

Test Report No.50051170 001

Appendix D: Radiated and Mains Spurious Emission Data

(File: 50051170AppendixD)

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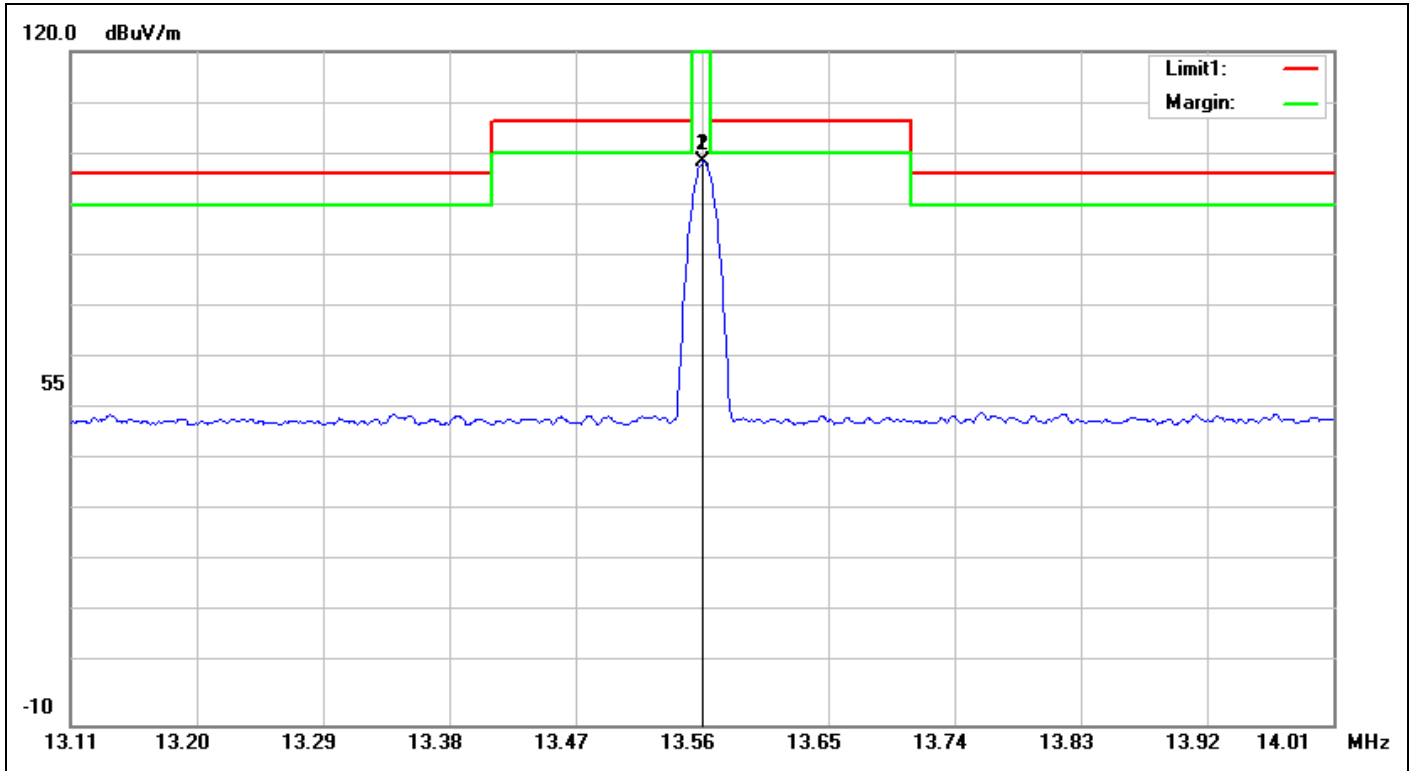
Emissions, Fundamental



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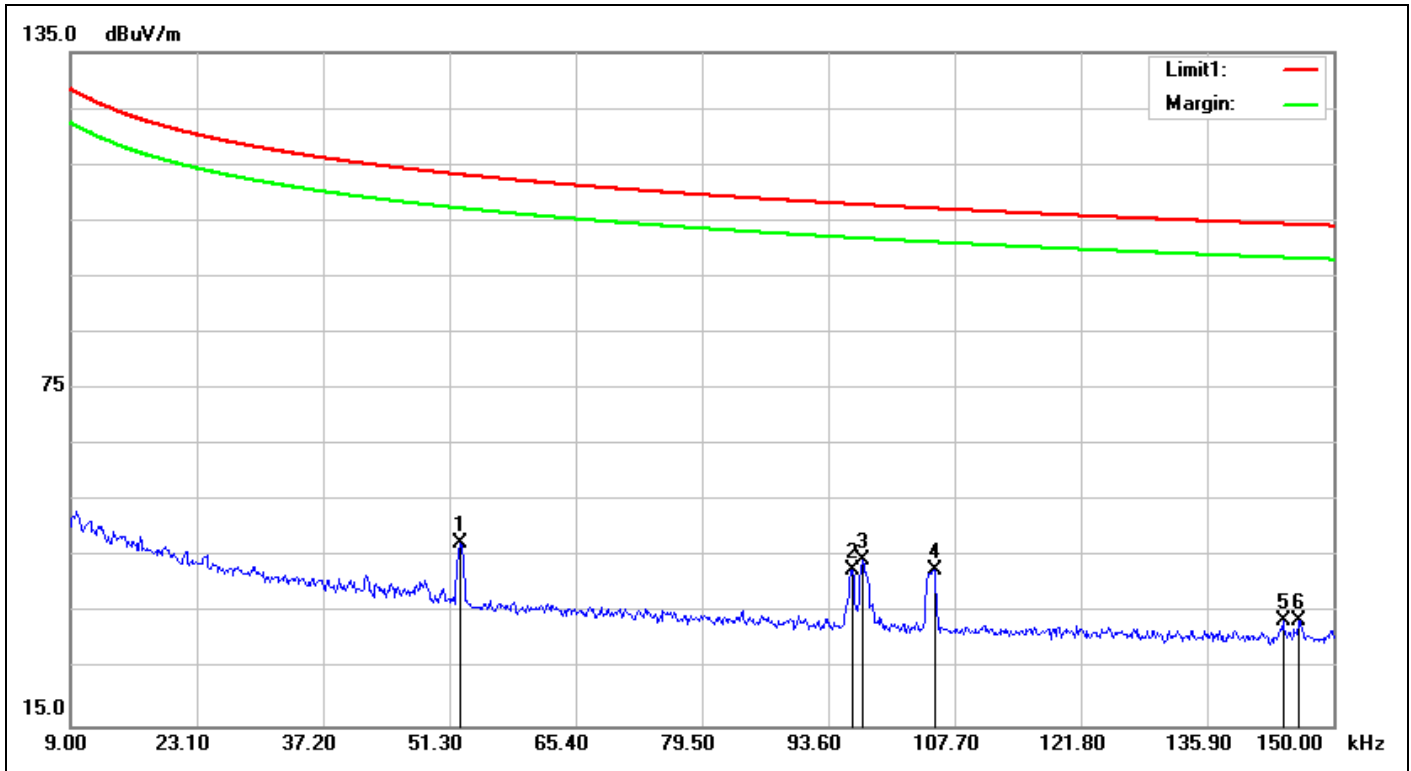
Service No.:	114041540-FCC	Test Distance:	1.2m
Test Standard:	FCC 15.225_Fundamental_1.2m(dBuV/m)	Ant. Polarization:	
Test item:	Radiation Emission	Test Time:	2016/7/27 09:37:18
Applicant:	Nedap	Test Rating:	AC 120V/60Hz
Product:	RFID Reader MidRanger MR-100-UE	Temp.(°C)/Hum.(%):	22.3(°C)/57%
Model No.:	MidRanger	Test Engineer:	George Yang
Test Mode:	Fundamental		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	13.5609	20.94	77.73	98.67	139.90	-41.23	peak	100	229	
2	13.5609	20.94	77.73	98.67	139.90	-41.23	QP	100	229	

Spurious Emissions, TX Mode, 9-150 kHz



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Service No.:	114041540-FCC	Test Distance:	3m
Test Standard:	FCC15.209_9k-1G_3m	Ant. Polarization:	
Test item:	Radiation Emission	Test Time:	2016/7/27 10:00:13
Applicant:	Nedap	Test Rating:	AC 120V/60Hz
Product:	RFID Reader MidRanger MR-100-UE	Temp.(°C)/Hum.(%):	22.3(°C)/57%
Model No.:	MidRanger	Test Engineer:	George Yang
Test Mode:	13.56-TX		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0524	19.60	28.06	47.66	113.21	-65.55	QP	100	133	
2	0.0963	19.27	23.61	42.88	107.92	-65.04	QP	100	360	
3	0.0974	19.26	25.17	44.43	107.83	-63.40	QP	100	77	
4	0.1054	19.24	23.43	42.67	107.14	-64.47	QP	100	133	
5	0.1444	19.25	14.41	33.66	104.41	-70.75	QP	100	53	
6	0.1462	19.25	14.57	33.82	104.30	-70.48	QP	100	66	

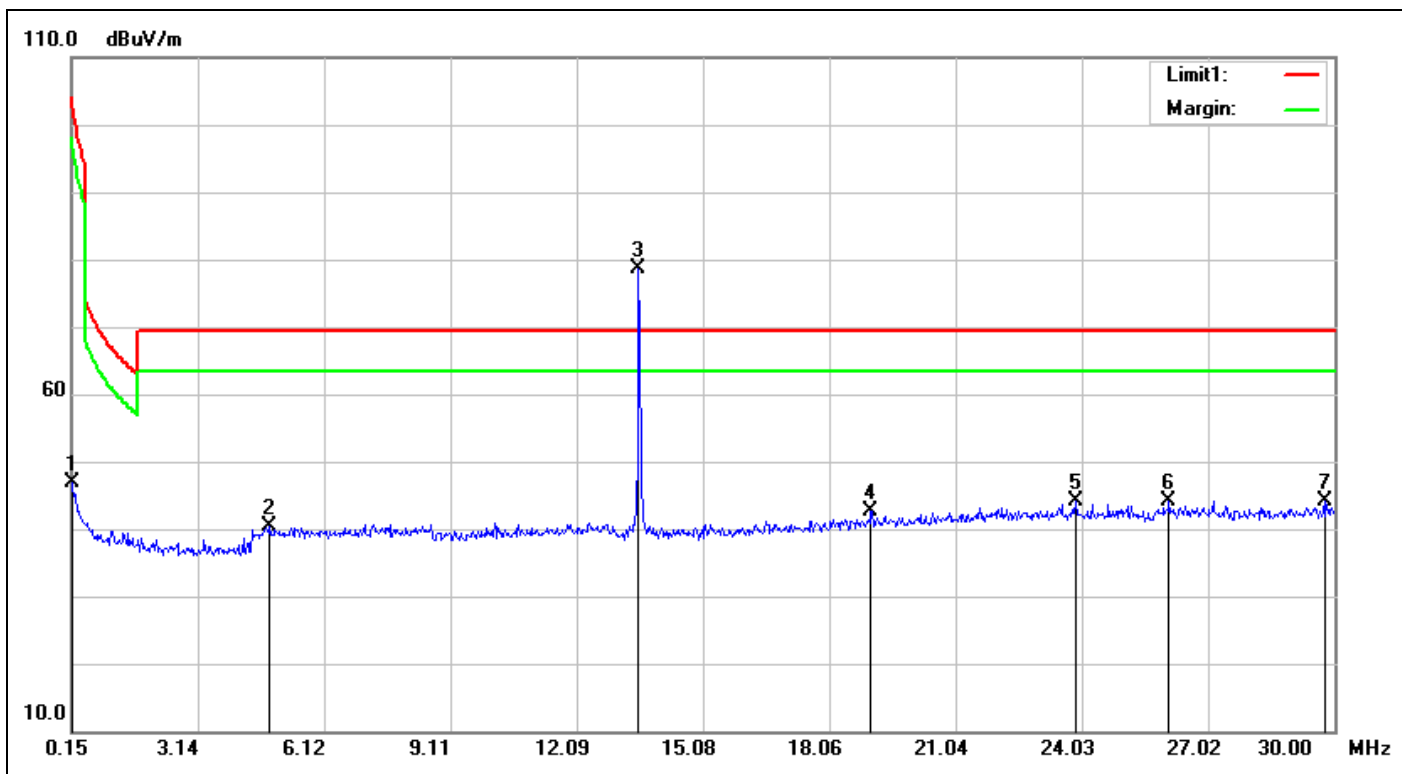
Spurious Emissions, TX Mode, 150 kHz -30MHz



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Service No.:	114041540-FCC	Test Distance:	3m
Test Standard:	FCC15.209_9k-1G_3m	Ant. Polarization:	
Test item:	Radiation Emission	Test Time:	2016/7/27 10:03:07
Applicant:	Nedap	Test Rating:	AC 120V/60Hz
Product:	RFID Reader MidRanger MR-100-UE	Temp.(°C)/Hum.(%):	22.3(°C)/57%
Model No.:	MidRanger	Test Engineer:	George Yang
Test Mode:	13.56-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	19.25	27.67	46.92	104.08	-57.16	QP	100	115	
2	4.8365	19.65	20.61	40.26	69.50	-29.24	QP	100	0	
3	13.5600	20.94	57.70	78.64	69.50	9.14	QP	100	115	Fundamental
4	19.0451	21.63	21.06	42.69	69.50	-26.81	QP	100	115	
5	23.8808	21.96	22.09	44.05	69.50	-25.45	QP	100	115	
6	26.0897	22.07	22.12	44.19	69.50	-25.31	QP	100	232	
7	29.7612	22.27	21.78	44.05	69.50	-25.45	QP	100	232	

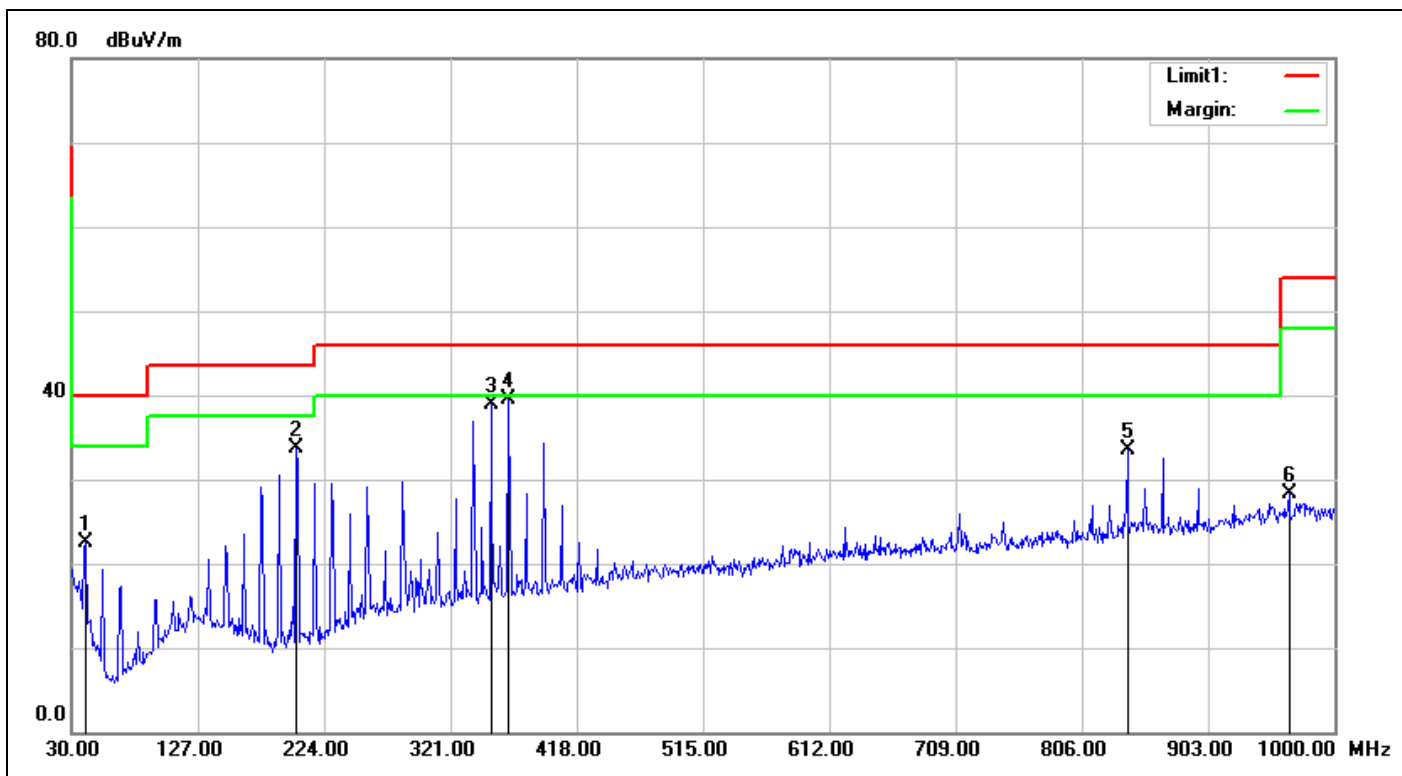
Spurious Emissions, TX Mode, 30MHz-1GHz



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Service No.:	114041540-FCC	Test Distance:	3m
Test Standard:	FCC15.209_9k-1G_3m	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2016/7/27 10:11:57
Applicant:	Nedap	Test Rating:	AC 120V/60Hz
Product:	RFID Reader MidRanger MR-100-UE	Temp.(°C)/Hum.(%):	22.3(°C)/57%
Model No.:	MidRanger	Test Engineer:	George Yang
Test Mode:	13.56-TX		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	40.6700	-11.86	34.33	22.47	40.00	-17.53	QP	100	245	
2	202.6600	-14.67	48.30	33.63	43.50	-9.87	QP	100	245	
3	352.0400	-9.36	48.30	38.94	46.00	-7.06	QP	100	128	
4	365.6200	-9.17	48.73	39.56	46.00	-6.44	QP	100	128	
5	840.9200	-2.65	36.17	33.52	46.00	-12.48	QP	100	128	
6	965.0800	-0.36	28.69	28.33	54.00	-25.67	QP	100	0	

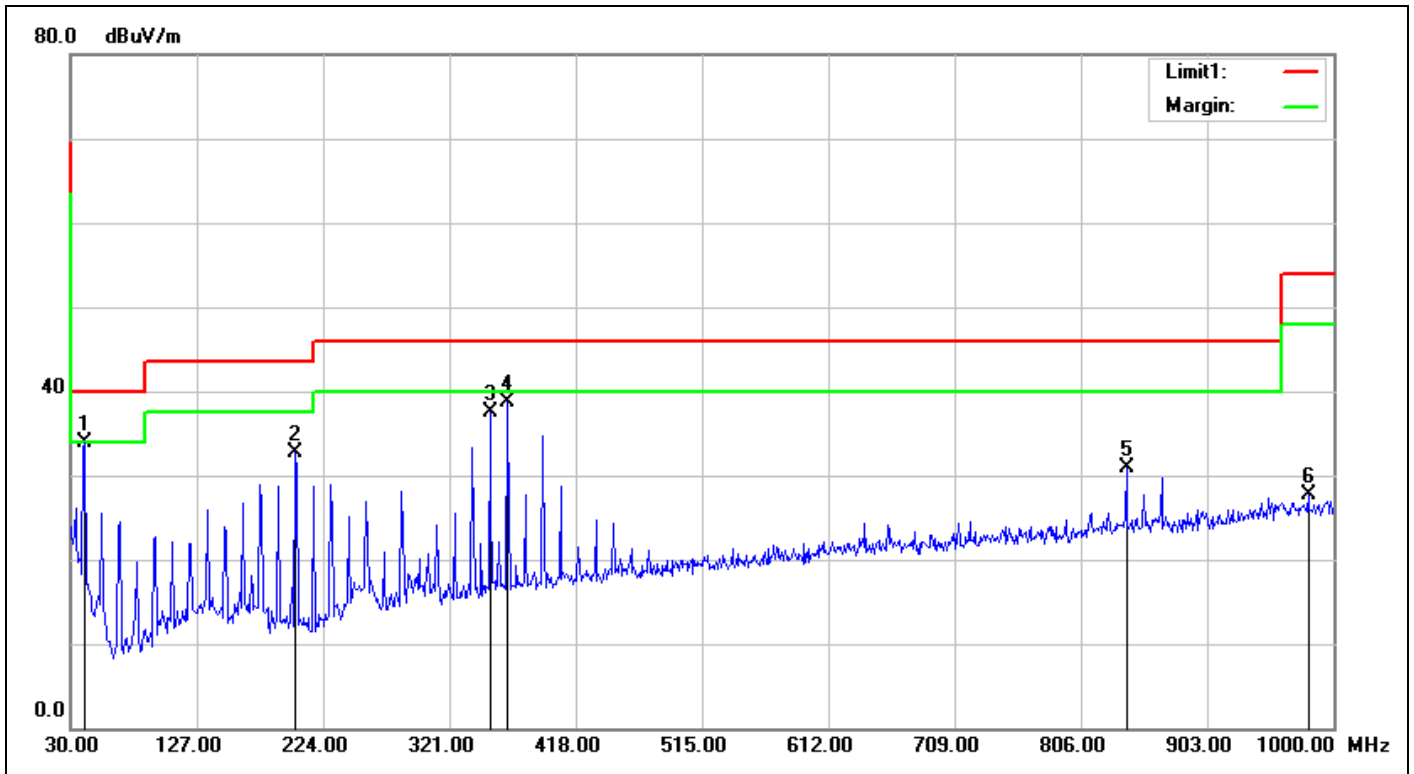


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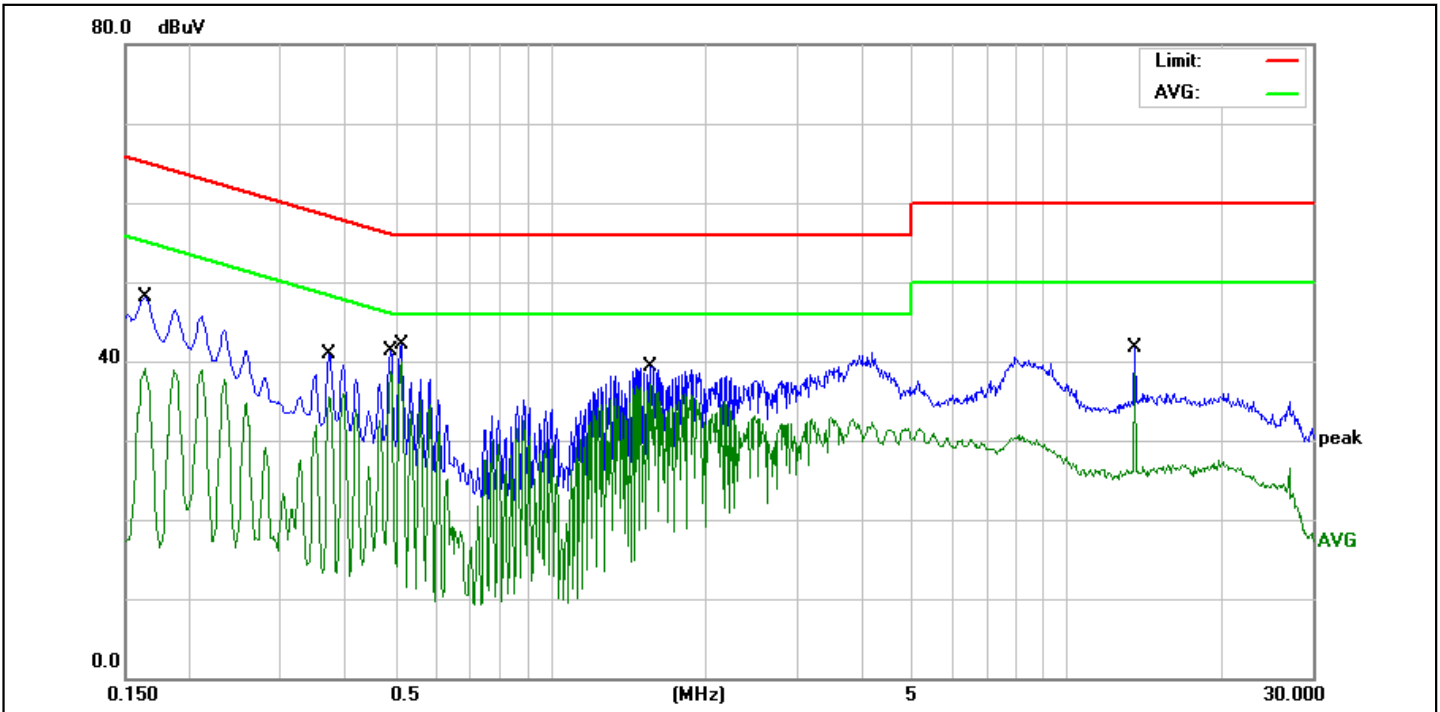
Spurious Emissions, TX Mode, 30MHz-1GHz



Service No.:	114041540-FCC	Test Distance:	3m
Test Standard:	FCC15.209_9k-1G_3m	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2016/7/27 10:13:48
Applicant:	Nedap	Test Rating:	AC 120V/60Hz
Product:	RFID Reader MidRanger MR-100-UE	Temp.(°C)/Hum.(%):	22.3(°C)/57%
Model No.:	MidRanger	Test Engineer:	George Yang
Test Mode:	13.56-TX		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	40.6700	-11.86	45.74	33.88	40.00	-6.12	QP	100	115	
2	202.6600	-14.67	47.33	32.66	43.50	-10.84	QP	100	232	
3	352.0400	-9.36	46.91	37.55	46.00	-8.45	QP	100	115	
4	365.6200	-9.17	47.95	38.78	46.00	-7.22	QP	100	115	
5	840.9200	-2.65	33.59	30.94	46.00	-15.06	QP	100	115	
6	980.6000	-0.19	27.88	27.69	54.00	-26.31	QP	100	349	

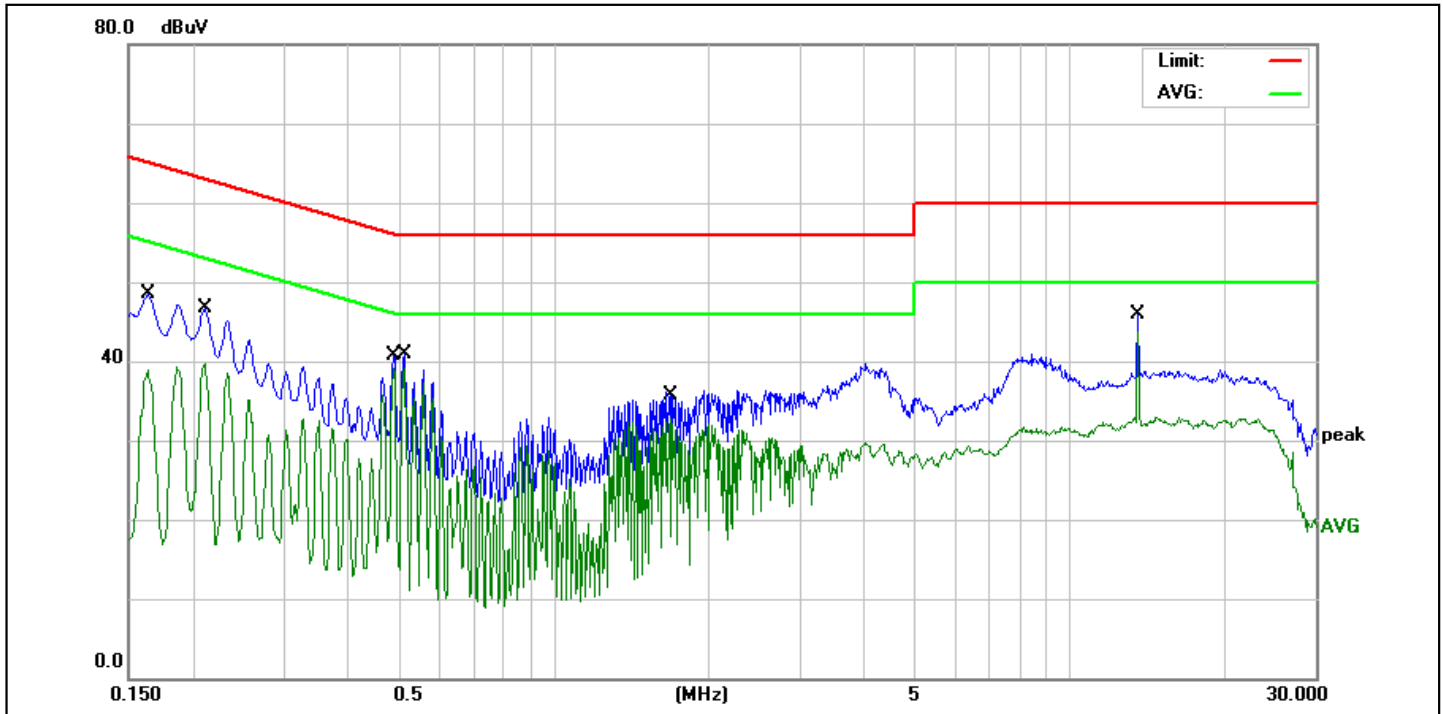
Mains Spurious Emissions



Service No.: 114041540(MR-100-UE)
 Test Standard: FCC Class B Conduction(QP)
 Test item: Conducted Emission Phase: L1
 Applicant: Nedap Temp.(°C)/Hum.(%): 23(°C) / 46 %
 Product: RFID Reader MidRanger MR-100-UE Power Rating: AC 120V/60Hz
 Model No.: MR-100-UE Test Engineer: Kai Wang

Test Mode: (a) USB operation
 Remark: Power-Win Adapter(New Adapter)

No.	Frequency (MHz)	Factor ()	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1635	9.78	31.77	41.55	65.28	-23.73	QP	P	
2	0.1635	9.78	28.79	38.57	55.28	-16.71	AVG	P	
3	0.3727	9.75	29.11	38.86	58.44	-19.58	QP	P	
4	0.3727	9.75	24.26	34.01	48.44	-14.43	AVG	P	
5	0.4897	9.75	29.19	38.94	56.17	-17.23	QP	P	
6	0.4897	9.75	28.35	38.10	46.17	-8.07	AVG	P	
7	0.5144	9.75	30.60	40.35	56.00	-15.65	QP	P	
8	0.5144	9.75	29.74	39.49	46.00	-6.51	AVG	P	
9	1.5653	9.76	27.18	36.94	56.00	-19.06	QP	P	
10	1.5653	9.76	26.94	36.70	46.00	-9.30	AVG	P	
11	13.5600	9.90	28.31	38.21	60.00	-21.79	QP	P	
12	13.5600	9.90	28.01	37.91	50.00	-12.09	AVG	P	



Service No.: 114041540(MR-100-UE)

Test Standard: FCC Class B Conduction(QP)

Test item: Conducted Emission

Phase: N

Applicant: Nedap

Temp.(°C)/Hum.(%): 23(°C) / 46 %

Product: RFID Reader MidRanger MR-100-UE

Power Rating: AC 120V/60Hz

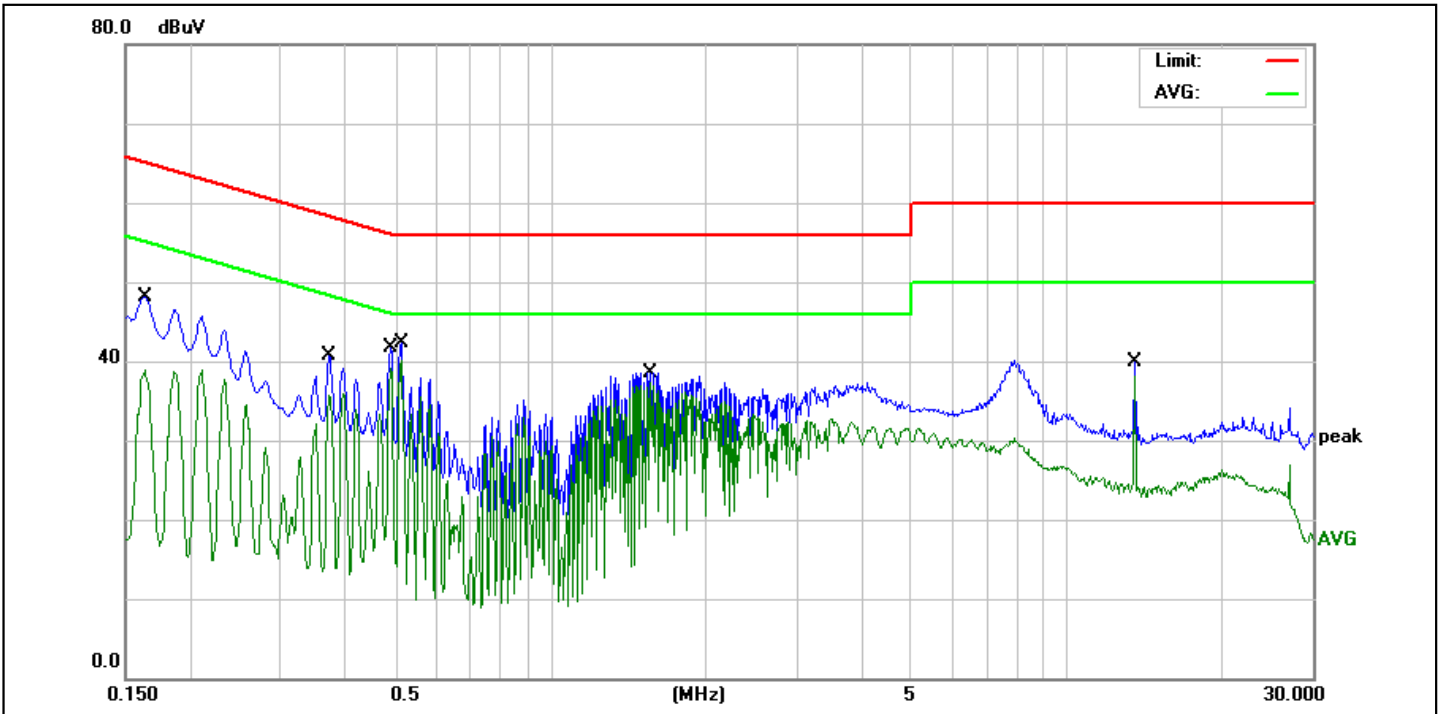
Model No.: MR-100-UE

Test Engineer: Kai Wang

Test Mode: (a) USB operation

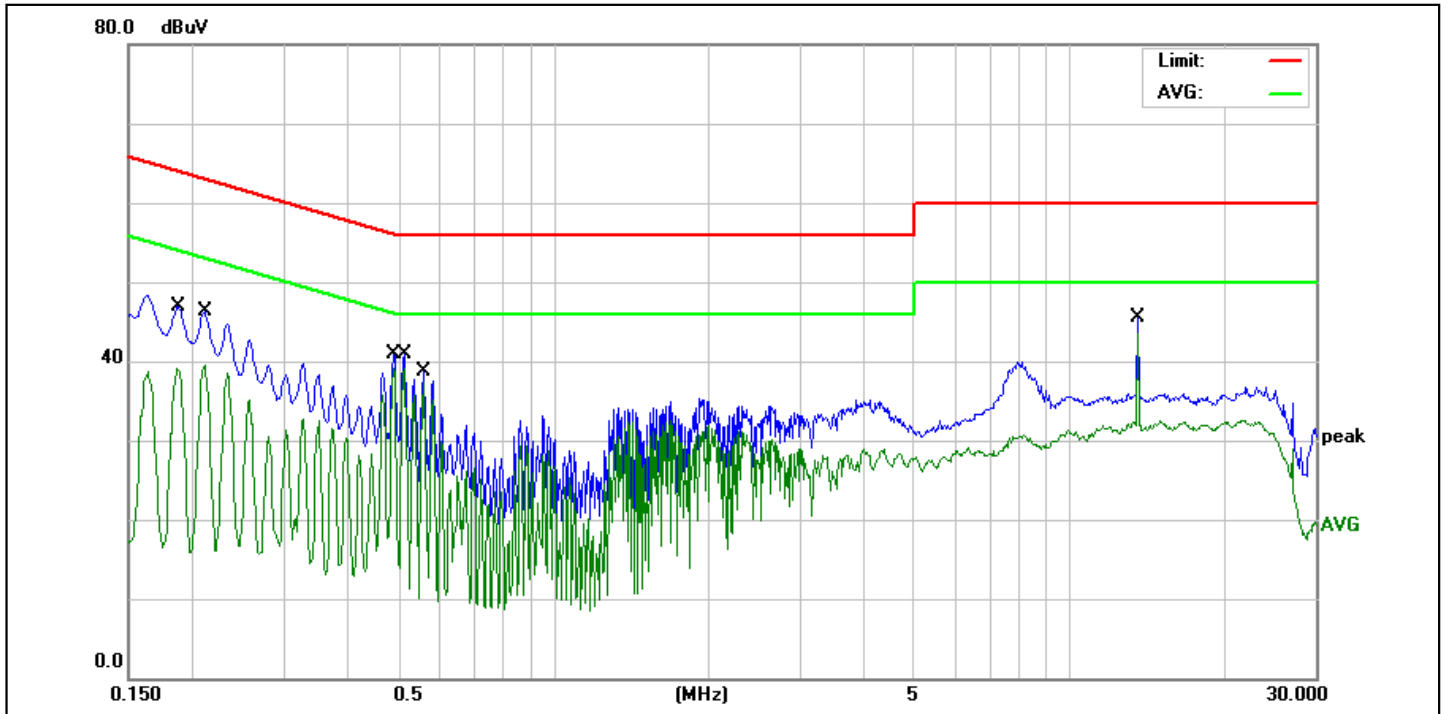
Remark: Power-Win Adapter(New Adapter)

No.	Frequency (MHz)	Factor ()	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1635	9.72	31.66	41.38	65.28	-23.90	QP	P	
2	0.1635	9.72	28.55	38.27	55.28	-17.01	AVG	P	
3	0.2108	9.69	30.16	39.85	63.17	-23.32	QP	P	
4	0.2108	9.69	29.28	38.97	53.17	-14.20	AVG	P	
5	0.4897	9.68	29.54	39.22	56.17	-16.95	QP	P	
6	0.4897	9.68	28.97	38.65	46.17	-7.52	AVG	P	
7	0.5144	9.68	29.76	39.44	56.00	-16.56	QP	P	
8	0.5144	9.68	28.81	38.49	46.00	-7.51	AVG	P	
9	1.6823	9.71	22.56	32.27	56.00	-23.73	QP	P	
10	1.6823	9.71	22.50	32.21	46.00	-13.79	AVG	P	
11	13.5600	9.88	33.75	43.63	60.00	-16.37	QP	P	
12	13.5600	9.88	33.44	43.32	50.00	-6.68	AVG	P	



Service No.:	114041540(MR-100-UE)	Phase:	L1
Test Standard:	FCC Class B Conduction(QP)	Temp.(°C)/Hum.(%):	23(°C) / 46 %
Test item:	Conducted Emission	Power Rating:	AC 120V/60Hz
Applicant:	Nedap	Test Engineer:	Kai Wang
Product:	RFID Reader MidRanger MR-100-UE		
Model No.:	MR-100-UE		
Test Mode:	(b) RJ45 operation		
Remark:	Power-Win Adapter(New Adapter)		

No.	Frequency (MHz)	Factor ()	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1635	9.78	31.42	41.20	65.28	-24.08	QP	P	
2	0.1635	9.78	28.72	38.50	55.28	-16.78	AVG	P	
3	0.3727	9.75	29.05	38.80	58.44	-19.64	QP	P	
4	0.3727	9.75	24.49	34.24	48.44	-14.20	AVG	P	
5	0.4897	9.75	29.58	39.33	56.17	-16.84	QP	P	
6	0.4897	9.75	28.76	38.51	46.17	-7.66	AVG	P	
7	0.5144	9.75	30.79	40.54	56.00	-15.46	QP	P	
8	0.5144	9.75	29.88	39.63	46.00	-6.37	AVG	P	
9	1.5653	9.76	27.29	37.05	56.00	-18.95	QP	P	
10	1.5653	9.76	27.10	36.86	46.00	-9.14	AVG	P	
11	13.5600	9.90	28.04	37.94	60.00	-22.06	QP	P	
12	13.5600	9.90	27.85	37.75	50.00	-12.25	AVG	P	



Service No.: 114041540(MR-100-UE)
 Test Standard: FCC Class B Conduction(QP)
 Test item: Conducted Emission Phase: N
 Applicant: Nedap Temp.(°C)/Hum.(%): 23(°C) / 46 %
 Product: RFID Reader MidRanger MR-100-UE Power Rating: AC 120V/60Hz
 Model No.: MR-100-UE Test Engineer: Kai Wang

Test Mode: (b) RJ45 operation
 Remark: Power-Win Adapter(New Adapter)

No.	Frequency (MHz)	Factor ()	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1860	9.70	30.14	39.84	64.21	-24.37	QP	P	
2	0.1860	9.70	28.76	38.46	54.21	-15.75	AVG	P	
3	0.2108	9.69	30.04	39.73	63.17	-23.44	QP	P	
4	0.2108	9.69	29.25	38.94	53.17	-14.23	AVG	P	
5	0.4897	9.68	29.66	39.34	56.17	-16.83	QP	P	
6	0.4897	9.68	29.07	38.75	46.17	-7.42	AVG	P	
7	0.5144	9.68	29.80	39.48	56.00	-16.52	QP	P	
8	0.5144	9.68	28.84	38.52	46.00	-7.48	AVG	P	
9	0.5617	9.69	27.23	36.92	56.00	-19.08	QP	P	
10	0.5617	9.69	26.95	36.64	46.00	-9.36	AVG	P	
11	13.5600	9.88	33.78	43.66	60.00	-16.34	QP	P	
12	13.5600	9.88	33.37	43.25	50.00	-6.75	AVG	P	