



Test report no. : 173439-5

Item tested : TA-76XX (50W)

Type of equipment : VHF Transceiver

FCC ID : RA9TA-76XX

Client : Jotron AS

Test report covers only emission mask for 8.33kHz channel separation

FCC Part 87 Subpart D
Aviation Services

25 August 2011

Authorized by :
Frode Sveinsen

Frode Sveinsen
Technical Verificator



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1 GENERAL INFORMATION

1.1 Testhouse Info

Name : Nemko AS
Address : Nemko Kjeller
Instituttveien 6, Box 96
NO-2027 Kjeller, NORWAY
Telephone : +47 64 84 57 00
Fax : +47 64 84 57 05
Email: comlab@nemko.no
FCC test firm : 994405
IC OATS : 2040D-1
Total Number of Pages: 16

1.2 Client Information

Name : Jotron AS
Address : P.O.Box 54, Kirkestian 1, 3280 Tjodalyng
Telephone : +47 33 13 97 14
Fax : --

Contact:

Name : Bjørn Rishovd
Telephone : +47 33 13 97 14
E-mail : bjorn.rishovd@jotron.com

1.3 Manufacturer (if other than client)

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2 Test Information

2.1 Test Item

Name :	Jotron
Model/version :	TX: TA-76XX
Serial number :	TX: 24
Hardware identity and/or version:	TX: X84506:R0543, X82411:R0552X
Software identity and/or version :	TX: Dec 5 2006
Frequency Range :	118 – 136.975 MHz
Tunable Bands :	None
Emission designator:	5K60A3E
Number of Channels :	3
Operating Modes :	TX & RX (Simplex)
Channel separation:	8,33kHz
Type of Modulation :	AM & VDL
User Frequency Adjustment :	Yes
Rated Output Power (TX) :	36 Watts
Rated maximum audio output:	+10 dBm at 600 ohm line
Rated maximum audio input:	+10 dBm at 600 ohm line
Type of Power Supply :	100 – 260 AC mains or 21 - 36VDC
Antenna Connector :	50 Ohm N-connector

Description of Test Item

The Jotron TA 76XX series VHF radios are designed for ground to air communications on air port traffic control centers. The units are rack mounted. And the transmitter and receiver are separate units and have their own built in power supplies. These radios can be operated locally as well as remotely. The remote control ports are LAN, RS-485 and RS-232.

Theory of Operation

A simple AM modulated ground to air VHF aeronautical radio.

2.2 Test Environment

2.2.1 Normal test condition

Temperature: 20 - 24 °C

Relative humidity: 20 - 50 %

Normal test voltage: 120 V AC

The values are the limit registered during the test period.

2.3 Test Period

Item received date: 2011-06-12

Test period : 2011-07-02

3 TEST REPORT SUMMARY

3.1 General

Manufacturer: Jotron AS
Model No.: TA-76XX
Serial No.: TA-7650: 24

All measurements are traceable to national standards.


The tests were conducted for the purpose of demonstrating compliance with FCC Part 87 subpart D.

- | | |
|--|---|
| <input type="checkbox"/> New Submission | <input checked="" type="checkbox"/> Production Unit |
| <input checked="" type="checkbox"/> Class II Permissive Change | <input type="checkbox"/> Pre-production Unit |
| TNB Equipment Code | <input type="checkbox"/> Family Listing |

THIS TEST REPORT RELATES ONLY TO THE ITEMS AND CONFIGURATIONS TESTED.
Deviations from, additions to, or exclusions from the test specifications are described in
"Summary of Test Data".



TEST REPORT #: 173439-5

TESTED BY: 
G.Suhanthakumar, Test engineer

DATE: 05.07.2011

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3.2 Test Summary

Name of test	FCC part 87 paragraph	IC RSS-141 paragraph	Result
Occupied Bandwidth	87.139a / 2.1049	-	Complies

¹ The output power 1 to 25 W is selected in software.

² The manufacturer specified voltage range is 80 - 260 V AC

3.3 Description of modification for Modification Filing

Not applicable.

3.4 Comments

The measurements were done with the EUT powered by 120 V AC. It was checked that power variations between 85% and 115% did not have any influence on the measurements.

All ports were populated during spurious emission measurements.

3.5 Family List Rational

Not Applicable.

4 TEST RESULTS

5 Occupied Bandwidth

Para. No.: 87.139(a)/ 2.1049

Test Performed By: G.Suhandhakumar

Date of Test: 02.07.2011

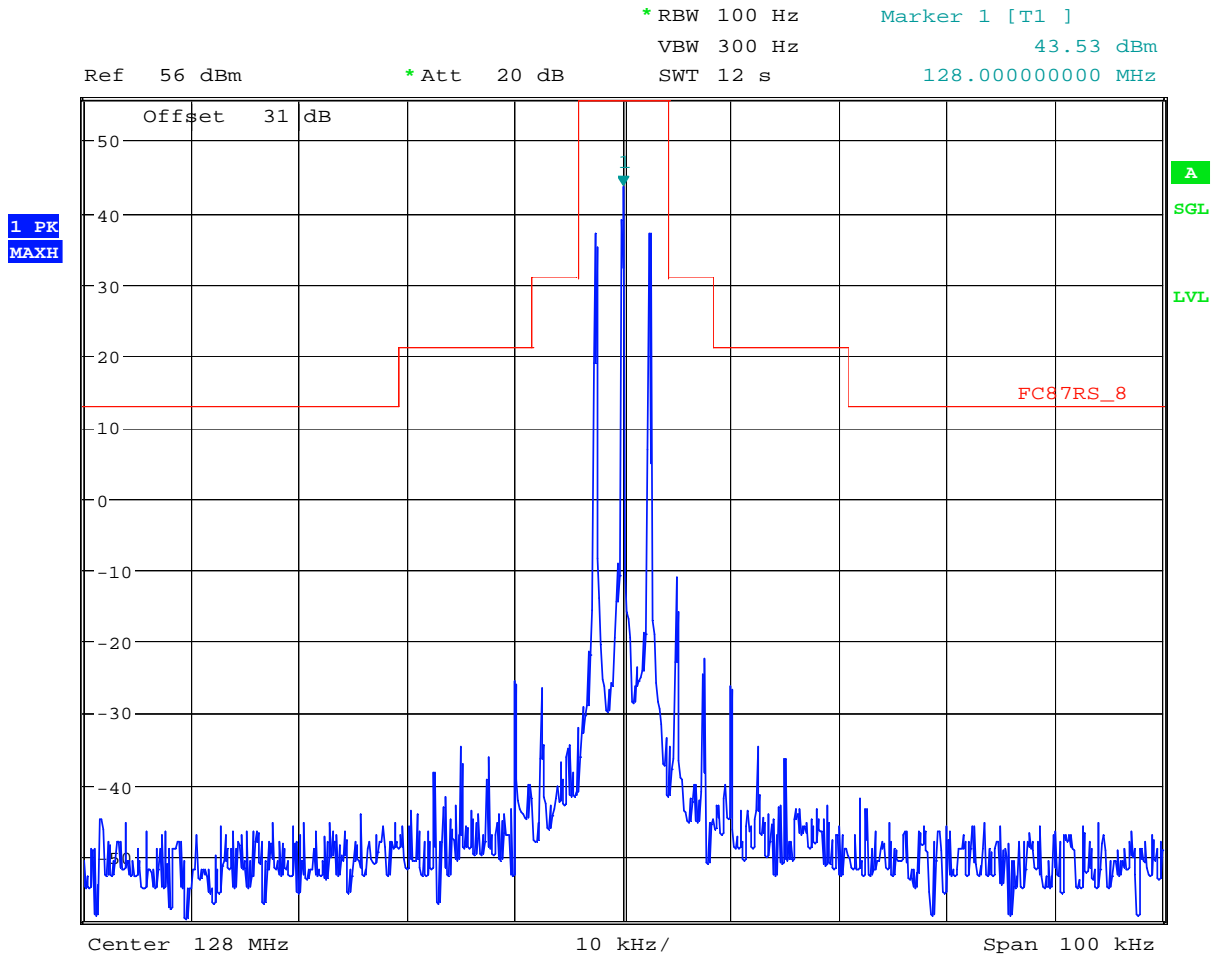
Test Results: Complies.

Test Data: See attached graphs.

Requirement (87.139(a)):

(a) Except for ELTs and when using single sideband (R3E, H3E, J3E), or frequency modulation (F9) or digital modulation (F9Y) for telemetry or telecommand in the frequency bands 1435-1535 MHz and 2310-2390 MHz or digital modulation (G7D) for differential GPS, the mean power of any emission must be attenuated below the mean power of the transmitter (pY) as follows:

- (1) When the frequency is removed from the assigned frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth the attenuation must be at least 25 dB;
- (2) When the frequency is removed from the assigned frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth the attenuation must be at least 35 dB.
- (3) When the frequency is removed from the assigned frequency by more than 250 percent of the authorized bandwidth the attenuation for aircraft station transmitters must be at least 40 dB; and the attenuation for aeronautical station transmitters must be at least $43 + 10 \log_{10} pY$ dB



Date: 2.JUL.2011 18:38:04

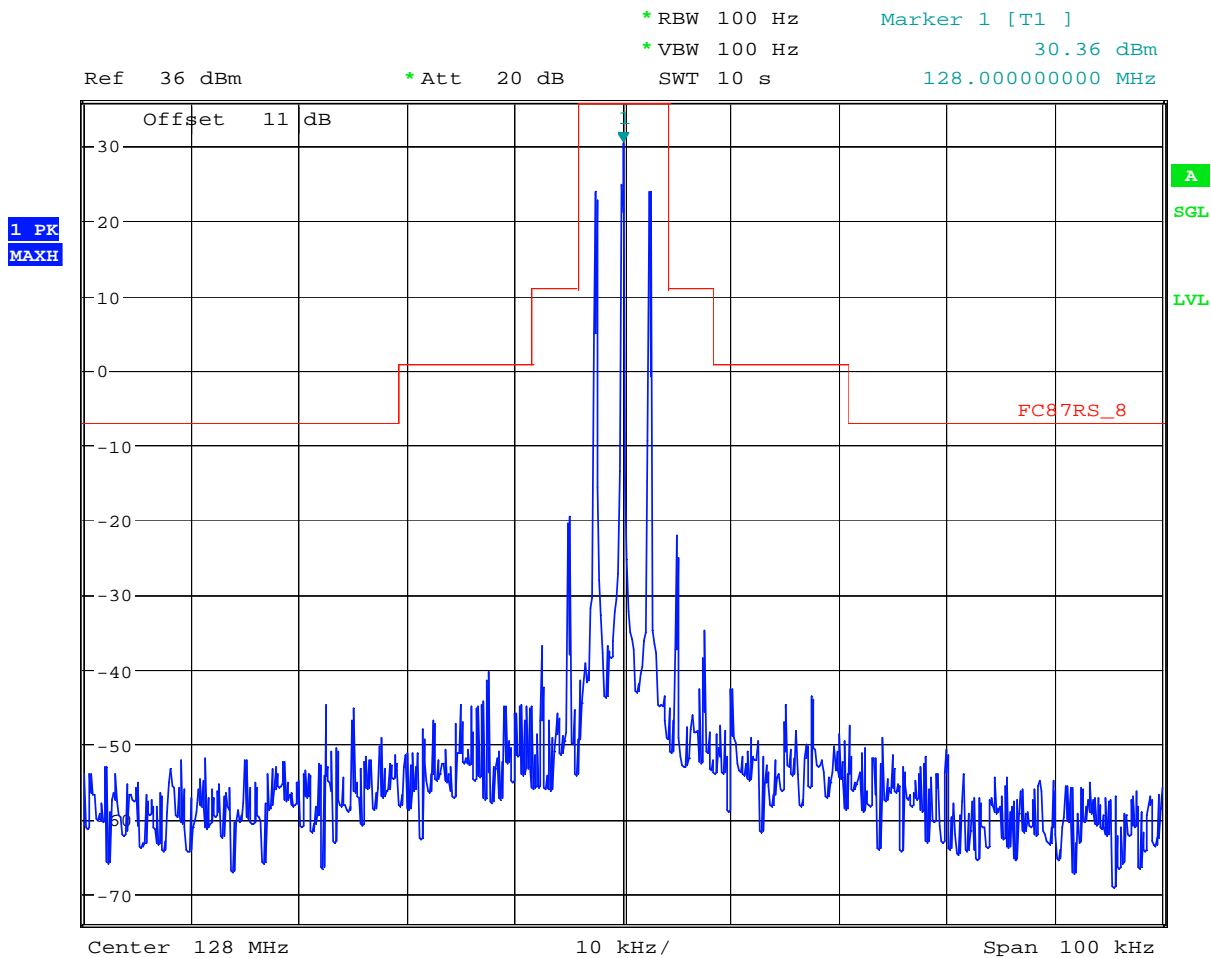
5K60A3E

TX 128 MHz , High power: 25Watts

Modulated 2500 Hz, 16 dB overdrive (ref: 50% modulation, 1000 Hz)

Authorized Bandwidth: 8.33 kHz, 87.137(a)

$43+10\log(25)= 56.98\text{dB}$



Date: 2.JUL.2011 18:25:09

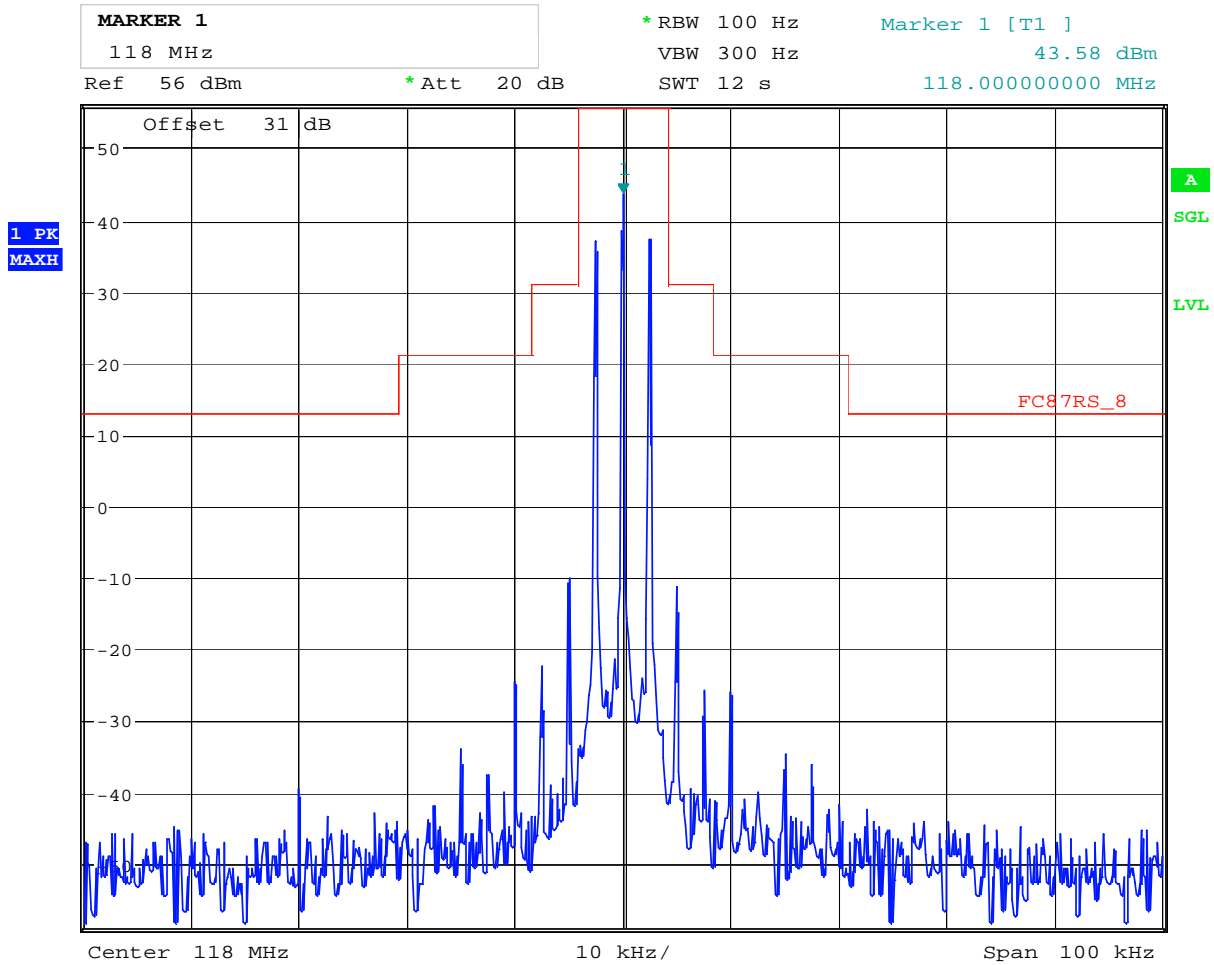
6K00A3E

TX 128 MHz, Low Power: 1Watt

Modulated 2500 Hz, 16 dB overdrive (ref: 50% modulation, 1000 Hz)

Authorized Bandwidth: 25 kHz, 87.137(a)

$43+10\log(25)= 43\text{dB}$



Date: 2.JUL.2011 18:38:54

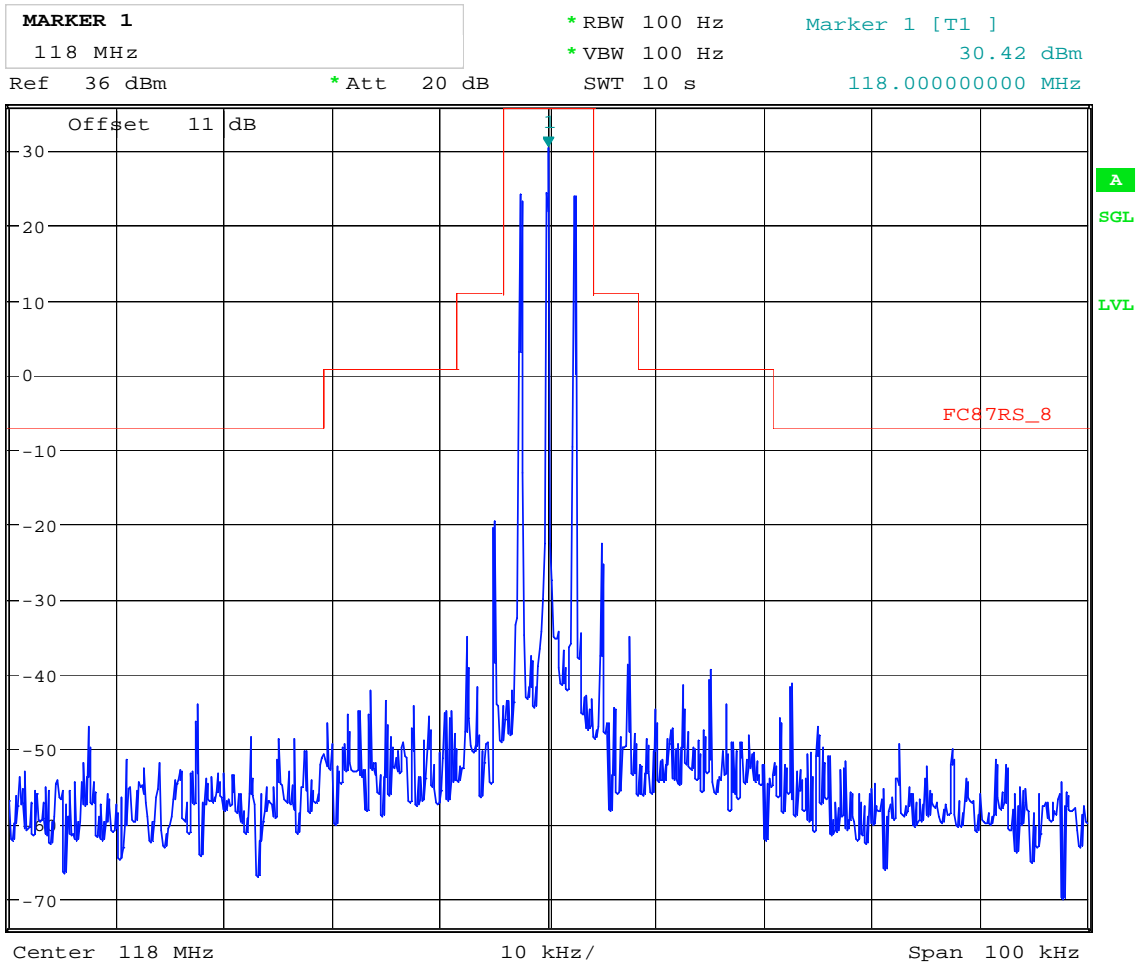
5K60A3E

TX 118 MHz , High power: 25Watts

Modulated 2500 Hz, 16 dB overdrive (ref: 50% modulation, 1000 Hz)

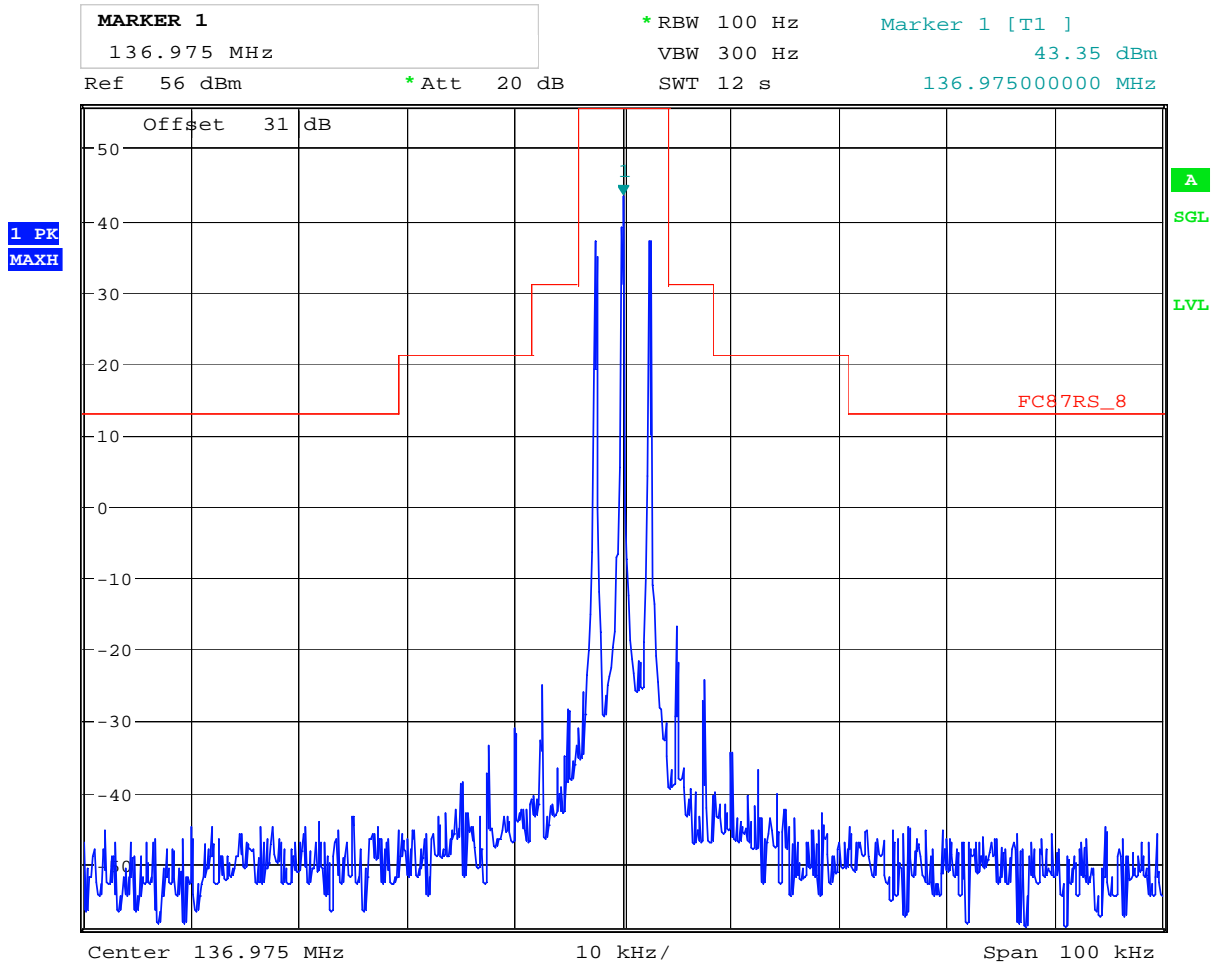
Authorized Bandwidth: 8.33 kHz, 87.137(a)

$43+10 \log(25)= 56.98\text{dB}$



Date: 2.JUL.2011 18:26:53

5K60A3E
TX 118 MHz, Low Power: 1Watt
Modulated 2500 Hz, 16 dB overdrive (ref: 50% modulation, 1000 Hz)
Authorized Bandwidth: 8.33 kHz, 87.137(a)
 $43+10 \log(25)= 43\text{dB}$



Date: 2.JUL.2011 18:40:05

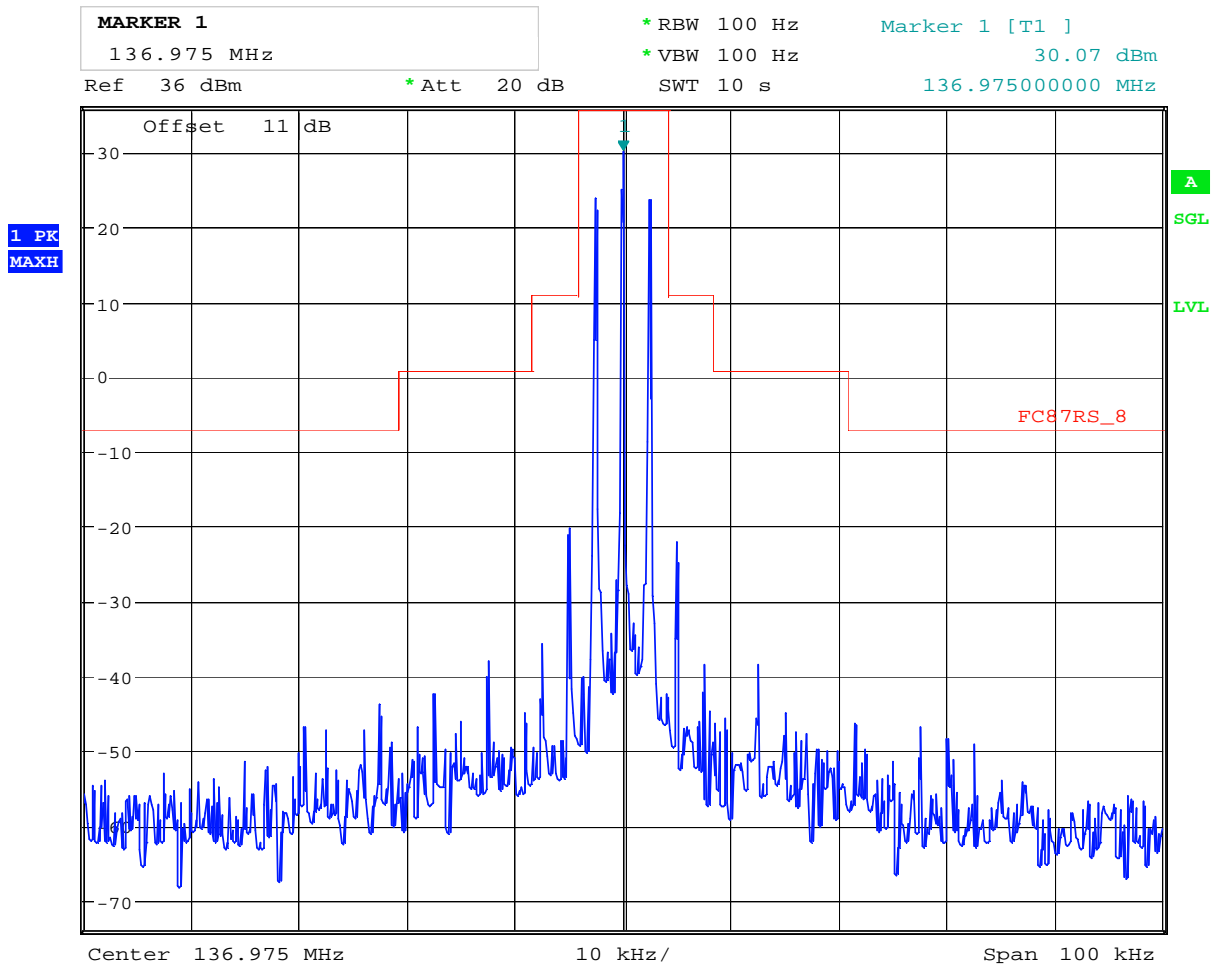
5K60A3E

TX 136.975 MHz , High power: 25Watts

Modulated 2500 Hz, 16 dB overdrive (ref: 50% modulation, 1000 Hz)

Authorized Bandwidth: 8.33 kHz, 87.137(a)

$43+10 \log(25)= 56.98\text{dB}$



Date: 2.JUL.2011 18:28:44

5K60A3E

TX 136.975 MHz, Low Power: 1Watt

Modulated 2500 Hz, 16 dB overdrive (ref: 50% modulation, 1000 Hz)

Authorized Bandwidth: 8.33kHz, 87.137(a)

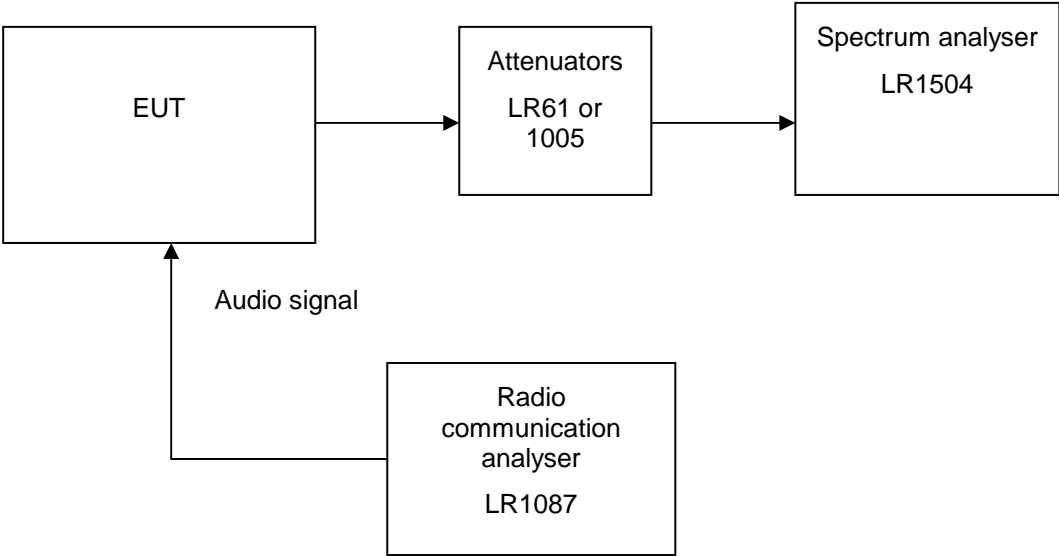
$43+10 \log(25)= 43\text{dB}$

6 LIST OF TEST EQUIPMENT

To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment and ancillaries are identified (numbered) by the Test Laboratory.

No.	Model number	Description	Manufacturer	Ref. no.	Cal. date	Cal. Due
1.	CMTA 54	Radiocomm Analyzer	R&S	1087	22.02.2010	22.02.2012
2.	FSU26	EMI Receiver	R&S	1504	28.09.2010	28.09.2011
3.	765-10	Attenuator	Narda	1005	16.09.2010	16.09.2012
4.	8321	Attenuator	Bird	61	-	-

7 TEST SET-UP



Occupied Bandwidth