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CERTIFICATION TEST REPORT
Class II Permissive Change

Report Number:	2010 08154507 FCC
Project Number:	54533-1
Applicant:	Netgear, Inc. 350 East Plumeria Drive San Jose CA 95134
Equipment Under Test (EUT): Models:	Wireless Camera CI2010, CO2080, CM2040 VZCB2010, VZCN2050, VZCN2060
FCC ID:	WD9-G2CAM
In Accordance With:	FCC Part 15 Subpart C, 15.247 RSS-210, Issue 7, June 2007
Authorized By:	Alan Laudani, Wireless/EMC Engineer
Date:	September 28, 2012
Total Number of Pages:	14

DOCUMENT HISTORY

REVISION	DATE	COMMENTS
-	September 28, 2012	Released: Alan Laudani Introduce Model VZCM2050 with new antenna: Repeat of Conducted Output Power and Spurious Emissions. Re-identify CB2010 as VZCB2010. Introduce Model VZCM2060 as same as Model VZCM2050 differing in plastic case color and lens optical coating.

NOTE: Nemko USA, Inc. hereby makes the following statements so as to conform to Chapter 10 (Test Reports) Requirements of ANSI C63.4 (2003) “Methods and Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz”:

- The unit described in this report was received at Nemko USA, Inc.'s facilities on 9/25/2012
- Testing was performed on the unit described in this report on 9/25/2012 to 9/28/2012
- The Test Results reported herein apply only to the Unit actually tested, and to substantially identical Units.
- This report does not imply the endorsement of the Federal Communications Commission (FCC), Industry Canada, NVLAP or any other government agency.

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:	Wireless Camera
Specification:	FCC Part 15 Subpart C, 15.247
Date Received in Laboratory:	8/30/2012
Compliance Status:	Complies
Exclusions:	None
Non-compliances:	None

CERTIFICATION

Nemko USA, Inc., an independent Electromagnetic Compatibility (EMC) Test Laboratory, produced this Test Report and performed the Radio Frequency Interference (RFI) testing and data evaluation contained herein.

Nemko USA, Inc.'s measurement facility is currently registered with the United States Federal Communications Commission (FCC) in accordance with the provisions of 47 United States Code (CFR) Part 2, Subpart I, Section 2.948(a). A current description of Nemko USA, Inc.'s measurement facility is on file with the FCC. Nemko USA Inc. has additionally satisfied the FCC that it complies with the requirements set forth in 47 CFR Part 2, Subpart I, Section 2.948(d) regarding the accreditation of EMC laboratories.

The RFI testing, test data collection and test data evaluation were accomplished in accordance with the ANSI C63.4–2003 Standard, and in accordance with the applicable sections of the FCC rules (47 CFR Parts 2 and 15). The testing was also accomplished in accordance with Industry Canada's ICES-003 standard for unintentional radiating device per EMCAB-3, Issue 3 (May 1998). The administrative summary of this test report provides a description of the test sample.

I hereby certify that the test data, test data evaluation, and equipment configurations used to compile this test report are a true and accurate representation of the test sample's radio frequency interference characteristics as of the test date(s), and, for the design of the test sample.

TESTED BY:

_____Date: September 28, 2012
A. Laudani, EMC Test Engineer

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Section 2: Equipment Under Test

2.1 Technical Specifications of the EUT

Manufacturer:	Netgear, Inc.
Operating Frequency:	2404 MHz to 2474 MHz in the 2400-2483.5 MHz Band
Rated Power:	Original: 17.34 dBm or 54 mW Retest: 17.12 dBm or 51 mW
Modulation:	FSK
Antenna Connector/Data:	Integral/ 0 dBi
Power Source:	3.0 V battery

Section 3: Test Conditions

3.1 Specifications

The apparatus was assessed against the following specifications:

FCC Part 15 Subpart C, 15.247

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	:	24 – 25 ^{o}C
Humidity range	:	42 - 76 %
Pressure range	:	87 - 105 kPa
Power supply range	:	+/- 1% of rated voltages

3.4 Test Equipment

Nemko ID	Device	Manufacturer	Model	Serial Number	Cal Date	Cal Due Date
E1018	E1018	9kHz to 7GHz Spectrum Analyzer	Rohde & Schwarz	FSP7	835363/0003	2/23/2012
110	Antenna, LPA	Electrometrics	LPA-25	1217	4/1/2011	4/1/2013
752	Antenna, DRWG	EMCO	3115	4943	12/2/2010	12/2/2012
911	Spectrum Analyzer	Agilent	E4440A	US41421266	10/27/2011	11/27/2012
317	Preamplifier	HP	8449A	2749A00167	6/11/2012	6/11/2013
N/A	2040B-3	IC Registration Number				

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 Test Deleted

No Tests were deleted from this assessment.

Section 5: Results Summary

This section contains the following:

FCC Part 15 Subpart C: Test Results

§ 15.247 Operation within the bands 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz.

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 Test Results

Part 15C	Test Description	Required	Result
15.257 (b)(1)	Maximum peak output power	Y	Pass
15.247 (d)	Radiated Emissions within Restricted Bands	Y	Pass

Notes:

EUT is battery powered—exempt from power lines conducted emissions.

Appendix A: Test Results

Radiated Emissions within Restricted Bands

15.247 (d)
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. *Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).*

RSS 210 2.2(b)
Unwanted emissions falling into restricted bands of Table 1 shall meet Tables 2 and 3 limits. It should also be noted that unwanted emissions falling in non-restricted bands do not need to be suppressed to a level lower than the Table 2 and 3 limits.

Test Conditions:

Sample Number:	VCZM2050	Temperature:	23
Date:	Sept. 26, 2012	Humidity:	65%
Modification State:	Lo/Mid/High Channels	Tester:	A. Gilmeier
		Laboratory:	10m Chamber

Test Results:

See attached table.

Additional Observations:

- RBW/VBW =1MHz above 1GHz while RBW 120kHz/VBW 300kHz below 1GHz using Quasi-Peak detector.
- Sweep = Auto
- Detector function = peak.
- Trace = Max hold
- The Spectrum was searched from 30MHz to the 10th Harmonic, 25000 MHz. There are no emissions found that do not comply to the restricted bands defined in FCC Part 15 Subpart C, 15.205 or Part 15.247(d).
- Testing occurred with a freshly charged battery

Radiated Emissions Data

Job # :	10230140	Date :	9/25/12	Page 1 of 1	
NEX#:	218814	Time :	8:30 am		
		Staff :	AG		
Client Name :	Netgear			EUT Voltage :	6V DC
EUT Name :	Wireless camera system			EUT Frequency :	
EUT Model # :	VZCM2050			Phase:	
EUT Serial # :	2C0A6F49 "24R"				
EUT Config. :	Modulated test mode				
	Retest for verification			Distance < 1000 MHz:	3 m
				Distance > 1000 MHz:	3 m
Specification :	CFR47 Part 15, Subpart B, Class B 15.247				
Loop Ant. #:	NA				
Bicon Ant.#:	NA	Temp. (°C) :	23		
Log Ant.#:	110_3m	Humidity (%) :	65		
DRG Ant. #	752	Spec Analyzer #:	911		
Cable LF#:	SAC_10m	Analyzer Display #:	911		
Cable HF#:	WCC	Quasi-Peak Detector #:	911		
Preamp LF#:	NA	Duty Cycle (%):	10.00		
Preamp HF#	317				

Peak	RBW: 1 MHz
	Video Bandwidth 3 MHz
Average = Peak + Duty Cycle Factor	
DCF = 20 x log(duty cyle)	

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 DEG	Ant. Height cm	Max. Reading (dBµV)	Corrected Reading (dBµV)	Spec. limit (dBµV)	CR/SL Diff. (dB)	Pass Fail	Comment
4884.0	54.9	51.2	P	185	166	54.9	66.4	74.0	-7.6	Pass	standing
4884.0	54.9	51.2	A	185	166	54.9	46.4	54.0	-7.6	Pass	standing
4884.0	50.0	56.4	P	234	148	56.4	67.9	74.0	-6.1	Pass	lying down left
4884.0	53.9	54.5	P	159	138	54.5	66.0	74.0	-8.0	Pass	lens pointing up
7326.0	44.8	49.5	P	278	131	49.5	68.1	74.0	-5.9	Pass	standing
7326.0	44.8	49.5	A	278	131	49.5	48.1	54.0	-5.9	Pass	standing
7326.0	44.8	43.9	P	300	119	44.8	63.4	74.0	-10.6	Pass	lying down left
7326.0	48.4	45.5	P	289	131	48.4	67.0	74.0	-7.0	Pass	lens pointing up
9616.0	36.0	37.5	P	311	100	37.5	60.7	74.0	-13.3	Pass	standing
9616.0	36.0	37.5	A	311	100	37.5	40.7	54.0	-13.3	Pass	standing
4884.0	55.1	53.9	P	323	100	55.1	66.6	74.0	-7.4	Pass	standing
4884.0	55.1	53.9	A	323	100	55.1	46.6	54.0	-7.4	Pass	standing
7326.0	44.5	44.5	P	203	116	44.5	63.1	74.0	-10.9	Pass	standing
7326.0	44.5	44.5	A	203	116	44.5	43.1	54.0	-10.9	Pass	standing
9767.0	38.2	38.3	P	182	123	38.3	61.5	74.0	-12.5	Pass	standing
9767.0	38.2	38.3	A	182	123	38.3	41.5	54.0	-12.5	Pass	standing
4948.0	51.3	51.7	P	266	150	51.7	63.2	74.0	-10.8	Pass	standing
4948.0	51.3	51.7	A	266	150	51.7	43.2	54.0	-10.8	Pass	standing
7422.0	42.1	44.4	P	274	135	44.4	62.8	74.0	-11.2	Pass	standing
7422.0	42.1	44.4	A	274	135	44.4	42.8	54.0	-11.2	Pass	standing
9896.0	35.8	35.9	P	163	126	35.9	59.8	74.0	-14.2	Pass	standing
9896.0	35.8	35.9	A	163	126	35.9	39.8	54.0	-14.2	Pass	standing

Maximum Peak Output Power

15.257 (b)(1)
For frequency hopping systems operating in the 2400–2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725–5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400–2483.5 MHz band: 0.125 watts.

Test Conditions:

Sample Number:	VUE Camera Gen II	Temperature:	24 °C
Date:	September 28, 2012	Humidity:	43 %
Modification State:	Lo/Mid/High Channels	Tester:	A. Gillmeier
		Laboratory:	Test Area

Additional Observations:

- Conductive measurement with minimum offset of hardline “pigtail” soldered onto circuit board --cutting out integral antenna.
- A fresh battery was installed prior to test.
- RBW was greater than 20 dB bandwidth.
- Detector peak, max hold.

Original Test Results:

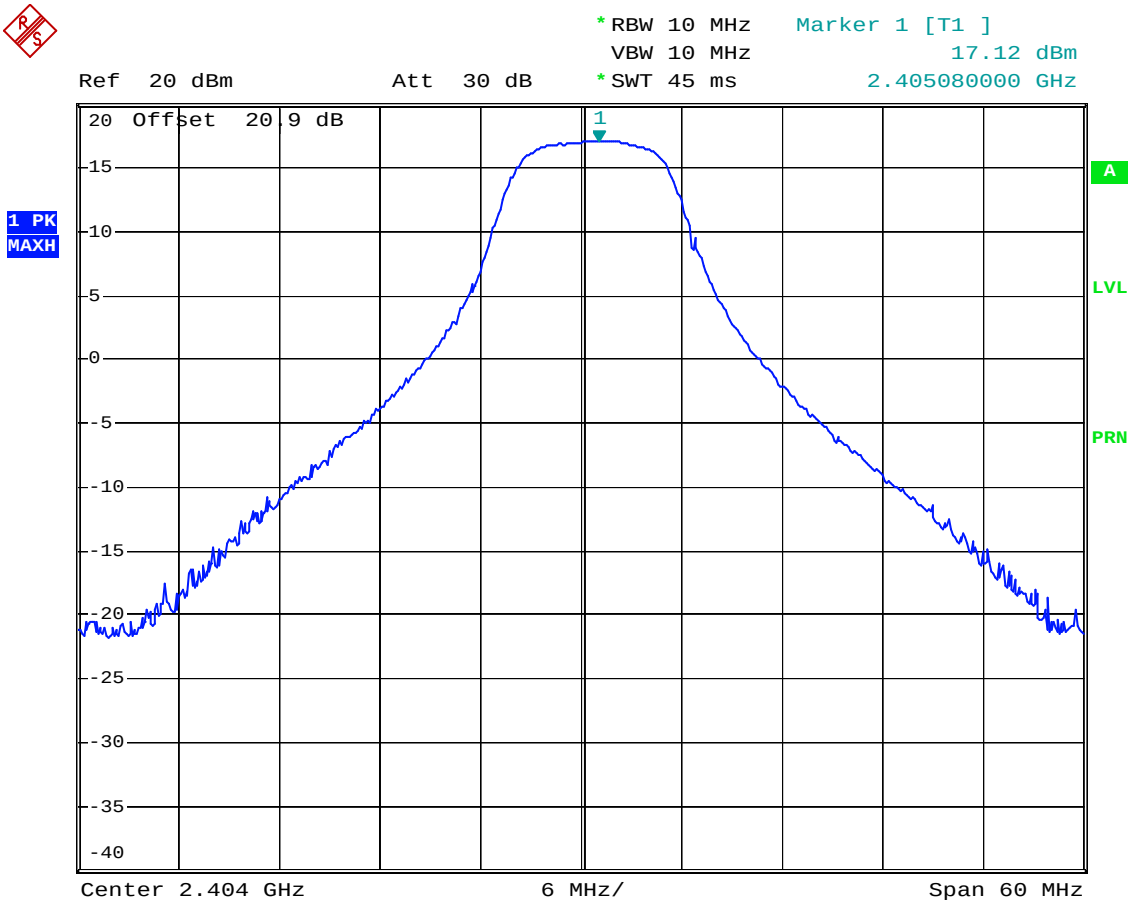
Channel	Frequency (MHz)	Measured Output Power Conducted dBm	Measured Output Power Conducted mW	Gain	EIRP dBm
Low	2404	17.34	54	0	17.34
Mid	2442	17.23	53	0	17.23
High	2474	16.80	48	0	16.80

Class II Permissive Change Test Results:

Channel	Frequency (MHz)	Measured Output Power Conducted dBm	Measured Output Power Conducted mW	Gain	EIRP dBm
Low	2404	17.12	51	0	17.12
Mid	2442	16.94	49	0	16.94
High	2474	16.42	44	0	16.42

Test equipment: E1018

Plots:



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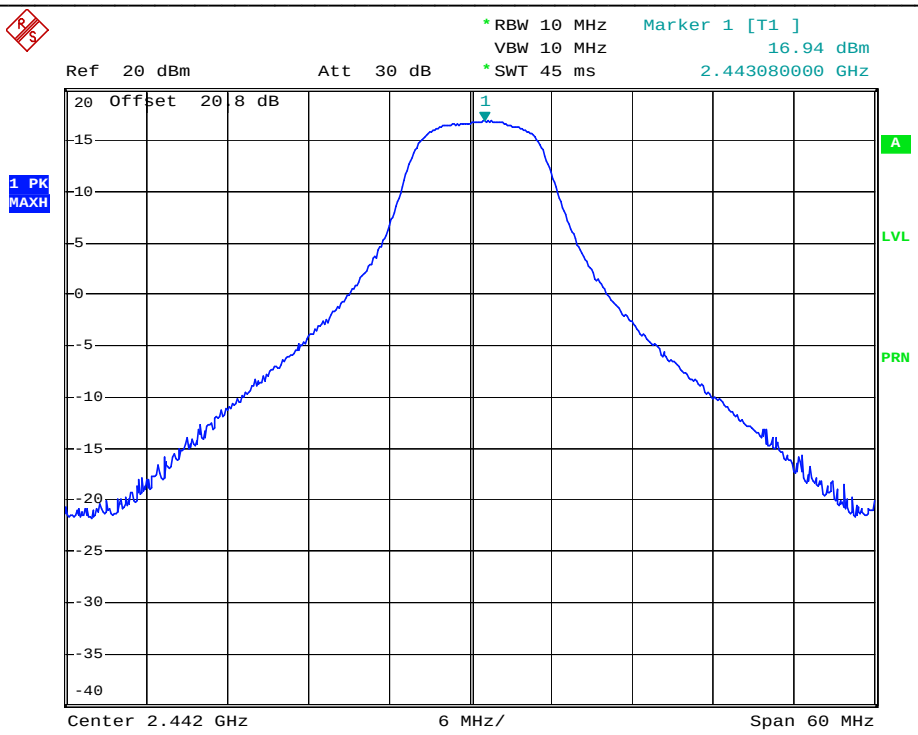

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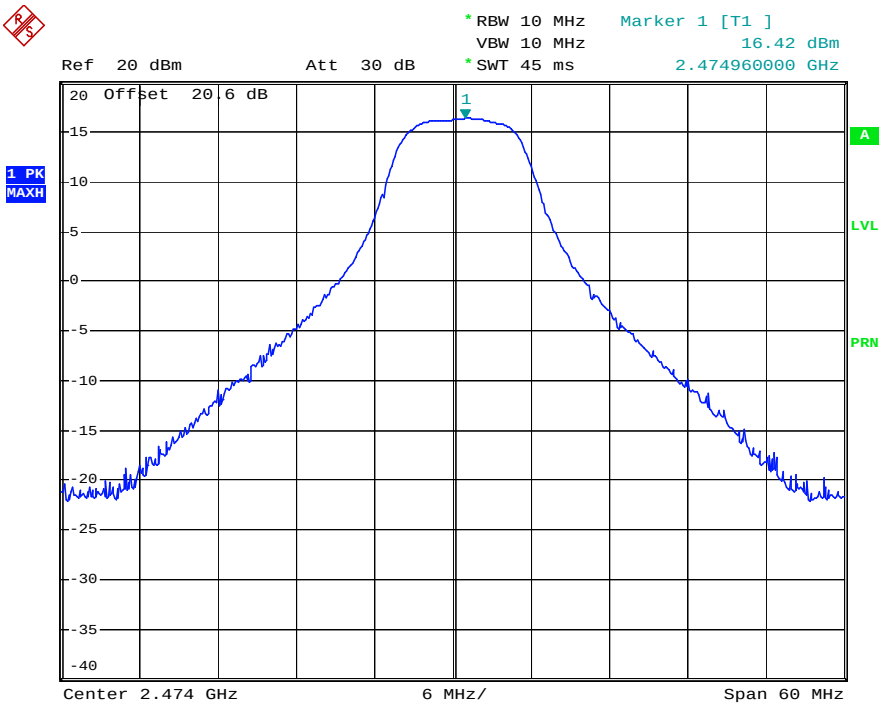

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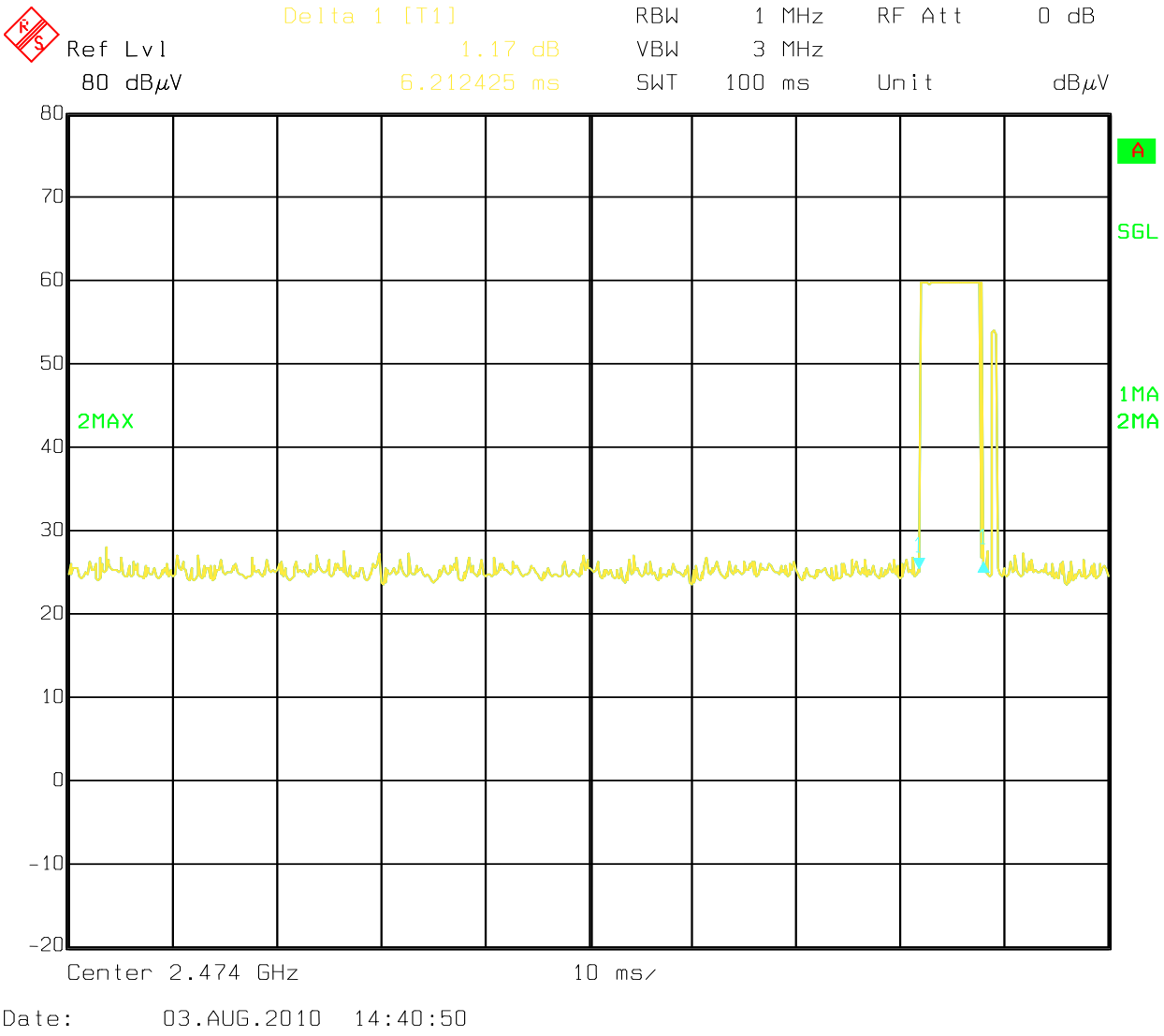
Duty Cycle Computation

One emission in 100 ms



Duty Cycle = 6.21 ms/100ms = 6%
Duty Cycle Factor = -20 dB since duty cycle is < 10%
No change.