



Nemko Test Report: 45401RUS1

Applicant: DRS Tactical Systems
1110 West Hibiscus Blvd.
Melbourne, FL 32901
USA

Equipment Under Test: Armor X10gx Ruggedized Tablet PC
(E.U.T.)

FCC ID: UGLX10GX

In Accordance With: **FCC Part 15, Subpart C, Paragraph 15.209**
General Limits For Low Power Transmitters

Tested By: Nemko USA Inc.
802 N. Kealy
Lewisville, TX 75057

TESTED BY:

A handwritten signature in black ink, appearing to read 'David Light'.

David Light, Senior Wireless Engineer

DATE: 21 July 2010

APPROVED BY:

A handwritten signature in black ink, appearing to read 'Tom Tidwell'.

Tom Tidwell, Telecom Direct

DATE: 26 July 2010

Total Number of Pages: 14

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EQUIPMENT: Armor X10gx Ruggedized Tablet PC

Section 1. Summary Of Test Results

Manufacturer: DRS Tactical Systems

Model No.: Armor X10gx

Serial No.: 814GM01006G01200011M000

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 FCC Part 15, Subpart C for low power devices. All tests were conducted using measurement procedure ANSI C63.4-2003. Radiated Emissions were made on an open area test site.



Production Unit



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".



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Summary Of Test Data

NAME OF TEST	PARA. NO.	RESULT
Powerline Conducted Emissions	15.207	Not Tested
Radiated Emissions	15.209	Complies

Footnotes For N/A's:

The EUT (FCC Id UGLX10GX, IC Id 7888B-X10GX) was tested to verify that there were no Intermodulation disturbance caused by the collocation of the WLAN wireless module (FCC Id PD9533ANH, IC Id 1000M-533ANH) and the Bluetooth wireless module (FCC Id RK9-BTC04R, IC Id 4729A-BTC04R).

The EUT as well as all wireless modules contained within have been certified by the FCC and Industry Canada as modular devices.

Section 2. General Equipment Specification

Frequency Range:	WLAN:	2400 to 2485 MHz
	BT:	2400 to 2485 MHz
Operating Frequency(ies) of Sample:	WLAN:	2412 to 2462 MHz
	BT:	2401 to 2479 MHz

Integral Antenna

Yes



No



EQUIPMENT: Armor X10gx Ruggedized Tablet PC

Section 3. Radiated Emissions

NAME OF TEST: Radiated Emissions	PARA. NO.: 15.209
TESTED BY: David Light	DATE: 21 June 2010

Test Results: Complies. There were no intermodulation products detected above the noise floor which was greater than 20 dB below the specification limit of 500 $\mu\text{V/m}$ (average) or 500 $\mu\text{V/m}$ (peak).

The spectrum was searched from 30 MHz to 26 GHz.

RBW/VBW = 1 MHz Peak detector

The EUT was configured to with WLAN module set to transmit maximum power at 2412 MHz and the Bluetooth module set to transmit at full power at 2440 MHz.

Measurement Data: No emissions were detected within 20 dB of the specification limit therefore none are reported per 15.31(o).

Notes:

- ☒ 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).

Equipment Used: 1464-1484-1485-1016-791-1480-993

Measurement Uncertainty: +/-3.6 dB

Temperature: 22 °C

Relative Humidity: 45 %

Radiated Photographs



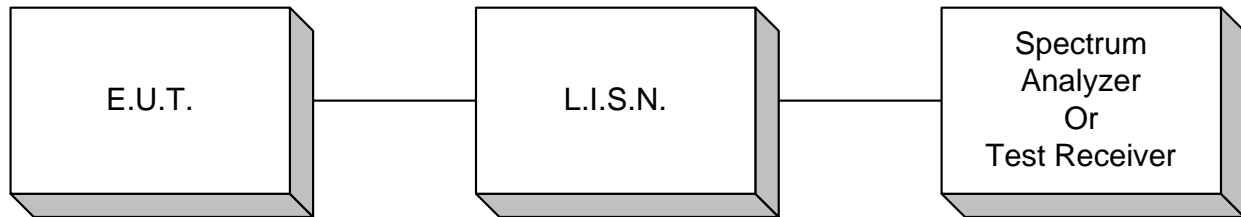
Section 4. Test Equipment List

Asset Tag	Description	Manufacturer	Model	Serial #	Last Cal	Next Cal
993	Antenna, Horn	A.H. Systems	SAS-200/571	162	09-Sep-2009	09-Sep-2011
1016	Preamplifier	Hewlett Packard	8449A	2749A00159	19-Jun-2010	19-Jun-2011
1464	Spectrum Analyzer	Hewlett Packard	8563E	3551A04428	27-Feb-2009	27-Feb-2011
1480	Antenna, Bilog	Schaffner- Chase	CBL6111C	2572	18-Jan-2010	18-Jan-2011
1484	Cable	Storm	PR90-010-072		19-Jun-2010	19-Jun-2011
1485	Cable	Storm	PR90-010-216		19-Jun-2010	19-Jun-2011
791	PreAmp	Nemko, USA			08-Mar-2010	08-Mar-2011

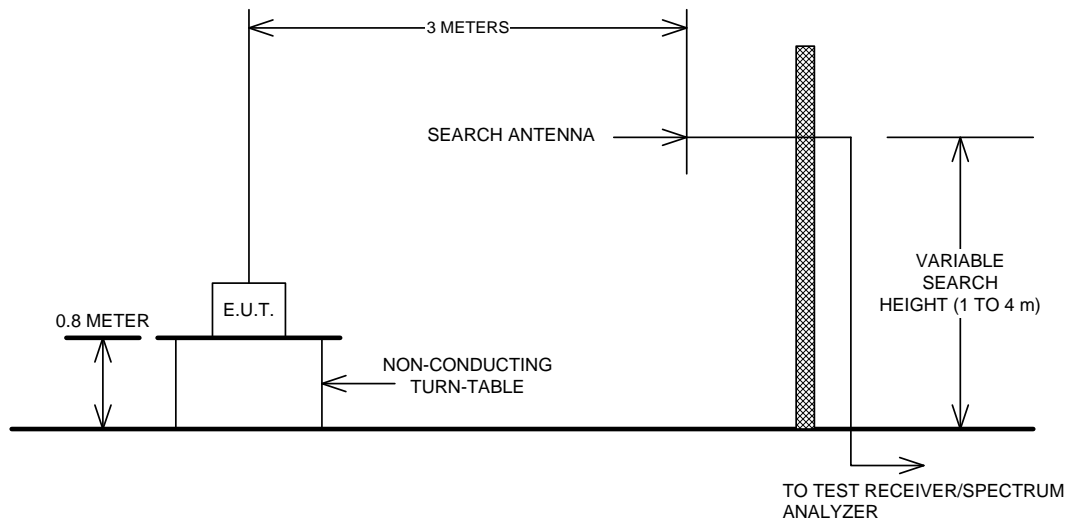
ANNEX A

TEST DIAGRAMS

Conducted Emissions



Test Site For Radiated Emissions



ANNEX B

TEST DETAILS

EQUIPMENT: Armor X10gx Ruggedized Tablet PC

NAME OF TEST: Powerline Conducted Emissions

PARA. NO.: 15.207(a)

Minimum Standard: §15.207 Conducted limits.

(a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 mH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of Conducted Emission (MHz)	Limit (dBmV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

(b) The limit shown in paragraph (a) of this section shall not apply to carrier current systems operating as intentional radiators on frequencies below 30 MHz. In lieu thereof, these carrier current systems shall be subject to the following standards:

(1) For carrier current systems containing their fundamental emission within the frequency band 535-1705 kHz and intended to be received using a standard AM broadcast receiver: no limit on conducted emissions.

(2) For all other carrier current systems: 1000 mV within the frequency band 535-1705 kHz, as measured using a 50 mH/50 ohms LISN.

(3) Carrier current systems operating below 30 MHz are also subject to the radiated emission limits as provided in §15.205 and §§15.209, 15.221, 15.223, 15.225 or 15.227, as appropriate.

(c) Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines. Devices that include, or make provision for, the use of battery chargers which permit operating while charging, AC adaptors or battery eliminators or that connect to the AC power lines indirectly, obtaining their power through another device which is connected to the AC power lines, shall be tested to demonstrate compliance with the conducted limits.

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NAME OF TEST: Radiated Emissions	PARA. NO.: 15.209
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Minimum Standard: §15.207 Radiated limits. (a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009-0.490	2400F (kHz)	300
0.490-1.705	24000F (kHz)	30
1.705-30.0	30	30
30-88	100 ¹	3
88-216	150 ²	3
216-960	200 ³	3
Above 960	500	3

(b) In the emission table above, the tighter limit applies at the band edges.

(c) The level of any unwanted emissions from an intentional radiator operating under these general provisions shall not exceed the level of the fundamental emission. For intentional radiators which operate under the provisions of other sections within this part and which are required to reduce their unwanted emissions to the limits specified in this table, the limits in this table are based on the frequency of the unwanted emission and not the fundamental frequency. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.

(d) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

(e) The provisions in [§§15.31](#), [15.33](#), and [15.35](#) for measuring emissions at distances other than the distances specified in the above table, determining the frequency range over which radiated emissions are to be measured, and limiting peak emissions apply to all devices operated under this part.

(f) In accordance with [§15.33\(a\)](#), in some cases the emissions from an intentional radiator must be measured to beyond the tenth harmonic of the highest fundamental frequency designed to be emitted by the intentional radiator because of the incorporation of a digital device. If measurements above the tenth harmonic are so required, the radiated emissions above the tenth harmonic shall comply with the general radiated emission limits applicable to the incorporated digital device, as shown in [§15.109](#) and as based on the frequency of the emission being measured, or, except for emissions contained in the restricted frequency bands shown in [§15.205](#), the limit on spurious emissions specified for the intentional radiator, whichever is the higher limit. Emissions which must be measured above the tenth harmonic of the highest

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fundamental frequency designed to be emitted by the intentional radiator and which fall within the restricted bands shall comply with the general radiated emission limits in [§15.109](#) that are applicable to the incorporated digital device.

(g) Perimeter protection systems may operate in the 54-72 MHz and 76-88 MHz bands under the provisions of this section. The use of such perimeter protection systems is limited to industrial, business and commercial applications.