

Device Description:

Combination Smoke/Carbon Monoxide (CO) Detector with Built-in Wireless Transmitter

Radio Type:

Honeywell 5800 Short Range Radio Protocol, 344.94MHz Carrier, OOK Modulation

Number And Type Of Antennas:

One single wire antenna integrated onto PCB.

Date:

10/19/2016

Tested By:

Christopher Locke

Approved By:

Andrew Roussin

Test Specification:

FCC Part 15, Sub-part C and RSS210, Issue 8

Test Methods:

ANSI C63.10-2013

Spectrum Analyzer Settings:

Quasi-Peak

RBW/VBW = 120K/1M for < 1G.

Average, Peak

RBW/VBW = 100K/300K for < 1G.

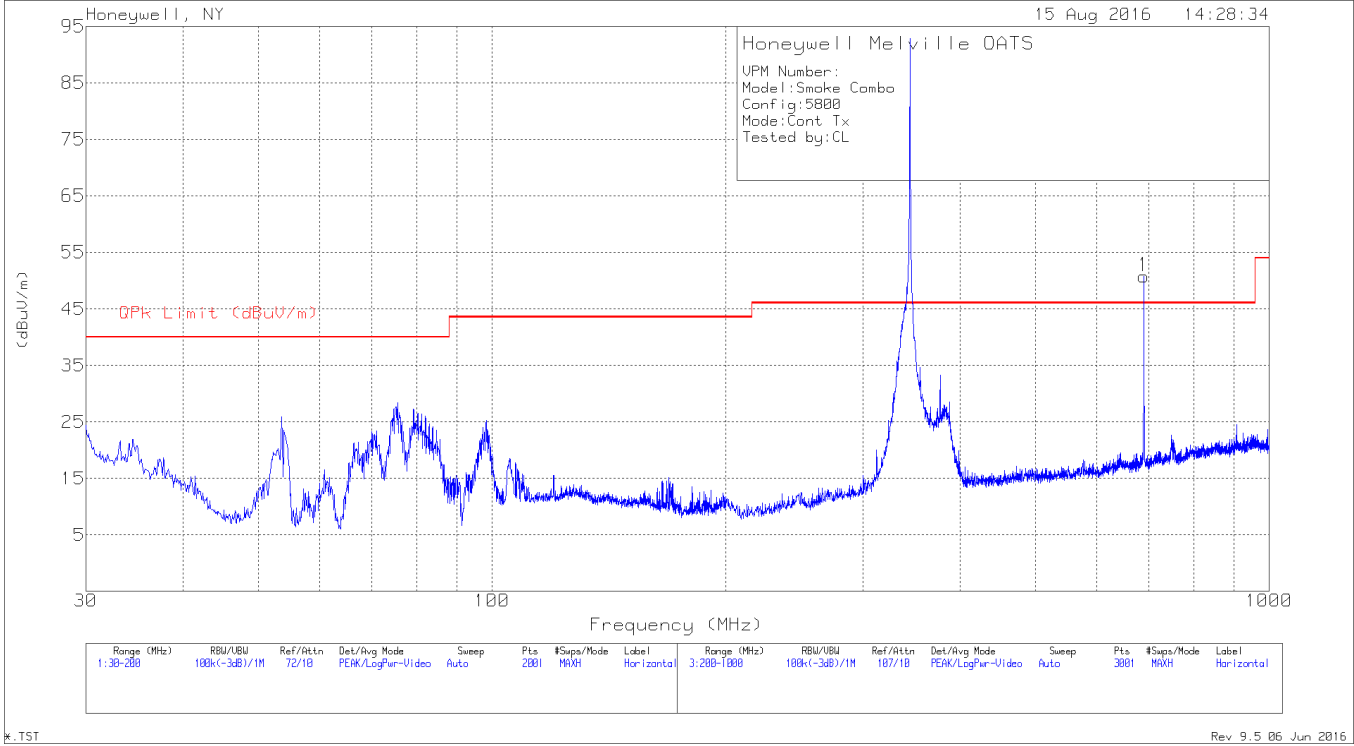
RBW/VBW = 1M/3M for > 1G.

ANT1 BELOW 1G

Note: This is a 3m pre-scan to locate peaks.

RBW/VBW = 120k (-6dB)/1M

Horizontal Antenna

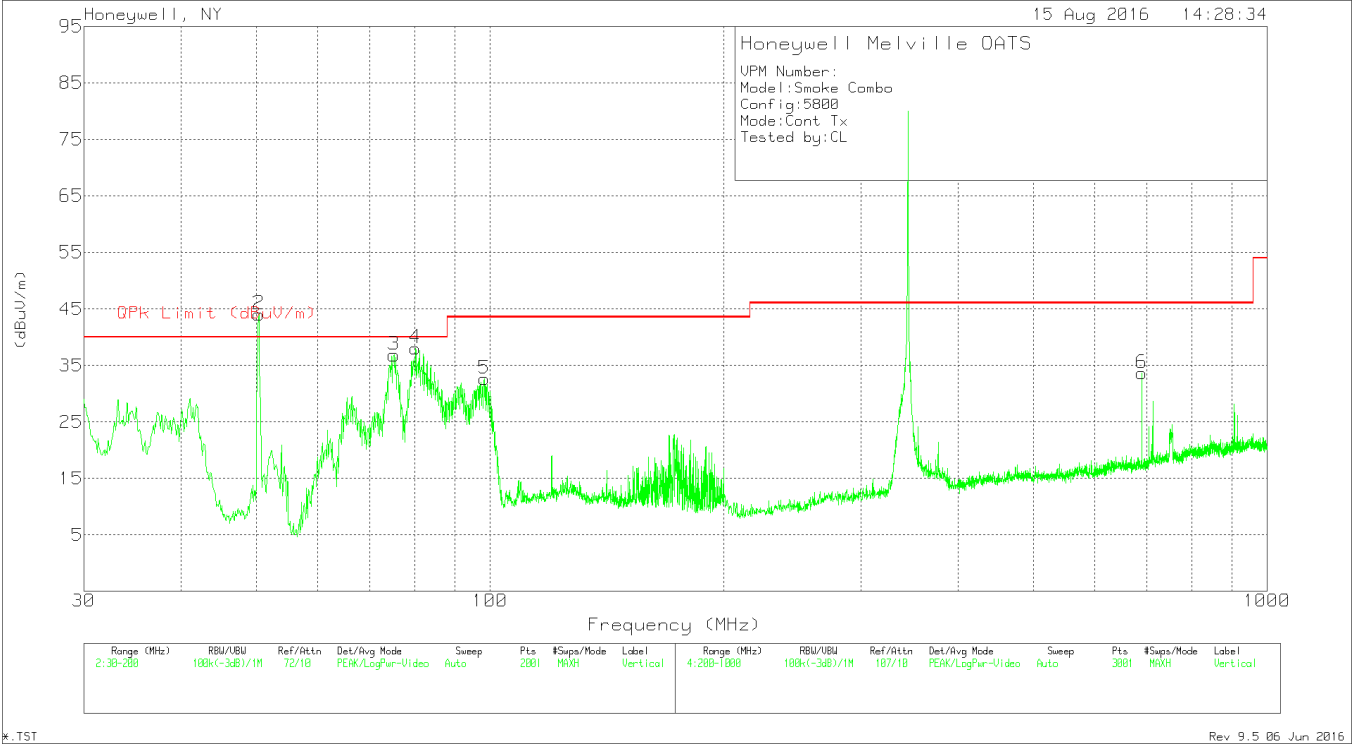


ANT1 BELOW 1G CONT.

Note: This is a 3m pre-scan to locate peaks.

RBW/VBW = 120k (-6dB)/1M

Vertical Antenna



PRE-SCAN: TRACE MARKERS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	JBS Antenna CF	Pre Amp #1	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	689.8673	59.5	Pk	19.9	-28.6	50.8	46.02	4.78	0-360	98	H
2	50.4	64.66	Pk	8.4	-29	44.06	40	4.06	0-360	98	V
3	75.22	57.64	Pk	8.1	-28.9	36.84	40	-3.16	0-360	98	V
4	80.15	59.25	Pk	7.7	-28.9	38.05	40	-1.95	0-360	98	V
5	98.255	51.64	Pk	9.8	-28.8	32.64	43.52	-10.88	0-360	98	V
6	689.8673	42.31	Pk	19.9	-28.6	33.61	46.02	-12.41	0-360	100	V

Pk - Peak detector

5800 RADIATED EMISSIONS CONT.

ANT1 BELOW 1G CONT.***Radiated Emissions***

Note: This is data from the OATS site.

Quasi-Peak Values

Frequency (MHz)	Meter Reading (dBuV)	Det	AF [dB/m] JB6 w/4dB pad	Gain/Loss [dB]	Pre Amp #1	Corrected Reading (dBuV/m)	DC Corr (dB)	Pulsed Avg. (dB)	Pk. Limit (uV/m)	Pk. Limit (dBuV/m)	Avg Limit (uV/m)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Ht (cm)	Pol	Rule Part For Limit
50.4012	48.54	Qp	12.6	-29	1	33.1					100	40	-6.86	350	116	V	15.209(a)
75.209	40.37	Qp	12.1	-28.9	1.2	24.7					100	40	-15.23	276	344	V	15.209(a)
80.0612	39.42	Qp	11.9	-28.9	1.3	23.7					100	40	-16.28	76	156	V	15.209(a)
98.3145	48.52	Qp	13.9	-28.8	1.4	35.0					150	44	-8.98	186	114	V	15.209(a)
689.8851	36.07	Qp	24.8	-28.6	4.7	36.9					728.9	57.25	-20.28	184	136	V	15.231(b)
689.8871	45.34	Qp	24.8	-28.6	4.7	46.2					728.9	57.25	-11.01	177	104	H	15.231(b)

Peak Values With Duty Factor Applied

Frequency (MHz)	Meter Reading (dBuV)	Det	AF [dB/m] JB6 w/4dB pad	Gain/Loss [dB]	Pre Amp #1	Corrected Reading (dBuV/m)	DC Corr (dB)	Pulsed Avg. (dB)	Pk. Limit (uV/m)	Pk. Limit (dBuV/m)	Avg Limit (uV/m)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Ht (cm)	Pol	Rule Part For Limit
344.9452	102.0	Pk	19.2	2.9	-	96.2	-20	76.2			7289	77.25	-0.96	135	103	H	15.231(b)
344.946	92.66	Pk	19.2	2.9	-	86.8	-20	66.8			7289	77.25	-10.39	55	117	V	15.231(b)
689.897	54.41	Pk	24.8	4.7	-	55.3	-20	35.3			728.9	57.25	-21.94	132	110	H	15.231(b)
689.9008	37.92	Pk	24.8	4.7	-	38.8	-20	18.8			728.9	57.25	-38.43	232	131	V	15.231(b)

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

Qp - Quasi-Peak detector

Av - Average detection

RDE 30-1000MHz Final Detector Harmony_5800 Ant1(2).DAT

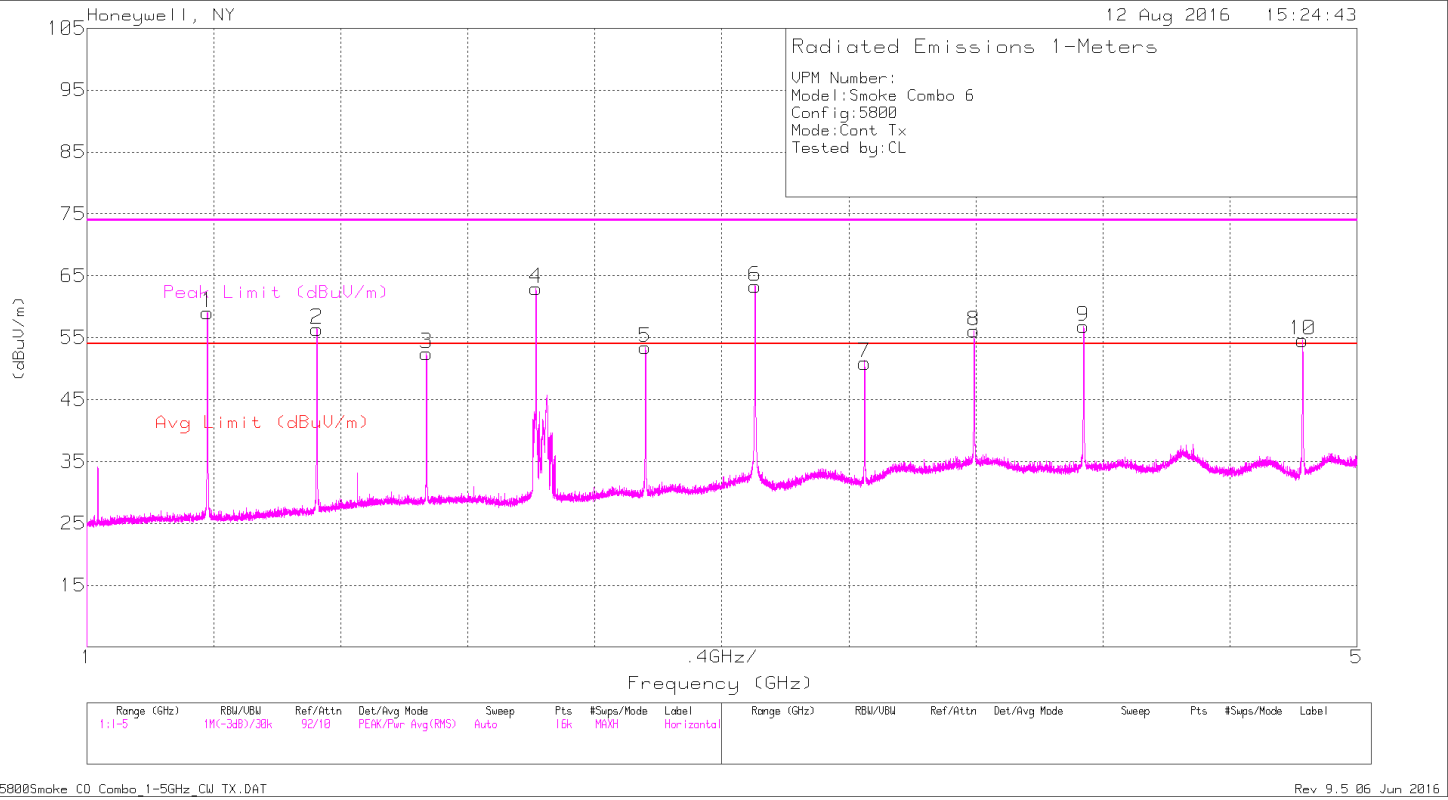
Rev 9.5 06 Jun 2016

ANT1 ABOVE 1G

Note: This is a 1m pre-scan to locate peaks.

RBW/VBW = 1M (-3dB)/30K

Horizontal Antenna

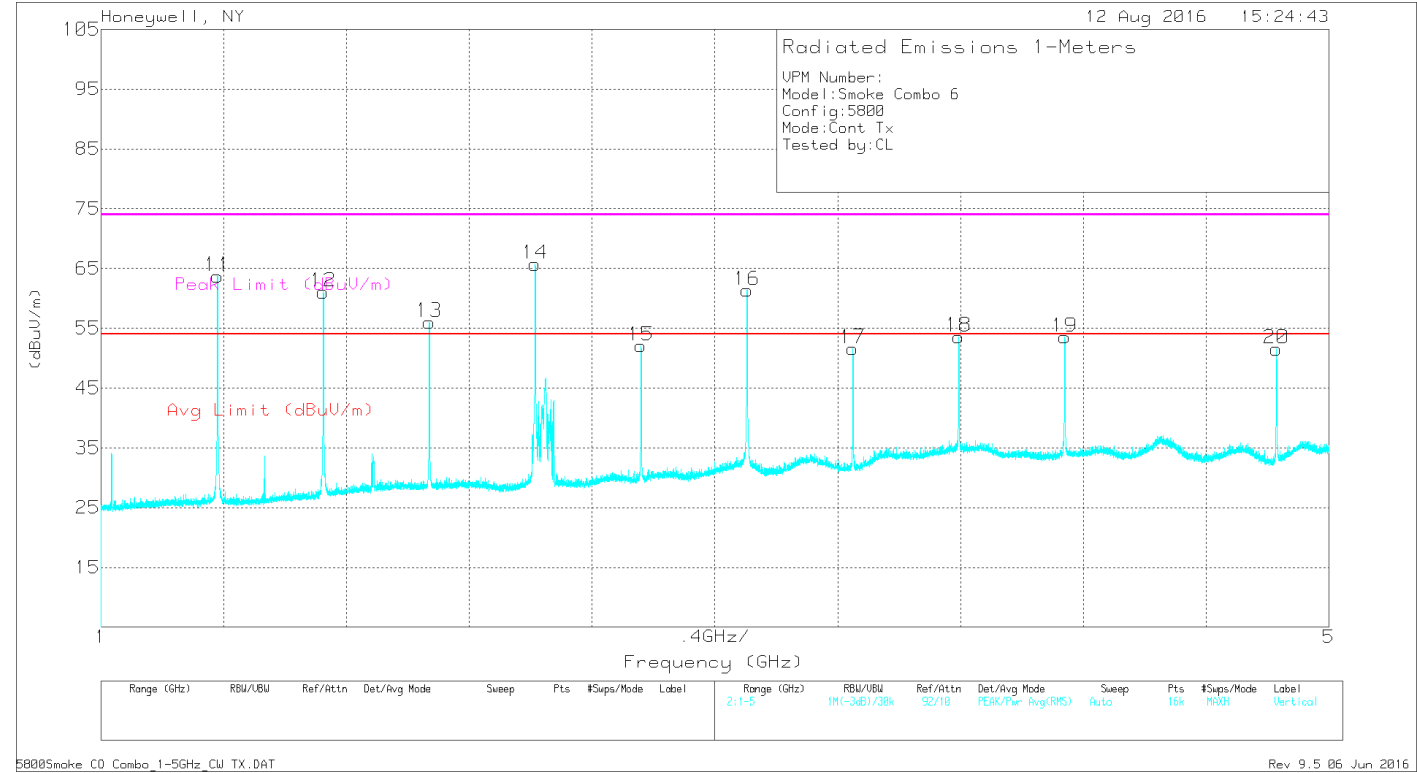


ANT1 ABOVE 1G CONT.

Note: This is a 1m pre-scan to locate peaks.

RBW/VBW = 1M (-3dB)/30K

Vertical Antenna



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF [dB/m] Horn#1	Above 1GHz Pre Amp On	RDE #3	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)
1	* 1.38	71.76	Pk	25.2	-42.2	4.3	59.06	-	-	74	-14.94	0-360
2	1.725	67.9	Pk	26.5	-42.8	4.8	56.4	-	-	74	-17.6	0-360
3	2.07	62.88	Pk	28	-43.6	5.2	52.48	-	-	74	-21.52	0-360
4	2.415	72.96	Pk	28.6	-44.3	5.7	62.96	-	-	74	-11.04	0-360
5	* 2.759	62.61	Pk	29.4	-44.7	6.1	53.41	-	-	74	-20.59	0-360
6	3.105	70.79	Pk	30.8	-44.7	6.4	63.29	-	-	74	-10.71	0-360
7	3.45	57.42	Pk	31.2	-44.5	6.8	50.92	-	-	74	-23.08	0-360
8	* 3.794	58.97	Pk	32.4	-42.5	7.2	56.07	-	-	74	-17.93	0-360
9	* 4.139	59.93	Pk	32.1	-42.6	7.4	56.83	-	-	74	-17.17	0-360
10	* 4.829	58.29	Pk	33	-44.9	8.2	54.59	-	-	74	-19.41	0-360
11	* 1.38	76.4	Pk	25.2	-42.2	4.3	63.7	-	-	74	-10.3	0-360
12	1.725	72.57	Pk	26.5	-42.8	4.8	61.07	-	-	74	-12.93	0-360
13	2.07	66.41	Pk	28	-43.6	5.2	56.01	-	-	74	-17.99	0-360
14	2.415	75.71	Pk	28.6	-44.3	5.7	65.71	-	-	74	-8.29	0-360
15	* 2.76	61.26	Pk	29.4	-44.7	6.1	52.06	-	-	74	-21.94	0-360
16	3.105	68.86	Pk	30.8	-44.7	6.4	61.36	-	-	74	-12.64	0-360
17	3.45	58.1	Pk	31.2	-44.5	6.8	51.6	-	-	74	-22.4	0-360
18	* 3.794	56.48	Pk	32.4	-42.5	7.2	53.58	-	-	74	-20.42	0-360
19	* 4.14	56.61	Pk	32.1	-42.6	7.4	53.51	-	-	74	-20.49	0-360
20	* 4.829	55.24	Pk	33	-44.9	8.2	51.54	-	-	74	-22.46	0-360

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector

5800 RADIATED EMISSIONS CONT.

ANT1 ABOVE 1G CONT.***Peak Values With Duty Factor Applied***

Note: This is a data from the OATS site.

Frequenc y (MHz)	Meter Readin g (dBuV)	Det	AF [dB/m] Horn# 1	Above 1GHz Pre Amp On	SMA Cable Factor s	Correc ted Readin g (dBuV /m)	DC Corr (dB)	Pulsed Avg. (dB)	Pk. Limit (uV/m)	Pk. Limit (dBuV /m)	Avg Limit (uV/m)	Avg Limit (dBuV /m)	Margi n (dB)	Azimu th (Degs)	Height (cm)	Polarity	Rule Part For Limit
* 1.035	55.12	PK2	24.1	-40.8	3.4	41.82	-20	21.82			500.00	53.98	-32.16	142	400	H	15.205
* 1.035	68.88	PK2	24.1	-40.8	3.4	55.58	-20	35.58			500.00	53.98	-18.40	153	314	V	15.205
* 1.38	69.01	PK2	25.2	-42.2	3.7	55.71	-20	35.71			500.00	53.98	-18.27	267	155	H	15.205
* 1.38	68.56	PK2	25.2	-42.2	3.7	55.26	-20	35.26			500.00	53.98	-18.72	181	272	V	15.205
1.725	63.43	PK2	26.5	-42.8	4.1	51.23	-20	31.23			728.90	57.25	-26.02	84	117	H	15.231(b)
1.725	66.85	PK2	26.5	-42.8	4.1	54.65	-20	34.65			728.90	57.25	-22.60	112	318	V	15.231(b)
2.07	62.4	PK2	28	-43.6	4.4	51.2	-20	31.20			728.90	57.25	-26.05	102	131	H	15.231(b)
2.07	63.2	PK2	28	-43.6	4.4	52	-20	32.00			728.90	57.25	-25.25	148	195	V	15.231(b)
2.414	74.96	PK2	28.6	-44.3	4.8	64.06	-20	44.06			728.90	57.25	-13.19	137	288	V	15.231(b)
2.415	76.38	PK2	28.6	-44.3	4.8	65.48	-20	45.48			728.90	57.25	-11.77	41	356	H	15.231(b)
* 2.76	63.83	PK2	29.4	-44.7	4.8	53.33	-20	33.33			500.00	53.98	-20.65	302	362	H	15.205
* 2.76	64.77	PK2	29.4	-44.7	4.8	54.27	-20	34.27			500.00	53.98	-19.71	39	120	V	15.205
3.104	62.92	PK2	30.7	-44.7	5	53.92	-20	33.92			728.90	57.25	-23.33	159	333	H	15.231(b)
3.104	61.27	PK2	30.7	-44.7	5	52.27	-20	32.27			728.90	57.25	-24.98	127	150	V	15.231(b)
3.449	56.71	PK2	31.2	-44.5	5.2	48.61	-20	28.61			728.90	57.25	-28.64	11	308	V	15.231(b)
3.45	55.62	PK2	31.2	-44.5	5.3	47.62	-20	27.62			728.90	57.25	-29.63	260	330	H	15.231(b)

Radiated Emissions

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk2 - Peak detector