Straubing, November 4, 2009

TEST-REPORT

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)

Note:

The test data of this report is related only to the individual item which has been tested. This report shall not be reproduced except in full extent without the written approval of the testing laboratory.



Table of Contents

1		Description of the Equipment Under Test (EUT)	3
2	,	Administrative Data	4
3	ļ	Identification of the Test Laboratory	5
4	;	Summary	6
5	(Operation Mode and Configuration of EUT	7
6	ĺ	Measurement Procedures	8
	6.1	Bandwidth Measurements	8
	6.2	Pulse Train Measurement	9
	6.3	Radiated Emission Measurement 9 kHz to 30 MHz	10
	6.4	Radiated Emission in Fully or Semi Anechoic Room	12
	6.5	Radiated Emission at Open Field Test Site	14
7	I	Photographs Taken During Testing	15
8	-	Test Results	19
	8.1	Occupied Bandwidth	21
	8.2	Emission Bandwidth	24
	8.3	Designation of Emissions	26
	8.4	Pulse Train Measurement	27
	8.5	Restricted Bands of Operation	31
	8.6	Radiated Emission Measurement 9 kHz to 30 MHz	33
	8.7	Radiated Emission Measurement 30 MHz to 10 GHz	34
	8.8	Exposure of Humans to RF Fields	36
9	I	Referenced Regulations	37
1() (Charts taken during testing	38

General data of EUT



Description of the Equipment Under Test (EUT)

M3-2914 (Hand-held Transmitter) Type designation¹:

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.

Parts²:

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:

Contract identification:

Order no. 31649 0F

Receipt of EUT:

20th May 2005

Date(s) of test: 6th – 7th June 2005

Report details

Note(s):

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).

Responsible for test report:

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

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	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

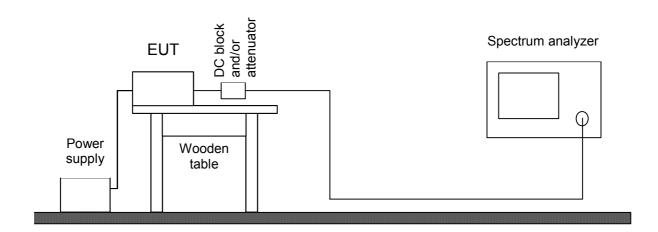
6.1 Bandwidth Measurements

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).



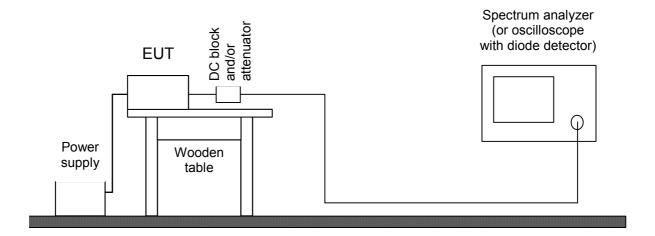


6.2 Pulse Train Measurement

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.

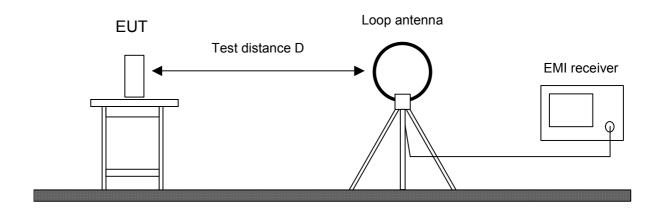
Hand-held or body-worn devices are rotated through three orthogonal axes to determine which attitude and configuration produces the highest emission relative to the limit and therefore shall be used for final testing.

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	Туре	Model	Serial No. or ID	Manufacturer
\boxtimes	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
\boxtimes	Loop antenna	HFH2-Z2	882964/1	Rohde & Schwarz
\boxtimes	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.

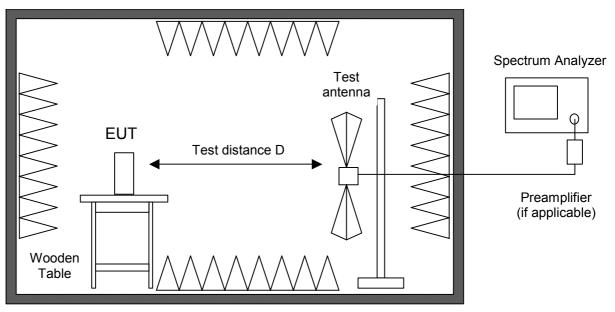
All tests below 18 GHz are performed at a test distance D of 3 meters. For higher frequencies the test distance is reduced (e.g. to 1 meter) due to the sensitivity of the measuring instrument(s) and the test results are calculated according to CFR 47 Part 15 section 15.31(f)(1) using an extrapolation 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	Туре	Model	Serial No. or ID	Manufacturer
\boxtimes	Spectrum Analyzer	FSP 30	100063	Rohde & Schwarz
	Spectrum analyzer	R 3271	05050023	Advantest
	EMI test receiver	ESMI	839379/013 839587/006	Rohde & Schwarz
\boxtimes	Preamplifier	CPA9231A	3393	Schaffner
	Preamplifier	R14601		Advantest
\boxtimes	Preamplifier 1-8 GHz	AFS3-00100800-32-LN	847743	Miteq
	Preamplifier 0.5-8 GHz	AMF-4D-005080-25-13P	860149	Miteq
\boxtimes	Preamplifier 8-18 GHz	ACO/180-3530	32641	CTT
	External Mixer	WM782A	845881/005	Tektronix
	Harmonic Mixer	FS-Z30	843389/007	Rohde & Schwarz
	Accessories			
	Trilog broadband antenna	VULB 9163	9163-188	Schwarzbeck
	Horn antenna	3115	9508-4553	EMCO
	Horn antenna	3160-03	9112-1003	EMCO
\boxtimes	Horn antenna	3160-04	9112-1001	EMCO
\square	Horn antenna	3160-05	9112-1001	EMCO
\square	Horn antenna	3160-06	9112-1001	EMCO
\boxtimes	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
\boxtimes	Fully anechoic room	No. 2	1452	Albatross Projects
	Semi-anechoic room	No. 3	1453	Siemens



6.5 Radiated Emission at Open Field Test Site

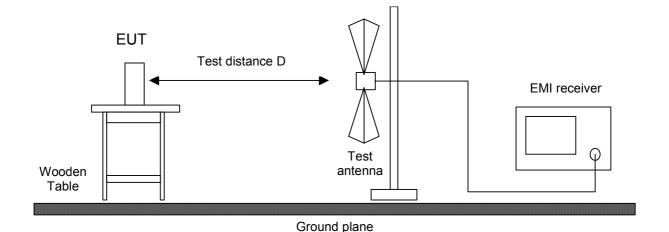
Measurement Procedure:			
Rules and specifications:	CFR 47 Part 15, sections 15.215(b) and 15.249 IC RSS-210 Issue 7, section A2.9		
Guide:	ANSI C63.4		

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 guasi-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:

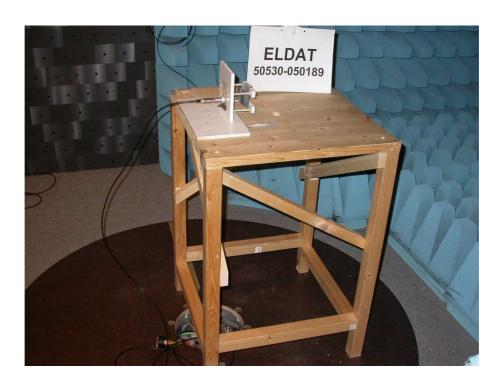
Used	Туре		Model	Serial No. or ID	Manufacturer
\boxtimes	EMI receiver		ESVP	881414/009	Rohde & Schwarz
\boxtimes	Biconical antenna	EG 1	HK 116	842204/001	Rohde & Schwarz
\boxtimes	Log. per. antenna	EG 1	HL 223	841516/023	Rohde & Schwarz
\boxtimes	Open field test site		EG 1	1450	Senton

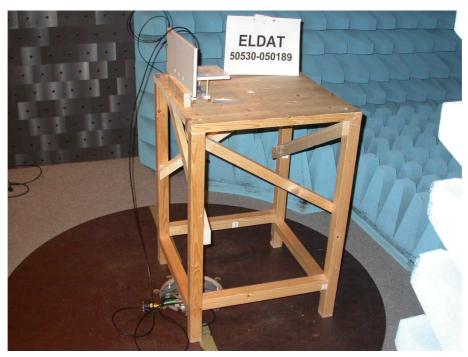


7 Photographs Taken During Testing



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 Pa	C 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



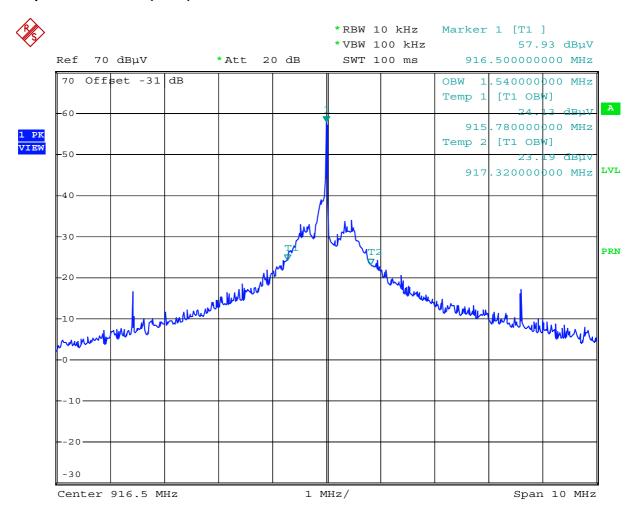
8.1 Occupied Bandwidth

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 as the frequency range defined by the the maximum level of the modulated of	points that are 26 dB down relative to
	The resolution bandwidth of the spect greater than 5.0% of the allowed band are given, the following guidelines are	lwidth. If no bandwidth specifications
	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 resolution bandwidth.	three times greater than the
Measurement procedure:	Bandwidth Measurements (6.1)	

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



Occupied Bandwidth (99 %):



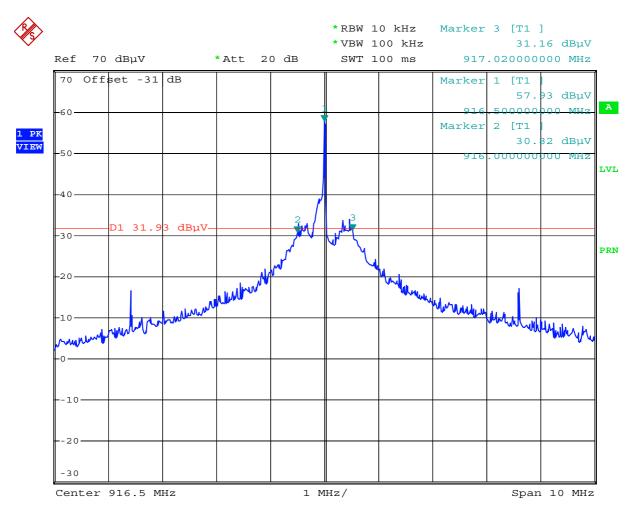
Comment: Eldat 050189: Occupied Bandwidth

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

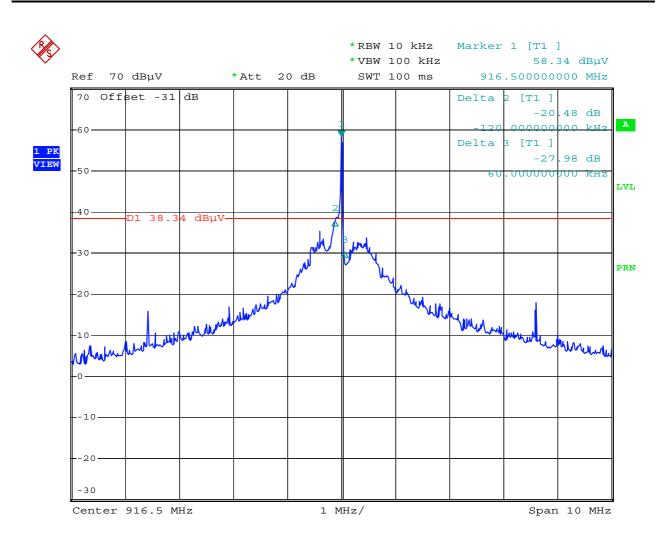


8.2 Emission Bandwidth

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:	7 th 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 band⁴: ⊠ 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:	$B_n = 2 \cdot (5 \text{ kHz}) \cdot 1 = 10 \text{ kHz}$

Designation of Emissions:



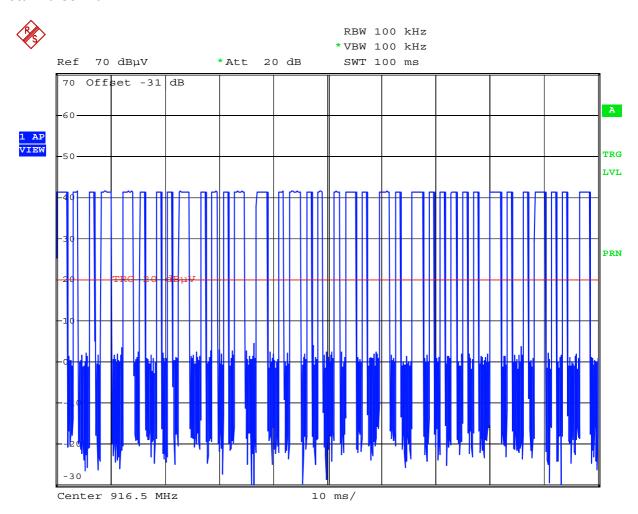
8.4 Pulse Train Measurement

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:	7 th June 2005
Test site:	Fully anechoic room, cabin no. 2



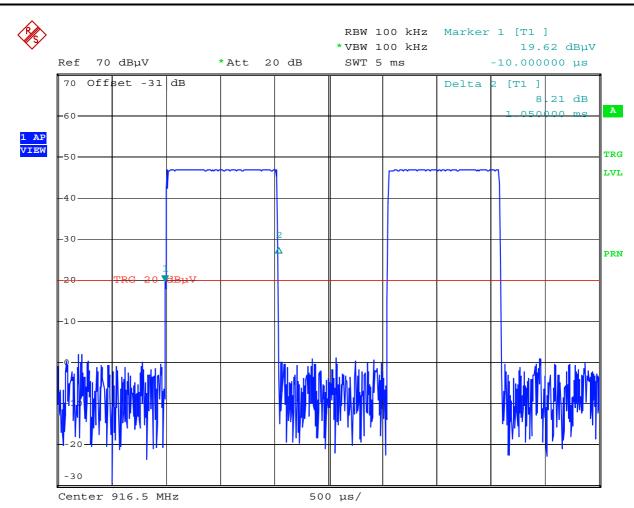
Total Pulse Train:



Comment: Eldat 050189: Duty Cycle Correction

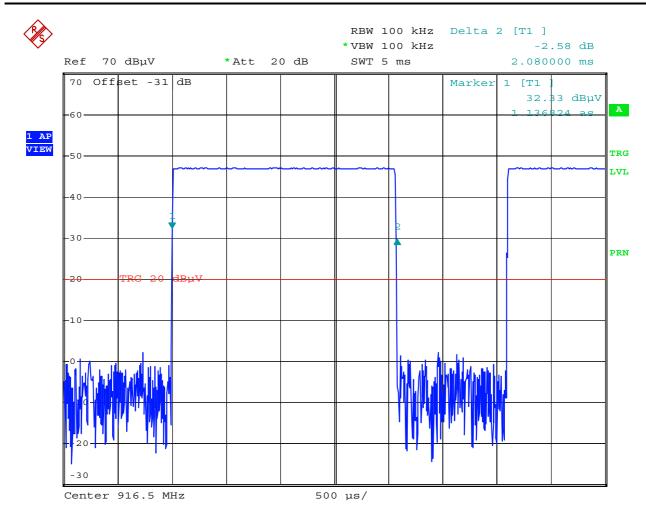
Date: 7.JUN.2005 17:48:11





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 · Log(T _{on} / T _{period}) dB
	·	=	-5.8 dB

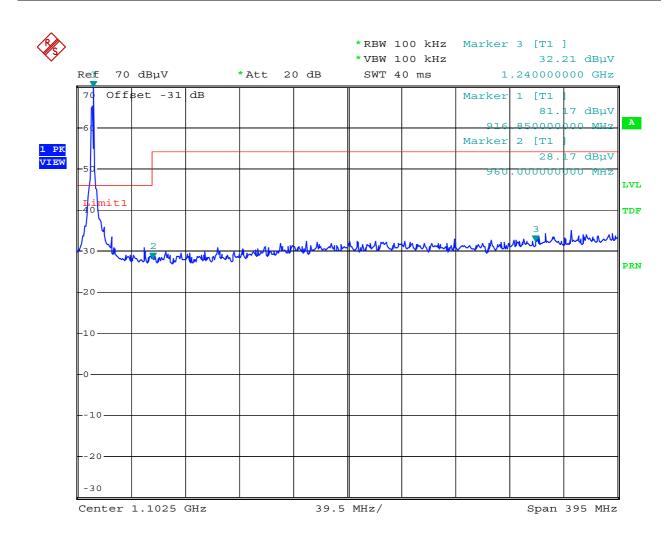


8.5 Restricted Bands of Operation

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:	7 th 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		300 30			
	1.705 - 30.000	30	· / • · //			
	Additionally, the level of any unwanted emissions shall not exceed the lev 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:	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				
	30 - 88	100	40.0		
	88 - 216	150	43.5		
	216 - 960	46.0			
	Above 960	500	54.0		
Additionally, the level of any unwanted emissions shall not ex 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: Date of test:	Discontinious disturbances at transmitter switching excluded. 7 th 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	Antenna	Detector	Receiver	Correction	Pulse Train	Final	Limit	Margin
	Polarization		Reading	Factor	Correction	Value		
(MHz)			(dBµV)	(dB/m)	(dB)	(dBµV/m)	(dBµV/m)	(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 (dB μ V/m) = Reading Value (dB μ V) + 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				Declared by applicant	Measured	Exemption
The transmitter is for						
fixed use	mobile use	⊠ portable use		\boxtimes		
The antenna is						
detachable						
The output power (TP in	n watts) is measured	d at the antenna connector:				
$TP = \dots$ W						
Numerical gain of the antenna: $G = \dots$						
⊠ 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			\boxtimes	
Distance between the two antennas in m: $D = 3 \text{ m}$					\boxtimes	
Numerical gain of the antenna: $G = 1$						
SAR and RF evaluation						
EI	$RP = G \cdot TP \Rightarrow EI$	$IRP = 238.2 \mu W$				
☐ Transmitter is operating at TP equal to or less than 20		1.0 GHz with an output power				
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
Serial no.:		- within pneumatic system
A4 Applicant:		- transmitting continiously
Eldat GmbH		- EUT on left side (P1)
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:	File name:	
automatically	default.emi	
Detector: Peak		List of values: 10 dB Margin 50 Subranges
BμV/m		Limit1: FCC Part 15 Transducer: VULB 9163
60		
55	i i i i i 	
50		
50	+	·+
45		
40		
35	; ;;;;;	·;
30	<u></u>	
25		
		Line had been been been been been been been bee
20	+	AND TO SHOW THE PROPERTY OF TH
15	M	
	The state of the s	
10		
5		
0 30 40 50	70 100	200 300 400 500 700 10
		N

50530-50189

Page

of

Pages

Prescan

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

Model: Handsender 916.5 MHz	
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	

Prescan

Comment:

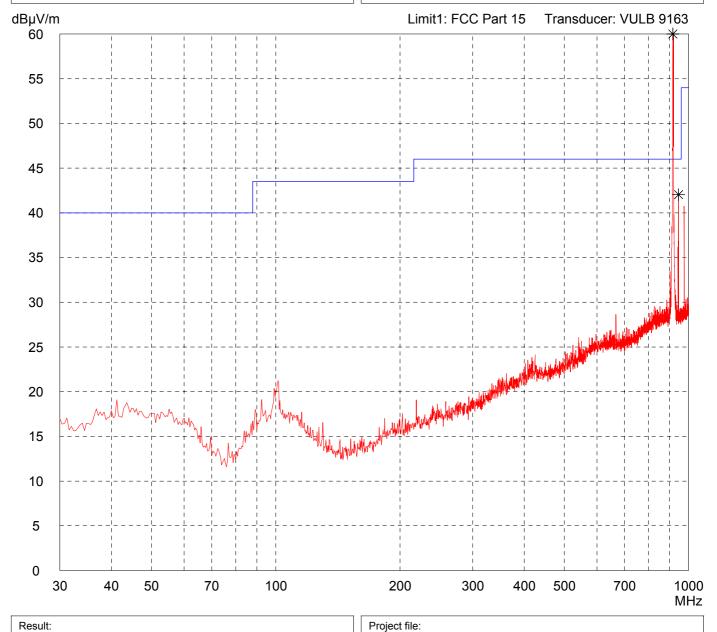
- 3 V lithium battery supply
- within pneumatic system
- transmitting continiously
- EUT on left side (P1)

Detector:

Peak

List of values:
10 dB Margin

50 Subranges



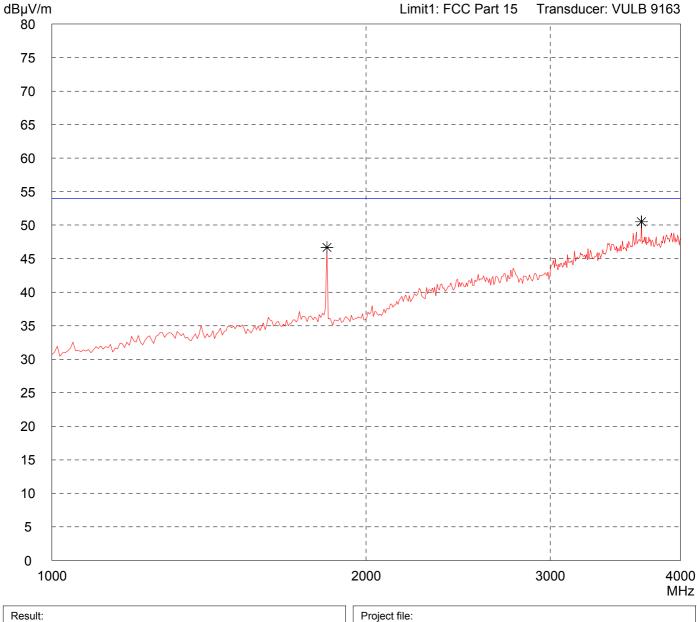
50530-50189

Page

Pages

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

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



50530-50189

Page

Pages

Prescan

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

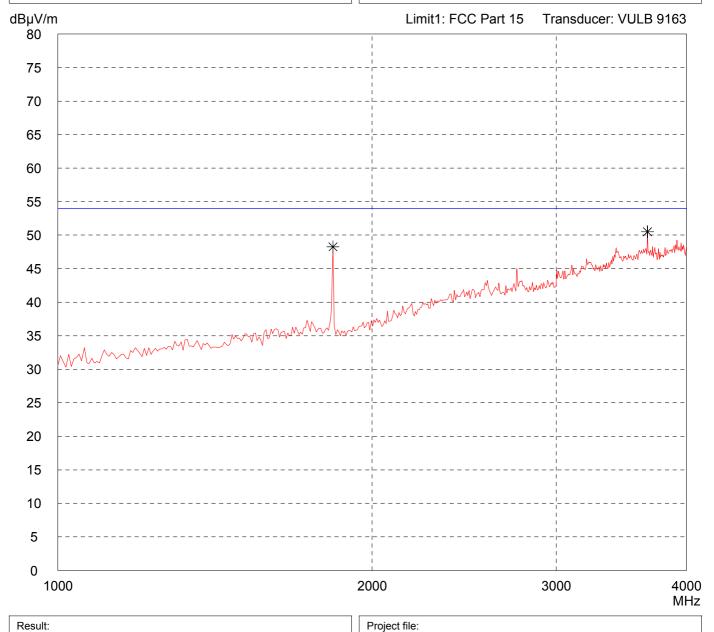
Model:		Comment:
Handsender 916.5 MI	HZ	- 3 V lithi
Serial no.:		م مناطقانی
A4		- within p
Applicant:		- transini
Eldat GmbH		- EUT or
Test site:		
Fully anechoic room,	cabin no. 2	
Tested on:		
Test distance 3 metre	s	
Vertical Polarization		
Date of test:	Operator:	
06/06/2005	M. Steindl	
Test performed:	File name:	
automatically	default.emi	
Detector:		List of valu

- 3 V lithium battery supply
- within pneumatic system
- transmitting continiously
- EUT on left side (P1)

Detector:

Peak

List of values:
Selected by hand



50530-50189

Page

Pages

Prescan

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

		,		
Model: Handsender 916.5 MHz Serial no.: A4 Applicant: Eldat GmbH			Comment: - 3 V lithium battery supply	
		- within pneumatic sys	item usly	
		- EUT on left side (P1)		
Test site:		- LOT OIT left side (i 1)	1	
Fully anechoic roor	n, cabin no. 2			
Tested on:				
Test distance 3 me Horizontal Polariza				
Date of test:	Operator:			
06/06/2005	M. Steindl			
Test performed: automatically	File name: default.emi			
Detector:		List of values:		
Peak		Selected by hand		
dBµV/m 80		Limit1: FCC Part	t 15 Transducer: EMCO 3160	
00				
75				
70	·			
05	i !			
65				
60	·			
55				
50	·			
45	· · · · · · · · · · · · · · · · · · ·		**************************************	
40	 			
	*	٨		
35	the property of the second	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
30	·			
25				
20	 			
20				
15				
10	·			
5	·			
0	 			
2600	3000		39 MI	
Result:		Project file:		
Prescan		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		
Serial no.: A4		- within pneumatic system - transmitting continiously		
Applicant: Eldat GmbH		- EUT on left side (P1)		
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				
Detector: Peak		List of values: Selected by hand		
dBμV/m 80		Limit1: FCC Part 15 Transducer: EMCO 3160		
dBμV/m 80 75		Limit1: FCC Part 15 Transducer: EMCO 3160		
80		Limit1: FCC Part 15 Transducer: EMCO 3160		
75		Limit1: FCC Part 15 Transducer: EMCO 3160		
75 70		Limit1: FCC Part 15 Transducer: EMCO 3160		
75 70 65		Limit1: FCC Part 15 Transducer: EMCO 3160		
80 75 70 65 60		Limit1: FCC Part 15 Transducer: EMCO 3160		
80 75 70 65 60 55		Limit1: FCC Part 15 Transducer: EMCO 3160		
80 75 70 65 60 55	*	Limit1: FCC Part 15 Transducer: EMCO 3160		
80 75 70 65 50 45	m.m.m.m.m.m.m.m.m.m.m.m.m.m.m.m.m.m.m.	Limit1: FCC Part 15 Transducer: EMCO 3160		

15 10 5 0 2600 3000 3950 MHz

25

20

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

	Radiated Emission Tes acc. to FCC Part	15 (EMCO 3160)	HZ
Model:		Comment:	
Hands	sender 916.5 MHz	- 3 V lithium battery supply	
Serial n	no.:	- within pneumatic system	
A4 Applica	int:	- transmitting continiously	
1	GmbH	- EUT on left side (P1)	
Test site	e: anechoic room, cabin no. 2	, ,	
Tested			
	distance 3 metres ontal Polarization		
Date of 06/06/	•		
1	erformed: File name: natically default.emi		
Detecto Peak	or:	List of values: 10 dB Margin	50 Subranges
dBµV/n 80	m	Limit1: FCC Part 15	Transducer: EMCO 3160
75			
70	<u> </u>		
65		·	
60	 		
55			
50	 *	·	
45		·	*
40		was marked the same and the sam	Many Mary Mary Mary Mary Mary Mary Mary Mar
35		·	
30		·	
25		·	

10 5 0 3950 5000 5850 MHz

20

15

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

Radiated Emission Test 3.95 GHz - 5.85 GHz

acc. to FCC	Part 15 (EMCO 3160)
Model: Handsender 916.5 MHz 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 M. Steindl Test performed: automatically Gefault.emi	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT on left side (P1)
Detector: Peak	List of values: 10 dB Margin 50 Subranges
dBµV/m 80 75	Limit1: FCC Part 15 Transducer: EMCO 3160
55	
50	*

40 35 30 25 20 15 10 5 0 3950 5000 5850 MHz

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

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

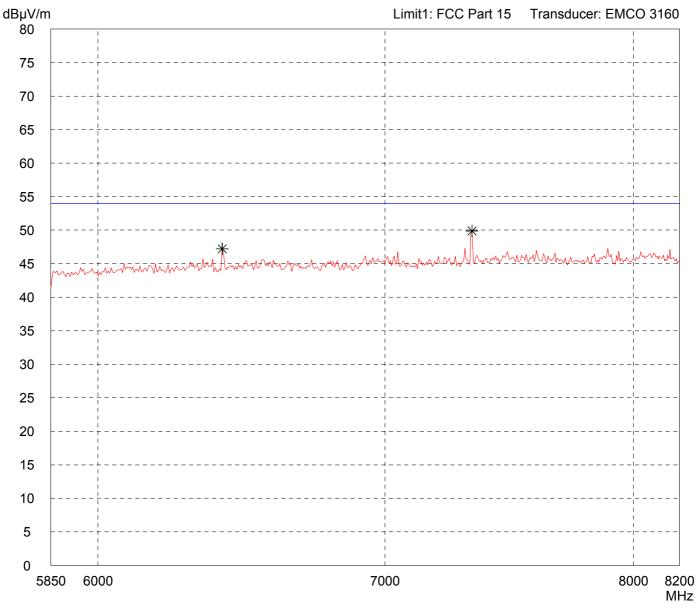
Model: Handsender 916.5 MI	Hz	Comm
Serial no.:		- with
Applicant: Eldat GmbH		- tran
Test site: Fully anechoic room,	cabin no. 2	
Tested on: Test distance 3 metre Horizontal Polarizatio	· -	
Date of test: 06/06/2005	Operator: M. Steindl	
Test performed: automatically	File name: default.emi	
Detector: Peak		List of Selec

Result:

ent:

- lithium battery supply
- nin pneumatic system
- smitting continiously
- Γ on left side (P1)

values: cted by hand



Project file:

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

Model: Handsender 916.5 MHz	
Serial no	
A4	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cab	oin 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:	

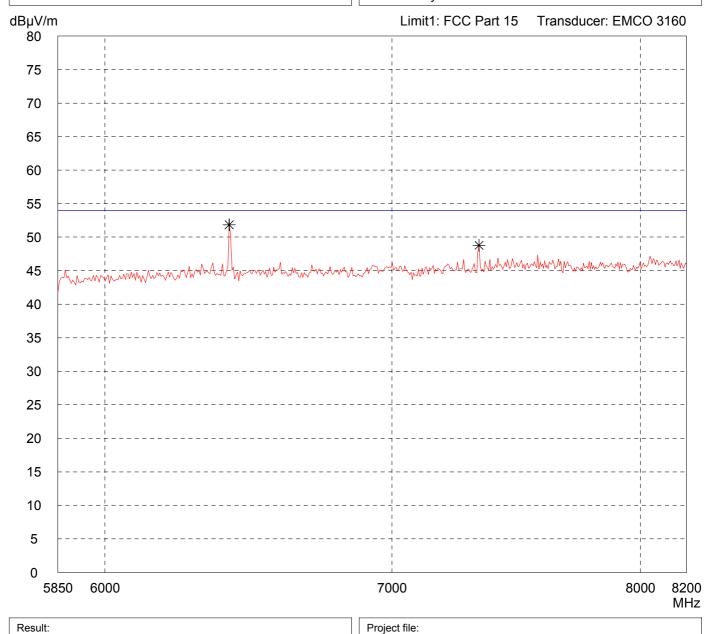
Comment:

- 3 V lithium battery supply
- within pneumatic system
- transmitting continiously
- EUT on left side (P1)

Detector:

Peak

List of values:
Selected by hand



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

Model: Comment: Handsender 916.5 MHz - 3 V lithium battery supply Serial no.: - within pneumatic system A4 - transmitting continiously Applicant: Eldat GmbH - EUT on left side (P1) Test site: Fully anechoic room, cabin no. 2 Tested on: Test distance 1 meter Horizontal Polarization Operator: Date of test: 06/06/2005 M. Steindl File name: Test performed: automatically default.emi Detector: List of values: Peak 10 dB Margin 50 Subranges dBµV/m Limit1: FCC Part 15 (1 m) Transducer: EMCO 3160 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 8200 10000 MHz Result: Project file: Prescan 50530-50189 Page **Pages**

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

Model: Hands	sender 916.5 MHz		Comment: - 3 V lithium battery supply	
Serial n	0.:		- within pneumatic system	
Applica			- transmitting continiously	
Eldat Test site	GmbH 		- EUT on left side (P1)	
	anechoic room, cab	oin no. 2		
Tested	on: listance 1 meter			
	al Polarization			
Date of 06/06/		Operator: M. Steindl		
	rformed:	File name:		
	atically	default.emi		
Detecto Peak	r:		List of values: 10 dB Margin 50 Subranges	
dBµV/n	n		Limit1: FCC Part 15 (1 m) Transducer: EMCO 316	0
80			 	
75			· 	
70			· 	
65				
60	*			
55			· 	
50	- LAMAMANAA	apperluse grapes some lands and and an appearance of the second and a	marriage of the contrated in the contrated of the contrat	⅓
45			· 	
40				
35			·	
30			· 	
25			·	
20			· 	-
15				
10				
5			·	
0 82	200			000
Result:			Project file:	ИHz
Presca	an		50530-50189 Page of Page	200

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

Model: Handsender 916.5 MHz	
Serial no.:	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabir	n 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	

Prescan

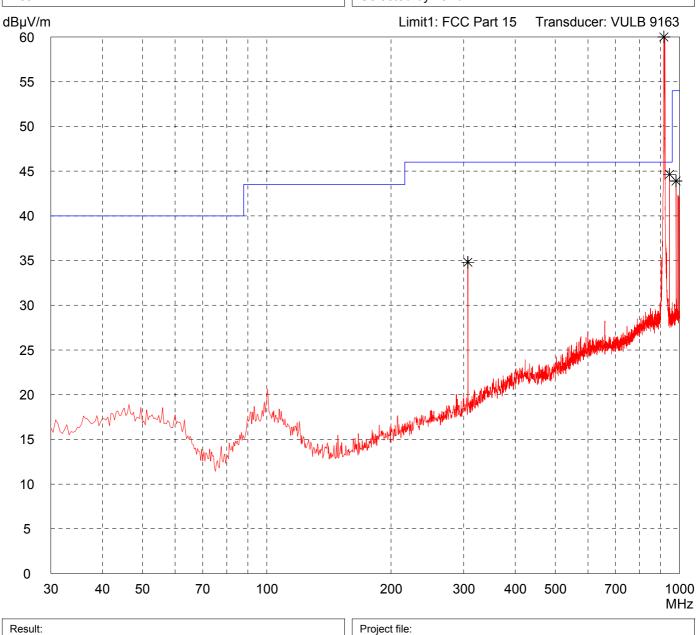
Comment:

- 3 V lithium battery supply
- within pneumatic system
- transmitting continiously
- EUT flat on table (P2)

Detector:

Peak

List of values:
Selected by hand



50530-50189

Page

Pages

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

Model:					Comm					
Handsender 916.5	5 MHz				- 3 V	lithium batte	ery supply			
Serial no.: A4					- with	in pneumati	c system			
Applicant:					- tran	smitting con	tiniously			
Eldat GmbH					- EU	Γ flat on tabl	e (P2)			
Test site: Fully anechoic roo	m cabin no	. 2								
Tested on:	iii, cabiii iio). Z								
Test distance 3 me Vertical Polarization										
Date of test: 06/06/2005		perator: 1. Steind	I							
Test performed: automatically		ile name: lefault.er	ni							
Detector: Peak						values: 3 Margin		50 Subra	nges	
dBμV/m						Limit1: FC	C Part 15	Transdu	cer: VULE	3 9163
60			1 1			 		 		*
55			i i	 		; 	 	i ! 		<u> </u>
55		 		 		 	1 1 1	1 1 1	1 1 1 1 1 1	
50		 		 		 		 		+
45				 		 				
		 		<u> </u> 		<u> </u> 		 	 	
40			<u> </u>			 				
				 		 		ļ		
35						<u> </u> 				
30				<u>_</u>		<u> </u> 				
25			i i				 			
		 	 			 	L. Judisland	MANAGAN MANAGANA		
20		- -				مالمان باین	Manager :	 	-	+
M. ~~~		 	MM	1744/hay Max., 1	بإيدا/ين	y halinghirahilahka papaka kaka	1 1 1 1	 		[[[
15		W. J. J. J.	- 	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		 	 	₁		
10			 	 - 		 				
		1 1		 		 		 	1 	
5	 -			 		 	,		,	
	1 1 1 1		1 1	 - -		 	'	1 1 1		
0	F.C.	70		20		20 -	20 13		700	
30 40	50	70	10	00	20	00 3	00 40	0 500	700	100 ME

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: Hands	sender 916.5 MH:	z	Comment: - 3 V lithium ba	itterv supply		
Serial no	0.:		- within pneum	atic system		
Applicar			- transmitting c	_		
Eldat (- EUT flat on ta	able (P2)		
	anechoic room, ca	abin no. 2				
Tested of	on: listance 3 metres					
	ontal Polarization					
Date of 06/06/		Operator: M. Steindl				
Test per		File name:				
	atically	default.emi				
Detector Peak	r:		List of values: 10 dB Margin		50 Subran	ges
dBµV/m	า		 Limit1: F	CC Part 15	Transduc	er: VULB 9163
80				 		
75			 			
70			 . – – – – – – – – –			
65			 			
60			 			
55			 			
50			 			
45			 	 		
40			 . – – – – – – – –		<u>-</u>	warmy Mayny Mayny
35			 MMANY MAN	The state of the s	MM = 01	
30	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		 			
25			 	 <u> </u>		
20			 			
15			 			
10			 	 		
5			 			
0						
10	000			2000		260 MH
Result:	an		Project file: 50530-50189		Page	of Pages

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

Model: Handsende	er 916.5 MHz	Comment: - 3 V lithium battery supply
Serial no.:		- within pneumatic system
Applicant:		- transmitting continiously
Eldat Gmb Test site:	H	- EUT flat on table (P2)
Fully anecl	hoic room, cabin no. 2	
Tested on: Test distar Vertical Po	nce 3 metres	
Date of test:	Operator:	
06/06/2005		
Test performe automatica		
Detector: Peak		List of values: Selected by hand
dBμV/m		Limit1: FCC Part 15 Transducer: VULB 9163
80		
75		
70		
65		
60		
55		
50		*
45		
40		1 million management
35		
30		
25		
20		
15		
10		
5		
0		2000
1000		2000 260 MH
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)

		acc. to FCC Pa	art 15 (EMCO 3160)
Model:			Comment:
Hands	sender 916.5 MHz		- 3 V lithium battery supply
Serial n	0.:		within proumatic evetem
A4			- within pneumatic system - transmitting continiously
Applicate Eldate			
Test site			- EUT flat on table (P2)
	anechoic room, cabin no. 2		
Tested			
	listance 3 metres ontal Polarization		
Date of	test: Opera	ator:	
06/06/	/2005 M. S	Steindl	
1	rformed: File n		
autom	natically defa	ult.emi	
Detecto Peak	r:		List of values: Selected by hand
dBµV/n	n		Limit1: FCC Part 15 Transducer: EMCO 3160
80			
75			
75		!	
70			
65		 	
00		 	
60		 	
		i I	
55			
50			
		 	*
45		 	
40			
	*	i !	
35	my Multury man	www	THE CAME AND ALL HOLD AND AND AND AND AND AND AND AND AND AN
30		<u> </u>	
25		 	
20		 	
15			
10			
5		 	

Project file:

3950 MHz

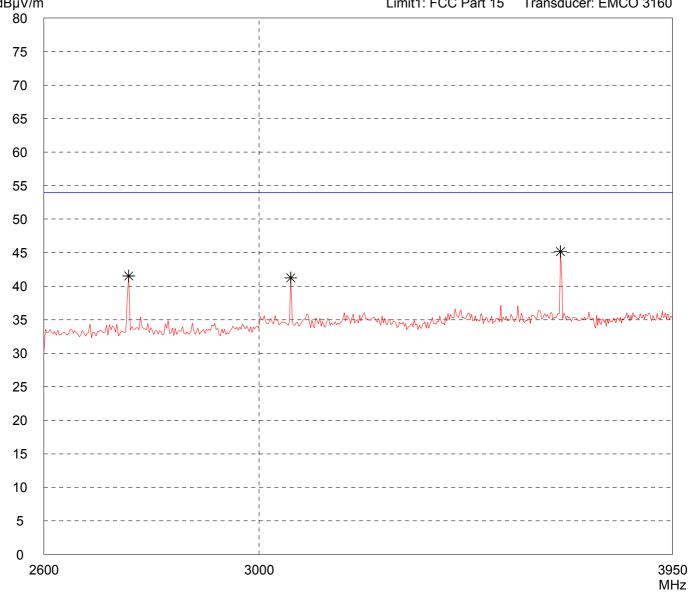
3000

2600

Result:

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

	400: 10 1 00	or art to (EMOO 0100)
Model: Handsender 916.5 M Serial no.: A4 Applicant: Eldat GmbH Test site: Fully anechoic room Tested on: Test distance 3 metr Vertical Polarization Date of test:	, cabin no. 2 res	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT flat on table (P2)
06/06/2005 Test performed: automatically	M. Steindl File name: default.emi	
Detector: Peak		List of values: Selected by hand
dBµV/m 80	1	Limit1: FCC Part 15 Transducer: EMCO 3160



Project file:

Result:

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

Handsender 916.5 MHz Serial no: 44 Applicant: Elidat GmbH Test site: Fully anechoic room, cabin no. 2 Tested or test: GO(06/2005 M. Steindl) Test performed: automatically default emi Detector: Peak dBjW/m Limit1: FCC Part 15 Transducer: EMCC 65 60 45 40 35 30 25 20 16 10 5					•			
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: Operator: automatically Detector: Peak BliptV/m Company	Model:	sandar 016 5 ML	J-7		Comment:	- h - 44 - m		
A4 Applicant: Flidat GmbH Test site: Fully anechoic room, cabin no. 2 Tested on: Tested on: Test distance 3 metres Horizontal Polarization Date of test: Peak Detector: Peak BBW/mm Limit1: FCC Part 15 Transducer: EMCC 10 dB Margin S0 Subranges Limit1: FCC Part 15 Transducer: EMCC 45 40 45 40 45 40 45 40 45 40 45 40 46 47 48 48 49 40 40 45 40 40 45 40 46 47 48 48 49 40 40 40 40 41 45 40 40 45 40 46 47 48 48 49 40 40 40 40 40 41 45 40 40 41 45 40 40 41 45 40 40 41 45 40 40 41 45 40 40 41 45 40 40 41 41 41 41 41 41 41 41 41 41 41 41 41			14					
Applicant: Eldat GmbH Test site: Fully anechoic room, cabin no. 2 Tested on: Tested ori: Test distance 3 metres Horizontal Polarization Date of fest: Operator: Op/O/O/2005 M. Steindl Test performed: automatically default.emi Detector: Peak Detector: Peak Initiative C Part 15 Transducer: EMCC 46 40 40 35 30 25 20 15 10 5								
Test site: Fully anechoic room, cabin no. 2 Tested on: Test distance 3 metres Horizontal Polarization Date of test: Operator:								
Fully anechoic room, cabin no. 2 Tested on: Test distance 3 metres Horizontal Polarization Date of test: Operator: 06/06/2005 M. Steindl Test performet: File name: automatically default.emi Detector: Peak Indicate the control of					- EUT flat o	n table (P2)		
Test distance 3 metres Horizontal Polarization Date of test: Operator: 06/06/2005 M. Steindl Test performed: File name: automatically default.emi Detector: Peak Detector: Peak BUST of values: 10 dB Margin 50 Subranges BLIMITI: FCC Part 15 Transducer: EMCC Transducer: EMCC Solution of the steep o			cabin no. 2					
Horizontal Polarization								
06/06/2005 M. Steindl Test performed: File name: automatically default.emi Detector: Peak Did Margin 50 Subranges IBμV/m Limit1: FCC Part 15 Transducer: EMCC 60 75 70 65 60 45 40 35 30 25 20 15								
Detector: Peak Detector:								
Detector: Peak								
Peak 10 dB Margin 50 Subranges dBµV/m	autom	natically	default.emi					
75 70 65 60 45 40 35 30 25 20 15		or:				jin	50 Subranges	
75 70 65 60 45 40 35 30 25 20 15		n			Limit1	: FCC Part 15	Transducer: EMCO 3	3160
70	80	1				 		
65 60 55 50 45 40 35 30 25 20 15 10	75					 		
60 55 50 45 40 35 30 25 20 15 10	70					 		. – – –
60 55 50 45 40 35 30 25 20 15 10 5	65					 		
55 50 45 40 35 30 25 20 15						 		
50 45 40 35 30 25 20 15	60					 		
45	55					 		
45	50					 		
40		i	*			 		
35 30 25 20 15 10 5	45					+ · · · · · · · · · ·		
35 30 25 20 15 10 5	40	~	was how the war was	,7-,AMV-7	tAA~;;,;;;;	Manna a Manna	mandandining	<u>ν~Ψν</u>
30	35					 		
25						 		
20	30					+ 		
15	25					<u> </u>		. – – –
10	20					 		. – – –
5	15					 		. – – –
0	10					 		. – – –
0	5					 		
3950 5000		950			50	000		58 M

Result: Prescan

Project file:

50530-50189

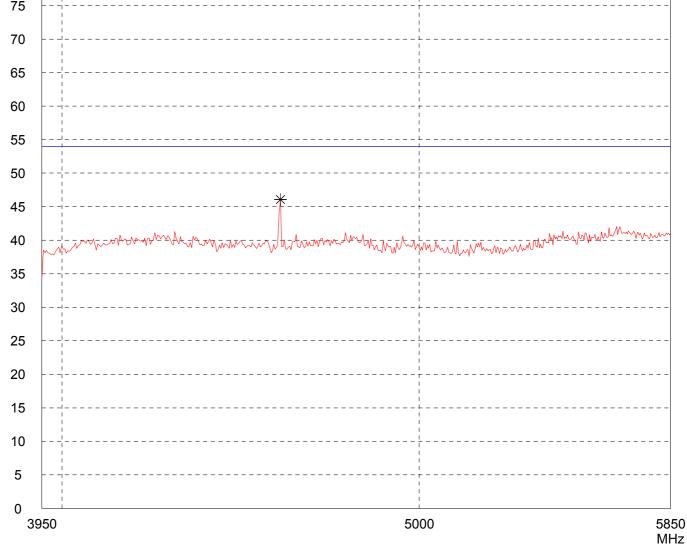
Page

of

Pages

Radiated Emission Test 3 95 GHz - 5 85 GHz

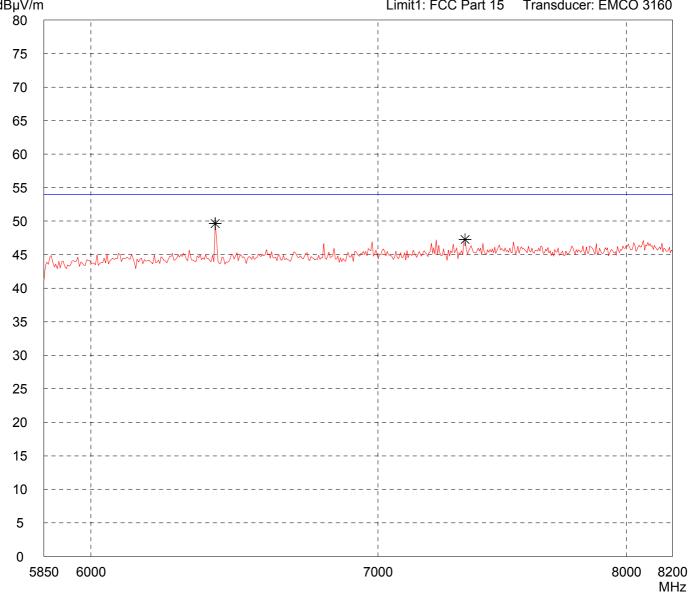
	CC Part 15 (EMCO 3160)
Model: Handsender 916.5 MHz	Comment: - 3 V lithium battery supply
Serial no.: A4	- within pneumatic system
Applicant: Eldat GmbH	- transmitting continiously - EUT flat on table (P2)
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Vertical Polarization	
Date of test: Operator: 06/06/2005 M. Steindl	
Test performed: File name: automatically default.emi	
Detector: Peak	List of values: 10 dB Margin 50 Subranges
dBμV/m 80	Limit1: FCC Part 15 Transducer: EMCO 3160
75	
70	
65	
60	
55	
50	



Project file: Result: 50530-50189 Prescan Page Pages

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

	acc. to FCC	C Part 15 (EMCO 3160)	
Model: Handsender 916.5 MH Serial no.: A4 Applicant: Eldat GmbH Test site: Fully anechoic room, of the control of the contro	cabin no. 2	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT flat on table (P2)	
Detector: Peak		List of values: Selected by hand	
dBμV/m 80 75		Limit1: FCC Part 15	Transducer: EMCO 3160



Project file:

Result:

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

Model: Handsender 916.5 MHz	<u> </u>	
Serial no.:		
Applicant: Eldat GmbH		
Test site: Fully anechoic room, ca	bin 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		

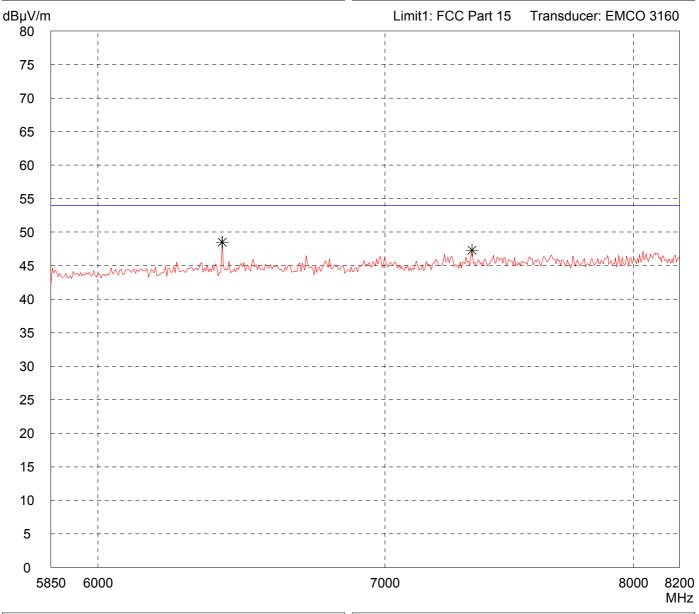
Result:

Prescan

comment:

- 3 V lithium battery supply
- within pneumatic system
- transmitting continiously
- EUT flat on table (P2)

ist of values: Selected by hand



Project file:

50530-50189

Page

Pages

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

Model: Comment: Handsender 916.5 MHz - 3 V lithium battery supply Serial no.: - within pneumatic system A4 - transmitting continiously Applicant: Eldat GmbH - EUT flat on table (P2) Test site: Fully anechoic room, cabin no. 2 Tested on: Test distance 1 meter Horizontal Polarization Operator: Date of test: 06/06/2005 M. Steindl File name: Test performed: automatically default.emi Detector: List of values: Peak 10 dB Margin 50 Subranges dBµV/m Limit1: FCC Part 15 (1 m) Transducer: EMCO 3160 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 8200 10000 MHz Result: Project file: Prescan 50530-50189 Page **Pages**

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

Model: Comment: Handsender 916.5 MHz - 3 V lithium battery supply Serial no.: - within pneumatic system A4 - transmitting continiously Applicant: Eldat GmbH - EUT flat on table (P2) Test site: Fully anechoic room, cabin no. 2 Tested on: Test distance 1 meter Vertical Polarization Date of test: Operator: 06/06/2005 M. Steindl File name: Test performed: automatically default.emi Detector: List of values: Peak 10 dB Margin 50 Subranges dBµV/m Limit1: FCC Part 15 (1 m) Transducer: EMCO 3160 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 8200 10000 MHz Result: Project file: Prescan 50530-50189 Page **Pages**

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

Model: Handsender 916.5 MH		
Serial no.:		
Applicant: Eldat GmbH		
Test site: Fully anechoic room, c	abin 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:		

Prescan

Comment:

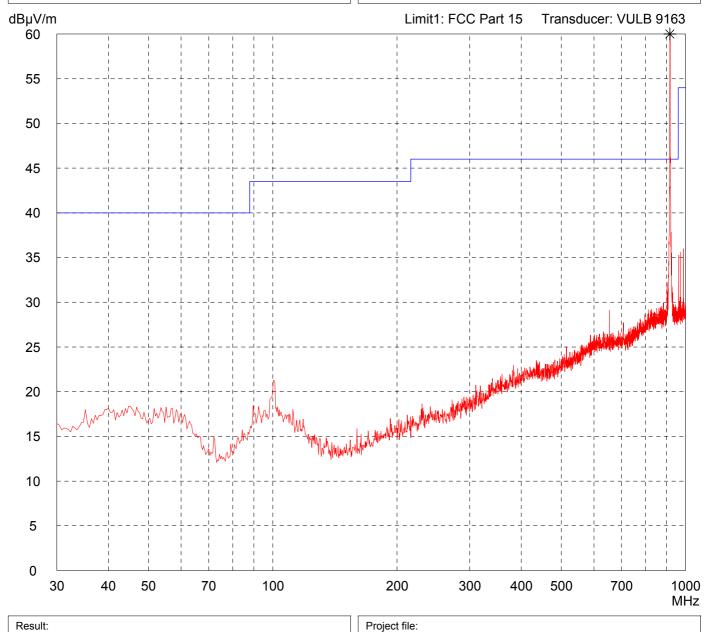
- 3 V lithium battery supply
- within pneumatic system
- transmitting continiously
- EUT in upright position (P3)

Detector:

Peak

List of values:
10 dB Margin

50 Subranges



50530-50189

Page

Pages

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

Model: Handsender 916.5 MHz	
Serial no.:	
Applicant: Eldat GmbH	
Test site: Fully anechoic room, cabi	n 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	

Prescan

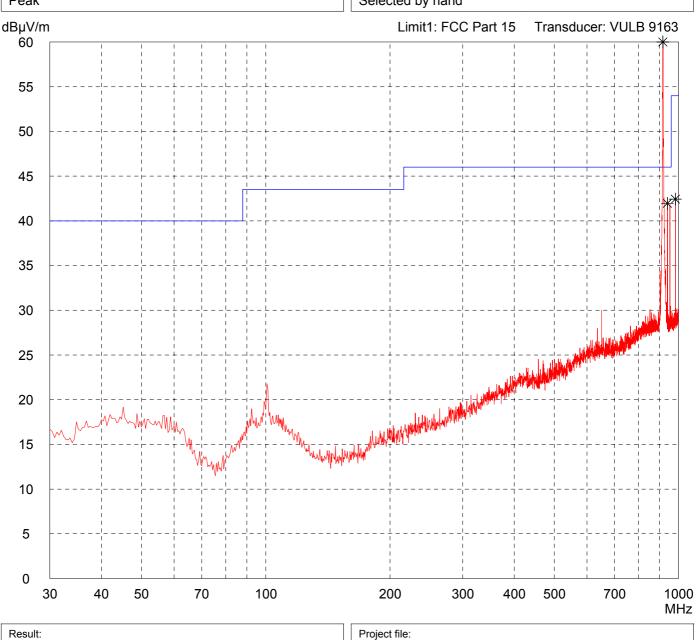
Comment:

- 3 V lithium battery supply
- within pneumatic system
- transmitting continiously
- EUT in upright position (P3)

Detector:

Peak

List of values:
Selected by hand



50530-50189

Page

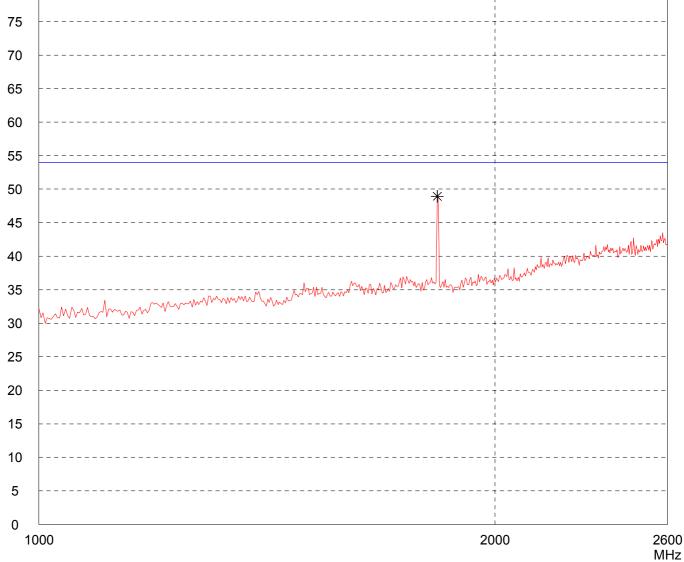
Pages

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

Model: Handsender 9	916.5 MHz	Comment: - 3 V lithium battery supply	
Serial no.:		- within pneumatic system	
Applicant:		- transmitting continiously	
Eldat GmbH		- EUT in upright position (P3)	
Test site: Fully anechoic	c room, cabin no. 2		
Tested on:	2 materia		
Test distance Horizontal Po			
Date of test: 06/06/2005	Operator: M. Steindl		
Test performed:	File name:	_	
automatically	default.emi		
Detector: Peak		List of values: Selected by hand	
dBµV/m		Limit1: FCC Part 15 Transducer: VULB 9163	
80			
75			
70			
65		 	
60			
55			
50		 	
45			
40 +			
35			
30		~~	
25		 	
20		; ; ;	
15			
10		 	
5			
0			
1000		2000 260 MH	
Result:		Project file: 50530-50189 Page of Pages	

Radiated Emission Test 1 GHz - 2 6 GHz

acc. to FCC Part 15 (F	Fully Anechoic Chamber)
Model: Handsender 916.5 MHz 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 M. Steindl Test performed: automatically Gefault.emi	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT in upright position (P3)
Detector: Peak	List of values: 10 dB Margin 50 Subranges
65	Limit1: FCC Part 15 Transducer: VULB 9163
55	



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

		t 15 (EMCO 3160)
Model:		Comment:
Hands Serial no	sender 916.5 MHz	- 3 V lithium battery supply
A4	J.,	- within pneumatic system
Applicar		- transmitting continiously
Eldat (- EUT in upright position (P3)
	anechoic room, cabin no. 2	
Tested o		
	istance 3 metres intal Polarization	
Date of t	•	
Test per	formed: File name: atically default.emi	
Detector	r:	List of values: 10 dB Margin 50 Subranges
dBµV/m	1	Limit1: FCC Part 15 Transducer: EMCO 3160
80		
75		
70		
70		
65		
60		
55		
50		*
45	*	
40		
35	Asstatation of the comment of the co	hall when the water and the form of the second the seco
30		
25		
20		
15		
	1	

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

3000

10

5

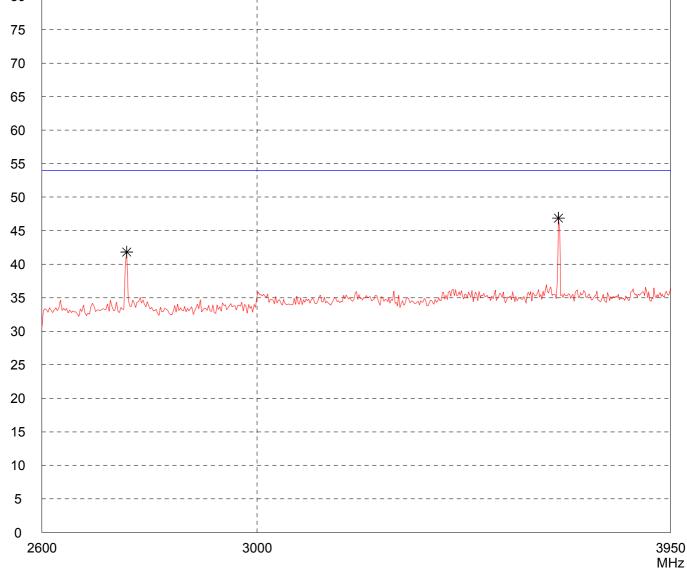
0

2600

3950 MHz

Radiated Emission Test 2.6 CHz 3 95 GHz

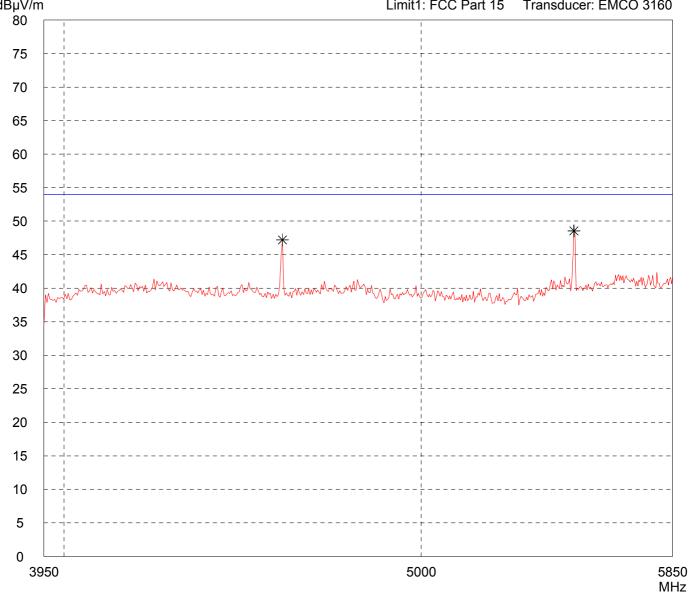
		rt 15 (EMCO 3160)
Serial not A4 Applicant Eldat (Control Test site Fully and Test do Vertical Date of the O6/06/2) Test per Control Test per	nt: GmbH e: anechoic room, cabin no. 2 on: distance 3 metres al Polarization test: C2005 M. Steindl	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT in upright position (P3)
Detector Peak	r:	List of values: Selected by hand
dBµV/m 80	1	Limit1: FCC Part 15 Transducer: EMCO 3160
75 70		
65 60		
55		



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

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

Model: Handsender 916.5 MHz Serial no.: A4 Applicant: Eldat GmbH Test site: Fully anechoic room, cabin no. 2 Tested on: Test distance 3 metres Horizontal Polarization		- within pneumatic system - transmitting continiously	
			,
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	Transducer: EMCO 3160



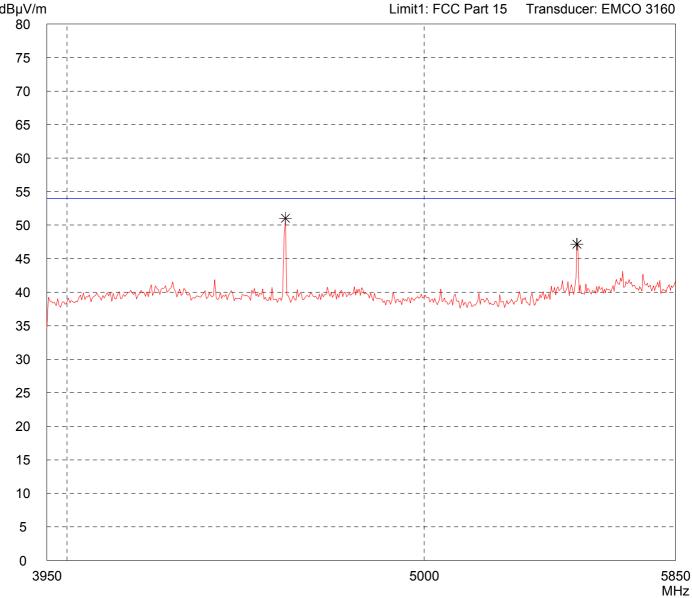
Result:
Prescan

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 M	Hz	Comment: - 3 V lithium battery	supply		
A4			- within pneumatic system - transmitting continiously		
Applicant:			Ously		
Eldat GmbH		- EUT in upright pos	- EUT in upright position (P3)		
Test site: Fully anechoic room,	cabin no. 2				
Tested on:					
Test distance 3 metre Vertical Polarization	es				
Date of test:	Operator:				
06/06/2005	M. Steindl				
Test performed:	File name:				
automatically	default.emi				
Detector:		List of values:			
Peak		10 dB Margin		50 Subranges	
dBμV/m		Limit1: FCC Pa	art 15	Transducer: EM	



Project file:

Result:

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

Model: Handsender 916.5 MHz	
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
Datastan	

Comment:

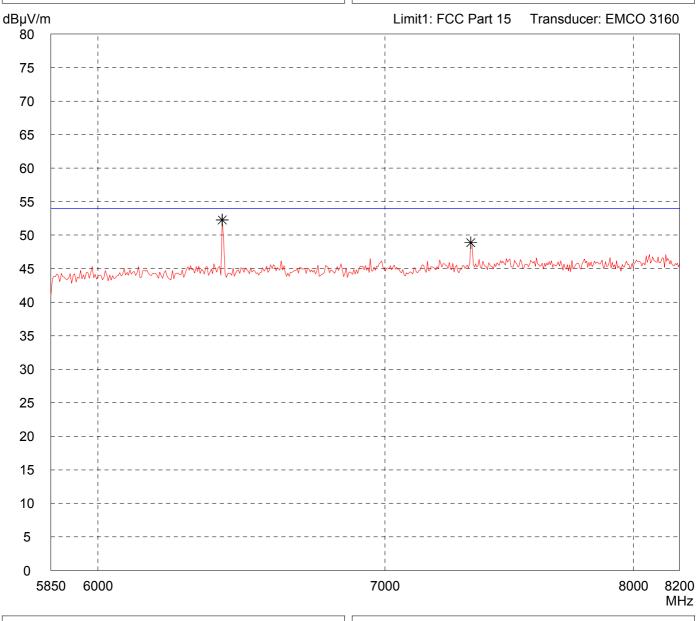
- 3 V lithium battery supply
- within pneumatic system
- transmitting continiously
- EUT in upright position (P3)

Detector:

Peak

List of values:

Selected by hand



Result: 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 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: Operator: 06/06/2005 M. Steindl File name: Test performed: automatically default.emi

Comment:

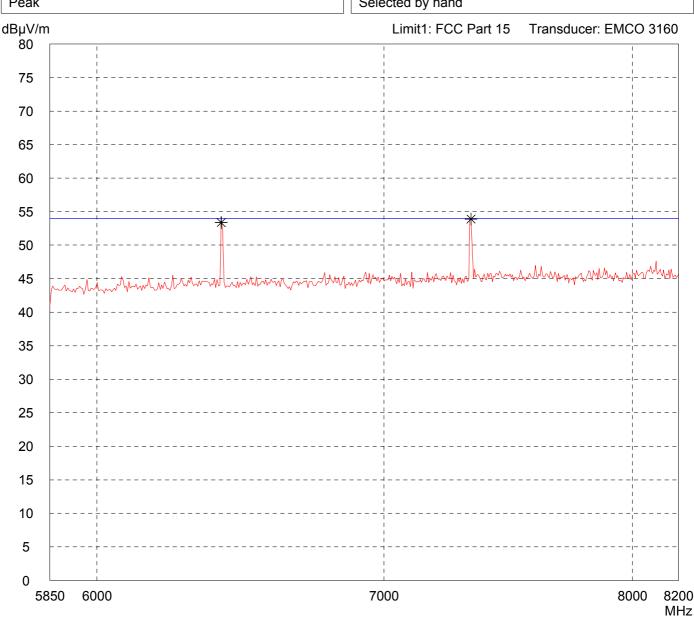
- 3 V lithium battery supply
- within pneumatic system
- transmitting continiously
- EUT in upright position (P3)

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: Hands	sender 916.5 MH	lz	Comment: - 3 V lithium battery sup	vlac			
Serial n	no.:		- within pneumatic syst	em			
Applica	Applicant:		- transmitting continious	- transmitting continiously			
	GmbH		- EUT in upright positio	- EUT in upright position (P3)			
Fully a	·e: anechoic room, c	abin no. 2					
Tested							
	distance 1 meter ontal Polarization	l					
Date of		Operator:					
06/06/		M. Steindl					
1	erformed: natically	File name: default.emi					
Detecto Peak	or:		List of values: 10 dB Margin	50 Subranges			
dBµV/n 80	n		Limit1: FCC Part 15 (1 n	m) Transducer: EMCO 3160			
75			 				
70			 				
65			<u> </u>				
60			-				
55							
50	my hope promised	-marhaman Surany Manananan [M	day may man large man for any	Markey Markey Markey Company C			
45							
40							
35							
30							
25			·				
20			 				
15			 				
10							
5			; ; ;				
0 82	200			1000 MHz			
Result:			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 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 M. Steindl Test performed: automatically Gefault.emi	Comment: - 3 V lithium battery supply - within pneumatic system - transmitting continiously - EUT in upright position (P3)
Detector: Peak	List of values: Selected by hand
45	Limit1: FCC Part 15 (1 m) Transducer: EMCO 3160
25	;
20	
15	
5	
8200	10000 MHz
Result: Prescan	Project file: 50530-50189 Page of Pages