

Straubing, 05 May 2009

TEST-REPORT

No. 55147-081414-2 (Edition 1)

for

NIT M14509

NIT

Applicant: Fakt S.r.l.

Test Specifications: FCC Code of Federal Regulations,

CFR 47, Part 15,

Sections 15.107, 15.109, 15.205, 15.207,

15.215 and 15.247

Industry Canada Radio Standards

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.



Specifications RSS-Gen Issue 2, Sections 7.2.2, 7.2.3 and RSS-210 Issue 7, Sections 2.2, A8 (Category I Equipment) TÜV SÜD SENTON GmbH Aeussere Fruehlingstrasse 45 D-94315 Straubing

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1 Description of the Equipment Under Test (EUT)

Type designation¹:
Parts²:
Serial number(s):
Manufacturer:
Magneti Marelli S.p.A.
Type of equipment:
Version:
FCC ID:
Additional parts/accessories:

NIT

NIT

NA

NIT

NA

NIT

NA

Technical data of EUT	Fechnical data of EUT			
Application frequency range:	2400 - 2483.5 MHz			
Frequency range:	2400 – 2483.5 MHz			
Operating frequency:	For Test Prurposes only: 2402 MHz, 2440 MHz, 2480 MHz			
Type of modulation:	FHSS			
Pulse train:	N/A			
Pulse width:	N/A			
Number of RF-channels:	79			
Channel spacing:	1 MHz			
Designation of emissions ³ :				
Type of antenna:	Integrated (Temporary antenna connector for test purpose)			
Size/length of antenna:	PC B Track			
Connection of antenna:	☐ detachable ☐ not detachable			
Type of power supply:	Battery supply (Vehicle operation only)			
Specifications for power supply:	nominal voltage: 12.0 V			
	minimum voltage: 10.8 V maximum voltage: 13.2 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): Fakt S.r.l.

Via Lithos, 53

I - 25086 Rezzato (BS)

Contact person: Nicola Scartapacchio

Contract identification: Verbal Order

Receipt of EUT: 21 November 2008
Date(s) of test: 21 November 2008

Note(s):

Report details

Report number: 55147-081414-2

Edition:

Issue date: May 5, 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: 3050A-1

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 15.107, 15.109, 15.205, 15.207, 15.215, 15.247 and 2.1093

of the Federal Communication Commission (FCC) and the

Radio Standards Specifications RSS-Gen Issue 2, Sections 7.2.2, 7.2.3 and RSS-210 Issue 7, Sections 2.2, 2.6 and A8 (Category I Equipment)

of Industry Canada (IC)

in the parts tested.

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



5 Operation Mode and Configuration of EUT

Operation Mode(s)

TX Mode at lowest (2402 MHz), middle (2440 MHz) and highest (2480 MHz) RF channel, RX Mode at 2440 MHz

Configuration(s) of EUT

Full test setup supplied by applicant

List	List of ports and cables				
Port	Description	Classification ⁴	Cable type	Cable length	
1	Full test setup supplied by applicant				
2					

List o	List of devices connected to EUT					
Item	Description None	Type Designation	Serial no. or ID	Manufacturer		
2						

List o	List of support devices				
Item 1 2	Description None	Type Designation	Serial no. or ID	Manufacturer	

⁴ Ports shall be classified as ac power, dc power or signal/control port



6 Measurement Procedures

6.1 Radiated Emission Measurement 9 kHz to 30 MHz

Measurement Procedure:		
Rules and specifications:	CFR 47 Part 15, sections 15.205(b) and 15.247 IC RSS-210 Issue 7, sections 2.2(b)(c), 2.6 and A8.5	
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.

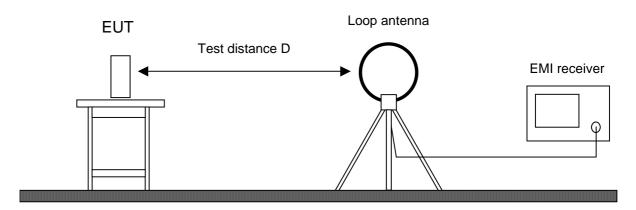
EUT is rotated all around to find the maximum levels of emissions. Equipment and cables are placed and moved within the range of position likely to find their maximum emissions.

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
	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
\boxtimes	Open field test site	EG 1	1450	Senton



6.2 Radiated Emission in Fully or Semi Anechoic Room

Measurement Procedure:			
Rules and specifications:	CFR 47 Part 15, sections 15.109, 15.215(b) and 15.249 IC RSS-Gen Issue 2, sections 6(a), 7.2.3.2 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.

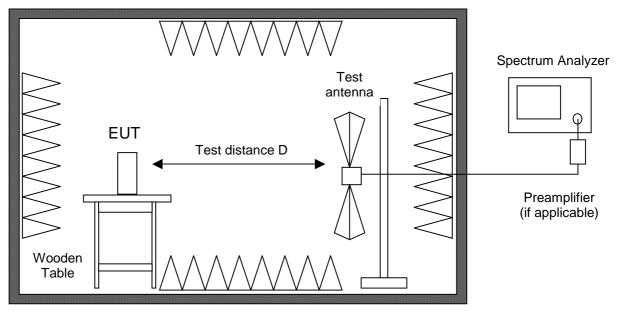
If the radiated emission limits are expressed in terms of the average value of the emission there also is a peak limit corresponding to 20 dB above the maximum permitted average limit. Additionally, if pulsed operation is employed, the average field strength is determined by averaging over one complete 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



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Test instruments used:

Used	Туре	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
\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 Accessories	FS-Z30	843389/007	Rohde & Schwarz
\boxtimes	Trilog broadband antenna	VULB 9163	9163-188	Schwarzbeck
\boxtimes	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
\boxtimes	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



6.3 Radiated Emission at Open Field Test Site

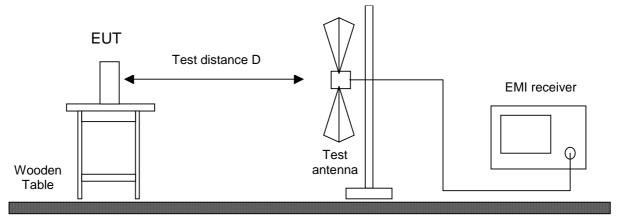
Measurement Procedure:			
Rules and specifications:	CFR 47 Part 15, sections 15.109, 15.215(b) and 15.249 IC RSS-Gen Issue 2, sections 6(a), 7.2.3.2 IC RSS-210 Issue 7, section A2.9		
Guide:	ANSI C63.4		

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.



Ground plane



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Test instruments used:

Used	Туре		Model	Serial No. or ID	Manufacturer
\boxtimes	EMI receiver		ESVP	881120/024	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



Test Results for Transmitter

FCC CFR 47 Parts 2 and 15			
Section(s)	Test	Page	Result
2.202(a)	Occupied bandwidth		Recorded
15.204	Antenna requirement		Integrated Antenna
15.35(c)	Pulse train measurement for pulsed operation		Not applicable
15.205(a)	Restricted bands of operation	18	Test passed
15.247(a)(1)(i)	Channel Bandwidth		Not performed
15.247(a)(1)	Hopping channel separation		Not performed
15.247(a)(1)(i)	Number of hopping frequencies used		Not performed
15.247(a)(1)(i)	Time occupancy on any channel		Not performed
15.247(b)(2)	Maximum peak output power		Not performed
15.207	Conducted AC powerline emission 150 kHz to 30 MHz		Not applicable
15.205(b) 15.247	Radiated emission 9 kHz to 30 MHz	19	Not performed
15.205(b) 15.215(b) 15.247(d)	Radiated emission 30 MHz to 25 GHz	20	Test passed
15.247(i) 2.1093	RF exposure requirement		Not performed

IC RSS-Gen Issue 2			
Section(s)	Test	Page	Result
4.8	Transmitter output power (conducted)		Not applicable
4.6.1	Occupied Bandwidth		Recorded
4.5	Pulsed operation		Not applicable
7.2.2	Transmitter AC power lines conducted emissions 150 kHz to 30 MHz		Not applicable
5.5	Exposure of Humans to RF Fields		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	18	Test passed
7.1.4	Antenna requirement		Integrated antenna
A8.1(c)	Channel bandwidth		Not performed
A8.1(b)	Hopping channel separation		Not performed
A8.1(c)	Number of hopping frequencies used		Not performed
A8.1(c)	Time occupancy on any channel		Not performed
A8.4(1)	Maximum output power		Not performed
2.2(b)(c) 2.6 A8.5	Unwanted emissions 9 kHz to 30 MHz	19	Test passed
2.2(b)(c) 2.6 A8.5	Unwanted emissions 30 MHz to 25 GHz	20	Test passed



6.4 Restricted Bands of Operation and Band Edge Compliance

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:	

Comment:	
Date of test:	21 November 2008
Test site:	Fully anechoic room, cabin no. 2
Test distance:	3 meters

Test Result:	Test passed, see test charts for details



6.5 Radiated Emission Measurement 9 kHz to 30 MHz

Rules and specifications:	CFR 47 Part 15, sections 15.205 and 15.209 IC RSS-210 Issue 7, sections 2.2 and 2.6			
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 lever of the fundamental		ted emissions shall not e	xceed the level
Measurement procedure:	Radiated Emission Measurement 9 kHz to 30 MHz (6.1)			

Comment:	
Date of test:	21 November 2008
Test site:	Open field test site

All emissions show more than 20 dB margin to the limit, no values recorded.

Test Result:	Test passed
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6.6 Radiated Emission Measurement 30 MHz to 25 GHz

Rules and specifications:	CFR 47 Part 15, sections 15.215(b) and 15.247 IC RSS-210 Issue 7, section A8		
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 (6.2) Radiated Emission at Open Field Test Site (6.3)		

	Test Result:	Test passed
--	--------------	-------------

Comment:	Low Channel
Mode:	CW TX
Date of test:	21 November, 2008
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

Frequency	Antenna	Detector	Receiver	Correction	Pulse Train	Final	Limit	Mar
								gin
	Polarization		Reading	Factor	Correction	Value		
(MHz)			(dBµV)	(dB/m)	(dB)	(dBµV/m)	(dBµV/m)	(dB)
264,74	Vertical	Quasi-Peak	15,16	14,11	0	29,27	46,0	16,7

Sample calculation of final values:

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



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Comment:	Middle Channel
Mode:	CW TX
Date of test:	21 November, 2008
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

Frequency	Antenna	Detector	Receiver	Correction	Pulse Train	Final	Limit	Mar
								gin
	Polarization		Reading	Factor	Correction	Value		
(MHz)			(dBµV)	(dB/m)	(dB)	(dBµV/m)	(dBµV/m)	(dB)
16353,0	Horizontal	Peak	-8,59	52,54	0	43,95	54,0	10.1

Sample calculation of final values:

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



TÜV SÜD SENTON GmbH Aeussere Fruehlingstrasse 45 D-94315 Straubing

Comment:	Highest Channel
Mode:	CW TX
Date of test:	21 November, 2008
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

Frequency	Antenna	Detector	Receiver	Correction	Pulse Train	Final	Limit	Mar
								gin
	Polarization		Reading	Factor	Correction	Value		
(MHz)			(dBµV)	(dB/m)	(dB)	(dBµV/m)	(dBµV/m)	(dB)
262,800	Horizontal	Quasi-Peak	19,64	14,04	0	33,68	46.0	12.3
398,600	Horizontal	Quasi-Peak	16,51	17,20	0	33,71	46,0	12,3
487,840	Horizontal	Quasi-Peak	14,76	18,62	0	33,38	46.0	12.6

Sample calculation of final values:

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



7 Referenced Regulations

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

 , , , , , , , , , , , , , , , , , , ,	g g	
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, 2006
CFR 47 Part 15	Code of Federal Regulations Part 15 (Radio Frequency Devices) of the Federal Communication Commission (FCC)	May 4, 2007
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 October 9, 1982 Necessary Bandwidth and Classification), Class of Station and Nature of Service, published by Industry Canada



8 Calibration Status



Test Equipment List with Calibration Data	SENTON Page 1 of 1
Test report number(s): Date of test: 09/2008	

Туре	InvNo.	InvNo. Type Designation	Serial Number	Manufacturer	Calibration Organization	Date of Calibration Last Next	libration Next
Test receiver	1025	ESVP	881120/024	Rohde & Schwarz	Rohde & Schwarz	03/2008	09/2009
Test receiver	1028	ESHS10	860043/016	Rohde & Schwarz	Rohde & Schwarz	04/2007	10/2008
Test receiver	1569	ESMI	839379/013	Rohde & Schwarz	Rohde & Schwarz	04/2007	10/2009
EMI Test Receiver	1711	ESPI7	836914/0002	Rohde & Schwarz	Rohde & Schwarz	03/2007	09/2008
Spectrum analyser	1666	FSP30	100063	Rohde & Schwarz	Rohde & Schwarz	10/2007	04/2009
Preamplifier	1142	R14601	13120026	Advantest	Senton	04/2008	04/2010
Preamplifier	1651	CPA9231A	3393	Schaffner Electrotest	Senton	05/2008	11/2009
Preamplifier	1684	AFS3-00100800-32-LN	847743	MITEQ	Senton	05/2008	11/2009
V-network	1059	ESH3-Z5	894785/005	Rohde & Schwarz	Rohde & Schwarz	12/2005	12/2008
V-network	1060	ESH3-Z5	862770/021	Rohde & Schwarz	Rohde & Schwarz	01/2007	01/2010
V-network	1218	ESH3-Z5	830952/025	Rohde & Schwarz	Rohde & Schwarz	07/2008	07/2011
Loop antenna	1016	HFH2-Z2	882964/0001	Rohde & Schwarz	Rohde & Schwarz	12/2007	06/2009
Double ridged waveguide horn antenna	1516	3115	9508-4553	EMCO Elektronik	ARC	05/2008	05/2011
Biconical Antenna	1518	HK116	842204/01	Rohde & Schwarz	Rohde & Schwarz	06/2008	12/2009
Logarithmic-periodic antenna	1519	HL223	841516/23	Rohde & Schwarz	Rohde & Schwarz	06/2008	12/2009
TRILOG Broadband Antenna	1722	VULB 9163	9163-188	Schwarzbeck	Schwarzbeck	04/2008	10/2009
TRILOG Broadband Antenna	1802	VULB 9163	9163-214	Schwarzbeck	Schwarzbeck	03/2008	09/2009

Date of next calibration contains maximum tolerance of six months for devices with calibration cycles less than three years. $\ddot{\mathbf{x}}$

Note:



9 Revision History

Revisio	n History		
Edition	Date	Issued by	Modifications
1	05 May. 2008	J. Roidt	



10 Charts taken during testing

Radiated Emission Test 30 MHz - 1 GHz acc. to FCC Part 15 Subpart C (FAR)

Model: Maserati				Comment: - TX at 2402	MHz			
Serial no.: 68/08/EMC				- Antenna co	nnectors termin	ated		
Applicant: Fakt S.r.I.								
Test site: Fully anechoic	room, cabir	n no. 2						
Tested on: Test distance 3 Horizontal Pola								
Date of test: 11/21/2008		Operator: J. Roidt						
Test performed: automatically		File name: default.e	mi					
Detector: Peak				List of values: 10 dB Margir	n	50 Subran	ges	
dBµV/m				Limit1: FCC	15.209 (3 m)	Transduce	er: VULI	B 9163
55				 				
50	 							 +
45		- +						1 +
40								
35		- 						
30								
25		- +						
20		-+						
15		-+			'			
10				 	-			
5				 			<u> </u> <u> </u>	
0 30 4	40 50	70	100	200	300 400	500	700	1000 MHz
Result:				Project file: 55147-81414	4	Page	of	Pages

Radiated Emission Test 30 MHz - 1 GHz acc. to FCC Part 15 Subpart C (FAR)

Result:	30	40	50	7	0	100	Pro	200	300	400	500	700	100 MH	
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dBµV/r 60	m			-	!	! !	Li	mit1: FC	C 15.209 (3 m)	Transdu	cer: VUL	B 9163	
Detector Peak	or:							of values: lected by	/ hand					
Test pe	erformed:			File	name: ault.er	mi								
Date of 11/21	test:			Oper J. R	ator:									
	on: distance al Polar													
	anechoi	c roon	n, cabir	no. 2										
Applica Fakt S														
Serial n									connectors	termina	ated			
Model: Masei	rati							Comment: - TX at 2402 MHz						

Radiated Emission Test 1 GHz - 5.85 GHz acc. to FCC Part 15 Subpart C (FAR)

Model: Masera	ati			Comment: - TX at 2402	MHz				
Serial no					nnectors termi	nated			
Applicar	nt:								
Fakt S Test site									
Fully a	nechoic room, cabi	in no. 2							
Test di	istance 3 metres ntal Polarization								
Date of t		Operator: J. Roidt							
Test per automa	formed: atically	File name: default.emi							
Detector Peak	r:			List of values: Selected by I	nand				
dBµV/m 80	1			Limit1: FCC	15.209 (3 m)	Transduce	er: EMC	CO 311	5
75					 	 	 - -		
70					 	 	 		
65			· - · · · · · · · · · · · · · ·	*	-;	 	i -		-
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	000	20	000		000	4000	500		850 //Hz
Result:				Project file: 55147-81414	1	Page	of	Pag	es

Radiated Emission Test 1 GHz - 5.85 GHz acc. to FCC Part 15 Subpart C (FAR)

Model: Maser	ati			Comment: - TX at 2402	MHz			
Serial no.: 68/08/EMC			- Antenna cor		inated			
Applicar Fakt S	nt:							
Test site	9:							
Fully a	nechoic room, cabir	n no. 2						
Test d	istance 3 metres							
Date of	al Polarization	Operator:						
11/21/2008 J. Roidt		J. Roidt						
Test per autom	formed: atically	File name: default.emi						
Detector Peak	r:			List of values: Selected by h	nand			
dBµV/m	<u> </u>			Limit1: FCC 1		Transduce	er: EMCO	3115
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0	200	2000	.	20	000	4000	5000	505
	000	2000	, 		000	4000	5000	585 MH
Result:				Project file: 55147-81414		Page	of	Pages

Radiated Emission Test 5.85 GHz - 8.2 GHz acc. to FCC Part 15 Subpart C (FAR)

Model: Maser	rati		Comment: - TX at 2402 MHz	
Serial n			- Antenna connectors terminated	
Applica Fakt S				
Test site		oom, cabin no. 2		
Tested	on: distance 3	metres		
Horizo	ontal Polar	ization	_	
Date of 11/21/	/2008	Operator: J. Roidt		
1	rformed: natically	File name: default.emi		
Detecto Peak	or:		List of values: Selected by hand	
dBµV/n 80	n		Limit1: FCC 15.209 (3 m) Transducer: EMCO 3160	0
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0 58	850 600	0		_ 200
Result:			Project file: 55147-81414 Page of Page	//Hz
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Radiated Emission Test 5.85 GHz - 8.2 GHz acc. to FCC Part 15 Subpart C (FAR)

Model: Maserati	Comment: - TX at 2402 MHz
Serial no.: 68/08/EMC	- Antenna connectors terminated
Applicant: Fakt S.r.I.	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres	
Vertical Polarization Date of test: Operator:	
11/21/2008 J. Roidt	
Test performed: File name: automatically default.emi	
Detector: Peak	List of values: Selected by hand
dBµV/m	Limit1: FCC 15.209 (3 m) Transducer: EMCO 3160
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45 J. Martin Mar	Sylphay Mary Mary Mary Mary Mary Mary Mary Ma
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0 5850 6000	7000 8000 8200 MHz
Result:	Project file: 55147-81414 Page of Pages

Radiated Emission Test 8.2 GHz - 12.4 GHz acc. to FCC Part 15 Subpart C (FAR)

Model:		Comment:
Maser		- TX at 2402 MHz
Serial no 68/08/		- Antenna connectors terminated
Applicar Fakt S		
Test site	e: anechoic room, cabin no. 2	
Tested		
	listance 1 meter ontal Polarization	
Date of test: Operator: 11/21/2008 J. Roidt		
1	rformed: File name: atically default.emi	
Detecto	•	List of values:
Peak		10 dB Margin 50 Subranges
dBµV/m 80	n	Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160
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0 8200 10000		
Result:		Project file: 55147-81414 Page of Pages
		55147-81414 Page of Pages

Radiated Emission Test 8.2 GHz - 12.4 GHz acc. to FCC Part 15 Subpart C (FAR)

Model:		Comment:
Maser		- TX at 2402 MHz
Serial no 68/08/		- Antenna connectors terminated
Applicar Fakt S		
Test site	e: anechoic room, cabin no. 2	
Tested		
	listance 1 meter ontal Polarization	
Date of test: Operator: 11/21/2008 J. Roidt		
1	rformed: File name: atically default.emi	
Detecto	•	List of values:
Peak		10 dB Margin 50 Subranges
dBµV/m 80	n	Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160
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0 8200 10000		
Result:		Project file: 55147-81414 Page of Pages
		55147-81414 Page of Pages

Model: Maser	rati	Comment: - TX at 2402 MHz
Serial no 68/08/		- Antenna connectors terminated
Applicar	nt:	
Fakt S		
	anechoic room, cabin no. 2	
Tested of	on: listance 1 meter	
	ontal Polarization	
Date of 11/21/	·	
	rformed: File name:	
by har		
Detector Peak	r:	List of values: 10 dB Margin 50 Subranges
dBµV/m 80	1	Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160
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12	400	18000 MHz
Result:		Project file:
		55147-81414 Page of Pages

		1
Model: Maser	rati	Comment: - TX at 2402 MHz
Serial n		- Antenna connectors terminated
Applica Fakt S		
Test site	e:	
Tested	on:	
	listance 1 meter al Polarization	
Date of 11/21/	·	
Test pe	rformed: File name:	
by har		
Detecto Peak	r:	List of values: 10 dB Margin 50 Subranges
dBµV/n 80	n	Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160
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0 12	2400	18000
		MHz
Result:		Project file:
		55147-81414 Page of Pages

Spurious emissions according to FCC Rules

Model: Maserati	Mode: - TX at 2402 MHz							
Serial No.: 68/08/EMC				- Horizontal and vertical polarisation displayed in two				
Applicant: Fakt s.r.l.				traces				
Ref.Level 87 dBµ\ 10 dB/Div.	/		ATT	0 dB				
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0140.000.000		1			. '			
Start 18.000 GHz RBW 100 kHz			VBW 1				Stop 2	6.500 GHz SWP 2.60 s
Tested by: Johann Roidt				Project-No. 55147-08				
Date: 11/21/2008						Page	e of	pages

Result:				Project file: 55147-8141	4	Page	of	Pages
	40 50	70	100	200	300 4	00 500	700	1000 MHz
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dBμV/m 60	1 1	1 1 1		Limit1: FCC	C 15.209 (3 m) Transduc	cer: VUL	B 9163
Detector: Peak				List of values: 10 dB Margi		50 Subra		
Test performed: automatically		File name: default.e						
Date of test: 11/21/2008		Operator: J. Roidt						
Tested on: Test distance 3 Horizontal Pola								
Test site: Fully anechoic	room, cabii	n no. 2						
Applicant: Fakt S.r.I.								
Serial no.: 68/08/EMC					onnectors tern	ninated		
Model: Maserati				Comment: - TX at 2440) MHz			

Result:				Project file: 55147-81414	4	Page	of	Pages
0 30 4	40 50	70	100	200	300 400	500	700	1000 MHz
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60				Limiti. 1 GC	10.209 (0 111)		JOI. VOL	
Peak dBµV/m				10 dB Margir	n 3 15.209 (3 m)	50 Subrai		R 0163
automatically Detector:		default.e	mi	List of values:				
11/21/2008 Test performed:		J. Roidt File name:						
Tested on: Test distance 3 Vertical Polariz Date of test:		Operator:						
Test site: Fully anechoic	room, cabii	n no. 2						
Applicant: Fakt S.r.I.								
Serial no.: 68/08/EMC				- Antenna co	nnectors termin	ated		
Model: Maserati				Comment: - TX at 2440	MHz			

Model: Maser	ati			Comment:	O MILI-			
Serial no				- TX at 244				
68/08/	EMC			- Antenna o	connectors term	ninated		
Applicar Fakt S								
Test site	2:							
	nechoic room, ca	bin no. 2						
	istance 3 metres ntal Polarization							
Date of 1		Operator: J. Roidt						
Test per autom	formed: atically	File name: default.emi						
Detector Peak	••			List of values: Selected by				
dBµV/m 80	1			Limit1: FC0	C 15.209 (3 m)	Transduc	er: EMC	O 3115
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0	000	2000			3000	4000	5000	0 5850
		2000				4000	3000	MHz
Result:				Project file: 55147-814	14	Page	of	Pages

Model: Masera	ati			Comment:	40 MHz			
Serial no					connectors terr	ninated		
Applican								
Fakt S Test site								
	e: inechoic room, cabi	n no. 2						
	on: istance 3 metres al Polarization							
Date of t		Operator: J. Roidt						
Test per		File name: default.emi						
Detector Peak	r:			List of values				
dBµV/m 80	1			Limit1: FC	C 15.209 (3 m)	Transduc	er: EMC	O 3115
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0	000	200	ın		3000	4000	5000	0 5850
		200	. .			- 1000	3000	MHz
Result:				Project file: 55147-814	414	Page	of	Pages

Model: Maserati	Comment: - TX at 2440 MHz
Serial no.: 68/08/EMC	- Antenna connectors terminated
Applicant: Fakt S.r.I.	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres	
Horizontal Polarization	
Date of test: Operator: 11/21/2008 J. Roidt	
Test performed: File name: automatically default.emi	
Detector: Peak	List of values: Selected by hand
dBµV/m	Limit1: FCC 15.209 (3 m) Transducer: EMCO 3160
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5850 6000	7000 8000 8200 MHz
Result:	Project file: 55147-81414 Page of Pages

Model: Maserati		Comment: - TX at 2440 MHz	
Serial no.: 68/08/EM	С	- Antenna connectors terminated	
Applicant: Fakt S.r.I.			
Test site: Fully aned	choic room, cabin no. 2		
Tested on: Test dista	nce 3 metres		
	olarization		
11/21/200	J. Roidt		
Test perform automatic			
Detector: Peak		List of values: Selected by hand	
dBμV/m 80		Limit1: FCC 15.209 (3 m) Transducer: EN	/ICO 3160
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0 5850	6000	7000	8000 8200 MHz
Result:		Project file: 55147-81414 Page of	

Model: Maserati		Comment: - TX at 2440 MHz
Serial no.: 68/08/EM	IC	- Antenna connectors terminated
Applicant:		
Test site:		
Tested on:	choic room, cabin no. 2	
	ance 3 metres al Polarization	
Date of test: 11/21/200	•	
Test perform		
Detector: Peak	•	List of values: Selected by hand
dBµV/m 80 ┌─		Limit1: FCC 15.209 (3 m) Transducer: EMCO 3160
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0 8200	<u> </u>	10000 12400
		MHz
Result:		Project file: 55147-81414 Page of Pages
		J-1

Comment:
- TX at 2440 MHz
- Antenna connectors terminated
List of values: 10 dB Margin 50 Subranges
Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160
-
and the same of th
0000 12400
MHz
Project file: 55147-81414 Page of Pages

Model: Maserati		Comment: - TX at 2440 MHz	
Serial no.: 68/08/EMC		- Antenna connectors term	inated
Applicant: Fakt S.r.I.			
Test site:			
Tested on:	oic room, cabin no. 2		
Test distan Horizontal	ce 1 meter Polarization		
Date of test: 11/21/2008	Operator: J. Roidt		
Test performe			
by hand	default.emi		
Detector: Peak		List of values: 10 dB Margin	50 Subranges
dBμV/m 80		Limit1: FCC 15.209 (1 m)	Transducer: EMCO 3160
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12400			18000 MHz
Result:		Project file:	
		55147-81414	Page of Pages

Model: Maser	rati	Comment: - TX at 2440 MHz
Serial n 68/08/		- Antenna connectors terminated
Applicar Fakt S		
Test site	e:	
Fully a	anechoic room, cabin no. 2	
Test d	listance 1 meter al Polarization	
Date of 11/21/	•	
Test pe	rformed: File name:	
by har		
Detecto Peak	r:	List of values: 10 dB Margin 50 Subranges
dBµV/n 80	1	Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160
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0 12	2400	1800
		MHz
Result:		Project file: 55147-81414 Page of Pages
		1 ago of Tagoo

Spurious emissions according to FCC Rules

Model: Maserati	Mode: - TX at 2440 MHz
Serial No.: 68/08/EMC	- Horizontal and vertical polarisation displayed in two
Applicant: Fakt s.r.l.	traces
T unt S.T.I.	
Ref.Level 87 dBµV 10 dB/Div.	ATT 0 dB
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	Marker
	17.76 dBµV
Meanly was exposited and the over Child and provide the contract of the Contra	vannak fannnag gaparfan en gang majeci kaltana alka garaken ka karar pana kan karar gang kata na palaman paka k
Start 18.000 GHz RBW 100 kHz	Stop 26.500 GHz VBW 100 kHz SWP 2.60 s
Tested by: Johann Roidt	Project-No.: 55147-081414
Date: 11/21/2008	Page of pages

Result:				Project file: 55147-81414	1	Page of	Pages
0 30	40 50	70	100	200	300 400	500 700	1000 MHz
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45							1 1 1
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55							
dBμV/m 60			1 1	Limiti: FCC	3 15.209 (3 m)	Transducer: VUL	.D 9103
Peak				Selected by		Transducer: \// !!	B 0162
Detector:		GCIGUIL.CI		List of values:			
Test performed:		File name:	mi				
Date of test: 11/21/2008		Operator: J. Roidt					
Test distance Horizontal Pol							
Fully anechoic	c room, cabin	no. 2					
Applicant: Fakt S.r.l. Test site:							
Serial no.: 68/08/EMC				- Antenna co	nnector termina	ted	
Model: Maserati				Comment: - TX at 2480	MHz		

Model: Maserati				Comment: - TX at 2480	MHz			
Serial no.: 68/08/EMC				- Antenna co	onnector termin	ated		
Applicant: Fakt S.r.I.								
Test site: Fully anechoic	c room, cabii	n no. 2						
Tested on: Test distance Vertical Polari	3 metres							
Date of test: 11/21/2008		Operator: J. Roidt						
Test performed: automatically		File name default.e						
Detector: Peak				List of values: 10 dB Margi	n	50 Subra	nges	
dBμV/m 60				Limit1: FCC	2 15.209 (3 m)	Transdu	cer: VUL	B 9163
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0 30	40 50	70	100	200	300 400	500	700	1000 MHz
Result:				Project file: 55147-8141	4	Page	of	Pages

Model:	ati			Comment: - TX at 2480	MHz			
Serial no	D.:				nnector termir	nated		
Applicar Fakt S	nt:							
Test site								
Fully a	nechoic room, cabi	n no. 2						
Test d	istance 3 metres							
Date of	ntal Polarization	Operator:						
11/21/	2008	J. Roidt						
Test per autom	formed: atically	File name: default.emi						
Detector Peak	r:			List of values: Selected by I	hand			
dBµV/m	1				15.209 (3 m)	Transduce	er: EMCO	3115
80					1 1 1	 		
75					 - 	-		
70			. – – – – –	-	 	-	 	
65					 - 	$ \frac{1}{1}$ $ -$		
60					 			
55					<u> </u> 			
50						 	my	
45						WAY AM	M	
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35		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	·····		 - 	 		
30		 			 -	 +	 	
25			. – – – – –		 - 	 	 	
20					i 	+	-	
15					 	 	 - 	
10					 	 	 - 	
5			_		1			
						+ · · · · · · · · · · · · ·	_ 	
0 10	000	200	00	30	000	4000	5000	585 MH
Result:				Project file: 55147-81414	1	Page	of	Pages

Model:	rati			Comment:	80 MHz			
Serial r					connector ter	minated		
Applica Fakt S	int:							
Test sit	re:							
Fully a	anechoic room, c	abin no. 2						
Test o	distance 3 metres ontal Polarization							
Date of 11/21		Operator: J. Roidt						
1	erformed: natically	File name: default.emi						
Detecto Peak	or:			List of values Selected I				
dBµV/r 80	n			Limit1: FC	CC 15.209 (3 r	n) Transduc	er: EMC	O 3115
75			 			 		
70			 		 	 	 - -	
65				*		 		
60			 		 	 		
55								
50			 					
45			 		i ! 	· - 7 - EVYYV	**************************************	~~~~~~
40					LANCE	VVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV		
35		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				 		
30		· 	 			·		
25						 		
20			1 1 1 			·		
15			 			· 		
10			1 1 1 1			. — — — — — — — — — — — — — — — — — — —		
5			 			·		
0			 				 	
1	000		000		3000	4000	5000	585 MH
Result:				Project file: 55147-81	414	Page	of	Pages

Model: Maserati	Comment: - TX at 2480 MHz
Serial no.: 68/08/EMC	- Antenna connector terminated
Applicant: Fakt S.r.l.	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Horizontal Polarization	
Date of test: Operator: 11/21/2008 J. Roidt	
Test performed: File name: automatically default.emi	
Detector: Peak	List of values: Selected by hand
dBμV/m 80	Limit1: FCC 15.209 (3 m) Transducer: EMCO 3160
75	
70	
65	
60	
55	
50	
45 40	mala and a serial and a serial market and a se
35	
30	
25	
20	
15	
10	
5	
5850 6000	7000 8000 8200 MHz
Result:	Project file: 55147-81414 Page of Pages

Model: Maserati	Comment: - TX at 2480 MHz
Serial no.: 68/08/EMC	- Antenna connector terminated
Applicant: Fakt S.r.l.	
Test site: Fully anechoic room, cabin no. 2	
Tested on: Test distance 3 metres Vertical Polarization	
Date of test: Operator: 11/21/2008 J. Roidt	
Test performed: File name: automatically default.emi	
Detector: Peak	List of values: Selected by hand
dBµV/m 80	Limit1: FCC 15.209 (3 m) Transducer: EMCO 3160
75	
70	
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60	
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45 milymanish - Marin Ma	man handrathaman and mara and a manadalla mina and a manadalla man
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15	
10	
5	
0 5850 6000	7000 8000 8200 MHz
Result:	Project file: 55147-81414 Page of Pages

Model: Maserati	Comment: - TX at 2480 MHz
Serial no.: 68/08/EMC	- Antenna connector terminated
Applicant: Fakt S.r.I.	
Test site: Fully anechoic room, cabin no. 2	
Tested on:	
Test distance 1 meter Horizontal Polarization	
Date of test: Operator: 11/21/2008 J. Roidt	
Test performed: File name:	
automatically default.emi	
Detector: Peak	List of values: 10 dB Margin 50 Subranges
dBµV/m	Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160
80	
75	
70	
65	
60	
55	
50	Mohamadanana manasakana makatanakatanakatanakatanakatanakatanakatanakatanakatanakatanakatanakatanakatanakatanak
45	
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35	
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25	
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15	·
10	
5	
0	40000
8200	10000 12400 MHz
Result:	Project file: 55147-81414 Page of Pages

Comment:
- TX at 2480 MHz
- Antenna connector terminated
List of values: 10 dB Margin 50 Subranges
Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160
My man munimum mandersolubra man man man man man man man man man ma
i
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;
0000 12400 MHz
Project file: 55147-81414 Page of Pages

		1
Model: Maser	ati	Comment: - TX at 2480 MHz
Serial no 68/08/		- Antenna connector terminated
Applicar Fakt S		
Test site	9:	
Tested (nnechoic room, cabin no. 2	
	istance 1 meter ontal Polarization	
Date of 11/21/	·	
Test per	formed: File name:	
by har		
Detecto Peak	r:	List of values: Selected by hand
dBµV/n 80	1	Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160
75		
70		
65		
60		
55		
50		MMWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW
45	My why Mar Mark Mark Mark Mark Mark Mark Mark	
40		
35		
30		
25		
20		
15		
10		
5		
0 12	400	18000
		MHz
Result:		Project file: 55147-81414 Page of Pages
		I age of Fages

Model: Maser	ati	Comment: - TX at 2480 MHz
Serial n		- Antenna connector terminated
Applica	nt:	
Fakt S	9:	
Fully a	anechoic room, cabin no. 2	
Test d	istance 1 meter al Polarization	
Date of 11/21/	•	
Test per		
by har Detecto Peak		List of values: Selected by hand
dBµV/n	1	Limit1: FCC 15.209 (1 m) Transducer: EMCO 3160
80		
75		
70		
65		
60		
55		
50		AMMANNAMANAMANAMANAMANAMANAMANAMANAMANA
45	John Janghar Janghar	
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25		
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15		
10		
5		
0		
	400	18000 MHz
Result:		Project file:
		55147-81414 Page of Pages

Spurious emissions according to FCC Rules

Model: Maserati	Mode: - TX at 2480 MHz
Serial No.: 68/08/EMC	- Horizontal and vertical polarisation displayed in two traces
Applicant: Fakt s.r.l.	- Haces
Ref.Level 87 dBµV ATT 10 dB/Div.	0 dB
	18.897222 GHz 21.11 dBμV
	and the second of the second o
Start 18.000 GHz	Stop 26 500 CLI-
RBW 100 kHz VBW	Stop 26.500 GHz 100 kHz SWP 2.60 s
Tested by: Johann Roidt	Project-No.: 55147-081414
Date: 11/21/2008	Page of pages