

Straubing, 27 March 2003

TEST - REPORT

No. 56408-30116

for

STAGE 55

Wireless Audio System

Applicant: SAMSON Technologies Corp.

Purpose of testing: To show compliance with
FCC Code of Federal Regulations,
Part 74 Subpart H, section 74.861

Note:

The test data of this report relate only to the individual item which has been tested.
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the testing laboratory.

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1. Administrative Data

Test item (EUT)	
Type designation	STAGE 55
Serial number(s):	001
Type of equipment:	Wireless Audio System
Parts/accessories:	HT5 Wireless Microphone, SR55 True Diversity Receiver
FCC-ID:	
Technical data	
Frequency range	174-216 MHz
Operational frequency	175.000 MHz, 199.600 MHz, 213.200 Mhz
Type of modulation	130KF3E
Pulse frequency	N/A
Pulse width	N/A
Antenna	Integrated
Power supply	9 V Battery
Applicant: (full address)	SAMSON Technologies Corp. 575 Underhill Blvd. Syosset, N.Y. 11791-9031, USA
Contract identification:	---
Contact person:	Joan Wu
Manufacturer:	SAMSON Technologies Corp.
Application details	
Receipt of EUT:	20 February 2003
Date of test:	25 March 2003
Note:	
Responsible for testing:	Johann Roidt
Responsible for test report:	Johann Roidt

2. Identification of Test Laboratory

DETAILS OF THE TEST LABORATORY	
COMPANY NAME:	Senton GmbH EMI/EMC Test Center
ADDRESS:	Aeussere Fruehlingsstrasse 45 D-94315 Straubing Germany
LABORATORY ACCREDITATION:	DAR-Registration No. TTI-P-G 062/94-40
FCC TEST SITE LISTING	
INDUSTRY CANADA TEST SITE REGISTRATION	IC 3050
NAME FOR CONTACT PURPOSES:	Mr. Johann Roidt
TELEPHONE: (+49) (0)9421 5522-0	FAX: (+49) (0)9421 5522-99

PERSONNEL INVOLVED IN THIS TEST REPORT	
TECHNICAL DIRECTOR:	 Mr. Johann Roidt
RESPONSIBLE FOR TESTING:	Mr. Johann Roidt
RESPONSIBLE FOR TEST REPORT:	Mr. Johann Roidt

SUMMARY OF TEST RESULTS
The tested sample complies with the requirements set forth in the Code of Regulations Part 74 Subpart H, Section § 74.861 of the Federal Communication Commission (FCC).

3. Operation Mode of EUT

Transmitter operating continuously,
full tests were performed on lowest, middle and highest RF channel.
With battery supply 9.00 V DC

4. Configuration

Configuration of the EUT
Not applicable

Cables connected to the EUT
Not applicable

Peripheral devices connected to the EUT
Not applicable

5. Measuring Methods

5.1. Maximum Transmitter Power (§ 2.1046 (a), 74.861 (e))

5.1.1. Conducted Maximum Transmitter Power

Rules and Specifications:	Sections 2.1046 (a)
Guide:	ANSI/TIA/EIA-603-1992, Paragraph 2.2.11
Test Conditions:	As indicated below

Measurement Procedure:

A spectrum analyzer / EMI test receiver is connected to the output of the transmitter power amplifier (conducted measurement) via dummy load while EUT was operating in transmit mode using the assigned frequency.

The trace mode of the spectrum analyzer was set to max hold with:

RBW = 100 kHz, VBW = 100 kHz, span = 1 MHz, sweep = 20 ms (auto mode)

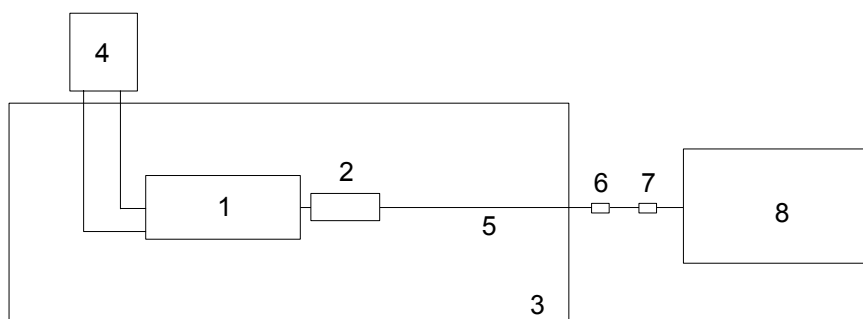


Figure 1: Measurement setup for testing on antenna connector

Test equipment used (see equipment list for details):
02, 18, 51, 69, 70, 71

5.1.2. Radiated Maximum Transmitter Power

Radiated Maximum Transmitter Power was measured with detector-function of the spectrum analyzer set to positive peak and trace mode max hold:

RBW = 100 kHz, VBW = 100 kHz, span = 1 MHz, sweep = 15 s

For measurement setup and procedure see section 6.2

5.2. Mean power of emissions 30 MHz – 2 GHz (§ 74.861.e.6.iii)

Rules and Specifications:	Sections 2.1053
Guide:	ANSI/TIA/EIA-603-1992, Paragraph 2.2.11
Test Conditions:	As indicated below

Measurement Procedure:

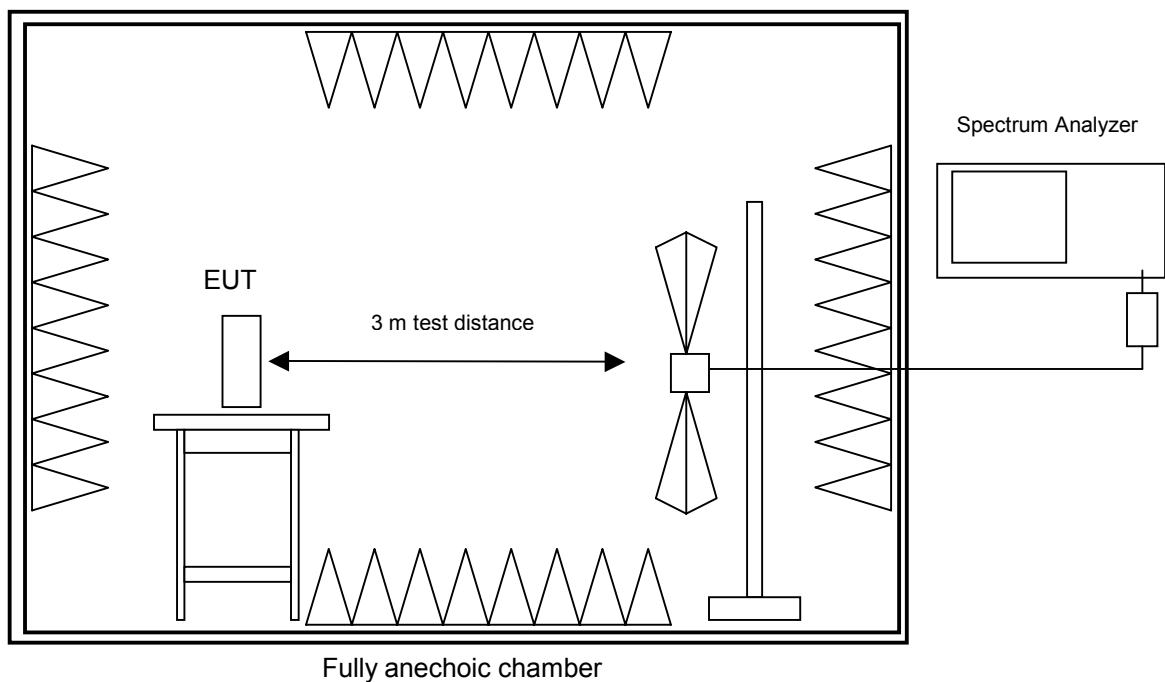
Radiated emissions were measured over the frequency range from 30 MHz to 1 GHz. For final testing the detector-function of the spectrum analyzer was set to positive peak and trace mode max hold:

RBW = 3 kHz, VBW = 10 kHz, span = 20 kHz, sweep = 10 s

Measurements were made in both the horizontal and vertical planes of polarization.

Preliminary scans were taken in a semi-anechoic room using a spectrum analyzer with the detector function set to peak and resolution bandwidth set to 100 kHz. All tests were performed at a test-distance of 3 meters. Hand-held or body-worn devices are rotated through three orthogonal axes to determine which attitude and configuration produces the highest emission relative to the limit and therefore shall be used for final testing. For final testing an open-area test-site was used. During the tests the EUT was rotated all around and the receiving-antenna was raised and lowered from 1 meter to 4 meters to find the maximum levels of emissions. The cables and equipment were placed and moved within the range of position likely to find their maximum emissions.

Final testing was performed referring to substitution method as described in TIA/EIA-603, section 2.2.12 ("Radiated Spurious Emissions").



Test equipment used (see equipment list for details):

01, 06, 12, 15, 38, 39, 40, 41, 55, 58, 61, 64, 66

5.3. Radiated Emission > 1 GHz (§ 74.861.e.6.iii)

Rules and Specifications:	Sections 2.1053
Guide:	ANSI/TIA/EIA-603-1992, Paragraph 2.2.11
Test Conditions:	As indicated below

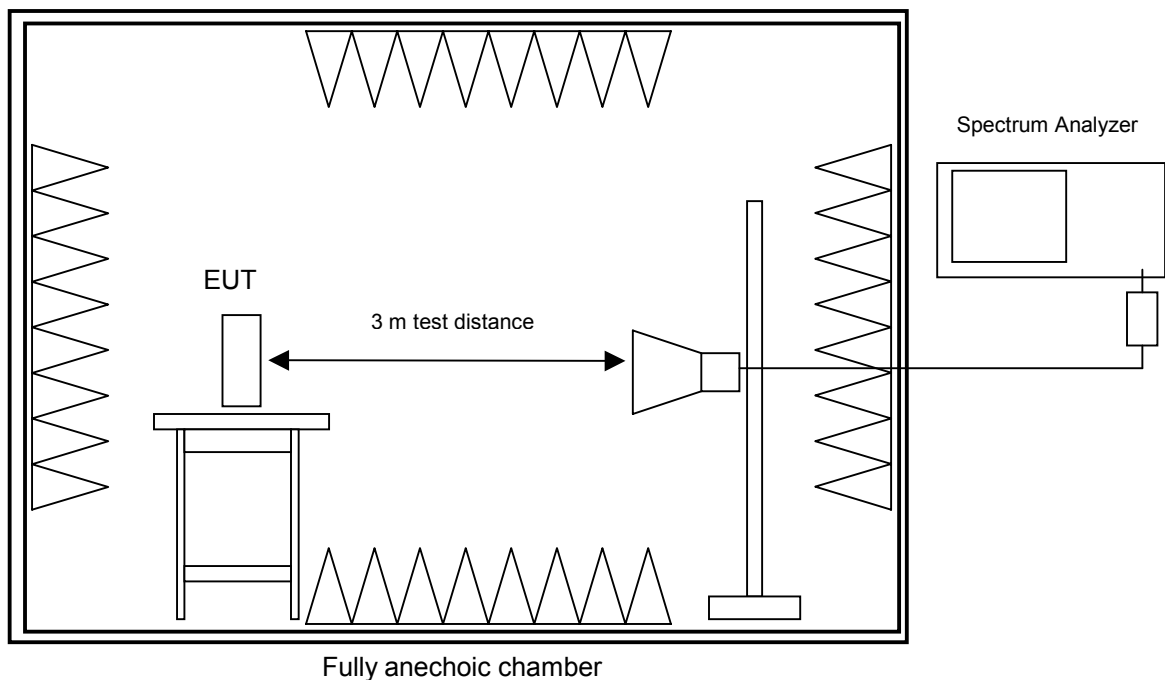
Measurement Procedure:

Radiated emissions are measured in the frequency range 1 GHz to 2.5 GHz. Resolution and video bandwidth of the spectrum analyzer are set to 1 MHz. Hand-held or body-worn devices are rotated through three orthogonal axes to determine which attitude and configuration produces the highest emission relative to the limit and therefore shall be used for final testing. Additional measurements are performed at critical frequencies with reduced span.

EUT is rotated all around and receiving antenna is raised and lowered to find the maximum levels of emission. The cables and equipment are placed and moved within the range of position likely to find their maximum emissions.

All tests are performed in a fully-anechoic chamber with a test-distance of 3 meters.

If required preamplifiers are used for the whole frequency range. Special care is taken to avoid overload in transmit mode (using appropriate attenuators and filters if necessary).



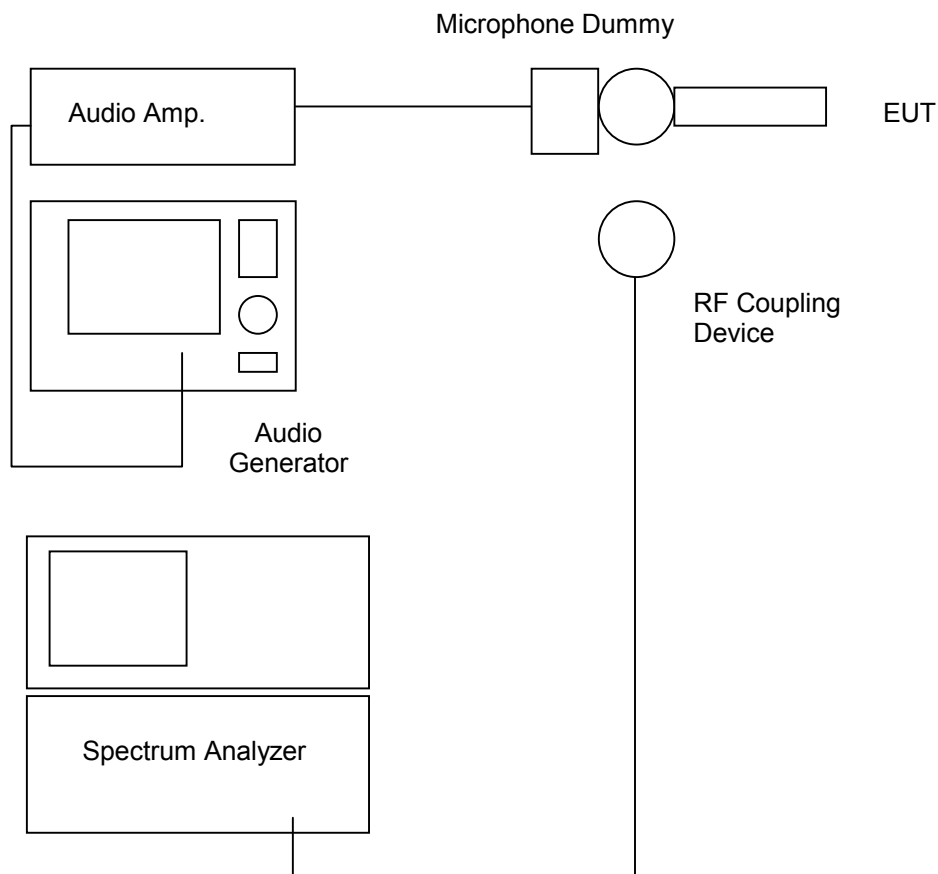
Test equipment used (see equipment list for details):
02, 13, 14, 16, ,42, 44, 45, 57, 64

5.4. Emission Masks (Occupied Bandwidth) § 2.1049 (c) (1)

Rules and Specifications:	Sections 2.1049 (c) (1),
Guide:	ANSI/TIA/EIA-603-1992, Paragraph 2.2.11
Test Conditions:	As indicated below

Measurement Procedure:	1. The EUT and equipment were set up as shown below 2. The audio signal was adjusted for 16 dB above 50 % of nominal modulation at the frequency of maximum response. 3. The occupied bandwidth was measured with the Spectrum Analyzer set as shown on the test charts.
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Test Setup

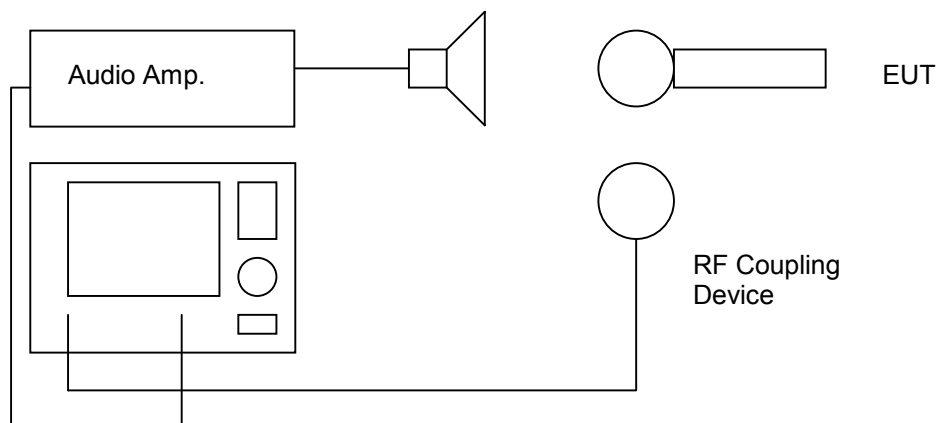


5.5. Audio Frequency Response, 2.1047 (a)

Rules and Specifications:	Sections 2.1047 (b),
Guide:	ANSI/TIA/EIA-603-1992, Paragraph 2.2.3
Test Conditions:	As indicated below

Measurement Procedure:	4. The audio signal was coupled to the microphone via a calibrated loudspeaker. 5. The audio signal was adjusted for 20 % nominal modulation at 1 kHz. this was taken as 0 dB reference. 6. With input levels held constant, the audiosignal was varied from 100 Hz to 30 kHz 7. The response was measured and recorded with a CMS 54 Radiocommunication Tester
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Test Setup

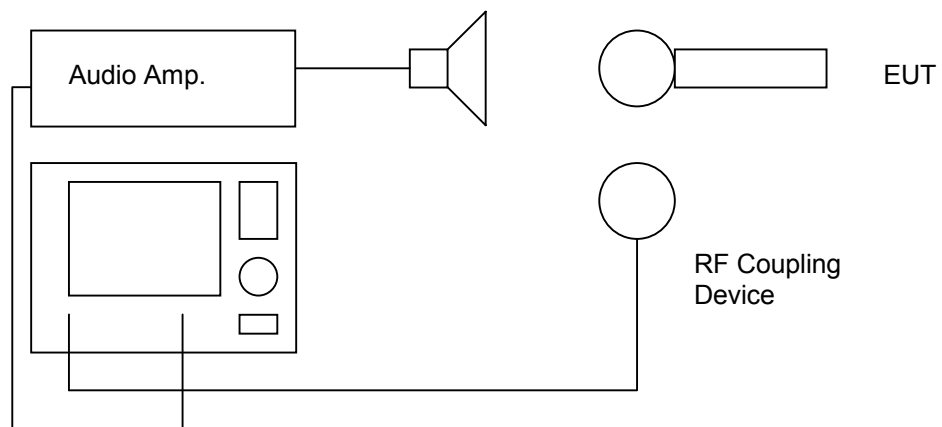


5.6. Modulation Limiting, § 2.1047 (b)

Rules and Specifications:	Sections 2.1047 (b),
Guide:	ANSI/TIA/EIA-603-1992, Paragraph 2.2.3
Test Conditions:	As indicated below

Measurement Procedure:	8. The audio signal was coupled to the microphone via a calibrated loudspeaker. 9. The modulation response was measured for three frequencies including the frequency with maximum response found during "Audio Frequency Response Test". 10. The input level was varied from 30 % modulation to 20 dB higher than the saturation point. The resulting deviation was measured with a CMS 54 Radiocommunication Tester. 11. Measurements were performed for positive and negative deviation.
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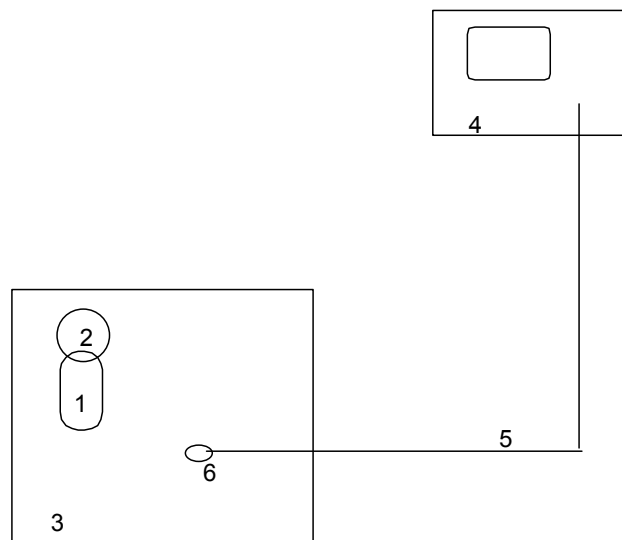
Test Setup



5.7. Frequency Stability (Temperature Variation), § 2.1055 (a) (1)

Rules and Specifications:	Sections 2.1055 (a) (1), 74.861 (e) (4)
Guide:	ANSI/TIA/EIA-603-1992, Paragraph 2.2.2
Test Conditions:	As indicated below

Measurement Procedure:	12. The EUT and test equipment were set up as shown below 13. With all power removed, the temperature was decreased to -30°C and permitted to stabilize for three hours. Power was applied and the maximum change in frequency was noted within one minute. 14. With power OFF, the temperature was raised in 10°C steps. The sample was permitted to stabilize at each step for at least half of an hour. Power was applied and the maximum frequency change was noted within one minute. 15. The temperature test were performed for worst case conditions.
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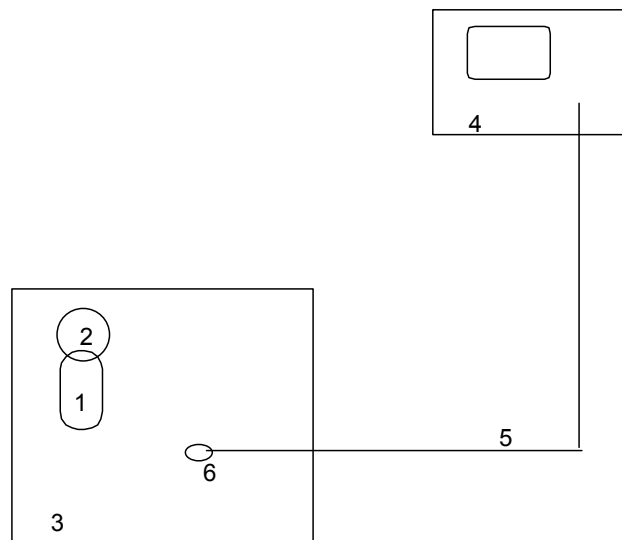
- 1 Base unit (EUT)
- 2 RF-antenna (EUT)
- 3 Temperature test chamber
- 4 Spectrum analyzer
- 5 RF cable
- 6 Test probe

Test equipment used (see equipment list for details):
02, 54, 55

5.8. Frequency Stability (Voltage Variation), § 2.1055 (b) (1)

Rules and Specifications:	Sections 2.1055 (b) (1), 74.861 (e) (4)
Guide:	ANSI/TIA/EIA-603-1992, Paragraph 2.2.2
Test Conditions:	As indicated below

Measurement Procedure:	16. The EUT and test equipment were set up as shown below 17. The temperature was set to 20 °C 18. The supply voltage was varied from 85% to 115% of the nominal voltage measured at the input of the EUT. 19. The variation in frequency was measured for worst case conditions.
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- 1 Base unit (EUT)
- 2 RF-antenna (EUT)
- 3 Temperature test chamber
- 4 Spectrum analyzer
- 5 RF cable
- 6 Test probe

Test equipment used (see equipment list for details):
02, 54, 55

6. Equipment List

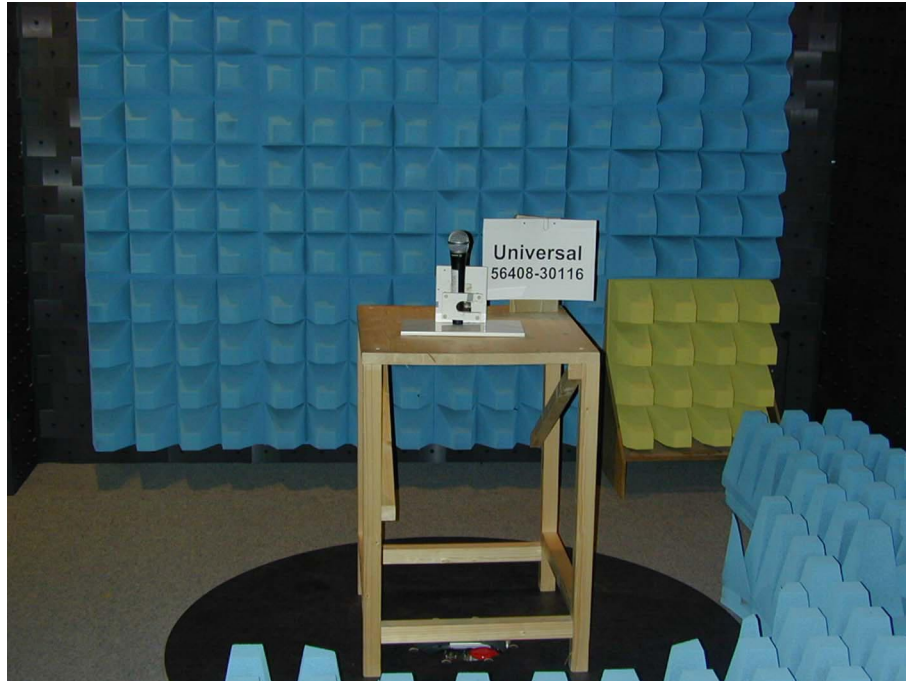
To facilitate reference to test equipment used for related tests, each item of test equipment and ancillaries such as cables are identified (numbered) by the Test Laboratory.

No.	Type	Model	Serial Number	Manufacturer
01	Spectrum Analyzer	R 3271	05050023	Advantest
02	EMI Test Receiver	ESMI	839379/013 839587/006	Rohde & Schwarz
03	Test Receiver	ESH 3	880112/032	Rohde & Schwarz
04	Test Receiver	ESHS 10	860043/016	Rohde & Schwarz
05	Test Receiver	ESV	881414/009	Rohde & Schwarz
06	Test Receiver	ESVP	881120/024	Rohde & Schwarz
07	Audio Analyzer	UPA	862954	Rohde & Schwarz
08	Power Meter	NRVS	836856/015	Rohde & Schwarz
09	Power Sensor	NRV-Z52	837901/030	Rohde & Schwarz
10	Power Sensor	NRV-Z4	863828/015	Rohde & Schwarz
11	Preamplifier	ESV-Z3	860907/004	Rohde & Schwarz
12	Preamplifier	R14601		Advantest
13	Preamplifier	ACX/080-3030	32640	CTT
14	Preamplifier	ACO/180-3530	32641	CTT
15	Signal Generator	SMS	872166/039	Rohde & Schwarz
16	Signal Generator	HP 8673 D	2930A00966	Hewlett Packard
17	Waveform Generator	HP 33120 A	US34005375	Hewlett Packard
18	Attenuator 20 dB	4776-20	9503	Narda
19	Attenuator 10 dB	4776-10	9412	Narda
20	Pulse Limiter	ESH 3-Z2	1144	Rohde & Schwarz
21	Pulse Limiter	11947 A	3107A00566	Hewlett Packard
22	V-Network	ESH 3-Z5	862770/018	Rohde & Schwarz
23	V-Network	ESH 3-Z5	894785/005	Rohde & Schwarz
24	V-Network	ESH 3-Z5	830952/025	Rohde & Schwarz
25	V-Network	ESH 3-Z6	830722/010	Rohde & Schwarz
26	V-Network	NSLK 8127	8127152	Schwarzbeck
27	V-Network	NNLA 8119	8119148	Schwarzbeck
28	V-Network	SE 01	01	Senton
29	T-Network	ESH 3-Z4	890602/011	Rohde & Schwarz
30	T-Network	ESH 3-Z4	890602/012	Rohde & Schwarz
31	High Impedance Probe	TK 9416	01	Schwarzbeck
32	High Impedance Probe	TK 9416	02	Schwarzbeck
33	Current Probe	ESH 2-Z1	863366/18	Rohde & Schwarz
34	Current Probe	ESV-Z1	862553/3	Rohde & Schwarz

No.	Type	Model	Serial Number	Manufacturer
35	Absorbing Clamp	MDS 21	80911	Lüthi
36	Absorbing Clamp	MDS 21	79690	Lüthi
37	Loop Antenna	HFH2-Z2	882964/1	Rohde & Schwarz
38	Biconical Antenna	HK 116	842204/001	Rohde & Schwarz
39	Biconical Antenna	HK 116	836239/02	Rohde & Schwarz
40	Log. Periodic Antenna	HL 223	841516/023	Rohde & Schwarz
41	Log. Periodic Antenna	HL 223	834408/12	Rohde & Schwarz
42	Horn Antenna	3115	9508-4553	Emco
43	Horn Antenna	3160-03	9112-1003	Emco
44	Horn Antenna	3160-04	9112-1001	Emco
45	Horn Antenna	3160-05	9112-1001	Emco
46	Horn Antenna	3160-06	9112-1001	Emco
47	Horn Antenna	3160-07	9112-1008	Emco
48	Horn Antenna	3160-08	9112-1002	Emco
49	Horn Antenna	3160-09	9403-1025	Emco
50	Digital multimeter	199	463386	Keithley
51	DC Power Supply	NGSM 32/10	203	Rohde & Schwarz
52	DC Power Supply	NGB	2455	Rohde & Schwarz
53	DC Power Supply	NGA	386	Rohde & Schwarz
54	Temperature Test Chamber	HT4010	07065550	Heraeus
55	Cable	RG214	1309	Senton
56	Cable	200CM_001	1357	Rosenberger
57	Cable	150CM_001	1479	Rosenberger
58	Cable Set EG1	RG214	1189 - 1191	Senton
59	Cable Set Cabine 1	RG214		Senton
60	Cable Set Cabine 2	RG214		Senton
61	Cable Set Cabine 3	RG214		Senton
62	Shielded Room	No. 1	1451	Senton
63	Shielded Room	No. 2	1452	Senton
64	Semi-anechoic Chamber	No. 3	1453	Siemens
65	Shielded Room	No. 4	1454	Euroshield
66	Open Area Test Site	EG 1		Senton
67	Test fixture			Senton

7. Photographs Taken During Testing

**Test setup for radiated emission measurement 30 MHz – 2 GHz
(fully anechoic room)**



8. List of Measurements

FCC Part 74 Subpart H			
Section(s):	Test	Page(s)	Result
	Transmitter:		
74.861.e.1	Measured unmodulated carrier power		Pass
74.861.e.5	Operating bandwidth		Pass
74.861.e.6	Mean power of emissions 30 MHz - 2 GHz		Pass
74.861.e.6	Mean power of emissions 1 GHz - 2.0 GHz		Pass
74.861.e.4	Frequency tolerance		Pass
	Receiver		
15.107	AC Powerline Emissions		Pass
15.109	Radiated Spurious emissions		Pass

Carrier Power Measurement

Rules and Specifications:	2.1046 (a), 74.861 (e) (1)
Guide:	ANSI/TIA/EIA-603-1992, § 2.2.1

	Conducted measurement at antenna terminal
Test Site:	Radio Lab.
Distance:	Not applicable
Date of Test:	26 March 2003

Frequency (MHz)	Detector	Antenna Polarization	Analyzer Reading (dBm)	Correction Factor (dB)	Mean Power (dBm)	Limit (dBm)	Margin (dB)
175.000	Av	N/A	4.5	0	4.5	17.0	12.5
199.600	Av	N/A	4.7	0	4.7	17.0	12.3
213.200	Av	N/A	4.4	0	4.4	17.0	12.6

*** = No emissions above noise floor detected

Sample calculation of erp values:

$$\text{Mean Power (dBm)} = \text{Analyzer Reading (dBm)} + \text{Correction Factor (dB)}$$

Test equipment used (see equipment list for details):
02, 13, 14, 16, 38, 40 ,42, 57, 64, 67

Spurious Radiation Measurement 30 MHz – 2GHz

Rules and Specifications:	2.1053 (a), 74.861 (e) (6) (iii)
Guide:	ANSI/TIA/EIA-603-1992, § 2.2.12
Limit:	74.861 (e) (6) (iii)

Tested Frequency:	175.000 MHz
Test Site:	Fully anechoic chamber
Distance:	3 Meter

Frequency (MHz)	Detector	Antenna Polarization	Analyzer Reading (dBm)	Correction Factor (dB)	Mean Power (dBm)	Limit (dBm)	Margin (dB)
25-2000	AV	Hor/Ver	***				

*** = All emissions showed more than 20 dB margin to the limit

Sample calculation of erp values:

$$\text{Mean Power (dBm)} = \text{Analyzer Reading (dBm)} + \text{Correction Factor (dB)}$$

Test equipment used (see equipment list for details):
02, 13, 14, 16, 38, 40, 42, 57, 64, 67

Spurious Radiation Measurement 30 MHz – 2GHz

Rules and Specifications:	2.1053 (a), 74.861 (e) (6) (iii)
Guide:	ANSI/TIA/EIA-603-1992, § 2.2.12
Limit:	74.861 (e) (6) (iii)

Tested Frequency:	199.600 MHz
Test Site:	Fully anechoic chamber
Distance:	3 Meter

Frequency (MHz)	Detector	Antenna Polarization	Analyzer Reading (dBm)	Correction Factor (dB)	Mean Power (dBm)	Limit (dBm)	Margin (dB)
25-2000	AV	Hor/Ver	***				

*** = All emissions showed more than 20 dB margin to the limit

Sample calculation of erp values:

$$\text{Mean Power (dBm)} = \text{Analyzer Reading (dBm)} + \text{Correction Factor (dB)}$$

Test equipment used (see equipment list for details):
02, 13, 14, 16, 38, 40, 42, 57, 64, 67

Spurious Radiation Measurement 30 MHz – 2GHz

Rules and Specifications:	2.1053 (a), 74.861 (e) (6) (iii)
Guide:	ANSI/TIA/EIA-603-1992, § 2.2.12
Limit:	74.861 (e) (6) (iii)

Tested Frequency:	213,200 MHz
Test Site:	Fully anechoic chamber
Distance:	3 Meter

Frequency (MHz)	Detector	Antenna Polarization	Analyzer Reading (dBm)	Correction Factor (dB)	Mean Power (dBm)	Limit (dBm)	Margin (dB)
25-2000	AV	Hor/Ver	***				

*** = All emissions showed more than 20 dB margin to the limit

Sample calculation of erp values:

$$\text{Mean Power (dBm)} = \text{Analyzer Reading (dBm)} + \text{Correction Factor (dB)}$$

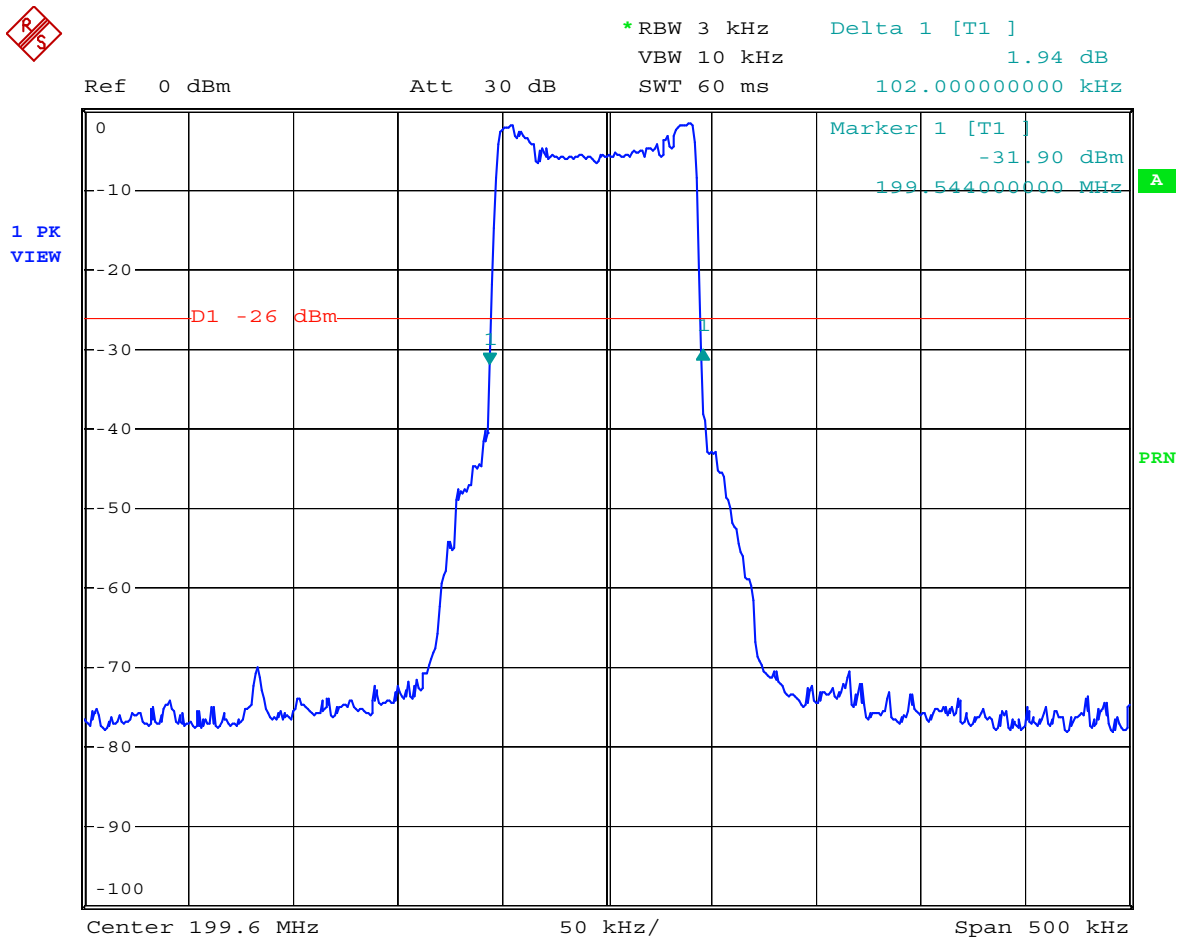
Test equipment used (see equipment list for details):

02, 13, 14, 16, 38, 40 ,42, 57, 64, 67

Measurement of Emission Masks (Occupied Bandwidth)

Rules and Specifications:	Sections 2.1049 (c) (1) and 74.861
Limits and Requirements:	ANSI TIA/EIA-603-1992
Nominal Frequency of EUT:	199.600 MHz

Test Procedure:	According to TIA/EIA.603-1992, § 2.2.11
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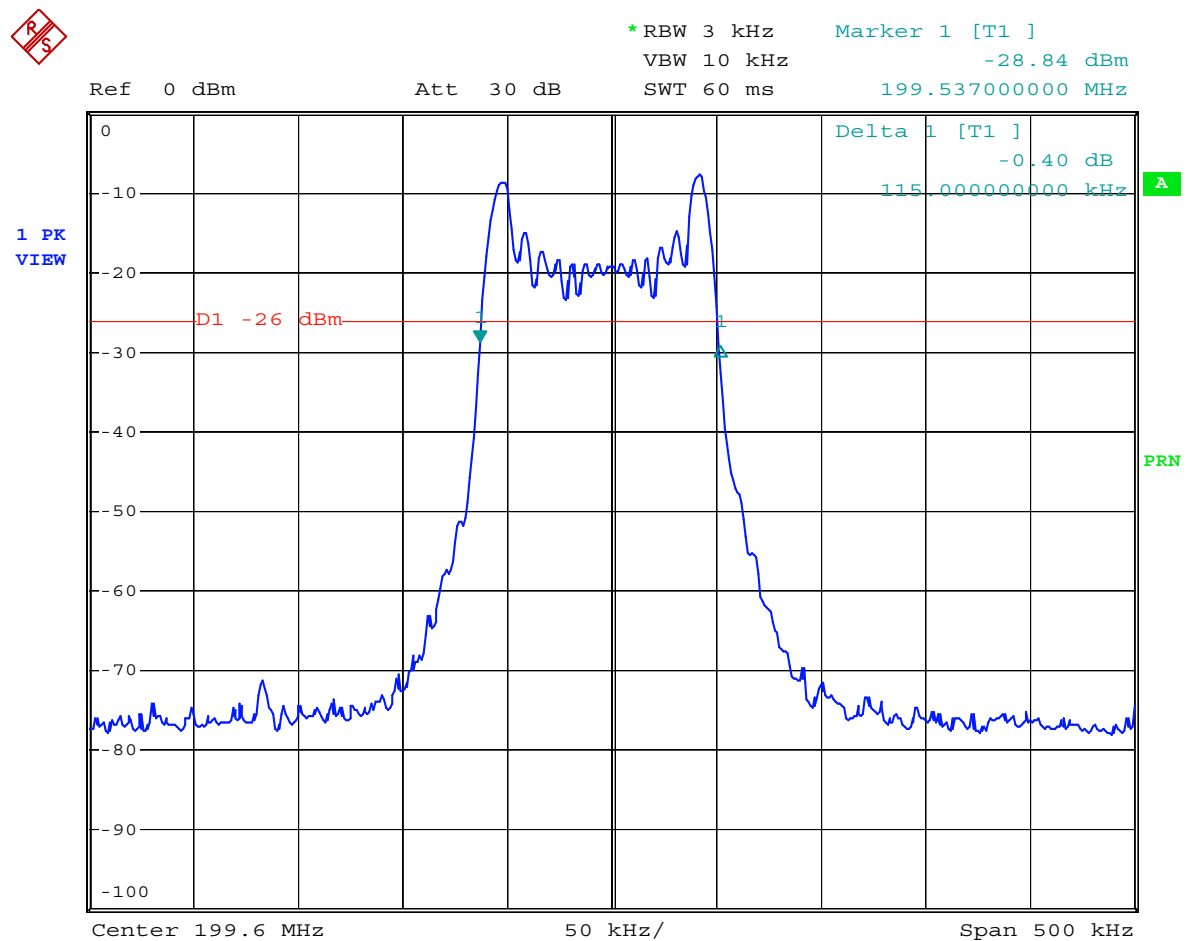
Comment A: UN30116 (SAMSON HT5) Occupied Bandwidth - 100 Hz
Date: 27.MAR.2003 15:06:17

Test Results:	See graph above
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Measurement of Emission Masks (Occupied Bandwidth)

Rules and Specifications:	Sections 2.1049 (c) (1) and 74.861
Limits and Requirements:	ANSI TIA/EIA-603-1992
Nominal Frequency of EUT:	199.600 MHz

Test Procedure:	According to TIA/EIA.603-1992, § 2.2.11
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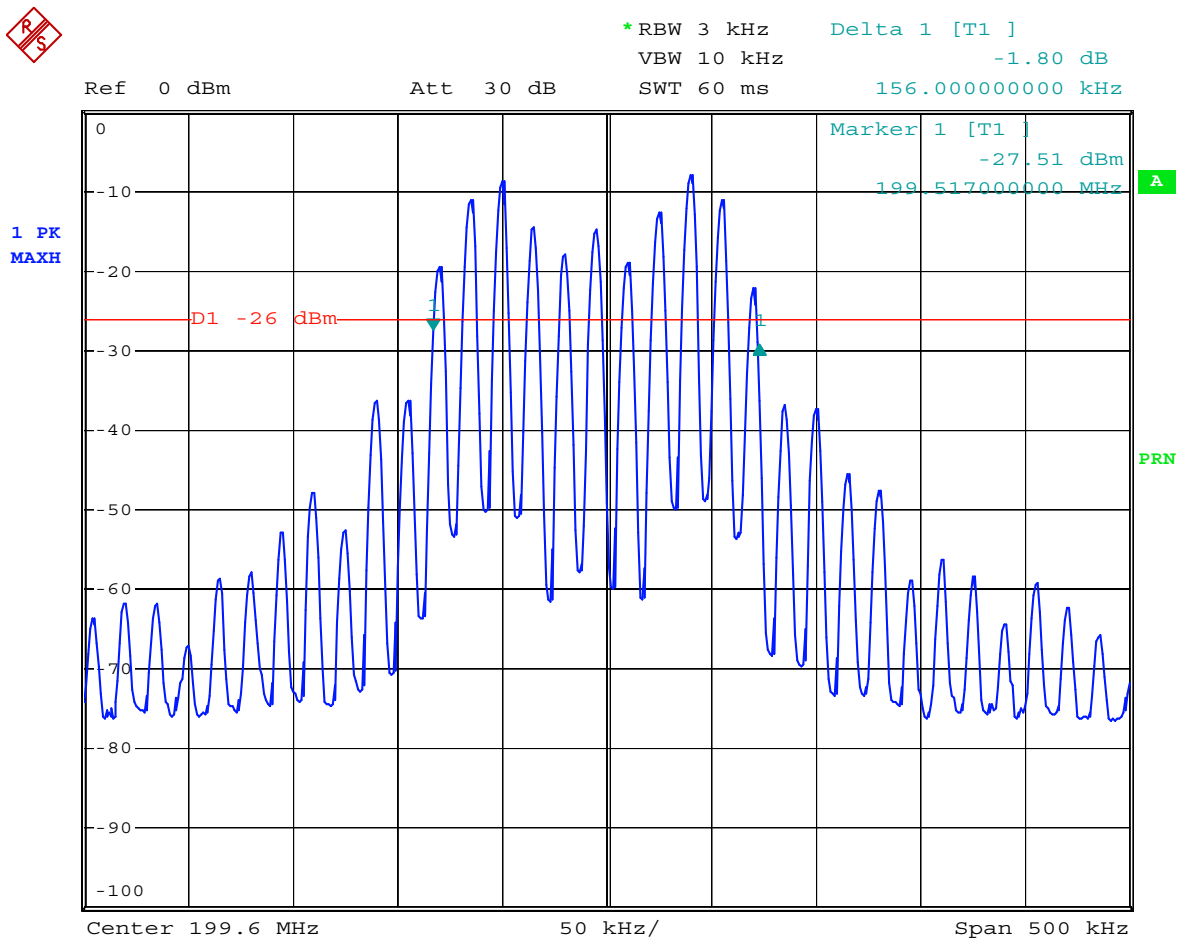
Comment A: UN30116 (SAMSON HT5) Occupied Bandwidth - 3 kHz
Date: 27.MAR.2003 15:08:00

Test Results:	See graph above
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Measurement of Emission Masks (Occupied Bandwidth)

Rules and Specifications:	Sections 2.1049 (c) (1) and 74.861
Limits and Requirements:	ANSI TIA/EIA-603-1992
Nominal Frequency of EUT:	199.600 MHz

Test Procedure:	According to TIA/EIA.603-1992, § 2.2.11
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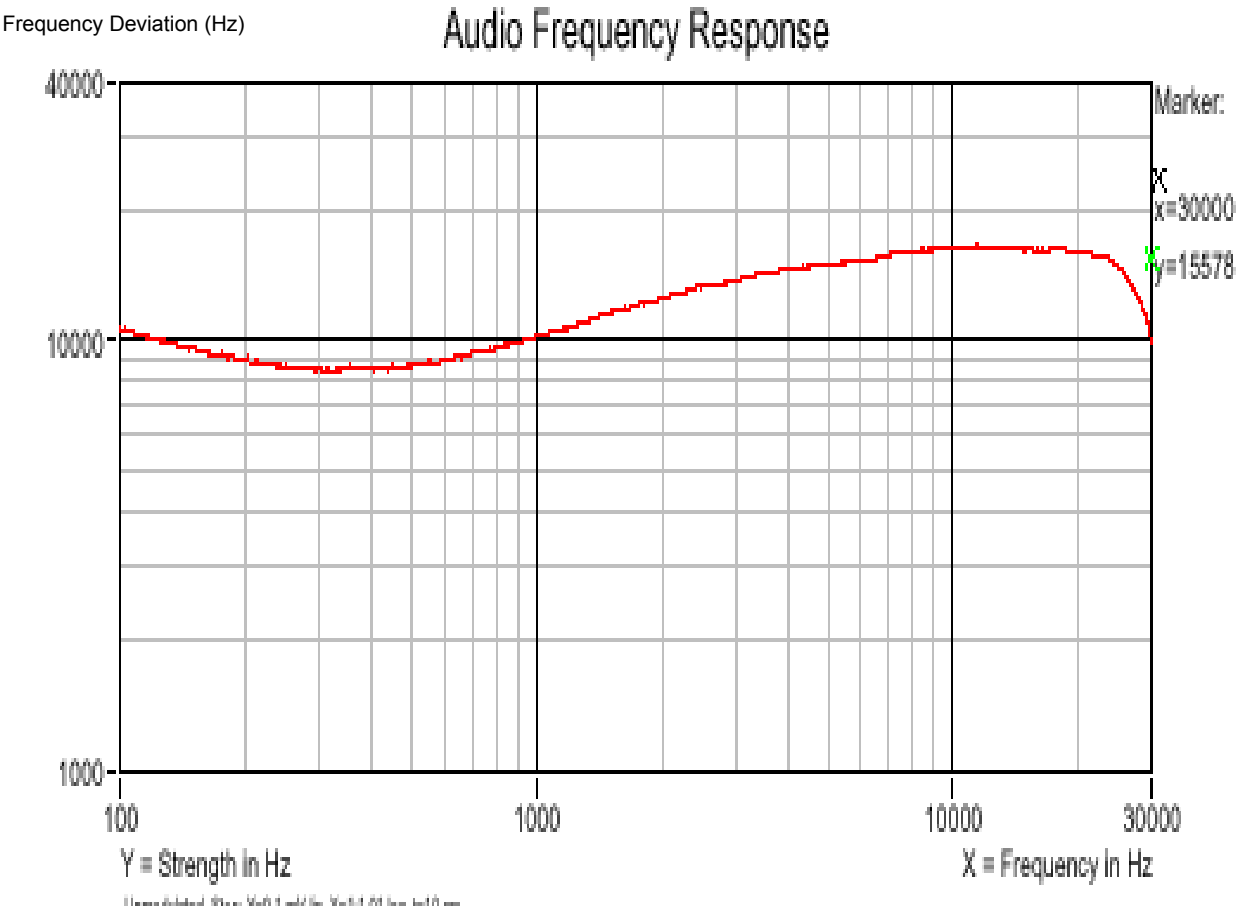
Comment A: UN30116 (SAMSON HT5) Occupied Bandwidth - 15 kHz
 Date: 27.MAR.2003 15:09:37

Test Results:	See graph above
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Measurement of Audio Frequency Response

Rules and Specifications:	Sections 2.1047 (a) and 74.861
Limits and Requirements:	ANSI TIA/EIA-603-1992
Nominal Frequency of EUT:	199.600 MHz

Test Procedure:	According to TIA/EIA.603-1992, § 2.2.6
	Note: The audio signal was coupled to the microphone inputof the transmitter via an audio isolation transformer

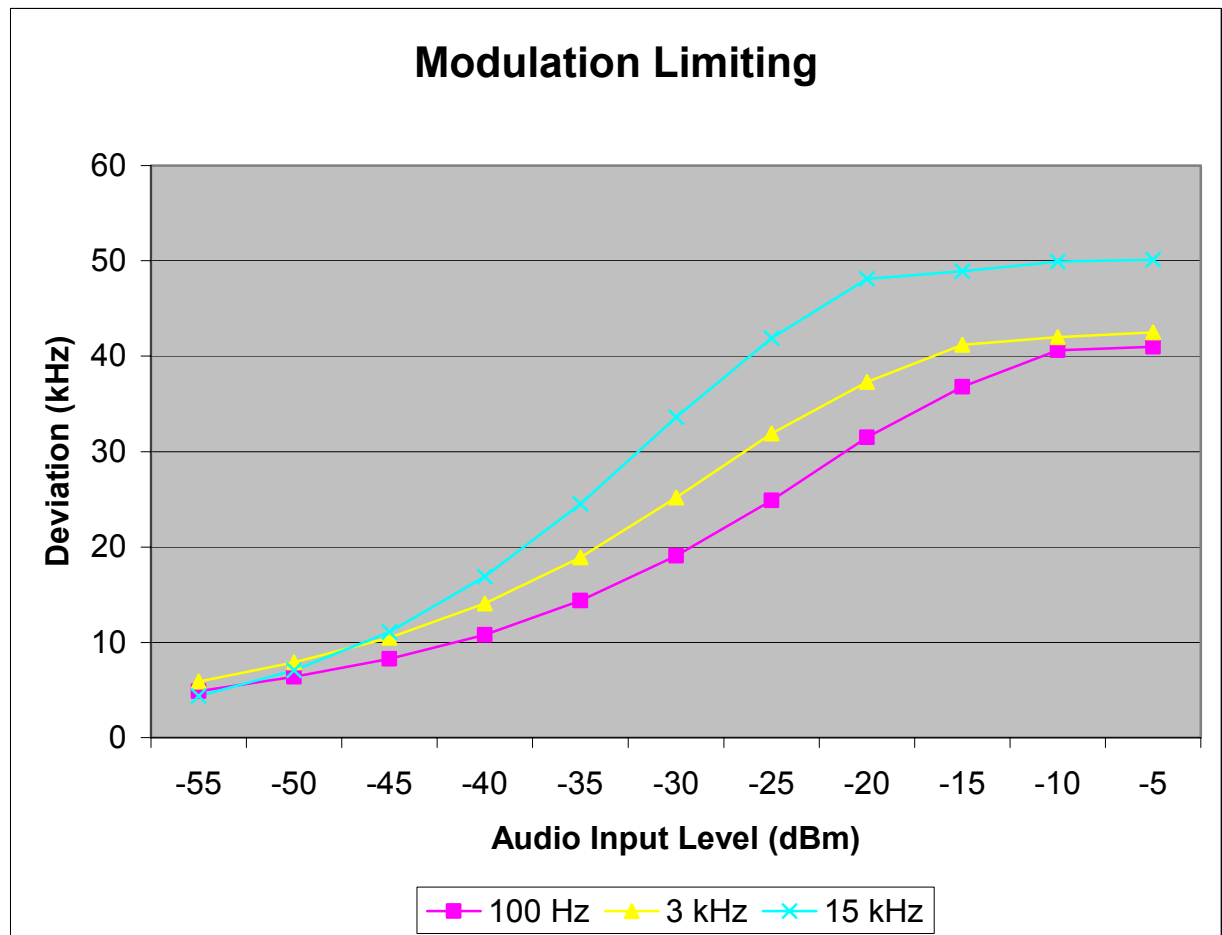


Test Results:	See graph above
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Measurement of Modulation Limiting

Rules and Specifications:	Sections 2.1047 (b) and 74.861
Limits and Requirements:	ANSI TIA/EIA-603-1992
Nominal Frequency of EUT:	199,600 MHz

Test Procedure:	According to TIA/EIA.603-1992, § 2.2.3
	Note: The audio signal was coupled to the microphone input of the transmitter via a direct connection



Test Results:	Pass	
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Type of Emission

Rules and Specifications:	Sections 2.1047 and 74.861
Limits and Requirements:	ANSI TIA/EIA-603-1992
Nominal Frequency of EUT:	799,600 MHz

	$B_n = 2M + 2DK$
	$M = 15 \text{ kHz}$
	$D = 50 \text{ kHz}$
	$K = 1$
	$B_n = 2(15 \text{ kHz}) + 2(50 \text{ kHz}) = 20 + 80 = 130 \text{ kHz}$

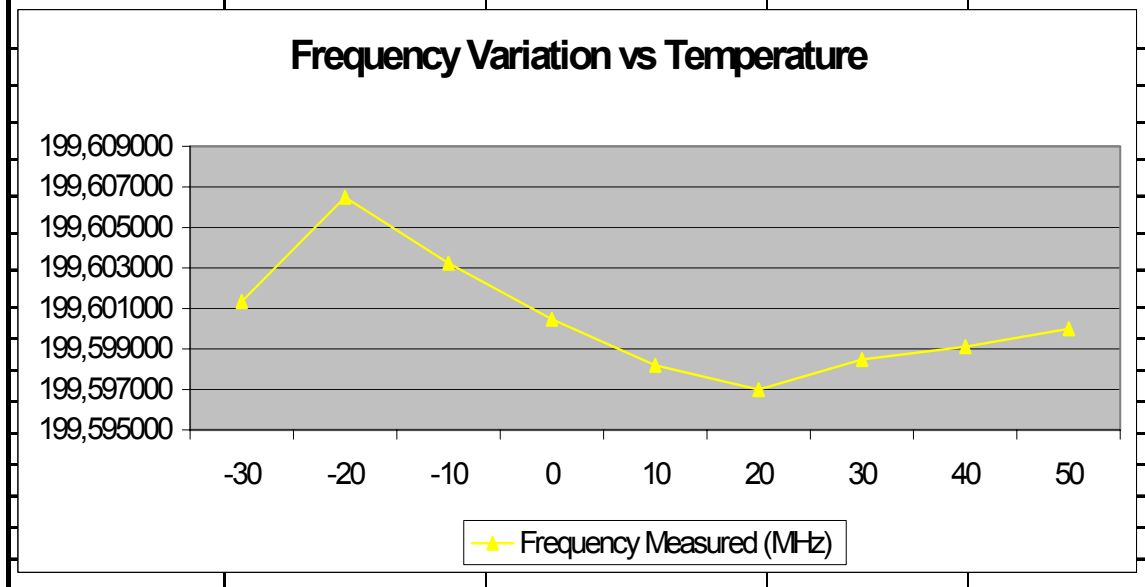
Type of Emission = 130KF3E

Measurement of Frequency Stability vs Temperature

Rules and Specifications:	Section 74.861 (e) (4), 2.1055
Limits and Requirements:	The frequency tolerance of the transmitter shall be 0.005 %
Nominal Frequency of EUT:	199.600 MHz

Temperature Variation Table

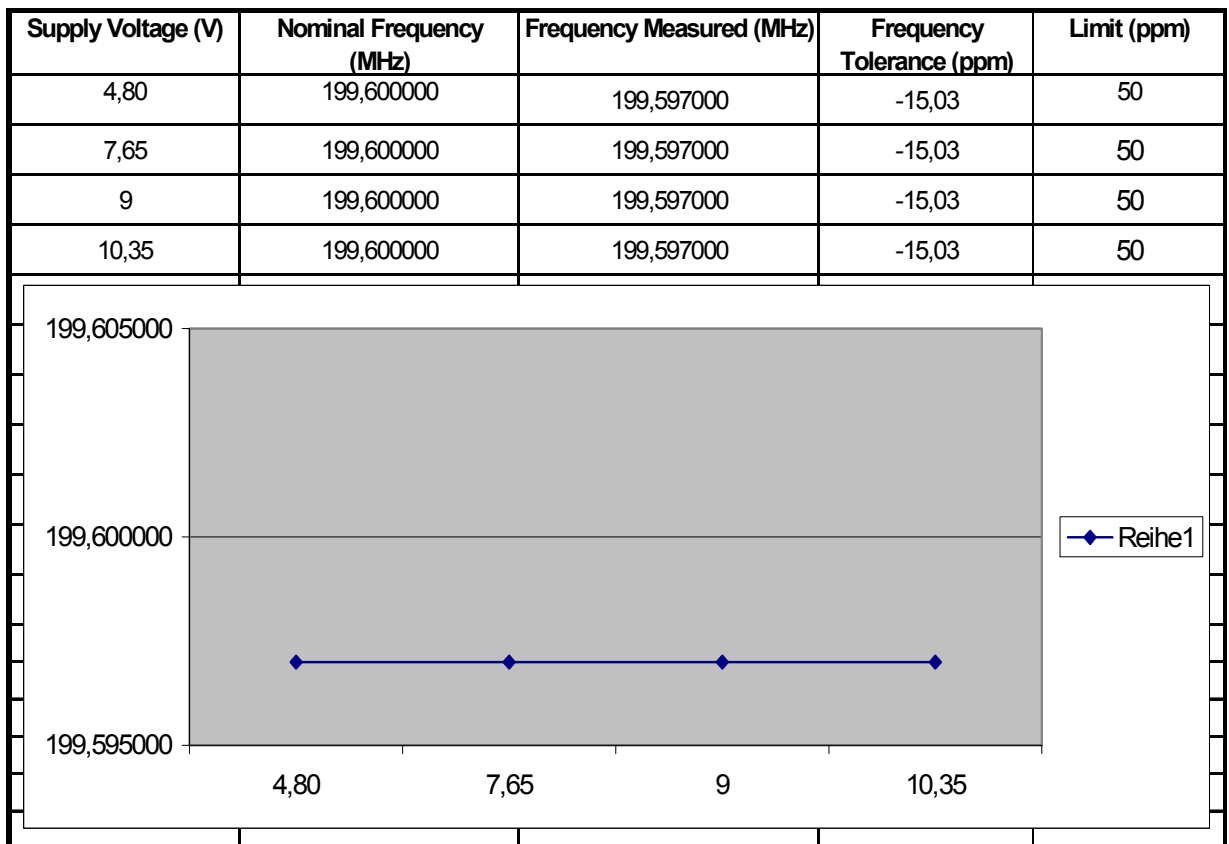
Temperature (°C)	Nominal Frequency (MHz)	Frequency Measured (MHz)	Frequency Tolerance (ppm)	Limit (ppm)
-30	199,600000	199,601350	6,76	50
-20	199,600000	199,606500	32,57	50
-10	199,600000	199,603230	16,18	50
0	199,600000	199,600460	2,30	50
10	199,600000	199,598180	-9,12	50
20	199,600000	199,597000	-15,03	50
30	199,600000	199,598470	-7,67	50
40	199,600000	199,599110	-4,46	50
50	199,600000	199,600000	0,00	50



Measurement of Frequency Stability vs Supply Voltage

Rules and Specifications:	Sections 74.861 (e) (4), 2.1055 (d)
Limits and Requirements:	The frequency tolerance of the transmitter shall be 0.005 %
Nominal Frequency of EUT:	199.600 MHz
Battery end-point:	4.80 V

Voltage Variation Table



9. Referenced Regulations

All tests were performed with reference to the following regulations and standards:

☒	FCC Part 15 Subpart A	Code of Regulations Part 15 (Radio Frequency Devices), Subpart A (General) of the Federal Communication Commission (FCC)	March 13, 2003
☐	FCC Part 15 Subpart B	Code of Regulations Part 15 (Radio Frequency Devices), Subpart B (Unintentional Radiators) of the Federal Communication Commission (FCC)	March 13, 2003
☐	FCC Part 15 Subpart C	Code of Regulations Part 15 (Radio Frequency Devices), Subpart C (Intentional Radiators) of the Federal Communication Commission (FCC)	March 13, 2003
☒	FCC Part 74 Subpart H	Code of Regulations Part 74 (Radio Frequency Devices), Subpart H (Low Power Auxiliary Stations) of the Federal Communication Commission (FCC)	March 13, 2003
☒	ANSI C63.4	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz - 40 GHz	October, 1992
☐	RSS-210	Radio Standards Specification RSS-210 Issue 2 for Low Power Licence-Exempt Radiocommunication Devices of Industry Canada	February 24, 1996

10. Charts taken during testing

Radiated Power Test 25 MHz - 200 MHz acc. to FCC Part 74 Subpart H

Model:

HT 5

Serial no.:

175.000 MHz

Applicant:

SAMSON Technologies Corp.

Test site:

Fully anechoic room, cabin no. 2

Tested on:

Test distance 3 meters
Horizontal Polarization

Date of test:

03/26/2003

Operator:

J. Roidt

Test performed:

automatically

File name:

default.emi

Comment:

TX without modulation

Detector:

Peak

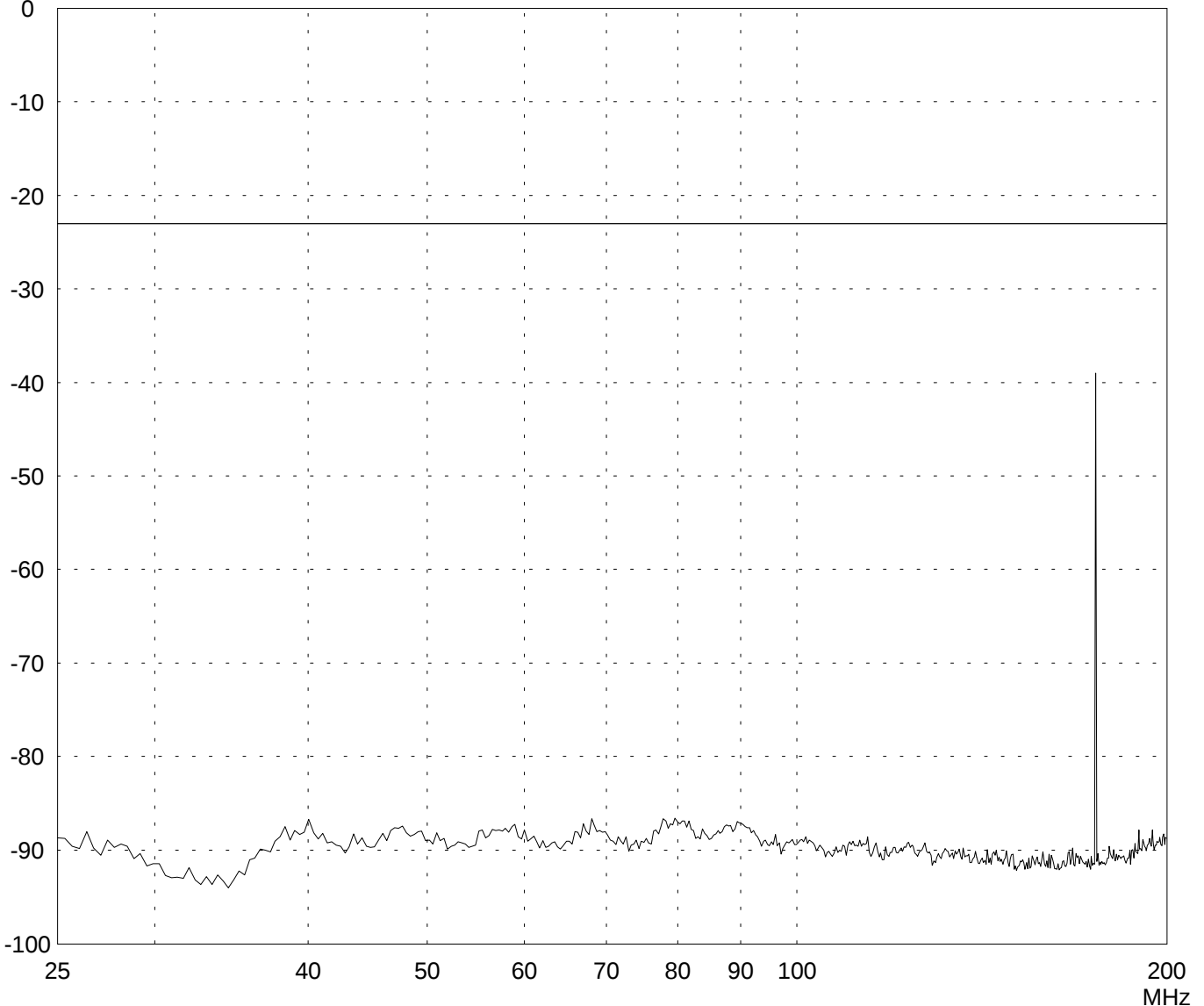
List of values:

10 dB Margin

50 Subranges

dBm
0

Limit1: FCC §74.861 Transducer: Substitution (H)



Result:

Prescan

Project file:

56408-30116

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Radiated Power Test 25 MHz - 200 MHz acc. to FCC Part 74 Subpart H

Model:

HT 5

Serial no.:

175.000 MHz

Applicant:

SAMSON Technologies Corp.

Test site:

Fully anechoic room, cabin no. 2

Tested on:

Test distance 3 meters
Vertical Polarization

Date of test:

03/26/2003

Operator:

J. Roidt

Test performed:

automatically

File name:

default.emi

Comment:

TX without modulation

Detector:

Peak

List of values:

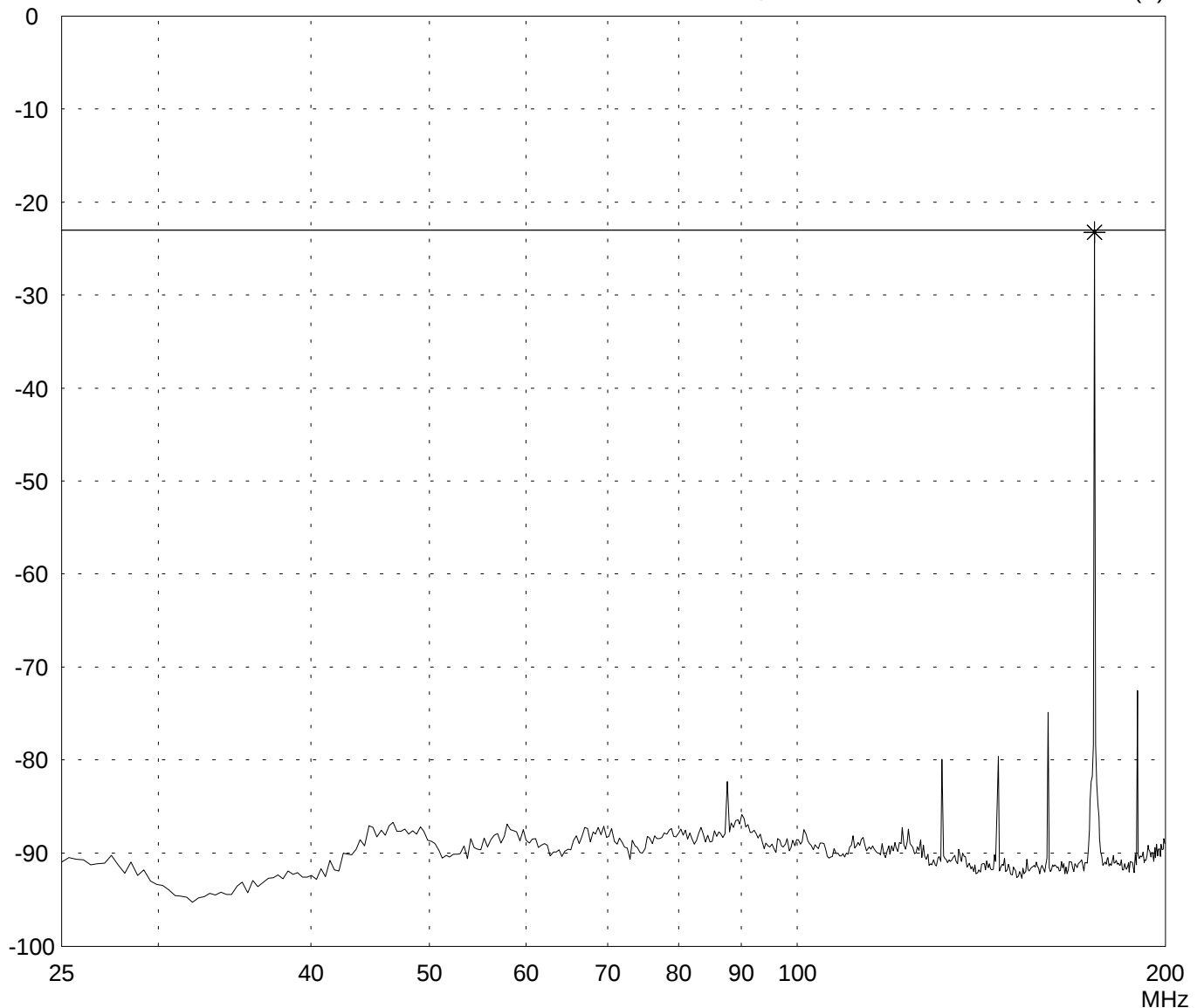
10 dB Margin

50 Subranges

dBm

Limit1: FCC §74.861

Transducer: Substitution (V)



Result:

Prescan

Project file:

56408-30116

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Radiated Power Test 200 MHz - 1 GHz acc. to FCC Part 74 Subpart H

Model:

HT 5

Serial no.:

175.000 MHz

Applicant:

SAMSON Technologies Corp.

Test site:

Fully anechoic room, cabin no. 2

Tested on:

Test distance 3 meters
Horizontal Polarization

Date of test:

03/26/2003

Operator:

J. Roidt

Test performed:

automatically

File name:

default.emi

Comment:

TX without modulation

Detector:

Peak

List of values:

10 dB Margin

50 Subranges

dBm

Limit1: FCC §74.861

Transducer: Substitution (H)

0

-10

-20

-30

-40

-50

-60

-70

-80

-90

-100

200

300

400

500

600

700

800

900

1000
MHz

Result:

Prescan

Project file:

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Pages

Radiated Power Test 200 MHz - 1 GHz acc. to FCC Part 74 Subpart H

Model:

HT 5

Serial no.:

175.000 MHz

Applicant:

SAMSON Technologies Corp.

Test site:

Fully anechoic room, cabin no. 2

Tested on:

Test distance 3 meters
Vertical Polarization

Date of test:

03/26/2003

Operator:

J. Roidt

Test performed:

automatically

File name:

default.emi

Comment:

TX without modulation

Detector:

Peak

List of values:

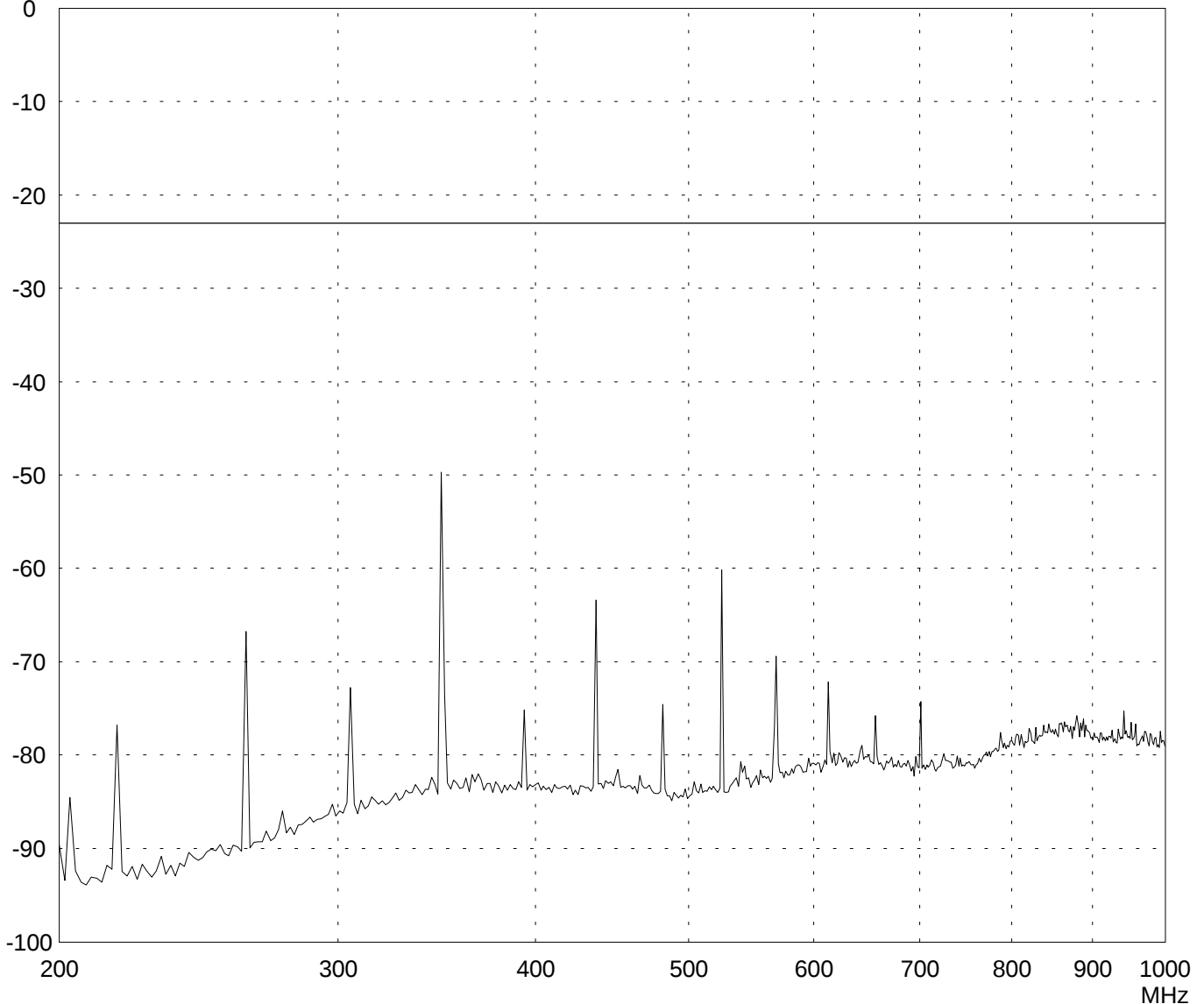
10 dB Margin

50 Subranges

dBm
0

Limit1: FCC §74.861

Transducer: Substitution (V)



Result:

Prescan

Project file:

56408-30116

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Radiated Power Test 1 GHz - 2 GHz acc. to FCC Part 74 Subpart H

Model:

HT 5

Serial no.:

175.000 MHz

Applicant:

SAMSON Technologies Corp.

Test site:

Fully anechoic room, cabin no. 2

Tested on:

Test distance 3 metres
Horizontal Polarization

Date of test:

03/26/2003

Operator:

J. Roidt

Test performed:

automatically

File name:

default.emi

Comment:

TX without modulation

Detector:

Peak

List of values:

10 dB Margin

50 Subranges

dBm

0

Limit1: FCC §74.861

Transducer: Substitution (H)

-10

-20

-30

-40

-50

-60

-70

-80

-90

-100

1000

2000

MHz

Result:

Prescan

Project file:

56408-30116

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Pages

Radiated Power Test 1 GHz - 2 GHz acc. to FCC Part 74 Subpart H

Model:

HT 5

Serial no.:

175.000 MHz

Applicant:

SAMSON Technologies Corp.

Test site:

Fully anechoic room, cabin no. 2

Tested on:

Test distance 3 metres
Vertical Polarization

Date of test:

03/26/2003

Operator:

J. Roidt

Test performed:

automatically

File name:

default.emi

Comment:

TX without modulation

Detector:

Peak

List of values:

10 dB Margin

50 Subranges

dBm

0

Limit1: FCC §74.861

Transducer: Substitution (V)

-10

-20

-30

-40

-50

-60

-70

-80

-90

-100

1000

2000

MHz

Result:

Prescan

Project file:

56408-30116

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Pages

Radiated Power Test 25 MHz - 200 MHz acc. to FCC Part 74 Subpart H

Model:

HT 5

Serial no.:

199.600 MHz

Applicant:

SAMSON Technologies Corp.

Test site:

Fully anechoic room, cabin no. 2

Tested on:

Test distance 3 meters
Horizontal Polarization

Date of test:

03/26/2003

Operator:

J. Roidt

Test performed:

automatically

File name:

default.emi

Comment:

TX without modulation

Detector:

Peak

List of values:

Selected by hand

dBm

Limit1: FCC §74.861

Transducer: Substitution (H)

0

-10

-20

-30

-40

-50

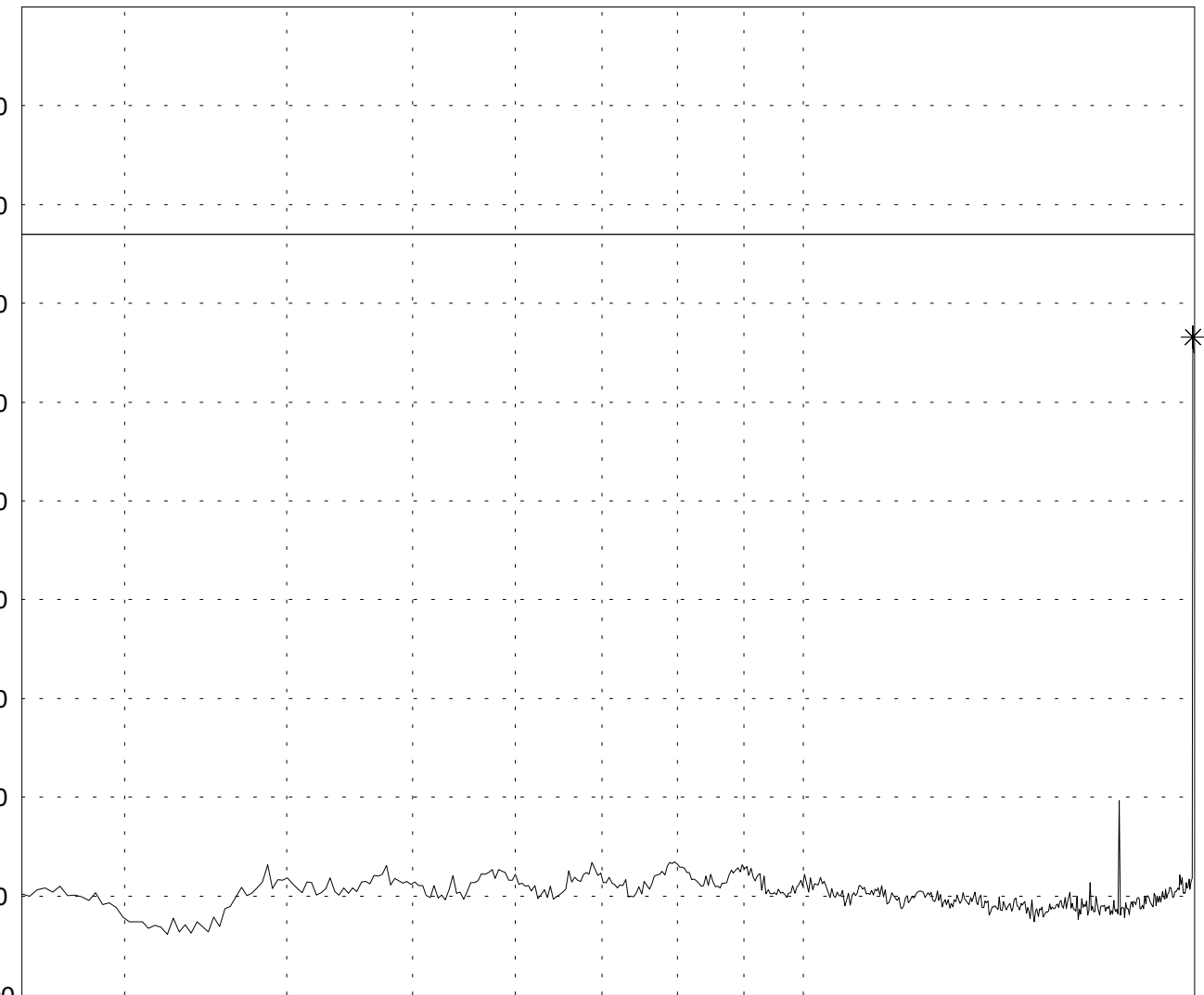
-60

-70

-80

-90

-100



25

40

50

60

70

80

90

100

200

MHz

Result:

Prescan

Project file:

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Pages

Radiated Power Test 25 MHz - 200 MHz acc. to FCC Part 74 Subpart H

Model:

HT 5

Serial no.:

199.600 MHz

Applicant:

SAMSON Technologies Corp.

Test site:

Fully anechoic room, cabin no. 2

Tested on:

Test distance 3 meters
Vertical Polarization

Date of test:

03/26/2003

Operator:

J. Roidt

Test performed:

automatically

File name:

default.emi

Comment:

TX without modulation

Detector:

Peak

List of values:

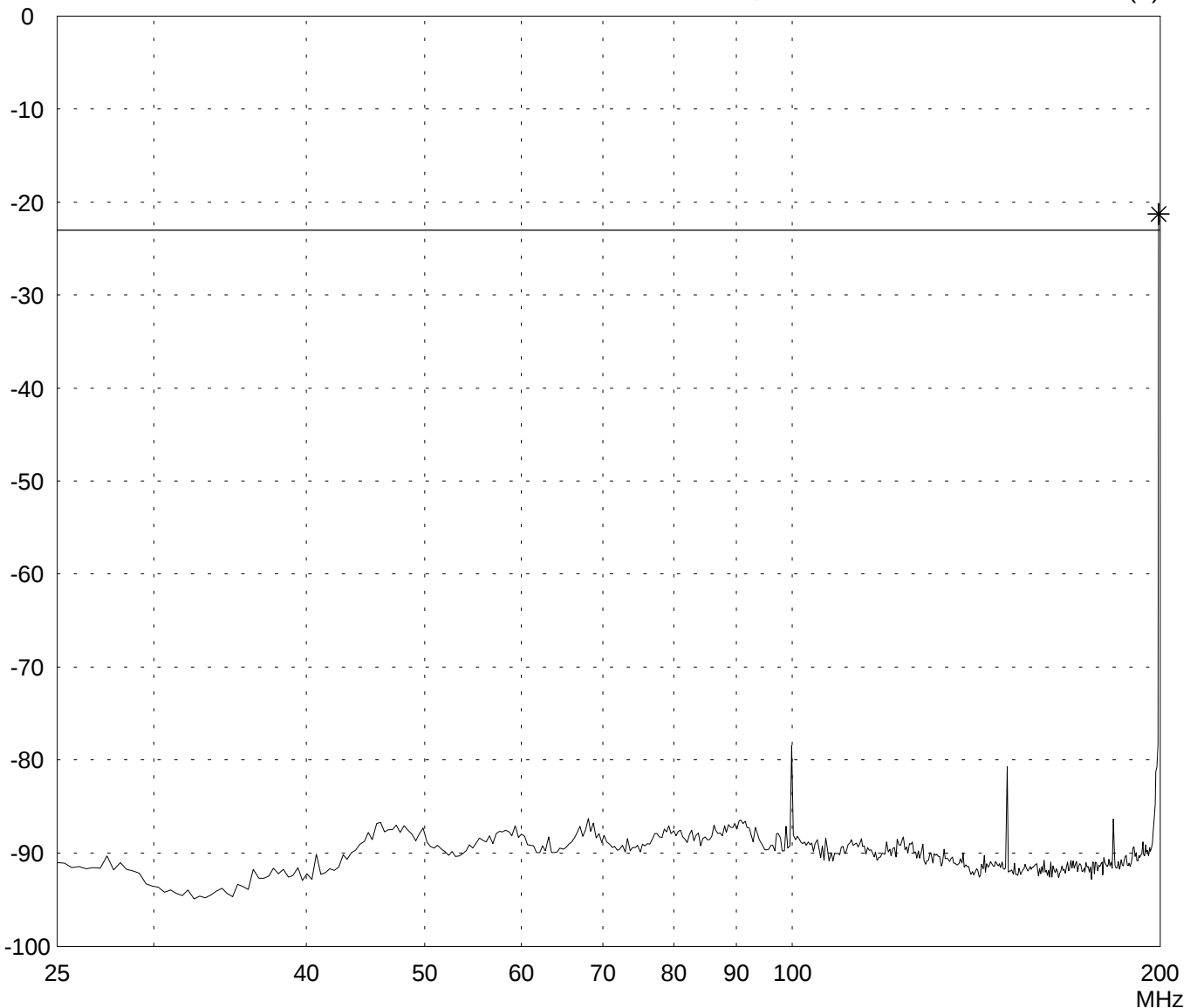
10 dB Margin

50 Subranges

dBm

Limit1: FCC §74.861

Transducer: Substitution (V)



Result:

Prescan

Project file:

56408-30116

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Radiated Power Test 200 MHz - 1 GHz acc. to FCC Part 74 Subpart H

Model:

HT 5

Serial no.:

199.600 MHz

Applicant:

SAMSON Technologies Corp.

Test site:

Fully anechoic room, cabin no. 2

Tested on:

Test distance 3 meters
Horizontal Polarization

Date of test:

03/26/2003

Operator:

J. Roidt

Test performed:

automatically

File name:

default.emi

Comment:

TX without modulation

Detector:

Peak

List of values:

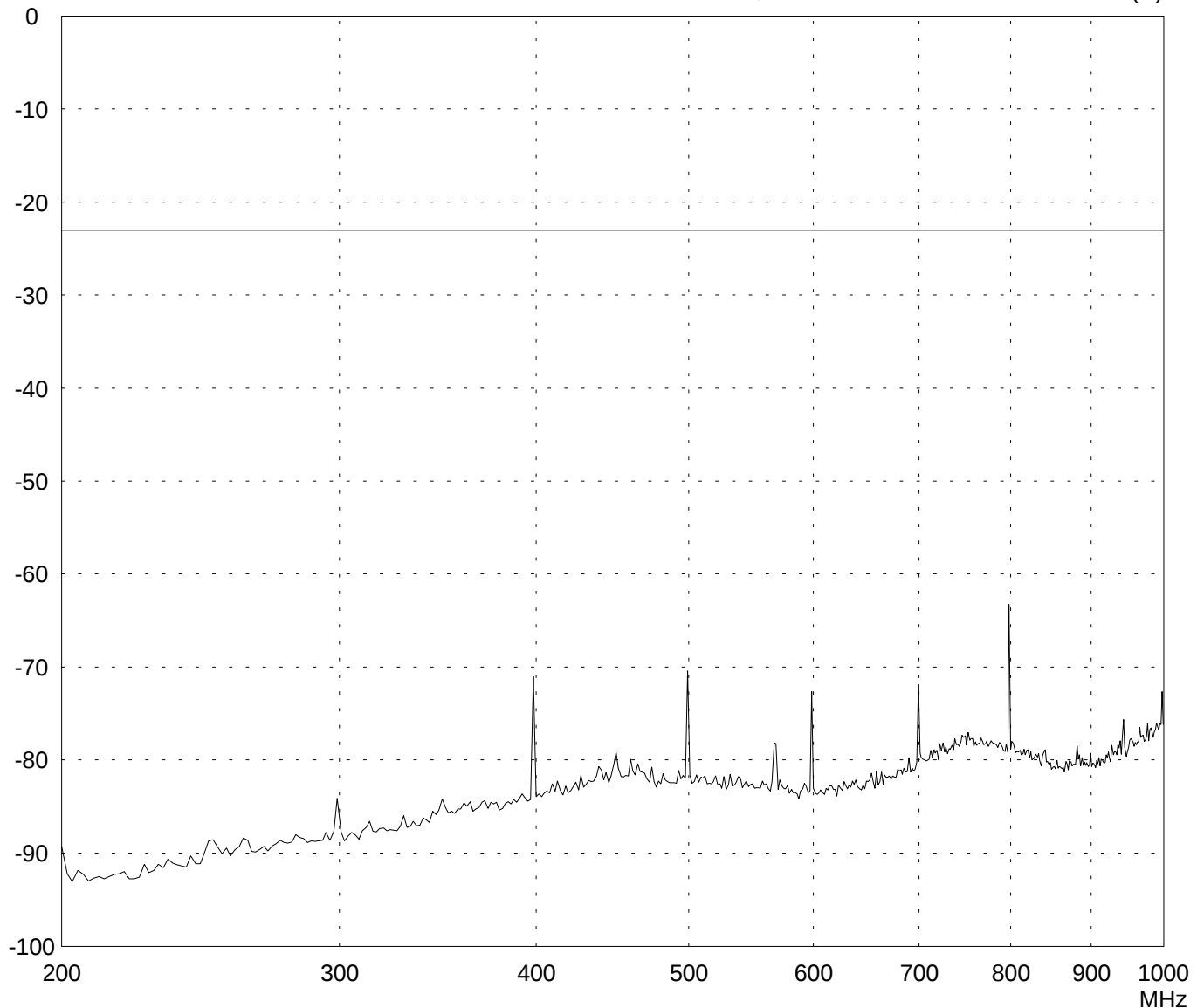
10 dB Margin

50 Subranges

dBm

Limit1: FCC §74.861

Transducer: Substitution (H)



Result:

Prescan

Project file:

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Pages

Radiated Power Test 200 MHz - 1 GHz acc. to FCC Part 74 Subpart H

Model:

HT 5

Serial no.:

199.600 MHz

Applicant:

SAMSON Technologies Corp.

Test site:

Fully anechoic room, cabin no. 2

Tested on:

Test distance 3 meters
Vertical Polarization

Date of test:

03/26/2003

Operator:

J. Roidt

Test performed:

automatically

File name:

default.emi

Comment:

TX without modulation

Detector:

Peak

List of values:

10 dB Margin

50 Subranges

dBm

Limit1: FCC §74.861

Transducer: Substitution (V)

0

-10

-20

-30

-40

-50

-60

-70

-80

-90

-100

200

300

400

500

600

700

800

900

1000
MHz

Result:

Prescan

Project file:

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Pages

Radiated Power Test 1 GHz - 2 GHz acc. to FCC Part 74 Subpart H

Model:

HT 5

Serial no.:

199.600 MHz

Applicant:

SAMSON Technologies Corp.

Test site:

Fully anechoic room, cabin no. 2

Tested on:

Test distance 3 metres
Horizontal Polarization

Date of test:

03/26/2003

Operator:

J. Roidt

Test performed:

automatically

File name:

default.emi

Comment:

TX without modulation

Detector:

Peak

List of values:

10 dB Margin

50 Subranges

dBm

Limit1: FCC §74.861

Transducer: Substitution (H)

0

-10

-20

-30

-40

-50

-60

-70

-80

-90

-100

1000

2000
MHz

Result:

Prescan

Project file:

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Pages

Radiated Power Test 1 GHz - 2 GHz acc. to FCC Part 74 Subpart H

Model:

HT 5

Serial no.:

199.600 MHz

Applicant:

SAMSON Technologies Corp.

Test site:

Fully anechoic room, cabin no. 2

Tested on:

Test distance 3 metres
Vertical Polarization

Date of test:

03/26/2003

Operator:

J. Roidt

Test performed:

automatically

File name:

default.emi

Comment:

TX without modulation

Detector:

Peak

List of values:

10 dB Margin

50 Subranges

dBm

0

Limit1: FCC §74.861

Transducer: Substitution (V)

-10

-20

-30

-40

-50

-60

-70

-80

-90

-100

1000

2000

MHz

Result:

Prescan

Project file:

56408-30116

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Pages

Radiated Power Test 25 MHz - 200 MHz acc. to FCC Part 74 Subpart H

Model:

HT 5

Serial no.:

213.200 MHz

Applicant:

SAMSON Technologies Corp.

Test site:

Fully anechoic room, cabin no. 2

Tested on:

Test distance 3 meters
Horizontal Polarization

Date of test:

03/26/2003

Operator:

J. Roidt

Test performed:

automatically

File name:

default.emi

Comment:

TX without modulation

Detector:

Peak

List of values:

10 dB Margin

50 Subranges

dBm

Limit1: FCC §74.861

Transducer: Substitution (H)

0

-10

-20

-30

-40

-50

-60

-70

-80

-90

-100

25

40

50

60

70

80

90

100

200
MHz

Result:

Prescan

Project file:

56408-30116

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Pages

Radiated Power Test 25 MHz - 200 MHz acc. to FCC Part 74 Subpart H

Model:

HT 5

Serial no.:

213.200 MHz

Applicant:

SAMSON Technologies Corp.

Test site:

Fully anechoic room, cabin no. 2

Tested on:

Test distance 3 meters
Vertical Polarization

Date of test:

03/26/2003

Operator:

J. Roidt

Test performed:

automatically

File name:

default.emi

Comment:

TX without modulation

Detector:

Peak

List of values:

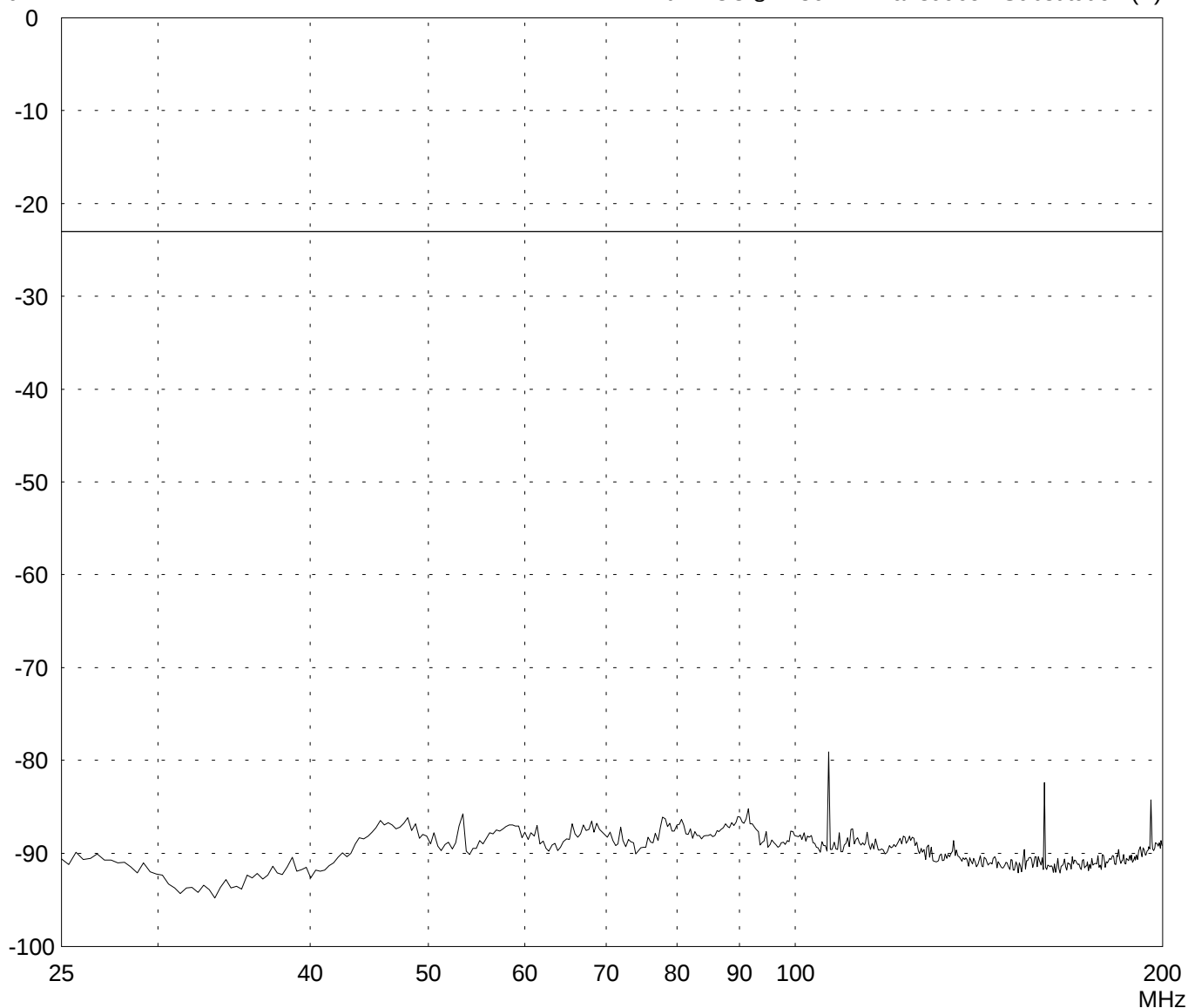
10 dB Margin

50 Subranges

dBm

Limit1: FCC §74.861

Transducer: Substitution (V)



Result:

Prescan

Project file:

56408-30116

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Radiated Power Test 200 MHz - 1 GHz acc. to FCC Part 74 Subpart H

Model:

HT 5

Serial no.:

213.200 MHz

Applicant:

SAMSON Technologies Corp.

Test site:

Fully anechoic room, cabin no. 2

Tested on:

Test distance 3 meters
Horizontal Polarization

Date of test:

03/26/2003

Operator:

J. Roidt

Test performed:

automatically

File name:

default.emi

Comment:

TX without modulation

Detector:

Peak

List of values:

Selected by hand

dBm

Limit1: FCC §74.861

Transducer: Substitution (H)

0

-10

-20

-30

-40

-50

-60

-70

-80

-90

-100

200

300

400

500

600

700

800

900

1000
MHz

Result:

Prescan

Project file:

56408-30116

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Pages

Radiated Power Test 200 MHz - 1 GHz acc. to FCC Part 74 Subpart H

Model:

HT 5

Serial no.:

213.200 MHz

Applicant:

SAMSON Technologies Corp.

Test site:

Fully anechoic room, cabin no. 2

Tested on:

Test distance 3 meters
Vertical Polarization

Date of test:

03/26/2003

Operator:

J. Roidt

Test performed:

automatically

File name:

default.emi

Comment:

TX without modulation

Detector:

Peak

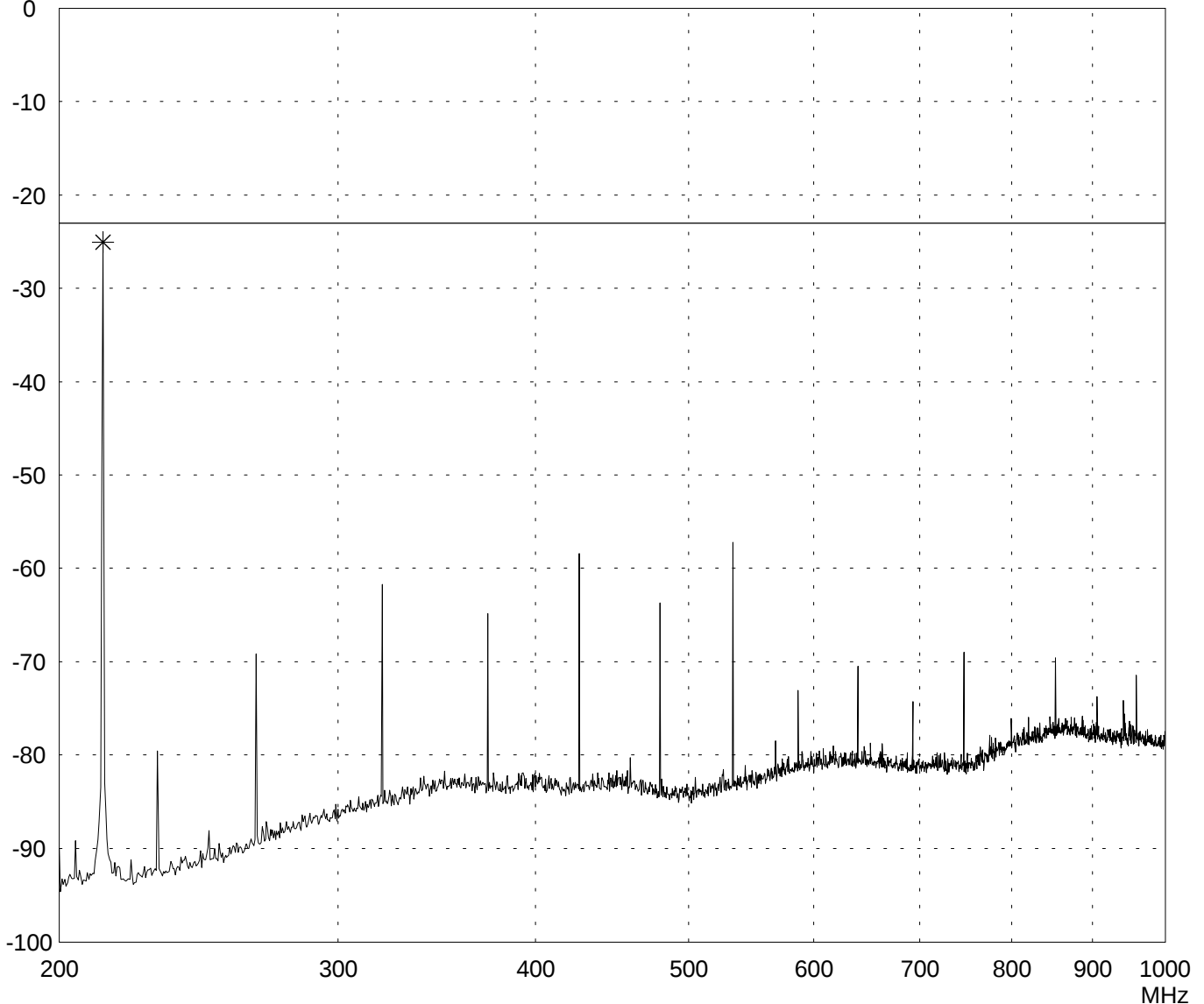
List of values:

10 dB Margin

50 Subranges

dBm
0

Limit1: FCC §74.861 Transducer: Substitution (V)



Result:

Prescan

Project file:

56408-30116

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Radiated Power Test 1 GHz - 2 GHz acc. to FCC Part 74 Subpart H

Model:

HT 5

Serial no.:

213.200 MHz

Applicant:

SAMSON Technologies Corp.

Test site:

Fully anechoic room, cabin no. 2

Tested on:

Test distance 3 metres
Horizontal Polarization

Date of test:

03/26/2003

Operator:

J. Roidt

Test performed:

automatically

File name:

default.emi

Comment:

TX without modulation

Detector:

Peak

List of values:

10 dB Margin

50 Subranges

dBm

0

Limit1: FCC §74.861

Transducer: Substitution (H)

-10

-20

-30

-40

-50

-60

-70

-80

-90

-100

1000

2000
MHz

Result:

Prescan

Project file:

56408-30116

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Pages

Radiated Power Test 1 GHz - 2 GHz acc. to FCC Part 74 Subpart H

Model:

HT 5

Serial no.:

213.200 MHz

Applicant:

SAMSON Technologies Corp.

Test site:

Fully anechoic room, cabin no. 2

Tested on:

Test distance 3 metres
Vertical Polarization

Date of test:

03/26/2003

Operator:

J. Roidt

Test performed:

automatically

File name:

default.emi

Comment:

TX without modulation

Detector:

Peak

List of values:

10 dB Margin

50 Subranges

dBm

0

Limit1: FCC §74.861

Transducer: Substitution (V)

-10

-20

-30

-40

-50

-60

-70

-80

-90

-100

1000

2000

MHz

Result:

Prescan

Project file:

56408-30116

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Pages

Radiated Emission Test 30 MHz - 200 MHz acc. to FCC Part 15 (Fully Anechoic Chamber)

Model:
SR 55

Serial no.:
sample with modification

Applicant:
Samson Technologies Corp.

Test site:
Fully anechoic room, cabin no. 2

Tested on:
Test distance 3 metres
Horizontal Polarization

Date of test: 03/27/2003 Operator: M. Steindl

Test performed: automatically File name: default.emi

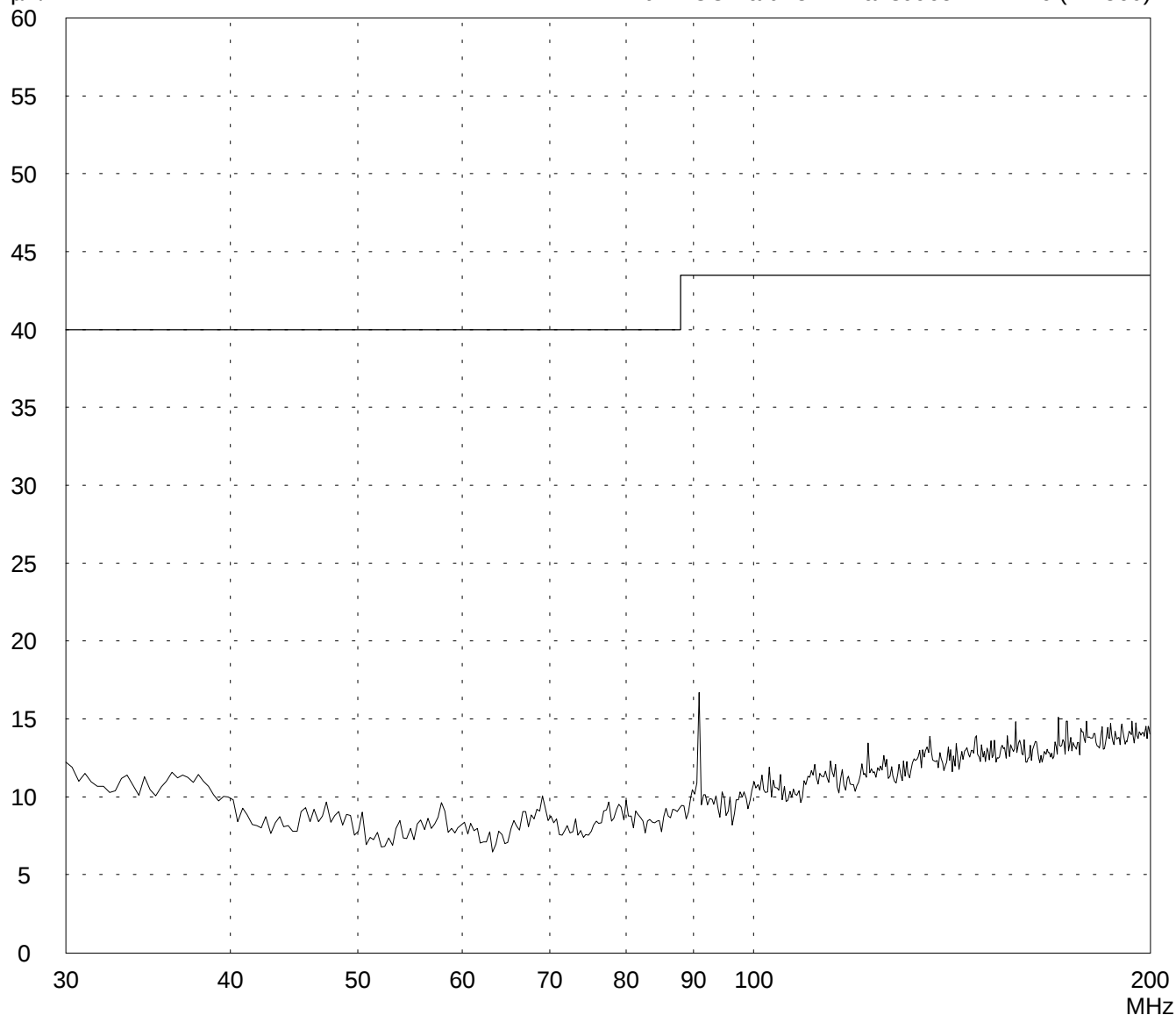
Comment:
- RX -mode
-
-
-
-

Detector:
Peak

List of values:
10 dB Margin 50 Subranges

$\text{dB}\mu\text{V/m}$
60

Limit1: FCC Part 15 Transducer: HK 116 (A-1560)



Result:
Prescan

Project file:
56408-30116

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Radiated Emission Test 30 MHz - 200 MHz acc. to FCC Part 15 (Fully Anechoic Chamber)

Model:

SR 55

Serial no.:

sample with modification

Applicant:

Samson Technologies Corp.

Test site:

Fully anechoic room, cabin no. 2

Tested on:

Test distance 3 metres
Vertical Polarization

Date of test:

03/27/2003

Operator:

M. Steindl

Test performed:

automatically

File name:

default.emi

Comment:

- RX -mode

-

-

-

-

-

Detector:

Peak

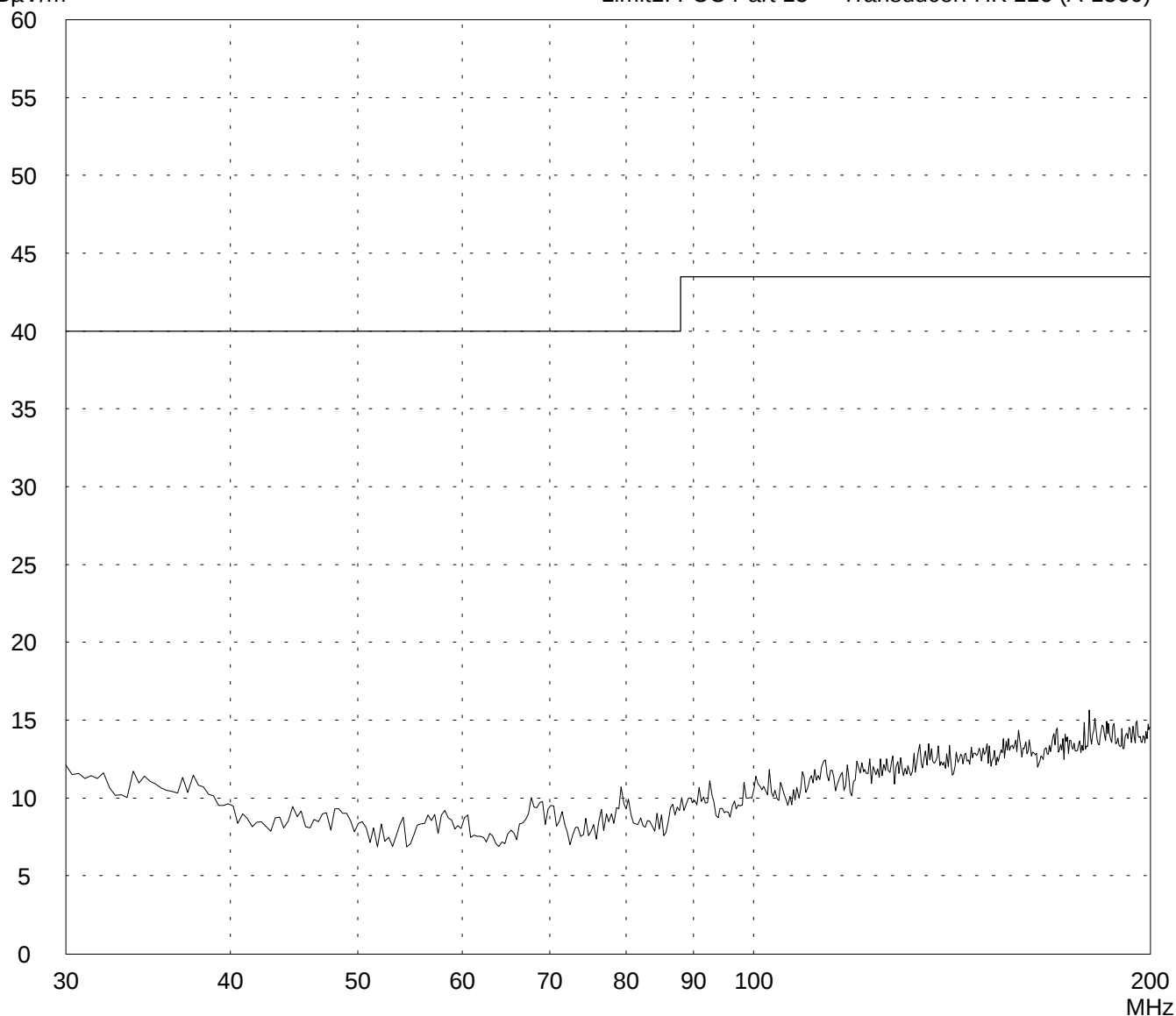
List of values:

10 dB Margin

50 Subranges

$\text{dB}\mu\text{V/m}$

Limit1: FCC Part 15 Transducer: HK 116 (A-1560)



Result:

Prescan

Project file:

56408-30116

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Radiated Emission Test 200 MHz - 1 GHz acc. to FCC Part 15 (Fully Anechoic Chamber)

Model:

SR 55

Serial no.:

sample with modification

Applicant:

Samson Technologies Corp.

Test site:

Fully anechoic room, cabin no. 2

Tested on:

Test distance 3 metres
Horizontal Polarization

Date of test:

03/27/2003

Operator:

M. Steindl

Test performed:

automatically

File name:

default.emi

Comment:

- RX -mode

-

-

-

-

-

Detector:

Peak

List of values:

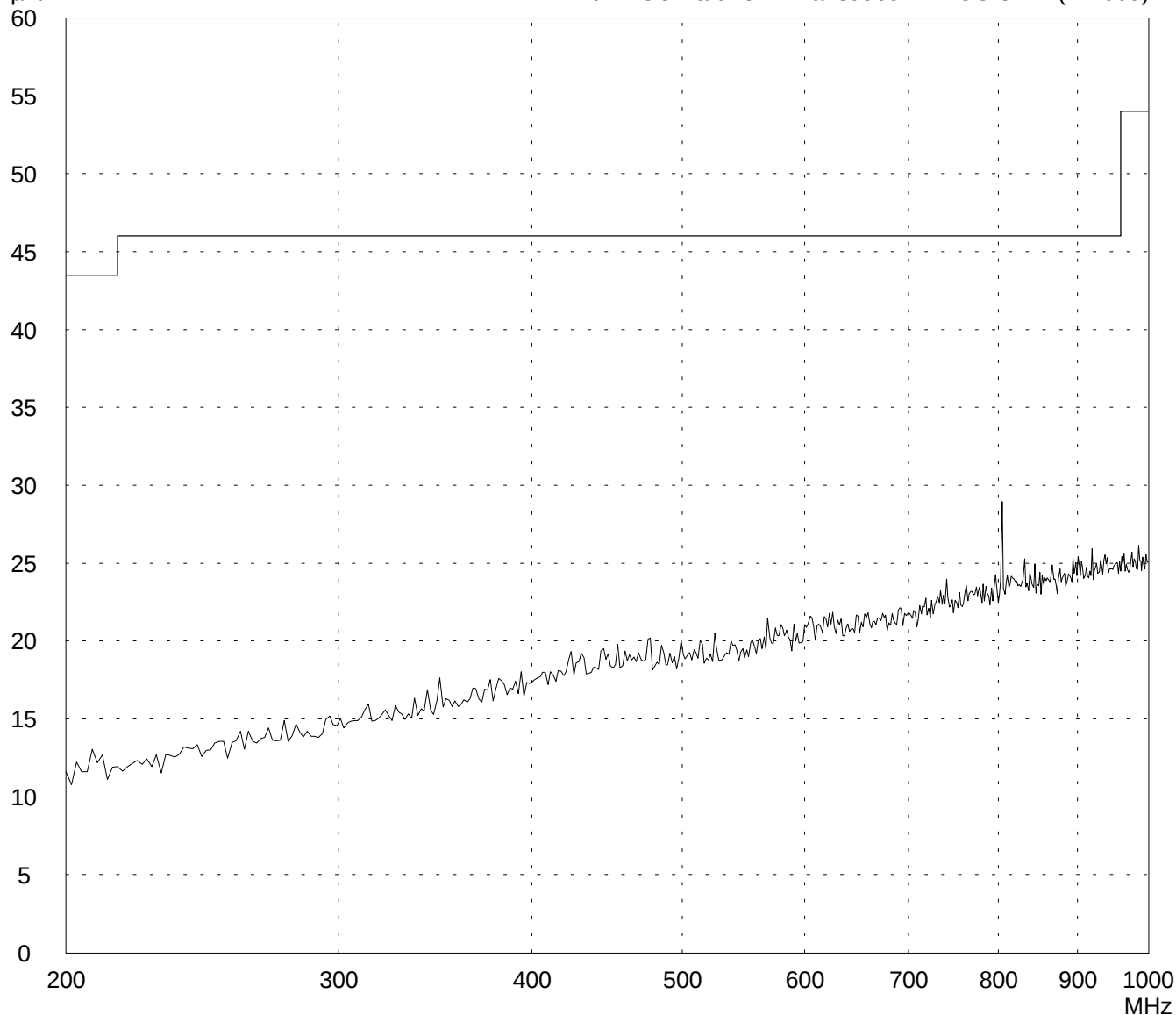
10 dB Margin

50 Subranges

dB μ V/m

Limit1: FCC Part 15

Transducer: EMCO 3147 (A-1009)



Result:

Prescan

Project file:

56408-30116

Page

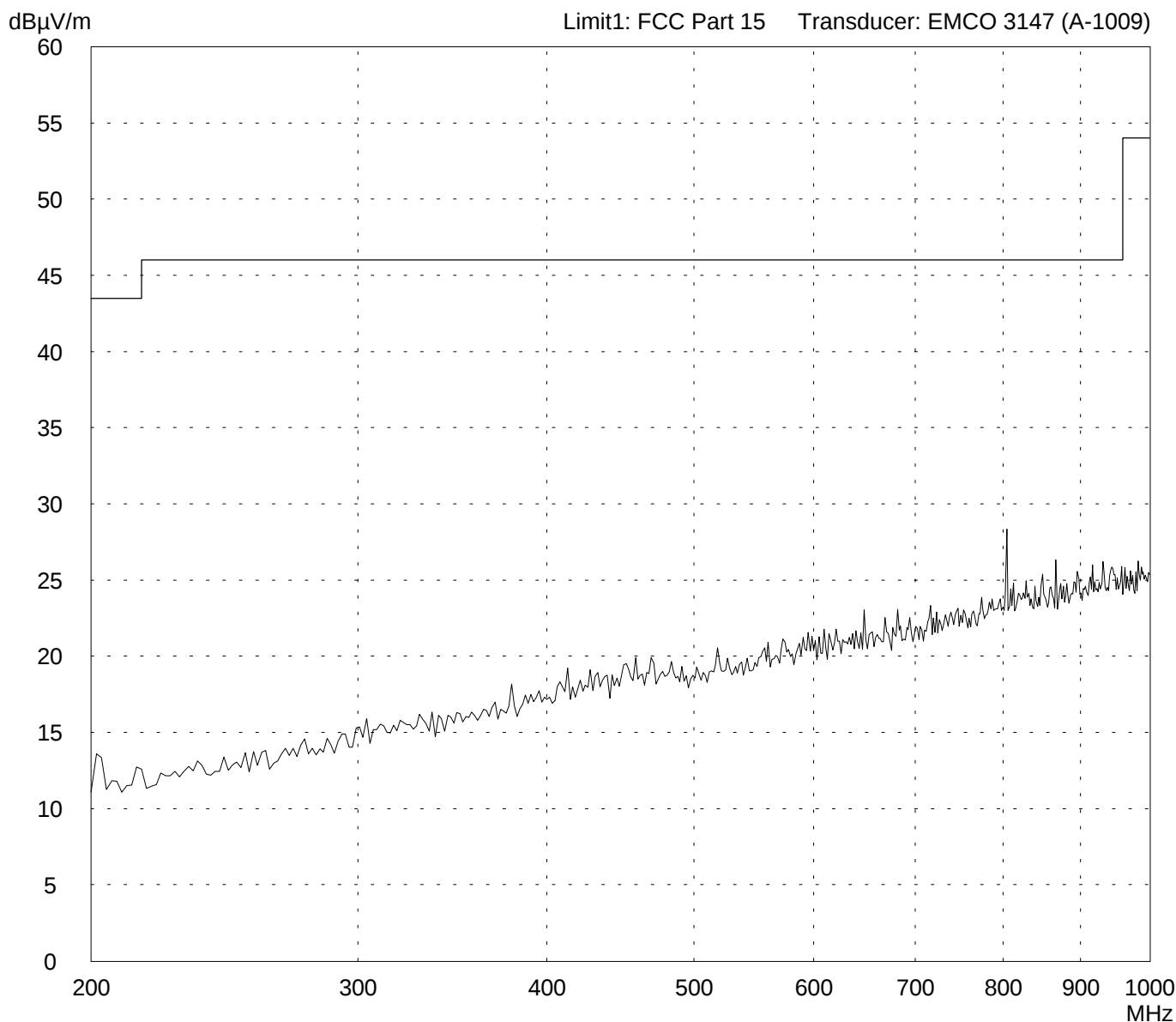
of

Pages

Radiated Emission Test 200 MHz - 1 GHz acc. to FCC Part 15 (Fully Anechoic Chamber)

Model: SR 55	Comment: - RX -mode - - - - -
Serial no.: sample with modification	
Applicant: Samson Technologies Corp.	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Vertical Polarization	
Date of test: 03/27/2003	Operator: M. Steindl
Test performed: automatically	File name: default.emi

Detector: Peak	List of values: 10 dB Margin
	50 Subranges

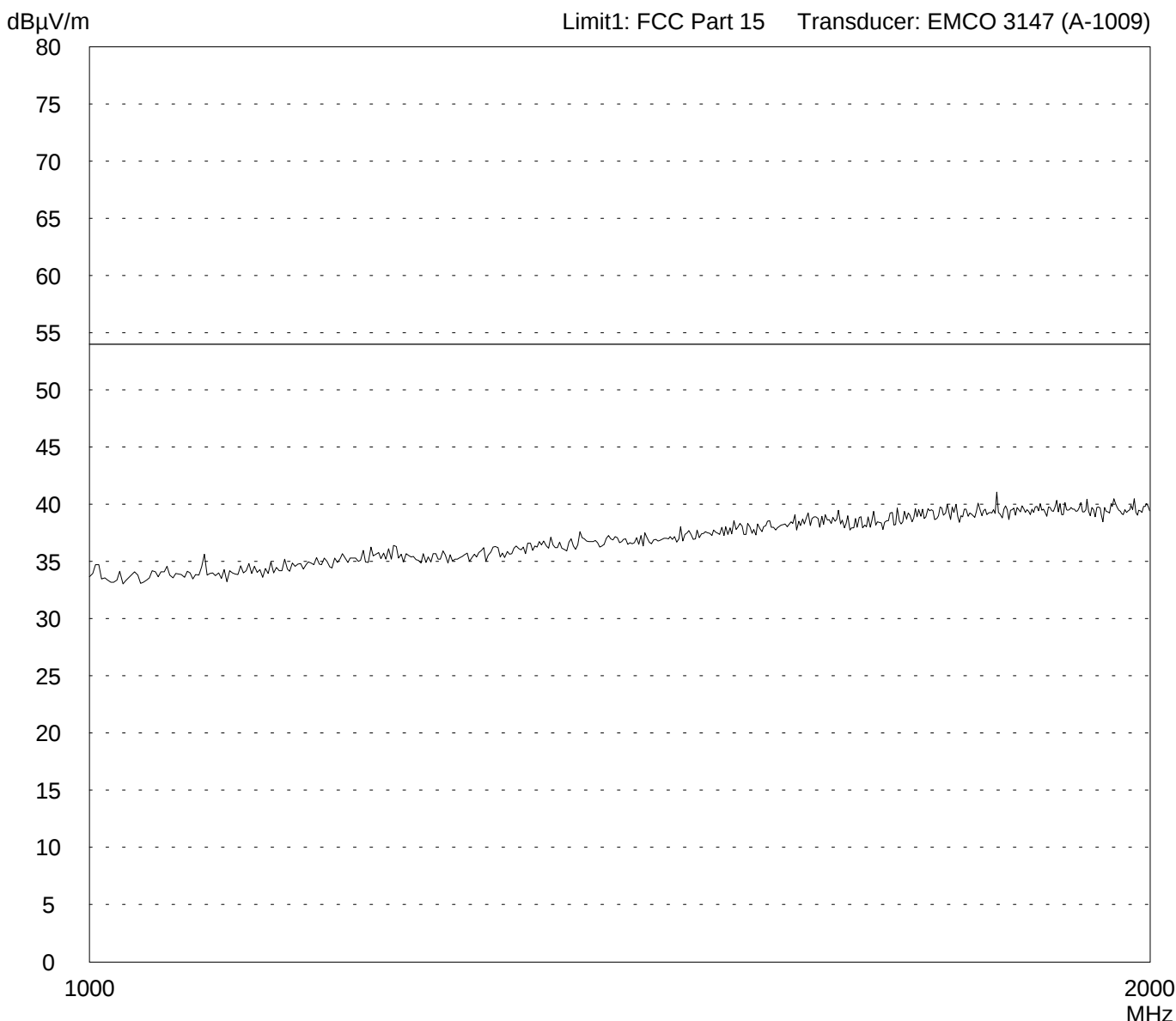


Result: Prescan	Project file: 56408-30116
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Radiated Emission Test 1 GHz - 2 GHz acc. to FCC Part 15 (Fully Anechoic Chamber)

Model: SR 55	Comment: - RX -mode - - - - -
Serial no.: sample with modification	
Applicant: Samson Technologies Corp.	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Horizontal Polarization	
Date of test: 03/27/2003	Operator: M. Steindl
Test performed: automatically	File name: default.emi

Detector: Peak	List of values: 10 dB Margin 50 Subranges
--------------------------	--



Result: Prescan	Project file: 56408-30116
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Radiated Emission Test 1 GHz - 2 GHz acc. to FCC Part 15 (Fully Anechoic Chamber)

Model:

SR 55

Serial no.:

sample with modification

Applicant:

Samson Technologies Corp.

Test site:

Fully anechoic room, cabin no. 2

Tested on:

Test distance 3 metres
Vertical Polarization

Date of test:

03/27/2003

Operator:

M. Steindl

Test performed:

automatically

File name:

default.emi

Comment:

- RX -mode

-

-

-

-

-

Detector:

Peak

List of values:

10 dB Margin

50 Subranges

dB μ V/m

Limit1: FCC Part 15

Transducer: EMCO 3147 (A-1009)

80

75

70

65

60

55

50

45

40

35

30

25

20

15

10

5

0

1000

2000

MHz

Result:

Prescan

Project file:

56408-30116

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Pages

Conducted Emission Test 150 kHz - 30 MHz according to FCC Part 15 Subpart C
--

Model:
Samson SR55 Receiver

Serial no.:
0001

Applicant:
Universal Technology Co. Ltd

Test site:
Shielded room, cabin no. 2

Tested on:	
Linecord	
Phase L1	

Date of test: 03/26/2003	Operator: M. Steindl
-----------------------------	-------------------------

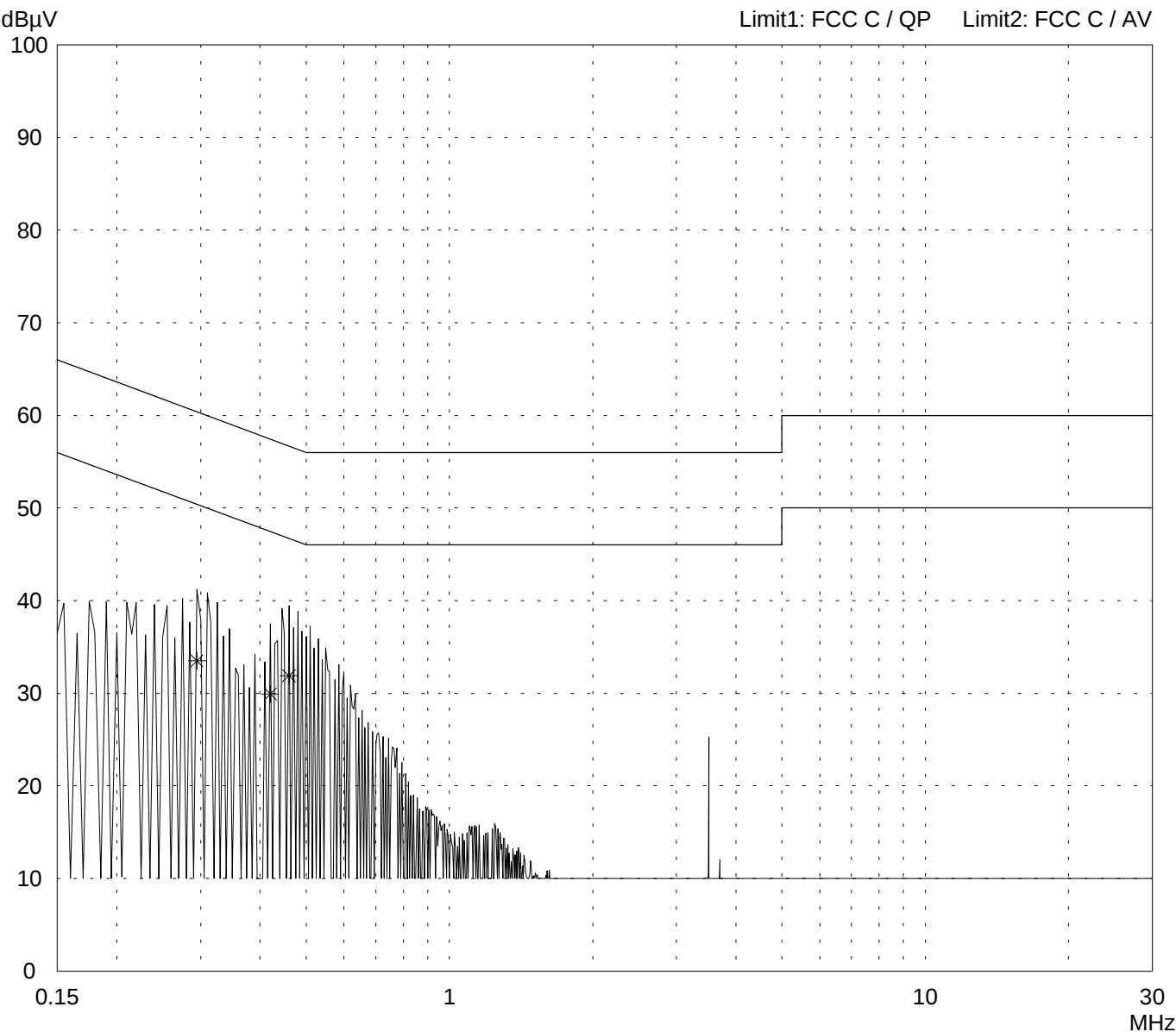
Test performed: automatically	File name:
----------------------------------	------------

Detector:
Peak / Final Results: QP

Mode:

- working continuously
- cables attached

Final results:
Selected by hand



Result:
Limit kept

Project file:				
56408-30116	Page	of	Pages	

Conducted Emission Test 150 kHz - 30 MHz according to FCC Part 15 Subpart C

Model:
Samson SR55 Receiver

Serial no.:
0001

Applicant:
Universal Technology Co. Ltd

Test site:
Shielded room, cabin no. 2

Tested on:
Linecord
Phase N

Date of test:
03/26/2003

Operator:
M. Steindl

Test performed:
automatically

File name:

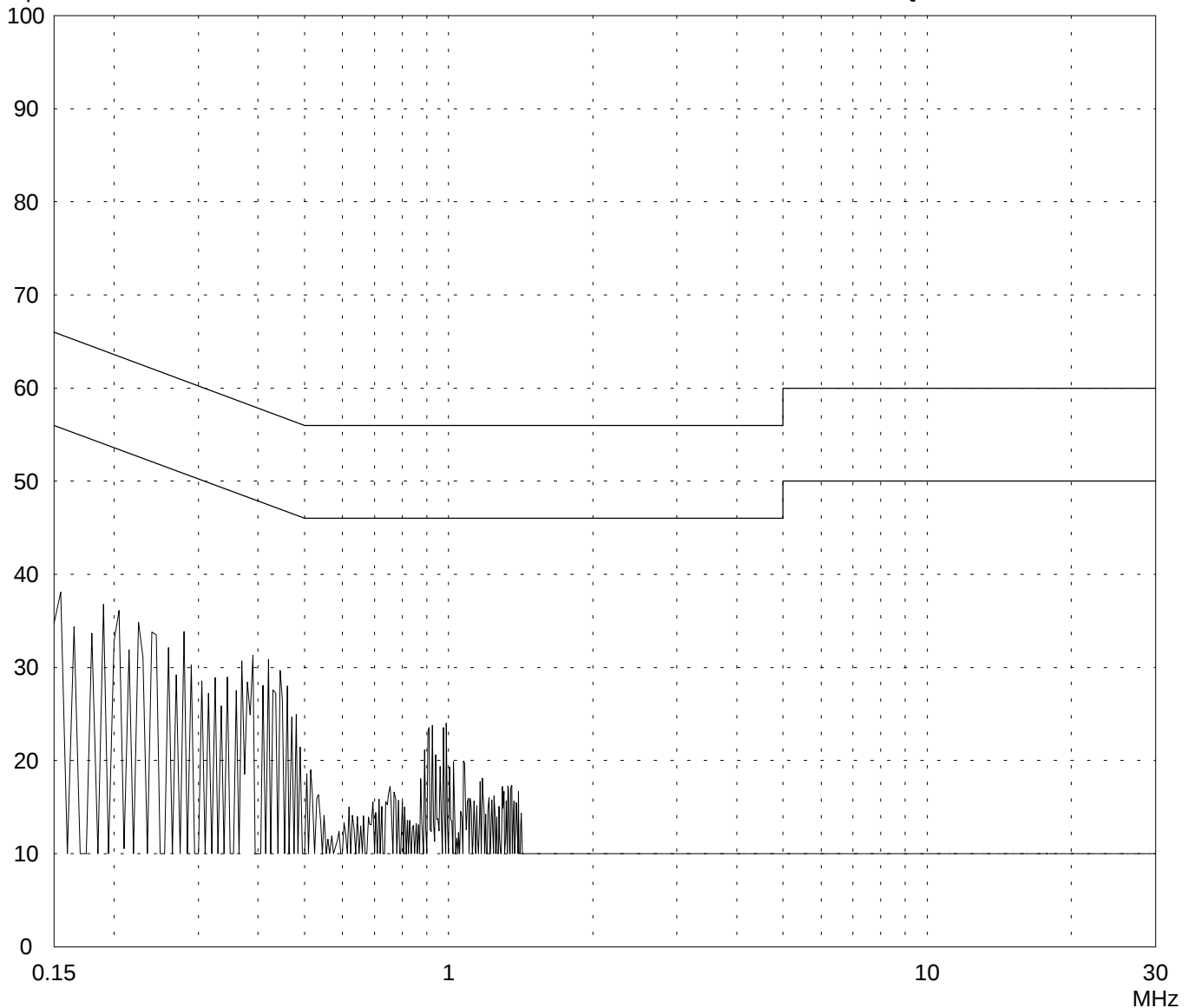
Mode:
- working continuously
- cables attached

Detector:
Peak / Final Results: QP

Final results:
Selected by hand

dB μ V

Limit1: FCC C / QP Limit2: FCC C / AV



Result:
Limit kept

Project file:
56408-30116

Page of Pages

Test Site Calibration 25 MHz - 5 GHz for ERP Measurements (Substitution Method)

Test site: Semi-anechoic room, cabin no. 2
 Test distance: Standard position [m]: 3
 Date: 07/15/2002
 Operator: R. Heller
 Transmit antennae: Biconical antenna HK 116, Rohde & Schwarz, inv.-no. A-1261
 Log.-per. antenna HL 223, Rohde & Schwarz, inv.-no. A-1262
 Horn antenna EMCO 3115, EMCO, inv.-no. B-1516
 Receiving antennae: Biconical antenna HK 116, Rohde & Schwarz, inv.-no. C-1560
 Log.-per. antenna 3147, EMCO, inv.-no. A-1009
 Signal source: Tracking generator of ESMI, Rohde & Schwarz, inv.-no. A-1569,
 connected to transmit antenna via cables inv.-no. 1683, port 2 of AP 1
 and 1592, nominal power at signal generator set to 0 dBm
 Receiving cables: Inv.-no. 1657, 1681 and 1592
 Test receiver: ESMI, Rohde & Schwarz, inv.-no. A-1569
 Antenna heights: TX antenna (h1): 1.5 metre
 RX antenna (h2): 1.5 metre
 Antenna position: TX antenna: center of turn table
 Polarization: horizontal

Frequency	Transmit signal	TX antenna gain		True transmit signal	Analyzer reading	Correction for reading
[MHz]	P tx [dBm]	(isotropic) [dBi]	(dipole) [dBd]	P true [dBm]	P site [dBm]	in "dBm" [dB]
25.0	-1.1	-17.0	-19.2	-20.3	-44.9	25.3
30.0	-1.4	-13.8	-16.0	-17.3	-40.0	23.3
35.0	-1.5	-11.1	-13.3	-14.7	-36.1	22.0
40.0	-1.5	-8.8	-11.0	-12.5	-38.8	27.0
45.0	-1.6	-6.7	-8.9	-10.5	-35.7	25.9
50.0	-1.6	-5.1	-7.3	-8.9	-34.3	26.1
55.0	-1.7	-3.8	-6.0	-7.6	-32.9	25.9
60.0	-1.7	-2.8	-5.0	-6.7	-32.2	26.2
65.0	-1.7	-2.0	-4.2	-5.9	-31.4	26.2
70.0	-1.7	-1.3	-3.5	-5.2	-30.6	26.1
75.0	-1.8	-0.7	-2.9	-4.7	-30.4	26.4
80.0	-1.9	-0.1	-2.3	-4.1	-30.4	26.9
85.0	-1.9	0.2	-2.0	-3.9	-30.3	27.1
90.0	-2.0	0.5	-1.7	-3.6	-29.6	26.6
95.0	-2.0	0.6	-1.6	-3.6	-28.9	26.0
100.0	-2.0	0.7	-1.5	-3.5	-28.2	25.3
110.0	-2.1	0.9	-1.3	-3.3	-27.9	25.2
120.0	-2.1	1.0	-1.2	-3.3	-27.4	24.8
130.0	-2.2	1.1	-1.1	-3.3	-27.2	24.6
140.0	-2.3	1.4	-0.8	-3.0	-26.3	23.9
150.0	-2.3	1.8	-0.4	-2.7	-25.6	23.6
160.0	-2.4	1.9	-0.3	-2.6	-25.4	23.4
170.0	-2.4	2.0	-0.2	-2.6	-25.3	23.4
180.0	-2.5	2.1	0.0	-2.5	-25.6	23.7
190.0	-2.6	2.3	0.2	-2.4	-26.4	24.6
200.0	-2.6	2.3	0.2	-2.4	-27.8	26.0
200.1	-2.3	6.5	4.4	2.0	-19.4	22.0
220.0	-2.6	6.9	4.8	2.1	-19.6	22.4
240.0	-2.7	7.0	4.9	2.1	-20.5	23.3
260.0	-2.8	7.1	5.0	2.2	-21.5	24.4
280.0	-2.9	7.3	5.1	2.2	-22.9	25.7

Test Site Calibration 25 MHz - 5 GHz for ERP Measurements (Substitution Method)

Test site: Semi-anechoic room, cabin no. 2
Test distance: Standard position [m]: 3
Date: 07/15/2002
Operator: R. Heller
Transmit antennae: Biconical antenna HK 116, Rohde & Schwarz, inv.-no. A-1261
Log.-per. antenna HL 223, Rohde & Schwarz, inv.-no. A-1262
Horn antenna EMCO 3115, EMCO, inv.-no. B-1516
Receiving antennae: Biconical antenna HK 116, Rohde & Schwarz, inv.-no. C-1560
Log.-per. antenna 3147, EMCO, inv.-no. A-1009
Signal source: Tracking generator of ESMI, Rohde & Schwarz, inv.-no. A-1569,
connected to transmit antenna via cables inv.-no. 1683, port 2 of AP 1
and 1592, nominal power at signal generator set to 0 dBm
Receiving cables: Inv.-no. 1657, 1681 and 1592
Test receiver: ESMI, Rohde & Schwarz, inv.-no. A-1569
Antenna heights: TX antenna (h1): 1.5 metre
RX antenna (h2): 1.5 metre
Antenna position: TX antenna: center of turn table
Polarization: horizontal

Frequency [MHz]	Transmit signal P tx [dBm]	TX antenna gain		True transmit signal P true [dBm]	Analyzer reading P site [dBm]	Correction for reading in "dBm" [dB]
		(isotropic) [dBi]	(dipole) [dBd]			
300.0	-3.0	7.2	5.1	2.1	-23.0	25.7
325.0	-3.0	7.2	5.1	2.0	-23.9	26.6
350.0	-3.2	7.1	5.0	1.8	-25.7	28.2
375.0	-3.2	7.2	5.1	1.8	-26.2	28.7
400.0	-3.1	6.8	4.7	1.6	-27.8	30.0
425.0	-3.4	6.7	4.6	1.1	-29.1	30.9
433.9	-3.4	6.8	4.7	1.3	-29.8	31.7
450.0	-3.4	7.0	4.9	1.4	-30.6	32.6
475.0	-3.6	6.9	4.8	1.2	-30.1	32.0
500.0	-3.7	7.0	4.9	1.2	-30.2	32.1
550.0	-3.8	7.5	5.4	1.6	-29.3	31.6
600.0	-3.7	7.0	4.9	1.1	-28.9	30.7
650.0	-4.0	6.9	4.8	0.8	-30.3	31.7
700.0	-4.2	6.5	4.4	0.2	-33.0	33.9
750.0	-4.2	7.2	5.1	0.8	-34.6	36.1
800.0	-4.3	7.1	5.0	0.7	-34.3	35.7
850.0	-4.6	6.7	4.6	0.0	-33.2	33.8
867.8	-4.4	6.6	4.5	0.0	-32.9	33.7
900.0	-4.6	7.0	4.9	0.3	-33.1	34.1
950.0	-4.6	7.7	5.6	0.9	-34.4	36.0
1000.0	-4.7	7.0	4.9	0.2	-36.9	37.8
1000.1	-4.6	4.3		-0.3	-36.8	37.2
1500.0	-5.6	6.9		1.3	-41.1	43.2
2000.0	-6.2	7.1		0.9	-42.7	44.4
2500.0	-6.6	7.6		1.0	-46.0	47.8
3000.0	-6.8	7.7		0.9	-47.9	49.7
3500.0	-7.6	7.8		0.2	-49.4	50.5
4000.0	-8.2	7.9		-0.3	-53.7	54.3
4500.0	-9.0	9.0		0.0	-55.3	56.4
5000.0	-9.5	8.9		-0.6	-55.5	55.9

Test Site Calibration 25 MHz - 5 GHz for ERP Measurements (Substitution Method)

Test site: Semi-anechoic room, cabin no. 2
 Test distance: Standard position [m]: 3
 Date: 07/15/2002
 Operator: R. Heller
 Transmit antennae: Biconical antenna HK 116, Rohde & Schwarz, inv.-no. A-1261
 Log.-per. antenna HL 223, Rohde & Schwarz, inv.-no. A-1262
 Horn antenna EMCO 3115, EMCO, inv.-no. B-1516
 Receiving antennae: Biconical antenna HK 116, Rohde & Schwarz, inv.-no. C-1560
 Log.-per. antenna 3147, EMCO, inv.-no. A-1009
 Signal source: Tracking generator of ESMI, Rohde & Schwarz, inv.-no. A-1569,
 connected to transmit antenna via cables inv.-no. 1683, port 2 of AP 1
 and 1592, nominal power at signal generator set to 0 dBm
 Receiving cables: Inv.-no. 1657, 1681 and 1592
 Test receiver: ESMI, Rohde & Schwarz, inv.-no. A-1569
 Antenna heights: TX antenna (h1): 1.5 metre
 RX antenna (h2): 1.5 metre
 Antenna position: TX antenna: center of turn table
 Polarization: vertical

Frequency	Transmit signal ¹ P tx [dBm]	TX antenna gain		True transmit signal P true [dBm]	Analyzer reading P site [dBm]	Correction for reading in "dBm" [dB]
[MHz]		(isotropic) [dBi]	(dipole) [dBd]			
25.0	-1.1	-17.0	-19.2	-20.3	-43.4	23.8
30.0	-1.4	-13.8	-16.0	-17.3	-38.6	21.9
35.0	-1.5	-11.1	-13.3	-14.7	-34.9	20.8
40.0	-1.5	-8.8	-11.0	-12.5	-34.3	22.5
45.0	-1.6	-6.7	-8.9	-10.5	-37.0	27.1
50.0	-1.6	-5.1	-7.3	-8.9	-34.3	26.1
55.0	-1.7	-3.8	-6.0	-7.6	-32.7	25.7
60.0	-1.7	-2.8	-5.0	-6.7	-32.5	26.4
65.0	-1.7	-2.0	-4.2	-5.9	-31.3	26.1
70.0	-1.7	-1.3	-3.5	-5.2	-30.6	26.1
75.0	-1.8	-0.7	-2.9	-4.7	-29.9	25.9
80.0	-1.9	-0.1	-2.3	-4.1	-29.9	26.5
85.0	-1.9	0.2	-2.0	-3.9	-30.5	27.2
90.0	-2.0	0.5	-1.7	-3.6	-30.3	27.3
95.0	-2.0	0.6	-1.6	-3.6	-29.0	26.1
100.0	-2.0	0.7	-1.5	-3.5	-28.3	25.5
110.0	-2.1	0.9	-1.3	-3.3	-27.9	25.2
120.0	-2.1	1.0	-1.2	-3.3	-28.2	25.5
130.0	-2.2	1.1	-1.1	-3.3	-27.0	24.3
140.0	-2.3	1.4	-0.8	-3.0	-25.8	23.4
150.0	-2.3	1.8	-0.4	-2.7	-25.1	23.1
160.0	-2.4	1.9	-0.3	-2.6	-25.1	23.1
170.0	-2.4	2.0	-0.2	-2.6	-25.0	23.1
180.0	-2.5	2.1	0.0	-2.5	-25.1	23.2
190.0	-2.6	2.3	0.2	-2.4	-25.5	23.7
200.0	-2.6	2.3	0.2	-2.4	-26.9	25.2
200.1	-2.3	6.5	4.4	2.0	-18.4	21.1
220.0	-2.6	6.9	4.8	2.1	-18.7	21.5
240.0	-2.7	7.0	4.9	2.1	-20.0	22.8
260.0	-2.8	7.1	5.0	2.2	-21.4	24.3
280.0	-2.9	7.3	5.1	2.2	-23.7	26.6

Test Site Calibration 25 MHz - 5 GHz for ERP Measurements (Substitution Method)

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 Antenna position: TX antenna: center of turn table
 Polarization: vertical

Frequency	Transmit signal ¹ P tx [dBm]	TX antenna gain		True transmit signal P true [dBm]	Analyzer reading P site [dBm]	Correction for reading in "dBm" [dB]
[MHz]		(isotropic) [dBi]	(dipole) [dBd]			
300.0	-3.0	7.2	5.1	2.1	-25.3	28.0
325.0	-3.0	7.2	5.1	2.0	-26.7	29.3
350.0	-3.2	7.1	5.0	1.8	-28.2	30.7
375.0	-3.2	7.2	5.1	1.8	-27.9	30.4
400.0	-3.1	6.8	4.7	1.6	-28.3	30.5
425.0	-3.4	6.7	4.6	1.1	-28.2	30.0
433.9	-3.4	6.8	4.7	1.3	-28.6	30.6
450.0	-3.4	7.0	4.9	1.4	-28.8	30.9
475.0	-3.6	6.9	4.8	1.2	-28.1	30.0
500.0	-3.7	7.0	4.9	1.2	-28.2	30.0
550.0	-3.8	7.5	5.4	1.6	-29.5	31.7
600.0	-3.7	7.0	4.9	1.1	-31.6	33.4
650.0	-4.0	6.9	4.8	0.8	-32.4	33.8
700.0	-4.2	6.5	4.4	0.2	-32.2	33.1
750.0	-4.2	7.2	5.1	0.8	-31.3	32.8
800.0	-4.3	7.1	5.0	0.7	-34.4	35.7
850.0	-4.6	6.7	4.6	0.0	-36.3	36.9
867.8	-4.4	6.6	4.5	0.0	-36.3	37.1
900.0	-4.6	7.0	4.9	0.3	-35.7	36.6
950.0	-4.6	7.7	5.6	0.9	-34.9	36.5
1000.0	-4.7	7.0	4.9	0.2	-34.7	35.6
1000.1	-4.6	4.3		-0.3	-36.3	36.7
1500.0	-5.6	6.9		1.3	-39.1	41.2
2000.0	-6.2	7.1		0.9	-44.3	46.1
2500.0	-6.6	7.6		1.0	-45.1	46.9
3000.0	-6.8	7.7		0.9	-46.5	48.3
3500.0	-7.6	7.8		0.2	-50.3	51.4
4000.0	-8.2	7.9		-0.3	-52.8	53.4
4500.0	-9.0	9.0		0.0	-55.9	57.0
5000.0	-9.5	8.9		-0.6	-54.7	55.1