ELECTRO-METRICS

CERTIFICATE # 21657 **DATE:** 05/17/2013

ELECTRO-METRICS
CERTIFICATE OF CONFORMANCE

MODEL: RGA-60 Double Ridged Guide Antenna
SERIAL # 3127
ID # 02973
CUSTOMER: HONEYWELL SECURITY
ADDRESS: 2 CORPORATE CENTER DRIVE, MELVILLE, NY 11747
P.O.# 5959111
LINE: 1

The above equipment has been calibrated and is within the manufacturer's published limit of error. Calibration is traceable to the National Institute of Standards & Technology. Calibration has been accomplished on the above-named instrument by comparison with some or all of the following standards that are maintained by Electro-Metrics or by an authorized facility.

This certificate shall not be altered or reproduced, except in full, without written approval of Electro-Metrics.

- **CONDITION OF EQUIPMENT RECEIVED:** Non-Operational (RE: Repair Letter)
- **DATE CALIBRATED:** 05/17/13
- **CALIBRATION RANGE/DISTANCE:** 1 GHz to 18 GHz/3 Meter (As per customer request).
- **CALIBRATION ORIENTATION:** Horizontal/Vertical (As per customer request).
- **ENVIRONMENTAL CONDITIONS:** TEMPERATURE 52 Degrees F HUMIDITY 59%
- **CALIBRATION PROCEDURE:** TS-J800-MOD
- **CALIBRATION DUE DATE:** 05/17/14
- **CALIBRATION STANDARDS:** ARP958A
- **COMMENTS/REMARKS:** Refer to repair letter for problems/solutions.

TYPE	DESCRIPTION	TRACE	ASSET#
FREQUENCY	EIP 371 Frequency Counter	13H34	B#2476
A.C./D.C.	Keithley 195 System DMM	13H35	B#0093
RF AMPLITUDE	Boonton 9200A RF Millivoltmeter	8P673	B#0246
ATTENUATION	JFW Model 50R-079 Attenuator	280687	B#0405
IMPULSE	Electro-Metrics CIG-25	811/268663-03	B#2772
POWER	HP 435B Powermeter	5194746	B#0077
POWER	HP 8484A Sensor	5161373	B#0078
POWER	HP 8485A Sensor	5175560	B#0114
ENVIRONMENTAL	Lufft Model HTAB169B Hygrometer	204709	B#2790

Certified by: _____
Quality Assurance

231 Enterprise Road, Johnstown, New York 12095 **Phone: (518) 762-2600 Fax: (518) 762-2812**
EMAIL: info@emihq.com **WEB: http://www.electro-metrics.com**

SERIAL NUMBER 3127

ELECTRO-METRICS
GAIN AND ANTENNA FACTORS
RGA-60

3 METER CALIBRATION HORIZONTAL

FREQUENCY MHZ	ANTENNA FACTOR dB/m	GAIN dBi	GAIN NUMERIC
1000	22.79	7.45	5.56
1500	22.88	10.89	12.27
2000	25.19	11.07	12.80
2500	26.88	11.33	13.57
3000	28.56	11.23	13.28
3500	30.07	11.06	12.76
4000	30.75	11.54	14.25
4500	31.02	12.29	16.94
5000	32.36	11.87	15.37
5500	33.31	11.74	14.93
6000	33.67	12.14	16.38
6500	34.49	12.01	15.89
7000	35.47	11.68	14.73
7500	36.16	11.58	14.40
8000	36.60	11.71	14.82
8500	36.36	12.47	17.67
9000	36.86	12.47	17.66
9500	37.16	12.64	18.38
10000	37.50	12.75	18.82
10500	38.01	12.66	18.45
11000	38.54	12.53	17.91
11500	39.25	12.21	16.65
12000	39.55	12.28	16.92
12500	39.68	12.51	17.81
13000	40.24	12.29	16.93
13500	40.65	12.20	16.60
14000	41.23	11.94	15.64
14500	41.40	12.08	16.13
15000	41.23	12.54	17.94
15500	41.04	13.02	20.02
16000	42.29	12.04	15.99
16500	42.08	12.52	17.85
17000	41.35	13.50	22.40
17500	43.29	11.82	15.20
18000	44.35	11.00	12.60

SPECIFICATION COMPLIANCE TESTING FACTOR (3 METER SPACING) TO BE ADDED TO RECEIVER METER READING IN dBuV TO CONVERT TO FIELD INTENSITY IN dBuV/METER. CALIBRATION PER ARP 958 METHODOLOGY.

SERIAL NUMBER 3127

ELECTRO-METRICS
GAIN AND ANTENNA FACTORS
RGA-60

3 METER CALIBRATION VERTICAL

FREQUENCY MHZ	ANTENNA FACTOR dB/m	GAIN dBi	GAIN NUMERIC
1000	21.34	8.90	7.77
1500	23.29	10.48	11.18
2000	25.94	10.32	10.77
2500	27.59	10.62	11.53
3000	28.67	11.12	12.95
3500	29.98	11.15	13.04
4000	30.91	11.38	13.73
4500	30.93	12.38	17.30
5000	32.00	12.22	16.68
5500	33.10	11.95	15.67
6000	33.31	12.50	17.80
6500	34.04	12.47	17.65
7000	35.23	11.92	15.55
7500	36.08	11.66	14.66
8000	36.31	12.00	15.84
8500	36.40	12.43	17.50
9000	36.62	12.71	18.66
9500	36.95	12.85	19.27
10000	37.47	12.78	18.95
10500	38.03	12.64	18.38
11000	38.51	12.56	18.03
11500	39.00	12.46	17.64
12000	39.17	12.66	18.47
12500	39.27	12.91	19.55
13000	39.84	12.69	18.56
13500	40.58	12.28	16.89
14000	40.81	12.36	17.21
14500	41.27	12.21	16.62
15000	40.89	12.88	19.40
15500	40.06	13.99	25.06
16000	40.26	14.07	25.55
16500	40.90	13.70	23.43
17000	42.41	12.45	17.57
17500	45.13	9.98	9.95
18000	44.96	10.39	10.95

SPECIFICATION COMPLIANCE TESTING FACTOR (3 METER SPACING) TO BE ADDED TO RECEIVER METER READING IN dBuV TO CONVERT TO FIELD INTENSITY IN dBuV/METER. CALIBRATION PER ARP 958 METHODOLOGY.

ELECTRO-METRICS INC.
231 Enterprise Road
Johnstown, NY 12095
Telephone No. (518) 762-2600
Fax No. (518) 762-2812

DATE: 05/17/2013

CUSTOMER: Honeywell Security
ATTENTION: Gregory Barbato

2 Corporate Center Drive
Melville, NY 11747

Dear Customer,

In accordance with Electro-Metrics policy, you are hereby notified that the following listed equipment was Non-Operational when received for Calibration:

Manufacturer:	Electro-Metrics
Model Number:	RGA-60
Serial Number:	3127
Company ID:	02973
Description:	Ridge Guide Horn Antenna
P.O. Number:	595111

The Non-Operational condition(s) were as follows:

1) The antenna did not appear to be operating over its stated frequency range, no or very low signal outputs were noted.

The Action(s) taken to correct the Non-Operational condition(s) were as follows:

1) The problem was traced to the VSWR being significantly out of tolerance. When readjustment was attempted to correct tolerance, it was noted that the adjusting pin was very loose within the feed block. Upon further investigation, it was found that the threads within the feed block had deteriorated. The lower feed block was replaced, VSWR was adjusted to within specification limits.

The unit was then calibrated at 3 Meter, horizontal and vertical (as per customer request); the data indicated all readings within specification limits.

WAM
Calibration Technician

Quality Assurance Manager