

APPENDIX E

DATA SHEETS



RADIATED AND CONDUCTED EMISSIONS
DATA SHEETS



FCC 15.231

Industrial Andons, LLC
 Andon Communication System
 Model: IA201

Date: 04/14/06

Lab: A

Tested By: Kyle F.

Vertical Polarization

Duty Cycle: 32.774%

With 4700 Ohm Resistor

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
418	87.67	V	100.28	-12.61	Peak	1	315	
418	77.99	V	80.28	-2.29	Avg	1	315	
836	57.84	V	80.28	-22.44	Peak	1	225	
836	48.16	V	60.28	-12.12	Avg	1	225	
1254		V	74	-74	Peak			No Emission
1254		V	54	-54	Avg			Detected
1672	41.79	V	74	-32.21	Peak	1.22	90	
1672	32.11	V	54	-21.89	Avg	1.22	90	
2090		V	80.28	-80.28	Peak			No Emission
2090		V	60.28	-60.28	Avg			Detected
2508		V	80.28	-80.28	Peak			No Emission
2508		V	60.28	-60.28	Avg			Detected
2926		V	80.28	-80.28	Peak			No Emission
2926		V	60.28	-60.28	Avg			Detected
3344		V	80.28	-80.28	Peak			No Emission
3344		V	60.28	-60.28	Avg			Detected
3762		V	74	-74	Peak			No Emission
3762		V	54	-54	Avg			Detected
4180		V	74	-74	Peak			No Emission
4180		V	54	-54	Avg			Detected

FCC 15.231

Industrial Andons, LLC
 Andon Communication System
 Model: IA201

Date: 04/14/06

Lab: A

Tested By: Kyle F.

Horizontal Polarization

Duty Cycle: 32.774%

With 4700 Ohm Resistor

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
418	81.35	H	100.28	-18.93	Peak	1	135	
418	71.67	H	80.28	-8.61	Avg	1	135	
836	56.45	H	80.28	-23.83	Peak	1	225	
836	46.77	H	60.28	-13.51	Avg	1	225	
1254		H	74	-74	Peak			No Emission
1254		H	54	-54	Avg			Detected
1672	59.9	H	74	-14.1	Peak	2.21	90	
1672	50.22	H	54	-3.78	Avg	2.21	90	
2090	45.47	H	80.28	-34.81	Peak	1.57	180	
2090	35.79	H	60.28	-24.49	Avg	1.57	180	
2508		H	80.28	-80.28	Peak			No Emission
2508		H	60.28	-60.28	Avg			Detected
2926		H	80.28	-80.28	Peak			No Emission
2926		H	60.28	-60.28	Avg			Detected
3344		H	80.28	-80.28	Peak			No Emission
3344		H	60.28	-60.28	Avg			Detected
3762		H	74	-74	Peak			No Emission
3762		H	54	-54	Avg			Detected
4180		H	74	-74	Peak			No Emission
4180		H	54	-54	Avg			Detected

Industrial Andons, LLC
Andon Communication System
Model: IA201

Tested By: Kyle F.

With 4700 Ohm Resistor

[illegible]



COMPATIBLE ELECTRONICS

Test Location : Compatible Electronics
Customer : Industrial Andons, LLC
Manufacturer : Industrial Andons, LLC
Eut name : Shop Floor Singal Station
Model : IA101
Serial # : N/A
Specification : FCC B
Distance correction factor ($20 * \log(\text{test}/\text{spec})$) : 0.00
Test Mode : Qualification Scan - Spurious Emissions - Transmit Mode
Vertical and Horizontal Polarization
TEST RANGE: 10 kHz to 1 GHz
TESTED BY: Kyle Fujimoto

Page : 1/1
Date : 4/14/2006
Time : 10:12:19
Lab : A
Test Distance : 3.0 Meters

Pol	Freq MHz	Rdng dBuV	Cable loss dB	Ant factor dB	Amp gain dB	Cor'd rdg = R dBuV	Limit = L dBuV/m	Delta R-L dB
1V	41.581	57.50	1.32	10.29	32.60	36.51	40.00	-3.49
2H	42.780	55.60	1.33	10.71	32.60	35.04	40.00	-4.96
3V	43.348	61.60	1.34	10.90	32.60	41.24	40.00	1.24
4V	43.351Qp	59.85	1.34	10.90	32.60	39.49	40.00	-0.51
5H	51.090	54.50	1.44	13.12	32.62	36.43	40.00	-3.57
6V	51.880	56.30	1.46	12.96	32.64	38.08	40.00	-1.92
7V	51.883Qp	53.96	1.46	12.95	32.64	35.74	40.00	-4.26
8H	114.510	50.50	2.34	12.68	32.60	32.93	43.50	-10.57
9V	115.550	52.90	2.36	12.75	32.60	35.41	43.50	-8.09
10H	124.260	51.20	2.49	12.72	32.60	33.81	43.50	-9.69
11V	124.290	54.60	2.49	12.72	32.60	37.21	43.50	-6.29
12H	143.230	47.70	2.72	11.81	32.53	29.71	43.50	-13.79
13H	250.040	42.70	3.50	16.96	32.30	30.86	46.00	-15.14
14V	331.101	33.80	4.02	12.87	32.40	18.29	46.00	-27.71
15V	382.143	42.80	4.33	13.11	32.20	28.04	46.00	-17.96
16V	449.790	38.80	4.90	14.14	32.10	25.73	46.00	-20.27
17V	450.051	41.80	4.90	14.14	32.10	28.74	46.00	-17.26
18H	623.270	37.20	5.95	16.88	31.95	28.08	46.00	-17.92



COMPATIBLE ELECTRONICS

Test Location : Compatible Electronics
Customer : Industrial Andons, LLC
Manufacturer : Industrial Andons, LLC
Eut name : Shop Floor Signal Station
Model : IA101
Serial # : N/A
Specification : FCC B
Distance correction factor ($20 * \log(\text{test}/\text{spec})$) : 0.00
Test Mode : Qualification Scan - Spurious Emissions - Transmit Mode
Vertical and Horizontal Polarization
TEST RANGE: 1 GHz to 4.18 GHz
TESTED BY: Kyle Fujimoto

Page : 1/1
Date : 4/14/2006
Time : 9:57:45
Lab : A
Test Distance : 3.0 Meters

Pol	Freq MHz	Rdng dBuV	Cable loss dB	Ant factor dB	Amp gain dB	Cor'd rdg = R dBuV	Limit = L dBuV/m	Delta R-L dB
1V	1047.720	50.60	2.70	25.64	28.33	50.61	54.00	-3.39
2H	1049.080	49.00	2.70	25.65	28.33	49.02	54.00	-4.98
3V	1241.640	48.20	3.29	26.90	28.66	49.73	54.00	-4.27
4H	1242.200	47.50	3.29	26.90	28.66	49.03	54.00	-4.97



COMPATIBLE ELECTRONICS

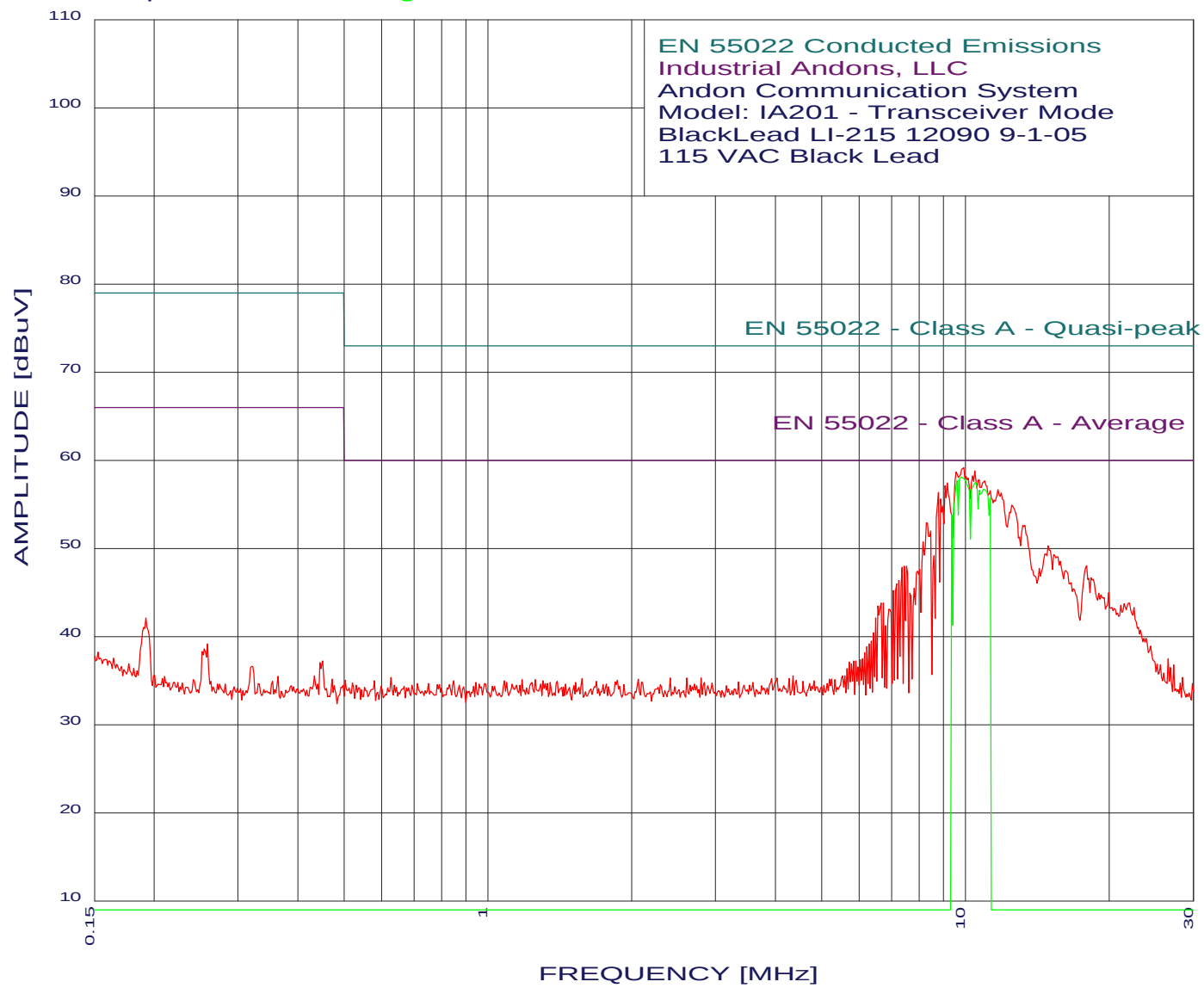
Test Location : Compatible Electronics
 Customer : Industrial Andons, LLC
 Manufacturer : Industrial Andons, LLC
 Eut name : Shop Floor Signal Station
 Model : IA101
 Serial # :
 Specification : FCC B
 Distance correction factor ($20 * \log(\text{test}/\text{spec})$) : 0.00
 Test Mode : Qualificaton Scan - Receiver Mode
 Test Range: 30 MHz to 2 GHz
 Vertical and Horizotal Polarizations
 Tested By: Benigno Chavez

Page : 1/1
 Date : 4/12/2006
 Time : 10:43:18
 Lab : A
 Test Distance : 3.0 Meters

Pol	Freq MHz	Rdng dBuV	Cable loss dB	Ant factor dB	Amp gain dB	Cor'd rdg = R dBuV	Limit = L dBuV/m	Delta R-L dB
1V	41.120	61.30	1.31	10.13	32.60	40.14	40.00	0.14
2V	41.123Qp	59.40	1.31	10.13	32.60	38.24	40.00	-1.76
3H	43.080	55.90	1.33	10.81	32.60	35.44	40.00	-4.56
4V	50.516	56.20	1.42	13.23	32.61	38.24	40.00	-1.76
5V	50.521Qp	52.88	1.42	13.23	32.61	34.92	40.00	-5.08
6H	51.971	54.70	1.46	12.94	32.64	36.46	40.00	-3.54
7H	56.109	53.80	1.59	12.14	32.73	34.80	40.00	-5.20
8V	83.988	57.50	1.92	6.74	32.70	33.47	40.00	-6.53
9V	85.140	57.70	1.96	6.89	32.70	33.85	40.00	-6.15
10V	86.870	57.80	2.01	7.11	32.70	34.22	40.00	-5.78
11V	87.243	56.70	2.02	7.16	32.70	33.18	40.00	-6.82
12H	90.963	55.90	2.10	7.92	32.69	33.23	43.50	-10.27
13H	91.960	57.60	2.10	8.35	32.68	35.37	43.50	-8.13
14V	108.698	58.10	2.25	12.29	32.60	40.04	43.50	-3.46
15V	110.848	56.00	2.28	12.44	32.60	38.12	43.50	-5.38
16V	116.902	59.70	2.38	12.84	32.60	42.32	43.50	-1.18
17V	116.904Qp	56.18	2.38	12.84	32.60	38.80	43.50	-4.70
18H	132.333	51.40	2.59	12.29	32.57	33.71	43.50	-9.79
19H	140.729	47.00	2.70	11.89	32.53	29.05	43.50	-14.45
20V	141.358	53.10	2.70	11.87	32.53	35.14	43.50	-8.36
21V	144.650	52.90	2.74	11.77	32.52	34.89	43.50	-8.61
22H	184.384	44.70	3.08	16.62	32.44	31.96	43.50	-11.54

EMISSION LEVEL [dBuV] PEAK
Graph for Peak & Average

4/14/2006 14:35:20



COMPATIBLE
ELECTRONICS



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4/14/2006 14:35:20

Industrial Andons, LLC
Andon Communication System
Model: IA201 - Transceiver Mode
115 VAC Black Lead
TEST ENGINEER : Kyle Fujimoto

49 highest peaks above -50.00 dB of EN 55022 - Class A - Average limit line

Peak criteria : 1.00 dB, Curve : Peak

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	9.916	59.16	60.00	-0.84*
2	10.458	58.80	60.00	-1.20*
3	10.678	57.81	60.00	-2.19*
4	9.160	57.40	60.00	-2.60*
5	9.065	57.09	60.00	-2.91*
6	11.688	56.67	60.00	-3.33
7	8.777	56.37	60.00	-3.63
8	8.873	55.58	60.00	-4.42
9	12.521	54.93	60.00	-5.07
10	8.282	52.93	60.00	-7.07
11	13.341	52.58	60.00	-7.42
12	8.148	50.72	60.00	-9.28
13	14.913	50.27	60.00	-9.73
14	15.312	49.30	60.00	-10.70
15	8.595	49.15	60.00	-10.85
16	17.955	48.06	60.00	-11.94
17	7.528	47.97	60.00	-12.03
18	7.450	47.96	60.00	-12.04
19	7.372	47.85	60.00	-12.15
20	8.023	47.61	60.00	-12.39
21	18.336	46.69	60.00	-13.31
22	7.255	46.34	60.00	-13.66
23	7.178	45.94	60.00	-14.06
24	7.815	45.49	60.00	-14.51
25	7.063	45.23	60.00	-14.77
26	19.950	45.00	60.00	-15.00
27	7.648	44.88	60.00	-15.12
28	6.736	43.80	60.00	-16.20
29	21.959	43.80	60.00	-16.20
30	6.664	43.80	60.00	-16.20
31	6.559	43.49	60.00	-16.51
32	6.918	43.12	60.00	-16.88
33	6.491	42.08	60.00	-17.92
34	6.809	41.21	60.00	-18.79
35	6.424	40.38	60.00	-19.62
36	6.356	39.47	60.00	-20.53
37	6.288	39.16	60.00	-20.84
38	6.220	38.86	60.00	-21.14
39	6.154	38.15	60.00	-21.85
40	6.091	37.45	60.00	-22.55
41	26.566	37.44	60.00	-22.56
42	6.028	37.34	60.00	-22.66
43	5.901	37.23	60.00	-22.77
44	5.838	37.23	60.00	-22.77
45	5.715	37.12	60.00	-22.88
46	5.774	36.92	60.00	-23.08
47	27.287	36.78	60.00	-23.22
48	25.605	36.75	60.00	-23.25
49	5.964	36.54	60.00	-23.46

*Please See the Average Readings on the Next Page and on the Plot

**COMPATIBLE
ELECTRONICS**

4/14/2006 14:35:20

Industrial Andons, LLC
Andon Communication System
Model: IA201 - Transceiver Mode
115 VAC Black Lead
TEST ENGINEER : Kyle Fujimoto

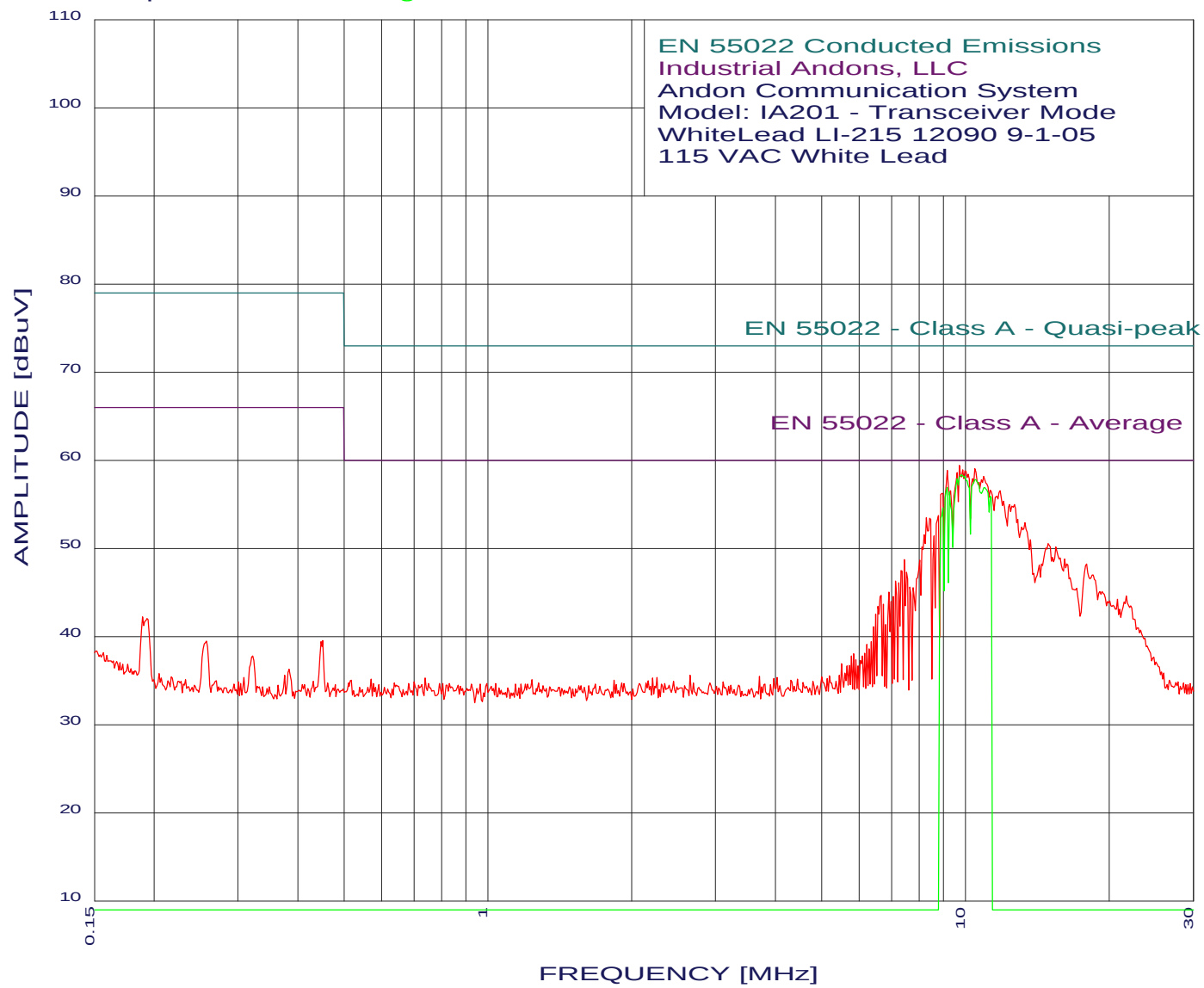
7 highest peaks above -50.00 dB of EN 55022 - Class A - Average limit line

Peak criteria : 0.00 dB, Curve : Average

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	9.813	58.10	60.00	-1.90
2	9.608	57.70	60.00	-2.30
3	10.513	57.45	60.00	-2.55
4	10.910	56.71	60.00	-3.29
5	10.678	56.61	60.00	-3.39
6	11.263	55.68	60.00	-4.32
7	9.352	53.79	60.00	-6.21

EMISSION LEVEL [dBuV] PEAK
Graph for Peak & Average

4/14/2006 14:42:04



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ELECTRONICS



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ELECTRONICS**

4/14/2006 14:42:04

Industrial Andons, LLC
Andon Communication System
Model: IA201 - Transceiver Mode
115 VAC White Lead
TEST ENGINEER : Kyle Fujimoto

49 highest peaks above -50.00 dB of EN 55022 - Class A - Average limit line

Peak criteria : 1.00 dB, Curve : Peak

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	9.711	59.39	60.00	-0.61*
2	10.458	59.04	60.00	-0.96*
3	9.160	58.84	60.00	-1.16*
4	9.608	58.58	60.00	-1.42*
5	10.910	58.17	60.00	-1.83*
6	11.814	56.53	60.00	-3.47
7	8.969	56.22	60.00	-3.78
8	12.656	54.98	60.00	-5.02
9	8.777	53.71	60.00	-6.29
10	8.282	53.46	60.00	-6.54
11	8.416	53.38	60.00	-6.62
12	13.341	52.93	60.00	-7.07
13	8.595	51.39	60.00	-8.61
14	13.703	50.95	60.00	-9.05
15	14.913	50.53	60.00	-9.47
16	15.478	50.16	60.00	-9.84
17	16.143	48.81	60.00	-11.19
18	7.450	48.69	60.00	-11.31
19	8.023	48.64	60.00	-11.36
20	17.955	48.22	60.00	-11.78
21	14.293	48.09	60.00	-11.91
22	7.333	47.48	60.00	-12.52
23	7.528	47.30	60.00	-12.70
24	7.139	46.27	60.00	-13.73
25	7.255	46.08	60.00	-13.92
26	7.648	45.61	60.00	-14.39
27	7.773	45.52	60.00	-14.48
28	6.918	45.05	60.00	-14.95
29	6.664	44.63	60.00	-15.37
30	21.724	44.56	60.00	-15.44
31	7.063	44.56	60.00	-15.44
32	20.825	44.20	60.00	-15.80
33	6.991	43.95	60.00	-16.05
34	6.736	43.63	60.00	-16.37
35	6.491	42.51	60.00	-17.49
36	6.809	41.34	60.00	-18.66
37	6.424	41.11	60.00	-18.89
38	6.356	39.40	60.00	-20.60
39	6.220	39.09	60.00	-20.91
40	6.288	38.60	60.00	-21.40
41	6.154	38.08	60.00	-21.92
42	5.838	38.06	60.00	-21.94
43	6.091	37.78	60.00	-22.22
44	5.774	37.75	60.00	-22.25
45	5.901	37.36	60.00	-22.64
46	5.508	36.93	60.00	-23.07
47	5.715	36.75	60.00	-23.25
48	5.964	36.67	60.00	-23.33
49	5.656	36.64	60.00	-23.36

*Please See the Average Readings on the Next Page and on the Plot

**COMPATIBLE
ELECTRONICS**

4/14/2006 14:42:04

Industrial Andons, LLC
Andon Communication System
Model: IA201 - Transceiver Mode
115 VAC White Lead
TEST ENGINEER : Kyle Fujimoto

9 highest peaks above -50.00 dB of EN 55022 - Class A - Average limit line

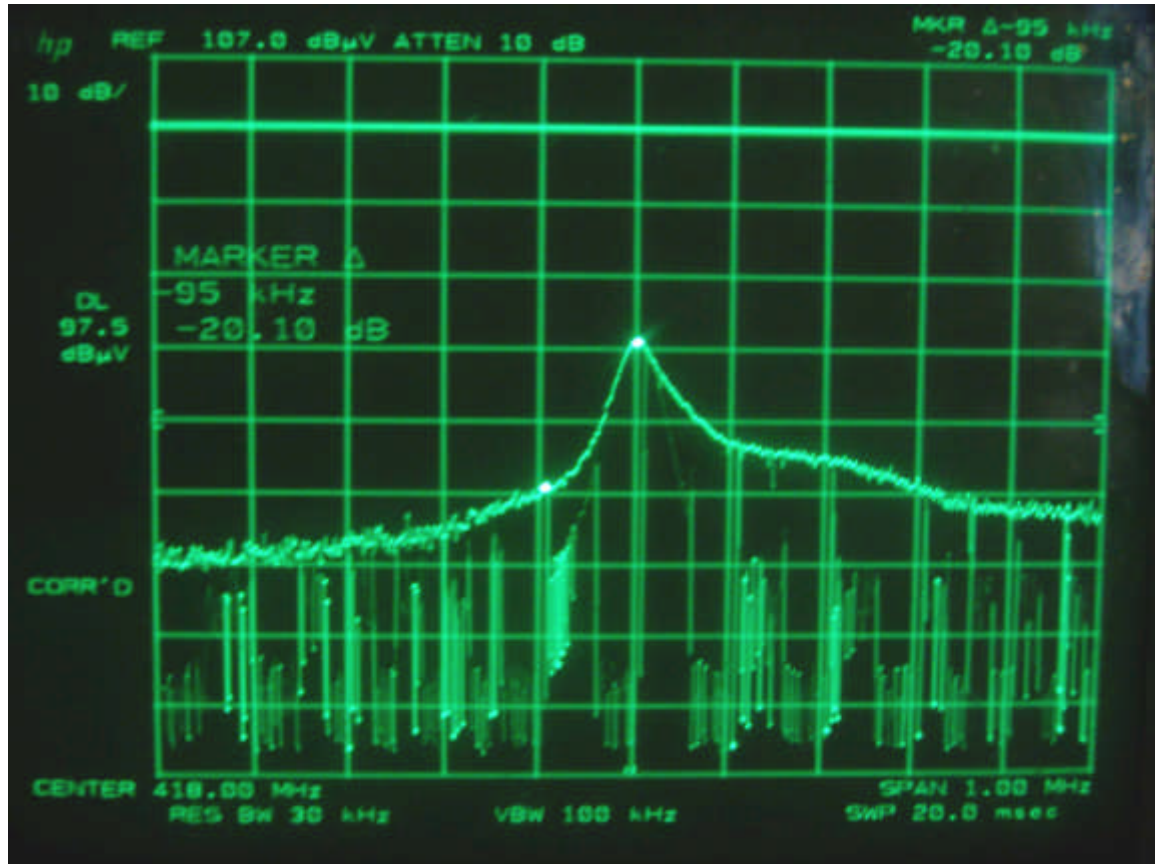
Peak criteria : 0.00 dB, Curve : Average

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	9.813	58.37	60.00	-1.63
2	9.967	58.18	60.00	-1.82
3	9.608	57.88	60.00	-2.12
4	10.513	57.76	60.00	-2.24
5	10.968	56.90	60.00	-3.10
6	9.160	56.89	60.00	-3.11
7	9.256	56.44	60.00	-3.56
8	11.263	55.89	60.00	-4.11
9	8.969	54.61	60.00	-5.39

-20 dB BANDWIDTH

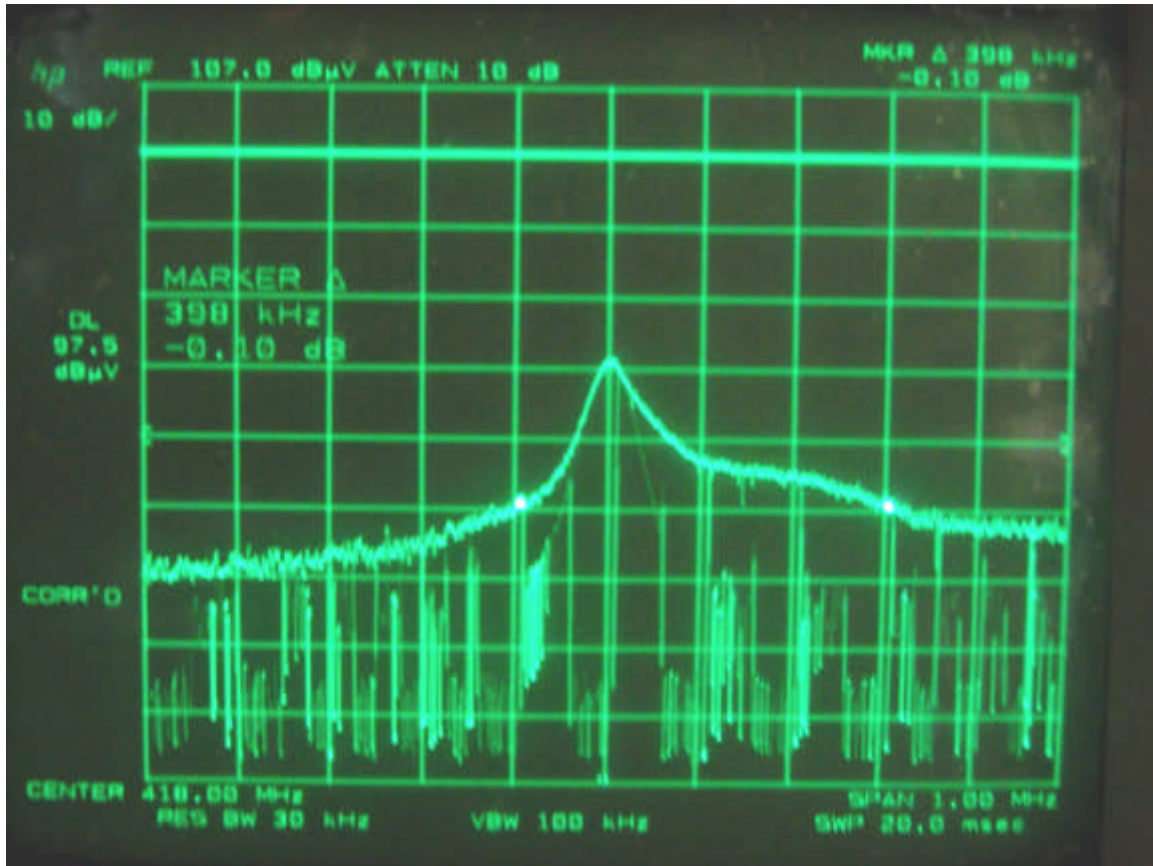
PHOTOGRAPHS





**PHOTOGRAPH SHOWING THE -20 dB REFERENCE LEVEL
BEING ESTABLISHED**





**PHOTOGRAPH SHOWING THE -20 dB BANDWIDTH
OF THE FUNDAMENTAL**

