Nike

Nike+ Watch Remote

August 12, 2008

Report No. NEMK0006

Report Prepared By



www.nwemc.com 1-888-EMI-CERT

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22975 NW Evergreen Parkway Suite 400 Hillsboro, Oregon 97124

Certificate of Test

Issue Date: August 12, 2008

Nike

Model: Nike+ Watch Remote

Emissions								
Test Description	Specification	Test Method	Pass/Fail					
Radiated Emissions	FCC 15.109(g) (CISPR 22:1997):2007	ANSI C63.4:2003	Pass					
Spurious Radiated Emissions	FCC 15.249:2007	ANSI C63.4:2003	Pass					
Field Strength of Fundamental	FCC 15.249:2007	ANSI C63.4:2003	Pass					

Modifications made to the product	
See the Modifications section of this report	

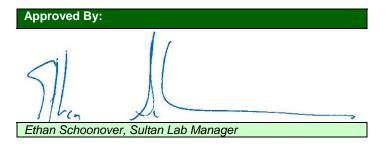
Test Facility

The measurement facility used to collect the data is located at:

Northwest EMC, Inc.; 22975 NW Evergreen Parkway, Suite 400; Hillsboro, OR 97124

Phone: (503) 844-4066 Fax: 844-3826

This site has been fully described in a report filed with and accepted by the FCC (Federal Communications Commission) and Industry Canada(Site filing #2834D-1).





NVLAP Lab Code: 200630-0

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America.

Product compliance is the responsibility of the client, therefore the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. This Report may only be duplicated in its entirety. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test.

Revision History

Revision 05/05/03

Revision Number	Description	Date	Page Number
00	None		

FCC: Accredited by NVLAP for performance of FCC radio, digital, and ISM device testing. Our Open Area Test Sites, certification chambers, and conducted measurement facilities have been fully described in reports filed with the FCC and accepted by the FCC in letters maintained in our files. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by the FCC as a Telecommunications Certification Body (TCB). This allows Northwest EMC to certify transmitters to FCC specifications in accordance with 47 CFR 2.960 and 2.962.





NVLAP: Northwest EMC, Inc. is accredited under the United States Department of Commerce, National Institute of Standards and Technology, and National Voluntary Laboratory Accreditation Program for satisfactory compliance with the requirements of ISO/IEC 17025 for Testing Laboratories. The NVLAP accreditation encompasses Electromagnetic Compatibility Testing in accordance with the European Union EMC Directive 2004/108/EC, and ANSI C63.4. Additionally, Northwest EMC is accredited by NVLAP to perform radio testing in accordance with the European Union R&TTE Directive 1999/5/EEC, the requirements of FCC, and the RSS radio standards for Industry Canada.



Industry Canada: Accredited by NVLAP for performance of Industry Canada RSS and ICES testing. Our Open Area Test Sites and certification chambers comply with RSS-Gen, Issue 2 and have been filed with Industry Canada and accepted. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by NIST and recognized by Industry Canada as a Certification Body (CB) per the APEC Mutual Recognition Arrangement (MRA). This allows Northwest EMC to certify transmitters to Industry Canada technical requirements. (Site Filing Numbers - Hillsboro: 2834D-1, 2834D-2, Sultan: 2834C-1, Irvine: 2834B-1, 2834B-2)



CAB: Designated by NIST and validated by the European Commission as a Conformity Assessment Body (CAB) to conduct tests and approve products to the EMC directive and transmitters to the R&TTE directive, as described in the U.S. - EU Mutual Recognition Agreement.



TÜV Product Service: Included in TUV Product Service Group's Listing of Recognized Laboratories. It qualifies in connection with the TUV Certification after Recognition of Agent's Testing Program for the product categories and/or standards shown in TUV's current Listing of CARAT Laboratories, available from TUV. A certificate was issued to represent that this laboratory continues to meet TUV's CARAT Program requirements. Certificate No. USA0604C.



TÜV Rheinland: Authorized to carryout EMC tests by order and under supervision of TÜV Rheinland. This authorization is based on "Conditions for EMC-Subcontractors" of November 1992.



NEMKO: Assessed and accredited by NEMKO (Norwegian testing and certification body) for European emissions and immunity testing. As a result of NEMKO's laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification (Authorization No. ELA 119).



Australia/New Zealand: The National Association of Testing Authorities (NATA), Australia has been appointed by the ACA as an accreditation body to accredit test laboratories and competent bodies for EMC standards. Accredited test reports or assessments by competent bodies must carry the NATA logo. Test reports made by an overseas laboratory that has been accredited for the relevant standards by an overseas accreditation body that has a Mutual Recognition Agreement (MRA) with NATA are also accepted as technical grounds for product conformity. The report should be endorsed with the respective logo of the accreditation body (NVLAP).



VCCI: Accepted as an Associate Member to the VCCI, Acceptance No. 564. Conducted and radiated measurement facilities have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. (Registration Numbers. - Hillsboro: C-1071, R-1025, C-2687, T-289, and R-2318, Irvine: R-1943, C-2766, and T-298, Sultan: R-871, C-1784, and T-294).



BSMI: Northwest EMC has been designated by NIST and validated by C-Taipei (BSMI) as a CAB to conduct tests as described in the APEC Mutual Recognition Agreement (US0017). License No.SL2-IN-E-1017.



GOST: Northwest EMC, Inc. has been assessed and accredited by the Russian Certification bodies Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC, to perform EMC and Hygienic testing for Information Technology Products. As a result of their laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification



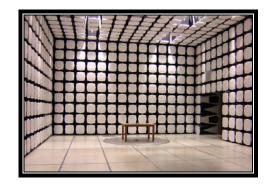
MIC: Northwest EMC, Inc is a CAB designated by MRA partners and recognized by Korea. (Assigned Lab Numbers: Hillsboro: US0017, Irvine: US0158, Sultan: US0157)



SCOPE

For details on the Scopes of our Accreditations, please visit: http://www.nwemc.com/accreditations/

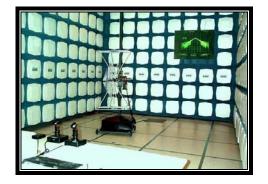




California – Orange County Facility Labs OC01 – OC13

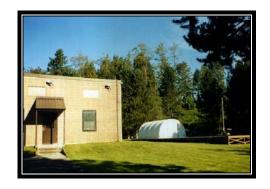
41 Tesla Ave. Irvine, CA 92618 (888) 364-2378 Fax: (503) 844-3826





Oregon – Evergreen Facility Labs EV01 – EV11

22975 NW Evergreen Pkwy. Suite 400 Hillsboro, OR 97124 (503) 844-4066 Fax: (503) 844-3826





Washington – Sultan Facility Labs SU01 – SU07

14128 339th Ave. SE Sultan, WA 98294 (888) 364-2378

Party Requesting the Test

Company Name:	Nike
Address:	1 Bowerman Drive
City, State, Zip:	Beaverton, OR 97005
Test Requested By:	Lars Mellander
Model:	Nike+ Watch Remote
First Date of Test:	July 30, 2008
Last Date of Test:	August 1, 2008
Receipt Date of Samples:	July 30, 2008
Equipment Design Stage:	Preproduction
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):

Wrist Transmitter

Testing Objective:

Seeking to demonstrate compliance under FCC 15.249 for operation in the 2.4 band. Single channel, 2425MHz.

EUT Photo



Configurations

Revision 9/21/05

CONFIGURATION 1 NEMK0006

EUT							
Description	Manufacturer	Model/Part Number	Serial Number				
EUT - Wireless Remote	Nike	Nike+ Watch Remote	None				

Revision 4/28/03

	Equipment modifications								
Item	Date	Test	Modification	Note	Disposition of EUT				
1	7/30/2008	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.				
2	7/30/2008	Field Strength Fundamentals	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.				
3	8/1/2008	Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was complete.				



RADIATED EMISSIONS

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION

Transmitting single channel, 1.1 mS every 4.0 mS

POWER SETTINGS INVESTIGATED

Battery

CONFIGURATIONS INVESTIGATED

11

Start Frequency 30 MHz Stop Frequency 1000 MHz

CLOCKS AND OSCILLATORS

None Provided

SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4443A	AAS	12/7/2007	13 mo
EV11 Cables		10m Test Distance Cables	EVL	5/24/2008	13 mo
Pre-Amplifier	Miteq	AM-1551	AOY	5/22/2008	13 mo
Antenna, Biconilog	EMCO	3142	AXB	1/15/2008	24 mo

MEASUREMENT BANDWIDTHS									
	Frequency Range	Peak Data	Quasi-Peak Data	Average Data					
	(MHz)	(kHz)	(kHz)	(kHz)					
	0.01 - 0.15	1.0	0.2	0.2					
	0.15 - 30.0	10.0	9.0	9.0					
	30.0 - 1000	100.0	120.0	120.0					
	Above 1000	1000.0	N/A	1000.0					
٨	leasurements were made using	ng the bandwidths and dete	ctors specified No video filter	was used					

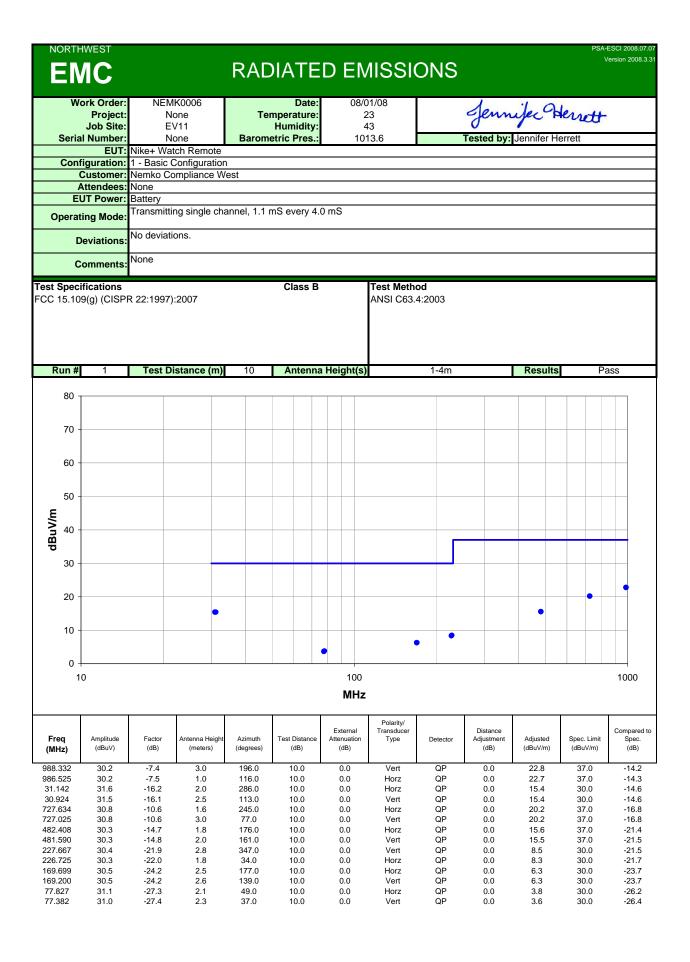
MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

Using the mode of operation and configuration noted within this report, a final radiated emissions test was performed. The frequency range investigated (scanned), is also noted in this report. Radiated emissions measurements were made at the EUT azimuth and antenna height such that the maximum radiated emissions level will be detected. This requires the use of a turntable and an antenna positioner. The preferred method of a continuous azimuth search is utilized for frequency scans of the EUT field strength with both polarities of the measuring antenna. A calibrated, linearly polarized antenna was positioned at the specified distance from the periphery of the EUT.

Tests were made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna was varied in height above the conducting ground plane to obtain the maximum signal strength. Though specified in the report, the measurement distance shall be 3 meters or 10 meters. At any measurement distance, the antenna height was varied from 1 meter to 4 meters. These height scans apply for both horizontal and vertical polarization, except that for vertical polarization the minimum height of the center of the antenna shall be increased so that the lowest point of the bottom of the antenna clears the ground surface by at least 25 cm.







Radiated Emissions



SPURIOUS RADIATED EMISSIONS

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION

Transmitting single channel, 1.1 mS every 4.0 mS

POWER SETTINGS INVESTIGATED

Battery

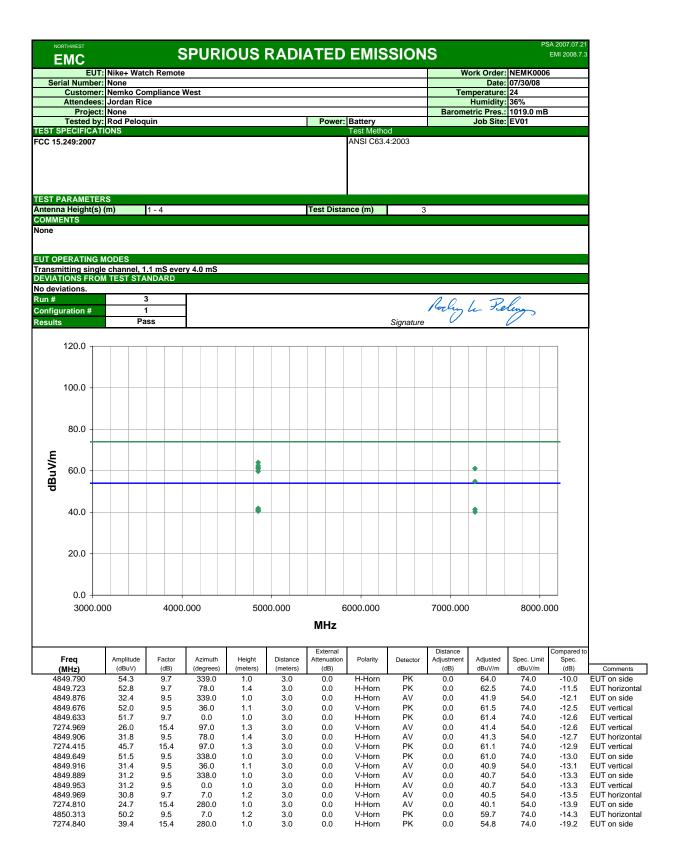
TEST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4446A	AAT	12/7/2007	13
High Pass Filter	Micro-Tronics	HPM50111	HFO	5/21/2008	13
Low Pass Filter 0-1000 MHz	Micro-Tronics	LPM50004	LFD	5/21/2008	13
Pre-Amplifier	Miteq	AM-1616-1000	AOL	5/19/2008	13
Antenna, Biconilog	EMCO	3141	AXE	1/15/2008	24
EV01 Cables		Bilog Cables	EVA	5/19/2008	13
Pre-Amplifier	Pre-Amplifier Miteq		APW	5/19/2008	13
Antenna, Horn	itenna, Horn EMCO		AHC	8/24/2006	24
EV01 Cables		Double Ridge Horn Cables	EVB	5/19/2008	13
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVC	6/30/2008	13
Antenna, Horn	ETS	3160-07	AHU	NCR	0
EV01 Cables		Standard Gain Horns Cables	EVF	10/23/2007	13
Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	7/25/2007	13
Antenna, Horn	EMCO	3160-09	AHG	NCR	0
EV01 Cables		18-26GHz Standard Gain Horn Cable	EVD	7/25/2007	13

MEASUREMENT UNCERTAINTY

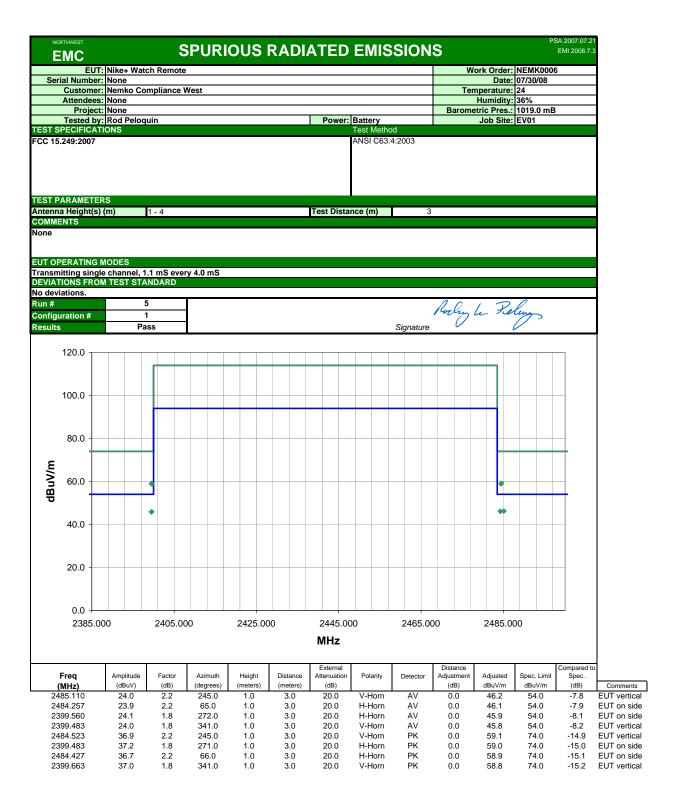
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TEST DESCRIPTION

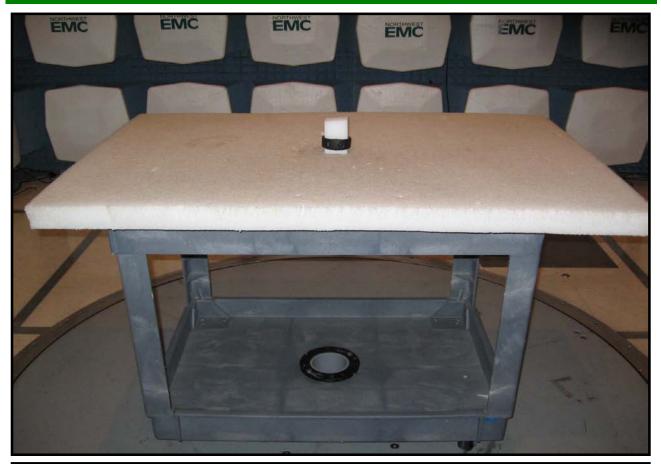
The antennas to be used with the EUT were tested. The EUT was transmitting and receiving while set at the lowest channel, a middle channel, and the highest channel available. While scanning, emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.4:2003). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

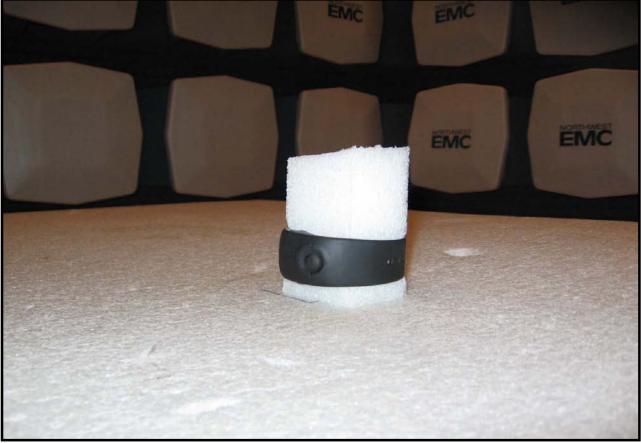


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	PECIFICAT		oquin					Test Metho	d		Job Site:	EVUI	
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	MHz)	33.4		124.0	1.3	3.0	0.0	H-Horn	AV	0.0	29.0	54.0	-25.0
(1		33.0	-4.4	302.0	1.4	3.0	0.0	V-Horn	AV	0.0	28.6	54.0	-25.4
121				302.0	1.4	3.0	0.0	V-Horn	PK	0.0	47.2	74.0	-26.8
121 121	24.740 24.470 25.060	51.7	-4.5										
121 121 121 121	24.470	51.7 51.4	-4.5 -4.4	124.0	1.3	3.0	0.0	H-Horn	PK	0.0	47.0	74.0	-27.0
121: 121: 121: 121: 969	24.470 25.060 26.860 99.467	51.4 38.5	-4.4 -11.6	124.0 332.0	1.0	3.0	0.0 0.0	V-Horn	PK AV	0.0	26.9	54.0	-27.1
121: 121: 121: 121: 121: 969: 969:	24.470 25.060 26.860 99.467 99.364	51.4 38.5 38.3	-4.4 -11.6 -11.6	124.0 332.0 336.0	1.0 1.0	3.0 3.0	0.0 0.0 0.0	V-Horn H-Horn	PK AV AV	0.0 0.0	26.9 26.7	54.0 54.0	-27.1 -27.3
121 121 121 121 121 969 969 969	24.470 25.060 26.860 99.467	51.4 38.5	-4.4 -11.6	124.0 332.0	1.0	3.0	0.0 0.0	V-Horn	PK AV	0.0	26.9	54.0	-27.1



SPURIOUS RADIATED EMISSIONS





SPURIOUS RADIATED EMISSIONS





FIELD STRENGTH OF FUNDAMENTAL

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POWER SETTINGS INVESTIGATED

Battery

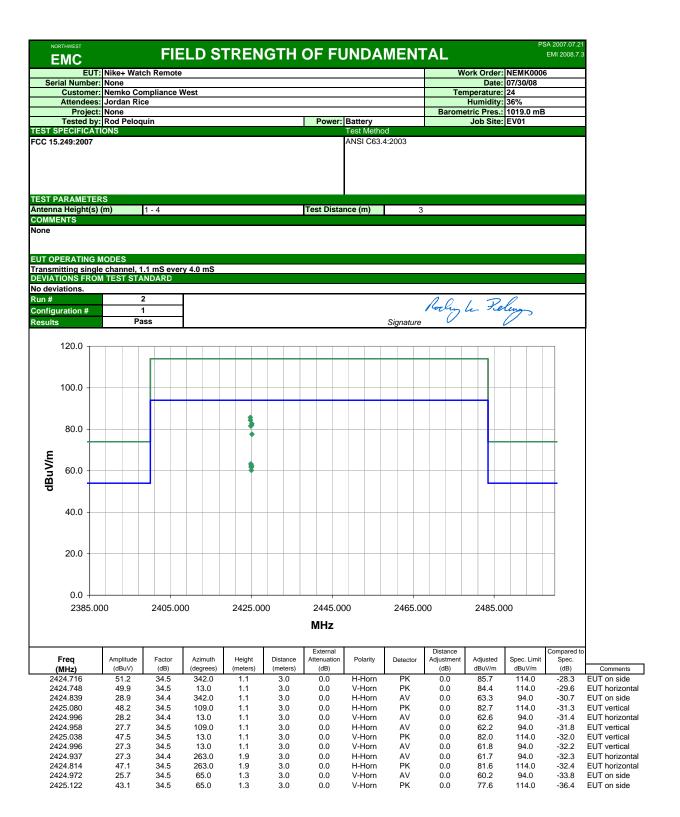
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Antenna, Horn	EMCO	3115	AHC	8/24/2006	24

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FIELD STRENGTH OF FUNDAMENTAL





FIELD STRENGTH OF FUNDAMENTAL



