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Nachrichtentechnik / EMV

TÜV®



Applicant: AKG Acoustics GmbH
Laxenburger Straße 254
A – 1230 Wien

Tested Product: Handheld wireless microphone transmitter

FCC-ID: V3TDHT800

IC-ID: N/A

Manufacturer: AKG Acoustics GmbH
Laxenburger Straße 254
A – 1230 Wien

Output power: 54,2mW erp **power supply:** 3,0 VDC

Frequency range: 548,1 – 697,9 MHz **Channel separation:** 25 kHz

ITU designator: 172KF3E **Declared channel bandwidth:** 200 kHz

Standard: FCC: 47 CFR Part 74 (October 1, 2014 edition)
RSS-123 Issue 2, February, 2011

TÜV AUSTRIA SERVICES GMBH

Test laboratory for EMC

Supervisor of EMC-laboratory:

Ing. Wilhelm Seier



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IC 2932K-1

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The results of this test report only refer to the provided equipment.

LIST OF MEASUREMENTS

The complete list of measurements called for in 47 CFR 74 and RSS-123 is given below.

SUBCLAUSE	PARAMETER TO BE MEASURED	PAGE
	Intentional Radiators	
	Test object data	3
74.861(e)(1) (6.2)	RF Power Output (erp)	4
74.861(e)(4) (7)	Frequency tolerance	5-6
74.861(e)(5) (6.3)	Operating bandwidth	7-18
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74.861(e)(6)(iii) (6.3)	Spurious emissions	56-58

TEST OBJECT DATA**General EUT Description**

This digital audio transmitter will be used as a handheld wireless microphone. It has no antenna connector, so all technical data were measured radiated.

2.1033 (c) Technical description

2.1033 (4) Type of emission: 172KF3E – Channel spacing selectable 25 kHz.

2.1033 (5) Frequency range selectable: 548,1 – 607,9 and 614,1 – 697,9 MHz

2.1033 (6) Power range and Controls: Selectable by software in 4 steps: 10, 20, 30 and 50 mW.

2.1033 (7) Maximum output power rating: 50mW erp.

2.1033 (8) DC Voltage and Current: 3,0 V nominal 2,3V minimum (2 AA Cells)
maximum current consumption: 190 mA

RSS-135 This standard does not apply to:

- 1.1.(a) a receiver that scans radio frequencies for the purpose of enabling its associated transmitter to avoid transmitting in an occupied frequency but which does not have the capability of decoding the message (e.g. converting it to audio voice) contained in the radio signal

Tests were performed Jan 21st 2015.

Power Output

**§ 74.261(e)(1)
(6.2)**

Radiated Measurement

Rated output power: 50 mW

Test conditions		Transmitter power (mW) (erp)		
		548,1 MHz	623,0 MHz	697,9 MHz
T _{nom} (24)°C	V _{nom} (3)V	38,55	54,20	42,85
Maximum deviation from rated output power under normal test conditions (dB)		-1,13	0,35	-0,67
Measurement uncertainty		± 0,75 dB		

LIMIT

SUBCLAUSE 74.261 (e)(1)(ii) (Table 1 of RSS-123)

Under normal test conditons	250 mW
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Test Equipment used: NT-100; NT-110; NT-111; NT-112; NT-125; NT-126; NT-150; NT-207; NT-500; NT-520; NT-550

Frequency tolerance

**§ 74.261 (e)(4)
(7)**

Frequency error vs. Supply voltage

DC-Voltage	Frequency Error kHz			Frequency Error ppm		
	548,1 MHz	623,0 MHz	697,9 MHz	548,1 MHz	623,0 MHz	697,9 MHz
3 V	1,0	0,0	-1,0	1,82	0,00	-1,43
2,3 V	1,0	0,0	-1,0	1,82	0,00	-1,43

Frequency error vs. Temperature

Temperature °C	Frequency Error kHz			Frequency Error ppm		
	548,1 MHz	623,0 MHz	697,9 MHz	548,1 MHz	623,0 MHz	697,9 MHz
-30	-1,0	-0,5	-1,0	-1,82	-0,80	-1,43
-20	-1,0	0,0	0,0	-1,82	0,00	0,00
-10	-0,5	-1,0	-1,0	-0,91	-1,61	-1,43
+0	0,5	-1,0	-3,0	0,91	-1,61	-4,30
+10	-0,5	-0,5	-1,0	-0,91	-0,80	-1,43
+20	1,0	0,0	-1,0	1,82	0,00	-1,43
+30	0,0	0,0	0,0	0,00	0,00	0,00
+40	-1,0	-1,0	-1,0	-1,82	-1,61	-1,43
+50	0,0	-0,5	-1,0	0,00	-0,80	-1,43

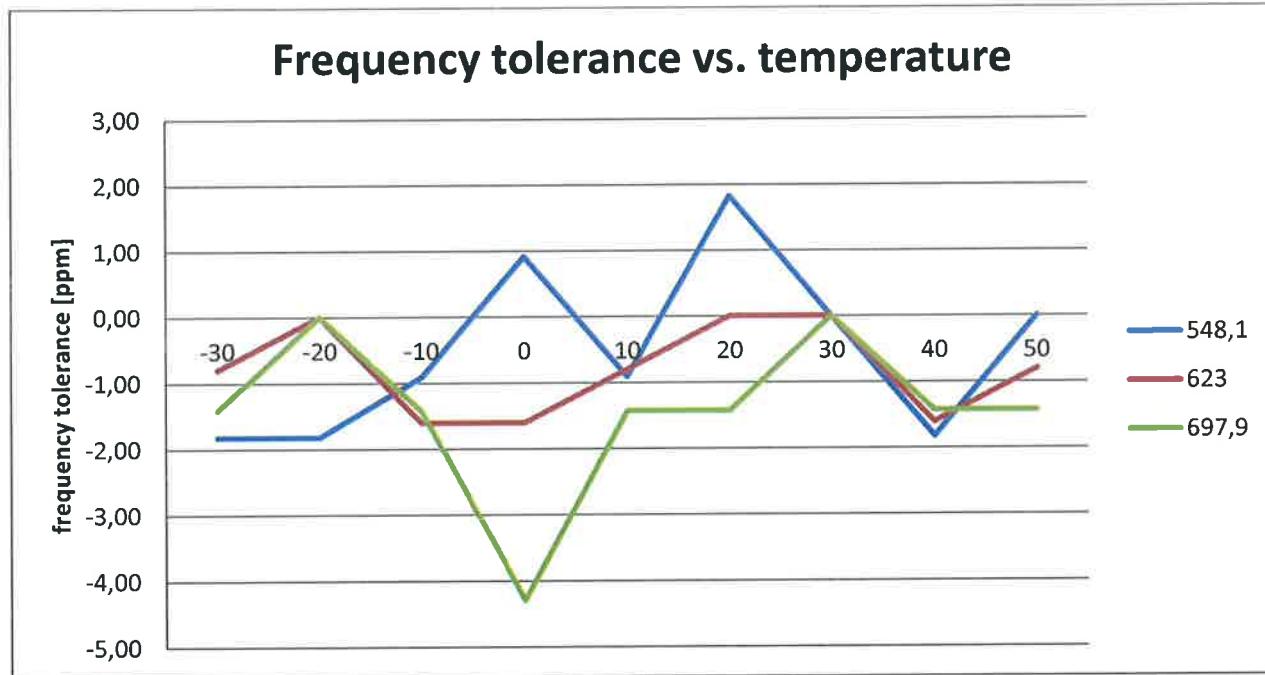
LIMIT

SUBCLAUSE 74.261 (e)(4) (Table 1 of RSS-123)

The frequency tolerance of the transmitter shall be 0.005 percent. = 50 ppm

Frequency tolerance

**§ 74.261 (e)(4)
(7)**



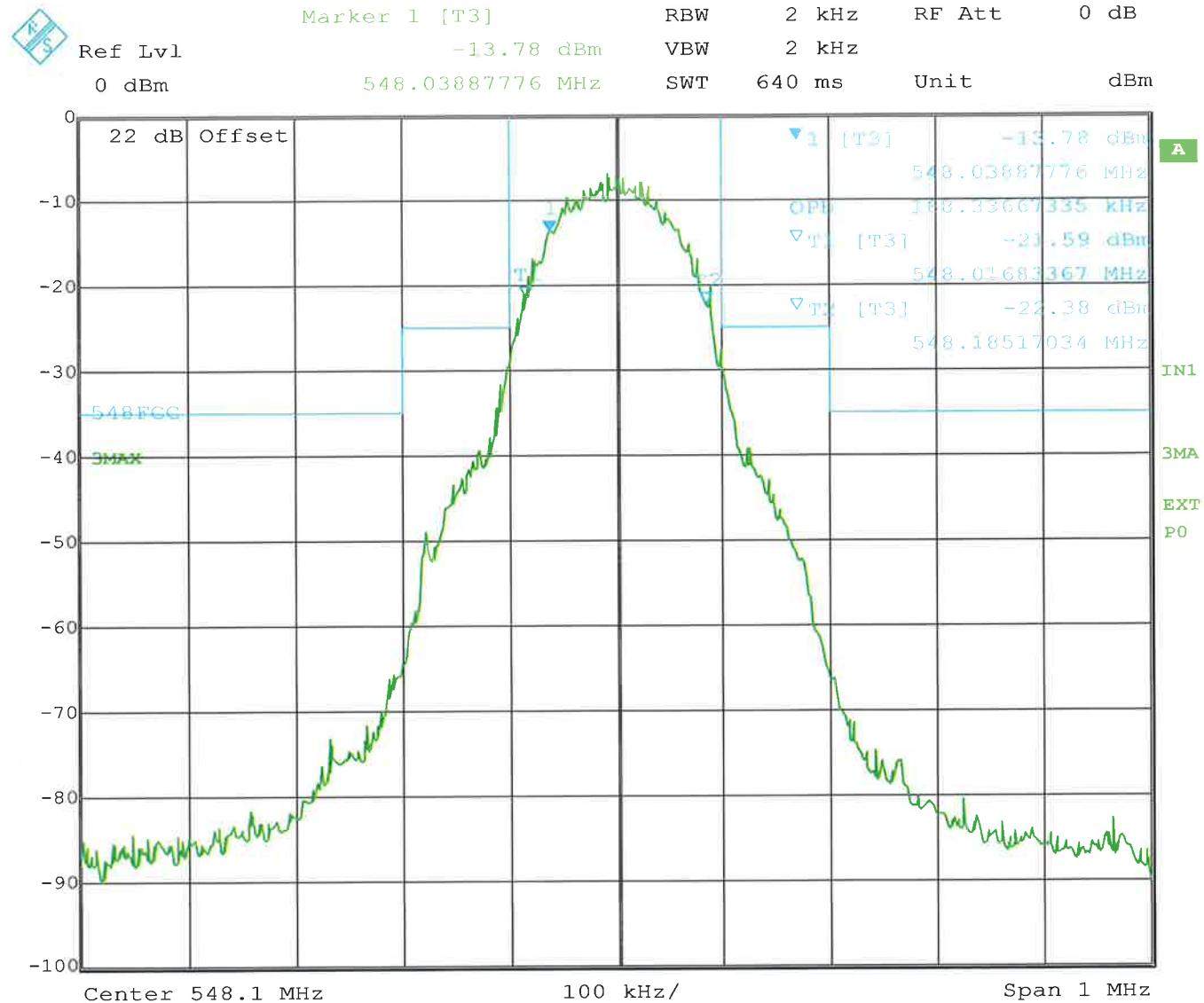
Test Equipment used: NT-203/1, M-1200

OPERATING BANDWIDTH

§ 74.261 (e)(5)
(6.3)

The operating Bandwidth was measured at an acoustic input level 16 dB higher than that required for half of the maximum linear input level.

Measurement with audio frequency 1 kHz @ 548,1 MHz



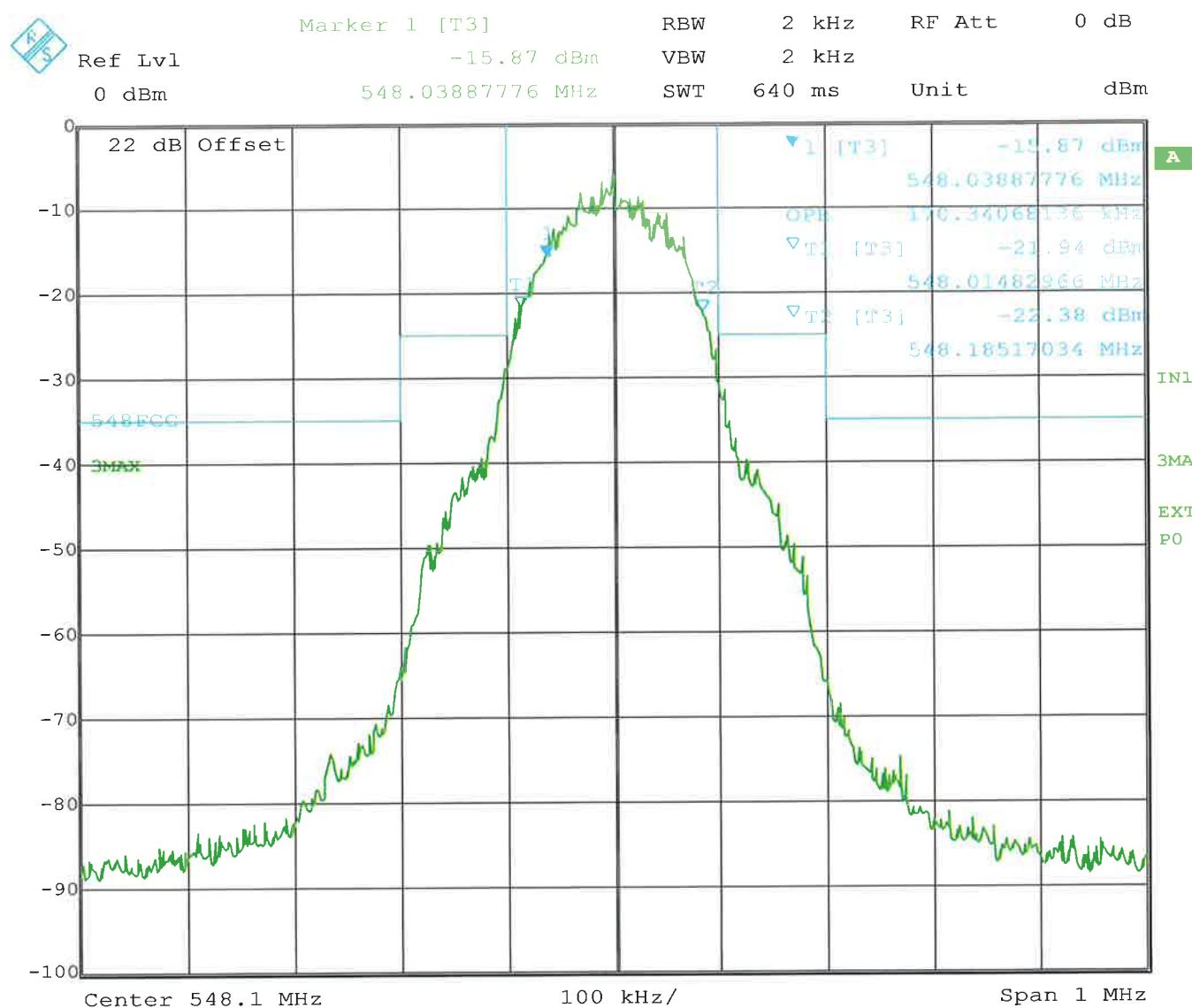
Date: 21.JAN.2015 14:49:53

OPERATING BANDWIDTH

§ 74.261 (e)(5)
(6.3)

The operating Bandwidth was measured at an acoustic input level 16 dB higher than that required for half of the maximum linear input level.

Measurement with audio frequency 7,5 kHz @ 548,1 MHz



Date: 21.JAN.2015 14:50:13

Measured bandwidth is: 170,3 kHz

LIMIT SUBCLAUSE 74.261 (e)(5) (Table 1 RSS-123)

The operating bandwidth shall not exceed 200 kHz.

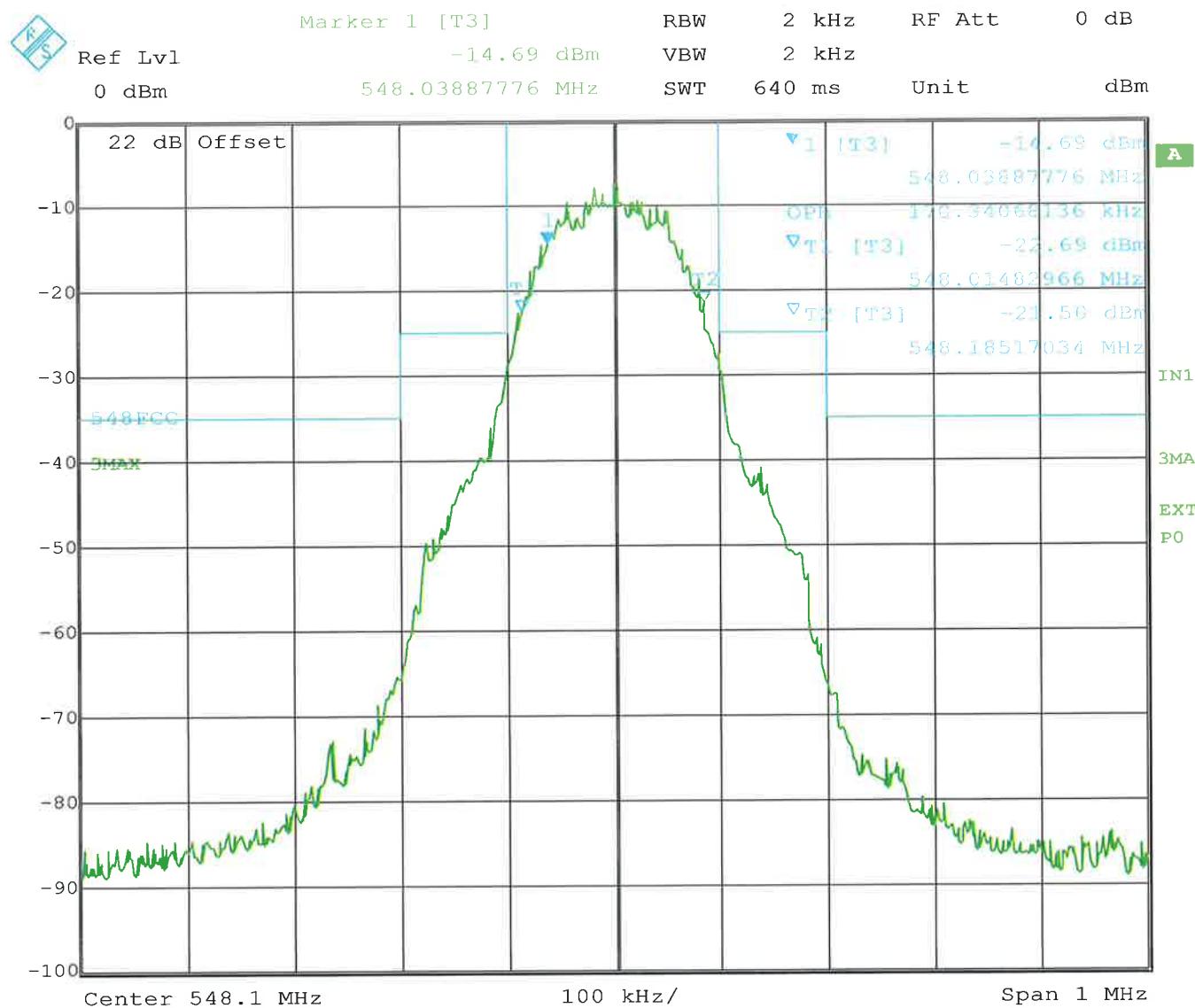
TEST EQUIPMENT USED: NT-207

OPERATING BANDWIDTH

§ 74.261 (e)(5)
(6.3)

The operating Bandwidth was measured at an acoustic input level 16 dB higher than that required for half of the maximum linear input level.

Measurement with audio frequency 15 kHz @ 548,1 MHz



Date: 21.JAN.2015 14:50:32

Measured bandwidth is: 170,3 kHz

LIMIT SUBCLAUSE 74.261 (e)(5) (Table 1 RSS-123)

The operating bandwidth shall not exceed 200 kHz.

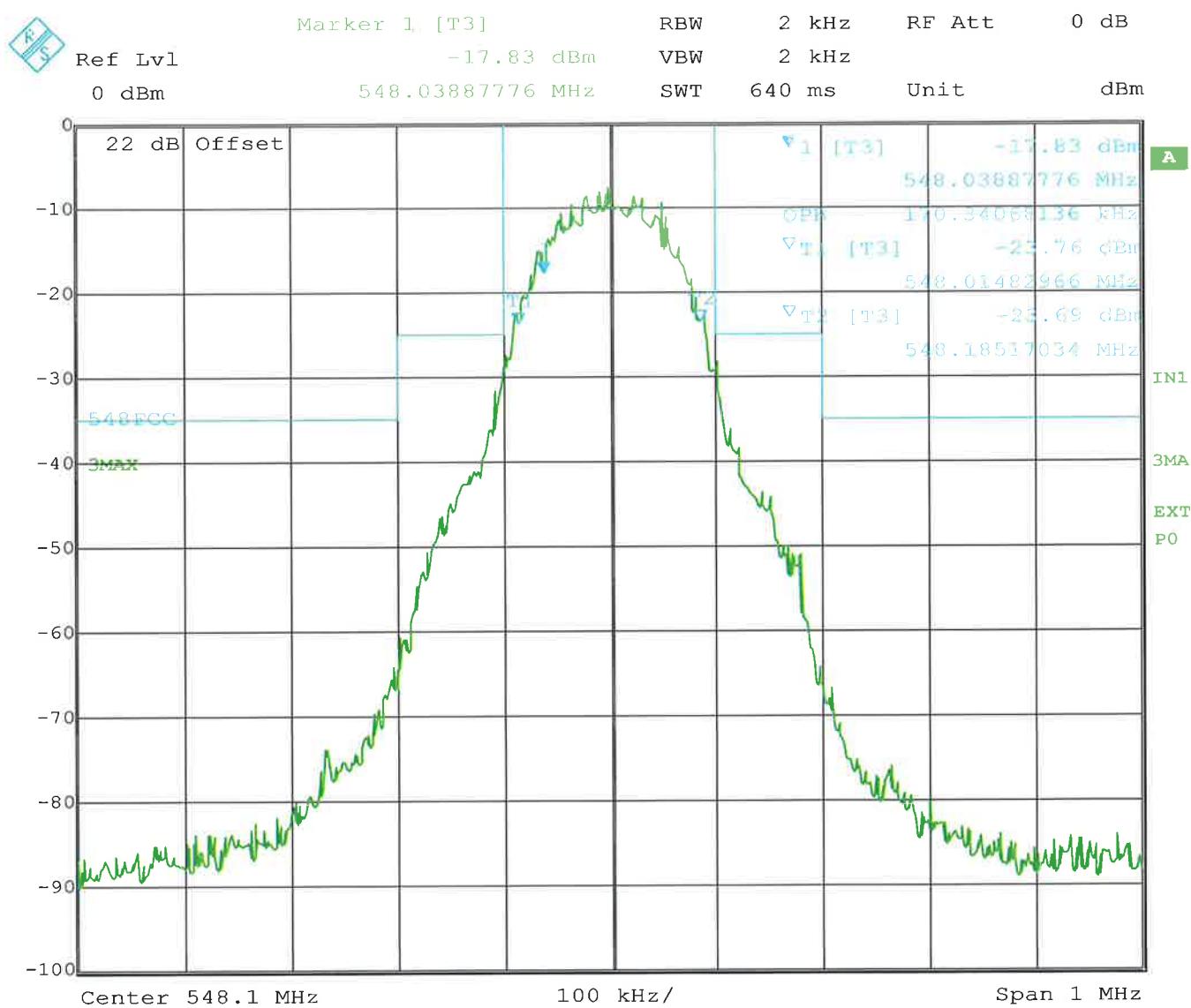
TEST EQUIPMENT USED: NT-207

OPERATING BANDWIDTH

§ 74.261 (e)(5)
(6.3)

The operating Bandwidth was measured at an acoustic input level 16 dB higher than that required for half of the maximum linear input level.

Measurement with audio frequency 20 kHz @ 548,1 MHz



Date: 21.JAN.2015 14:50:44

Measured bandwidth is: 170,3 kHz

LIMIT SUBCLAUSE 74.261 (e)(5) (Table 1 RSS-123)

The operating bandwidth shall not exceed 200 kHz.

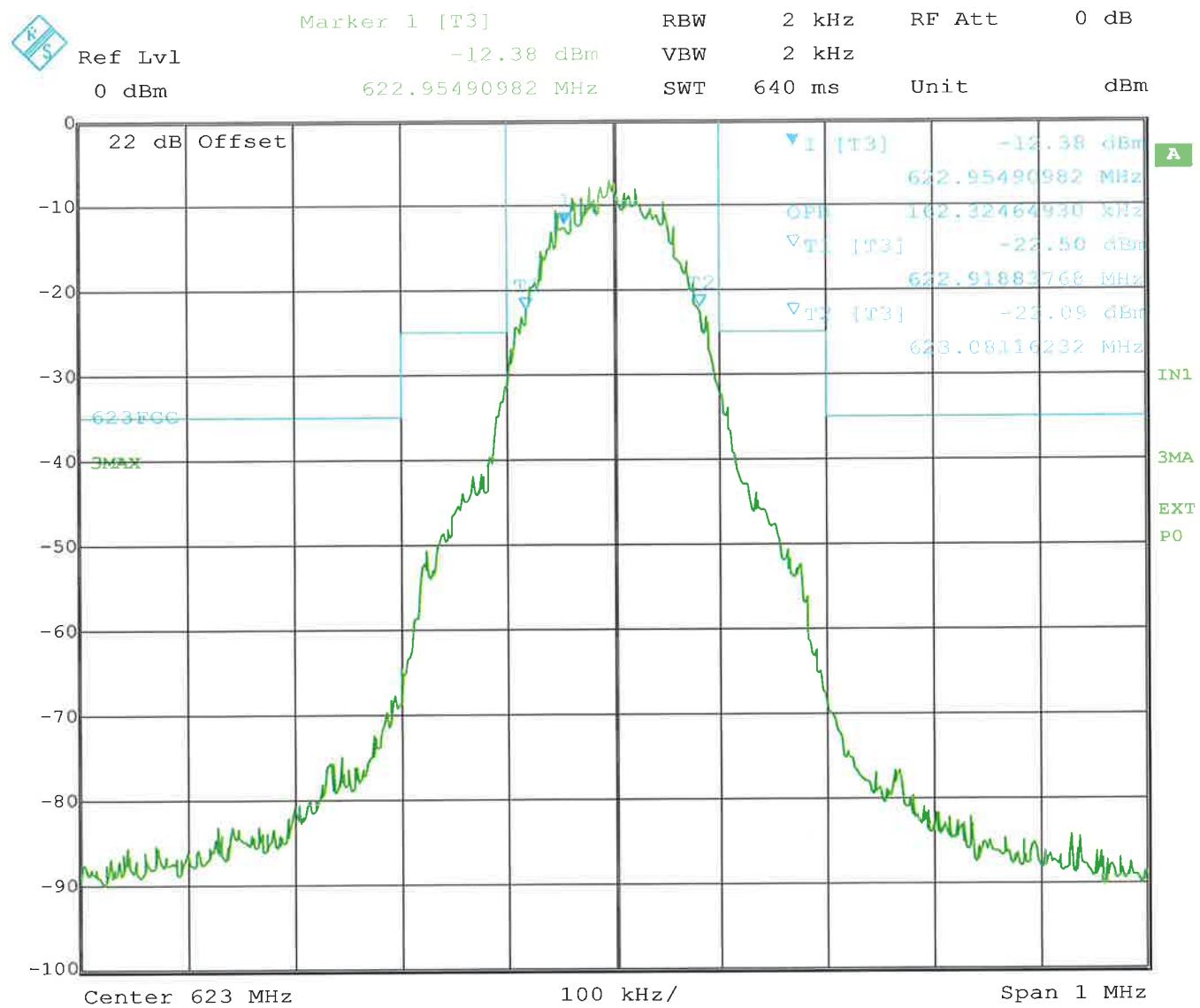
TEST EQUIPMENT USED: NT-207

OPERATING BANDWIDTH

§ 74.261 (e)(5)
(6.3)

The operating Bandwidth was measured at an acoustic input level 16 dB higher than that required for half of the maximum linear input level.

Measurement with audio frequency 1 kHz @ 623,0 MHz



Date: 21.JAN.2015 14:43:48

Measured bandwidth is: 162,3 kHz

LIMIT SUBCLAUSE 74.261 (e)(5) (Table 1 RSS-123)

The operating bandwidth shall not exceed 200 kHz.

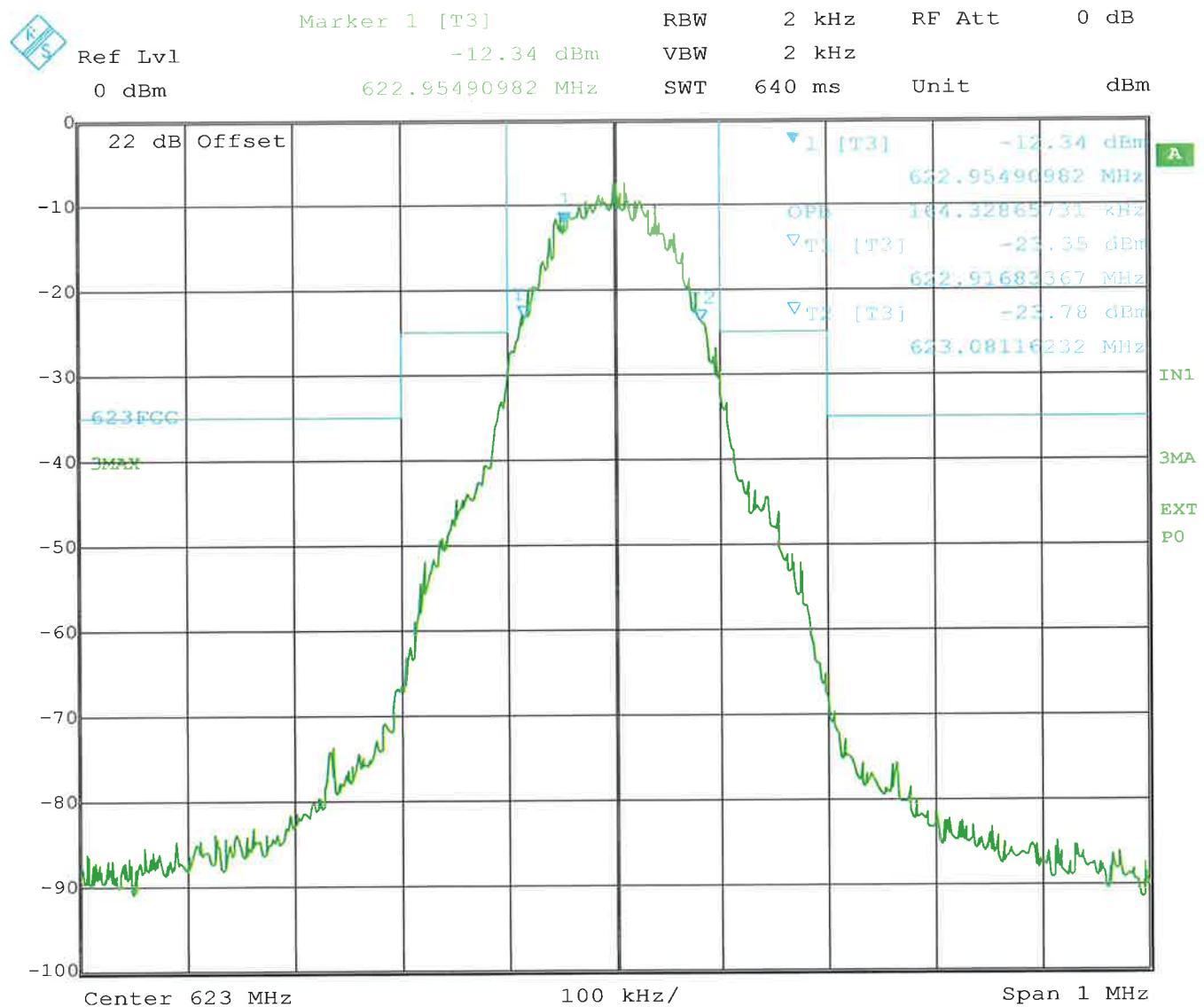
TEST EQUIPMENT USED: NT-207

OPERATING BANDWIDTH

§ 74.261 (e)(5)
(6.3)

The operating Bandwidth was measured at an acoustic input level 16 dB higher than that required for half of the maximum linear input level.

Measurement with audio frequency 7,5 kHz @ 623,0 MHz



Date: 21.JAN.2015 14:44:02

Measured bandwidth is: 164,3 kHz

LIMIT SUBCLAUSE 74.261 (e)(5) (Table 1 RSS-123)

The operating bandwidth shall not exceed 200 kHz.

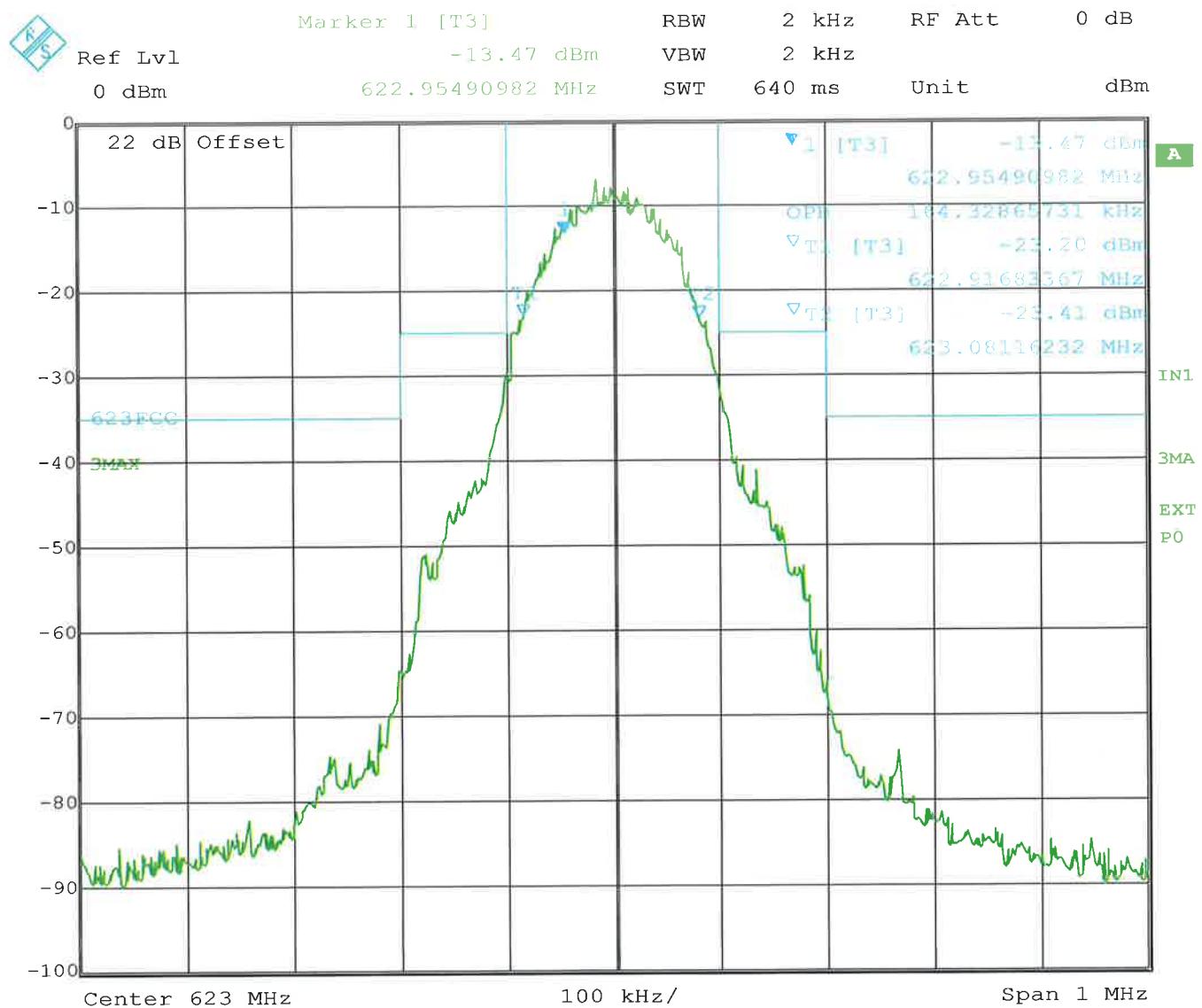
TEST EQUIPMENT USED: NT-207

OPERATING BANDWIDTH

**§ 74.261 (e)(5)
(6.3)**

The operating Bandwidth was measured at an acoustic input level 16 dB higher than that required for half of the maximum linear input level.

Measurement with audio frequency 15 kHz @ 623,0 MHz



Date: 21.JAN.2015 14:44:18

Measured bandwidth is: 164.3 kHz

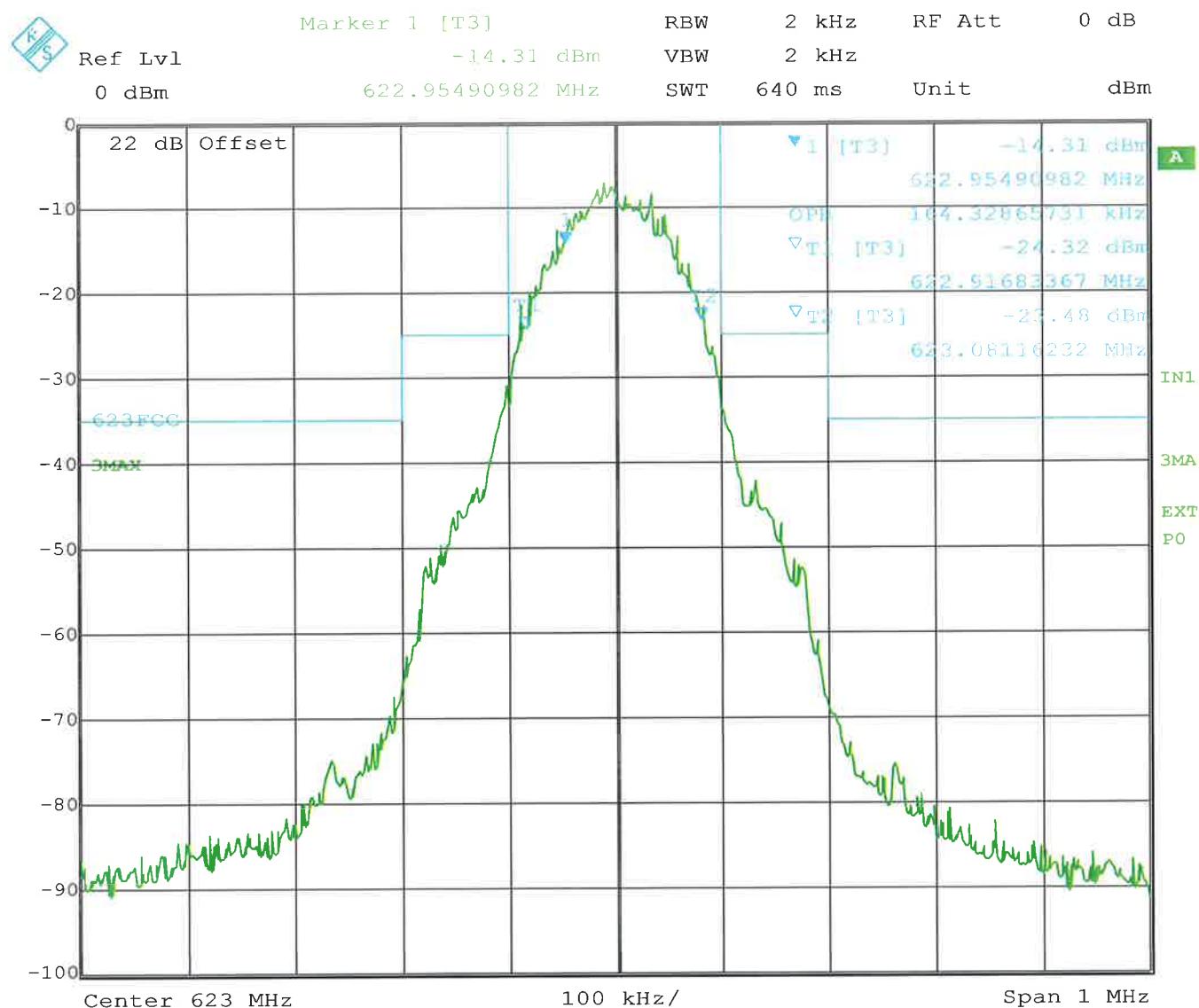
The operating bandwidth shall not exceed

OPERATING BANDWIDTH

§ 74.261 (e)(5)
(6.3)

The operating Bandwidth was measured at an acoustic input level 16 dB higher than that required for half of the maximum linear input level.

Measurement with audio frequency 20 kHz @ 623,0 MHz



Date: 21.JAN.2015 14:44:32

Measured bandwidth is: 164,3 kHz

LIMIT SUBCLAUSE 74.261 (e)(5) (Table 1 RSS-123)

The operating bandwidth shall not exceed 200 kHz.

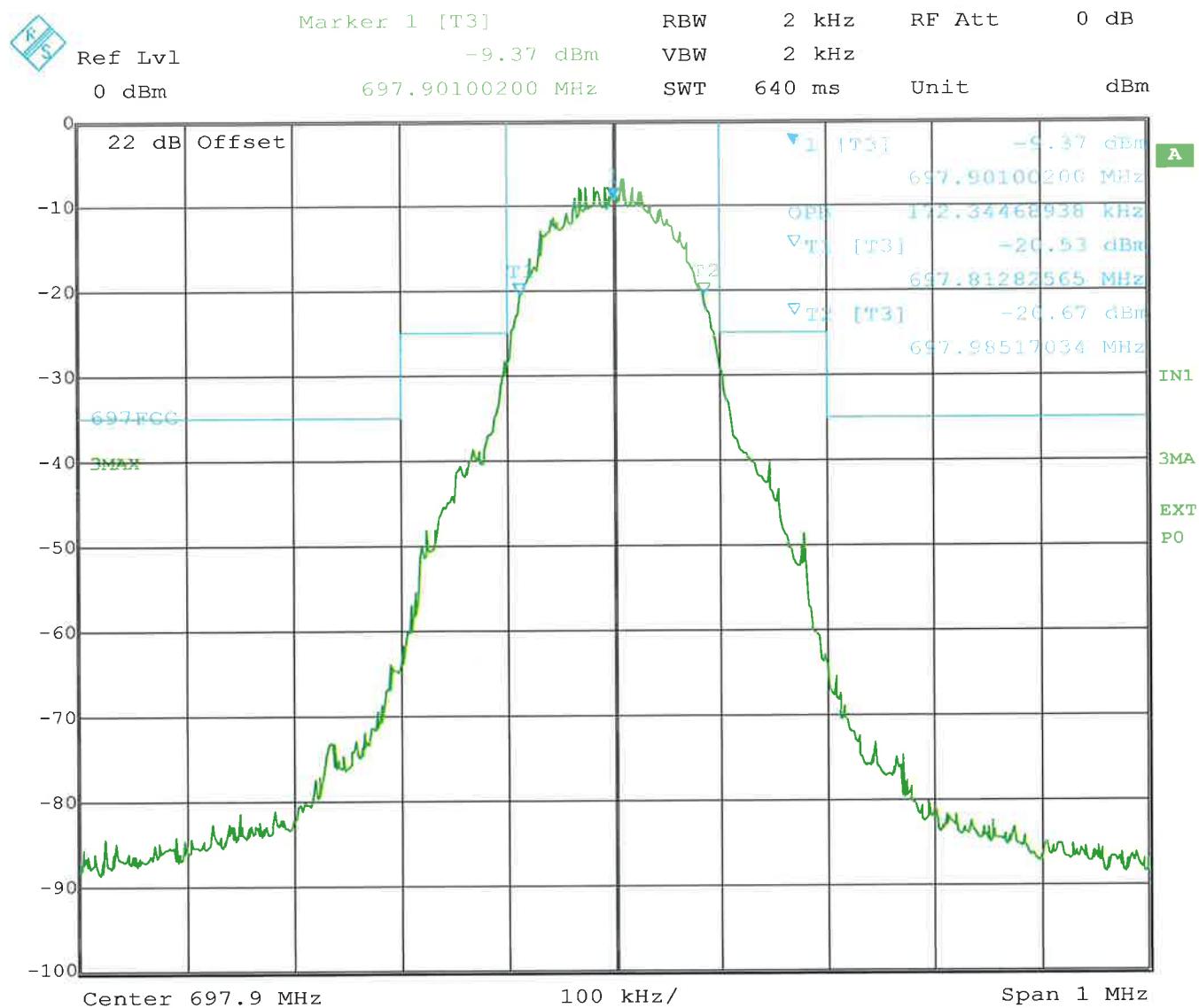
TEST EQUIPMENT USED: NT-207

OPERATING BANDWIDTH

§ 74.261 (e)(5)
(6.3)

The operating Bandwidth was measured at an acoustic input level 16 dB higher than that required for half of the maximum linear input level.

Measurement with audio frequency 1 kHz @ 697,9 MHz



Date: 21.JAN.2015 14:36:30

Measured bandwidth is: 172,3 kHz

LIMIT SUBCLAUSE 74.261 (e)(5) (Table 1 RSS-123)

The operating bandwidth shall not exceed 200 kHz.

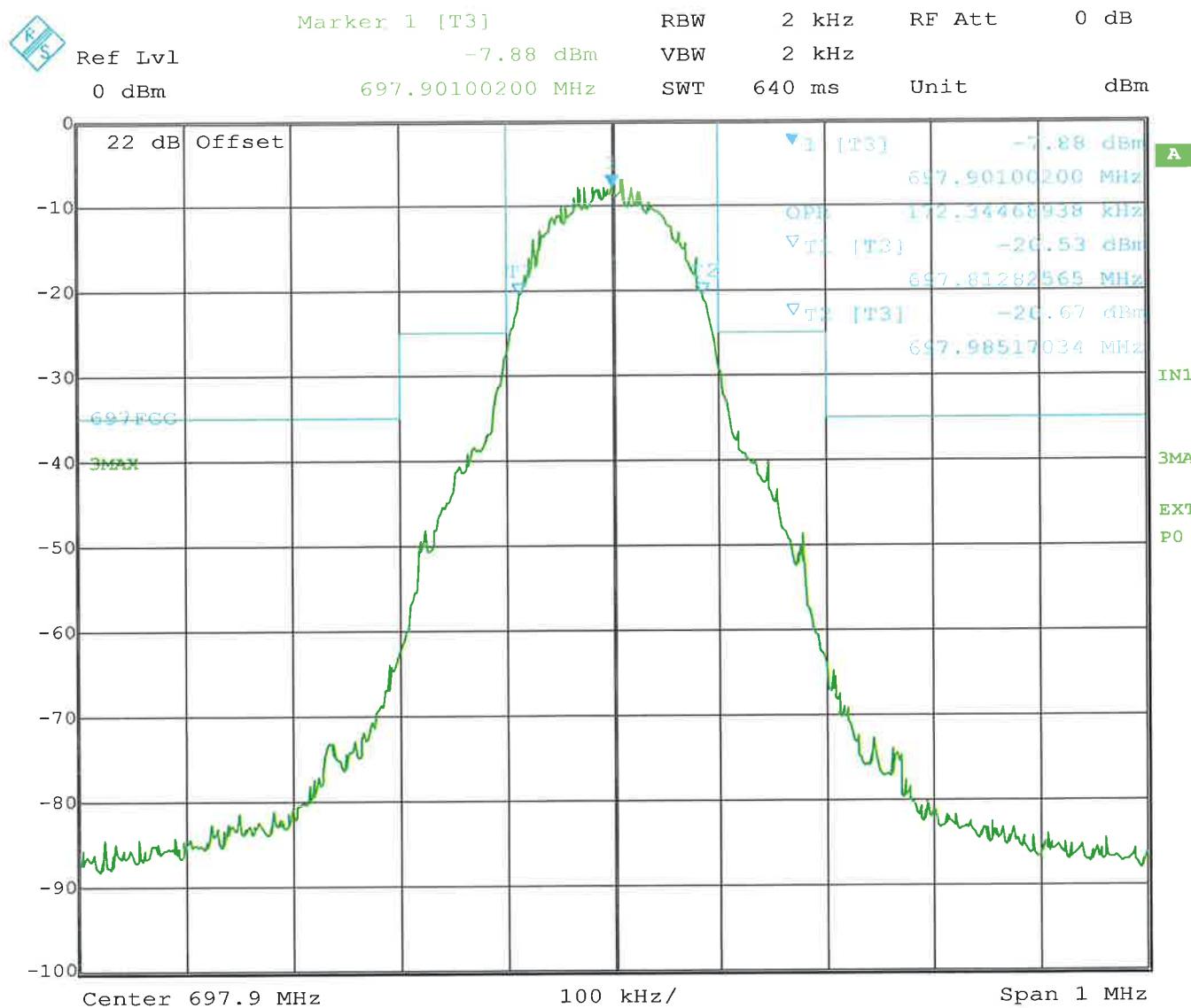
TEST EQUIPMENT USED: NT-207

OPERATING BANDWIDTH

§ 74.261 (e)(5)
(6.3)

The operating Bandwidth was measured at an acoustic input level 16 dB higher than that required for half of the maximum linear input level.

Measurement with audio frequency 7,5 kHz @ 697,9 MHz



Date: 21.JAN.2015 14:36:46

Measured bandwidth is: 172,3 kHz

LIMIT SUBCLAUSE 74.261 (e)(5) (Table 1 RSS-123)

The operating bandwidth shall not exceed 200 kHz.

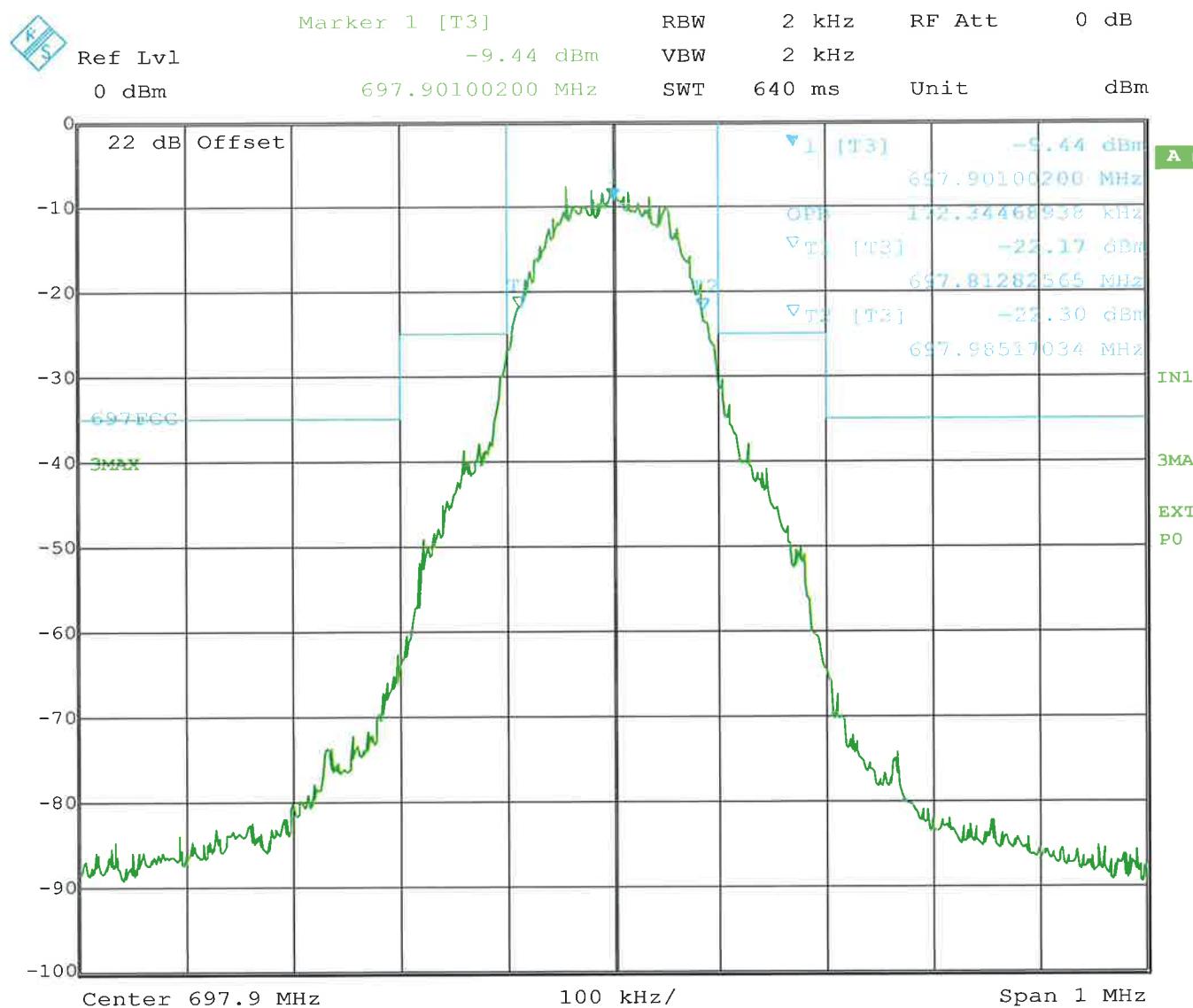
TEST EQUIPMENT USED: NT-207

OPERATING BANDWIDTH

§ 74.261 (e)(5)
(6.3)

The operating Bandwidth was measured at an acoustic input level 16 dB higher than that required for half of the maximum linear input level.

Measurement with audio frequency 15 kHz @ 697,9 MHz



Measured bandwidth is: 172,3 kHz

LIMIT SUBCLAUSE 74.261 (e)(5) (Table 1 RSS-123)

The operating bandwidth shall not exceed 200 kHz.

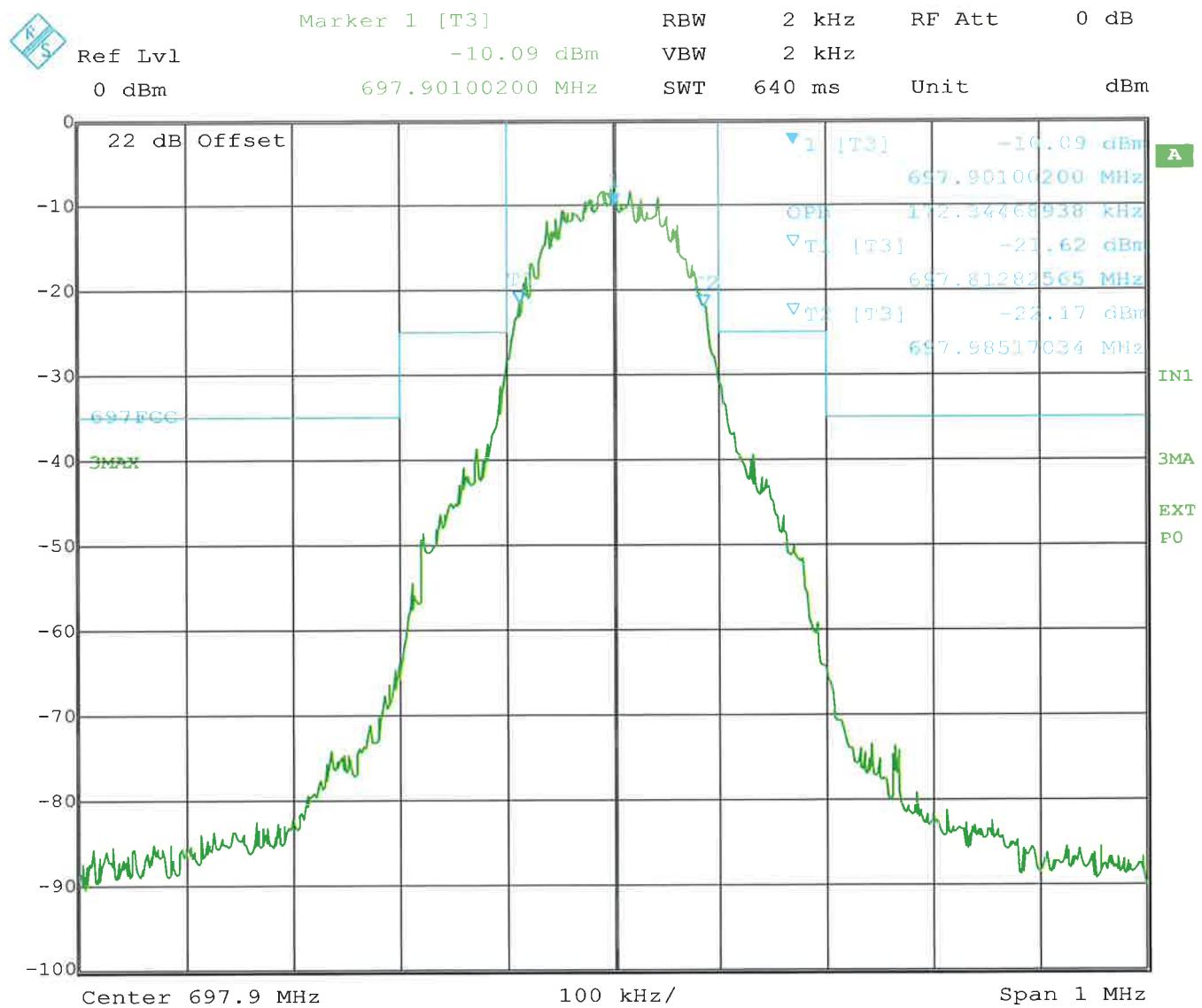
TEST EQUIPMENT USED: NT-207

OPERATING BANDWIDTH

§ 74.261 (e)(5)
(6.3)

The operating Bandwidth was measured at an acoustic input level 16 dB higher than that required for half of the maximum linear input level.

Measurement with audio frequency 20 kHz @ 697,9 MHz



Date: 21.JAN.2015 14:37:23

Measured bandwidth is: 172,3 kHz

LIMIT SUBCLAUSE 74.261 (e)(5) (Table 1 RSS-123)

The operating bandwidth shall not exceed 200 kHz.

TEST EQUIPMENT USED: NT-207

Emissions Mask**§ 74.261 (e)(6)
(6.3)****LIMIT****74.261(e)(6)**

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:

- (i) On any frequency removed from the operating frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: at least 25dB;
- (ii) On any frequency removed from the operating frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: at least 35dB;
- (iii) On any frequency removed from the operating frequency by more than 250 percent of the authorized bandwidth: at least $43 + 10\log_{10}$ (mean output power in watts) dB.

In deviation to above (iii) RSS-123 6.3.1 (3) requires:

at least $55 + 10 \log_{10}(TP)$ dB, in any 30 kHz band removed from the centre of the authorized bandwidth by more than 250% of the authorized bandwidth. The search for unwanted emissions shall be from the lowest frequency internally generated or used in the device (local oscillator, intermediate or carrier frequency), or 500 kHz below its lowest assignable frequency, whichever is the lowest frequency, to the 5th harmonic of the highest frequency generated or used, without exceeding 23 GHz.

All plots were normalised so that 0 dB is equal to the mean output power measured in a bandwidth equal to 5 times the nominal bandwidth of the emission.

Emissions Mask

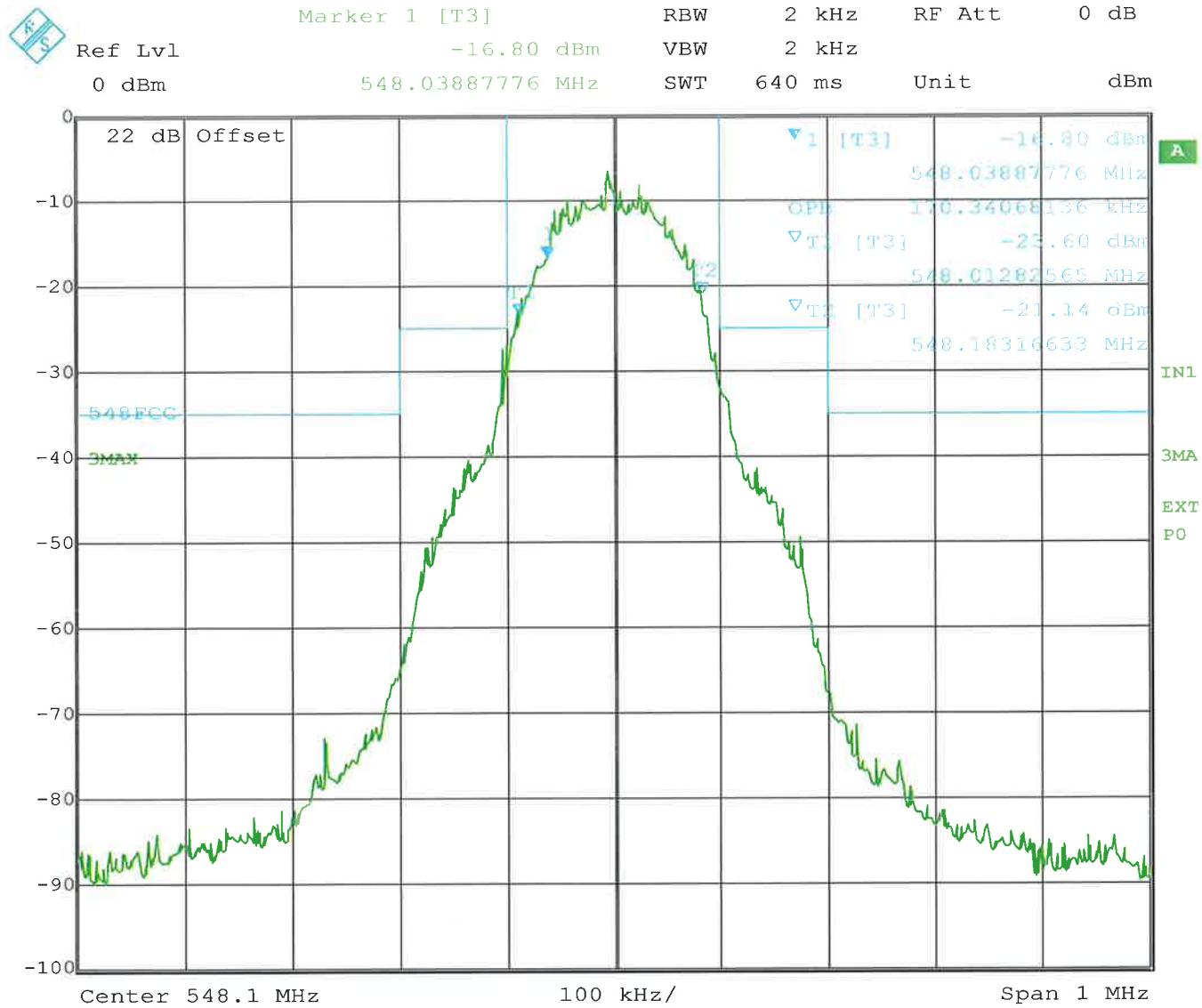
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 548,1 MHz

Modulation: acoustic input level to achieve half of maximum linear input level, audio frequency 1 kHz

DC Voltage: 3 V



Date: 21.JAN.2015 14:50:58

Test Equipment used: NT-207

Emissions Mask

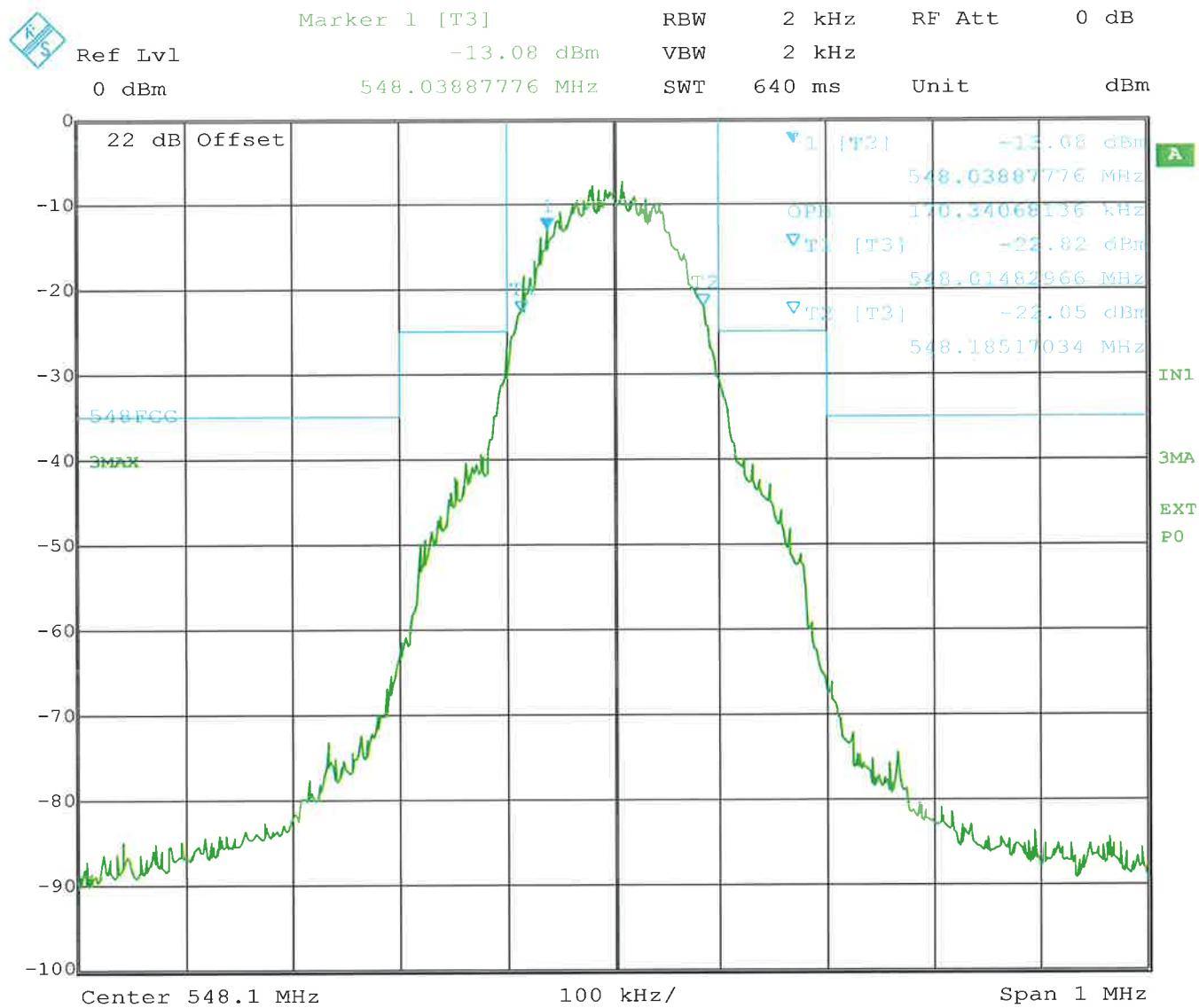
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 548,1 MHz

Modulation: acoustic input level to achieve half of maximum linear input level, audio frequency 1 kHz

DC Voltage: 2,3 V



Date: 21.JAN.2015 14:51:14

Test Equipment used: NT-207

Emissions Mask

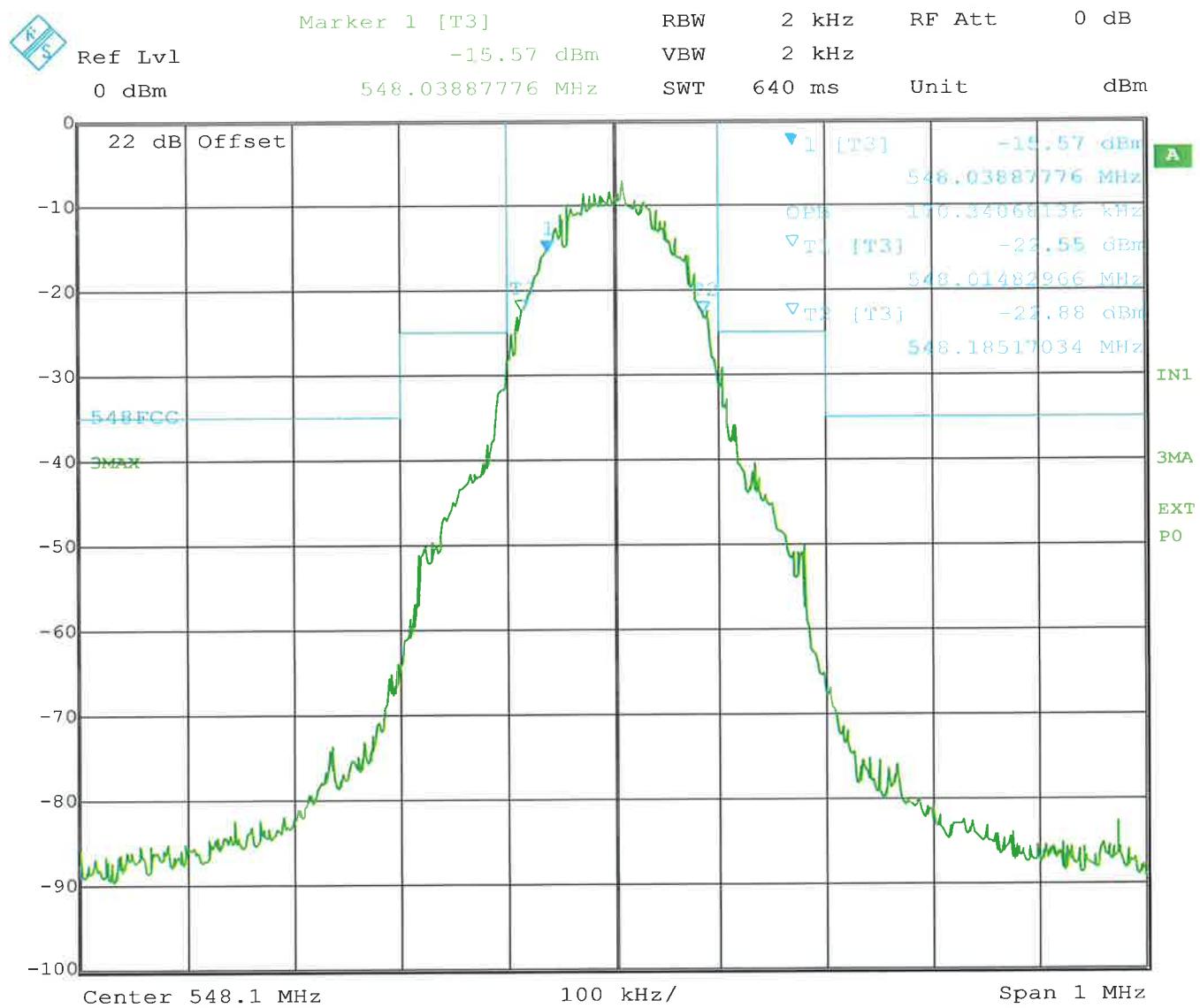
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 548,1 MHz

Modulation: acoustic input level equal to the maximum linear input level, audio frequency 1 kHz

DC Voltage: 3 V



Date: 21.JAN.2015 14:51:50

Test Equipment used: NT-207

Emissions Mask

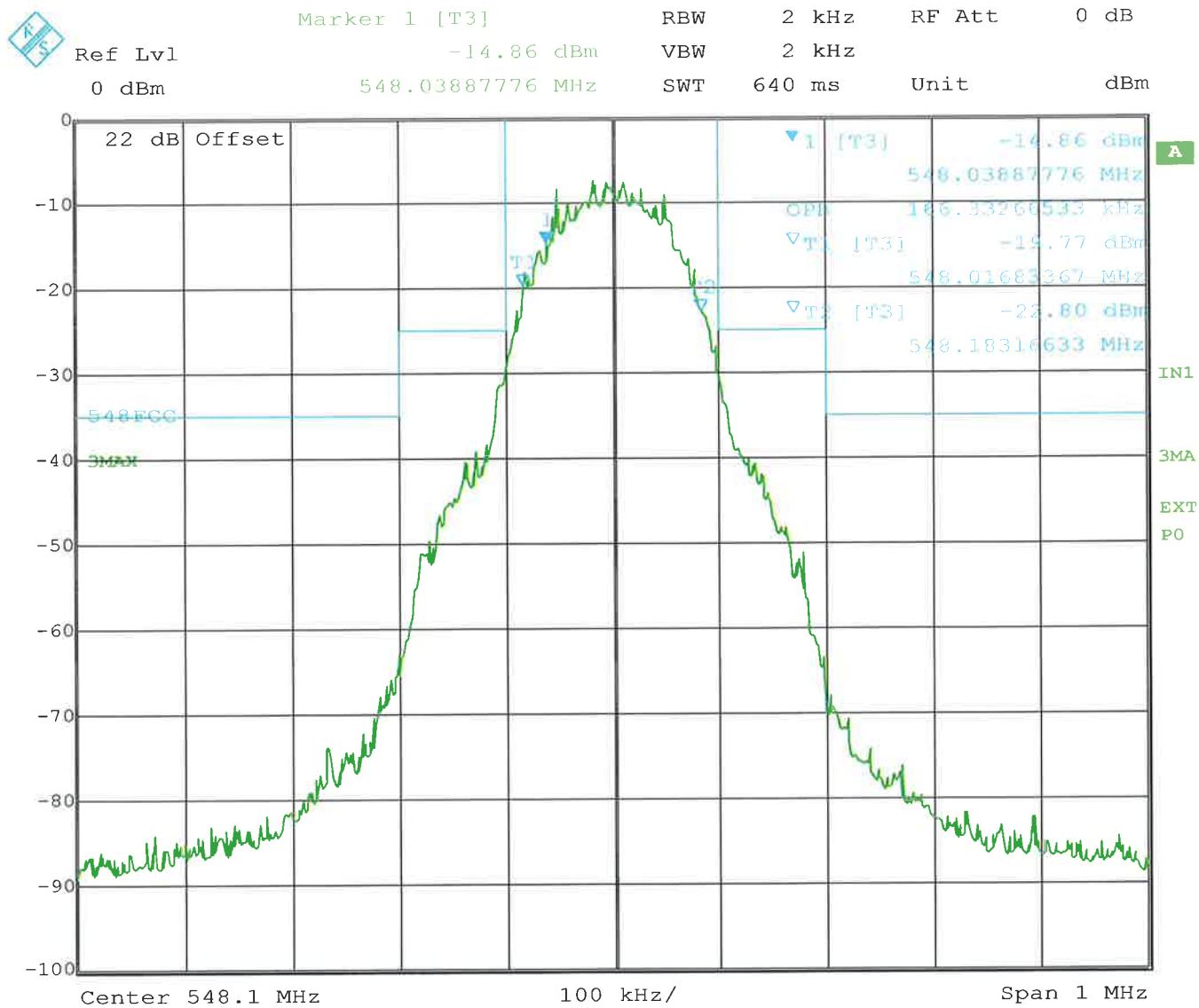
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 548,1 MHz

Modulation: acoustic input level equal to the maximum linear input level, audio frequency 1 kHz

DC Voltage: 2,3 V



Date: 21.JAN.2015 14:51:33

Test Equipment used: NT-207

Emissions Mask

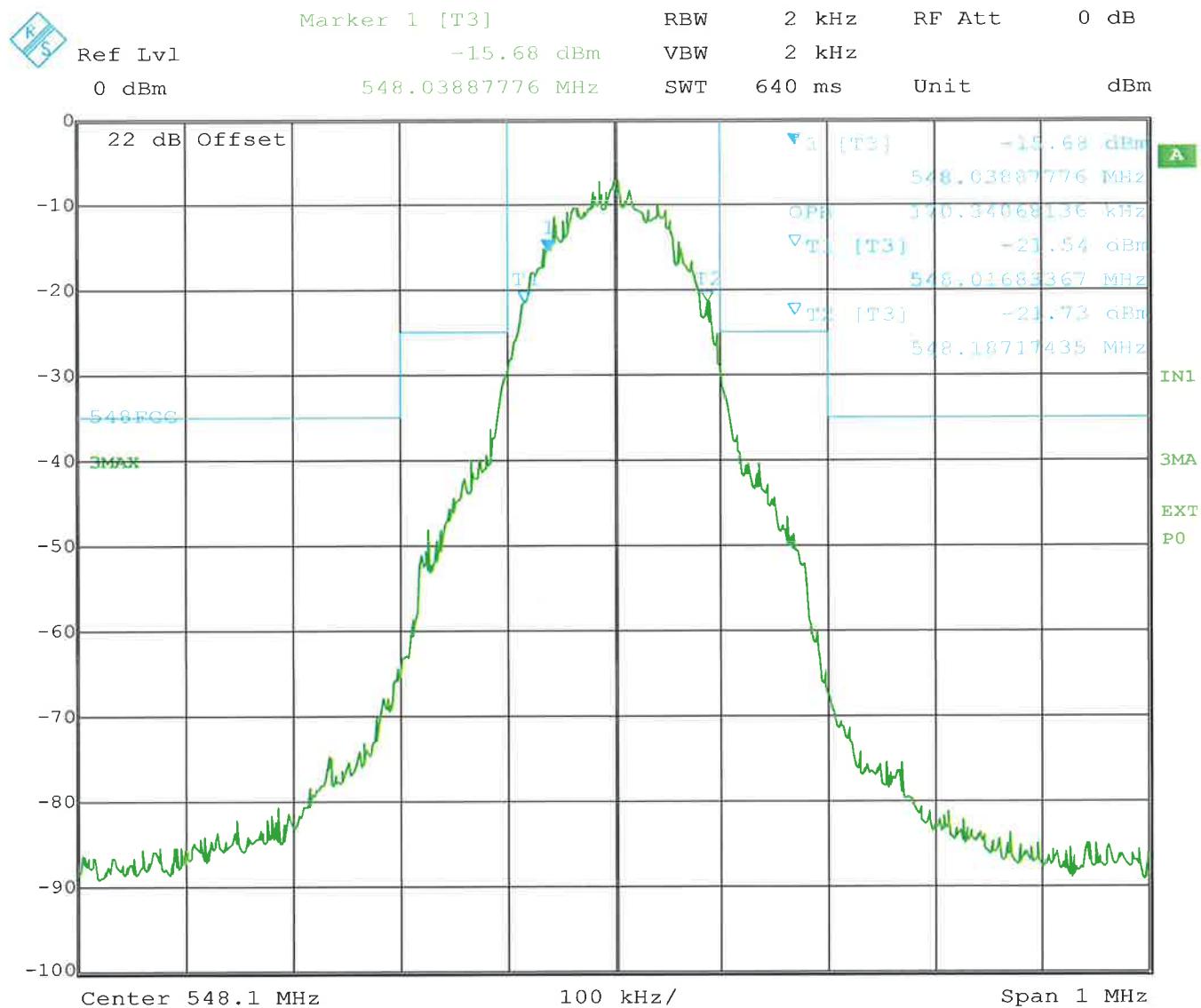
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 548,1 MHz

Modulation: acoustic input level to achieve half of maximum linear input level, audio frequency 15 kHz

DC Voltage: 3 V



Date: 21.JAN.2015 14:52:54

Test Equipment used: NT-207

Emissions Mask

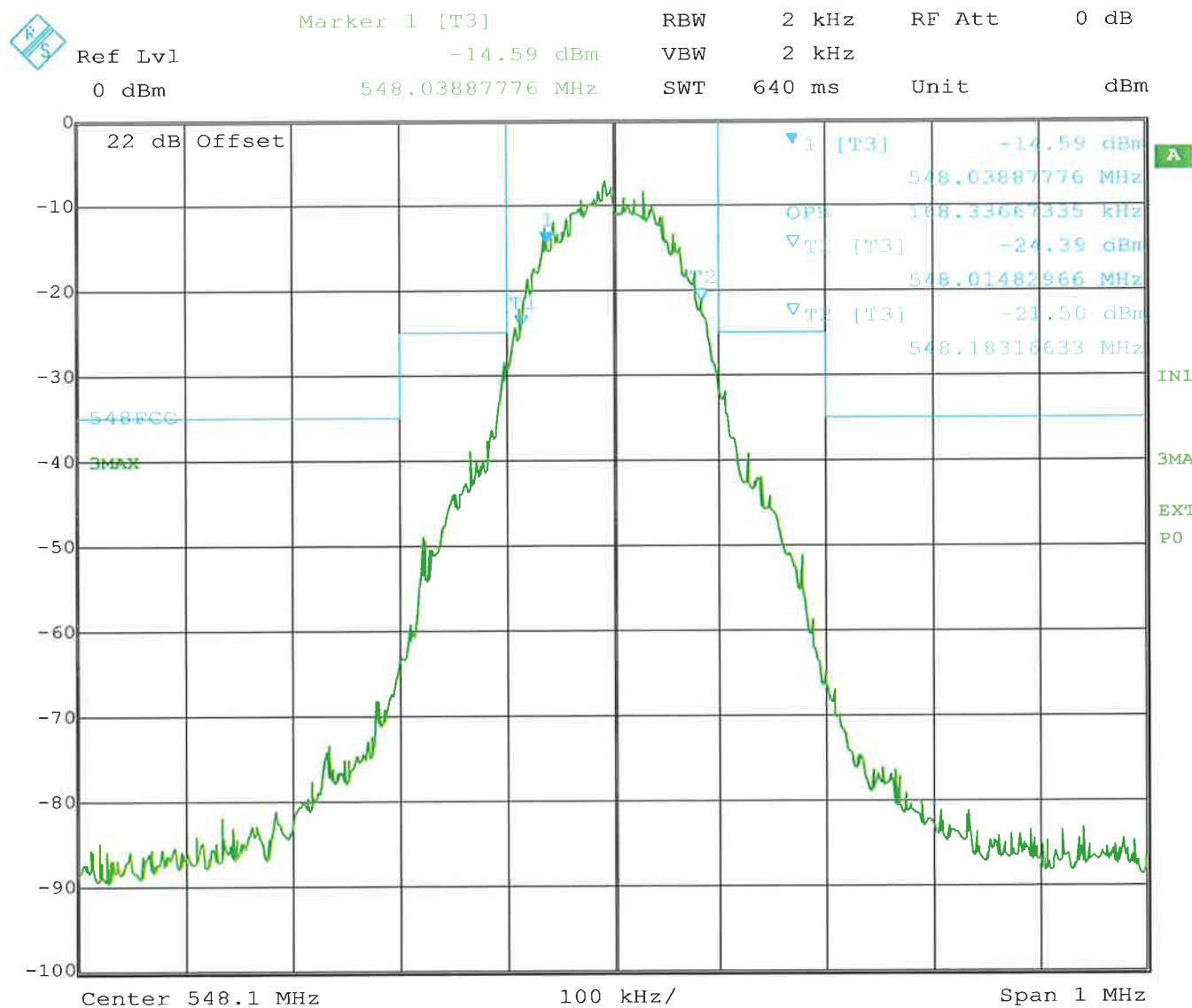
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 548,1 MHz

Modulation: acoustic input level to achieve half of maximum linear input level, audio frequency 15 kHz

DC Voltage: 2,3 V



Date: 21.JAN.2015 14:52:38

Test Equipment used: NT-207

Emissions Mask

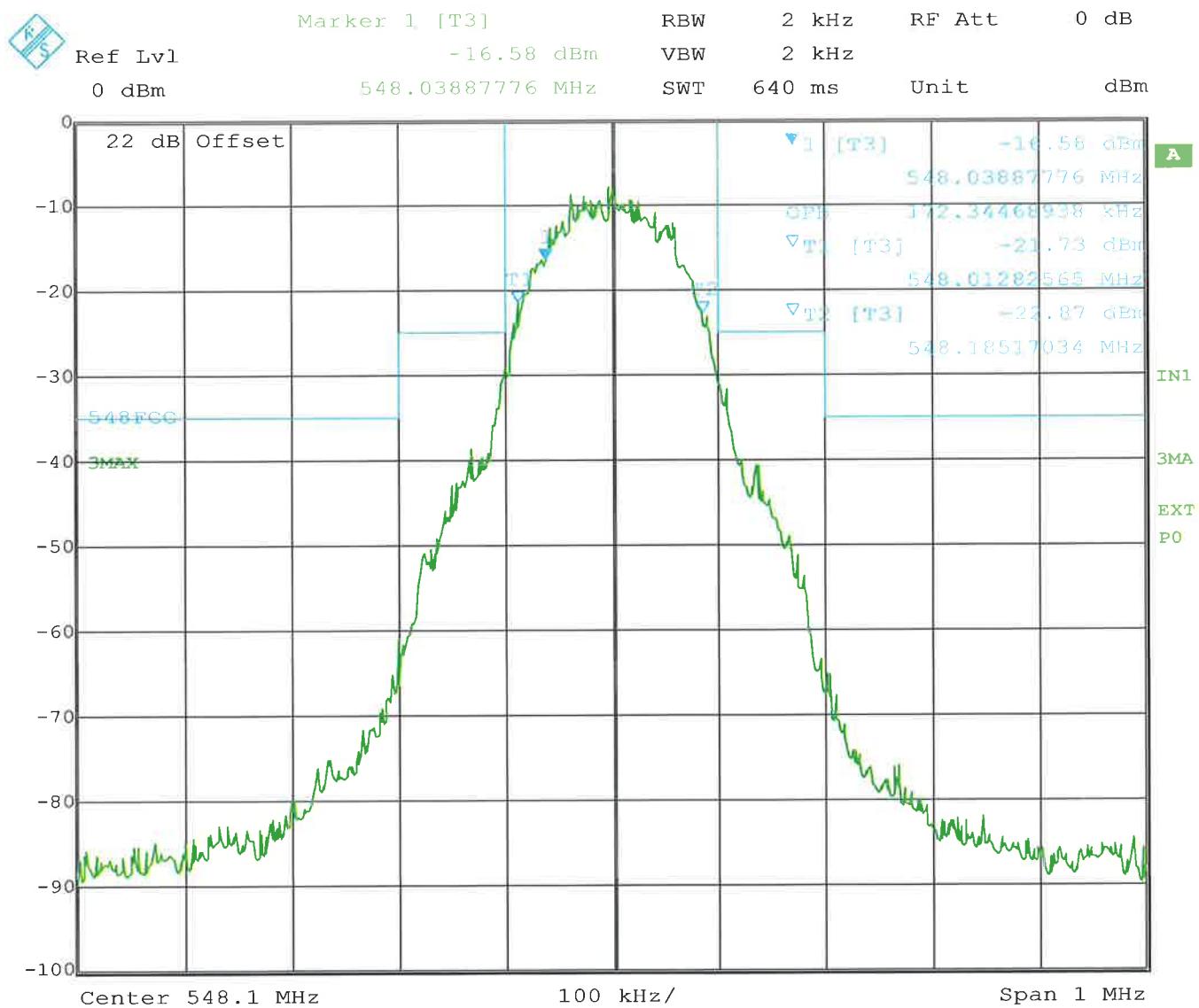
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 548,1 MHz

Modulation: acoustic input level equal to the maximum linear input level, audio frequency 15 kHz

DC Voltage: 3 V



Date: 21.JAN.2015 14:52:03

Test Equipment used: NT-207

Emissions Mask

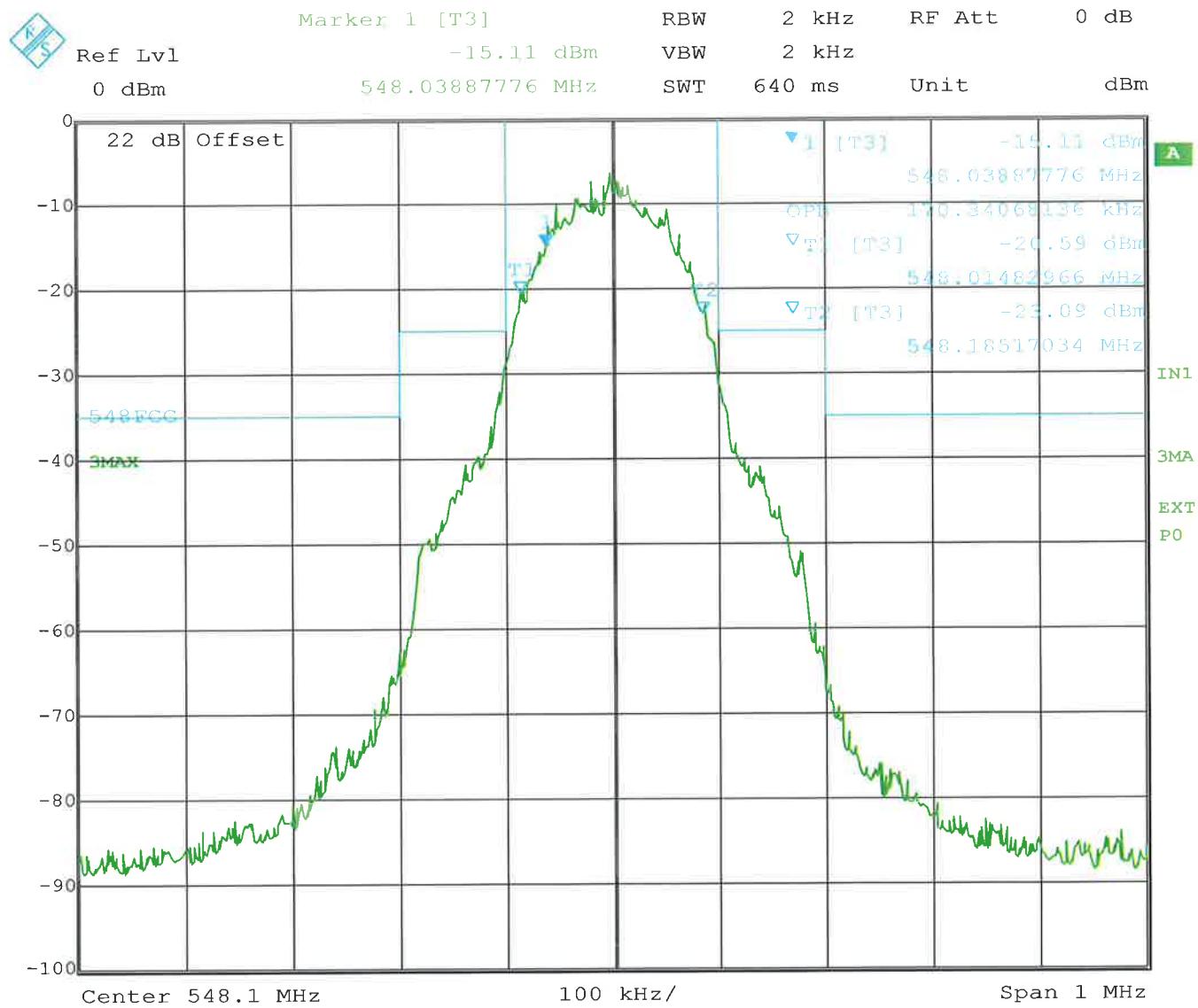
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 548,1 MHz

Modulation: acoustic input level equal to the maximum linear input level, audio frequency 15 kHz

DC Voltage: 2,3 V



Test Equipment used: NT-207

Emissions Mask

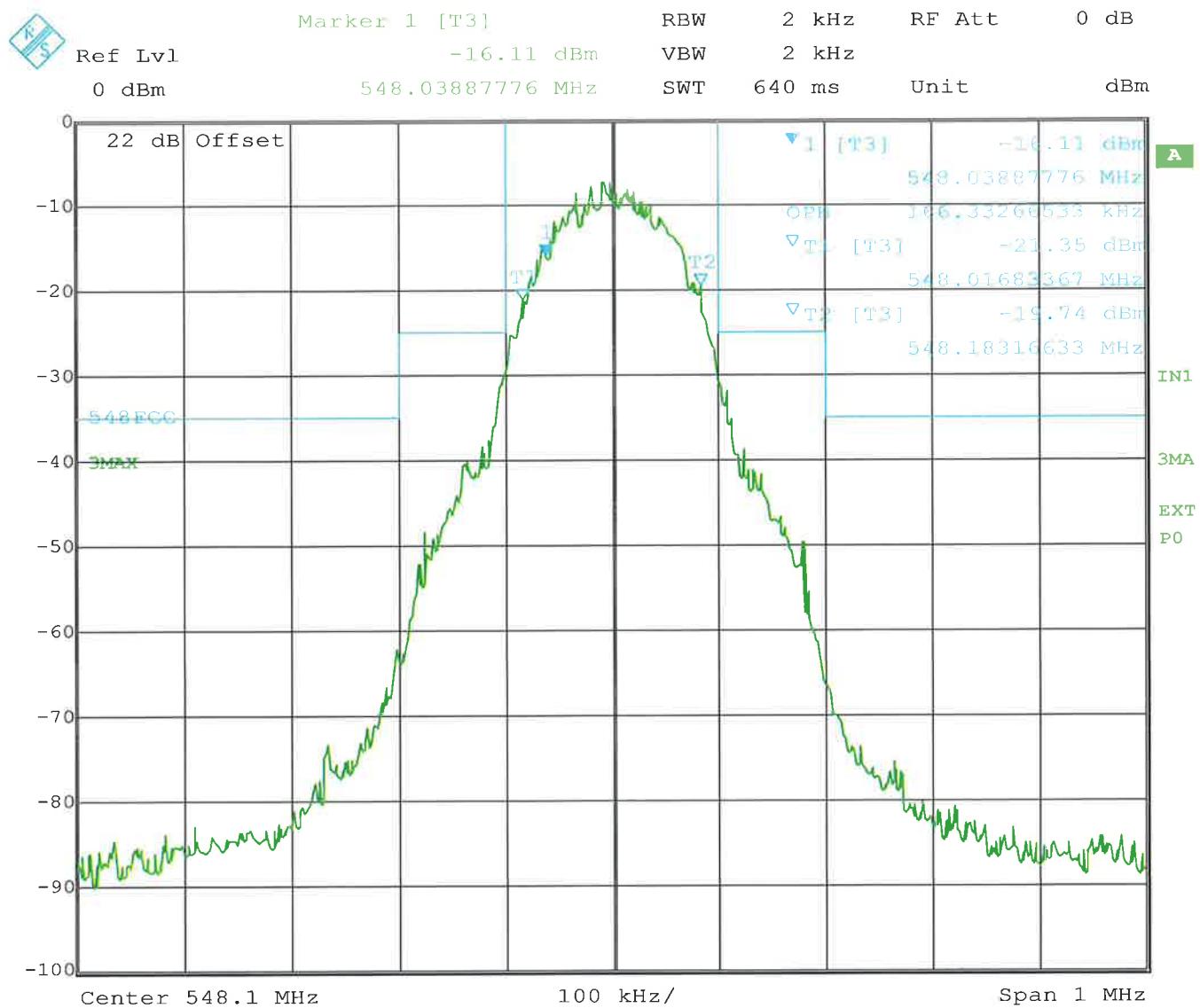
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 548,1 MHz

Modulation: acoustic input level to achieve half of maximum linear input level, audio frequency 20 kHz

DC Voltage: 3 V



Date: 21.JAN.2015 14:53:12

Test Equipment used: NT-207

Emissions Mask

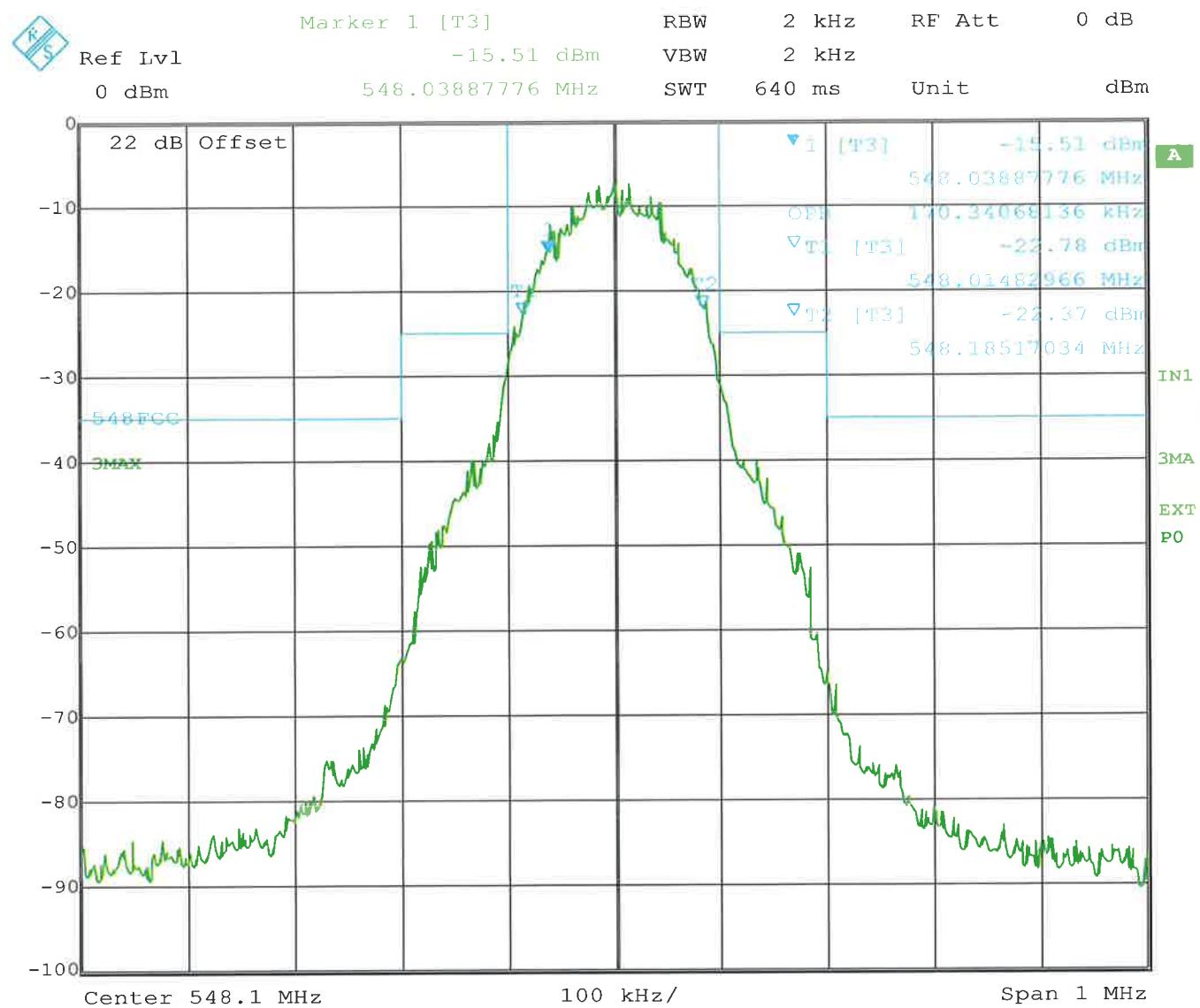
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 548,1 MHz

Modulation: acoustic input level to achieve half of maximum linear input level, audio frequency 20 kHz

DC Voltage: 2,3 V



Test Equipment used: NT-207

Emissions Mask

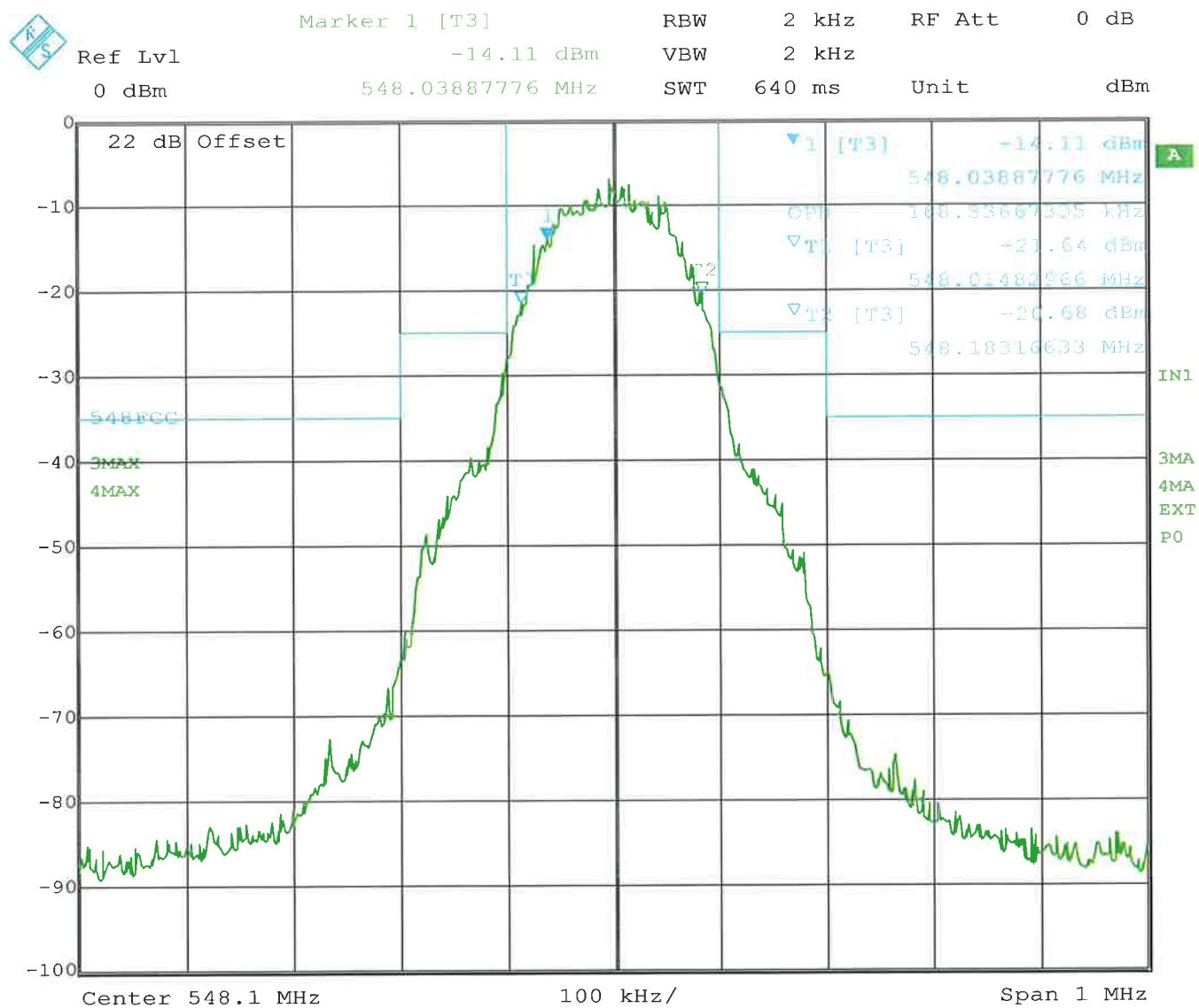
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 548,1 MHz

Modulation: acoustic input level equal to the maximum linear input level, audio frequency 20 kHz

DC Voltage: 3 V



Test Equipment used: NT 207

Emissions Mask

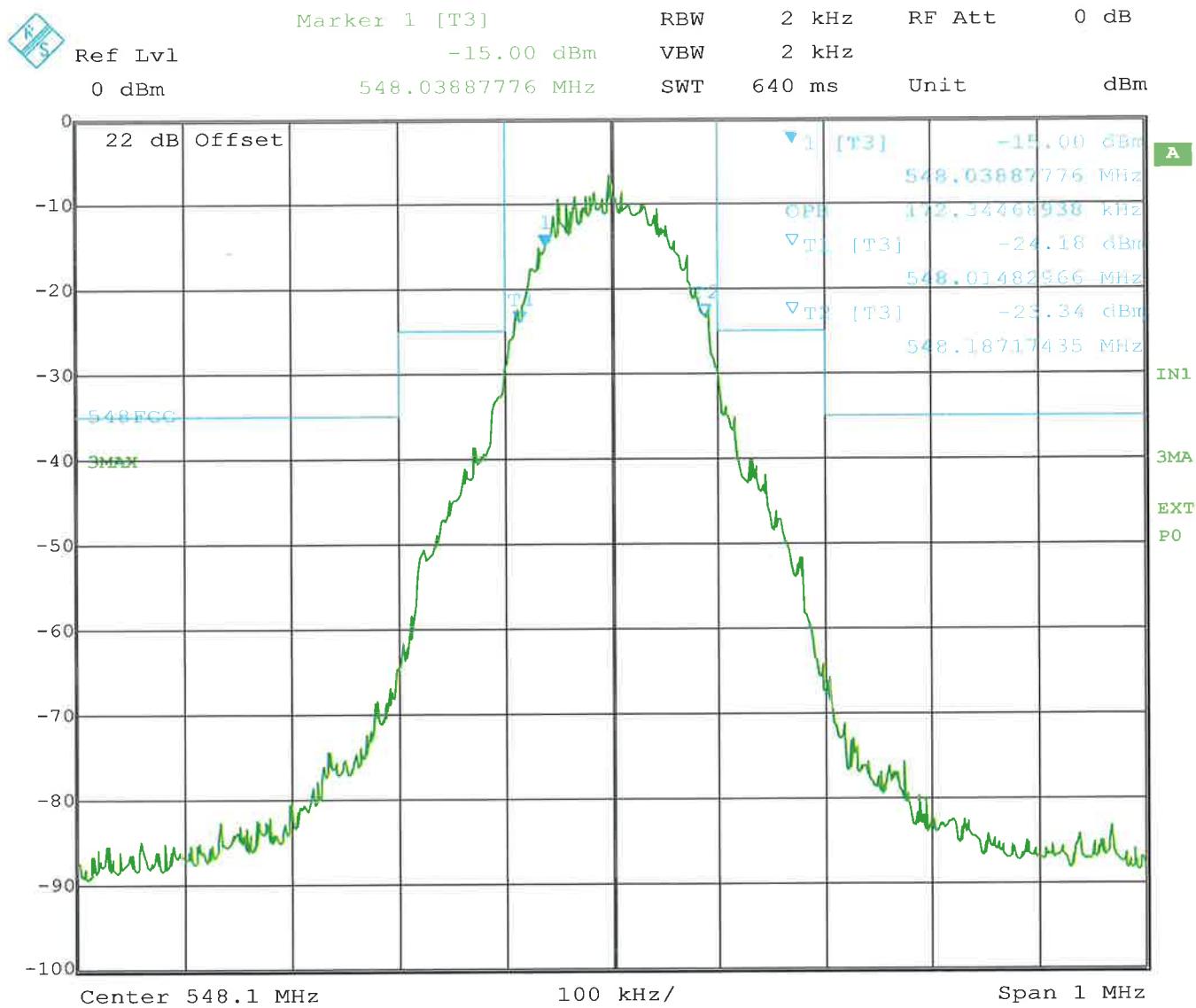
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 548,1 MHz

Modulation: acoustic input level equal to the maximum linear input level, audio frequency 20 kHz

DC Voltage: 2,3 V



Date: 21.JAN.2015 14:53:41

Test Equipment used: NT-207

Emissions Mask

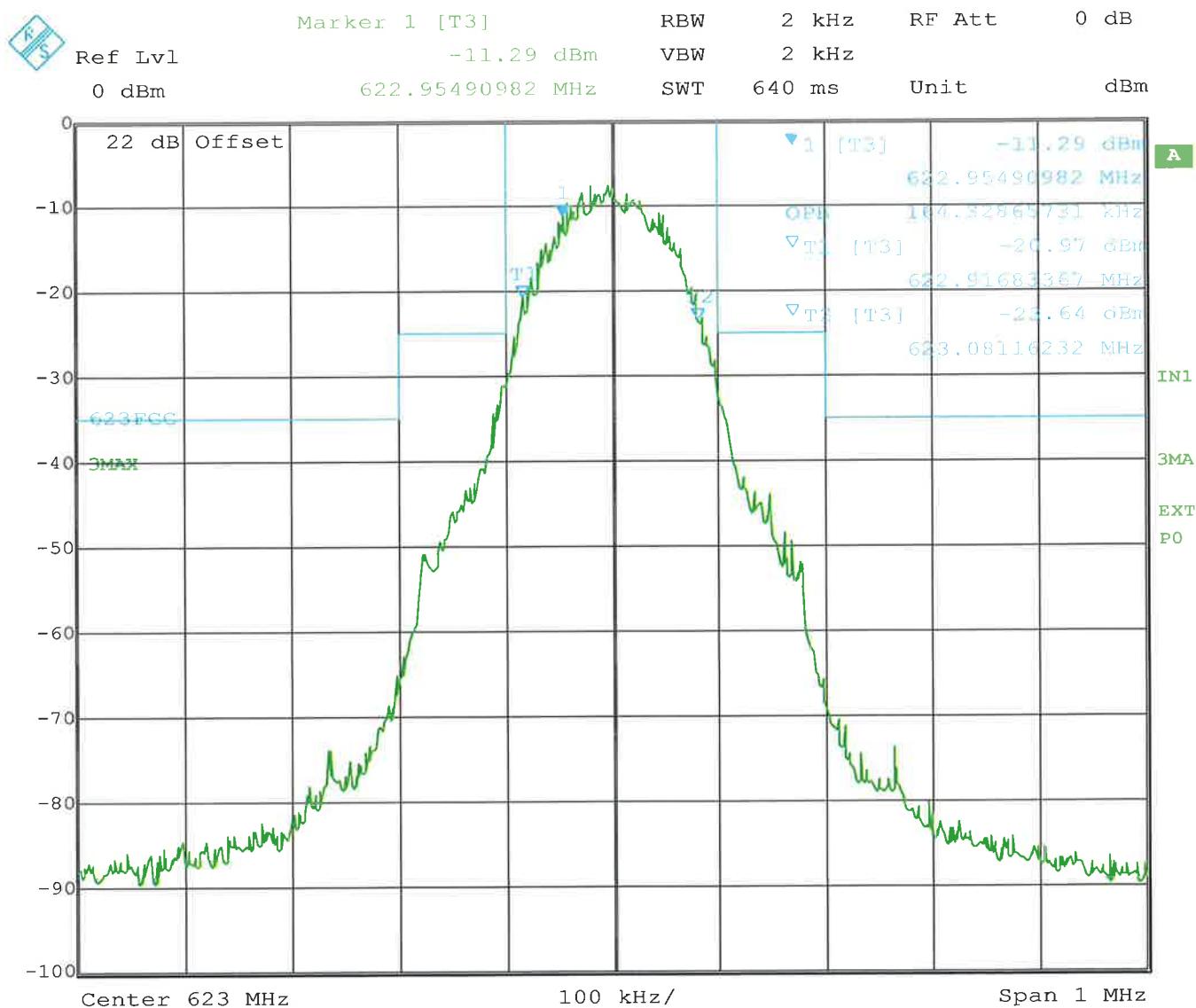
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 623,0 MHz

Modulation: acoustic input level to achieve half of maximum linear input level, audio frequency 1 kHz

DC Voltage: 3 V



Date: 21.JAN.2015 14:44:49

Test Equipment used: NT-207

Emissions Mask

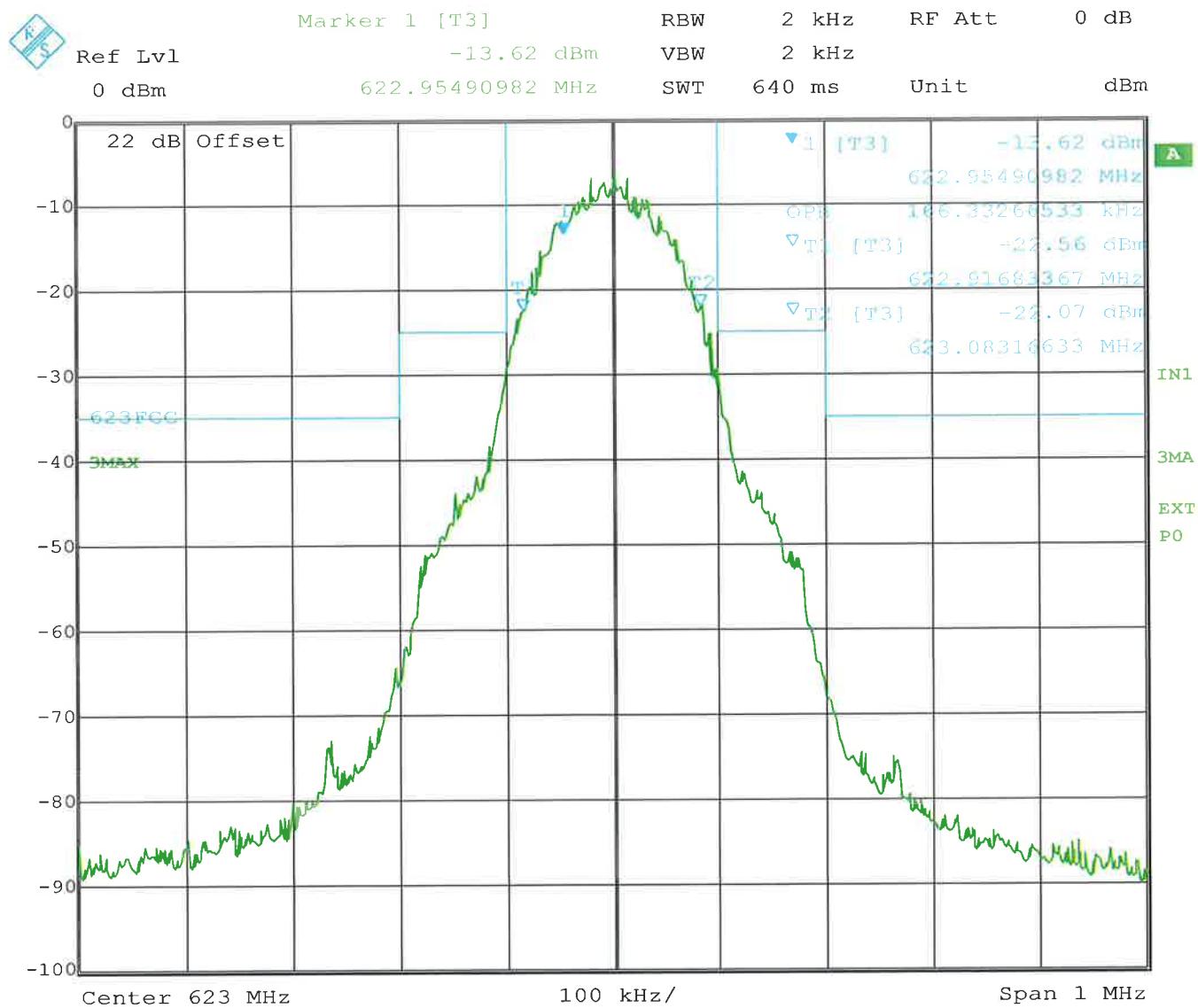
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 623,0 MHz

Modulation: acoustic input level to achieve half of maximum linear input level, audio frequency 1 kHz

DC Voltage: 2,3 V



Date: 21.JAN.2015 14:45:12

Test Equipment used: NT-207

Emissions Mask

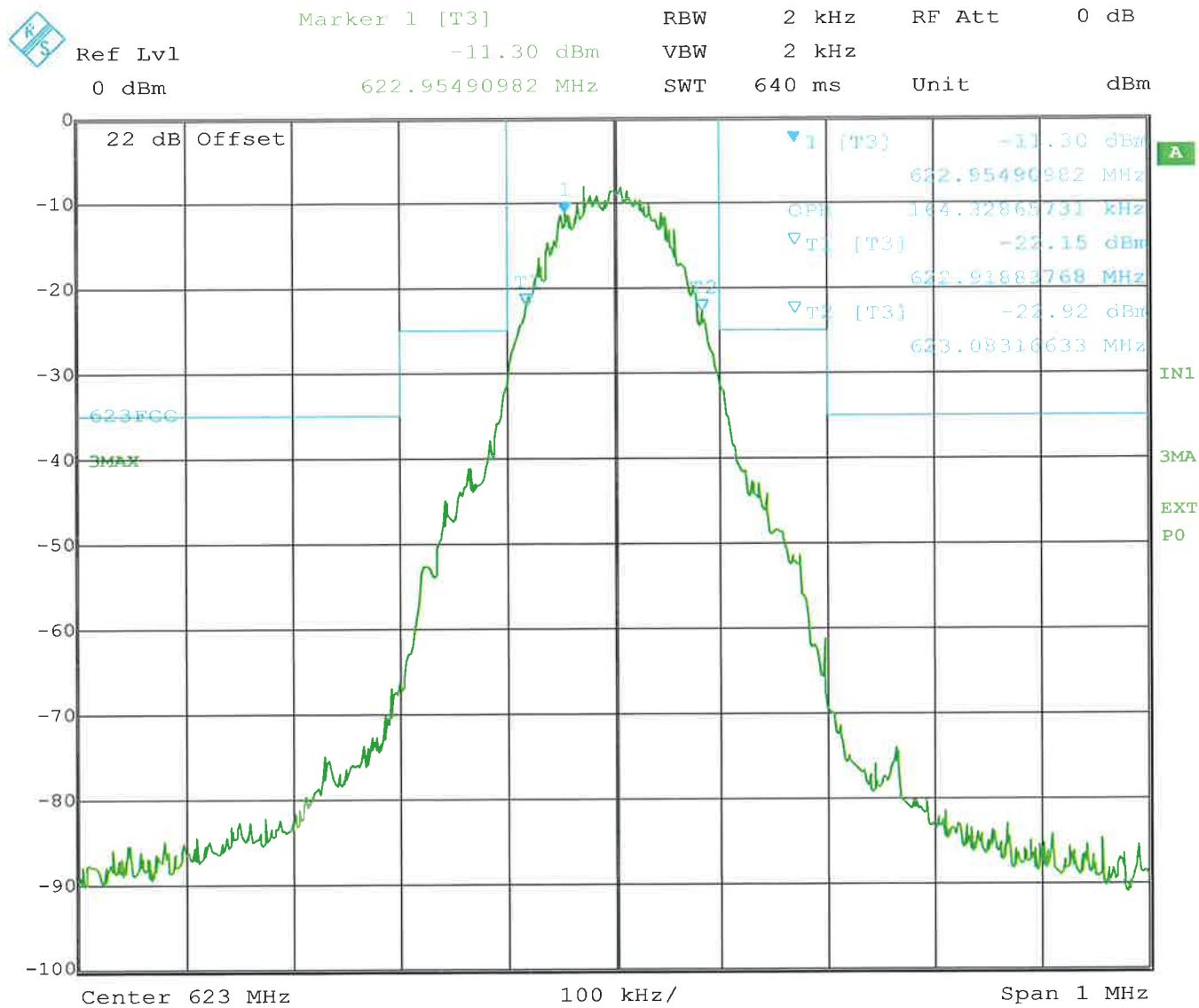
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 623,0 MHz

Modulation: acoustic input level equal to the maximum linear input level, audio frequency 1 kHz

DC Voltage: 3 V



Date: 21.JAN.2015 14:45:43

Test Equipment used: NT-207

Emissions Mask

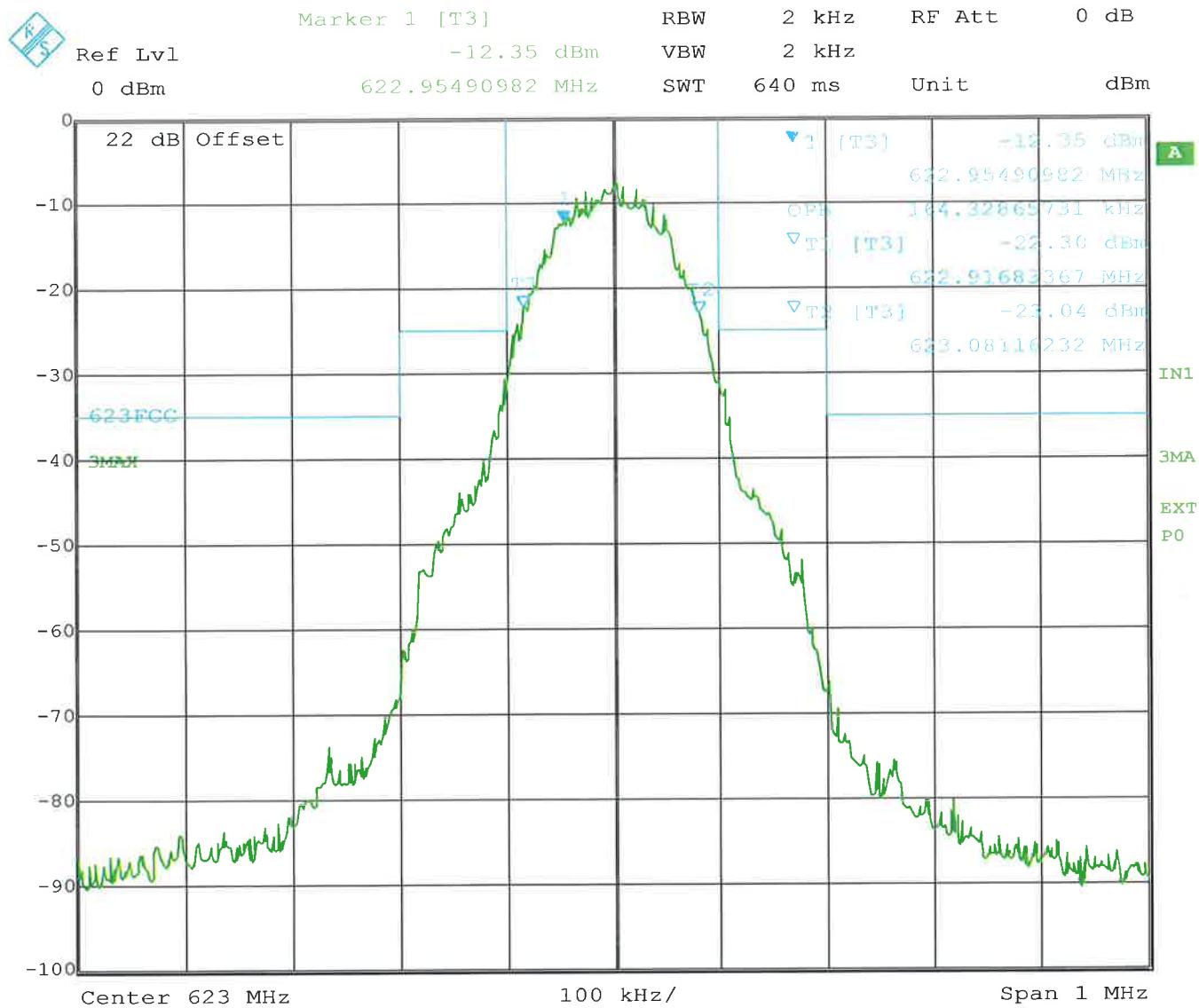
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 623,0 MHz

Modulation: acoustic input level equal to the maximum linear input level, audio frequency 1 kHz

DC Voltage: 2,3 V



Date: 21.JAN.2015 14:45:27

Test Equipment used: NT-207

Emissions Mask

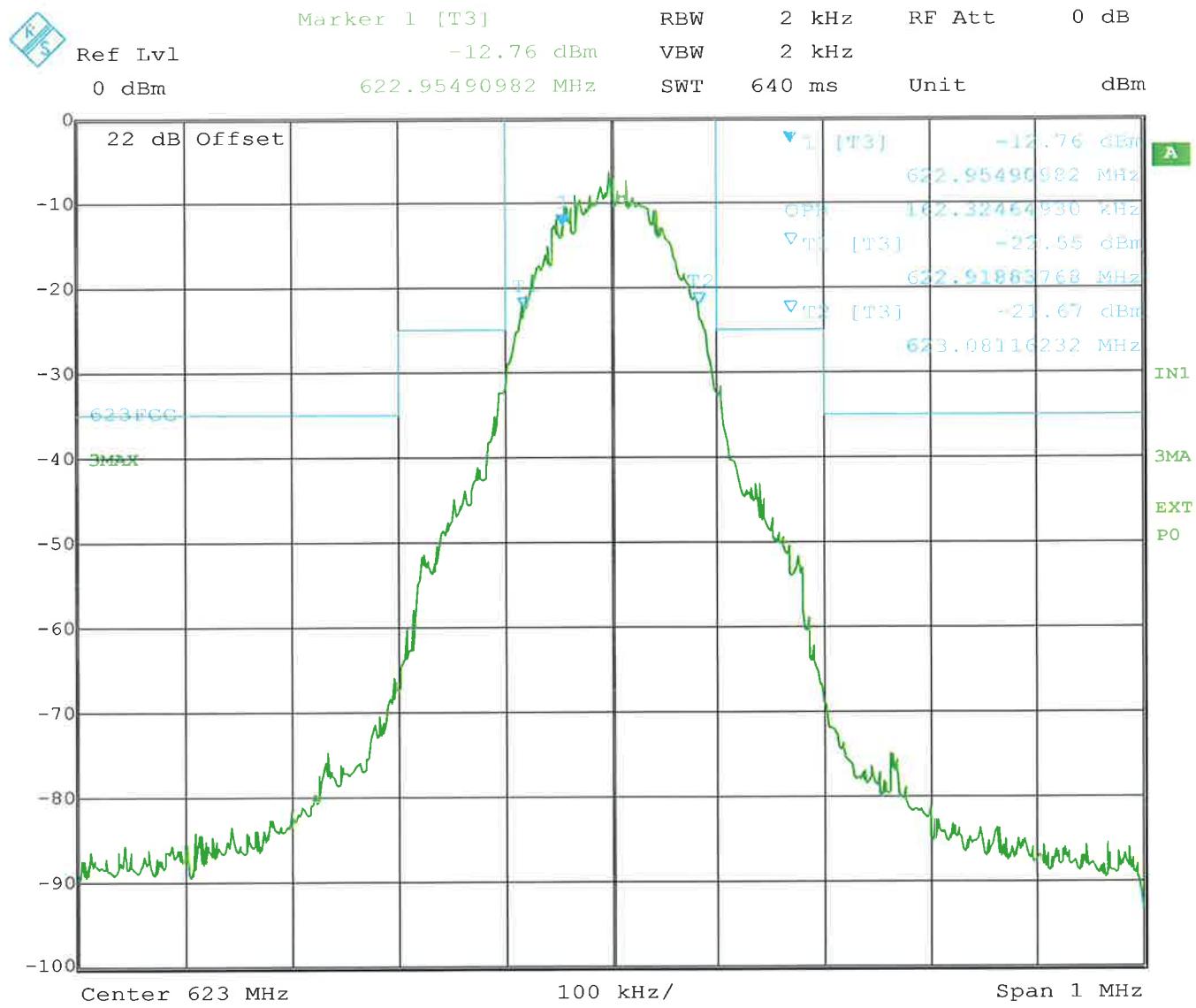
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 623,0 MHz

Modulation: acoustic input level to achieve half of maximum linear input level, audio frequency 15 kHz

DC Voltage: 3 V



Date: 21.JAN.2015 14:46:50

Test Equipment used: NT-207

Emissions Mask

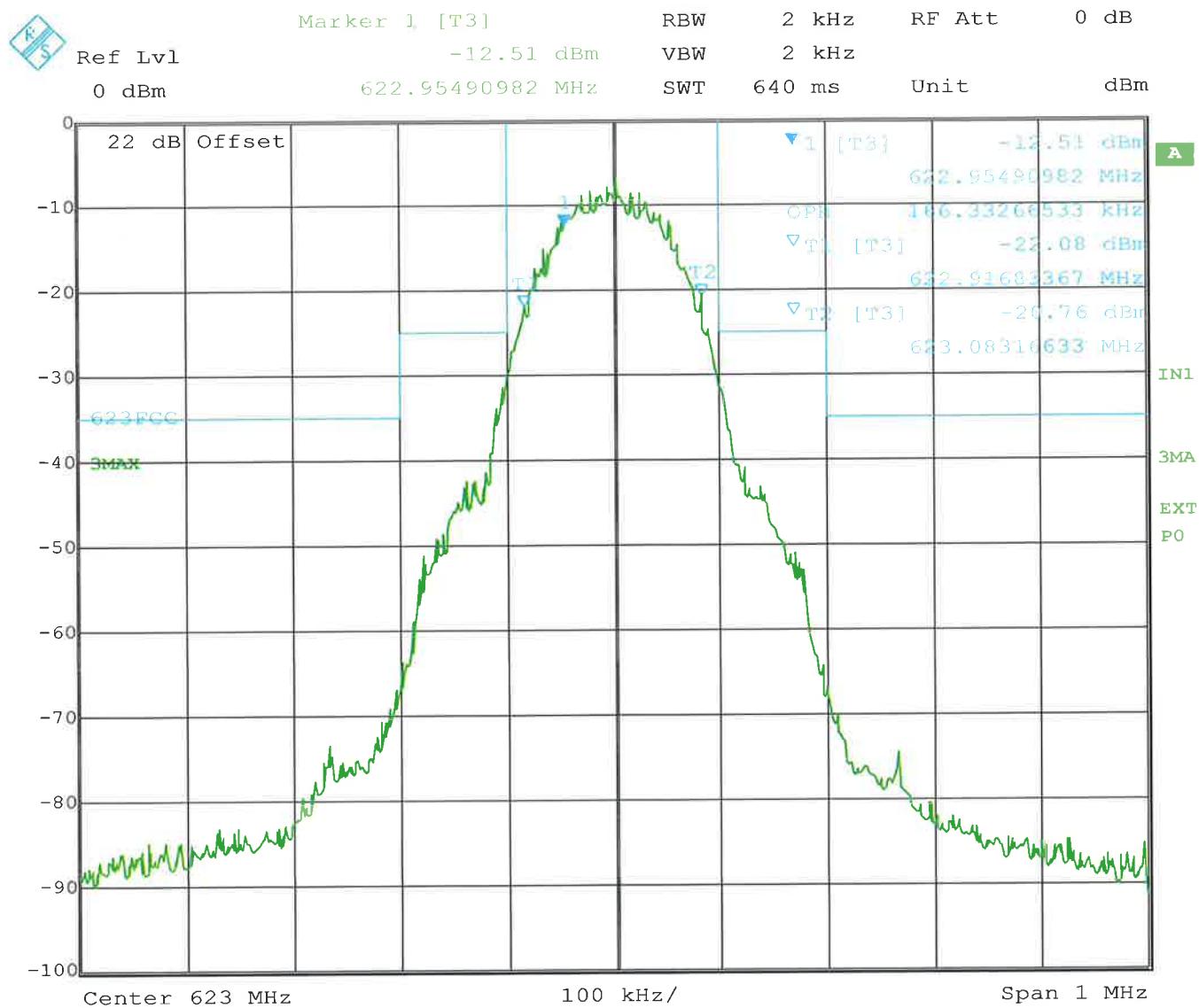
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 623,0 MHz

Modulation: acoustic input level to achieve half of maximum linear input level, audio frequency 15 kHz

DC Voltage: 2,3 V



Test Equipment used: NT-207

Emissions Mask

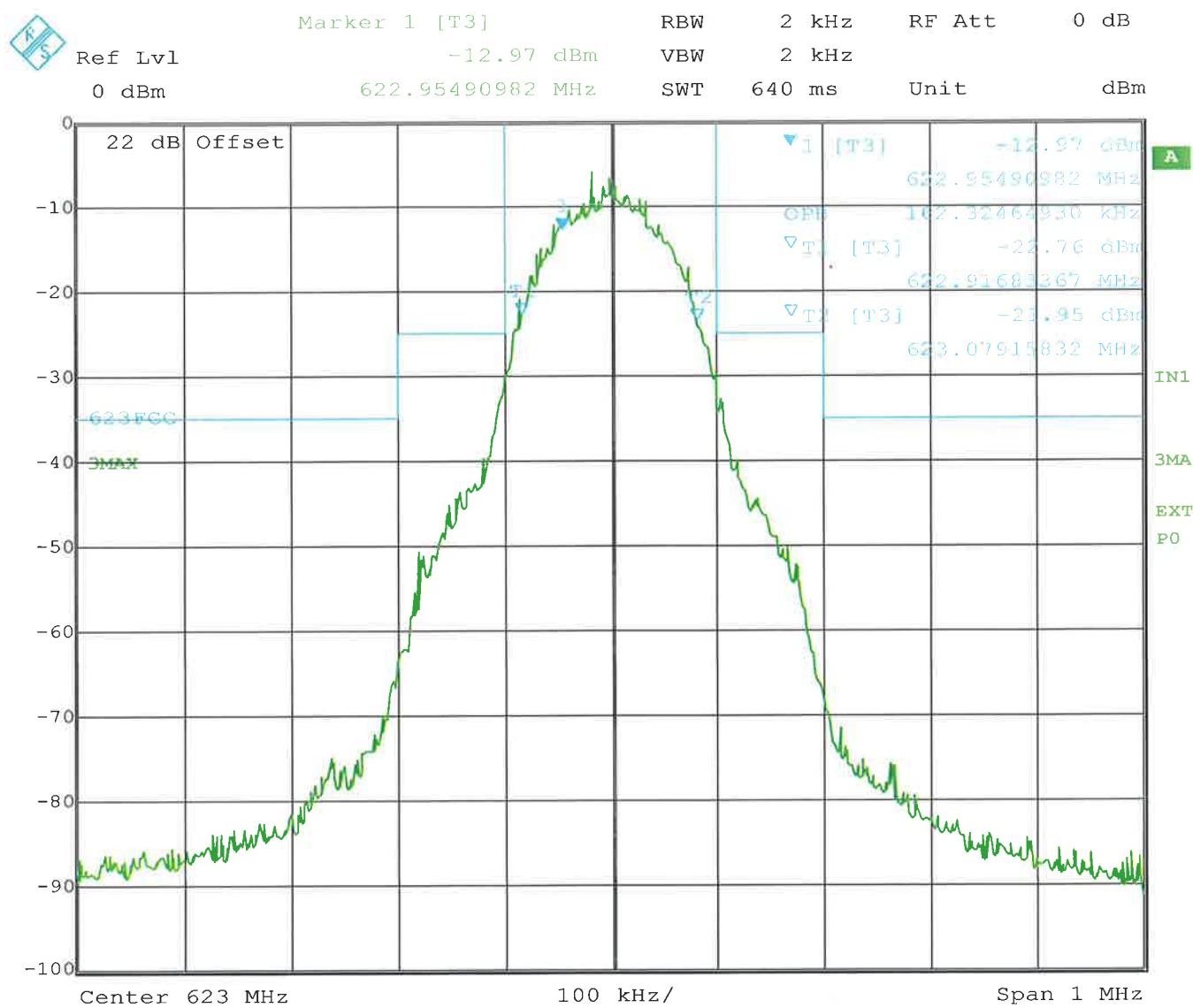
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 623,0 MHz

Modulation: acoustic input level equal to the maximum linear input level, audio frequency 15 kHz

DC Voltage: 3 V



Test Equipment used: NT-207

Emissions Mask

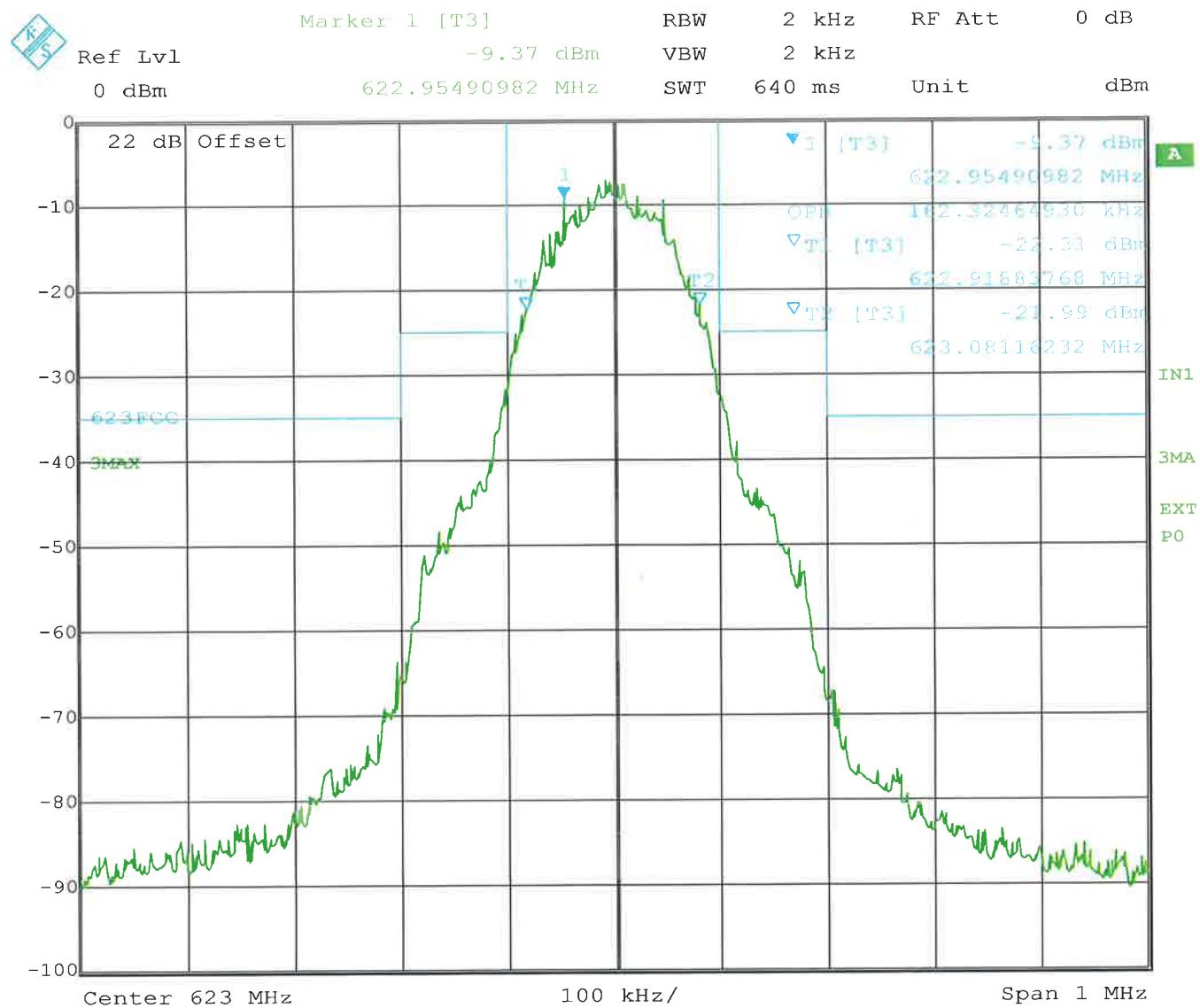
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 623,0 MHz

Modulation: acoustic input level equal to the maximum linear input level, audio frequency 15 kHz

DC Voltage: 2,3 V



Date: 21.JAN.2015 14:46:17

Test Equipment used: NT-207

Emissions Mask

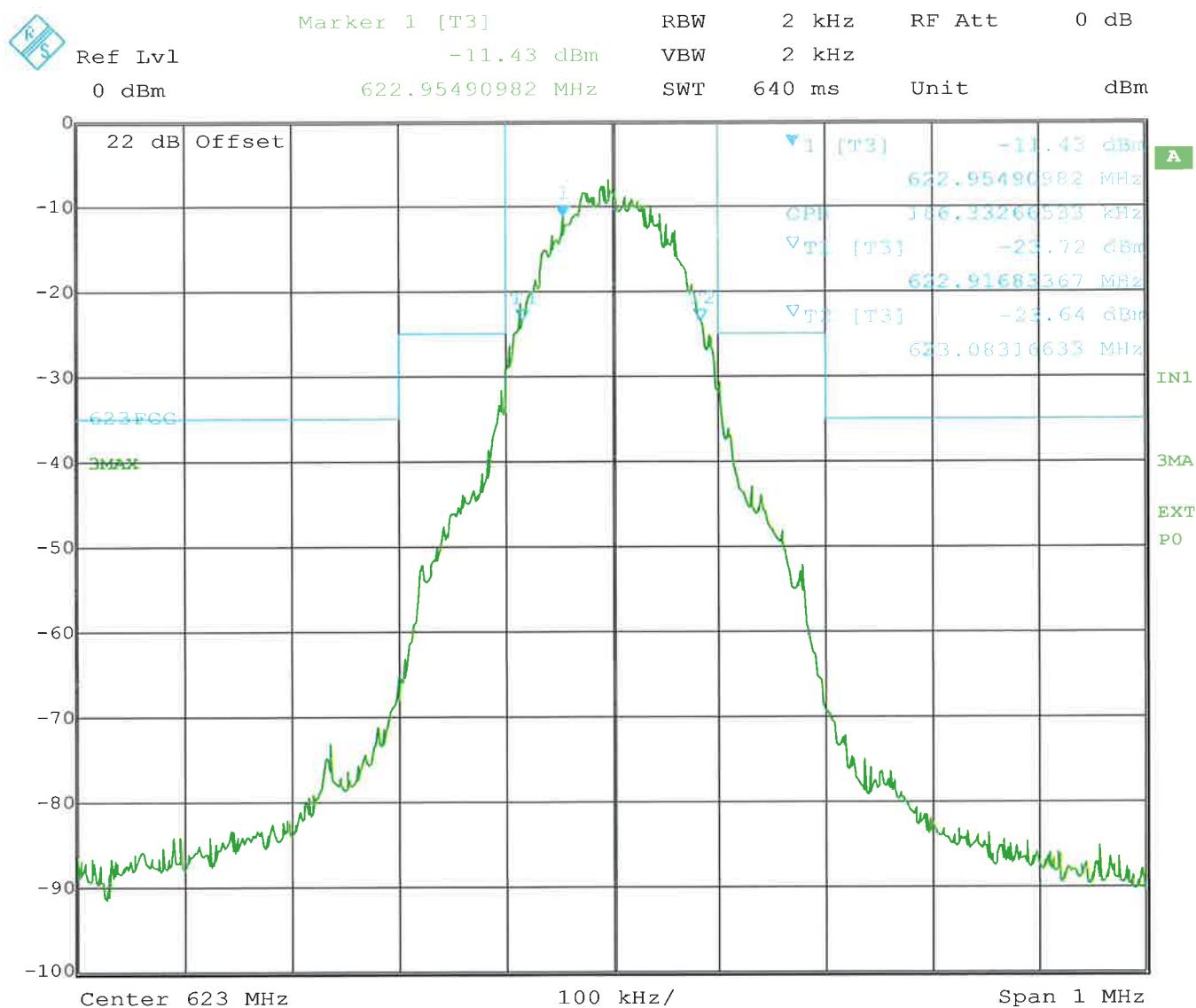
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 623,0 MHz

Modulation: acoustic input level to achieve half of maximum linear input level, audio frequency 20 kHz

DC Voltage: 3 V



Date: 21.JAN.2015 14:47:07

Test Equipment used: NT-207

Emissions Mask

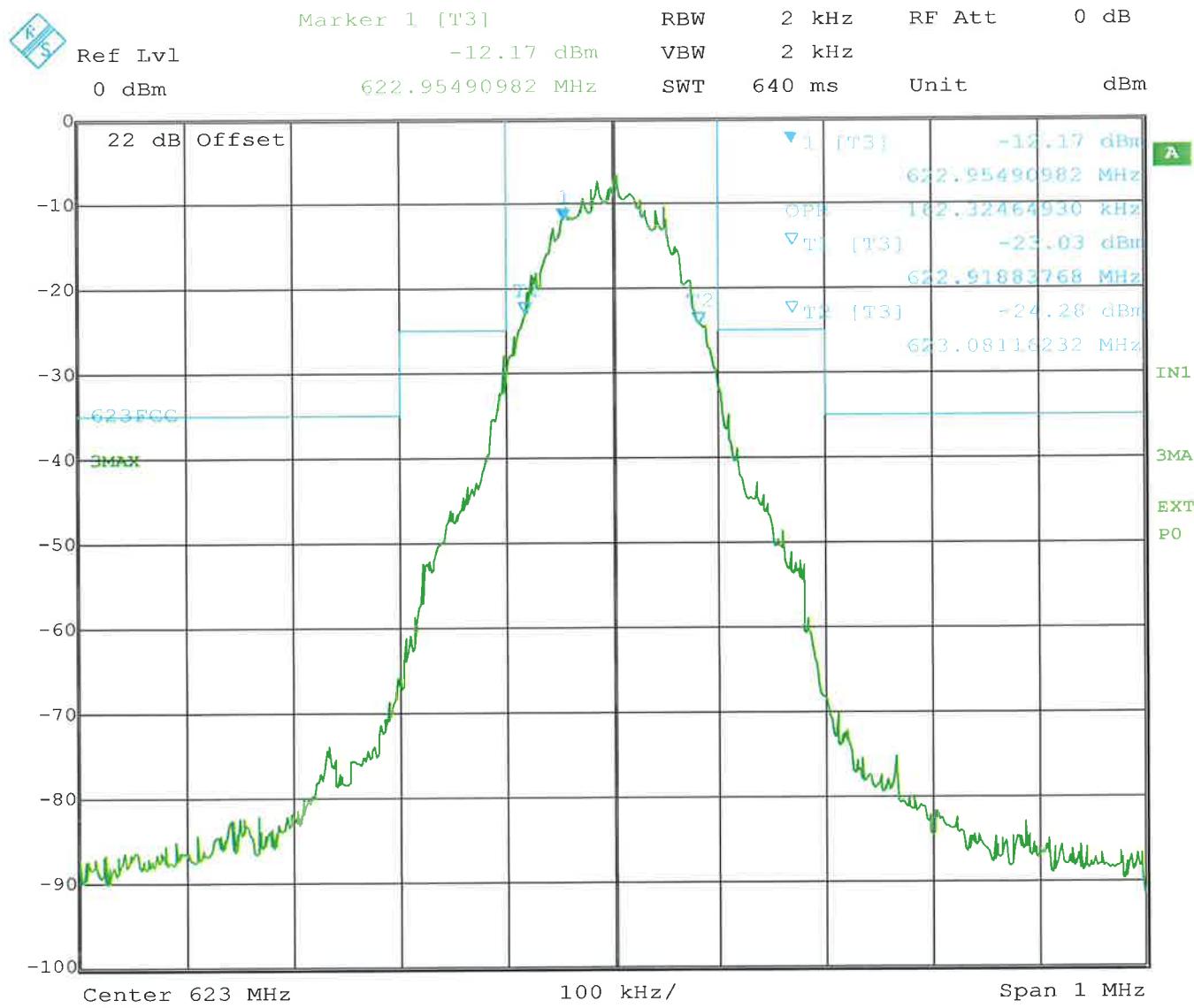
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 623,0 MHz

Modulation: acoustic input level to achieve half of maximum linear input level, audio frequency 20 kHz

DC Voltage: 2,3 V



Test Equipment used: NT-207

Emissions Mask

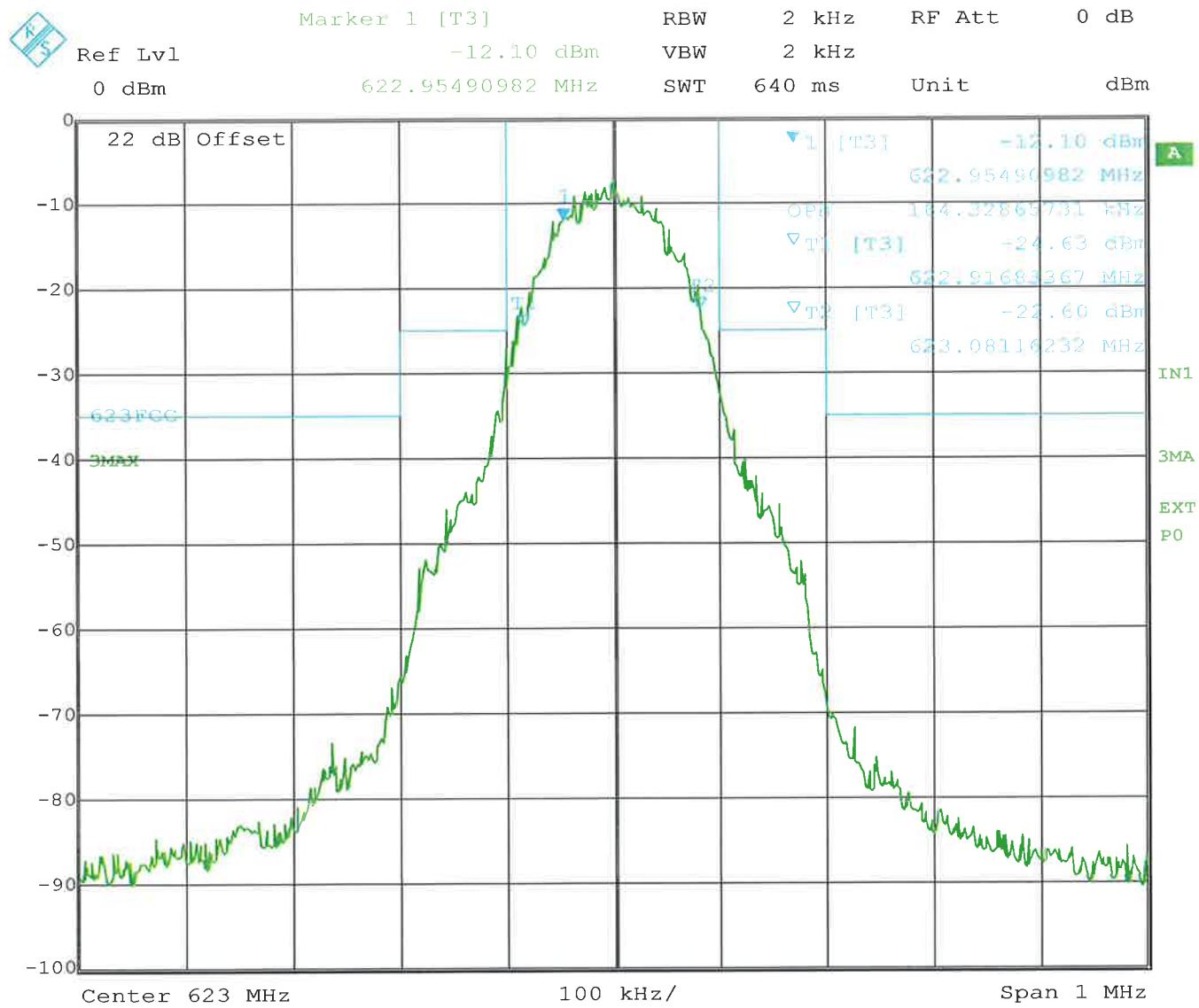
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 623,0 MHz

Modulation: acoustic input level equal to the maximum linear input level, audio frequency 20 kHz

DC Voltage: 3 V



Test Equipment used: NT-207

Emissions Mask

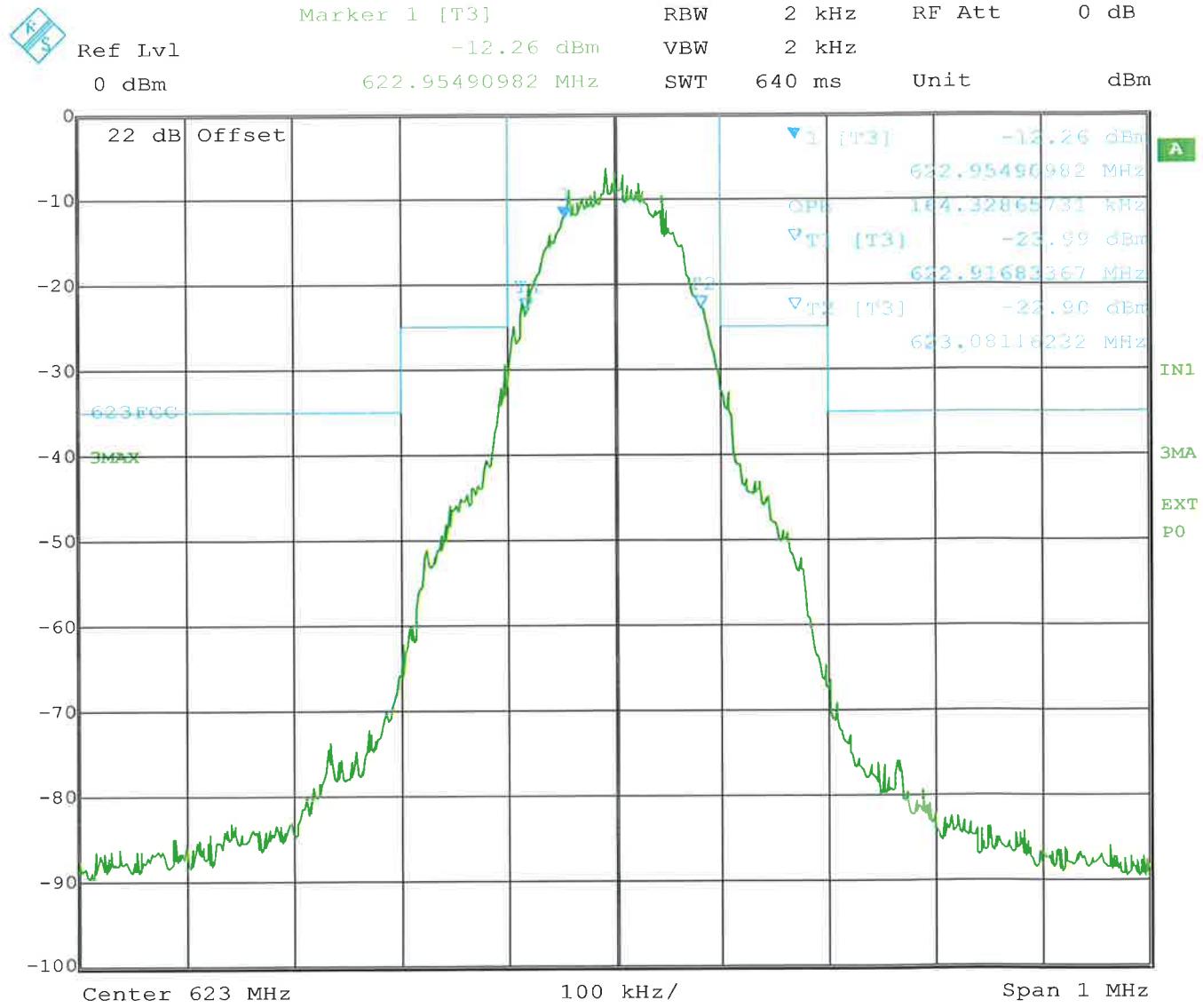
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 623,0 MHz

Modulation: acoustic input level equal to the maximum linear input level, audio frequency 20 kHz

DC Voltage: 2,3 V



Date: 21.JAN.2015 14:47:40

Test Equipment used: NT-207

Emissions Mask

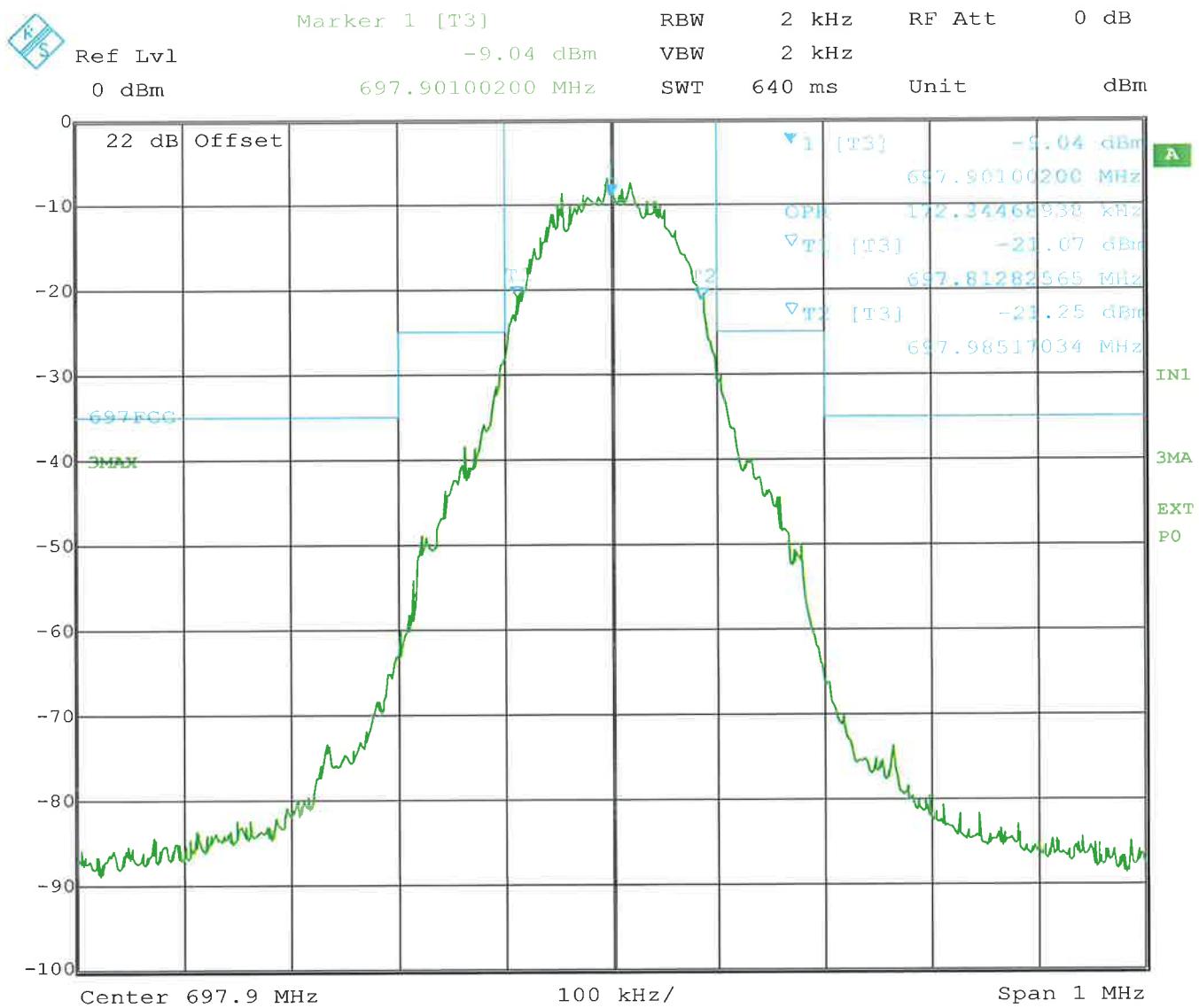
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 697,9 MHz

Modulation: acoustic input level to achieve half of maximum linear input level, audio frequency 1 kHz

DC Voltage: 3 V



Test Equipment used: NT-207

Emissions Mask

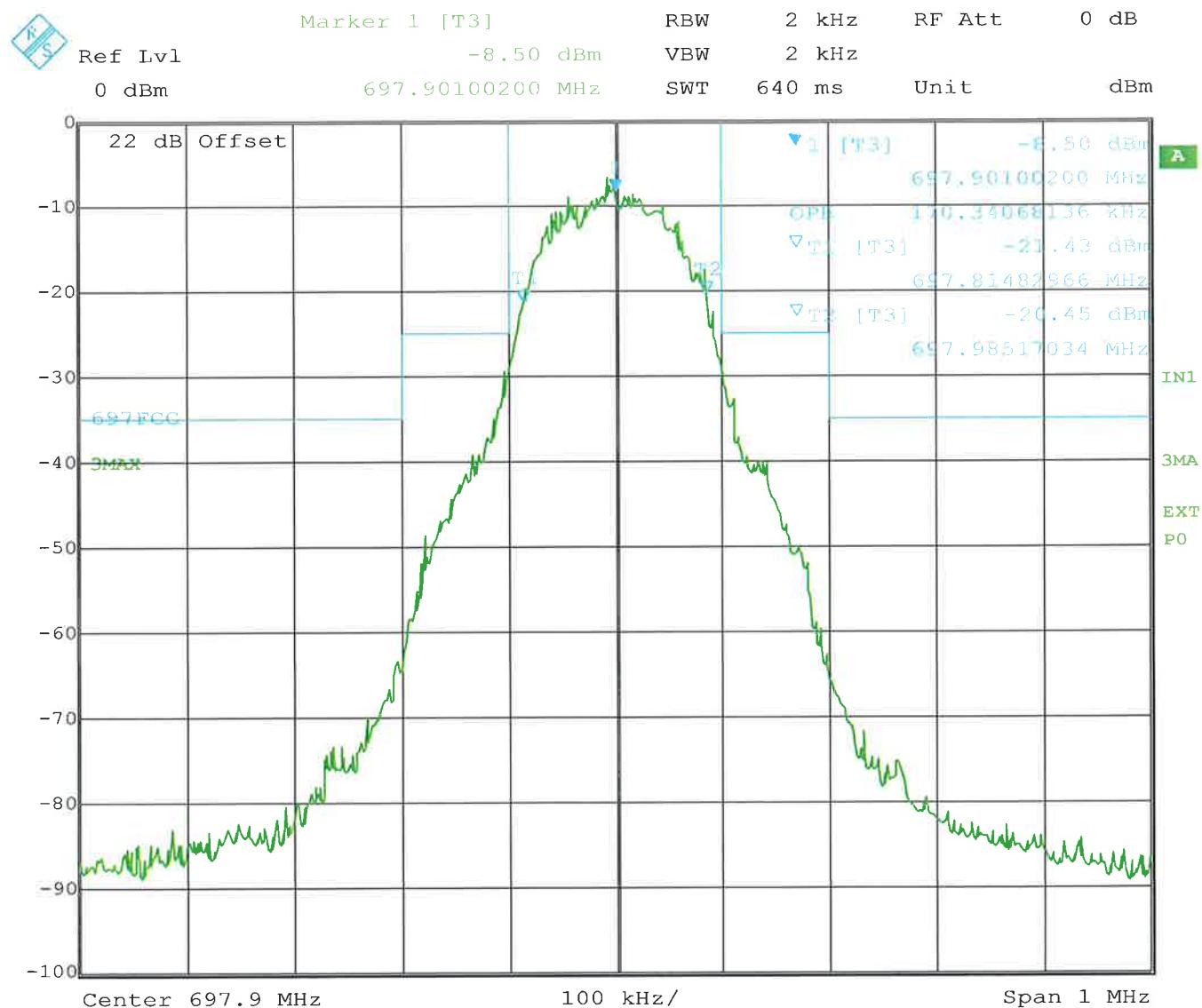
§ 74.261 (e)(6)
(6.3)

Operating mode:

Frequency: 697,9 MHz

Modulation: acoustic input level to achieve half of maximum linear input level, audio frequency 1 kHz

DC Voltage: 2,3 V



Date: 21.JAN.2015 14:38:19

Test Equipment used: NT-207

Emissions Mask

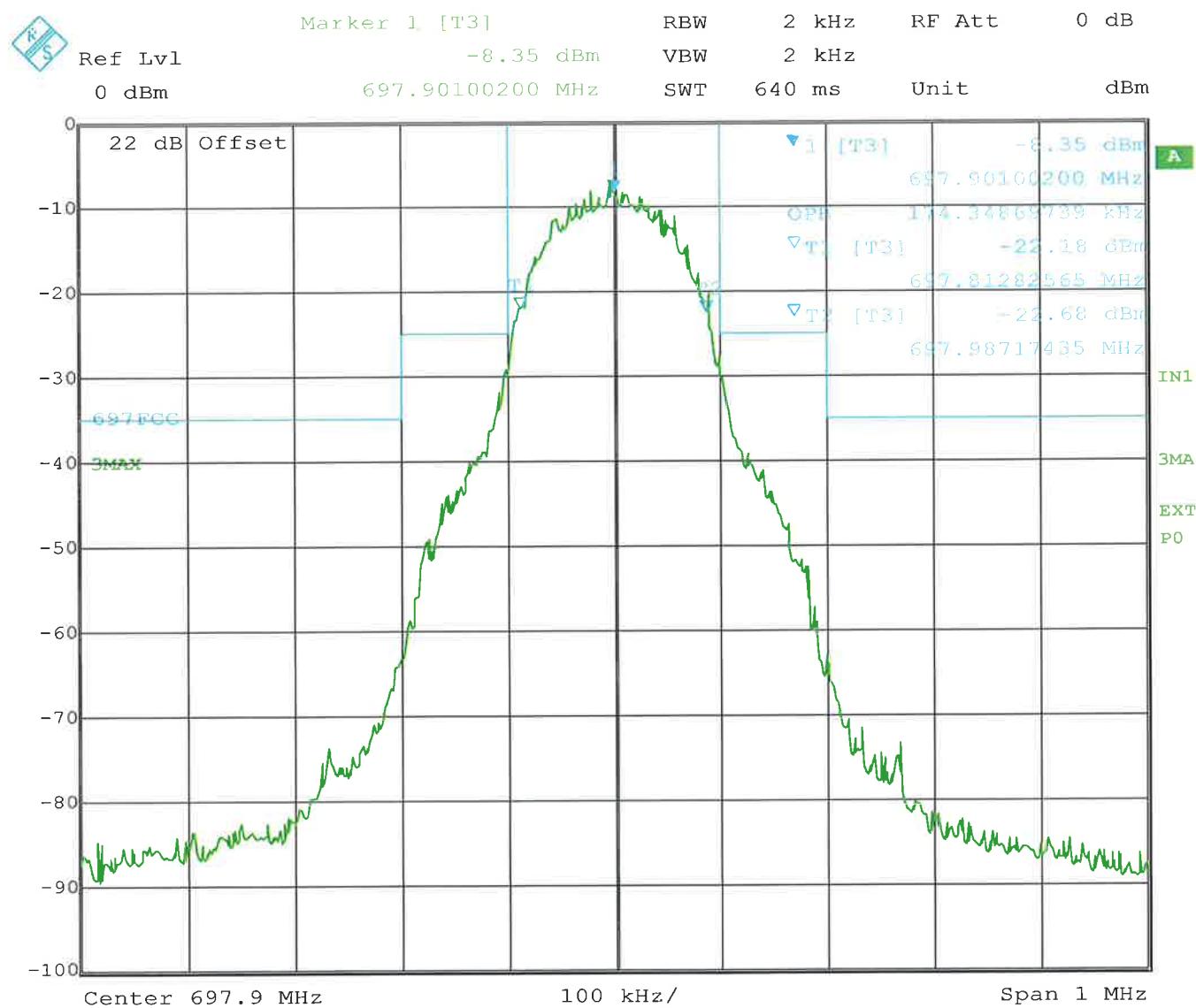
§ 74.261 (e)(6)
(6.3)

Operating mode:

Frequency: 697,9 MHz

Modulation: acoustic input level equal to the maximum linear input level, audio frequency 1 kHz

DC Voltage: 3 V



Test Equipment used: NT-207

Emissions Mask

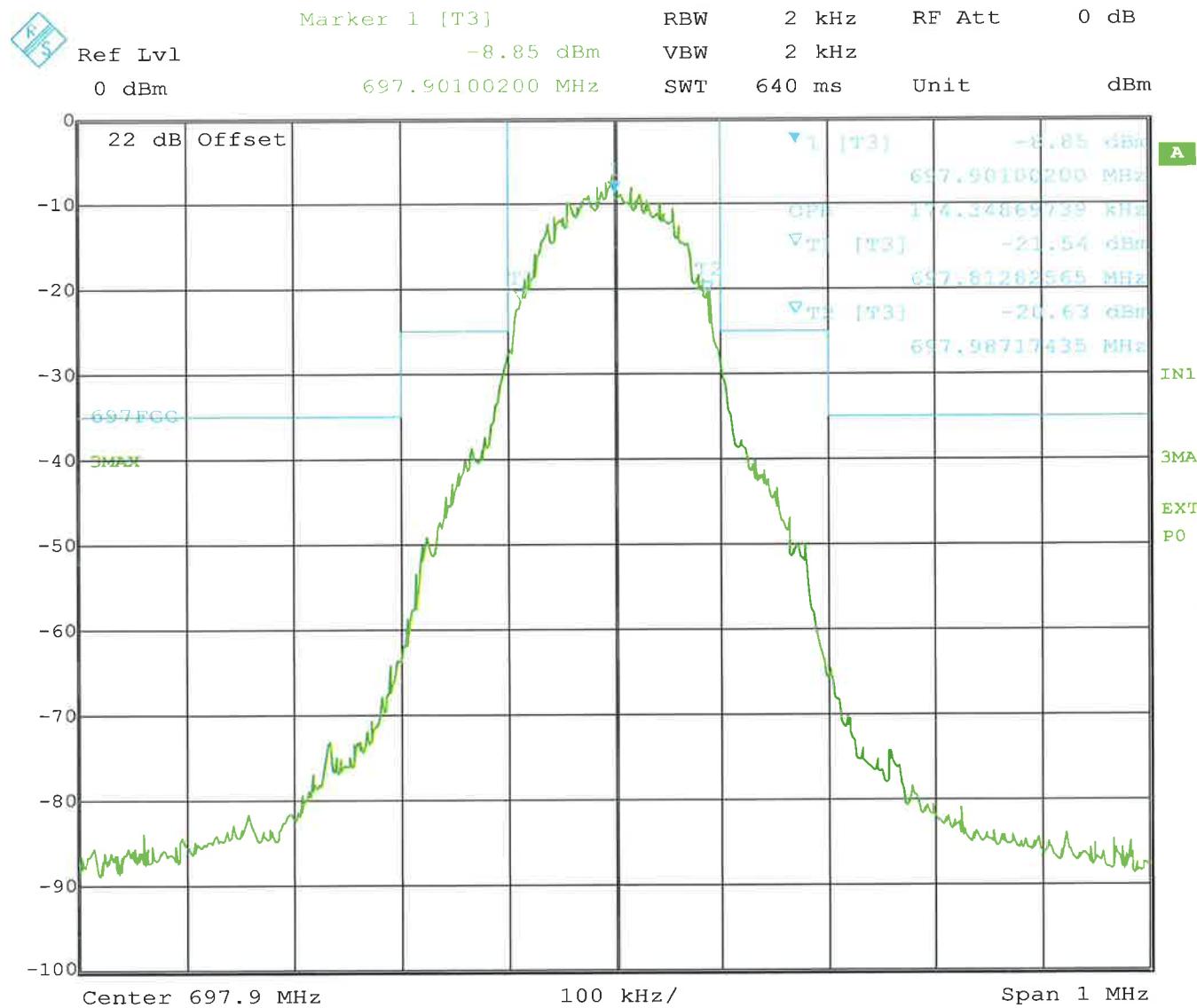
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 697,9 MHz

Modulation: acoustic input level equal to the maximum linear input level, audio frequency 1 kHz

DC Voltage: 2,3 V



Date: 21.JAN.2015 14:38:48

Test Equipment used: NT-207

Emissions Mask

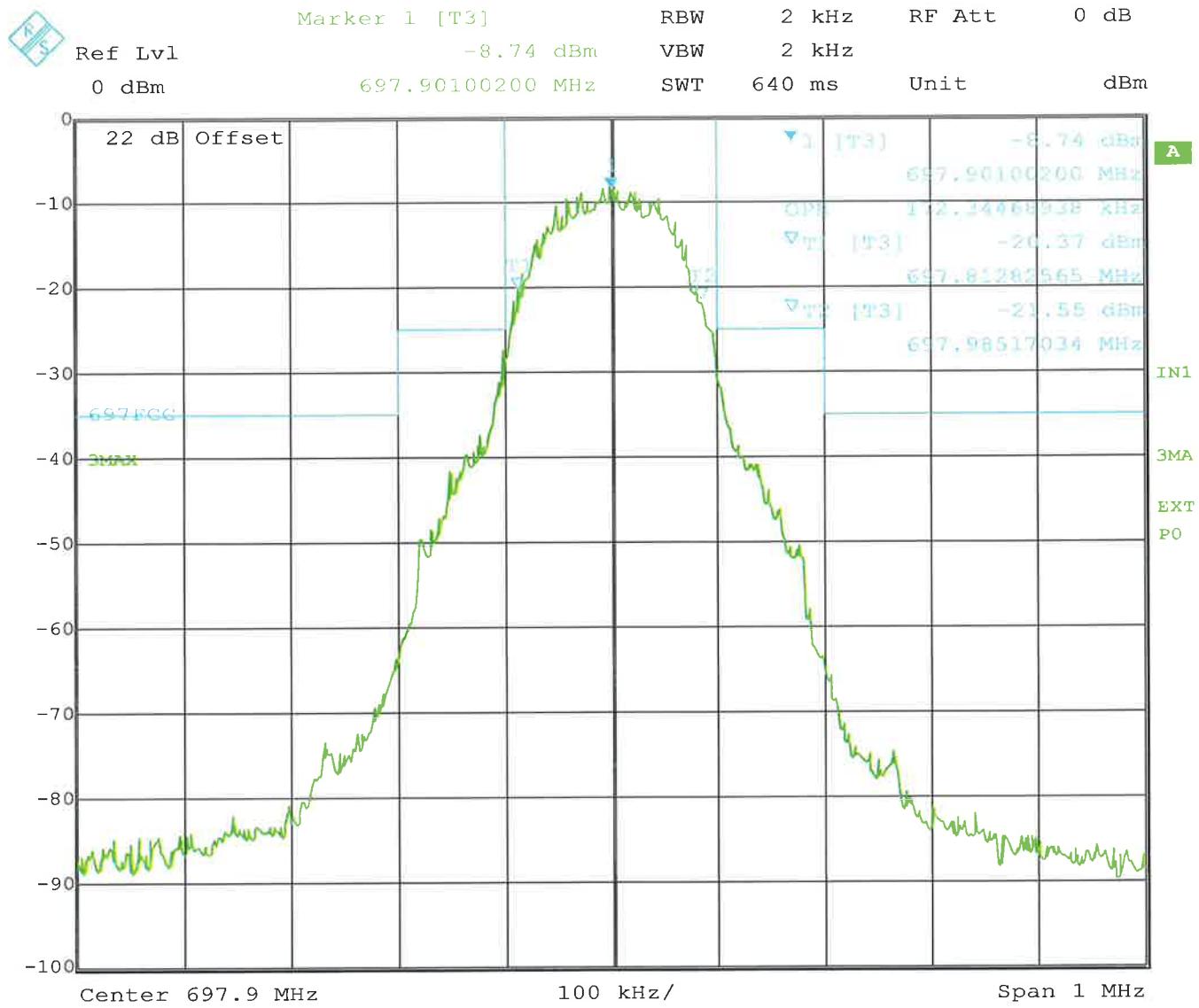
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 697,9 MHz

Modulation: acoustic input level to achieve half of maximum linear input level, audio frequency 15 kHz

DC Voltage: 3 V



Date: 21.JAN.2015 14:40:29

Test Equipment used: NT-207

Emissions Mask

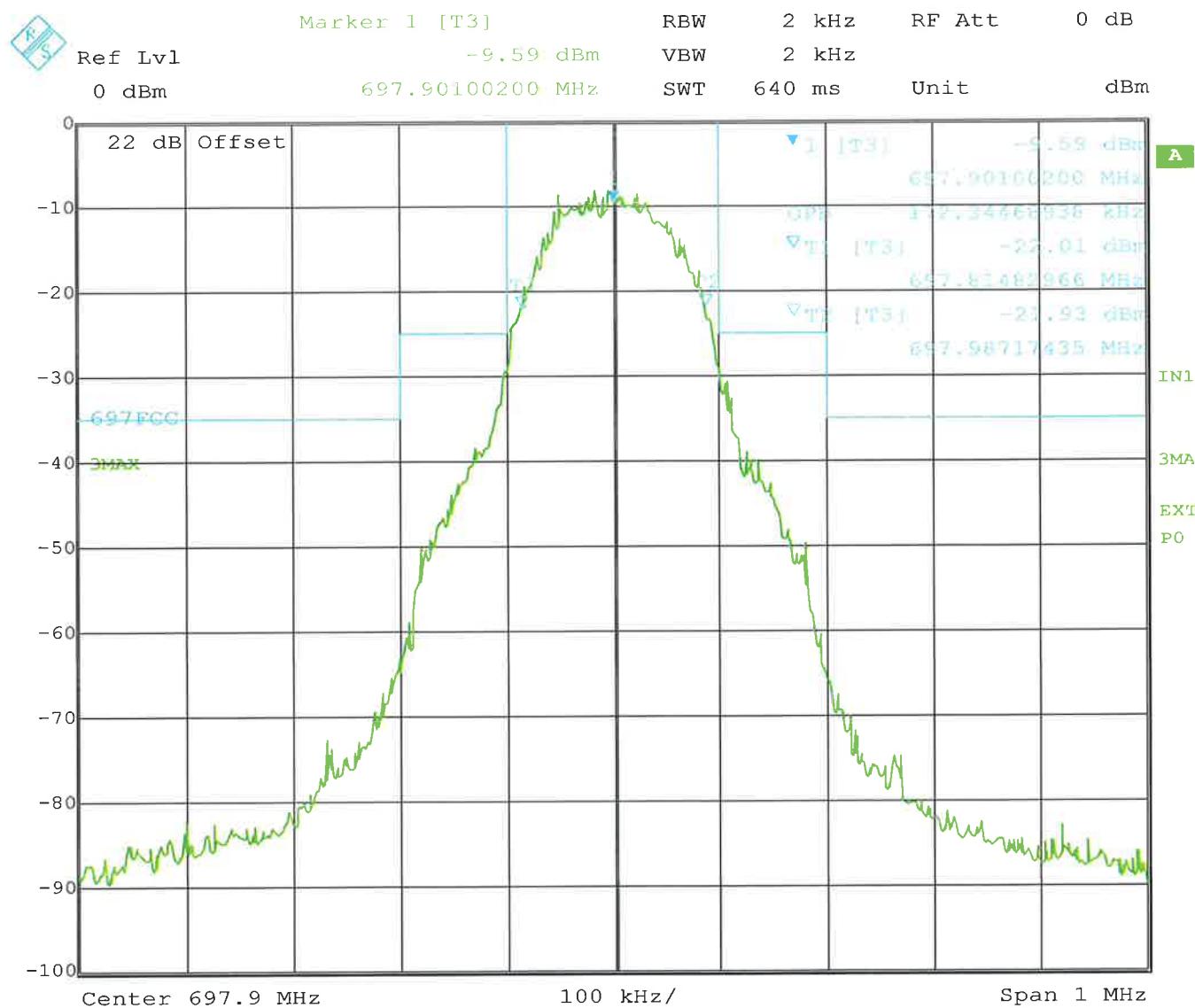
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 697,9 MHz

Modulation: acoustic input level to achieve half of maximum linear input level, audio frequency 15 kHz

DC Voltage: 2,3 V



Test Equipment used: NT-207

Emissions Mask

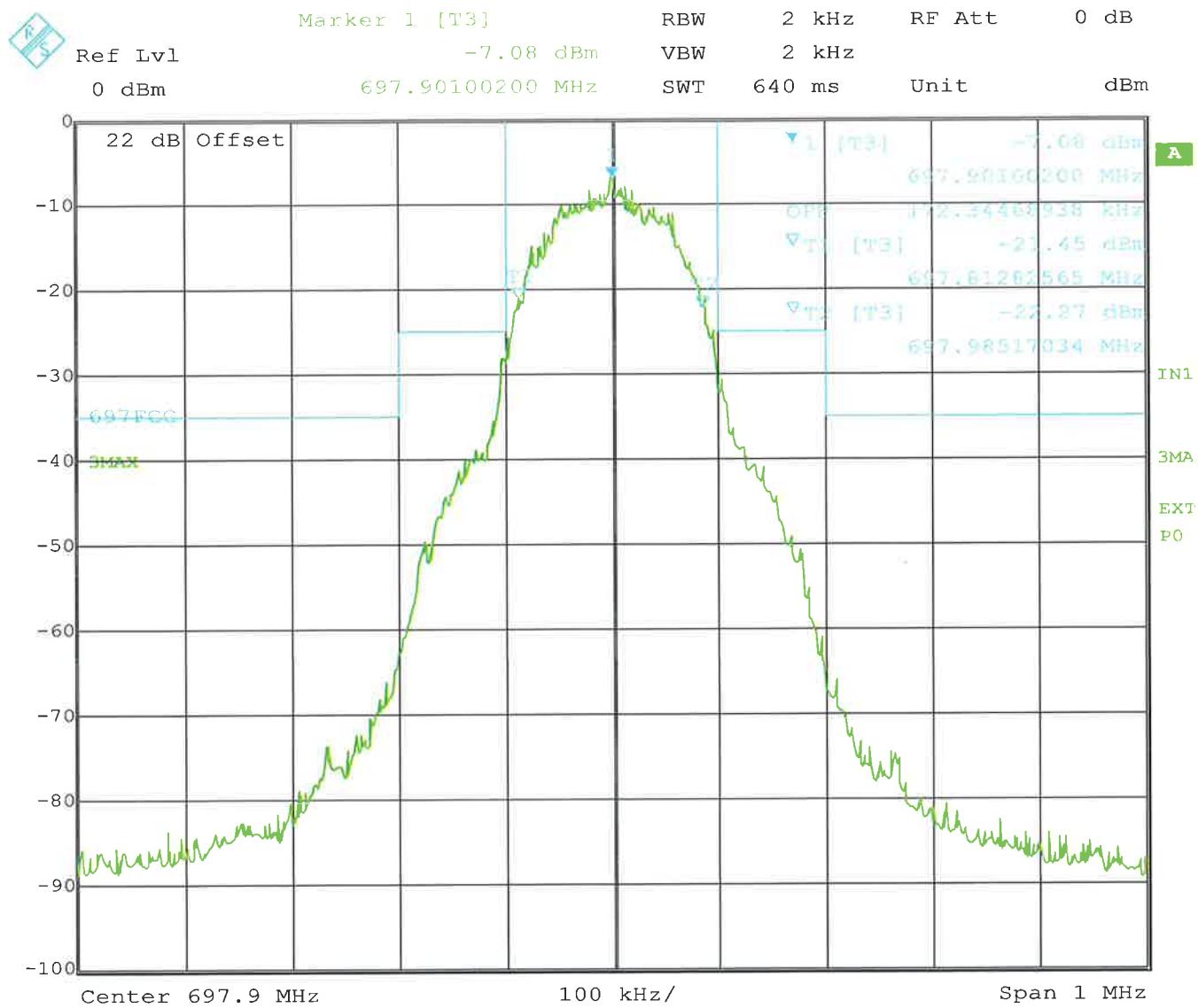
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 697,9 MHz

Modulation: acoustic input level equal to the maximum linear input level, audio frequency 15 kHz

DC Voltage: 3 V



Test Equipment used: NT-207

Emissions Mask

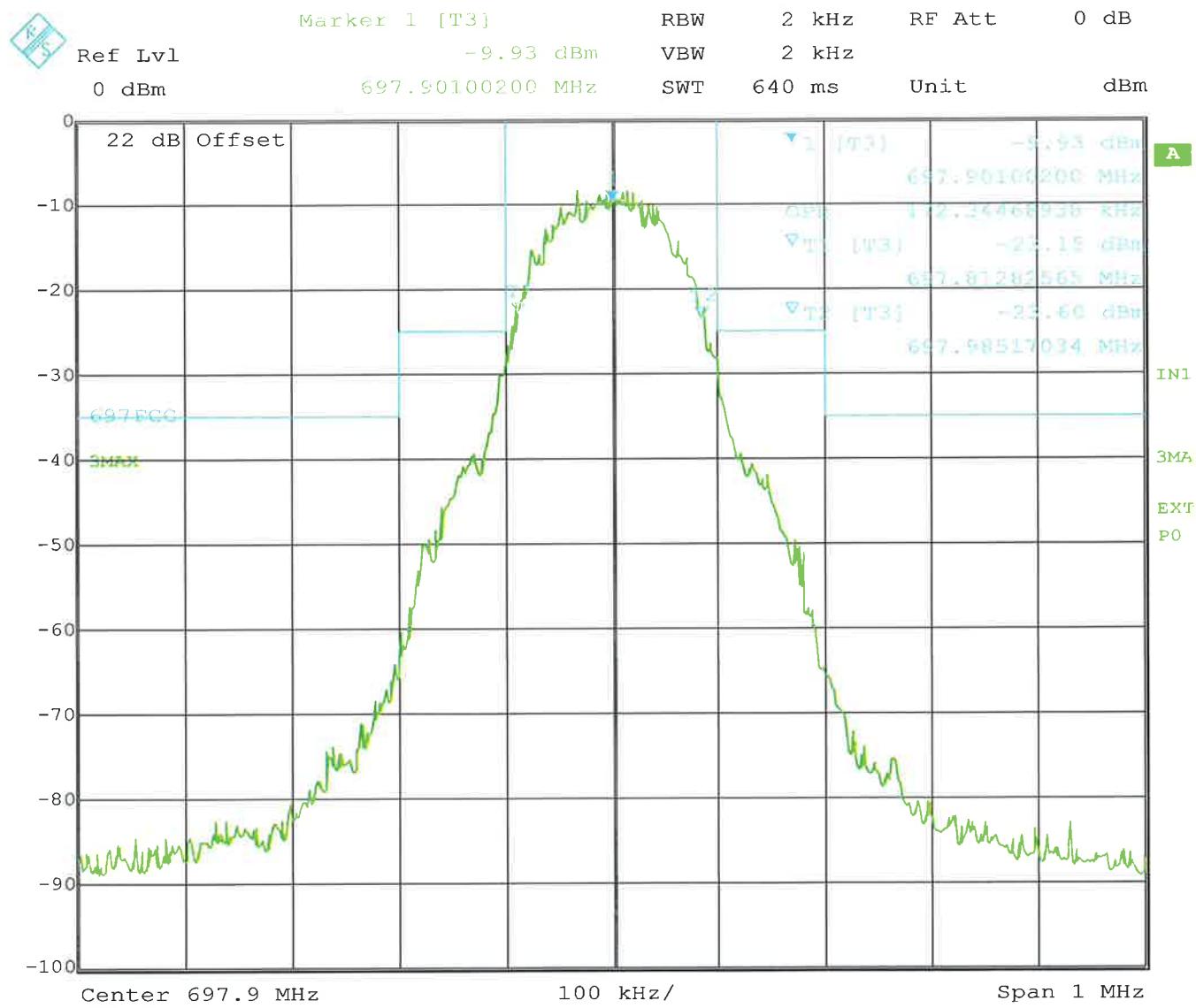
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 697,9 MHz

Modulation: acoustic input level equal to the maximum linear input level, audio frequency 15 kHz

DC Voltage: 2,3 V



Test Equipment used: NT-207

Emissions Mask

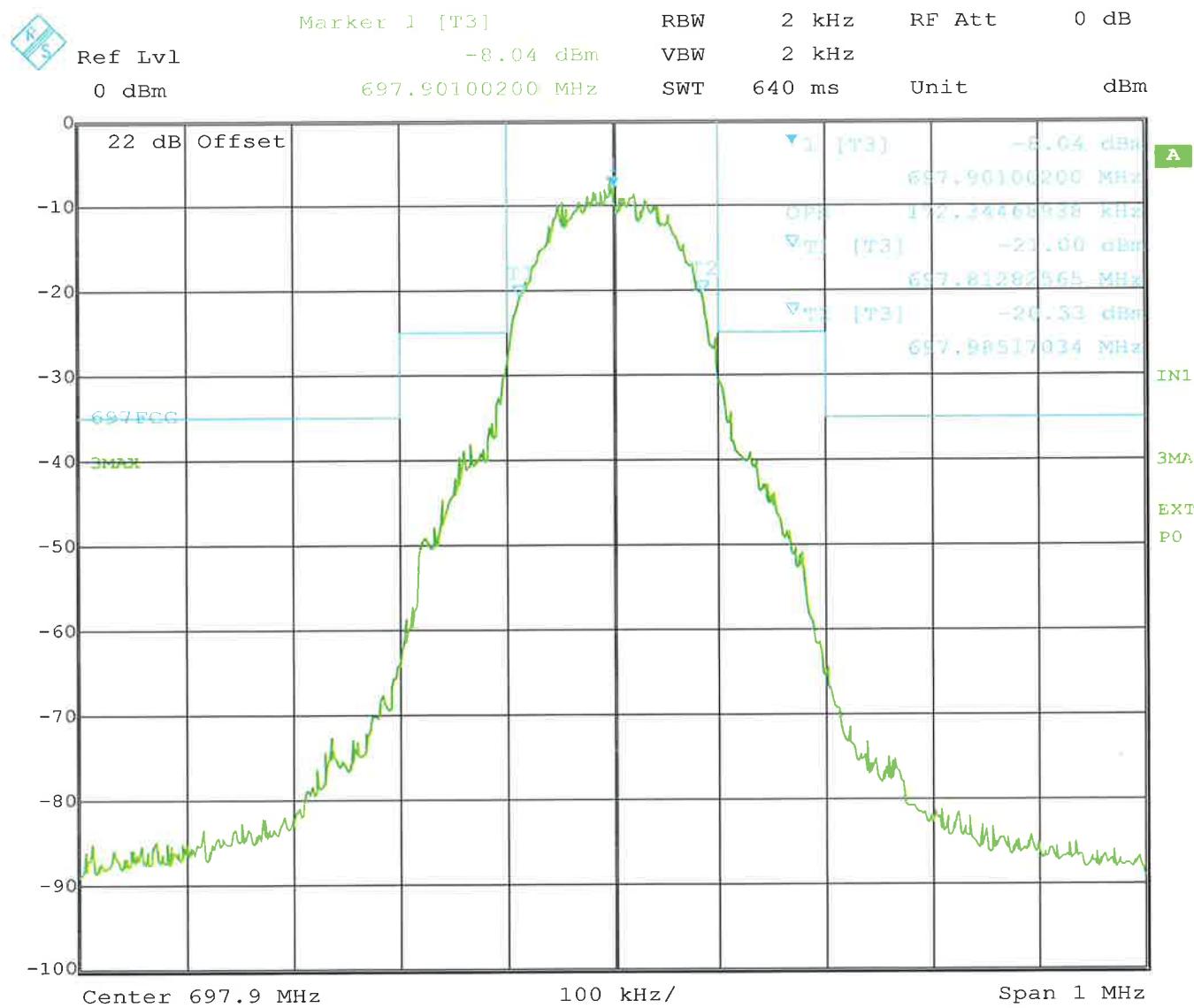
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 697,9 MHz

Modulation: acoustic input level to achieve half of maximum linear input level, audio frequency 20 kHz

DC Voltage: 3 V



Date: 21.JAN.2015 14:40:52

Test Equipment used: NT-207

Emissions Mask

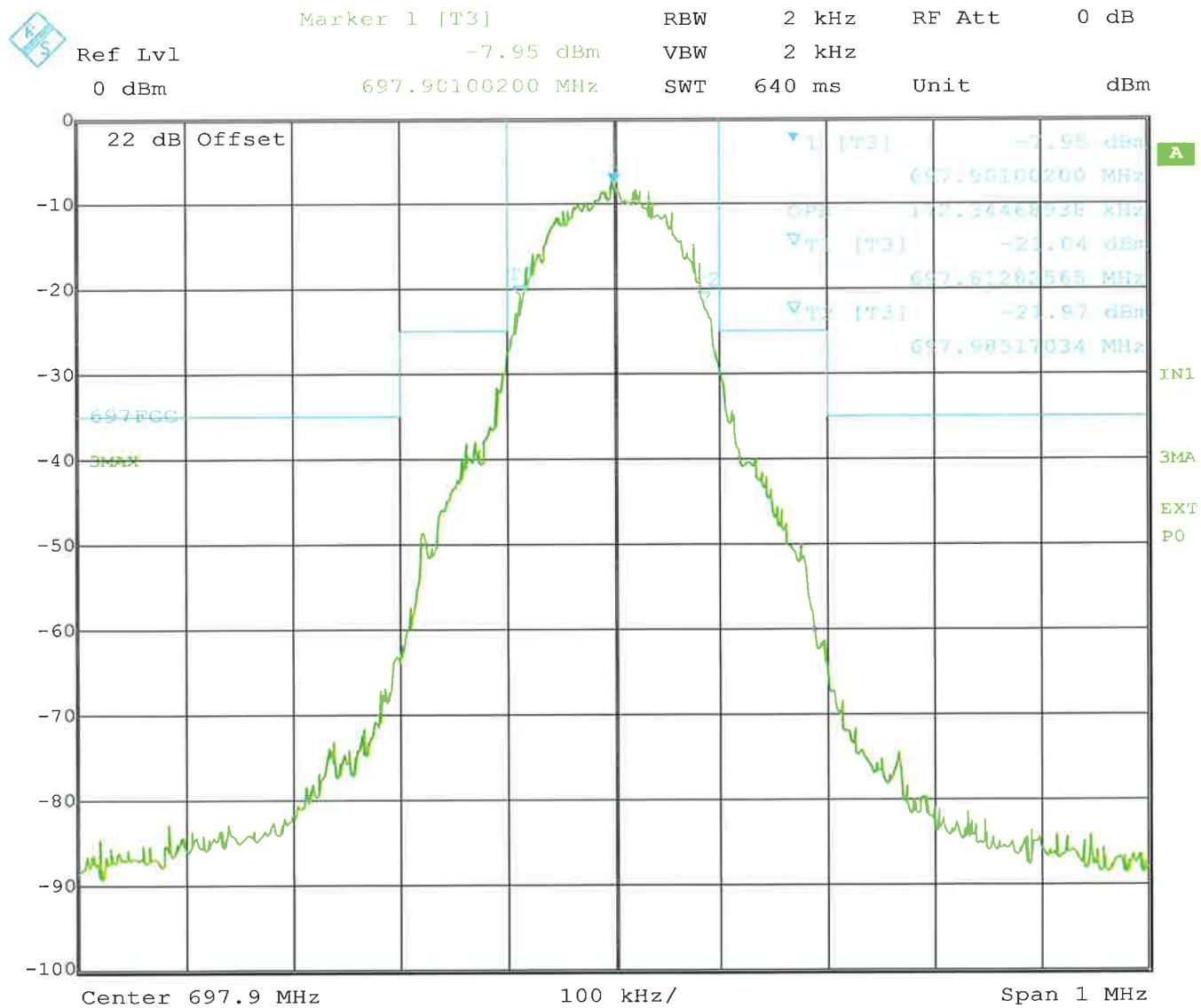
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 697,9 MHz

Modulation: acoustic input level to achieve half of maximum linear input level, audio frequency 20 kHz

DC Voltage: 2,3 V



Date: 21.JAN.2015 14:41:15

Test Equipment used: NT-207

Emissions Mask

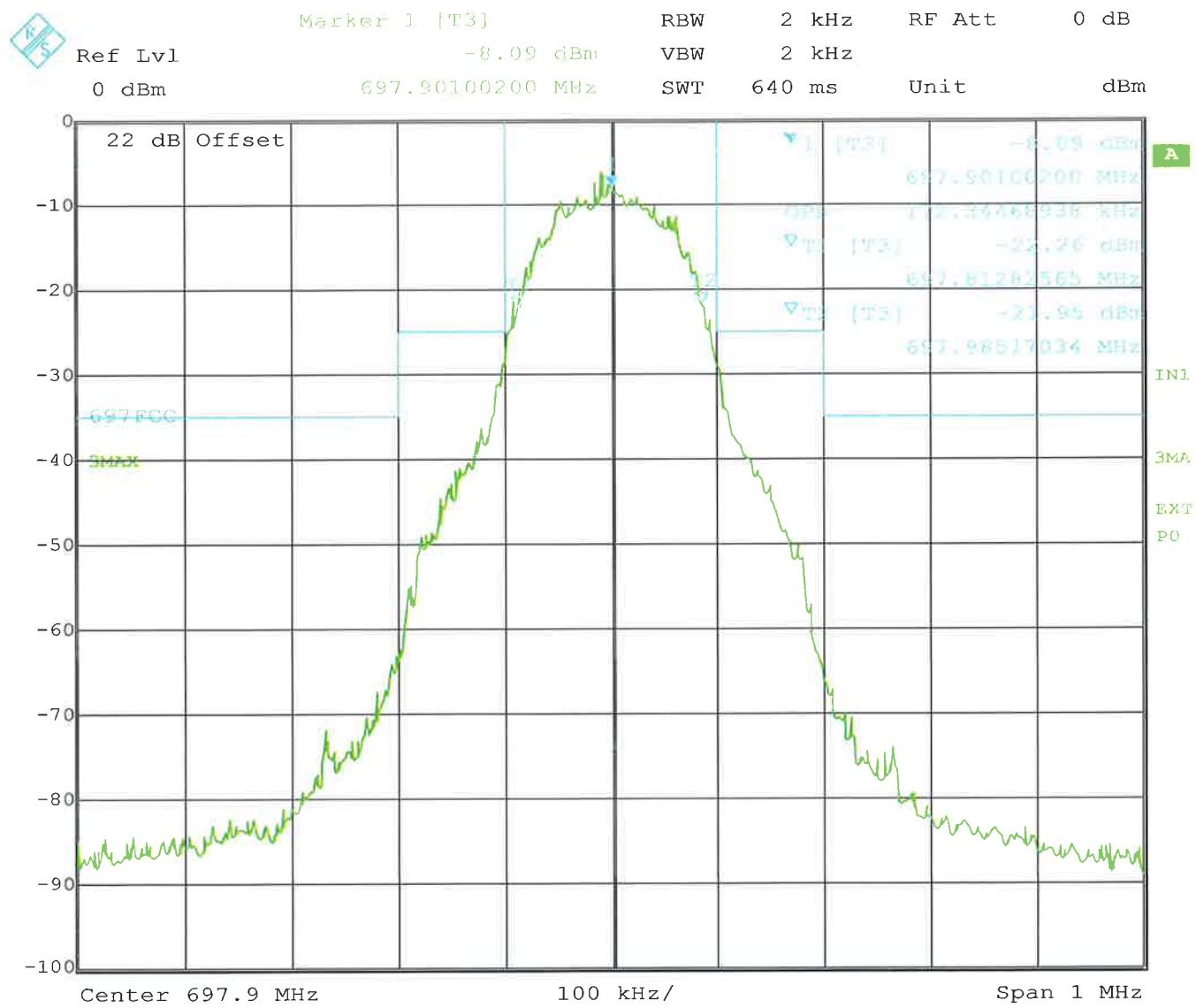
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 697,9 MHz

Modulation: acoustic input level equal to the maximum linear input level, audio frequency 20 kHz

DC Voltage: 3 V



Test Equipment used: NT-207

Emissions Mask

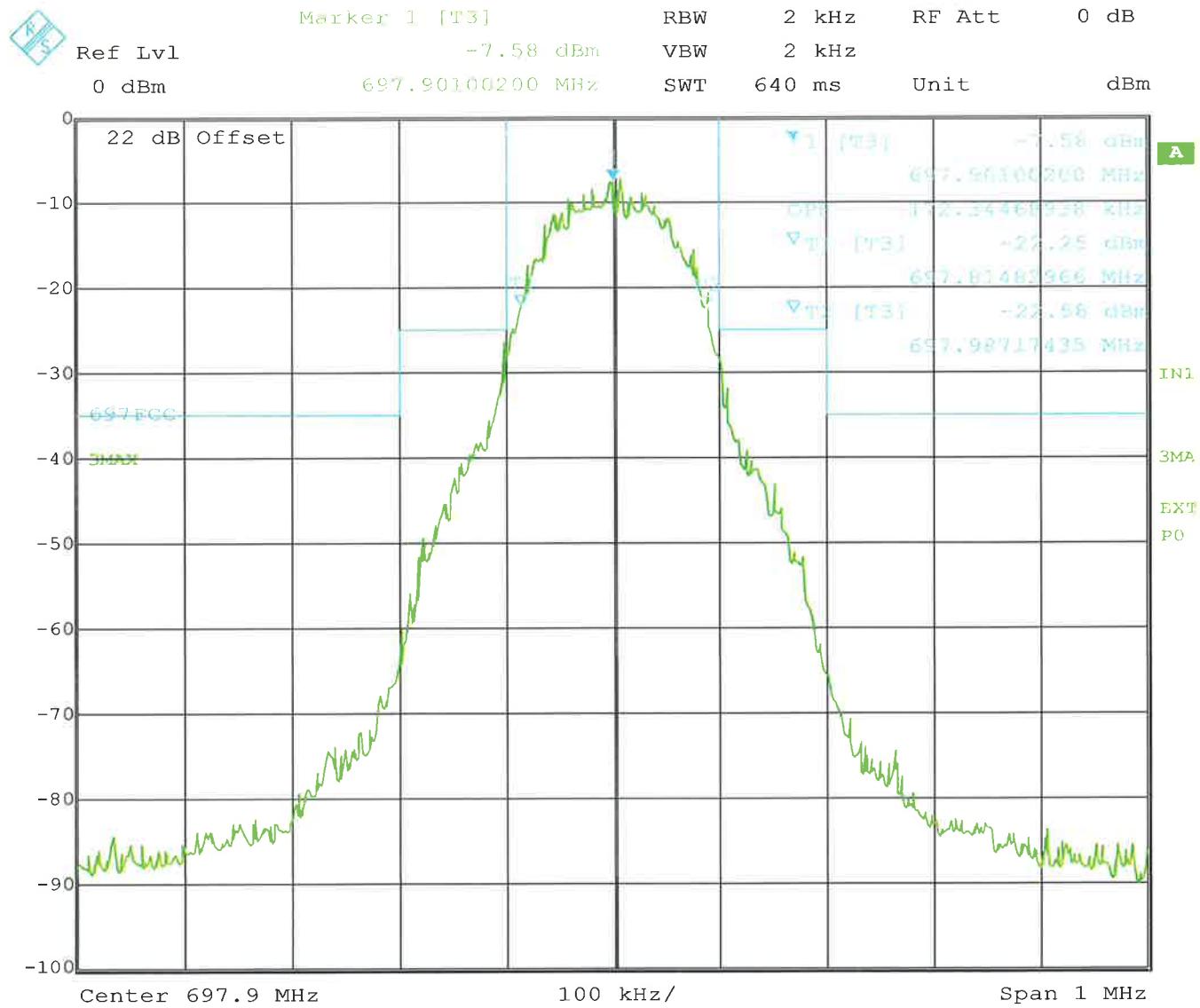
**§ 74.261 (e)(6)
(6.3)**

Operating mode:

Frequency: 697,9 MHz

Modulation: acoustic input level equal to the maximum linear input level, audio frequency 20 kHz

DC Voltage: 2,3 V



Date: 21.JAN.2015 14:41:32

Test Equipment used: NT-207

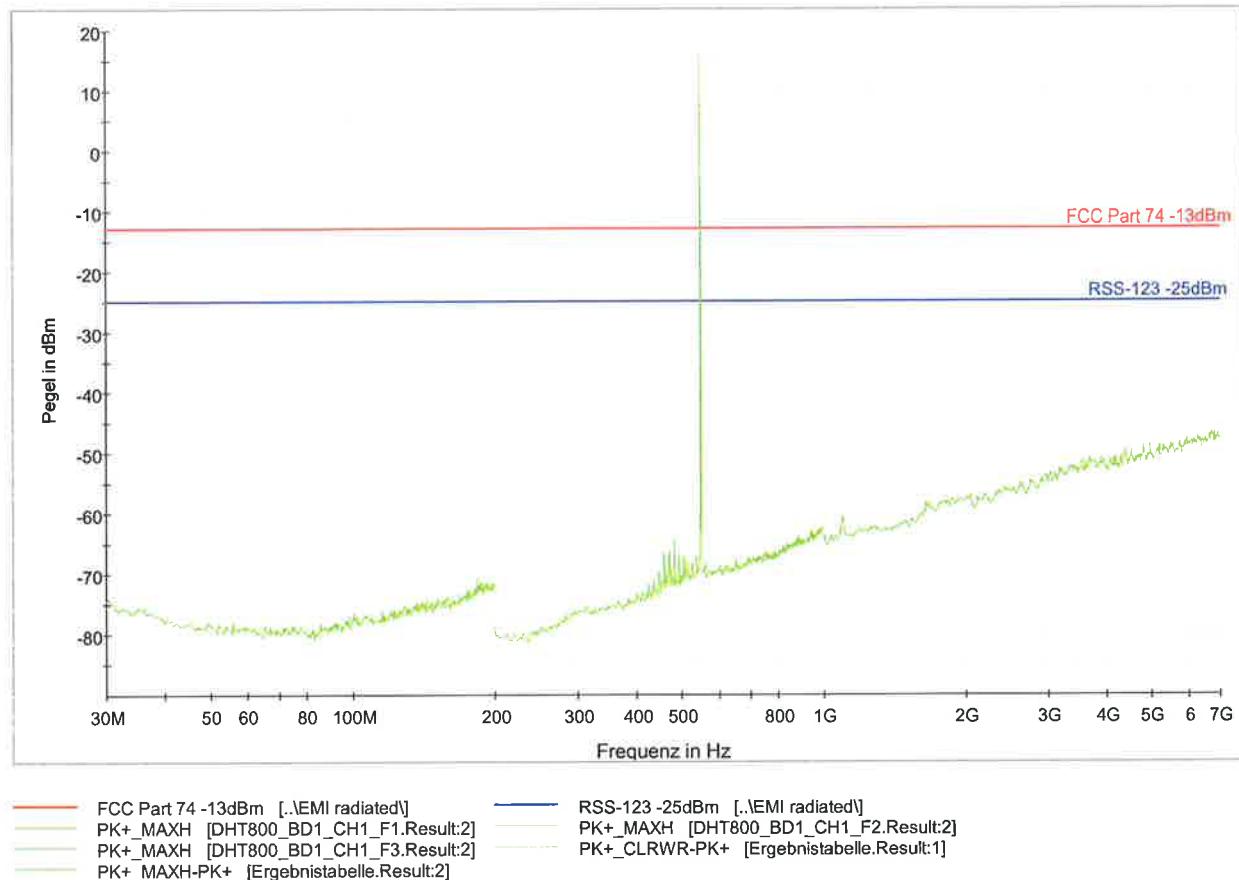
Field strength of spurious emissions of the transmitter

**§ 74.261 (e)(6)(iii)
(6.3)**

Operating mode:

Frequency: 548,1 MHz

Modulation: modulated carrier



Test Equipment used: NT-100; NT-110; NT-111; NT-112; NT-125; NT-129; NT-139; NT-207; NT-337

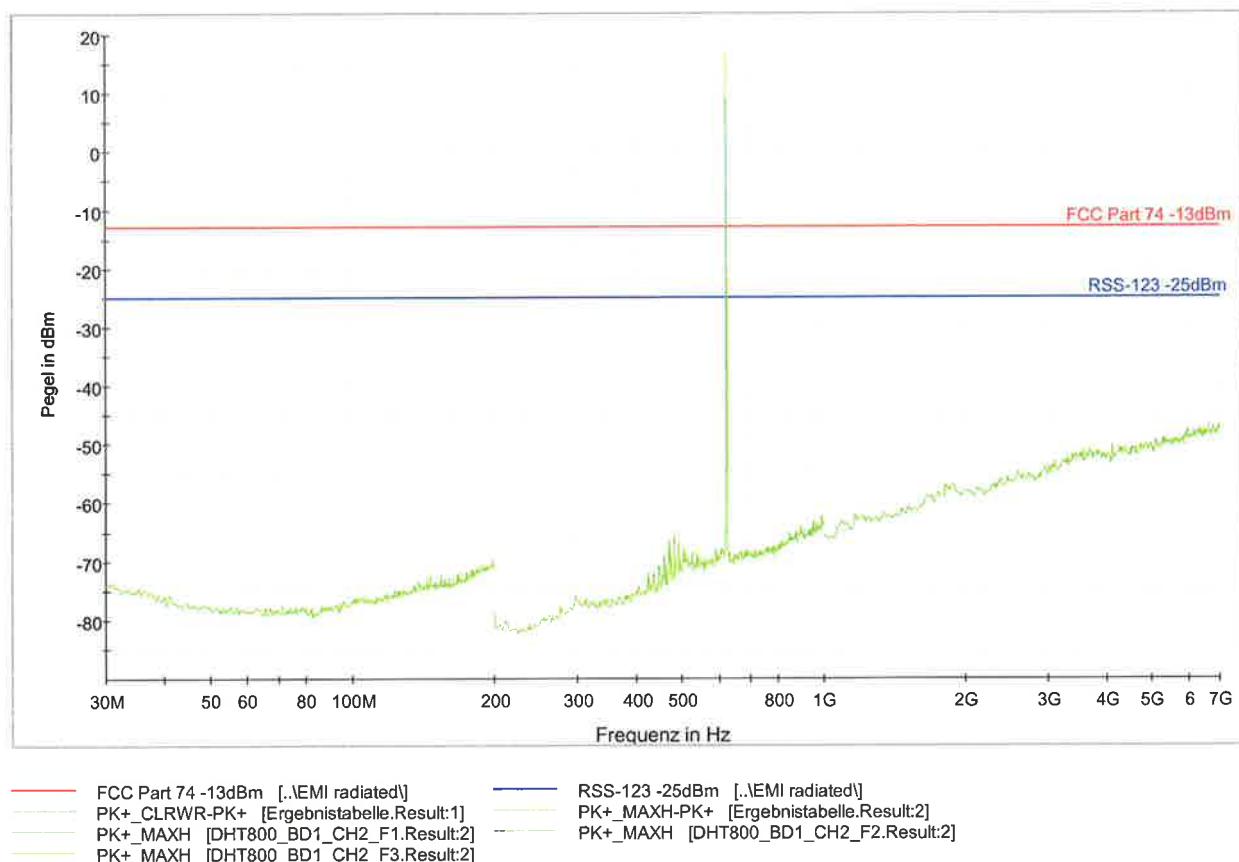
Field strength of spurious emissions of the transmitter

**§ 74.261 (e)(6)(iii)
(6.3)**

Operating mode:

Frequency: 623,0 MHz

Modulation: modulated carrier



Test Equipment used: NT-100; NT-110; NT-111; NT-112; NT-125; NT-129; NT-139; NT-207; NT-337

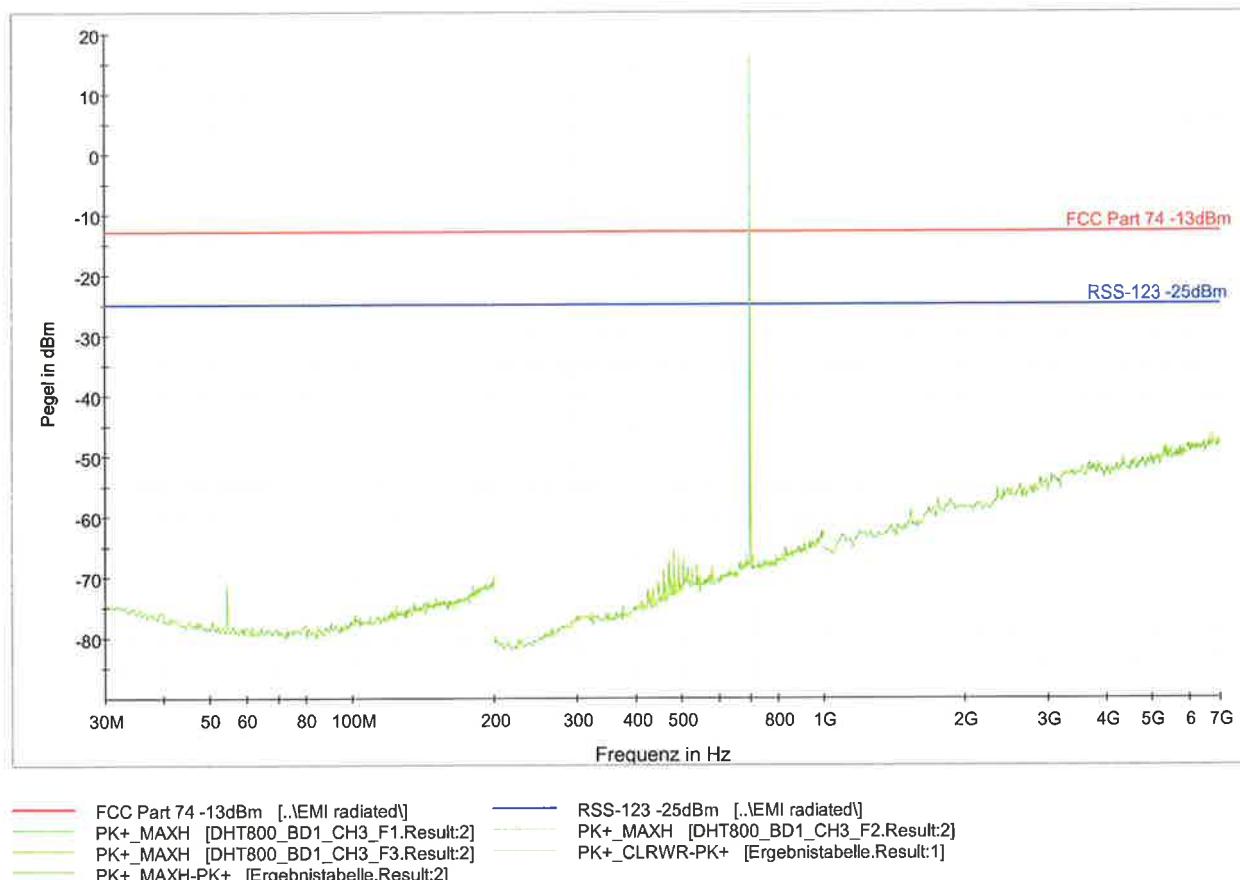
Field strength of spurious emissions of the transmitter

**§ 74.261 (e)(6)(iii)
(6.3)**

Operating mode:

Frequency: 697,9 MHz

Modulation: modulated carrier



Test Equipment used: NT-100; NT-110; NT-111; NT-112; NT-125; NT-129; NT-139; NT-207; NT-337

Appendix 1

Test equipment used

<input type="checkbox"/> Anechoic Chamber with 3m measurement distance	NT-100	<input type="checkbox"/> Spectrumanalyzer – FSP7 9 kHz – 7 GHz	NT-200	Division Medical Technology/ Communication Technology/ EMC
<input type="checkbox"/> stripline according to ISO 11452-5	NT-108	<input type="checkbox"/> ESCI - Test receiver 9 kHz - 7 GHz	NT-203/1	Department: FG
<input type="checkbox"/> MA4000 - Antenna mast 1 - 4 m height	NT-110/1	<input type="checkbox"/> ESI26 - Test receiver 20 Hz - 26,5 GHz	NT-207	Test report number: M/FG-15/128
<input type="checkbox"/> DS - Turntable 0 - 400 ° Azimuth	NT-111/1	<input type="checkbox"/> Digital Radio Tester CTS55	NT-208	Page: 1 of 3
<input type="checkbox"/> CO3000 Controller Mast+Turntable	NT-112/1	<input type="checkbox"/> Noise-gen., ITU-R 559-2 20 Hz – 20 kHz	NT-209	Date: 30.01.2015
<input type="checkbox"/> HUF-Z3 - Log. Per. Antenna 200 - 1000 MHz	NT-121	<input type="checkbox"/> CMTA - Radiocommunication analyzer ; 0,1 - 1000 MHz	NT-210	Checked by:
<input type="checkbox"/> HFH-Z2 - Loop Antenna 9 kHz - 30 MHz	NT-122	<input type="checkbox"/> 3271 - Spectrum analyzer 100 Hz - 26,5 GHz	NT-211	
<input type="checkbox"/> HFH-Z6 - Rod Antenna 9 kHz - 30 MHz	NT-123	<input type="checkbox"/> Digital Radio Tester Aeroflex 3920	NT-212/1	
<input type="checkbox"/> 3121C - Dipole Antenna 28 - 1000 MHz	NT-124	<input type="checkbox"/> Mixer M28HW 26,5 GHz - 40 GHz	NT-214	
<input type="checkbox"/> 3115 - Horn Antenna 1 - 18 GHz (immunity)	NT-125	<input type="checkbox"/> RubiSource T&M Timing reference	NT-216	
<input type="checkbox"/> 3116 - Horn Antenna 18 - 40 GHz	NT-126	<input type="checkbox"/> Radiocommunicationanalyzer SWR 1180 MD	NT-217	
<input type="checkbox"/> SAS-200/543 - Bicon. Antenna 20 MHz - 300 MHz	NT-127	<input type="checkbox"/> Mixer M19HWD 40 GHz – 60 GHz	NT-218	
<input type="checkbox"/> AT-1080 - Log. Per. Antenna 80 - 1000 MHz	NT-128	<input type="checkbox"/> Mixer M12HWD 60 GHz – 90 GHz	NT-219	
<input type="checkbox"/> HK-116 - bicon. Antenna 20 MHz - 300 MHz	NT-129	<input type="checkbox"/> DSO9104 Digital scope	NT-220/1	
<input type="checkbox"/> HK-116 - bicon. Antenna 20 MHz - 300 MHz	NT-130	<input type="checkbox"/> TPS 2014 Digital scope	NT-222	
<input type="checkbox"/> 3146 - Log. Per. Antenna 200 - 1000 MHz	NT-131	<input type="checkbox"/> Artificial Ear according to IEC 60318	NT-224	
<input type="checkbox"/> Loop Antenna H-Field	NT-132	<input type="checkbox"/> 1 kHz Sound calibrator	NT-225	
<input type="checkbox"/> Horn Antenna 500 MHz - 2900 MHz	NT-133	<input type="checkbox"/> B10 - Harmonics and flicker analyzer	NT-232	
<input type="checkbox"/> Horn Antenna 500 MHz - 6000 MHz	NT-133/1	<input type="checkbox"/> ARS 16/3 – Harmonics- flicker analyzer	NT-232/1	
<input type="checkbox"/> Log. per. Antenna 800 MHz - 2500 MHz	NT-134	<input type="checkbox"/> SRM-3000 Spectrumanalyzer	NT-233	
<input type="checkbox"/> Log. per. Antenna 800 MHz - 2500 MHz	NT-135	<input type="checkbox"/> SRM-3006 Spectrumanalyzer	NT-233/1a	
<input type="checkbox"/> BiConiLog Antenna 26 MHz – 2000 MHz	NT-137	<input type="checkbox"/> E-field probe SRM 75 MHz – 3 GHz	NT-234	
<input type="checkbox"/> Conical Dipol Antenna PCD8250	NT-138	<input type="checkbox"/> Field Meter NBM-500 incl. E- and H-Field probes	NT-240a-d	
<input type="checkbox"/> HF 906 - Horn Antenna 1 - 18 GHz (emission)	NT-139	<input type="checkbox"/> Hall-Teslameter ETM-1	NT-241	
<input type="checkbox"/> HZ-1 Antenna tripod	NT-150	<input type="checkbox"/> EFA-3 H-field- / E-field probe	NT-243	
<input type="checkbox"/> BN 1500 Antenna tripod	NT-151	<input type="checkbox"/> Field Meter EMR-200 100 kHz – 3 GHz	NT-244	
<input type="checkbox"/> Ant. tripod for EN61000-4-3 Model TP1000A	NT-156	<input type="checkbox"/> E-field probe 100 kHz – 3 GHz	NT-245	
<input type="checkbox"/> Power quality analyzer Fluke 1760 (complete set)	NT-160 - NT-173	<input type="checkbox"/> H-field probe 300 kHz – 30 MHz	NT-246	

Appendix 1 (continued)

Test equipment used

<input type="checkbox"/> E-field probe 3 MHz – 18 GHz	NT-247	<input type="checkbox"/> VCS 500-M6 Surge-Generator	NT-326	Division Medical Technology/ Communication Technology/ EMC
<input type="checkbox"/> H-field probe 27 MHz – 1 GHz	NT-248	<input type="checkbox"/> Oscillatory Wave Simulator incl. Coupling networks	NT- 328a+b+c	Test report number: M/FG-15/128
<input type="checkbox"/> ELT-400 1 Hz – 400 kHz	NT-249	<input type="checkbox"/> BTA-250 - RF-Amplifier 9 kHz - 220 MHz / 250 W	NT-330	Department: FG
<input type="checkbox"/> MDS 21 - Absorbing clamp 30 - 1000 MHz	NT-250	<input type="checkbox"/> T82-50 RF-Amplifier 2 GHz – 8 GHz	NT-331	Page: 2 of 3
<input type="checkbox"/> FCC-203I EM Injection clamp	NT-251	<input type="checkbox"/> 500W1000M7 - RF-Amplifier 80 - 1000 MHz / 500 W	NT-332	Date: 30.01.2015
<input type="checkbox"/> FCC-203I-DCN Ferrite decoupling network	NT-252	<input type="checkbox"/> AS0102-65R - RF-Amplifier 1 GHz - 2 GHz	NT-333	Checked by:
<input type="checkbox"/> PR50 Current Probe	NT-253	<input type="checkbox"/> APA01 – RF-Amplifier 0,5 GHz – 2,5 GHz	NT-334	
<input type="checkbox"/> i310s Current Probe	NT-254/1	<input type="checkbox"/> Preamplifier 1 GHz - 4 GHz	NT-335	
<input type="checkbox"/> Fluke 87 V True RMS Multimeter	NT-260	<input type="checkbox"/> Preamplifier for GPS MKU 152 A	NT-336	
<input type="checkbox"/> Model 2000 Digital Multimeter	NT-261	<input type="checkbox"/> Preamplifier 100 MHz – 23 GHz	NT-337	
<input type="checkbox"/> Fluke 87 V Digital Multimeter	NT-262/1	<input type="checkbox"/> DC Block 10 MHz – 18 GHz Model 8048	NT-338	
<input type="checkbox"/> ESH2-Z5-U1 Artificial mains network 4x25A	NT-300	<input type="checkbox"/> 2-97201 Electronic load	NT-341	
<input type="checkbox"/> ESH3-Z5-U1 Artificial mains network 2x10A	NT-301	<input type="checkbox"/> TSX3510P - Power supply 0-30 V / 0 - 10 A	NT-344	
<input type="checkbox"/> ESH3-Z6-U1 Artificial mains network 1x100A	NT-302	<input type="checkbox"/> TSX3510P - Power supply 0-30 V / 0 - 10 A	NT-345	
<input type="checkbox"/> ESH3-Z6-U1 Artificial mains network 1x100A	NT-302a	<input type="checkbox"/> VDS 200 Mobil-impuls-generator	NT-350	
<input type="checkbox"/> PHE 4500/B Power amplifier	NT-304	<input type="checkbox"/> LD 200 Mobil-impuls-generator	NT-351	
<input type="checkbox"/> PAS 5000 Power amplifier	NT- 304/1a	<input type="checkbox"/> MPG 200 Mobil-Impuls-Generators	NT-352	
<input type="checkbox"/> EZ10 T-Artificial Network	NT-305	<input type="checkbox"/> EFT 200 Mobil-Impuls-generator	NT-353	
<input type="checkbox"/> SMG - Signal generator 0,1 - 1000 MHz	NT-310	<input type="checkbox"/> AN 200 S1 Artificial Network	NT-354	
<input type="checkbox"/> SMA100A - Signal generator 9 kHz - 6 GHz	NT-310/1	<input type="checkbox"/> FP-EFT 32M 3 ph. Coupling filter (Burst)	NT-400/1	
<input type="checkbox"/> RefRad Reference generator	NT-312	<input type="checkbox"/> PHE 4500 - Mains impedance network	NT-401	
<input type="checkbox"/> SMP 02 Signal generator 10 MHz - 20 GHz	NT-313	<input type="checkbox"/> IP 6.2 Coupling filter for data lines (Surge)	NT-403	
<input type="checkbox"/> 40 MHz Arbitrary Generator TGA1241	NT-315	<input type="checkbox"/> TK 9421 High Power Volt. Probe 150 kHz - 30 MHz	NT-409	
<input type="checkbox"/> Artificial mains network NSLK 8127-PLC	NT-316	<input type="checkbox"/> ESH2-Z3 - Probe 9 kHz - 30 MHz	NT-410	
<input type="checkbox"/> Inrush Current Source for PAS 5000	NT-317a	<input type="checkbox"/> IP 4 - Capacitive clamp (Burst)	NT-411	
<input type="checkbox"/> Control and measurement device Sycore	NT-318	<input type="checkbox"/> Highpass-Filter 100 MHz – 3 GHz	NT-412	
<input type="checkbox"/> PEFT - Burst generator up to 4 kV	NT-320	<input type="checkbox"/> Highpass-Filter 600 MHz – 4 GHz	NT-413	
<input type="checkbox"/> ESD 30 System up to 25 kV	NT-321	<input type="checkbox"/> Highpass-Filter 1250 MHz – 4 GHz	NT-414	
<input type="checkbox"/> PSURGE 4.1 Surge generator	NT-324	<input type="checkbox"/> Highpass-Filter 1800 MHz – 16 GHz	NT-415	
<input type="checkbox"/> TRANSIENT 1000 Immunity test system	NT-325			

Appendix 1 (continued)

Test equipment used

				Division Medical Technology/ Communication Technology/ EMC
<input type="checkbox"/> Highpass-Filter 3500 MHz – 18 GHz	NT-416	<input type="checkbox"/> FCC-801-S25 Coupling decoupling network	NT-462	
<input type="checkbox"/> RF-Attenuator 10 dB DC – 18 GHz / 50 W	NT-417	<input type="checkbox"/> FCC-801-T4 Coupling decoupling network	NT-463	Department: FG
<input type="checkbox"/> RF-Attenuator 6 dB DC – 18 GHz / 50 W	NT-418	<input type="checkbox"/> FCC-801-C1 Coupling decoupling network	NT-464	Test report number: M/FG-15/128
<input type="checkbox"/> RF-Attenuator 3 dB DC – 18 GHz / 50 W	NT-419	<input type="checkbox"/> F-16A - Current probe 1kHz - 70MHz	NT-465	Page: 3 of 3
<input type="checkbox"/> RF-Attenuator 20 dB DC - 1000 MHz / 25 W	NT-421	<input type="checkbox"/> 95242-1 – Current probe 1 MHz – 400 MHz	NT-468	Date: 30.01.2015
<input type="checkbox"/> RF-Attenuator 30 dB DC - 1000 MHz / 1 W	NT-423	<input type="checkbox"/> 94106-1L-1 – Current probe 100 kHz – 450 MHz	NT-471	Checked by: <u>M</u>
<input type="checkbox"/> RF-Attenuator 30 dB	NT-424	<input type="checkbox"/> GA 1240 Power amplifier according to EN 61000-4-16	NT-480	
<input type="checkbox"/> RF-Attenuator 6 dB DC - 1000 MHz / 1 W	NT-425	<input type="checkbox"/> Coupling networks according to EN 61000-4-16	NT-481 - NT-483	
<input type="checkbox"/> RF-Attenuator 6 dB DC - 1000 MHz / 1 W	NT-426	<input type="checkbox"/> Van der Hoofden Test Head	NT-484	
<input type="checkbox"/> RF-Attenuator 6 dB	NT-428	<input type="checkbox"/> PC P4 3 GHz Test computer	NT-500	
<input type="checkbox"/> RF-Attenuator 0 dB - 81 dB	NT-429	<input type="checkbox"/> PC P4 1700 MHz Notebook	NT-505	
<input type="checkbox"/> WRU 27 - Band blocking 27 MHz	NT-430	<input type="checkbox"/> Monitoring camera with Monitor	NT-511	
<input type="checkbox"/> WHJ450C9 AA - High pass 450 MHz	NT-431	<input type="checkbox"/> ES-K1 Version 1.71 SP2 Test software	NT-520	
<input type="checkbox"/> WHJ250C9 AA - High pass 250 MHz	NT-432	<input type="checkbox"/> EMC32 Version 9.15 Test software	NT-520/1	
<input type="checkbox"/> RF-Load 150 W	NT-433	<input type="checkbox"/> SRM-TS Version 1.3 software for SRM-3000	NT-522	
<input type="checkbox"/> Impedance transducer 1:4 ; 1:9 ; 1:16	NT-435	<input type="checkbox"/> SRM-TS Version 1.3.1 software for SRM-3006	NT-522/1	
<input type="checkbox"/> RF-Attenuator DC – 18 GHz 6 dB	NT-436	<input type="checkbox"/> Spitzenberger und Spies Test software V3.4	NT-525	
<input type="checkbox"/> RF-Attenuator DC – 18 GHz 6 dB	NT-437	<input type="checkbox"/> Noise power test apparatus according to EN 55014	NT-530	
<input type="checkbox"/> RF-Attenuator DC – 18 GHz 10 dB	NT-438	<input type="checkbox"/> Vertical coupling plane (ESD)	NT-531	
<input type="checkbox"/> RF-Attenuator DC – 18 GHz 20 dB	NT-439	<input type="checkbox"/> Test cable #4 for EN 61000-4-6	NT-553	
<input type="checkbox"/> I+P 7780 Directional coupler 100 - 2000 MHz	NT-440	<input type="checkbox"/> Test cable #3 for conducted emission	NT-554	
<input type="checkbox"/> ESH3-Z2 - Pulse limiter 9 kHz - 30 MHz	NT-441	<input type="checkbox"/> Test cable #5+#6 ESD-cable (2x470k)	NT-555 + NT-556	
<input type="checkbox"/> Power Divider 6 dB/1 W/50 Ohm	NT-443	<input type="checkbox"/> Test cable #8 Sucoflex 104EA	NT-559	
<input type="checkbox"/> Directional coupler 0,1 MHz – 70 MHz	NT-444	<input type="checkbox"/> Test cable #9 (for outdoor measurements)	NT-580	
<input type="checkbox"/> Directional coupler 0,1 MHz – 70 MHz	NT-445	<input type="checkbox"/> Test cable #10 (for outdoor measurements)	NT-581	
<input type="checkbox"/> Tube imitations according to EN 55015	NT-450	<input type="checkbox"/> Test cable #13 Sucoflex 104PE	NT-584	
<input type="checkbox"/> FCC-801-M3-16A Coupling decoupling network	NT-458	<input type="checkbox"/> Test cable #21 for SRM-3000	NT-592	
<input type="checkbox"/> FCC-801-M2-50A Coupling decoupling network	NT-459	<input type="checkbox"/> Shield chamber	NT-600	
<input type="checkbox"/> FCC-801-M5-25 Coupling decoupling network	NT-460	<input type="checkbox"/> Climatic chamber	M-1200	
<input type="checkbox"/> FCC-801-AF10 Coupling decoupling network	NT-461			

Appendix 2 Photodocumentation

Description: Front view

Division Medical Technology/
Communication Technology/
EMC

Department: FG

Test report reference:
M/FG-15/128

Page: 1 of 18

Date: 30.01.2015

checked by: 



Appendix 2 Photodocumentation

Description: Backside view

Division Medical Technology/
Communication Technology/
EMC

Department: FG

Test report reference:
M/FG-15/128

Page: 2 of 18

Date: 30.01.2015

checked by: M



Appendix 2 Photodocumentation

Description: Label

Division Medical Technology/
Communication Technology/
EMC

Department: FG

Test report reference:
M/FG-15/128

Page: 3 of 18

Date: 30.01.2015

checked by: M



Appendix 2 Photodocumentation

Description: Label placement

Division Medical Technology/
Communication Technology/
EMC

Department: FG

Test report reference:
M/FG-15/128

Page: 4 of 18

Date: 30.01.2015

checked by: 



Appendix 2 Photodocumentation

Description: Battery compartment opened

Division Medical Technology/
Communication Technology/
EMC

Department: FG

Test report reference:
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Appendix 2 Photodocumentation

Description: Microphone capsule detached

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Appendix 2 Photodocumentation

Description: Case opened

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EMC

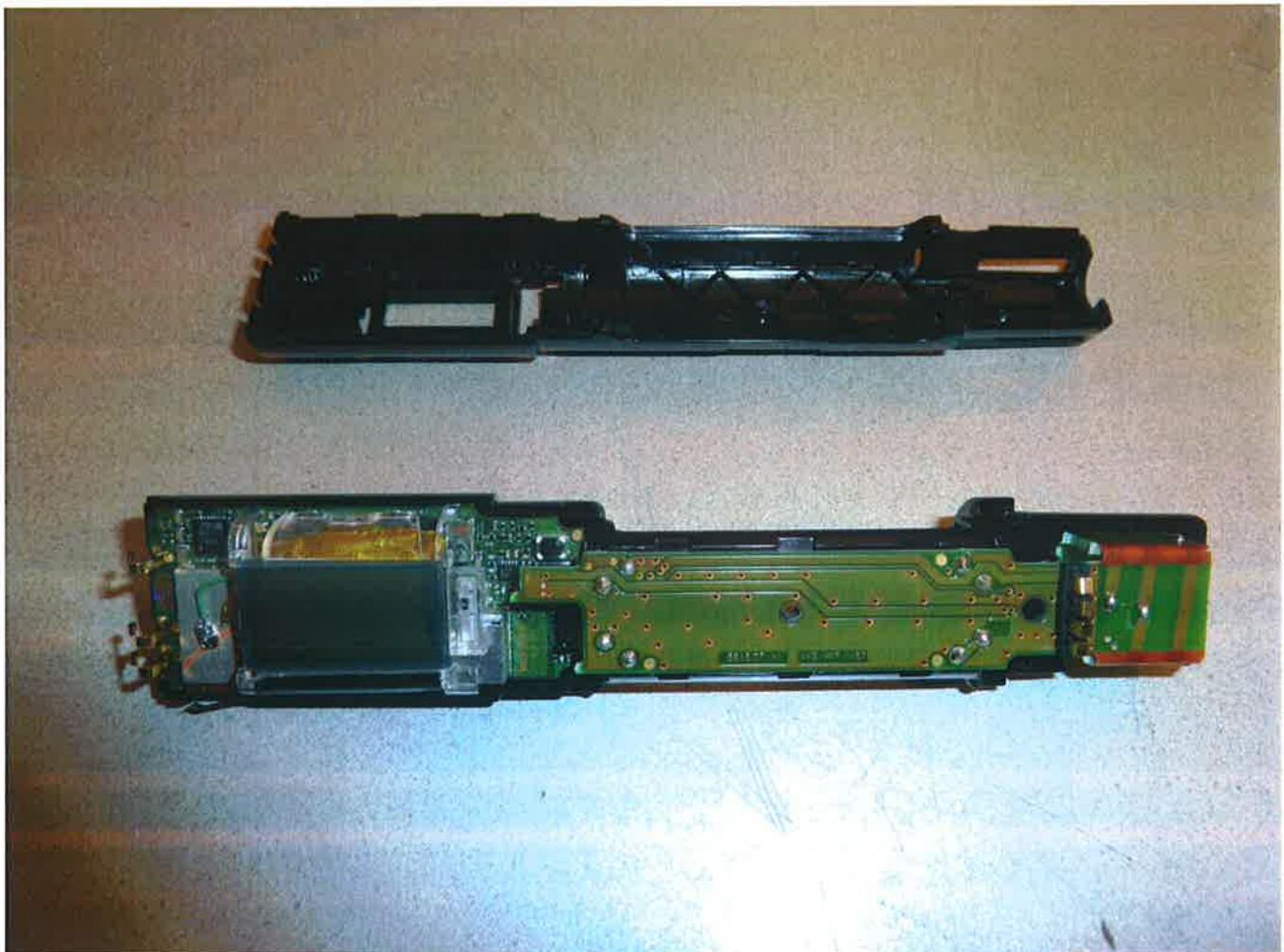
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Appendix 2 Photodocumentation

Description: Electronics view #1

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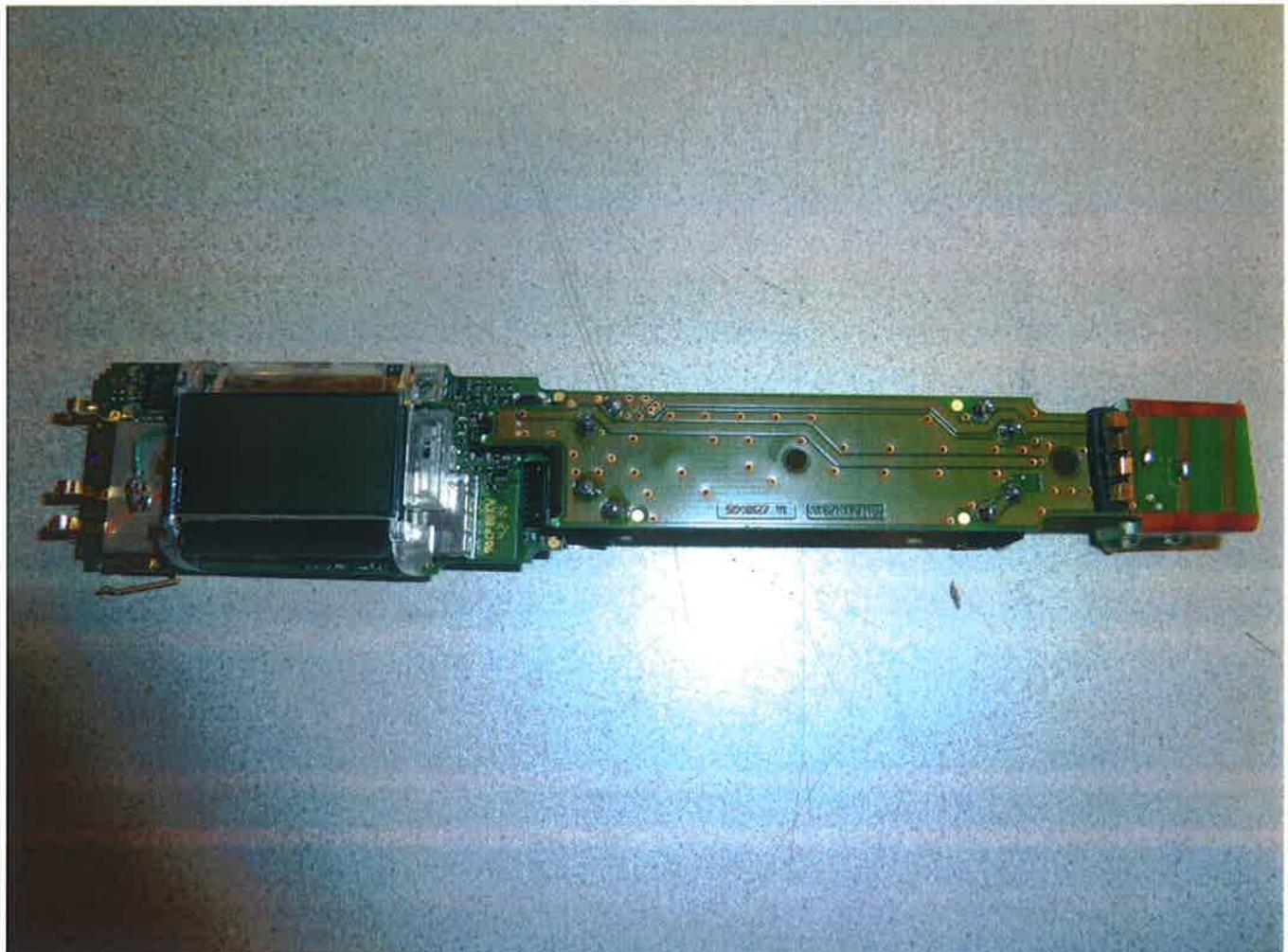
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Appendix 2 Photodocumentation

Description: Electronics view #2

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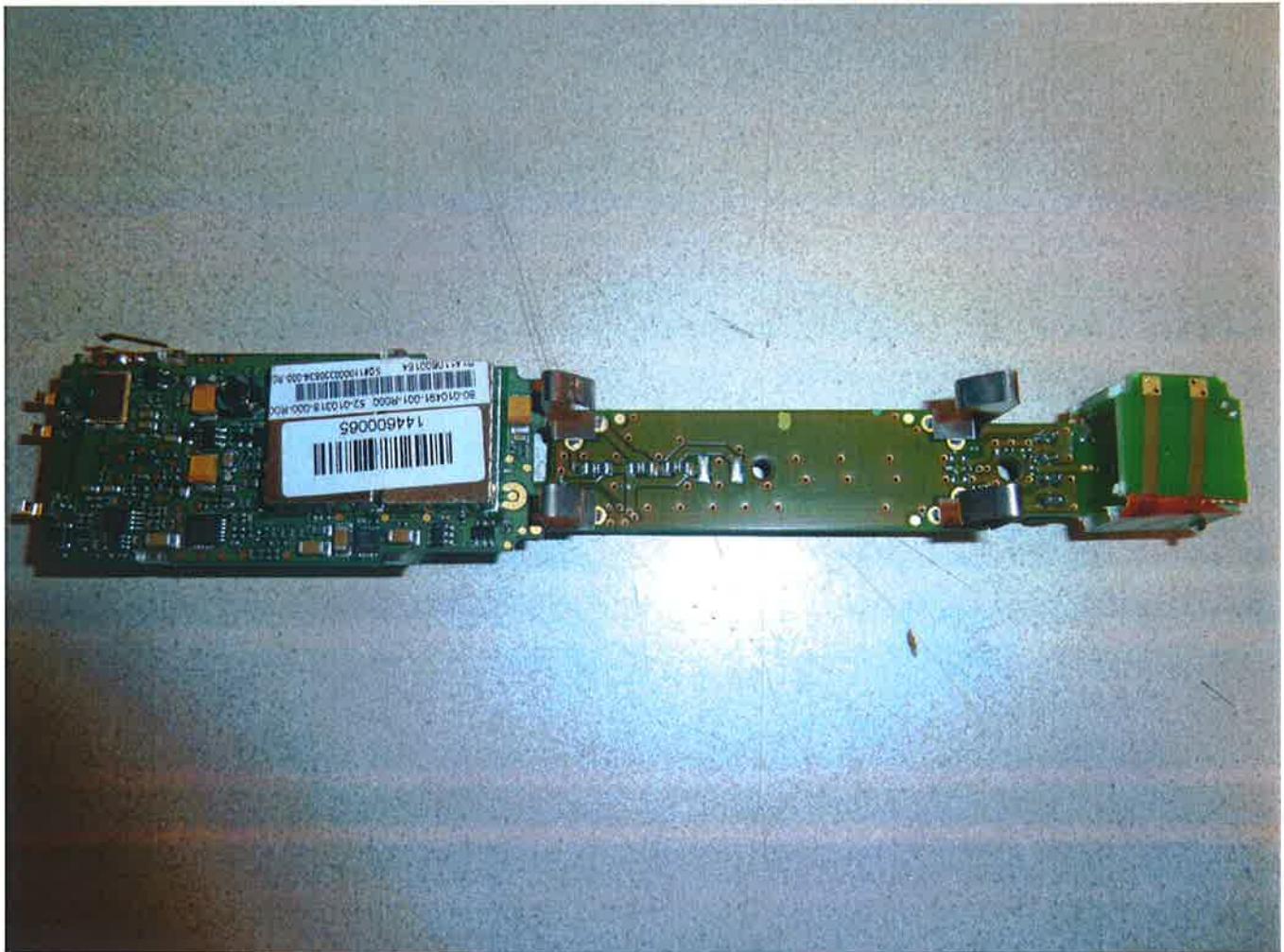
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Appendix 2 Photodocumentation

Description: RF shielding detached view #1

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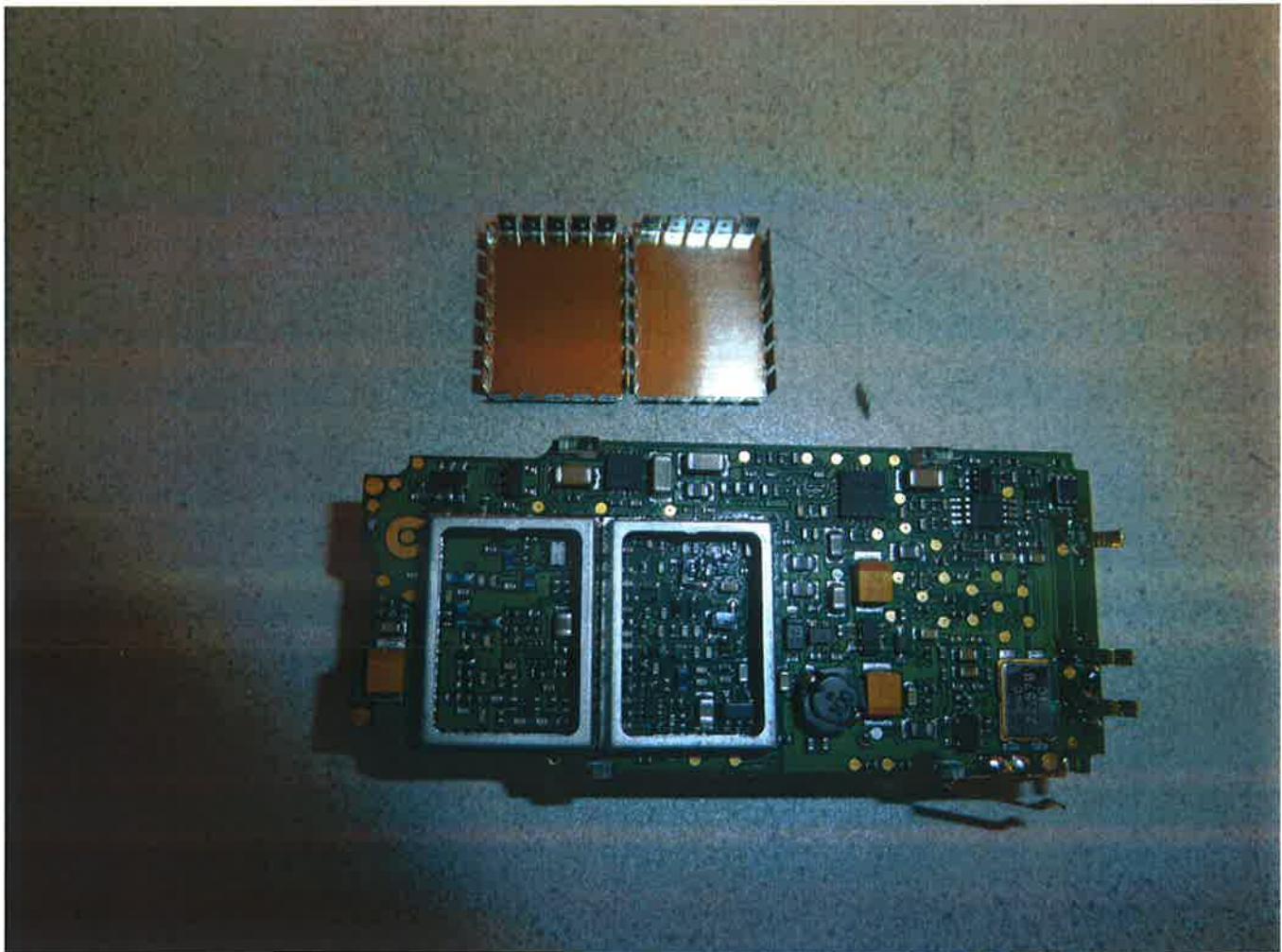
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Appendix 2 Photodocumentation

Description: RF shielding detached view #2

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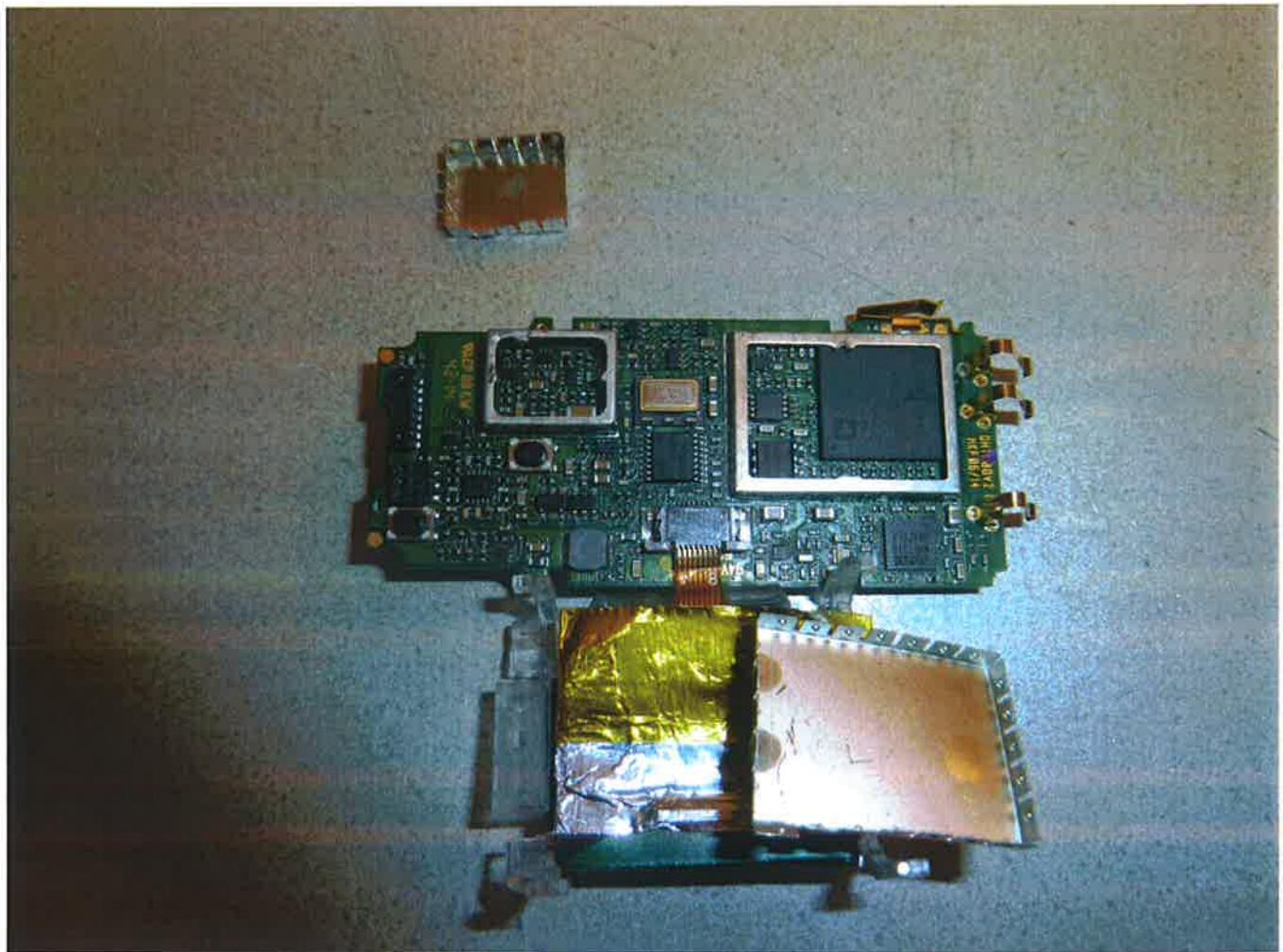
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Appendix 2 Photodocumentation

Description: C5 capsule view #1

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Appendix 2 Photodocumentation

Description: C5 capsule view #2

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Appendix 2 Photodocumentation

Description: D5 capsule view #1

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Appendix 2 Photodocumentation

Description: D5 capsule view #2

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Appendix 2 Photodocumentation

Description: D7 capsule view #1

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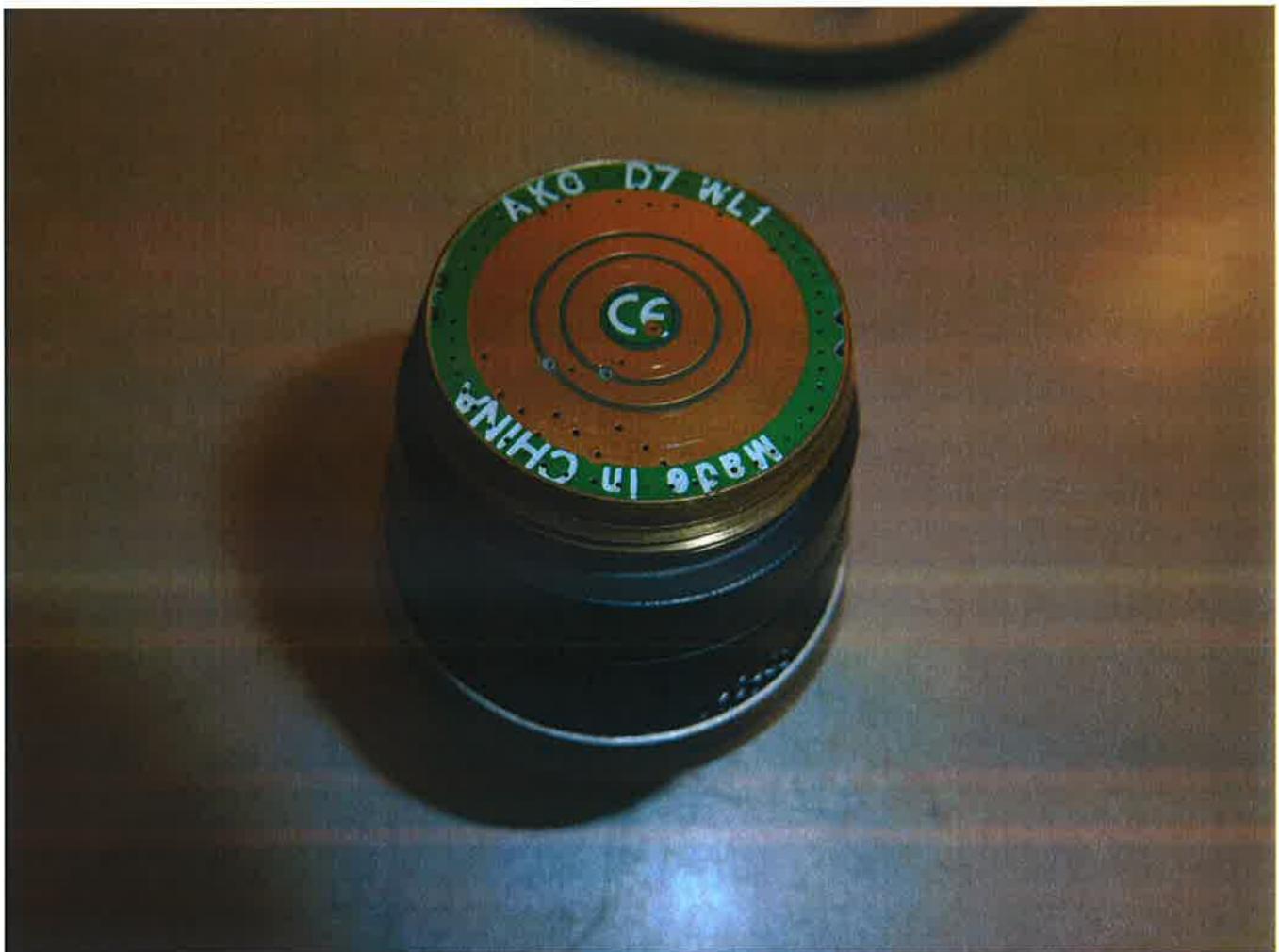
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Appendix 2 Photodocumentation

Description: D7 capsule view #2

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Appendix 2 Photodocumentation

Description: Test setup

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