TIMCO ENGINEERING, Inc.

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FCC PART 15

SCANNING RECEIVER

Applicant	UNIDEN AMERICA CORPORATION
Address	4700 AMON CARTER BLVD.
	FORT WORTH TEXAS 76155 USA
FCC ID:	AMWUB371
Model Number	BC345CRS
Product Description	DESKTOP SCANNING RECEIVER
Date Sample Received	11/27/2012
Date Tested	12/3/2012
Tested By	JOE SCOGLIO
Approved By	MARIO R. DE ARANZETA
Report Number	3040AUT12TestReport.doc
Test Results	☒ PASS ☐ FAIL

ACCREDITED
Certificate # 0955-01

TABLE OF CONTENTS

GENERAL REMARKS

The attached report shall not be reproduced except in full without the written permission of Timco Engineering Inc.

Summary

The device under test does:
☒ fulfill the general approval requirements as identified in this test report
☐ not fulfill the general approval requirements as identified in this test report

Attestations

This equipment has been tested in accordance with the standards identified in this test report. To the best of my knowledge and belief, these tests were performed using the measurement procedures described in this report.

All instrumentation and accessories used to test products for compliance to the indicated standards are calibrated regularly in accordance with ISO 17025 requirements.

Testing Certificate # 0955-01

I attest that the necessary measurements were made, under my supervision, at:

Timco Engineering Inc.
849 NW State Road 45
Newberry, Fl 32669

Authorized Signatory Name:

Mario de Aranzeta C.E.T.
Compliance Engineer/ Lab. Supervisor

Date: 12/13/2012

GENERAL INFORMATION

The test results relate only to the items tested.	
DUT Description	DESKTOP SCANNING RECEIVER
FCC ID	AMWUB371
Model Number	BC345CRS
DUT Power Source	☒ 110–120Vac/50– 60Hz
	☐ DC Power
	☐ Battery Operated Exclusively
Test Item	☐ Prototype
	☒ Pre-Production
	☐ Production
Modifications to DUT	None
Test Standards	FCC Part 15, Subpart B, ANSI C63.4-2003

TEST EQUIPMENT LIST

Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date
3/10-Meter OATS	TEI	N/A	N/A	12/31/11	12/31/13
3-Meter OATS	TEI	N/A	N/A	12/31/11	12/31/13
3-Meter Semi-Anechoic Chamber	Panashield	N/A	N/A	12/31/11	12/31/13
Analyzer Open-Frame Tower Preamplifier	HP	8449B	3008A01075	09/15/11	09/15/13
Analyzer Open-Frame Tower Quasi-Peak Adapter	HP	85650A	2043A00305	09/15/11	09/15/13
Analyzer Open-Frame Tower RF Preselector	HP	85685A	3107A01282	09/15/11	09/15/13
Analyzer Open-Frame Tower Spectrum Analyzer	HP	8566B/ 85662A	2627A03154/ 2648A14276	09/15/11	09/15/13
Antenna: Biconnical	Eaton	94455-1	1057	05/31/11	05/31/13
Antenna: Biconnical	Eaton	94455-1	1096	05/04/11	05/04/13
Antenna: Biconnical	Electro-Metrics	BIA-25	1171	06/13/12	06/13/14
Antenna: Log-Periodic	Eaton	96005	1243	05/31/11	05/31/13
Antenna: Log-Periodic	Electro-Metrics	LPA-25	1122	05/04/11	05/04/13
Antenna: Log-Periodic	Electro-Metrics	LPA-30	409	06/17/11	06/17/11
LISN	Electro-Metrics	ANS-25/2	2604	10/28/11	10/28/13
LISN	Electro-Metrics	EM-7820	2682	02/01/11	02/01/13
Signal Generator	HP	8640B	2308A21464	02/23/12	02/23/14

TEST PROCEDURE

General: This report shall NOT be reproduced except in full without the written approval of TIMCO ENGINEERING, INC.

Radiation Interference: The test procedure used was ANSI Standard C63.4-2003 using a spectrum analyzer with a pre-selector. The bandwidth of the spectrum analyzer was 100 kHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The video bandwidth was always greater than or equal to the RBW.

Formula Of Conversion Factors: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBµV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB. The gain of the Preselector was accounted for in the Spectrum Analyzer Meter Reading.

Example:

Freq (MHz)	Meter Reading	+ ACF	+CL	= FS
33	20 dBµV	+ 10.36 dB/m	+0.40 dB	=30.76 dBµV/m @ 3m

ANSI C63.4-2003 Section 10.1.7 Measurement Procedures: The unit under test was placed on a table 80 cm high and with dimensions of 1mby 1.5m. The table used for radiated measurements is capable of continuous rotation. When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and verticals planes.

If powerline conducted testing was required for this device, the situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSI C63.4-2003 with the EUT 40 cm from the vertical ground wall.

RADIATED SPURIOUS EMISSIONS

Rules Part No.: 15.109

Requirements:

Frequency	Limits
30 – 88	40.0 dBµV/m measured @ 3 meters
80 – 216	43.5 dBµV/m measured @ 3 meters
216 – 960	46.0 dBµV/m measured @ 3 meters
Above 960	54.0 dBµV/m measured @ 3 meters

Test Procedure: The procedure used was ANSI C63.4-2003. The frequency was scanned from 30 MHz to 1.0 GHz. When an emission was found, the table was rotated to produce the maximum signal strength. The DUT was measured in three (3) orthogonal planes.

Test Data:

Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBµV	Ant. Pol	Coax Loss dB	Correction Factor dB/m	Field Strength dBµV/m	Margin dB
30.0	55.30	4.5	H	0.52	9.76	14.78	25.22
30.0	55.30	6.7	V	0.52	9.76	16.98	23.02
30.0	62.60	6.1	H	0.54	6.56	13.20	26.80
30.0	62.60	13.5	V	0.54	6.56	20.60	19.40
30.0	69.10	5.2	H	0.56	5.29	11.05	28.95
30.0	69.10	11.0	V	0.56	5.29	16.85	23.15
30.0	160.00	3.5	H	0.74	16.70	20.94	22.56
30.0	160.00	6.1	V	0.74	16.70	23.54	19.96
42.0	55.30	4.5	H	0.52	9.76	14.78	25.22
42.0	55.30	6.7	V	0.52	9.76	16.98	23.02
42.0	62.60	6.1	H	0.54	6.56	13.20	26.80
42.0	62.60	13.5	V	0.54	6.56	20.60	19.40
42.0	69.10	5.2	H	0.56	5.29	11.05	28.95
42.0	69.10	11.0	V	0.56	5.29	16.85	23.15
42.0	160.00	3.5	H	0.74	16.70	20.94	22.56
42.0	160.00	6.1	V	0.74	16.70	23.54	19.96
54.0	55.30	4.5	H	0.52	9.76	14.78	25.22
54.0	55.30	6.7	V	0.52	9.76	16.98	23.02
54.0	62.60	6.1	H	0.54	6.56	13.20	26.80
54.0	62.60	13.5	V	0.54	6.56	20.60	19.40
54.0	69.10	5.2	H	0.56	5.29	11.05	28.95
54.0	69.10	11.0	V	0.56	5.29	16.85	23.15
54.0	160.00	3.5	H	0.74	16.70	20.94	22.56
54.0	160.00	6.1	V	0.74	16.70	23.54	19.96

TEST DATA CONT'D.

Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBµV	Ant. Pol	Coax Loss dB	Correction Factor dB/m	Field Strength dBµV/m	Margin dB
108.0	55.30	4.5	H	0.52	9.76	14.78	25.22
108.0	55.30	6.7	V	0.52	9.76	16.98	23.02
108.0	62.60	6.1	H	0.54	6.56	13.20	26.80
108.0	62.60	13.5	V	0.54	6.56	20.60	19.40
108.0	69.10	5.2	H	0.56	5.29	11.05	28.95
108.0	69.10	11.0	V	0.56	5.29	16.85	23.15
108.0	160.00	3.5	H	0.74	16.70	20.94	22.56
108.0	160.00	6.1	V	0.74	16.70	23.54	19.96
108.0	369.90	14.4	H	1.17	15.30	30.87	15.13
108.0	369.90	20.1	V	1.17	15.30	36.57	9.43
141.0	55.30	4.5	H	0.52	9.76	14.78	25.22
141.0	55.30	6.7	V	0.52	9.76	16.98	23.02
141.0	62.60	6.1	H	0.54	6.56	13.20	26.80
141.0	62.60	13.5	V	0.54	6.56	20.60	19.40
141.0	69.10	5.2	H	0.56	5.29	11.05	28.95
141.0	69.10	11.0	V	0.56	5.29	16.85	23.15
141.0	160.00	3.5	H	0.74	16.70	20.94	22.56
141.0	160.00	6.1	V	0.74	16.70	23.54	19.96
141.0	369.90	14.4	H	1.17	15.30	30.87	15.13
141.0	369.90	20.1	V	1.17	15.30	36.57	9.43
174.0	55.30	4.5	H	0.52	9.76	14.78	25.22
174.0	55.30	6.7	V	0.52	9.76	16.98	23.02
174.0	62.60	6.1	H	0.54	6.56	13.20	26.80
174.0	62.60	13.5	V	0.54	6.56	20.60	19.40
174.0	69.10	5.2	H	0.56	5.29	11.05	28.95
174.0	69.10	11.0	V	0.56	5.29	16.85	23.15
174.0	160.00	3.5	H	0.74	16.70	20.94	22.56
174.0	160.00	6.1	V	0.74	16.70	23.54	19.96
174.0	369.90	14.4	H	1.17	15.30	30.87	15.13
174.0	369.90	20.1	V	1.17	15.30	36.57	9.43
174.0	739.80	12.4	H	1.78	21.90	36.08	9.92
174.0	739.80	12.5	V	1.78	21.90	36.18	9.82
406.0	276.40	18.1	H	1.05	14.75	33.90	12.10
406.0	276.40	22.1	V	1.05	14.75	37.90	8.10
406.0	552.80	12.0	V	1.46	18.88	32.34	13.66
406.0	552.80	13.2	H	1.46	18.88	33.54	12.46
406.0	671.50	11.2	V	1.67	21.53	34.40	11.60
406.0	671.50	11.7	H	1.67	21.53	34.90	11.10
459.0	276.40	18.1	H	1.05	14.75	33.90	12.10
459.0	276.40	22.1	V	1.05	14.75	37.90	8.10
459.0	552.80	12.0	V	1.46	18.88	32.34	13.66
459.0	552.80	13.2	H	1.46	18.88	33.54	12.46
459.0	724.50	11.8	H	1.75	21.81	35.36	10.64
459.0	724.50	12.4	V	1.75	21.81	35.96	10.04

TEST DATA CONT'D.

Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBµV	Ant. Pol	Coax Loss dB	Correction Factor dB/m	Field Strength dBµV/m	Margin dB
512.0	276.40	18.1	H	1.05	14.75	33.90	12.10
512.0	276.40	22.1	V	1.05	14.75	37.90	8.10
512.0	552.80	12.0	V	1.46	18.88	32.34	13.66
512.0	552.80	13.2	H	1.46	18.88	33.54	12.46
512.0	777.50	12.9	V	1.86	22.08	36.84	9.17
512.0	777.50	15.6	H	1.86	22.08	39.54	6.47

POWER LINE CONDUCTED INTERFERENCE

Rules Part No.: Part 15.107

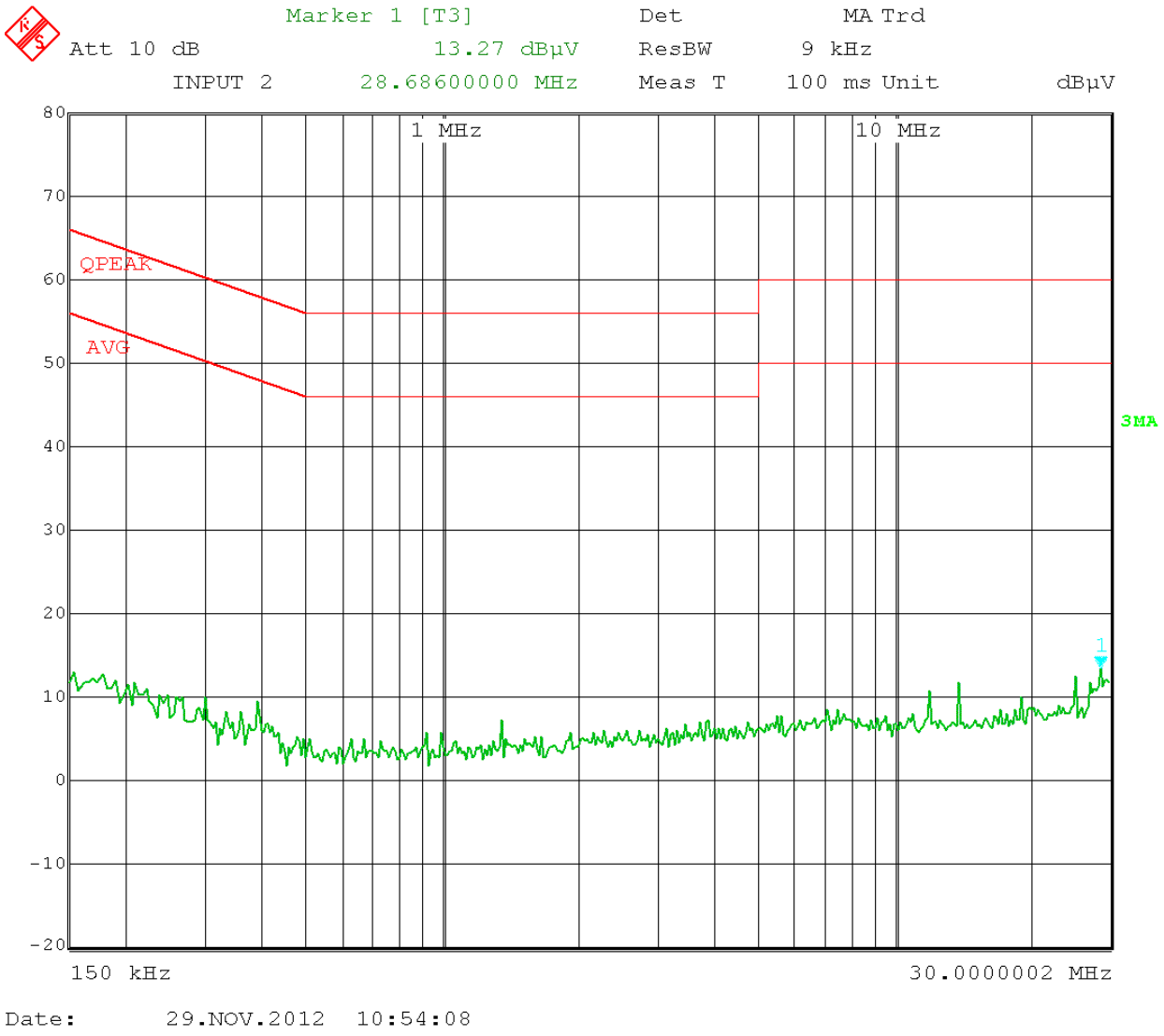
Requirements:

Frequency (MHz)	Quasi Peak Limits (dBµV)	Average Limits (dBµV)
0.15 – 0.5	66 – 56	56 – 46
0.5 – 5.0	56	46
5.0 – 30	60	50

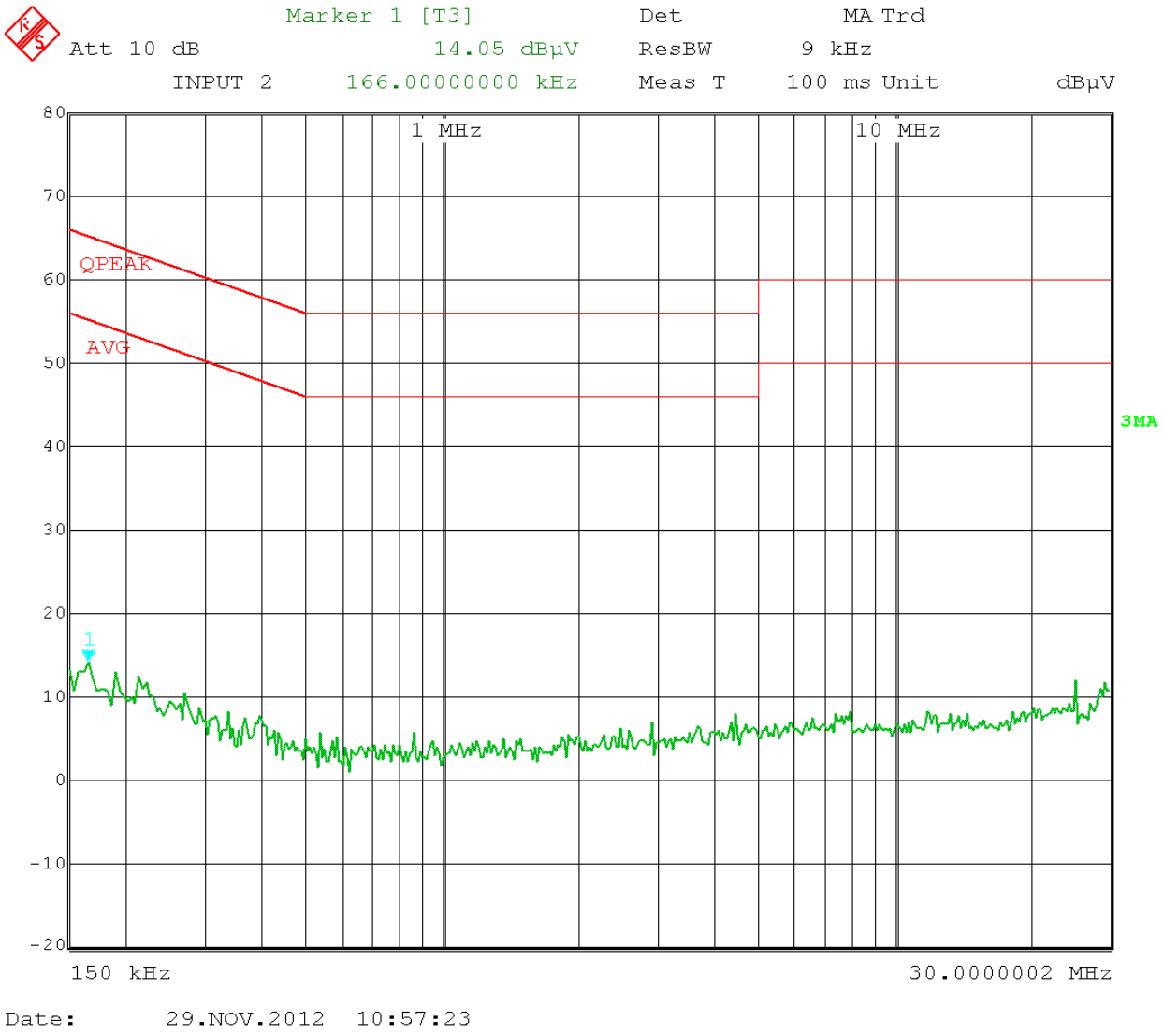
Test Procedure: ANSI Standard C63.4-2003. The spectrum was scanned from 0.15 to 30 MHz.

Test Data: The attached graphs represent the emissions read for power line conducted. Both lines were observed.

POWERLINE CONDUCTED EMISSIONS – LINE 1



POWERLINE CONDUCTED EMISSIONS – LINE 2

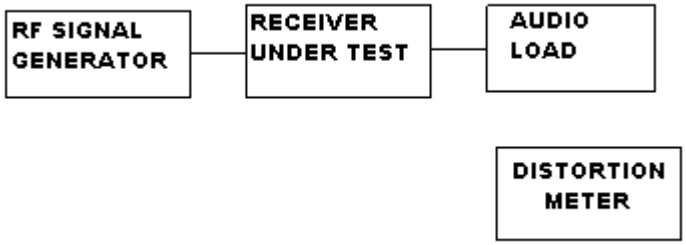


38 Db REJECTION RADIO

RULES PART NUMBER: 15.121(b)

REQUIREMENTS: 38dB REJECTION RATIO TO SENSITIVITY OF THE RECEIVER.

TEST SET-UP



a. Equipment connected as illustrated
b. A standard signal was applied to the receiver input terminals.
c. Receiver output audio output was adjusted for rated output.
d. The RF Signal generator was adjusted to the lowest level to produce a 12dB SINAD without the audio output dropping more than 3dB. Make note of sensitivity level.
e. This was done across the different bands to establish a reference level. The reference taken was the worse case sensitivity.
f. The output of the signal generator was then adjusted to a level of 60dB above the reference level at a frequency of 824.5MHz.
g. With the level set 60dB above the level measured in step e.
h. Set squelch on receiver to threshold, the signal level required to open the squelch must be lower than the level measured in step d.
i. Cause the receiver to scan or step-it through its complete range of frequencies.
j. If receiver stops or unsquelches on any frequency, record the frequency and then adjust the level until a 12dB SINAD is produced. This level must be greater than 38dB above the level in step e.
k. Repeat steps f through j for frequencies 836.0, 848.5, 869.1, 881.0, & 893.5MHz.

TEST RESULTS: The DUT meets the 38dB REJECTION RATIO.