

Test Report No.50096219 001

Appendix D: Radiated and Mains Spurious Emission Data

(File: 50096219AppendixD)

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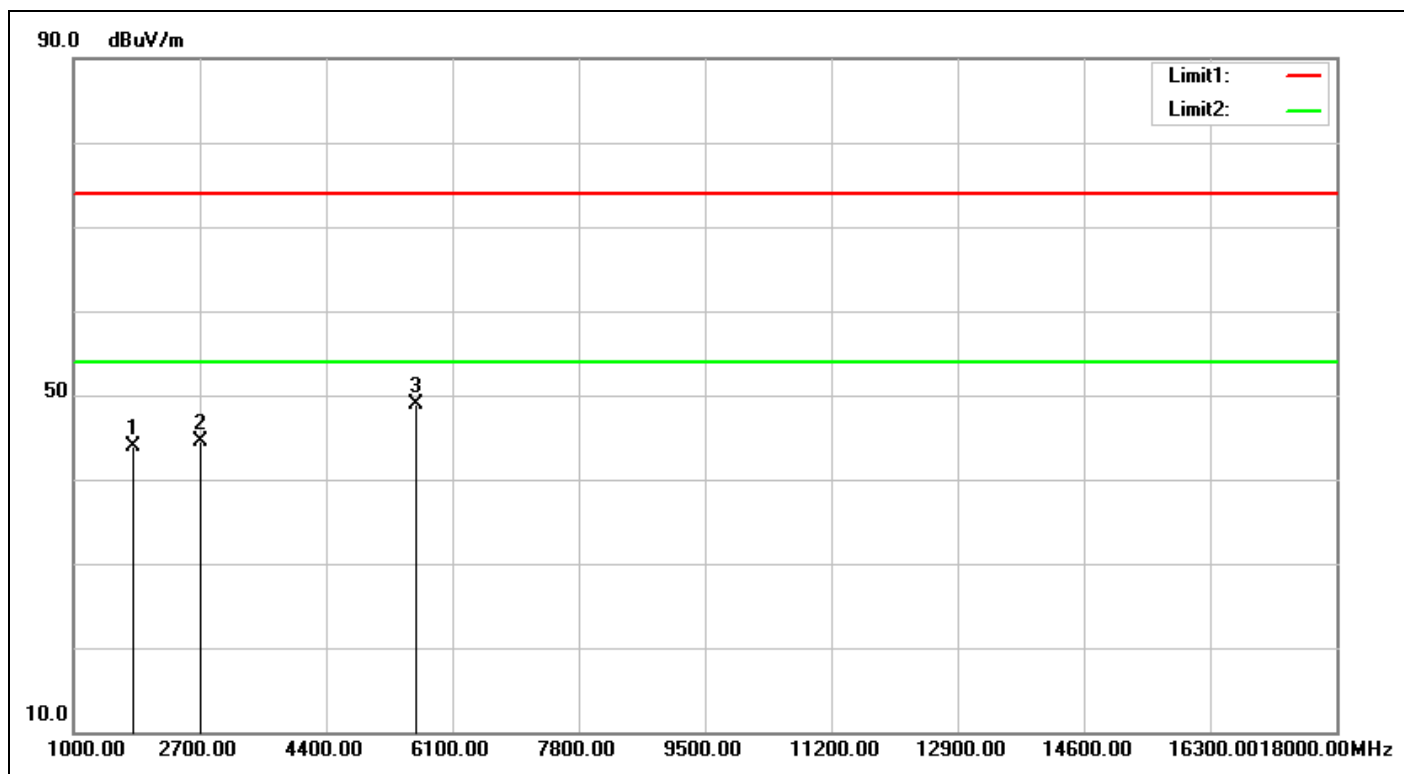
Spurious Emissions, TX Mode, 1-18G



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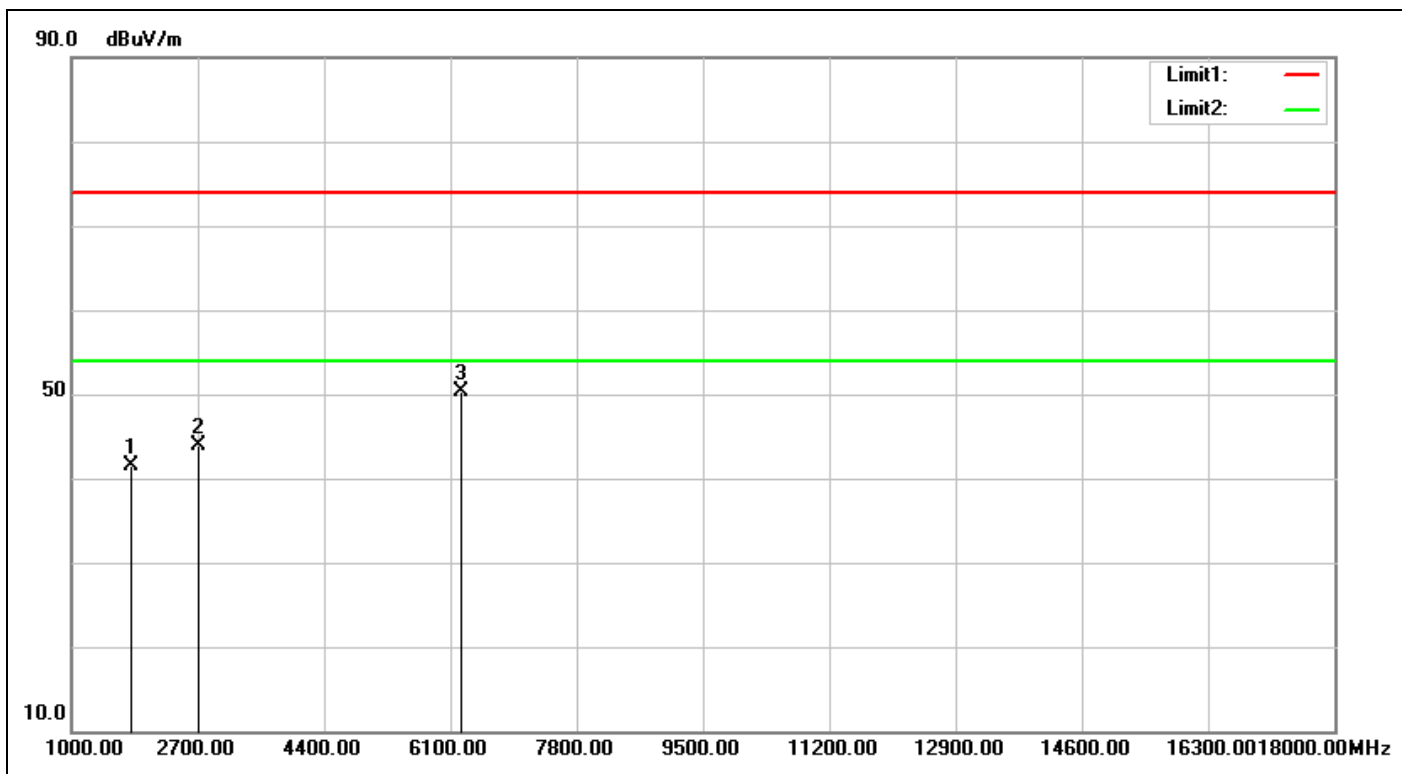
Tel:+886-2172-7000 fax:+886-2528-0018



Service No.:	114067578-22(ASSY AD46R RF+MD+RFID)_FCC	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2017/8/3 13:45:20
Applicant:	Nedap	Test Rating:	AC 120V/60Hz
Product:	Lumen iL45	Temp.(°C)/Hum.(%):	23.1(°C)/49%
Model No.:	ASSY AD46R RF+MD+RFID	Test Engineer:	Kai Wang
Test Mode:	902.75M-Tx		
Remark:			

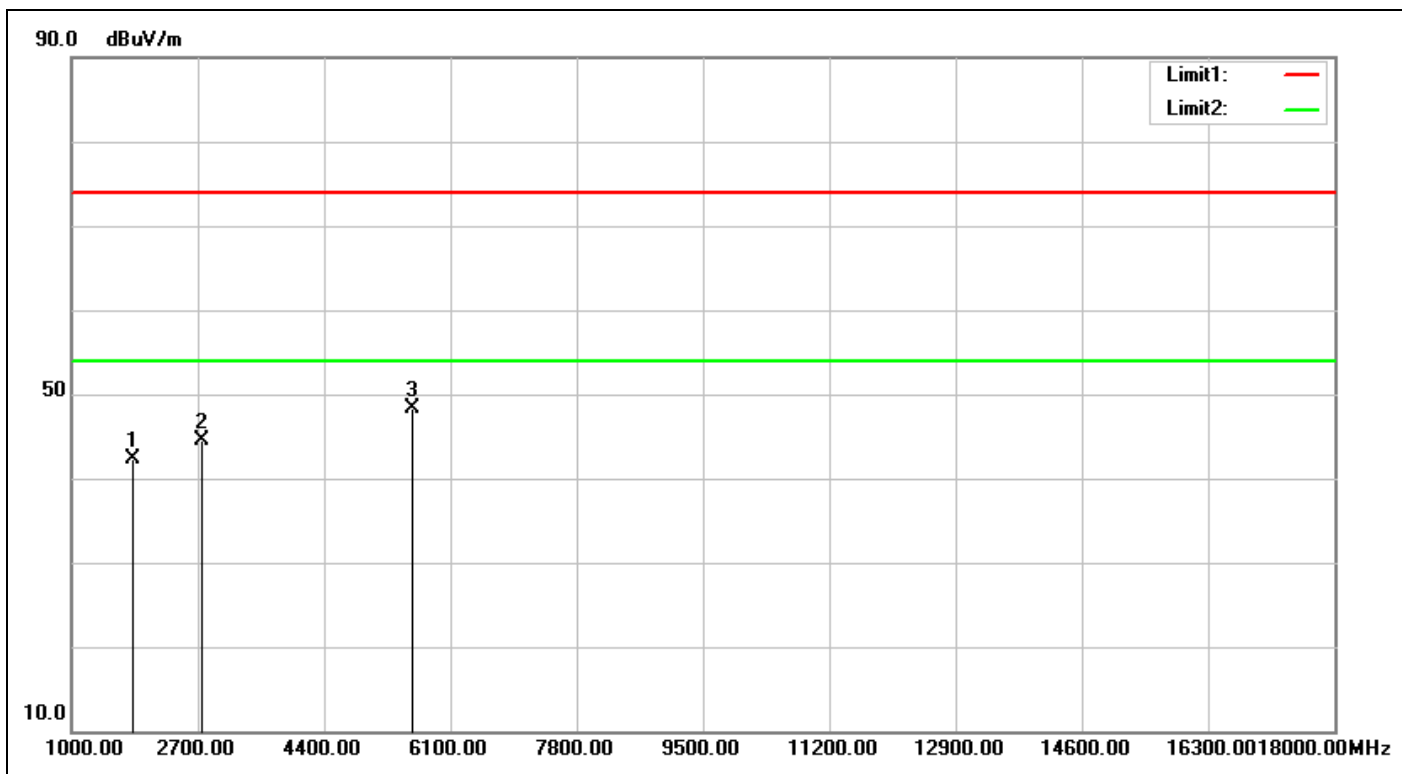
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1	1805.500	-7.45	51.28	43.83	74.00	-30.17	peak	100	273	
2	2708.250	-5.35	49.80	44.45	74.00	-29.55	peak	100	200	
3	5607.000	3.20	45.72	48.92	74.00	-25.08	peak	100	114	

Spurious Emissions, TX Mode, 1-18G



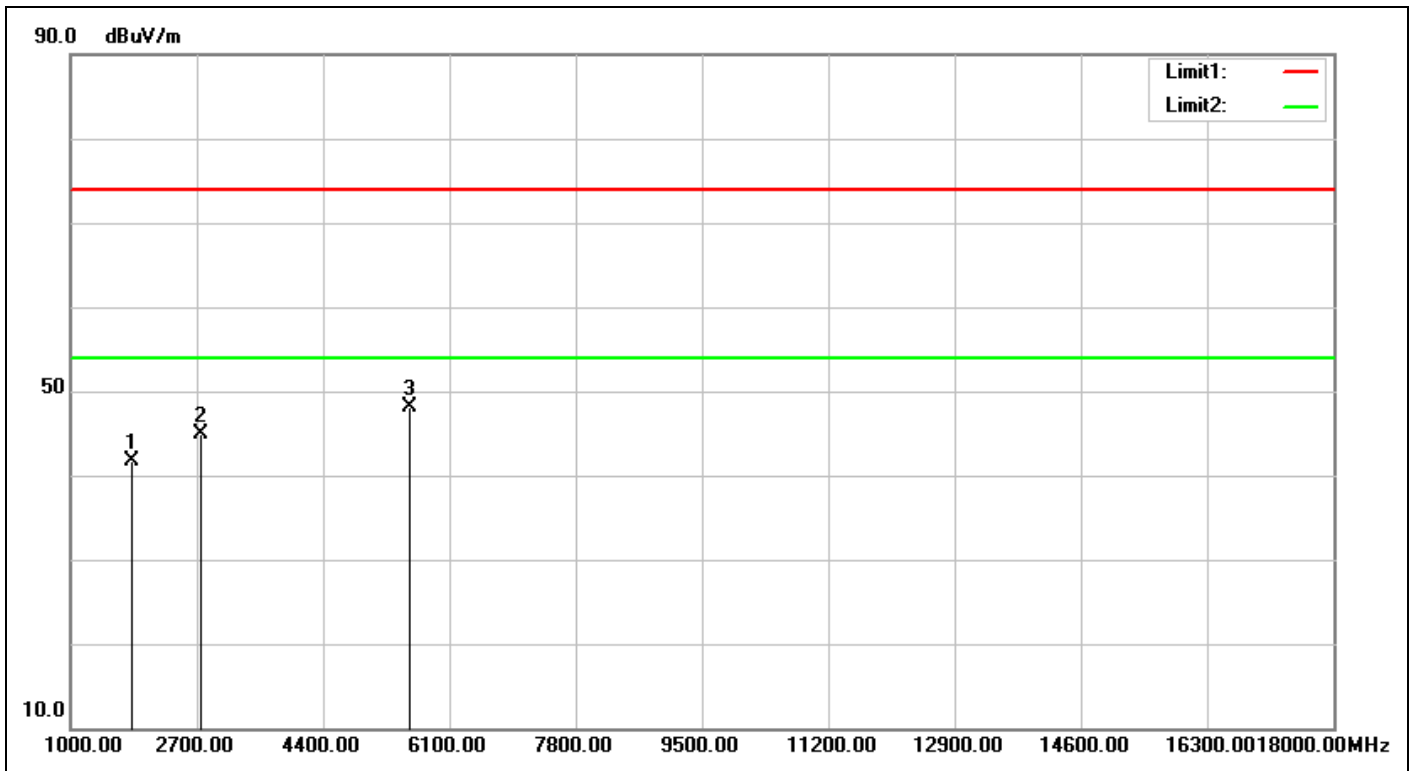
Service No.:	114067578-22(ASSY AD46R RF+MD+RFID)_FCC	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2017/8/3 13:46:22
Applicant:	Nedap	Test Rating:	AC 120V/60Hz
Product:	Lumen iL45	Temp.(°C)/Hum.(%):	23.1(°C)/49%
Model No.:	ASSY AD46R RF+MD+RFID	Test Engineer:	Kai Wang
Test Mode:	902.75M-Tx		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1805.500	-7.45	48.93	41.48	74.00	-32.52	peak	100	174	
2	2708.250	-5.35	49.19	43.84	74.00	-30.16	peak	100	227	
3	6253.000	6.92	43.30	50.22	74.00	-23.78	peak	100	332	



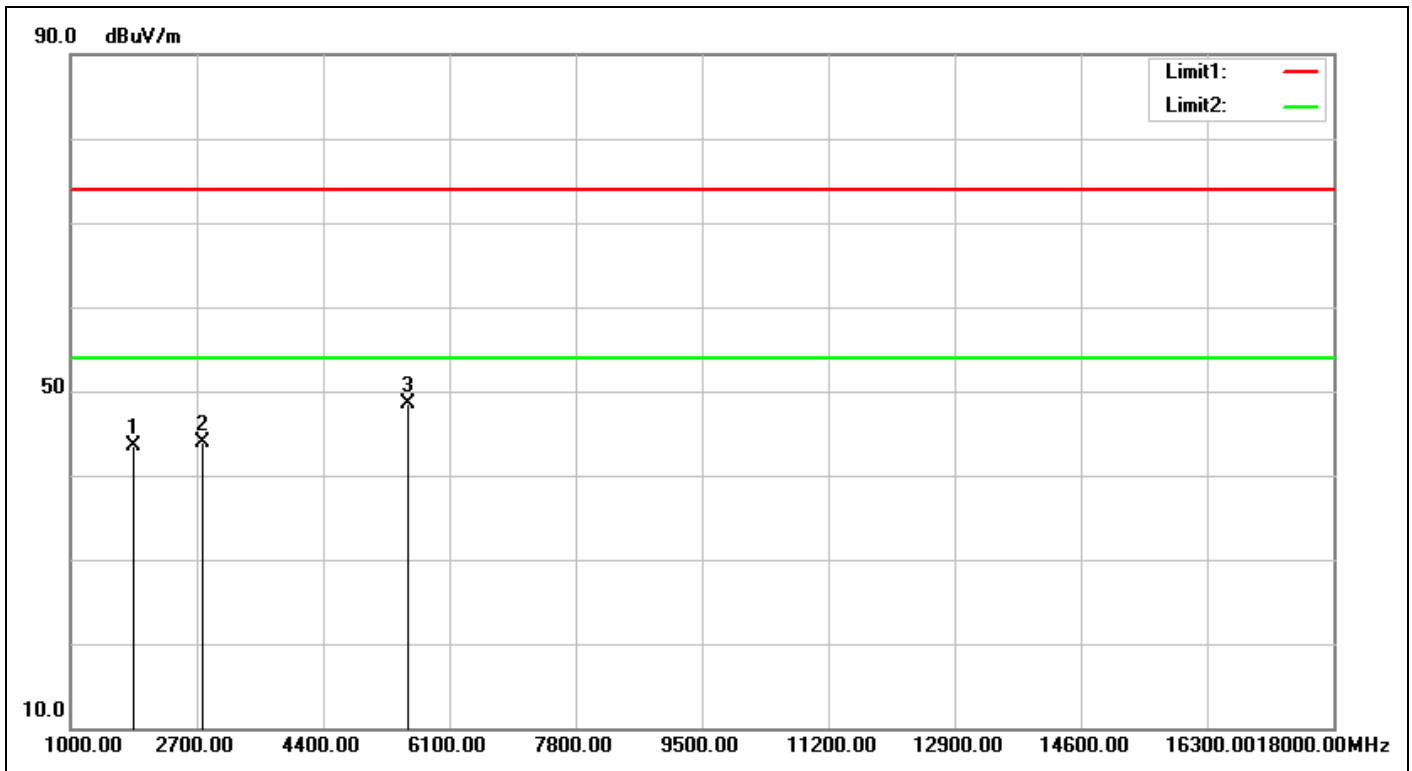
Service No.:	114067578-22(ASSY AD46R RF+MD+RFID)_FCC	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2017/8/3 13:51:11
Applicant:	Nedap	Test Rating:	AC 120V/60Hz
Product:	Lumen iL45	Temp.(°C)/Hum.(%):	23.1(°C)/49%
Model No.:	ASSY AD46R RF+MD+RFID	Test Engineer:	Kai Wang
Test Mode:	915.25M-Tx		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1830.500	-7.27	49.66	42.39	74.00	-31.61	peak	100	291	
2	2745.750	-5.27	49.74	44.47	74.00	-29.53	peak	100	335	
3	5590.000	3.09	45.30	48.39	74.00	-25.61	peak	100	137	



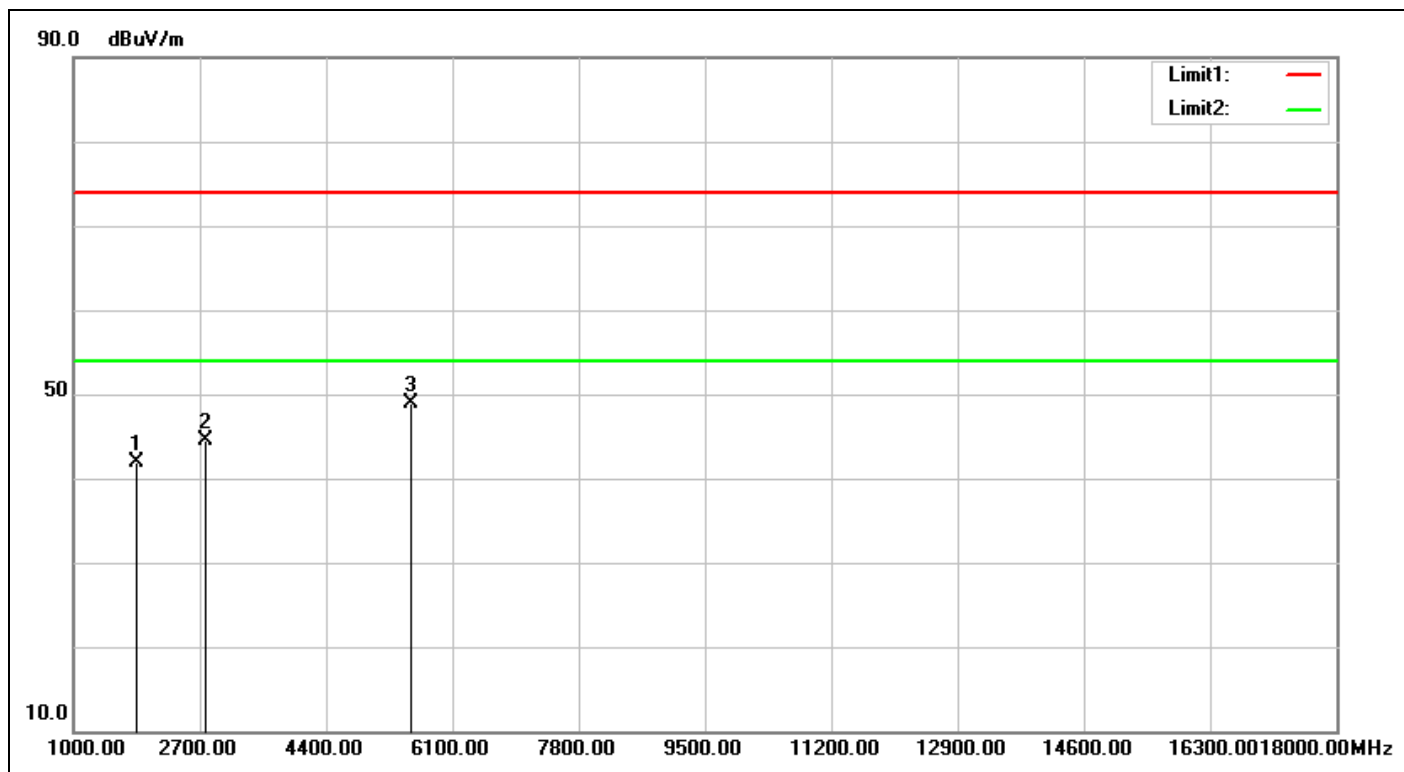
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	RF+MD+RFID)_FCC		
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2017/8/3 13:52:14
Applicant:	Nedap	Test Rating:	AC 120V/60Hz
Product:	Lumen iL45	Temp.(°C)/Hum.(%):	23.1(°C)/49%
Model No.:	ASSY AD46R RF+MD+RFID	Test Engineer:	Kai Wang
Test Mode:	915.25M-Tx		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1830.500	-7.27	48.91	41.64	74.00	-32.36	peak	100	179	
2	2745.750	-5.27	50.14	44.87	74.00	-29.13	peak	100	88	
3	5573.000	2.96	45.10	48.06	74.00	-25.94	peak	100	229	



Service No.:	114067578-22(ASSY AD46R	Test Distance:	3m
	RF+MD+RFID)_FCC		
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2017/8/3 13:56:29
Applicant:	Nedap	Test Rating:	AC 120V/60Hz
Product:	Lumen iL45	Temp.(°C)/Hum.(%):	23.1(°C)/49%
Model No.:	ASSY AD46R RF+MD+RFID	Test Engineer:	Kai Wang
Test Mode:	927.25M-Tx		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1854.500	-7.10	50.66	43.56	74.00	-30.44	peak	100	172	
2	2781.750	-5.18	49.18	44.00	74.00	-30.00	peak	100	202	
3	5539.000	2.73	45.74	48.47	74.00	-25.53	peak	100	160	



Service No.:	114067578-22(ASSY AD46R RF+MD+RFID)_FCC	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2017/8/3 13:57:32
Applicant:	Nedap	Test Rating:	AC 120V/60Hz
Product:	Lumen iL45	Temp.(°C)/Hum.(%)	23.1(°C)/49%
Model No.:	ASSY AD46R RF+MD+RFID	Test Engineer:	Kai Wang
Test Mode:	927.25M-Tx		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1854.500	-7.10	48.93	41.83	74.00	-32.17	peak	100	174	
2	2781.750	-5.18	49.60	44.42	74.00	-29.58	peak	100	252	
3	5539.000	2.73	46.08	48.81	74.00	-25.19	peak	100	351	

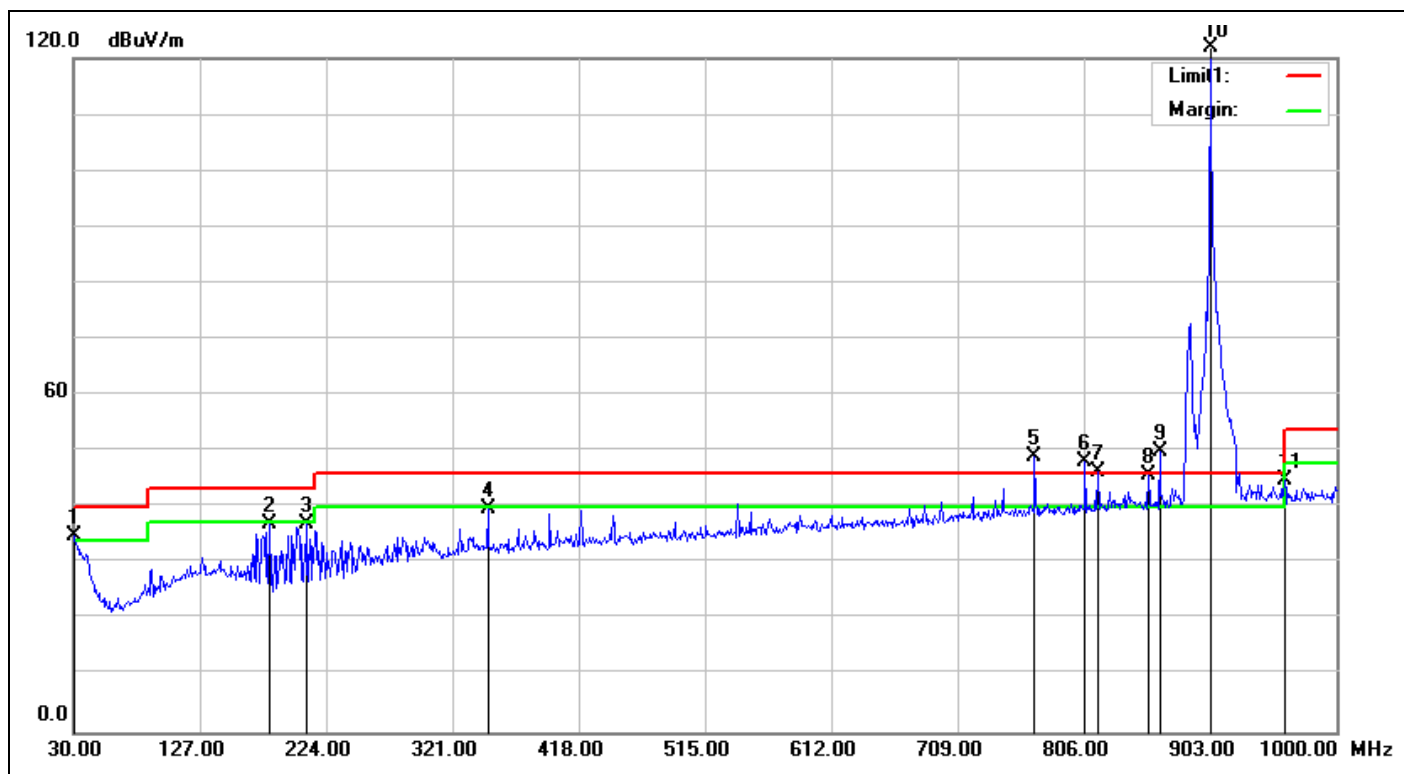
Spurious Emissions, TX Mode, 30M-1G



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11F., No.758, Sec.4 Bade Road, Songshan Dist, Taipei City 105

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



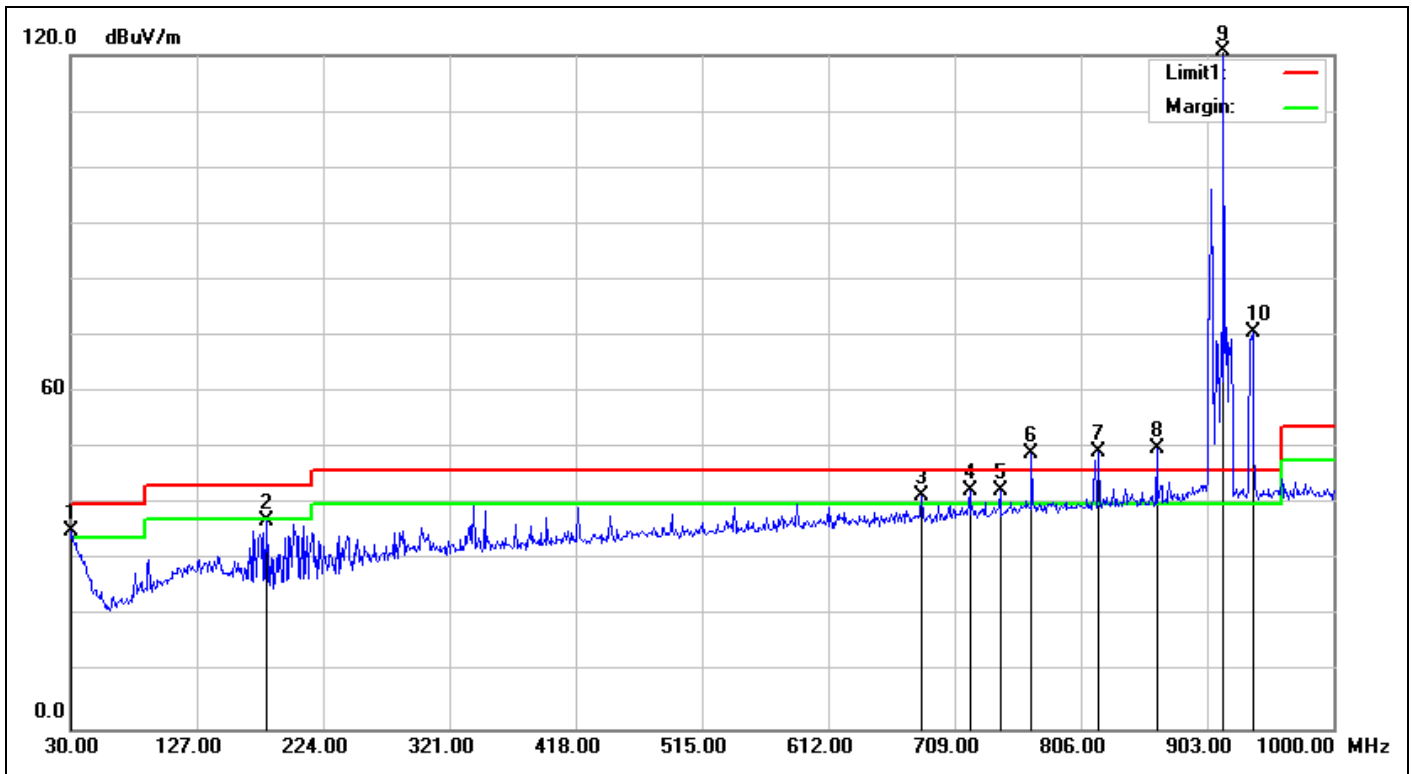
Service No.:	114067578-22(ASSY AD46R RF+MD+RFID)_FCC	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2017/8/3 09:06:05
Applicant:	Nedap	Test Rating:	AC 120V/60Hz
Product:	Lumen iL45	Temp.(°C)/Hum.(%)	22.6(°C)/42%
Model No.:	ASSY AD46R RF+MD+RFID	Test Engineer:	Kai Wang
Test Mode:	902.75M-Tx		
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	-0.08	34.89	34.81	40.00	-5.19	QP	300	80	
2	180.3500	-9.66	46.59	36.93	43.50	-6.57	QP	300	276	
3	209.4500	-8.59	45.52	36.93	43.50	-6.57	QP	100	317	
4	348.1600	-3.47	43.15	39.68	46.00	-6.32	QP	100	240	

Spurious Emissions, TX Mode, 30M-1G

5	768.1700	2.55	46.58	49.13	102	<20	QP	100	125	
6	806.9700	2.99	45.24	48.23	102	<20	QP	100	130	
7	816.6700	3.15	43.25	46.40	102	<20	QP	100	130	
8	855.4700	3.76	41.85	45.61	102	<20	QP	100	114	
9	864.2000	3.85	45.99	49.84	102	<20	QP	100	96	
10	902.7500	4.24	117.76	122.00	N/A	N/A	N/A	N/A	N/A	RFID-Tx Fundamental
11	960.2300	5.46	39.49	44.95	54.00	-9.05	QP	200	48	

6	768.1700	2.55	44.60	47.15	102	<20	QP	100	158	
7	806.9700	2.99	41.42	44.41	102	<20	QP	100	172	
8	864.2000	3.85	46.16	50.01	102	<20	QP	100	164	
9	902.7500	4.24	117.71	121.95	N/A	N/A	N/A	N/A	N/A	RFID-Tx Fundamental
10	960.2300	5.46	40.39	45.85	54.00	-8.15	QP	200	108	



Service No.: 114067578-22(ASSY AD46R

Test Distance: 3m

RF+MD+RFID)_FCC

Test Standard: FCC Class B 3M Radiation

Ant. Polarization: Horizontal

Test item: Radiation Emission

Test Time: 2017/8/3 09:58:17

Applicant: Nedap

Test Rating: AC 120V/60Hz

Product: Lumen iL45

Temp.(°C)/Hum.(%): 22.6(°C)/42%

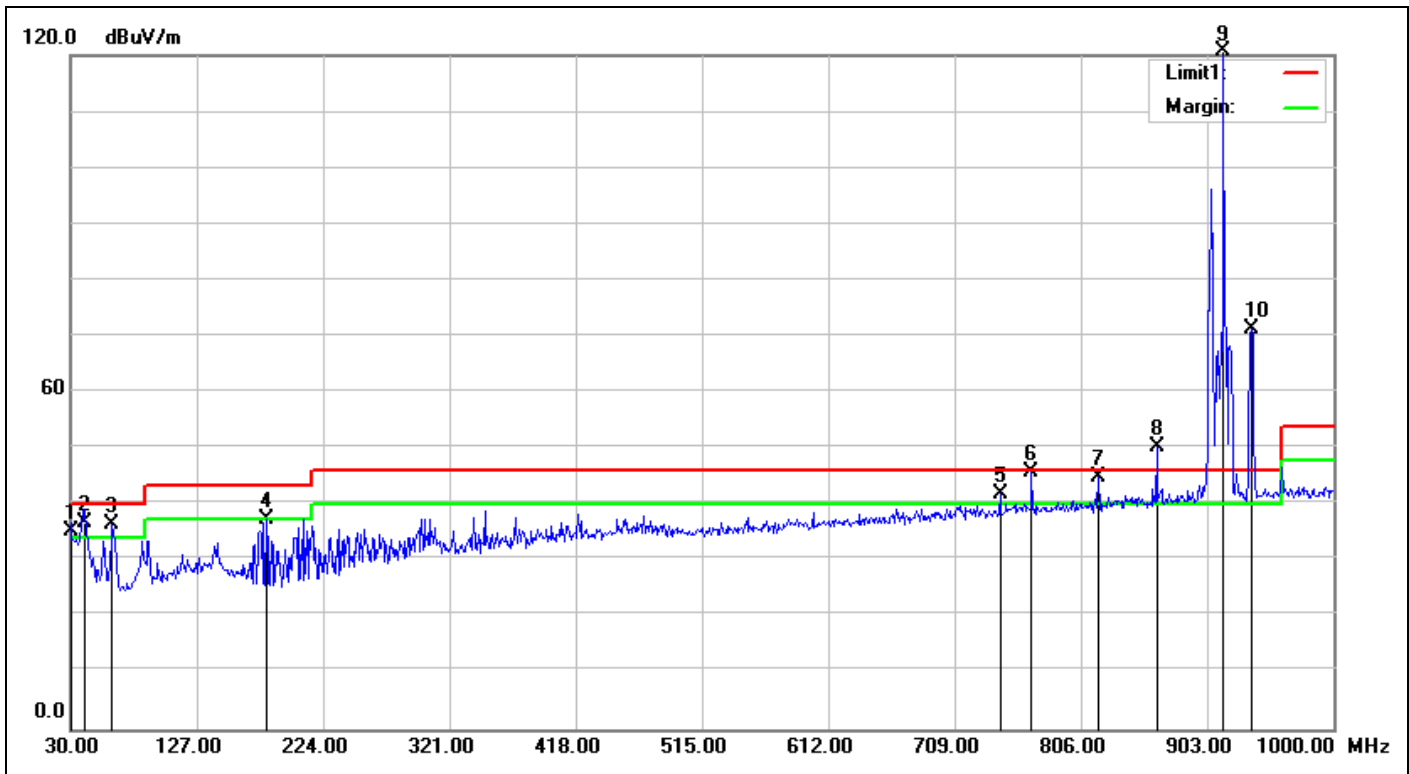
Model No.: ASSY AD46R RF+MD+RFID

Test Engineer: Kai Wang

Test Mode: 915.25M-Tx

Remark:

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.9700	-0.62	35.75	35.13	40.00	-4.87	QP	300	248	
2	180.3500	-9.66	46.71	37.05	43.50	-6.45	QP	300	280	
3	683.7800	0.90	40.78	41.68	100.85	<-20	QP	100	333	
4	720.6400	1.61	40.93	42.54	100.85	<-20	QP	100	359	
5	743.9200	2.21	40.24	42.45	100.85	<-20	QP	100	346	
6	768.1700	2.55	46.51	49.06	100.85	<-20	QP	100	125	
7	819.5800	3.19	46.08	49.27	100.85	<-20	QP	100	125	
8	864.2000	3.85	46.13	49.98	100.85	<-20	QP	100	131	
9	915.2500	4.55	116.30	120.85	N/A	N/A	N/A	N/A	N/A	RFID-Tx
10	937.9200	5.09	65.56	70.65	100.85	<-20	QP	200	120	



Service No.:	114067578-22(ASSY AD46R RF+MD+RFID)_FCC	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2017/8/3 10:01:53
Applicant:	Nedap	Test Rating:	AC 120V/60Hz
Product:	Lumen iL45	Temp.(°C)/Hum.(%)	22.6(°C)/42%
Model No.:	ASSY AD46R RF+MD+RFID	Test Engineer:	Kai Wang
Test Mode:	915.25M-Tx		
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	-0.08	35.39	35.31	40.00	-4.69	QP	100	274	
2	40.6700	-6.17	43.06	36.89	40.00	-3.11	QP	200	232	
3	62.0100	-13.58	50.14	36.56	40.00	-3.44	QP	100	107	
4	180.3500	-9.66	46.93	37.27	43.50	-6.23	QP	100	221	
5	743.9200	2.21	39.53	41.74	100.85	<-20	QP	200	75	
6	768.1700	2.55	43.11	45.66	100.85	<-20	QP	200	134	
7	819.5800	3.19	41.77	44.96	100.85	<-20	QP	200	106	
8	864.2000	3.85	46.51	50.36	100.85	<-20	QP	100	243	
9	915.2500	4.55	116.30	120.85	N/A	N/A	N/A	N/A	N/A	RFID-Tx

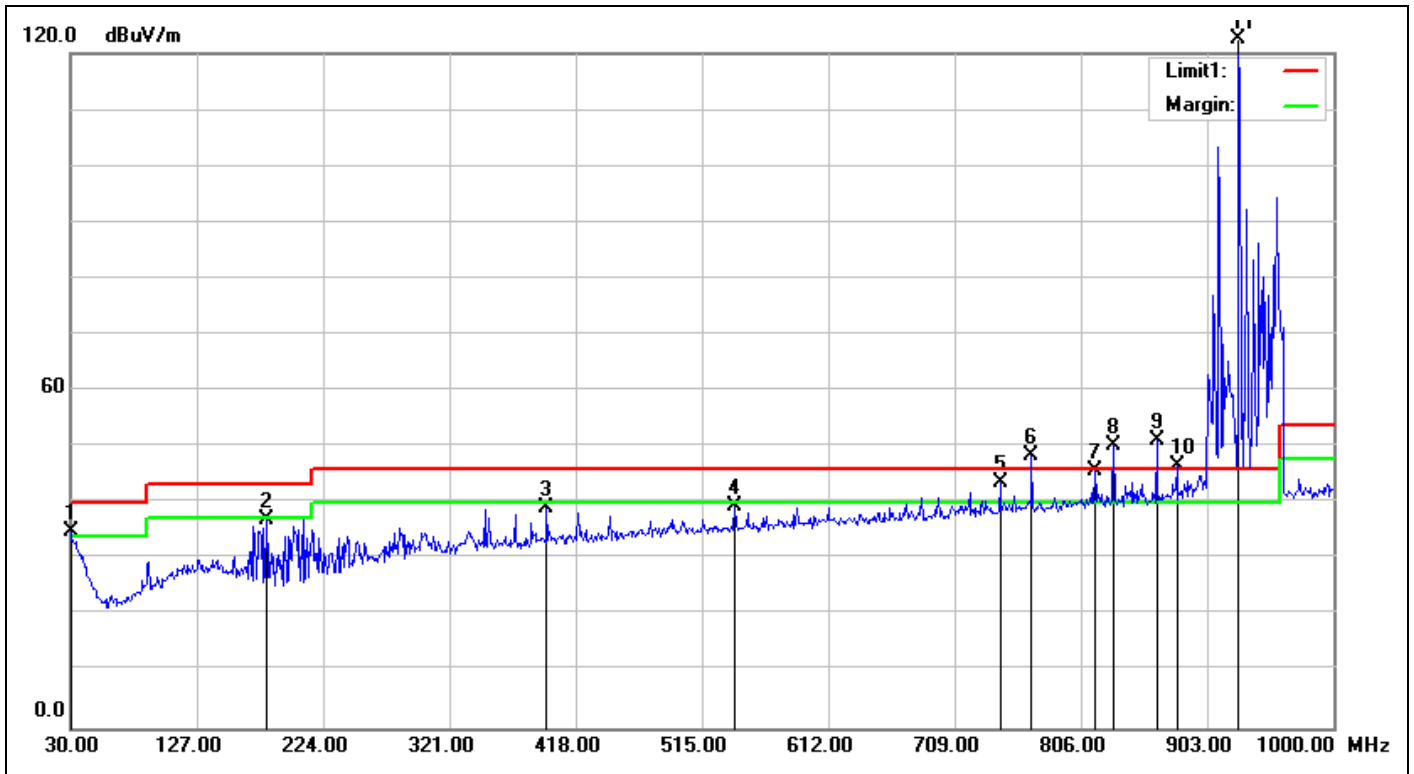
10	936.9500	5.06	66.10	71.16	100.85	<-20	QP	100	130	
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11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105

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

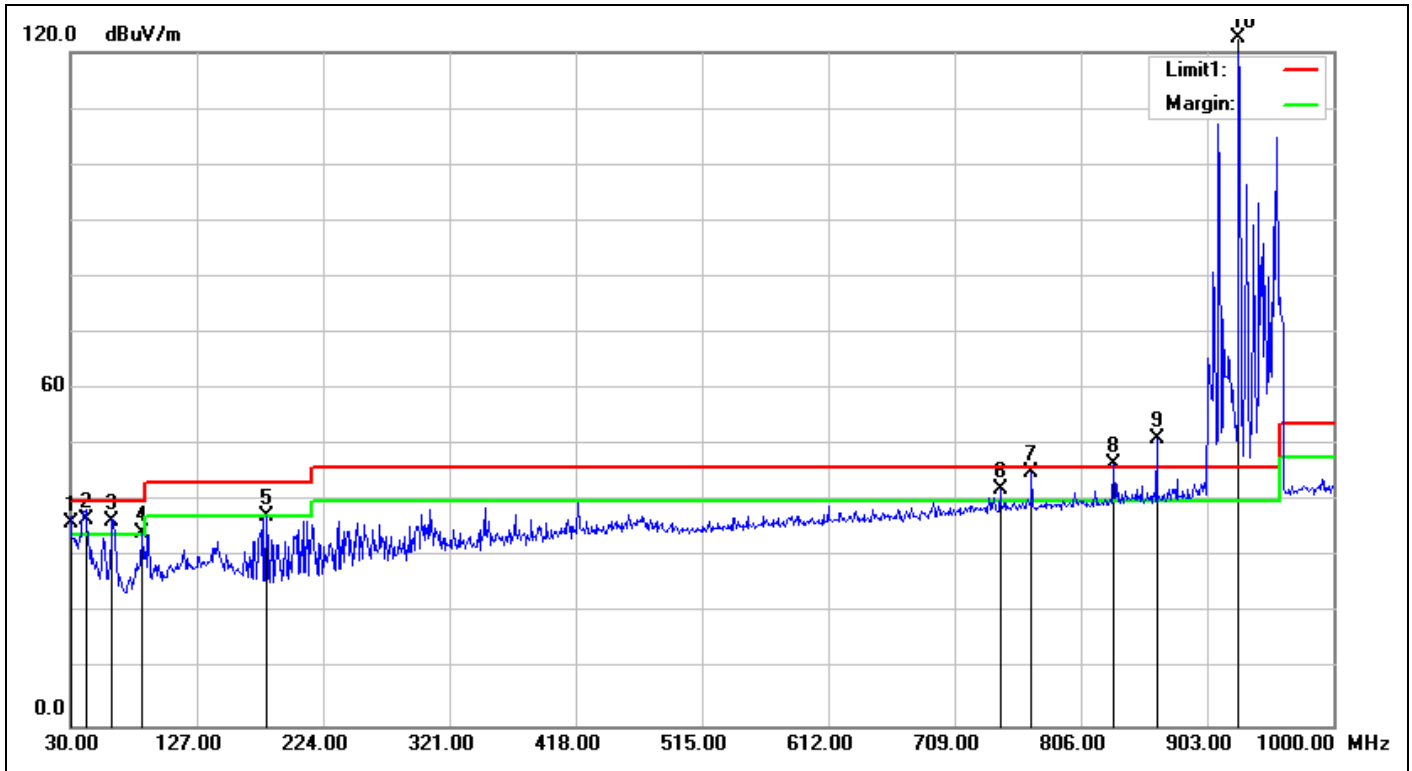


Service No.:	114067578-22(ASSY AD46R RF+MD+RFID)_FCC	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2017/8/3 10:09:48
Applicant:	Nedap	Test Rating:	AC 120V/60Hz
Product:	Lumen iL45	Temp.(°C)/Hum.(%)	22.6(°C)/42%
Model No.:	ASSY AD46R RF+MD+RFID	Test Engineer:	Kai Wang
Test Mode:	927.25M-Tx		
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	-0.08	34.92	34.84	40.00	-5.16	QP	200	216	
2	180.3500	-9.66	46.59	36.93	43.50	-6.57	QP	300	264	
3	395.6900	-2.60	41.73	39.13	46.00	-6.87	QP	200	312	
4	540.2200	-0.88	40.28	39.40	102	<-20	QP	100	243	

Spurious Emissions, TX Mode, 30M-1G

5	743.9200	2.21	41.36	43.57	102	<-20	QP	106	360	
6	768.1700	2.55	45.78	48.33	102	<-20	QP	100	128	
7	816.6700	3.15	42.54	45.69	102	<-20	QP	100	115	
8	831.2200	3.40	46.91	50.31	102	<-20	QP	100	117	
9	864.2000	3.85	47.16	51.01	102	<-20	QP	100	96	
10	879.7200	3.99	42.80	46.79	102	<-20	QP	200	48	
11	927.2500	4.83	117.58	122.41	N/A	N/A	N/A	N/A	N/A	RFID-Tx Fundamental



Service No.:	114067578-22(ASSY AD46R RF+MD+RFID)_FCC	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2017/8/3 10:13:24
Applicant:	Nedap	Test Rating:	AC 120V/60Hz
Product:	Lumen iL45	Temp.(°C)/Hum.(%)	22.6(°C)/42%
Model No.:	ASSY AD46R RF+MD+RFID	Test Engineer:	Kai Wang
Test Mode:	927.25M-Tx		
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	-0.08	36.20	36.12	40.00	-3.88	QP	100	324	
2	41.6400	-6.71	43.51	36.80	40.00	-3.20	QP	100	360	
3	62.0100	-13.58	50.00	36.42	40.00	-3.58	QP	200	86	
4	85.2900	-11.41	45.75	34.34	40.00	-5.66	QP	100	285	
5	180.3500	-9.66	46.90	37.24	43.50	-6.26	QP	100	237	

6	743.9200	2.21	39.86	42.07	102.64	<-20	QP	200	192	
7	768.1700	2.55	42.55	45.10	102.64	<-20	QP	200	234	
8	831.2200	3.40	43.26	46.66	102.64	<-20	QP	200	147	
9	864.2000	3.85	47.20	51.05	102.64	<-20	QP	100	153	
10	927.2500	4.83	117.81	122.64	N/A	N/A	N/A	N/A	N/A	RFID-Tx Fundamental

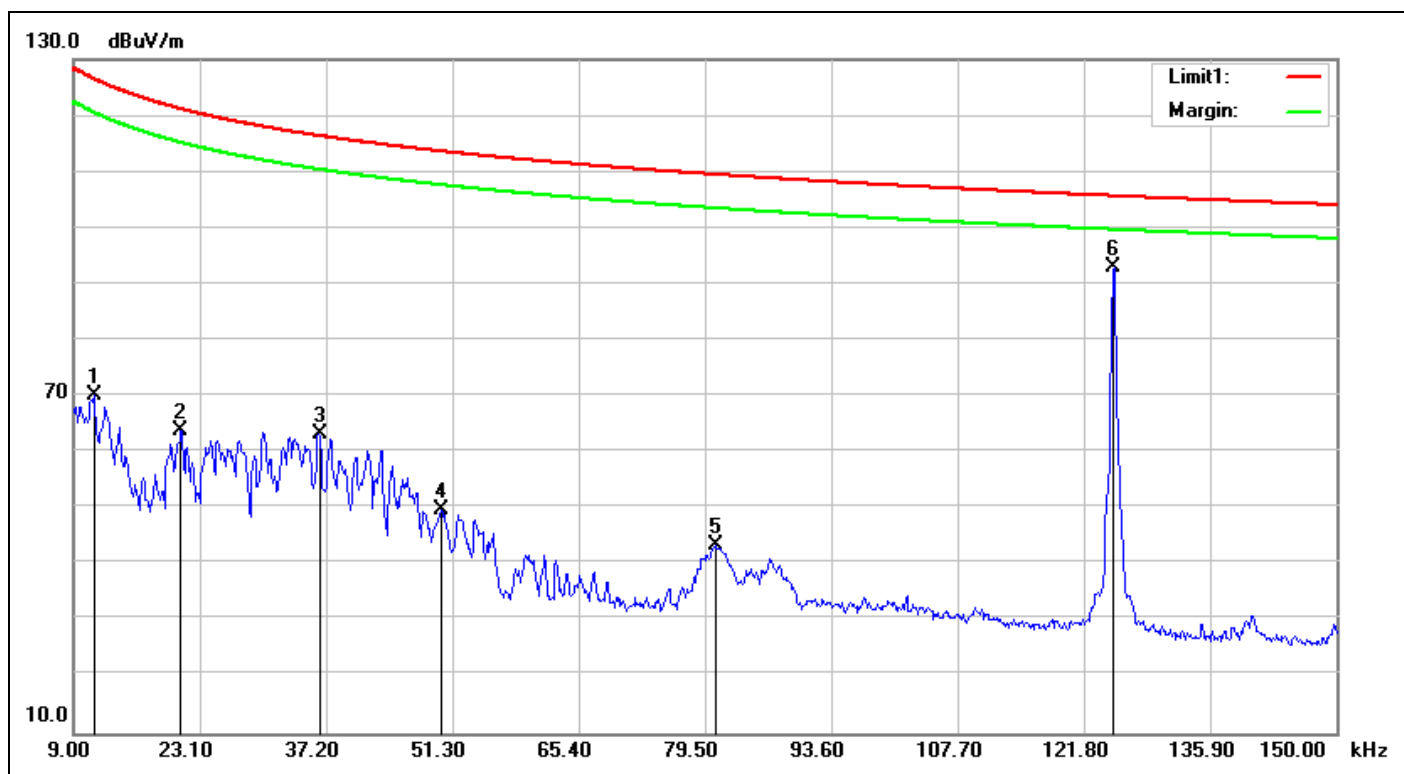
Spurious Emissions, TX Mode, 9 kHz-30M



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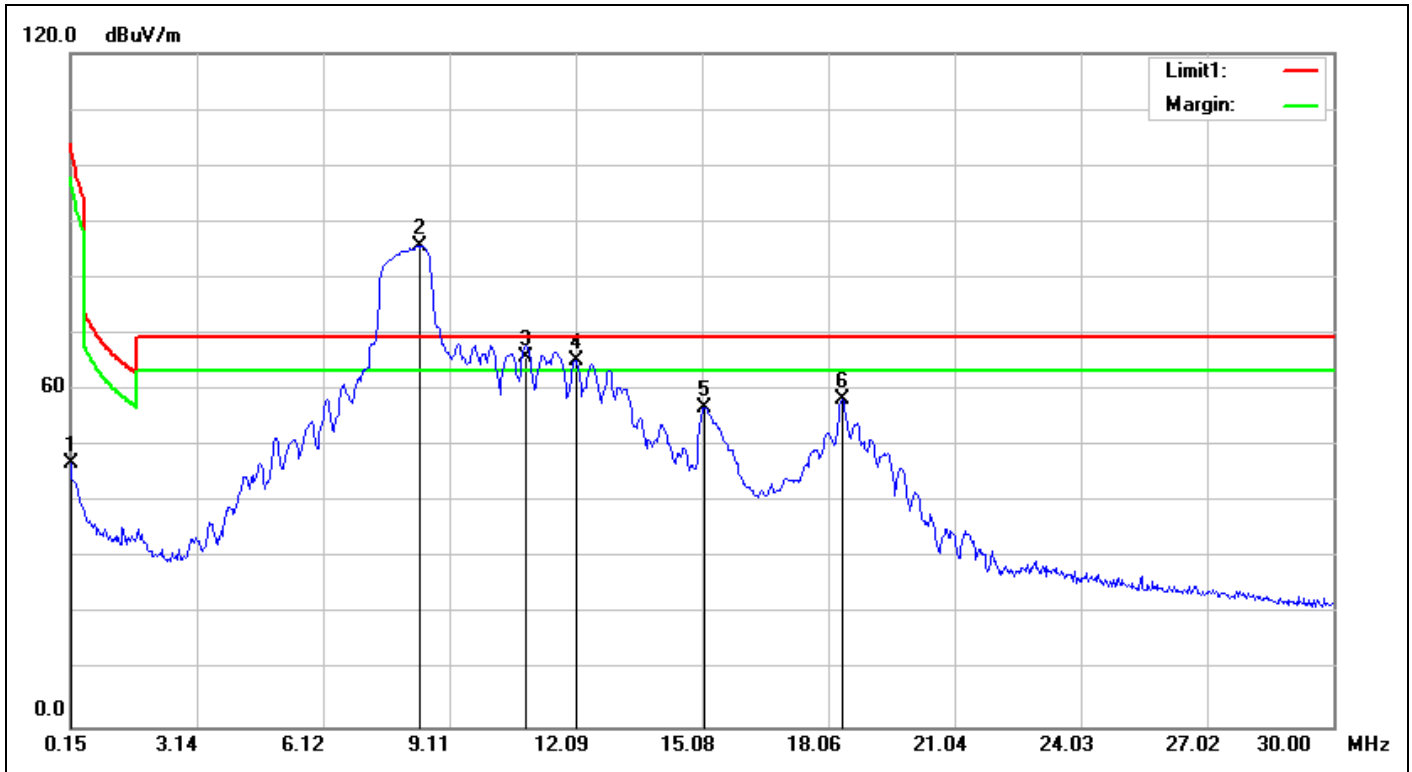
Tel:+886-2172-7000 fax:+886-2528-0018



Service No.:	114067578-22(ASSY AD46R RF+MD+RFID)_FCC	Test Distance:	3m
Test Standard:	FCC15.209_9k-1G_3m	Ant. Polarization:	
Test item:	Radiation Emission	Test Time:	2017/8/2 16:57:52
Applicant:	Nedap	Test Rating:	AC 120V/60Hz
Product:	Lumen iL45	Temp.(°C)/Hum.(%)	22(°C)/49%
Model No.:	ASSY AD46R RF+MD+RFID	Test Engineer:	Kai Wang
Test Mode:	915.25M-Tx		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0113	19.94	50.24	70.18	126.52	-56.34	QP	100	225	
2	0.0210	20.04	43.93	63.97	121.14	-57.17	QP	100	306	
3	0.0364	19.91	43.45	63.36	116.37	-53.01	QP	100	347	
4	0.0500	19.43	30.20	49.63	113.61	-63.98	QP	100	128	
5	0.0808	19.25	24.23	43.48	109.45	-65.97	QP	100	194	
6	0.1250	19.11	73.93	93.04	105.66	-12.62	QP	100	245	MD-Tx Fundamental

Spurious Emissions, TX Mode, 9 kHz-30M



Service No.: 114067578-22(ASSY AD46R
RF+MD+RFID)_FCC

Test Standard: FCC15.209_9k-1G_3m

Test item: Radiation Emission

Applicant: Nedap

Product: Lumen iL45

Model No.: ASSY AD46R RF+MD+RFID

Test Mode: 915.25M-Tx

Remark:

Test Distance: 3m

Ant. Polarization:

Test Time: 2017/8/2 17:00:19

Test Rating: AC 120V/60Hz

Temp.(°C)/Hum.(%): 22(°C)/49%

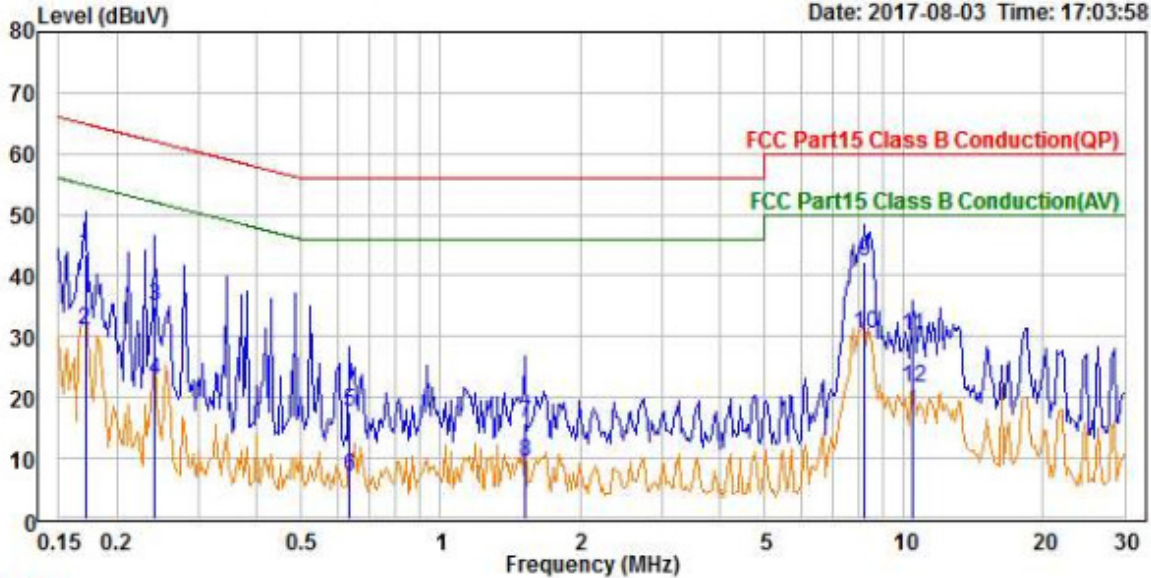
Test Engineer: Kai Wang

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.1500	19.08	28.01	47.09	104.08	-56.99	QP	100	247	
2	8.4185	20.07	65.64	85.71	69.50	N/A	QP	100	138	RF-Tx Fundamental
3	10.9259	20.39	45.51	65.90	69.50	-3.60	QP	100	256	
4	12.0900	20.59	44.55	65.14	69.50	-4.36	QP	100	105	
5	15.1347	21.12	35.82	56.94	69.50	-12.56	QP	100	118	
6	18.3884	21.70	36.56	58.26	69.50	-11.24	QP	100	194	

Mains Spurious Emissions

File: C:\EMC\Report\2017\Nedap\114067578-22(ASSY AD46R RF+MD+RFID)\114067578-22(ASSY AD46R RF+M

Date: 2017-08-03 Time: 17:03:58

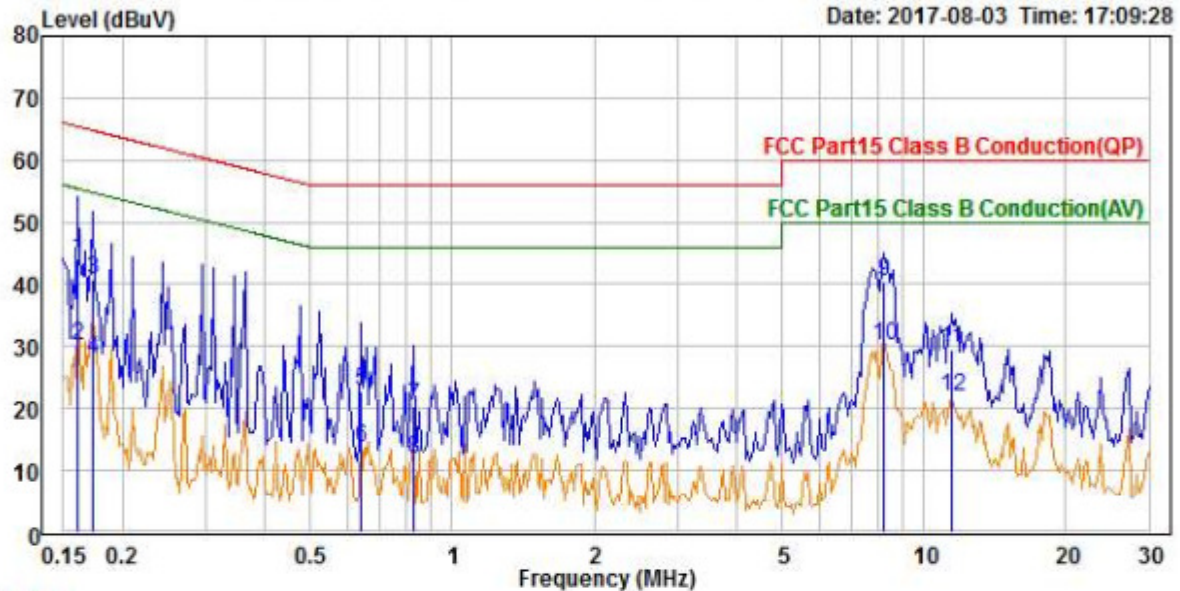


Trace: 1

Site : Conduction room
Condition : FCC Part15 Class B Conduction(QP) line1
Test Engineer: Kai Wang
Applicant : Nedap
Product : ASSY AD46R RF+MD+RFID
Model No. : Lumen iL45
Test Rating : 120Vac/60Hz
Tmp/Hum : 22.1 °C / 42 %
Memo : AC Mains

	Freq	Level	Read Level	LISN Factor	Cable Loss	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dB	dBuV	dB	
1	0.171	43.56	33.90	9.64	0.02	9.66	64.93	-21.37	QP
2	0.171	30.98	21.32	9.64	0.02	9.66	54.93	-23.95	Average
3	0.242	34.86	25.20	9.64	0.02	9.66	62.04	-27.18	QP
4	0.242	22.78	13.12	9.64	0.02	9.66	52.04	-29.26	Average
5	0.634	17.66	8.00	9.64	0.02	9.66	56.00	-38.34	QP
6	0.634	7.13	-2.53	9.64	0.02	9.66	46.00	-38.87	Average
7	1.520	15.75	6.06	9.65	0.04	9.69	56.00	-40.25	QP
8	1.520	9.38	-0.31	9.65	0.04	9.69	46.00	-36.62	Average
9	8.239	42.21	32.44	9.70	0.07	9.77	60.00	-17.79	QP
10	8.239	30.40	20.63	9.70	0.07	9.77	50.00	-19.60	Average
11	10.459	30.19	20.40	9.71	0.08	9.79	60.00	-29.81	QP
12	10.459	21.51	11.72	9.71	0.08	9.79	50.00	-28.49	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 AD46R RF+MD+RFID
Model No. : Lumen iL45
Test Rating : 120Vac/60Hz
Tmp/Hum : 22.1 °C / 42 %
Memo : AC Mains

	Freq	Level	Read Level	LISN Factor	Cable Loss	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dB	dBuV	dB	
1	0.161	44.10	34.43	9.65	0.02	9.67	65.42	-21.32	QP
2	0.161	30.21	20.54	9.65	0.02	9.67	55.42	-25.21	Average
3	0.172	40.78	31.11	9.65	0.02	9.67	64.84	-24.06	QP
4	0.172	28.09	18.42	9.65	0.02	9.67	54.84	-26.75	Average
5	0.640	22.74	13.07	9.65	0.02	9.67	56.00	-33.26	QP
6	0.640	13.61	3.94	9.65	0.02	9.67	46.00	-32.39	Average
7	0.829	20.37	10.70	9.65	0.02	9.67	56.00	-35.63	QP
8	0.829	11.92	2.25	9.65	0.02	9.67	46.00	-34.08	Average
9	8.239	40.45	30.66	9.72	0.07	9.79	60.00	-19.55	QP
10	8.239	30.16	20.37	9.72	0.07	9.79	50.00	-19.84	Average
11	11.438	29.42	19.59	9.74	0.09	9.83	60.00	-30.58	QP
12	11.438	21.94	12.11	9.74	0.09	9.83	50.00	-28.06	Average