

Test Report No.10047509 001

Appendix D: Radiated and Mains Spurious Emission Data

(File: 10047509AppendixD)

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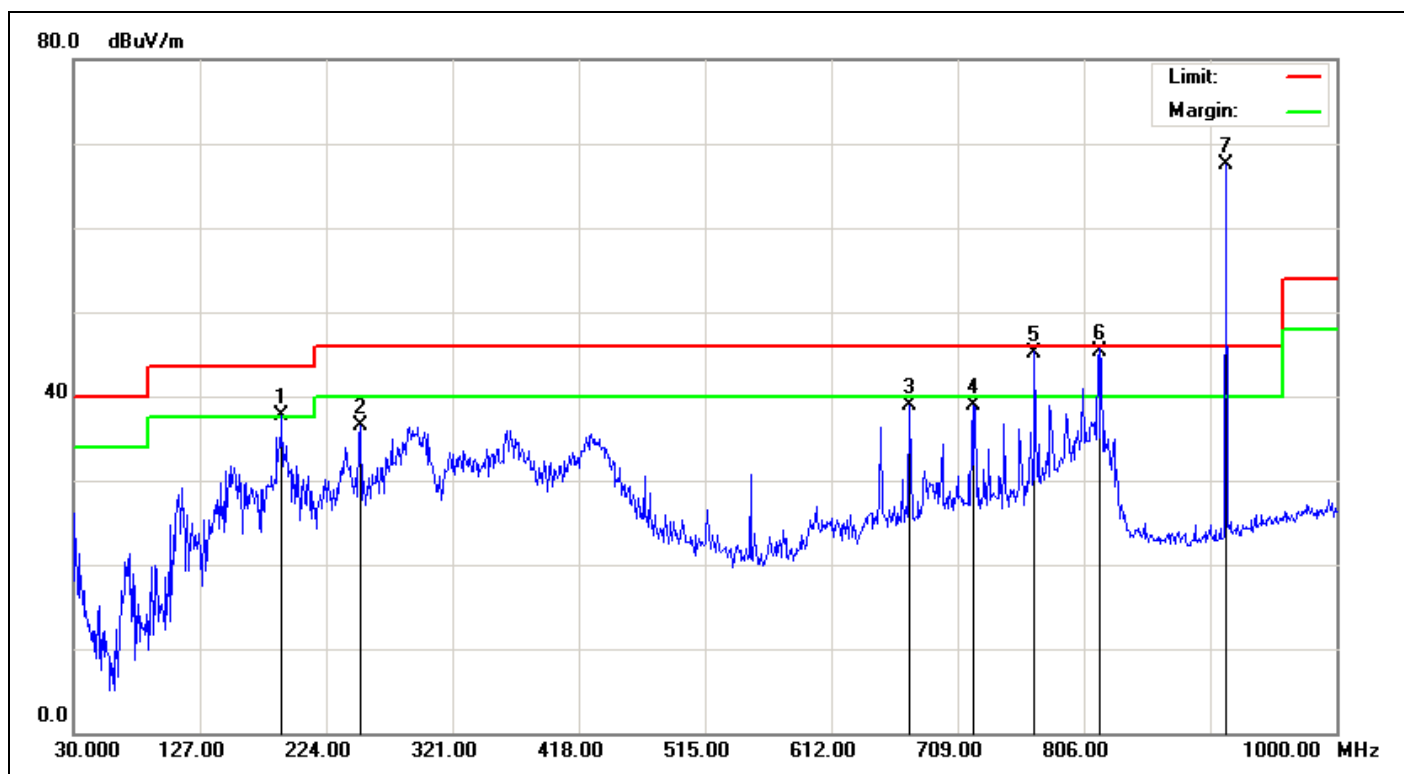
Spurious Emissions, TX Mode, 30M-1G



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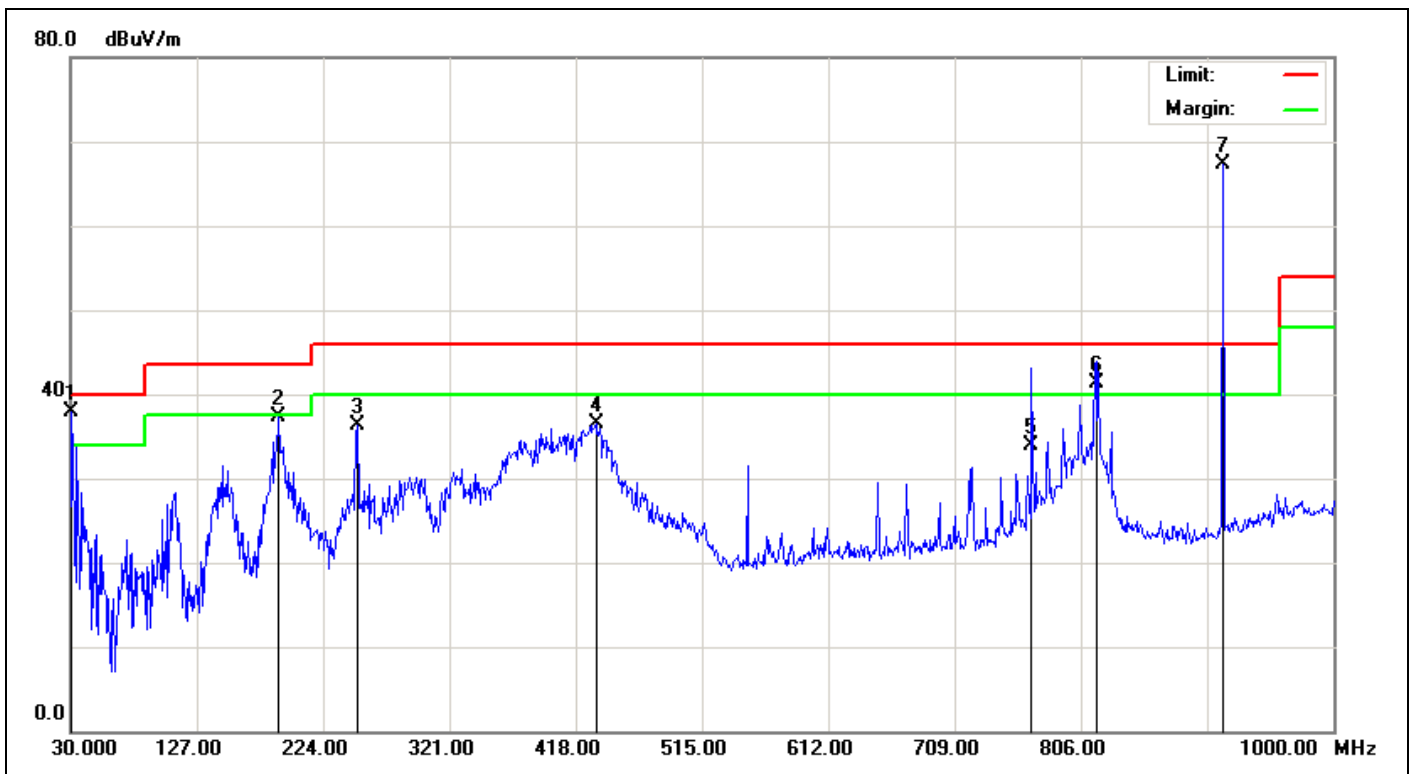
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Service No.:	114024737-FCC RF	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2014/8/25 21:10:26
Applicant:	Nedap	Test Rating:	Power by PoE
Product:	!DTop UHF RFID system	Temp.(°C)/Hum.(%):	29(°C)/52%
Model No.:	ASSY OVR RFID	Test Engineer:	Freeman Wang
Test Mode:	914.75MHz		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	190.0500	-16.93	54.64	37.71	43.50	-5.79	peak	100	205	
2	250.1900	-13.16	49.75	36.59	46.00	-9.41	peak	100	235	
3	672.1400	-6.26	45.12	38.86	46.00	-7.14	peak	100	25	
4	720.6400	-5.62	44.49	38.87	46.00	-7.13	peak	100	310	
5	768.1700	-4.87	49.97	45.10	46.00	-0.90	QP	100	17	
6	818.6100	-4.11	49.41	45.30	46.00	-0.70	QP	100	17	
7	915.6100	-2.43	69.85	67.42	46.00	21.42	peak	200	0	TX

Spurious Emissions, TX Mode, 30M-1G



Service No.:	114024737-FCC RF	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2014/8/25 21:15:22
Applicant:	Nedap	Test Rating:	Power by PoE
Product:	!DTop UHF RFID system	Temp.(°C)/Hum.(%)	29(°C)/52%
Model No.:	ASSY OVR RFID	Test Engineer:	Freeman Wang
Test Mode:	914.75MHz		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	-7.35	45.16	37.81	40.00	-2.19	peak	100	56	
2	190.0500	-16.93	54.25	37.32	43.50	-6.18	peak	200	168	
3	250.1900	-13.16	49.40	36.24	46.00	-9.76	peak	200	147	
4	433.5200	-9.59	46.08	36.49	46.00	-9.51	peak	100	178	
5	768.1700	-4.87	38.77	33.90	46.00	-12.10	peak	100	0	
6	818.6100	-4.11	45.47	41.36	46.00	-4.64	QP	100	0	
7	915.6100	-2.43	69.71	67.28	46.00	21.28	peak	100	133	TX

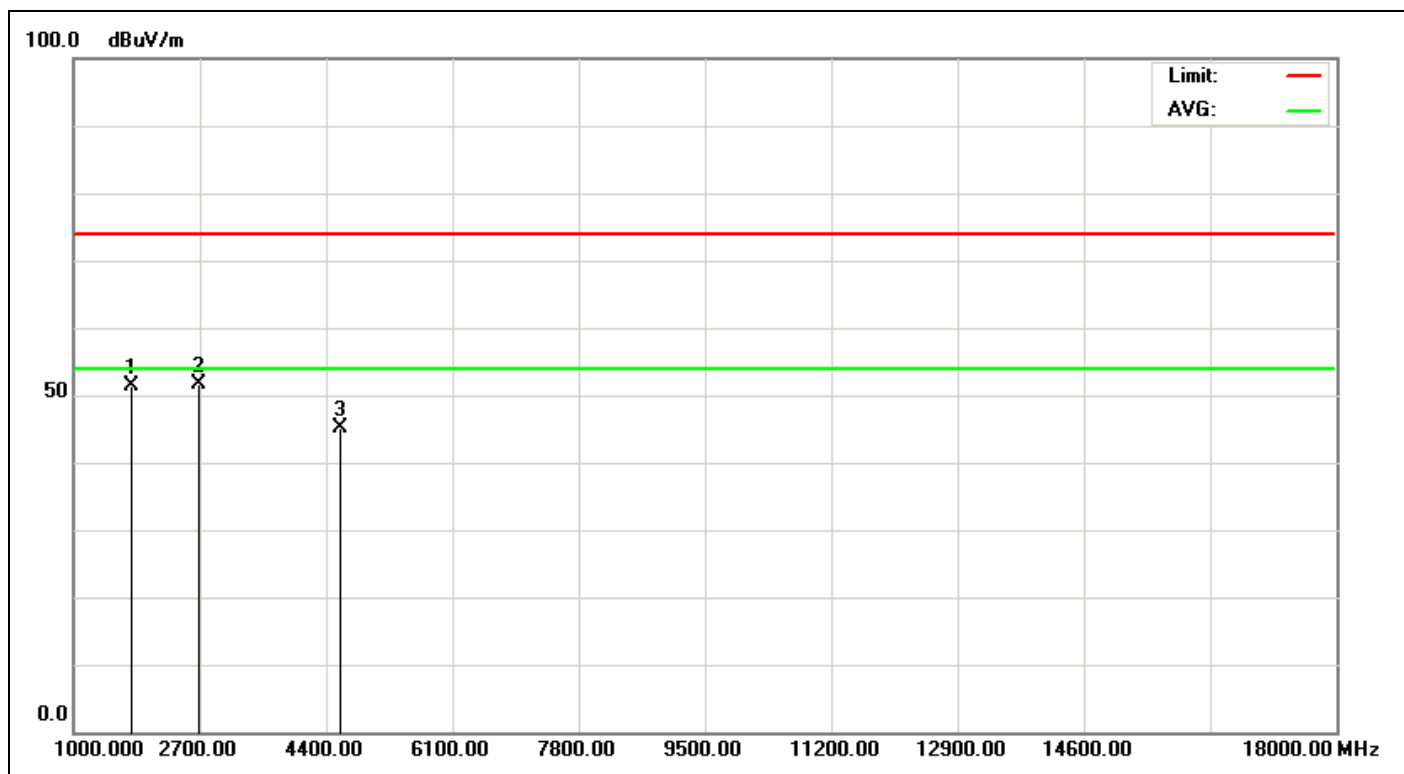
Spurious Emissions, TX Mode, 1-18G



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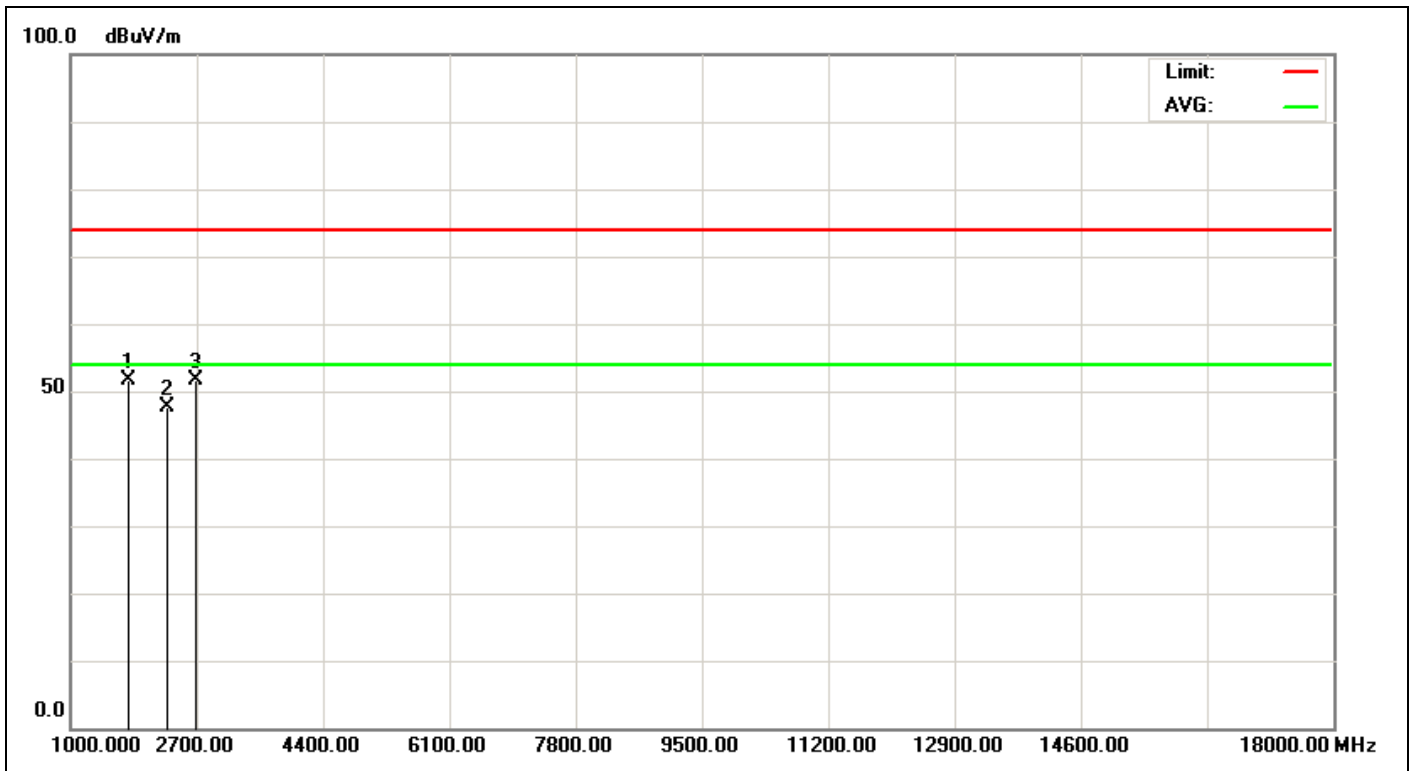
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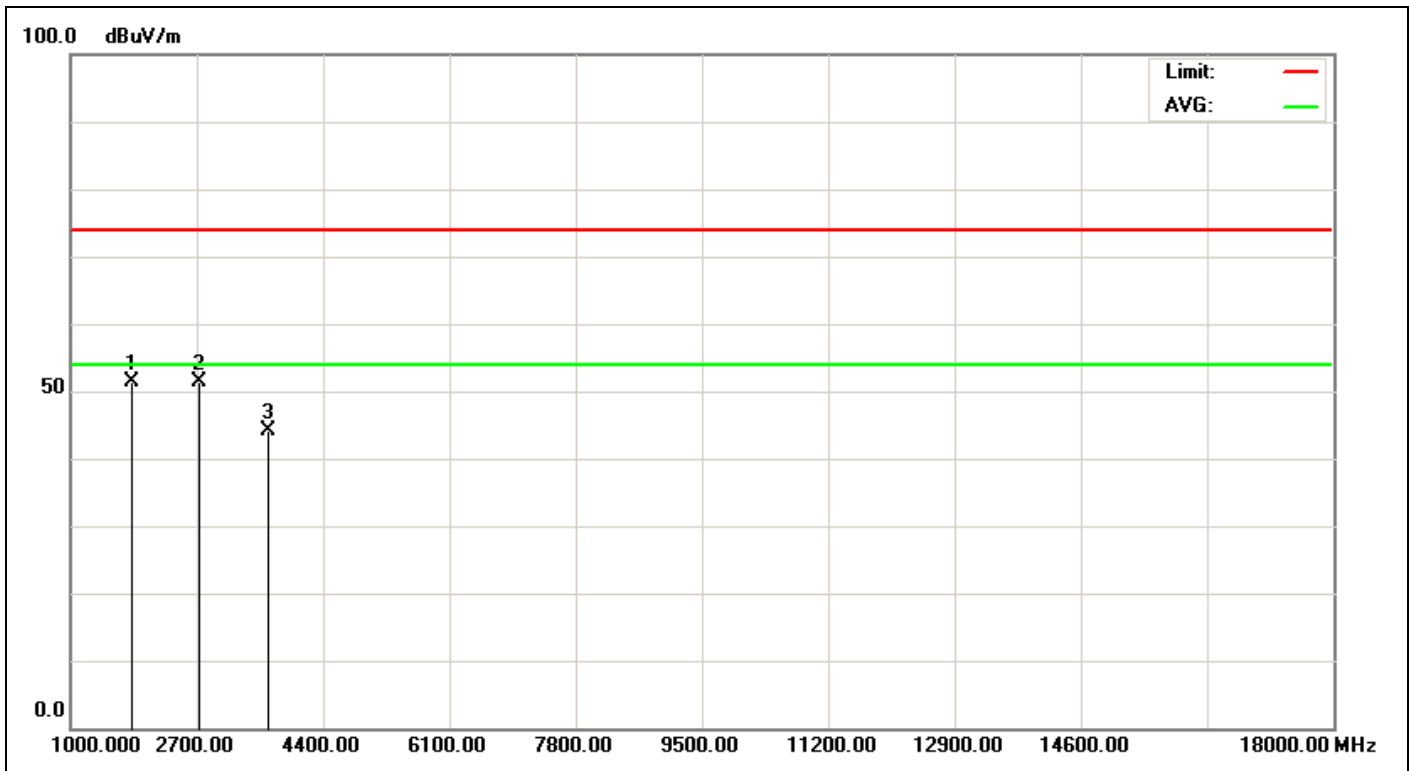
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Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2014/8/25 18:46:10
Applicant:	Nedap	Test Rating:	Power by PoE
Product:	!DTop UHF RFID system	Temp.(°C)/Hum.(%):	29(°C)/52%
Model No.:	ASSY OVR RFID	Test Engineer:	Freeman Wang
Test Mode:	902.75MHz		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1790.064	-9.75	61.17	51.42	74.00	-22.58	peak	100	33	
2	2689.103	-7.50	59.05	51.55	74.00	-22.45	peak	100	288	
3	4596.154	-3.69	48.82	45.13	74.00	-28.87	peak	100	171	



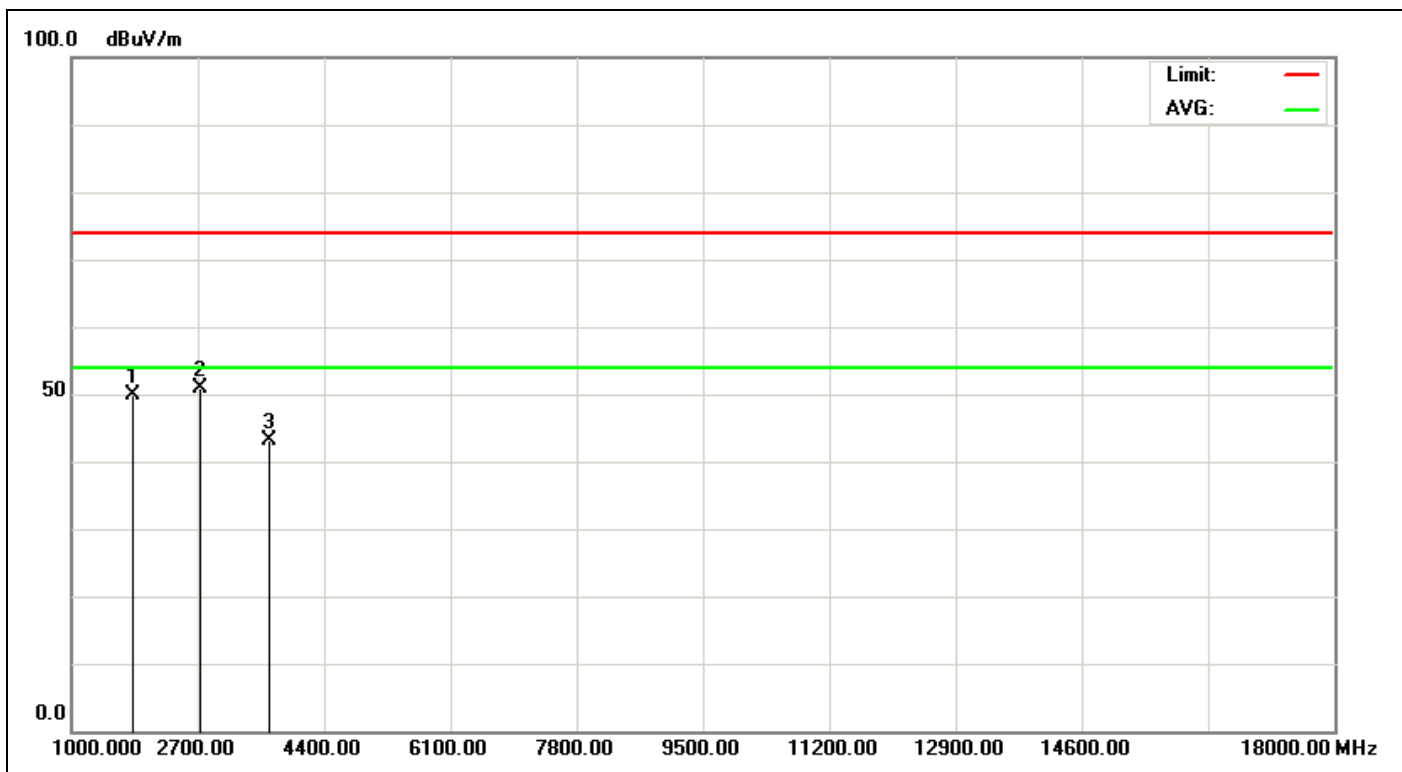
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Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2014/8/25 18:47:12
Applicant:	Nedap	Test Rating:	Power by PoE
Product:	!DTop UHF RFID system	Temp.(°C)/Hum.(%):	29(°C)/52%
Model No.:	ASSY OVR RFID	Test Engineer:	Freeman Wang
Test Mode:	902.75MHz		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1790.064	-9.75	61.34	51.59	74.00	-22.41	peak	100	22	
2	2307.692	-8.07	55.69	47.62	74.00	-26.38	peak	100	43	
3	2689.103	-7.50	59.01	51.51	74.00	-22.49	peak	100	359	



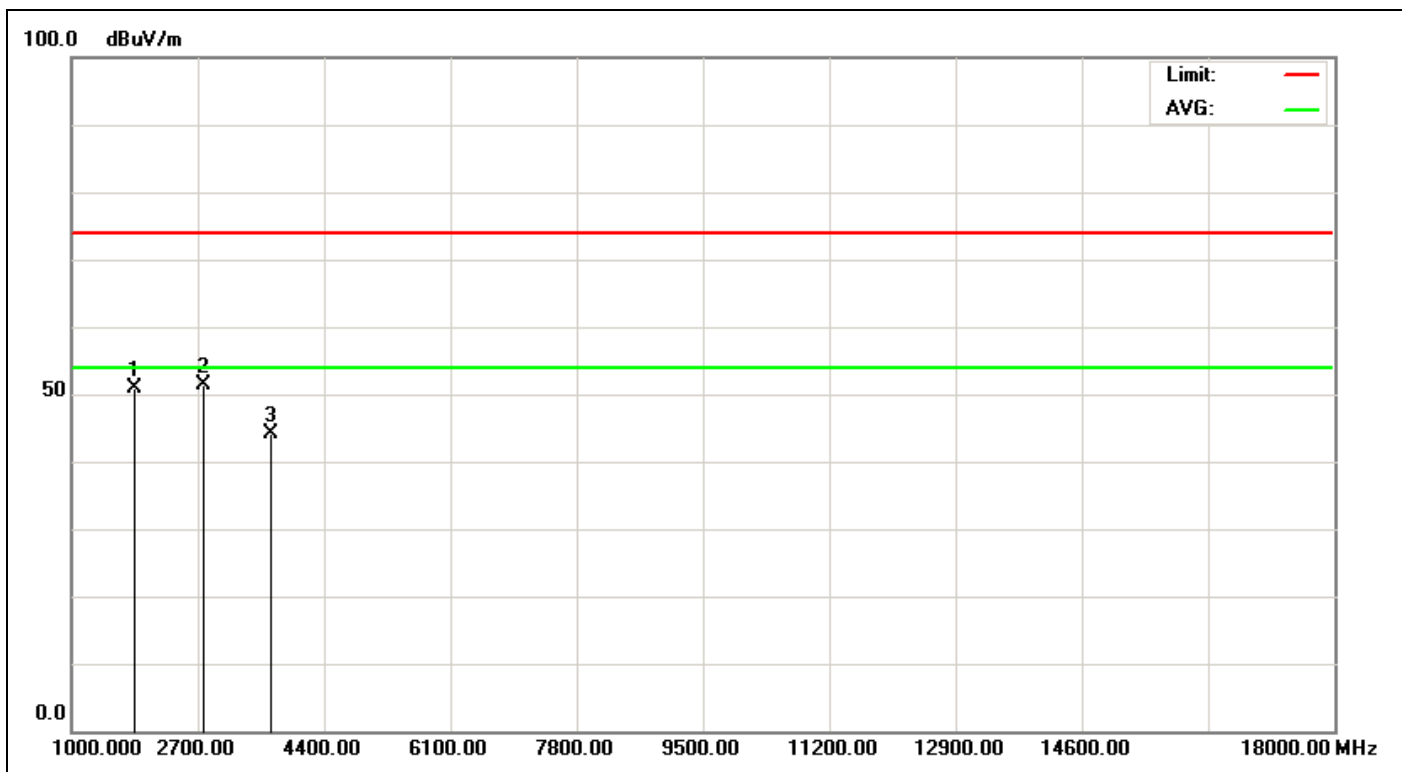
Service No.:	114024737-FCC RF	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2014/8/25 18:50:57
Applicant:	Nedap	Test Rating:	Power by PoE
Product:	!DTop UHF RFID system	Temp.(°C)/Hum.(%)	29(°C)/52%
Model No.:	ASSY OVR RFID	Test Engineer:	Freeman Wang
Test Mode:	914.75MHz		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1817.308	-9.59	60.89	51.30	74.00	-22.70	peak	100	35	
2	2743.590	-7.39	58.69	51.30	74.00	-22.70	peak	100	304	
3	3659.000	-6.09	50.13	44.04	74.00	-29.96	peak			



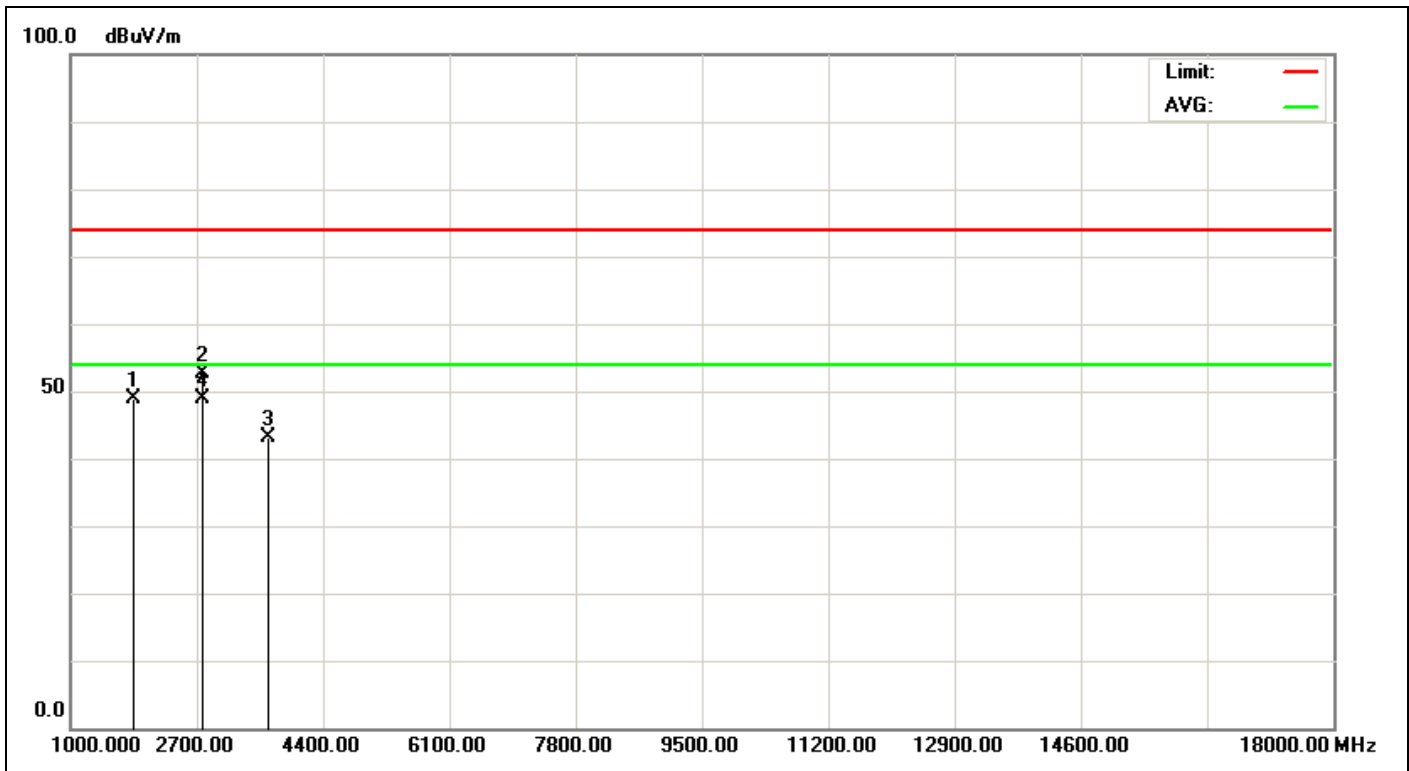
Service No.:	114024737-FCC RF	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2014/8/25 18:51:59
Applicant:	Nedap	Test Rating:	Power by PoE
Product:	!DTop UHF RFID system	Temp.(°C)/Hum.(%):	29(°C)/52%
Model No.:	ASSY OVR RFID	Test Engineer:	Freeman Wang
Test Mode:	914.75MHz		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1817.308	-9.59	59.46	49.87	74.00	-24.13	peak	100	22	
2	2743.590	-7.39	58.32	50.93	74.00	-23.07	peak	100	351	
3	3659.000	-6.09	49.15	43.06	74.00	-30.94	peak			



Service No.:	114024737-FCC RF	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2014/8/25 18:55:21
Applicant:	Nedap	Test Rating:	Power by PoE
Product:	!DTop UHF RFID system	Temp.(°C)/Hum.(%):	29(°C)/52%
Model No.:	ASSY OVR RFID	Test Engineer:	Freeman Wang
Test Mode:	927.25MHz		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1844.551	-9.41	60.39	50.98	74.00	-23.02	peak	100	166	
2	2770.833	-7.34	58.61	51.27	74.00	-22.73	peak	100	349	
3	3697.115	-6.03	50.27	44.24	74.00	-29.76	peak	100	296	



Service No.:	114024737-FCC RF	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2014/8/25 18:56:24
Applicant:	Nedap	Test Rating:	Power by PoE
Product:	!DTop UHF RFID system	Temp.(°C)/Hum.(%)	29(°C)/52%
Model No.:	ASSY OVR RFID	Test Engineer:	Freeman Wang
Test Mode:	927.25MHz		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1844.551	-9.41	58.29	48.88	74.00	-25.12	peak	100	348	
2	2770.833	-7.34	59.90	52.56	74.00	-21.44	peak	100	346	
3	3669.872	-6.08	49.27	43.19	74.00	-30.81	peak	100	96	
4	2770.833	-7.34	56.18	48.84	54.00	-5.16	AVG			

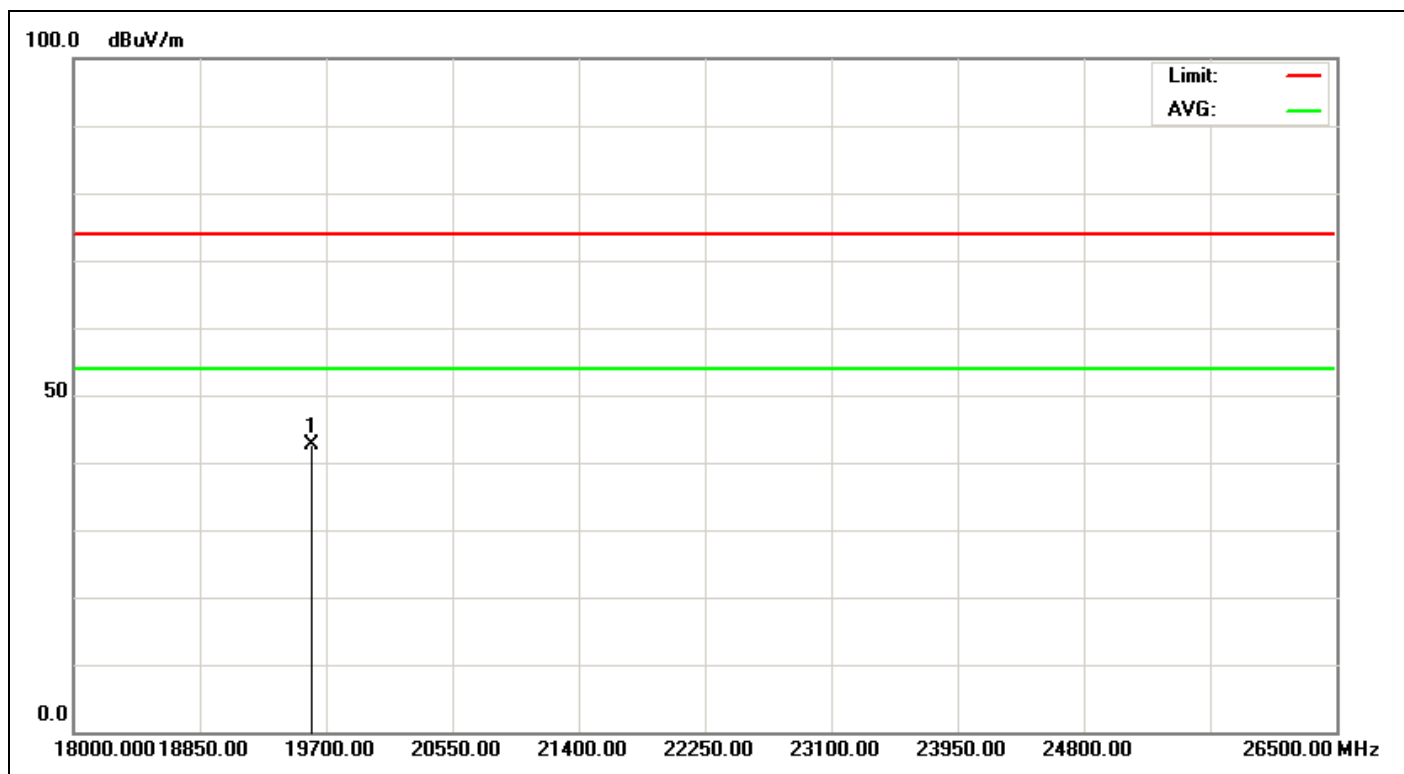
Spurious Emissions, TX Mode, 18-26G



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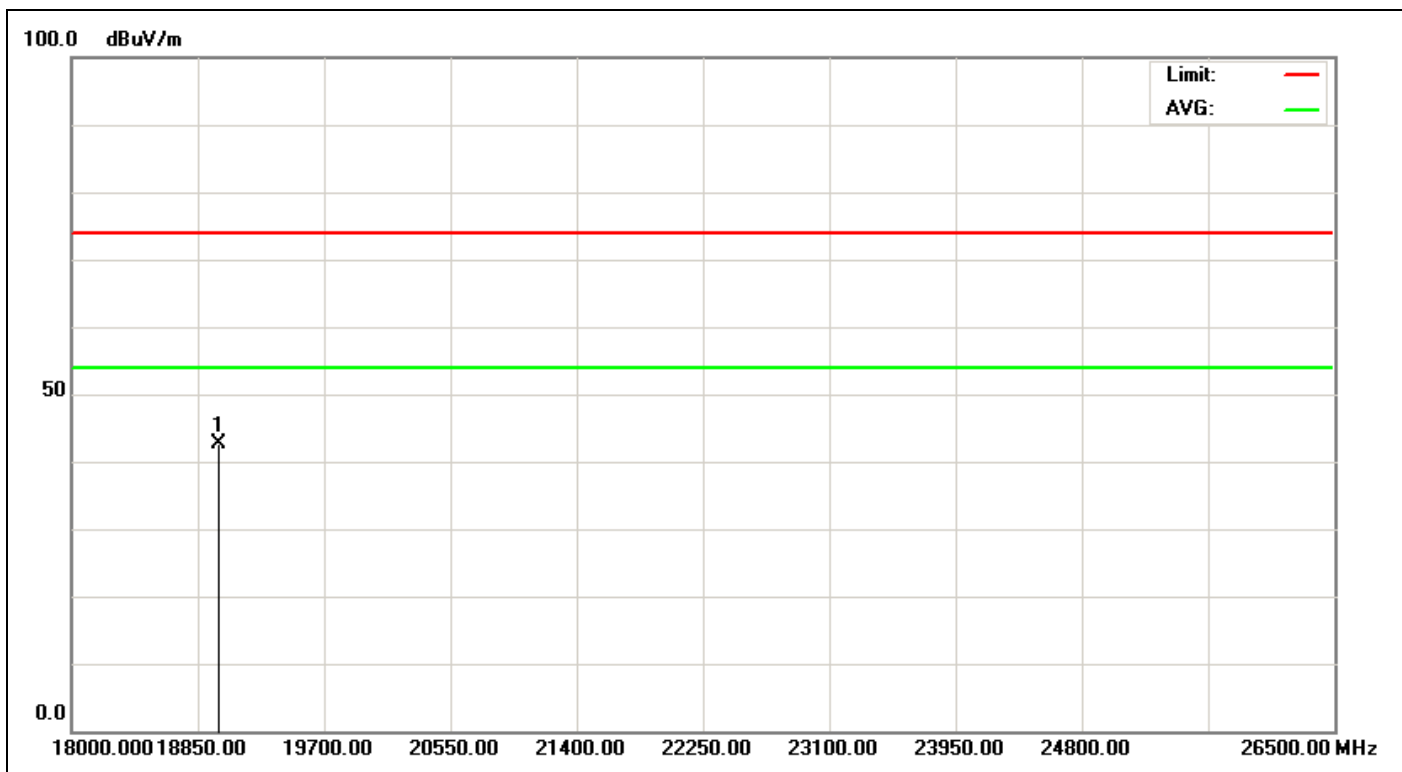
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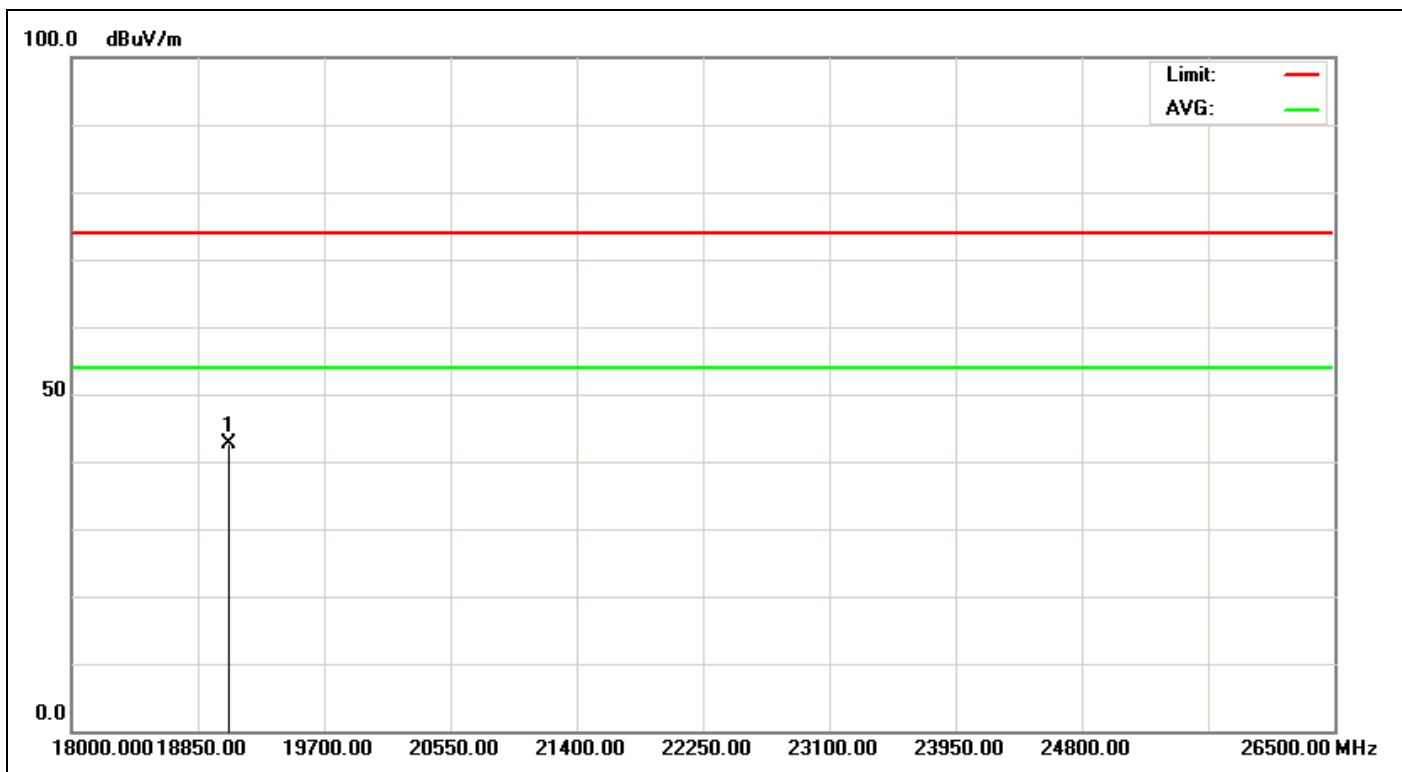
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Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2014/9/2 15:49:54
Applicant:	Nedap	Test Rating:	Power by PoE
Product:	!DTop UHF RFID system	Temp.(°C)/Hum.(%)	24(°C)/48%
Model No.:	ASSY OVR RFID	Test Engineer:	Freeman Wang
Test Mode:	902.75MHz		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	19607.372	28.97	13.67	42.64	74.00	-31.36	peak			



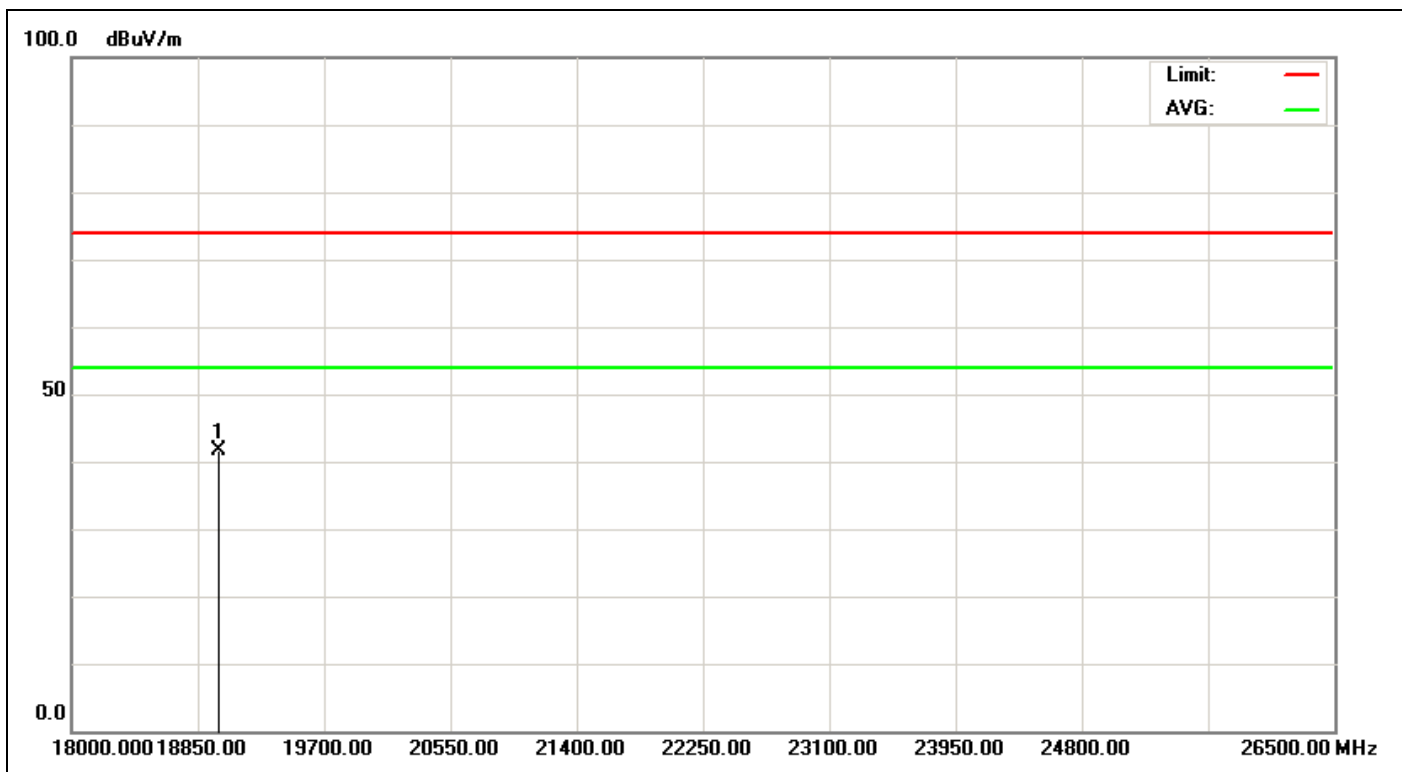
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Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2014/9/2 15:50:08
Applicant:	Nedap	Test Rating:	Power by PoE
Product:	!DTop UHF RFID system	Temp.(°C)/Hum.(%)	24(°C)/48%
Model No.:	ASSY OVR RFID	Test Engineer:	Freeman Wang
Test Mode:	902.75MHz		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	18994.391	29.96	12.75	42.71	74.00	-31.29	peak			



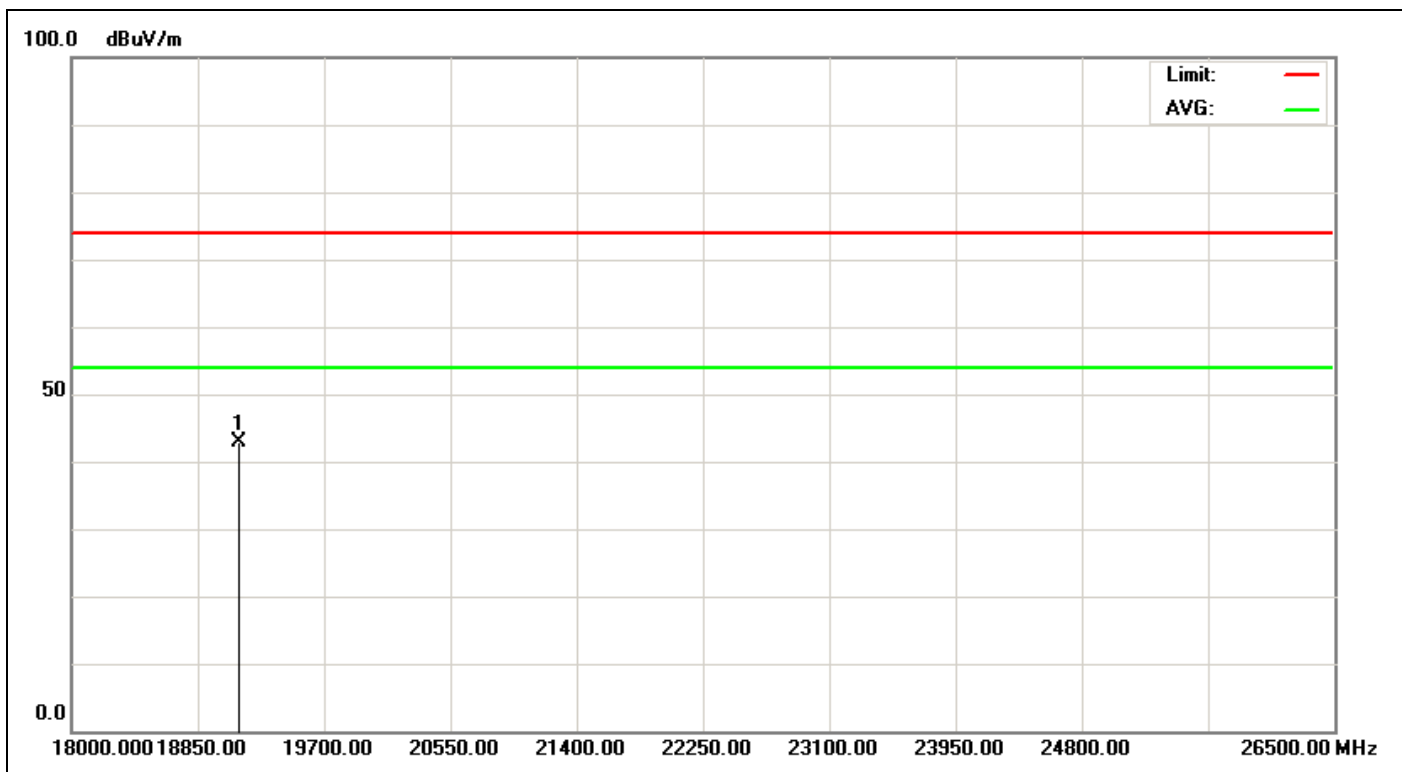
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Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2014/9/2 15:50:38
Applicant:	Nedap	Test Rating:	Power by PoE
Product:	!DTop UHF RFID system	Temp.(°C)/Hum.(%):	24(°C)/48%
Model No.:	ASSY OVR RFID	Test Engineer:	Freeman Wang
Test Mode:	914.75MHz		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	19062.500	29.84	12.85	42.69	74.00	-31.31	peak			



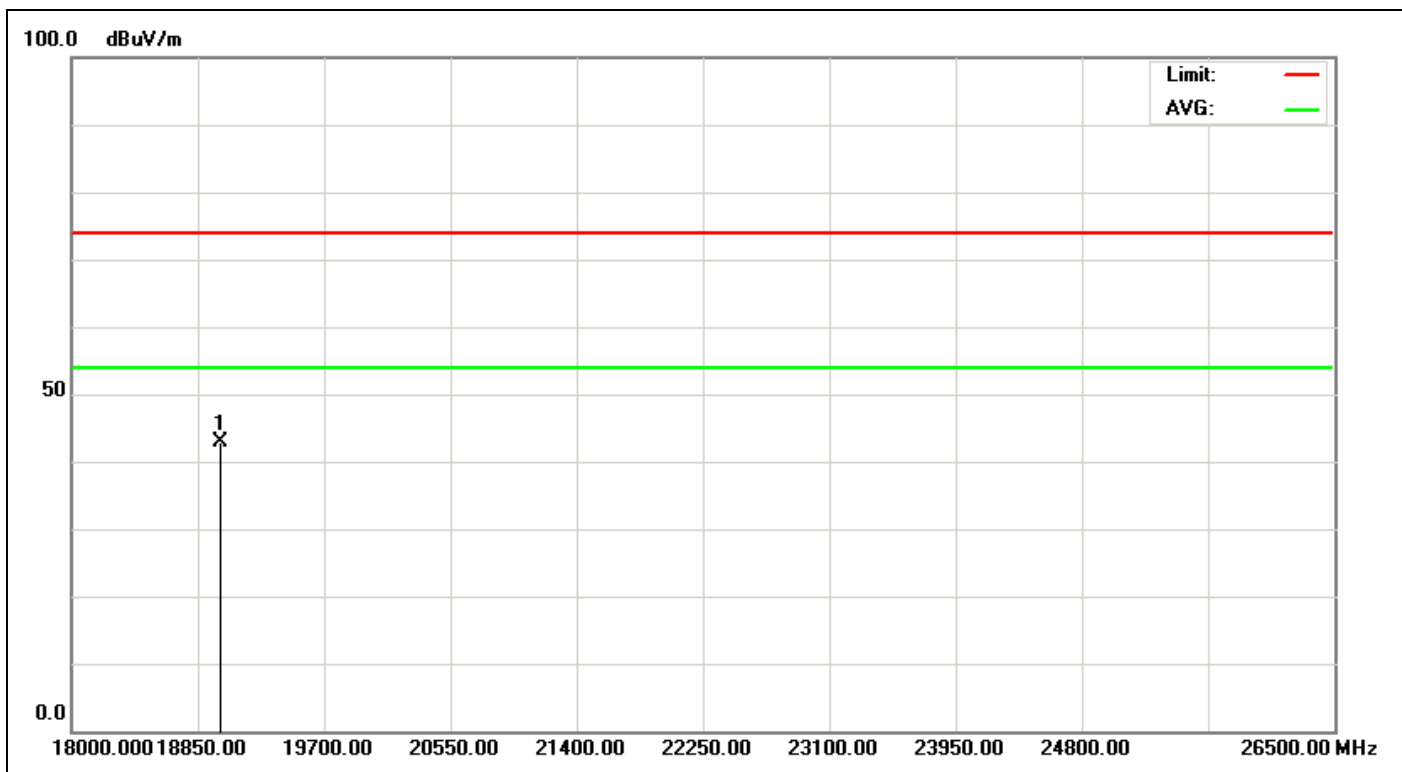
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Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2014/9/2 15:50:49
Applicant:	Nedap	Test Rating:	Power by PoE
Product:	!DTop UHF RFID system	Temp.(°C)/Hum.(%):	24(°C)/48%
Model No.:	ASSY OVR RFID	Test Engineer:	Freeman Wang
Test Mode:	914.75MHz		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	18994.391	29.96	11.64	41.60	74.00	-32.40	peak			



Service No.:	114024737-FCC RF	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2014/9/2 15:51:08
Applicant:	Nedap	Test Rating:	Power by PoE
Product:	!DTop UHF RFID system	Temp.(°C)/Hum.(%):	24(°C)/48%
Model No.:	ASSY OVR RFID	Test Engineer:	Freeman Wang
Test Mode:	927.25MHz		
Remark:			

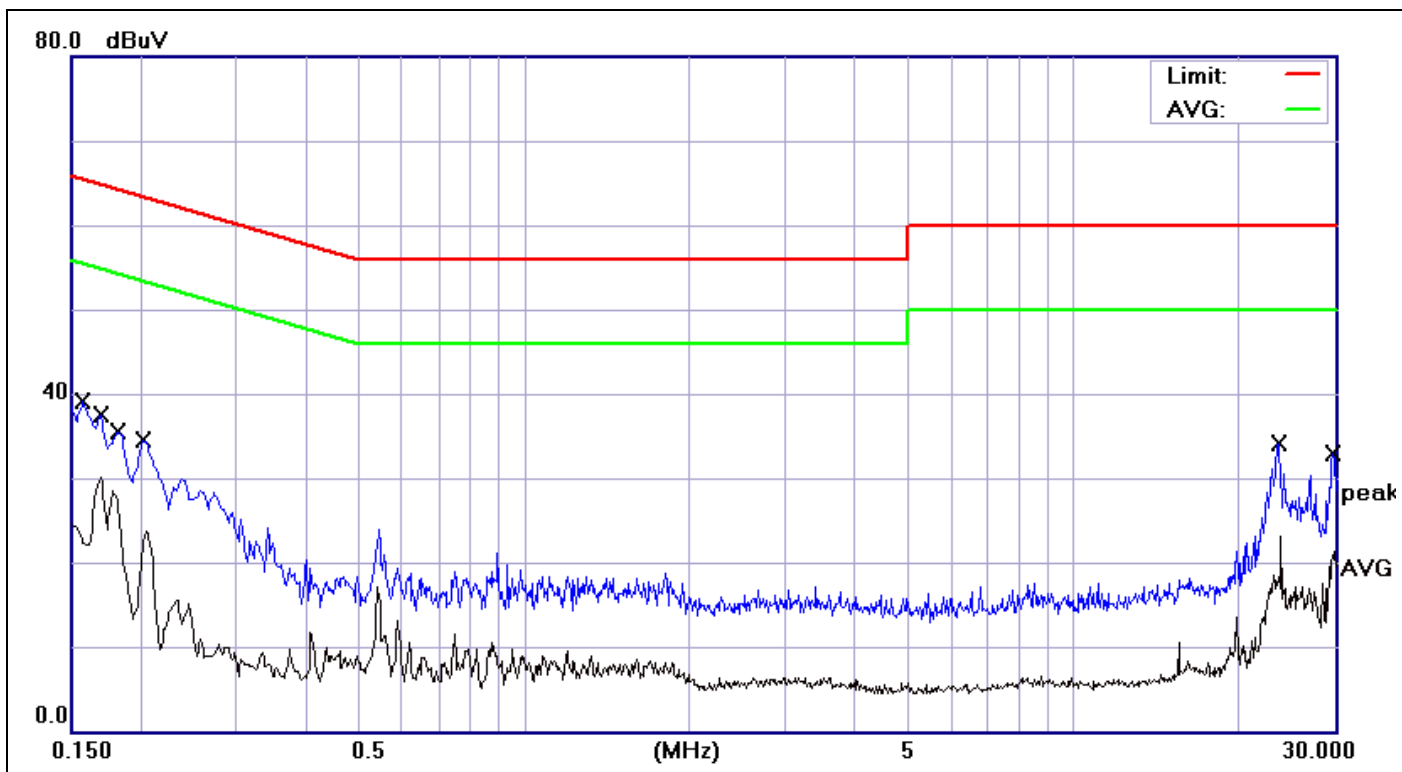
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	19130.609	29.68	13.10	42.78	74.00	-31.22	peak			



Service No.:	114024737-FCC RF	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2014/9/2 15:51:17
Applicant:	Nedap	Test Rating:	Power by PoE
Product:	!DTop UHF RFID system	Temp.(°C)/Hum.(%):	24(°C)/48%
Model No.:	ASSY OVR RFID	Test Engineer:	Freeman Wang
Test Mode:	927.25MHz		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	19008.013	29.96	12.94	42.90	74.00	-31.10	peak			

Mains Spurious Emissions



Service No.: 114024737

Test Standard: CISPR22 Class B Conduction(QP)

Probe: L1

Test item: Conduction Emission

Test Time: 2014/7/28 11:34:33

Applicant: Nedap

Test Rating: AC 120V/60Hz

Product: !DTop UHF RFID system

Temp.(°C)/Hum.(%): 27.5(°C)/48%

Model No.: ASSY OVR RFID

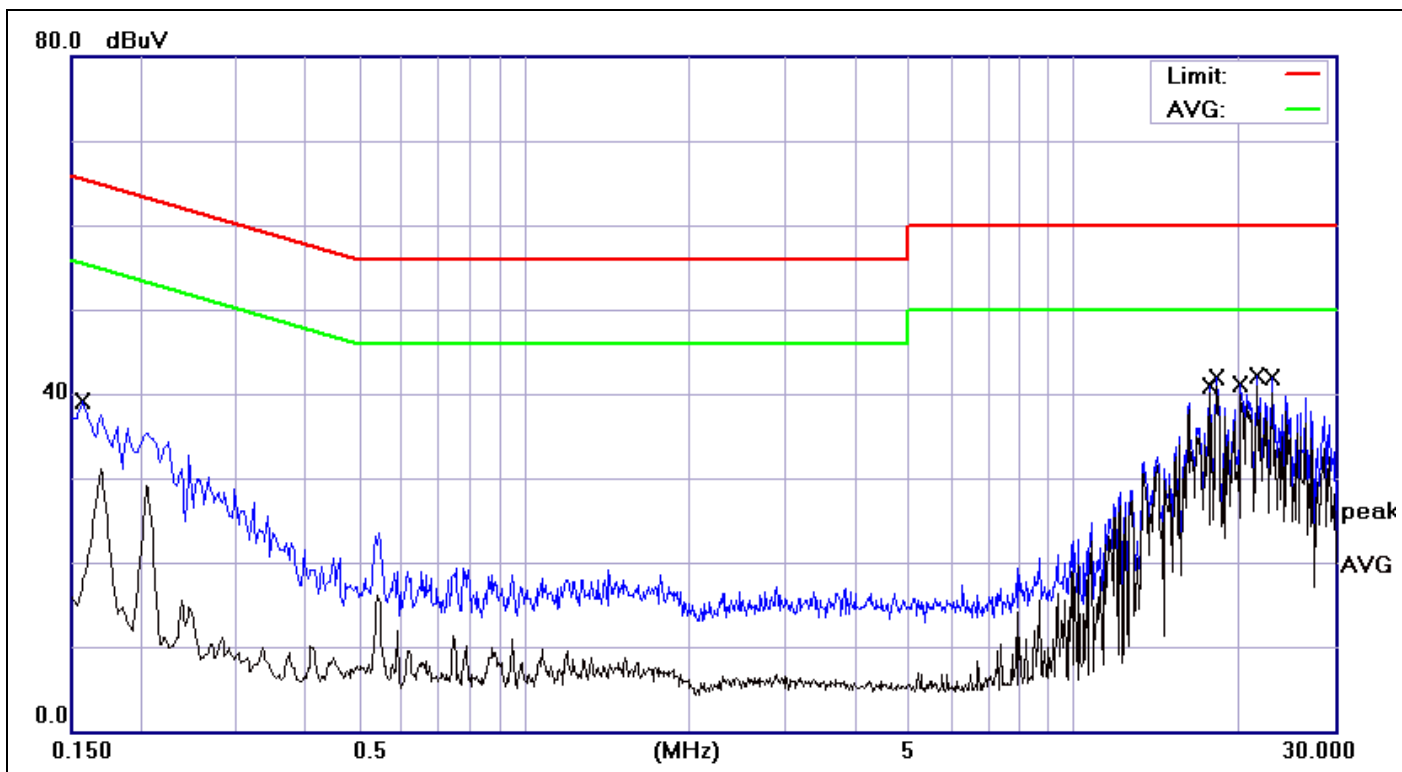
Test Engineer: Freeman Wang

Test Mode: (a)Normal operation with card

Remark:

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Remark
1	0.1580	9.65	20.77	30.42	65.56	-35.14	QP	
2	0.1580	9.65	8.16	17.81	55.56	-37.75	AVG	
3	0.1700	9.65	23.91	33.56	64.96	-31.40	QP	
4	0.1700	9.65	20.28	29.93	54.96	-25.03	AVG	
5	0.1819	9.63	18.93	28.56	64.39	-35.83	QP	
6	0.1819	9.63	5.32	14.95	54.39	-39.44	AVG	
7	0.2020	9.63	18.45	28.08	63.52	-35.44	QP	
8	0.2020	9.63	12.67	22.30	53.52	-31.22	AVG	

9	23.6740	9.90	18.56	28.46	60.00	-31.54	QP	
10	23.6740	9.90	11.95	21.85	50.00	-28.15	AVG	
11	29.7620	9.87	9.71	19.58	60.00	-40.42	QP	
12	29.7620	9.87	4.23	14.10	50.00	-35.90	AVG	



Service No.: 114024737

Test Standard: CISPR22 Class B Conduction(QP)

Probe: N

Test item: Conduction Emission

Test Time: 2014/7/28 11:38:01

Applicant: Nedap

Test Rating: AC 120V/60Hz

Product: !DTop UHF RFID system

Temp.(°C)/Hum.(%): 27.5(°C)/48%

Model No.: ASSY OVR RFID

Test Engineer: Freeman Wang

Test Mode: (a)Normal operation with card

Remark:

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Remark
1	0.1580	9.66	21.76	31.42	65.56	-34.14	QP	
2	0.1580	9.66	7.79	17.45	55.56	-38.11	AVG	
3	17.6940	9.91	30.39	40.30	60.00	-19.70	QP	
4	17.6940	9.91	30.22	40.13	50.00	-9.87	AVG	
5	18.2420	9.91	31.34	41.25	60.00	-18.75	QP	
6	18.2420	9.91	31.12	41.03	50.00	-8.97	AVG	
7	20.2580	9.96	30.63	40.59	60.00	-19.41	QP	
8	20.2580	9.96	30.28	40.24	50.00	-9.76	AVG	

9	21.6620	9.99	31.33	41.32	60.00	-18.68	QP	
10	21.6620	9.99	30.63	40.62	50.00	-9.38	AVG	
11	23.1299	10.01	30.51	40.52	60.00	-19.48	QP	
12	23.1299	10.01	29.60	39.61	50.00	-10.39	AVG	