Nemko Test Report:	28620RUS2
Applicant:	DRS Tactical Systems 1110 West Hibiscus DR. Melbourne, FL 32901 USA
FCC ID.:	UGL980026010
Equipment Under Test: (E.U.T.)	Armor X10
In Accordance With:	**FCC Part 15, Subpart C, 15.247** Frequency Hopping Transmitters
Tested By:	Nemko USA Inc. 802 N. Kealy Lewisville, Texas 75057-3136

TESTED BY: _____ **DATE:** **25 September 2009**

David Light, Senior Wireless Engineer

APPROVED BY: _____ **DATE:** **2 October 2009**

Tom Tidwell, Telecom Direct

Total Number of Pages: 13

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Section 1. Summary of Test Results

Manufacturer: DRS Tactical Systems

Model No.: Armor X10

Serial Nos.: L TTL 1 H80 U02 EFB4

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, Paragraph 15.247 for Frequency Hopping Spread Spectrum devices. 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.

☒	New Submission	☒	Production Unit
☐	Class II Permissive Change	☐	Pre-Production Unit

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.

THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST SPECIFICATIONS HAVE BEEN MADE.
See " Summary of Test Data".

NVLAP Lab Code 100426-0

Summary Of Test Data

NAME OF TEST	PARA. NO.	RESULT
Powerline Conducted Emissions	15.207(a) / RSS-Gen 7.2.2	Not tested
Channel Separation	15.247(a)(1) / RSS-210 A8.1(b)	Not tested
Time of Occupancy	15.247(a)(1) / RSS-210 A8.1(d)	Not tested
20 dB Occupied Bandwidth	15.247(a)(1) / RSS-210(b)	Not tested
Peak Power Output	15.247(b) / RSS-210 A8.4(2)	Not tested
Spurious Emissions (Antenna Conducted)	15.247(d) / RSS-210 A8.5	Complies
Spurious Emissions (Radiated)	15.205 / RSS-Gen 7.2.3	Not tested

Footnotes:

The MICRO-STAR INT'L Bluetooth module contained in this device is approved under FCC Identifier I4L-MS6837D. DRS Tactical Systems has modified the antenna used.

Section 2. Equipment Under Test (E.U.T.)

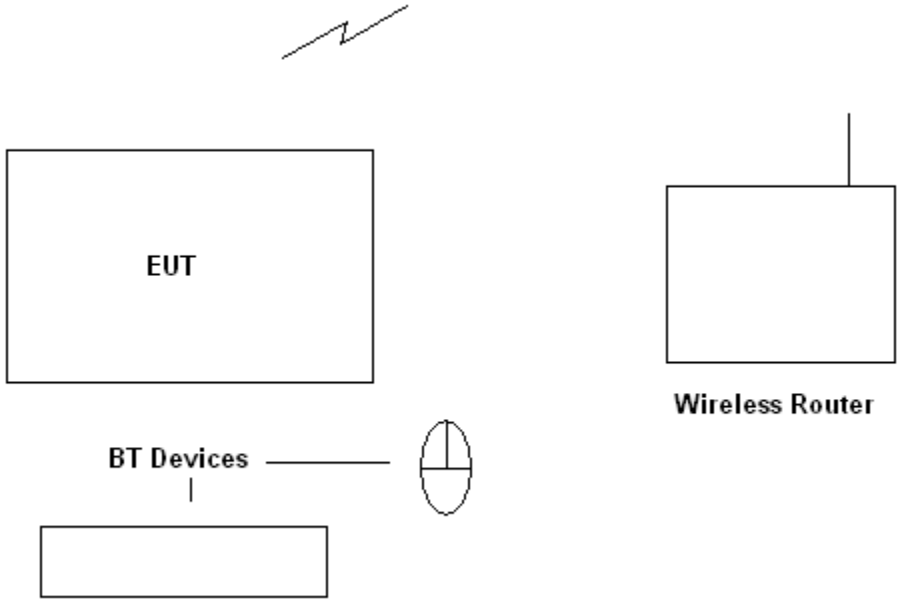
General Equipment Information

Frequency Band:	☐ 902 – 928 MHz ☒ 2400 – 2483.5 MHz ☐ 5725 – 5850 MHz
Operating Frequency Range:	2402 to 2480 MHz
Number of Channels:	79
Channel Spacing:	500 kHz
User Frequency Adjustment:	Software controlled

Description of EUT

The Armor X10 is a ruggedized tablet PC incorporating Bluetooth® and 802.11abg radios.

System Diagram



Section 3. Spurious Emissions (Radiated)

NAME OF TEST: Spurious Emissions (Radiated)	PARA. NO.: 15.247(d)
TESTED BY:	DATE:

Test Results: Complies. The worst case emission was dBµV/m at MHz. This is dB below the specification limit of dBµV/m.

Measurement Data: See attached table.

Duty Cycle Calculation:

Duty Cycle correction factor(dB) = 20 log (rf_{ON} in ms/100ms)

Notes:

☒ For handheld devices, the EUT was tested on three orthogonal axis'

☒ The device was tested from 30 MHz to the tenth harmonic of the highest fundamental frequency per 15.33

☒ The device was tested on three channels per 15.31(l).

☒ No emissions were detected within 20 dB of the specification limit therefore none are reported per 15.31(o). Band edge data is presented below.

Measurement Uncertainty: +/-3.6 dB

Temperature: 22 °C

Relative Humidity: 35 %

RBW=VBW=100 kHz below 1000 MHz
RBW=VBW=1 MHz above 1000 MHz (Peak)
RBW= 1 MHz VBW=10Hz (Average)

Test Data - Radiated Emissions

There were no emissions detected above the noise floor. Band edge data at the highest channel in the 2.4 GHz band is presented to demonstrate compliance in the restricted band. All readings are peak unless otherwise indicated.

Measurement Data: Reading listed by order taken. Test Distance: 3 Meters

Freq MHz	Rdng dBµV	Pre-A dB	Horn dB	Cable dB	Cable dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
2483.50	43.0	-33.0	+29.0	+0.8	+2.3	+0.0	42.1	54.0	-11.9	Horiz
2483.50	43.8	-33.0	+29.0	+0.8	+2.3	+0.0	42.9	54.0	-11.1	Vert

All tests were conducted with the 802.11abg radio transmitting at 2440 MHz and 5320 MHz. There were no Intermodulation products detected.

Section 4. Test Equipment List

9/09

Nemko ID	Description	Manufacturer Model Number	Serial Number	Calibration Date	Calibration Due
1464	Spectrum analyzer	Hewlett Packard 8563E	3551A04428	02/27/09	02/28/11
1484	Cable	Storm PR90-010-072	N/A	06/23/09	06/23/10
1485	Cable	Storm PR90-010-216	N/A	06/23/09	06/23/10
1480	Bilog Antenna	Schaffner-Chase CBL6111C	2572	10/17/08	10/17/09
791	PREAMP, 25dB	Nemko USA, Inc. LNA25	398	05/28/09	05/28/10
993	Horn antenna	A.H. Systems SAS-200/571	XXX	9/9/09	9/9/10

ANNEX A - TEST DETAILS

NAME OF TEST: Radiated Spurious Emissions PARA. NO.: 15.247(d)

Minimum Standard: In any 100kHz bandwidth outside the frequency band in which the transmitter is operating, emissions shall be at least 20 dB below the fundamental emission or shall not exceed the following field strength limits:

Emissions falling in the restricted bands of 15.205 shall not exceed the following field strength limits:

Frequency (MHz)	Field Strength (μV/m @ 3m)	Field Strength (dB @ 3m)
30 - 88	100	40.0
88 - 216	150	43.5
216 - 960	200	46.0
Above 960	500	54.0

THE SPECTRUM WAS SEARCHED TO THE 10th HARMONIC

15.205 Restricted Bands

MHz	MHz	MHz	GHz
0.09-0.11	16.42-16.423	399.9-410	4.5-5.25
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.125-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2655-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41	1718		

Number of channels tested:

Tuning range	Number of channels tested	Channel location in band
1 MHz or less	1	middle
1 to 10 MHz	2	top and bottom
more than 10 MHz	3	top, middle, bottom

ANNEX B - TEST DIAGRAMS

Test Site For Radiated Emissions