

# Test Report No.50075140 001

## Appendix D: Radiated Spurious Emission Data

(File: 50075140 AppendixD)

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# Radiated Emissions, Fundamental

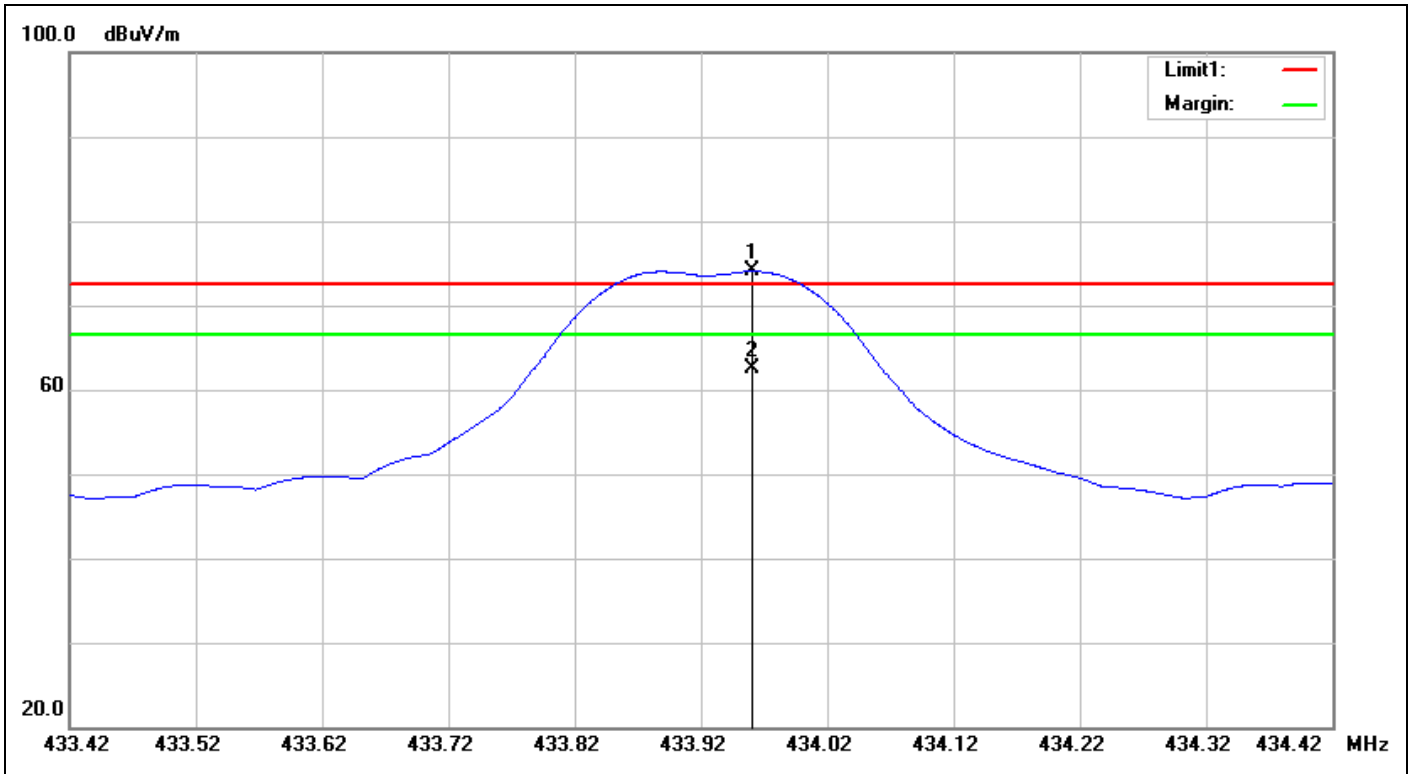
## Radiated Emissions, Fundamental



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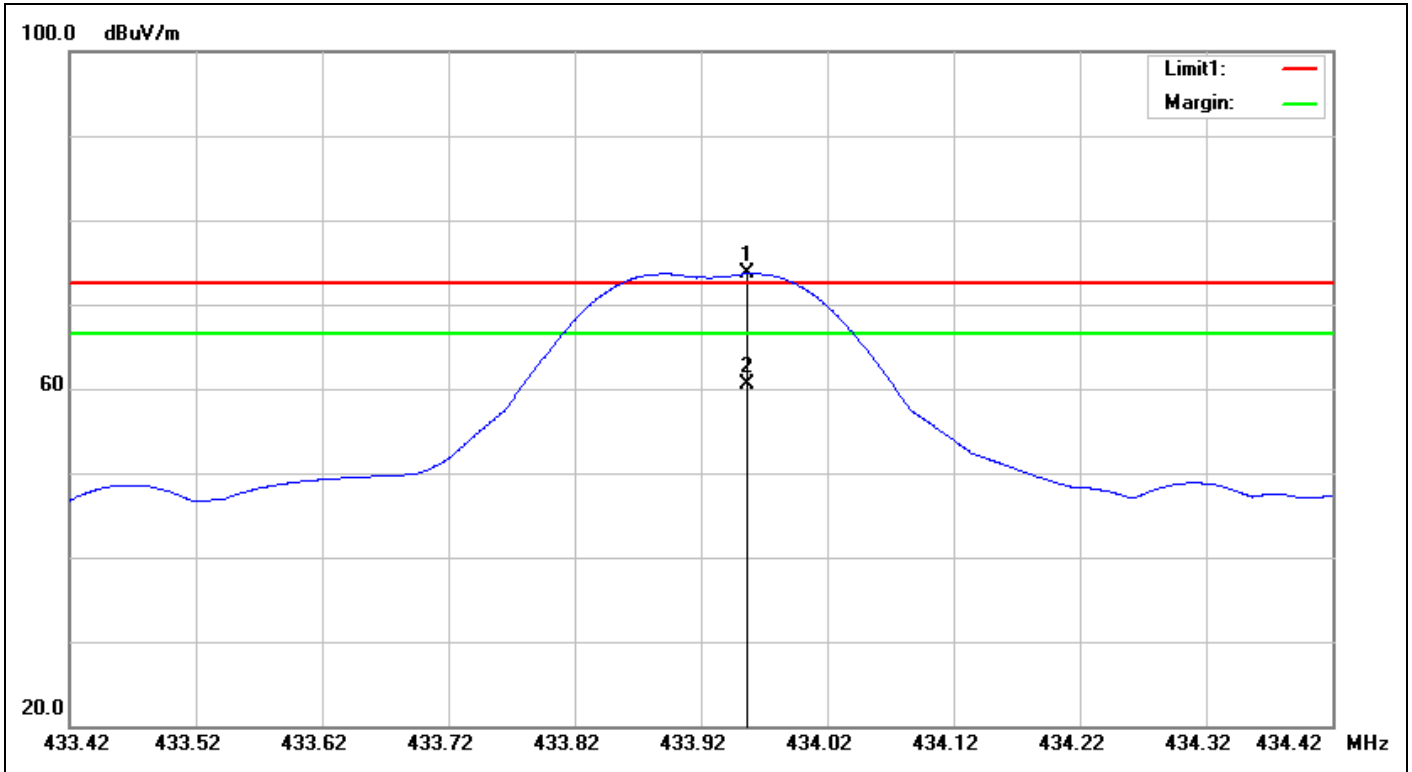
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Service No.:	114061337(DF-UNISENSOR)-FCC	Test Distance:	3m
Test Standard:	FCC 15.231_field strength_3m(dBuV/m)	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2017/3/8 21:58:44
Applicant:	CUB	Test Rating:	DC 3V
Product:	Dual frequency programmable universal TPMS	Temp.(°C)/Hum.(%):	19.1(°C)/54%
Model No.:	DF-Unisensor	Test Engineer:	George Yang
Test Mode:	433 FSK		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	433.9599	-2.22	76.25	74.03	92.86	-18.83	peak		0	
2	433.9599	-2.22	64.73	62.51	72.86	-10.35	AVG		0	



Service No.:	114061337(DF-UNISENSOR)-FCC	Test Distance:	3m
Test Standard:	FCC 15.231_field strength_3m(dBuV/m)	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2017/3/8 21:59:43
Applicant:	CUB	Test Rating:	DC 3V
Product:	Dual frequency programmable universal TPMS	Temp.(°C)/Hum.(%):	19.1(°C)/54%
Model No.:	DF-Unisensor	Test Engineer:	George Yang
Test Mode:	433 FSK		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	433.9569	-2.22	75.86	73.64	92.86	-19.22	peak			
2	433.9569	-2.22	62.72	60.50	72.86	-12.36	AVG			

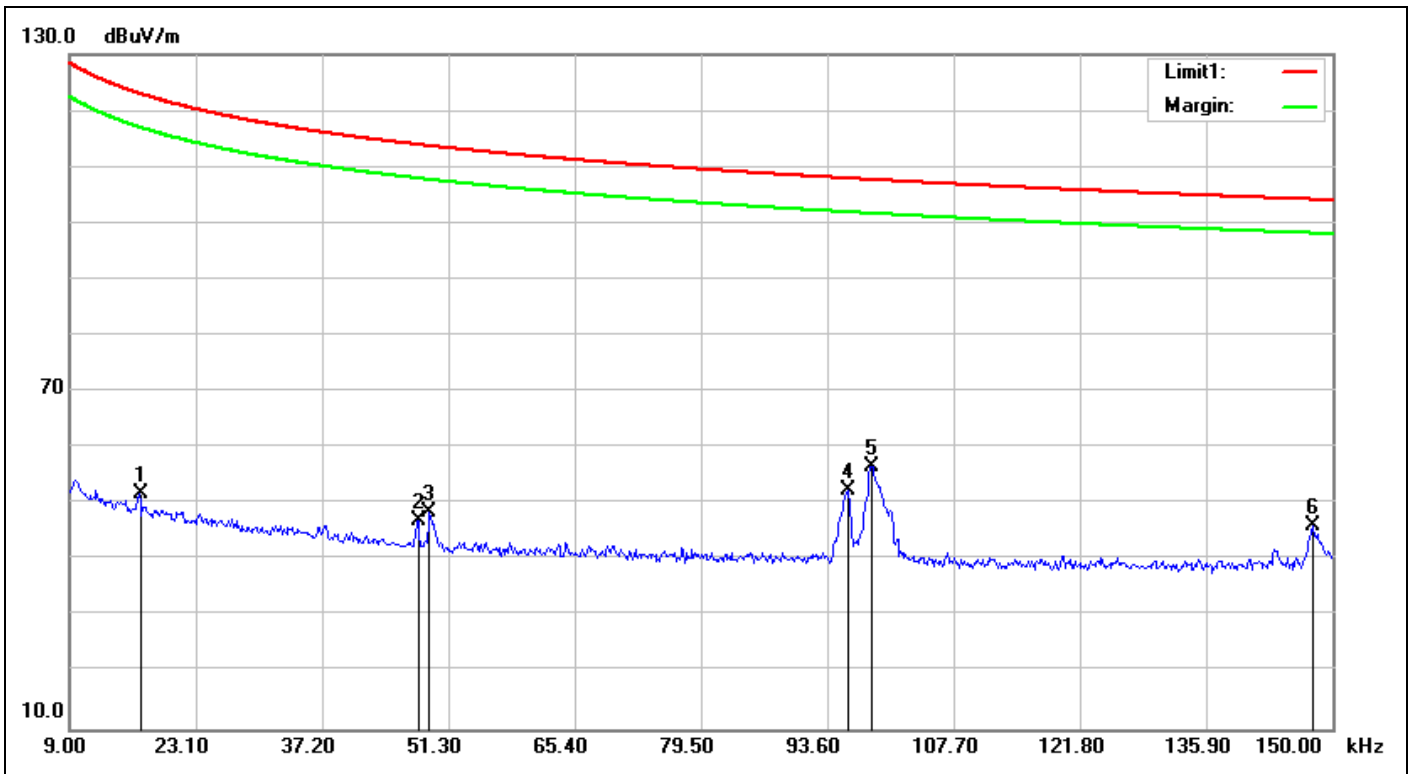
# Spurious Emissions, TX Mode, 9K-30M



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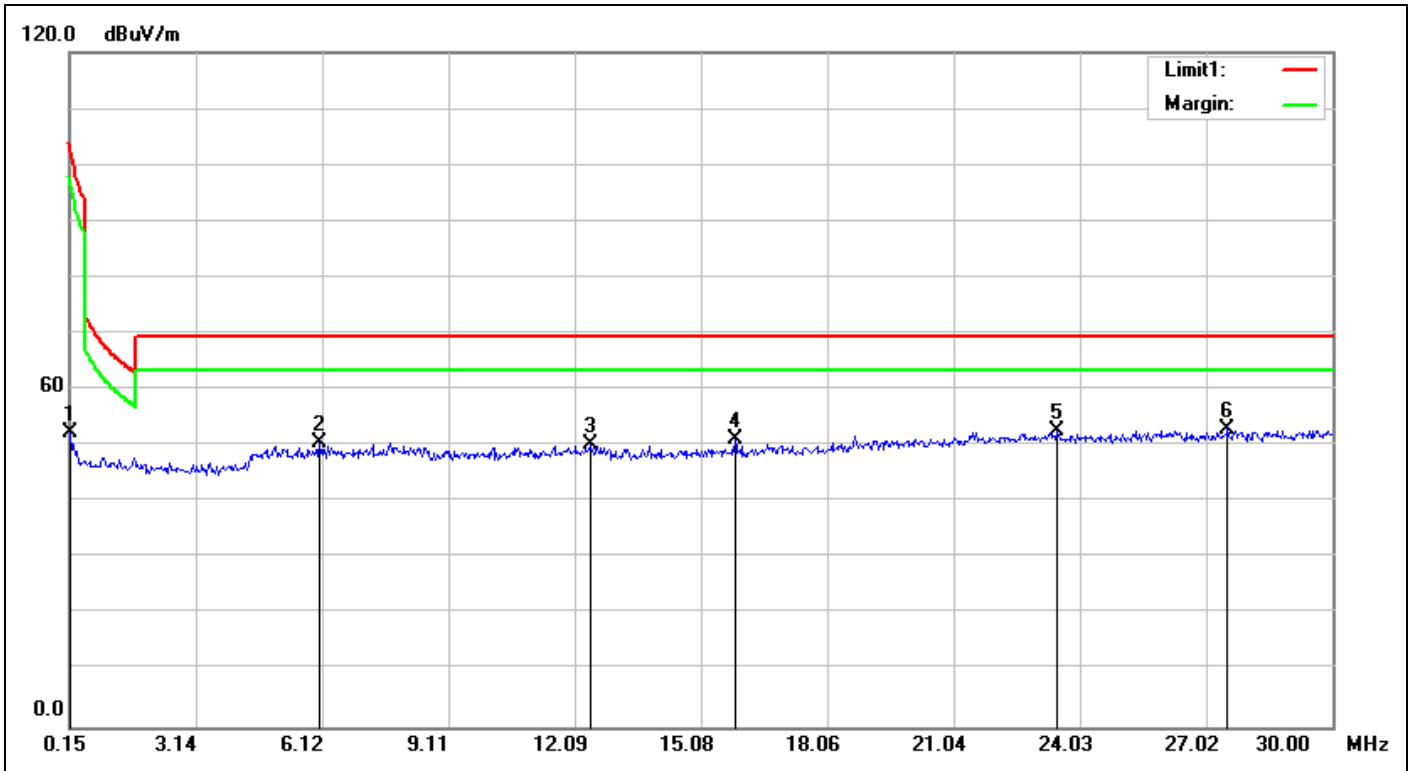
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<b>Service No.:</b>	<b>114061337(DF-UNISENSOR)-FCC</b>	<b>Test Distance:</b>	<b>3m</b>
<b>Test Standard:</b>	<b>FCC 15.209_9k-30M_3m(dBuV/m)</b>	<b>Ant. Polarization:</b>	
<b>Test item:</b>	<b>Radiation Emission</b>	<b>Test Time:</b>	<b>2017/3/8 22:27:55</b>
<b>Applicant:</b>	<b>CUB</b>	<b>Test Rating:</b>	<b>DC 3V</b>
<b>Product:</b>	<b>Dual frequency programmable universal TPMS</b>	<b>Temp.(°C)/Hum.(%):</b>	<b>19.1(°C)/54%</b>
<b>Model No.:</b>	<b>DF-Unisensor</b>	<b>Test Engineer:</b>	<b>George Yang</b>
<b>Test Mode:</b>	<b>433 FSK</b>		
<b>Remark:</b>			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0168	20.30	31.42	51.72	123.02	-71.30	QP	100	248	
2	0.0479	19.32	27.84	47.16	113.94	-66.78	QP	100	160	
3	0.0492	19.26	29.39	48.65	113.71	-65.06	QP	100	264	
4	0.0959	18.87	33.59	52.46	107.93	-55.47	QP	100	144	
5	0.0985	18.85	37.82	56.67	107.70	-51.03	QP	100	152	
6	0.1477	18.80	27.32	46.12	104.19	-58.07	QP	100	150	

## Radiated Emissions, Fundamental



Service No.:	114061337(DF-UNISENSOR)-FCC	Test Distance:	3m
Test Standard:	FCC 15.209_9k-30M_3m(dBuV/m)	Ant. Polarization:	
Test item:	Radiation Emission	Test Time:	2017/3/8 22:33:20
Applicant:	CUB	Test Rating:	DC 3V
Product:	Dual frequency programmable universal TPMS	Temp.(°C)/Hum.(%):	19.1(°C)/54%
Model No.:	DF-Unisensor	Test Engineer:	George Yang
Test Mode:	433 FSK		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.1799	18.77	33.72	52.49	102.48	-49.99	QP	100	343	
2	6.0603	19.77	30.89	50.66	69.54	-18.88	QP	100	264	
3	12.4482	20.67	29.61	50.28	69.54	-19.26	QP	100	1	
4	15.8810	21.08	29.93	51.01	69.54	-18.53	QP	100	298	
5	23.4927	21.81	30.74	52.55	69.54	-16.99	QP	100	282	
6	27.5224	22.10	31.00	53.10	69.54	-16.44	QP	100	149	

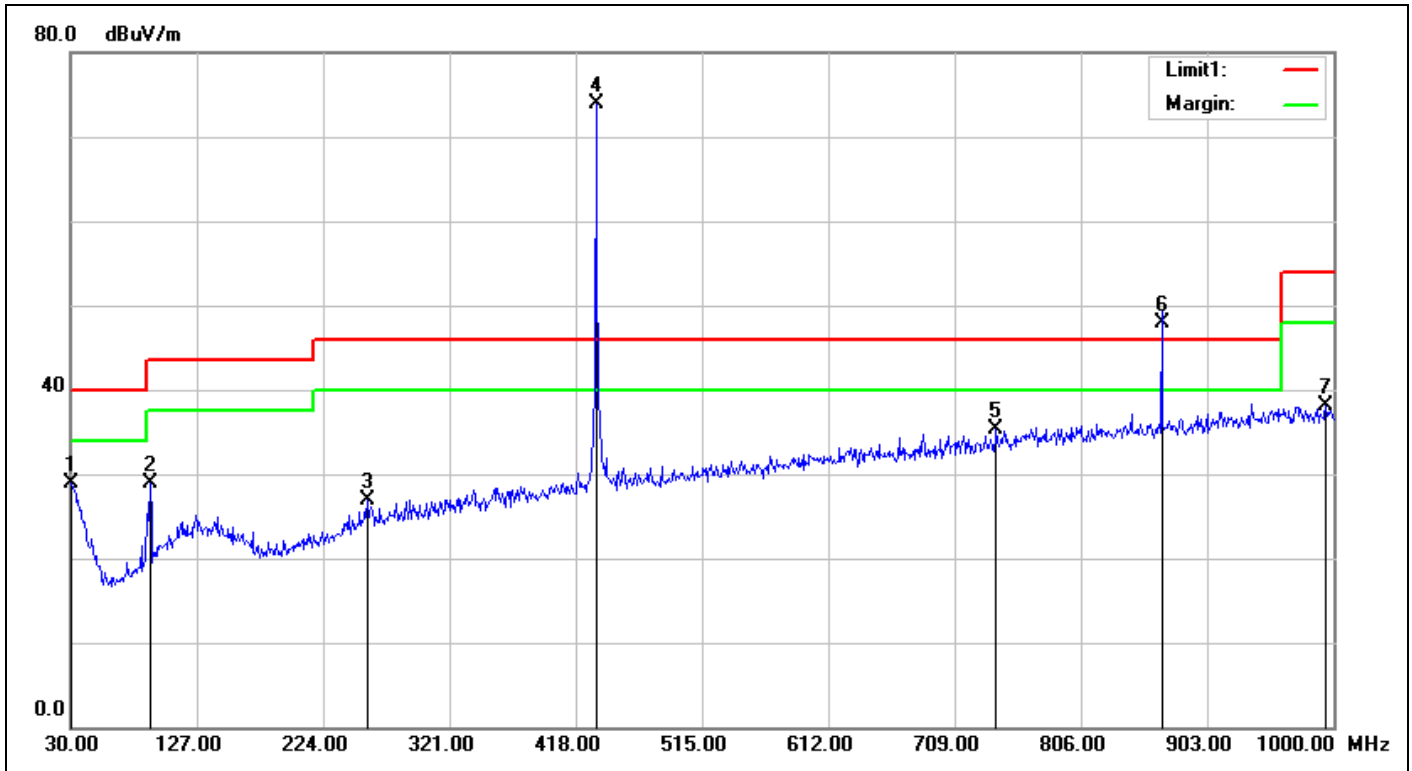
# Spurious Emissions, TX Mode, 30M-1G



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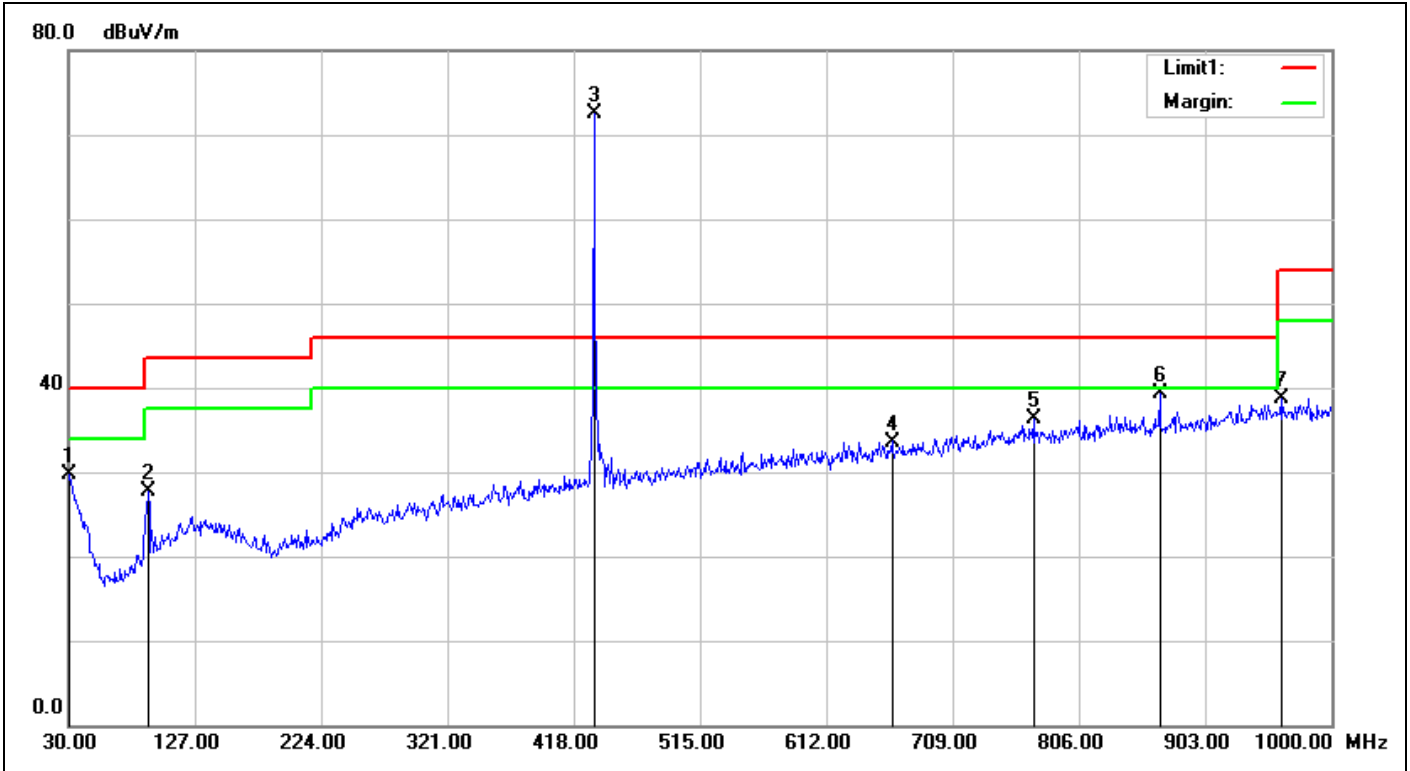


Service No.:	114061337(DF-UNISENSOR)-FCC	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2017/3/8 22:14:28
Applicant:	CUB	Test Rating:	DC 3V
Product:	Dual frequency programmable universal TPMS	Temp.(°C)/Hum.(%):	19.1(°C)/54%
Model No.:	DF-Unisensor	Test Engineer:	George Yang
Test Mode:	433 FSK		
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	-0.07	29.00	28.93	40.00	-11.07	QP	100	131	
2	91.1099	-10.70	39.52	28.82	43.50	-14.68	QP	100	230	
3	257.9499	-5.05	31.98	26.93	46.00	-19.07	QP	100	282	
4	433.9200	-2.22	76.21	73.99	46.00	27.99	QP	100	200	
5	741.0099	2.11	33.17	35.28	46.00	-10.72	QP	100	3	
6	867.8400	3.85	44.15	48.00	52.86	-4.86	QP	100	142	
7	994.1799	5.78	32.40	38.18	54.00	-15.82	QP	100	25	

Remark: spurious emissions limit 72.86 dBuV/m – 20dB = 52.86 dBuV/m

## Spurious Emissions, TX Mode, 30M-1G



<b>Service No.:</b>	<b>114061337(DF-UNISENSOR)-FCC</b>	<b>Test Distance:</b>	<b>3m</b>
<b>Test Standard:</b>	<b>FCC Class B 3M Radiation</b>	<b>Ant. Polarization:</b>	<b>Vertical</b>
<b>Test item:</b>	<b>Radiation Emission</b>	<b>Test Time:</b>	<b>2017/3/8 22:15:31</b>
<b>Applicant:</b>	<b>CUB</b>	<b>Test Rating:</b>	<b>DC 3V</b>
<b>Product:</b>	<b>Dual frequency programmable universal TPMS</b>	<b>Temp.(°C)/Hum.(%):</b>	<b>19.1(°C)/54%</b>
<b>Model No.:</b>	<b>DF-Unisensor</b>	<b>Test Engineer:</b>	<b>George Yang</b>
<b>Test Mode:</b>	<b>433 FSK</b>		
<b>Remark:</b>			

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	30.31	29.69	40.00	-10.31	QP	100	253	
2	91.1100	-10.70	38.41	27.71	43.50	-15.79	QP	100	341	
3	433.9200	-2.22	74.70	72.48	46.00	26.48	QP	100	144	
4	662.4400	0.67	32.93	33.60	46.00	-12.40	QP	100	237	
5	771.0800	2.55	33.74	36.29	46.00	-9.71	QP	100	186	
6	867.8400	3.85	35.37	39.22	46.00	-6.78	QP	100	317	fundamental
7	961.2000	5.48	33.15	38.63	54.00	-15.37	QP	100	139	

**Spurious Emissions, TX Mode, 30M-1G**

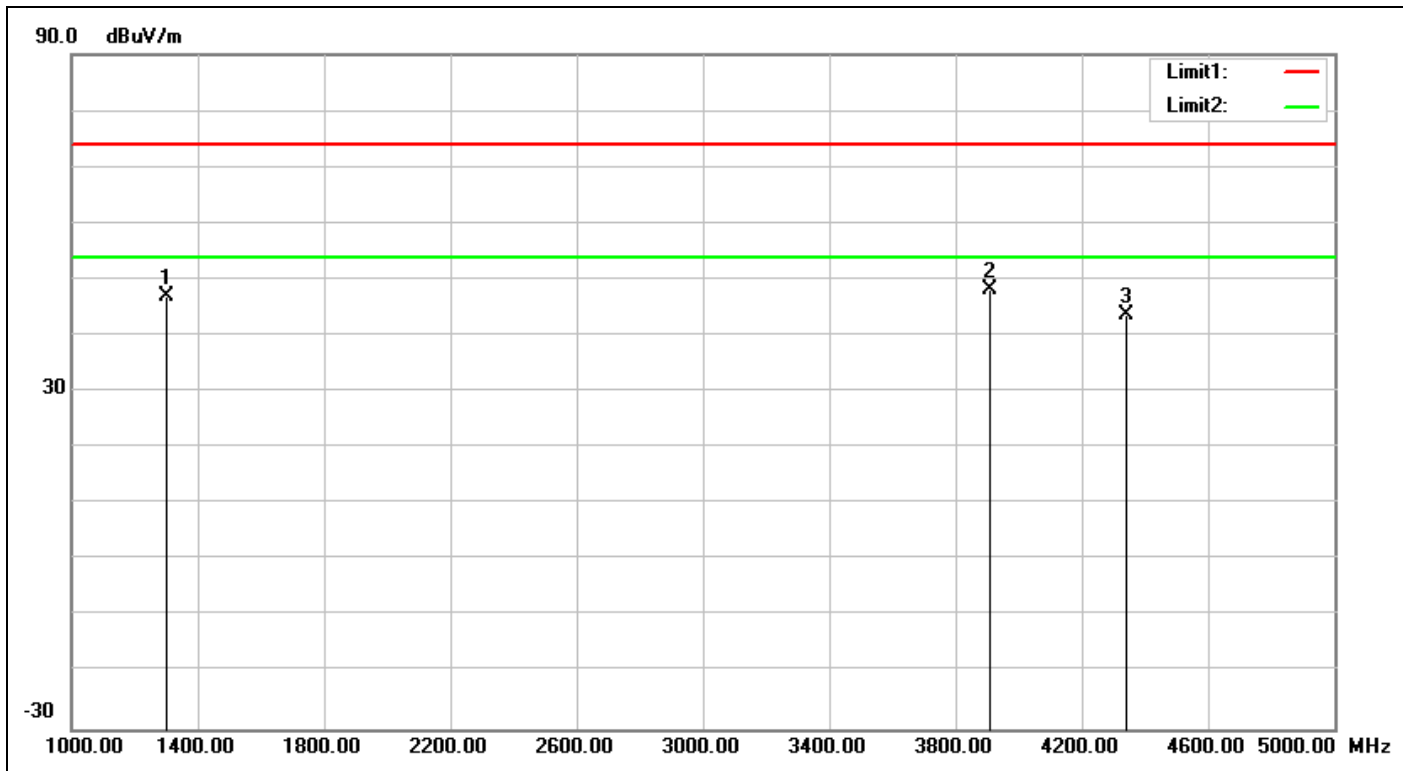
# Spurious Emissions, TX Mode, 1-4G



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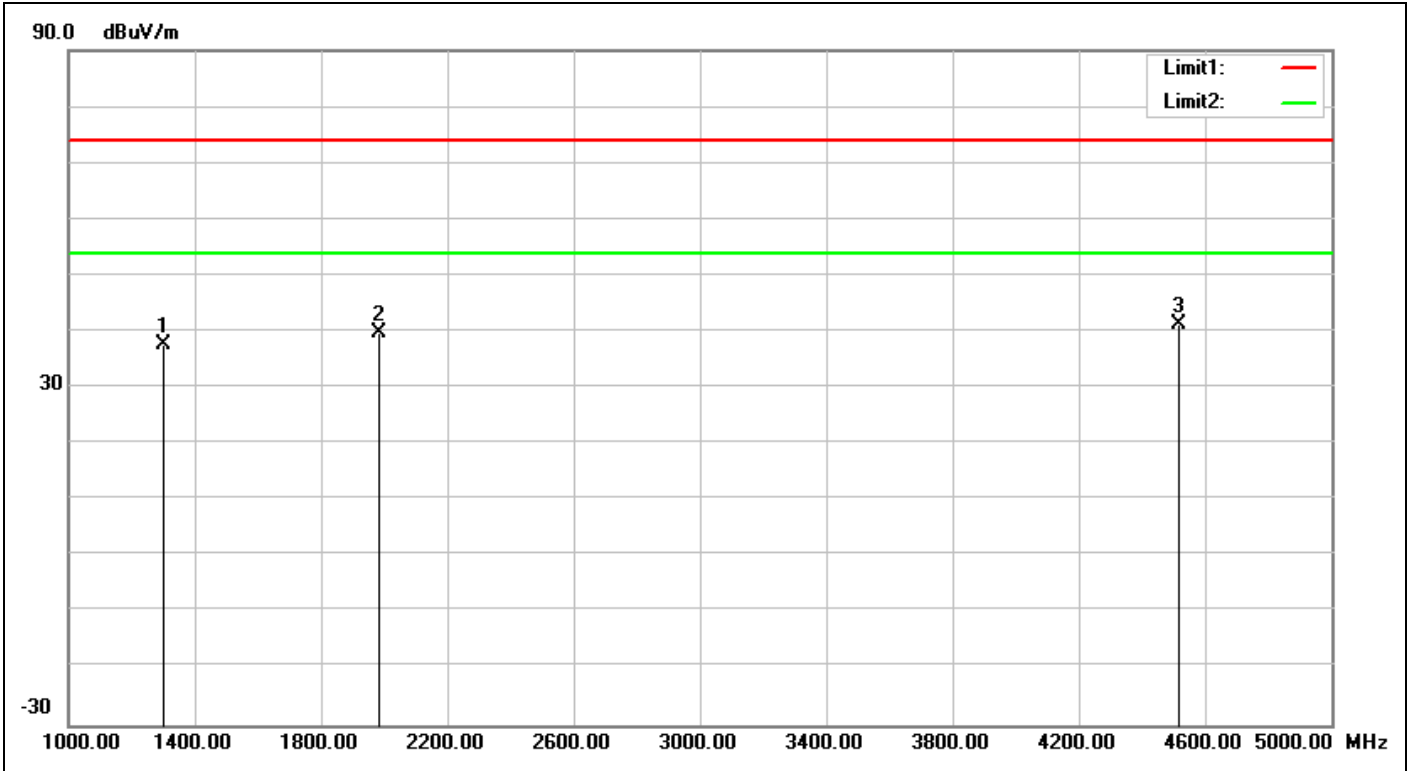
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<b>Service No.:</b>	<b>114061337(DF-UNISENSOR)-FCC</b>	<b>Test Distance:</b>	<b>3m</b>
<b>Test Standard:</b>	<b>FCC Above 1G PEAK</b>	<b>Ant. Polarization:</b>	<b>Horizontal</b>
<b>Test item:</b>	<b>Radiation Emission</b>	<b>Test Time:</b>	<b>2017/3/8 22:42:04</b>
<b>Applicant:</b>	<b>CUB</b>	<b>Test Rating:</b>	<b>DC 3V</b>
<b>Product:</b>	<b>Dual frequency programmable universal TPMS</b>	<b>Temp.(°C)/Hum.(%):</b>	<b>19.1(°C)/54%</b>
<b>Model No.:</b>	<b>DF-Unisensor</b>	<b>Test Engineer:</b>	<b>George Yang</b>
<b>Test Mode:</b>	<b>433 FSK</b>		
<b>Remark:</b>			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1301.760	-13.76	60.69	46.93	74.00	-27.07	peak	100	165	
2	3908.000	-10.89	59.01	48.12	74.00	-25.88	peak	100	141	
3	4340.000	-9.67	53.40	43.73	74.00	-30.27	peak	100	138	





<b>Service No.:</b>	<b>114061337(DF-UNISENSOR)-FCC</b>	<b>Test Distance:</b>	<b>3m</b>
<b>Test Standard:</b>	<b>FCC Above 1G PEAK</b>	<b>Ant. Polarization:</b>	<b>Vertical</b>
<b>Test item:</b>	<b>Radiation Emission</b>	<b>Test Time:</b>	<b>2017/3/8 22:43:08</b>
<b>Applicant:</b>	<b>CUB</b>	<b>Test Rating:</b>	<b>DC 3V</b>
<b>Product:</b>	<b>Dual frequency programmable universal TPMS</b>	<b>Temp.(°C)/Hum.(%):</b>	<b>19.1(°C)/54%</b>
<b>Model No.:</b>	<b>DF-Unisensor</b>	<b>Test Engineer:</b>	<b>George Yang</b>
<b>Test Mode:</b>	<b>433 FSK</b>		
<b>Remark:</b>			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1301.760	-13.76	51.35	37.59	74.00	-36.41	peak	100	224	
2	1984.000	-11.72	51.38	39.66	74.00	-34.34	peak	100	104	
3	4516.000	-9.15	50.31	41.16	74.00	-32.84	peak	100	59	