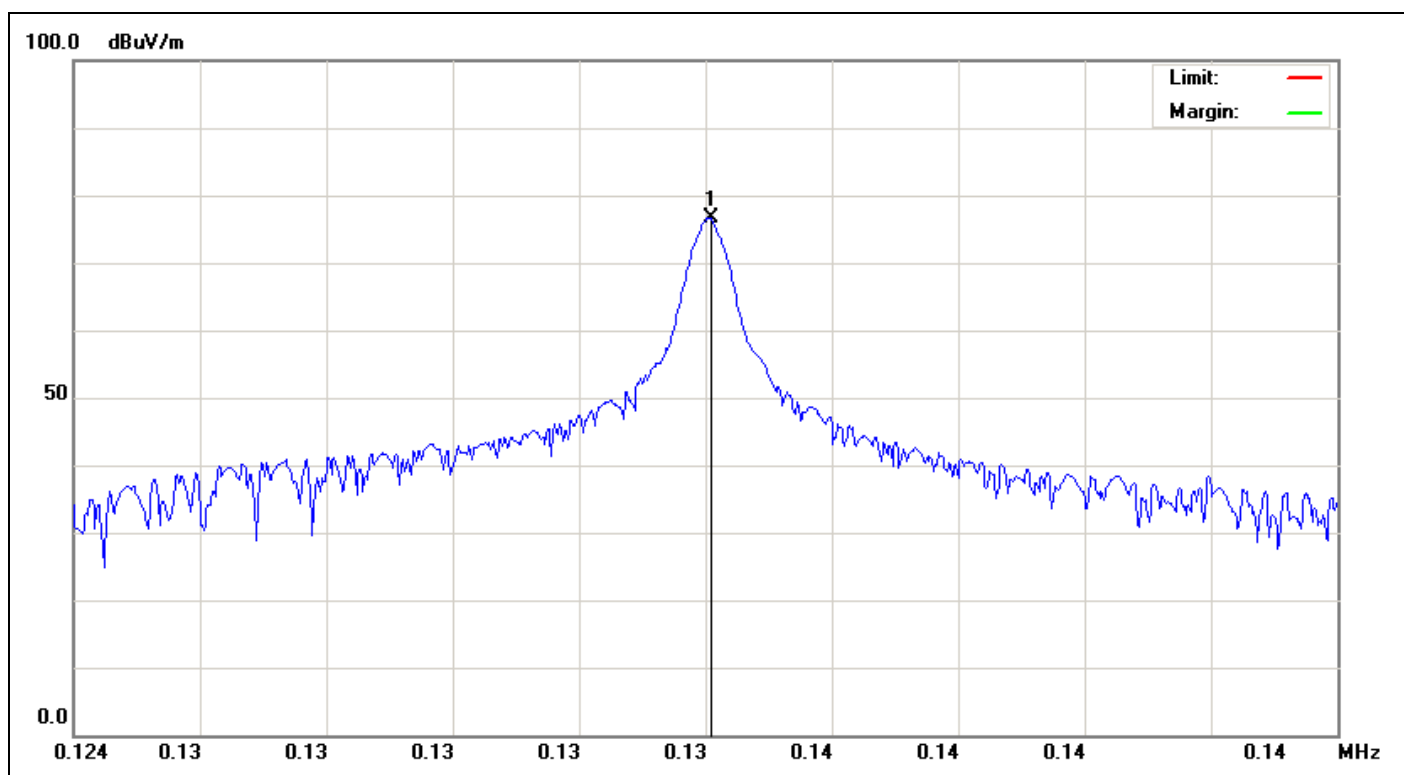
0034-0001.,Sec.2,Balian Rd.,Xizhi Dist.,New Taipei City 221

Tel:+886-2-2172-7000 Fax:+886-2-2528-0018



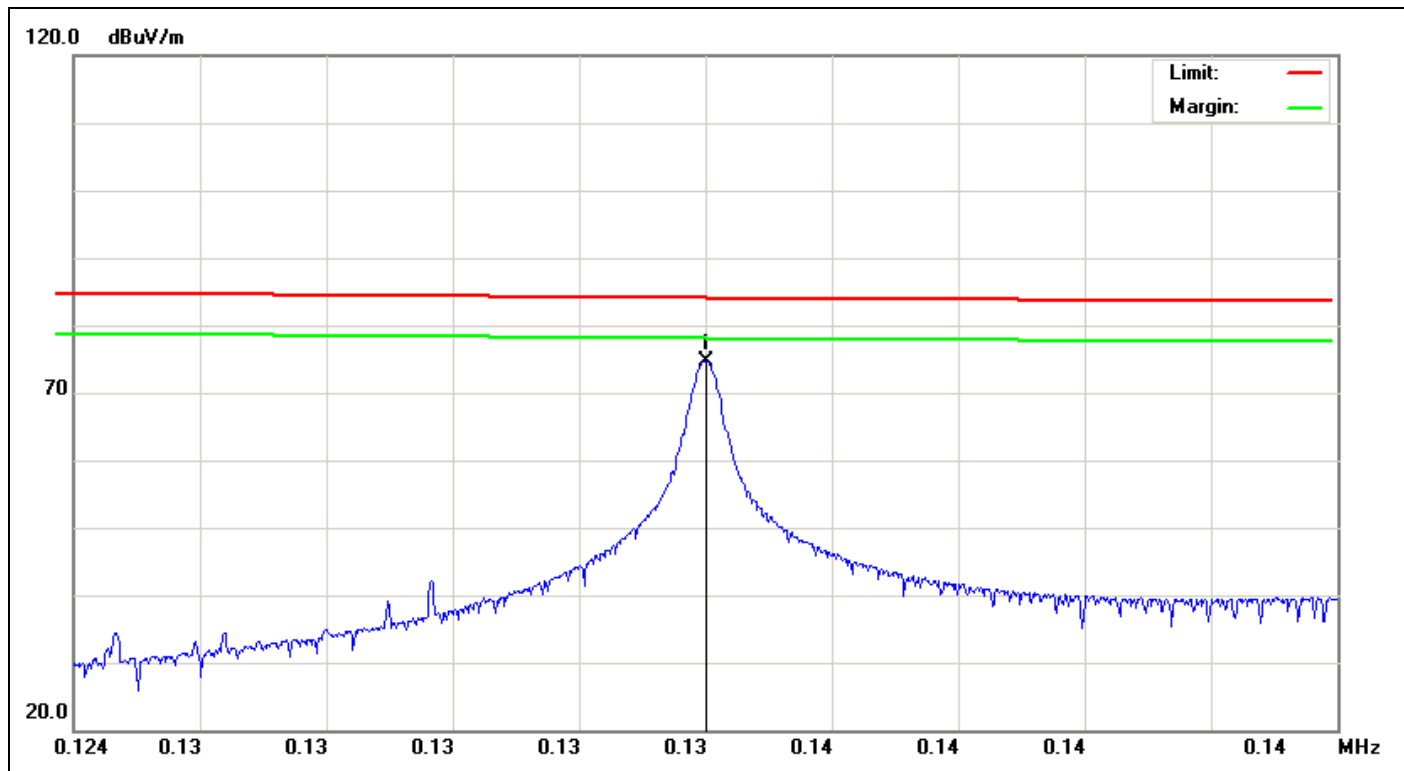
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Test Standard:	FCC_15.209_9k-1G_3m	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2016/8/12 15:39:24
Applicant:	NEDAP	Test Rating:	DC 24V
Product:	Transceiver HDP/FDP op. on 134.2 kHz	Temp.(°C)/Hum.(%):	29(°C)/73%
Model No.:	VP1801	Test Engineer:	Freeman Wang
Test Mode:	with Tag		
Remark:	a) Antenna VP6011		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.1341	19.96	57.64	77.60			peak			



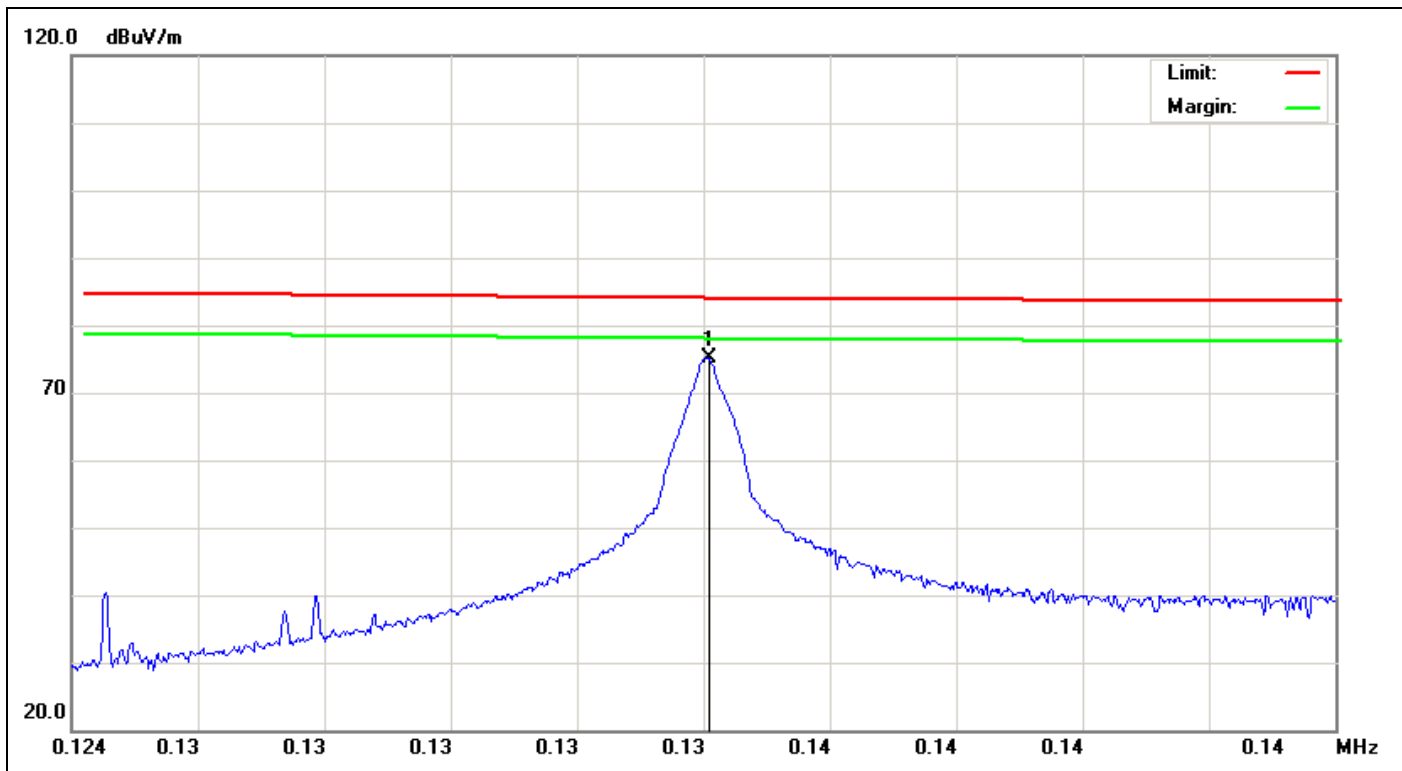
Service No.:	114054576-FCC	Test Distance:	3m
Test Standard:	FCC_15.209_9k-1G_3m	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2016/8/12 15:36:10
Applicant:	NEDAP	Test Rating:	DC 24V
Product:	Transceiver HDP/FDP op. on 134.2 kHz	Temp.(°C)/Hum.(%):	29(°C)/73%
Model No.:	VP1801	Test Engineer:	Freeman Wang
Test Mode:	without Tag		
Remark:	a) Antenna VP6011		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.1341	19.96	56.63	76.59			peak			



Service No.:	114054576-FCC	Test Distance:	10m
Test Standard:	FCC_15.209_9k-1G_10m	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2016/8/12 15:10:47
Applicant:	NEDAP	Test Rating:	DC 24V
Product:	Transceiver HDP/FDP op. on 134.2 kHz	Temp.(°C)/Hum.(%):	29(°C)/73%
Model No.:	VP1801	Test Engineer:	Freeman Wang
Test Mode:	with Tag		
Remark:	b) Antenna Single Loop Walk Through		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.1340	19.96	54.79	74.75	84.10	-9.35	peak			



Service No.:	114054576-FCC	Test Distance:	10m
Test Standard:	FCC_15.209_9k-1G_10m	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2016/8/12 15:14:15
Applicant:	NEDAP	Test Rating:	DC 24V
Product:	Transceiver HDP/FDP op. on 134.2 kHz	Temp.(°C)/Hum.(%):	29(°C)/73%
Model No.:	VP1801	Test Engineer:	Freeman Wang
Test Mode:	without Tag		
Remark:	b) Antenna Single Loop Walk Through		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.1341	19.96	55.23	75.19	84.09	-8.90	peak			

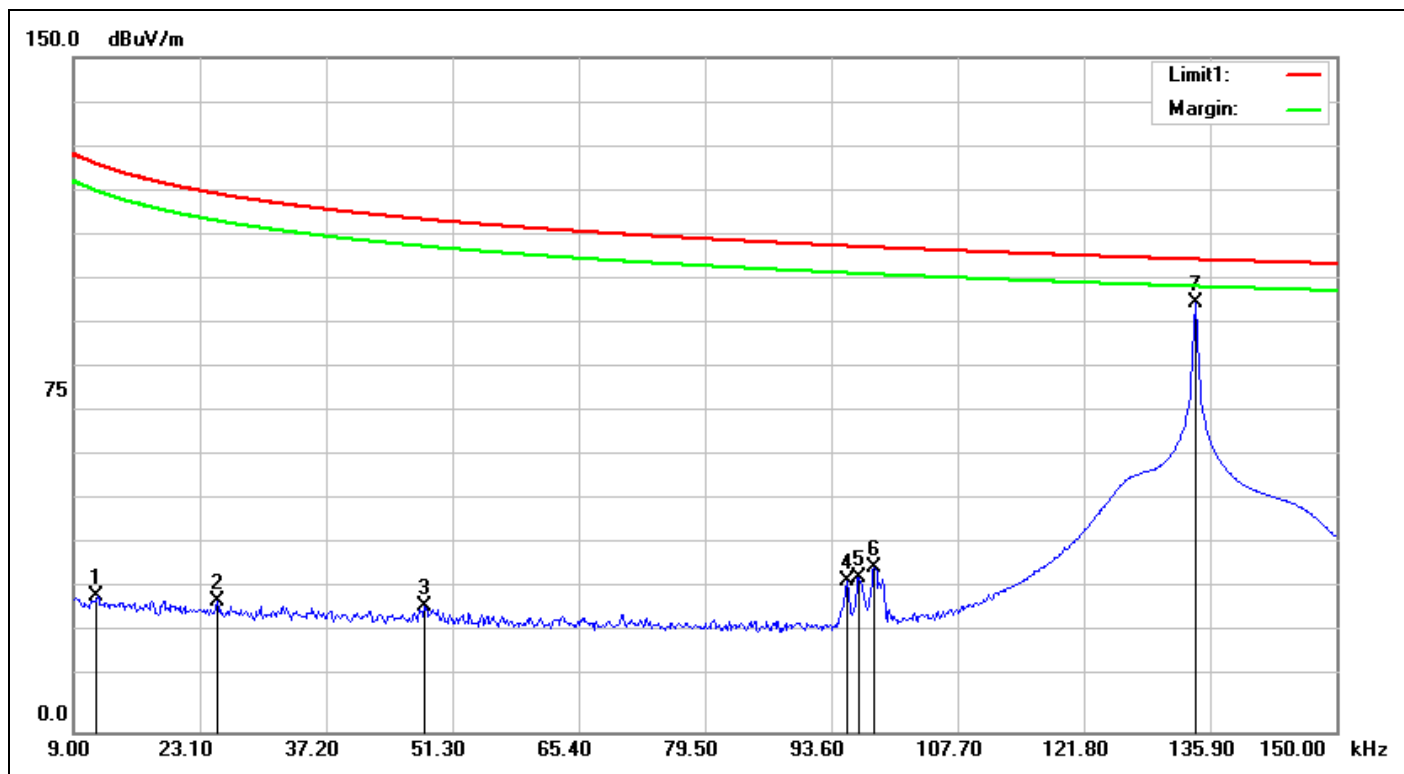
Spurious Emissions, TX Mode, 9-150 kHz



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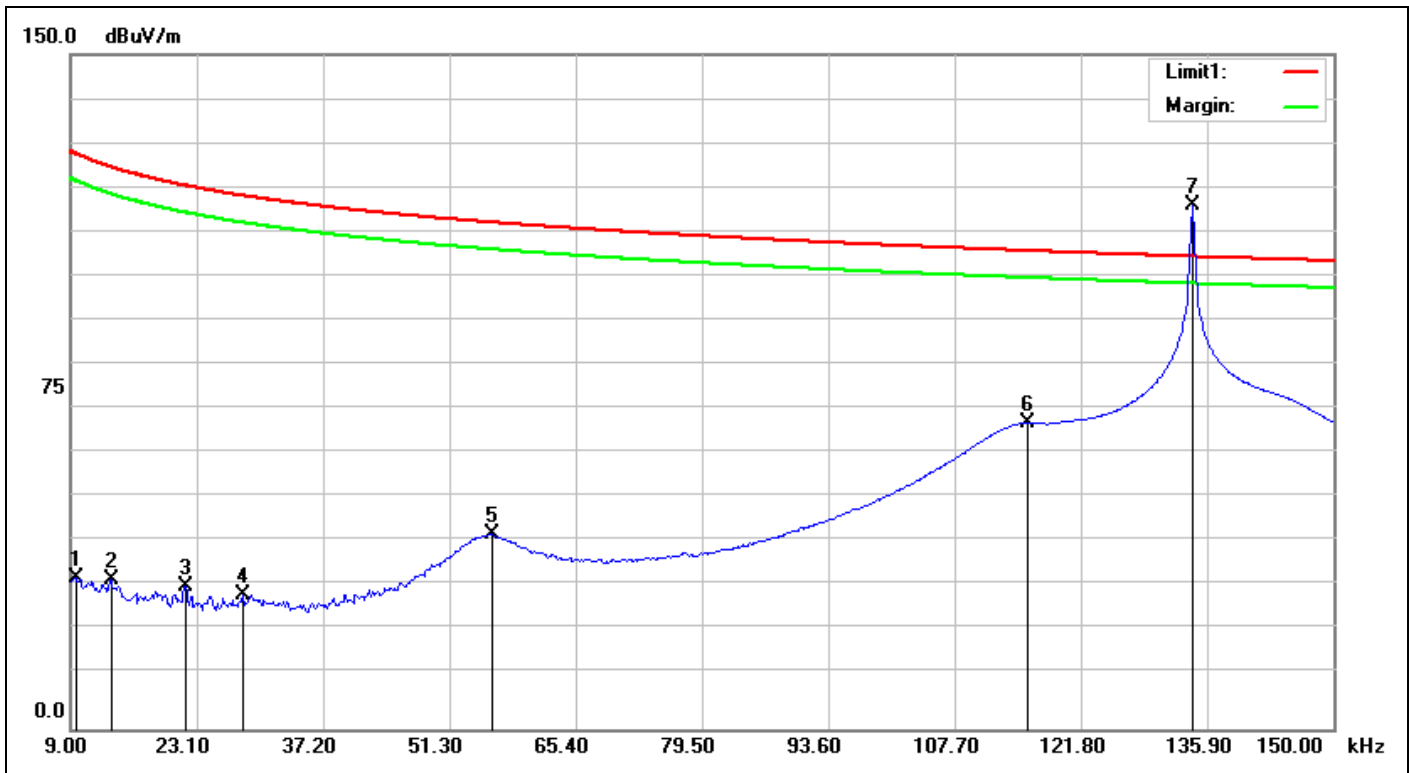
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Service No.:	114054576-FCC	Test Distance:	3m
Test Standard:	FCC15.209_9k-1G_3m	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2016/8/16 12:07:57
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Transceiver HDP/FDP op. on 134.2 kHz	Temp.(°C)/Hum.(%)	22.6(°C)/53%
Model No.:	VP1801	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	TX 134.2kHz		
	a)Antenna VP6011		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0115	20.52	9.77	30.29	126.37	-96.08	QP	100	152	
2	0.0250	20.45	8.68	29.13	119.63	-90.50	QP	100	47	
3	0.0481	19.70	8.07	27.77	113.95	-86.18	QP	100	201	
4	0.0954	19.28	14.39	33.67	108.01	-74.34	QP	100	177	
5	0.0967	19.27	15.18	34.45	107.89	-73.44	QP	100	180	
6	0.0983	19.25	17.36	36.61	107.75	-71.14	QP	100	162	
7	0.1342	19.25	76.28	95.53	105.04	-9.51	QP	100	173	

Spurious Emissions, TX Mode 9-150 kHz



Service No.:	114054576-FCC	Test Distance:	3m
Test Standard:	FCC15.209_9k-1G_3m	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2016/8/16 12:24:56
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Transceiver HDP/FDP op. on 134.2 kHz	Temp.(°C)/Hum.(%)	22.6(°C)/53%
Model No.:	VP1801	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	TX 134.2kHz		

b) Antenna Single Loop Walk Through

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0096	20.29	13.28	33.57	127.94	-94.37	QP	100	187	
2	0.0135	20.51	12.65	33.16	124.98	-91.82	QP	100	27	
3	0.0218	20.47	11.31	31.78	120.82	-89.04	QP	100	163	
4	0.0282	20.44	9.42	29.86	118.59	-88.73	QP	100	118	
5	0.0560	19.57	23.74	43.31	112.63	-69.32	QP	100	74	
6	0.1159	19.24	48.85	68.09	106.32	-38.23	QP	100	180	
7	0.1342	19.25	97.15	116.40	105.04	11.36	QP	100	157	Fundamental

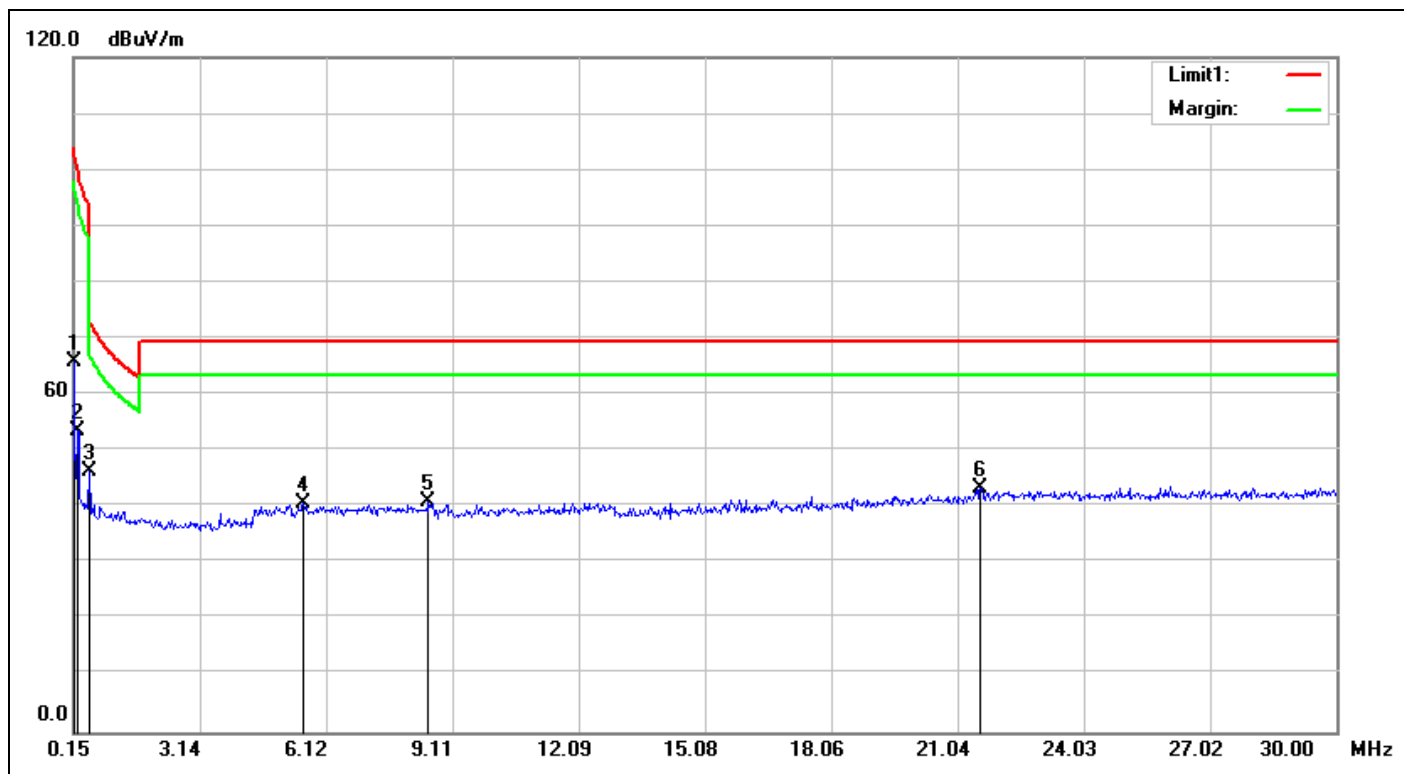
Spurious Emissions, TX Mode, 150 kHz -30MHz



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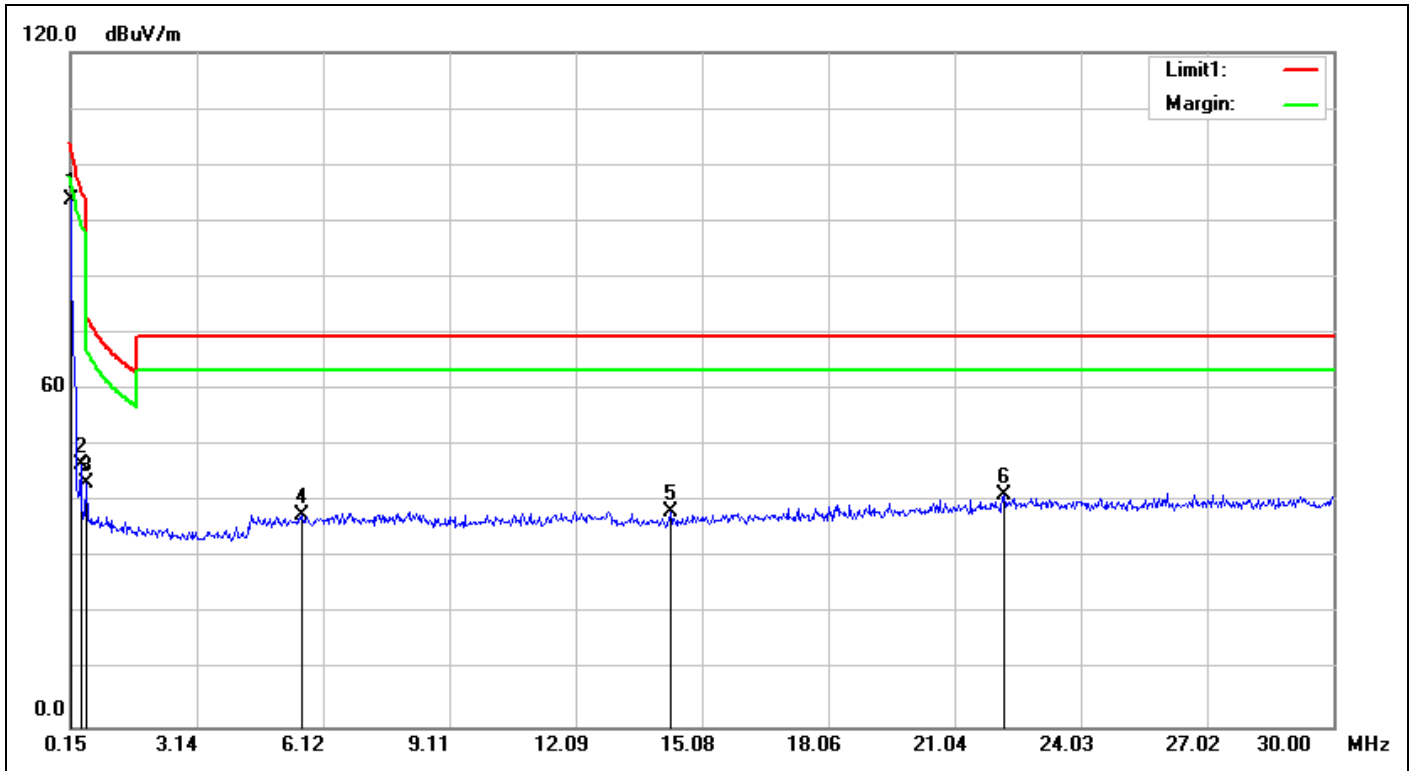
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Service No.:	114054576-FCC	Test Distance:	3m
Test Standard:	FCC15.209_9k-1G_3m	Ant. Polarization:	
Test item:	Radiation Emission	Test Time:	2016/8/12 09:37:41
Applicant:	Nedap	Test Rating:	
Product:	Transceiver HDP/FDP op. on 134.2 kHz	Temp.(°C)/Hum.(%)	20.6(°C)/51%
Model No.:	VP1801	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	TX 134.2kHz a)Antenna VP6011		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.1500	19.25	46.60	65.85	104.08	-38.23	QP	100	163	
2	0.2395	19.26	34.26	53.52	100.01	-46.49	QP	100	172	
3	0.5082	19.21	27.07	46.28	73.48	-27.20	QP	100	184	
4	5.5827	19.79	20.89	40.68	69.50	-28.82	QP	100	224	
5	8.5378	20.26	20.77	41.03	69.50	-28.47	QP	100	246	
6	21.5823	21.83	21.64	43.47	69.50	-26.03	QP	100	186	

Spurious Emissions, TX Mode 150 kHz -30MHz



Service No.:	114054576-FCC	Test Distance:	3m
Test Standard:	FCC15.209_9k-1G_3m	Ant. Polarization:	
Test item:	Radiation Emission	Test Time:	2016/8/12 11:32:50
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Transceiver HDP/FDP op. on 134.2 kHz	Temp.(°C)/Hum.(%)	20.6(°C)/51%
Model No.:	VP1801	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	TX 134.2kHz		
	b)Antenna Single Loop Walk Through		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.1500	19.25	74.38	93.63	104.05	-10.42	QP	100	88	
2	0.3888	19.25	27.29	46.54	95.80	-49.26	QP	100	247	
3	0.5082	19.21	24.25	43.46	73.48	-30.02	QP	100	180	
4	5.6125	19.80	17.97	37.77	69.50	-31.73	QP	100	115	
5	14.3287	21.04	17.27	38.31	69.50	-31.19	QP	100	47	
6	22.2092	21.87	19.27	41.14	69.50	-28.36	QP	100	122	

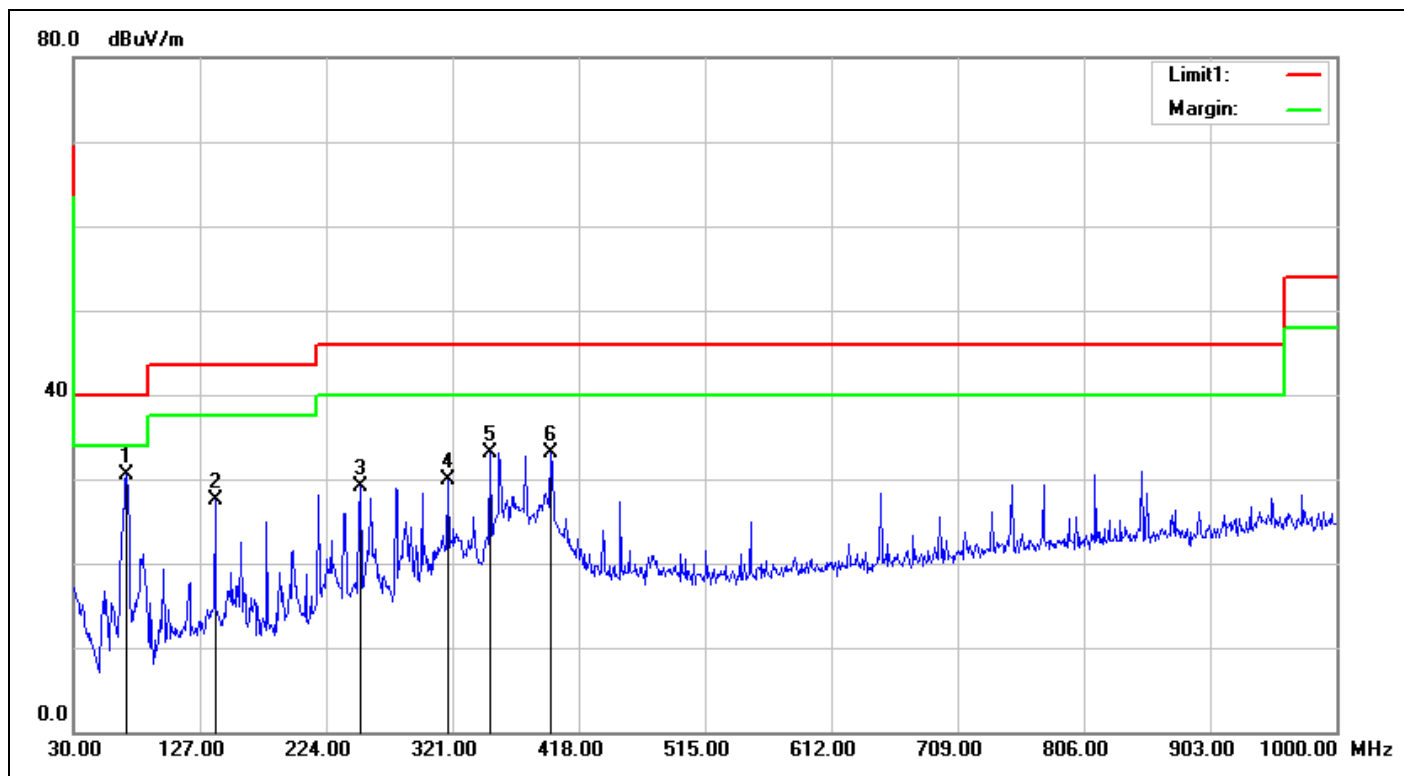
Spurious Emissions, TX Mode, 30MHz-1GHz



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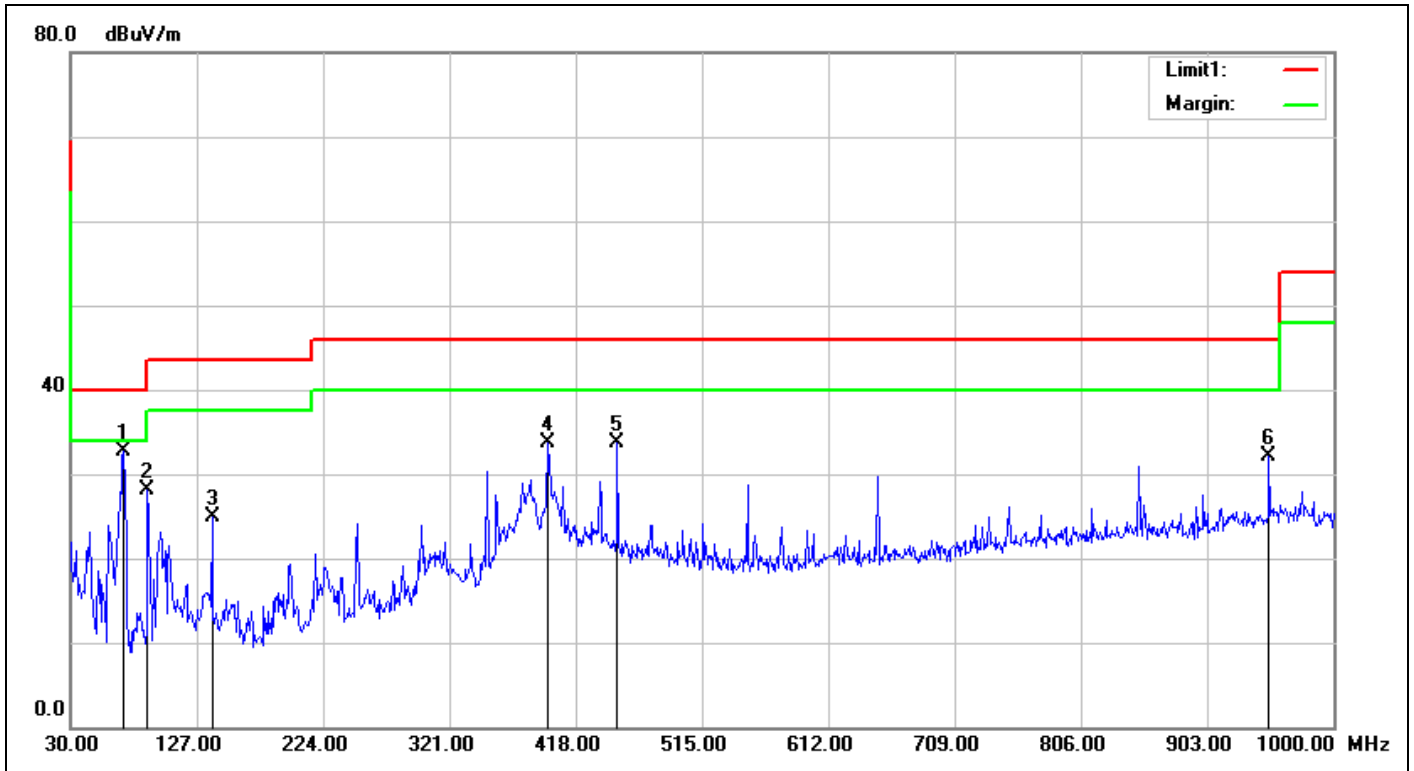
Tel:+886-2172-7000 fax:+886-2528-0018



Service No.:	114054576-FCC	Test Distance:	3m
Test Standard:	FCC15.209_9k-1G_3m	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2016/8/12 09:47:45
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Transceiver HDP/FDP op. on 134.2 kHz	Temp.(°C)/Hum.(%)	20.6(°C)/51%
Model No.:	VP1801	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	TX 134.2kHz a)Antenna VP6011		

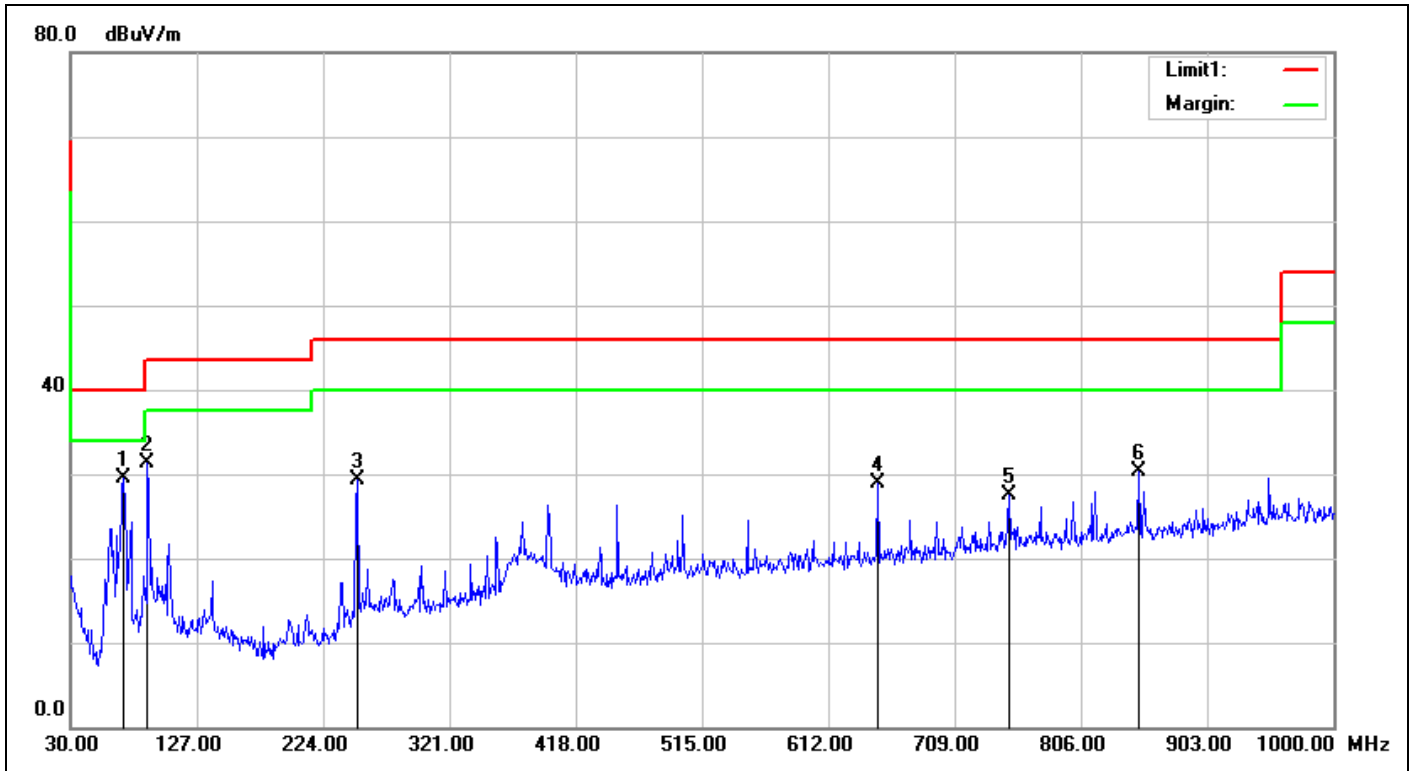
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	70.7400	-20.57	51.17	30.60	40.00	-9.40	QP	100	162	
2	138.6399	-14.47	42.02	27.55	43.50	-15.95	QP	100	157	
3	250.1900	-13.27	42.30	29.03	46.00	-16.97	QP	100	77	
4	317.1200	-11.65	41.52	29.87	46.00	-16.13	QP	100	133	
5	350.1000	-11.02	44.11	33.09	46.00	-12.91	QP	100	106	
6	396.6600	-10.07	43.23	33.16	46.00	-12.84	QP	100	213	

Spurious Emissions, TX Mode, 30M-1GHz



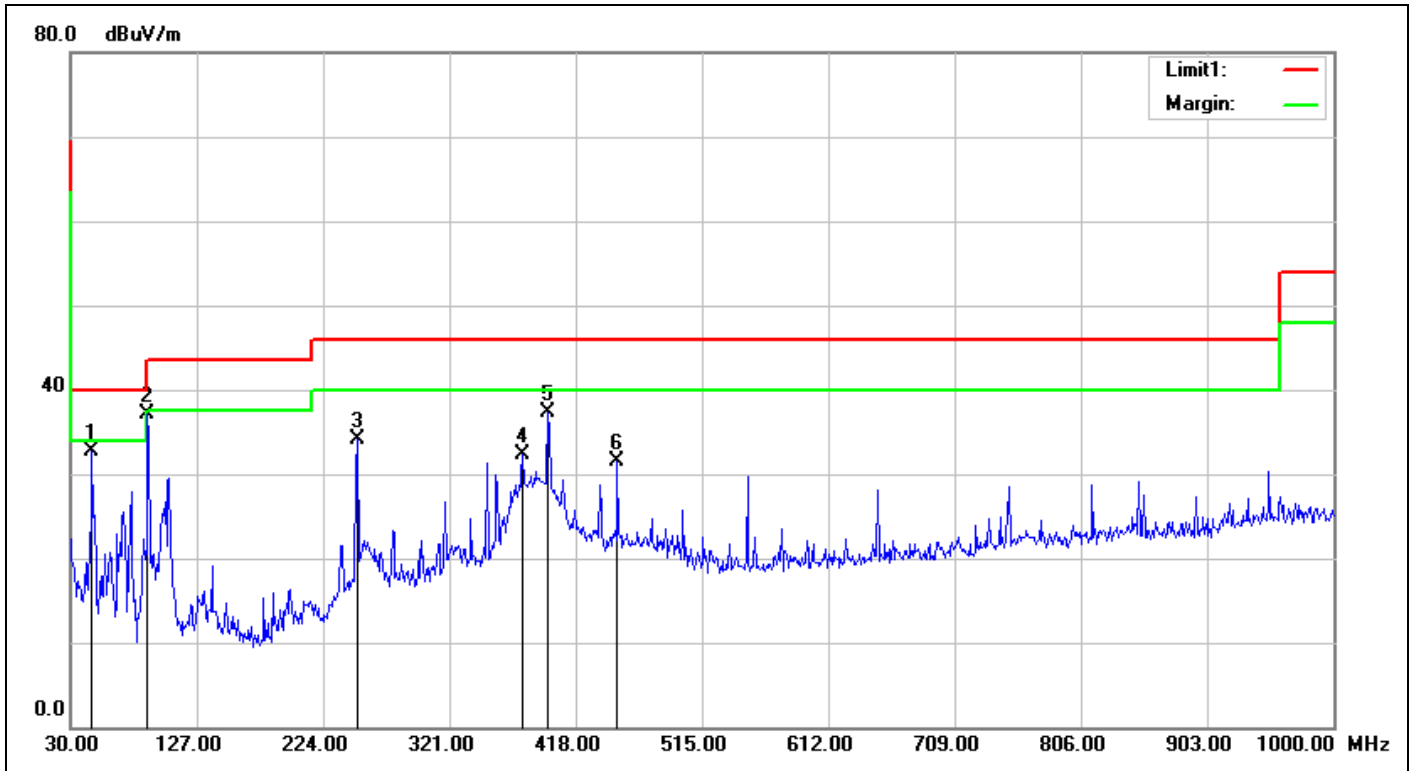
Service No.:	114054576-FCC	Test Distance:	3m
Test Standard:	FCC15.209_9k-1G_3m	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2016/8/12 09:48:49
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Transceiver HDP/FDP op. on 134.2 kHz	Temp.(°C)/Hum.(%)	20.6(°C)/51%
Model No.:	VP1801	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	TX 134.2kHz a)Antenna VP6011		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	70.7400	-20.57	53.23	32.66	40.00	-7.34	QP	100	192	
2	89.1700	-18.48	46.51	28.03	43.50	-15.47	QP	100	78	
3	138.6400	-14.47	39.42	24.95	43.50	-18.55	QP	100	198	
4	396.6600	-10.07	43.75	33.68	46.00	-12.32	QP	100	152	
5	450.0100	-9.53	43.26	33.73	46.00	-12.27	QP	100	179	
6	950.5300	-1.17	33.25	32.08	46.00	-13.92	QP	100	187	



Service No.:	114054576-FCC	Test Distance:	3m
Test Standard:	FCC15.209_9k-1G_3m	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2016/8/12 11:53:46
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Transceiver HDP/FDP op. on 134.2 kHz	Temp.(°C)/Hum.(%)	20.6(°C)/51%
Model No.:	VP1801	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	TX 134.2kHz b)Antenna Single Loop Walk Through		

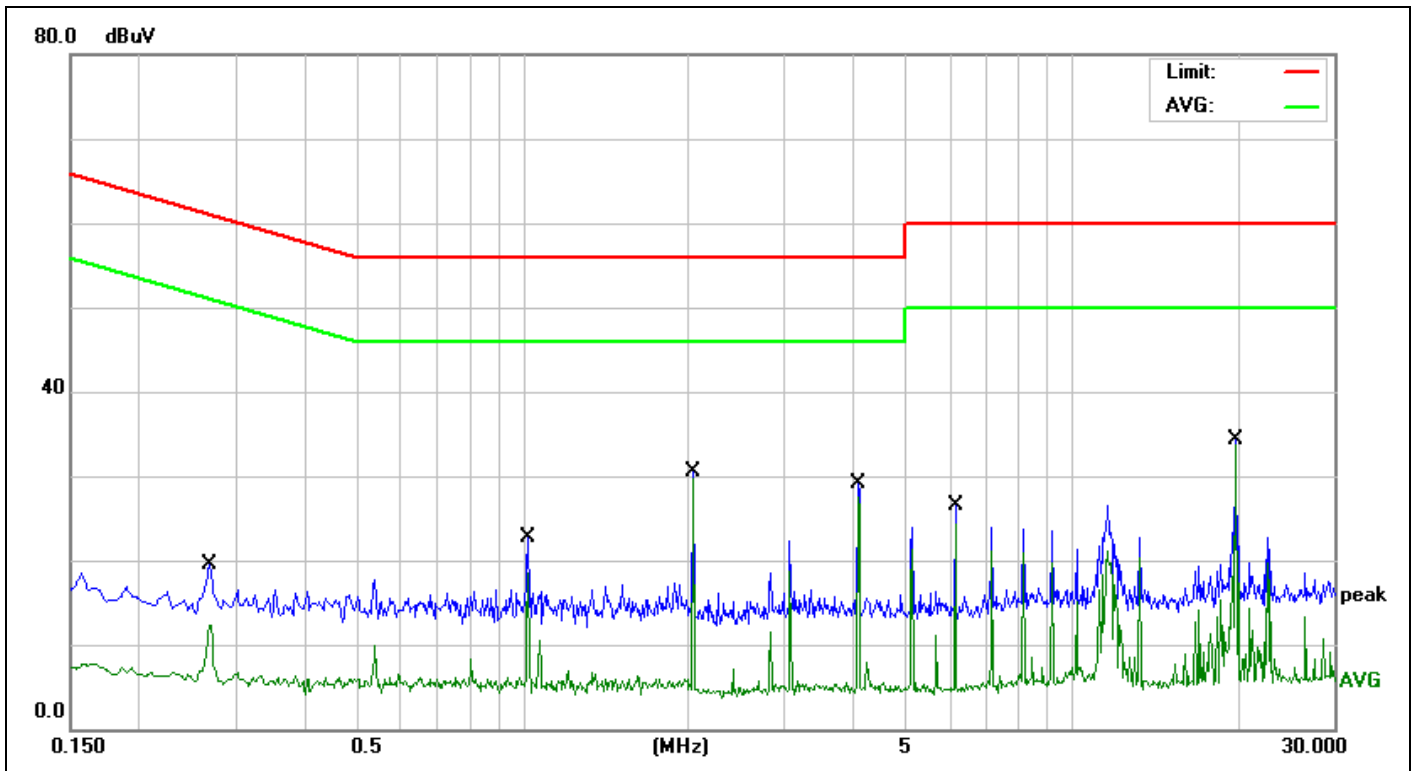
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1	70.7399	-20.57	50.05	29.48	40.00	-10.52	QP	100	303	
2	89.1700	-18.48	49.77	31.29	43.50	-12.21	QP	100	192	
3	250.1899	-13.27	42.54	29.27	46.00	-16.73	QP	100	88	
4	649.8300	-6.55	35.48	28.93	46.00	-17.07	QP	100	104	
5	750.7100	-4.50	32.06	27.56	46.00	-18.44	QP	100	88	
6	850.6200	-3.29	33.60	30.31	46.00	-15.69	QP	100	136	



Service No.:	114054576-FCC	Test Distance:	3m
Test Standard:	FCC15.209_9k-1G_3m	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2016/8/12 11:54:49
Applicant:	Nedap	Test Rating:	DC 24V
Product:	Transceiver HDP/FDP op. on 134.2 kHz	Temp.(°C)/Hum.(%)	20.6(°C)/51%
Model No.:	VP1801	Test Engineer:	Freeman Wang
Test Mode:			
Remark:	TX 134.2kHz b)Antenna Single Loop Walk Through		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	46.4900	-16.66	49.42	32.76	40.00	-7.24	QP	100	168	
2	89.1700	-18.48	55.55	37.07	43.50	-6.43	QP	100	117	
3	250.1900	-13.27	47.44	34.17	46.00	-11.83	QP	100	147	
4	377.2600	-10.46	42.73	32.27	46.00	-13.73	QP	100	229	
5	396.6600	-10.07	47.42	37.35	46.00	-8.65	QP	100	226	
6	450.0100	-9.53	40.96	31.43	46.00	-14.57	QP	100	179	

Mains Spurious Emissions



Service No.: 114054576(VP1801)

Test Standard: FCC Class B Conduction(QP)

Probe: L1

Test item: Conduction Emission

Test Time: 2016/8/15 14:09:01

Applicant: Nedap

Test Rating: DC 24V

Product: Transceiver HDP/FDP

Temp.(°C)/Hum.(%): 30.5(°C)/36%

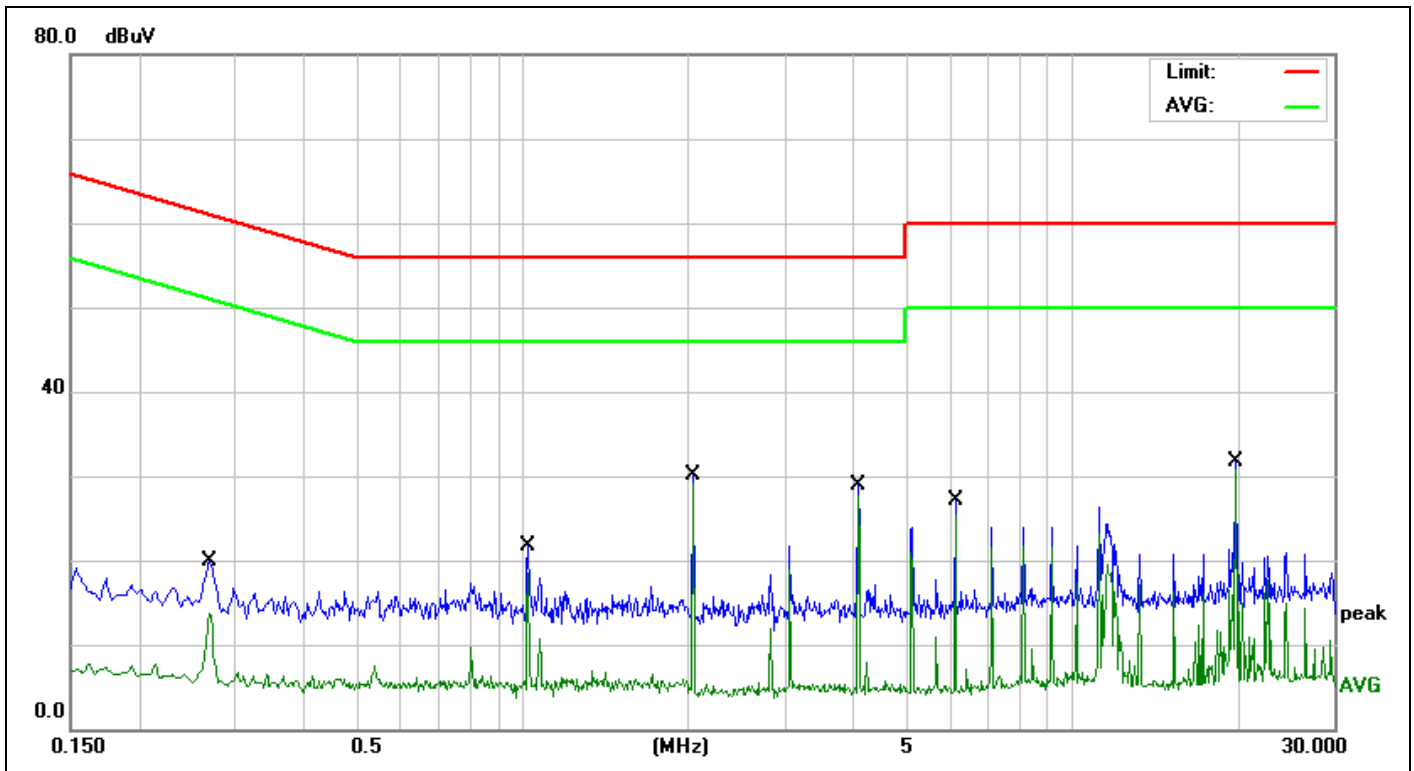
Model No.: VP1801

Test Engineer: Freeman Wang

Test Mode:

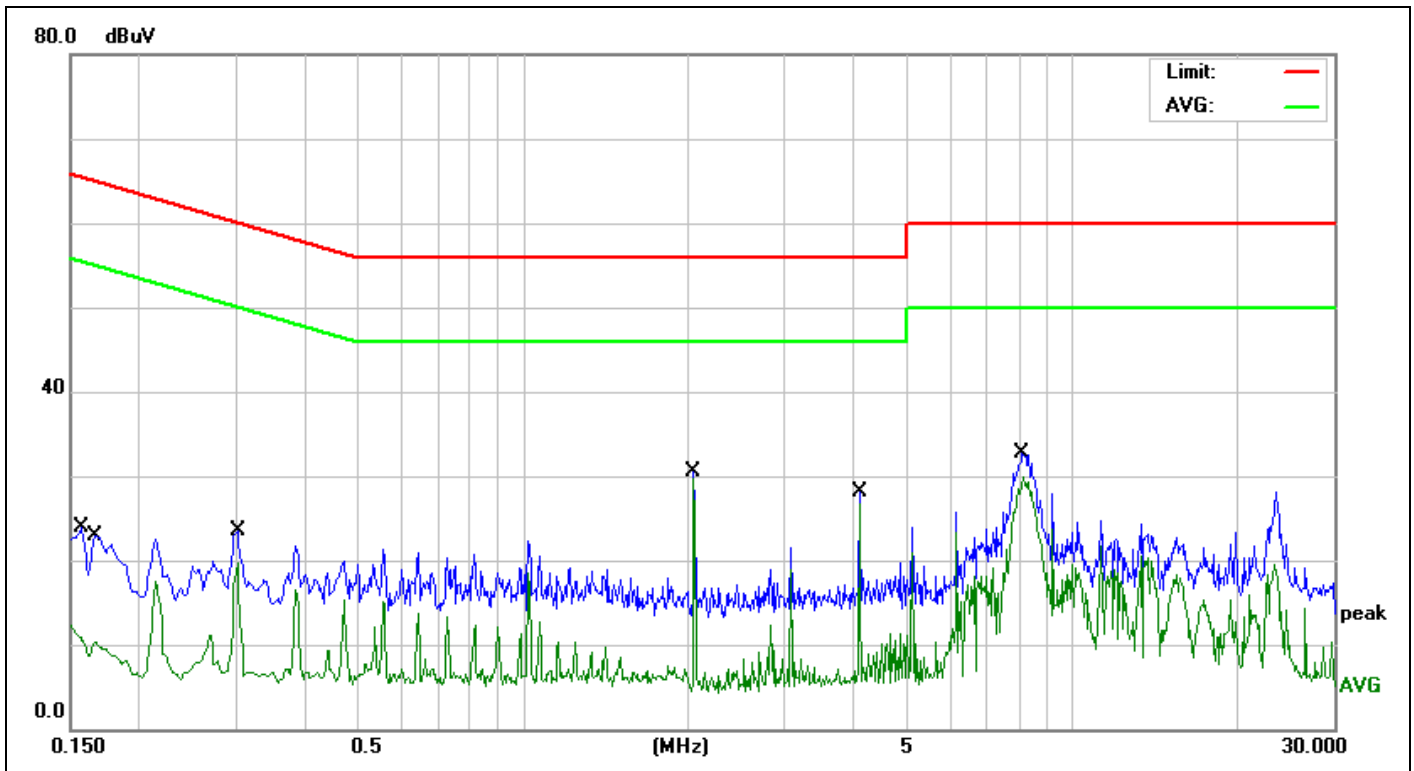
Remark: a)Antenna VP6011

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Remark
1	0.2700	9.75	4.15	13.90	61.12	-47.22	QP	
2	0.2700	9.75	1.78	11.53	51.12	-39.59	AVG	
3	1.0220	9.75	9.65	19.40	56.00	-36.60	QP	
4	1.0220	9.75	8.99	18.74	46.00	-27.26	AVG	
5	2.0460	9.77	19.57	29.34	56.00	-26.66	QP	
6	2.0460	9.77	19.59	29.36	46.00	-16.64	AVG	
7	4.0900	9.79	18.08	27.87	56.00	-28.13	QP	
8	4.0900	9.79	18.01	27.80	46.00	-18.20	AVG	
9	6.1380	9.81	13.22	23.03	60.00	-36.97	QP	
10	6.1380	9.81	11.55	21.36	50.00	-28.64	AVG	
11	19.8620	9.98	24.12	34.10	60.00	-25.90	QP	
12	19.8620	9.98	23.86	33.84	50.00	-16.16	AVG	



Service No.: 114054576(VP1801)
Test Standard: FCC Class B Conduction(QP) **Probe:** N
Test item: Conduction Emission **Test Time:** 2016/8/15 14:12:01
Applicant: Nedap **Test Rating:** DC 24V
Product: Transceiver HDP/FDP **Temp.(°C)/Hum.(%):** 30.5(°C)/36%
Model No.: VP1801 **Test Engineer:** Freeman Wang
Test Mode:
Remark: a)Antenna VP6011

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Remark
1	0.2700	9.68	5.35	15.03	61.12	-46.09	QP	
2	0.2700	9.68	3.56	13.24	51.12	-37.88	AVG	
3	1.0220	9.70	9.70	19.40	56.00	-36.60	QP	
4	1.0220	9.70	9.05	18.75	46.00	-27.25	AVG	
5	2.0460	9.71	18.66	28.37	56.00	-27.63	QP	
6	2.0460	9.71	18.58	28.29	46.00	-17.71	AVG	
7	4.0900	9.70	16.94	26.64	56.00	-29.36	QP	
8	4.0900	9.70	16.48	26.18	46.00	-19.82	AVG	
9	6.1340	9.74	14.60	24.34	60.00	-35.66	QP	
10	6.1340	9.74	13.48	23.22	50.00	-26.78	AVG	
11	19.8620	9.96	21.02	30.98	60.00	-29.02	QP	
12	19.8620	9.96	20.97	30.93	50.00	-19.07	AVG	



Service No.: 114054576(VP1801)

Test Standard: FCC Class B Conduction(QP)

Probe: L1

Test item: Conduction Emission

Test Time: 2016/8/15 14:29:49

Applicant: Nedap

Test Rating: DC 24V

Product: Transceiver HDP/FDP

Temp.(°C)/Hum.(%): 30.5(°C)/36%

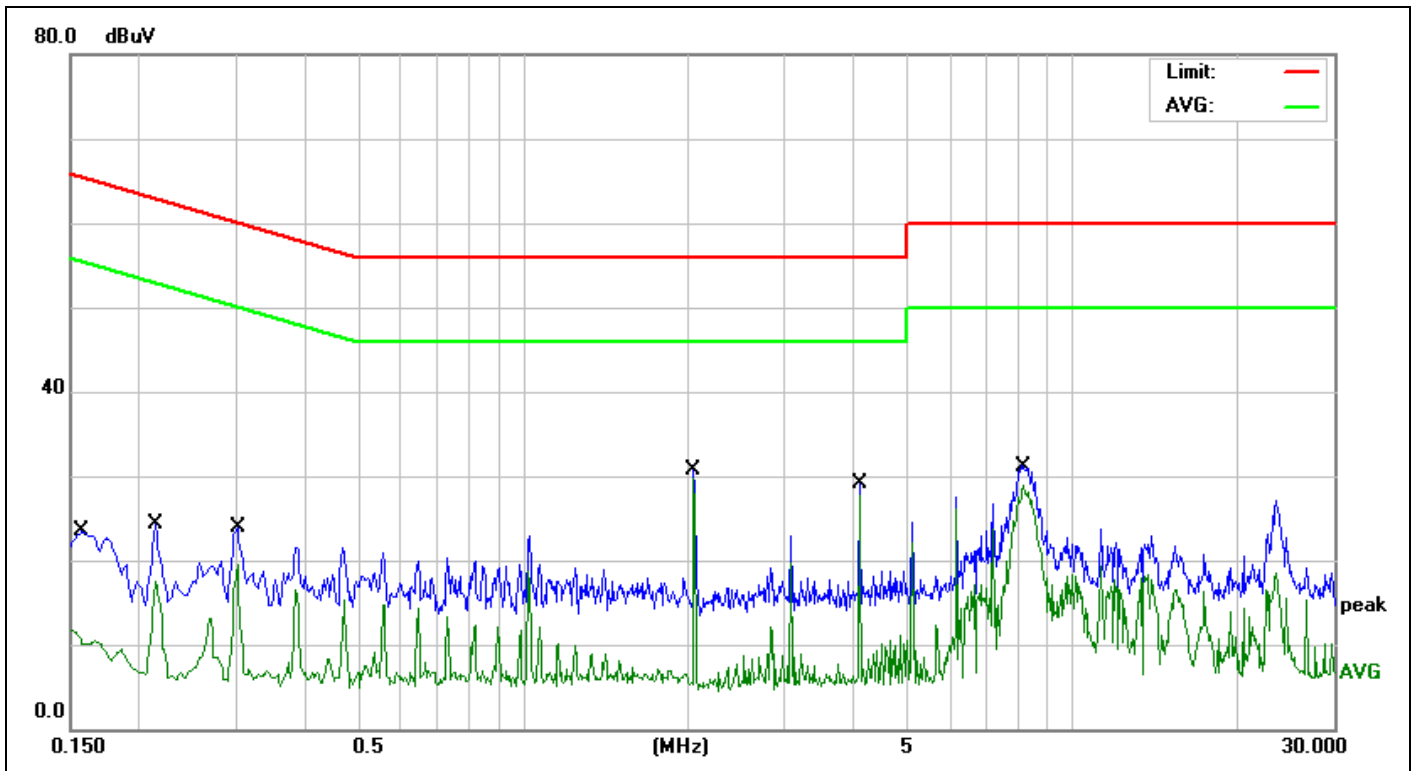
Model No.: VP1801

Test Engineer: Freeman Wang

Test Mode:

Remark: b)Antenna Single Loop Walk Through

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Remark
1	0.1580	9.78	8.54	18.32	65.56	-47.24	QP	
2	0.1580	9.78	-0.63	9.15	55.56	-46.41	AVG	
3	0.1660	9.78	8.50	18.28	65.15	-46.87	QP	
4	0.1660	9.78	-0.19	9.59	55.15	-45.56	AVG	
5	0.3020	9.75	10.89	20.64	60.19	-39.55	QP	
6	0.3020	9.75	9.48	19.23	50.19	-30.96	AVG	
7	2.0540	9.77	19.07	28.84	56.00	-27.16	QP	
8	2.0540	9.77	19.01	28.78	46.00	-17.22	AVG	
9	4.1060	9.79	17.29	27.08	56.00	-28.92	QP	
10	4.1060	9.79	17.05	26.84	46.00	-19.16	AVG	
11	8.1620	9.84	20.85	30.69	60.00	-29.31	QP	
12	8.1620	9.84	20.00	29.84	50.00	-20.16	AVG	



Service No.: 114054576(VP1801)

Test Standard: FCC Class B Conduction(QP)

Probe: N

Test item: Conduction Emission

Test Time: 2016/8/15 14:27:22

Applicant: Nedap

Test Rating: DC 24V

Product: Transceiver HDP/FDP

Temp.(°C)/Hum.(%): 30.5(°C)/36%

Model No.: VP1801

Test Engineer: Freeman Wang

Test Mode:

Remark: b)Antenna Single Loop Walk Through

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Remark
1	0.1580	9.73	8.59	18.32	65.56	-47.24	QP	
2	0.1580	9.73	-0.59	9.14	55.56	-46.42	AVG	
3	0.2140	9.69	9.05	18.74	63.04	-44.30	QP	
4	0.2140	9.69	7.56	17.25	53.04	-35.79	AVG	
5	0.3020	9.68	10.85	20.53	60.19	-39.66	QP	
6	0.3020	9.68	9.47	19.15	50.19	-31.04	AVG	
7	2.0540	9.71	20.02	29.73	56.00	-26.27	QP	
8	2.0540	9.71	20.01	29.72	46.00	-16.28	AVG	
9	4.1100	9.70	17.52	27.22	56.00	-28.78	QP	
10	4.1100	9.70	17.12	26.82	46.00	-19.18	AVG	
11	8.1620	9.79	19.41	29.20	60.00	-30.80	QP	
12	8.1620	9.79	18.89	28.68	50.00	-21.32	AVG	