

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. This report shall not be reproduced except in full extent without the written approval of 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 Fruhlingsstrasse 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)

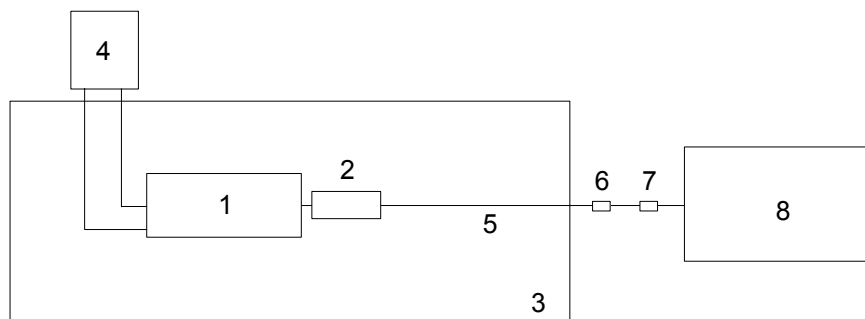


Figure 1: Measurement setup for testing on antenna connector

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:

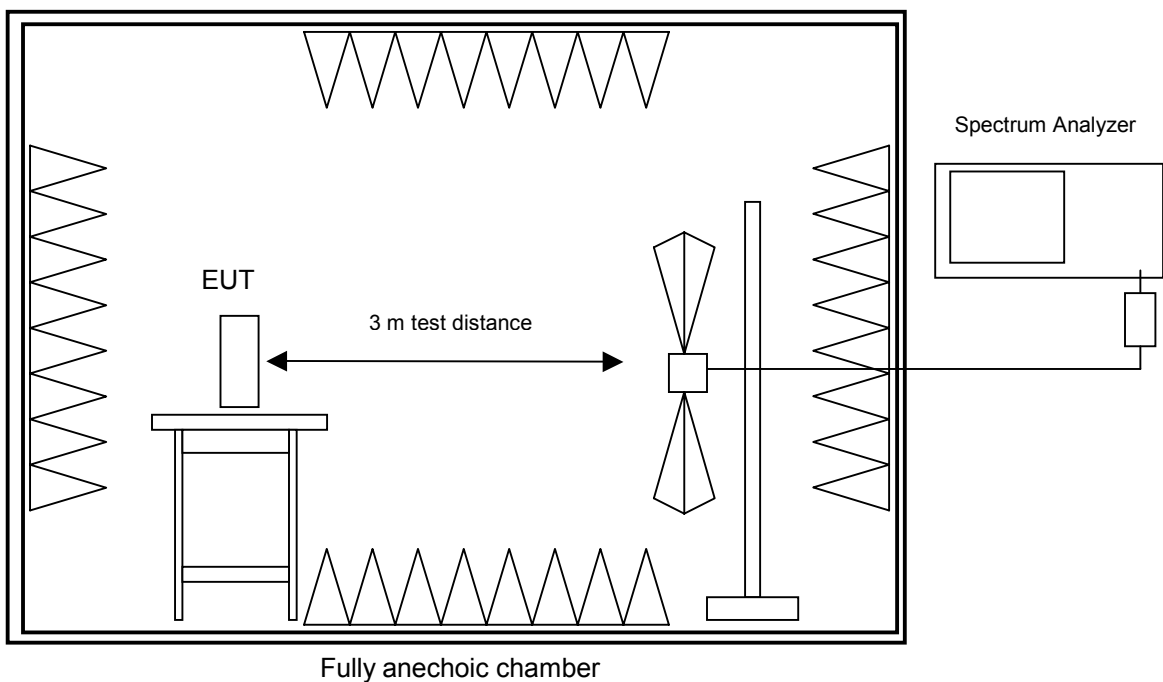
Radiated emissions were measured over the frequency range from 30 MHz to 1 GHz. For final testing the detector-function of the spectrum analyzer was set to positive peak and trace mode max hold:

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 |

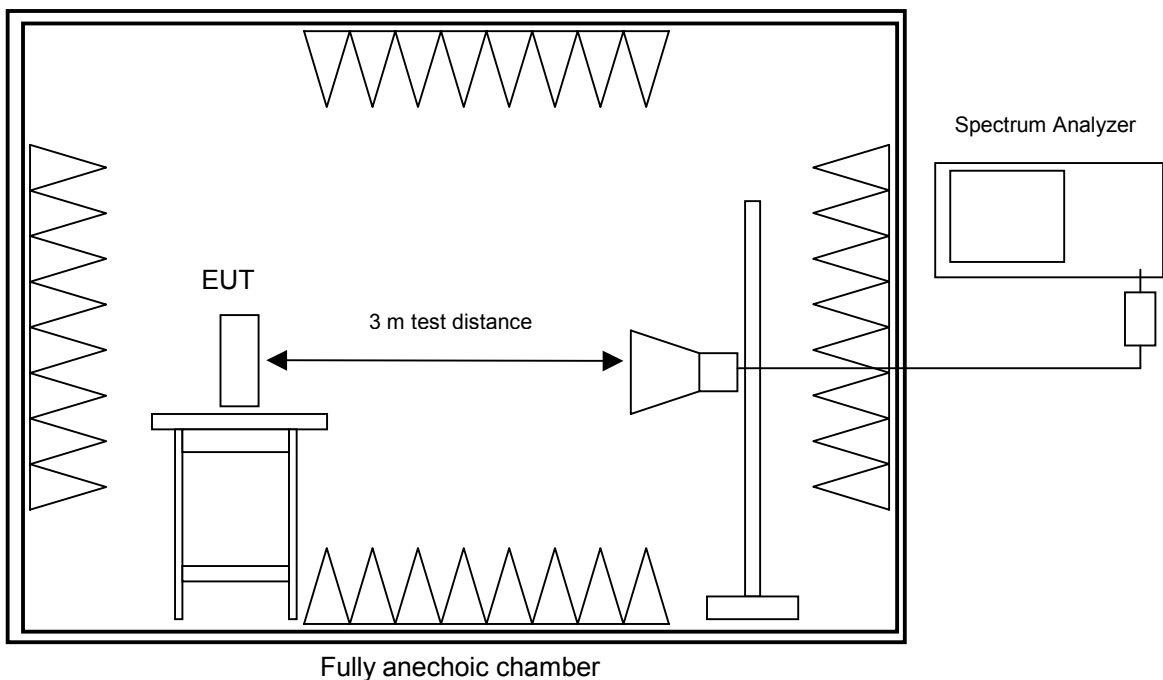
Measurement Procedure:

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).



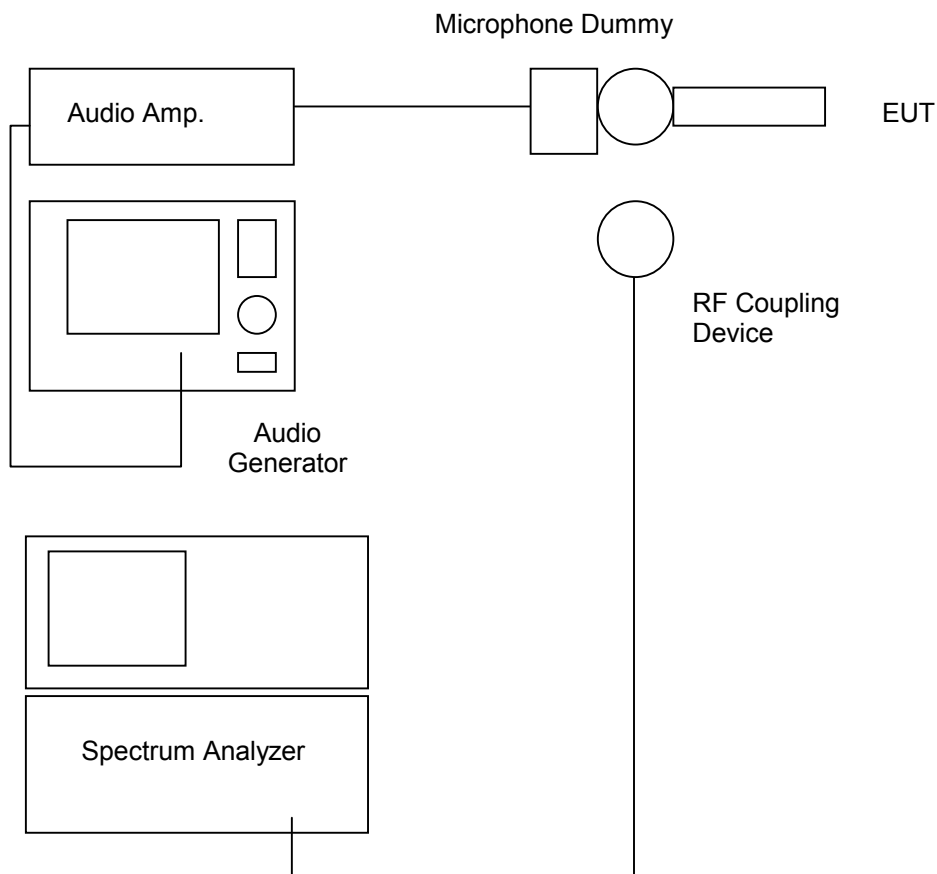
Test equipment used (see equipment list for details):
02, 13, 14, 16, ,42, 44, 45, 57, 64

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: | <ol style="list-style-type: none">1. The EUT and equipment were set up as shown below2. 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. |
|------------------------|--|

Test Setup

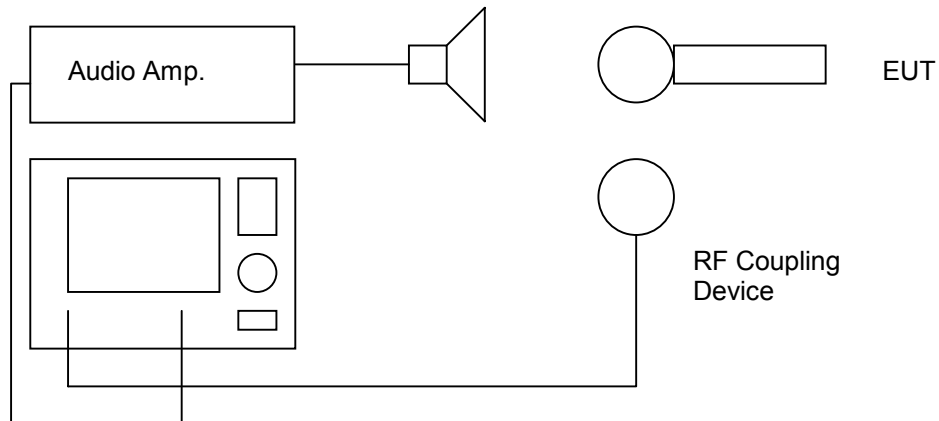


5.5. Audio Frequency Response, 2.1047 (a)

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

| | |
|------------------------|---|
| Measurement Procedure: | <ol style="list-style-type: none">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 kHz7. The response was measured and recorded with a CMS 54 Radiocommunication Tester |
|------------------------|---|

Test Setup

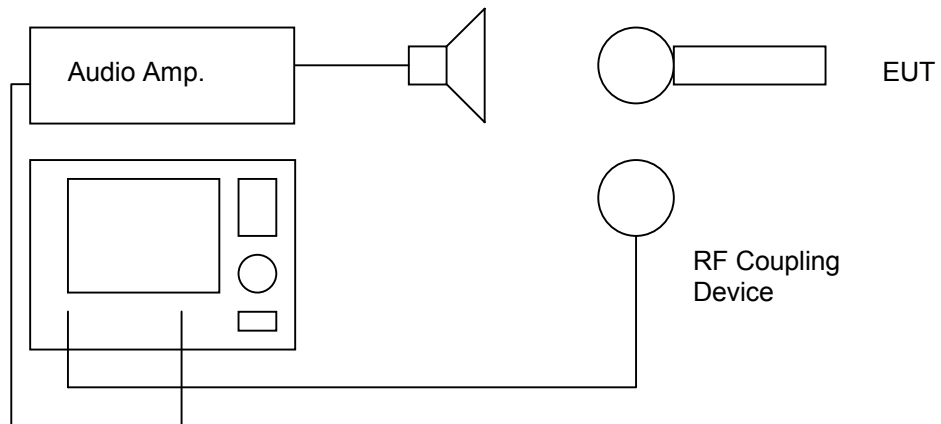


5.6. Modulation Limiting, § 2.1047 (b)

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

| | |
|------------------------|---|
| Measurement Procedure: | <ol style="list-style-type: none">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. |
|------------------------|---|

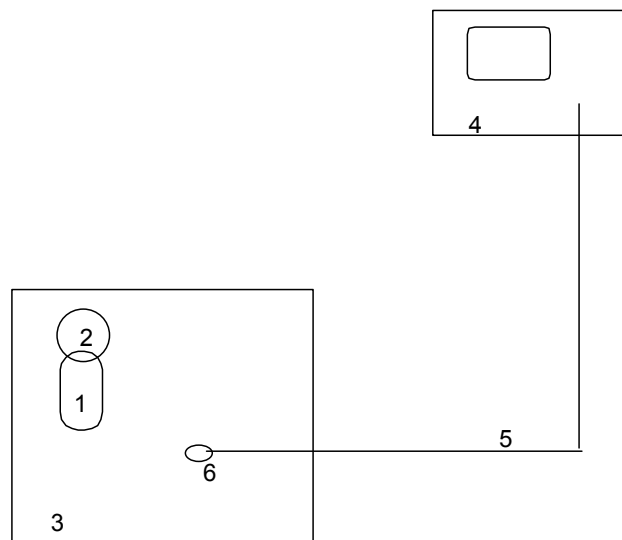
Test Setup



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: | <p>12. The EUT and test equipment were set up as shown below</p> <p>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.</p> <p>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.</p> <p>15. The temperature test were performed for worst case conditions.</p> |
|------------------------|---|



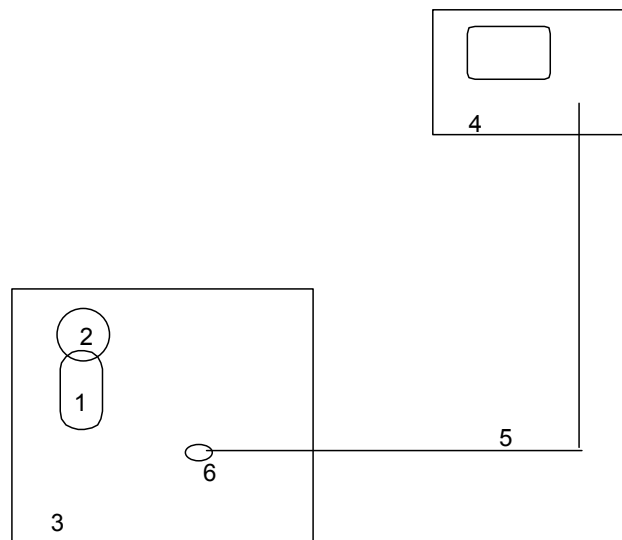
- 1 Base unit (EUT)
- 2 RF-antenna (EUT)
- 3 Temperature test chamber
- 4 Spectrum analyzer
- 5 RF cable
- 6 Test probe

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: | <p>16. The EUT and test equipment were set up as shown below</p> <p>17. The temperature was set to 20 °C</p> <p>18. The supply voltage was varied from 85% to 115% of the nominal voltage measured at the input of the EUT.</p> <p>19. The variation in frequency was measured for worst case conditions.</p> |
|------------------------|---|



- 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

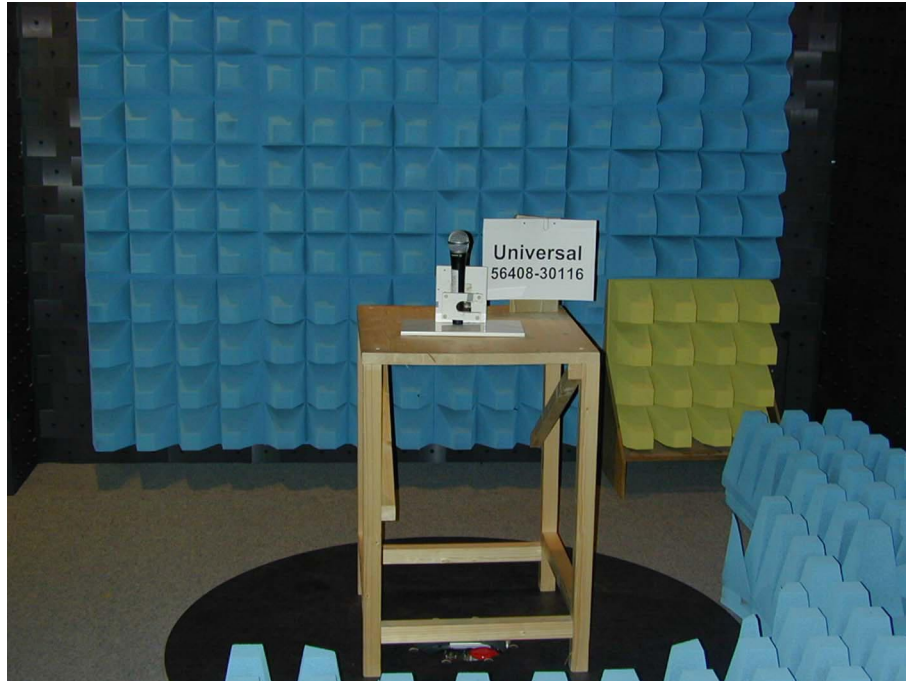
To facilitate reference to test equipment used for related tests, each item of test equipment and ancillaries such as cables are identified (numbered) by the Test Laboratory.

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

Sample calculation of erp values:

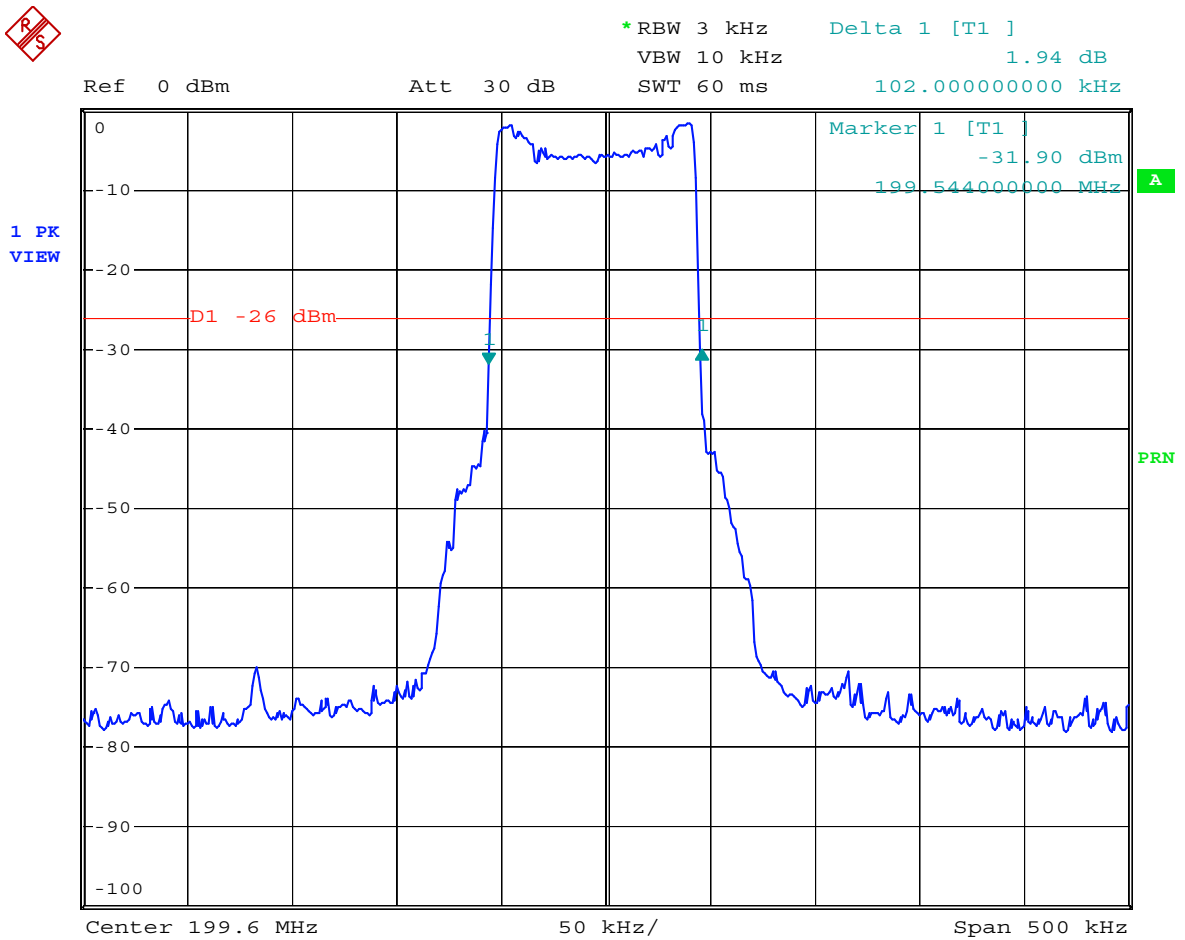
$$\text{Mean Power (dBm)} = \text{Analyzer Reading (dBm)} + \text{Correction Factor (dB)}$$

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 |
|-----------------|---|



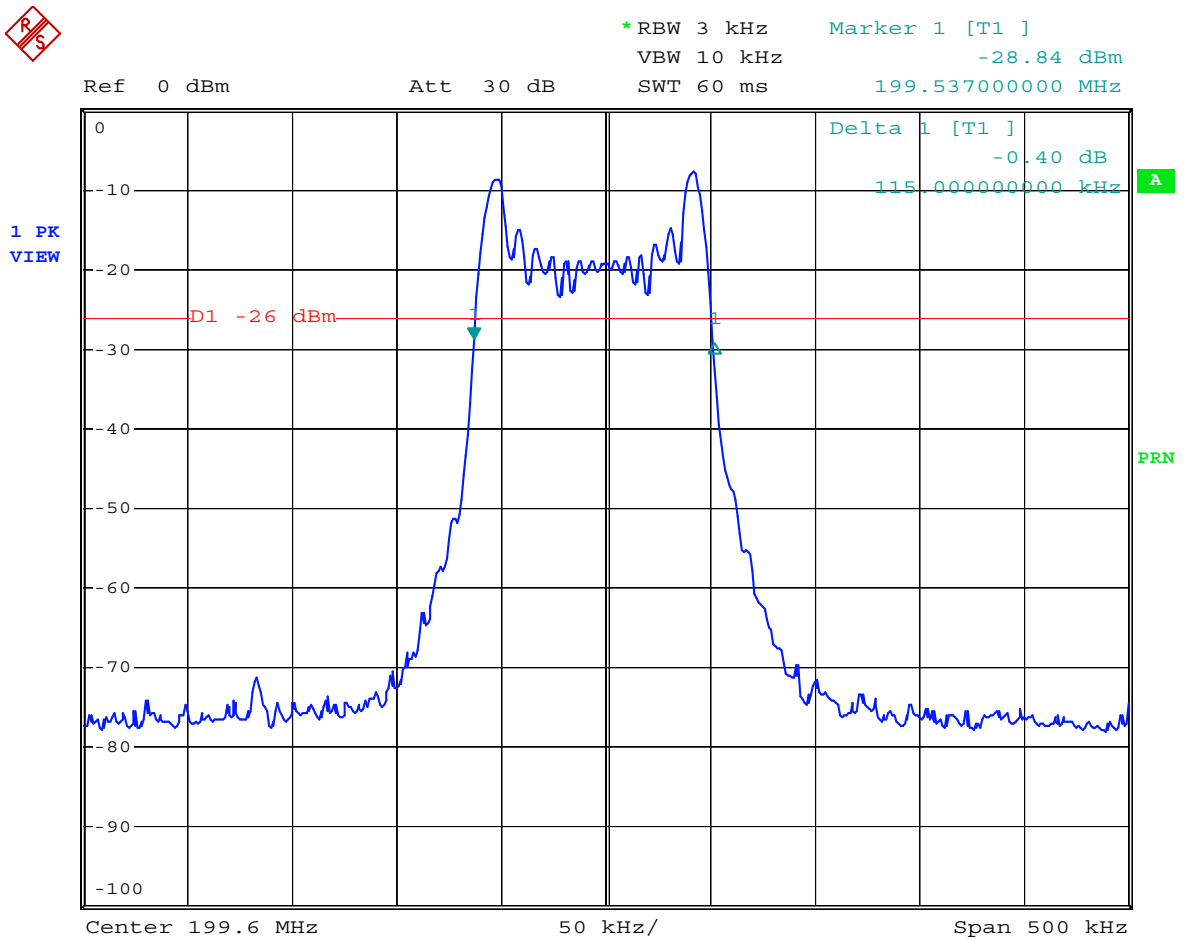
Comment A: UN30116 (SAMSON HT5) Occupied Bandwidth - 100 Hz
Date: 27.MAR.2003 15:06:17

| | |
|---------------|-----------------|
| Test Results: | See graph above |
|---------------|-----------------|

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 |
|------------------------|---|



Comment A: UN30116 (SAMSON HT5) Occupied Bandwidth - 3 kHz
 Date: 27.MAR.2003 15:08:00

| | |
|----------------------|-----------------|
| Test Results: | See graph above |
|----------------------|-----------------|

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 |

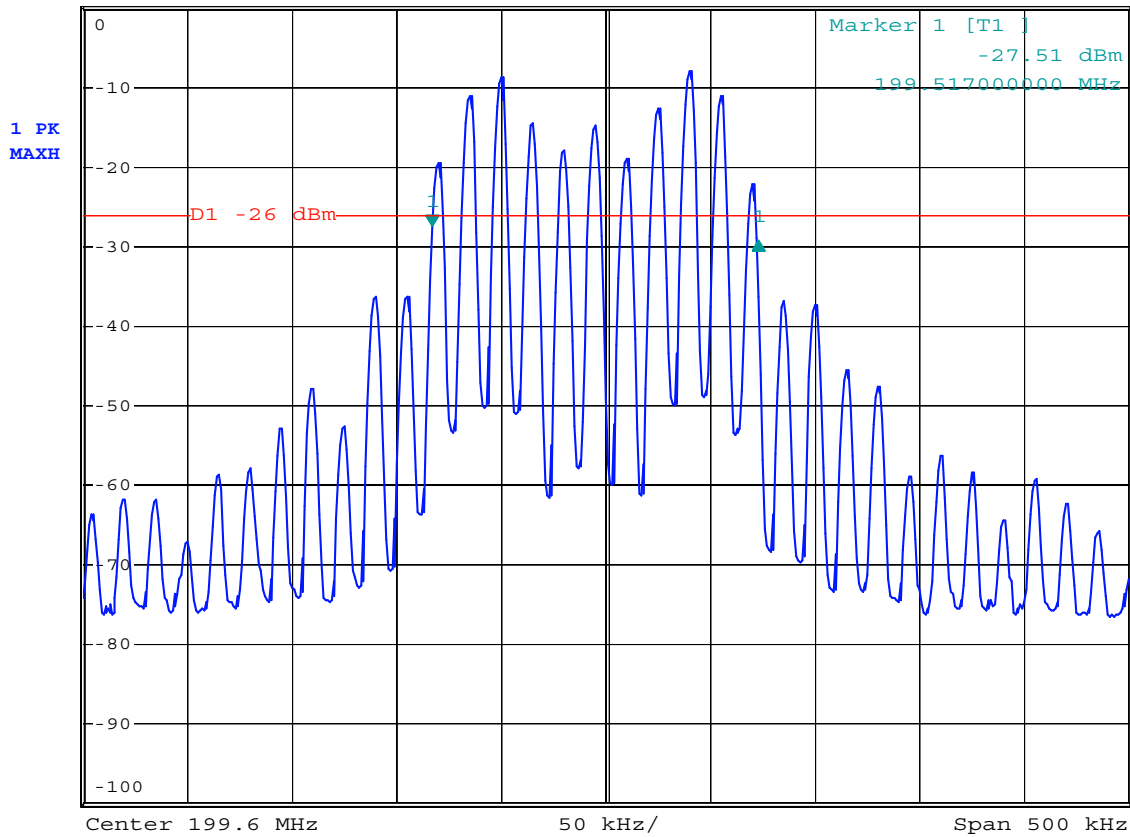
| | |
|------------------------|---|
| Test Procedure: | According to TIA/EIA.603-1992, § 2.2.11 |
|------------------------|---|



*RBW 3 kHz Delta 1 [T1]
VBW 10 kHz -1.80 dB
SWT 60 ms 156.00000000 kHz

Ref 0 dBm

Att 30 dB



Comment A: UN30116 (SAMSON HT5) Occupied Bandwidth - 15 kHz
Date: 27.MAR.2003 15:09:37

| | |
|----------------------|-----------------|
| Test Results: | See graph above |
|----------------------|-----------------|

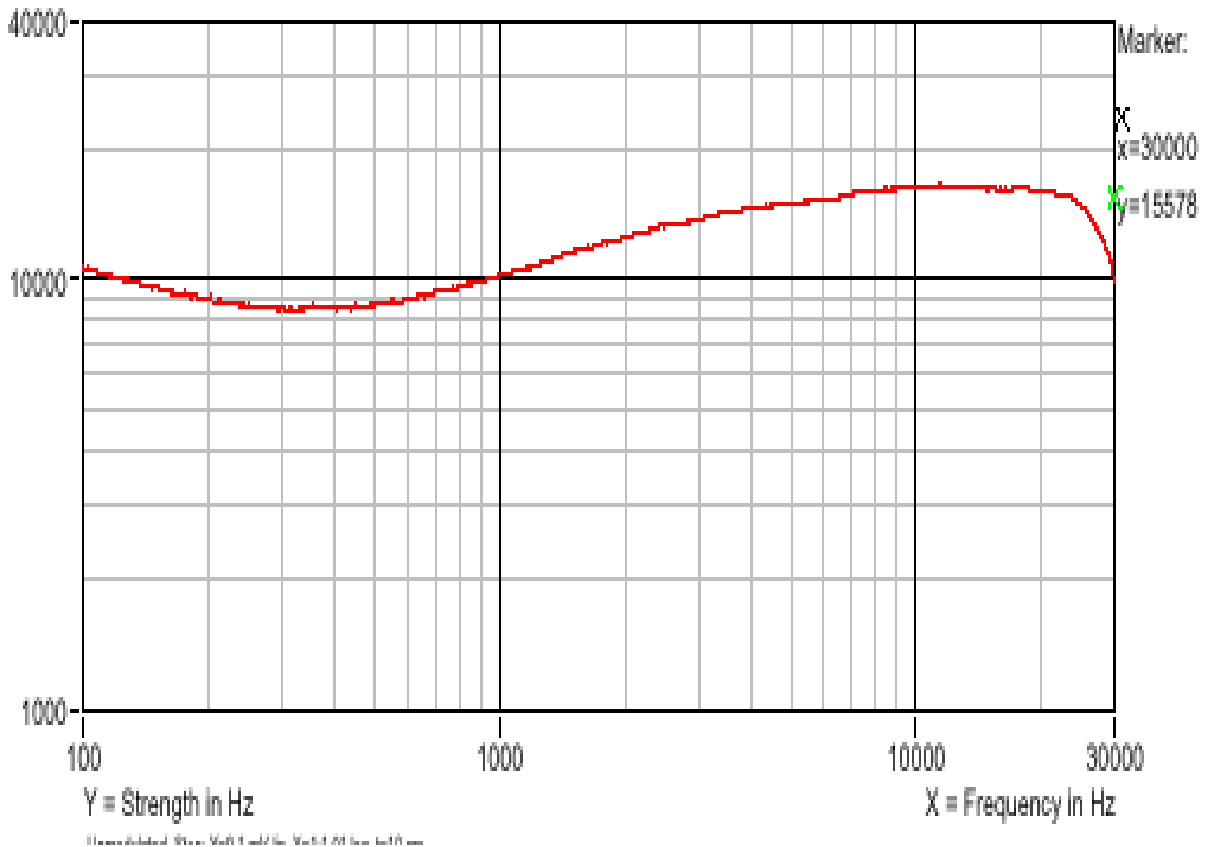
Measurement of Audio Frequency Response

| | |
|---------------------------|--------------------------------|
| 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 input of the transmitter via an audio isolation transformer |

Frequency Deviation (Hz)

Audio Frequency Response

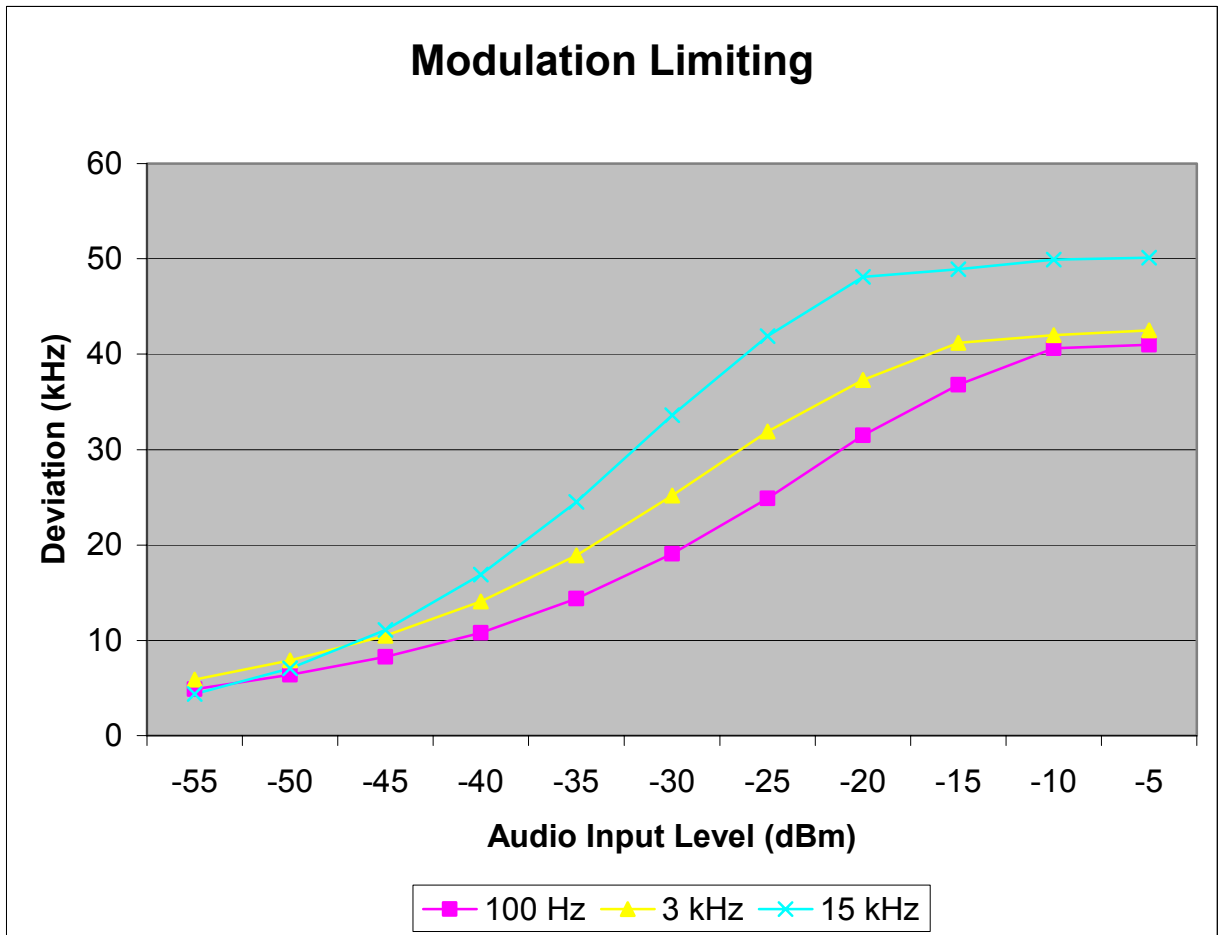


| | |
|----------------------|-----------------|
| Test Results: | See graph above |
|----------------------|-----------------|

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 |
|----------------------|------|

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 |

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

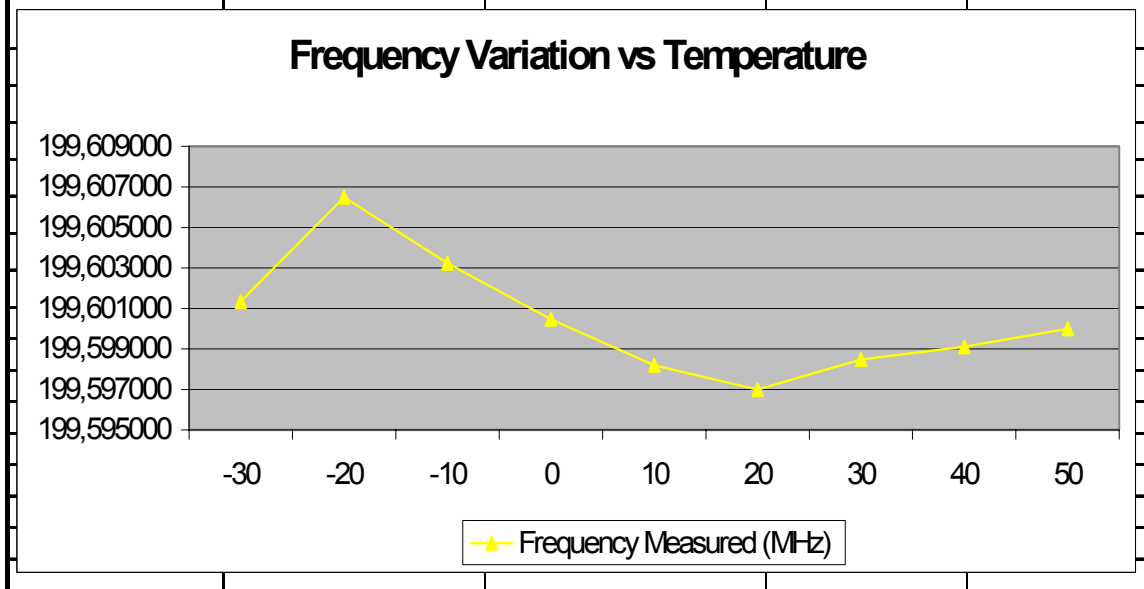
Type of Emission = 130KF3E

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 |

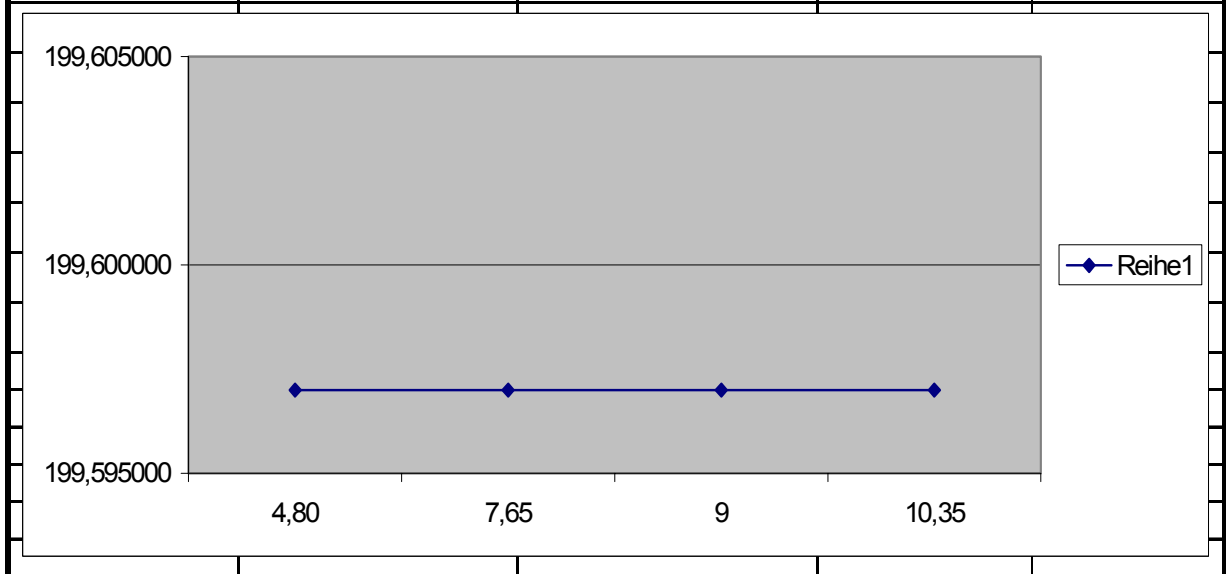


Measurement of Frequency Stability vs Supply Voltage

| | |
|---------------------------|---|
| 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

| Supply Voltage (V) | Nominal Frequency (MHz) | Frequency Measured (MHz) | Frequency Tolerance (ppm) | Limit (ppm) |
|--------------------|-------------------------|--------------------------|---------------------------|-------------|
| 4,80 | 199,600000 | 199,597000 | -15,03 | 50 |
| 7,65 | 199,600000 | 199,597000 | -15,03 | 50 |
| 9 | 199,600000 | 199,597000 | -15,03 | 50 |
| 10,35 | 199,600000 | 199,597000 | -15,03 | 50 |



9. Referenced Regulations

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

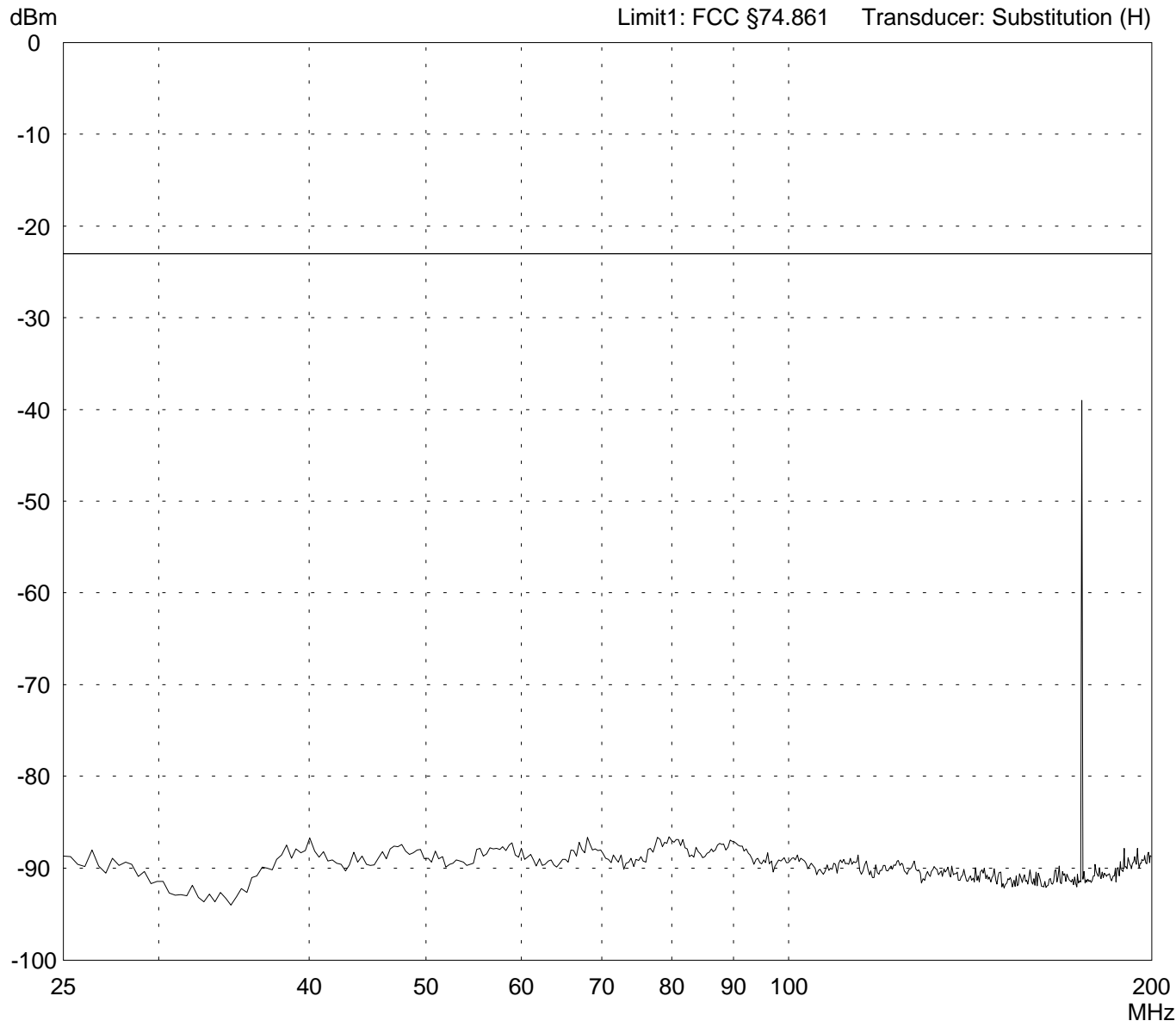
- | | | | |
|-------------------------------------|--------------------------|--|-------------------|
| <input checked="" type="checkbox"/> | FCC Part 15 Subpart A | Code of Regulations Part 15 (Radio Frequency Devices), Subpart A (General) of the Federal Communication Commission (FCC) | March 13, 2003 |
| <input type="checkbox"/> | 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 |
| <input type="checkbox"/> | 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 |
| <input checked="" type="checkbox"/> | 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 |
| <input checked="" type="checkbox"/> | 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 |
| <input type="checkbox"/> | 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

| | |
|---|--|
| <p>Model: HT 5</p> <p>Serial no.: 175.000 MHz</p> <p>Applicant: SAMSON Technologies Corp.</p> <p>Test site: Fully anechoic room, cabin no. 2</p> <p>Tested on: Test distance 3 meters Horizontal Polarization</p> <p>Date of test: 03/26/2003 Operator: J. Roidt</p> <p>Test performed: automatically File name: default.emi</p> | <p>Comment: TX without modulation</p> |
|---|--|

| | |
|----------------------------------|--|
| <p>Detector: Peak</p> | <p>List of values: 10 dB Margin 50 Subranges</p> |
|----------------------------------|--|

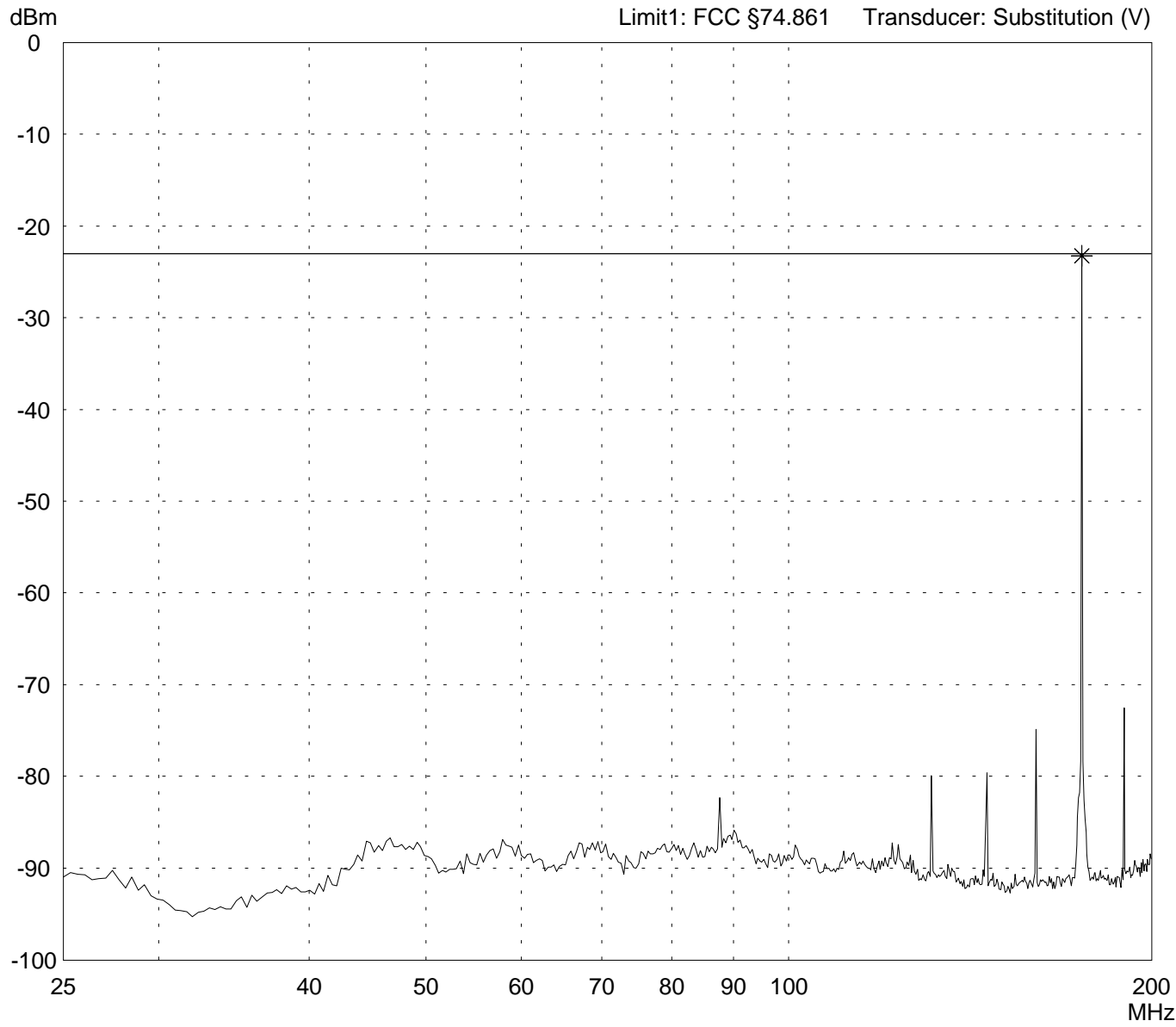


| | |
|-----------------------------------|---|
| <p>Result: Prescan</p> | <p>Project file: 56408-30116</p> <p style="text-align: right;">Page of Pages</p> |
|-----------------------------------|---|

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

| | |
|---|--|
| <p>Model: HT 5</p> <p>Serial no.: 175.000 MHz</p> <p>Applicant: SAMSON Technologies Corp.</p> <p>Test site: Fully anechoic room, cabin no. 2</p> <p>Tested on: Test distance 3 meters Vertical Polarization</p> <p>Date of test: 03/26/2003 Operator: J. Roidt</p> <p>Test performed: automatically File name: default.emi</p> | <p>Comment: TX without modulation</p> |
|---|--|

| | |
|----------------------------------|--|
| <p>Detector: Peak</p> | <p>List of values: 10 dB Margin 50 Subranges</p> |
|----------------------------------|--|

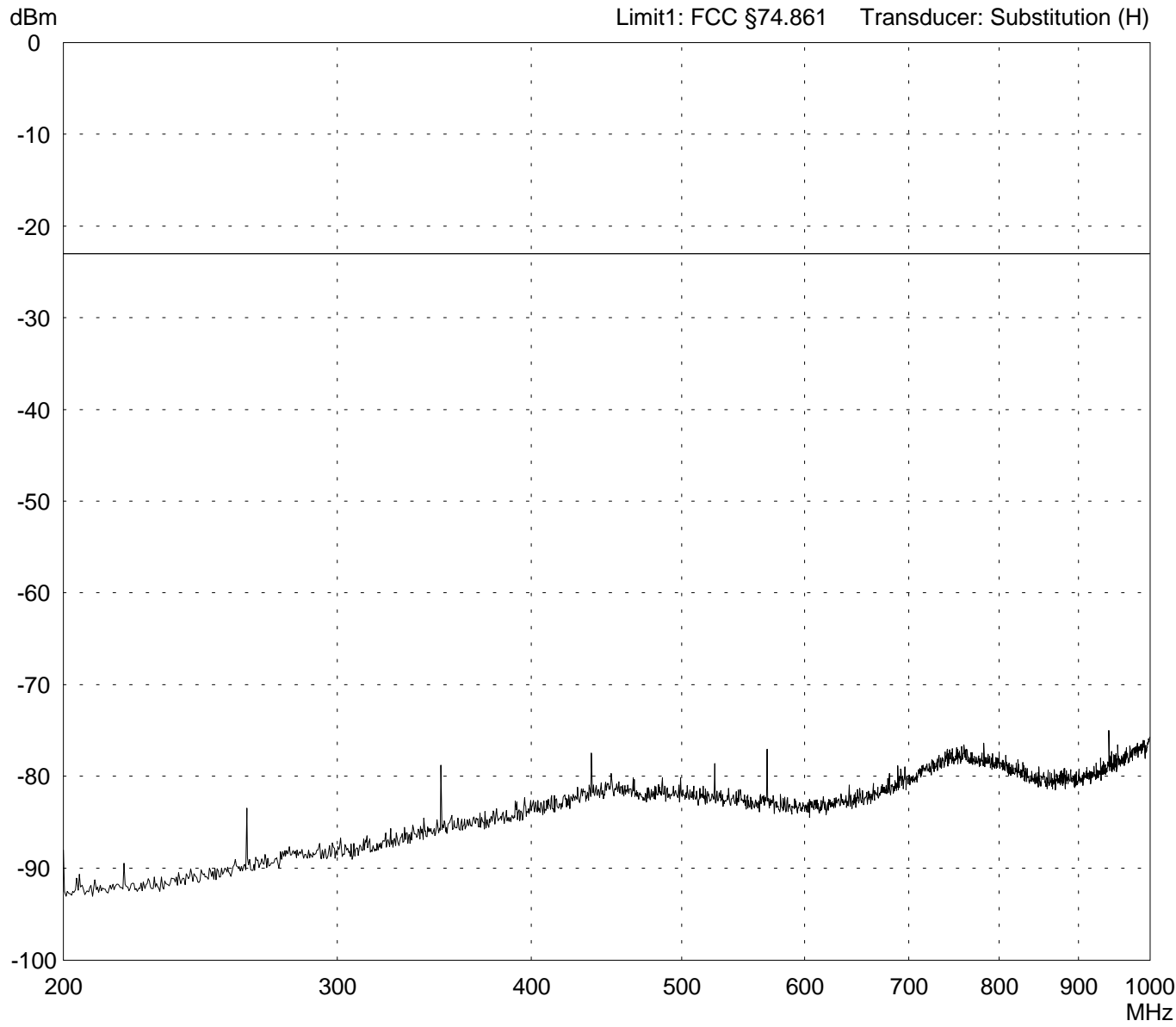


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|-----------------------------------|---|
| <p>Result: Prescan</p> | <p>Project file: 56408-30116</p> <p style="text-align: right;">Page of Pages</p> |
|-----------------------------------|---|

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

| | |
|--|--|
| Model: HT 5 | Comment: TX without modulation |
| 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: Operator: 03/26/2003 J. Roidt | |
| Test performed: File name: automatically default.emi | |

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



| | |
|---------------------------|-------------------------------------|
| Result: Prescan | Project file: 56408-30116 |
| Page of 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

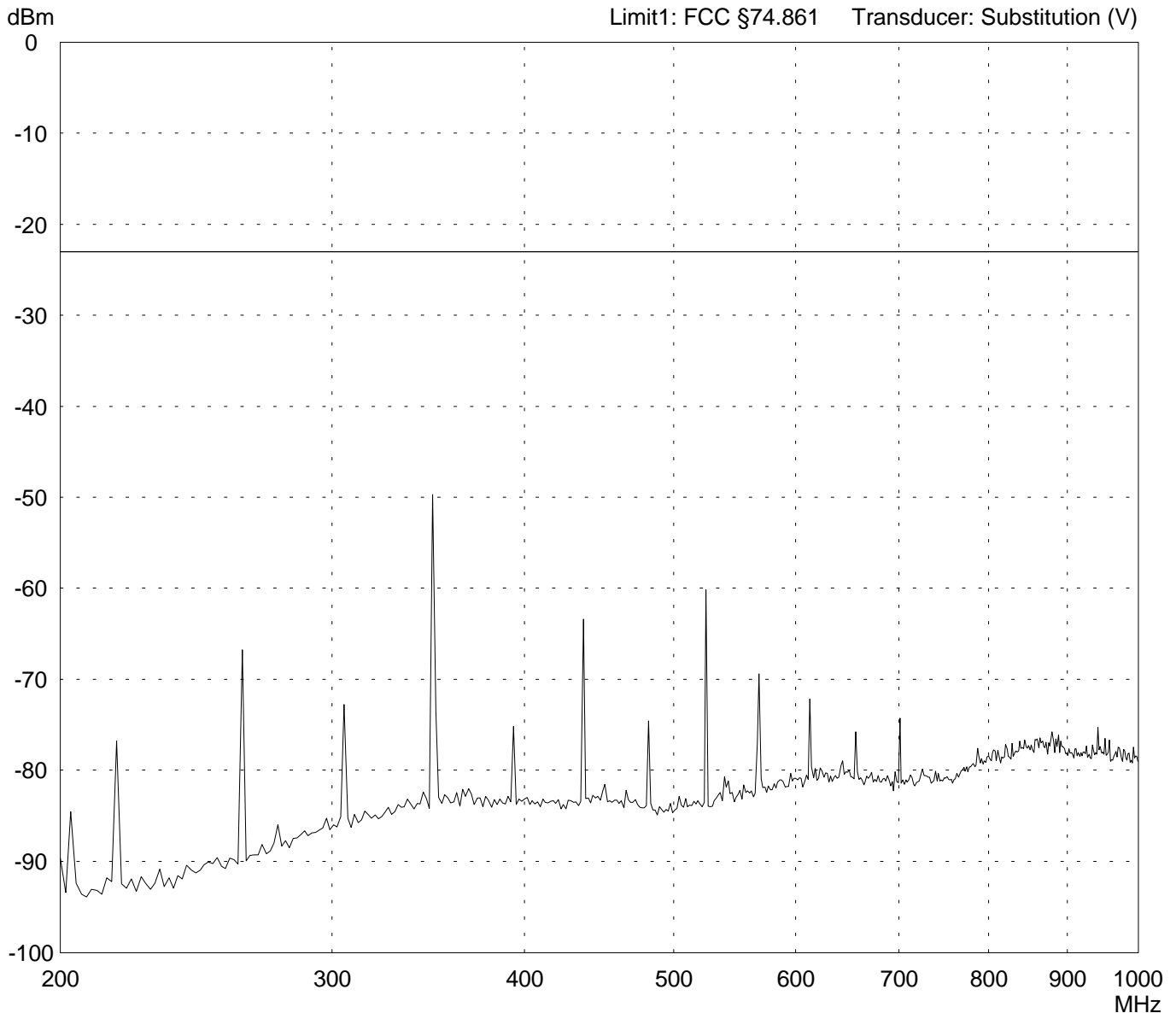
Date of test: 03/26/2003 Operator: J. Roidt

Test performed: automatically File name: default.emi

Comment:
TX without modulation

Detector:
Peak

List of values:
10 dB Margin 50 Subranges



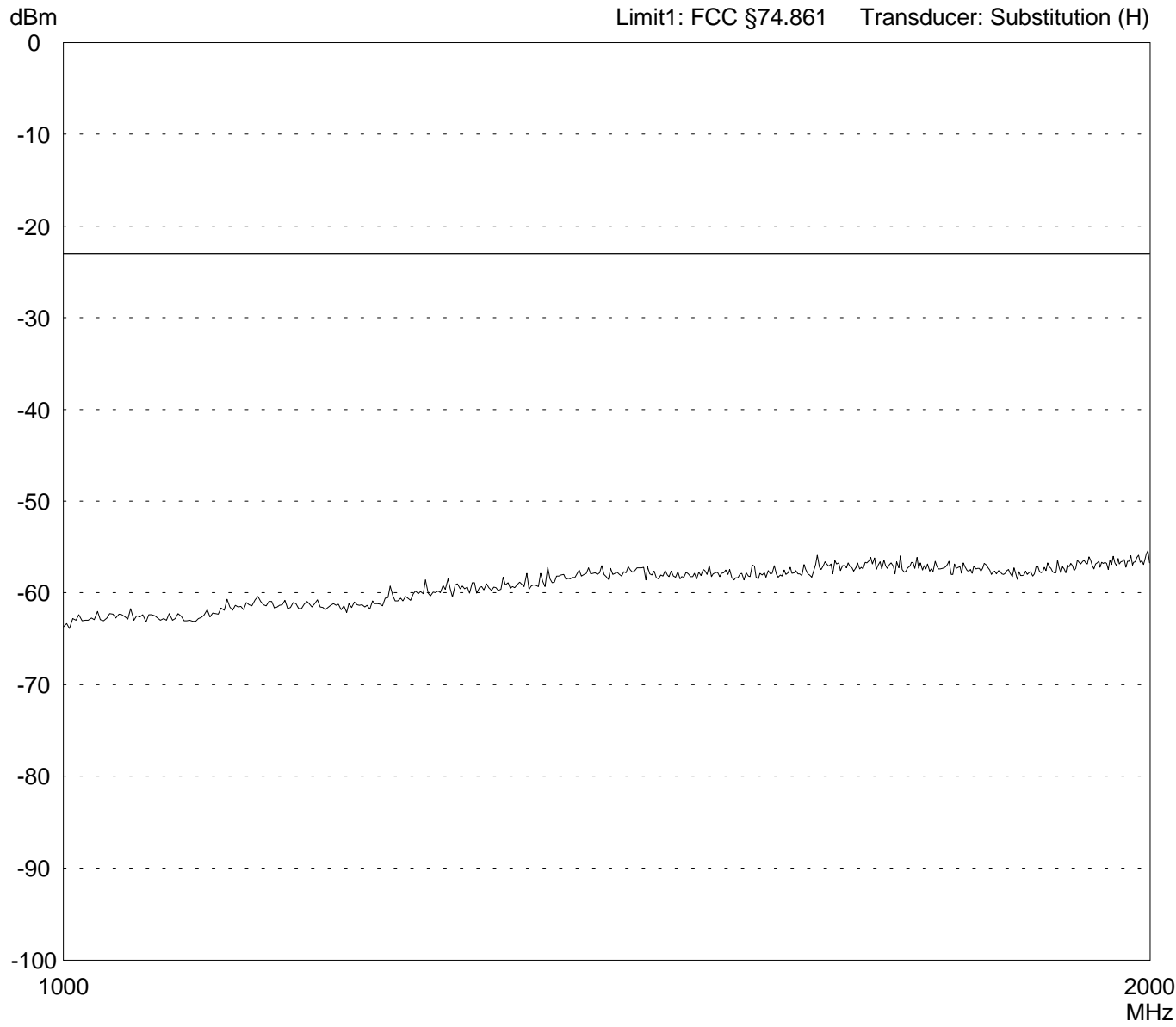
Result:
Prescan

Project file:
56408-30116 Page of Pages

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

| | |
|---|--|
| <p>Model: HT 5</p> <p>Serial no.: 175.000 MHz</p> <p>Applicant: SAMSON Technologies Corp.</p> <p>Test site: Fully anechoic room, cabin no. 2</p> <p>Tested on: Test distance 3 metres Horizontal Polarization</p> <p>Date of test: Operator: 03/26/2003 J. Roidt</p> <p>Test performed: File name: automatically default.emi</p> | <p>Comment: TX without modulation</p> |
|---|--|

| | |
|----------------------------------|--|
| <p>Detector: Peak</p> | <p>List of values: 10 dB Margin 50 Subranges</p> |
|----------------------------------|--|

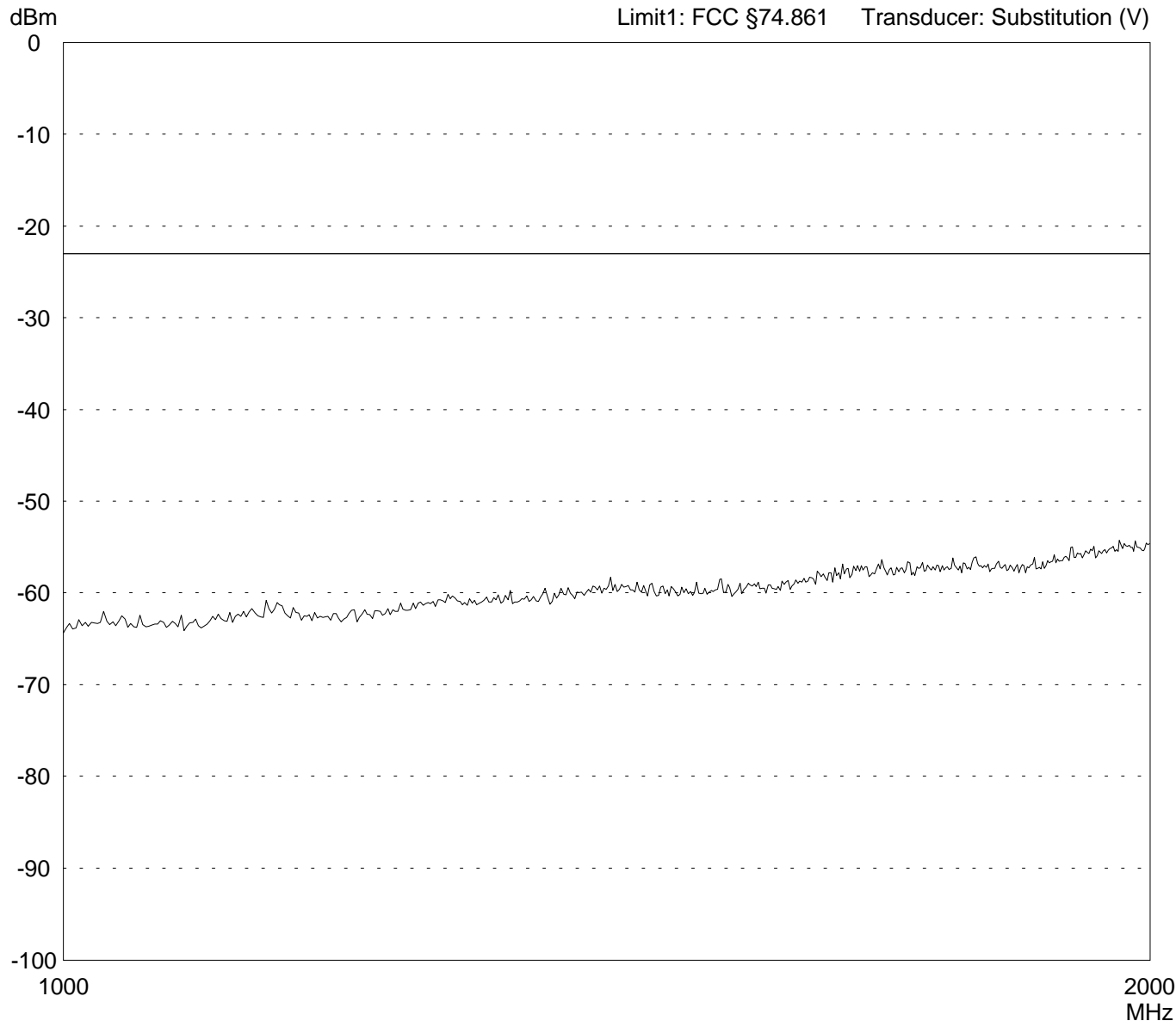


| | |
|-----------------------------------|---|
| <p>Result: Prescan</p> | <p>Project file: 56408-30116</p> <p style="text-align: right;">Page of Pages</p> |
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Radiated Power Test 1 GHz - 2 GHz acc. to FCC Part 74 Subpart H

| | |
|---|--|
| <p>Model: HT 5</p> <p>Serial no.: 175.000 MHz</p> <p>Applicant: SAMSON Technologies Corp.</p> <p>Test site: Fully anechoic room, cabin no. 2</p> <p>Tested on: Test distance 3 metres Vertical Polarization</p> <p>Date of test: Operator: 03/26/2003 J. Roidt</p> <p>Test performed: File name: automatically default.emi</p> | <p>Comment: TX without modulation</p> |
|---|--|

| | |
|----------------------------------|--|
| <p>Detector: Peak</p> | <p>List of values: 10 dB Margin 50 Subranges</p> |
|----------------------------------|--|

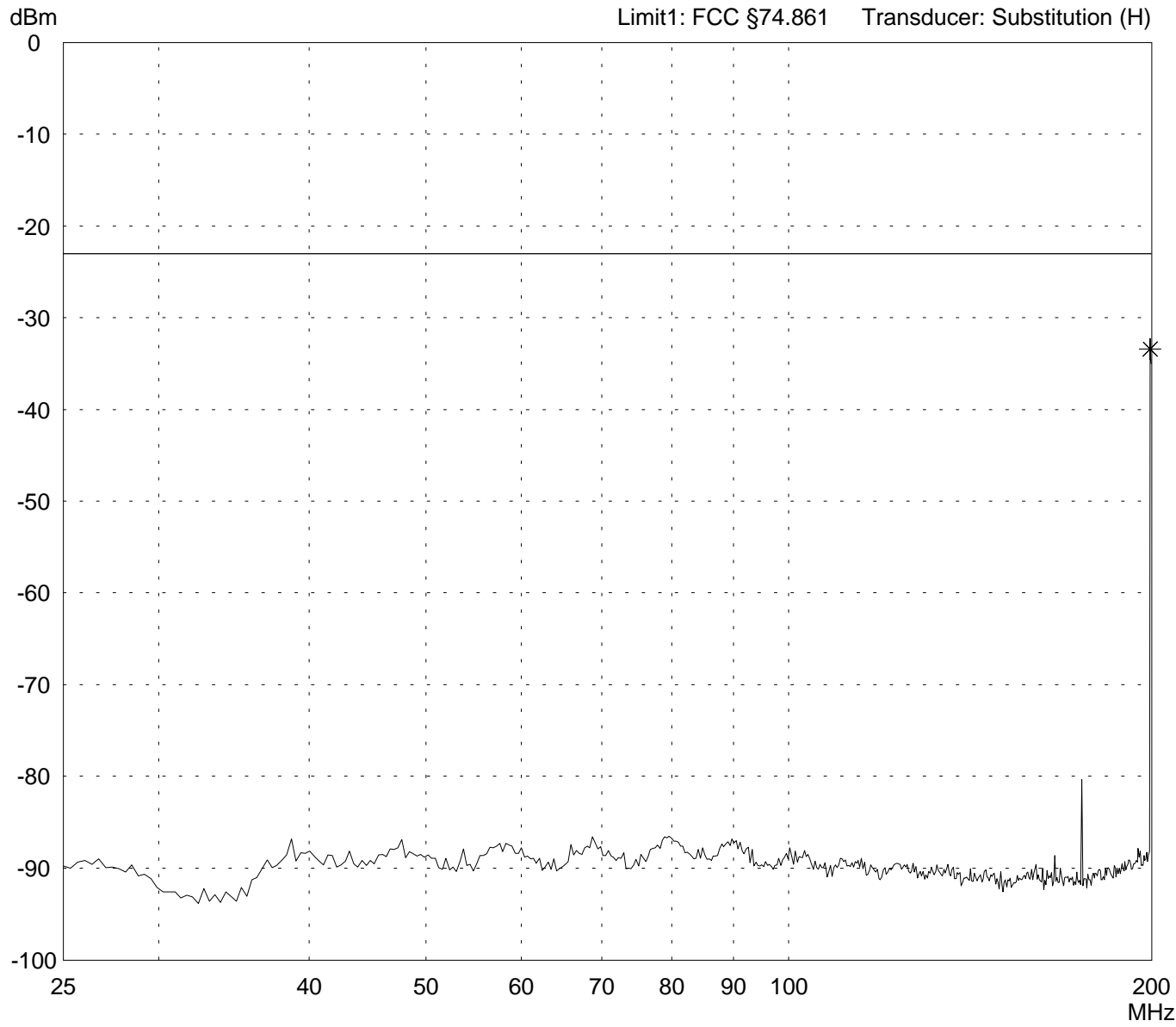


| | |
|-----------------------------------|---|
| <p>Result: Prescan</p> | <p>Project file: 56408-30116</p> <p style="text-align: right;">Page of Pages</p> |
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Radiated Power Test 25 MHz - 200 MHz acc. to FCC Part 74 Subpart H

| | |
|---|--|
| <p>Model: HT 5</p> <p>Serial no.: 199.600 MHz</p> <p>Applicant: SAMSON Technologies Corp.</p> <p>Test site: Fully anechoic room, cabin no. 2</p> <p>Tested on: Test distance 3 meters Horizontal Polarization</p> <p>Date of test: 03/26/2003 Operator: J. Roidt</p> <p>Test performed: automatically File name: default.emi</p> | <p>Comment: TX without modulation</p> |
|---|--|

| | |
|----------------------------------|--|
| <p>Detector: Peak</p> | <p>List of values: Selected by hand</p> |
|----------------------------------|--|

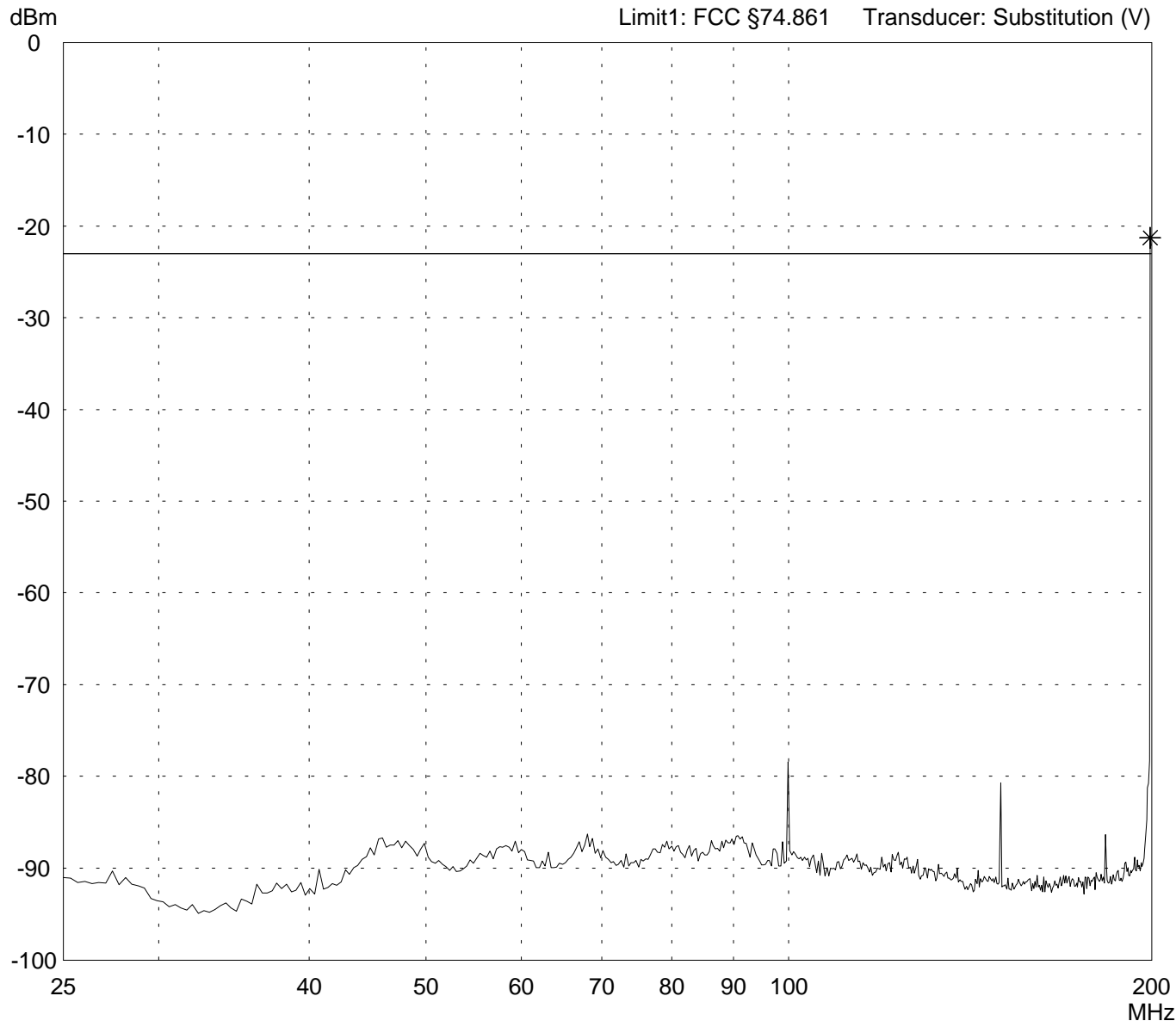


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|-----------------------------------|---|
| <p>Result: Prescan</p> | <p>Project file: 56408-30116</p> <p style="text-align: right;">Page of Pages</p> |
|-----------------------------------|---|

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

| | |
|--|--|
| Model: HT 5 | Comment: TX without modulation |
| 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: Operator: 03/26/2003 J. Roidt | |
| Test performed: File name: automatically default.emi | |

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

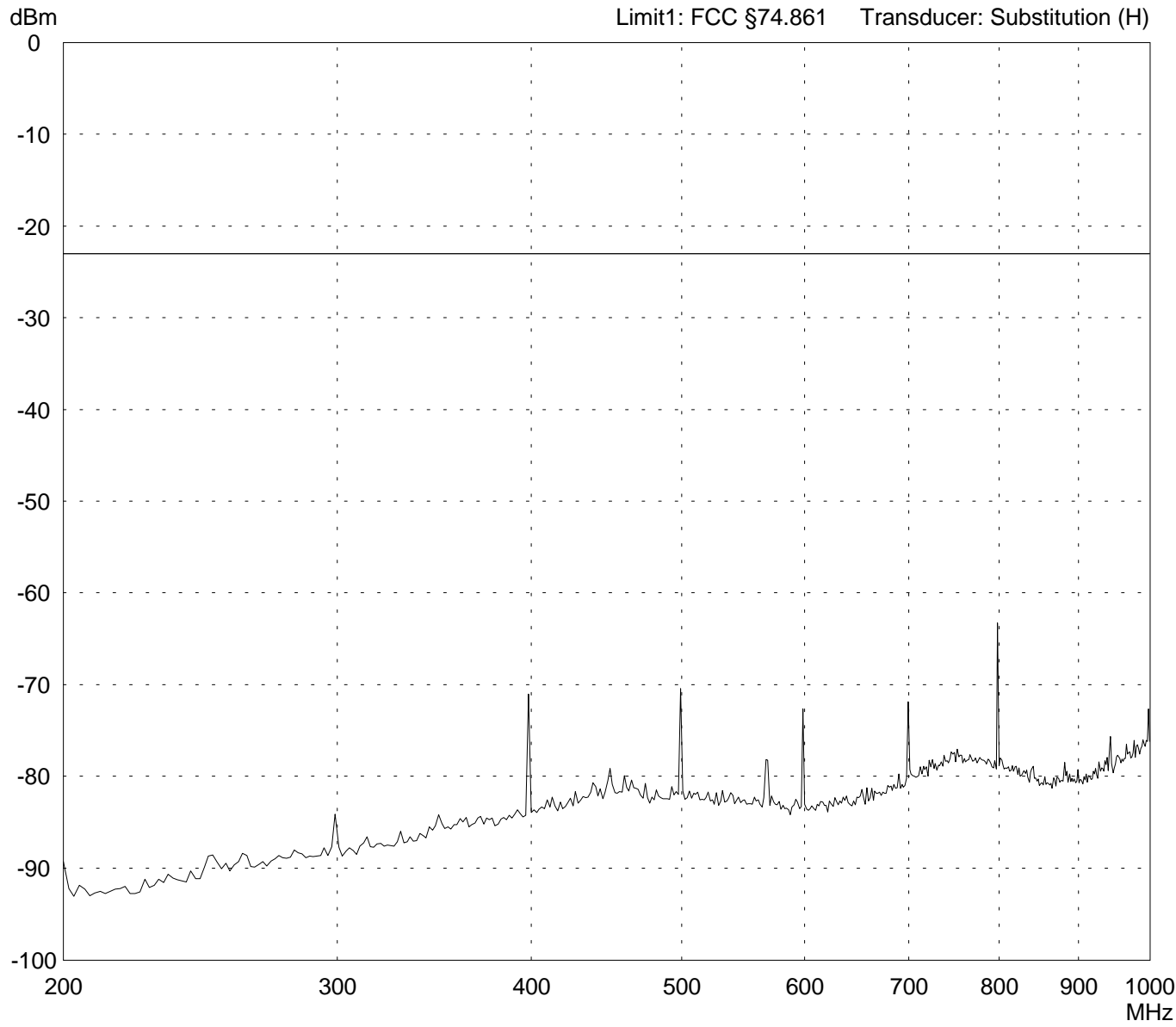


| | |
|---------------------------|-------------------------------------|
| Result: Prescan | Project file: 56408-30116 |
| | Page of Pages |

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

| | |
|---|--|
| <p>Model: HT 5</p> <p>Serial no.: 199.600 MHz</p> <p>Applicant: SAMSON Technologies Corp.</p> <p>Test site: Fully anechoic room, cabin no. 2</p> <p>Tested on: Test distance 3 meters Horizontal Polarization</p> <p>Date of test: 03/26/2003 Operator: J. Roidt</p> <p>Test performed: automatically File name: default.emi</p> | <p>Comment: TX without modulation</p> |
|---|--|

| | |
|----------------------------------|--|
| <p>Detector: Peak</p> | <p>List of values: 10 dB Margin 50 Subranges</p> |
|----------------------------------|--|

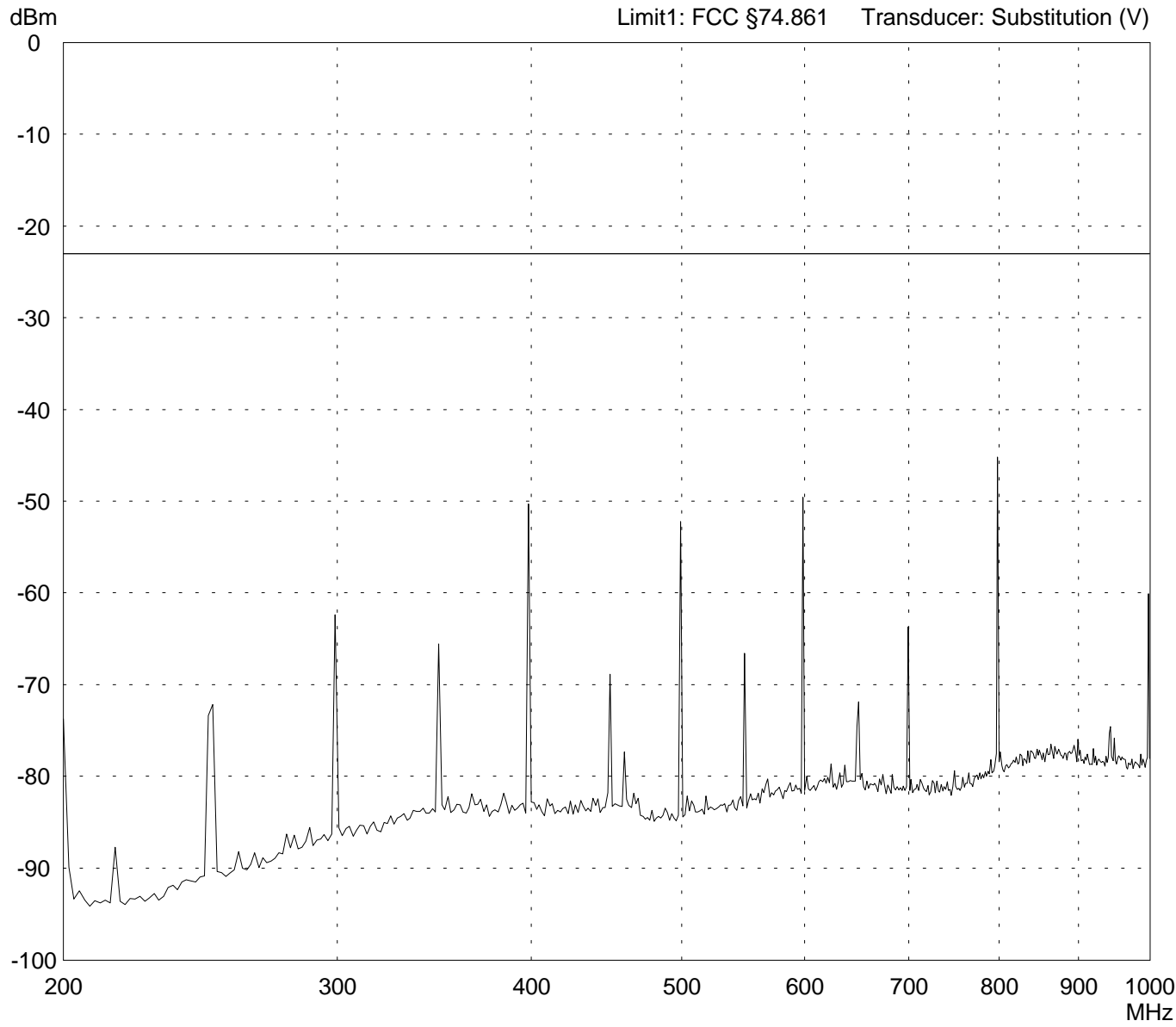


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|-----------------------------------|---|
| <p>Result: Prescan</p> | <p>Project file: 56408-30116</p> <p style="text-align: right;">Page of Pages</p> |
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Radiated Power Test 200 MHz - 1 GHz acc. to FCC Part 74 Subpart H

| | |
|---|--|
| <p>Model: HT 5</p> <p>Serial no.: 199.600 MHz</p> <p>Applicant: SAMSON Technologies Corp.</p> <p>Test site: Fully anechoic room, cabin no. 2</p> <p>Tested on: Test distance 3 meters Vertical Polarization</p> <p>Date of test: 03/26/2003 Operator: J. Roidt</p> <p>Test performed: automatically File name: default.emi</p> | <p>Comment: TX without modulation</p> |
|---|--|

| | |
|----------------------------------|--|
| <p>Detector: Peak</p> | <p>List of values: 10 dB Margin 50 Subranges</p> |
|----------------------------------|--|

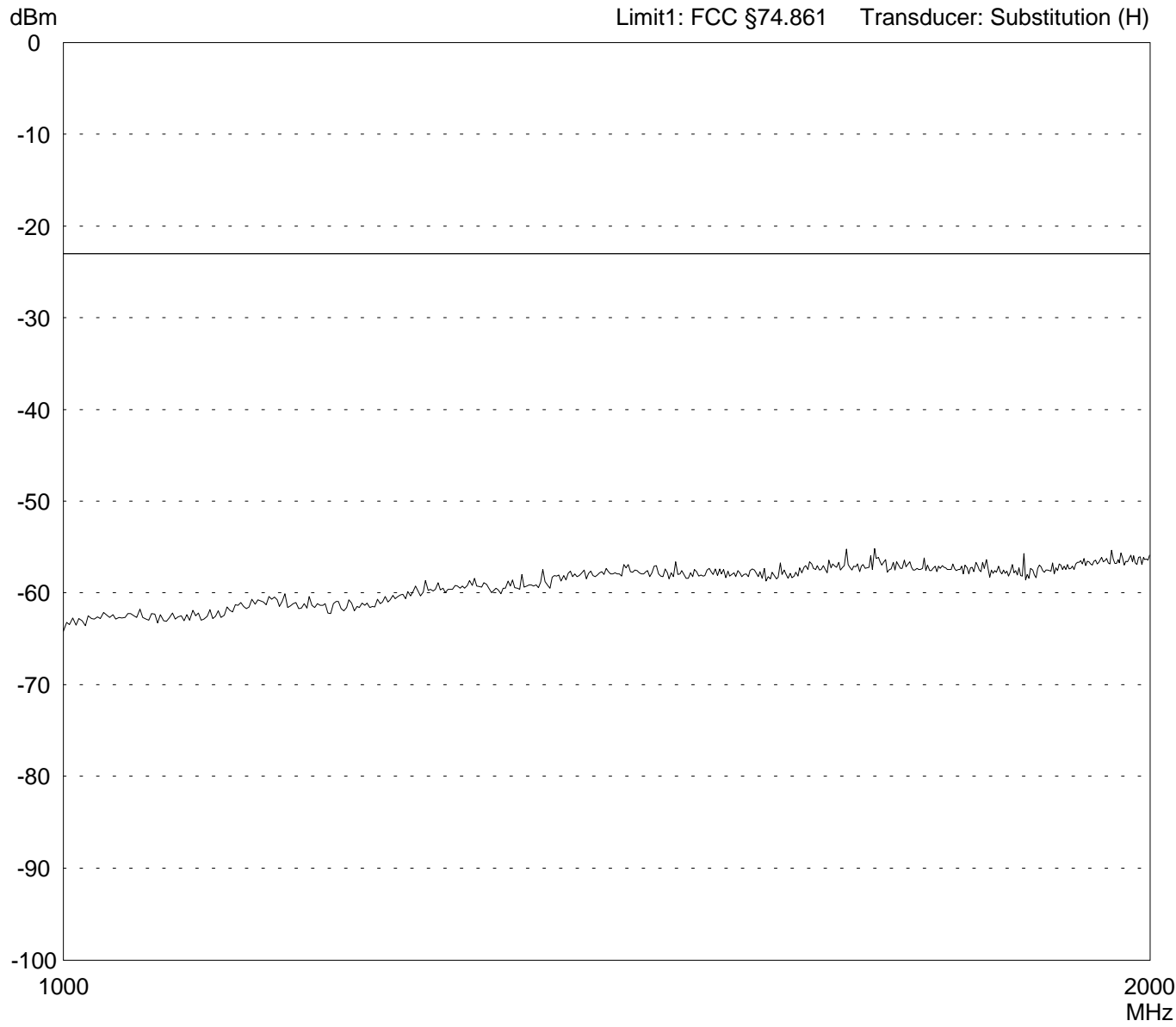


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|-----------------------------------|---|
| <p>Result: Prescan</p> | <p>Project file: 56408-30116</p> <p style="text-align: right;">Page of Pages</p> |
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Radiated Power Test 1 GHz - 2 GHz acc. to FCC Part 74 Subpart H

| | |
|---|--|
| <p>Model: HT 5</p> <p>Serial no.: 199.600 MHz</p> <p>Applicant: SAMSON Technologies Corp.</p> <p>Test site: Fully anechoic room, cabin no. 2</p> <p>Tested on: Test distance 3 metres Horizontal Polarization</p> <p>Date of test: Operator: 03/26/2003 J. Roidt</p> <p>Test performed: File name: automatically default.emi</p> | <p>Comment: TX without modulation</p> |
|---|--|

| | |
|----------------------------------|--|
| <p>Detector: Peak</p> | <p>List of values: 10 dB Margin 50 Subranges</p> |
|----------------------------------|--|

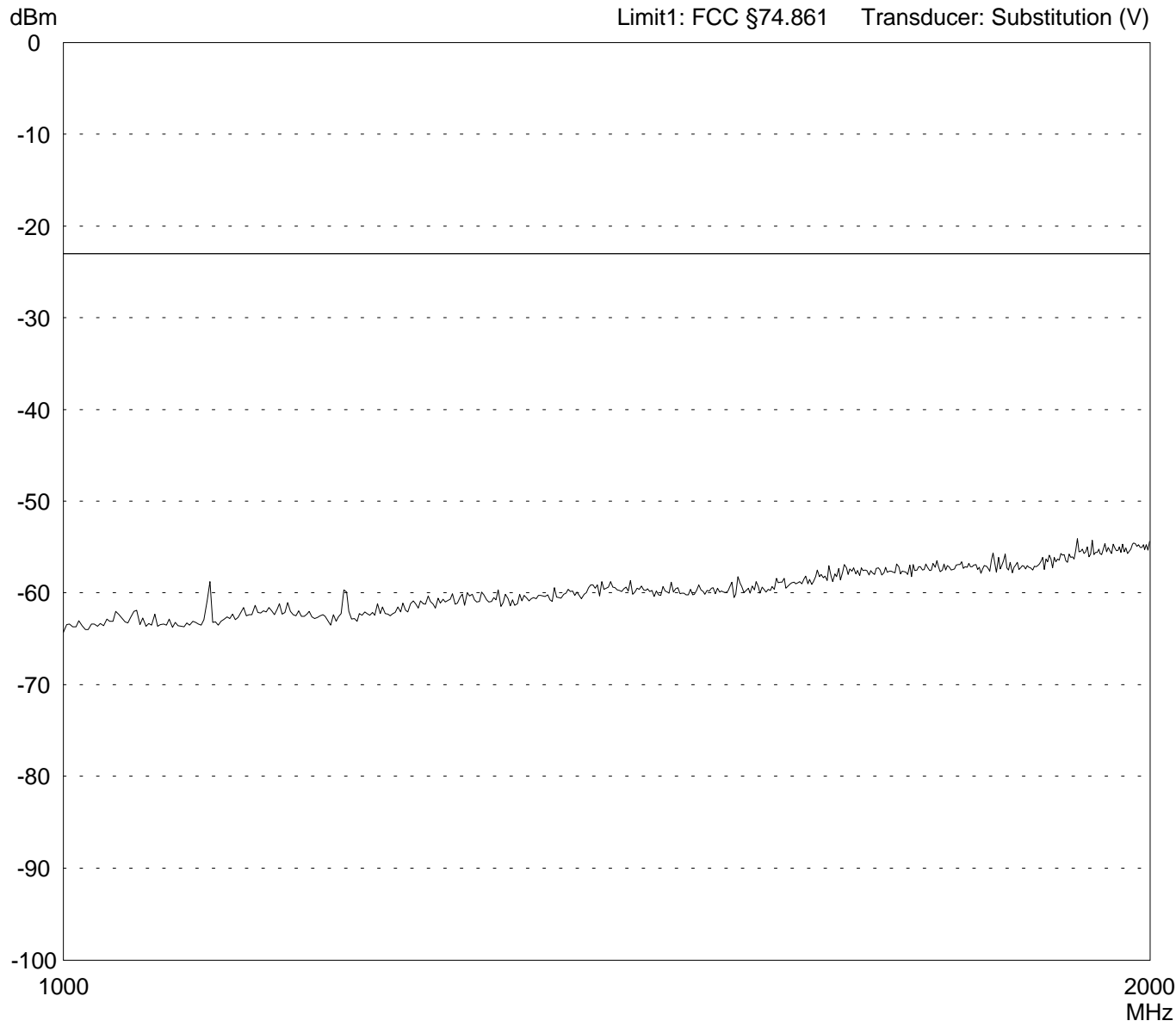


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|-----------------------------------|---|
| <p>Result: Prescan</p> | <p>Project file: 56408-30116</p> <p style="text-align: right;">Page of Pages</p> |
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Radiated Power Test 1 GHz - 2 GHz acc. to FCC Part 74 Subpart H

| | |
|--|--|
| Model: HT 5 | Comment: TX without modulation |
| 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: Operator: 03/26/2003 J. Roidt | |
| Test performed: File name: automatically default.emi | |

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

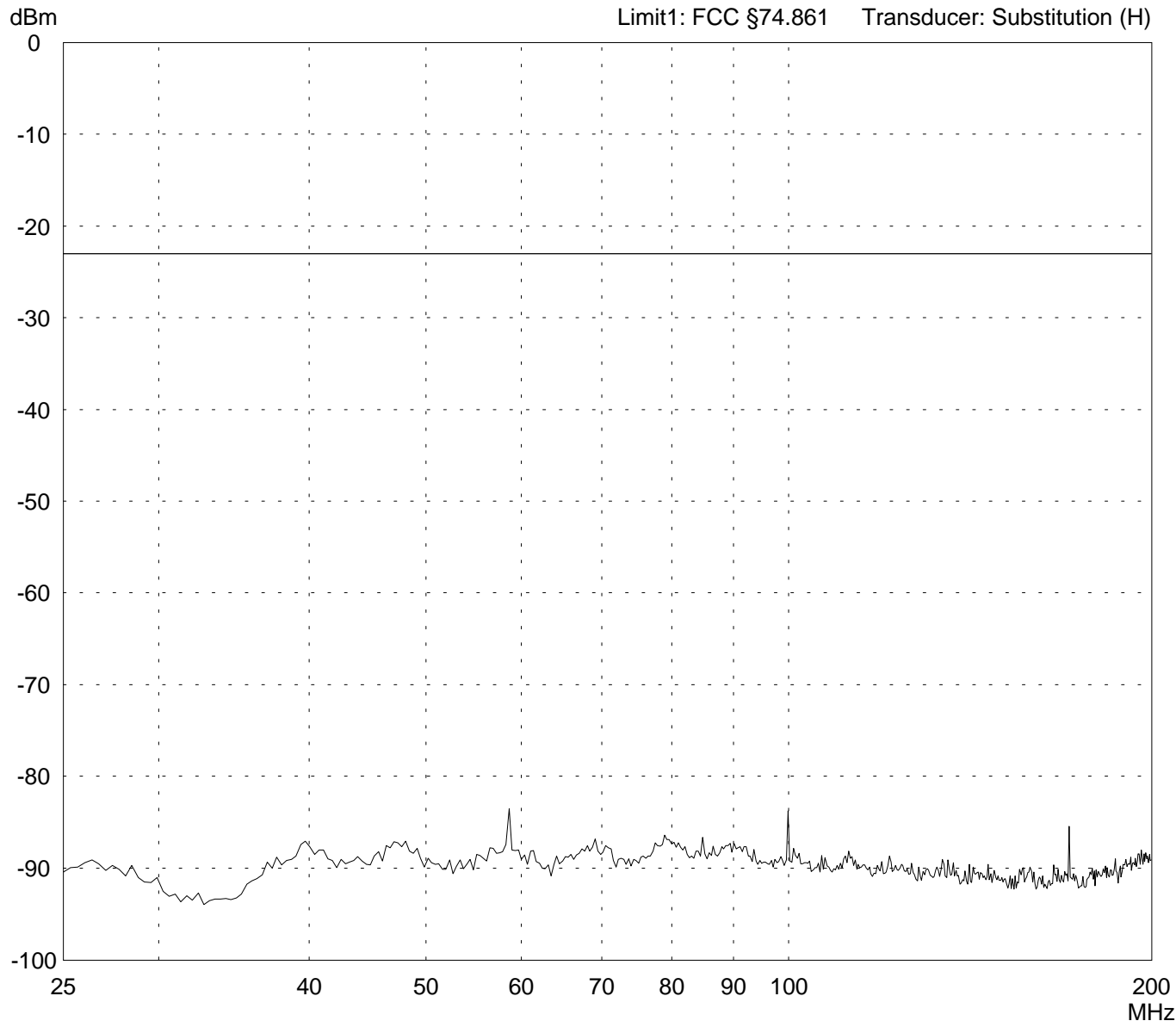


| | |
|---------------------------|-------------------------------------|
| Result: Prescan | Project file: 56408-30116 |
| Page of Pages | |

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

| | |
|---|--|
| <p>Model: HT 5</p> <p>Serial no.: 213.200 MHz</p> <p>Applicant: SAMSON Technologies Corp.</p> <p>Test site: Fully anechoic room, cabin no. 2</p> <p>Tested on: Test distance 3 meters Horizontal Polarization</p> <p>Date of test: 03/26/2003 Operator: J. Roidt</p> <p>Test performed: automatically File name: default.emi</p> | <p>Comment: TX without modulation</p> |
|---|--|

| | |
|----------------------------------|--|
| <p>Detector: Peak</p> | <p>List of values: 10 dB Margin 50 Subranges</p> |
|----------------------------------|--|

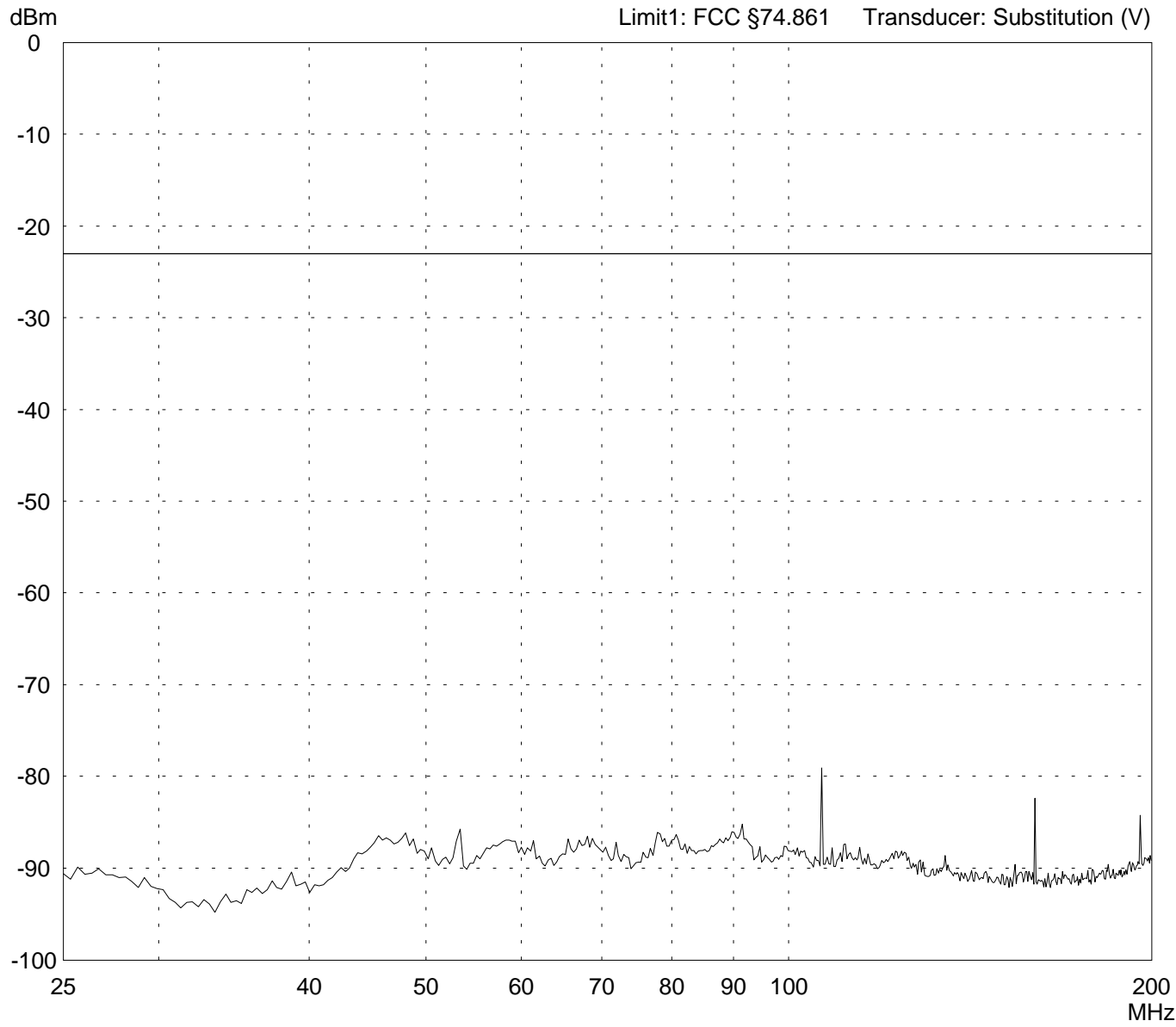


| | |
|-----------------------------------|---|
| <p>Result: Prescan</p> | <p>Project file: 56408-30116</p> <p style="text-align: right;">Page of Pages</p> |
|-----------------------------------|---|

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

| | |
|--|--|
| Model: HT 5 | Comment: TX without modulation |
| 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: Operator: 03/26/2003 J. Roidt | |
| Test performed: File name: automatically default.emi | |

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

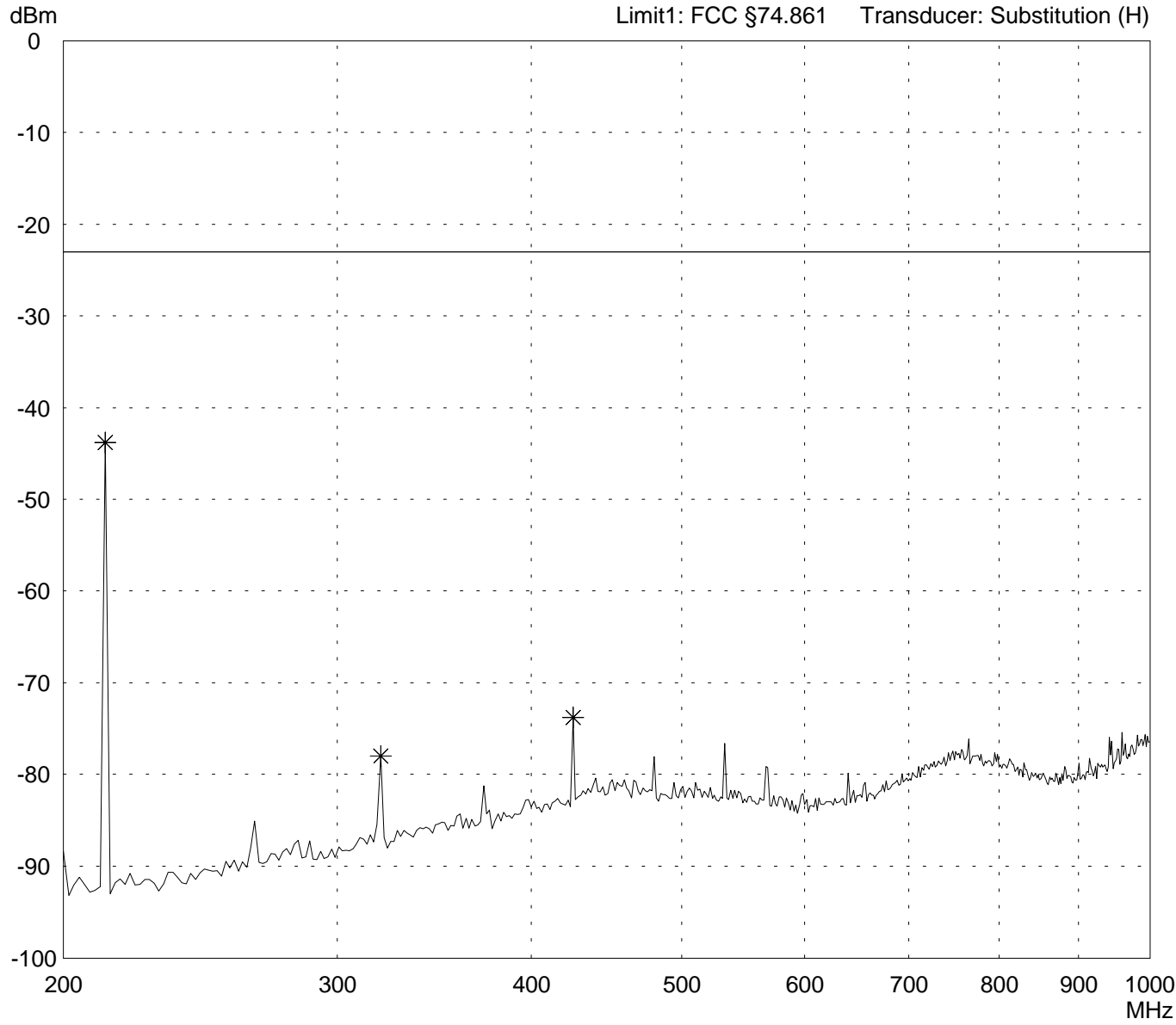


| | |
|---------------------------|-------------------------------------|
| Result: Prescan | Project file: 56408-30116 |
| Page of Pages | |

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

| | |
|--|--|
| Model: HT 5 | Comment: TX without modulation |
| 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: Operator: 03/26/2003 J. Roidt | |
| Test performed: File name: automatically default.emi | |

| | |
|--------------------------|--|
| Detector: Peak | List of values: Selected by hand |
|--------------------------|--|

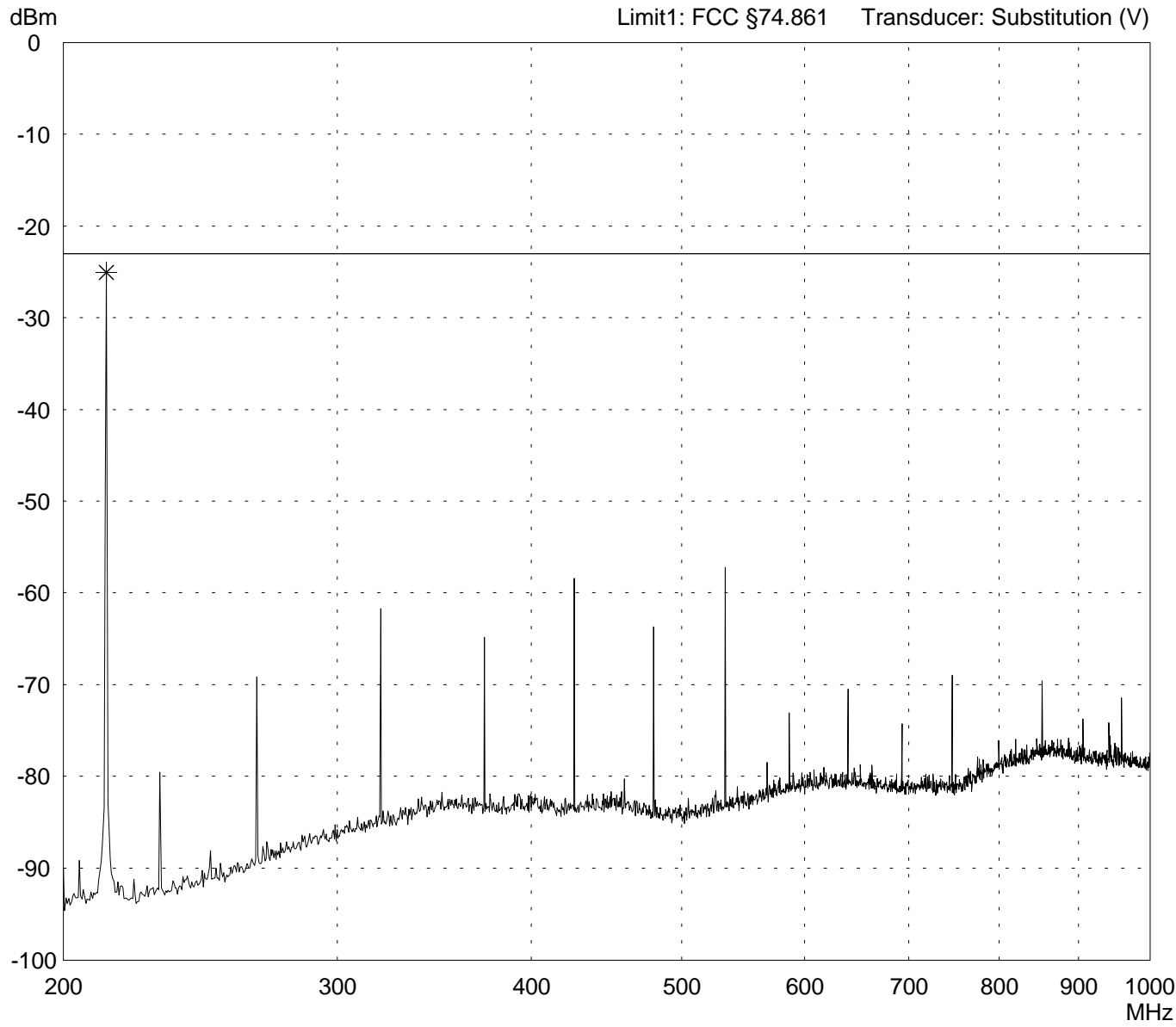


| | |
|---------------------------|-------------------------------------|
| Result: Prescan | Project file: 56408-30116 |
| | Page of Pages |

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

| | |
|---|--|
| <p>Model: HT 5</p> <p>Serial no.: 213.200 MHz</p> <p>Applicant: SAMSON Technologies Corp.</p> <p>Test site: Fully anechoic room, cabin no. 2</p> <p>Tested on: Test distance 3 meters Vertical Polarization</p> <p>Date of test: 03/26/2003 Operator: J. Roidt</p> <p>Test performed: automatically File name: default.emi</p> | <p>Comment: TX without modulation</p> |
|---|--|

| | |
|----------------------------------|--|
| <p>Detector: Peak</p> | <p>List of values: 10 dB Margin 50 Subranges</p> |
|----------------------------------|--|

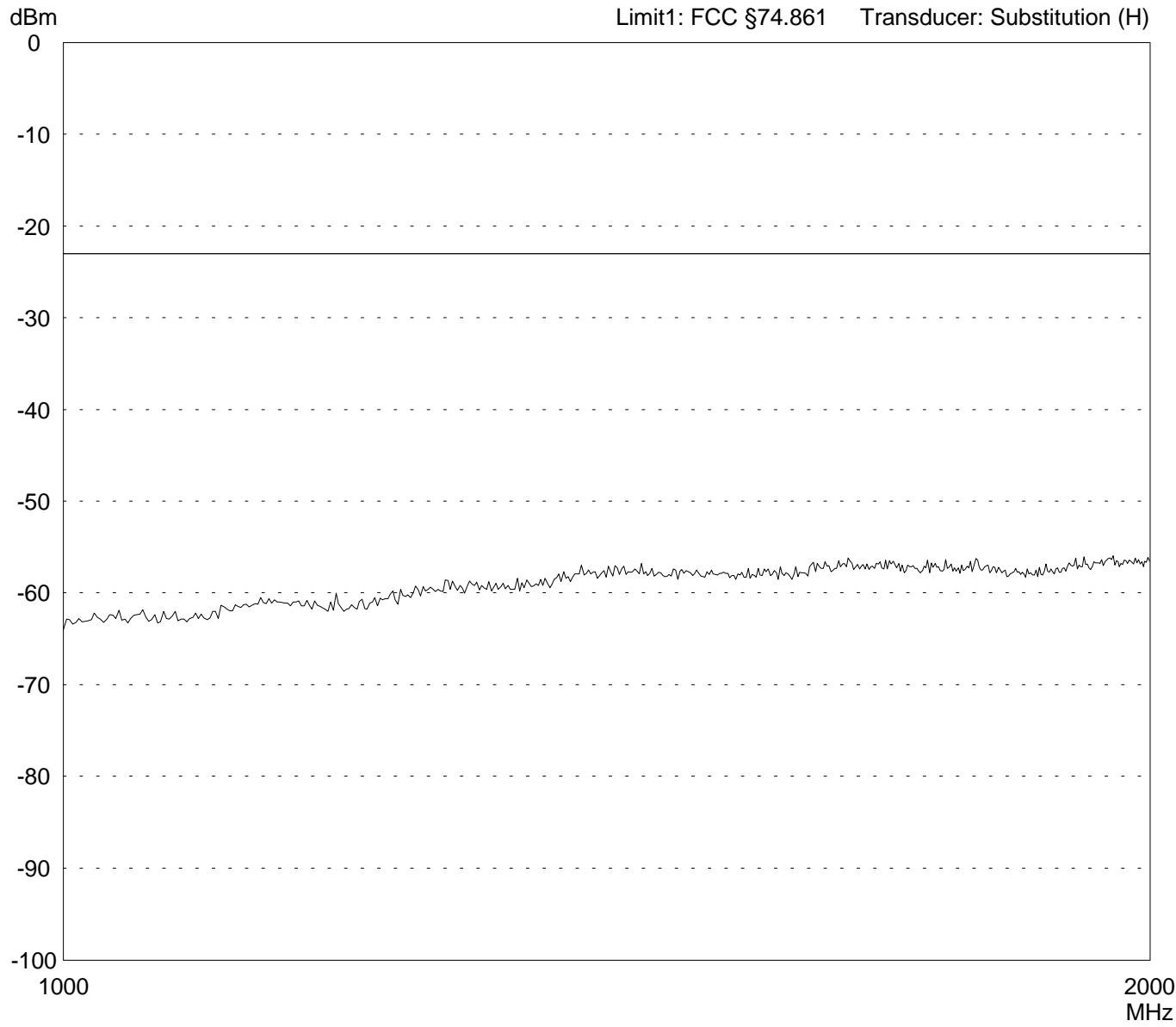


| | |
|-----------------------------------|---|
| <p>Result: Prescan</p> | <p>Project file: 56408-30116</p> <p style="text-align: right;">Page of Pages</p> |
|-----------------------------------|---|

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

| | |
|---|--|
| <p>Model: HT 5</p> <p>Serial no.: 213.200 MHz</p> <p>Applicant: SAMSON Technologies Corp.</p> <p>Test site: Fully anechoic room, cabin no. 2</p> <p>Tested on: Test distance 3 metres Horizontal Polarization</p> <p>Date of test: Operator: 03/26/2003 J. Roidt</p> <p>Test performed: File name: automatically default.emi</p> | <p>Comment: TX without modulation</p> |
|---|--|

| | |
|----------------------------------|--|
| <p>Detector: Peak</p> | <p>List of values: 10 dB Margin 50 Subranges</p> |
|----------------------------------|--|

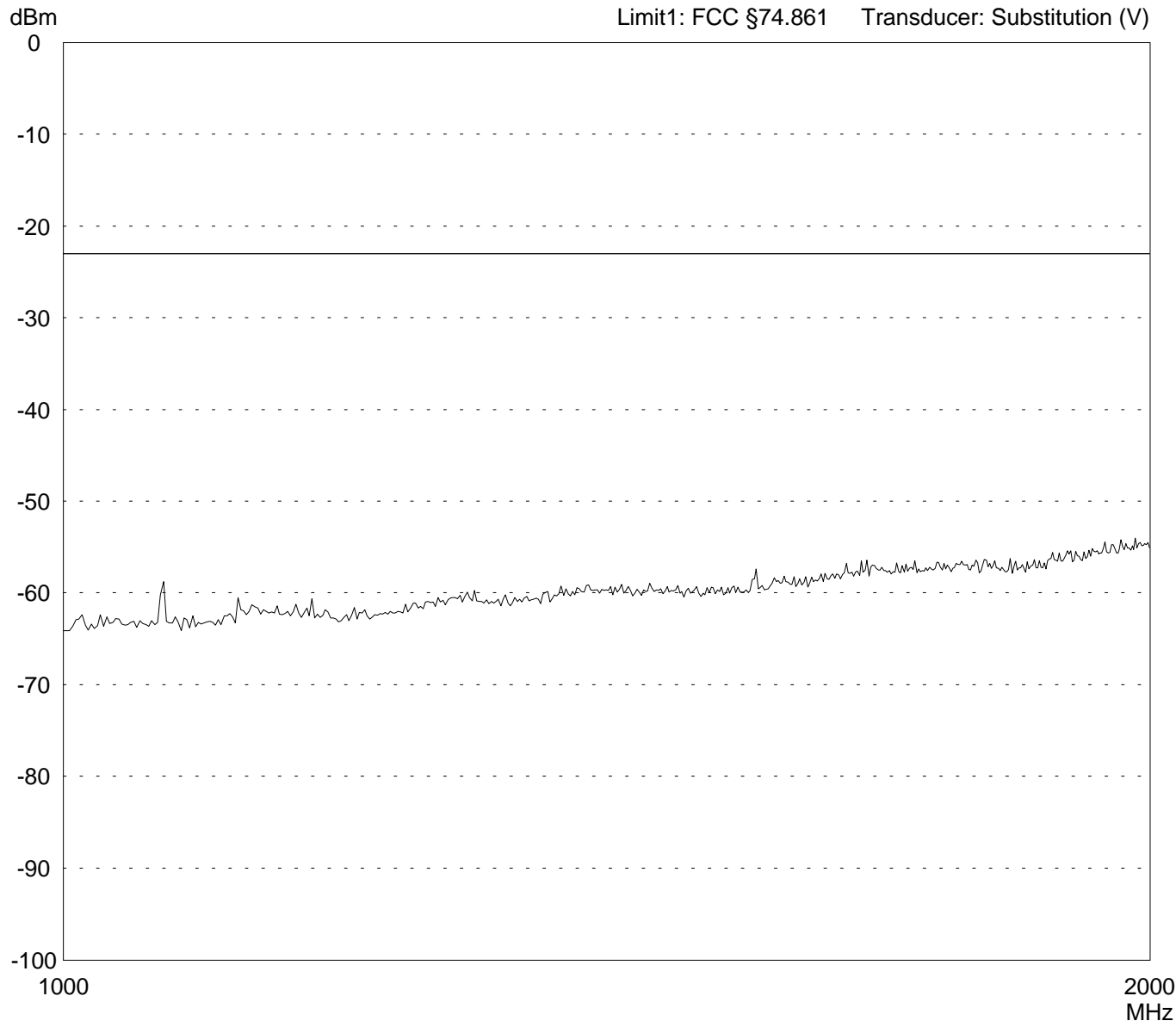


| | |
|-----------------------------------|---|
| <p>Result: Prescan</p> | <p>Project file: 56408-30116</p> <p style="text-align: right;">Page of Pages</p> |
|-----------------------------------|---|

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

| | |
|---|--|
| <p>Model: HT 5</p> <hr/> <p>Serial no.: 213.200 MHz</p> <hr/> <p>Applicant: SAMSON Technologies Corp.</p> <hr/> <p>Test site: Fully anechoic room, cabin no. 2</p> <hr/> <p>Tested on: Test distance 3 metres Vertical Polarization</p> <hr/> <p>Date of test: Operator: 03/26/2003 J. Roidt</p> <hr/> <p>Test performed: File name: automatically default.emi</p> | <p>Comment: TX without modulation</p> |
|---|--|

| | |
|----------------------------------|--|
| <p>Detector: Peak</p> | <p>List of values: 10 dB Margin 50 Subranges</p> |
|----------------------------------|--|

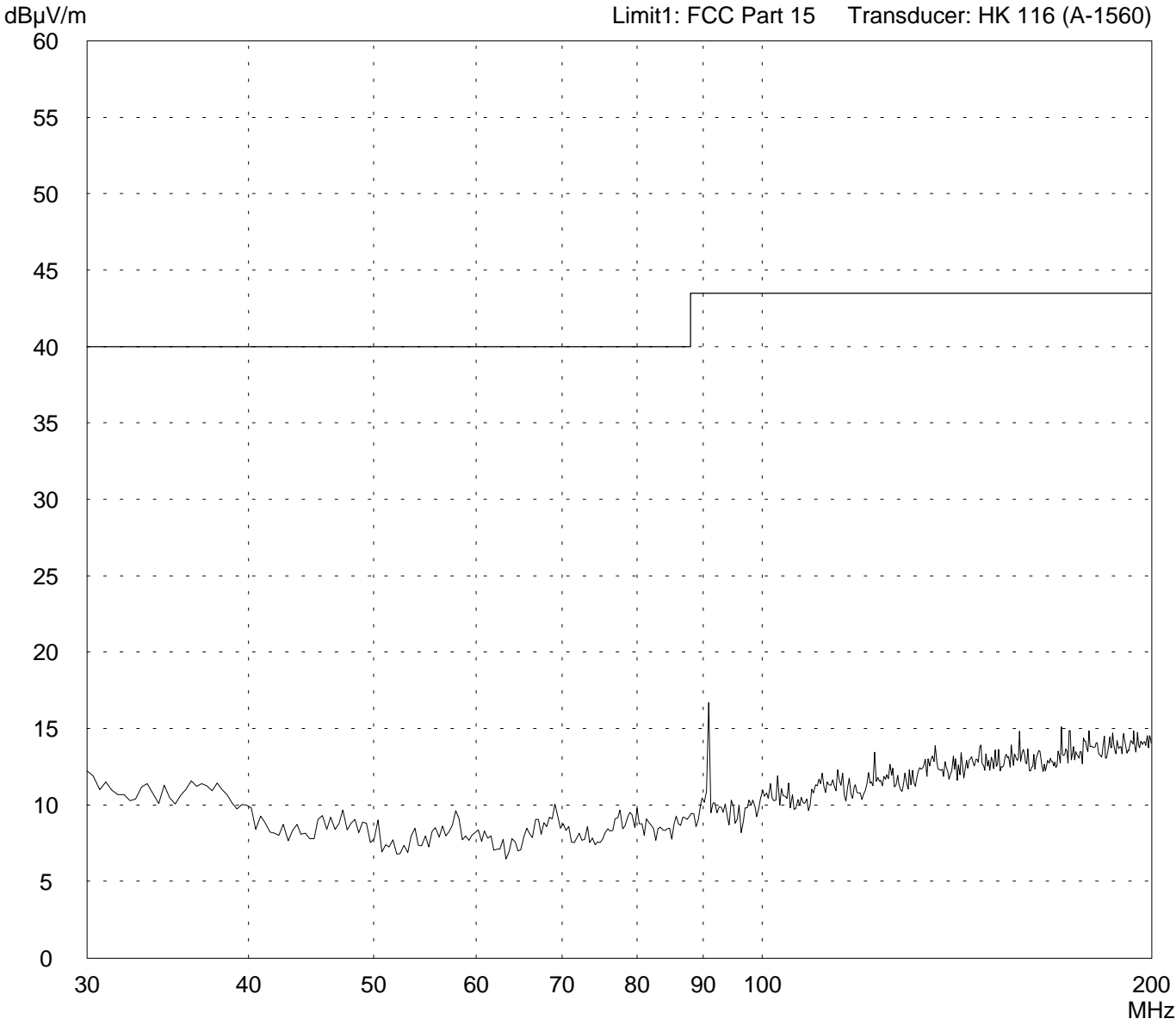


| | |
|-----------------------------------|---|
| <p>Result: Prescan</p> | <p>Project file: 56408-30116</p> <p style="text-align: right;">Page of Pages</p> |
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Radiated Emission Test 30 MHz - 200 MHz acc. to FCC Part 15 (Fully Anechoic Chamber)

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

| | |
|----------------------------------|--|
| <p>Detector: Peak</p> | <p>List of values: 10 dB Margin 50 Subranges</p> |
|----------------------------------|--|

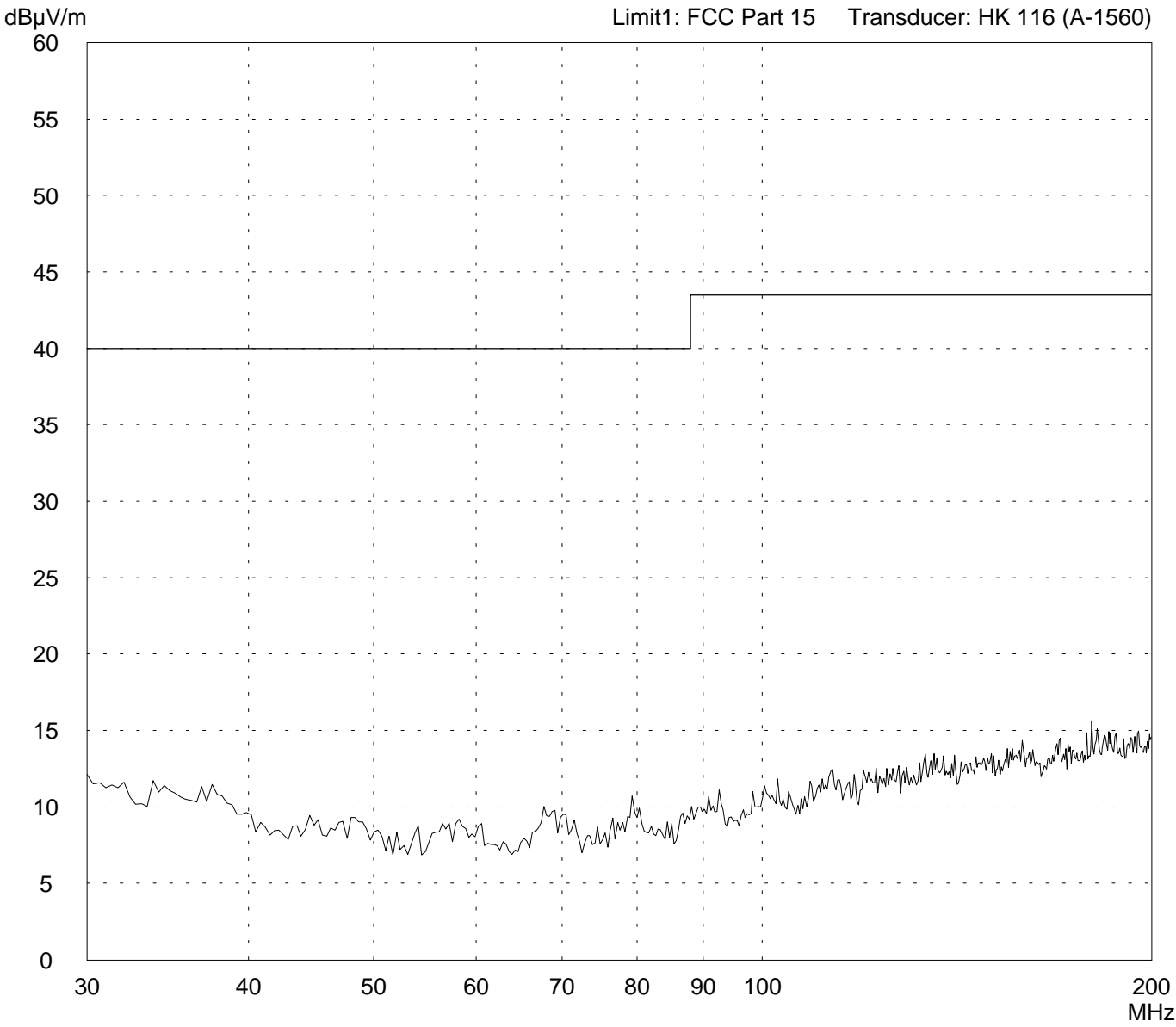


| | |
|-----------------------------------|---|
| <p>Result: Prescan</p> | <p>Project file: 56408-30116</p> <p style="text-align: right;">Page of Pages</p> |
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Radiated Emission Test 30 MHz - 200 MHz acc. to FCC Part 15 (Fully Anechoic Chamber)

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

| | |
|----------------------------------|--|
| <p>Detector: Peak</p> | <p>List of values: 10 dB Margin 50 Subranges</p> |
|----------------------------------|--|

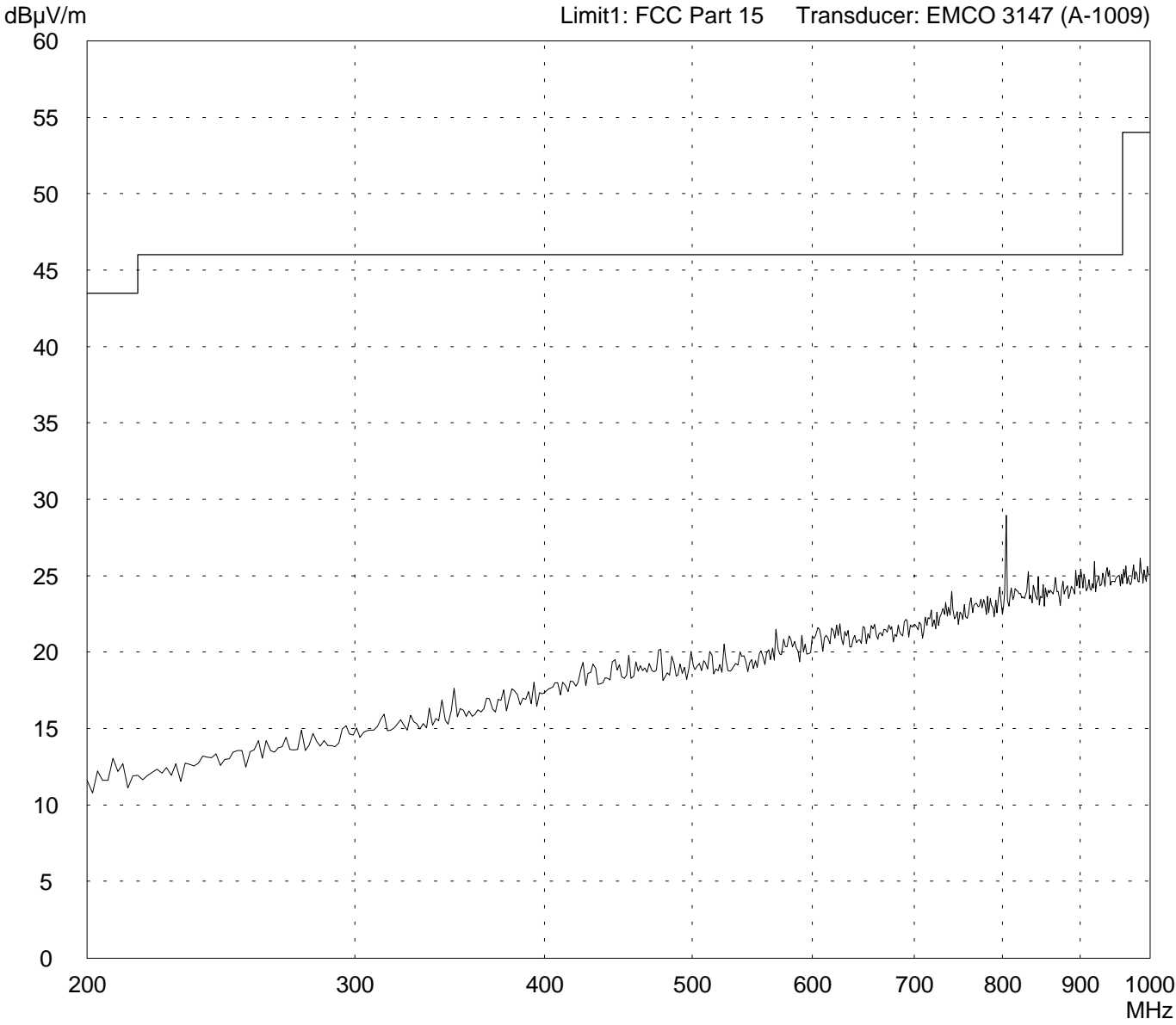


| | |
|-----------------------------------|---|
| <p>Result: Prescan</p> | <p>Project file: 56408-30116</p> <p style="text-align: right;">Page of Pages</p> |
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Radiated Emission Test 200 MHz - 1 GHz acc. to FCC Part 15 (Fully Anechoic Chamber)

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

| | |
|----------------------------------|--|
| <p>Detector: Peak</p> | <p>List of values: 10 dB Margin 50 Subranges</p> |
|----------------------------------|--|

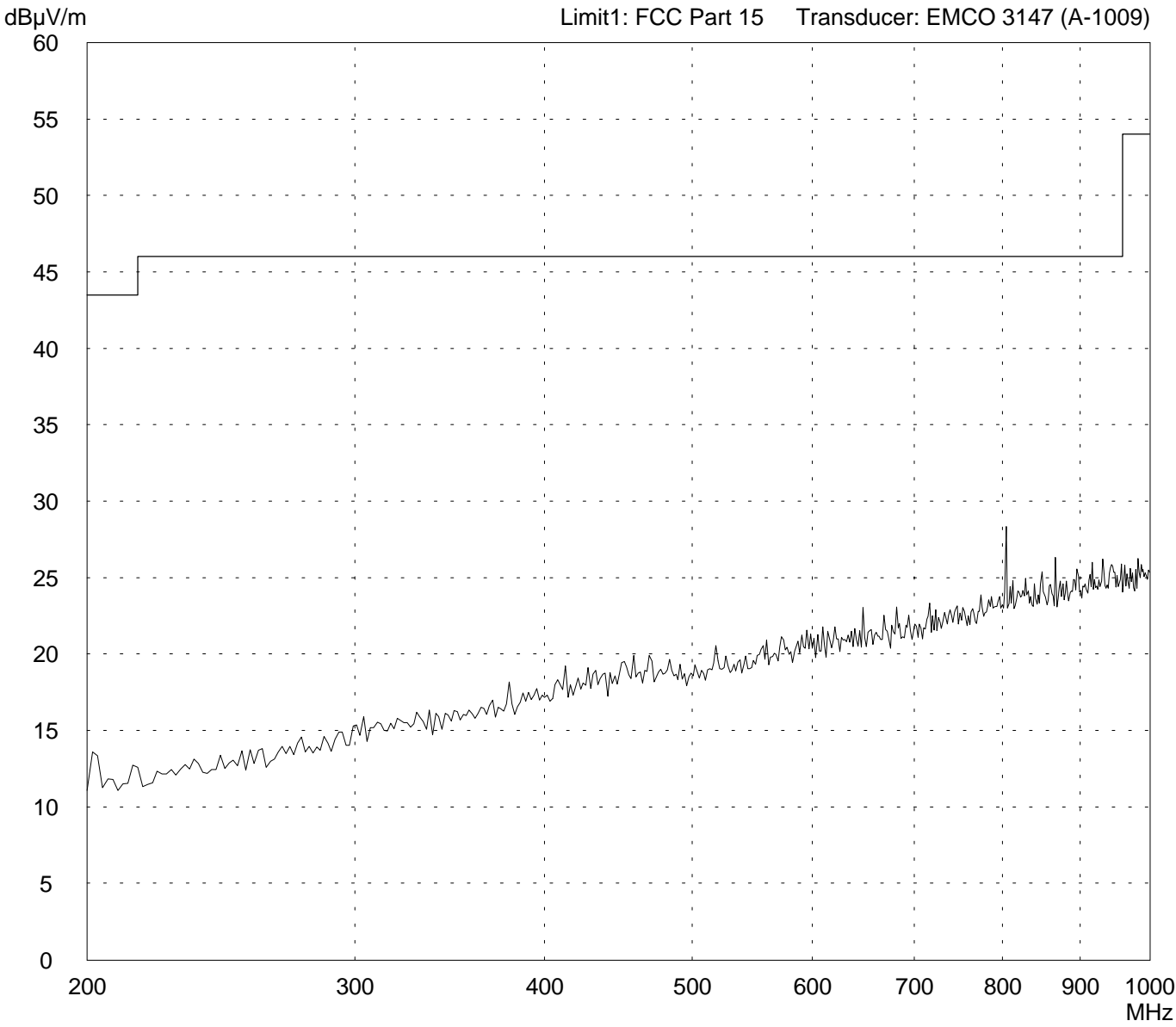


| | |
|-----------------------------------|---|
| <p>Result: Prescan</p> | <p>Project file: 56408-30116</p> <p style="text-align: right;">Page of Pages</p> |
|-----------------------------------|---|

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 |
|--------------------------|--|

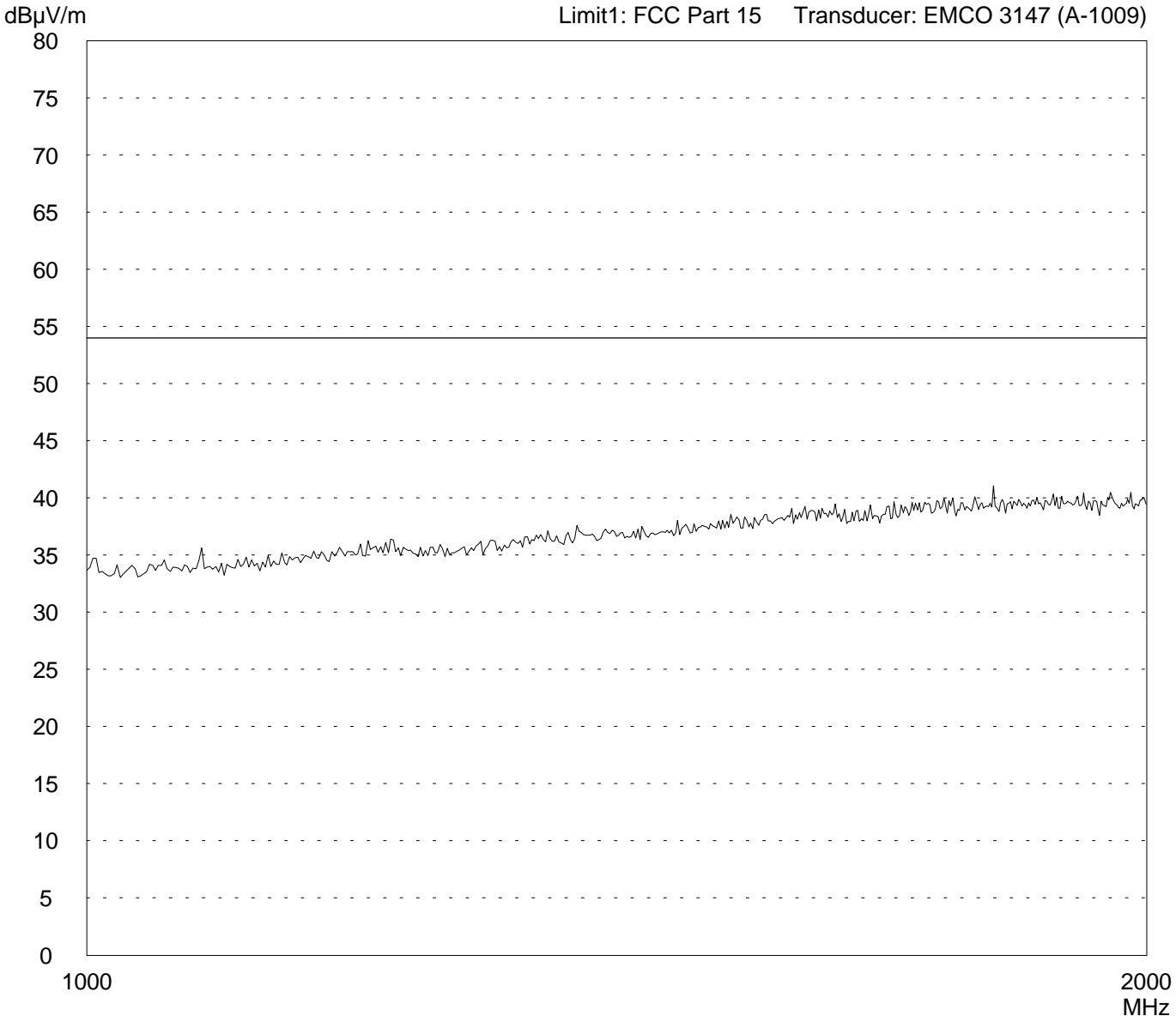


| | |
|---------------------------|--|
| Result: Prescan | Project file: 56408-30116 Page of Pages |
|---------------------------|--|

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 |
|--------------------------|---|

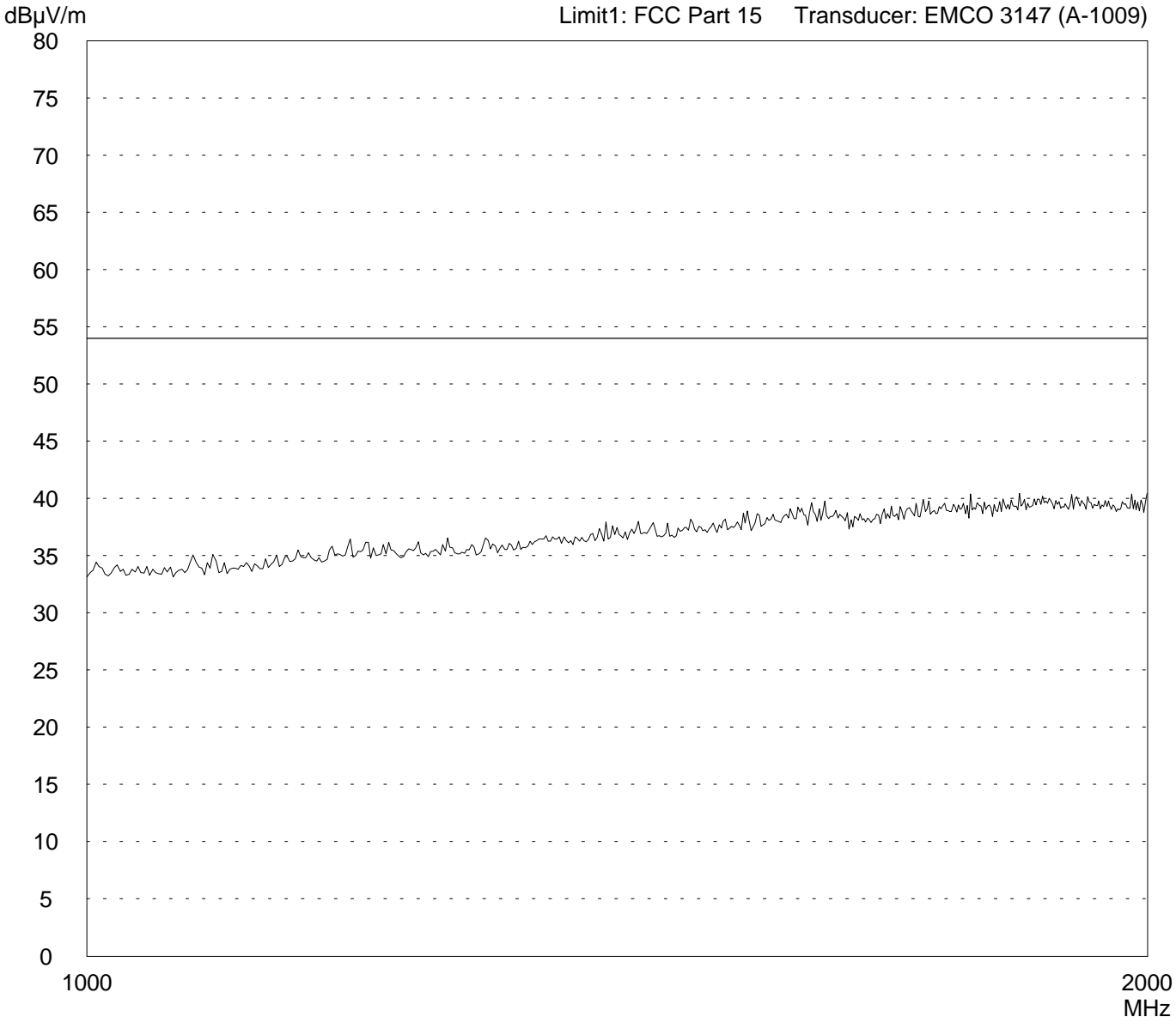


| | |
|---------------------------|-------------------------------------|
| Result: Prescan | Project file: 56408-30116 |
| | Page of Pages |

Radiated Emission Test 1 GHz - 2 GHz acc. to FCC Part 15 (Fully Anechoic Chamber)

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

| | |
|----------------------------------|--|
| <p>Detector: Peak</p> | <p>List of values: 10 dB Margin 50 Subranges</p> |
|----------------------------------|--|



| | |
|-----------------------------------|---|
| <p>Result: Prescan</p> | <p>Project file: 56408-30116</p> <p style="text-align: right;">Page of Pages</p> |
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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

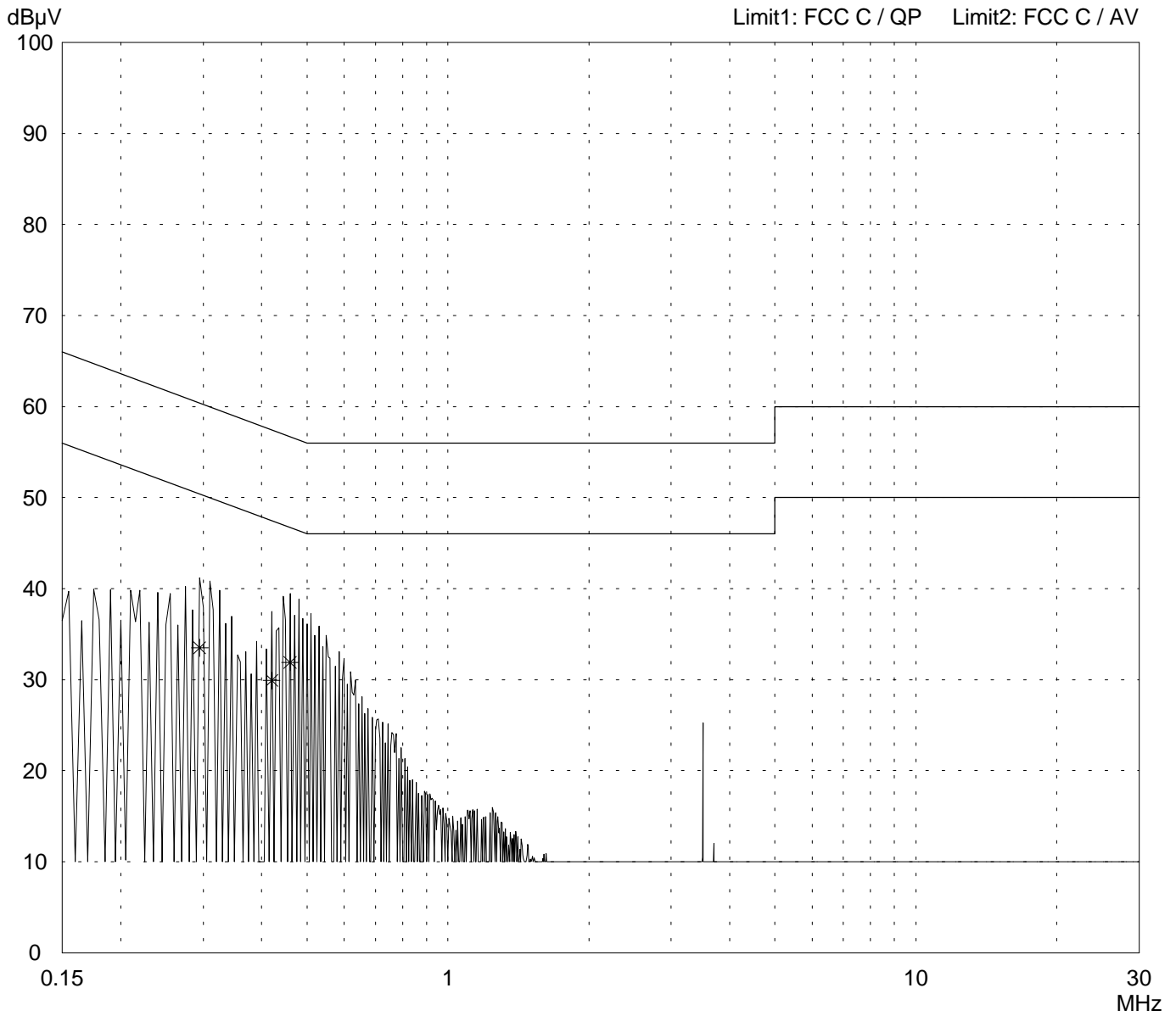
Date of test: 03/26/2003 Operator: M. Steindl

Test performed: automatically File name:

Mode:
- working continuously
- cables attached

Detector:
Peak / Final Results: QP

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

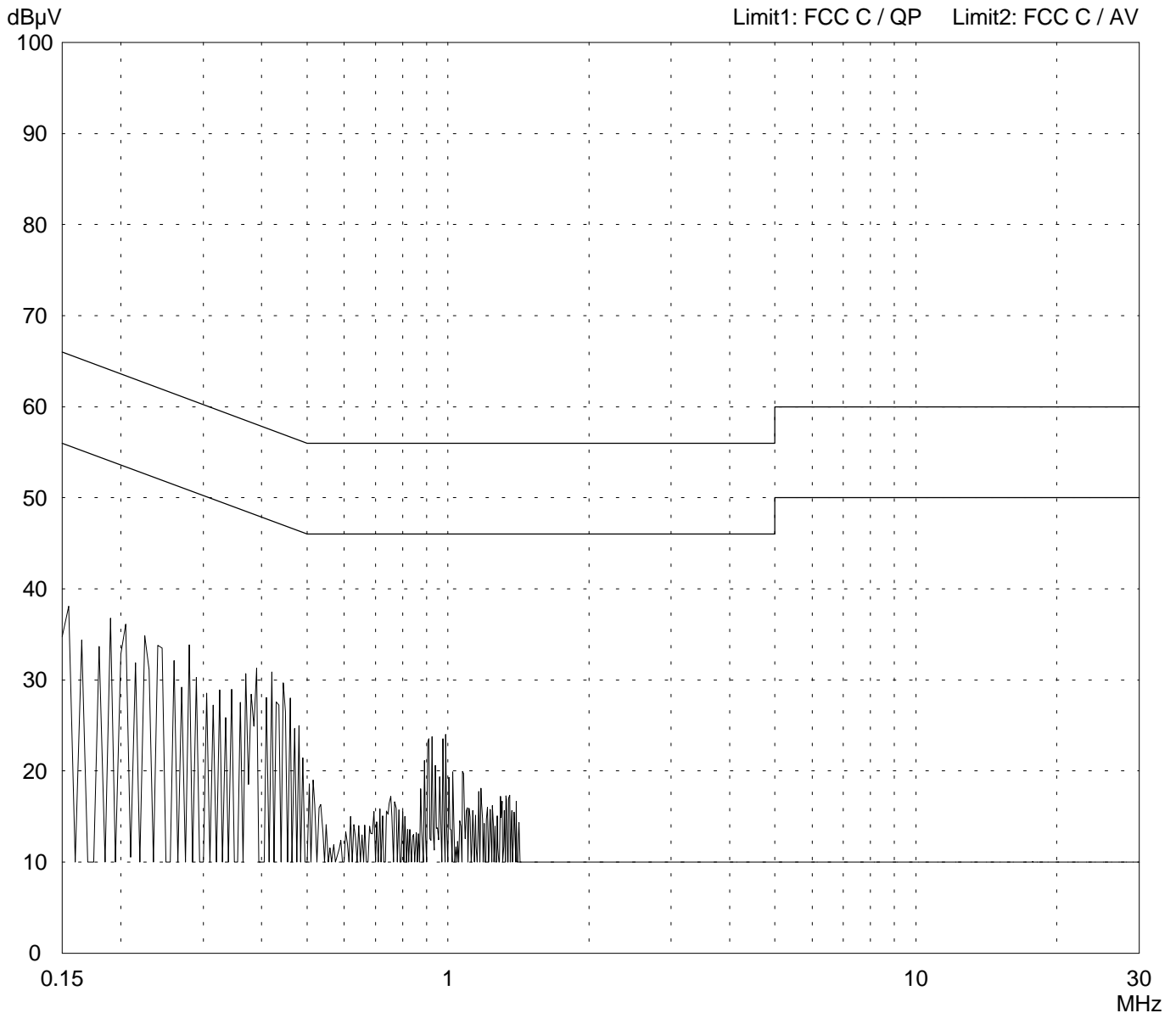
Date of test: 03/26/2003 Operator: M. Steindl

Test performed: automatically File name:

Mode:
- working continuously
- cables attached

Detector:
Peak / Final Results: QP

Final results:
Selected by hand



Result:
Limit kept

Project file:
56408-30116

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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] | | | |
| 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 [MHz] | 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] |
|--------------------|--|----------------------|-------------------|--|--|---|
| | | (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)

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 [MHz] | 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] |
|--------------------|--|----------------------|-------------------|--|--|---|
| | | (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 |