

Exhibit M: Technical Report

FCC ID: QYUELITEHRM

Nike

Triax Elite - Heart Rate Monitor

March 11, 2003

Report No. NIKE004

Report Prepared By:



1-888-EMI-CERT

Test Report



22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

Certificate of Test

Issue Date: March 11, 2003

Nike
Model : Triax Elite - Heart Rate Monitor
Report No: NIKE0004

Emissions

Description	Pass	Fail
FCC 15.249, Field Strength of Fundamental	<input checked="" type="checkbox"/>	<input type="checkbox"/>
FCC 15.249, Field Strength of Spurious Emissions	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The equipment was tested in the configuration and mode(s) of operation provided by the client. The specific tests and test levels were specified by the client. Any additional tests, or product configurations that should be tested are the responsibility of the client. Product compliance is the responsibility of the client.

List of Modifications to equipment under test required to meet the requirements:

- No EMI suppression devices were added or modified. The EUT was tested as delivered.

Deviations to the test standard

- No deviations were made to the test standard

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 the FCC (Federal Communications Commission), and accepted by the FCC in a letter maintained in our files.

Approved By:

Don Facteau, IS Manager

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.



22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

Revision History

Nike
Triax Elite - Heart Rate Monitor
Report No: NIKE0004

Revision Number	Description	Date		Page Number
00	None			

FCC: The Open Area Test Sites, 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.



TCB: 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.

A2LA: Accreditation has been granted to Northwest EMC, Inc. to perform the Electromagnetic Compatibility (EMC) tests described in the Scope of Accreditation. Assessment performed to ISO/IEC 17025. Certificate Number: 1936-01, Certificate Number: 1936-02, Certificate Number 1936-03



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. (A2LA)



TÜV Product Service: Included in TÜV Product Service Group's Listing of Recognized Laboratories. It qualifies in connection with the TÜV Certification after Recognition of Agent's Testing Program for the product categories and/or standards shown in TÜV's current Listing of CARAT Laboratories available from TÜV. A certificate was issued to represent that this laboratory continues to meet TÜV's CARAT Program requirements. Certificate No. USA070102



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).



Technology International: Assessed in accordance with ISO Guide 25 defining the general international requirements for the competence of calibration and testing laboratories and with ITI assessment criteria LACO196. Based upon that assessment Interference Technology International, Ltd., has granted approval for specifications implementing the EU Directive on EMC (89/336/EEC and amendments). The scope of the approval was provided on a Schedule of Assessment supplied with the certificate and is available upon request.



Industry Canada: Accredited by Industry Canada for performance of radiated measurements. Our open area test sites comply with RSP 100, Issue 7, section 3.3.



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 Nos. - Evergreen: C-1071 and R-1025, Trails End: C-694 and R-677, Sultan: C-905, R-871 and R-1172, North Sioux City C-1246, R-1185 and R-1217)



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. License No.SL2-IN-E-1017.



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



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



When a measurement is made the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. The following statement of measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" value. In the case of transient tests (ESD, EFT, Surge, Voltage Dips and Interruptions), the test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements.

Radiated Emissions ≤ 1 GHz

Test Distance	Probability Distribution	Value (dB)					
		Biconical Antenna		Log Periodic Antenna		Dipole Antenna	
		3m	10m	3m	10m	3m	10m
Combined standard uncertainty $u_c(y)$	normal	+ 1.86 - 1.88	+ 1.82 - 1.87	+ 2.23 - 1.41	+ 1.29 - 1.26	+ 1.31 - 1.27	+ 1.25 - 1.25
Expanded uncertainty U (level of confidence ≈ 95%)	normal (k=2)	+ 3.72 - 3.77	+ 3.64 - 3.73	+ 4.46 - 2.81	+ 2.59 - 2.52	+ 2.61 - 2.55	+ 2.49 - 2.49

Radiated Emissions > 1 GHz

	Probability Distribution	Value (dB)	
		Without High Pass Filter	With High Pass Filter
Combined standard uncertainty $u_c(y)$	normal	+ 1.29 - 1.25	+ 1.38 - 1.35
Expanded uncertainty U (level of confidence ≈ 95%)	normal (k=2)	+ 2.57 - 2.51	+ 2.76 - 2.70

Conducted Emissions

	Probability Distribution	Value (+/- dB)
Combined standard uncertainty $u_c(y)$	normal	1.48
Expanded uncertainty U (level of confidence ≈ 95 %)	normal (k = 2)	2.97

Radiated Immunity

	Probability Distribution	Value (+/- dB)
Combined standard uncertainty $u_c(y)$	normal	1.05
Expanded uncertainty U (level of confidence ≈ 95 %)	normal (k = 2)	2.11

Conducted Immunity

	Probability Distribution	Value (+/- dB)
Combined standard uncertainty $uc(y)$	normal	1.05
Expanded uncertainty U (level of confidence $\approx 95\%$)	normal ($k = 2$)	2.10

$uc(y)$ = square root of the sum of squares of the individual standard uncertainties

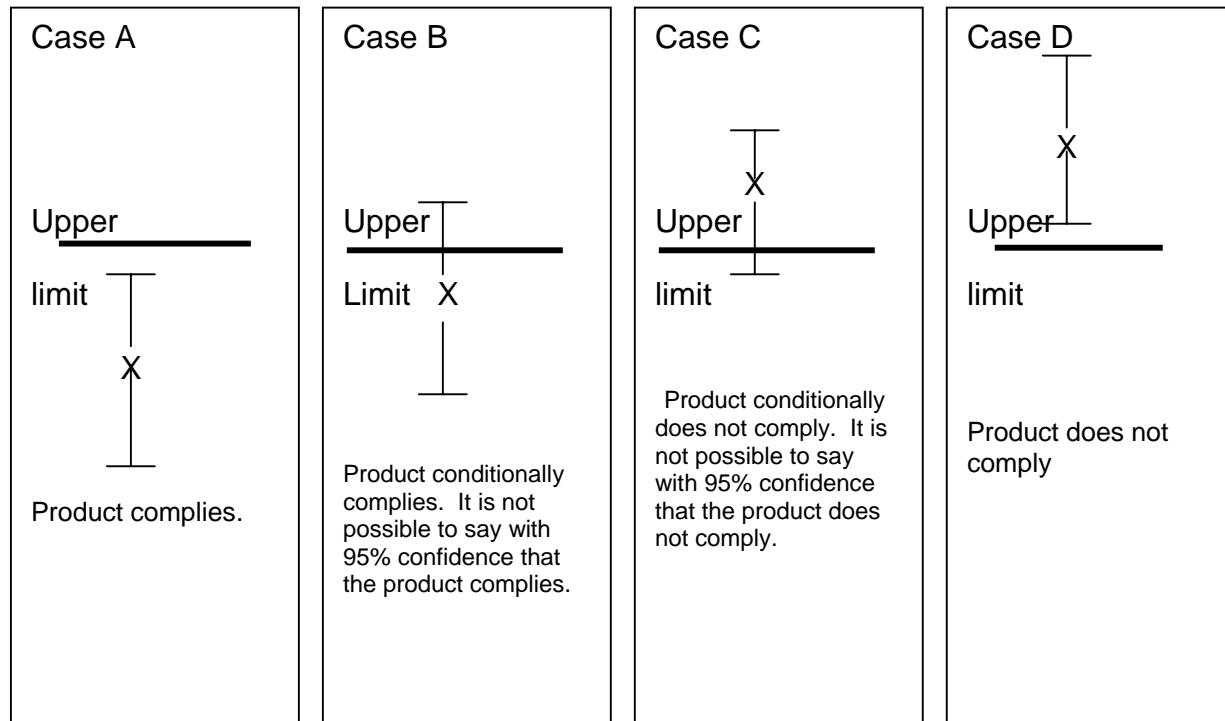
U = combined standard uncertainty multiplied by the coverage factor: k . This defines an interval about the measured result that will encompass the true value with a confidence level of approximately 95%. If a higher level of confidence is required, then $k=3$ (CL of 99.7%) can be used. Please note that with a coverage factor of one, $uc(y)$ yields a confidence level of only 68%.

The following documents were the basis for determining the uncertainty levels of our measurements:

- "ISO Guide to the Expression of Uncertainty in Measurements", October 1993
- "NIS81: The Treatment of Uncertainty in EMC Measurements", May 1994
- "IEC CISPR 16-3 A1 f1 Ed.1: Radio-interference measurements and statistical techniques", December 2000

How do I apply measurement uncertainty to test results?

If 'X' marks the measured value for the test and the vertical bars bracket the range of + and - measurement uncertainty values, then test results can be interpreted from the diagram below.



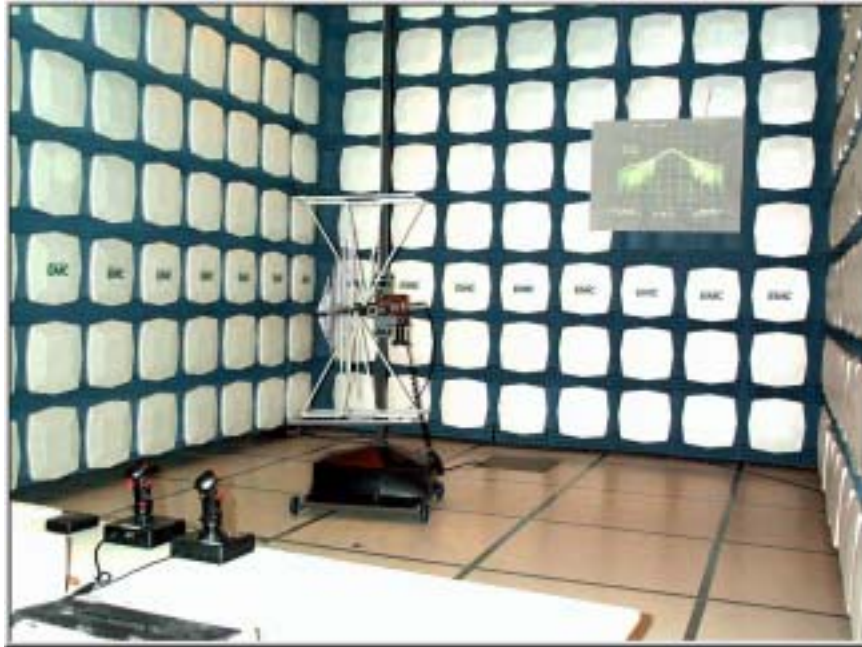
Hillsboro - Evergreen Facility

22975 NW Evergreen Parkway, Suite 400

Hillsboro, OR 97124

(503) 844-4066

FAX (503) 844-3826



5 Meter Chamber



Trails End - Facility

30475 NE Trails End Lane
Newberg, OR 97132
(503) 844-4066
FAX (503) 537-0735



Sultan - Facility

14128 339th Avenue SE

Sultan, WA 98294

(360) 793-8675

FAX (360) 793-2536



North Sioux City - Facility

745 N. Derby Lane / P.O. Box 217

N. Sioux City, SD 57079

(605) 232-5267

FAX (605) 232-3873



Party Requesting the Test

Company Name:	Nike
Address:	1 Bowerman Drive, Miam Hamm Building, Floor 2
City, State, Zip:	Beaverton, OR, 97005
Test Requested By:	Charlie Case
Model:	Triax Elite - Heart Rate Monitor
First Date of Test:	03-11-2003
Last Date of Test:	03-11-03
Receipt Date of Samples:	03-11-2003
Equipment Design Stage:	Production
Equipment Condition:	No visual damage.

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):

Heart rate monitor.

Client Justification for EUT Selection:

Typical production sample.

Client Justification for Test Selection

These tests satisfy the requirements for FCC CFR 47 Part 15.249. Battery operated unit, no provisions for connection to the AC mains; therefore, conducted emissions testing to 15.207 is not required.

Justification

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

Channels in Specified Band Investigated:

Single channel operation

Operating Modes Investigated:

Typical

Antennas Investigated:

Integral

Data Rates Investigated:

Typical

Power Input Settings Investigated:

Battery

Software\Firmware Applied During Test

Exercise software	Triax Elite Firmware	Version	Elite_220.a43
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Description

The system was tested using standard operating production firmware to exercise the functions of the device during the testing.

Equipment Modifications

No EMI suppression devices were added or modified. The EUT was tested as delivered.

EUT and Peripherals

Description	Manufacturer	Model/Part Number	Serial Number
EUT	Nike	Triax Elite - Heart Rate Monitor	N/A

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Control Leads	No	0.5	No	BNC	EUT
Control Leads	No	0.5	No	BNC	EUT
BNC	No	1.0	No	Control leads	Function Generator

Remote Equipment

Description	Manufacturer	Model/Part Number	Serial Number
Function Generator	Hewlett-Packard	33120A	TEA

Measurement Equipment

Description	Manufacturer	Model	Identifier	Last Cal	Interval
Spectrum Analyzer	Hewlett-Packard	8566B	AAL	01/07/2003	12 mo
Spectrum Analyzer Display	Hewlett Packard	85662A	AALD	01/07/2003	12 mo
Antenna, Biconilog	EMCO	3141	AXE	12/31/2001	36 mo

Test Description

Requirement: The field strength of the fundamental emission shall comply with the limits, as defined in 47 CFR 15.249. Field strength limits are specified at a distance of 3 meters.

Configuration: The antenna to be used with the EUT was tested. The EUT was transmitting while set at the single 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 in 3 orthogonal planes (per ANSI C63.4:1992).

The square wave output of a function generator was used to simulate a 2 Hz heart beat.

Completed by:



OATS DATA SHEET

EUT: Triax Elite - Heart Rate Monitor		Work Order: NIKE0004
Serial Number: N/A	Customer: Nike	Date: 03/11/03
Attendees: Charlie Case		Temperature: 73
Cust. Ref. No.:		Humidity: 37%
Tested by: Rod Peloquin	Power: Battery	Barometric Pressure: 29.98
		Job Site: EV01

TEST SPECIFICATIONS	
Specification: FCC Part 15.249	Year: 2001
Method: ANSI C63.4	Year: 1992

SAMPLE CALCULATIONS
 Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation
 Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

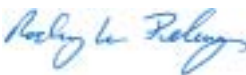
COMMENTS
 Function generator used at 2Hz to simulate heart beat.

EUT OPERATING MODES
 Transmitting with modulation at 916.5MHz.

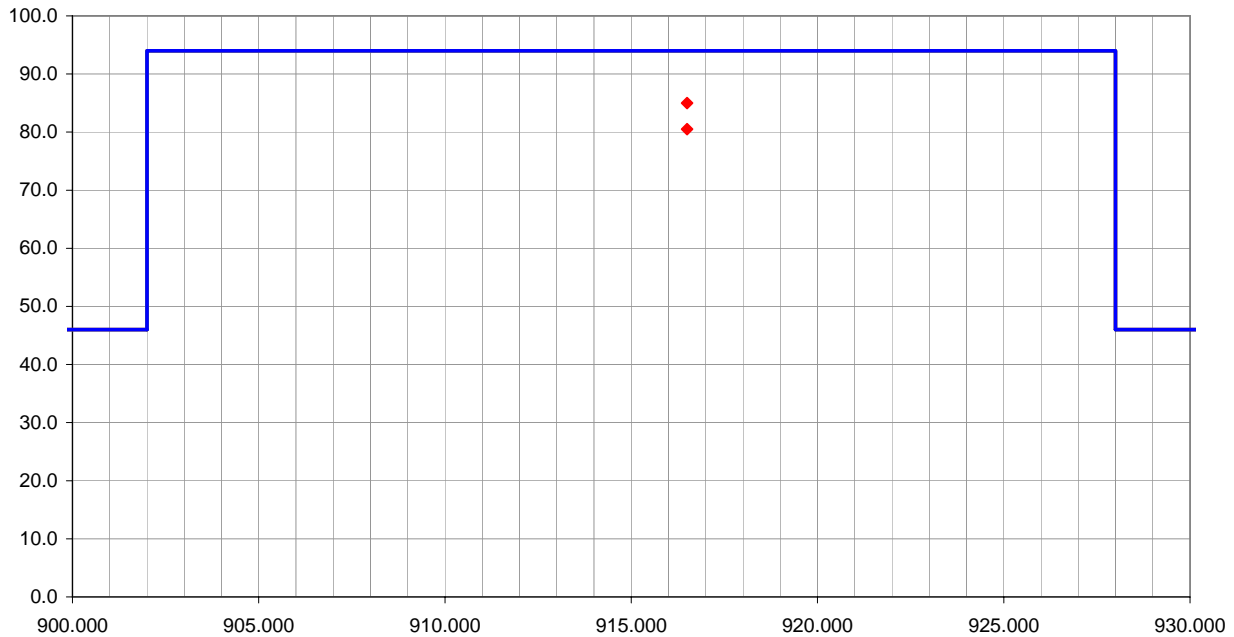
DEVIATIONS FROM TEST STANDARD
 No deviations.

RESULTS	Run #
Pass	2

Other



 Tested By:



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
916.500	58.5	26.5	28.0	1.4	3.0	0.0	H-Bilog	PK	0.0	85.0	94.0	-9.0
916.500	54.0	26.5	84.0	1.6	3.0	0.0	V-Bilog	PK	0.0	80.5	94.0	-13.5

Justification

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

Channels in Specified Band Investigated:

Single channel

Operating Modes Investigated:

Typical

Antennas Investigated:

Integral

Data Rates Investigated:

Typical

Output Power Setting(s) Investigated:

Maximum

Power Input Settings Investigated:

Battery

Software\Firmware Applied During Test

Exercise software	Triax Elite Firmware	Version	Elite_220.a43
Description			
The system was tested using standard operating production firmware to exercise the functions of the device during the testing.			

Equipment Modifications

No EMI suppression devices were added or modified. The EUT was tested as delivered.

EUT and Peripherals

Description	Manufacturer	Model/Part Number	Serial Number
EUT	Nike	Triax Elite - Heart Rate Monitor	N/A

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Control Leads	No	0.5	No	BNC	EUT
Control Leads	No	0.5	No	BNC	EUT
BNC	No	1.0	No	Control leads	Function Generator

Remote Equipment

Description	Manufacturer	Model/Part Number	Serial Number
Function Generator	Hewlett-Packard	33120A	TEA

Measurement Equipment

Description	Manufacturer	Model	Identifier	Last Cal	Interval
Spectrum Analyzer	Hewlett-Packard	8566B	AAL	01/07/2003	12 mo
Spectrum Analyzer Display	Hewlett Packard	85662A	AALD	01/07/2003	12 mo
Quasi-Peak Adapter	Hewlett-Packard	85650A	AQF	01/07/2003	12 mo
Pre-Amplifier	Amplifier Research	LN1000A	APS	01/06/2003	12 mo
Antenna, Biconilog	EMCO	3141	AXE	12/31/2001	36 mo
Pre-Amplifier	Miteq	AMF-4D-005180-24-10P	APJ	01/06/2003	12 mo
Antenna, Biconilog	EMCO	3141	AXE	12/31/2001	36 mo
High Pass Filter	Hewlett-Packard	84300-80037	HFE	02/04/2002	12 mo

Test Description

Requirement: The field strength of harmonics and spurious radiated emissions shall comply with the limits as defined in 47 CFR 15.249. Field strength limits are specified at a distance of 3 meters. 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. As shown in Sec. 15.35(b), for frequencies above 1000 MHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified in Sec. 15.249 by more than 20 dB under any condition of modulation.

Configuration: The antenna to be used with the EUT was tested. The EUT was transmitting and receiving while set at it single channel. While scanning, emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height and polarization, and manipulating the EUT in 3 orthogonal planes (per ANSI C63.4:1992). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

The square wave output of a function generator was used to simulate a 2 Hz heart beat.

Bandwidths Used for Measurements

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (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
<i>Measurements were made using the bandwidths and detectors specified. No video filter was used.</i>			

Completed by:



EUT: Triax Elite - Heart Rate Monitor		Work Order: NIKE0004
Serial Number: N/A		Date: 03/11/03
Customer: Nike		Temperature: 73
Attendees: Charlie Case		Humidity: 37%
Cust. Ref. No.:		Barometric Pressure: 29.98
Tested by: Rod Peloquin	Power: Battery	Job Site: EV01

TEST SPECIFICATIONS	
Specification: FCC Part 15.249	Year: 2001
Method: ANSI C63.4	Year: 1992

SAMPLE CALCULATIONS	
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation	
Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator	

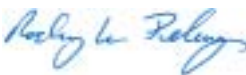
COMMENTS
Function generator used at 2Hz to simulate heart beat.

EUT OPERATING MODES
Transmitting with modulation at 916.5MHz.

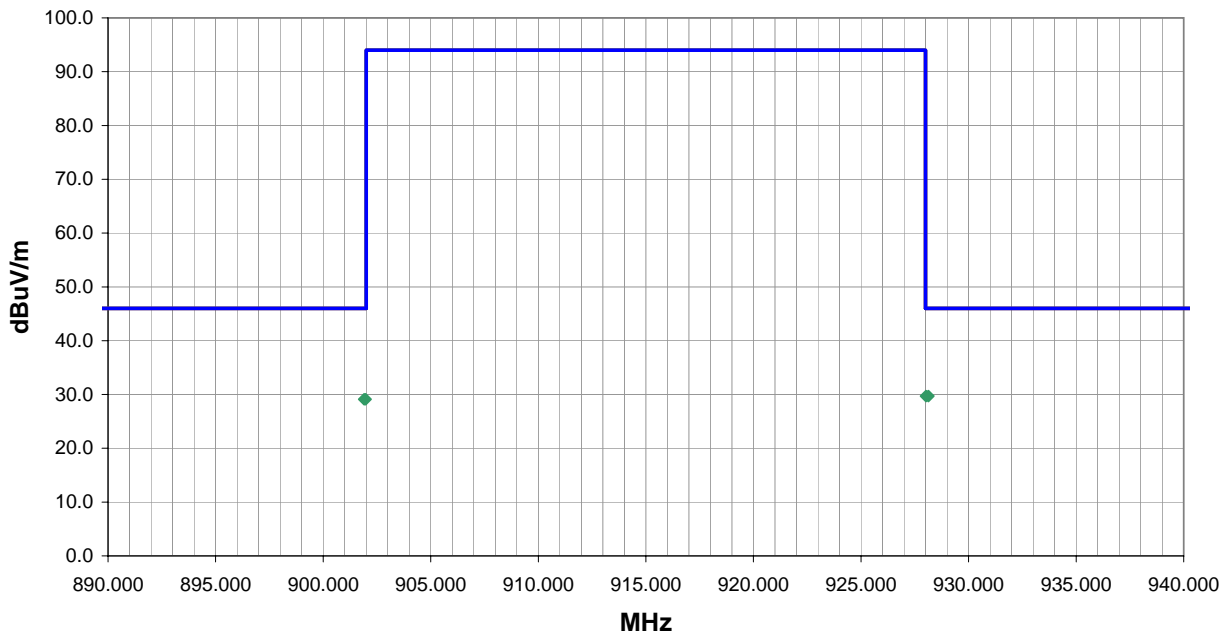
DEVIATIONS FROM TEST STANDARD
No deviations.

RESULTS	Run #
Pass	4

Other



 Tested By:



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
928.020	23.4	-3.7	152.0	1.0	3.0	10.0	H-Bilog	QP	0.0	29.7	46.0	-16.3
928.134	23.4	-3.7	311.0	1.2	3.0	10.0	V-Bilog	QP	0.0	29.7	46.0	-16.3
901.906	23.2	-4.1	135.0	1.0	3.0	10.0	H-Bilog	QP	0.0	29.1	46.0	-16.9
901.972	23.2	-4.1	197.0	2.9	3.0	10.0	V-Bilog	QP	0.0	29.1	46.0	-16.9

EUT: Triax Elite - Heart Rate Monitor		Work Order: NIKE0004
Serial Number: N/A	Customer: Nike	Date: 03/11/03
Attendees: None	Tested by: Rod Peloquin	Temperature: 73
Cust. Ref. No.:	Power: Battery	Humidity: 37%
		Barometric Pressure: 29.98
		Job Site: EV01

TEST SPECIFICATIONS	
Specification: FCC Part 15.249	Year: 2001
Method: ANSI C63.4	Year: 1992

SAMPLE CALCULATIONS

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

COMMENTS

Function generator used at 2Hz to simulate heart beat.

EUT OPERATING MODES

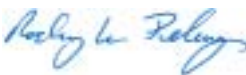
Transmitting with modulation at 916.5MHz.

DEVIATIONS FROM TEST STANDARD

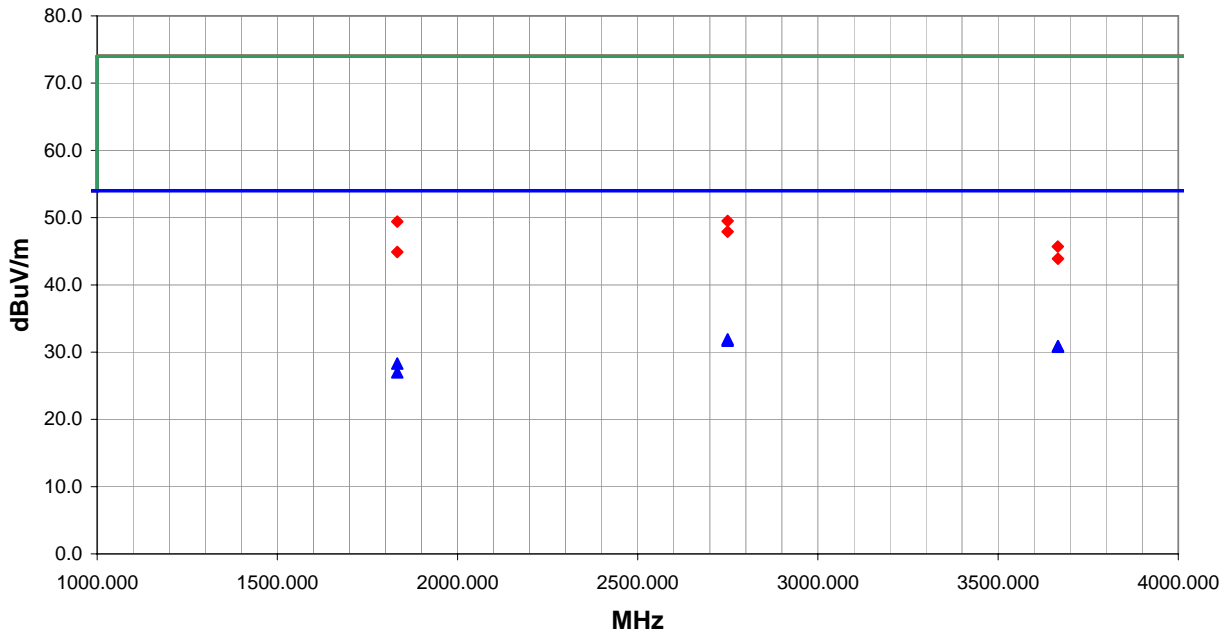
No deviations.

RESULTS	Run #
Pass	6

Other



 Tested By:



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
2749.500	30.1	1.8	36.0	1.1	3.0	0.0	H-Horn	AV	0.0	31.9	54.0	-22.1
2749.500	29.9	1.8	180.0	1.1	3.0	0.0	V-Horn	AV	0.0	31.7	54.0	-22.3
3666.000	27.1	3.8	183.0	1.2	3.0	0.0	H-Horn	AV	0.0	30.9	54.0	-23.1
3666.000	27.0	3.8	117.0	1.1	3.0	0.0	V-Horn	AV	0.0	30.8	54.0	-23.2
1832.966	30.9	-2.6	216.0	1.3	3.0	0.0	H-Horn	AV	0.0	28.3	54.0	-25.7
1832.966	29.6	-2.6	219.0	1.2	3.0	0.0	V-Horn	AV	0.0	27.0	54.0	-27.0
2749.500	47.7	1.8	36.0	1.1	3.0	0.0	H-Horn	PK	0.0	49.5	74.0	-24.5
1832.966	52.0	-2.6	216.0	1.3	3.0	0.0	H-Horn	PK	0.0	49.4	74.0	-24.6
2749.500	46.1	1.8	180.0	1.1	3.0	0.0	V-Horn	PK	0.0	47.9	74.0	-26.1
3665.940	41.9	3.8	117.0	1.1	3.0	0.0	V-Horn	PK	0.0	45.7	74.0	-28.3
1832.966	47.5	-2.6	219.0	1.2	3.0	0.0	V-Horn	PK	0.0	44.9	74.0	-29.1
3666.000	40.1	3.8	183.0	1.2	3.0	0.0	H-Horn	PK	0.0	43.9	74.0	-30.1