# Datalogic Scanning, Inc.

## PowerScan RF – Handheld 915Mhz

EMC Test Report

**June 27, 2007**

**Report No. PSCI0210 Rev. 2**

Report Prepared By

NORTHWEST EMC

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

NORTHWEST EMC

22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

# Certificate of Test

**Issue Date: June 27, 2007**
**Datalogic Scanning, Inc.**
**Model: PowerScan RF – Handheld 915 Mhz**

| Emissions | | | | |
|---|---|---|---|---|
| **Test Description** | **Specification** | **Test Method** | **Pass** | **Fail** |
| Field Strength of Fundamental | FCC 15.249:2006 | ANSI C63.4:2003 | ☒ | ☐ |
| Field Strength of Harmonics & Spurious Emissions | FCC 15.249:2006 | ANSI C63.4:2003 | ☒ | ☐ |
| Receiver Spurious Emissions | FCC 15.109:2006 | ANSI C63.4:2003 | ☒ | ☐ |

| **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.

**Approved By:**

*Don Facteau, IS Manager*

***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 Number | Description | Date | Page Number |
|---|---|---|---|
| 01 | Changed the manufacturer from DSL to DLS | 7-10-07 | 8 |
| 02 | Changed the report approver to Don | 8-2-07 | 2 |

# Accreditations and Authorizations



**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 89/336/EEC, 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.

NVLAP LAB CODE 200629-0
NVLAP LAB CODE 200630-0
NVLAP LAB CODE 200676-0
NVLAP LAB CODE 200761-0

**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 212, Issue 1 (Provisional) 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.

**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).

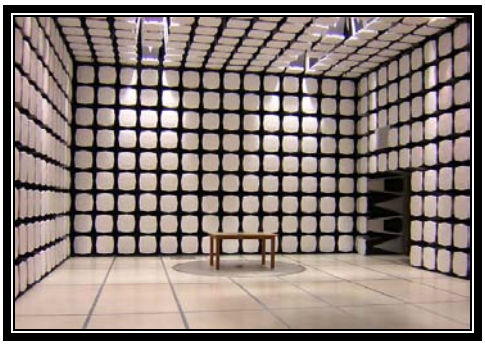
**VCCI:** Accepted as an Associate Member to the VCCI, Acceptance No. 564. Conducted and radiated measurement facilities have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. *(Registration Numbers. - Hillsboro: C-1071, R-1025, C-2687, T-289, and R-2318, Irvine: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

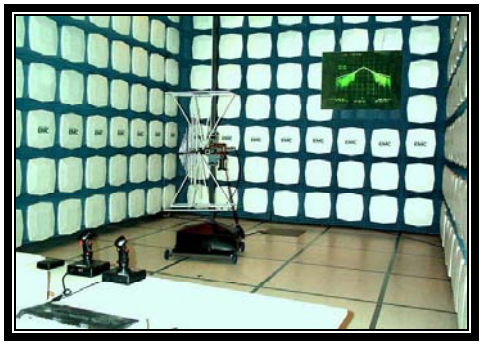
## SCOPE

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

**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:** | Datalogic Scanning, Inc. |
| **Address:** | 959 Terry Street |
| **City, State, Zip:** | Eugene, OR 97402-9120 |
| **Test Requested By:** | Ken Wyman |
| **Model:** | PowerScan RF – Handheld 915 Mhz |
| **First Date of Test:** | June 7, 2007 |
| **Last Date of Test:** | June 13, 2007 |
| **Receipt Date of Samples:** | June 7, 2007 |
| **Equipment Design Stage:** | Production |
| **Equipment Condition:** | No Damage |

## Information Provided by the Party Requesting the Test

**Functional Description of the EUT (Equipment Under Test):**

The PowerScan RF handheld/base station laser scanner reads bar codes in rugged industrial applications. The handheld scanner reads barcode labels and transmits to the base station. The base station acknowledges and transmits back to the handheld scanner. It operates using FSK modulation in a half duplex configuration.

**Testing Objective:**

These tests were selected to demonstrate compliance of the PowerScan RF handheld to FCC 15.249 requirements. The EUT had been previously tested to FCC regulations (FCC ID: 09NPWRSCAN-BS, 09NPWRSCAN-HH). However, the transceiver became obsolete, so testing is required using a new transceiver.

## EUT Photo

## CONFIGURATION 2 PSCI0210

| EUT | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| EUT- Handheld | DLS | PowerScan RF – Handheld 915 Mhz | BFX5119442 |

| Equipment modifications | | | | | |
|---|---|---|---|---|---|
| Item | Date | Test | Modification | Note | Disposition of EUT |
| 1 | 6/7/2007 | Field Strength of Fundamental | 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 | 6/10/2007 | Field Strength of Harmonics & Spurious 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. |
| 3 | 6/13/2007 | Spurious Radiated Emissions-Receiver | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | Scheduled testing was completed. |

# Field Strength of the Fundamental



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 |
|---|
| Handheld, Transmitting low channel, Ch. 0, 904.3MHz |
| Handheld, Transmitting mid channel, Ch. 5, 916.13MHz |
| Handheld, Transmitting high channel, Ch. 9, 924.86MHz |

| POWER SETTINGS INVESTIGATED |
|---|
| Battery |

| FREQUENCY RANGE INVESTIGATED | | | |
|---|---|---|---|
| Start Frequency | 30MHz | Stop Frequency | 1000MHz |

| 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 |
| Antenna, Biconilog | EMCO | 3141 | AXE | 12/28/2005 | 24 |
| EV01 cables c,g, h | | | EVA | 12/29/2006 | 13 |
| Spectrum Analyzer | Agilent | E4446A | AAT | 12/7/2006 | 13 |

| 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 |
| Measurements were made using the bandwidths and detectors 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

The antennas to be used with the EUT were tested. The EUT was transmitting and/or 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).

NORTHWEST EMC

# Field Strength of the Fundamental

PSA 2007.05.07
EMI 2006.12.20

| | | | | | |
|---|---|---|---|---|---|
| EUT: | PowerScan RF - Handheld 915 Mhz | | | Work Order: | PSCI0210 |
| Serial Number: | BFX5119442 | | | Date: | 06/07/07 |
| Customer: | Datalogic Scanning, Inc. | | | Temperature: | 22 |
| Attendees: | None | | | Humidity: | 33% |
| Project: | None | | | Barometric Pres.: | 30.11 |
| Tested by: | David Divergigelis | Power: | Battery | Job Site: | EV01 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.249:2006 | ANSI C63.4:2003 |

| TEST PARAMETERS | | | |
|---|---|---|---|
| Antenna Height(s) (m) | 1 - 4 | Test Distance (m) | 3 |

**COMMENTS**

Please see comments for channel, position, and data rate.

**EUT OPERATING MODES**

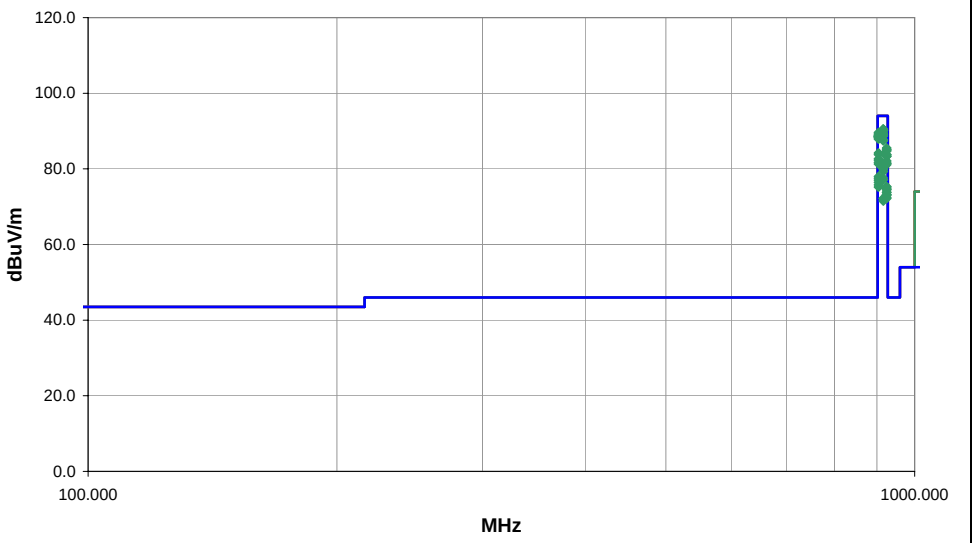
Handheld transmitting.

**DEVIATIONS FROM TEST STANDARD**

No deviations.

| | |
|---|---|
| Run # | 6 |
| Configuration # | 2 |
| Results | Pass |

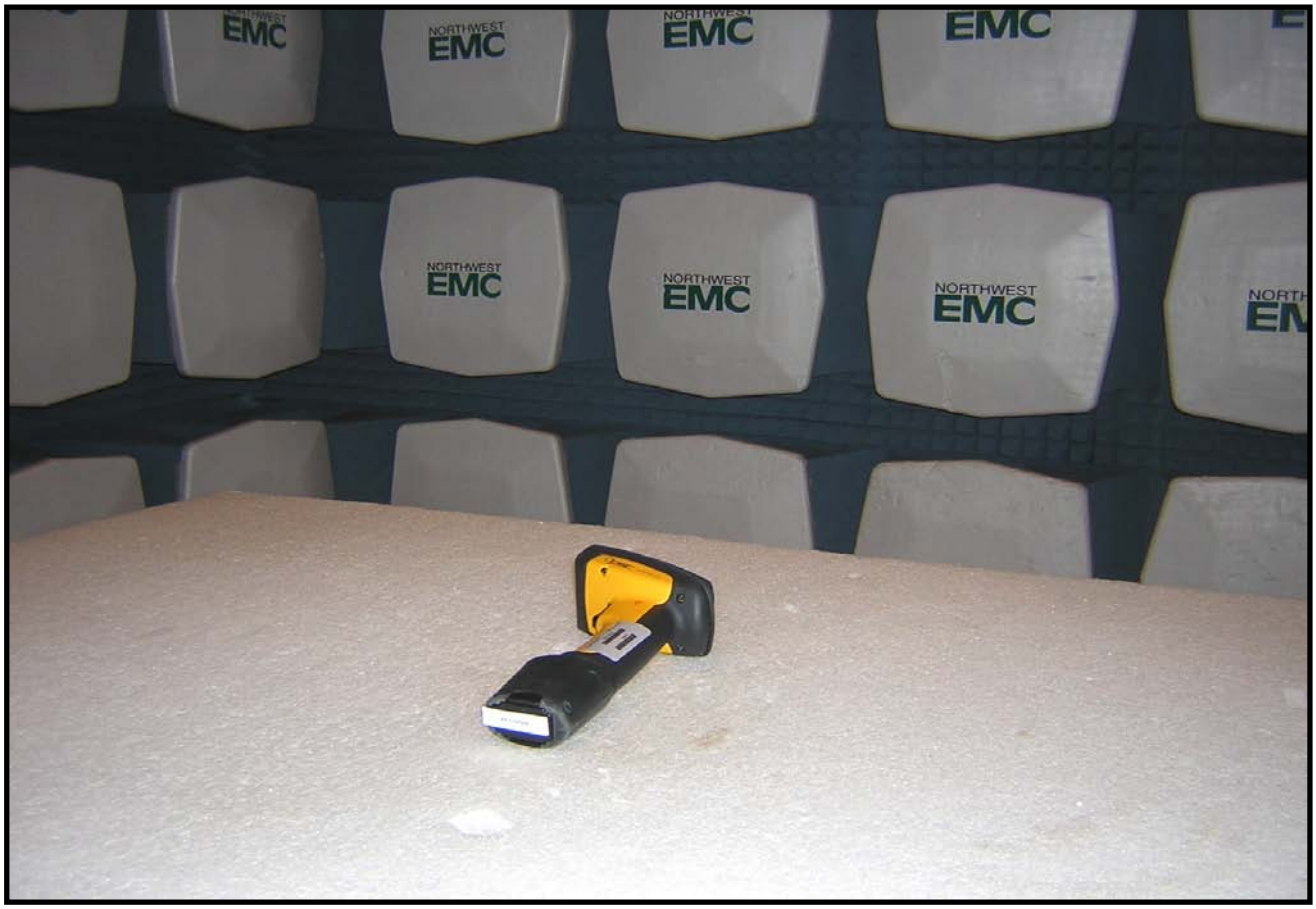
Signature




| 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) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 916.086 | 56.3 | 34.2 | 85.0 | 1.0 | 3.0 | 0.0 | H-Bilog | PK | 0.0 | 90.5 | 94.0 | -3.5 | TX mid, 9.6kHz, EUT on side. |
| 916.180 | 56.3 | 34.2 | 122.0 | 1.0 | 3.0 | 0.0 | H-Bilog | PK | 0.0 | 90.5 | 94.0 | -3.5 | TX mid, 19.2kHz, EUT horizontal. |
| 916.083 | 56.2 | 34.2 | 116.0 | 1.0 | 3.0 | 0.0 | H-Bilog | PK | 0.0 | 90.4 | 94.0 | -3.6 | TX mid, 9.6kHz, EUT horizontal. |
| 916.181 | 56.0 | 34.2 | 122.0 | 1.0 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 90.2 | 94.0 | -3.8 | TX mid, 19.2kHz, EUT horizontal. |
| 916.184 | 56.0 | 34.2 | 85.0 | 1.0 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 90.2 | 94.0 | -3.8 | TX mid, 9.6kHz, EUT on side. |
| 916.184 | 55.9 | 34.2 | 116.0 | 1.0 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 90.1 | 94.0 | -3.9 | TX mid, 9.6kHz, EUT horizontal. |
| 904.348 | 55.5 | 34.1 | 260.0 | 1.0 | 3.0 | 0.0 | H-Bilog | PK | 0.0 | 89.6 | 94.0 | -4.4 | TX low, 19.2kHz, EUT on side. |
| 916.081 | 55.3 | 34.2 | 24.0 | 1.2 | 3.0 | 0.0 | V-Bilog | PK | 0.0 | 89.5 | 94.0 | -4.5 | TX mid, 19.2kHz, EUT vertical. |
| 904.343 | 55.2 | 34.1 | 260.0 | 1.0 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 89.3 | 94.0 | -4.7 | TX low, 19.2kHz, EUT on side. |
| 916.181 | 55.0 | 34.2 | 24.0 | 1.2 | 3.0 | 0.0 | V-Bilog | QP | 0.0 | 89.2 | 94.0 | -4.8 | TX mid, 19.2kHz, EUT vertical. |
| 904.244 | 54.9 | 34.1 | 293.0 | 1.0 | 3.0 | 0.0 | H-Bilog | PK | 0.0 | 89.0 | 94.0 | -5.0 | TX low, 9.6kHz, EUT horizontal. |
| 916.180 | 54.8 | 34.2 | 118.0 | 1.0 | 3.0 | 0.0 | H-Bilog | PK | 0.0 | 89.0 | 94.0 | -5.0 | TX mid, 19.2kHz, EUT on side. |
| 904.342 | 54.8 | 34.1 | 295.0 | 1.0 | 3.0 | 0.0 | H-Bilog | PK | 0.0 | 88.9 | 94.0 | -5.1 | TX low, 19.2kHz, EUT horizontal. |
| 904.342 | 54.6 | 34.1 | 251.0 | 1.2 | 3.0 | 0.0 | V-Bilog | PK | 0.0 | 88.7 | 94.0 | -5.3 | TX low, 9.6kHz, EUT vertical. |
| 916.181 | 54.5 | 34.2 | 118.0 | 1.0 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 88.7 | 94.0 | -5.3 | TX mid, 19.2kHz, EUT on side. |
| 904.342 | 54.5 | 34.1 | 282.0 | 1.2 | 3.0 | 0.0 | V-Bilog | PK | 0.0 | 88.6 | 94.0 | -5.4 | TX low, 19.2kHz, EUT vertical. |
| 904.343 | 54.5 | 34.1 | 295.0 | 1.0 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 88.6 | 94.0 | -5.4 | TX low, 19.2kHz, EUT horizontal. |
| 904.346 | 54.5 | 34.1 | 293.0 | 1.0 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 88.6 | 94.0 | -5.4 | TX low, 9.6kHz, EUT horizontal. |
| 904.346 | 54.3 | 34.1 | 251.0 | 1.2 | 3.0 | 0.0 | V-Bilog | QP | 0.0 | 88.4 | 94.0 | -5.6 | TX low, 9.6kHz, EUT vertical. |
| 904.343 | 54.2 | 34.1 | 282.0 | 1.2 | 3.0 | 0.0 | V-Bilog | QP | 0.0 | 88.3 | 94.0 | -5.7 | TX low, 19.2kHz, EUT vertical. |

# Field Strength of the Fundamental


# Field Strength of the Fundamental



# Field Strength of Harmonics and Spurious 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.

| CHANNELS INVESTIGATED |
|---|
| Low channel, Ch. 0 = 904.3 MHz |
| Mid channel, Ch. 5 = 916.13 MHz |
| High channel, Ch. 9 = 924.86 MHz |

| DATA RATES INVESTIGATED |
|---|
| 9.6kHz |
| 19.2kHz |
| |
| **POWER SETTINGS INVESTIGATED** |
| Battery |

| FREQUENCY RANGE INVESTIGATED | | | |
|---|---|---|---|
| Start Frequency | 30 MHz | Stop Frequency | 10 GHz |

| CLOCKS AND OSCILLATORS |
|---|
| Not 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 |
|---|---|---|---|---|---|
| High Pass Filter 1.2 - 18 GHz | Micro-Tronics | HPM50108 | HFV | 12/29/2006 | 13 |
| Pre-Amplifier | Miteq | AMF-4D-010100-24-10P | APW | 5/10/2007 | 13 |
| Pre-Amplifier | Miteq | AM-1616-1000 | AOL | 12/29/2006 | 13 |
| Antenna, Horn | EMCO | 3115 | AHC | 8/24/2006 | 12 |
| Antenna, Biconilog | EMCO | 3141 | AXE | 12/28/2005 | 24 |
| EV01 cables g,h,j | | | EVB | 5/10/2007 | 13 |
| EV01 cables c,g, h | | | EVA | 12/29/2006 | 13 |
| Spectrum Analyzer | Agilent | E4446A | AAT | 12/7/2006 | 13 |

**MEASUREMENT BANDWIDTHS**

| | 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 |
| Measurements were made using the bandwidths and detectors 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

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.

NORTHWEST EMC

# Field Strength of Harmonics and Spurious Emissions

PSA 2007.05.07
EMI 2006.12.20

| | | | |
|---|---|---|---|
| EUT: | PowerScan RF - Handheld 915 Mhz | Work Order: | PSCI0210 |
| Serial Number: | BFX5119442 | Date: | 06/10/07 |
| Customer: | Datalogic Scanning, Inc. | Temperature: | 21 |
| Attendees: | None | Humidity: | 39% |
| Project: | None | Barometric Pres.: | 29.97 |
| Tested by: | Holly Ashkannejhad | Power: 120VAC/60Hz | Job Site: EV01 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.249:2006 | ANSI C63.4:2003 |

| TEST PARAMETERS | | | |
|---|---|---|---|
| Antenna Height(s) (m) | 1 - 4 | Test Distance (m) | 3 |

**COMMENTS**

See comments for data rate.

**EUT OPERATING MODES**

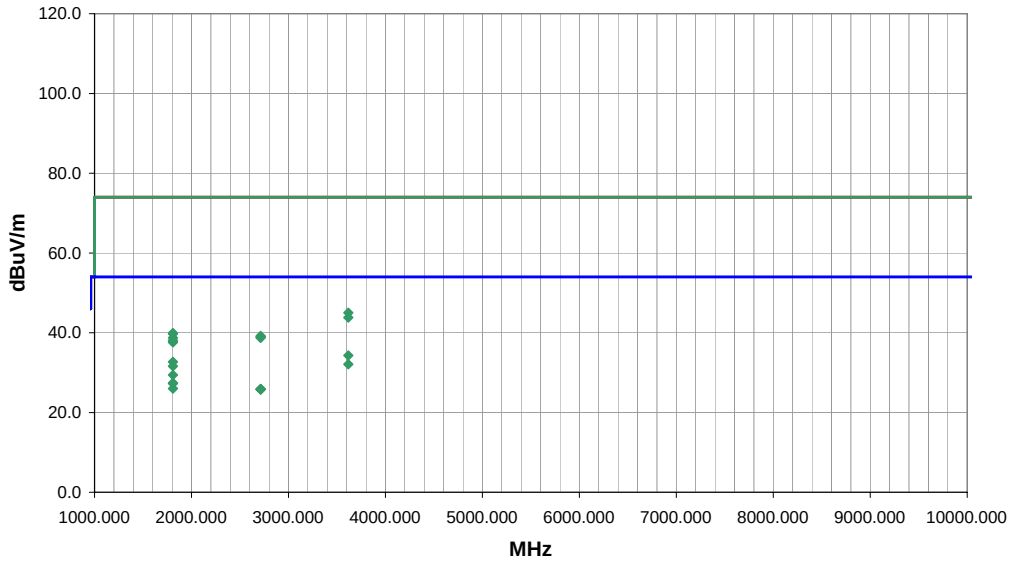
Handheld transmitting, low channel

**DEVIATIONS FROM TEST STANDARD**

No deviations.

| | |
|---|---|
| Run # | 5 |
| Configuration # | 2 |
| Results | Pass |

Signature




| 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) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3617.183 | 28.8 | 5.5 | 353.0 | 1.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 34.3 | 54.0 | -19.7 | 19.2kHz, EUT horizontal |
| 1808.613 | 34.7 | -2.0 | 301.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 32.7 | 54.0 | -21.3 | 19.2kHz, EUT on side |
| 3617.210 | 26.6 | 5.5 | 359.0 | 2.2 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 32.1 | 54.0 | -21.9 | 19.2kHz, EUT on side |
| 1808.613 | 33.6 | -2.0 | 105.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 31.6 | 54.0 | -22.4 | 19.2kHz, EUT horizontal |
| 1808.603 | 31.4 | -2.0 | 200.0 | 1.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 29.4 | 54.0 | -24.6 | 19.2kHz, EUT horizontal |
| 1808.597 | 29.4 | -2.0 | 100.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 27.4 | 54.0 | -26.6 | 9.6kHz, EUT on side |
| 1808.607 | 29.3 | -2.0 | 295.0 | 1.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 27.3 | 54.0 | -26.7 | 9.6kHz, EUT horizontal |
| 1808.570 | 28.0 | -2.0 | 351.0 | 1.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 26.0 | 54.0 | -28.0 | 19.2kHz, EUT on side |
| 2712.823 | 24.9 | 1.0 | 0.0 | 2.2 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 25.9 | 54.0 | -28.1 | 19.2kHz, EUT vertical |
| 2712.947 | 24.8 | 1.0 | 215.0 | 3.4 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 25.8 | 54.0 | -28.2 | 19.2kHz, EUT vertical |
| 2713.277 | 24.8 | 1.0 | 347.0 | 3.4 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 25.8 | 54.0 | -28.2 | 19.2kHz, EUT on side |
| 2713.570 | 24.8 | 1.0 | 69.0 | 2.2 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 25.8 | 54.0 | -28.2 | 19.2kHz, EUT horizontal |
| 3617.033 | 39.5 | 5.5 | 353.0 | 1.0 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 45.0 | 74.0 | -29.0 | 19.2kHz, EUT horizontal |
| 3617.523 | 38.3 | 5.5 | 359.0 | 2.2 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 43.8 | 74.0 | -30.2 | 19.2kHz, EUT on side |
| 1808.557 | 41.9 | -2.0 | 301.0 | 1.0 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 39.9 | 74.0 | -34.1 | 19.2kHz, EUT on side |
| 1808.490 | 41.7 | -2.0 | 105.0 | 1.0 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 39.7 | 74.0 | -34.3 | 19.2kHz, EUT horizontal |
| 2712.373 | 38.2 | 1.0 | 0.0 | 2.2 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 39.2 | 74.0 | -34.8 | 19.2kHz, EUT vertical |
| 2712.777 | 38.0 | 1.0 | 69.0 | 2.2 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 39.0 | 74.0 | -35.0 | 19.2kHz, EUT horizontal |
| 2712.500 | 37.9 | 1.0 | 347.0 | 3.4 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 38.9 | 74.0 | -35.1 | 19.2kHz, EUT on side |
| 1808.630 | 40.7 | -2.0 | 200.0 | 1.0 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 38.7 | 74.0 | -35.3 | 19.2kHz, EUT horizontal |

NORTHWEST EMC

# Field Strength of Harmonics and Spurious Emissions

PSA 2007.05.07
EMI 2006.12.20

| | | | | | |
|---|---|---|---|---|---|
| **EUT:** | PowerScan RF - Handheld 915 Mhz | | | **Work Order:** | PSCI0210 |
| **Serial Number:** | BFX5119442 | | | **Date:** | 06/10/07 |
| **Customer:** | Datalogic Scanning, Inc. | | | **Temperature:** | 21 |
| **Attendees:** | None | | | **Humidity:** | 39% |
| **Project:** | None | | | **Barometric Pres.:** | 29.97 |
| **Tested by:** | Holly Ashkannejhad | **Power:** | 120VAC/60Hz | **Job Site:** | EV01 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.249:2006 | ANSI C63.4:2003 |

| TEST PARAMETERS | | | |
|---|---|---|---|
| **Antenna Height(s) (m)** | 1 - 4 | **Test Distance (m)** | 3 |

**COMMENTS**

See comments for data rate.

**EUT OPERATING MODES**

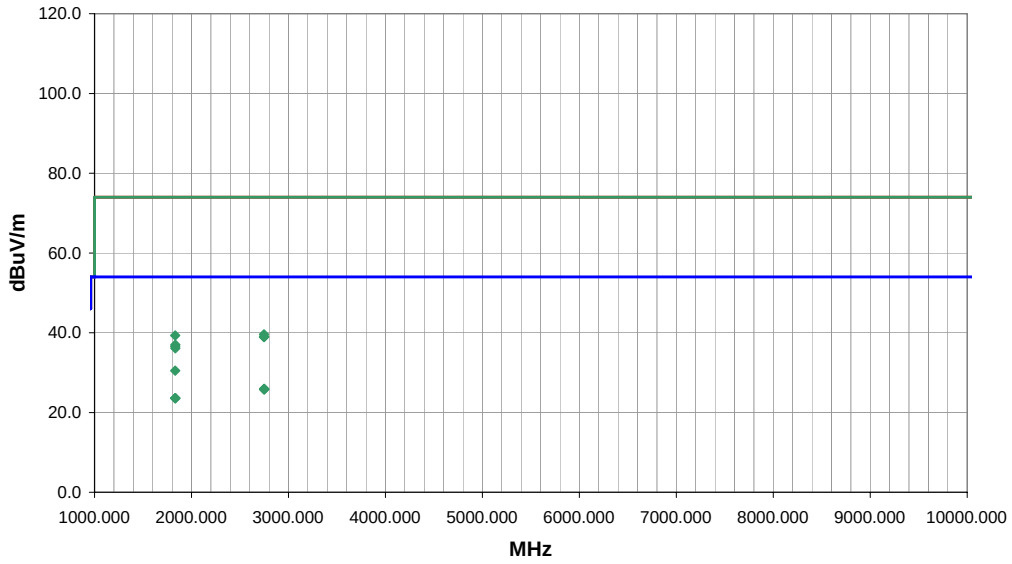
Handheld transmitting, mid channel

**DEVIATIONS FROM TEST STANDARD**

No deviations.

| | |
|---|---|
| **Run #** | 6 |
| **Configuration #** | 2 |
| **Results** | Pass |

*Signature* Holly Ashkannejhad




| 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) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1832.277 | 32.3 | -1.8 | 241.0 | 1.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 30.5 | 54.0 | -23.5 | 19.2kHz, EUT horizontal |
| 2748.837 | 24.8 | 1.1 | 59.0 | 1.7 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 25.9 | 54.0 | -28.1 | 19.2kHz, EUT horizontal |
| 2749.607 | 24.8 | 1.1 | 212.0 | 1.7 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 25.9 | 54.0 | -28.1 | 9.6kHz, EUT horizontal |
| 2748.547 | 24.7 | 1.1 | 60.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 25.8 | 54.0 | -28.2 | 9.6kHz, EUT on side |
| 2748.617 | 24.7 | 1.1 | 261.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 25.8 | 54.0 | -28.2 | 19.2kHz, EUT on side |
| 1831.890 | 25.4 | -1.8 | 176.0 | 1.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 23.6 | 54.0 | -30.4 | 9.6kHz, EUT horizontal |
| 1832.067 | 25.4 | -1.8 | 259.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 23.6 | 54.0 | -30.4 | 19.2kHz, EUT on side |
| 1833.127 | 25.4 | -1.8 | 197.0 | 3.6 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 23.6 | 54.0 | -30.4 | 9.6kHz, EUT on side |
| 2747.760 | 38.5 | 1.1 | 60.0 | 1.0 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 39.6 | 74.0 | -34.4 | 9.6kHz, EUT on side |
| 1832.227 | 41.1 | -1.8 | 241.0 | 1.0 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 39.3 | 74.0 | -34.7 | 19.2kHz, EUT horizontal |
| 2748.057 | 37.9 | 1.1 | 59.0 | 1.7 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 39.0 | 74.0 | -35.0 | 19.2kHz, EUT horizontal |
| 2748.870 | 37.9 | 1.1 | 261.0 | 1.0 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 39.0 | 74.0 | -35.0 | 19.2kHz, EUT on side |
| 2747.827 | 37.8 | 1.1 | 212.0 | 1.7 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 38.9 | 74.0 | -35.1 | 9.6kHz, EUT horizontal |
| 1832.670 | 38.8 | -1.8 | 176.0 | 1.0 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 37.0 | 74.0 | -37.0 | 9.6kHz, EUT horizontal |
| 1831.967 | 38.4 | -1.8 | 197.0 | 3.6 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 36.6 | 74.0 | -37.4 | 9.6kHz, EUT on side |
| 1832.873 | 37.9 | -1.8 | 259.0 | 1.0 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 36.1 | 74.0 | -37.9 | 19.2kHz, EUT on side |

NORTHWEST EMC

# Field Strength of Harmonics and Spurious Emissions

PSA 2007.05.07
EMI 2006.12.20

| | | | | | |
|---|---|---|---|---|---|
| EUT: | PowerScan RF - Handheld 915 Mhz | | | Work Order: | PSCI0210 |
| Serial Number: | BFX5119442 | | | Date: | 06/10/07 |
| Customer: | Datalogic Scanning, Inc. | | | Temperature: | 21 |
| Attendees: | None | | | Humidity: | 39% |
| Project: | None | | | Barometric Pres.: | 29.97 |
| Tested by: | Holly Ashkannejhad | Power: | 120VAC/60Hz | Job Site: | EV01 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.249:2006 | ANSI C63.4:2003 |

| TEST PARAMETERS | | | |
|---|---|---|---|
| Antenna Height(s) (m) | 1 - 4 | Test Distance (m) | 3 |

**COMMENTS**

See comments for data rate.

**EUT OPERATING MODES**

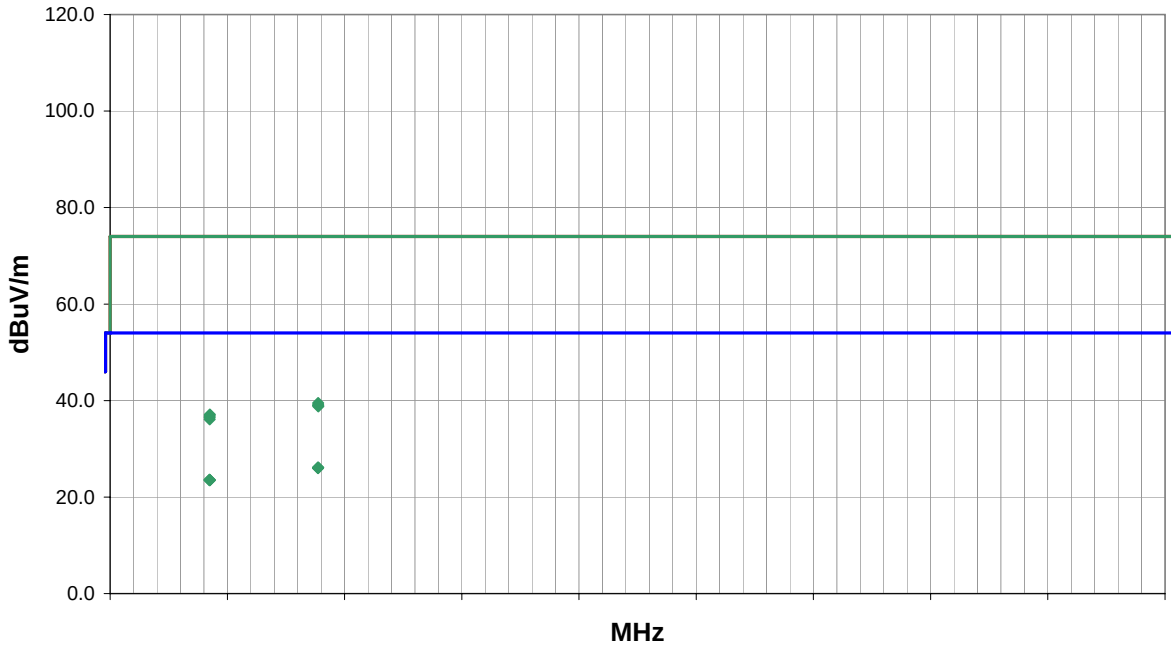
Handheld transmitting, high channel

**DEVIATIONS FROM TEST STANDARD**

No deviations.

| | |
|---|---|
| Run # | 7 |
| Configuration # | 2 |
| Results | Pass |

Signature Holly Ashkannejhad




| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Azimuth (degrees) | Height (meters) | Distance (meters) | External Attenuation (dB) | Polarity | Detector | Distance Adjustment (dB) | Adjusted unknown units | Spec. Limit unknown units | Compared to Spec. (dB) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2773.547 | 24.7 | 1.4 | 137.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 26.1 | 54.0 | -27.9 | 19.2kHz, EUT on side |
| 2773.937 | 24.7 | 1.4 | 15.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 26.1 | 54.0 | -27.9 | 9.6kHz, EUT on side |
| 2774.167 | 24.7 | 1.4 | 234.0 | 1.3 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 26.1 | 54.0 | -27.9 | 19.2kHz, EUT horizontal |
| 2773.727 | 24.7 | 1.3 | 75.0 | 1.3 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 26.0 | 54.0 | -28.0 | 9.6kHz, EUT horizontal |
| 1848.1 | 25.2 | -1.6 | 359.0 | 2.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 23.6 | 54.0 | -30.4 | 9.6kHz, EUT horizontal |
| 1849.453 | 25.2 | -1.7 | 35.0 | 2.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 23.5 | 54.0 | -30.5 | 19.2kHz, EUT horizontal |
| 1849.46 | 25.2 | -1.7 | 19.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 23.5 | 54.0 | -30.5 | 19.2kHz, EUT on side |
| 1850.227 | 25.2 | -1.7 | 207.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 23.5 | 54.0 | -30.5 | 9.6kHz, EUT on side |
| 2775.227 | 38.2 | 1.3 | 137.0 | 1.0 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 39.5 | 74.0 | -34.5 | 19.2kHz, EUT on side |
| 2775.187 | 37.8 | 1.3 | 234.0 | 1.3 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 39.1 | 74.0 | -34.9 | 19.2kHz, EUT horizontal |
| 2774.813 | 37.7 | 1.3 | 75.0 | 1.3 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 39.0 | 74.0 | -35.0 | 9.6kHz, EUT horizontal |
| 2775.47 | 37.5 | 1.3 | 15.0 | 1.0 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 38.8 | 74.0 | -35.2 | 9.6kHz, EUT on side |
| 1850.357 | 38.8 | -1.7 | 359.0 | 2.0 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 37.1 | 74.0 | -36.9 | 9.6kHz, EUT horizontal |
| 1849.473 | 38.5 | -1.7 | 207.0 | 1.0 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 36.8 | 74.0 | -37.2 | 9.6kHz, EUT on side |
| 1848.923 | 38.2 | -1.7 | 19.0 | 1.0 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 36.5 | 74.0 | -37.5 | 19.2kHz, EUT on side |
| 1849.557 | 37.8 | -1.7 | 35.0 | 2.0 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 36.1 | 74.0 | -37.9 | 19.2kHz, EUT horizontal |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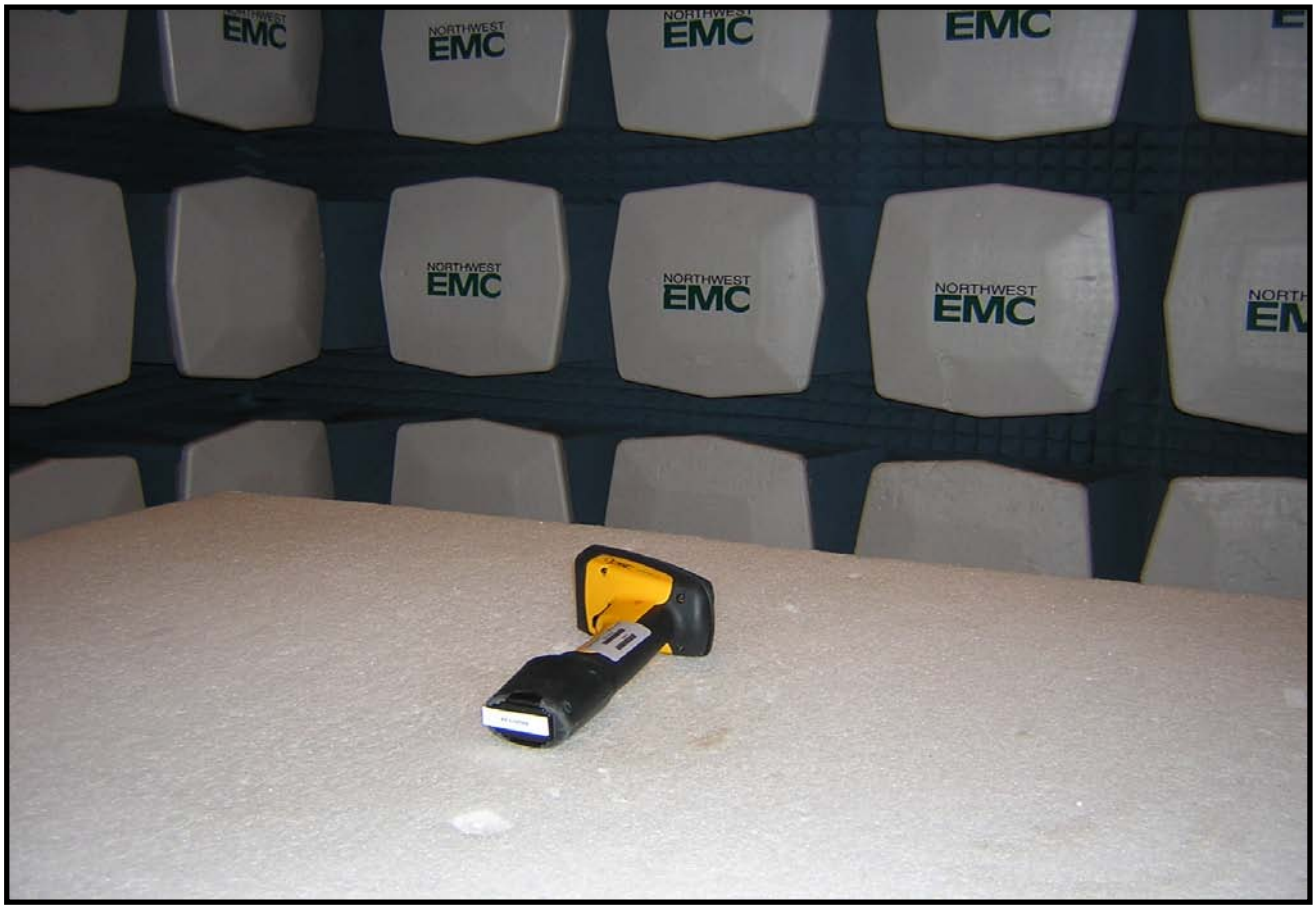

NORTHWEST
EMC

# Receiver Spurious 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 |
|---|
| Handheld, Receive mode, low channel |
| Handheld, Receive mode, mid channel |
| Handheld, Receive mode, high channel |

| POWER SETTINGS INVESTIGATED |
|---|
| 120VAC/60Hz |

| FREQUENCY RANGE INVESTIGATED | | | |
|---|---|---|---|
| Start Frequency | 30 MHz | Stop Frequency | 5 GHz |

| 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 | E4446A | AAT | 12/7/2006 | 13 |
| EV01 cables g,h,j | | | EVB | 5/10/2007 | 13 |
| EV01 cables c,g, h | | | EVA | 12/29/2006 | 13 |
| Pre-Amplifier | Miteq | AMF-4D-010100-24-10P | APW | 5/10/2007 | 13 |
| Pre-Amplifier | Miteq | AM-1616-1000 | AOL | 12/29/2006 | 13 |
| Antenna, Horn | EMCO | 3115 | AHC | 8/24/2006 | 12 |
| Antenna, Biconilog | EMCO | 3141 | AXE | 12/28/2005 | 24 |

**MEASUREMENT BANDWIDTHS**

| | 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 |
| Measurements were made using the bandwidths and detectors 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.

NORTHWEST EMC

# Receiver Spurious Emissions

PSA 2007.05.07
EMI 2006.12.20

| | | | |
|---|---|---|---|
| EUT: | PowerScan RF - Handheld 915 Mhz | Work Order: | PCSI0210 |
| Serial Number: | BFX5119442 | Date: | 06/13/07 |
| Customer: | Datalogic Scanning, Inc. | Temperature: | 22° C |
| Attendees: | None | Humidity: | 36% |
| Project: | None | Barometric Pres.: | 30.11 |
| Tested by: | David Divergigelis | Power: 120VAC/60Hz | Job Site: EV01 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.109:2006 | ANSI C63.4:2003 |

| TEST PARAMETERS | | | |
|---|---|---|---|
| Antenna Height(s) (m) | 1 - 4 | Test Distance (m) | 3 |

**COMMENTS**

Please see comments for channel tested.

**EUT OPERATING MODES**

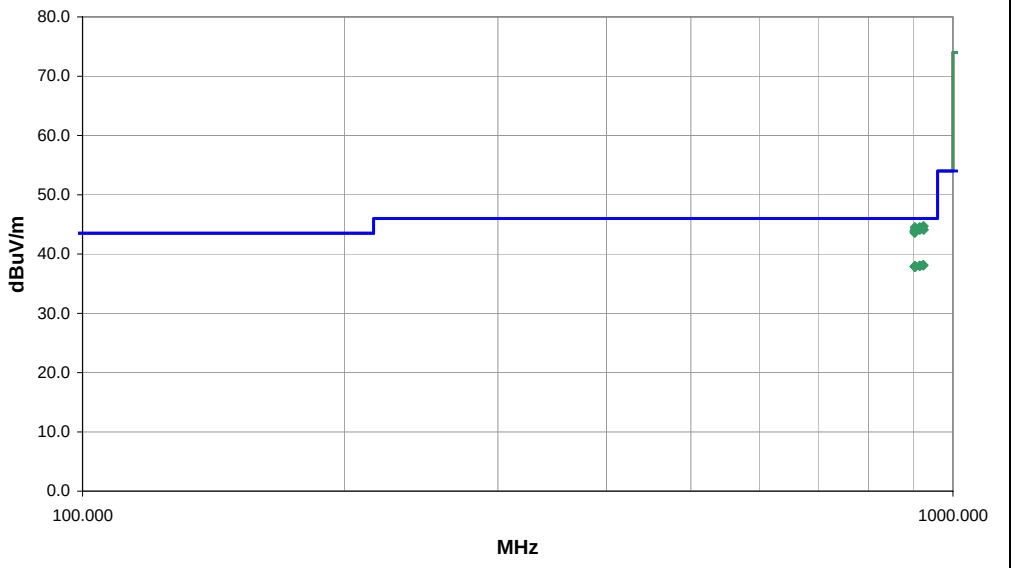
Hand held RX mode,

**DEVIATIONS FROM TEST STANDARD**

No deviations.

| | |
|---|---|
| Run # | 3 |
| Configuration # | 2 |
| Results | Pass |

Signature




| 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) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 924.993 | 33.4 | 11.3 | 164.0 | 1.6 | 3.0 | 0.0 | H-Bilog | PK | 0.0 | 44.7 | 46.0 | -1.3 | e, high channel, EUT vertical |
| 904.047 | 33.4 | 11.1 | 103.0 | 1.0 | 3.0 | 0.0 | V-Bilog | PK | 0.0 | 44.5 | 46.0 | -1.5 | e, low channel, EUT vertical |
| 915.663 | 33.3 | 11.2 | 177.0 | 1.0 | 3.0 | 0.0 | V-Bilog | PK | 0.0 | 44.5 | 46.0 | -1.5 | e, mid channel, EUT vertical |
| 904.348 | 33.0 | 11.1 | 282.0 | 1.0 | 3.0 | 0.0 | H-Bilog | PK | 0.0 | 44.1 | 46.0 | -1.9 | low channel, EUT Horizontal |
| 916.000 | 32.9 | 11.2 | 305.0 | 1.0 | 3.0 | 0.0 | H-Bilog | PK | 0.0 | 44.1 | 46.0 | -1.9 | e, mid channel, EUT vertical |
| 925.315 | 32.8 | 11.3 | 295.0 | 3.2 | 3.0 | 0.0 | V-Bilog | PK | 0.0 | 44.1 | 46.0 | -1.9 | e, high channel, EUT vertical |
| 904.348 | 32.8 | 11.1 | 104.0 | 1.0 | 3.0 | 0.0 | H-Bilog | PK | 0.0 | 43.9 | 46.0 | -2.1 | e, low channel, EUT vertical |
| 903.848 | 32.7 | 11.1 | 186.0 | 1.0 | 3.0 | 0.0 | V-Bilog | PK | 0.0 | 43.8 | 46.0 | -2.2 | e, low channel, EUT on side |
| 903.868 | 32.7 | 11.1 | 2.0 | 1.0 | 3.0 | 0.0 | H-Bilog | PK | 0.0 | 43.8 | 46.0 | -2.2 | e, low channel, EUT on side |
| 903.933 | 32.5 | 11.1 | 194.0 | 1.0 | 3.0 | 0.0 | V-Bilog | PK | 0.0 | 43.6 | 46.0 | -2.4 | low channel, EUT Horizontal |
| 924.410 | 26.8 | 11.3 | 295.0 | 3.2 | 3.0 | 0.0 | V-Bilog | QP | 0.0 | 38.1 | 46.0 | -7.9 | e, high channel, EUT vertical |
| 924.660 | 26.8 | 11.3 | 164.0 | 1.6 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 38.1 | 46.0 | -7.9 | e, high channel, EUT vertical |
| 915.577 | 26.8 | 11.2 | 305.0 | 1.0 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 38.0 | 46.0 | -8.0 | e, mid channel, EUT vertical |
| 916.097 | 26.8 | 11.2 | 177.0 | 1.0 | 3.0 | 0.0 | V-Bilog | QP | 0.0 | 38.0 | 46.0 | -8.0 | e, mid channel, EUT vertical |
| 903.553 | 26.8 | 11.1 | 282.0 | 1.0 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 37.9 | 46.0 | -8.1 | low channel, EUT Horizontal |
| 904.066 | 26.8 | 11.1 | 104.0 | 1.0 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 37.9 | 46.0 | -8.1 | e, low channel, EUT vertical |
| 904.413 | 26.8 | 11.1 | 2.0 | 1.0 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 37.9 | 46.0 | -8.1 | e, low channel, EUT on side |
| 904.681 | 26.8 | 11.1 | 194.0 | 1.0 | 3.0 | 0.0 | V-Bilog | QP | 0.0 | 37.9 | 46.0 | -8.1 | low channel, EUT Horizontal |
| 905.119 | 26.8 | 11.1 | 103.0 | 1.0 | 3.0 | 0.0 | V-Bilog | QP | 0.0 | 37.9 | 46.0 | -8.1 | e, low channel, EUT vertical |
| 905.227 | 26.8 | 11.1 | 186.0 | 1.0 | 3.0 | 0.0 | V-Bilog | QP | 0.0 | 37.9 | 46.0 | -8.1 | e, low channel, EUT on side |

NORTHWEST EMC

# Receiver Spurious Emissions

PSA 2007.05.07
EMI 2006.12.20

| | | | |
|---|---|---|---|
| EUT: | PowerScan RF - Handheld 915 Mhz | Work Order: | PSCI0210 |
| Serial Number: | BFX5119442 | Date: | 06/13/07 |
| Customer: | Datalogic Scanning, Inc. | Temperature: | 22° C |
| Attendees: | None | Humidity: | 36% |
| Project: | None | Barometric Pres.: | 30.11 |
| Tested by: | David Divergigelis | Power: 120VAC/60Hz | Job Site: EV01 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.109:2006 | ANSI C63.4:2003 |

| TEST PARAMETERS | | | |
|---|---|---|---|
| Antenna Height(s) (m) | 1 - 4 | Test Distance (m) | 3 |

**COMMENTS**

Please see comments for channel tested.

**EUT OPERATING MODES**

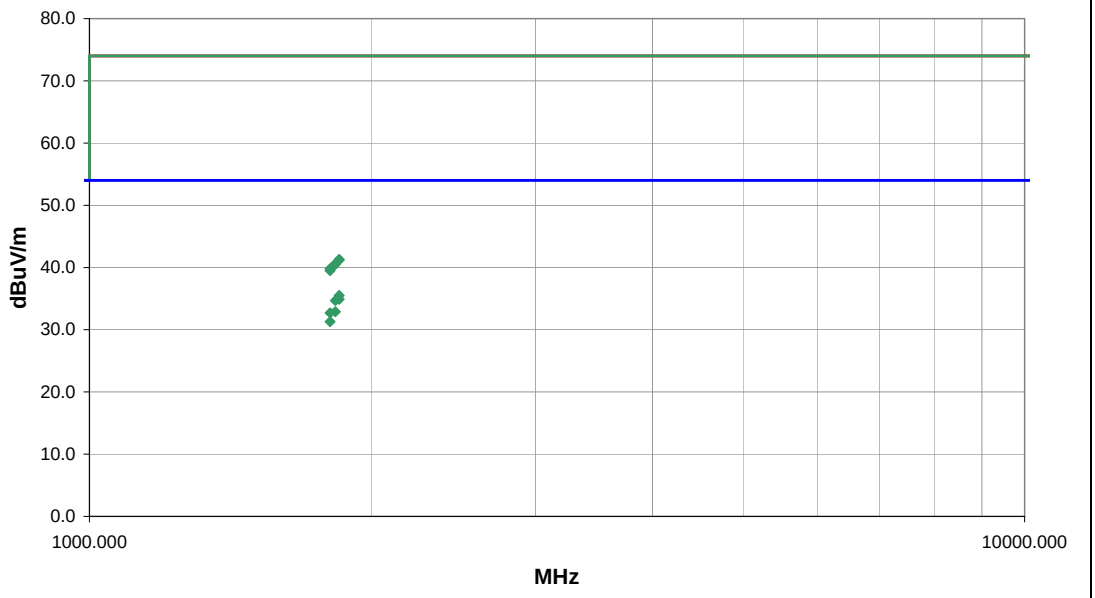
Hand held RX mode.

**DEVIATIONS FROM TEST STANDARD**

No deviations.

| | |
|---|---|
| Run # | 4 |
| Configuration # | 2 |
| Results | Pass |

Signature




| 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) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1849.730 | 37.2 | -1.7 | 55.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 35.5 | 54.0 | -18.5 | High channel, EU |
| 1849.742 | 36.6 | -1.7 | 59.0 | 1.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 34.9 | 54.0 | -19.1 | High channel, EU |
| 1832.268 | 36.5 | -1.8 | 36.0 | 1.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 34.7 | 54.0 | -19.3 | , Mid channel, EU |
| 1832.287 | 34.7 | -1.8 | 54.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 32.9 | 54.0 | -21.1 | , Mid channel, EU |
| 1808.617 | 34.7 | -2.0 | 28.0 | 1.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 32.7 | 54.0 | -21.3 | Low channel, EU |
| 1808.637 | 33.3 | -2.0 | 80.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 31.3 | 54.0 | -22.7 | Low channel, EU |
| 1849.763 | 43.0 | -1.7 | 59.0 | 1.0 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 41.3 | 74.0 | -32.7 | High channel, EU |
| 1849.740 | 42.9 | -1.7 | 55.0 | 1.0 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 41.2 | 74.0 | -32.8 | High channel, EU |
| 1832.355 | 42.4 | -1.8 | 54.0 | 1.0 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 40.6 | 74.0 | -33.4 | , Mid channel, EU |
| 1832.503 | 42.3 | -1.8 | 36.0 | 1.0 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 40.5 | 74.0 | -33.5 | , Mid channel, EU |
| 1808.673 | 41.8 | -2.0 | 28.0 | 1.0 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 39.8 | 74.0 | -34.2 | Low channel, EU |
| 1808.588 | 41.5 | -2.0 | 80.0 | 1.0 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 39.5 | 74.0 | -34.5 | Low channel, EU |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