Senton GmbH
Aeussere Fruehlingstrasse 45
D-94315 Straubing

Straubing, November 4, 2009

T E S T - R E P O R T

No. 50530-050189 (Edition 4)

for

M3-2914 (Hand-held Transmitter)

Variants covered by this test report:
M3-2912
M3-3913

Remote Control Transmitter

Applicant:	ELDAT GmbH Gesellschaft für Elektronik und Datentechnik mbH
Test Specifications:	FCC Code of Federal Regulations, CFR 47, Part 15, Sections 15.205, 15.207, 15.215 and 15.249 Industry Canada Radio Standards Specifications RSS-Gen Issue 2, Section 7.2.2 and RSS-210 Issue 7, Sections 2.2, A2.9 (Category I Equipment)

Table of Contents

1 Description of the Equipment Under Test (EUT)

General data of EUT	
Type designation[1]:	M3-2914 (Hand-held Transmitter)
Variants covered by this test report:	M3-2912 (2 buttons) M3-3913 (3 buttons) The difference of the transmitters M3-2914, M3-2912 and M3-3913 is only in housing form und number of buttons. The electronics is the same.
Parts[2]:	
Serial number(s):	101825275 (A4)
Manufacturer:	ELDAT GmbH Gesellschaft für Elektronik und Datentechnik mbH
Type of equipment:	Remote Control Transmitter
FCC ID:	
Additional parts/accessories:	

Technical data of EUT		
Application frequency range:	902 - 928 MHz	
Frequency range:	902 – 928 MHz	
Operating frequency:	916.5 MHz	
Type of modulation:	ASK	
Pulse train:	86.4 ms	
Pulse width:	100 ms	
Number of RF-channels:	1	
Channel spacing:	Not Applicable	
Designation of emissions[3]:	10K0A1D	
Type of antenna:	Integrated	
Size/length of antenna:	6.5 mm	
Connection of antenna:	☐ detachable	☒ not detachable
Type of power supply:	Battery supply	
Specifications for power supply:	nominal voltage: minimum voltage: maximum voltage:	3.00 V 2.55 V 3.00 V

[1] Type designation of the system if EUT consists of more than one part.
[2] Type designations of the parts of the system, if applicable.
[3] Also known as "Class of Emission".

2 Administrative Data

Application details	
Applicant (full address):	ELDAT GmbH Gesellschaft für Elektronik und Datentechnik mbH Im Gewerbepark 14 15711 Zeesen Germany
Contact person:	Mr. Klaus Puppel
Contract identification:	Order no. 31649 0F
Receipt of EUT:	20th May 2005
Date(s) of test:	6th – 7th June 2005
Note(s):	

Report details	
Report number:	50530-050189
Edition:	4
Issue date:	November 4, 2009

3 Identification of the Test Laboratory

Details of the Test Laboratory	
Company name:	Senton GmbH EMI/EMC Test Center
Address:	Aeussere Fruehlingstrasse 45 D-94315 Straubing Germany
Laboratory accreditation:	DAR-Registration No. DAT-P-171/94-02
FCC test site registration number	90926
Industry Canada test site registration:	IC 3050
Contact person:	Mr. Johann Roidt Phone: (+49) (0)9421 5522-0 Fax: (+49) (0)9421 5522-99

4 Summary

Summary of test results
The tested sample complies with the requirements set forth in the **Code of Federal Regulations CFR 47, Part 15, Sections 15.205, 15.215 and 15.249** of the Federal Communication Commission (FCC) and the **Radio Standards Specifications** **RSS-210 Issue 7, Sections 2.2, A2.9 (Category I Equipment)** of Industry Canada (IC).

Personnel involved in this report	
Laboratory Manager:	Mr. Johann Roidt
Responsible for testing:	Mr. Martin Steindl
Responsible for test report:	Mr. Martin Steindl

5 Operation Mode and Configuration of EUT

Operation Mode(s)
Transmitter is triggered with pneumatic system continuously. EUT transmitting continuously with short pauses.

Configuration(s) of EUT
Not Applicable

List of ports and cables
Not Applicable

List of devices connected to EUT
Not Applicable

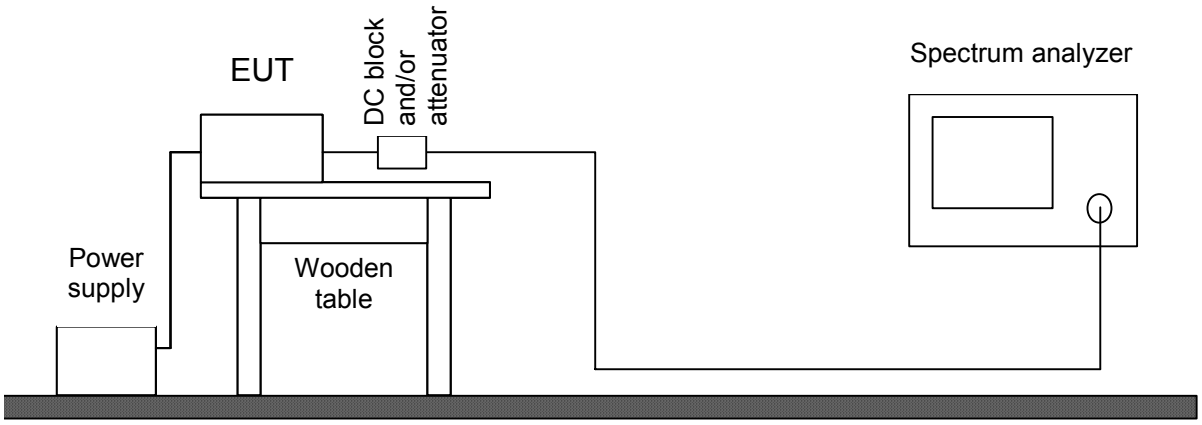
List of support devices

Item	*Description*	*Type Designation*	*Serial no. or ID*	*Manufacturer*
1	Pneumatic system	Pneumatic compressor with cylinder		JUN-AIR

6 Measurement Procedures

6.1 Bandwidth Measurements

Measurement Procedure:	
Rules and specifications:	CFR 47 Part 2, section 2.202(a) CFR 47 Part 15, section 15.215(c) IC RSS-Gen Issue 2, sections 4.6.1 and 4.6.2 IC RSS-210 Issue 7, section A1.1.3 ANSI C63.4, annex H.6
Guide:	ANSI C63.4 / IC RSS-Gen Issue 2, sections 4.6.1 and 4.6.2
Measurement setup:	☐ Conducted: See below ☒ Radiated: Radiated Emission in Fully or Semi Anechoic Room (6.4)
If antenna is detachable bandwidth measurements shall be performed at the antenna connector (conducted measurement) when the transmitter is adjusted in accordance with the tune-up procedure, if applicable. The RF output terminals are connected to a spectrum analyzer. If required, a resistive matching network equal to the impedance specified or employed for the antenna is used as well as dc block and appropriate attenuators (50 Ohms). The electrical characteristics of the radio frequency load attached to the output terminals shall be stated, if applicable. If radiated measurements are performed the same test setups and instruments are used as with radiated emission measurements for the appropriate frequency range. The analyzer settings are specified by the test description of the appropriate test record(s).	



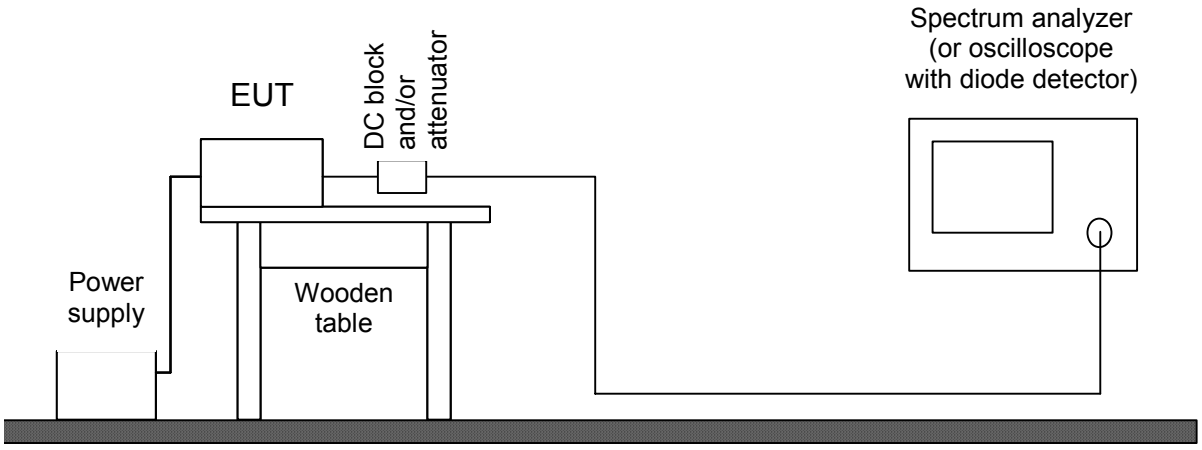
6.2 Pulse Train Measurement

Measurement Procedure:	
Rules and specifications:	CFR 47 Part 15, section 15.35(c) IC RSS-Gen Issue 2, section 4.5
Guide:	ANSI C63.4
Measurement setup:	☐ Conducted: See below (direct connection or via test fixture) ☒ Radiated: Radiated Emission in Fully or Semi Anechoic Room (6.4)

If antenna is detachable pulse train measurements shall be performed at the antenna connector (conducted measurement). The RF output terminals are connected to a spectrum analyzer or to a diode detector in combination with an oscilloscope. If required, a resistive matching network equal to the impedance specified or employed for the antenna is used as well as dc block and appropriate attenuators (50 Ohms). The electrical characteristics of the radio frequency load attached to the output terminals shall be stated, if applicable.

If antenna is not detachable a test fixture may be used instead of direct connection to RF output terminals.

If radiated measurements are performed similar test setups and instruments are used as with radiated emission measurements for the appropriate frequency range. However, the spectrum analyzer may be replaced by a diode detector connected to an oscilloscope.



6.3 Radiated Emission Measurement 9 kHz to 30 MHz

Measurement Procedure:	
Rules and specifications:	CFR 47 Part 15, sections 15.215(b) and 15.249(d) IC RSS-210 Issue 7, section A2.9(b)
Guide:	ANSI C63.4

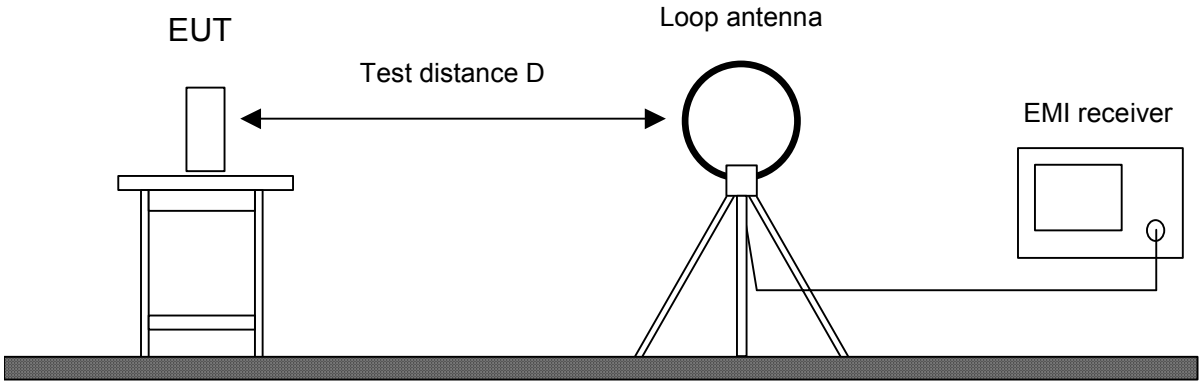
Radiated emission in the frequency range 9 kHz to 30 MHz is measured using an active loop antenna. First the whole spectrum of emission caused by the equipment is recorded at a distance of 3 meters in a fully or semi anechoic room with the detector of the spectrum analyzer or EMI receiver set to peak. This configuration is also used for recording the spectrum of intentional radiators.

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.

EUT is rotated all around to find the maximum levels of emissions. Equipment and cables are placed and moved within the range of position likely to find their maximum emissions.
If worst case emission of the EUT cannot be recorded with EUT in standard position and loop antenna in vertical polarization the EUT (or the radiating part of the EUT) is rotated by 90 degrees instead of changing the loop antenna to horizontal polarization. This procedure is selected to minimize the influence of the environment (e.g. effects caused by the floor especially with longer distances).

Final measurement is performed at a test distance D of 30 meters using an open field test site. In case the regulation requires testing at other distances, the result is extrapolated by either making measurements at an additional distance D of 10 meters to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). In cases of very low emissions measurements are performed at shorter distances and results are extrapolated to the required distance. The provisions of CFR 47 Part 15 sections 15.31(d) and (f)(2) apply. According to CFR 47 Part 15 section 15.209(d) final measurement is performed with detector function set to quasi-peak except for the frequency bands 9 to 90 kHz and 110 to 490 kHz where, for non-pulsed operation, average detector is employed.

If the radiated emission limits are expressed in terms of the average value of the emission there also is a peak limit corresponding to 20 dB above the maximum permitted average limit. Additionally, if pulsed operation is employed, the average field strength is determined by averaging over one complete pulse train, including blanking intervals, as specified in CFR 47 Part 15 section 15.35(c). If the pulse train exceeds 0.1 second that 0.1 second interval during which the value of the emission is at its maximum is selected for calculation. The pulse train correction is added to the peak value of the emission to get the average value.



Test instruments used:

Used	Type	Model	Serial No. or ID	Manufacturer
☒	Spectrum Analyzer	FSP 30	100063	Rohde & Schwarz
☐	EMI test receiver	ESMI	839379/013 839587/006	Rohde & Schwarz
☐	Test receiver	ESHS 10	860043/016	Rohde & Schwarz
☐	Preamplifier	CPA9231A	3393	Schaffner
☒	Loop antenna	HFH2-Z2	882964/1	Rohde & Schwarz
☒	Fully anechoic room	No. 2	1452	Albatross Projects
☐	Semi-anechoic room	No. 3	1453	Siemens
☐	Open field test site	EG 1	1450	Senton

6.4 Radiated Emission in Fully or Semi Anechoic Room

Measurement Procedure:	
Rules and specifications:	CFR 47 Part 15, sections 15.215(b) and 15.249 IC RSS-210 Issue 7, section A2.9
Guide:	ANSI C63.4

Radiated emission in fully or semi anechoic room is measured in the frequency range from 30 MHz to the maximum frequency as specified in CFR 47 Part 15 section 15.33.

Measurements are made in both the horizontal and vertical planes of polarization in a fully anechoic room using a spectrum analyzer with the detector function set to peak and resolution as well as video bandwidth set to 100 kHz (below 1 GHz) or 1 MHz (above 1 GHz).

Testing up to 1 GHz is performed with a linear polarized logarithmic periodic antenna combined with a 4:1 broadband dipole ("Trilog broadband antenna"). For testing above 1 GHz horn antennas are used.

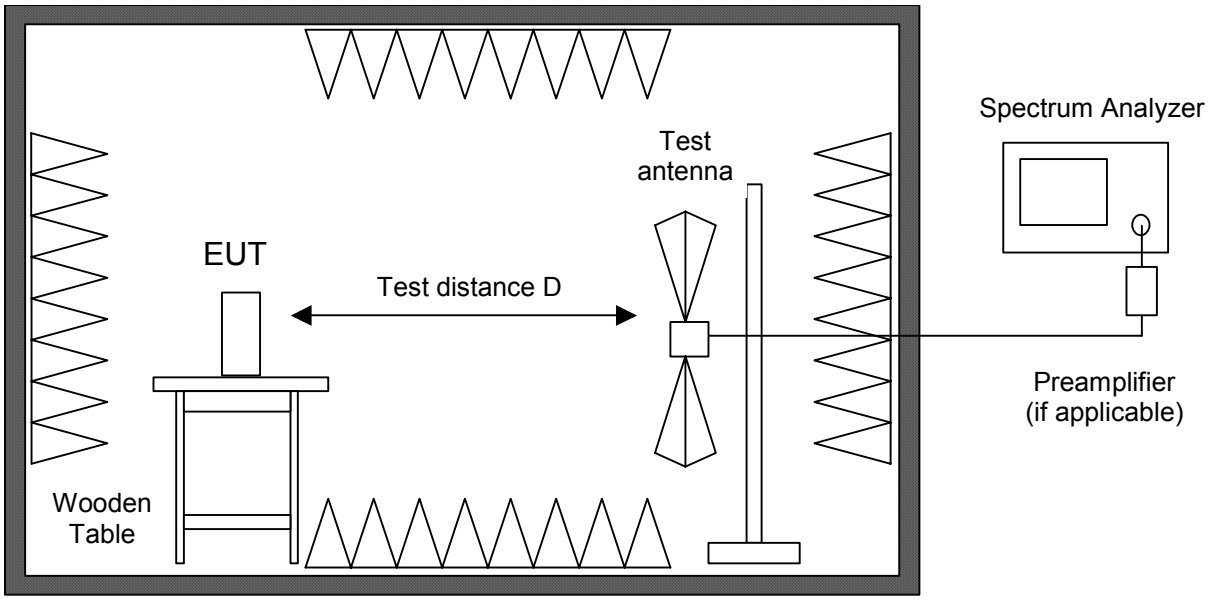
All tests below 18 GHz are performed at a test distance D of 3 meters. For higher frequencies the test distance is reduced (e.g. to 1 meter) due to the sensitivity of the measuring instrument(s) and the test results are calculated according to CFR 47 Part 15 section 15.31(f)(1) using an extrapolation factor of 20 dB/decade. If required, preamplifiers are used for the whole frequency range. Special care is taken to avoid overload, using appropriate attenuators and filters, if necessary.

If the radiated emission limits are expressed in terms of the average value of the emission there also is a peak limit corresponding to 20 dB above the maximum permitted average limit. Additionally, if pulsed operation is employed, the average field strength is determined by averaging over one complete pulse train, including blanking intervals, as specified in CFR 47 Part 15 section 15.35(c). If the pulse train exceeds 0.1 second that 0.1 second interval during which the value of the emission is at its maximum is selected for calculation. The pulse train correction is added to the peak value of the emission to get the average value.

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.

During testing the EUT is rotated all around to find the maximum levels of emissions. Equipment and cables are placed and moved within the range of position likely to find their maximum emissions.

For final testing below 1 GHz an open field test-site is used and the plots recorded in the fully or semi anechoic room are indicated as prescans.



Fully or semi anechoic room

Test instruments used:

Used	Type	Model	Serial No. or ID	Manufacturer
☒	Spectrum Analyzer	FSP 30	100063	Rohde & Schwarz
☐	Spectrum analyzer	R 3271	05050023	Advantest
☐	EMI test receiver	ESMI	839379/013 839587/006	Rohde & Schwarz
☒	Preamplifier	CPA9231A	3393	Schaffner
☐	Preamplifier	R14601		Advantest
☒	Preamplifier 1-8 GHz	AFS3-00100800-32-LN	847743	Miteq
☐	Preamplifier 0.5-8 GHz	AMF-4D-005080-25-13P	860149	Miteq
☒	Preamplifier 8-18 GHz	ACO/180-3530	32641	CTT
☐	External Mixer	WM782A	845881/005	Tektronix
☐	Harmonic Mixer Accessories	FS-Z30	843389/007	Rohde & Schwarz
☒	Trilog broadband antenna	VULB 9163	9163-188	Schwarzbeck
☐	Horn antenna	3115	9508-4553	EMCO
☐	Horn antenna	3160-03	9112-1003	EMCO
☒	Horn antenna	3160-04	9112-1001	EMCO
☒	Horn antenna	3160-05	9112-1001	EMCO
☒	Horn antenna	3160-06	9112-1001	EMCO
☒	Horn antenna	3160-07	9112-1008	EMCO
☐	Horn antenna	3160-08	9112-1002	EMCO
☐	Horn antenna	3160-09	9403-1025	EMCO
☐	Horn antenna	3160-10	399185	EMCO
☒	Fully anechoic room	No. 2	1452	Albatross Projects
☐	Semi-anechoic room	No. 3	1453	Siemens

6.5 Radiated Emission at Open Field Test Site

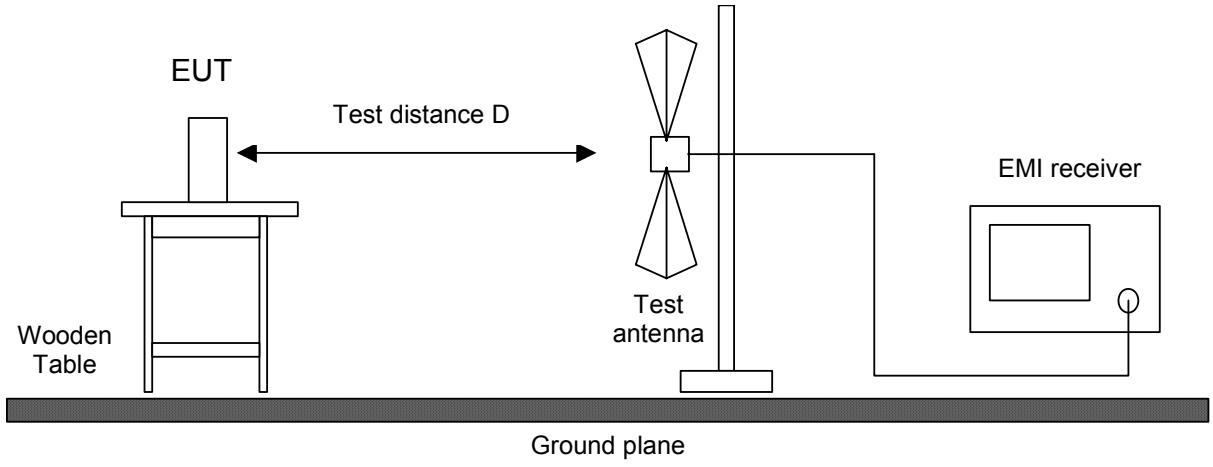
Measurement Procedure:	
Rules and specifications:	CFR 47 Part 15, sections 15.215(b) and 15.249 IC RSS-210 Issue 7, section A2.9
Guide:	ANSI C63.4

Radiated emission at open field test site is measured in the frequency range 30 MHz to 1 GHz using a biconical antenna up to 300 MHz and a logarithmic periodic antenna above. The measurement bandwidth of the test receiver is set to 120 kHz with quasi-peak detector selected.

If the radiated emission limits are expressed in terms of the average value of the emission there also is a peak limit corresponding to 20 dB above the maximum permitted average limit. Additionally, if pulsed operation is employed, the average field strength is determined by averaging over one complete pulse train, including blanking intervals, as specified in CFR 47 Part 15 section 15.35(c). If the pulse train exceeds 0.1 second that 0.1 second interval during which the value of the emission is at its maximum is selected for calculation. The pulse train correction is added to the peak value of the emission to get the average value.

Hand-held or body-worn devices are tested in the position producing the highest emission relative to the limit as verified by prescans in the fully anechoic room. EUT is rotated all around and receiving antenna is raised and lowered within 1 meter to 4 meters to find the maximum levels of emission. Equipment and cables are placed and moved within the range of position likely to find their maximum emissions.

For measuring emissions of intentional radiators and receivers a test distance D of 3 meters is selected. Testing of unintentional radiators is performed at a distance of 10 meters. If limits specified for 3 meters shall be used for measurements performed at 10 meters distance the limits are calculated according to CFR 47 Part 15 section 15.31(d) and (f)(1) using an inverse linear-distance extrapolation factor of 20 dB/decade.

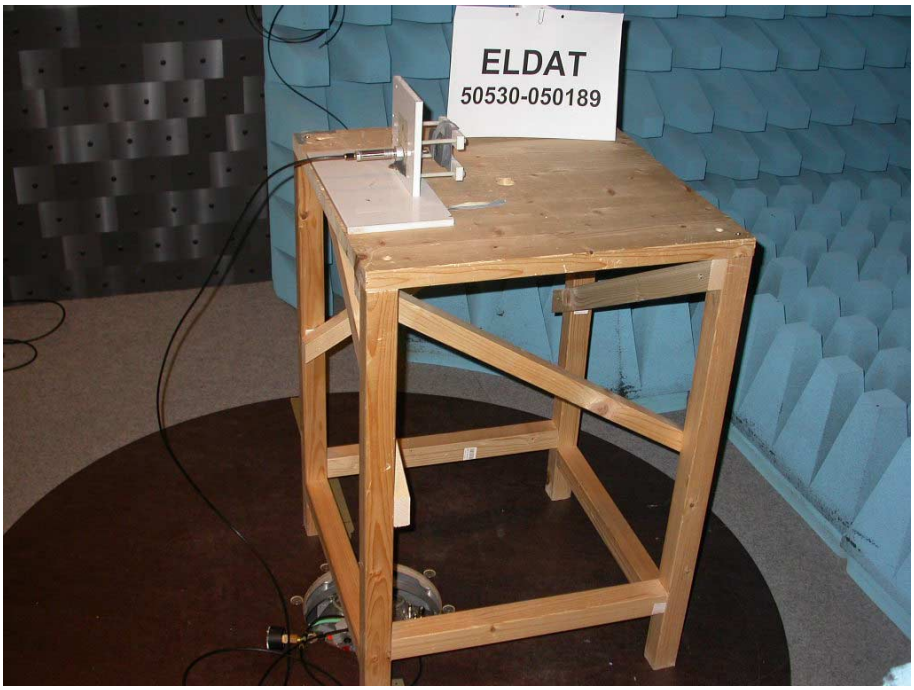


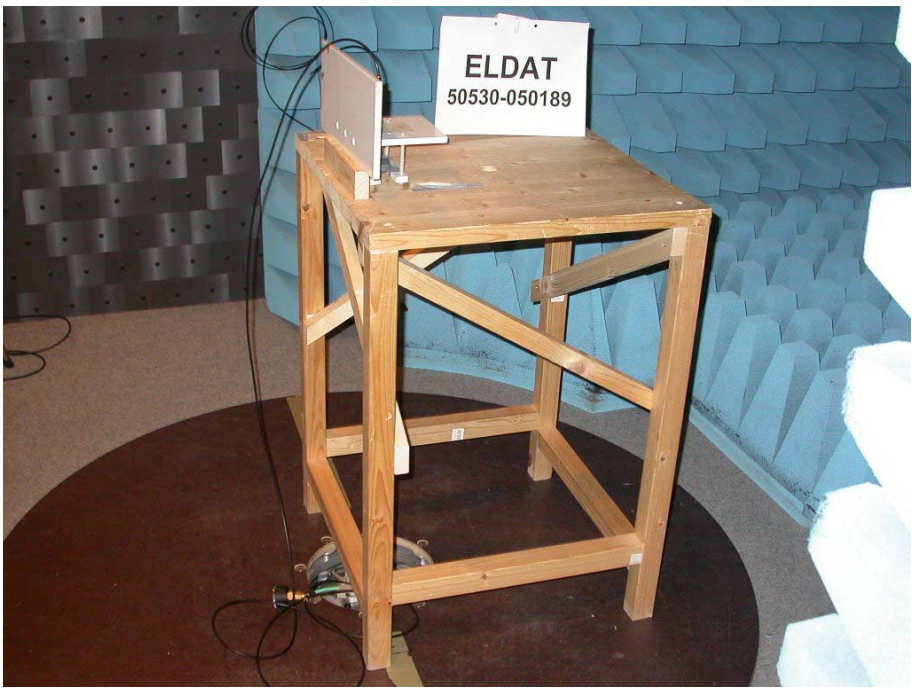
Test instruments used:

Used	Type		Model	Serial No. or ID	Manufacturer
☒	EMI receiver		ESVP	881414/009	Rohde & Schwarz
☒	Biconical antenna	EG 1	HK 116	842204/001	Rohde & Schwarz
☒	Log. per. antenna	EG 1	HL 223	841516/023	Rohde & Schwarz
☒	Open field test site		EG 1	1450	Senton

7 Photographs Taken During Testing

Test setup for radiated emission measurement (fully anechoic room)





Test setup for radiated emission measurement (fully anechoic room) - continued -

Test setup for radiated emission measurement (open field test site)

8 Test Results

FCC CFR 47 Parts 2 and 15			
Section(s)	*Test*	*Page*	*Result*
2.1046(a)	Conducted output power	---	Not applicable
2.202(a)	Occupied bandwidth	21	Recorded
15.215(c)	Bandwidth of the emission	24	Test passed
2.201, 2.202	Class of emission	26	Calculated
15.35(c)	Pulse train measurement for pulsed operation	27	Recorded
15.205(a)	Restricted bands of operation	31	Test passed
15.207	Conducted AC powerline emission 150 kHz to 30 MHz	---	Not applicable
15.205(b) 15.249	Radiated emission 9 kHz to 30 MHz	33	Test passed
15.205(b) 15.215(b) 15.249	Radiated emission 30 MHz to 10 GHz	34	Test passed

IC RSS-Gen Issue 2			
Section(s)	*Test*	*Page*	*Result*
4.8	Transmitter output power (conducted)	---	Not applicable
4.6.1	Occupied Bandwidth	21	Recorded
3.2(h), 8	Designation of emissions	26	Calculated
4.5	Pulsed operation	27	Recorded
7.2.2	Transmitter AC power lines conducted emissions 150 kHz to 30 MHz	---	Not applicable
5.5	Exposure of Humans to RF Fields	36	Exempted from SAR and RF evaluation

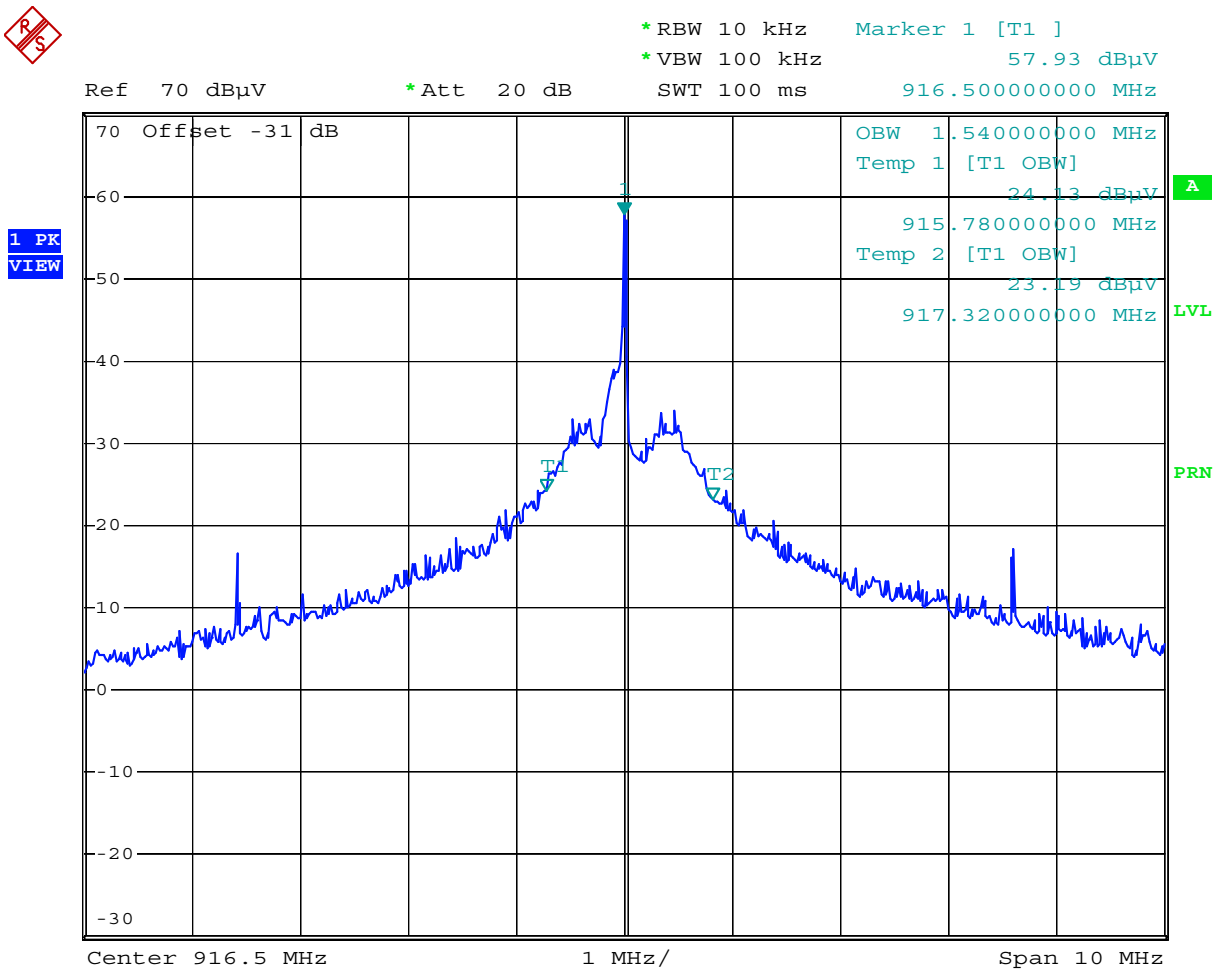
IC RSS-210 Issue 7			
Section(s)	*Test*	*Page*	*Result*
2.2(a)	Restricted bands and unwanted emission frequencies	31	Test passed
2.2(b)(c), 2.6 A2.9	Unwanted emissions 9 kHz to 30 MHz	33	Test passed
2.2(b)(c), 2.6 A2.9	Unwanted emissions 30 MHz to 10 GHz	34	Test passed

8.1 Occupied Bandwidth

Rules and specifications:	CFR 47 Part 2, section 2.202(a) ANSI C63.4, annex H.6	
Guide:	ANSI C63.4	
Description:	The occupied bandwidth according to CFR 47 Part 2, section 2.202(a), is measured as the 99% emission bandwidth, i.e. below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5% of the total mean power radiated by a given emission. The occupied bandwidth according to ANSI C63.4, annex H.6; is measured as the frequency range defined by the points that are 26 dB down relative to the maximum level of the modulated carrier. The resolution bandwidth of the spectrum analyzer shall be set to a value greater than 5.0% of the allowed bandwidth. If no bandwidth specifications are given, the following guidelines are used:	
	Fundamental frequency	Minimum resolution bandwidth
	9 kHz to 30 MHz	1 kHz
	30 MHz to 1000 MHz	10 kHz
	1000 MHz to 40 GHz	100 kHz
	The video bandwidth shall be at least three times greater than the resolution bandwidth.	
Measurement procedure:	Bandwidth Measurements (6.1)	

Comment:	
Date of test:	7th June 2005
Test site:	Fully anechoic room, cabin no. 2

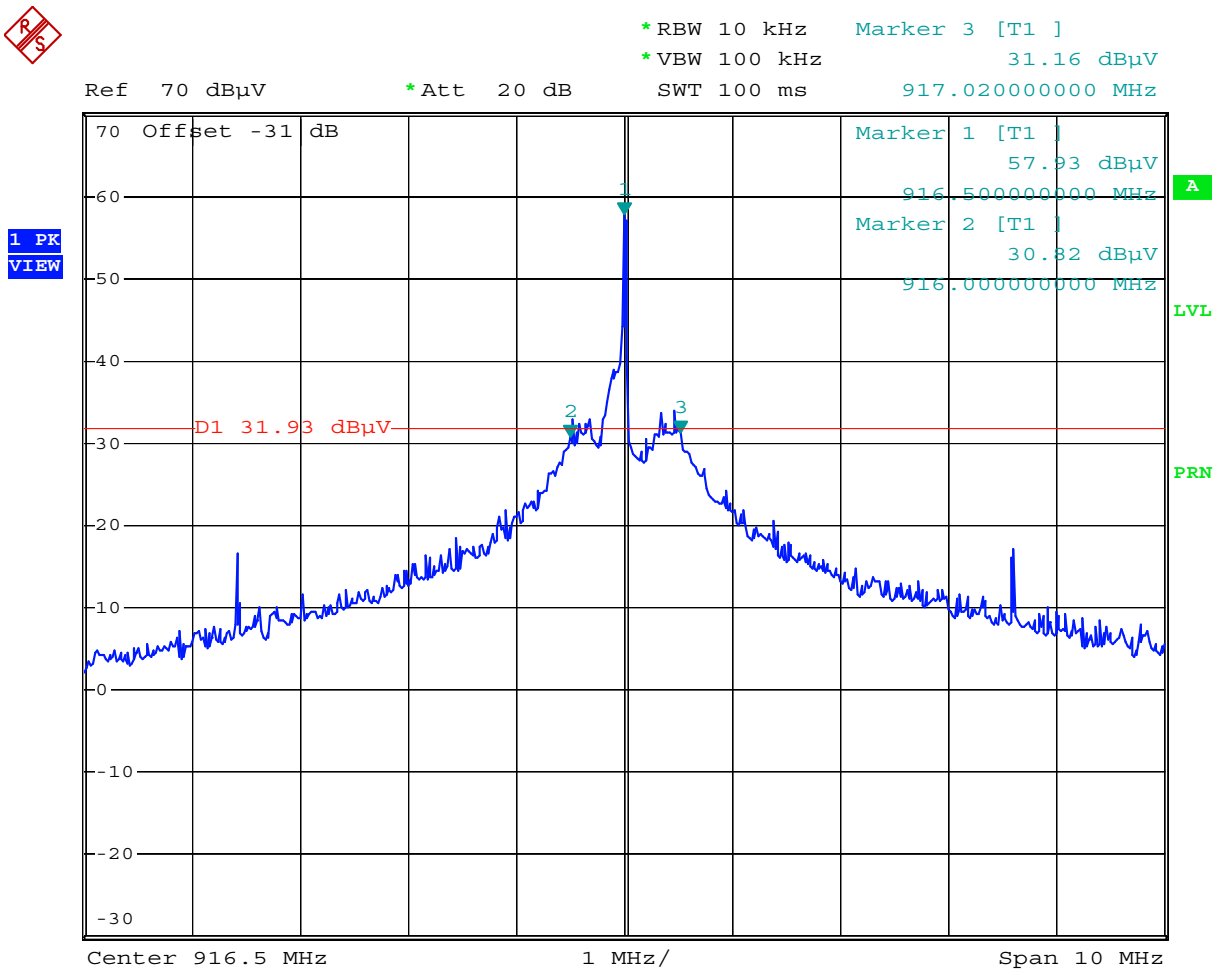
Occupied Bandwidth (99 %):



Comment: Eldat 050189: Occupied Bandwidth
Date: 7.JUN.2005 17:37:19

Occupied Bandwidth (99 %):	**1.54 MHz**

Occupied Bandwidth (-26 dB):



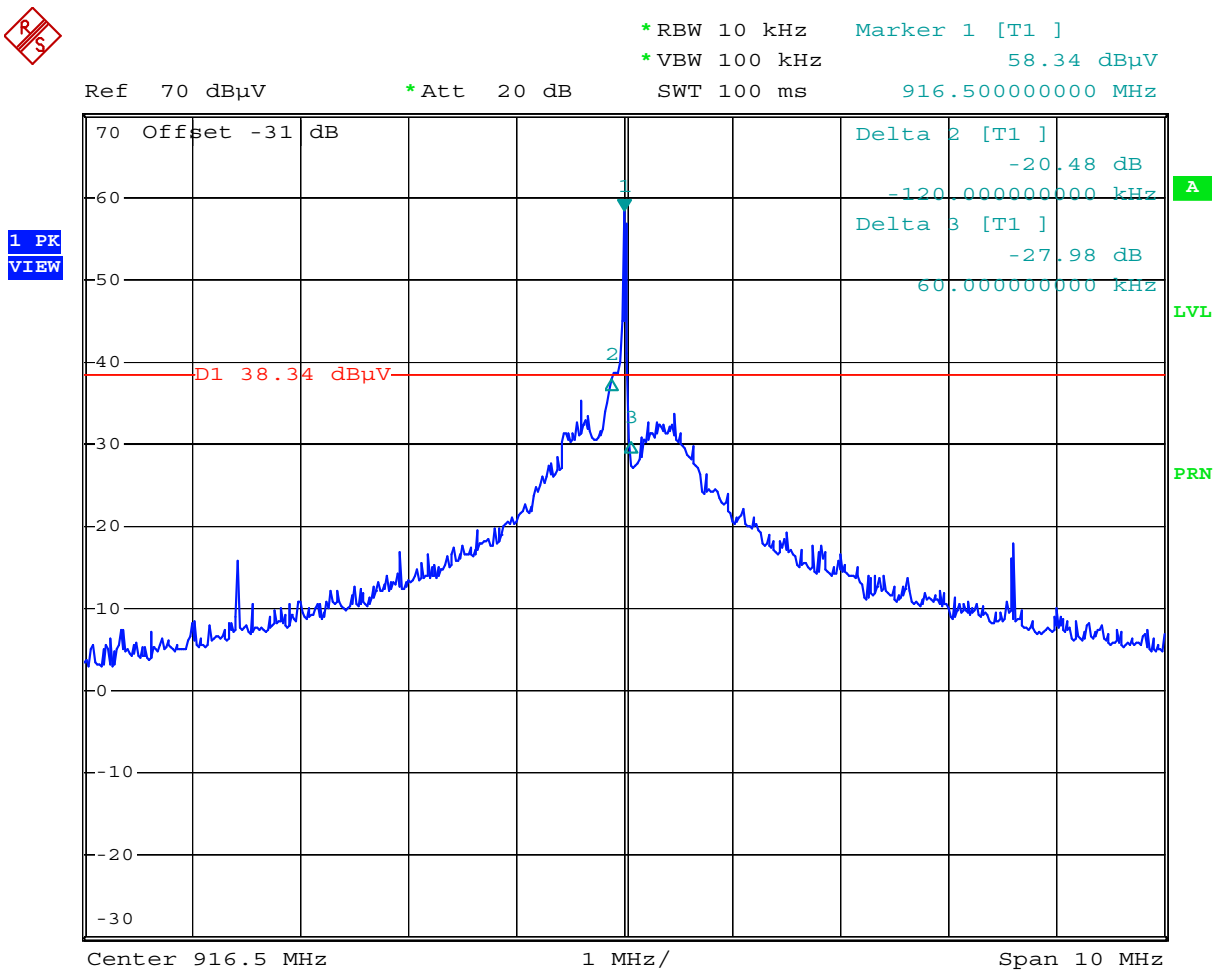
Comment: Eldat 050189: Occupied Bandwidth
Date: 7.JUN.2005 17:38:31

Occupied Bandwidth (-26 dB):	**1.02 MHz**

8.2 Emission Bandwidth

Rules and specifications:	CFR 47 Part 15, section 15.215(c)
Guide:	ANSI C63.4
Description:	The 20 dB bandwidth is measured at the points when the spectral density of the signal is 20 dB down from the inband spectral density of the modulated signal, with the transmitter modulated by a representative signal. Spectral density (power per unit bandwidth) is measured with a spectrum analyzer with resolution bandwidth set to 300 Hz or alternatively equal to approximately 1.0% of the emission bandwidth. The video bandwidth shall be at least three times greater than the resolution bandwidth.
Measurement procedure:	Bandwidth Measurements (6.1)

Comment:	
Date of test:	7th June 2005
Test site:	Fully anechoic room, cabin no. 2



Comment: Eldat 050189: Emission Bandwidth
Date: 7.JUN.2005 17:43:34

Permitted frequency band:	**902 - 928 MHz**	
Emission frequency range: Emission bandwidth:	**180 kHz**	
Carrier frequency stability: Maximum frequency tolerances:	☐ **specified**	☒ **not specified**
Frequency range of the emission: Bandwidth of the emission:		**within permitted frequency band[4]:** ☒ **yes** ☐ **no**

Test Result:	Test passed

[4] If a frequency stability is not specified, it is recommended that the fundamental emission is kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

8.3 Designation of Emissions

Rules and specifications:	CFR 47 Part 2, sections 2.201 and 2.202 IC RSS-Gen Issue 2, sections 3.2(h) and 8
Guide:	ANSI C63.4 / TRC-43

Type of modulation:	Amplitude Modulation

B_n = Necessary Bandwidth	B_n = 2BK
B = Modulation rate	B = 5 kHz
K = Overall numerical factor	K = 1
Calculation:	$B_n = 2 \cdot (5\ kHz) \cdot 1 = 10\ kHz$

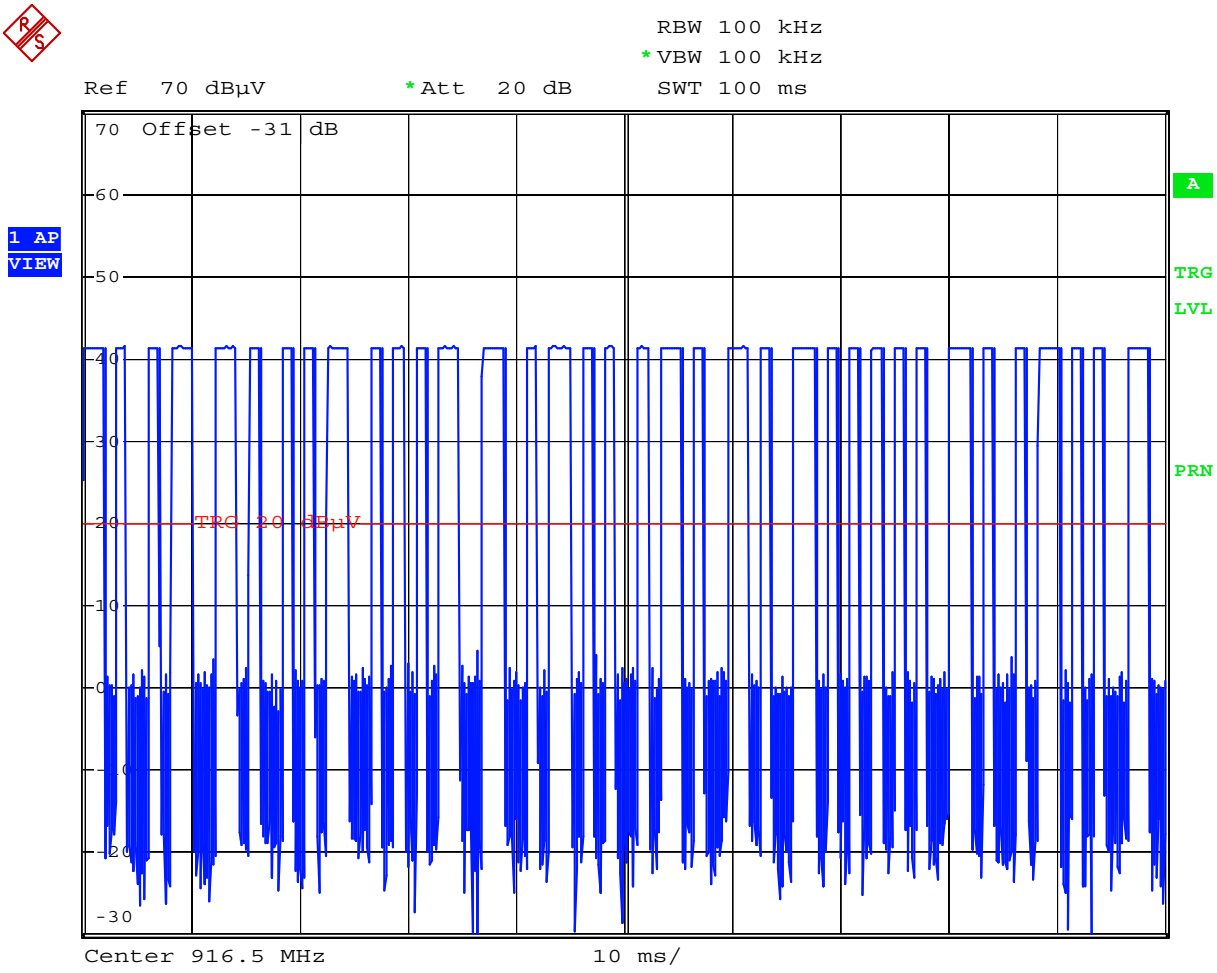
Designation of Emissions:	**10K0A1D**

8.4 Pulse Train Measurement

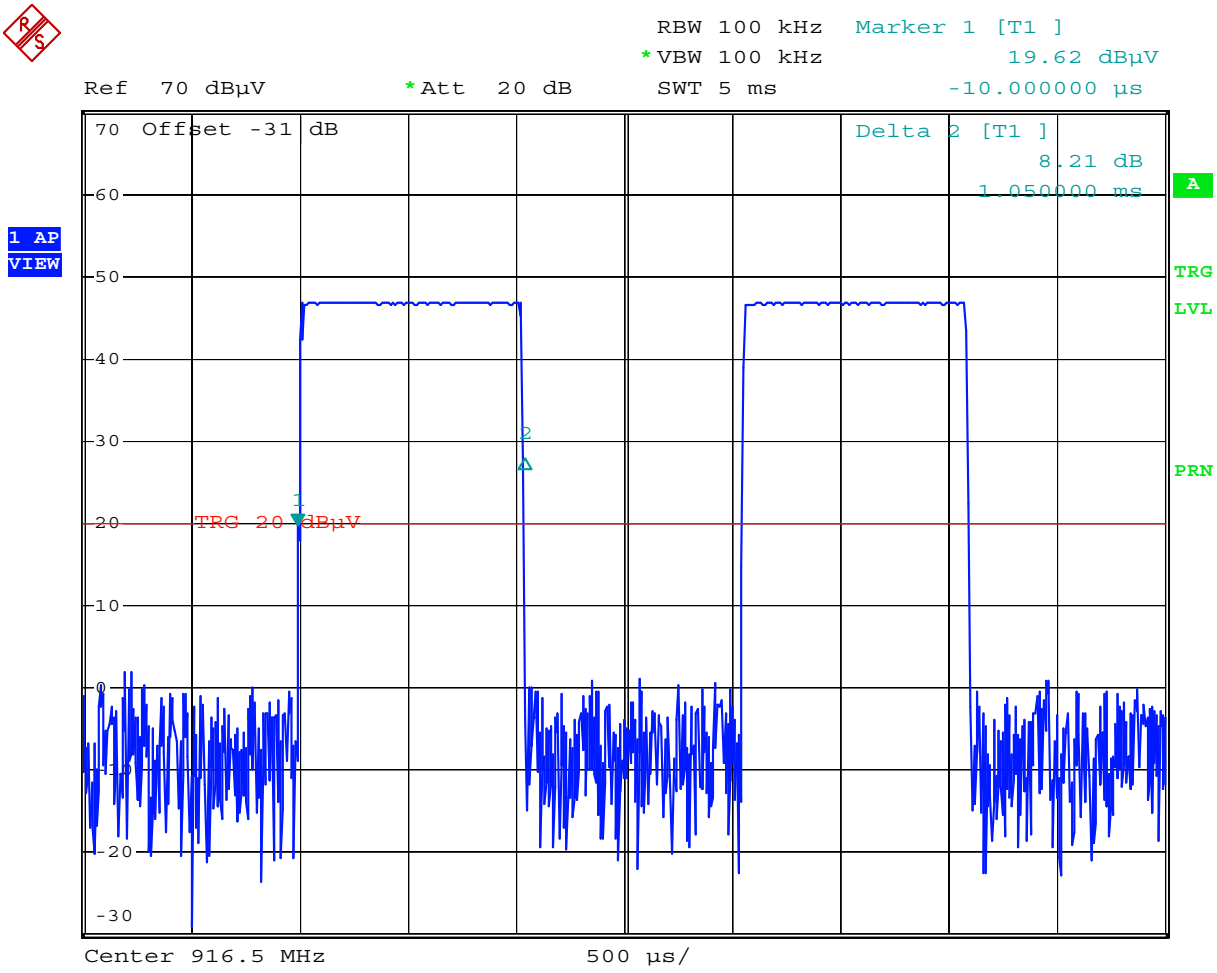
Rules and specifications:	CFR 47 Part 15, section 15.35(c) IC RSS-Gen Issue 2, section 4.5
Guide:	ANSI C63.4
Measurement procedure:	Pulse Train Measurement (6.2)

Comment:	Plots taken as worst case of all four buttons.
Date of test:	7th June 2005
Test site:	Fully anechoic room, cabin no. 2

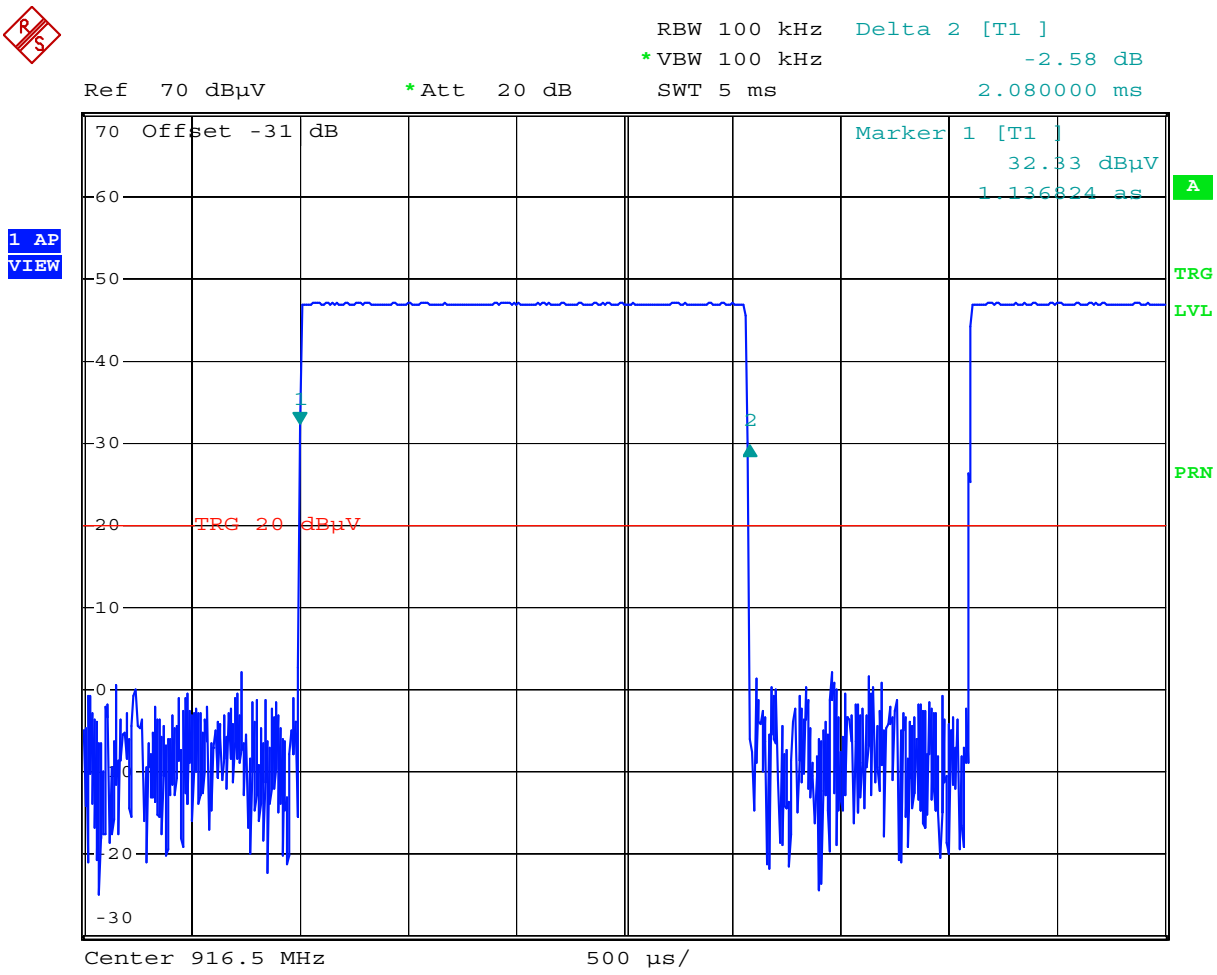
Total Pulse Train:



Comment: Eldat 050189: Duty Cycle Correction
Date: 7.JUN.2005 17:48:11



Comment: Eldat 050189: Duty Cycle Correction
Date: 7.JUN.2005 17:51:50



Comment: Eldat 050189: Duty Cycle Correction
Date: 7.JUN.2005 17:51:25

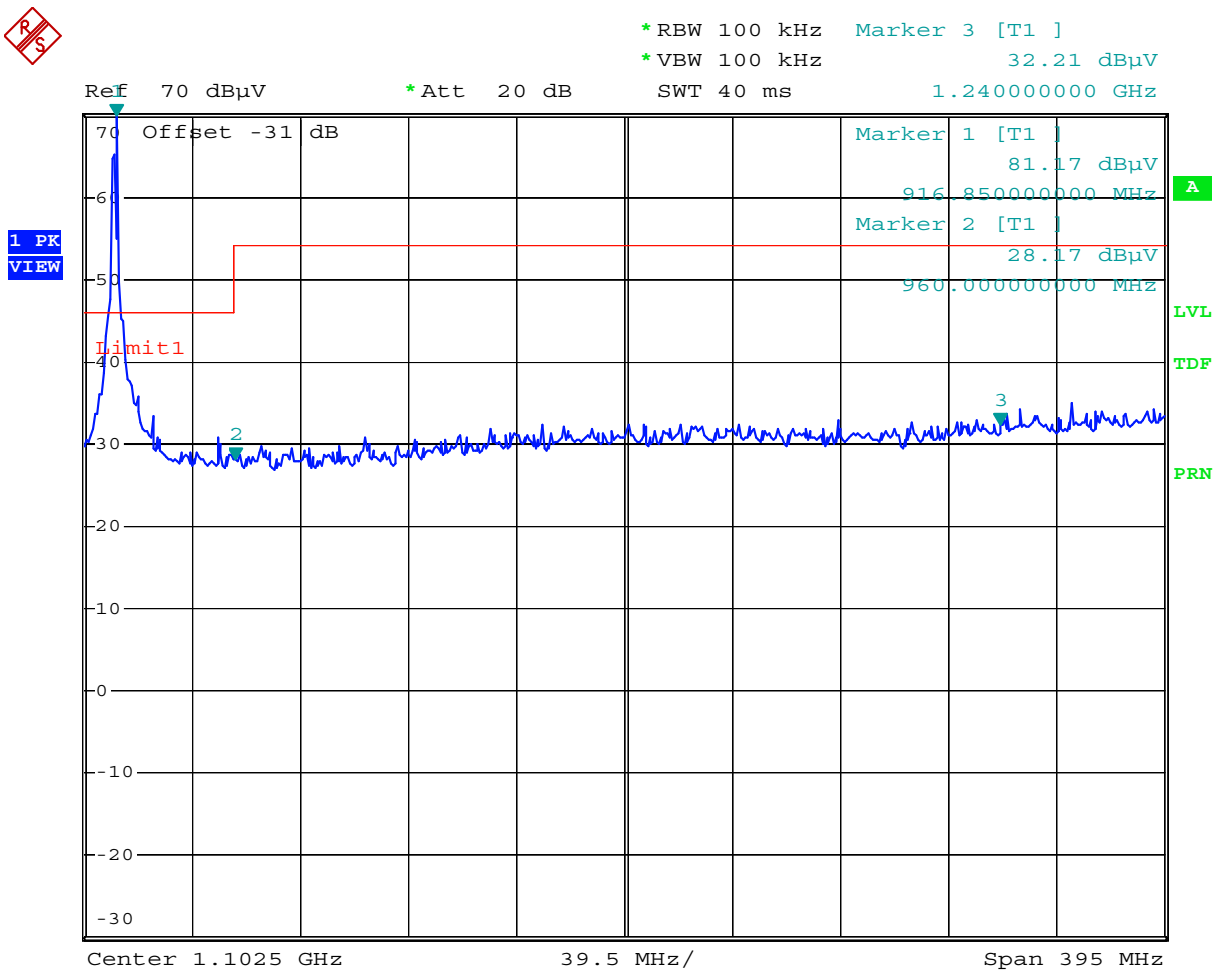
Calculation of pulse train correction:

TX-On-Time (worst case):	T_{on}	=	51.19 ms
Pulse Train Time:	T_{pt}	=	100 ms
Period Time:	T_{period}	=	100 ms
Pulse Train Correction:	C_{pt}	=	$20 \cdot \mathrm{Log}(T_{on} / T_{period})$ dB
		=	**-5.8 dB**

8.5 Restricted Bands of Operation

Rules and specifications:	CFR 47 Part 15, section 15.205(a) IC RSS-210 Issue 7, section 2.2(a)
Guide:	ANSI C63.4
Limit:	Only spurious emissions are permitted in any of the frequency bands listed in CFR 47 Part 15, section 15.205(a) or IC RSS-210 Issue 7, section 2.2(a)..
Measurement procedure:	Radiated Emission in Fully or Semi Anechoic Room (6.4)

Comment:	
Date of test:	7th June 2005
Test site:	Fully anechoic room, cabin no. 2
Test distance:	3 meters



Comment: Eldat 050189: Restricted Bands of Operation
Date: 7.JUN.2005 17:33:19

Test Result:	Test passed

8.6 Radiated Emission Measurement 9 kHz to 30 MHz

Rules and specifications:	CFR 47 Part 15, sections 15.215(b) and 15.249(d) IC RSS-210 Issue 7, section A2.9(b)			
Guide:	ANSI C63.4			
Limit:	Frequency of Emission (MHz)	Field Strength (µV/m)	Field Strength (dBµV/m)	Measurement Distance d (meters)
	0.009 - 0.490	2400/F(kHz)	67.6 - 20 · log(F(kHz))	300
	0.490 - 1.705	24000/F(kHz)	87.6 - 20 · log(F(kHz))	30
	1.705 - 30.000	30	29.5	30
	Additionally, the level of any unwanted emissions shall not exceed the level of the fundamental emission.			
Measurement procedure:	Radiated Emission Measurement 9 kHz to 30 MHz (6.3)			

Test Result:	Test passed (No emissions above noise level detected)

8.7 Radiated Emission Measurement 30 MHz to 10 GHz

Rules and specifications:	CFR 47 Part 15, sections 15.215(b) and 15.249 IC RSS-210 Issue 7, section A2.9		
Guide:	ANSI C63.4		
Limit:	Frequency of Emission (MHz)	Field Strength (µV/m)	Field Strength (dBµV/m)
	30 - 88	100	40.0
	88 - 216	150	43.5
	216 - 960	200	46.0
	Above 960	500	54.0
	Additionally, the level of any unwanted emissions shall not exceed the level of the fundamental emission.		
Measurement procedures:	Radiated Emission in Fully or Semi Anechoic Room (6.4) Radiated Emission at Open Field Test Site (6.5)		

Comment:	Discontinious disturbances at transmitter switching excluded.
Date of test:	7th June 2005
Test site:	Frequencies ≤ 1 GHz: Open field test site Frequencies > 1 GHz: Fully anechoic room, cabin no. 2
Test distance:	Frequencies ≤ 8.2 GHz: 3 meters Frequencies > 8.2 GHz: 1 meters

Test Result:	Test passed

Frequency (MHz)	Antenna Polarization	Detector	Receiver Reading (dBµV)	Correction Factor (dB/m)	Pulse Train Correction (dB)	Final Value (dBµV/m)	Limit (dBµV/m)	Margin (dB)
916.500	horizontal	Quasi-Peak	62.2	26.8		89.0	94.0	**5.0**
1025.600	horizontal	Peak	15.9	25.4	-5.8	35.5	54.0	18.5
1096.000	vertical	Peak	16.5	26.4	-5.8	37.0	54.0	17.0
1832.000	horizontal	Peak	18.9	31.3	-5.8	44.3	54.0	9.7
1834.000	vertical	Peak	18.5	31.2	-5.8	44.0	54.0	10.0
2751.200	horizontal	Peak	15.5	28.8	-5.8	38.5	54.0	15.5
3064.400	vertical	Peak	12.2	29.1	-5.8	35.5	54.0	18.6
3666.500	horizontal	Peak	19.7	29.8	-5.8	43.6	54.0	10.4
4584.600	vertical	Peak	17.0	34.1	-5.8	45.2	54.0	8.8
5500.400	horizontal	Peak	13.6	34.9	-5.8	42.8	54.0	11.2
5504.200	vertical	Peak	10.7	34.9	-5.8	39.9	54.0	14.2
6414.000	vertical	Peak	15.1	38.3	-5.8	47.6	54.0	6.5
7330.500	horizontal	Peak	9.8	39.1	-5.8	43.1	54.0	10.9
7335.200	vertical	Peak	14.8	39.1	-5.8	48.1	54.0	5.9
8246.800	horizontal	Peak	20.0	43.2	-5.8	57.4	63.5	6.2
9164.800	vertical	Peak	11.0	43.8	-5.8	49.1	63.5	14.4

Sample calculation of final values:

Final Value (dBµV/m) = Reading Value (dBµV) + Correction Factor (dB/m) + Pulse Train Correction (dB)

8.8 Exposure of Humans to RF Fields

Rules and specifications:	IC RSS-Gen Issue 2, section 5.5
Guide:	IC RSS-102 Issue 2, section 2.5

Exposure of Humans to RF Fields	Applicable	Declared by applicant	Measured	Exemption
The transmitter is for				
☐ fixed use ☐ mobile use ☒ portable use		☒		☐
The antenna is				
☐ detachable				
The output power (TP in watts) is measured at the antenna connector: TP = **..... W**			☐	
Numerical gain of the antenna: G = **.....**		☐		
☒ not detachable				
A field strength measurement is used to determine the output power (TP in watts) given by[5]: $TP = \frac{(FS \cdot D)^2}{30 \cdot G} \Rightarrow TP$ = **238.2 µW**				
with:				
Field strength[6] in V/m: FS = **28.18 mV/m**			☒	
Distance between the two antennas in m: D = **3 m**			☒	
Numerical gain of the antenna: G = **1**		☒		
SAR and RF evaluation				
$EIRP = G \cdot TP \Rightarrow EIRP$ = **238.2 µW**				
☐ Transmitter is operating at frequencies below 1.0 GHz with an output power TP equal to or less than 200 milliwatts (mW).				☒
☐ Transmitter is operating at frequencies between 1.0 and 2.2 GHz with an output power TP equal to or less than 100 milliwatts (mW).				☐
☐ Transmitter is for mobile use and operating frequency is below 1.5 GHz with effective radiated power (ERP) of 1.5 watts or less (i.e. EIRP of 2.5 watts or less).				☐
☐ Transmitter is for mobile use and operating frequency is above 1.5 GHz with ERP of 3 watts or less (i.e. EIRP of 5 watts or less).				☐
☐ SAR and/or RF evaluation is documented in test report no.				

[5] The conversion formula is valid only for properly matched antennas. In other cases the transmitter output power may have to be measured by a terminated measurement when applying the exemption clauses.
[6] If an open area test site is used for field strength measurement, the effect due to the metal ground reflecting plane should be subtracted from the maximum field strength value in order to reference it to free space, before calculating TP.

9 Referenced Regulations

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

☒	CFR 47 Part 2	Code of Federal Regulations Part 2 (Frequency allocation and radio treaty matters; General rules and regulations) of the Federal Communication Commission (FCC)	October 1, 2008
☒	CFR 47 Part 15	Code of Federal Regulations Part 15 (Radio Frequency Devices) of the Federal Communication Commission (FCC)	October 1, 2008
☒	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 to 40 GHz	December 11, 2003 (published on January 30, 2004)
☒	RSS-Gen	Radio Standards Specification RSS-Gen Issue 2 containing General Requirements and Information for the Certification of Radiocommunication Equimpment, published by Industry Canada	June 2007
☒	RSS-210	Radio Standards Specification RSS-210 Issue 7 for Low Power Licence-Exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment, published by Industry Canada	June 2007
☐	RSS-310	Radio Standards Specification RSS-310 Issue 1 for Low Power Licence-Ecempt Radiocommunicaton Devices (All Frequency Bands): Category II Equipment, published by Industry Canada	September 2005
☒	RSS-102	Radio Standards Specification RSS-102 Issue 2: Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)	November 2005
☐	ICES-003	Interference-Causing Equipment Standard ICES-003 Issue 4 for Digital Apparatus, published by Industry Canada	February 7, 2004
☒	CISPR 22	Third Edition of the International Special Committee on Radio Interference (CISPR), Pub. 22, “Information Technology Equipment – Radio Disturbance Characteristics – Limits and Methods of Measurement”	1997
☐	CAN/CSA-CEI/IEC CISPR 22	Limits and Methods of Measurement of Radio Disturbance Characteristics of Information Technology Equipment	2002
☒	TRC-43	Notes Regarding Designation of Emission (Including Necessary Bandwidth and Classification), Class of Station and Nature of Service, published by Industry Canada	October 9, 1982

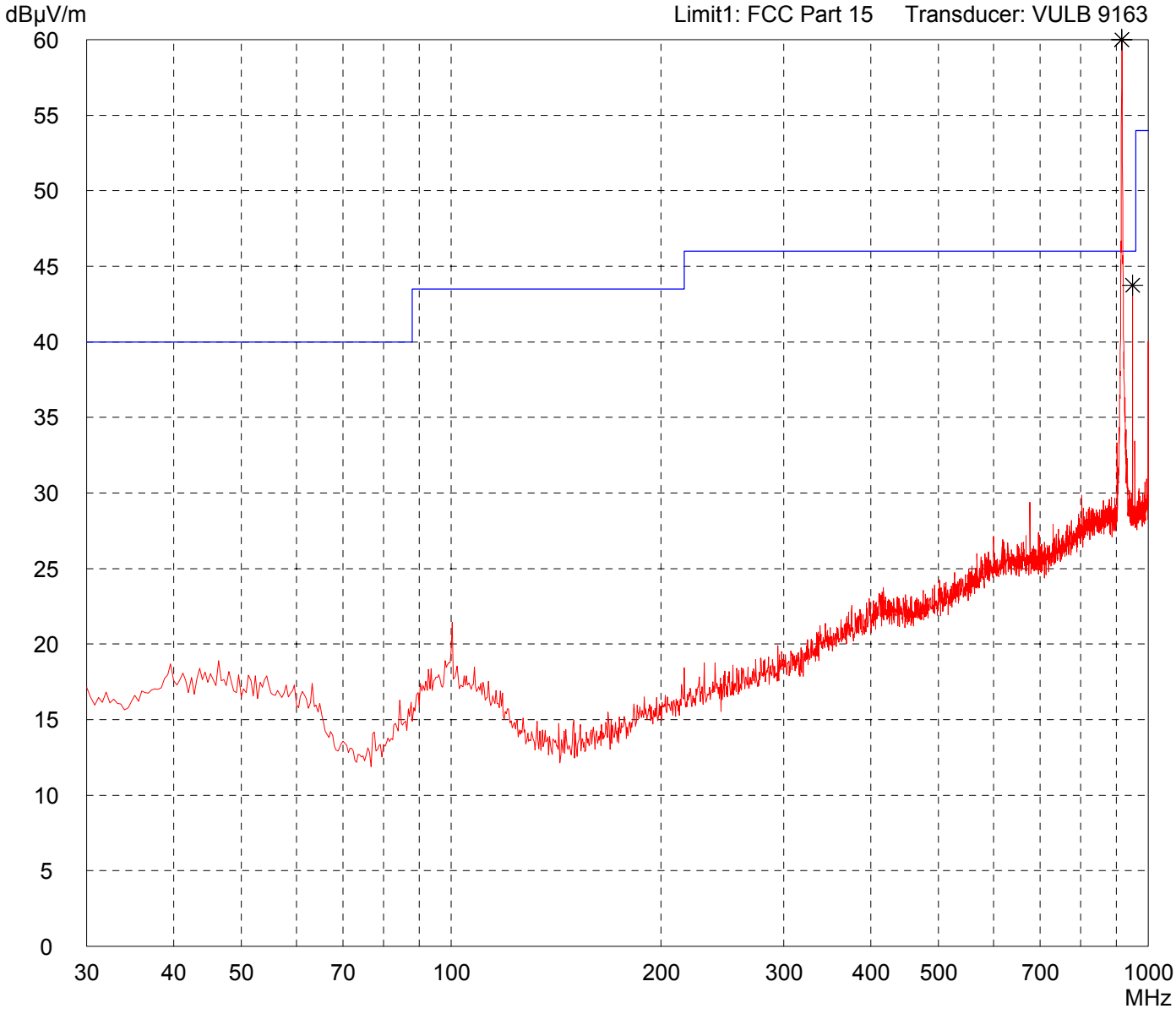
10 Charts taken during testing

Revision	*Datum*	*Autor*	*Änderungen*
000	06.06.2005	M. Steindl	First Edition
001	31.08.2009	C. Jäger	Edition 2: Update required for FCC-/IC-Certification: Referenced Regulations Model Designation
002	19.10.2009	M. Steindl	Edition 3: Modification of Duty-Cycle correction for FCC-/IC-Certification
003	04.11.2009	M. Steindl	Edition 4: Correction of test distances, Model variants enclosed

Radiated Emission Test 30 MHz - 1 GHz
acc. to FCC Part 15 (Fully Anechoic Chamber)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT on left side (P1)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Horizontal Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

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

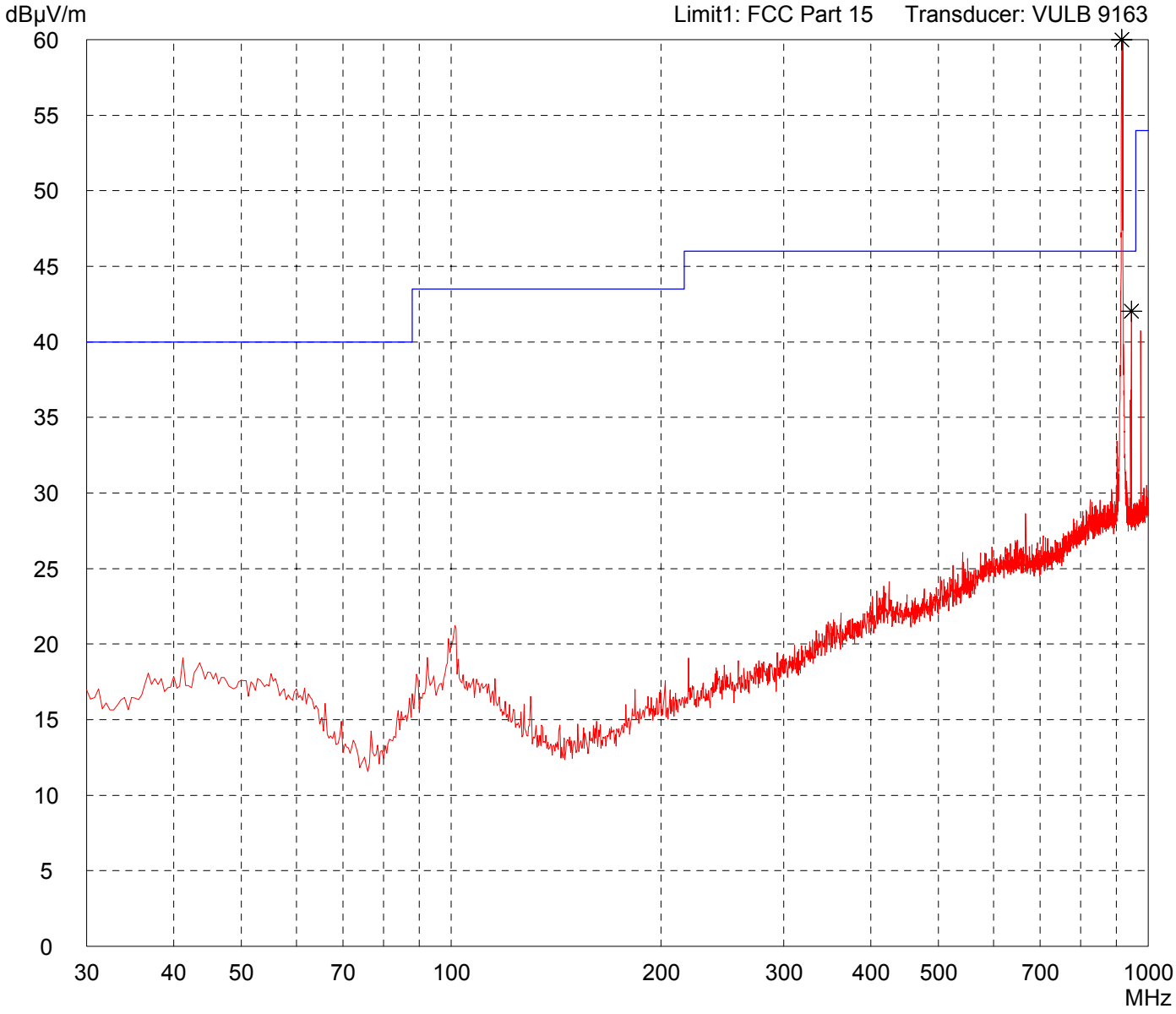


Result: Prescan	Project file: 50530-50189 — Page of Pages

Radiated Emission Test 30 MHz - 1 GHz
acc. to FCC Part 15 (Fully Anechoic Chamber)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT on left side (P1)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Vertical Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

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

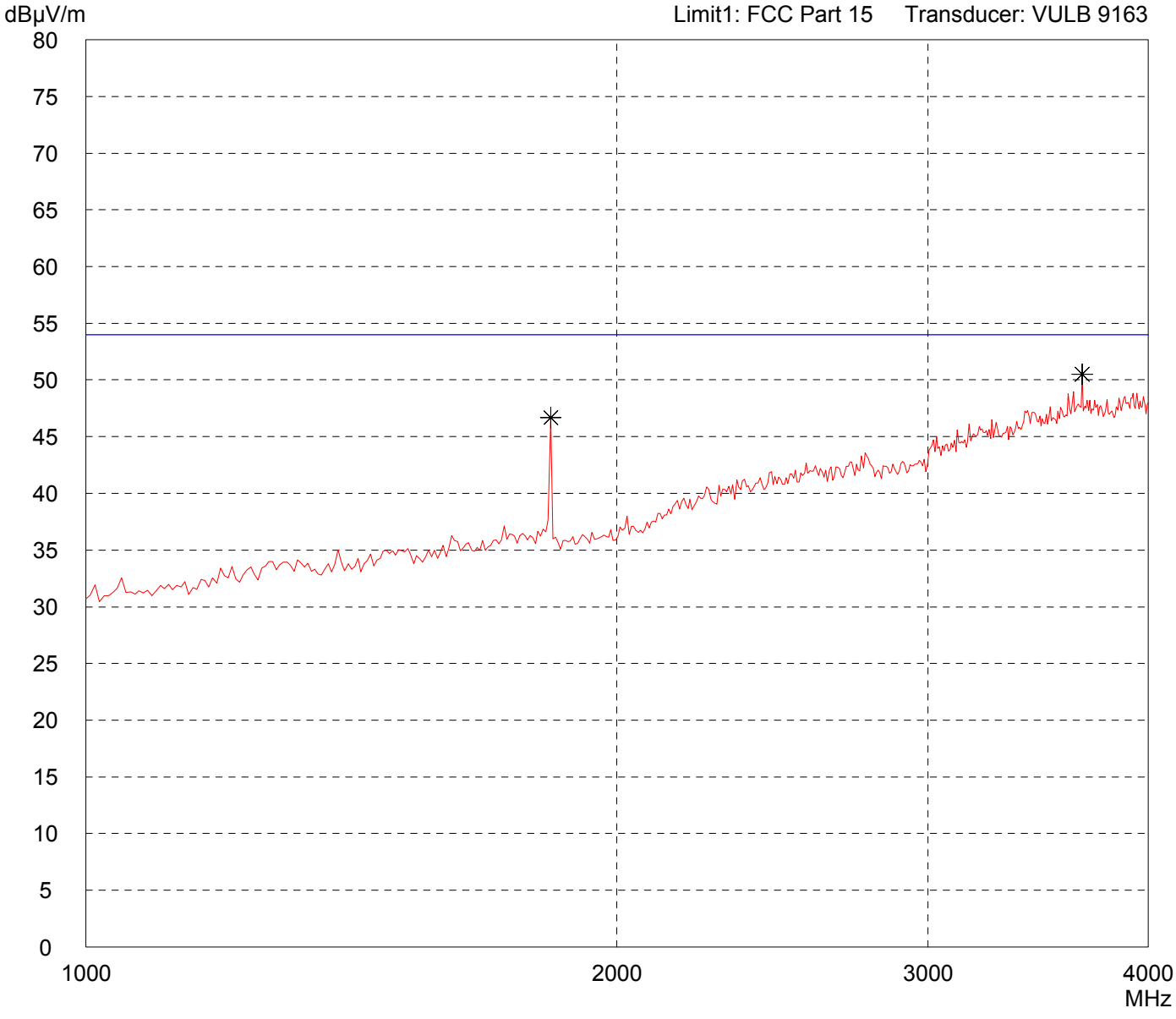


Result: Prescan	Project file: 50530-50189 — Page of Pages

Radiated Emission Test 1 GHz - 4 GHz
acc. to FCC Part 15 (Fully Anechoic Chamber)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT on left side (P1)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Horizontal Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

Detector: Peak	List of values: Selected by hand

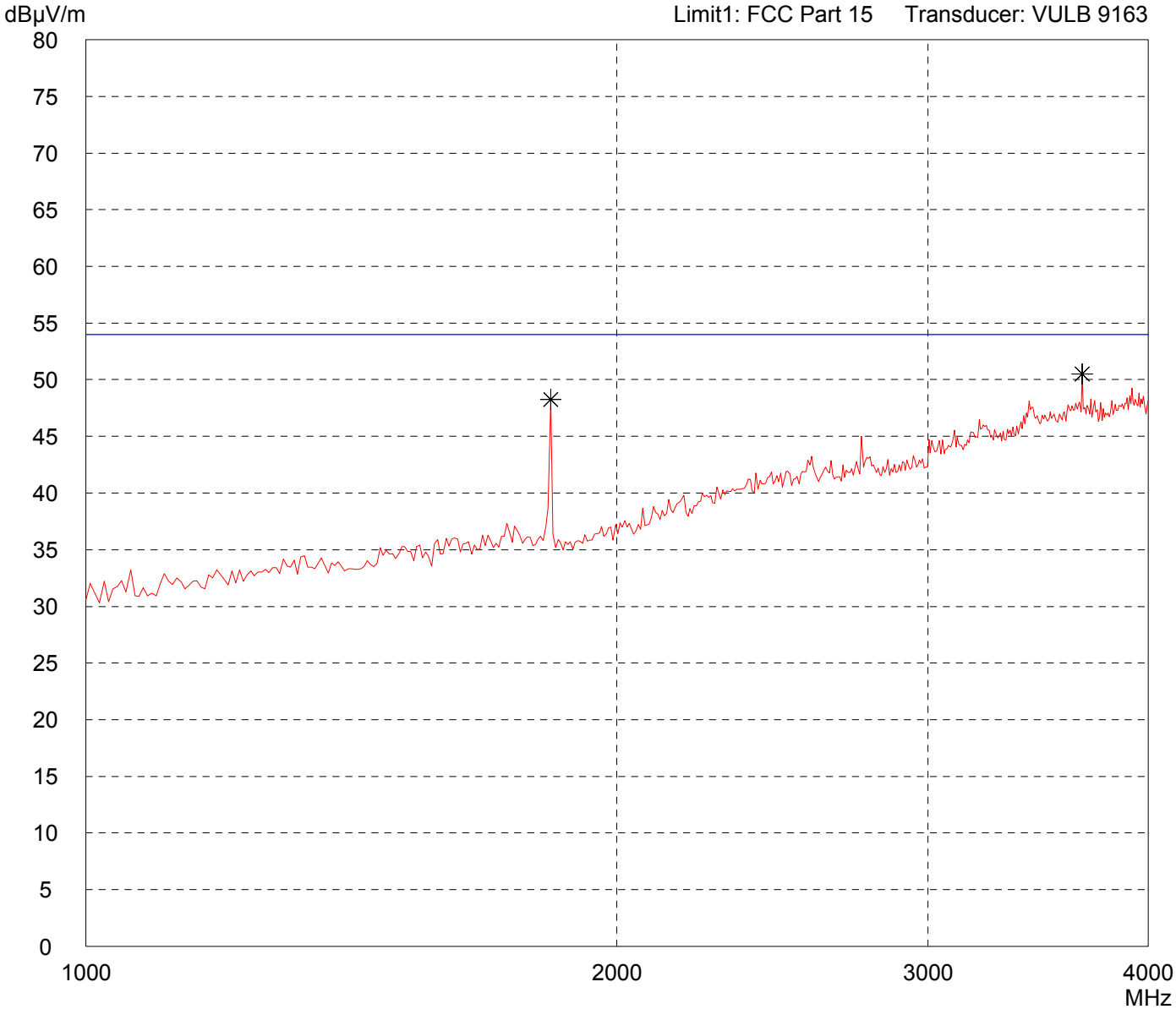


Result: Prescan	Project file: 50530-50189 Page of Pages

Radiated Emission Test 1 GHz - 4 GHz
acc. to FCC Part 15 (Fully Anechoic Chamber)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT on left side (P1)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Vertical Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

Detector: Peak	List of values: Selected by hand



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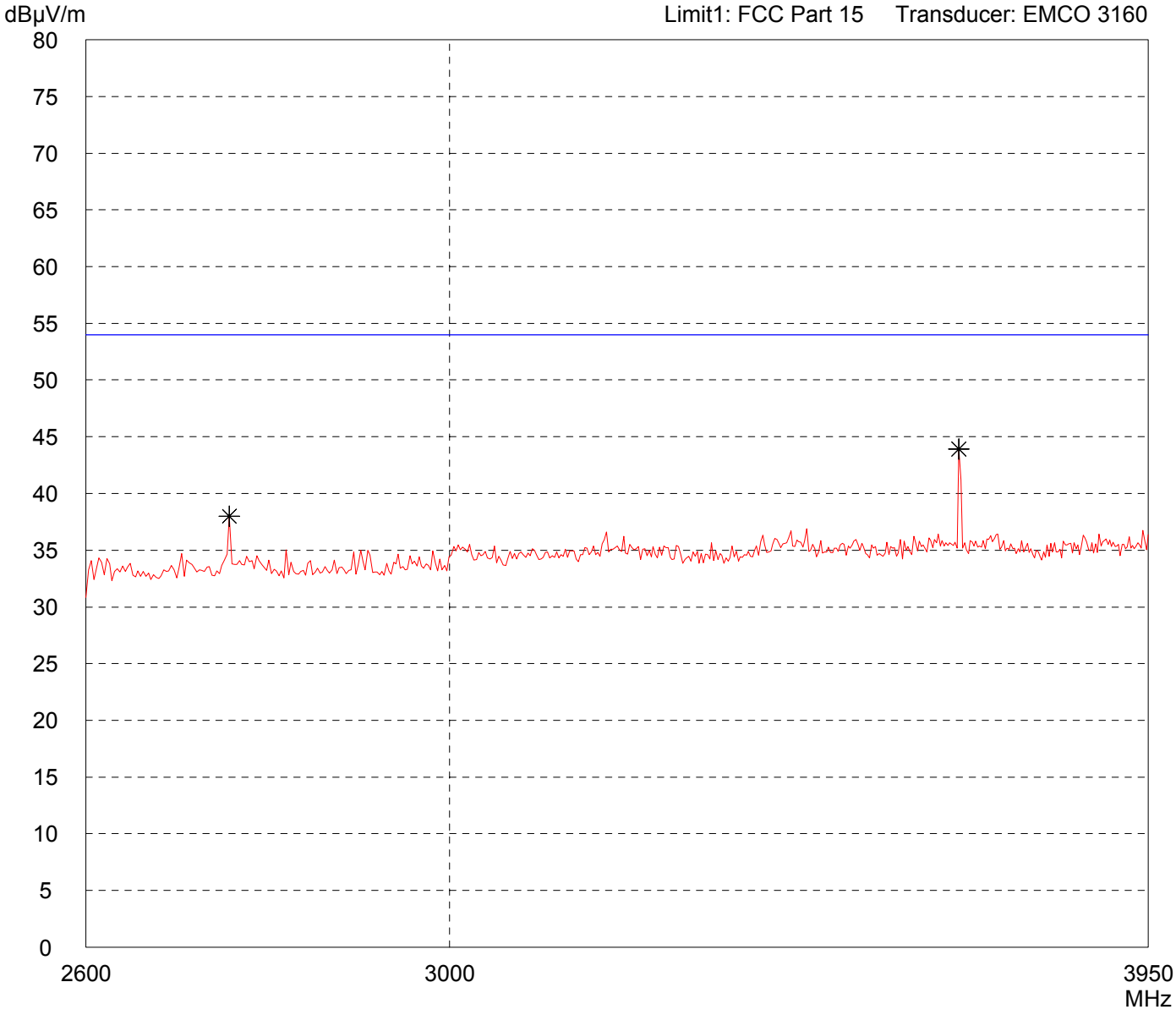
Radiated Emission Test 2.6 GHz - 3.95 GHz
acc. to FCC Part 15 (EMCO 3160)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT on left side (P1)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Horizontal Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

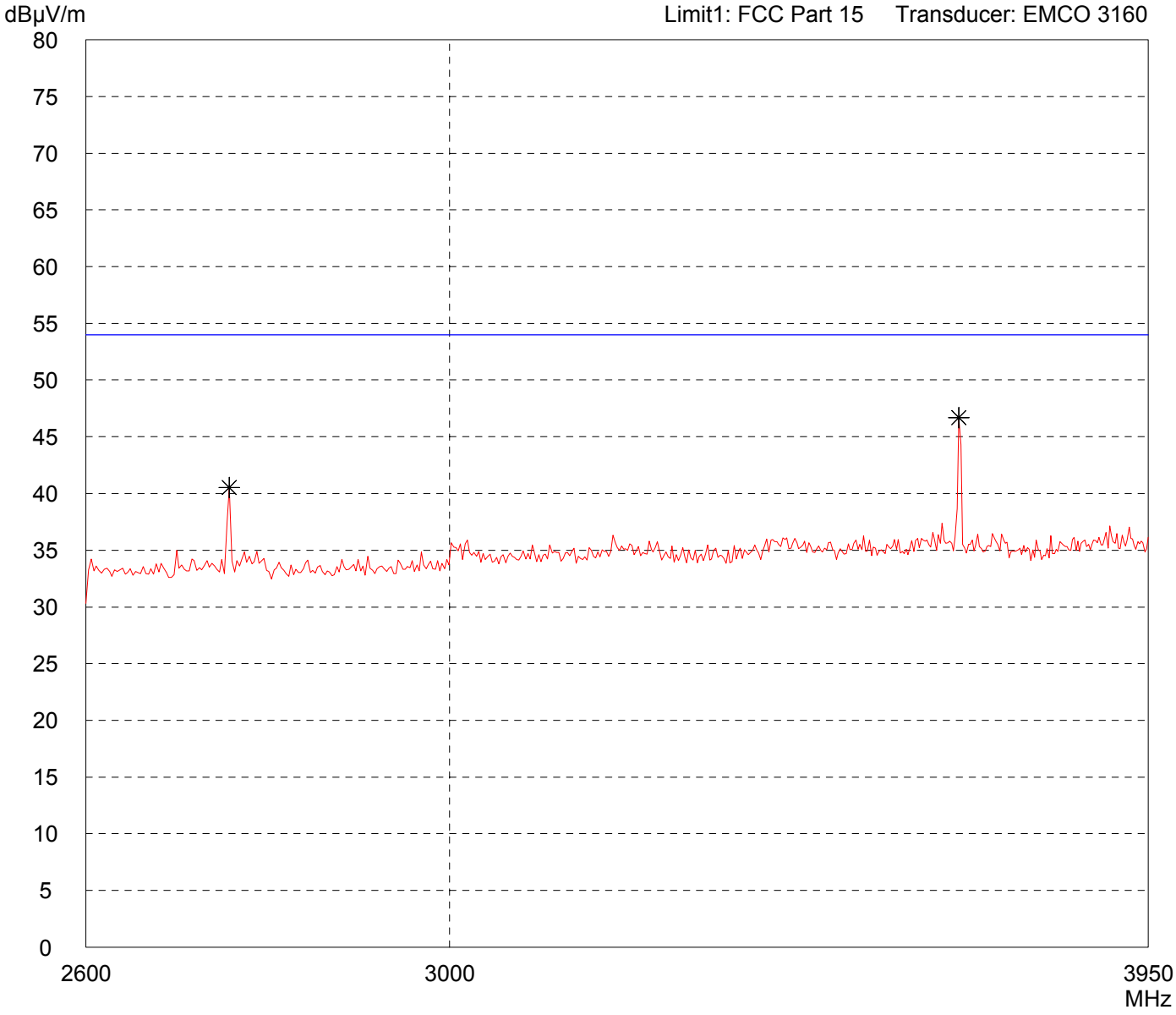
Detector: Peak	List of values: Selected by hand



Result: Prescan	Project file: 50530-50189 Page of Pages

Radiated Emission Test 2.6 GHz - 3.95 GHz
acc. to FCC Part 15 (EMCO 3160)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT on left side (P1)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Vertical Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	
Detector: Peak	List of values: Selected by hand

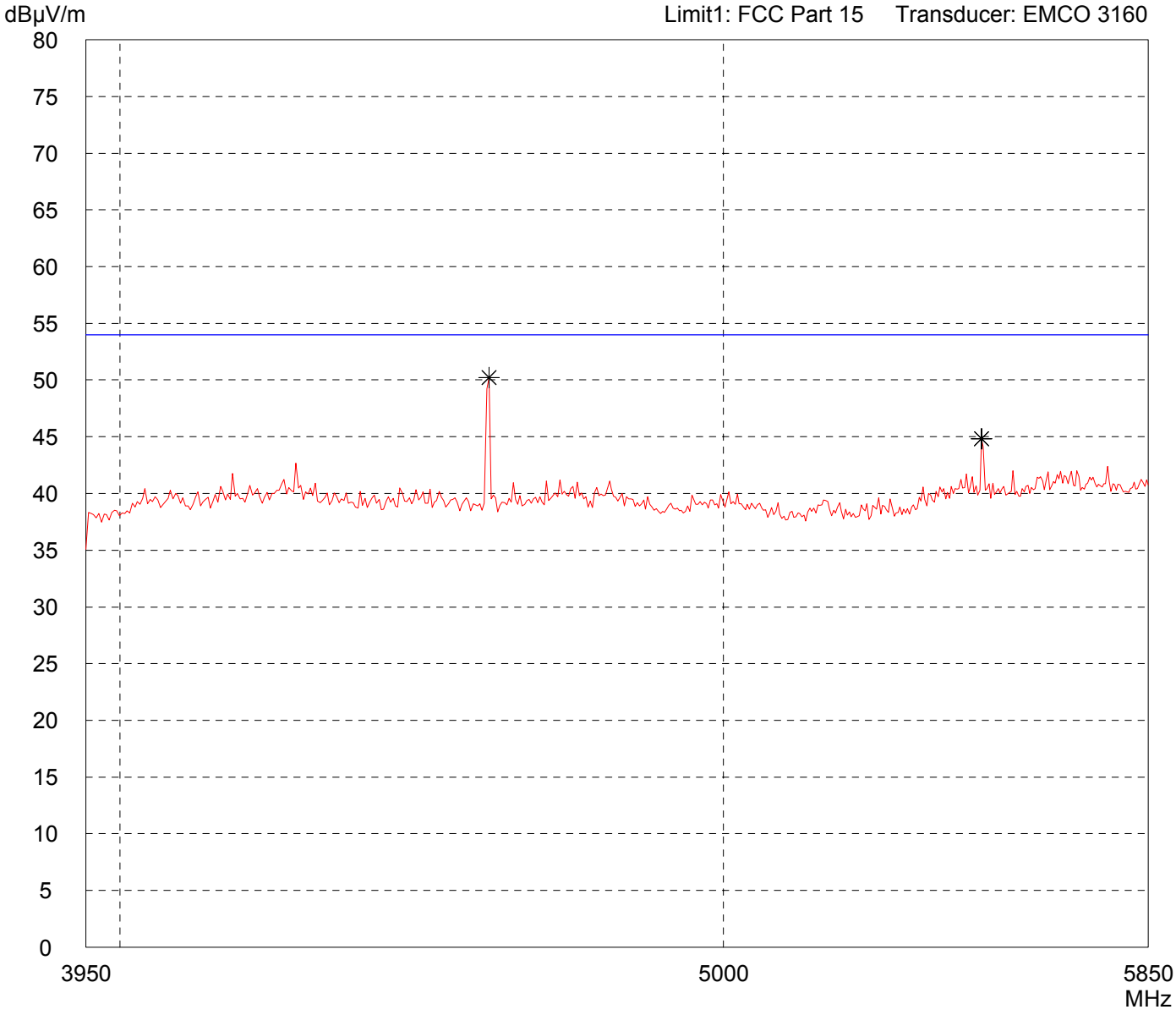


Result: Prescan	Project file: 50530-50189 Page of Pages

Radiated Emission Test 3.95 GHz - 5.85 GHz
acc. to FCC Part 15 (EMCO 3160)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT on left side (P1)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Horizontal Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

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

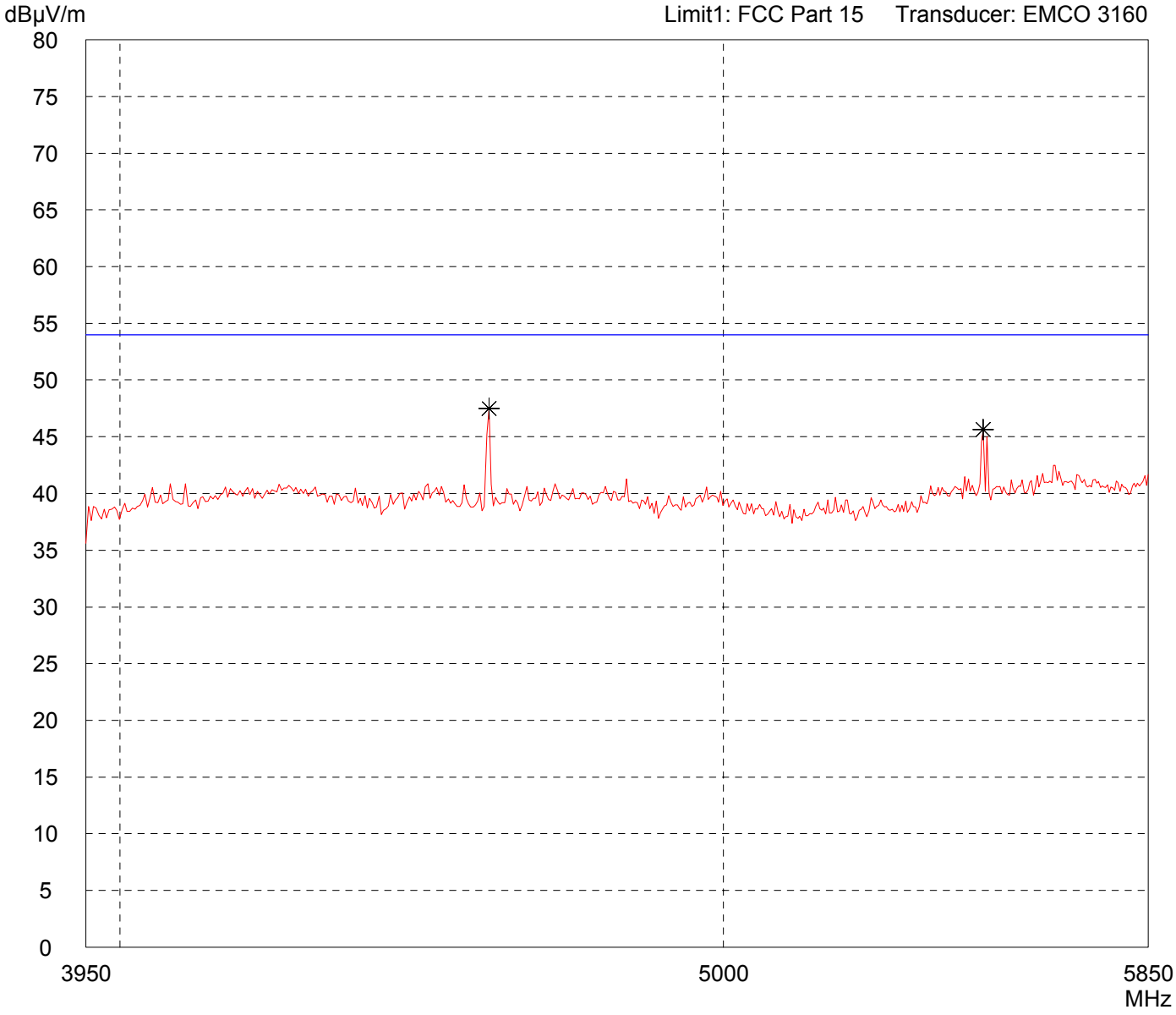


Result: Prescan	Project file: 50530-50189 — Page of Pages

Radiated Emission Test 3.95 GHz - 5.85 GHz
acc. to FCC Part 15 (EMCO 3160)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT on left side (P1)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Vertical Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

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

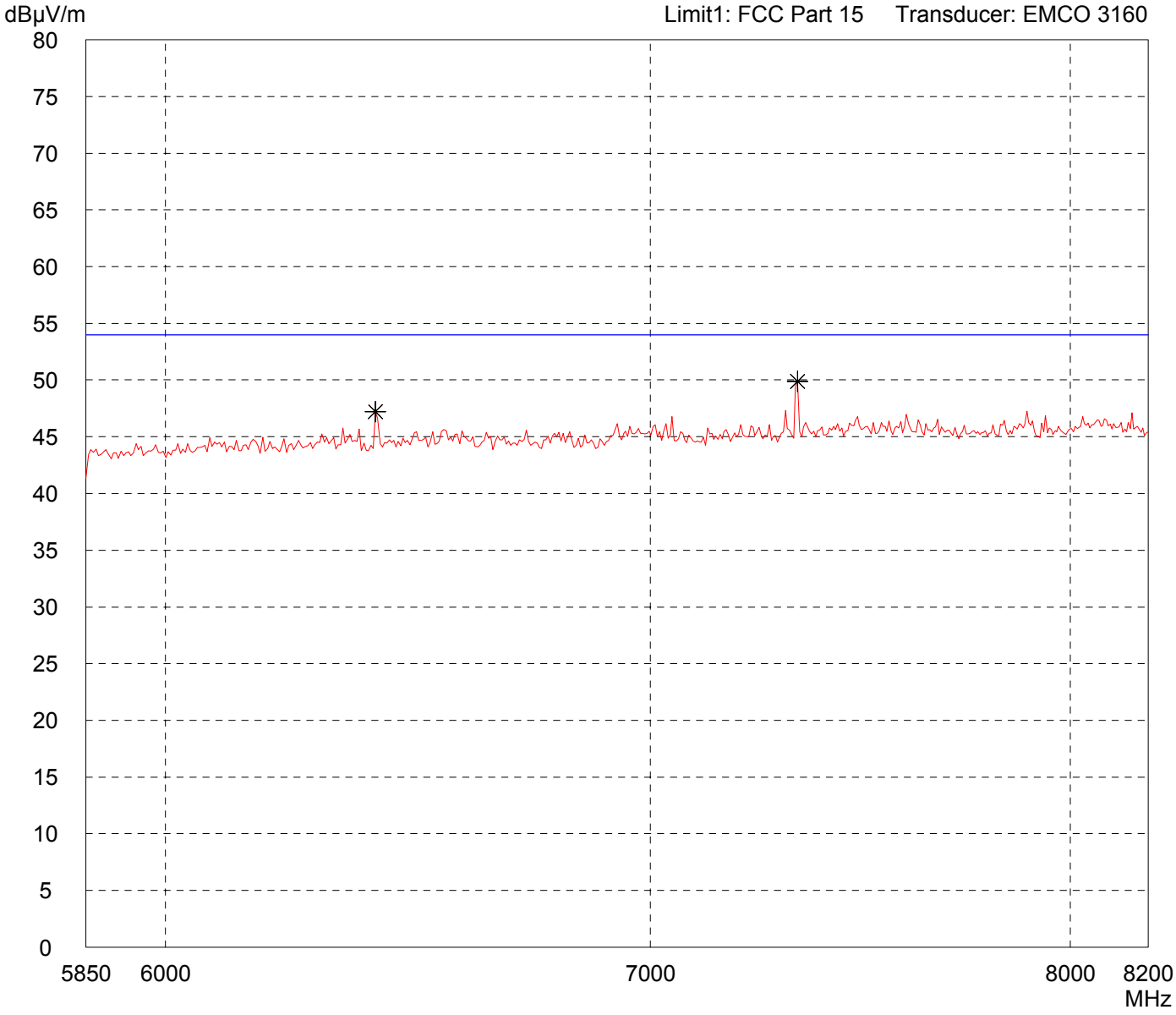


Result: Prescan	Project file: 50530-50189 — Page of Pages

Radiated Emission Test 5.85 GHz - 8.2 GHz
acc. to FCC Part 15 (EMCO 3160)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT on left side (P1)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Horizontal Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

Detector: Peak	List of values: Selected by hand

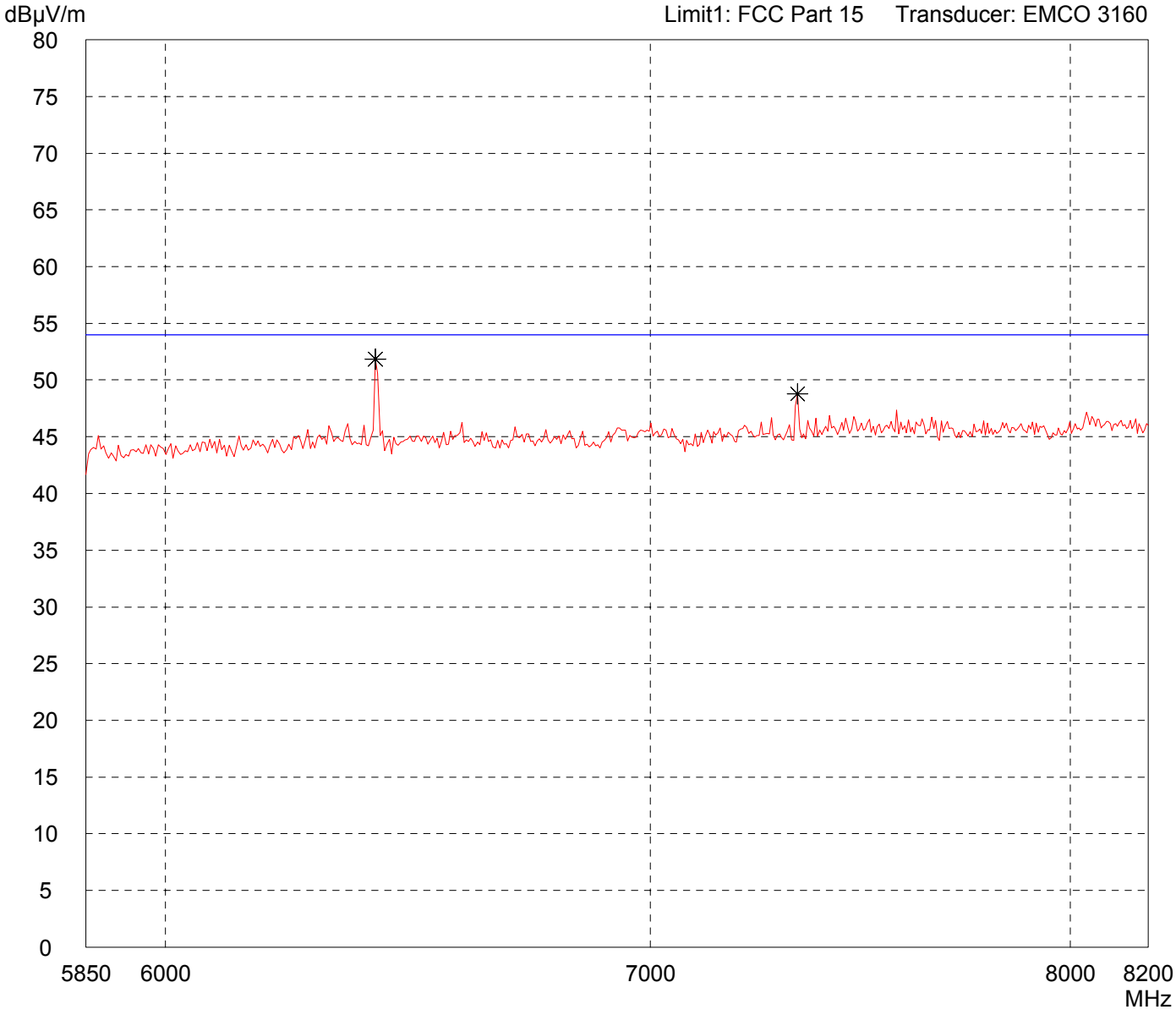


Result: Prescan	Project file: 50530-50189 Page of Pages

Radiated Emission Test 5.85 GHz - 8.2 GHz
acc. to FCC Part 15 (EMCO 3160)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT on left side (P1)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Vertical Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

Detector: Peak	List of values: Selected by hand

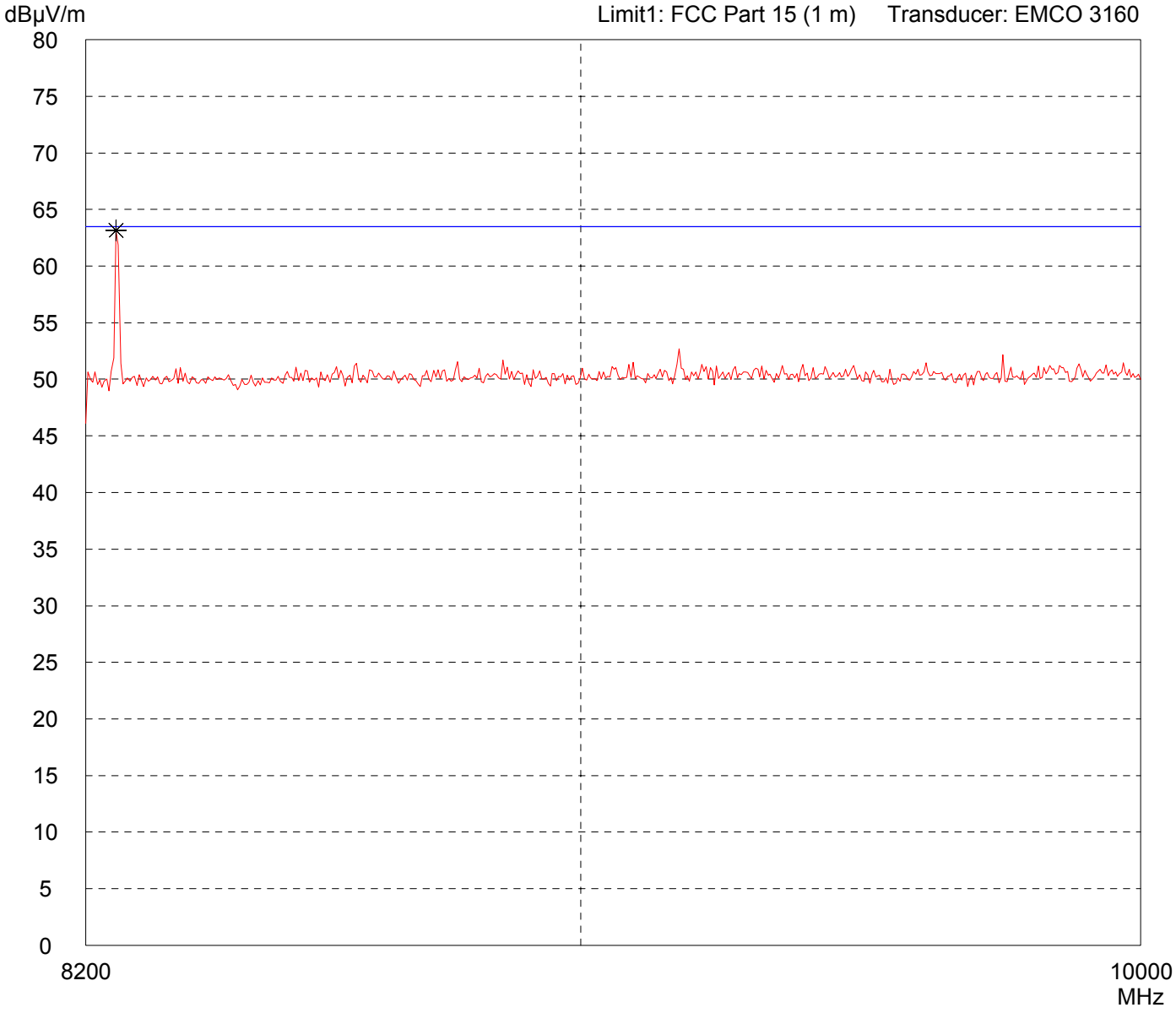


Result: Prescan	Project file: 50530-50189 Page of Pages

Radiated Emission Test 8.2 GHz - 10 GHz
acc. to FCC Part 15 (EMCO 3160)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT on left side (P1)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 1 meter Horizontal Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

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



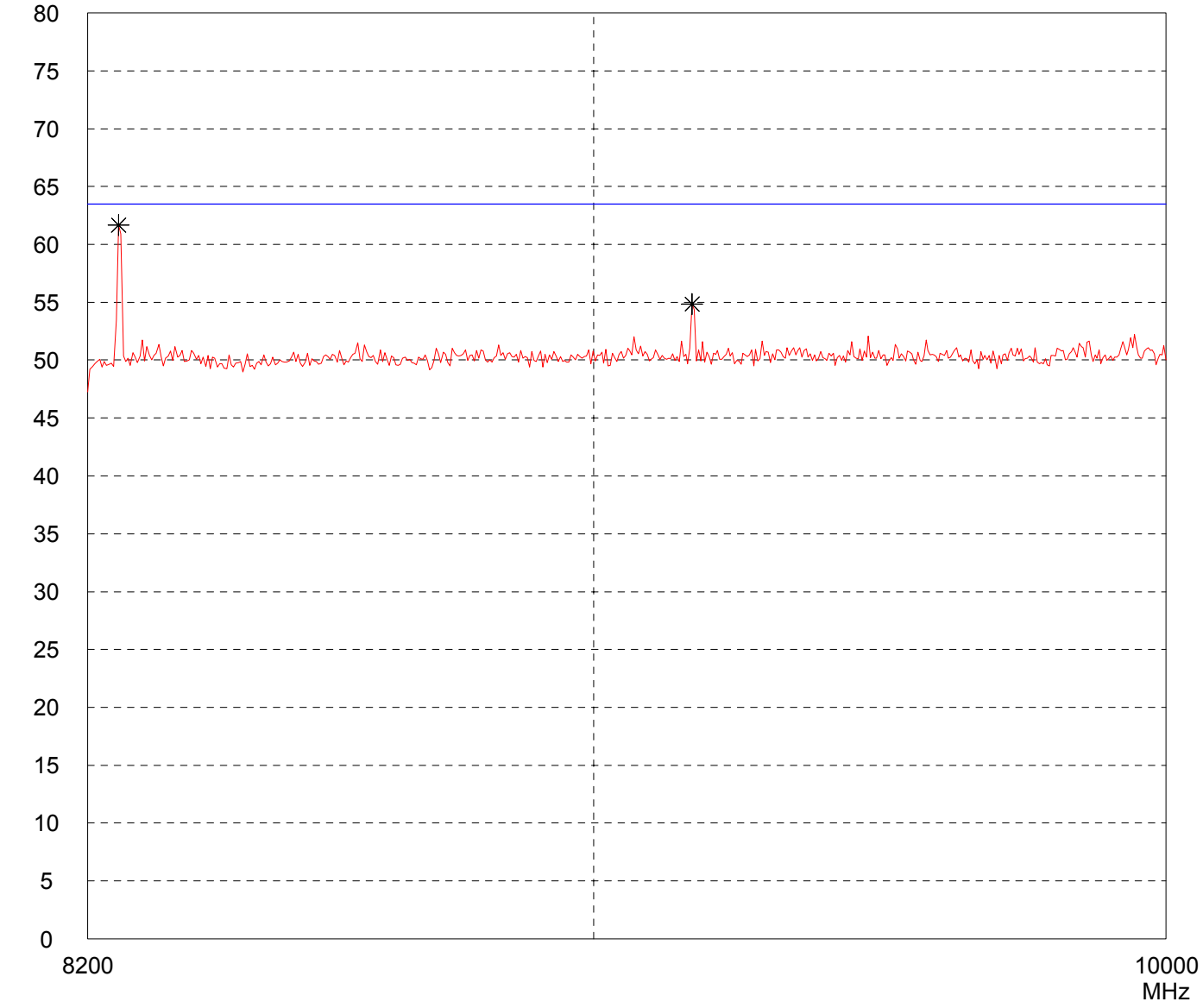
Result: Prescan	Project file: 50530-50189 — Page of Pages

Radiated Emission Test 8.2 GHz - 10 GHz
acc. to FCC Part 15 (EMCO 3160)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT on left side (P1)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 1 meter Vertical Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

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

dBµV/m — Limit1: FCC Part 15 (1 m) — Transducer: EMCO 3160

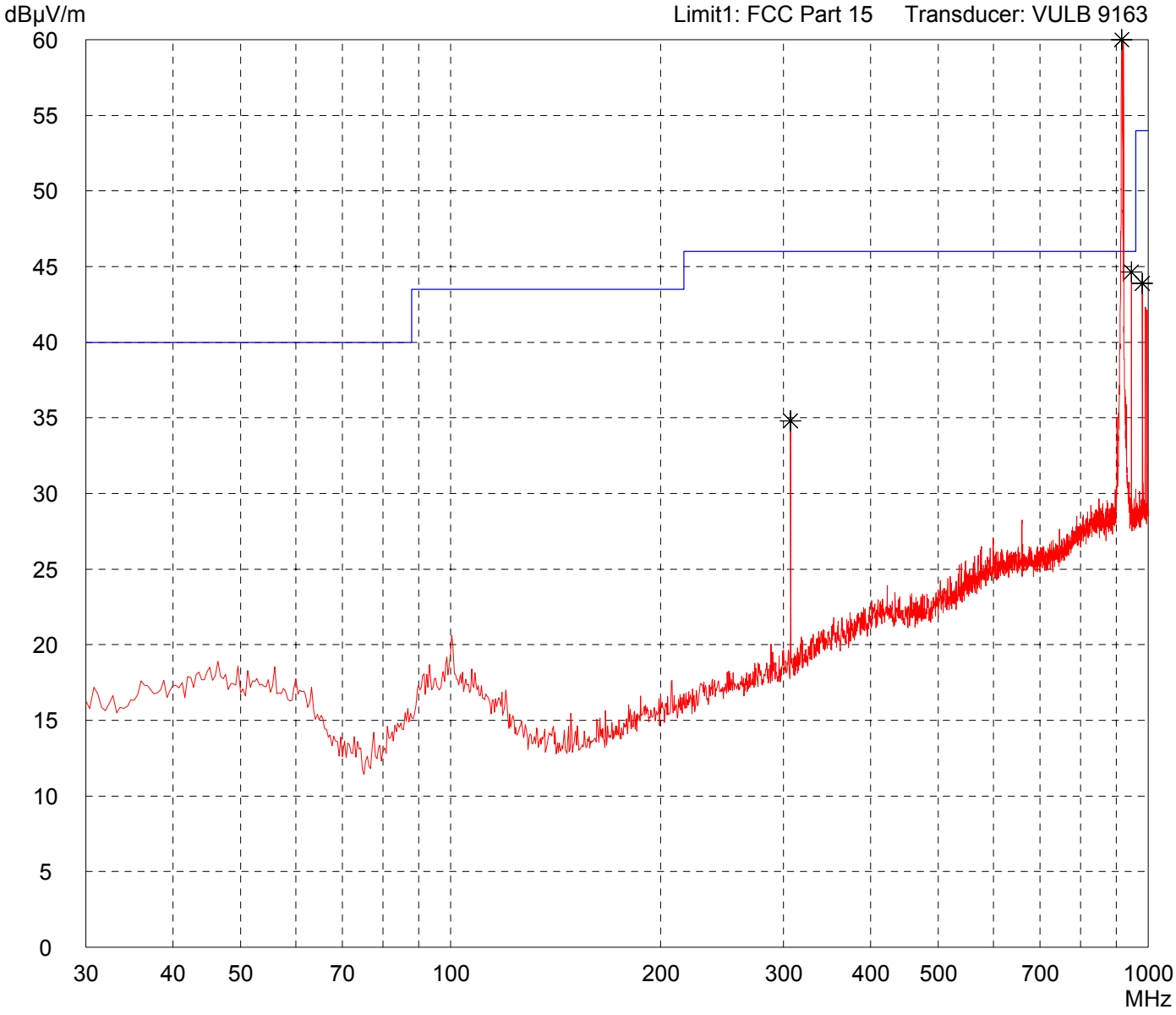


Result: Prescan	Project file: 50530-50189 — Page of Pages

Radiated Emission Test 30 MHz - 1 GHz
acc. to FCC Part 15 (Fully Anechoic Chamber)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT flat on table (P2)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Horizontal Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

Detector: Peak	List of values: Selected by hand

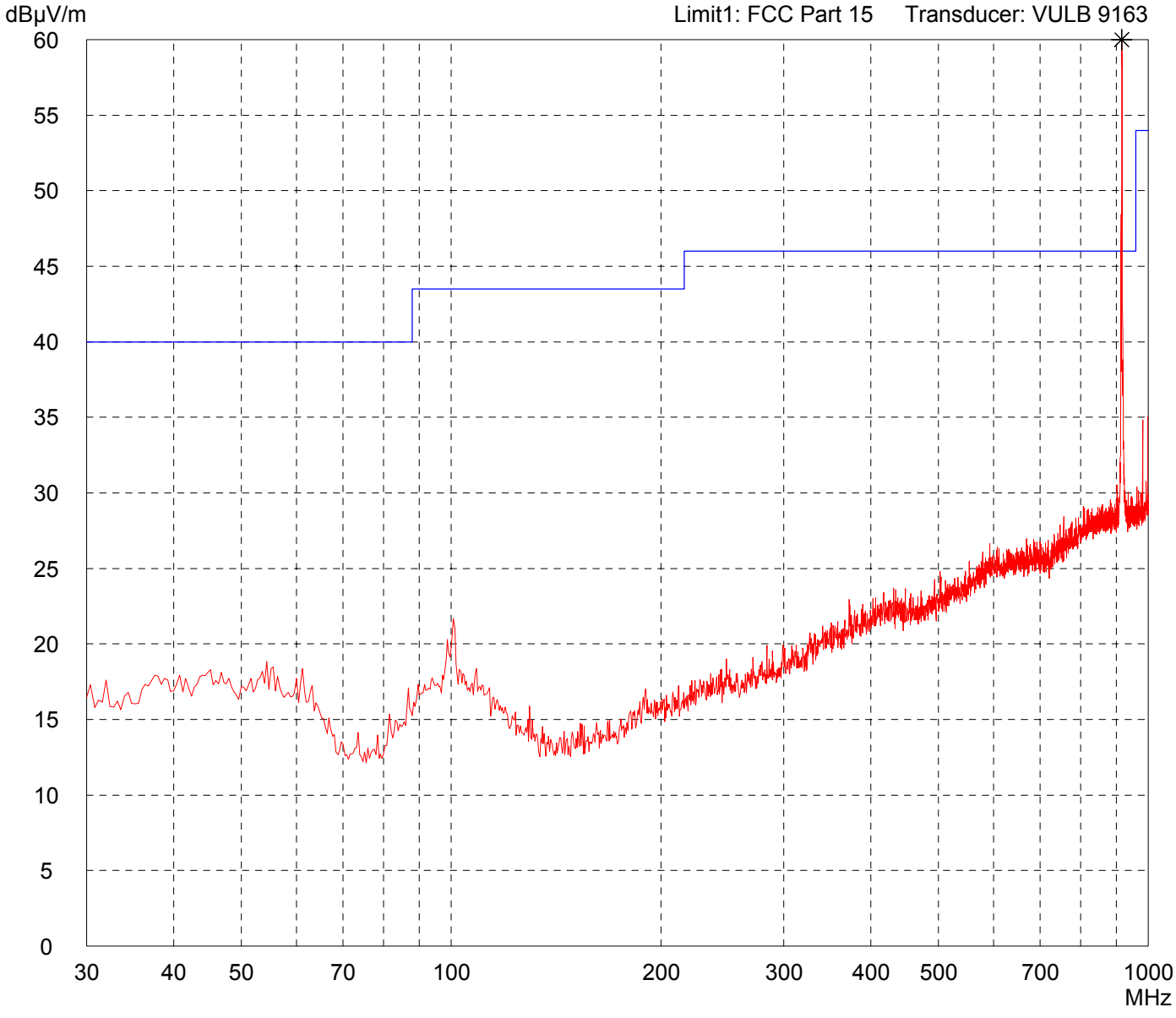


Result: Prescan	Project file: 50530-50189 Page of Pages

Radiated Emission Test 30 MHz - 1 GHz
acc. to FCC Part 15 (Fully Anechoic Chamber)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT flat on table (P2)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Vertical Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

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

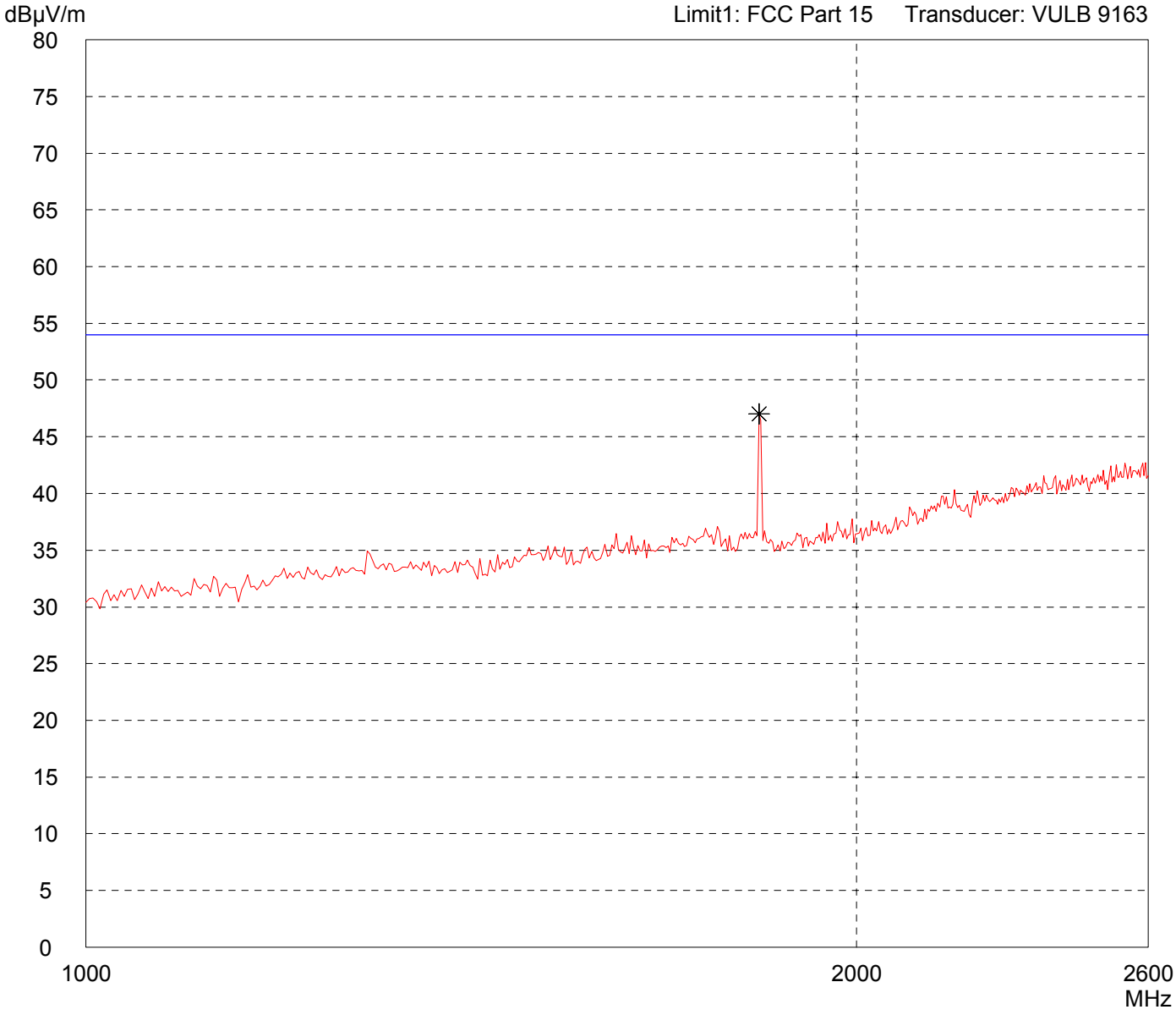


Result: Prescan	Project file: 50530-50189 — Page of Pages

Radiated Emission Test 1 GHz - 2.6 GHz
acc. to FCC Part 15 (Fully Anechoic Chamber)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT flat on table (P2)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Horizontal Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

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

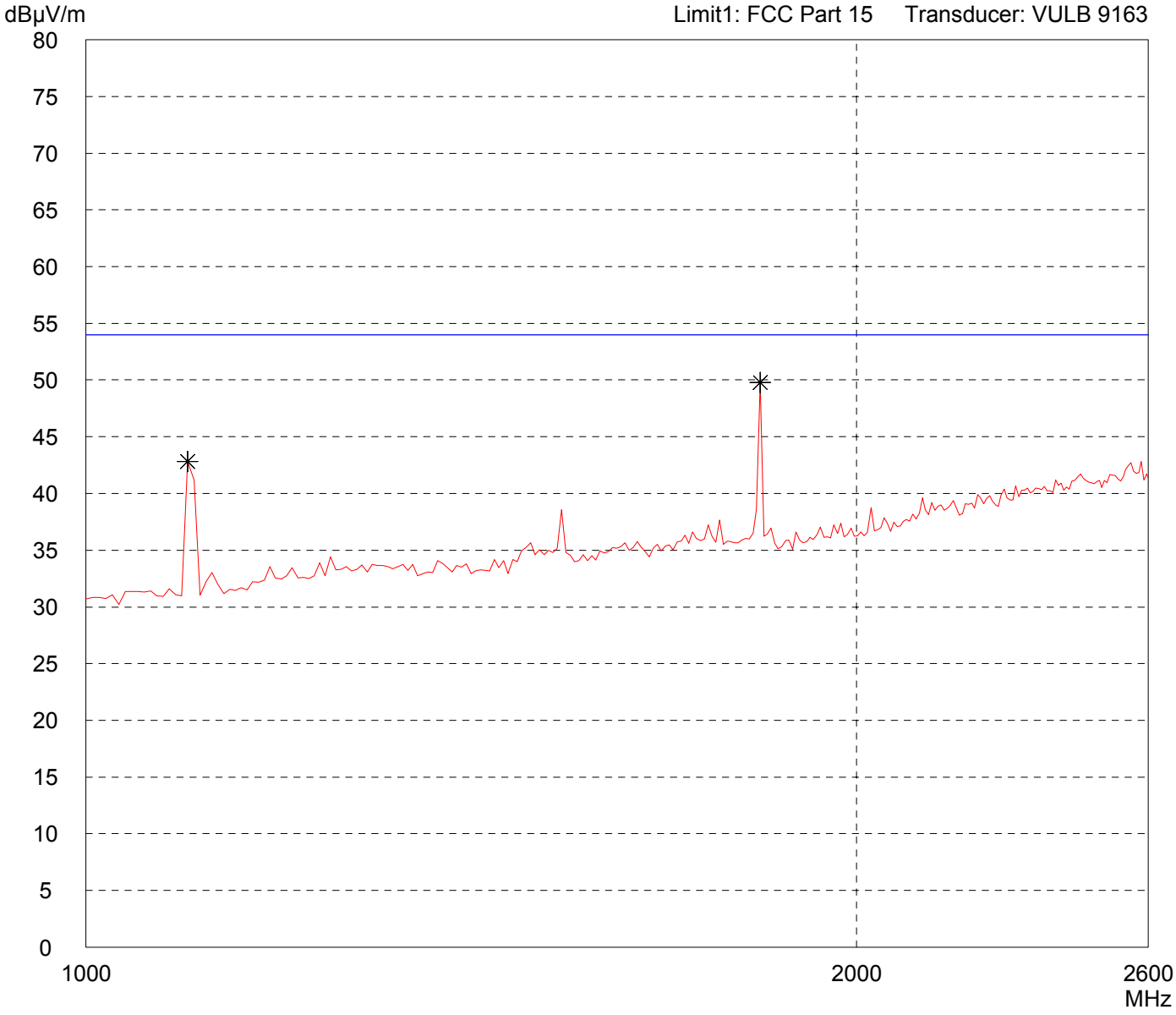


Result: Prescan	Project file: 50530-50189 — Page of Pages

Radiated Emission Test 1 GHz - 2.6 GHz
acc. to FCC Part 15 (Fully Anechoic Chamber)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT flat on table (P2)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Vertical Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: last.emi	

Detector: Peak	List of values: Selected by hand

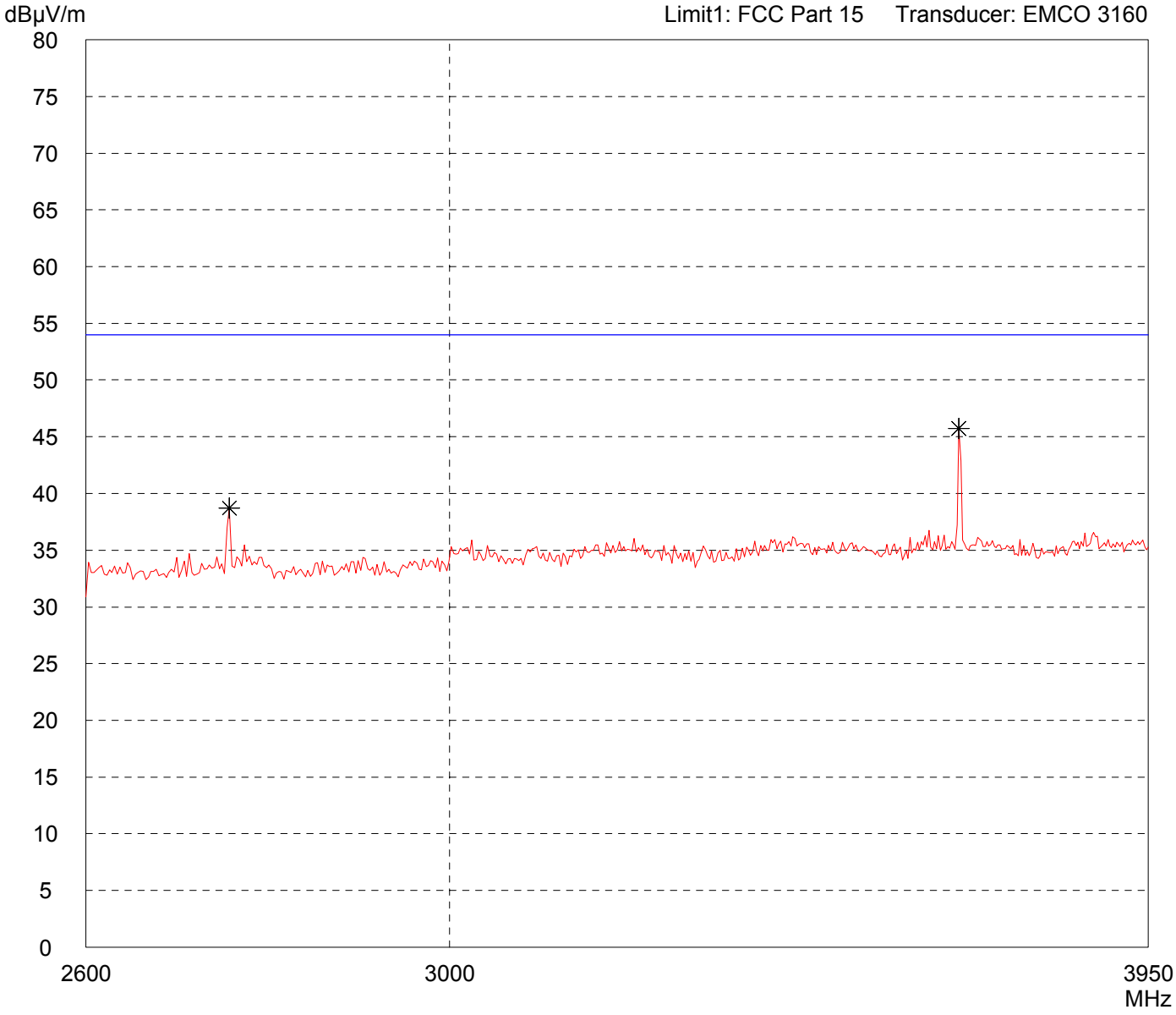


Result: Prescan	Project file: 50530-50189 Page of Pages

Radiated Emission Test 2.6 GHz - 3.95 GHz
acc. to FCC Part 15 (EMCO 3160)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT flat on table (P2)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Horizontal Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

Detector: Peak	List of values: Selected by hand



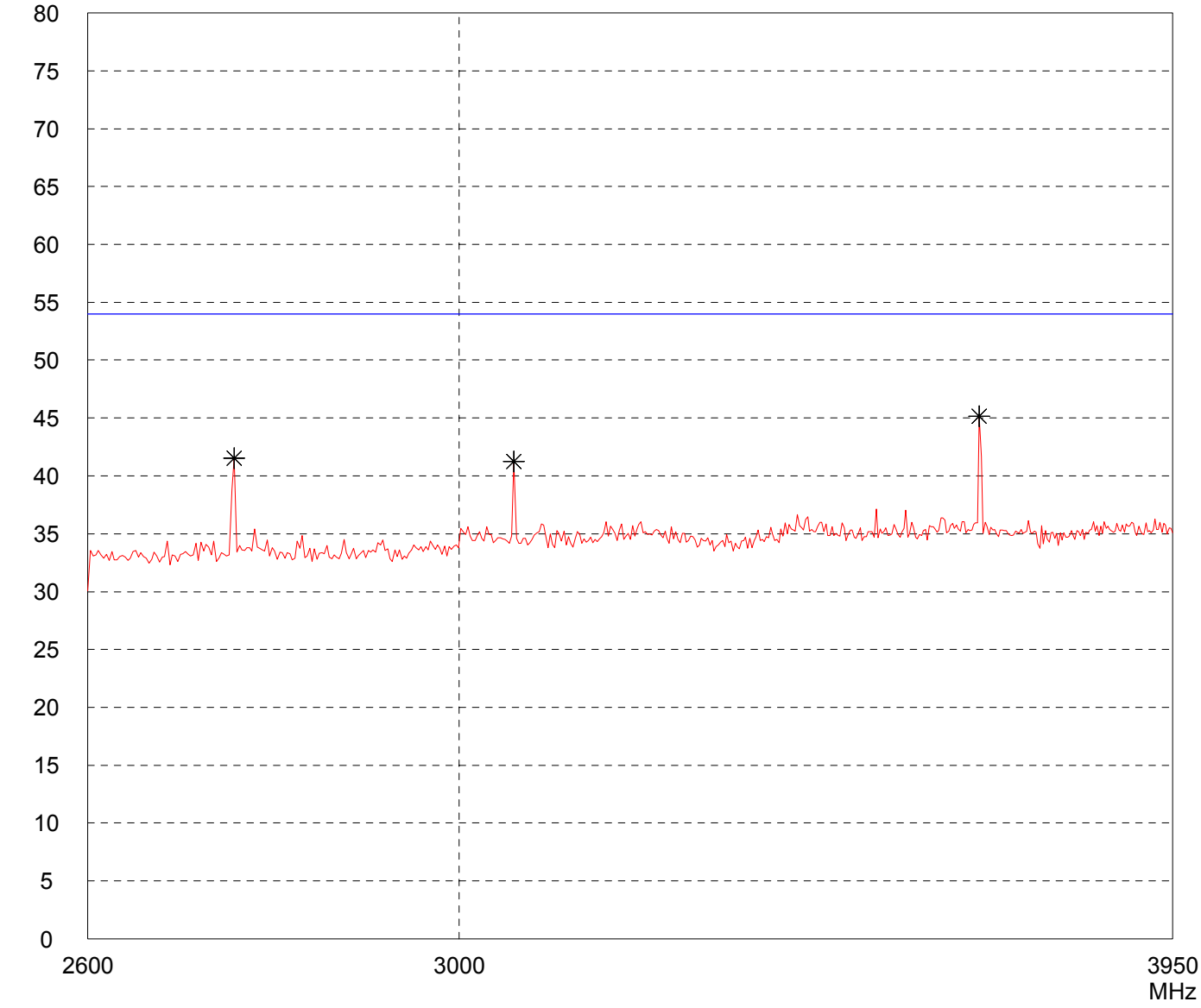
Result: Prescan	Project file: 50530-50189 Page of Pages

Radiated Emission Test 2.6 GHz - 3.95 GHz
acc. to FCC Part 15 (EMCO 3160)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT flat on table (P2)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Vertical Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

Detector: Peak	List of values: Selected by hand

dBµV/m — Limit1: FCC Part 15 — Transducer: EMCO 3160

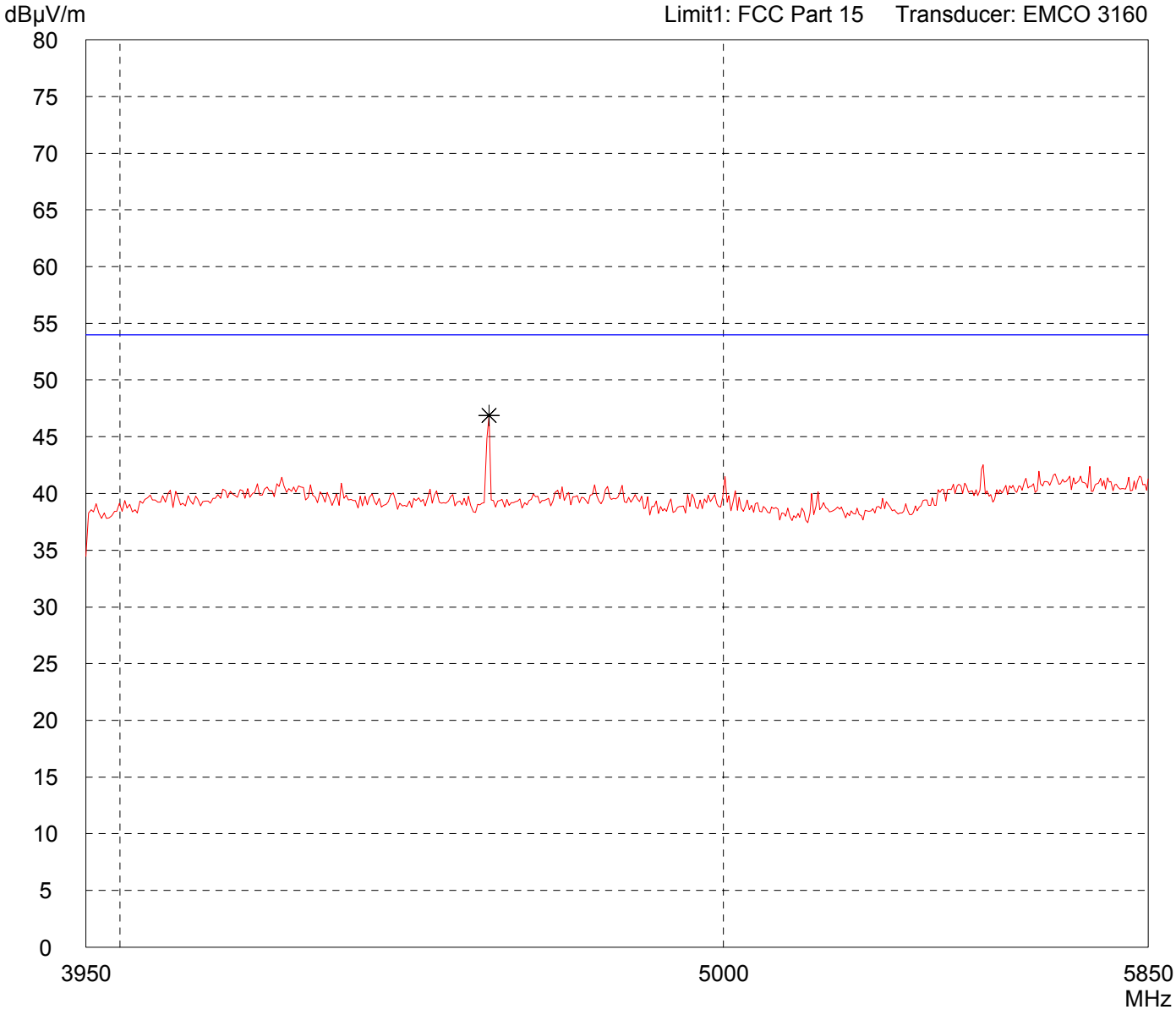


Result: Prescan	Project file: 50530-50189 Page of Pages

Radiated Emission Test 3.95 GHz - 5.85 GHz
acc. to FCC Part 15 (EMCO 3160)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT flat on table (P2)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Horizontal Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

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

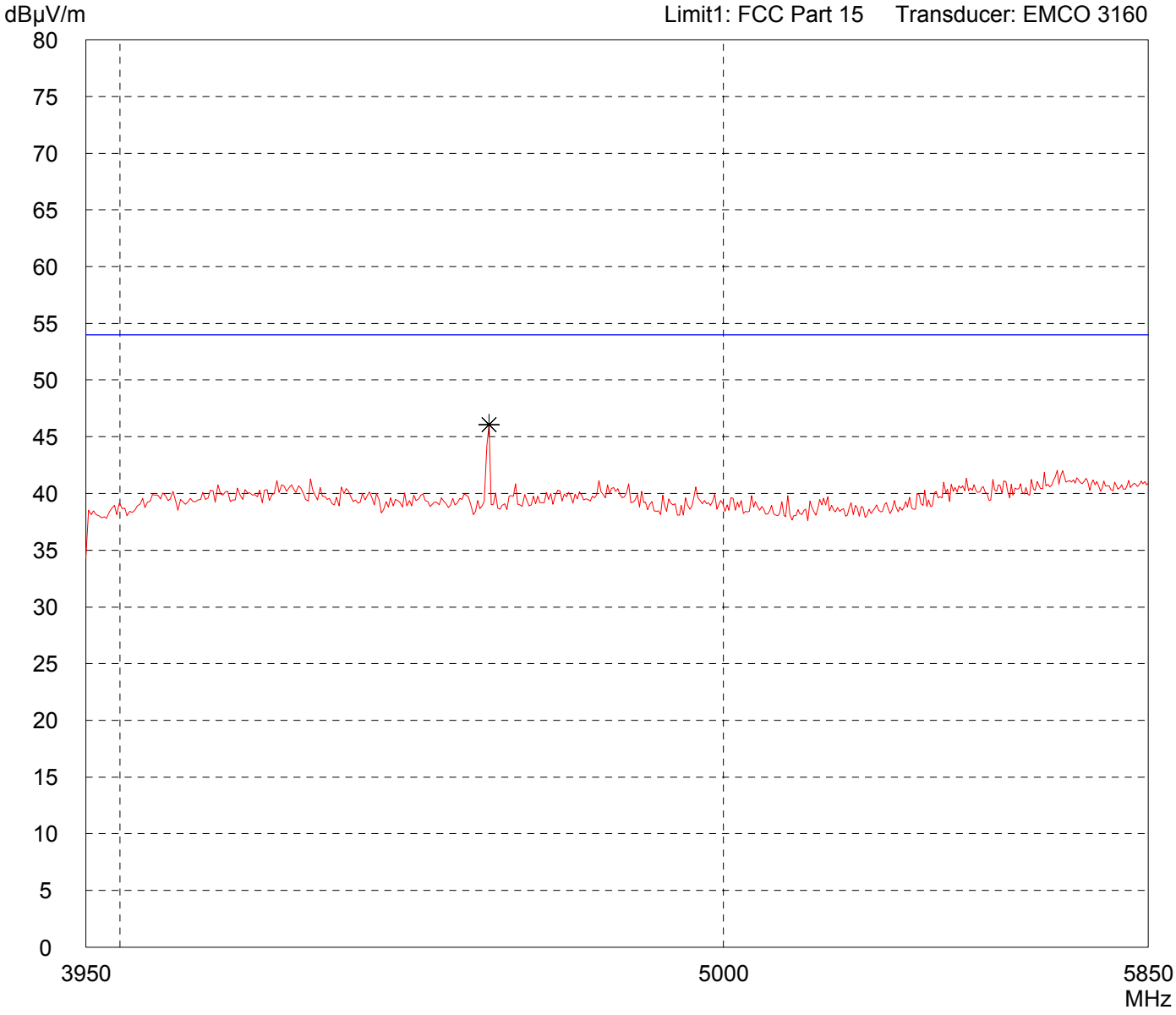


Result: Prescan	Project file: 50530-50189 — Page of Pages

Radiated Emission Test 3.95 GHz - 5.85 GHz
acc. to FCC Part 15 (EMCO 3160)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT flat on table (P2)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Vertical Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

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

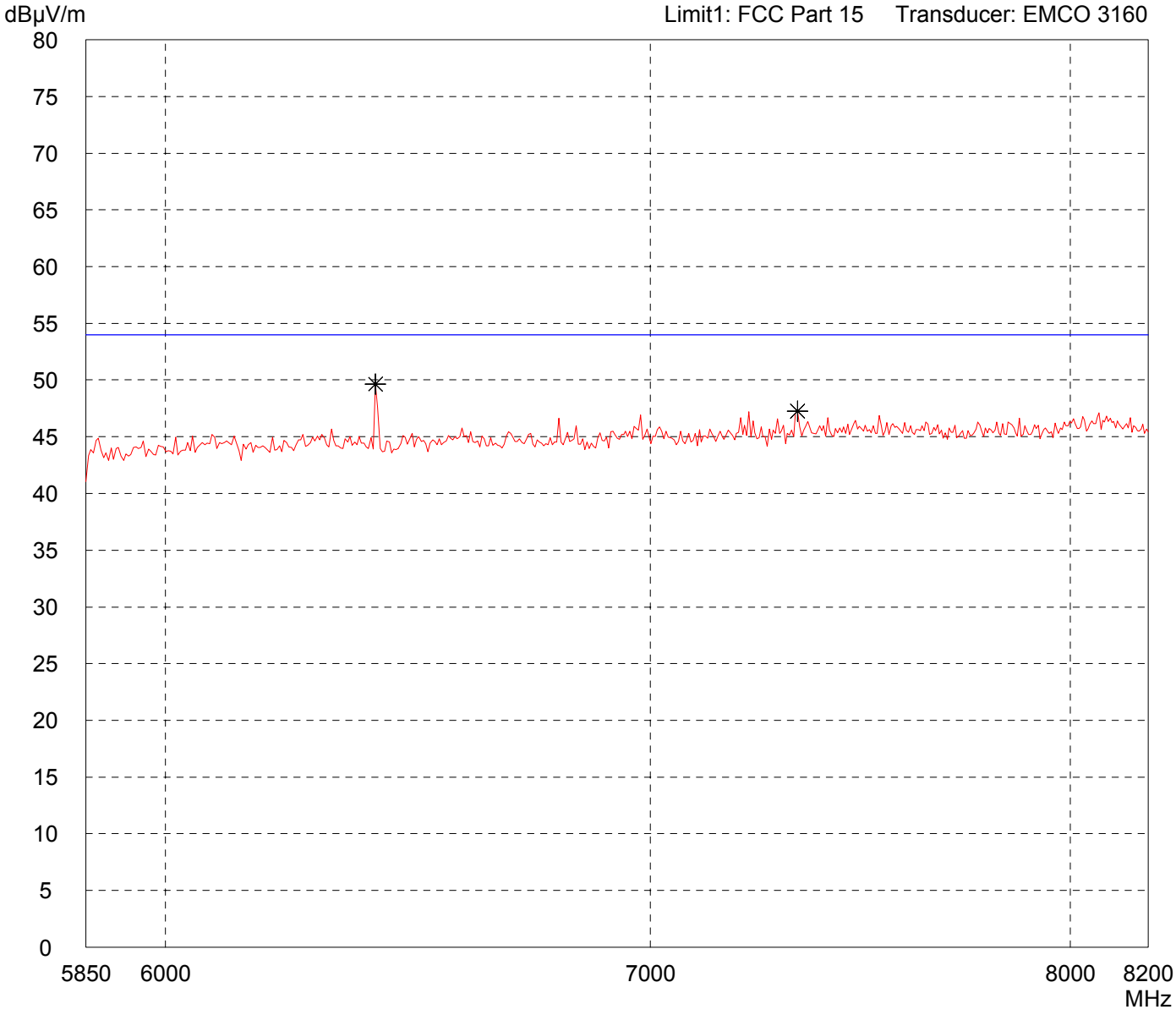


Result: Prescan	Project file: 50530-50189 — Page of Pages

Radiated Emission Test 5.85 GHz - 8.2 GHz
acc. to FCC Part 15 (EMCO 3160)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT flat on table (P2)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Horizontal Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

Detector: Peak	List of values: Selected by hand



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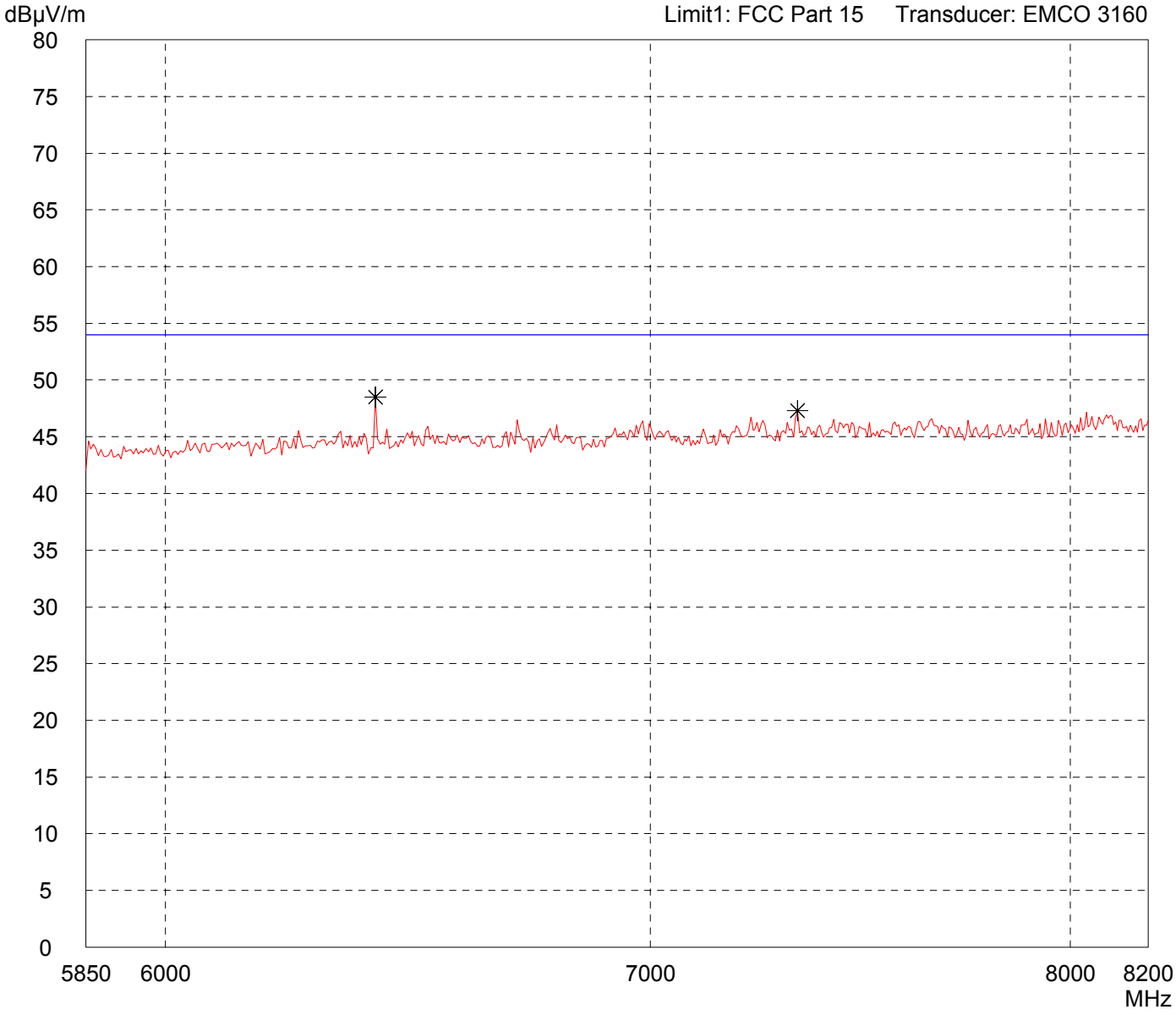
Radiated Emission Test 5.85 GHz - 8.2 GHz
acc. to FCC Part 15 (EMCO 3160)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT flat on table (P2)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Vertical Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

Detector: Peak	List of values: Selected by hand



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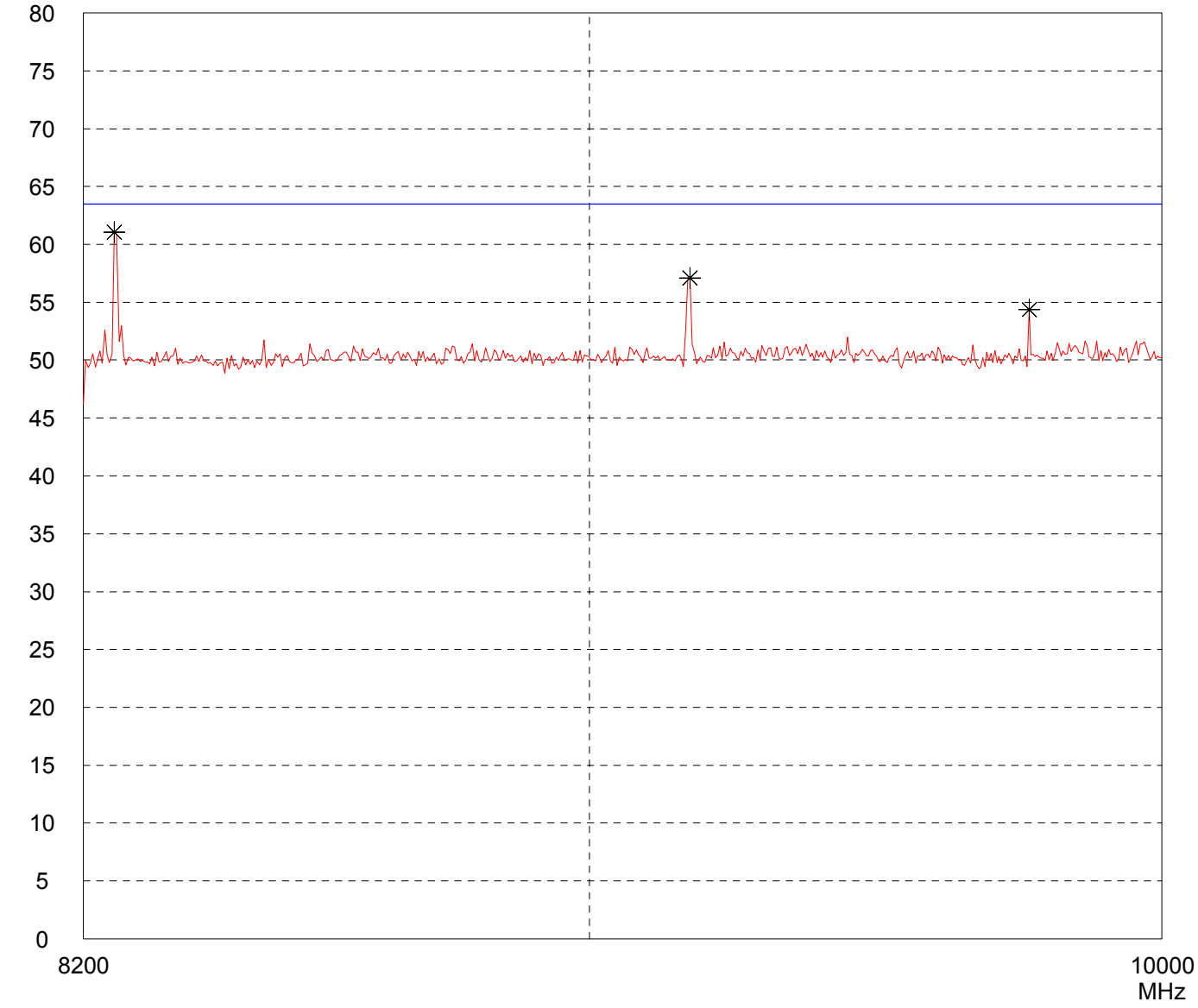
Radiated Emission Test 8.2 GHz - 10 GHz
acc. to FCC Part 15 (EMCO 3160)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT flat on table (P2)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 1 meter Horizontal Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

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

dBµV/m — Limit1: FCC Part 15 (1 m) — Transducer: EMCO 3160



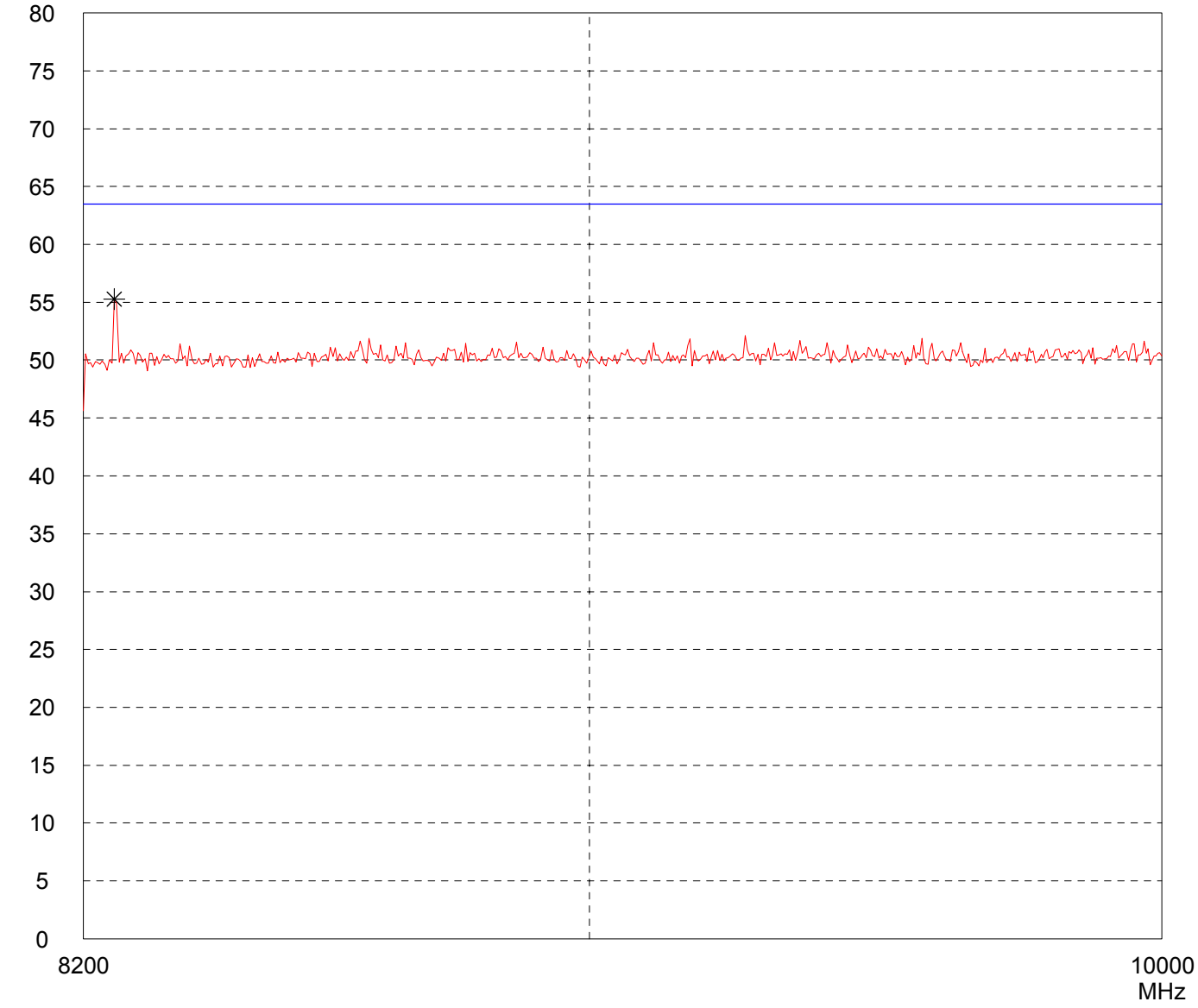
Result: Prescan	Project file: 50530-50189 — Page of Pages

Radiated Emission Test 8.2 GHz - 10 GHz
acc. to FCC Part 15 (EMCO 3160)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT flat on table (P2)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 1 meter Vertical Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

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

dBµV/m — Limit1: FCC Part 15 (1 m) — Transducer: EMCO 3160



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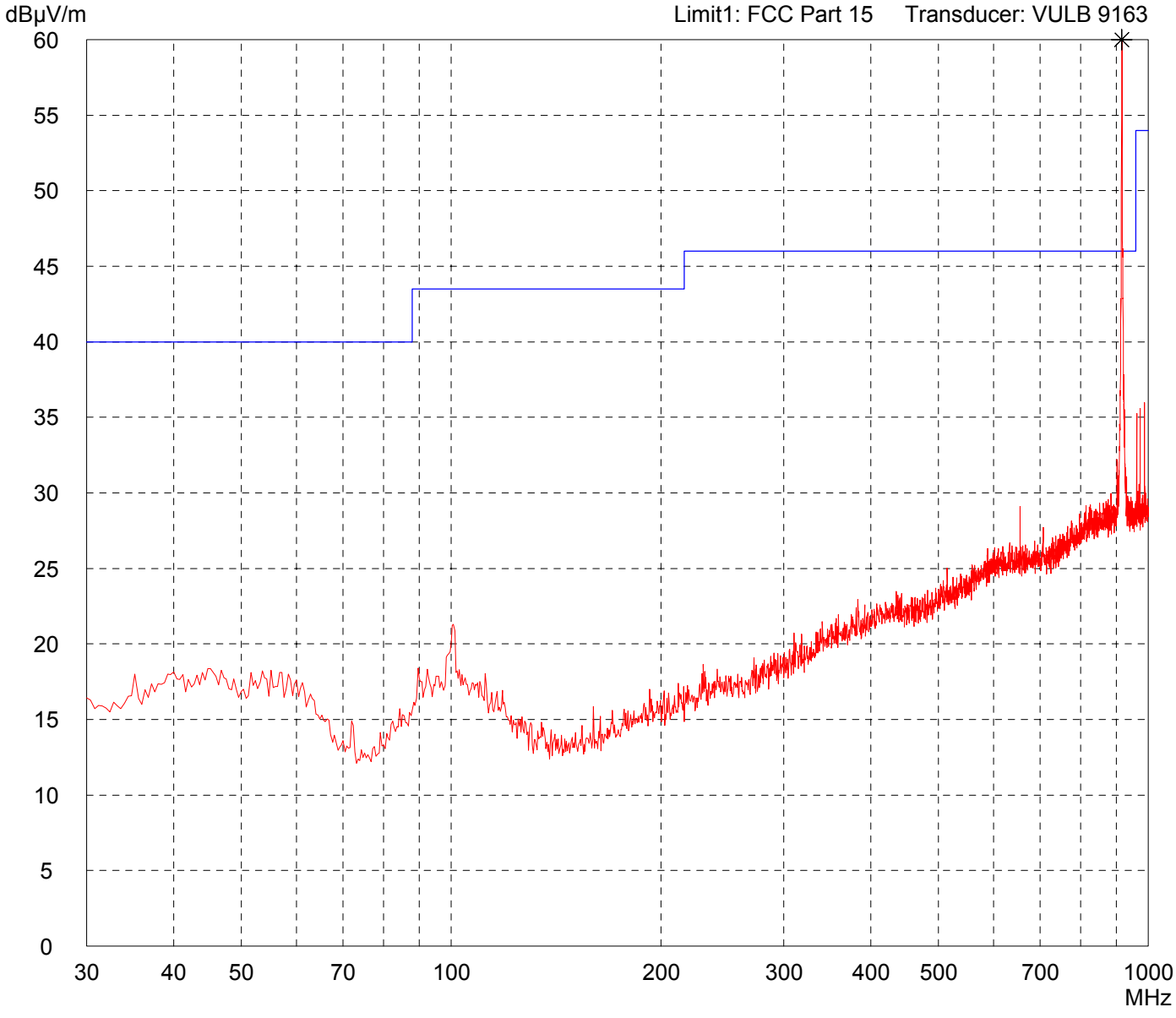
Radiated Emission Test 30 MHz - 1 GHz
acc. to FCC Part 15 (Fully Anechoic Chamber)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT in upright position (P3)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Horizontal Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

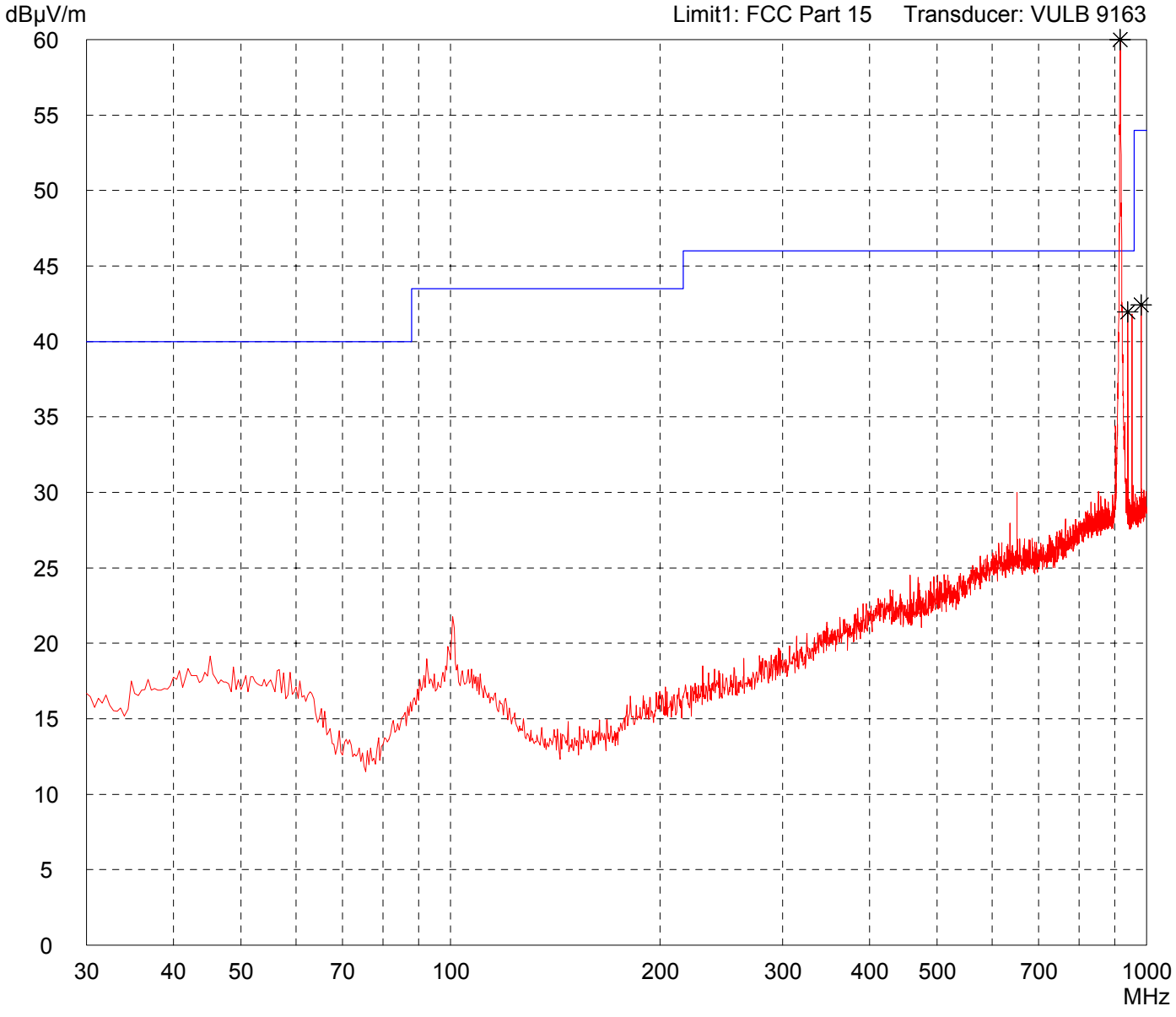
Detector: Peak	List of values: 10 dB Margin — 50 Subranges



Result: Prescan	Project file: 50530-50189 — Page of Pages

Radiated Emission Test 30 MHz - 1 GHz
acc. to FCC Part 15 (Fully Anechoic Chamber)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT in upright position (P3)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Vertical Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	
Detector: Peak	List of values: Selected by hand



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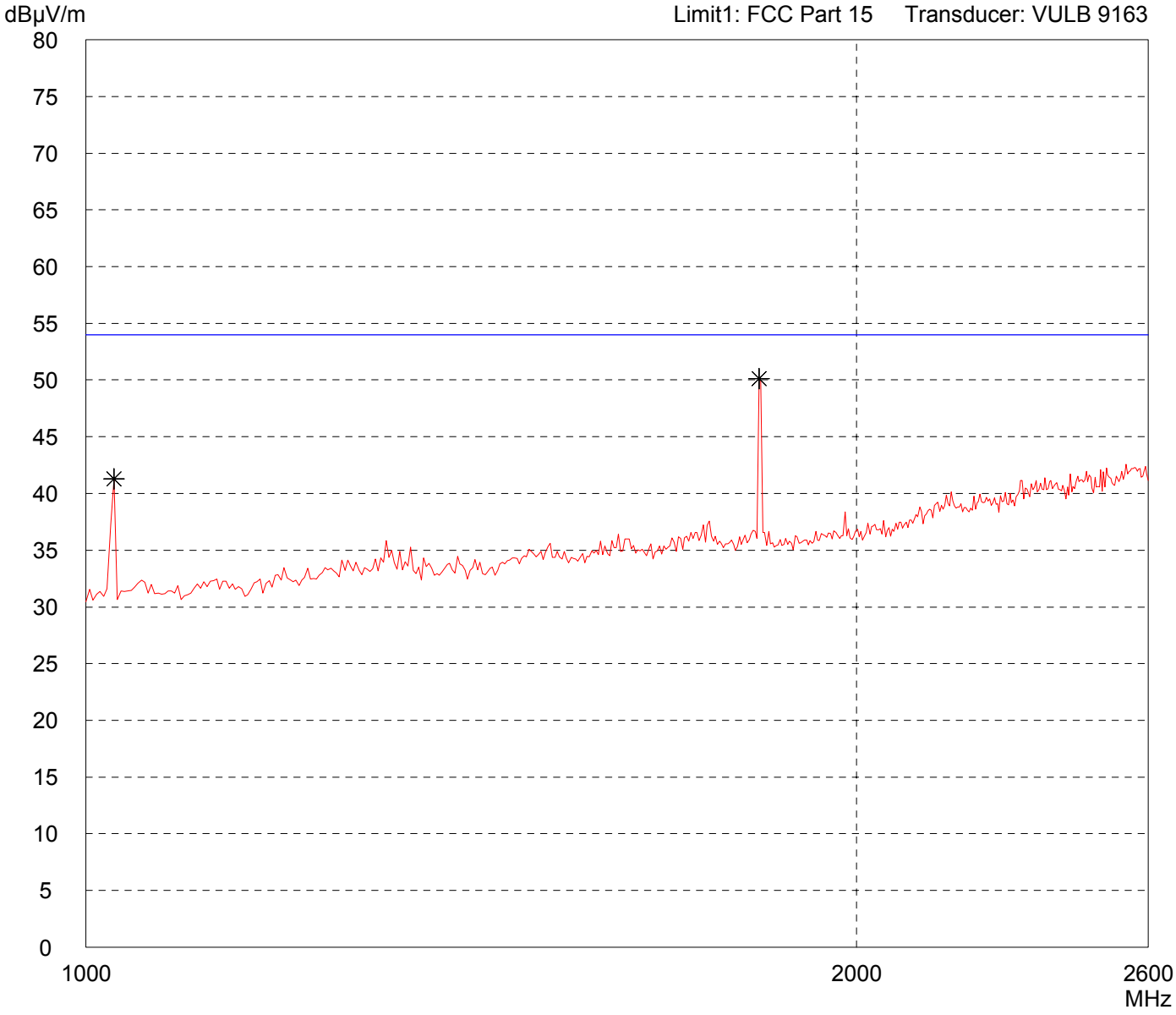
Radiated Emission Test 1 GHz - 2.6 GHz
acc. to FCC Part 15 (Fully Anechoic Chamber)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT in upright position (P3)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Horizontal Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	
Detector: Peak	List of values: Selected by hand

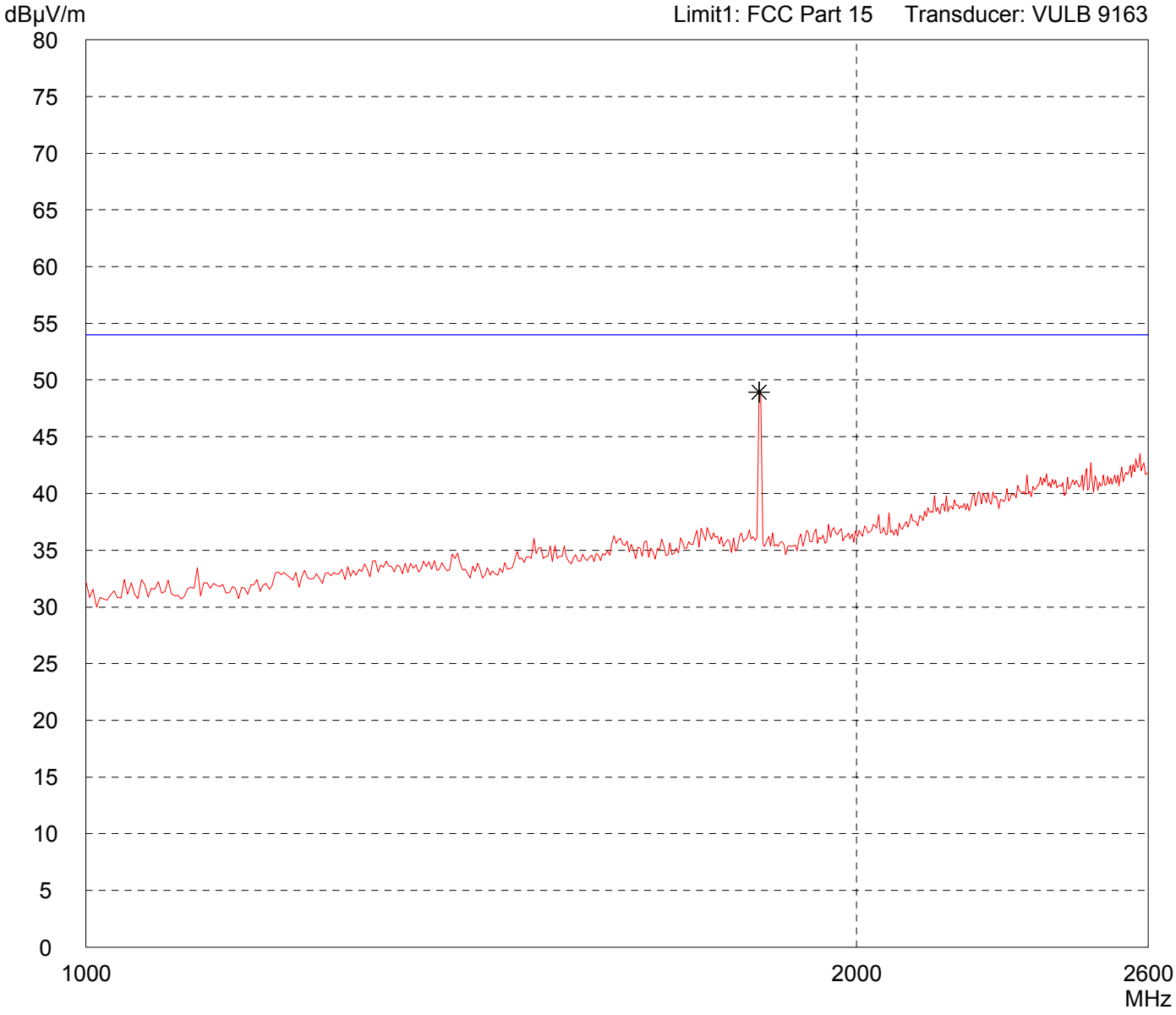


Result: Prescan	Project file: 50530-50189 Page of Pages

Radiated Emission Test 1 GHz - 2.6 GHz
acc. to FCC Part 15 (Fully Anechoic Chamber)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT in upright position (P3)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Vertical Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

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



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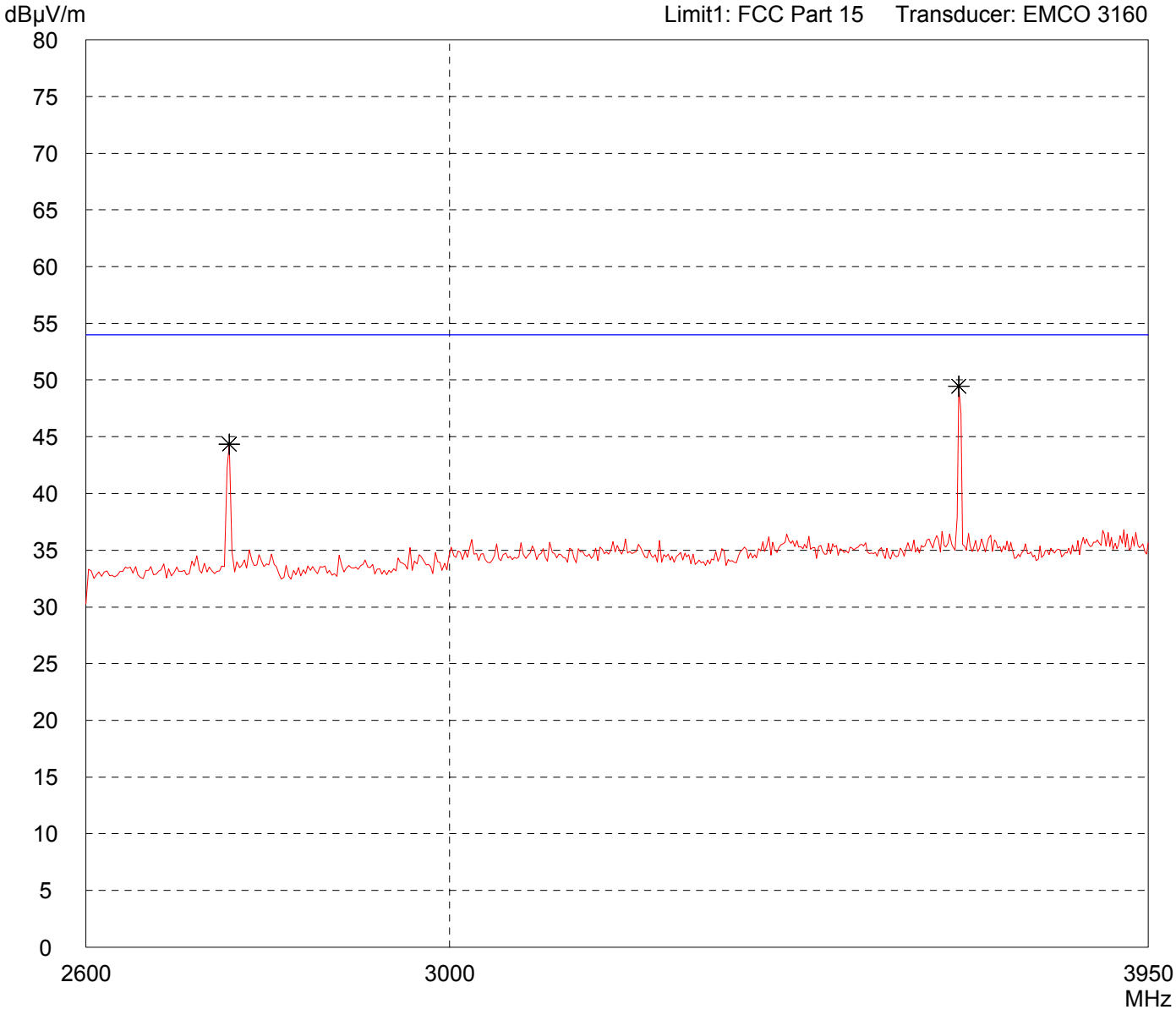
Radiated Emission Test 2.6 GHz - 3.95 GHz
acc. to FCC Part 15 (EMCO 3160)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT in upright position (P3)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Horizontal Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

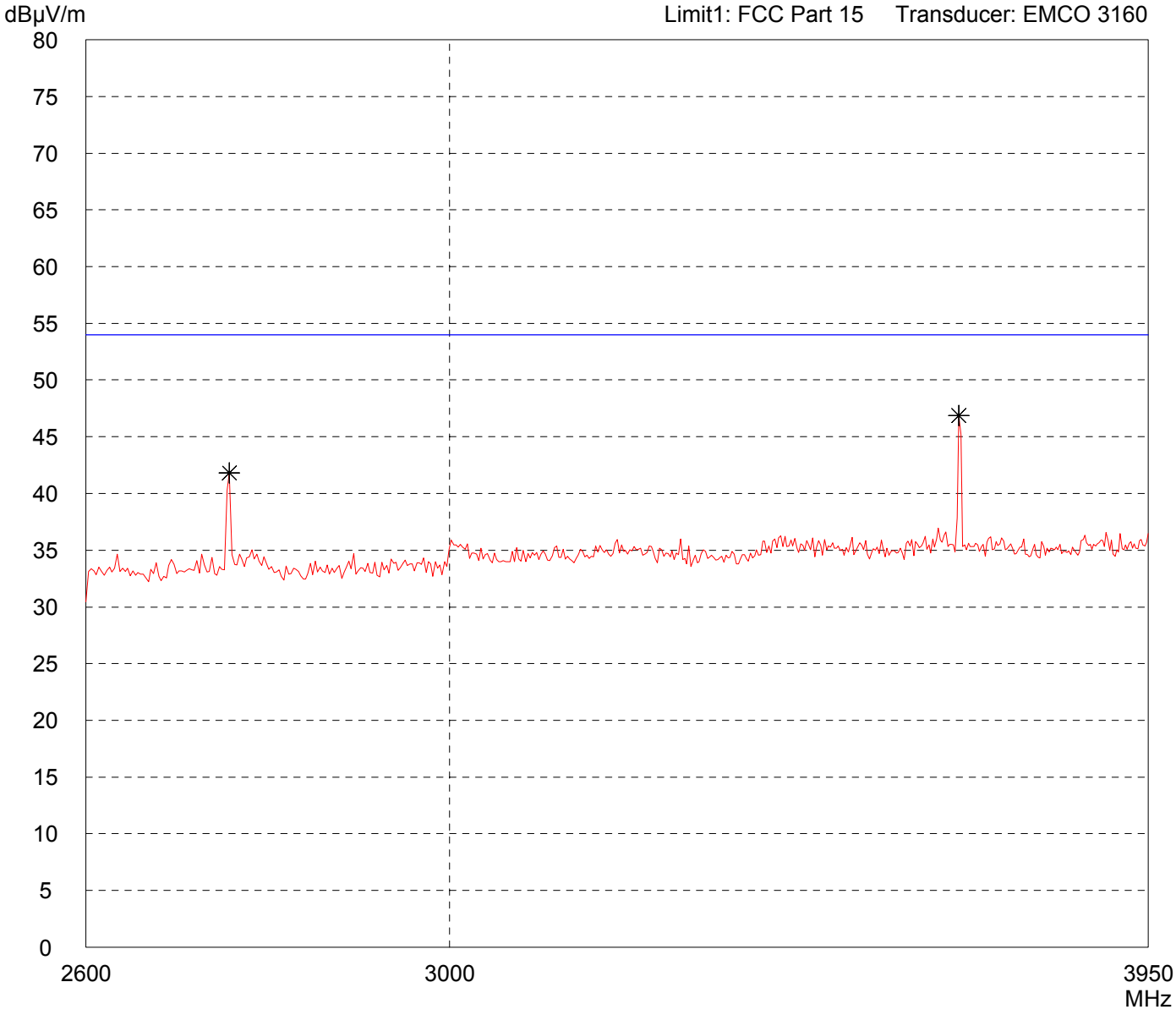
Detector: Peak	List of values: 10 dB Margin — 50 Subranges



Result: Prescan	Project file: 50530-50189 — Page of Pages

Radiated Emission Test 2.6 GHz - 3.95 GHz
acc. to FCC Part 15 (EMCO 3160)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT in upright position (P3)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Vertical Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	
Detector: Peak	List of values: Selected by hand



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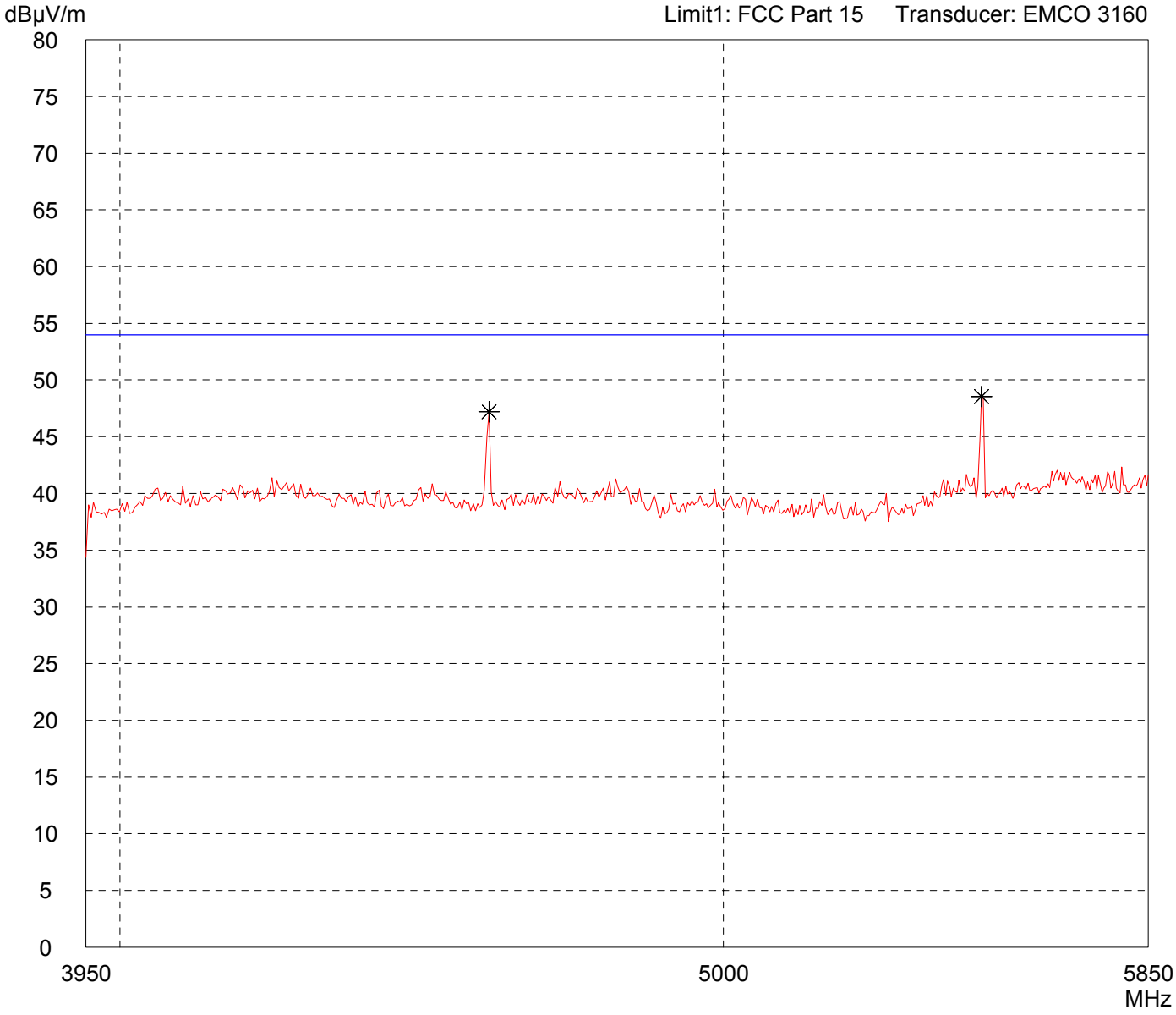
Radiated Emission Test 3.95 GHz - 5.85 GHz
acc. to FCC Part 15 (EMCO 3160)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT in upright position (P3)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Horizontal Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

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

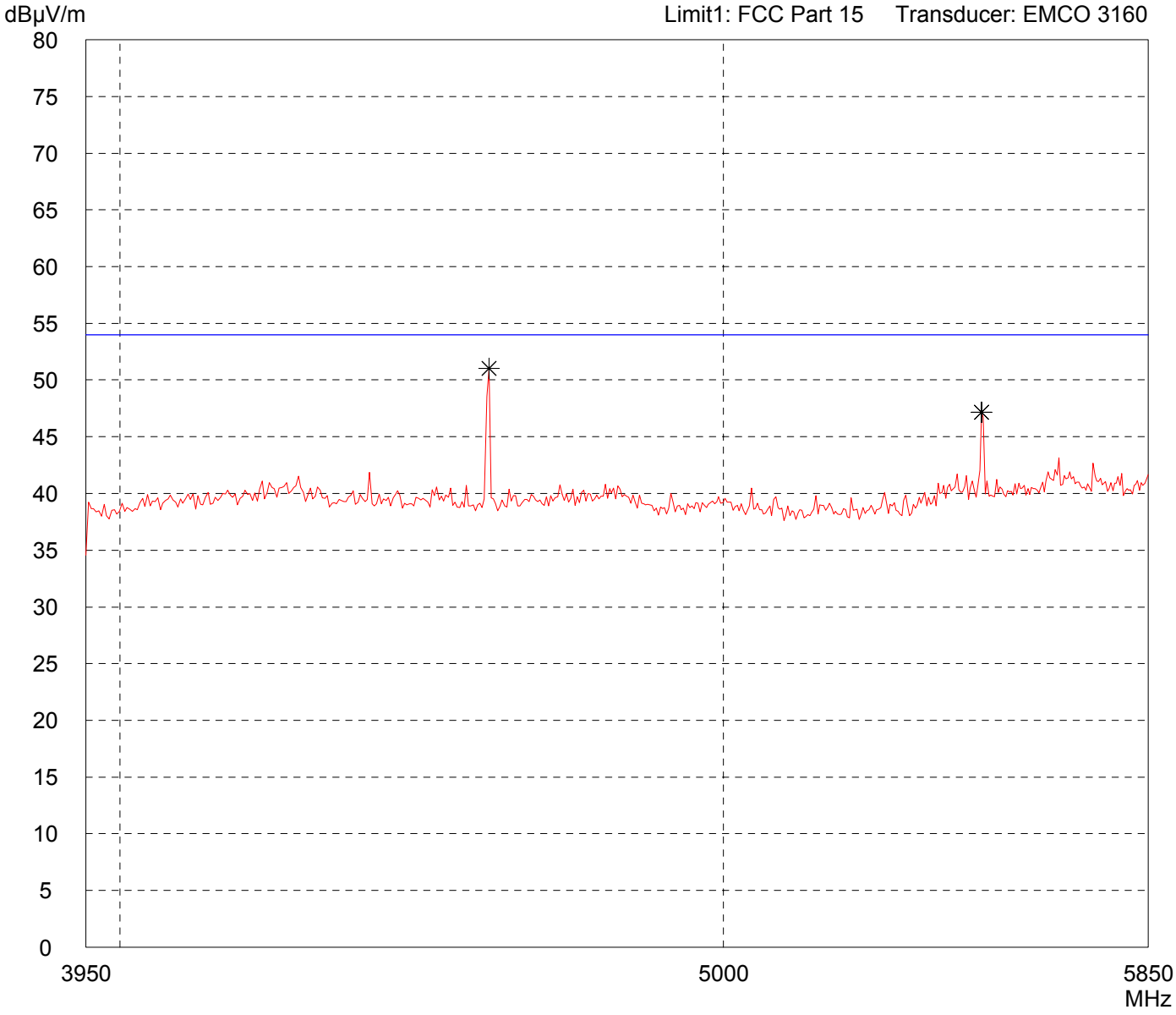


Result: Prescan	Project file: 50530-50189 — Page of Pages

Radiated Emission Test 3.95 GHz - 5.85 GHz
acc. to FCC Part 15 (EMCO 3160)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT in upright position (P3)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Vertical Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

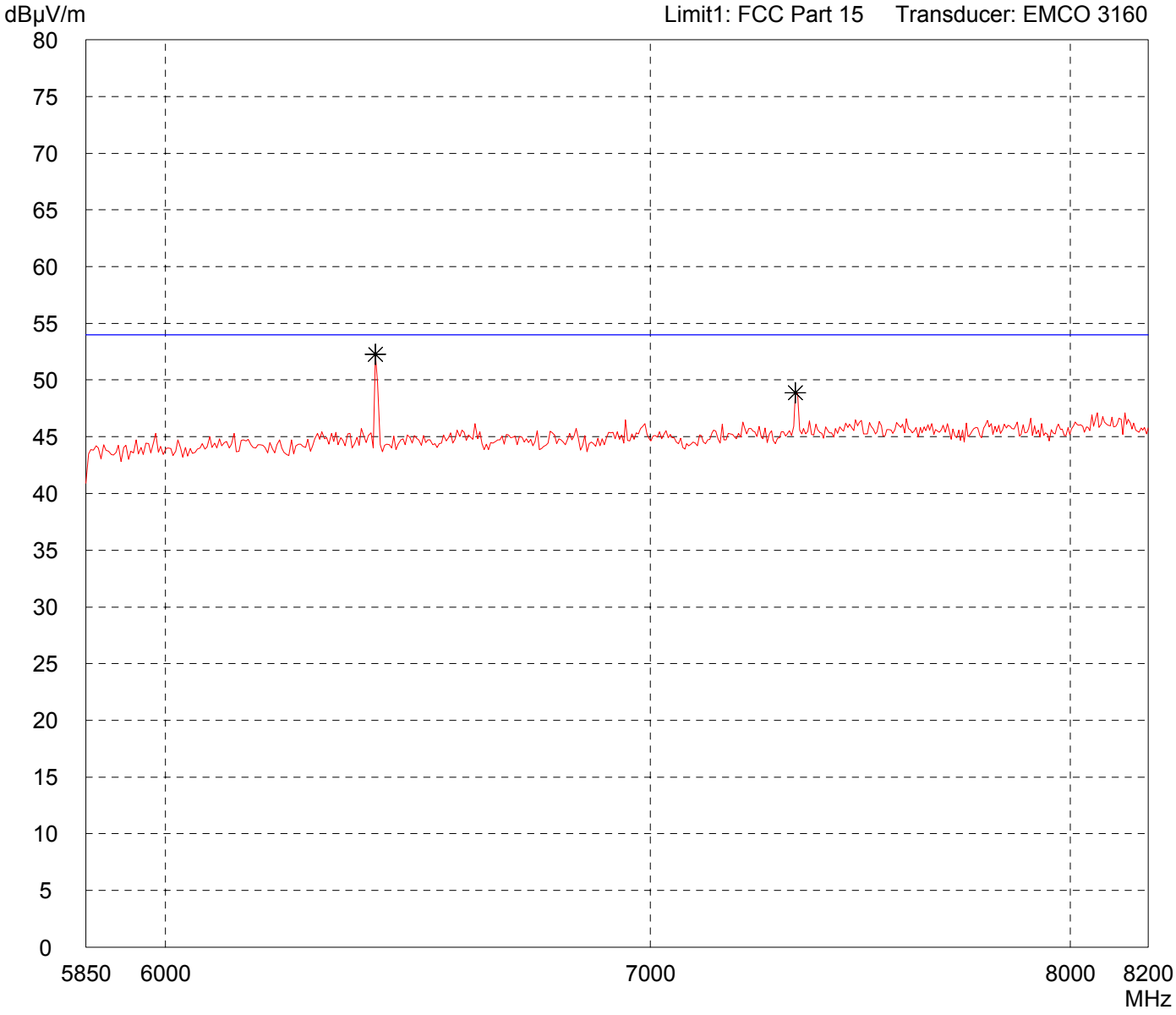
Detector: Peak	List of values: 10 dB Margin — 50 Subranges



Result: Prescan	Project file: 50530-50189 — Page of Pages

Radiated Emission Test 5.85 GHz - 8.2 GHz
acc. to FCC Part 15 (EMCO 3160)

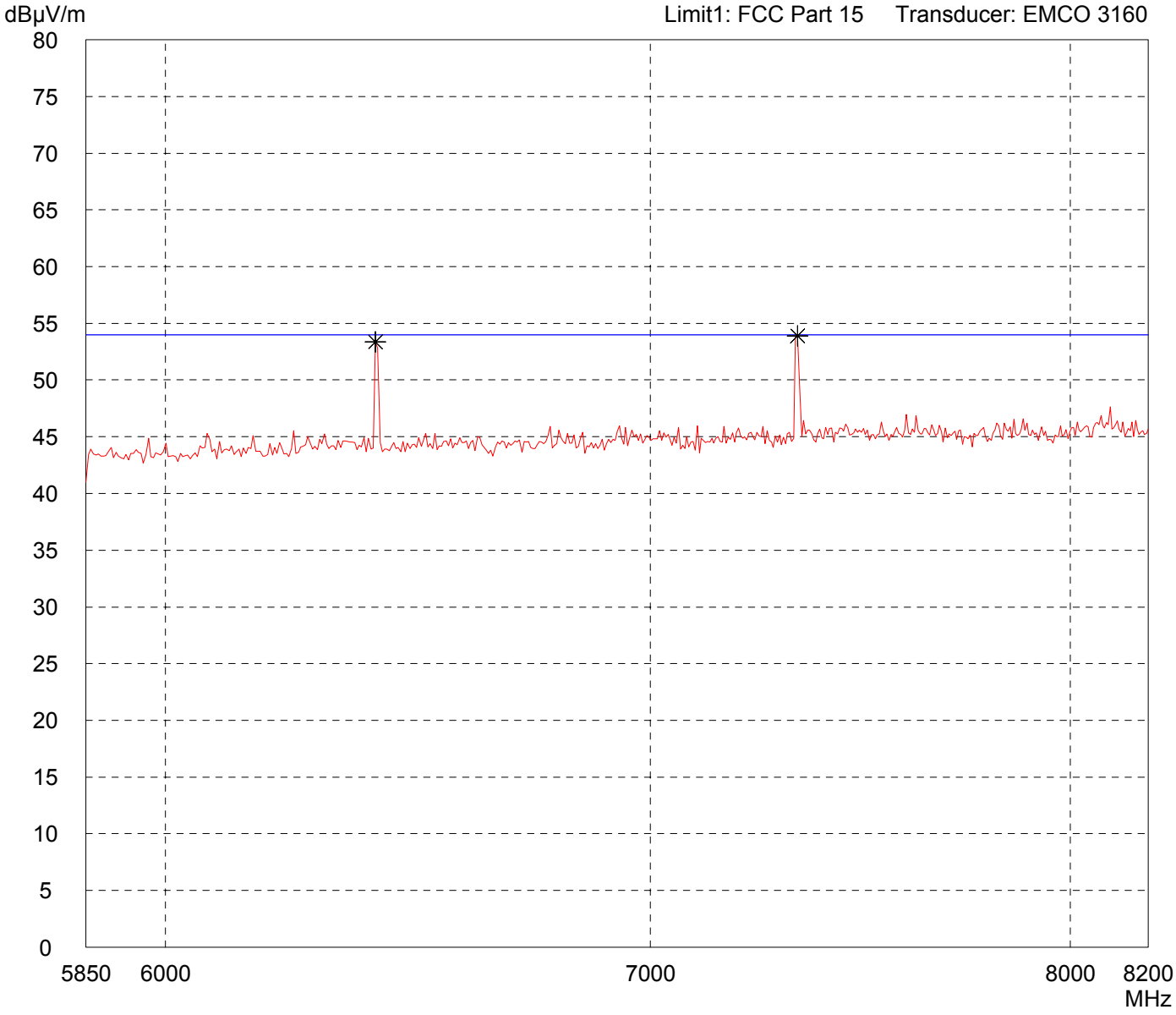
Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT in upright position (P3)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Horizontal Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	
Detector: Peak	List of values: Selected by hand



Result: Prescan	Project file: 50530-50189 Page of Pages

Radiated Emission Test 5.85 GHz - 8.2 GHz
acc. to FCC Part 15 (EMCO 3160)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT in upright position (P3)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Vertical Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	
Detector: Peak	List of values: Selected by hand



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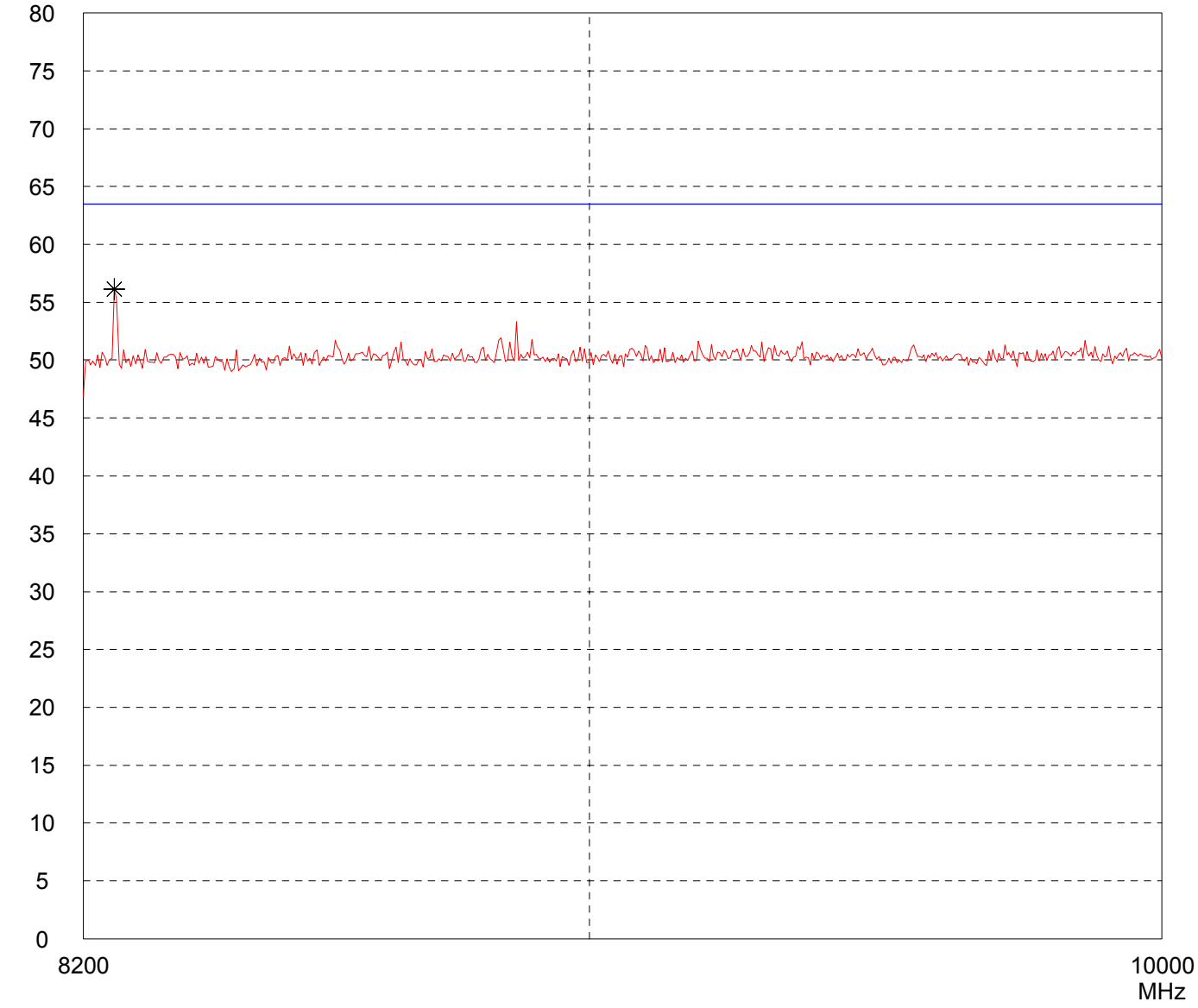
Radiated Emission Test 8.2 GHz - 10 GHz
acc. to FCC Part 15 (EMCO 3160)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT in upright position (P3)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 1 meter Horizontal Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

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

dBµV/m — Limit1: FCC Part 15 (1 m) — Transducer: EMCO 3160



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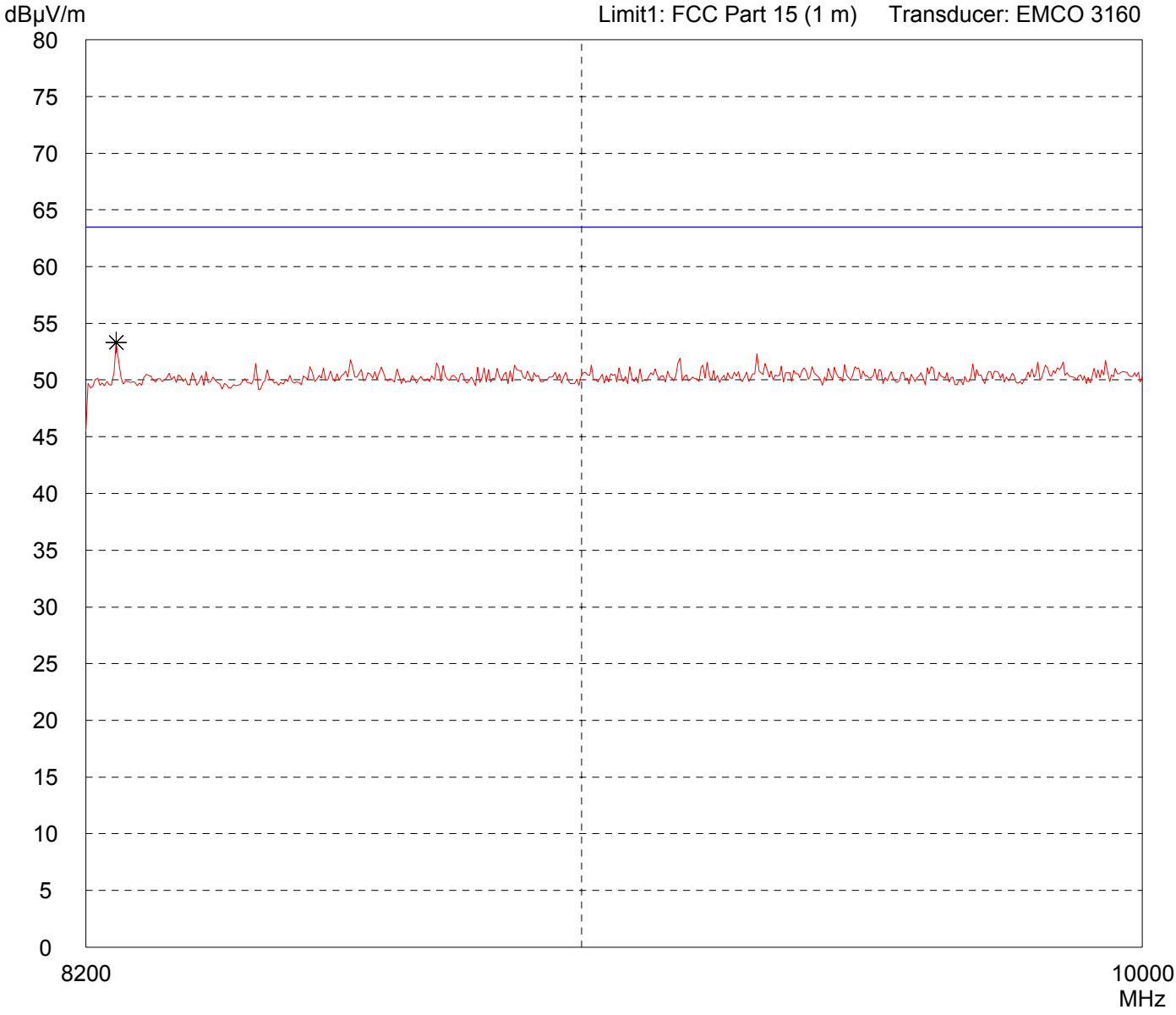
Radiated Emission Test 8.2 GHz - 10 GHz
acc. to FCC Part 15 (EMCO 3160)

Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT in upright position (P3)
Serial no.: A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 1 meter Vertical Polarization	
Date of test: 06/06/2005 — Operator: M. Steindl	
Test performed: automatically — File name: default.emi	

Detector: Peak	List of values: Selected by hand



Result: Prescan	Project file: 50530-50189 Page of Pages