



## **Exhibit 5: EMI Test Report**

**External Radio Frequency  
Power Amplifier ACOM 1010**

**Model 1010**

71 West street  
Medfield, MA 02052  
Tel: 508 359 5990  
fax: 508 359 5989

E-mail: [aa1nd@aol.com](mailto:aa1nd@aol.com)

# **EMI Test Report**

## **for ACOM International, inc.**

**Product Name:** ACOM1010

**Regulation:** FCC, Part 97 Sub Part D

**Date of test:** APR 15 2004

**Tested by:** Eng. Dr. Stanimir Lekov, R&D at ACOM OOD

**Test Method:** FCC, Part 97.317 (a)(1)(2)(3), (b)(1)(2), (c)(i)(ii)  
Part 97.307 (d), (e)

### **Responsible Parties**

**Manufacturer:** ACOM OOD – Bulgaria

**Applicant:** ACOM International Inc. USA

**EUT Type/Model #:** Linear Amplifier ACOM1010

**Test Location:** ACOM OOD laboratory

### **EUT Description**

The EUT (ACOM1010) is a Linear Amplifier for Amateur Radio.

The tests were run in a typical configuration including the following support equipment:

- 1) H.F. plus six meters 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 ACOM1010 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-(a) (1) (2) (3), (c) (6) (ii)                                                                                                                                                 |                   |                    |                       | Spurious emissions per 97.307 (e) |                       |                       |                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------|-----------------------|-----------------------------------|-----------------------|-----------------------|-------------------------------------------|
| Frequency<br>f <sub>1</sub> , MHz                                                                                                                                                                   | Input<br>Power, W | Output<br>Power, W | Amplifier<br>Gain, dB | 2f <sub>1</sub> , dBc             | 3f <sub>1</sub> , dBc | 4f <sub>1</sub> , dBc | 5-10f <sub>1</sub> ,<br>dBc worst<br>case |
| 1.900                                                                                                                                                                                               | 53.1              | 700                | 11.2                  | -53.5                             | -79.5                 | -84.5                 | -72.7                                     |
| 3.750                                                                                                                                                                                               | 61.0              | 700                | 10.6                  | -53.0                             | -98.1                 | -87.0                 | -93.6                                     |
| 7.150                                                                                                                                                                                               | 73.3              | 700                | 9.8                   | -58.5                             | -99.9                 | -97.5                 | -94.5                                     |
| 10.125                                                                                                                                                                                              | 62.4              | 700                | 10.5                  | -53.8                             | -95.5                 | -67.3                 | -95.0                                     |
| 14.175                                                                                                                                                                                              | 60.9              | 700                | 10.6                  | -57.5                             | -96.7                 | -89.1                 | -84.6                                     |
| 18.100                                                                                                                                                                                              | 65.3              | 700                | 10.3                  | -53.2                             | -77.6                 | -78.5                 | -74.8                                     |
| 21.225                                                                                                                                                                                              | 58.2              | 700                | 10.8                  | -61.6                             | -90.2                 | -84.6                 | -77.0                                     |
| Amplifier was not capable of operation on any frequency or frequencies between 24 and 35MHz as measured at the points below per 97.317-(b) (1) (2). Data for: amplifier in Stand-by / amplifier ON. |                   |                    |                       |                                   |                       |                       |                                           |
| 24.000                                                                                                                                                                                              | 50                | 49.1 / 169         | -0.1 / 5.3            |                                   |                       |                       |                                           |
| 26.000                                                                                                                                                                                              | 50                | 48.3 / 47.8        | -0.15 / -0.2          |                                   |                       |                       |                                           |
| 27.120                                                                                                                                                                                              | 50                | 48.3 / 34.6        | -0.15 / -1.6          |                                   |                       |                       |                                           |
| 28.000                                                                                                                                                                                              | 50                | 48.3 / 28.1        | -0.15 / -2.5          |                                   |                       |                       |                                           |
| 35.000                                                                                                                                                                                              | 50                | 47.9 / 1.17        | -0.2 / -16.3          |                                   |                       |                       |                                           |
| Amplifier was not capable of full power output and the gain is less than 11.3dB when driven with less than 50 watts per 97.317-(c)(6) (i)(iii).                                                     |                   |                    |                       |                                   |                       |                       |                                           |
| 1.900                                                                                                                                                                                               | 30                | 405                | 11.3                  |                                   |                       |                       |                                           |
| 3.750                                                                                                                                                                                               | 30                | 353                | 10.7                  |                                   |                       |                       |                                           |
| 7.150                                                                                                                                                                                               | 30                | 307                | 10.1                  |                                   |                       |                       |                                           |
| 10.125                                                                                                                                                                                              | 30                | 344                | 10.6                  |                                   |                       |                       |                                           |
| 14.175                                                                                                                                                                                              | 30                | 352                | 10.7                  |                                   |                       |                       |                                           |
| 18.100                                                                                                                                                                                              | 30                | 345                | 10.6                  |                                   |                       |                       |                                           |
| 21.225                                                                                                                                                                                              | 30                | 369                | 10.9                  |                                   |                       |                       |                                           |
| 24.930*                                                                                                                                                                                             | 30                | 322                | 10.3                  |                                   |                       |                       |                                           |
| 28.500*                                                                                                                                                                                             | 30                | 352                | 10.7                  |                                   |                       |                       |                                           |
| After owner modification to activate 24-28 MHz bands:                                                                                                                                               |                   |                    |                       |                                   |                       |                       |                                           |
| 24.930*                                                                                                                                                                                             | 71.6              | 700                | 9.9                   | -73.7                             | -82.4                 | -81.0                 | -61.1                                     |
| 28.500*                                                                                                                                                                                             | 60.1              | 700                | 10.7                  | -67.5                             | -82.8                 | -82.2                 | -70.5                                     |

\*Not usable as shipped; data applicable only after enabling of 24.5 & 28 MHz bands as follows.

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

| Inter-modulation in dB relative to 700W PEP per 97.307(a)(b) |     |     |     |     |                |
|--------------------------------------------------------------|-----|-----|-----|-----|----------------|
| Order:                                                       | D3  | D5  | D7  | D9  | D11 and higher |
| Freq. (MHz)                                                  | dB  | dB  | dB  | dB  | dB             |
| 1.900                                                        | -45 | -48 | -44 | -50 | -53            |
| 3.750                                                        | -43 | -49 | -45 | -47 | -52            |
| 7.150                                                        | -42 | -47 | -45 | -47 | -51            |
| 10.125                                                       | -46 | -46 | -45 | -51 | -53            |
| 14.175                                                       | -44 | -46 | -47 | -52 | -59            |
| 18.100                                                       | -40 | -46 | -50 | -54 | -57            |
| 21.225                                                       | -42 | -46 | -48 | -54 | -56            |
| 24.930*                                                      | -45 | -45 | -49 | -54 | -58            |
| 28.500*                                                      | -38 | -40 | -44 | -52 | -56            |

\*Not usable as shipped; data applicable only after authorized owner modification.

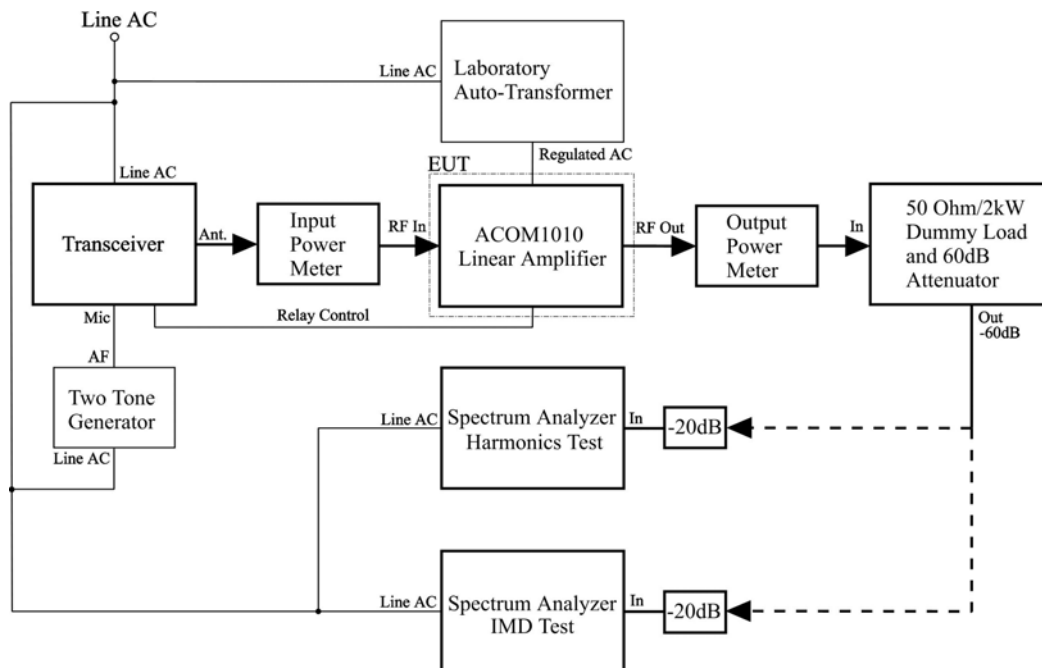


Fig.1 Setup Block Diagram for ACOM1010

### **EUT Technical Data**

**Description:** Linear Amplifier ACOM1010  
**Manuf/Model:** ACOM OOD Bulgaria / Model 1010  
**Serial #:** 000001  
**FCC/FTZ Ident.:** N/A  
**Power (Rated):** 240 VAC 50/60Hz  
**Power (Tested):** 240VAC 50Hz  
**Internal Options:** None  
**Frequencies Amplified:** Amateur radio bands from 1.8MHz through 29.7MHz

### **Support Equipment Data**

**Description:** HF Transceiver  
**Manuf/Model:** ICOM Model No. IC-746  
**Serial #:** 03678  
**Power:** 220VAC 50Hz  
**Internal Options:** None  
**Frequencies Generated:** from 1.8MHz through 35MHz

**Description:** Two-Tone Generator  
**Manuf/Model:** Kenwood Station Monitor, Model SM-220  
**Serial #:** None  
**Power:** 220VAC 50Hz  
**Internal Options:** None  
**Frequencies Generated:** 1000Hz plus 1575Hz Audio

**Description:** Laboratory Auto-Transformer  
**Manuf/Model:** RFT, Model LSS 020  
**Serial #:** 13/004  
**Power:** 220VAC 50Hz  
**Internal Options:** None  
**Frequencies Generated:** None

### **Cables Description**

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

**EUT I/O Ports****ACOM1010**

Key-In (Transmit/Receive Relay Control)

RF INPUT 50 Ohm

RF OUTPUT A1 or A2 - 50 Ohm

Mains AC Input 240V 50/60Hz

**Test Equipment List**

| #  | Equipment type              | Manufacturer          | Model #                | Serial #        | Used |
|----|-----------------------------|-----------------------|------------------------|-----------------|------|
| 1  | Spectrum Analyzer           | TEKTRONIX             | 2710                   | B 02 0771       | Yes  |
| 2  | Spectrum Analyzer           | Russia                | CK4-59                 | 8806264/8806204 | Yes  |
| 3  | 2kW 60dB Attenuator         | ACOM                  | IM-400                 | 004             | Yes  |
| 4  | 20dB Attenuator             | Russia                | n/a                    | n/a             | Yes  |
| 5  | Signal Generator            | Marconi Instruments   | MI 2018A               | 118454/058      | Yes  |
| 6  | Power Meter                 | Bird Electronic Corp. | Model 4421-101         | 1665            | Yes  |
| 7  | Power Sensor                | Bird Electronic Corp. | 4021                   | 0004            | Yes  |
| 8  | Power Sensor                | Bird Electronic Corp. | BIR 100A               | n/a             | Yes  |
| 9  | HF plus 6m Transceiver      | ICOM                  | IC-746                 | 03678           | Yes  |
| 10 | Two-Tone Generator          | Kenwood               | SM-220 Station Monitor | n/a             | Yes  |
| 11 | Laboratory Auto-Transformer | RFT                   | LSS 020                | 13/004          | Yes  |