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CERTIFICATION TEST REPORT

In Accordance With:	FCC Part 15 Subpart C, 15.249 IC RSS-210 Issue 7 June 2007
Applicant:	Discus Dental Inc. 8550 Higuera St. Culver City, CA 90232
Equipment Under Test :	RF Module
Model:	04-1293P03
FCC ID:	VIK-OH001
IC:	7260A-OH001
Tested By:	Nemko USA Inc. 11696 Sorrento Valley Road, Suite F San Diego, CA 92121
Test Report:	2010 03145283 FCC
Date:	March 4, 2010
Project number:	41491
Nex Number:	145283
Total Number of Pages:	15

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Section 1. Summary of Test Results

General

All measurements are traceable to national standards

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15; Subpart C. Radiated tests were conducted is accordance with ANSI C63.4-2003. Radiated emissions are made on an open area test site. A description of the test facility is on file with the FCC.

The assessment summary is as follows:

Apparatus Assessed:	RF Module
Model:	04-1293P03
Specification:	FCC Part 15 Subpart C, 15.249 IC RSS-210 Issue 7 June 2007
Date Received in Laboratory:	March 1, 2010
Compliance Status:	Complies
Exclusions:	None
Non-compliances:	None

Report Release History

REVISION	DATE	COMMENTS
-	March 4, 2010	Prepared By: Alan Laudani
-	March 4, 2010	Initial Release: Alan Laudani

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

This test report has been completed in accordance with the requirements of ISO/IEC 17025.

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TESTED BY:  Date: March 4, 2010

Alan Laudani, EMC Test Engineer

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Section 2: Equipment Under Test

2.1 Product Identification

The Equipment Under Test for compliance with FCC Part 15.249 was identified as follows:

EUT:	RF Module
Model:	04-1293P03
Serial Number:	04-1293P02

2.2 Samples Submitted for Assessment

The following samples of the apparatus have been submitted for type assessment:

DEVICE	**MANUFACTURER** **MODEL #** **SERIAL #**	**POWER CABLE**
EUT - RF Module	Discus Dental Inc. Model: 04-1293P03 Serial #: 04-1293P02	
EUT – Battery Holder	Discus Dental Inc. Model: NA Serial #: NA	Clip leads, 3 AAA 1.5 V Batteries

CONNECTION	**I/O CABLE**
No connections	

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2.3 Theory of Operation

The 04-1293P03 is a RF Module. It has no receive function. Module is intended for battery powered devices only.

Test Mode:
When powered up by clipping on the battery holder's clip leads, it transmits at the lowest channel at full rated power and maximum digital modulation at the maximum duty cycle. A push button allows to toggle thru the mid and highest channels for RF testing per FCC 15.31m. Frequencies at test are 2405, 2440, 2478 MHz. Testing was performed with fresh batteries. The antenna is a trace on the circuit board.

Normal use:
There is no frequency hopping. The module, when powered up for the very first time at the factory, selects one of the 15 pre-assigned frequency channels (range is 2405 – 2475 MHZ, and 5 MHZ apart). The user can then change the channel by pressing and holding the button for about 3 seconds. Upon releasing of the button, the frequency channel increments by 10 MHZ internally, and if the new channel is over the uppermost (2475 MHZ), then it rotates back to lower frequencies, beginning at 2410 MHz. When a new frequency is assigned, the blue LED must stop flashing (10 seconds after button release) before the RF module is again usable in normal mode. During this 10 seconds, the frequency transmitted is always 2478 MHZ and is meant for pairing of the transmitter to the receiver. Therefore there are 16 frequency channels

The EUT's performance during test was evaluated against the performance criterion specified by applicable test standards. Performance results are detailed in the test results section of this report.

2.4 Technical Specifications of the EUT

Manufacturer:	Discus Dental Inc.
Operating Frequency:	2405 to 2478 MHz in the 2400 to 2483.5 MHz Band
Number of Operating Frequencies:	16
Measured Field Strength:	93.2 dBµV/m at 3m or 46 mV/m
Modulation:	Digital
Emissions Designator:	659KM1D
Antenna Data:	Trace on circuit board
Antenna Connector:	None
Power Source:	3 AAA batteries, 4.5 VDC

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Section 3: Test Conditions

3.1 Specifications

The apparatus was assessed against the following specifications:

FCC Part 15 Subpart C, 15.249
Operation within the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5850 MHz and 24.0-24.25 GHz bands.

IC RSS-210 Issue 7 June 2007
Low-power Licence-exempt Radio-communication Devices (All Frequency Bands): Category I Equipment. A2.9 902-928, 2400-2483.5 and 5725-5875 MHz

IC RSS-Gen Issue 2 June 2007
General Requirements and Information for the Certification of Radio-communication Equipment

3.2 Deviations From Laboratory Test Procedures

No deviations from Laboratory Test Procedure

3.3 Test Environment

All tests were performed under the following environmental conditions:

Temperature range	16 – 20 ^{o}C
Humidity range	60-66 %
Pressure range	86 - 106 kPa

3.4 Test Equipment

Nemko ID	Device	Manufacturer	Model	Serial Number	Cal Date	Cal Due Date
110	Antenna, LPA	Electrometrics	LPA-25	1217	1/10/2009	2/10/2011
116	Antenna, Bicon	EMCO	3110	1267	11/12/2008	11/12/2010
317	Preamplifier	HP	8449A	2749A00167	4/16/2009	4/16/2010
835	Spectrum Analyzer	Rohde & Schwarz	RHDFSEK	829058/005	3/31/2009	3/31/2010
877	Antenna, DRG Horn, .7-18GHz	AH Systems	SAS-571	688	7/28/2008	7/28/2010
E1013	DRG Horn (Small)	EMCO	3116	00119488	12/23/2009	12/23/2011

Registration of the OATS are on file with the Federal Communications Commission, under Registration Number 90579, the VCCI under registration number R-3027, and are also registered with Industry Canada under Site Numbers 2040B-1 and 2040B-2.

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Section 4: Observations

4.1 Modifications Performed During Assessment

No modifications were performed during assessment.

4.2 Record Of Technical Judgements

No technical judgements were made during the assessment.

4.3 EUT Parameters Affecting Compliance

The user of the apparatus could not alter parameters that would affect compliance.

4.4 Tests Deleted

No Tests were deleted from this assessment.

4.5 Additional Observations

There were no additional observations made during this assessment.

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Section 5: Results Summary

This section contains the following:

FCC Part 15 Subpart C: §15.249
IC RSS-210 Issue 7 June 2007 A2.9
IC RSS-Gen Issue 2 June 2007

The column headed “Required” indicates whether the associated clauses were invoked for the apparatus under test. The following abbreviations are used:

N No: not applicable / not relevant
Y Yes: Mandatory i.e. the apparatus shall conform to these tests.
N/T Not Tested, mandatory but not assessed. (See section 4.4 Test deleted)

The results contained in this section are representative of the operation of the apparatus as originally submitted.

5.1 Results Summary

FCC	Industry Canada	Test Description	Required	Result
15.107 (a)	RSS-Gen 7.2.2	Power line Conducted Emissions – Receive or Stand-by Mode	N	
15.207 (a)	RSS-Gen 7.2.2	Power line Conducted Emissions -- Transmit Mode	N	
15.215 (c)	RSS-Gen 4.6.1	Occupied Bandwidth	Y	Pass
		Duty Cycle Test	Y	Pass
15.249 (a)	RSS-Gen 4.8 & 4.9 & RSS-210 A2.9	Field Strength of Emissions	Y	Pass
15.249 (d) 15.209 (a)	RSS-Gen 4.9 & RSS-210 A2.9	Spurious Emissions Outside of the band	Y	Pass
15.249 (b)		Fixed Point-to-Point Operation	N	
15.107 (a)	RSS-Gen 4.10 RSS-Gen 7.2.3	Receiver Spurious Emissions	N	

Appendix A: Test Results

Power line Conducted Emissions / Receiver or Stand-by Mode

RSS-Gen

Table 2 - AC Power Lines Conducted Emission Limits

Frequency range (MHz)	Conducted limit (dBµV)	
	Quasi-peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30	60	50

Test Conditions:

Sample Number:	NA	**Temperature:**	
Date:		**Humidity:**	
Modulation State:		**Tester:**	
		Laboratory:	

Test Parameters:

Peak RBW: 100kHz VBW: 100kHz
Quasi-Peak: RBW 9kHz, VBW 30 kHz
Average: RBW 9kHz, VBW 30 kHz
Quasi-Peak Limit Blue Line, Average Limit Green Line

Test Results: EUT Not tested, battery operated device

Occupied Bandwidth

4.6.1 Occupied Bandwidth

When an occupied bandwidth value is not specified in the applicable RSS, the transmitted signal bandwidth to be reported is to be its 99% emission bandwidth, as calculated or measured.

The transmitter shall be operated at its maximum carrier power measured under normal test conditions.

Clause 15.215(c); Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

Test Conditions:

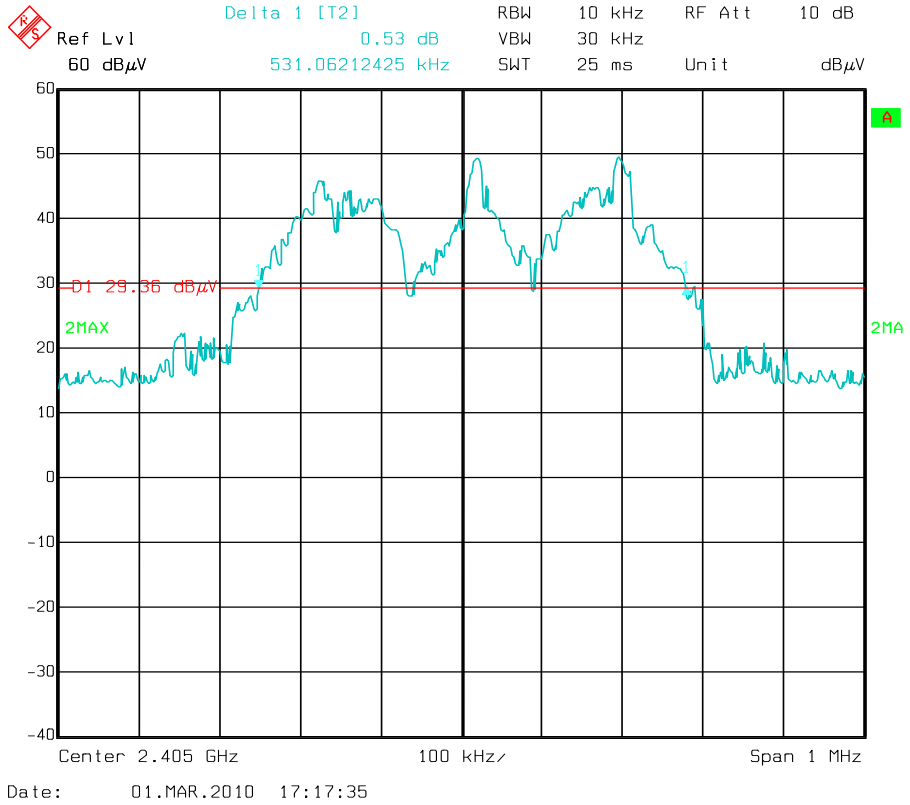
Sample Number:	NA	**Temperature:**	°C
Date:	3-1-2010	**Humidity:**	%
Modulation State:	Modulated	**Tester:**	Alan Laudani
		Laboratory:	SOATS

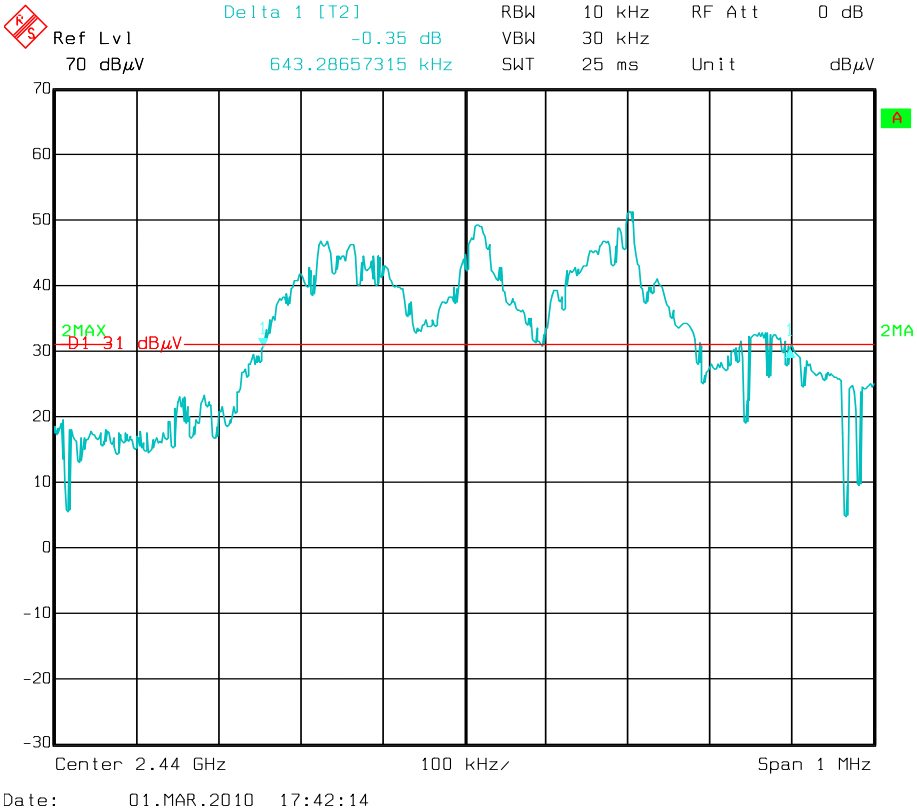
Test Results: 115 kHz

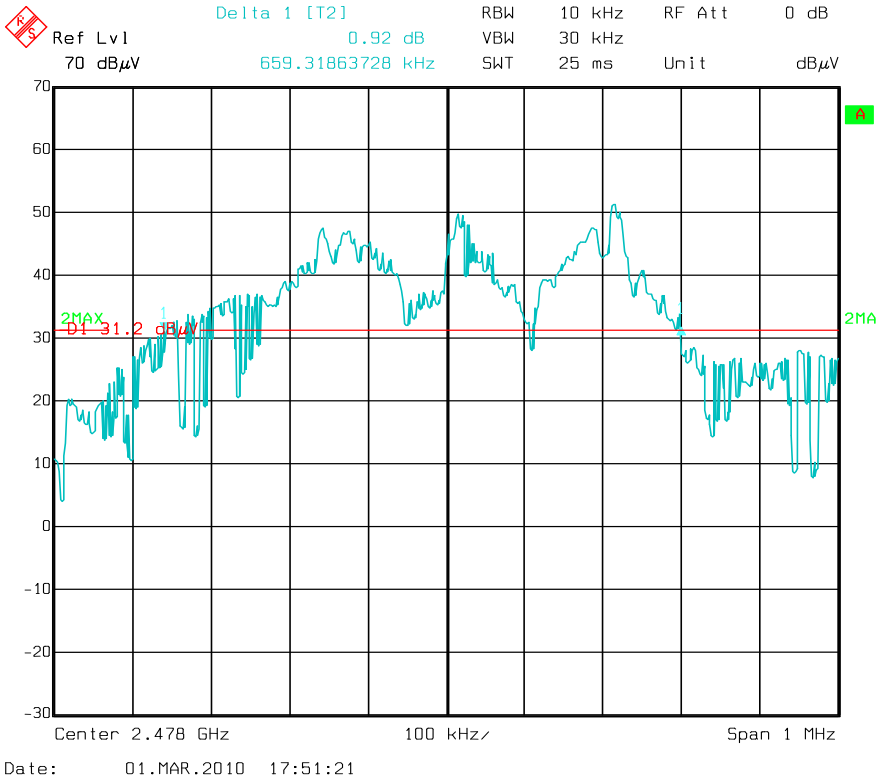
- Span is wide enough to capture the channel transmission
- RBW is 1% of the span
- VBW is 3X RBW
- Sweep is auto
- Detector is Peak
- Trace is Max Hold
- A peak output max hold reading was taken, a display line was drawn 20 dB lower than peak level. The 20 dB bandwidth was determined from where the channel output spectrum intersected the display line.

See Plots below.

Channel Frequency	Band width
2405	531 kHz
2440	643 kHz
2478	659 kHz


Delta 1 [T2]
RBW 10 kHz
RF Att 10 dB
Ref Lvl
0.53 dB
VBW 30 kHz
60 dBµV
531.06212425 kHz
SWT 25 ms
Unit dBµV
D1 29.35 dBµV
2MAX
2MA
A
Center 2.405 GHz
100 kHz/
Span 1 MHz
Date: 01.MAR.2010 17:17:35


Delta 1 [T2]
RBW 10 kHz
RF Att 0 dB
Ref Lvl
-0.35 dB
VBW 30 kHz
70 dBµV
643.28657315 kHz
SWT 25 ms
Unit dBµV
2MAX
D1 31 dBµV
2MA
A
Center 2.44 GHz
100 kHz/
Span 1 MHz
Date: 01.MAR.2010 17:42:14


Delta 1 [T2]
Ref Lvl
70 dBµV
0.92 dB
659.31863728 kHz
RBW 10 kHz
VBW 30 kHz
SWT 25 ms
RF Att 0 dB
Unit dBµV
70
60
50
40
30
20
10
0
-10
-20
-30
2MAX
D1 31.2 dBµV
2MA
A
Center 2.478 GHz
100 kHz/
Span 1 MHz
Date: 01.MAR.2010 17:51:21

Duty Cycle Test

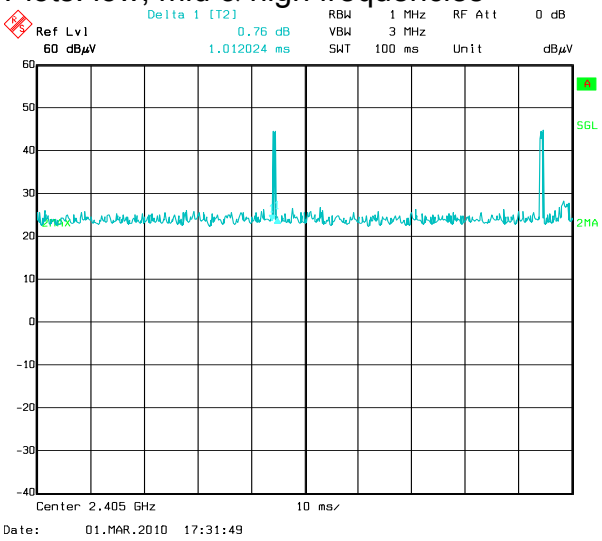
Test Conditions:

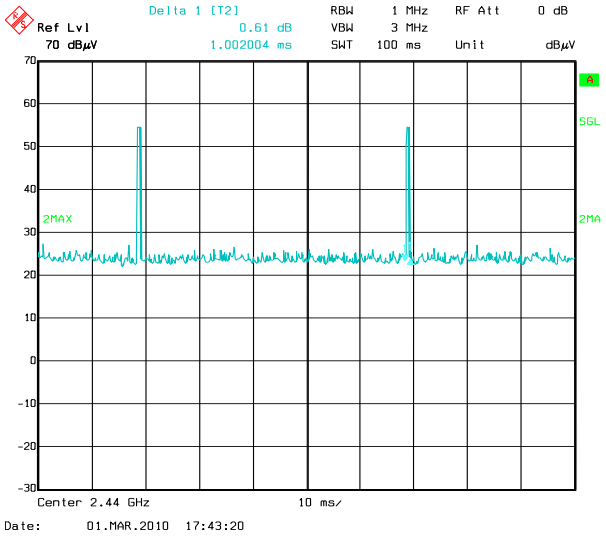
Sample Number:	NA	**Temperature:**	17°C
Date:	3-1-2010	**Humidity:**	70%
Modulation State:	w/ modulation	**Tester:**	Alan Laudani
		Laboratory:	SOATS

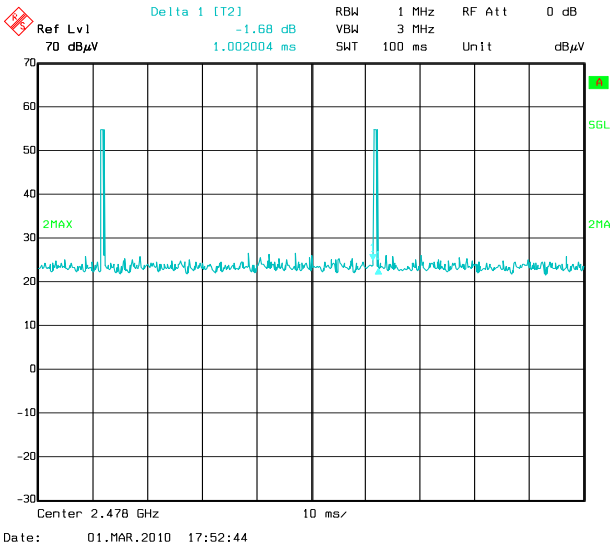
Test Results: The modulation is digital pulsed, duty cycle is < 10%.

Marker delta: 1 ms,
2 emissions in 100ms
Duty cycle = 2/100 or 0.02 or 2 %
20 x log(10%) = -20dB
Maximum duty cycle factor allowed = -20 dB

Plots: low, mid & high frequencies







Field Strength of Emissions

15.249(a) Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency (MHz)	Field strength of fundamental (mV/meter)	Field strength of harmonics (uV/meter)
902-928	50	500
2400-2483.5	50	500
5725-5875	50	500
24000-24250	250	2500

Emissions radiated outside of the band

15.249 (d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Sec. 15.209, whichever is the lesser attenuation.

Test Conditions:

Sample Number:	NA	**Temperature:**	17°C
Date:	3-1-2010	**Humidity:**	70%
Modulation State:	w/ modulation	**Tester:**	Alan Laudani
		Laboratory:	SOATS

Test Results:

See Table. EUT complies for fundamental power, band edges and spurious emissions.

Additional Observations:

- The Spectrum was searched from 30 MHz to the 10th Harmonic (24850 MHz), but no emissions within 20 dB of the limits were evident.
- All Measurements below 1 GHz were performed at 3m employing a CISPR quasi-peak detector
- Peak measurements above 1 GHz utilize a RBW of 1 MHz and a VBW of 3 MHz
- Measurements were made after installing fresh batteries.
- The RF module was investigated for worst case orientation. Test setup photos show orientation for worst case emission results. Normal orientation of circuit board is horizontal, coplanar to the floor.

ERP Power Calculations:

Limit = 50 mV/m
Measured Peak reading 55.7 dBuV + antenna factor 27.7 dB/m + Cable loss 9.8 dB =
corrected average reading = 93.2 dBuV/m

$10^{((93.2-120)/20)}$ = 0.046 V/m, or 46 mV/m

Radiated Emissions Data

Job # : 41491-1 Date : 3-1-2010 Page 1 of 1
NEX #: 145283 Time : 1620
Staff : AAL

Client Name : Discuss Dental, Inc.
EUT Name : RF Module
EUT Model # : 04-1293Pxx
EUT Serial # : NA
EUT Config. : Test mode transmitting

EUT Voltage : 4.5
EUT Frequency : VDC
Phase:
NOATS X
SOATS
Distance < 1000 MHz: 3 m
Distance > 1000 MHz: 3 m

Specification : CFR47 Part 15.249, 15.209
Loop Ant. #: NA
Bicon Ant.#: 116_3M Temp. (°C) : 17
Log Ant.#: 110_3M Humidity (%) : 70 DCF= -20
DRG Ant. # 877 Spec Analyzer #: 835
Cable LF#: SOATS Analyzer Display #: 835
Cable HF#: SOATS Quasi-Peak Detector #: NA
Preamp LF#: NA Preselector #: NA
Preamp HF# NA

Peak RBW: 1 MHz
Video Bandwidth 3 MHz
Average = Peak + DCF

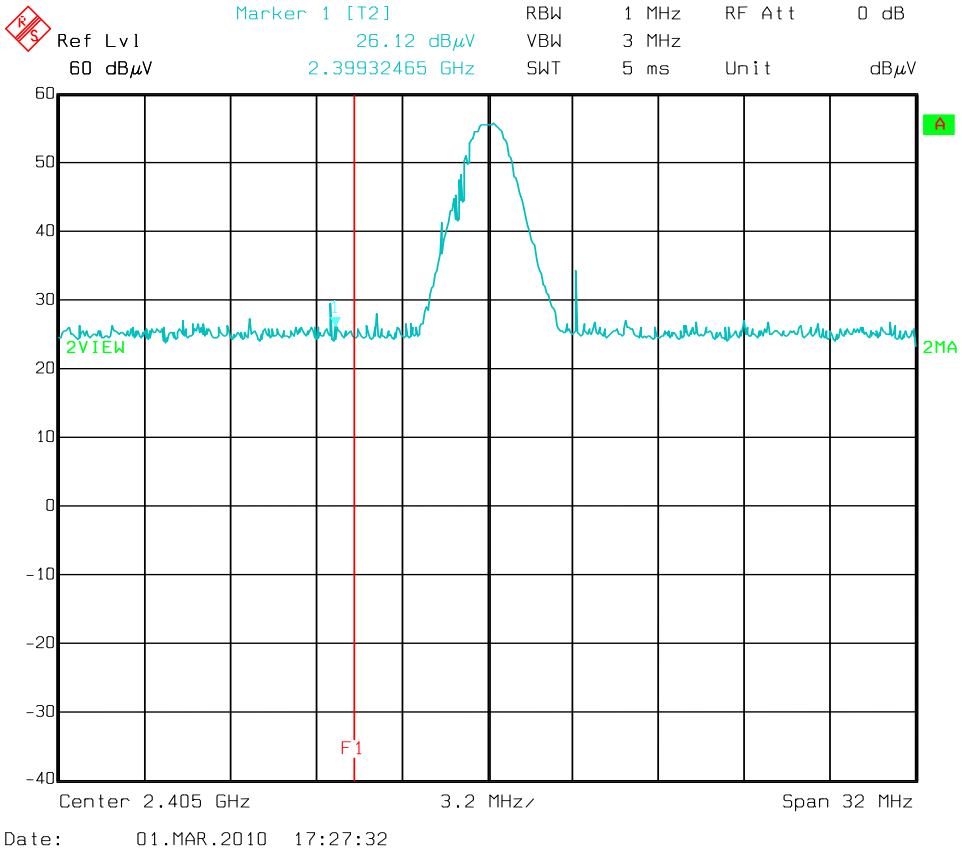
Measurements below 1 GHz are Quasi-Peak values, unless otherwise stated.
Measurements above 1 GHz are Average values, unless otherwise stated.

Meas. Freq. (MHz)	Meter Reading **Vertical**	Meter Reading **Horizontal**	Det.	EUT Side F/L/R/B	Ant. Height m	Max. Reading (dBµV)	Corrected Reading (dBµV/m)	Spec. limit (dBµV/m)	CR/SL Diff. (dB)	Pass Fail	Comment
2405.0	55.5	44.6	P	-	1.0	55.5	93.0	114.0	-21.0	Pass	
2405.0	35.5	24.6	A	-	1.0	35.5	73.0	94.0	-21.0	Pass	
2440.0	55.7	44.7	P	-	1.0	55.7	93.2	114.0	-20.8	Pass	
2440.0	35.7	24.7	A	-	1.0	35.7	73.2	94.0	-20.8	Pass	
2478.0	54.8	44.0	P	-	1.0	54.8	92.3	114.0	-21.7	Pass	
2478.0	34.8	24.0	A	-	1.0	34.8	72.3	94.0	-21.7	Pass	
											Band Edge
2400.0	26.1	26.0	P	-	1.0	26.1	63.6	74.0	-10.3	Pass	
2400.0	6.1	6.0	A	-	1.0	6.1	43.6	54.0	-10.3	Pass	
2483.5	28.3	28.1	P	-	1.0	28.3	65.8	74.0	-8.1	Pass	
2483.5	8.3	8.1	A	-	1.0	8.3	45.8	54.0	-8.1	Pass	
											Preamp 317
											used to verify
											no emissions
											caused by
											harmonics or
											spurious digital
											emissions.

Lower Band Edge

Plot taken while maximize Peak hold at OATS
Correction factors 28.3 dB/m for antenna factor and 10.3 dB for cable loss provides 9.8 dB margin when compared to limit of 74 dBµV/m from FCC 15.209

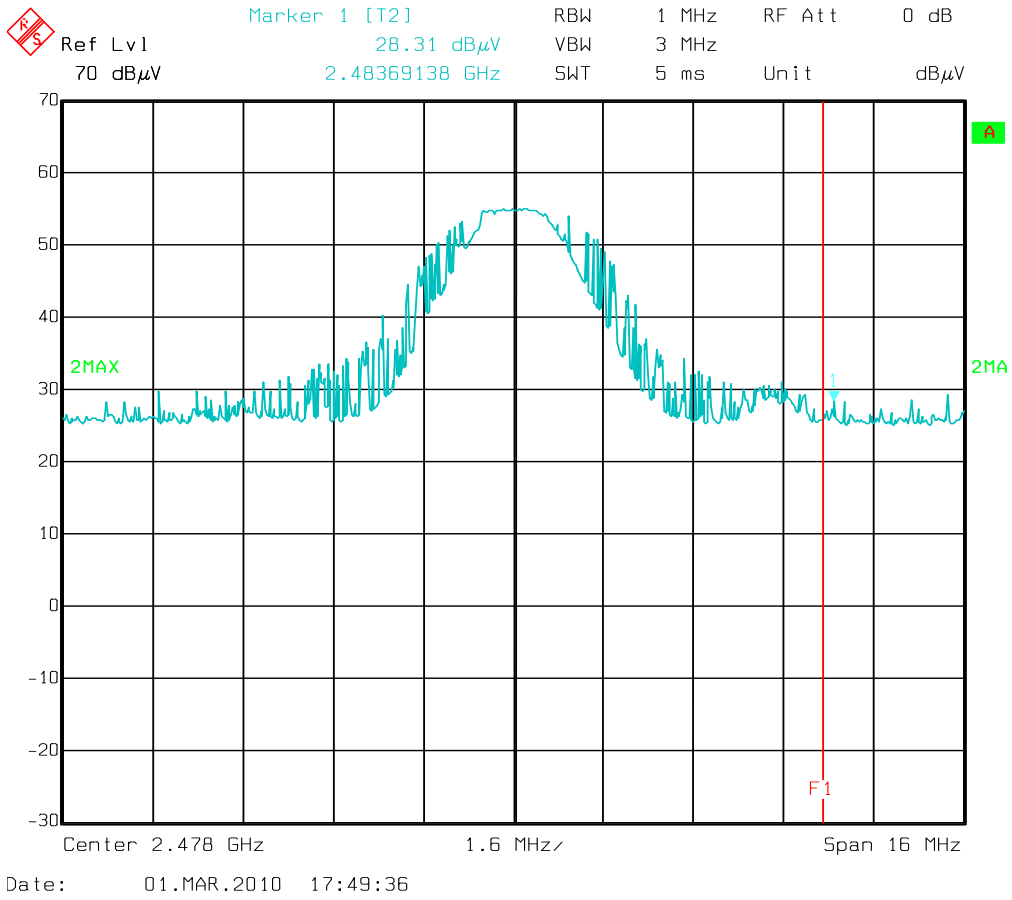
Use of Duty Cycle Factor of –20 dB provides 10.3 dB margin when compared to average limit of 54 dBµV/m from FCC 15.209



Upper Band Edge

Plot taken while maximize Peak hold at OATS
Correction factors 28.3 dB/m for antenna factor and 8.1 dB for cable loss provides 9.8 dB margin when compared to limit of 74 dBµV/m from FCC 15.209

Use of Duty Cycle Factor of –20 dB provides 8.1 dB margin when compared to average limit of 54 dBµV/m from FCC 15.209



Fixed Point-to-Point Operation

15.249 (b) Fixed, point-to-point operation as referred to in this paragraph shall be limited to systems employing a fixed transmitter transmitting to a fixed remote location. Point-to-multipoint systems, omnidirectional applications, and multiple co-located intentional radiators transmitting the same information are not allowed. Fixed, point-to-point operation is permitted in the 24.05–24.25 GHz band subject to the following conditions:
(1) The field strength of emissions in this band shall not exceed 2500 millivolts/meter.
(2) The frequency tolerance of the carrier signal shall be maintained within ±0.001% of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.
(3) Antenna gain must be at least 33 dBi. Alternatively, the main lobe beamwidth must not exceed 3.5 degrees. The beamwidth limit shall apply to both the azimuth and elevation planes. At antenna gains over 33 dBi or beamwidths narrower than 3.5 degrees, power must be reduced to ensure that the field strength does not exceed 2500 millivolts/meter.

Test Conditions:

Sample Number:		**Temperature:**	
Date:		**Humidity:**	
Modification State:		**Tester:**	Alan Laudani
		Laboratory:	Nemko

Test Results: Not Applicable, EUT is not Point-to-Point.

Receiver Spurious Emissions

The following receiver spurious emission limits shall be complied with: If a radiated measurement is made, all spurious emissions shall comply with the limits of Table 1.

Table 1 - Spurious Emission Limits for Receivers

Spurious Frequency (MHz)	Field Strength (microvolt/m at 3 metres)
30-88	100
88-216	150
216-960	200
Above 960	500

Test Conditions:

Sample Number:	NA	**Temperature:**	
Date:		**Humidity:**	
Modulation State:		**Tester:**	A. Laudani
		Laboratory:	

Test Results: EUT cannot receive

APPENDIX B

B. Radiated Emissions Measurement Uncertainties

1. Introduction

ISO/IEC 17025:2005 and ANSI/NCSL Z540.3: 2006 require that all measurements contained in a test report be “traceable”. “Traceability” is defined in the *International Vocabulary of Basic and General Terms in Metrology* (ISO: 1993) as: “the property of the result of a measurement... whereby it can be related to stated references, usually national or international standards, through an unbroken chain of comparisons, *all having stated uncertainties*”.

The purposes of this Appendix are to “state the *Measurement Uncertainties*” of the conducted emissions and radiated emissions measurements contained in Section 5 of this Test Report, and to provide a practical explanation of the meaning of these measurement uncertainties.

2. Statement of the Worst-Case Measurement Uncertainties for the Conducted and Radiated Emissions Measurements Contained in This Test Report

Table 1: Worst-Case Expanded Uncertainty "U" of Measurement for a k=2 Coverage Factor

Radiated Emissions Measurement Detection Systems	Applicable Frequency Range	"U” for a k=2 Coverage Factor
Spectrum Analyzer with QPA & Preamplifier	30 MHz - 200 MHz	+3.9 dB, -4.0 dB
Spectrum Analyzer with QPA & Preamplifier	200 MHz-1000 MHz	+/- 3.5 dB
Spectrum Analyzer with Preamplifier	1 GHz - 18 GHz	+2.5 dB, -2.6 dB
Spectrum Analyzer with Preamplifier	18 GHz - 40 GHz	+/- 3.4 dB

NOTES:
1. Applies to 3 and 10 meter measurement distances
2. Applies to all valid combinations of Transducers (i.e. LISNs, Line Voltage Probes, and Antennas, as appropriate)
3. Excludes the Repeatability of the EUT

3. Practical Explanation of the Meaning of Radiated Emissions Measurement Uncertainties

In general, a "Statement of Measurement Uncertainty" means that with a certain (specified) confidence level, the "true" value of a measurand will be between a (stated) upper bound and a (stated) lower bound.

In the specific case of EMC Measurements in this test report, the measurement uncertainties of the conducted emissions measurements and the radiated emissions measurements have been calculated in accordance with the method detailed in the following documents:

- *ANSI Z540.2 (2002) Guide to the Expression of Uncertainty in Measurement*
- NIS 81:1994, *The Treatment of Uncertainty in EMC Measurements* (NAMAS, 1994)
- NIST Technical Note 1297(1994), *Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results* (NIST, 1994)

The calculation method used in these documents requires that the stated uncertainty of the measurements be expressed as *an "expanded uncertainty", U, with a k=2 coverage factor*. The practical interpretation of this method of expressing measurement uncertainty is shown in the following example:

EXAMPLE: Assume that at 39.51 MHz, the (measured) radiated emissions level was equal to +26.5 dBuV/m, and that the +/- 2 standard deviations (i.e. 95% confidence level) measurement uncertainty was +/- 3.4 dB.

APPENDIX C

C. Nemko USA, Inc. Test Equipment & Facilities Calibration Program

Nemko USA, Inc. operates a comprehensive Periodic Calibration Program in order to ensure the validity of all test data. Nemko USA's Periodic Calibration Program is fully compliant to the requirements of NVLAP Policy Guide PG-1-1988, ANSI/NCSL Z540.3: 2006, ISO 10012:2003, ISO/IEC 17025:2005, and ISO-9000: 2000. Nemko USA, Inc.'s calibrations program therefore meets or exceeds the US national commercial and military requirements [N.B. ANSI/NCSL Z540.1-1994 replaced MIL-STD-45662A].

Specifically, all of Nemko USA's *primary reference standard devices* (e.g. vector voltmeters, multimeters, attenuators and terminations, RF power meters and their detector heads, oscilloscope mainframes and plug-ins, spectrum analyzers, RF preselectors, quasi-peak adapters, interference analyzers, impulse generators, signal generators and pulse/function generators, field-strength meters and their detector heads, etc.) and certain *secondary standard devices* (e.g. RF Preamplifiers used in CISPR 11/22 and FCC Part 15/18 tests) are periodically recalibrated by:

- A Nemko USA-approved independent (third party) metrology laboratory that uses NIST-traceable standards and that is ISO Guide 25-accredited as a calibration laboratories by NIST; or,
- A Nemko USA-approved independent (third party) metrology laboratory that uses NIST-traceable standards and that is ISO Guide 25-accredited as a calibration laboratory by another accreditation body (such as A2LA) that is mutually recognized by NIST; or,
- A manufacturer of Measurement and Test Equipment (M&TE), if the manufacturer uses NIST-traceable standards and is ISO Guide 25-accredited as calibration laboratory either by NIST or by another accreditation body (such as A2LA) that is mutually recognized by NIST; or
- A manufacturer of M&TE (or by a Nemko USA-approved independent third party metrology laboratory) that is not ISO Guide 25-accredited. (In these cases, Nemko USA conducts an annual audit of the manufacturer or metrology laboratory for the purposes of proving traceabilty to NIST, ensuring that adequate and repeatable calibration procedures are being applied, and verifying conformity with the other requirements of ISO Guide 25).

In all cases, the entity performing the Calibration is required to furnish Nemko USA with a calibration test report and/or certificate of calibration, and a “calibration sticker” on each item of M&TE that is successfully calibrated.

Calibration intervals are normally one year, except when the manufacture advises a shorter interval or if US Government directives or client requirements demand a shorter interval. Items of instrumentation/related equipment which fail during routine use, or which suffer visible mechanical damage (during use or while in transit), are sidelined pending repair and recalibration. (Repairs are carried out either in-house [if minor] or by a Nemko USA-approved independent [third party] metrology laboratory, or by the manufacturer of the item of M&TE).

Each antenna used for CISPR 11 and CISPR 22 and FCC Part 15 and Part 18 radiated emissions testing (and for testing to the equivalent European Norms) is calibrated annually by either a NIST (or A2LA) ISO Standard 17025-Accredited third-party Antenna Calibration Laboratory or by the antenna’s OEM if the OEM is NIST or A2LA ISO Standard 17025-accredited as an antenna calibration laboratory. The antenna calibrations are performed using the methods specified in Annex G.5 of CISPR 16-1(2003) or ANSI C63.5-2004, including the “Three-Antenna Method”. Certain other kinds of antennas (e.g. magnetic-shielded loop antennas) are calibrated annually by either a NIST (or A2LA) ISO Standard 17025-accredited third-party antenna calibration laboratory, or by the antenna’s OEM if the OEM is NIST or A2LA ISO Standard 17025-accredited as an antenna calibration laboratory using the procedures specified in the latest version of SAE ARP-958.

In accordance with FCC and other regulations, Nemko USA recalibrates its suite of antennas used for radiated emissions tests on an annual basis. These calibrations are performed as a precursor to the FCC-required annual revalidation of the Normalized Site Attenuation properties of Nemko USA’s Open Area Test Site. Nemko USA, Inc. uses the procedures given in both Sub clause 16.6 and Annex G.2 of CISPR 16-1 (2003), and, ANSI C63.4-2003 when performing the normalized site attenuation measurements.

APPENDIX D
D. NVLAP Certification

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 200116-0

Nemko USA, Inc. - San Diego EMC Division
San Diego, CA

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated 18 June 2005).

2009-01-01 through 2009-12-31
Effective dates

DEPARTMENT OF COMMERCE * UNITED STATES OF AMERICA *

Sally A. Bruce
For the National Institute of Standards and Technology

NVLAP-01C (REV. 2006-09-13)