

Straubing, July 16, 2002

## **TEST-REPORT**

**No. 52226-20430**

**for**

**Tigershark**

**Inductive Tag Reader**

Applicant: Texas Instruments Deutschland GmbH

Purpose of testing: To show compliance with

FCC Code of Federal Regulations,  
CFR 47, Part 15, Subpart C,  
Section 15.225

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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

Equipment Under Test (EUT): **Tigershark**  
Serial number(s): **Sample no. 1**  
Type of equipment: **Inductive Tag Reader**  
Type of emission: **7K0A1D**  
Parts/accessories: **---**  
FCC-ID: **A92TSR102**

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Applicant: **Texas Instruments Deutschland GmbH**  
(full address) **Haggertystrasse 1**  
**D-85356 Freising / Germany**  
Contract identification: **---**  
Contact person: **Mr. Reinhard Nowak**  
Manufacturer: **Texas Instruments Deutschland GmbH**

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Receipt of EUT: **01 July 2002**  
Dates of test: **16 July 2002**  
Note: **---**

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Responsible for testing: **Johann Roidt**  
Responsible for test report: **Johann Roidt**

## 2. Identification of Test Laboratory

|                                     |                                                                                                           |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Test Laboratory:<br>(full address): | <b>Senton GmbH EMI/EMC Test Center<br/>Aeussere Fruehlingstrasse 45<br/>D-94315 Straubing<br/>Germany</b> |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------|

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|                 |                         |                                 |
|-----------------|-------------------------|---------------------------------|
| Contact person: | <b>Mr. Johann Roidt</b> |                                 |
| Communication:  | <b>Telephone</b>        | <b>(+49) 0 94 21 / 55 22-0</b>  |
|                 | <b>Fax</b>              | <b>(+49) 0 94 21 / 55 22-99</b> |
|                 | <b>eMail:</b>           | <b>Office@senton.de</b>         |

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|                              |                |
|------------------------------|----------------|
| FCC registration number:     | <b>90926</b>   |
| Industry Canada file number: | <b>IC 3050</b> |

### 3. Summary of Test Results

The tested sample complies with the requirements for set forth in the

**The Code of Federal Regulations 47, Part 15, Subpart C, Section 15.225**

of the Federal Communication Commission (FCC).



Johann Roidt  
Technical Manager

#### **4. Operation Mode of EUT**

Continuously reading a TAG

## **5. Configuration of EUT and Peripheral Devices**

### **Configuration of cables of EUT**

Not applicable

### **Configuration of peripheral devices connected to EUT**

The EUT was connected to a Fujitsu Notebook PC via standard RS 232 interface.

## 6. Measuring Methods

### 6.1. Field strength of in-band emissions (§15.225 (a)) and unwanted emissions < 30 MHz (§15.225 (b))

Radiated emissions in the frequency range 9 kHz – 30 MHz will be measured initially at a distance of 3 meters. A prescan at 3 meter distance will be performed in a shielded room with the detector of the spectrum analyzer or EMI Receiver set to peak. Final measurement is then performed at 30 meter distance. In case the regulation requires testing at other distances, the result will be extrapolated. The extrapolation factor will be determined by making a second measurement at 10 meter distance. The provisions of 15.31 (d) apply.

According to section 15.209 (d) final measurement is performed with the detector set to Quasi Peak except for the frequency bands 9 – 90 kHz and 110 – 490 kHz where average detector is employed.

## 6.2. Frequency tolerance (§15.225 (c))

### 6.2.1. Frequency stability vs. temperature

The frequency stability vs. temperature was measured with a spectrum analyzer 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 write with frequency count mode activated:

RBW = 100 Hz, VBW = 100 Hz, span = 20 kHz, sweep = 1.5 s (auto mode)

See figure 1 for the measurement setup.

Test equipment used (see equipment list for details):

02, 18, 51, 54, 69, 70, 71

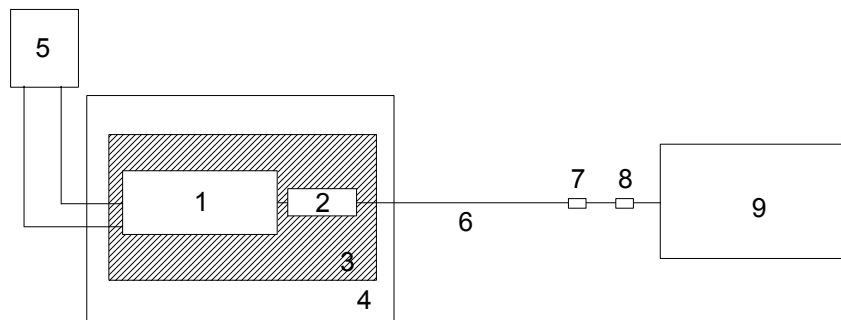


Figure 1: Measurement setup for testing within temperature test chamber

- |                            |                     |
|----------------------------|---------------------|
| 1 Transmitter (EUT)        | 6 Test cable        |
| 2 Dummy load               | 7 DC-block          |
| 3 Wooden support           | 8 Attenuator        |
| 4 Temperature test chamber | 9 Spectrum analyzer |
| 5 DC power supply          |                     |

### **6.2.2.Frequency stability vs. supply voltage**

The frequency stability vs. supply voltage was measured with a spectrum analyzer 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 write with frequency count mode activated:

RBW = 100 Hz, VBW = 100 Hz, span = 20 kHz, sweep = 1.5 s (auto mode)

See figure 1 for the measurement setup.

Test equipment used (see equipment list for details):

02, 18, 51, 69, 70, 71

### **6.3. Unwanted Emission 30 MHz - 1 GHz (§15.225 (b))**

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 quasi peak

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.

See figure 2 for the measurement setup.

Test equipment used (see equipment list for details):  
01, 06, 12, 15, 38, 39, 40, 41, 55, 58, 61, 64, 66

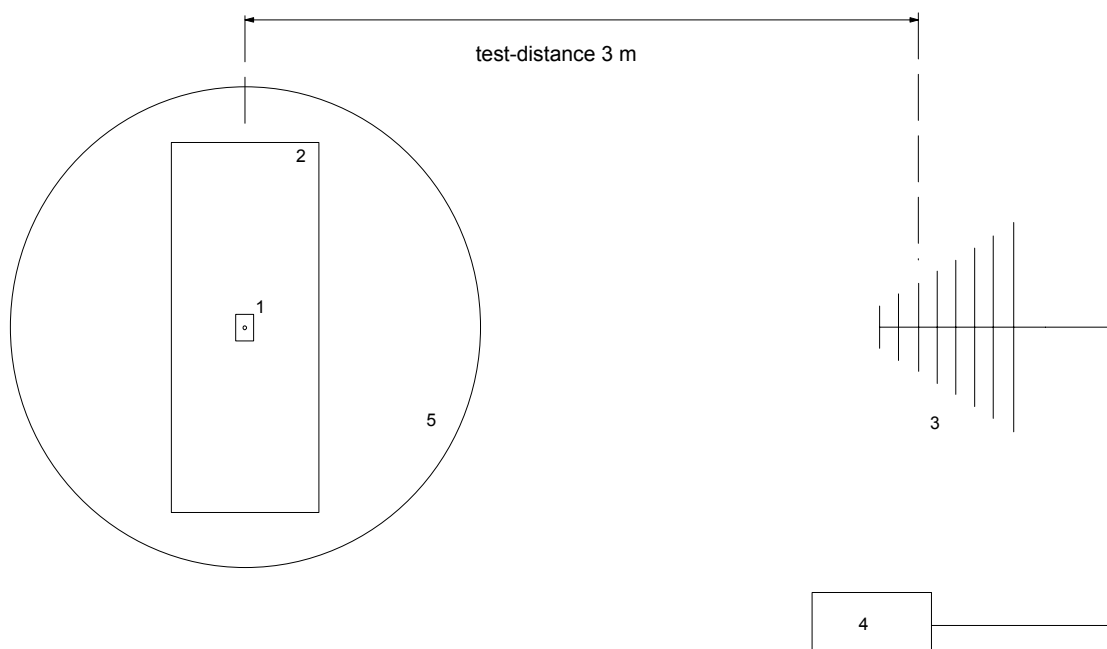


Figure 2: Measurement setup for radiated emission test

- |                            |                              |
|----------------------------|------------------------------|
| <b>1</b> Transmitter (EUT) | <b>3</b> Measurement antenna |
| <b>2</b> Wooden table      | <b>4</b> Test receiver       |
|                            | <b>5</b> Turn table          |

## 7. Photographs of Test Setups

### 7.1. Conducted Emissions 450 kHz – 30 MHz



## 7.2. Radiated Emissions 10 kHz – 30 MHz



### 7.3. Radiated Emissions 30 – 1000 MHz





## 8. 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<br>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     | SMY 01       | 830694/001               | 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  | Cable for Antenna Connector |            |               | Lucent Technologies |
| 68  | DC Block 0.01-18GHz         |            | 8037          | Inmet Corp.         |
| 69  | High pass filter            |            |               | Lucent Technologies |
| 69  | DC Block                    | 7006       | A2798         | Weinschel Corp.     |
| 70  | Cable for Antenna Connector |            |               | Senton              |
| 71  | Dummy load                  |            |               | Futaba Corporation  |

## 9. Referenced Regulations

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

|                                     |                            |                                                                                                                                                                    |                   |
|-------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| <input checked="" type="checkbox"/> | CFR 47 Part 2              | Code of Federal Regulations Part 2 (Frequency Allocations And Radio Treaty Matters, General Rules And Regulations) of the Federal Communication Commission (FCC)   | October 1, 1999   |
| <input type="checkbox"/>            | CFR 47 Part 15 Subpart A   | Code of Federal Regulations Part 15 (Radio Frequency Devices), Subpart A (General) of the Federal Communication Commission (FCC)                                   | October 1, 1999   |
| <input type="checkbox"/>            | CFR 47 Part 15 Subpart B   | Code of Federal Regulations Part 15 (Radio Frequency Devices), Subpart B (Unintentional Radiators) of the Federal Communication Commission (FCC)                   | October 1, 1999   |
| <input checked="" type="checkbox"/> | CFR 47 Part 15 Subpart C   | Code of Federal Regulations Part 15 (Radio Frequency Devices), Subpart C (Intentional Radiators) of the Federal Communication Commission (FCC)                     | October 1, 1999   |
| <input type="checkbox"/>            | CFR 47 Part 95 Subpart C/E | Code of Federal Regulations Part 95 (Personal Radio Services), Subpart C/E (Radio Control(R/C) Radio Service) of the Federal Communication Commission (FCC)        | October 1, 1998   |
| <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 checked="" type="checkbox"/> | RSS-210                    | Radio Standards Specification RSS-210 Issue 2 for Low Power Licence-Exempt Radiocommunication Devices of Industry Canada                                           | February 24, 1996 |
| <input type="checkbox"/>            | TIA/EIA-603                | Land Mobile FM or PM Communications Equipment Measurement and Performance Standards                                                                                | February, 1993    |
| <input type="checkbox"/>            | TIA/EIA-603-1              | Addendum to TIA/EIA-603                                                                                                                                            | March 4, 1998     |

## 10. List of Measurements

|                                 |                                       |             |               |
|---------------------------------|---------------------------------------|-------------|---------------|
|                                 |                                       |             |               |
| <b>CFR 47 Part 15 Subpart C</b> |                                       |             |               |
|                                 |                                       |             |               |
| <b>Section(s):</b>              | <b>Test</b>                           | <b>Page</b> | <b>Result</b> |
|                                 |                                       |             |               |
| <b>§15.207</b>                  | Conducted powerline emissions         |             | Passed        |
| <b>§15.225 (a)</b>              | Maximum in-band field strength        |             | Passed        |
| <b>§15.225 (b)</b>              | Out-of-band emissions                 |             | Passed        |
| <b>§15.225 (c)</b>              | Frequency tolerance of carrier signal |             | Passed        |
|                                 |                                       |             |               |

## 11. Test Results

**Measurement of Conducted Emissions according to FCC Rules,  
 Part 15, Subpart C, Section 15.207  
 Frequency Band 0.45 - 30 MHz**

Model: Tigershark  
 Type: Inductive Reader  
 Serial No. ---  
 Applicant: Texas Instruments Deutschland GmbH  
 Test Site: Shielded Room No. 2  
 Distance: N/A  
 Date of Test: 16 July 2002

**Test Results**

| Frequency<br>(MHz) | Detector | Terminal<br>tested | Analyzer<br>Reading<br>(dBμV) | Correction<br>Factor<br>(dB) | Terminal<br>Voltage<br>(dBμV) | Limit<br>(dBμV) | Margin<br>(dB) |
|--------------------|----------|--------------------|-------------------------------|------------------------------|-------------------------------|-----------------|----------------|
| 0.185              | AV       | Neutral            | 52,4                          | 0                            | 52,4                          | 54,3            | 1,9            |
| 0.370              | AV       | Neutral            | 48                            | 0                            | 48                            | 48,5            | 0,5            |
| 0.555              | AV       | Neutral            | 42,6                          | 0                            | 42,6                          | 46              | 3,4            |
| 0.920              | AV       | Neutral            | 40                            | 0                            | 40                            | 46              | 6,0            |
|                    |          |                    |                               |                              |                               |                 |                |
|                    |          |                    |                               |                              |                               |                 |                |
|                    |          |                    |                               |                              |                               |                 |                |
|                    |          |                    |                               |                              |                               |                 |                |
|                    |          |                    |                               |                              |                               |                 |                |
|                    |          |                    |                               |                              |                               |                 |                |

**Field Strength of Emissions according to FCC Rules,  
 Part 15, Subpart C, Section 15.225 (a), (b)  
 Frequency Band < 30 MHz**

Model: **Tigershark**  
 Type: **Inductive Reader**  
 Serial No. **Prototype 1**  
 Applicant: **Texas Instruments Deutschland GmbH**  
 Test Site: **Open Field Test Site (without Ground Plane)**  
 Distance: **30 Meter**  
 Date of Test: **16 July 2002**

| Frequency (MHz) | Detector | Antenna Polarization | Analyzer Reading (dBμV) | Correction Factor (dB) | Field Strength (dBμV/m) | Limit dBμV/m | Margin dB   |
|-----------------|----------|----------------------|-------------------------|------------------------|-------------------------|--------------|-------------|
| 13.553          | Q.P.     | N/A                  | ***                     | 20                     |                         | 29.5         | ---         |
| 13.560          | Q.P.     | N/A                  | 30,8                    | 20                     | 56.8                    | 80.0         | <b>23.2</b> |
| 13.567          | Q.P.     | N/A                  | ***                     | 20                     |                         | 29.5         | ---         |
| 27.125          | Q.P.     | N/A                  | ***                     | 20                     |                         | 29.5         | ---         |
|                 |          |                      |                         |                        |                         |              |             |

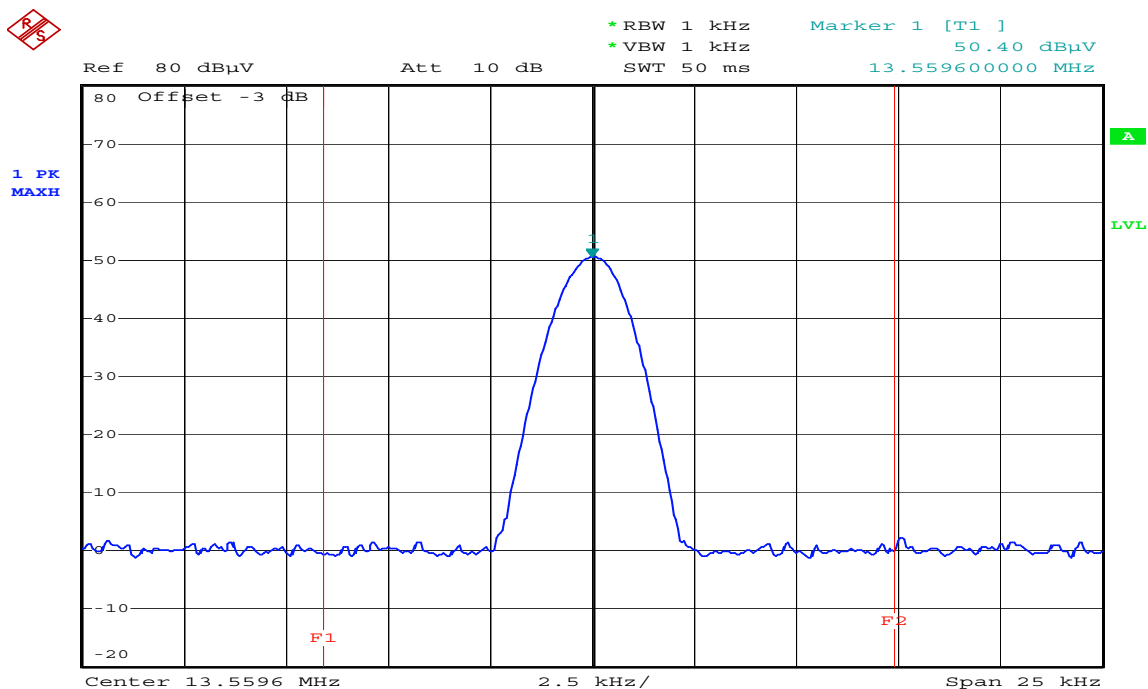
\*\*\* = No emissions above noise floor detected

**Sample calculation of field strength values:**

Field Strength (dBμV/m) = Analyzer Reading (dBμV) + Correction Factor (dB)

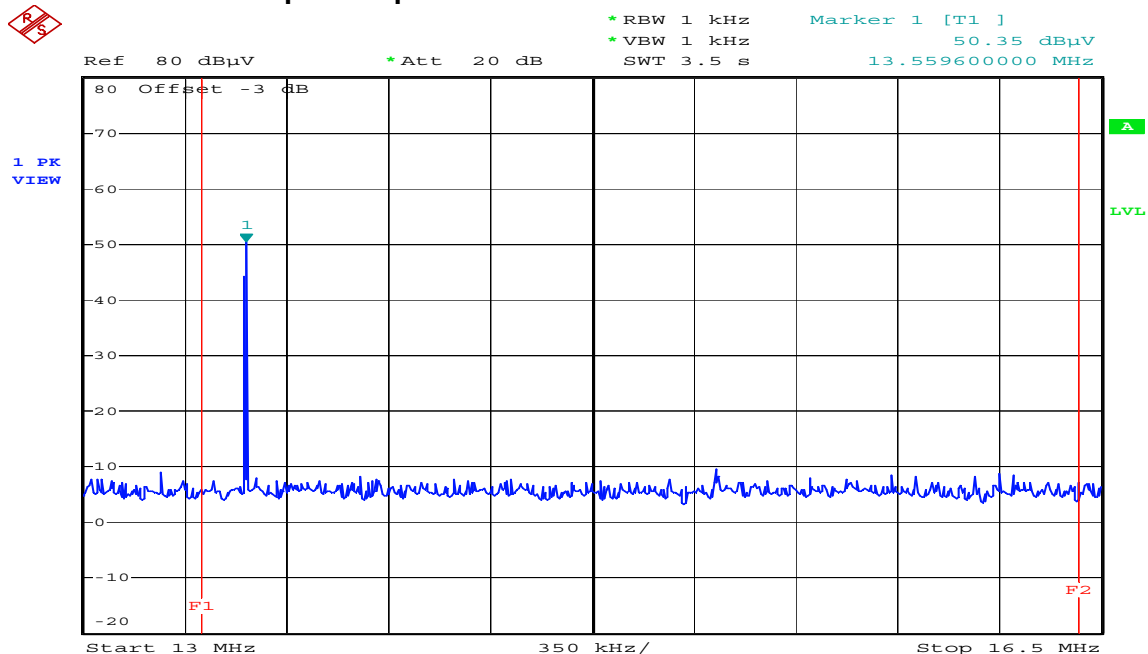
Test equipment used (see equipment list for details):  
 02, 13, 14, 16, 38, 40 ,42, 57, 64, 67

## Band-edge compliance plot



Comment A: ITS20393 External immunity in-band scan  
fv = 680 MHz / 70 dBμV  
Date: 17.JUL.2002 08:23:46

## Restricted band compliance plot



Comment A: ITS20393 External immunity in-band scan  
fv = 680 MHz / 70 dBμV  
Date: 17.JUL.2002 08:28:03

**Field Strength of Emissions according to FCC Rules,  
 Part 15, Subpart C, Section 15.225 (b)  
 Frequency Band > 30 MHz**

Model: **Tigershark**  
 Type: **Inductive Reader**  
 Serial No. **Prototype 1**  
 Applicant: **Texas Instruments Deutschland GmbH**  
 Test Site: **Open Field Test Site**  
 Distance: **3 Meter**  
 Date of Test: **15 July 2002**

| Frequency (MHz) | Detector | Antenna Polarization | Analyzer Reading (dBμV) | Correction Factor (dB) | Field Strength (dBμV/m) | Limit dBμV/m | Margin dB   |
|-----------------|----------|----------------------|-------------------------|------------------------|-------------------------|--------------|-------------|
| 190.00          | Q.P.     | Hor                  | 17.0                    | 19.0                   | 36.0                    | 43.5         | <b>7.5</b>  |
| 348.00          | Q.P.     | Hor                  | 11.8                    | 20.9                   | 32.6                    | 46.0         | <b>13.4</b> |
| 443.2           | Q.P.     | Hor                  | 12.5                    | 23.8                   | 36.3                    | 46.0         | <b>9.7</b>  |
| 583.00          | Q.P.     | Hor                  | 14.0                    | 27.5                   | 41.5                    | 46.0         | <b>4.5</b>  |
|                 |          |                      |                         |                        |                         |              |             |
|                 |          |                      |                         |                        |                         |              |             |

\*\*\* = No emissions above noise floor detected

**Sample calculation of field strength values:**

$$\text{Field Strength (dB}\mu\text{V/m)} = \text{Analyzer Reading (dB}\mu\text{V)} + \text{Correction Factor (dB)}$$

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

## FREQUENCY STABILITY VS. TEMPERATURE

## Section 15.225 (c)

Model: **Tigershark**  
Type: **Inductive Reader**  
Serial No. **Prototype 1**  
Applicant: **Texas Instruments Deutschland GmbH**  
Date of Test: **16 July 2002**

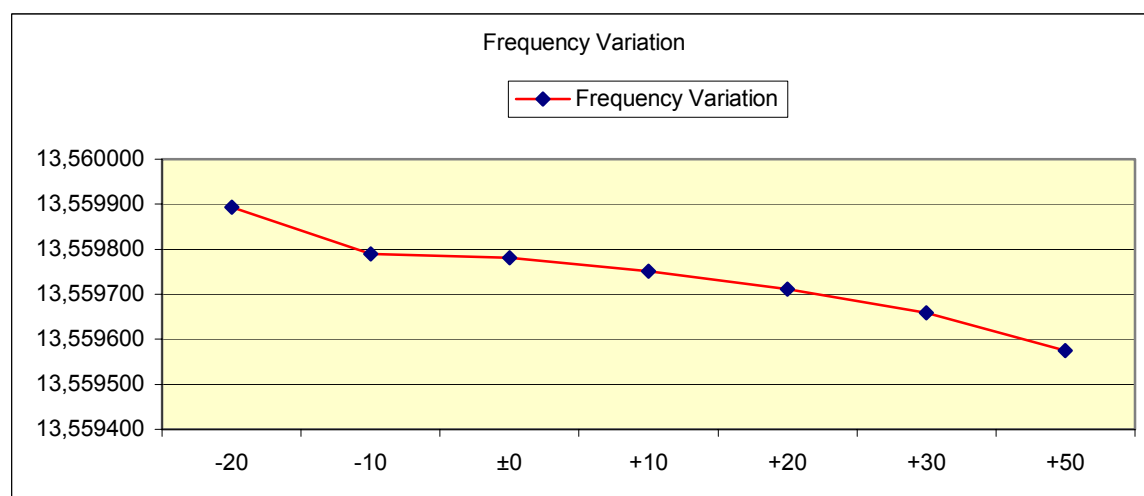
### Test conditions:

Temperature: see table below  
Supply voltage: 5.0 V DC

### Specifications:

Frequency tolerance:  **$\pm 0.01$  % of nominal carrier frequency**  
Temperature range: -20 to +50°C

| Temperature (°C) | Nominal carrier frequency (MHz) | Frequency measured (MHz) | Frequency deviation (Hz) | Frequency deviation (%) | Limit (%) |
|------------------|---------------------------------|--------------------------|--------------------------|-------------------------|-----------|
| -20              | 13,560000                       | 13,559893                | -107                     | -0,0008                 | 0,01      |
| -10              | 13,560000                       | 13,559789                | -211                     | -0,0016                 | 0,00      |
| $\pm 0$          | 13,560000                       | 13,559781                | -219                     | -0,0016                 | 0,01      |
| +10              | 13,560000                       | 13,559751                | -249                     | -0,0018                 | 0,01      |
| +20              | 13,560000                       | 13,559711                | -289                     | -0,0021                 | 0,01      |
| +30              | 13,560000                       | 13,559659                | -341                     | -0,0025                 | 0,01      |
| +40              | 13,560000                       | 13,559613                | -387                     | -0,0029                 | 0,01      |
| +50              | 13,560000                       | 13,559575                | -425                     | -0,0031                 | 0,01      |



**Result:** Test passed

## FREQUENCY STABILITY VS. SUPPLY VOLTAGE

## Section 15.225 (c)

Model: **Tigershark**  
Type: **Inductive Reader**  
Serial No. **Prototype 1**  
Applicant: **Texas Instruments Deutschland GmbH**  
Date of Test: **16 July 2002**

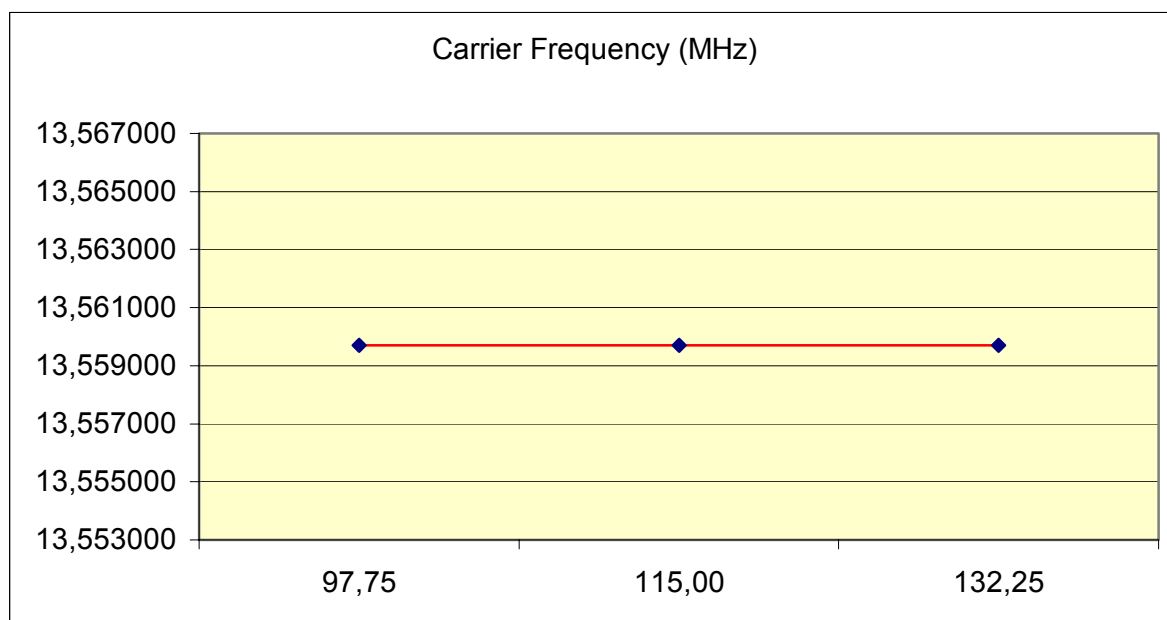
### Test conditions:

Temperature: see table below  
Supply voltage: **115 V AC**

### Specifications:

Frequency tolerance:  **$\pm 0.01$  % of nominal carrier frequency**  
Supply voltage range: **+/- 15 % of nominal supply voltage**

| Supply voltage (V) | Nominal carrier frequency (MHz) | Frequency measured (MHz) | Frequency deviation (Hz) | Frequency deviation (%) | Limit (%) |
|--------------------|---------------------------------|--------------------------|--------------------------|-------------------------|-----------|
| 97,75              | 13,560000                       | 13,559711                | -289                     | -0,00213                | 0,01      |
| 115,00             | 13,560000                       | 13,559711                | -289                     | -0,00213                | 0,01      |
| 132,25             | 13,560000                       | 13,559711                | -289                     | -0,00213                | 0,01      |



**Result:** Test passed

## 12. Charts taken during testing

# Conducted Emission Test 150 kHz - 30 MHz according to FCC Rules, section 15.207

Model:  
**Tigershark**

Serial no.:  
**0001**

Applicant:  
**Texas Instruments Deutschland GmbH**

Test site:  
**Shielded room, cabin no. 2**

Tested on:  
**Linecord  
Neutral Wire**

Date of test:  
**07/16/2002**

Operator:  
**J. Roidt**

Test performed:  
**automatically**

File name:

Mode:

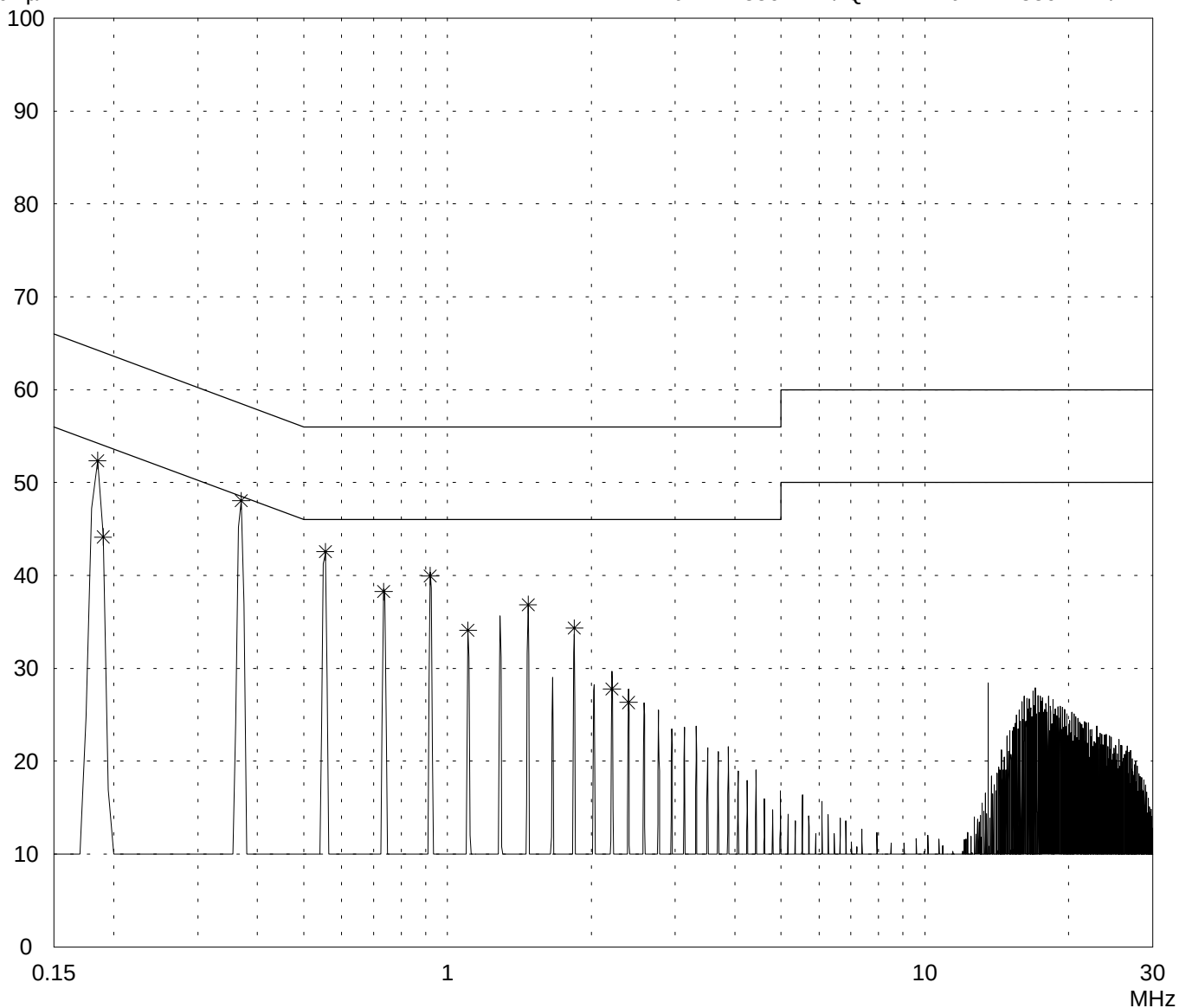
Detector:  
**Average / Final Results: AV**

Final results:  
**20 dB Margin**

**25 Subranges**

**dB $\mu$ V**

**Limit1: EN 55022 B / QP    Limit2: EN 55022 B / AV**



Result:  
**Limit kept**

Project file:  
**00000-00000**

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# Conducted Emission Test 150 kHz - 30 MHz according to FCC Rules, section 15.207

Model:  
Tigershark

Serial no.:  
0001

Applicant:  
Texas Instruments Deutschland GmbH

Test site:  
Shielded room, cabin no. 2

Tested on:  
Linecord  
Life Wire

Date of test:  
07/16/2002

Operator:  
J. Roidt

Test performed:  
automatically

File name:

Mode:

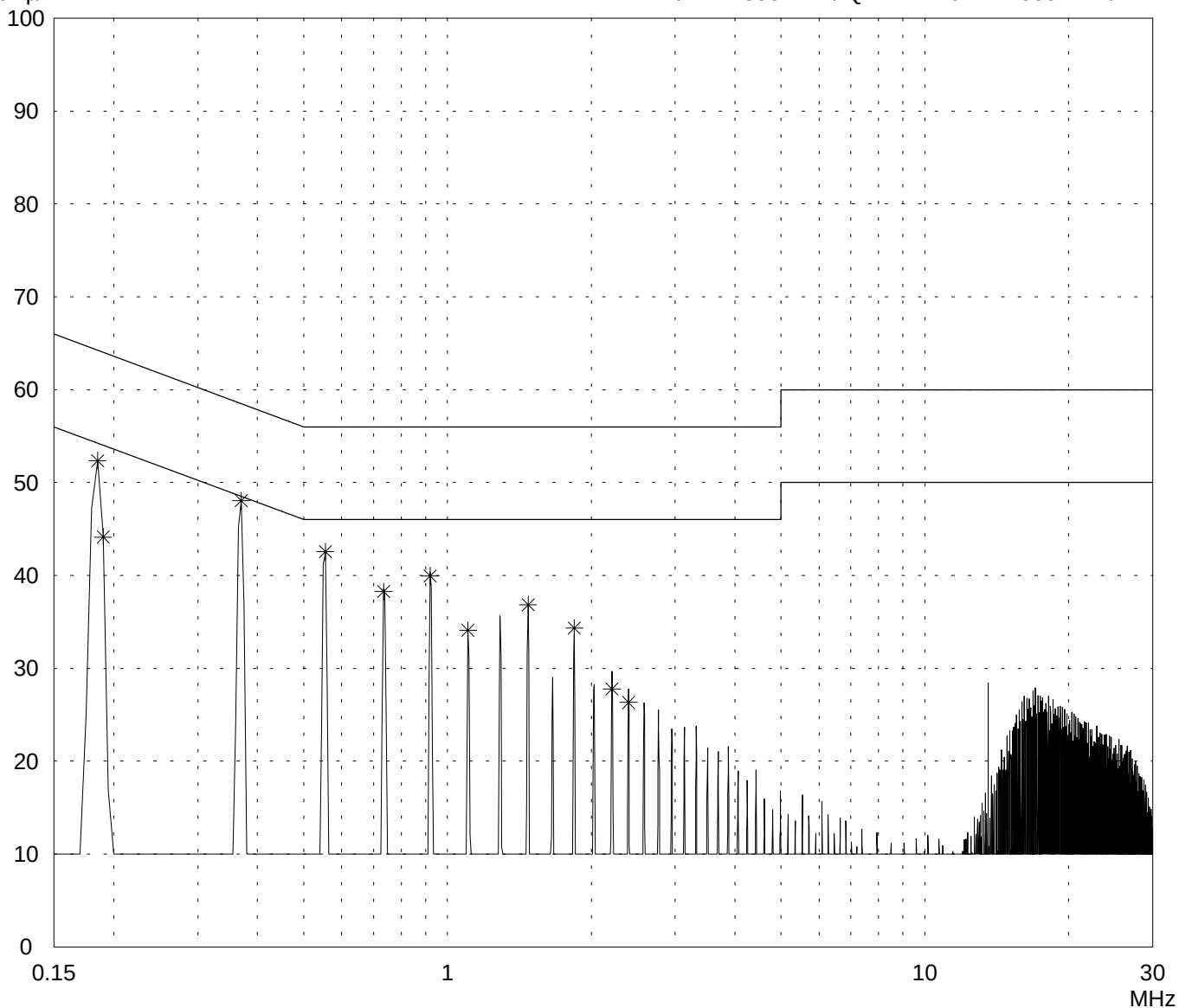
Detector:  
Average / Final Results: AV

Final results:  
20 dB Margin

25 Subranges

dB $\mu$ V

Limit1: EN 55022 B / QP Limit2: EN 55022 B / AV



Result:  
Limit kept

Project file:  
00000-00000

Page of Pages

# Conducted Emission Test 150 kHz - 30 MHz according to FCC Rules, section 15.207

Model:  
Tigershark

Serial no.:  
0001

Applicant:  
Texas Instruments Deutschland GmbH

Test site:  
Shielded room, cabin no. 2

Tested on:  
Linecord  
Neutral Wire

Date of test:  
07/16/2002

Operator:  
J. Roidt

Test performed:  
automatically

File name:

Mode:

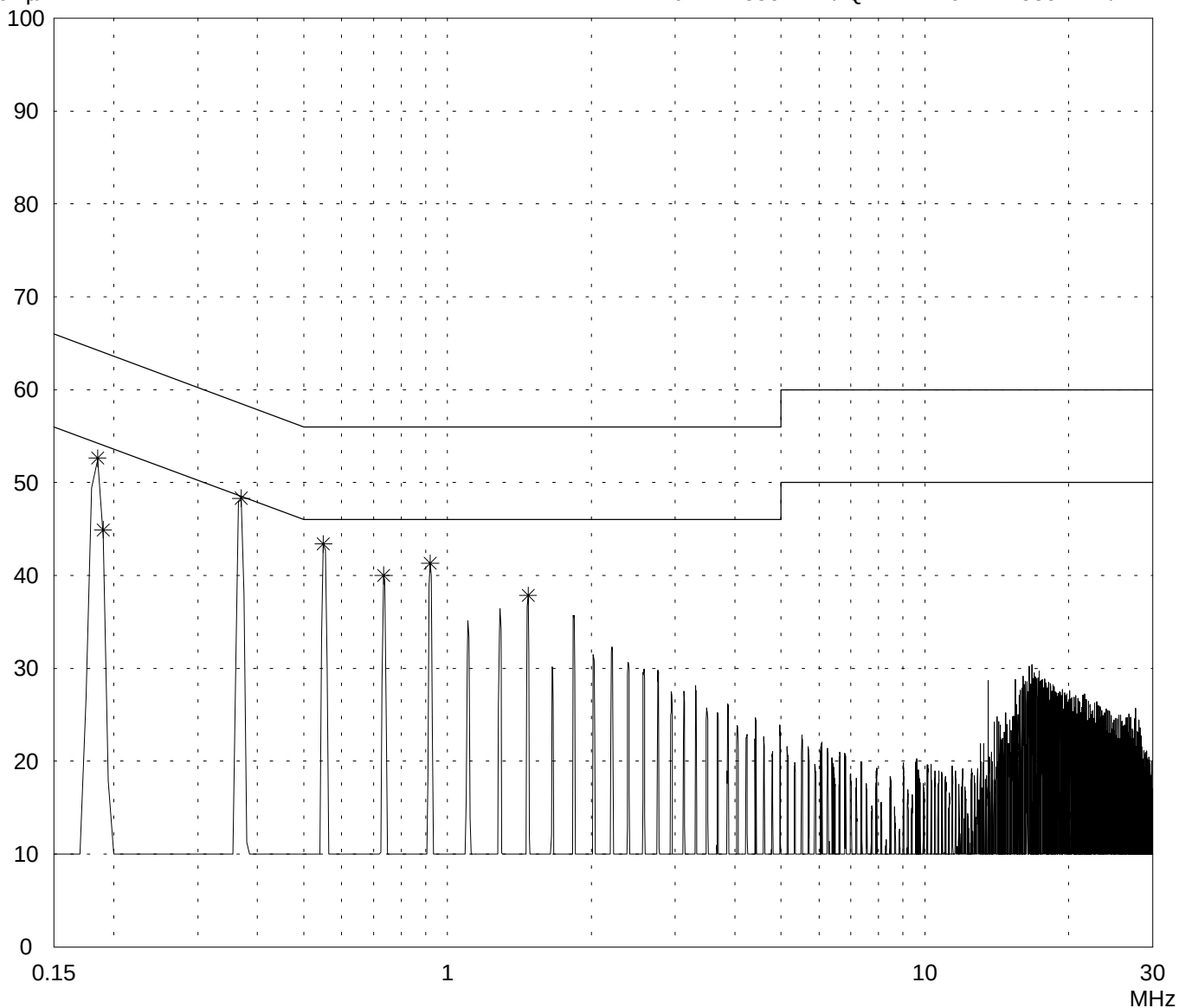
Detector:  
Peak / Final Results: QP

Final results:  
20 dB Margin

25 Subranges

dB $\mu$ V

Limit1: EN 55022 B / QP Limit2: EN 55022 B / AV



Result:  
Limit kept

Project file:  
00000-00000

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# Conducted Emission Test 150 kHz - 30 MHz according to FCC Rules, section 15.207

Model:  
**Tigershark**

Serial no.:  
**0001**

Applicant:  
**Texas Instruments Deutschland GmbH**

Test site:  
**Shielded room, cabin no. 2**

Tested on:  
**Linecord  
Live wire**

Date of test:  
**07/16/2002**

Operator:  
**J. Roidt**

Test performed:  
**automatically**

File name:

Mode:

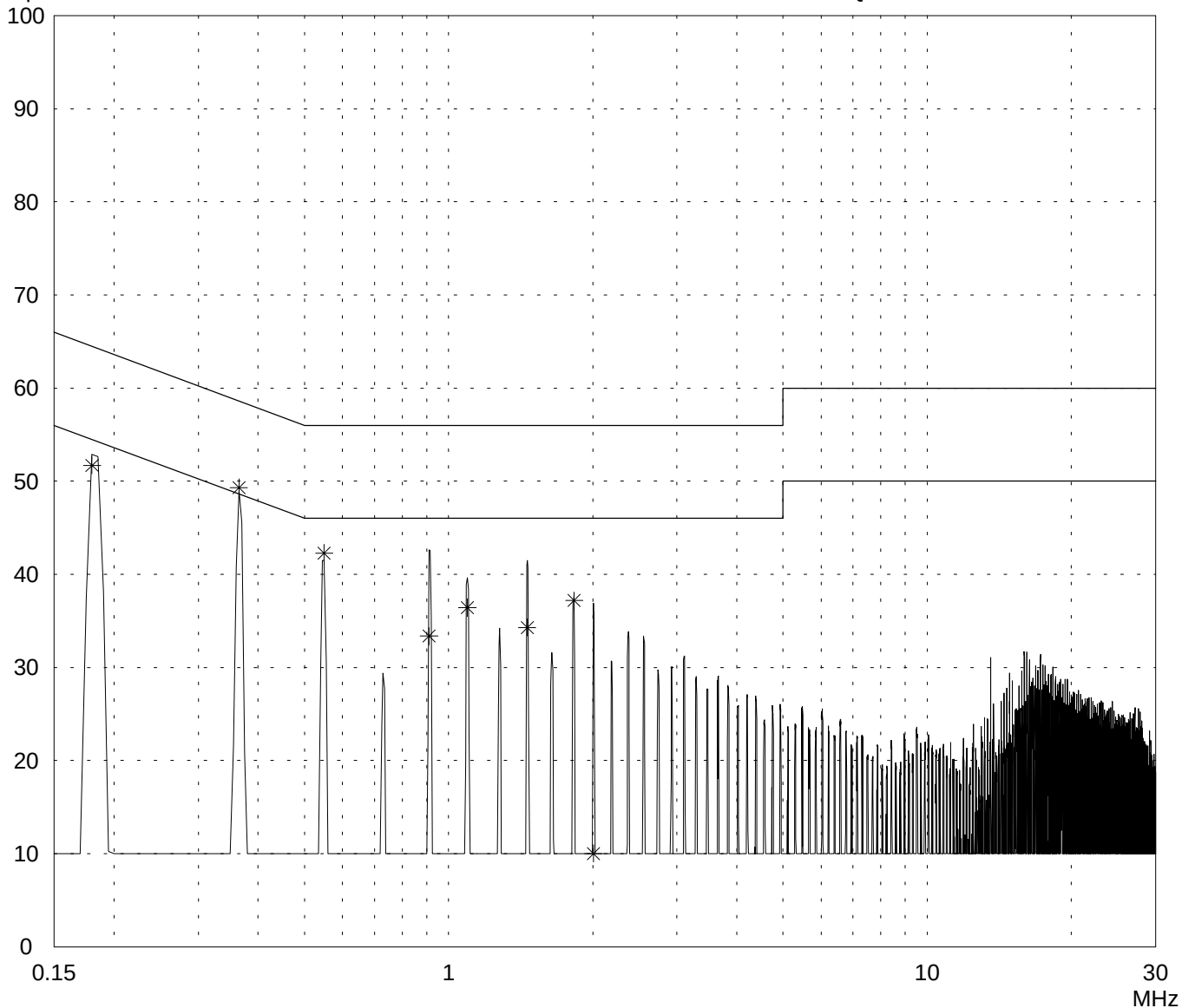
Detector:  
**Peak / Final Results: QP**

Final results:  
**20 dB Margin**

**25 Subranges**

**dB $\mu$ V**

**Limit1: EN 55022 B / QP    Limit2: EN 55022 B / AV**



Result:  
**Limit kept**

Project file:  
**00000-00000**

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# Radiated Emission Test 9 kHz - 30 MHz according to FCC Rules, section 15.209

Model:  
Tigershark

Serial no.:  
--

Applicant:  
Texas Instruments Deutschland GmbH

Test site:  
Shielded room, cabin no. 2

Tested on:  
Test distance 3 metres Antenna parallel to EUT

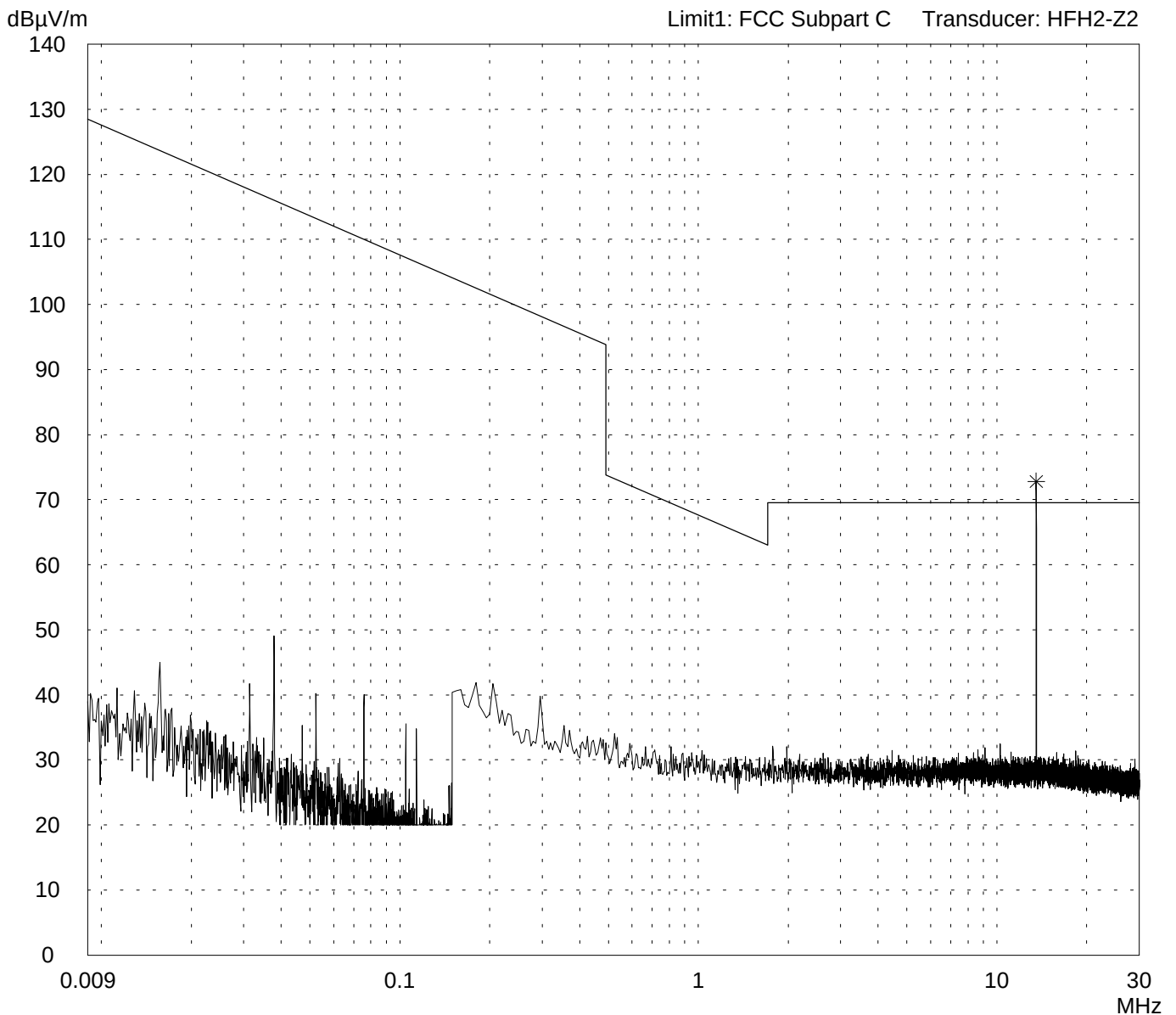
Date of test: 07/15/2002  
Operator: T. Eberl

Test performed: automatically  
File name:

Mode:  
- TX mode  
  
- FCC test setup

Detector:  
Peak / Final Results: QP

Final results:  
20 dB Margin 8 Subranges



Result:  
Prescan

Project file:  
52226-20430

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

Model:

Tigershark

Serial no.:

01

Applicant:

Texas Instruments Deutschland GmbH

Test site:

Fully anechoic room

Tested on:

Test distance 3 metres  
Horizontal Polarization

Date of test:

07/15/2002

Operator:

T. Eberl

Test performed:

automatically

File name:

default.emi

Comment:

- TX mode

- FCC test setup

Detector:

Peak

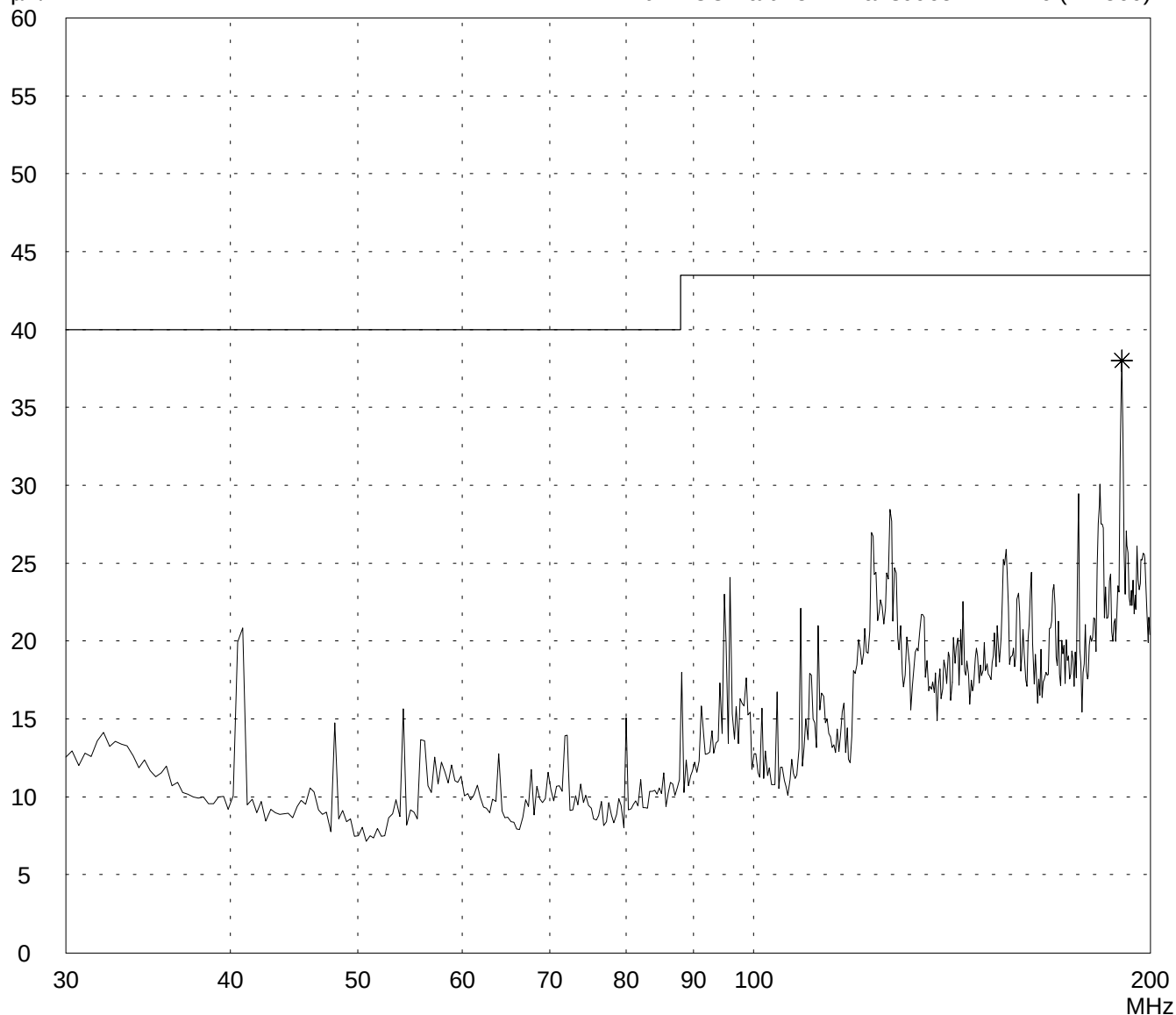
List of values:

10 dB Margin

8 Subranges

dB $\mu$ V/m

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



Result:

Prescan

Project file:

52226-20430

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

Model:

**Tigershark**

Serial no.:

**01**

Applicant:

**Texas Instruments Deutschland GmbH**

Test site:

**Fully anechoic room**

Tested on:

**Test distance 3 metres  
Vertical Polarization**

Date of test:

**07/15/2002**

Operator:

**T. Eberl**

Test performed:

**automatically**

File name:

**default.emi**

Comment:

- TX mode

- FCC test setup

Detector:

**Peak**

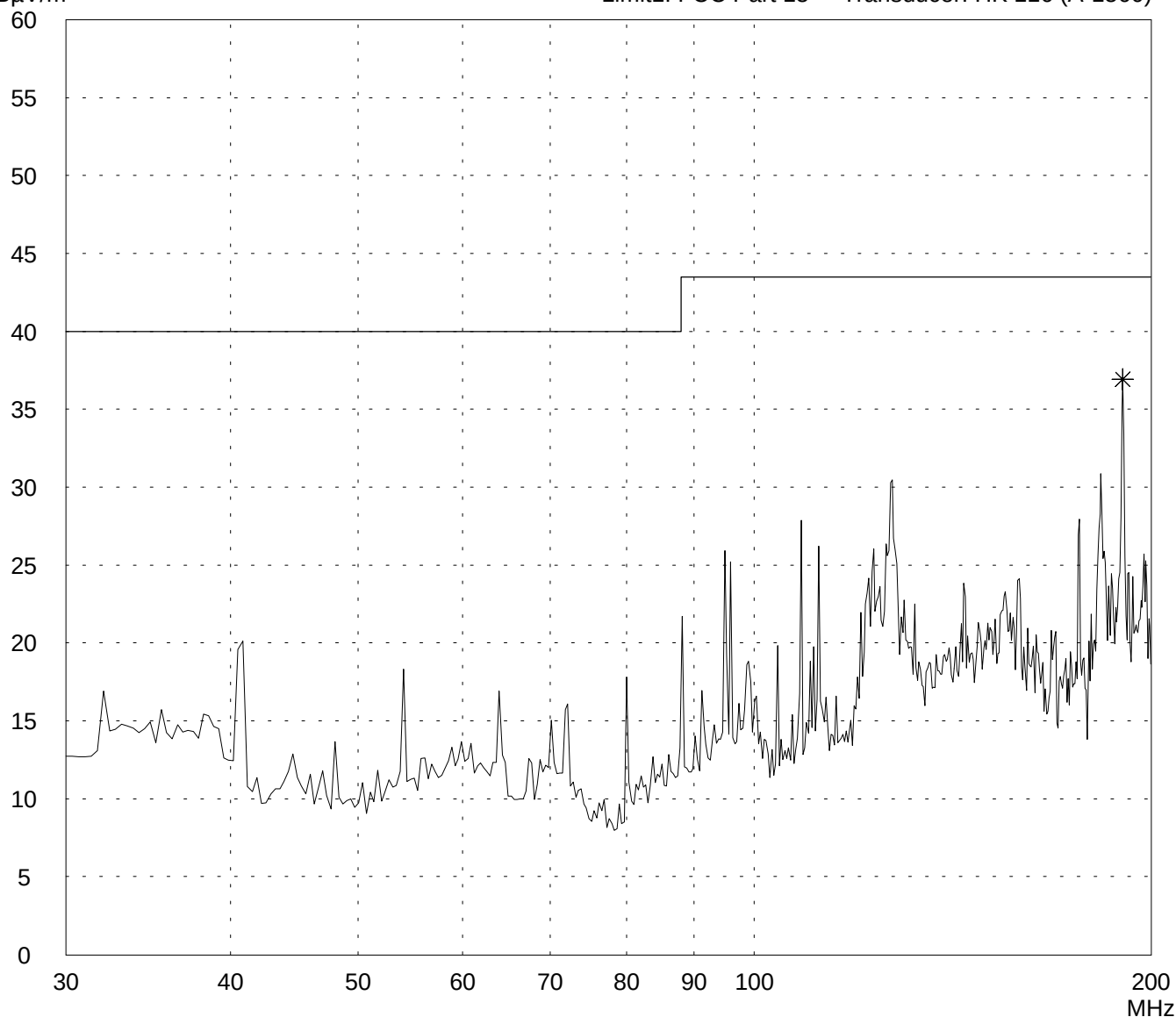
List of values:

**10 dB Margin**

**8 Subranges**

**dBµV/m**

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



Result:

**Prescan**

Project file:

**52226-20430**

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

Model:

Tigershark

Serial no.:

01

Applicant:

Texas Instruments Deutschland GmbH

Test site:

Fully anechoic room

Tested on:

Test distance 3 metres  
Horizontal Polarization

Date of test:

07/15/2002

Operator:

T. Eberl

Test performed:

automatically

File name:

default.emi

Comment:

- TX mode

- FCC test setup

Detector:

Peak

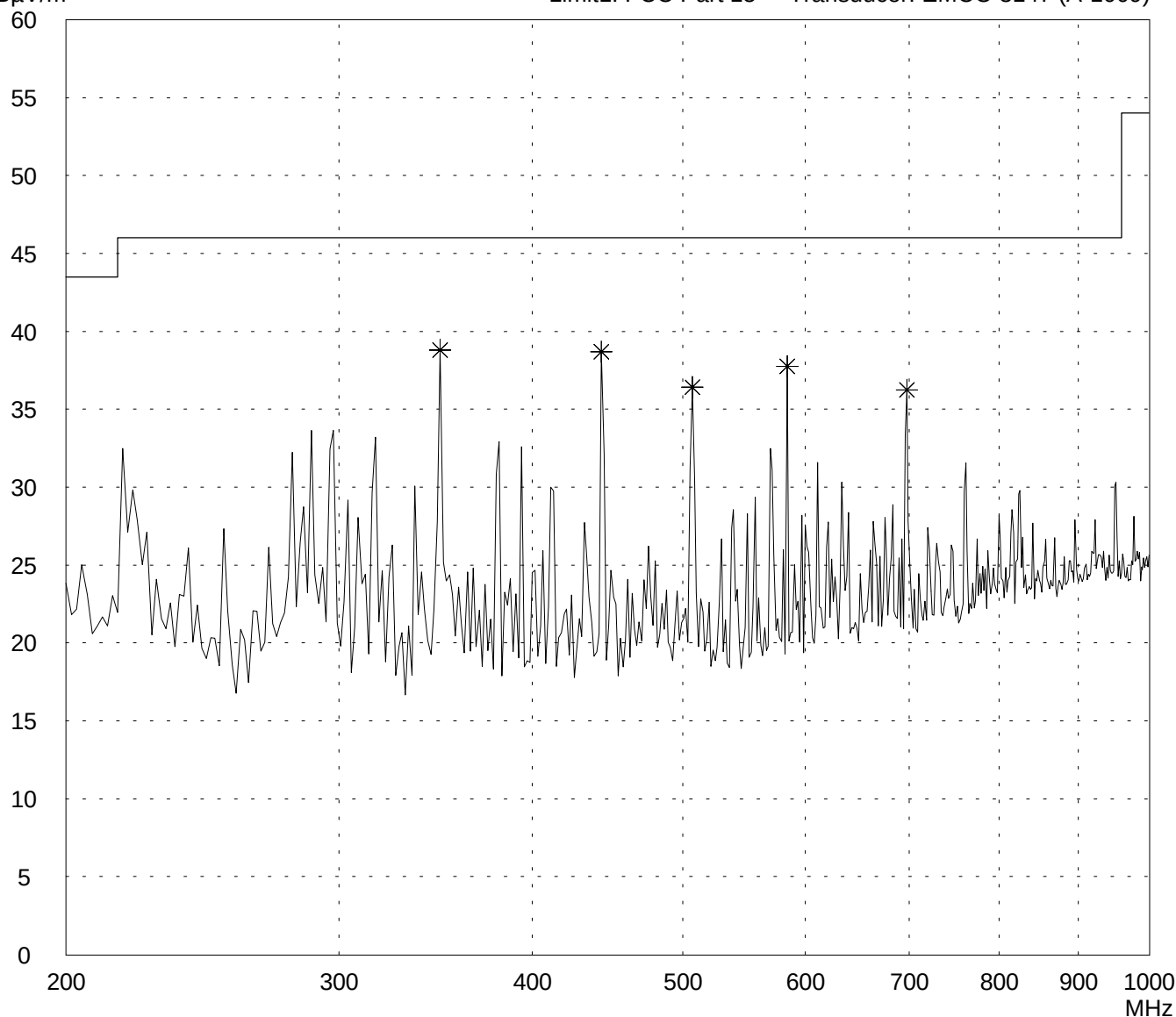
List of values:

10 dB Margin

8 Subranges

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

Limit1: FCC Part 15 Transducer: EMCO 3147 (A-1009)



Result:

Prescan

Project file:

52226-20430

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

Model:

Tigershark

Serial no.:

01

Applicant:

Texas Instruments Deutschland GmbH

Test site:

Fully anechoic room

Tested on:

Test distance 3 metres  
Vertical Polarization

Date of test:

07/15/2002

Operator:

T. Eberl

Test performed:

automatically

File name:

default.emi

Comment:

- TX mode

- FCC test setup

Detector:

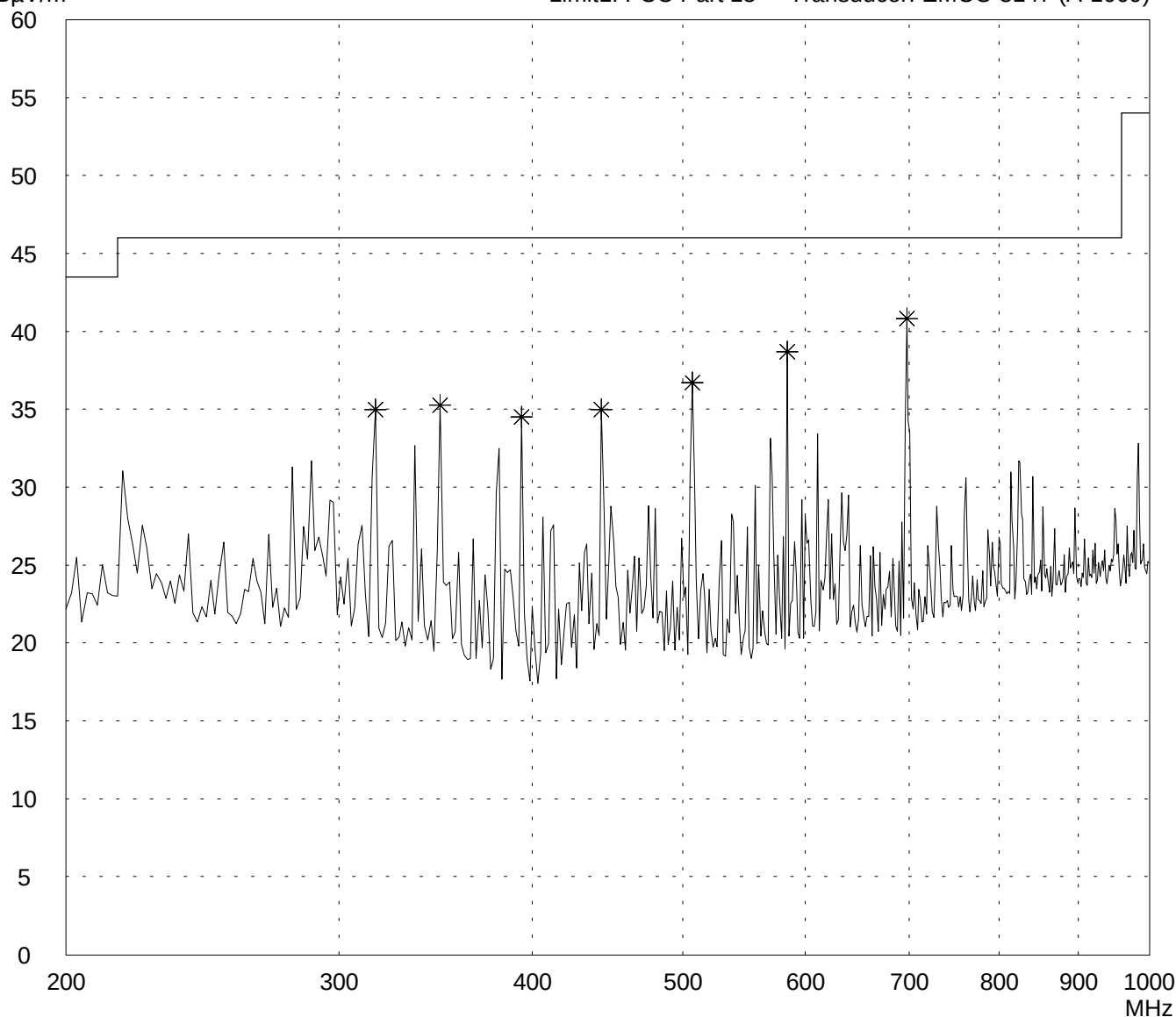
Peak

List of values:

Selected by hand

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

Limit1: FCC Part 15 Transducer: EMCO 3147 (A-1009)



Result:

Prescan

Project file:

52226-20430

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