OM Power

Exhibit 5: EMI Test Report

External Radio Frequency

Power Amplifier OM4000A

Model OM4000A

Array Solutions

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EMI Test Report
For OM POWER

Product Name:	OM4000A
Regulation:	FCC, Part 97, Subpart D
Date of Test:	April 18, 2015
Tested by:	Jozef Lang, OM Power LTD
Test Method:	FCC, Part 97.317 (a) (1) (2) (3), (b) (1) (2), (c) (i) (ii) Part 97.307 (d), (e)
Responsible Parties	
Manufacturer:	OM Power LTD Slovakia
Applicant:	Array Solutions
EUT Type/Model#:	Linear Amplifier OM4000A
Test Location:	OM Power LTD Laboratory

EUT Description

The EUT (OM4000A) is a Linear Amplifier for Amateur Radio. The tests were run in a typical configuration including the following support equipment:

1. H.F. Transceiver
2. Power Supply for Transceiver

Reason for Test

Qualification for FCC Part 97

Changes made during test: none
Deviations from standard test method: none

Test Summary

The OM4000A complied with FCC Part 97 Subpart D, 97.307 and 97.317. Limits for Amateur Radio equipment when tested in the system configuration defined herein.

The following table indicates the measurement points and test results for the harmonic emissions to the tenth order:

Power Gain per 97.317				**Spurious emmisions per 97.307d**			
Frequency f1, MHz	**Input Power, W**	**Output Power, W**	**Amplifier Gain, dB**	**2f1, dBc**	**3f1, dBc**	**4f1, dBc**	**5-10f1, dBc worst case**
1,850	55	1500	14,36	53,3	68,2	79,6	83,2
3,650	56	1500	14,28	52,7	67,8	83,6	81,8
7,050	56	1500	14,28	61,2	77,4	82,6	84,7
10,100	57	1500	14,20	63,7	75,1	83,6	82,2
14,150	53	1500	14,52	60,3	72,2	83,1	77,4
18,100	50	1500	14,77	56,2	63,7	74,4	82,2
21,150	48	1500	14,95	58,9	64,8	74,8	76,6
Amplifier was not capable of operationon any frequency betweeb 24 and 35MHz as measured at the points below per 97-317 –(b) (1) (2).							
24,000	50	48,6	-0,11				
26,000	50	48,6	-0,12				
27,120	50	48,6	-0,12				
28,000	50	48,5	-0,13				
35,000	50	48,4	-0,14				
After owner modification to activate 24 – 28MHz bands							
24,900*	61	1500	13,91	55,5	65,8	62,9	74,8
28,500*	53	1500	14,52	55,6	70,7	59,6	87,6

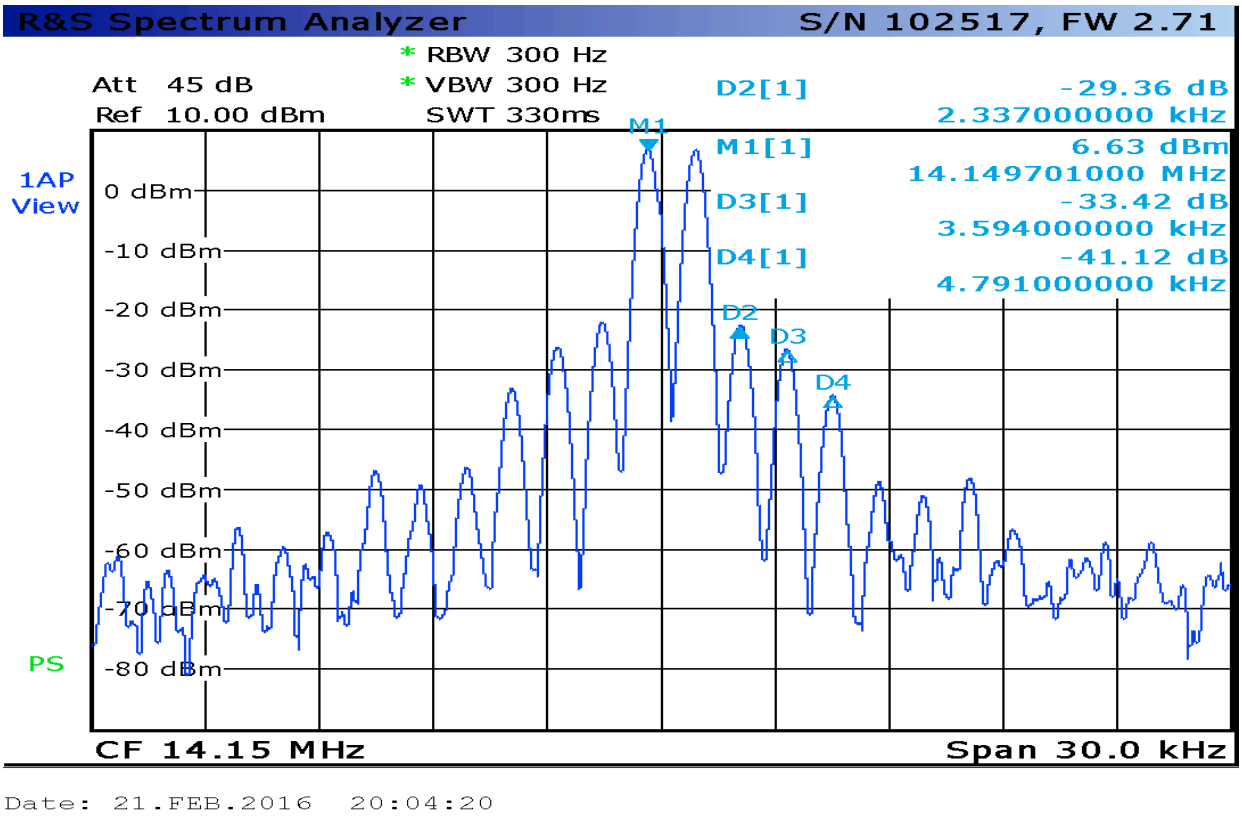
*Not usable as shipped, data applicable only after enabling of 24 and 28MHz bands

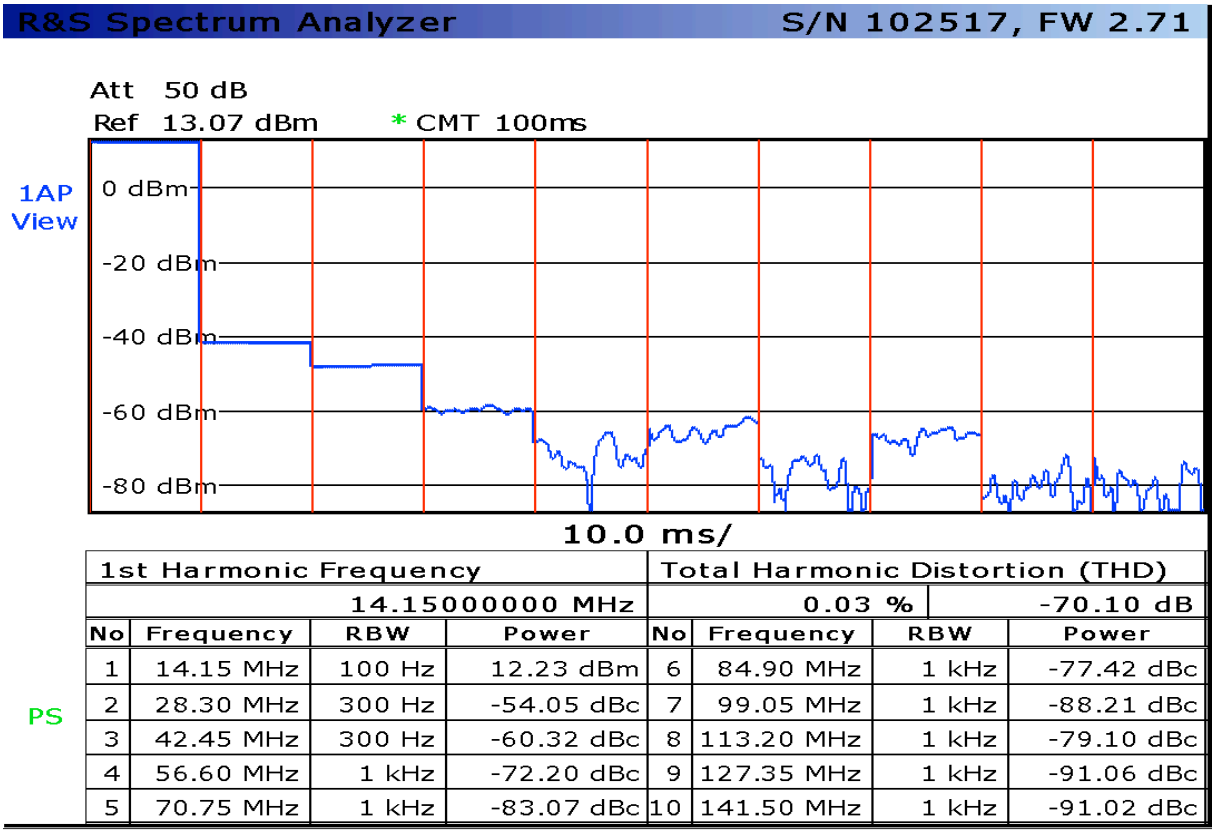
The following table indicates the measurments points and test results for the Inter Modulation Distortions to the 11-th order

Inter- modulation in dB relative to 1500W per 97.307					
Order:	**D3**	**D5**	**D7**	**D9**	**D11 and higher**
Freq. MHz	**dB**	**dB**	**dB**	**dB**	**dB**
1,850	42,2	48,5	57,3	62,4	56,7
3,650	36,4	43,1	54,9	54,1	65,2
7,050	34,0	43,2	47,7	70,5	60,7
10,100	34,4	40,8	47,9	63,7	62,6
14,150	35,9	39,4	47,1	61,7	61,0
18,100	35,4	43,8	51,6	60,6	70,1
21,150	33,9	37,2	48,9	57,5	59,0
24,900 *	33,2	37,6	51,0	63,8	64,1
28,500 *	30,1	41,8	51,0	56,9	66,8

- usable after authorized modification.Not usable as shipped. Model OM4000A uses firmware means to prevent the user from operating in the 26 - 28 MHz band as prohibited by 97.317(b)(2).

Measurement example:





1st Harmonic Frequency				Total Harmonic Distortion (THD)			
14.15000000 MHz				0.03 %			-70.10 dB
No	Frequency	RBW	Power	No	Frequency	RBW	Power
1	14.15 MHz	100 Hz	12.23 dBm	6	84.90 MHz	1 kHz	-77.42 dBc
2	28.30 MHz	300 Hz	-54.05 dBc	7	99.05 MHz	1 kHz	-88.21 dBc
3	42.45 MHz	300 Hz	-60.32 dBc	8	113.20 MHz	1 kHz	-79.10 dBc
4	56.60 MHz	1 kHz	-72.20 dBc	9	127.35 MHz	1 kHz	-91.06 dBc
5	70.75 MHz	1 kHz	-83.07 dBc	10	141.50 MHz	1 kHz	-91.02 dBc

Date: 21.FEB.2016 19:23:27

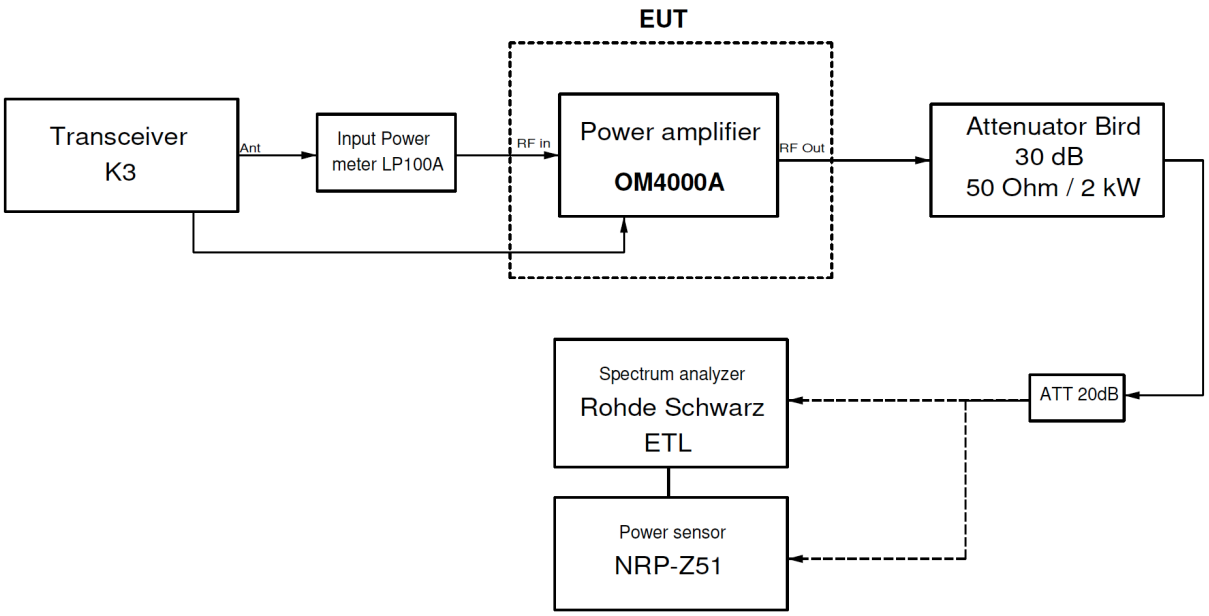


Fig. 1 Setup Block Diagram for OM4000A

EUT Technical Data

Description: Linear Amplifier OM4000A
Manufacturer /Model: OM Power / OM4000A
Serial Number:
Power (rated): 240VAC 50/60Hz
Power (tested): 240 VAC 50Hz
Internal Options: none
Frequencies amplified: Amateur radio bands from 1.8 MHz through 29.7 MHz

Support Equipment Data:

Description: HF Transceiver
Manufacturer / Model: ELECRAFT Model No. K3
Serial Number: 4191
Power: 230 VAC 50Hz
Internal Options: None
Frequencies Generated: from 1.8 MHz to 54 MHz

Cables Description

Transceiver Ant. To Input Power Meter – RG58/U, 1,5m length
Input Power Meter to EUT input – RG58/u, 25 cm length
Output Power Meter to Dummy Attenuator – RG213/U, 1,5m length
Dummy Attenuator / out to Spectrum Analyzer – RG58/U, 1.5 m length

EUT I/O Ports

OM4000A
- Key-In (Transmit/Receive Relay Control)
- RF INPUT 50 Ohm
- RF OUTPUT A1 50 Ohm
- Mains AC Input 240V 50/60 Hz

Test Equipment List

#	Equipment type	Manufacturer	Model #	Serial #	Used
1	Spectrum analyzer	Rohde Schwarz	ETL	102517	Yes
2	2kW 30dB Attenuator	BIRD	8329-300	263	Yes
3	20dB Attenuator	Spinner	BN 52 86 38		Yes
4	Power sensor	Rohde Schwarz	NRP-Z51	103046	Yes
5	HF Transceiver	Elecraft	K3	4191	Yes
6	Two-Tone Generator	Elecraft	build in K3		Yes