

Intermec Technologies Corporation

Model: RC12

Tested to the following Specifications:

FCC 15.247:2010
FCC 15.207:2010

Report No. INMC0575.1

Report Prepared By



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

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EMC Test Report

Certificate of Test
Last Date of Test: August 11, 2010
Intermec Technologies Corporation
Model: RC12

| Emissions | | | |
|----------------------------------|----------------------|--------------------|------------------|
| Test Description | Specification | Test Method | Pass/Fail |
| Occupied Bandwidth | FCC 15.247:2010 | ANSI C63.10:2009 | Pass |
| Output Power | FCC 15.247:2010 | ANSI C63.10:2009 | Pass |
| Band Edge Compliance | FCC 15.247:2010 | ANSI C63.10:2009 | Pass |
| Spurious Conducted Emissions | FCC 15.207:2010 | ANSI C63.10:2009 | Pass |
| Power Spectral Density | FCC 15.247:2010 | ANSI C63.10:2009 | Pass |
| Spurious Radiated Emissions | FCC 15.247:2010 | ANSI C63.10:2009 | Pass |
| AC Powerline Conducted Emissions | FCC 15.247:2010 | ANSI C63.10:2009 | 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-2).

Approved By:



Don Facteau, IS Manager



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 Number | Description | Date | Page Number |
|-----------------|-------------|------|-------------|
| 00 | None | | |

Barometric Pressure

The recorded barometric pressure has been normalized to sea level.



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 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.



NVLAP LAB CODE 200629-0
NVLAP LAB CODE 200630-0
NVLAP LAB CODE 200676-0
NVLAP LAB CODE 200761-0
NVLAP LAB CODE 200881-0

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-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, Brooklyn Park: 2834E-1*)



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.



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, G-84, C-2687, T-1658, and R-2318, Irvine: R-1943, G-85, C-2766, and T-1659, Sultan: R-871, G-83, C-1784, and T-1511, Brooklyn Park: R-3125, G-86, G-141, C-3464, and T-1634).



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



KCC

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



VIETNAM

Vietnam MIC has approved Northwest EMC as an accredited test lab. Per Decision No. 194/QD-QLCL (dated December 15, 2009), Northwest EMC test reports can be used for Vietnam approval submissions.



SCOPE

For details on the Scopes of our Accreditations, please visit:

<http://www.nwemc.com/accreditations/>



Northwest EMC Locations



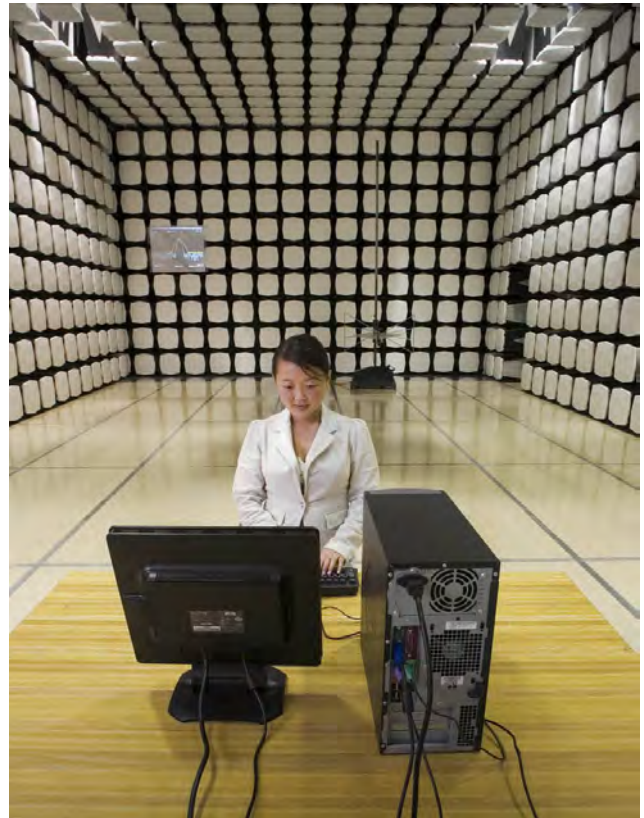
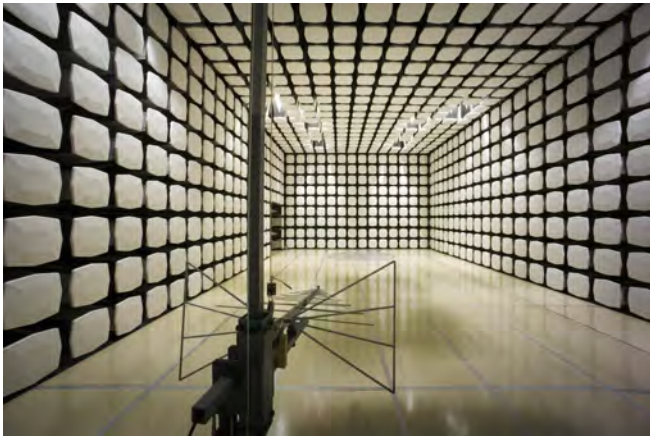
Oregon
Labs EV01-EV12
22975 NW Evergreen Pkwy
Suite 400
Hillsboro, OR 97124
(503) 844-4066

California
Labs OC01-OC13
41 Tesla
Irvine, CA 92618
(949) 861-8918

Minnesota
Labs MN01-MN08
9349 W Broadway Ave.
Brooklyn Park,
MN 55445
(763) 425-2281

Washington
Labs SU01-SU07
14128 339th Ave. SE
Sultan, WA 98294
(360) 793-8675

New York
Labs WA01-WA04
4939 Jordan Rd.
Elbridge, NY 13060
(315) 685-0796



Party Requesting the Test

| | |
|---------------------------------|-----------------------------------|
| Company Name: | Intermec Technologies Corporation |
| Address: | 6001 36th Avenue West |
| City, State, Zip: | Everett, WA 98203-1264 |
| Test Requested By: | Wayne Rieger |
| Model: | RC12 |
| First Date of Test: | August 11, 2010 |
| Last Date of Test: | July 28, 2010 |
| Receipt Date of Samples: | July 27, 2010 |
| Equipment Design Stage: | Production |
| Equipment Condition: | No Damage |

Information Provided by the Party Requesting the Test**Functional Description of the EUT (Equipment Under Test):**

One combination 802.11a/b/g/n - Bluetooth radio seeking modular approval.

Testing Objective:

Seeking to demonstrate compliance of the Bluetooth portion of the radio module to FCC 15.247 specifications.

CONFIGURATION 1 INMC0575**Software/Firmware Running during test**

| Description | Version |
|----------------------|------------------|
| Regulatory Test Tool | RTT_1.01.00.0007 |

EUT

| Description | Manufacturer | Model/Part Number | Serial Number |
|---|-----------------------------------|-------------------|---------------|
| Galileo 802.11abgn and Bluetooth radio module | Intermec Technologies Corporation | ES5 | R14 |

Peripherals in test setup boundary

| Description | Manufacturer | Model/Part Number | Serial Number |
|------------------------------|--|-------------------|---------------|
| Shuttle Board | Intermec Technologies Corporation | 145-375-001 | None |
| AC Adapter | Intermec Technologies Corporation | 074749 | None |
| Laird PIFA Antenna | Laird | CAF94400 | None |
| Modular Antenna PCB Assembly | Centurion Wireless Technologies, Inc. | CAF94337 | None |
| Power Supply | Topward Electric Instruments Co., LTD. | TPS-2000 | 946425 |

Remote Equipment Outside of Test Setup Boundary

| Description | Manufacturer | Model/Part Number | Serial Number |
|-------------|--------------|-------------------|---------------|
| Remote PC | Dell | Latitude D600 | 3XJ3H51 |

Cables

| Cable Type | Shield | Length (m) | Ferrite | Connection 1 | Connection 2 |
|------------|--------|------------|---------|---------------|---------------|
| DC power | PA | 1.85m | PA | AC Adapter | Shuttle Board |
| USB | Yes | 5.0m | No | Shuttle Board | Remote PC |

PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.

CONFIGURATION 2 INMC0575**Software/Firmware Running during test**

| Description | Version |
|----------------------|------------------|
| Regulatory Test Tool | RTT_1.01.00.0007 |

EUT

| Description | Manufacturer | Model/Part Number | Serial Number |
|---|-----------------------------------|-------------------|---------------|
| Galileo 802.11abgn and Bluetooth radio module | Intermec Technologies Corporation | ES5 | R11 |

Peripherals in test setup boundary

| Description | Manufacturer | Model/Part Number | Serial Number |
|------------------------------|--|-------------------|---------------|
| Shuttle Board | Intermec Technologies Corporation | 145-375-001 | None |
| AC Adapter | Intermec Technologies Corporation | 074749 | None |
| Laird PIFA Antenna | Laird | CAF94400 | None |
| Modular Antenna PCB Assembly | Centurion Wireless Technologies, Inc. | CAF94337 | None |
| Power Supply | Topward Electric Instruments Co., LTD. | TPS-2000 | 946425 |

Remote Equipment Outside of Test Setup Boundary

| Description | Manufacturer | Model/Part Number | Serial Number |
|-------------|--------------|-------------------|---------------|
| Remote PC | Dell | Inspiron 6000 | NW EMC IS386 |

Cables

| Cable Type | Shield | Length (m) | Ferrite | Connection 1 | Connection 2 |
|------------|--------|------------|---------|---------------|---------------|
| DC power | PA | 1.85m | PA | AC Adapter | Shuttle Board |
| USB | Yes | 3.0m | No | Shuttle Board | Remote PC |

PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.

CONFIGURATION 3 INMC0575**Software/Firmware Running during test**

| Description | Version |
|----------------------|------------------|
| Regulatory Test Tool | RTT_1.01.00.0007 |

EUT

| Description | Manufacturer | Model/Part Number | Serial Number |
|---|-----------------------------------|-------------------|---------------|
| Galileo 802.11abgn and Bluetooth radio module | Intermec Technologies Corporation | ES5 | R11 |

Peripherals in test setup boundary

| Description | Manufacturer | Model/Part Number | Serial Number |
|------------------------------|--|-------------------|---------------|
| Shuttle Board | Intermec Technologies Corporation | 145-375-001 | None |
| Laird PIFA Antenna | Laird | CAF94400 | None |
| Modular Antenna PCB Assembly | Centurion Wireless Technologies, Inc. | CAF94337 | None |
| Power Supply | Topward Electric Instruments Co., LTD. | TPS-2000 | 946425 |

Remote Equipment Outside of Test Setup Boundary

| Description | Manufacturer | Model/Part Number | Serial Number |
|-------------|--------------|-------------------|---------------|
| Remote PC | Dell | Inspiron 6000 | NW EMC IS386 |

Cables

| Cable Type | Shield | Length (m) | Ferrite | Connection 1 | Connection 2 |
|------------|--------|------------|---------|---------------|---------------|
| DC power | PA | 0.55m | PA | Power Supply | Shuttle Board |
| AC power | No | 1.0m | No | Power Supply | AC Mains |
| USB | Yes | 3.0m | No | Shuttle Board | Remote PC |

PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.

| Equipment modifications | | | | | |
|--------------------------------|-----------|----------------------------------|--------------------------------------|---|---|
| Item | Date | Test | Modification | Note | Disposition of EUT |
| 1 | 7/28/2010 | Output Power | 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 | 7/28/2010 | Occupied Bandwidth | 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 | 7/28/2010 | Band Edge Compliance | 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. |
| 4 | 8/4/2010 | 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. |
| 5 | 8/5/2010 | Spurious Conducted 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. |
| 6 | 8/2/2010 | Power Spectral Density | 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. |
| 7 | 8/11/2010 | AC Powerline Conducted Emissions | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | Scheduled testing was completed. |

BLUETOOTH APPROVALS
FCC Procedure Received from Joe Dichoso on 2-15-02

The following exhibit indicates the FCC Spread Spectrum requirements in Section 15.247 for devices meeting the Bluetooth Specifications in the 2.4 GHz band as of February 2001 operating in the USA. The purpose of this exhibit is to help expedite the approval process for Bluetooth devices. This exhibit provides items that vary for each device and also provides a list of items that are common to Bluetooth devices that explains the remaining requirements. The list of common items can be submitted for each application for equipment authorization. This exhibit only specifies requirements in Section 15.247, requirements in other rule Sections for intentional radiators such as in Section 15.203 or 15.207 must be also be addressed. A Bluetooth device is a FHSS transmitter in the data mode and applies as a Hybrid spread spectrum device in the acquisition mode.

For each individual device, the following items, 1-7 will vary from one device to another and must be submitted.

- 1) The occupied bandwidth in Section 15.247(a)(1)(ii).
- 2) Conducted output power specified in Section 15.247(b)(1).
- 3) EIRP limit in Section 15.247(b)(3).
- 4) RF safety requirement in Section 15.247(b)(4)
- 5) Spurious emission limits in Section 15.247(c).
- 6) Processing gain and requirements for Hybrids in Section 15.247(f) in the acquisition mode.
- 7) Power spectral density requirement in Section 15.247(f) in the acquisition mode.

For all devices, the following items, 1-12, are common to all Bluetooth devices and will not vary from one device to another. This list can be copied into the filing.

1 Output power and channel separation of a Bluetooth device in the different operating modes:

The different operating modes (data-mode, acquisition-mode) of a Bluetooth device don't influence the output power and the channel spacing. There is only one transmitter which is driven by identical input parameters concerning these two parameters.

Only a different hopping sequence will be used. For this reason, the RF parameters in one op-mode is sufficient.

2 Frequency range of a Bluetooth device:

The maximum frequency of the device is: **2402 – 2480 MHz**.

This is according the Bluetooth Core Specification V 1.0B (+ critical errata) for devices which will be operated in the USA. Other frequency ranges (e.g. for Spain, France, Japan) which are allowed according the Core Specification must **not be** supported by the device.

3 Co-ordination of the hopping sequence in data mode to avoid simultaneous occupancy by multiple transmitters:

Bluetooth units which want to communicate with other units must be organized in a structure called piconet. This piconet consist of max. 8 Bluetooth units. One unit is the master the other seven are the slaves. The master co-ordinates frequency occupation in this piconet for all units. As the master hop sequence is derived from it's BD address which is unique for every Bluetooth device, additional masters intending to establish new piconets will always use different hop sequences.

4 Example of a hopping sequence in data mode:

Example of a 79 hopping sequence in data mode:

40, 21, 44, 23, 42, 53, 46, 55, 48, 33, 52, 35, 50, 65, 54, 67,
56, 37, 60, 39, 58, 69, 62, 71, 64, 25, 68, 27, 66, 57, 70, 59,
72, 29, 76, 31, 74, 61, 78, 63, 01, 41, 05, 43, 03, 73, 07, 75,
09, 45, 13, 47, 11, 77, 15, 00, 64, 49, 66, 53, 68, 02, 70, 06,
01, 51, 03, 55, 05, 04

5 Equally average use of frequencies in data mode and short transmissions:

The generation of the hopping sequence in connection mode depends essentially on two input values:

1. LAP/UAP of the master of the connection
2. Internal master clock

The LAP (lower address part) are the 24 LSB's of the 48 BD_ADDRESS. The BD_ADDRESS is an unambiguous number of every Bluetooth unit. The UAP (upper address part) are the 24 MSB's of the 48 BD_ADDRESS. The internal clock of a Bluetooth unit is derived from a free running clock which is never adjusted and is never turned off. For synchronization with other units, only the offsets are used. It has no relation to the time of the day. Its resolution is at least half the RX/TX slot length of 312.5 μ s. The clock has a cycle of about one day (23h30). In most case it is implemented as 28 bit counter. For the deriving of the hopping sequence the entire LAP (24 bits), 4 LSB's (4 bits) (Input 1) and the 27 MSB's of the clock (Input 2) are used. With this input values different mathematical procedures (permutations, additions, XOR-operations) are performed to generate the sequence. This will be done at the beginning of every new transmission.

Regarding short transmissions, the Bluetooth system has the following behavior:

The first connection between the two devices is established, a hopping sequence is generated. For transmitting the wanted data, the complete hopping sequence is not used and the connection ends. The second connection will be established. A new hopping sequence is generated. Due to the fact that the Bluetooth clock has a different value, because the period between the two transmission is longer (and it cannot be shorter) than the minimum resolution of the clock (312.5 μ s). The hopping sequence will always differ from the first one.

6 Receiver input bandwidth, synchronization and repeated single or multiple packets:

The input bandwidth of the receiver is 1 MHz.

In every connection, one Bluetooth device is the master and the other one is the slave. The master determines the hopping sequence (see chapter 5). The slave follows this sequence. Both devices shift between RX and TX time slot according to the clock of the master. Additionally the type of connection (e.g. single or multi-slot packet) is set up at the beginning of the connection. The master adapts its hopping frequency and its TX/RX timing is according to the packet type of the connection. Also, the slave of the connection uses these settings. Repeating of a packet has no influence on the hopping sequence. The hopping sequence generated by the master of the connection will be followed in any case. That means, a repeated packet will not be send on the same frequency, it is send on the next frequency of the hopping sequence

7 Dwell time in data mode

The dwell time of 0.3797s within a 30 second period in data mode is independent from the packet type (packet length). The calculation for a 30 second period is a follows:

Dwell time = time slot length * hop rate / number of hopping channels *30s

Example for a DH1 packet (with a maximum length of one time slot)

Dwell time = 625 μ s * 1600 1/s / 79 * 30s = 0.3797s (in a 30s period)

For multi-slot packet the hopping is reduced according to the length of the packet.
Example for a DH5 packet (with a maximum length of five time slots)
Dwell time = $5 * 625 \mu s * 1600 * 1/5 * 1/s / 79 * 30s = 0.3797s$ (in a 30s period)
This is according the Bluetooth Core Specification V 1.0B (+ critical errata) for all Bluetooth devices. Therefore, all Bluetooth devices **comply** with the FCC dwell time requirement in the data mode.

This was checked during the Bluetooth Qualification tests.

The Dwell time in hybrid mode is approximately 2.6 mS (in a 12.8s period)

8 Channel Separation in hybrid mode

The nominal channel spacing of the Bluetooth system is 1Mhz independent of the operating mode.

The maximum "initial carrier frequency tolerance" which is allowed for Bluetooth is $f_{center} = 75 \text{ kHz}$.

This was checked during the Bluetooth Qualification tests (Test Case: TRM/CA/07-E) for three frequencies (2402, 2441, 2480 MHz).

9 Derivation and examples for a hopping sequence in hybrid mode

For the generation of the inquiry and page hop sequences the same procedures as described for the data mode are used (see item 5), but this time with different input vectors:

**For the inquiry hop sequence, a predefined fixed address is always used. This results in the same 32 frequencies used by all devices doing an inquiry but every time with a different start frequency and phase in this sequence.

**For the page hop sequence, the device address of the paged unit is used as the input vector. This results in the use of a subset of 32 frequencies which is specific for that initial state of the connection establishment between the two units. A page to different devices would result in a different subset of 32 frequencies.

So it is ensured that also in hybrid mode, the frequency is used equally on average.

Example of a hopping sequence in inquiry mode:

48, 50, 09, 13, 52, 54,41, 45, 56, 58, 11, 15, 60, 62, 43, 47, 00, 02, 64, 68, 04, 06, 17, 21, 08, 10, 66, 70, 12, 14, 19, 23

Example of a hopping sequence in paging mode:

08, 57, 68, 70, 51, 02, 42, 40, 04, 61, 44, 46, 63, 14, 50, 48, 16, 65, 52, 54, 67, 18, 58, 56, 20, 53, 60, 62, 55, 06, 66, 64

10 Receiver input bandwidth and synchronization in hybrid mode:

The receiver input bandwidth is the same as in the data mode (1 MHz). When two Bluetooth devices establish contact for the first time, one device sends an inquiry access code and the other device is scanning for this inquiry access code. If two devices have been connected previously and want to start a new transmission, a similar procedure takes place. The only difference is, instead of the inquiry access code, a special access code, derived from the BD_ADDRESS of the paged device will be, will be sent by the master of this connection. Due to the fact that both units have been connected before (in the inquiry procedure) the paging unit has timing and frequency information about the page scan of the paged unit. For this reason the time to establish the connection is reduced.

11 Spread rate / data rate of the direct sequence signal

The Spread rate / Data rate in inquiry and paging mode can be defined via the access code. The access code is the only criterion for the system to check if there is a valid transmission or not. If you regard the presence of a valid access code as one bit of information, and compare it with the length of the access code of 68 bits, the Spread rate / Data rate will be 68/1.

12 Spurious emission in hybrid mode

The Dwell in hybrid mode is shorter than in data mode. For this reason the spurious emissions average level in data mode is worst case. The spurious emissions peak level is the same for both modes.

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.

TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Interval |
|---------------------------------|------------------|---------------|-----|------------|----------|
| Spectrum Analyzer | Agilent | E4440A | AFD | 6/1/2009 | 24 |
| EV06 Direct Connect Cable | ESM Cable Corp. | TT | ECA | NCR | 0 |
| Attenuator 20 dB, SMA M/F 26GHz | S.M. Electronics | SA26B-20 | AUY | 7/21/2009 | 13 |
| Attenuator, 6 dB, 'SMA' | N/A | 93459 3330A-6 | AUF | 4/1/2010 | 13 |
| 26 GHz DC Block, SMA | Pasternack | PE8210 | AME | 10/19/2009 | 13 |
| Power Meter | Gigatronics | 8651A | SPM | 1/7/2010 | 13 |
| Power Sensor | Gigatronics | 80701A | SPL | 1/7/2010 | 13 |
| Signal Generator | Agilent | E8257D | TGX | 12/10/2008 | 24 |

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The 20 dB occupied bandwidth was measured with the EUT set to low, medium, and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The Occupied Bandwidth measurement function of the spectrum analyzer was used and the value from the x dB measurement set to -20.00 db was reported. The EUT was transmitting in a no hop mode at its maximum data rate for each of the three different modulations available.

OCCUPIED BANDWIDTH

EMC

| | | | |
|----------------|-----------------------------------|-------------------|-----------|
| EUT: | RC12 | Work Order: | INMC0575 |
| Serial Number: | R11 | Date: | 07/28/10 |
| Customer: | Intermec Technologies Corporation | Temperature: | 20°C |
| Attendees: | none | Humidity: | 48% |
| Project: | None | Barometric Pres.: | 1019.3 mb |
| Tested by: | Rod Peloquin | Power: | 5VDC |
| | | Job Site: | EV06 |

| | | |
|----------------------------|--|------------------|
| TEST SPECIFICATIONS | | Test Method |
| FCC 15.247:2010 | | ANSI C63.10:2009 |

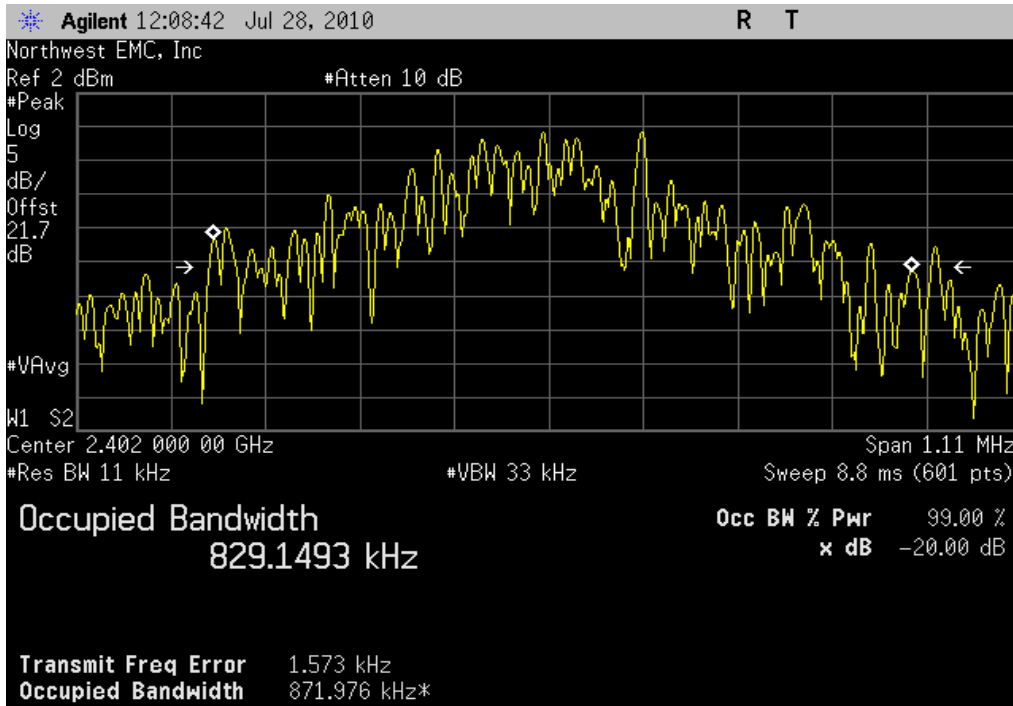
COMMENTS
None

DEVIATIONS FROM TEST STANDARD
No deviations

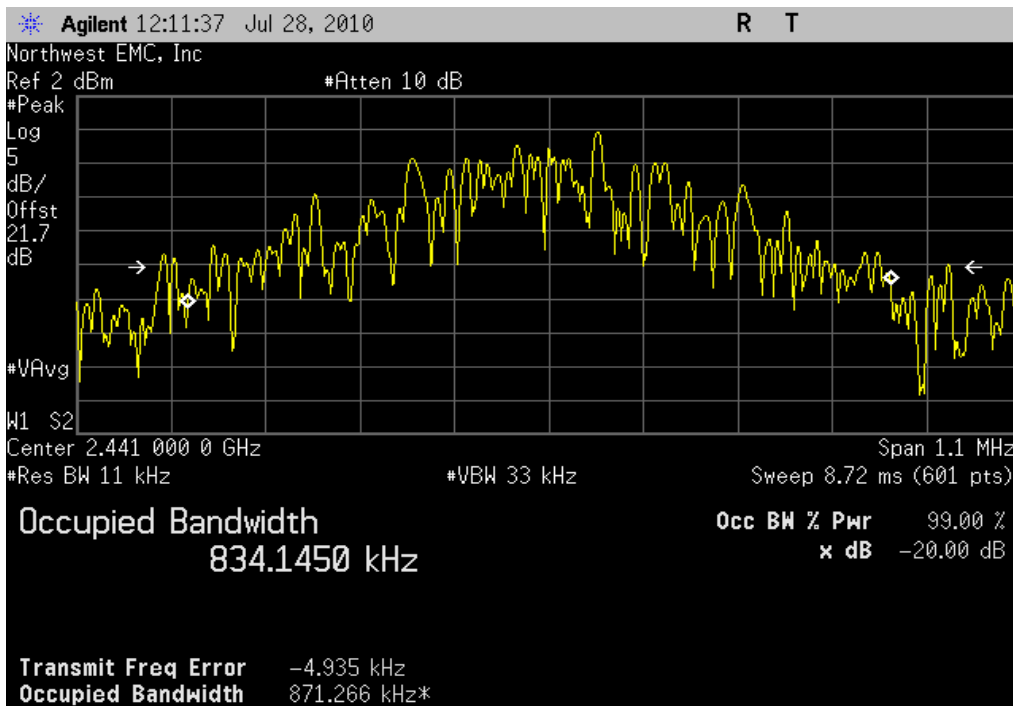
| | | |
|------------------------|---|----------------------------------|
| Configuration # | 2 | <i>Rod Peloquin</i> Signature |
|------------------------|---|----------------------------------|

| | | Value | Limit | Results |
|-------------------------|------------------------|------------|---------|---------|
| GFSK, DH5 | | | | |
| | Low Channel, 2402MHz | 871.98 kHz | 1.5 MHz | Pass |
| | Mid Channel, 2441 MHz | 871.27 kHz | 1.5 MHz | Pass |
| | High Channel, 2480 MHz | 873.86 kHz | 1.5 MHz | Pass |
| pi/4-DQPSK, 2DH5 | | | | |
| | Low Channel, 2402MHz | 1.336 MHz | 1.5 MHz | Pass |
| | Mid Channel, 2441 MHz | 1.332 MHz | 1.5 MHz | Pass |
| | High Channel, 2480 MHz | 1.344 MHz | 1.5 MHz | Pass |
| 8-DPSK, 3DH5 | | | | |
| | Low Channel, 2402MHz | 1.345 MHz | 1.5 MHz | Pass |
| | Mid Channel, 2441 MHz | 1.343 MHz | 1.5 MHz | Pass |
| | High Channel, 2480 MHz | 1.349 MHz | 1.5 MHz | Pass |

GFSK, DH5, Low Channel, 2402MHz
Result: Pass **Value:** 871.98 kHz **Limit:** 1.5 MHz



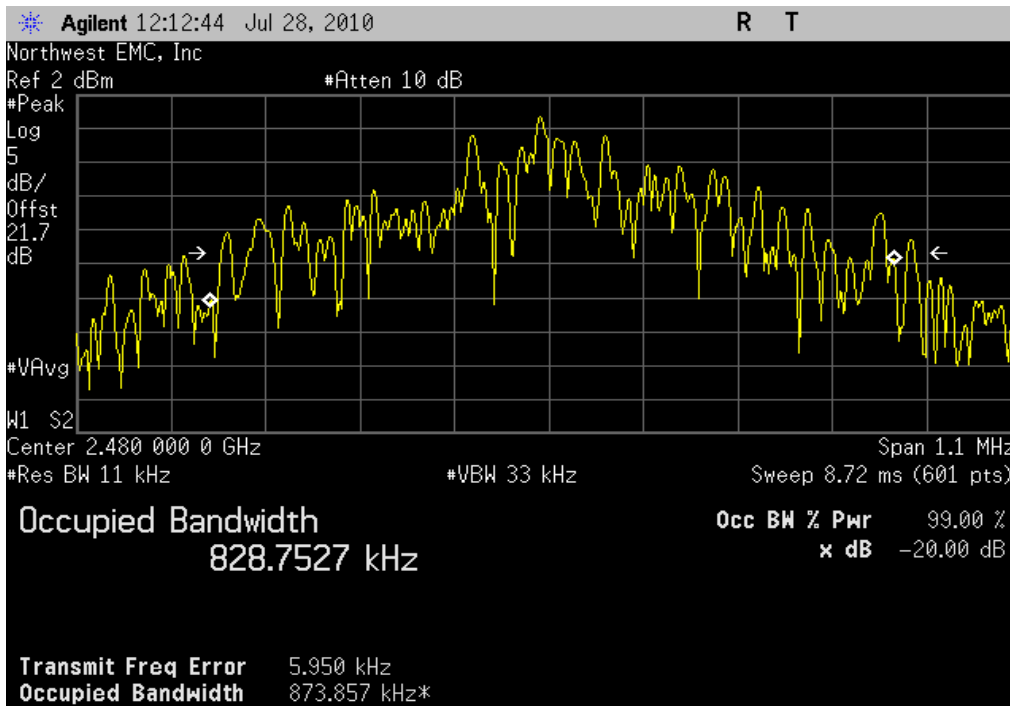
GFSK, DH5, Mid Channel, 2441 MHz
Result: Pass **Value:** 871.27 kHz **Limit:** 1.5 MHz



OCCUPIED BANDWIDTH

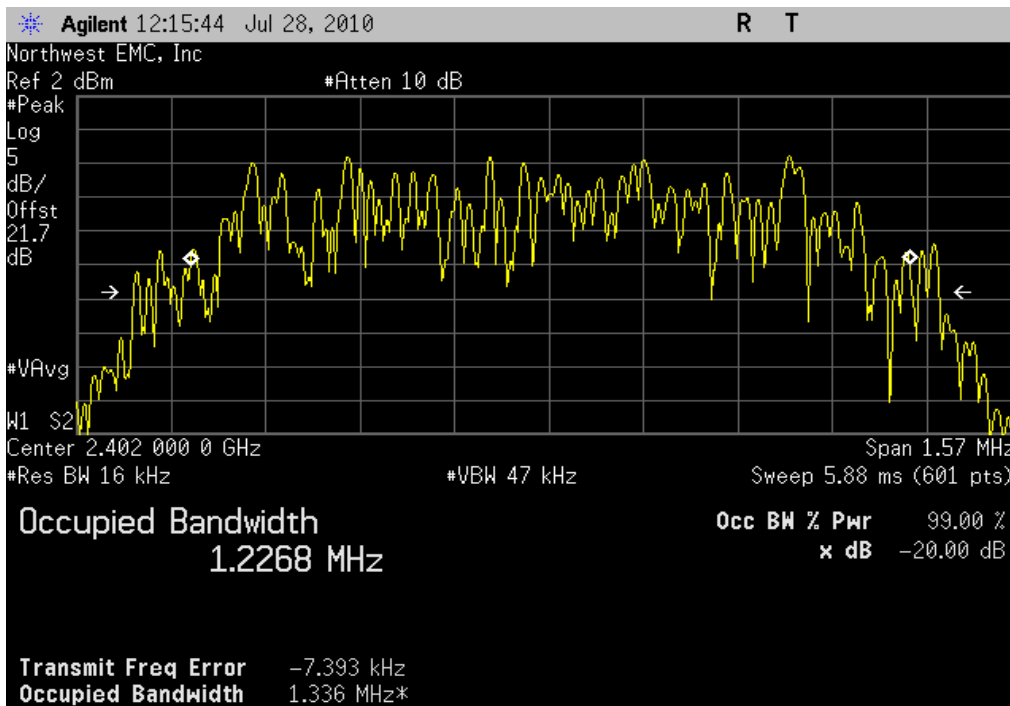
GFSK, DH5, High Channel, 2480 MHz

Result: Pass **Value:** 873.86 kHz **Limit:** 1.5 MHz



pi/4-DQPSK, 2DH5, Low Channel, 2402MHz

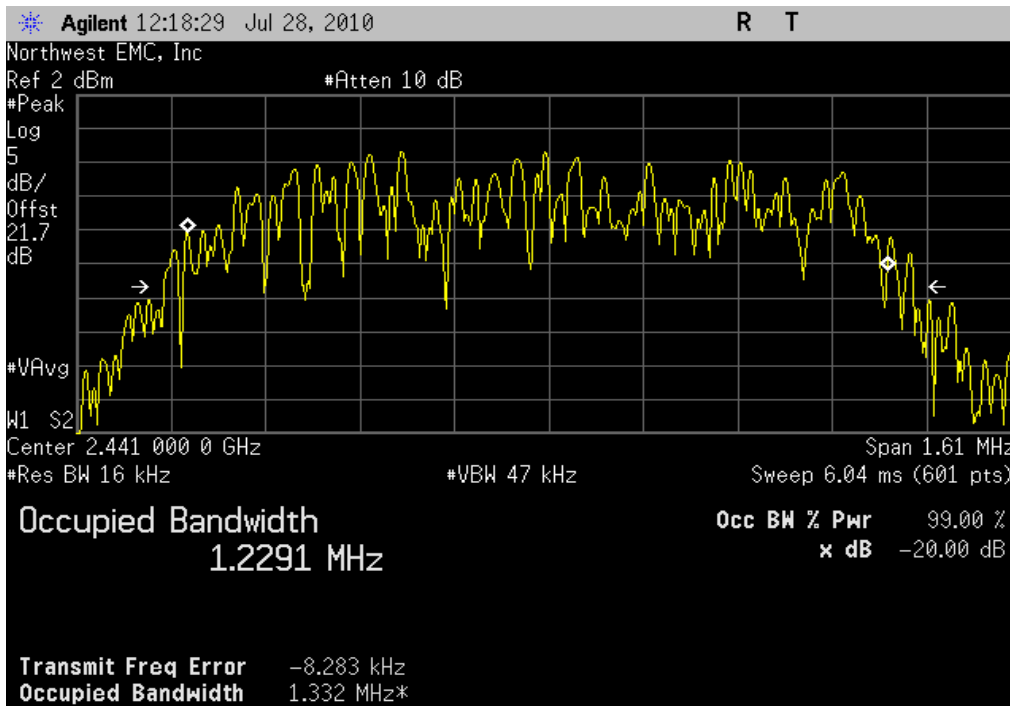
Result: Pass **Value:** 1.336 MHz **Limit:** 1.5 MHz



OCCUPIED BANDWIDTH

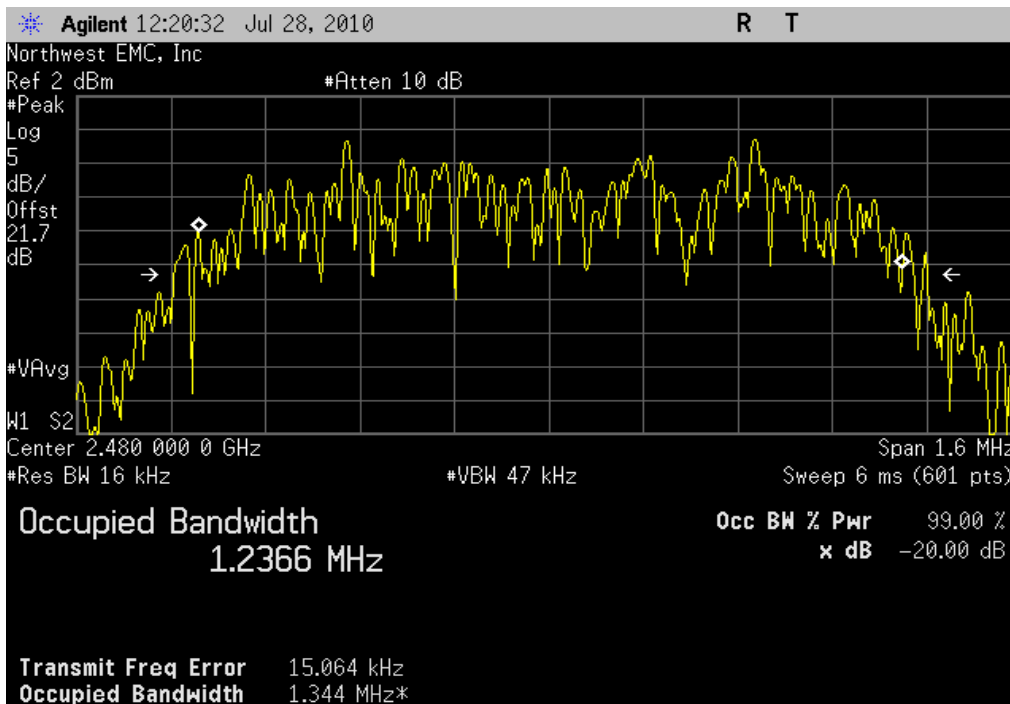
pi/4-DQPSK, 2DH5, Mid Channel, 2441 MHz

| | | |
|---------------------|-------------------------|-----------------------|
| Result: Pass | Value: 1.332 MHz | Limit: 1.5 MHz |
|---------------------|-------------------------|-----------------------|



pi/4-DQPSK, 2DH5, High Channel, 2480 MHz

| | | |
|---------------------|-------------------------|-----------------------|
| Result: Pass | Value: 1.344 MHz | Limit: 1.5 MHz |
|---------------------|-------------------------|-----------------------|



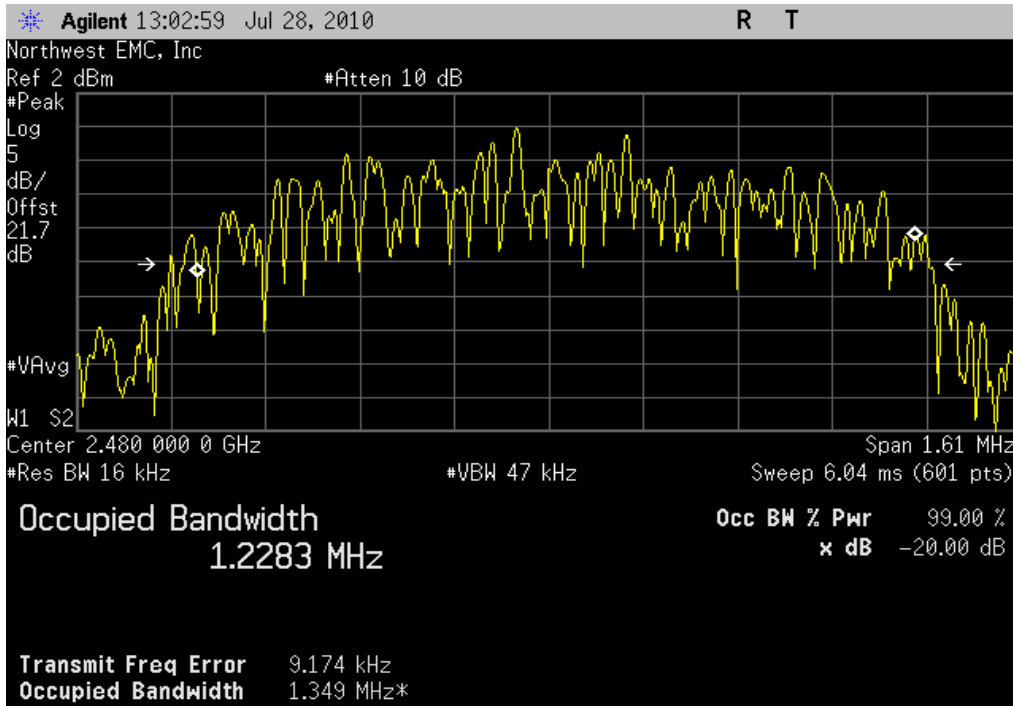
OCCUPIED BANDWIDTH

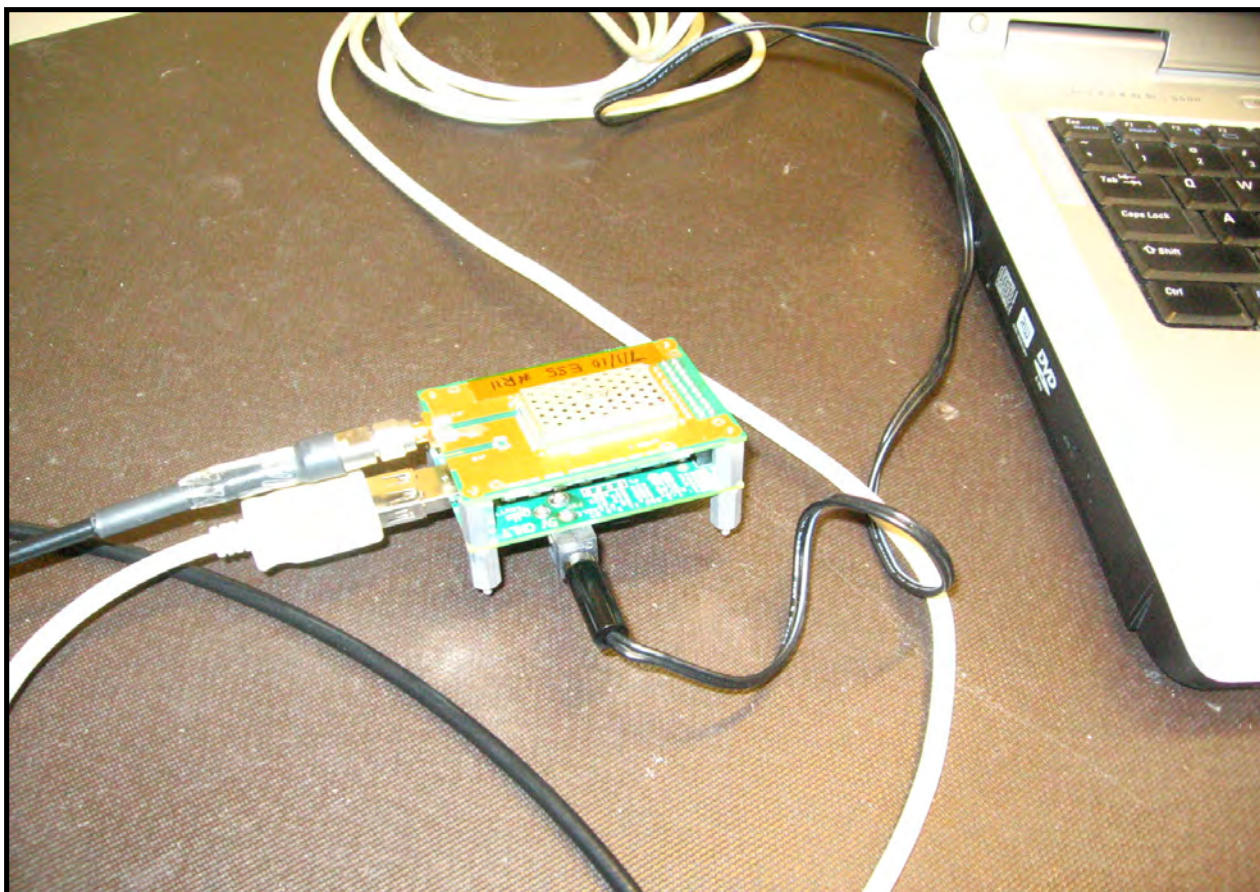
8-DPSK, 3DH5, High Channel, 2480 MHz

Result: Pass

Value: 1.349 MHz

Limit: 1.5 MHz





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.

| TEST EQUIPMENT | | | | | |
|---------------------------------|------------------|---------------|-----|------------|----------|
| Description | Manufacturer | Model | ID | Last Cal. | Interval |
| Spectrum Analyzer | Agilent | E4440A | AFD | 6/1/2009 | 24 |
| 26 GHz DC Block, SMA | Pasternack | PE8210 | AME | 10/19/2009 | 13 |
| Attenuator 20 dB, SMA M/F 26GHz | S.M. Electronics | SA26B-20 | AUY | 7/21/2009 | 13 |
| EV06 Direct Connect Cable | ESM Cable Corp. | TT | ECA | NCR | 0 |
| Attenuator, 6 dB, 'SMA' | N/A | 93459 3330A-6 | AUF | 4/1/2010 | 13 |
| Power Meter | Gigatronics | 8651A | SPM | 1/7/2010 | 13 |
| Power Sensor | Gigatronics | 80701A | SPL | 1/7/2010 | 13 |
| Signal Generator | Agilent | E8257D | TGX | 12/10/2008 | 24 |

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The peak output power was measured with the EUT set to low, medium, and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. . The EUT was transmitting in a no hop mode at its maximum data rate for each of the three different modulations available.

De Facto EIRP Limit: Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36dBm.

EMC

OUTPUT POWER

| | | | |
|----------------|-----------------------------------|-------------------|-----------|
| EUT: | RC12 | Work Order: | INMC0575 |
| Serial Number: | R11 | Date: | 07/28/10 |
| Customer: | Intermec Technologies Corporation | Temperature: | 24°C |
| Attendees: | none | Humidity: | 44% |
| Project: | None | Barometric Pres.: | 1015.4 mb |
| Tested by: | Rod Peloquin | Power: | 5VDC |
| | | Job Site: | EV06 |

| | | |
|----------------------------|--|------------------|
| TEST SPECIFICATIONS | | Test Method |
| FCC 15.247:2010 | | ANSI C63.10:2009 |

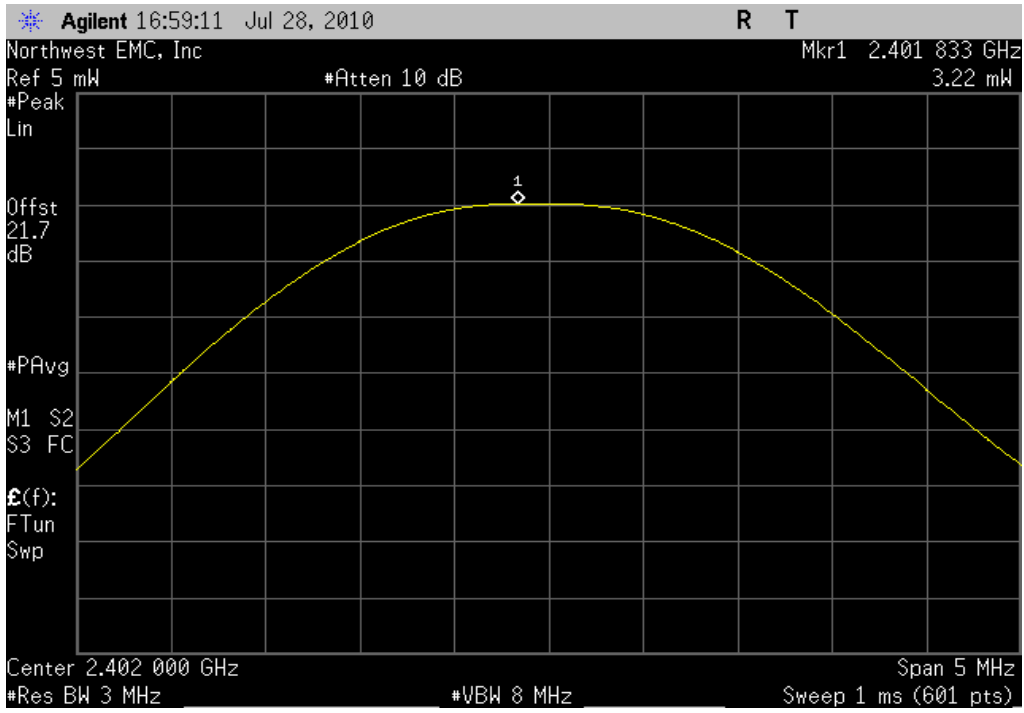
| |
|-----------------|
| COMMENTS |
| None |

| |
|--------------------------------------|
| DEVIATIONS FROM TEST STANDARD |
| No Deviations |

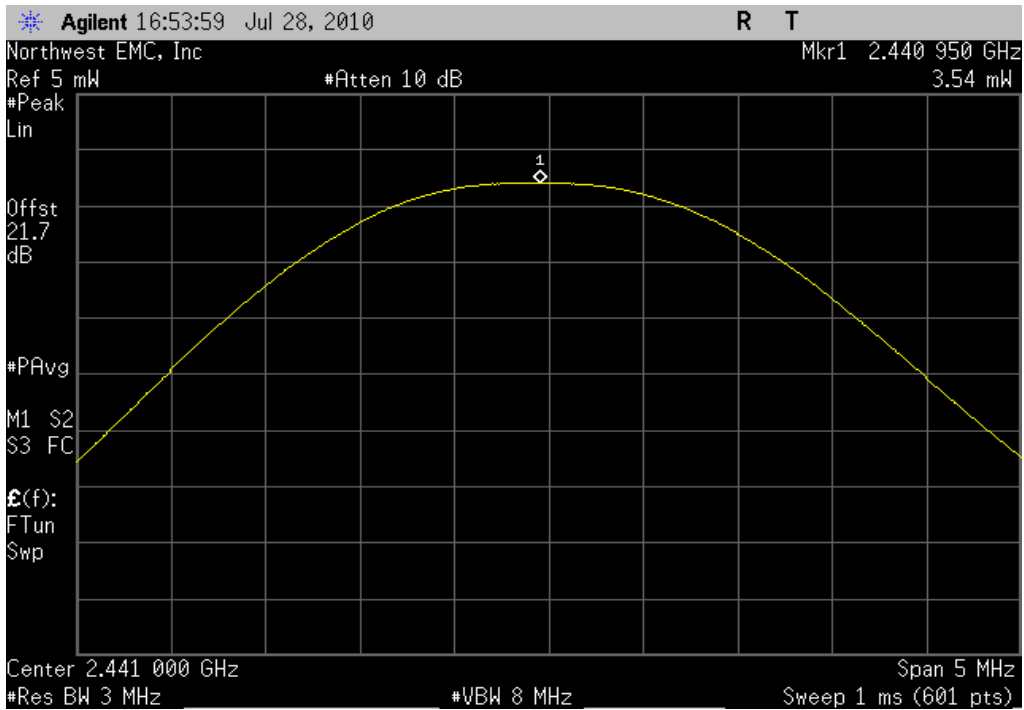
| | | |
|------------------------|---|----------------------------------|
| Configuration # | 2 | <i>Rod Peloquin</i> Signature |
|------------------------|---|----------------------------------|

| | | Value | Limit | Results |
|----------------------|--------------|--------|--------|---------|
| DH5, GFSK | | | | |
| | Low Channel | 3.2 mW | 125 mW | Pass |
| | Mid Channel | 3.5 mW | 125 mW | Pass |
| | High Channel | 3.7 mW | 125 mW | Pass |
| 2DH5, 4-DQPSK | | | | |
| | Low Channel | 5.8 mW | 125 mW | Pass |
| | Mid Channel | 6.2 mW | 125 mW | Pass |
| | High Channel | 6.2 mW | 125 mW | Pass |
| 3DH5, 8-DPSK | | | | |
| | Low Channel | 6.7 mW | 125 mW | Pass |
| | Mid Channel | 7.2 mW | 125 mW | Pass |
| | High Channel | 7.1 mW | 125 mW | Pass |

| | | |
|------------------------|----------------------|----------------------|
| DH5, GFSK, Low Channel | | |
| Result: Pass | Value: 3.2 mW | Limit: 125 mW |

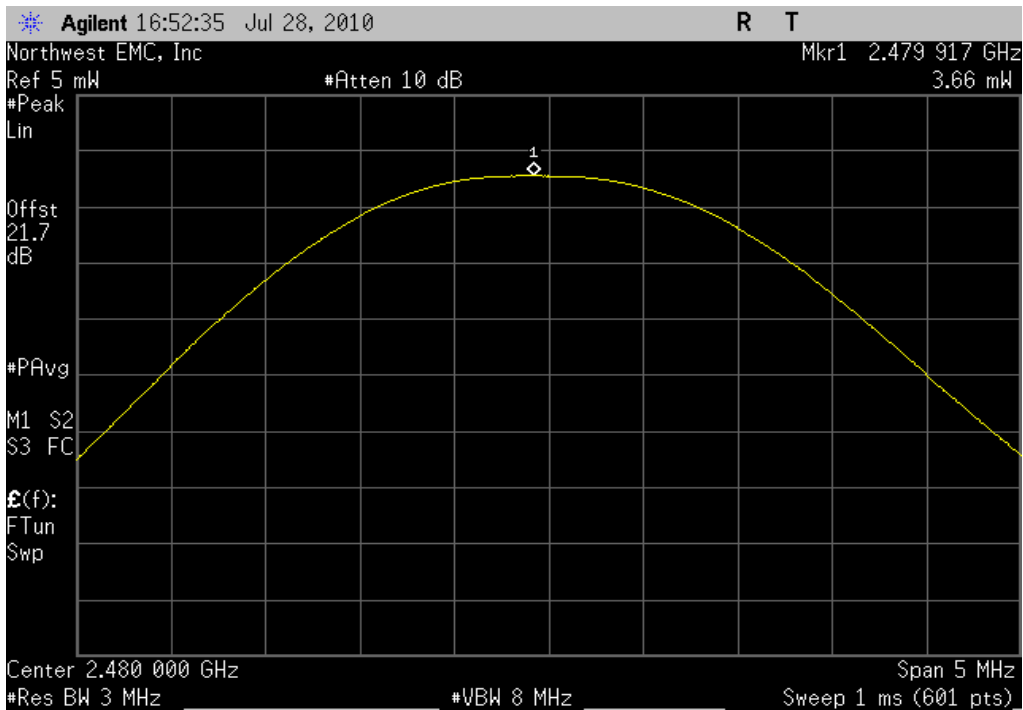


| | | |
|------------------------|----------------------|----------------------|
| DH5, GFSK, Mid Channel | | |
| Result: Pass | Value: 3.5 mW | Limit: 125 mW |

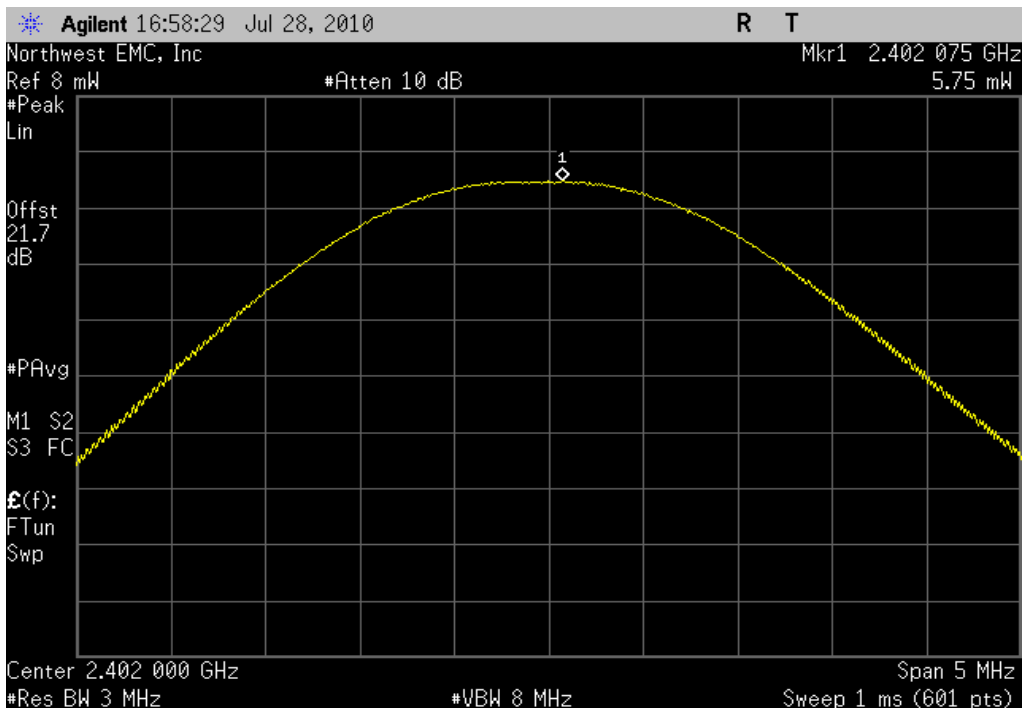


OUTPUT POWER

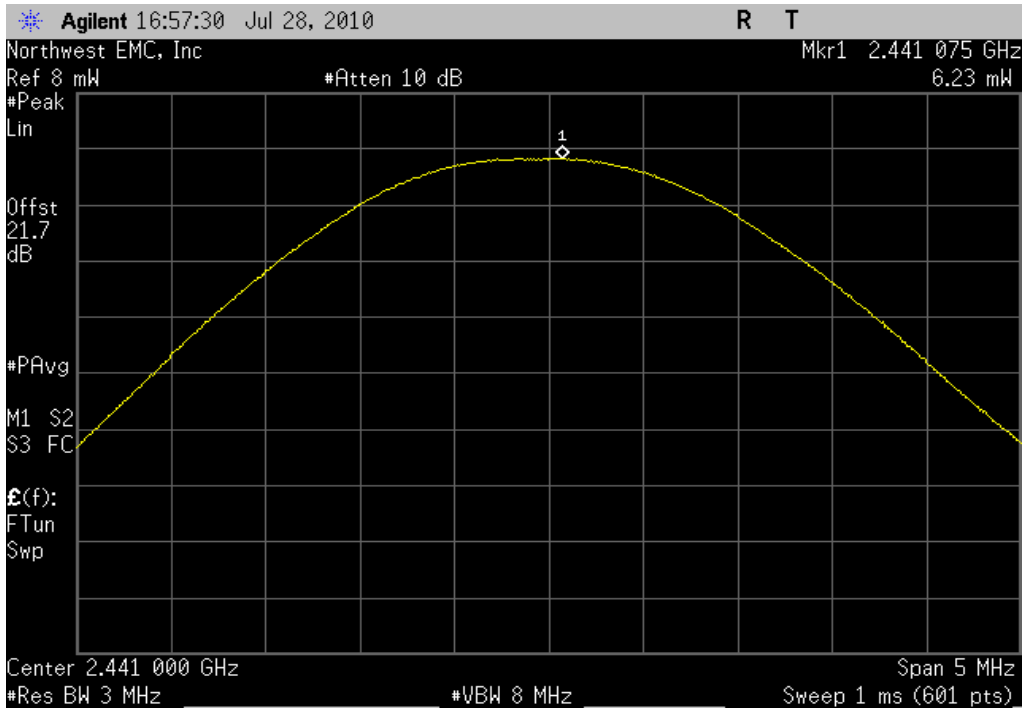
| | | |
|-------------------------|----------------------|----------------------|
| DH5, GFSK, High Channel | | |
| Result: Pass | Value: 3.7 mW | Limit: 125 mW |



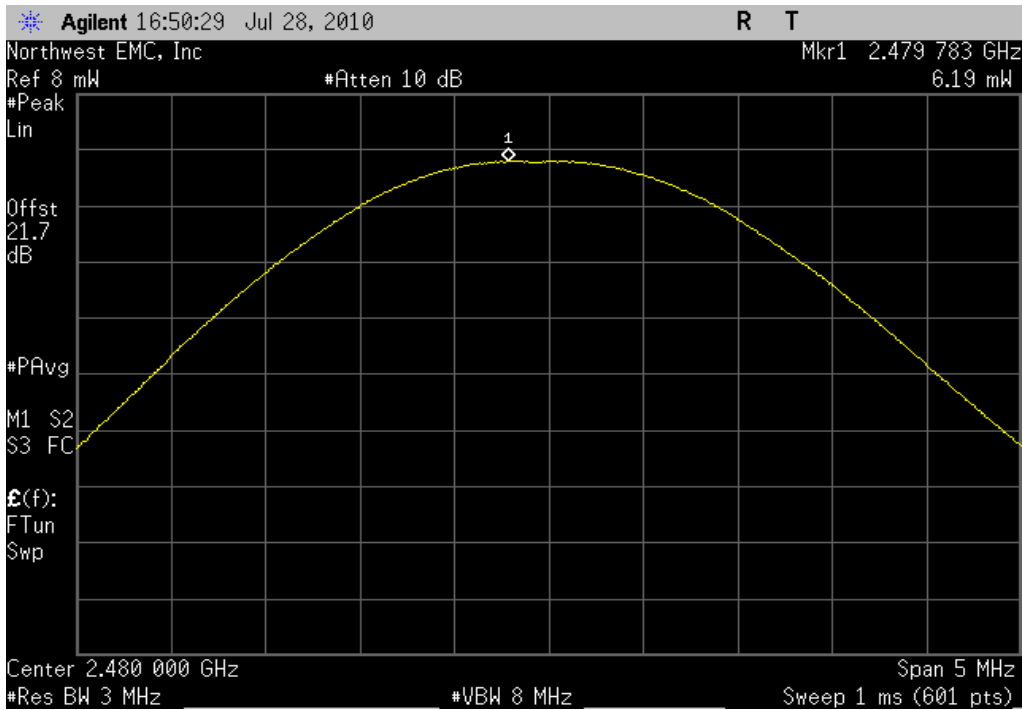
| | | |
|---------------------------|----------------------|----------------------|
| 2DH5, 4-QPSK, Low Channel | | |
| Result: Pass | Value: 5.8 mW | Limit: 125 mW |



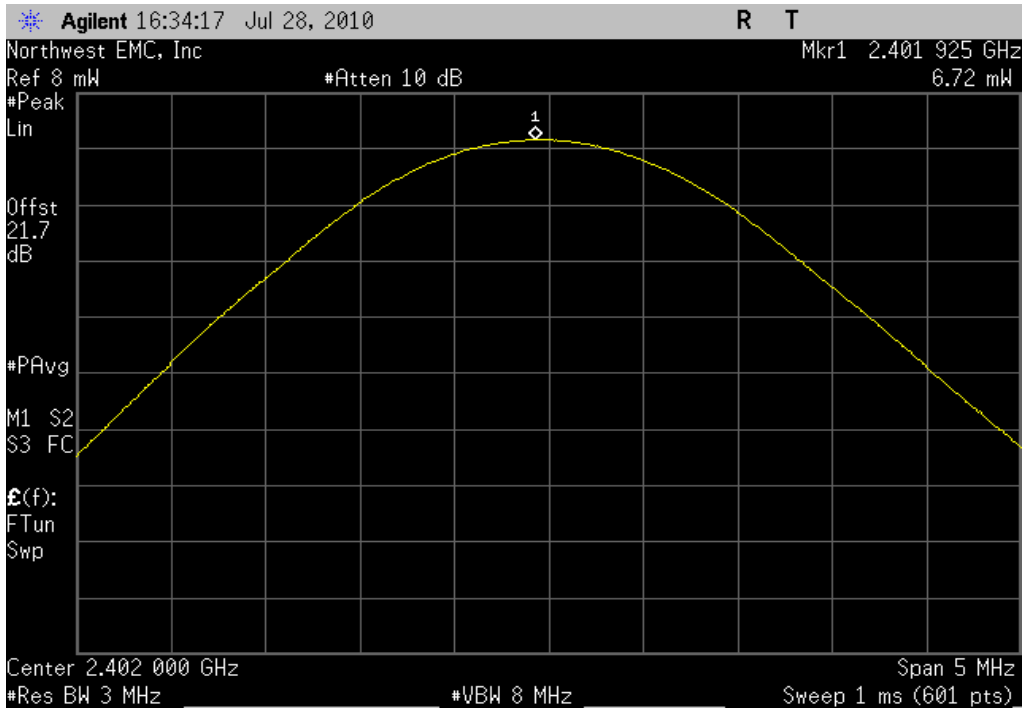
| | | |
|---------------------------|----------------------|----------------------|
| 2DH5, 4-QPSK, Mid Channel | | |
| Result: Pass | Value: 6.2 mW | Limit: 125 mW |



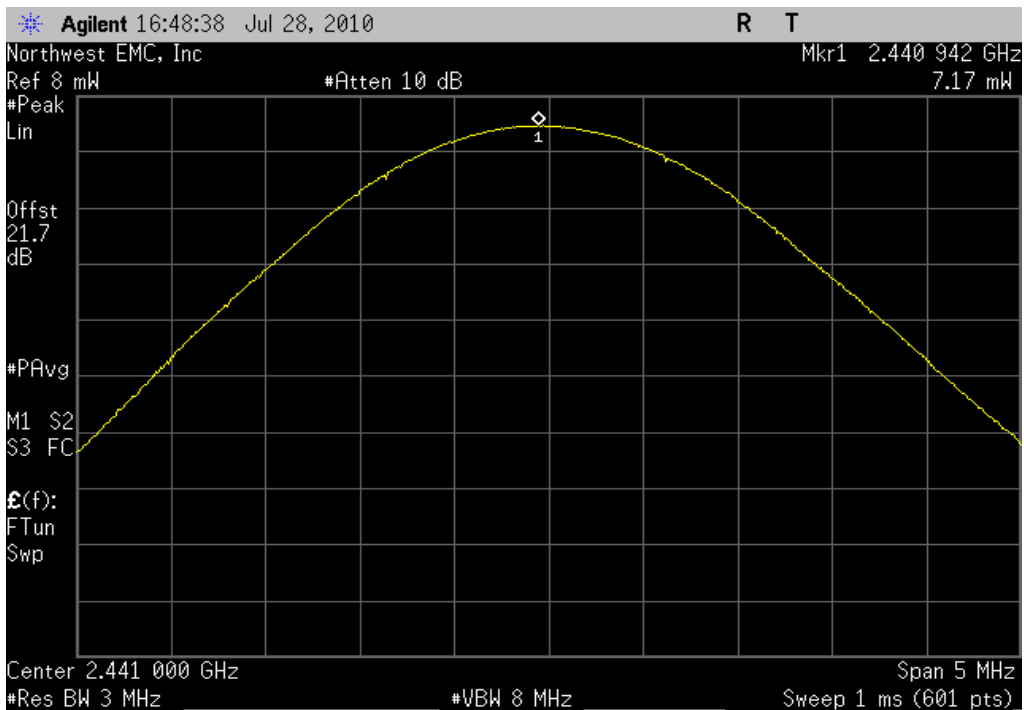
| | | |
|----------------------------|----------------------|----------------------|
| 2DH5, 4-QPSK, High Channel | | |
| Result: Pass | Value: 6.2 mW | Limit: 125 mW |



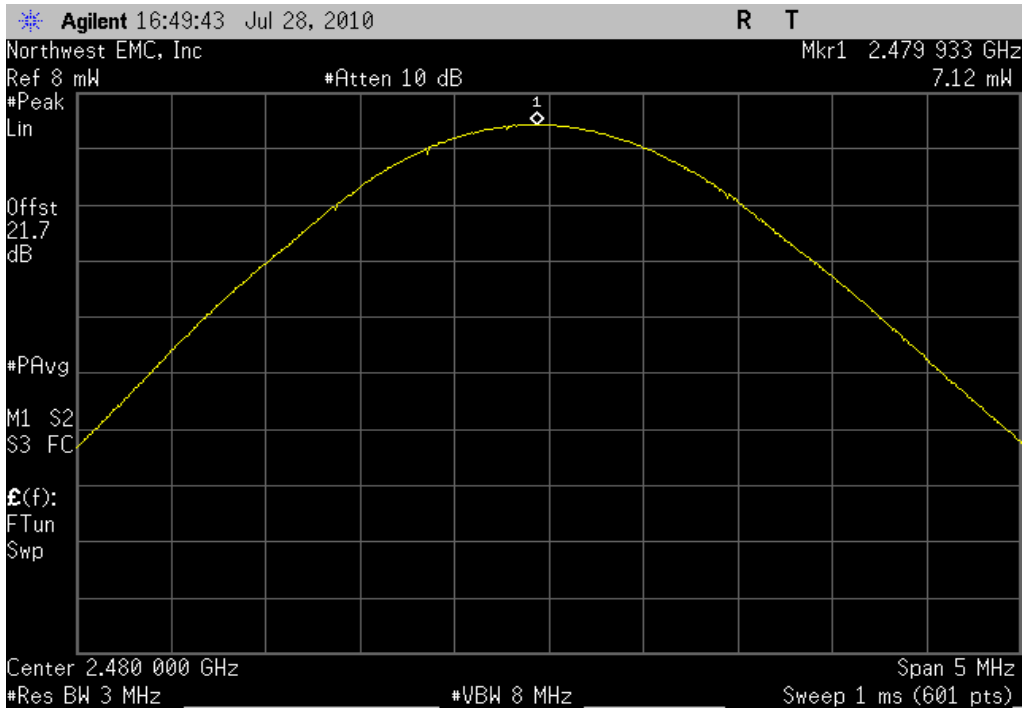
| | | |
|----------------------------------|----------------------|----------------------|
| 3DH5, 8-DPSK, Low Channel | | |
| Result: Pass | Value: 6.7 mW | Limit: 125 mW |



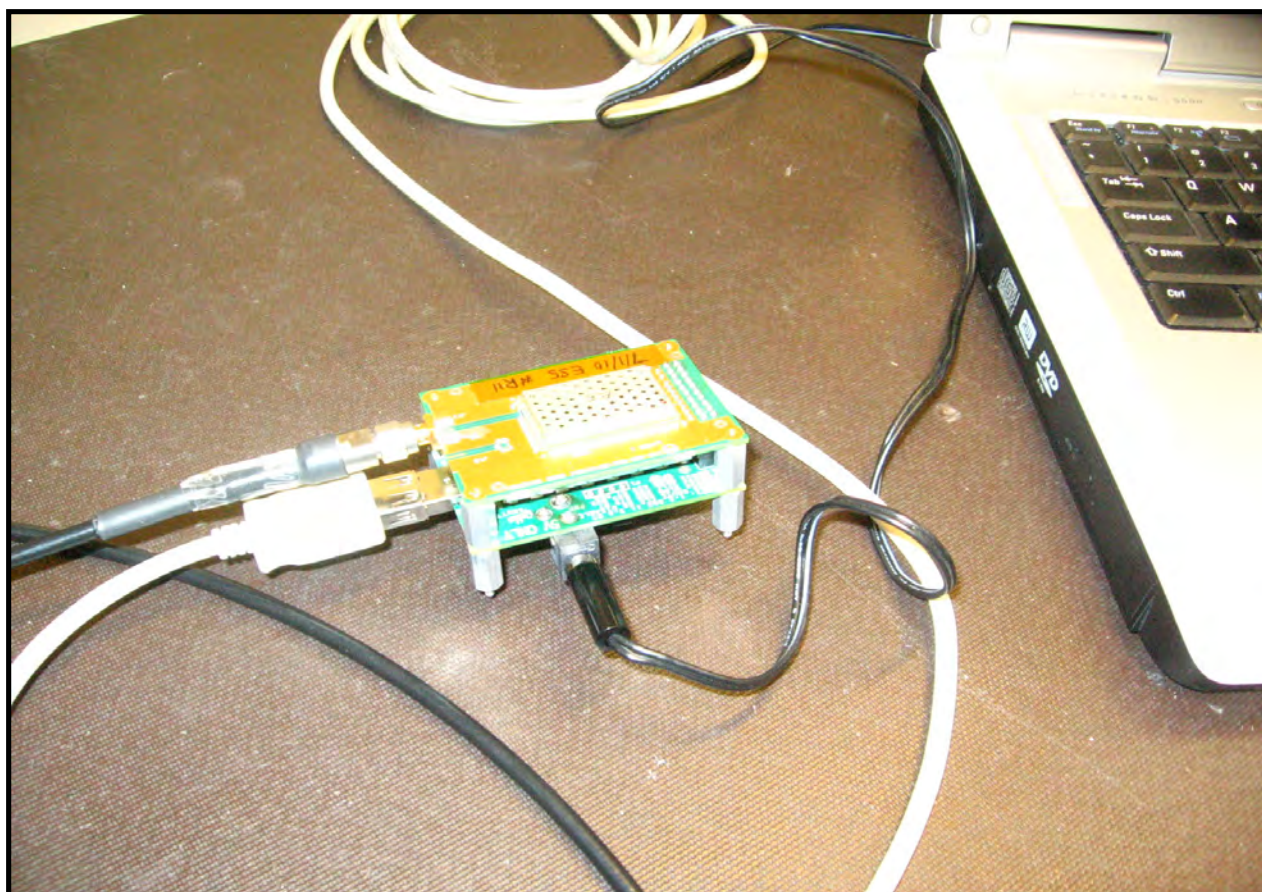
| | | |
|----------------------------------|----------------------|----------------------|
| 3DH5, 8-DPSK, Mid Channel | | |
| Result: Pass | Value: 7.2 mW | Limit: 125 mW |



| | | |
|----------------------------|----------------------|----------------------|
| 3DH5, 8-DPSK, High Channel | | |
| Result: Pass | Value: 7.1 mW | Limit: 125 mW |



mW



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.

| TEST EQUIPMENT | | | | | |
|---------------------------------|------------------|----------|-----|------------|----------|
| Description | Manufacturer | Model | ID | Last Cal. | Interval |
| Spectrum Analyzer | Agilent | E4440A | AFD | 6/1/2009 | 24 |
| Attenuator 20 dB, SMA M/F 26GHz | S.M. Electronics | SA26B-20 | AUY | 7/21/2009 | 13 |
| 26 GHz DC Block, SMA | Pasternack | PE8210 | AME | 10/19/2009 | 13 |
| EV06 Direct Connect Cable | ESM Cable Corp. | TT | ECA | NCR | 0 |

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The requirements of FCC 15.247(d) for emissions at least 20dB below the carrier in any 100kHz bandwidth outside the allowable band was measured with the EUT set to low and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The channels closest to the band edges were selected. The spectrum was scanned across each band edge from 10 MHz below the band edge to 10 MHz above the band edge.

The EUT was transmitting at its maximum data rate using all three types of modulations available in Bluetooth EDR.

EMC

BAND EDGE COMPLIANCE

| | |
|---|-----------------------------|
| EUT: RC12 | Work Order: INMC0575 |
| Serial Number: R11 | Date: 07/28/10 |
| Customer: Intermec Technologies Corporation | Temperature: 24°C |
| Attendees: none | Humidity: 44% |
| Project: None | Barometric Pres.: 1015.4 mb |
| Tested by: Rod Peloquin | Power: 5VDC |
| | Job Site: EV06 |

| | | |
|---------------------|--|------------------|
| TEST SPECIFICATIONS | | Test Method |
| FCC 15.247:2010 | | ANSI C63.10:2009 |

| |
|----------|
| COMMENTS |
| None |

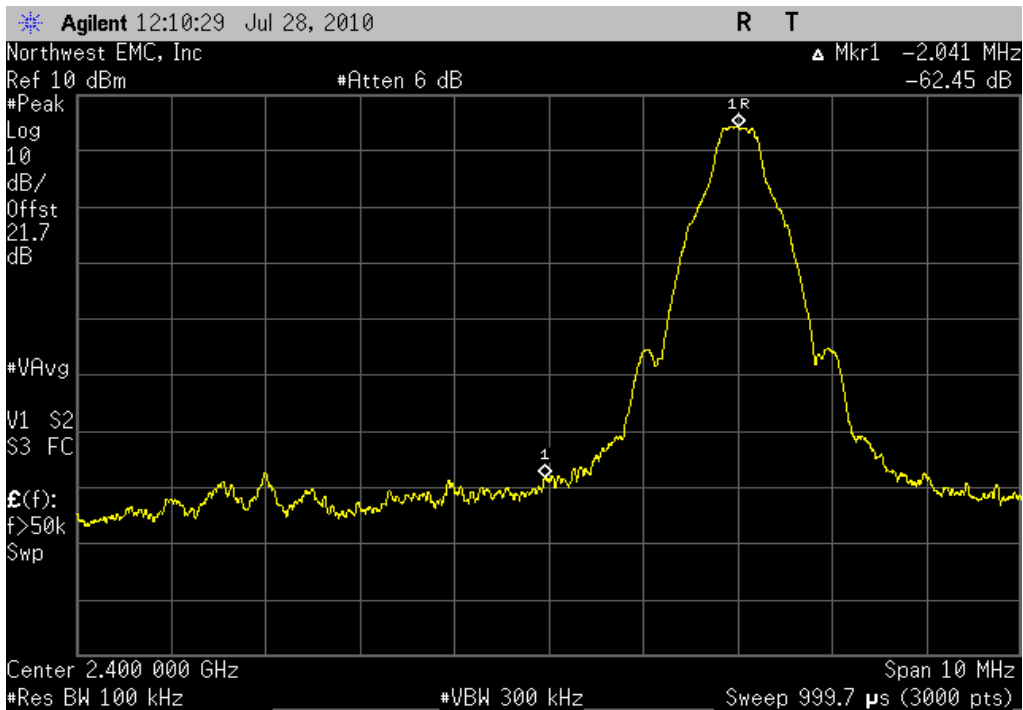
| |
|-------------------------------|
| DEVIATIONS FROM TEST STANDARD |
| No Deviations |

| | | |
|-----------------|---|----------------------------------|
| Configuration # | 2 | <i>Rod Peloquin</i> Signature |
|-----------------|---|----------------------------------|

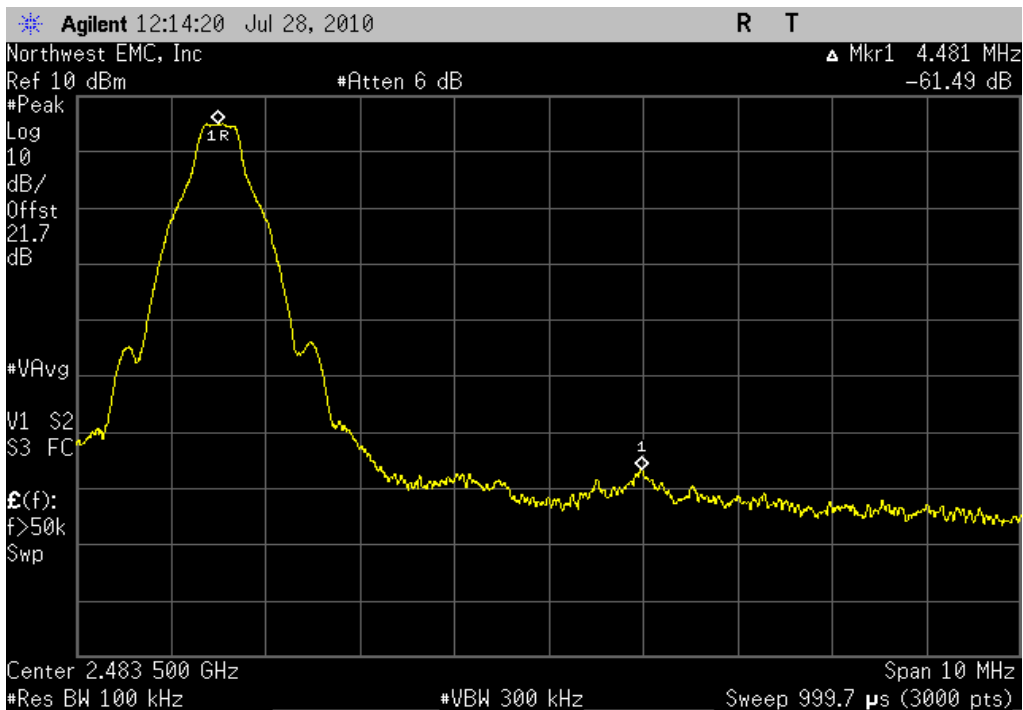
| | | Value | Limit | Results |
|------------------|--------------|-----------|-----------|---------|
| GFSK, DH5 | Low Channel | -62.5 dBc | ≤ -20 dBc | Pass |
| | High Channel | -61.5 dBc | ≤ -20 dBc | Pass |
| pi/4-DQPSK, 2DH5 | Low Channel | -48.9 dBc | ≤ -20 dBc | Pass |
| | High Channel | -55.6 dBc | ≤ -20 dBc | Pass |
| 8-DPSK, 3DH5 | Low Channel | -48.3 dBc | ≤ -20 dBc | Pass |
| | High Channel | -54.4 dBc | ≤ -20 dBc | Pass |

BAND EDGE COMPLIANCE

| | | |
|------------------------|-------------------------|-------------------------|
| GFSK, DH5, Low Channel | | |
| Result: Pass | Value: -62.5 dBc | Limit: ≤ -20 dBc |



| | | |
|-------------------------|-------------------------|-------------------------|
| GFSK, DH5, High Channel | | |
| Result: Pass | Value: -61.5 dBc | Limit: ≤ -20 dBc |



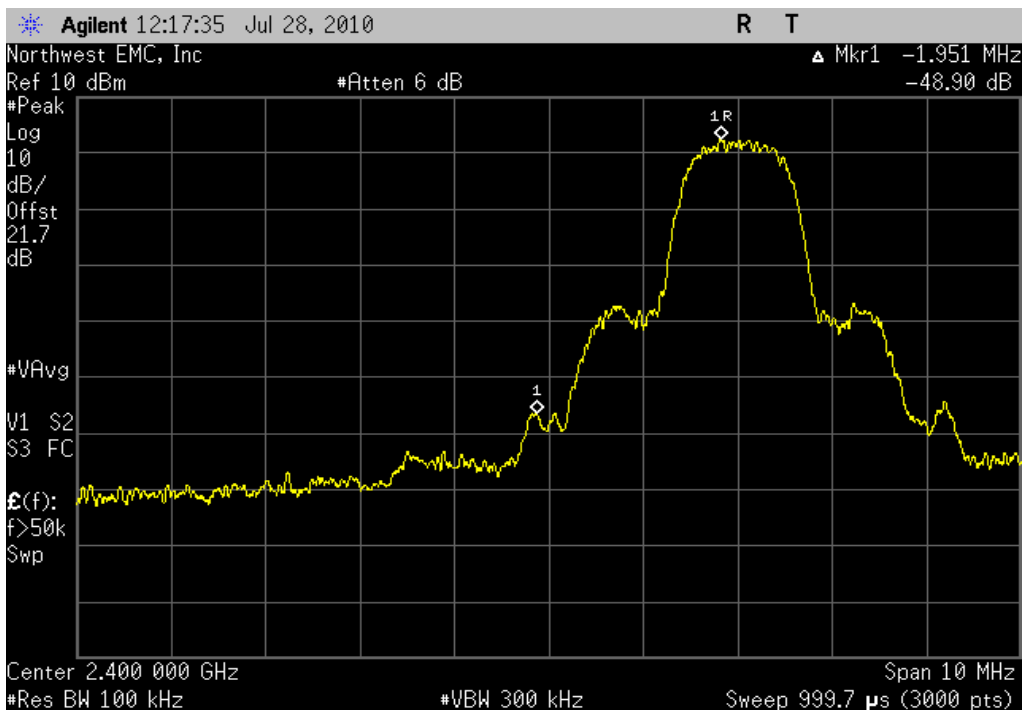
BAND EDGE COMPLIANCE

pi/4-DQPSK, 2DH5, Low Channel

Result: Pass

Value: -48.9 dBc

Limit: ≤ -20 dBc

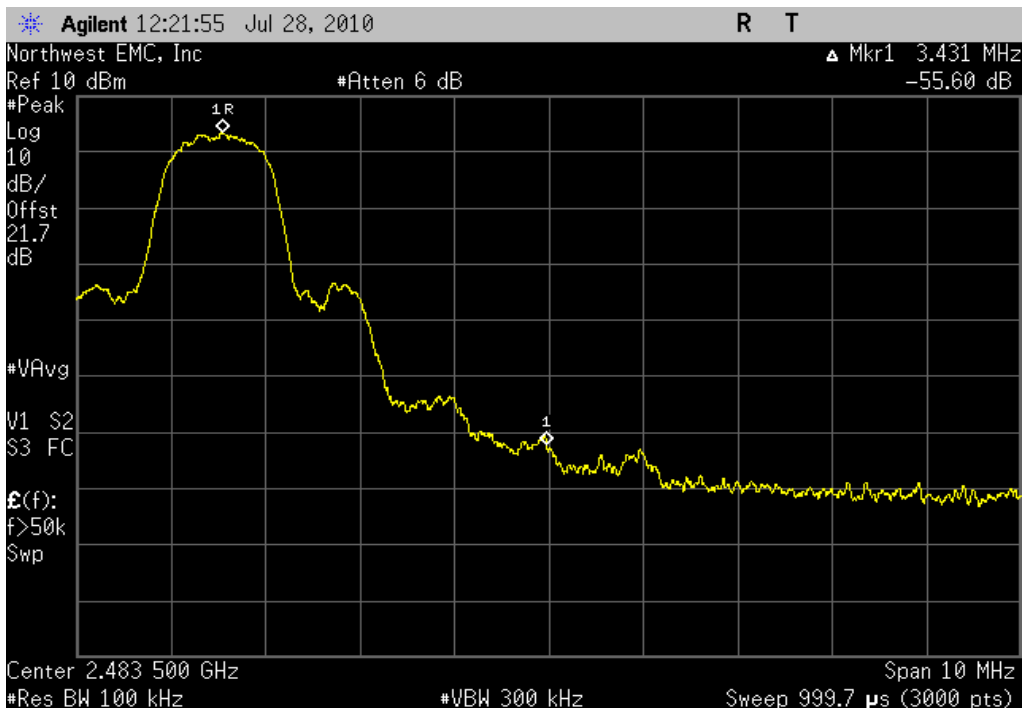


pi/4-DQPSK, 2DH5, High Channel

Result: Pass

Value: -55.6 dBc

Limit: ≤ -20 dBc



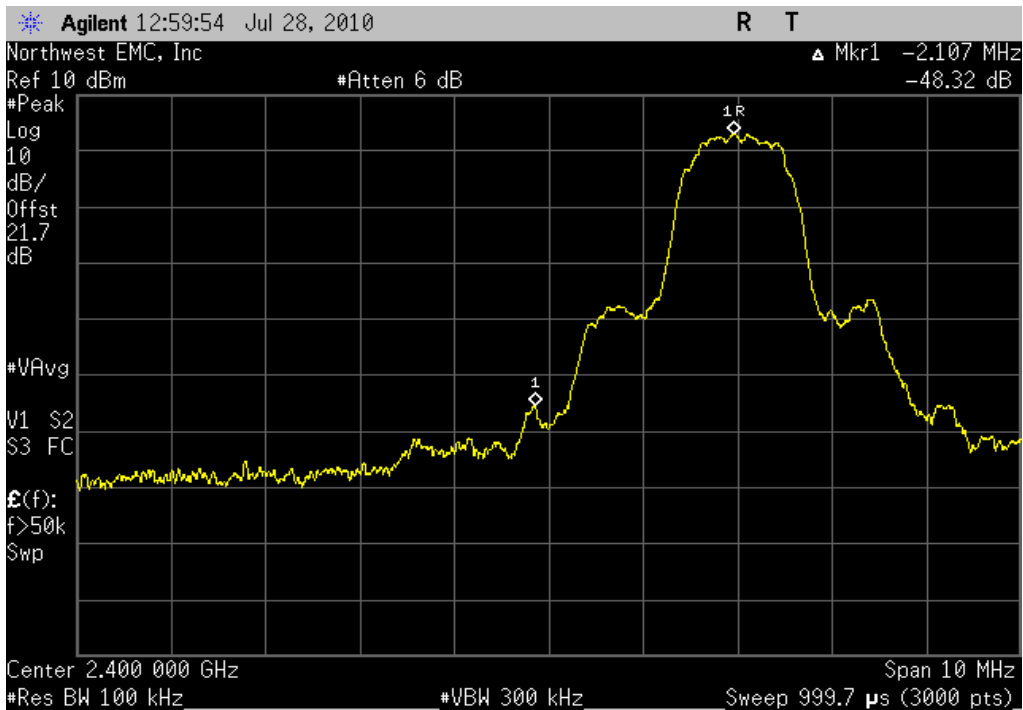
BAND EDGE COMPLIANCE

8-DPSK, 3DH5, Low Channel

Result: Pass

Value: -48.3 dBc

Limit: ≤ -20 dBc

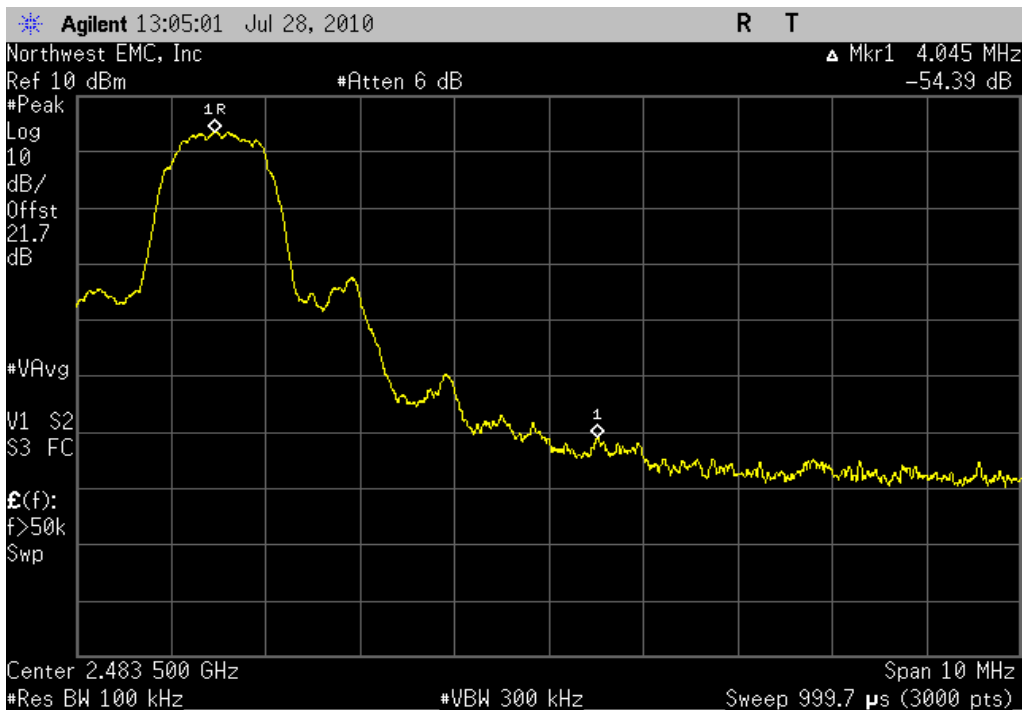


8-DPSK, 3DH5, High Channel

Result: Pass

Value: -54.4 dBc

Limit: ≤ -20 dBc





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.

TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Interval |
|---------------------------------|------------------|----------|-----|------------|----------|
| Spectrum Analyzer | Agilent | E4440A | AFD | 6/1/2009 | 24 |
| Attenuator 20 dB, SMA M/F 26GHz | S.M. Electronics | SA26B-20 | AUY | 7/21/2009 | 13 |
| 26 GHz DC Block, SMA | Pasternack | PE8210 | AME | 10/19/2009 | 13 |
| EV06 Direct Connect Cable | ESM Cable Corp. | TT | ECA | NCR | 0 |

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The spurious RF conducted emissions were measured with the EUT set to low, medium, and high transmit frequencies. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate in a no hop mode. For each transmit frequency, the spectrum was scanned throughout the specified frequency.

EMC

SPURIOUS CONDUCTED EMISSIONS

| | |
|---|-----------------------------|
| EUT: RC12 | Work Order: INMC0575 |
| Serial Number: R11 | Date: 08/05/10 |
| Customer: Intermec Technologies Corporation | Temperature: 23°C |
| Attendees: none | Humidity: 36% |
| Project: None | Barometric Pres.: 1015.5 mb |
| Tested by: Rod Peloquin | Power: 5VDC |
| | Job Site: EV06 |

| | |
|----------------------------|------------------|
| TEST SPECIFICATIONS | Test Method |
| FCC 15.247:2010 | ANSI C63.10:2009 |

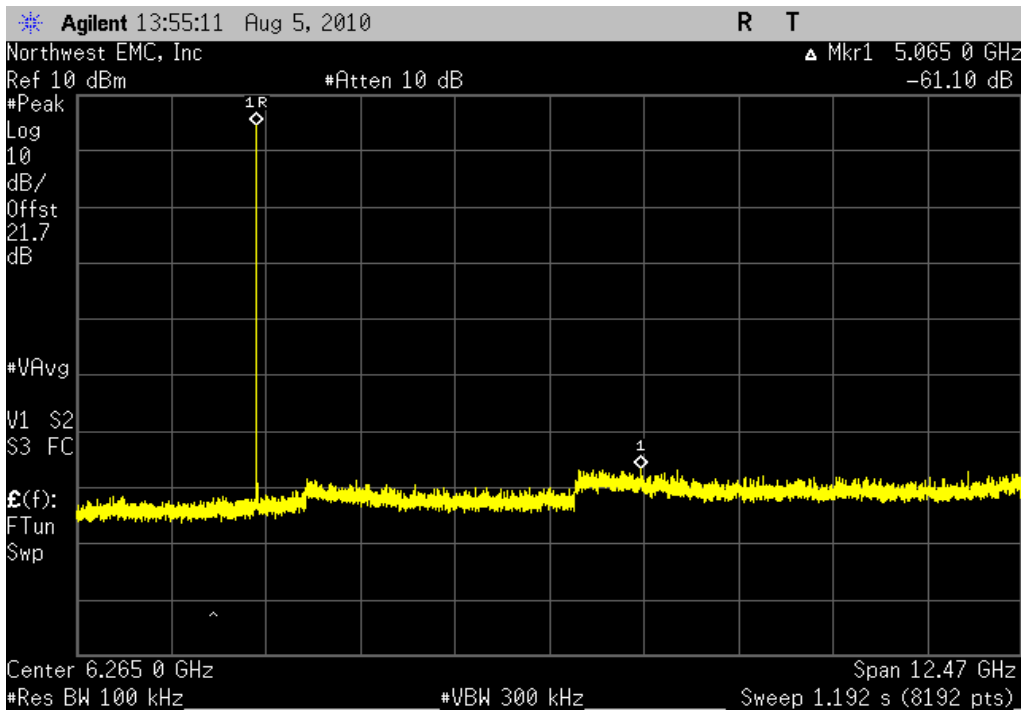
| |
|--|
| COMMENTS |
| Transmitting in Bluetooth mode at default power. |

| |
|--------------------------------------|
| DEVIATIONS FROM TEST STANDARD |
| No Deviations |

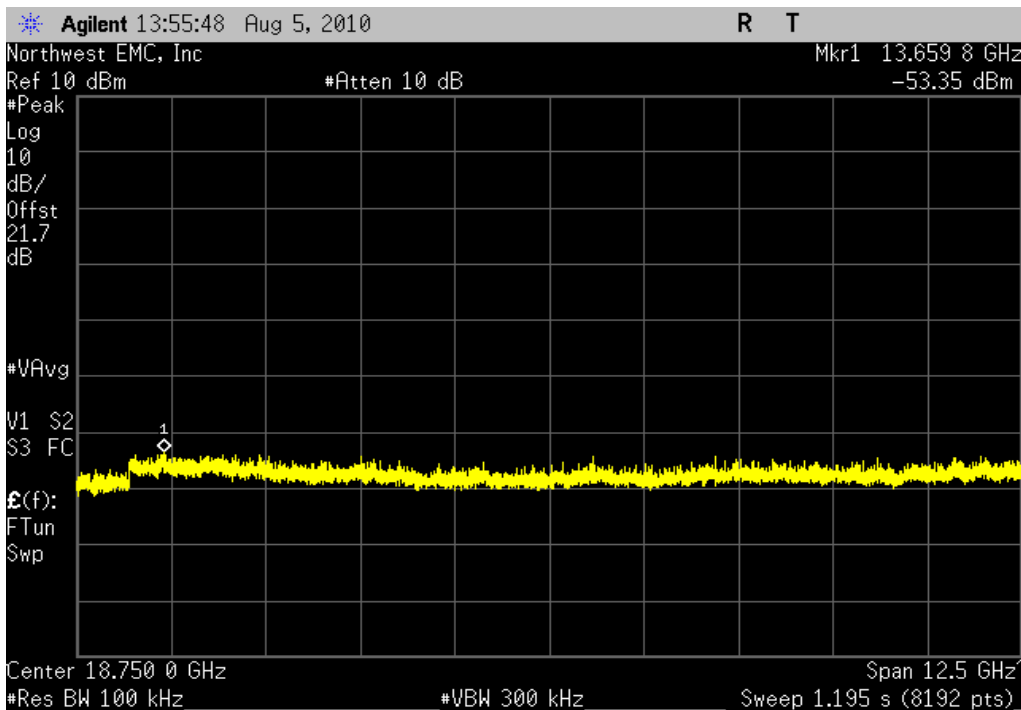
| | | |
|------------------------|---|----------------------------------|
| Configuration # | 2 | <i>Rod Peloquin</i> Signature |
|------------------------|---|----------------------------------|

| | | Value | Limit | Results |
|------------------|-----------------|-----------|-----------|---------|
| GFSK, DH5 | Low Channel | | | |
| | 30MHz - 12.5GHz | -61.1 dBc | < -20 dBc | Pass |
| | 12.4GHz-25GHz | -53.4 dBc | < -20 dBc | Pass |
| | Mid Channel | | | |
| | 30MHz - 12.5GHz | -60.7 dBc | < -20 dBc | Pass |
| | 12.4GHz-25GHz | -53.4 dBc | < -20 dBc | Pass |
| | High Channel | | | |
| | 30MHz - 12.5GHz | -60.5 dBc | < -20 dBc | Pass |
| | 12.4GHz-25GHz | -53.4 dBc | < -20 dBc | Pass |
| pi/4-DQPSK, 2DH5 | Low Channel | | | |
| | 30MHz - 12.5GHz | -54.3 dBc | < -20 dBc | Pass |
| | 12.4GHz-25GHz | -53.3 dBc | < -20 dBc | Pass |
| | Mid Channel | | | |
| | 30MHz - 12.5GHz | -58.4 dBc | < -20 dBc | Pass |
| | 12.4GHz-25GHz | -53.1 dBc | < -20 dBc | Pass |
| | High Channel | | | |
| | 30MHz - 12.5GHz | -53.8 dBc | < -20 dBc | Pass |
| | 12.4GHz-25GHz | -52.6 dBc | < -20 dBc | Pass |
| 8DPSK, 3DH5 | Low Channel | | | |
| | 30MHz - 12.5GHz | -50.8 dBc | < -20 dBc | Pass |
| | 12.4GHz-25GHz | -52.6 dBc | < -20 dBc | Pass |
| | Mid Channel | | | |
| | 30MHz - 12.5GHz | -57.7 dBc | < -20 dBc | Pass |
| | 12.4GHz-25GHz | -53.1 dBc | < -20 dBc | Pass |
| | High Channel | | | |
| | 30MHz - 12.5GHz | -53.2 dBc | < -20 dBc | Pass |
| | 12.4GHz-25GHz | -53.5 dBc | < -20 dBc | Pass |

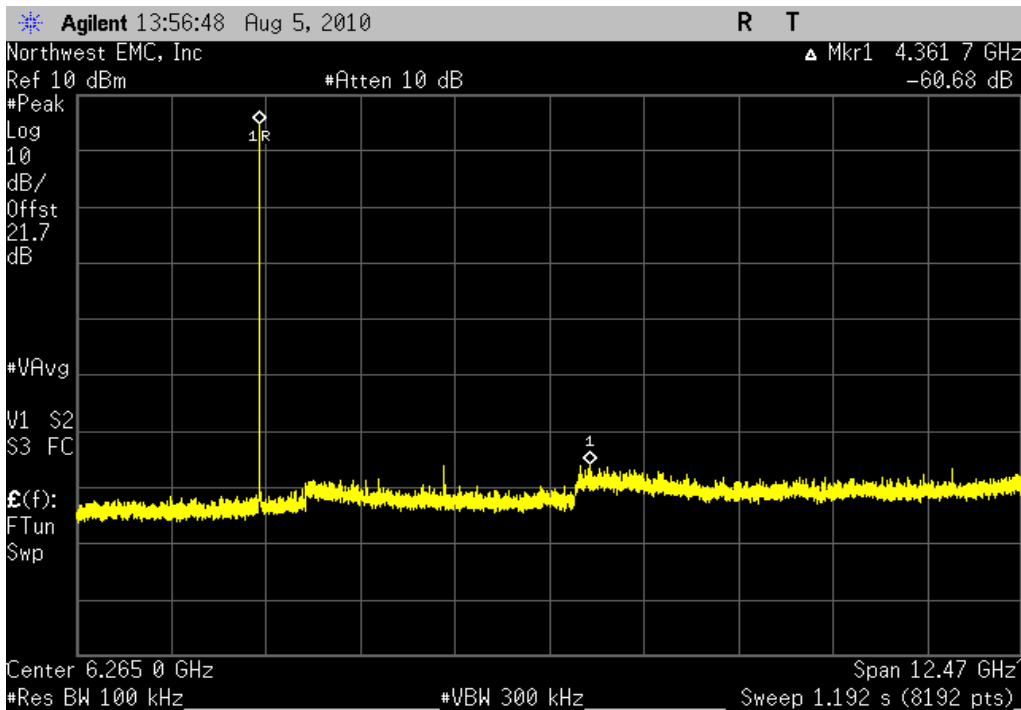
GFSK, DH5, Low Channel, 30MHz - 12.5GHz
Result: Pass **Value:** -61.1 dBc **Limit:** < -20 dBc



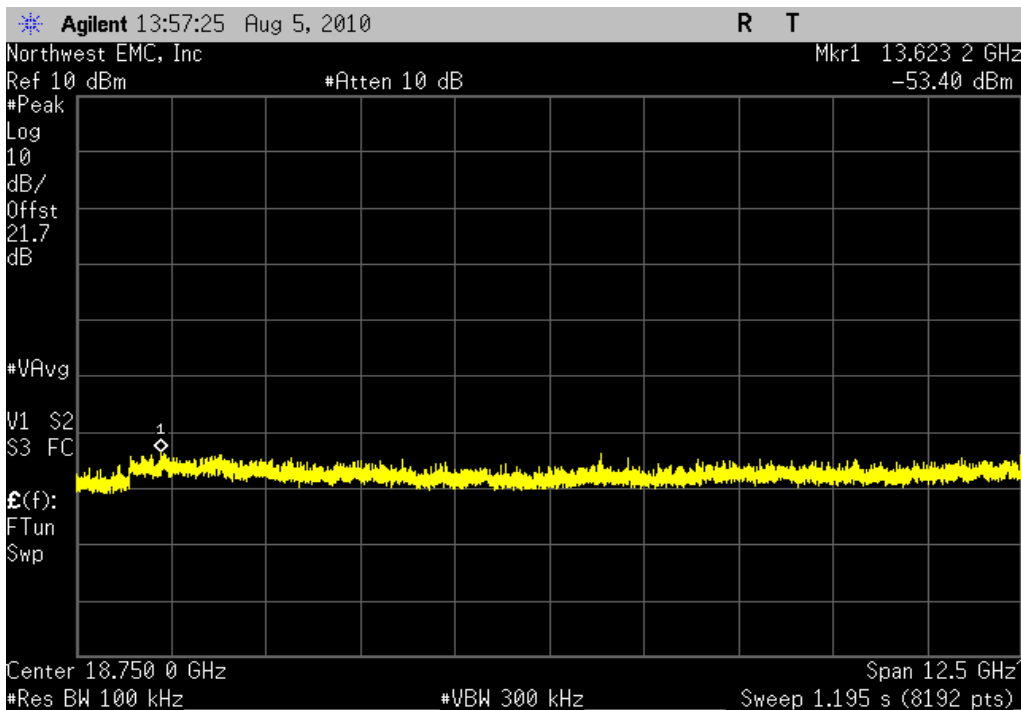
GFSK, DH5, Low Channel, 12.4GHz-25GHz
Result: Pass **Value:** -53.4 dBc **Limit:** < -20 dBc



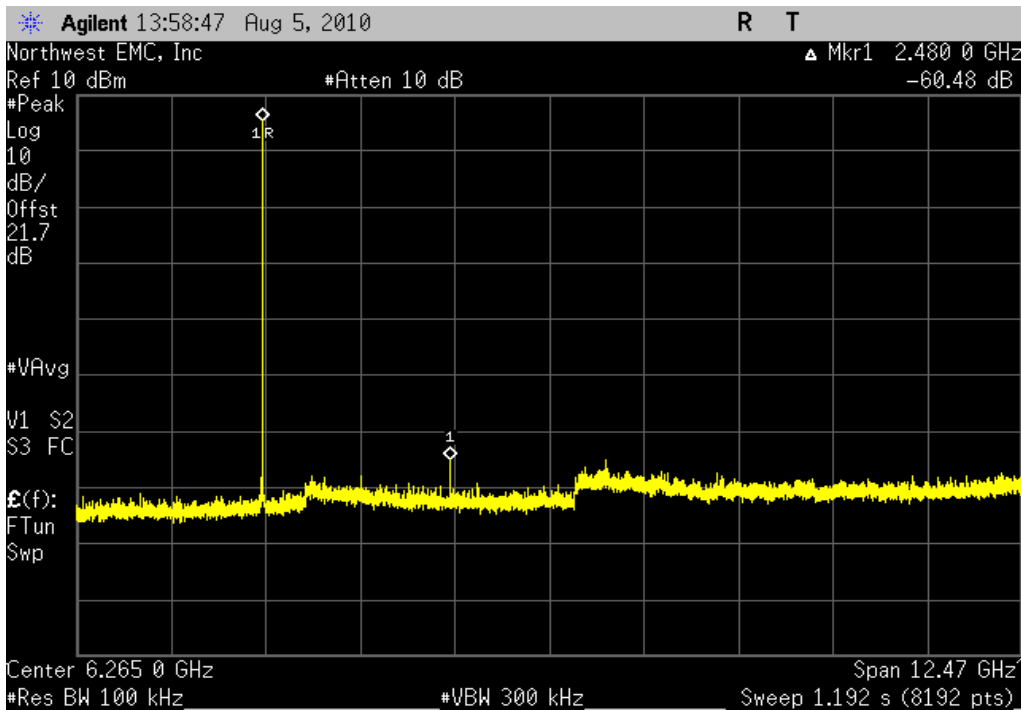
GFSK, DH5, Mid Channel, 30MHz - 12.5GHz
Result: Pass **Value:** -60.7 dBc **Limit:** < -20 dBc



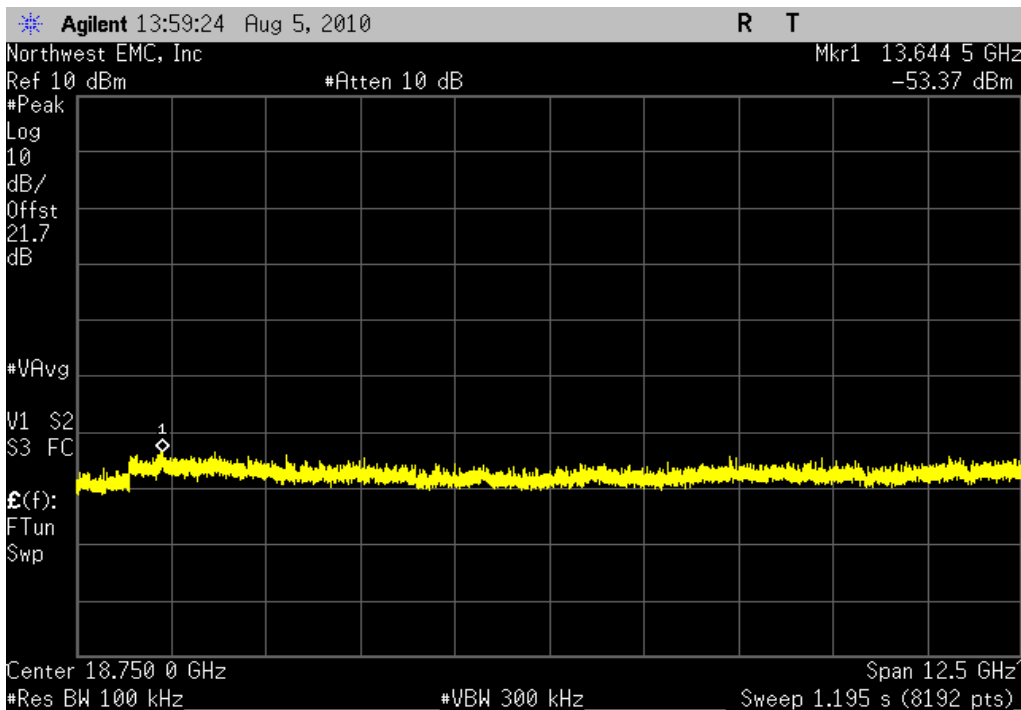
GFSK, DH5, Mid Channel, 12.4GHz-25GHz
Result: Pass **Value:** -53.4 dBc **Limit:** < -20 dBc



GFSK, DH5, High Channel, 30MHz - 12.5GHz
Result: Pass **Value:** -60.5 dBc **Limit:** < -20 dBc

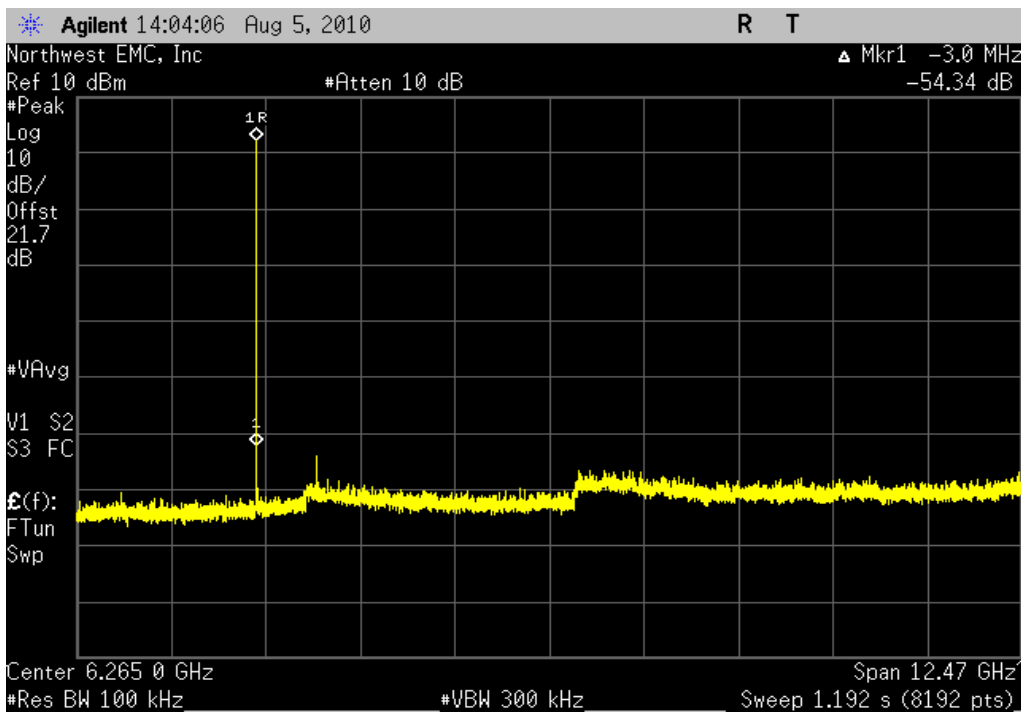


GFSK, DH5, High Channel, 12.4GHz-25GHz
Result: Pass **Value:** -53.4 dBc **Limit:** < -20 dBc



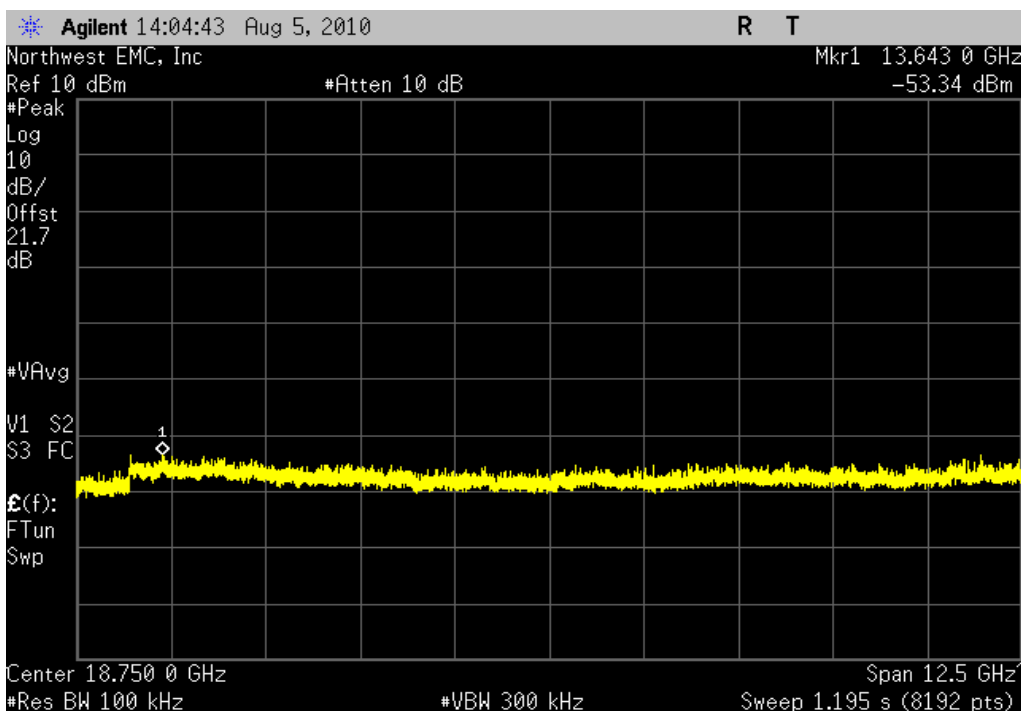
pi/4-DQPSK, 2DH5, Low Channel, 30MHz - 12.5GHz

Result: Pass **Value:** -54.3 dBc **Limit:** < -20 dBc



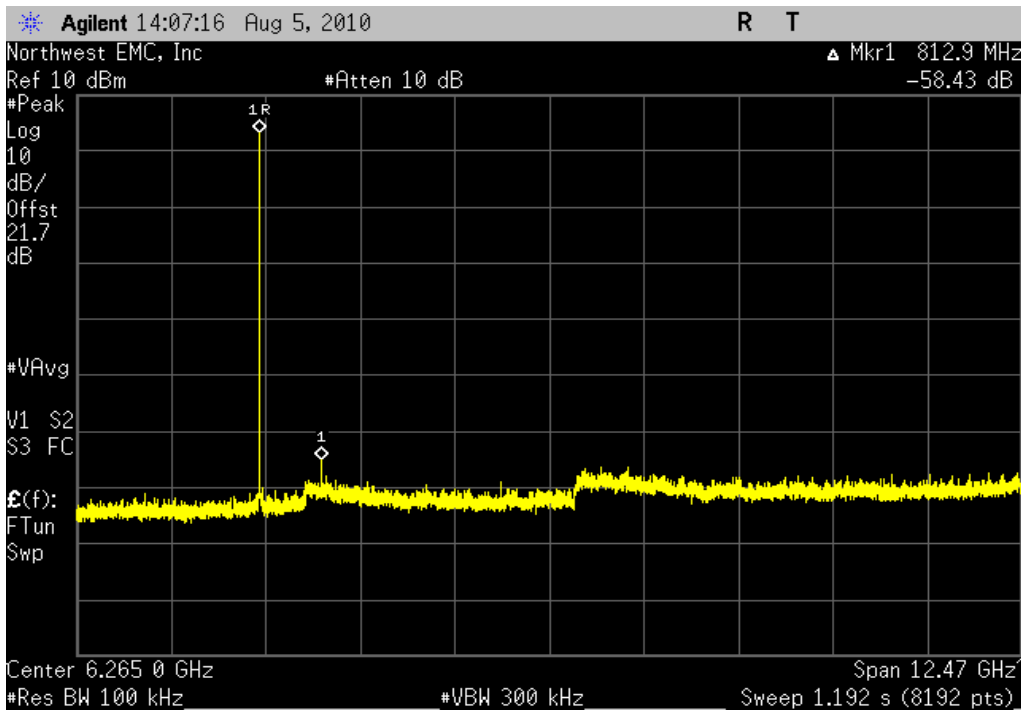
pi/4-DQPSK, 2DH5, Low Channel, 12.4GHz-25GHz

Result: Pass **Value:** -53.3 dBc **Limit:** < -20 dBc



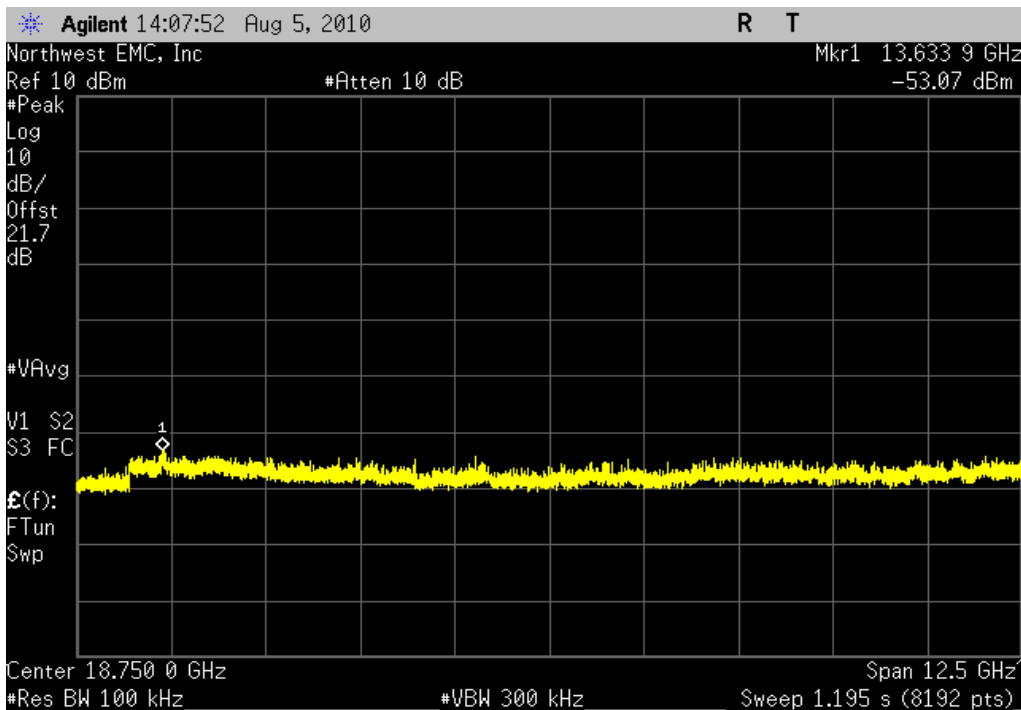
pi/4-DQPSK, 2DH5, Mid Channel, 30MHz - 12.5GHz

Result: Pass **Value:** -58.4 dBc **Limit:** < -20 dBc



pi/4-DQPSK, 2DH5, Mid Channel, 12.4GHz-25GHz

Result: Pass **Value:** -53.1 dBc **Limit:** < -20 dBc

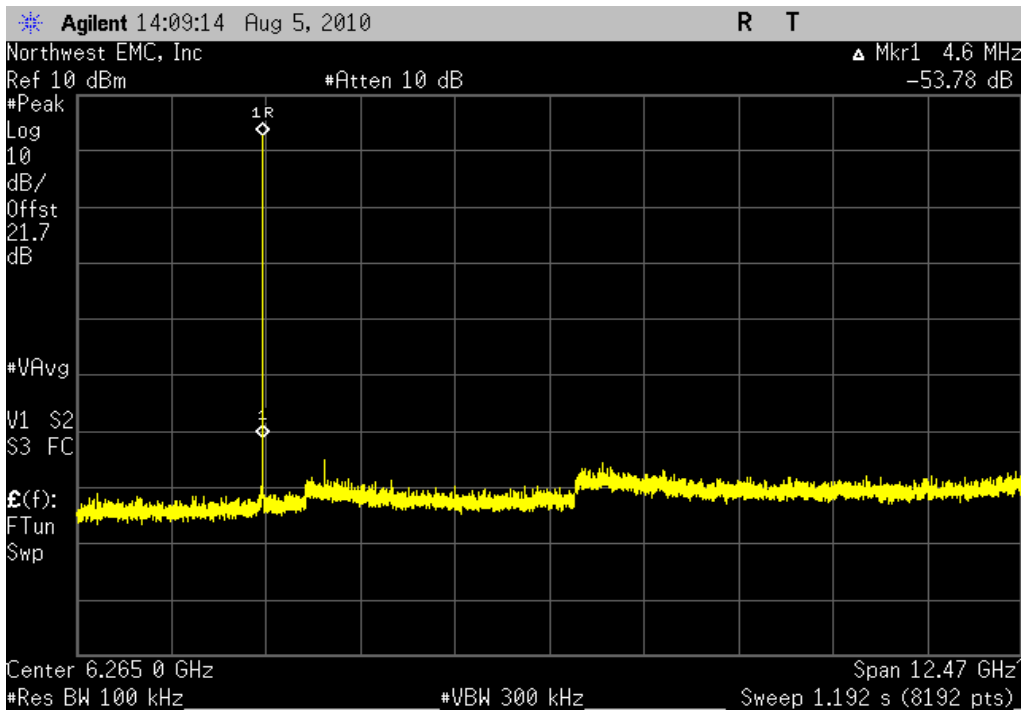


pi/4-DQPSK, 2DH5, High Channel, 30MHz - 12.5GHz

Result: Pass

Value: -53.8 dBc

Limit: < -20 dBc

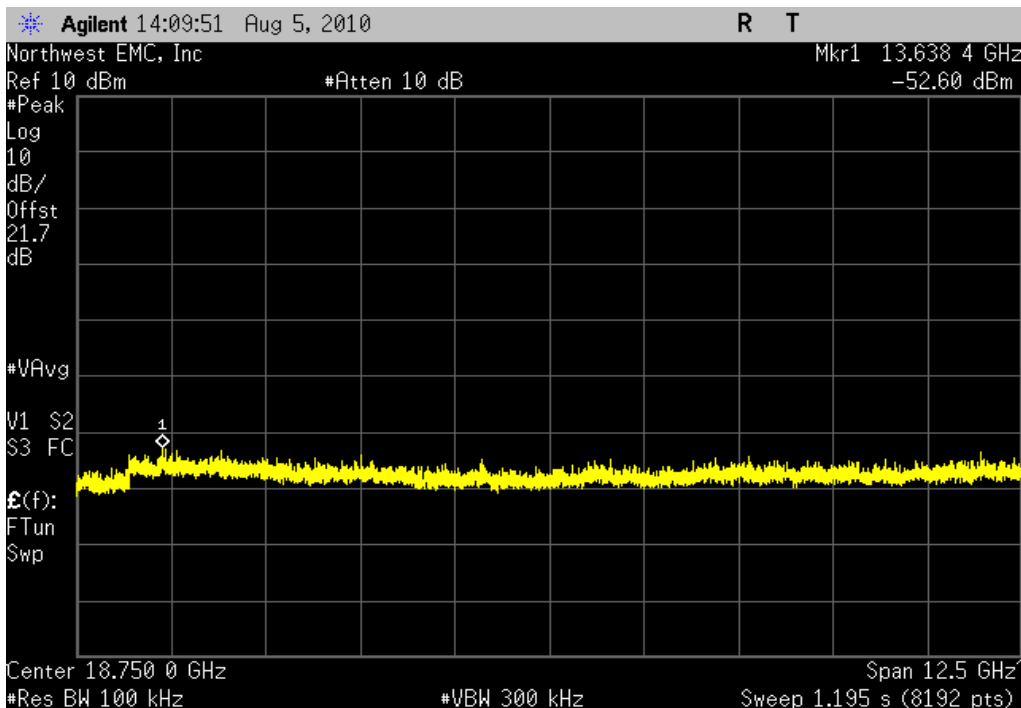


pi/4-DQPSK, 2DH5, High Channel, 12.4GHz-25GHz

Result: Pass

Value: -52.6 dBc

Limit: < -20 dBc

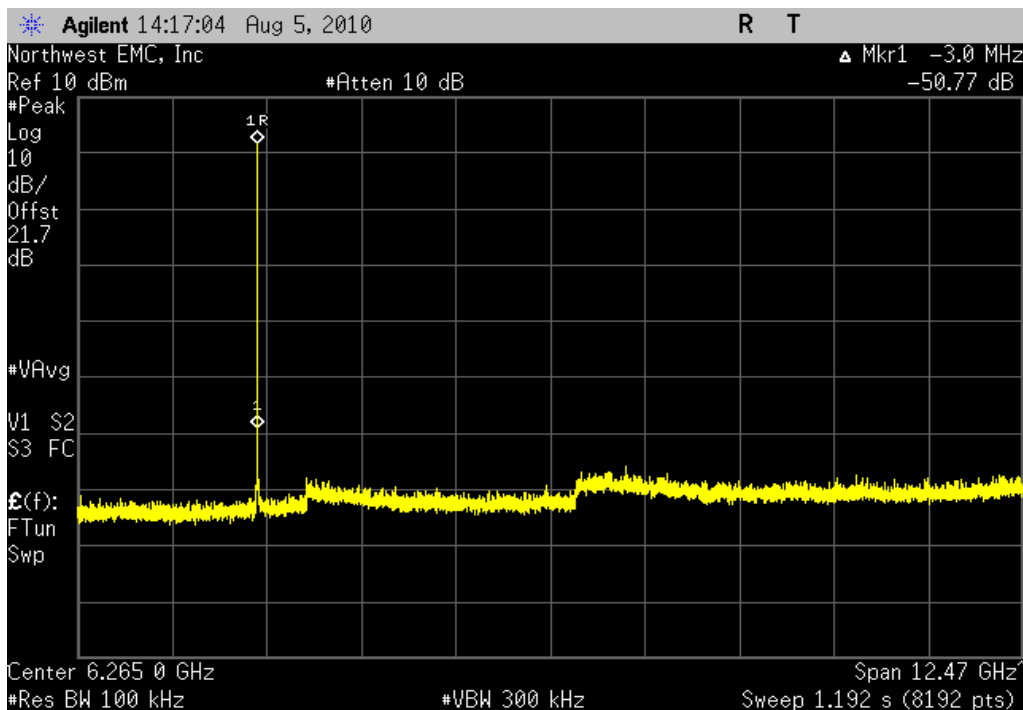


8DPSK, 3DH5, Low Channel, 30MHz - 12.5GHz

Result: Pass

Value: -50.8 dBc

Limit: < -20 dBc

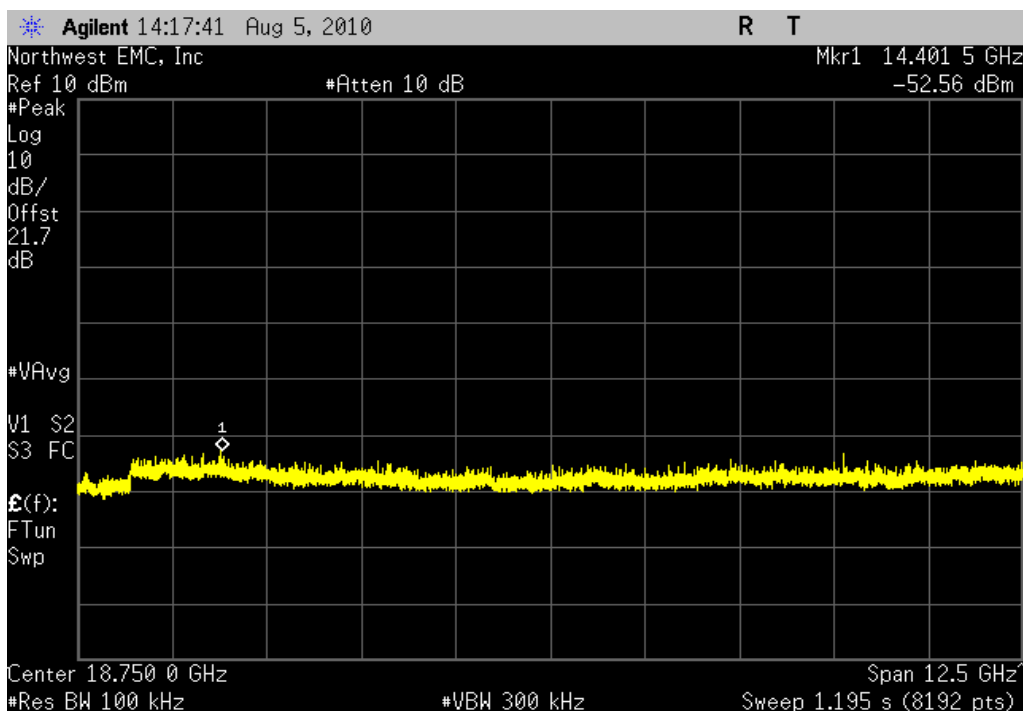


8DPSK, 3DH5, Low Channel, 12.4GHz-25GHz

Result: Pass

Value: -52.6 dBc

Limit: < -20 dBc



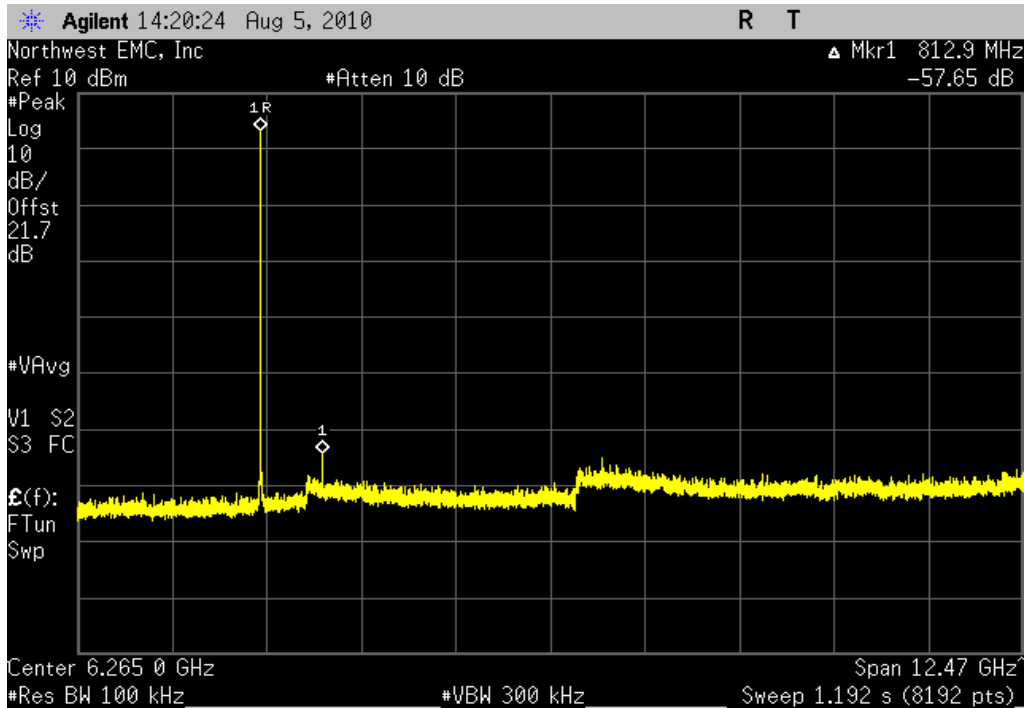
SPURIOUS CONDUCTED EMISSIONS

8DPSK, 3DH5, Mid Channel, 30MHz - 12.5GHz

Result: Pass

Value: -57.7 dBc

Limit: < -20 dBc

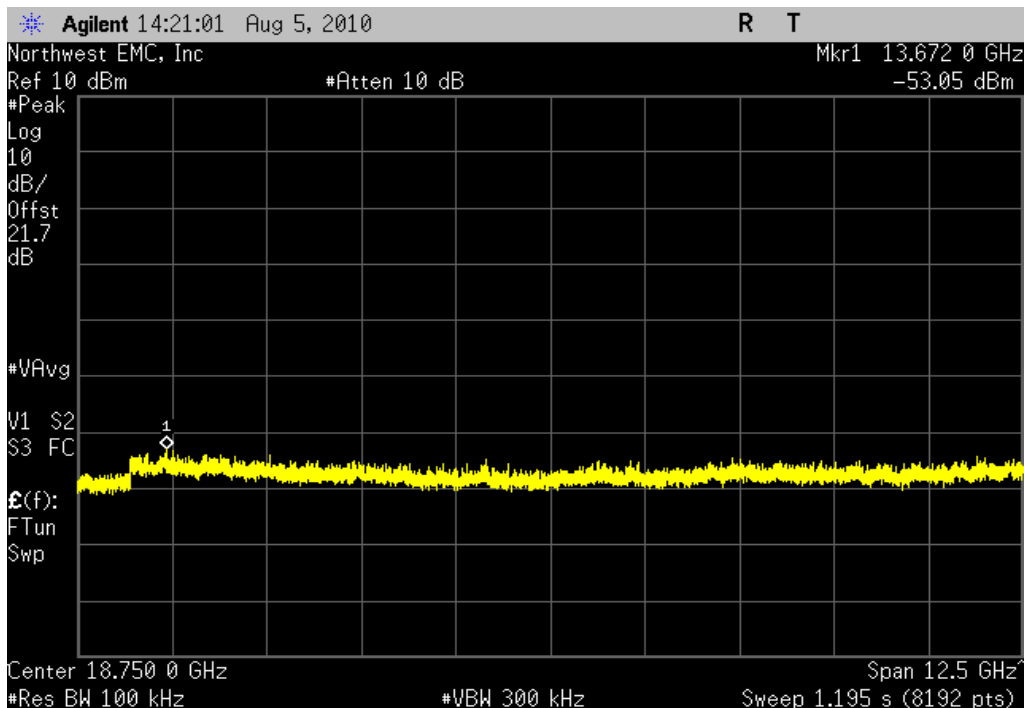


8DPSK, 3DH5, Mid channel, 12.4GHz-25GHz

Result: Pass

Value: -53.1 dBc

Limit: < -20 dBc



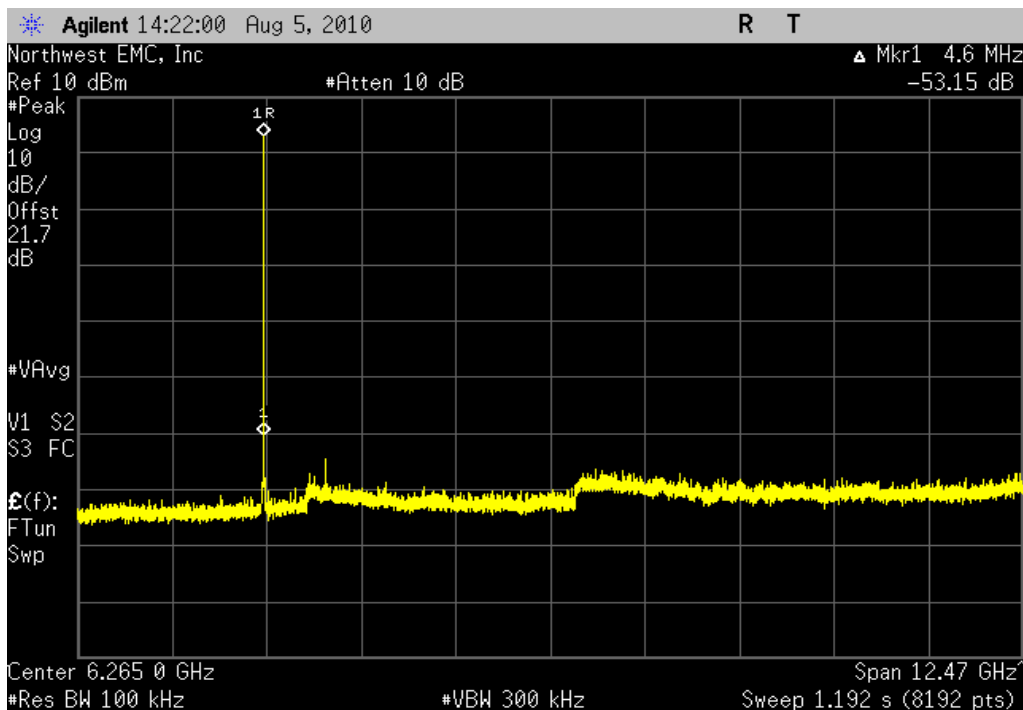
SPURIOUS CONDUCTED EMISSIONS

8DPSK, 3DH5, High Channel, 30MHz - 12.5GHz

Result: Pass

Value: -53.2 dBc

Limit: < -20 dBc

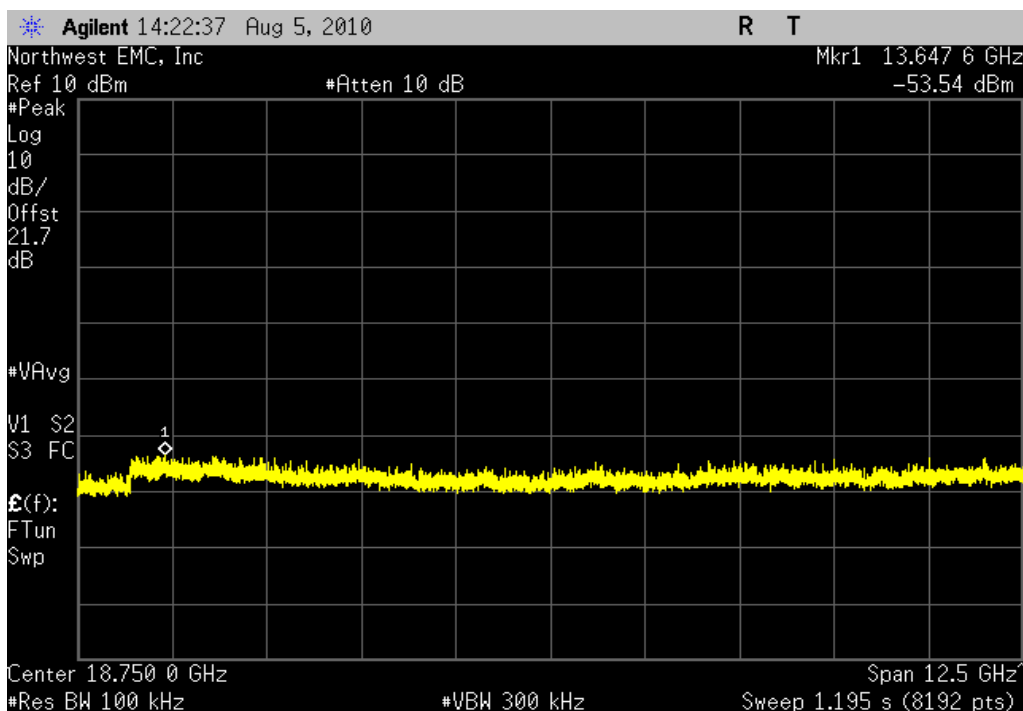


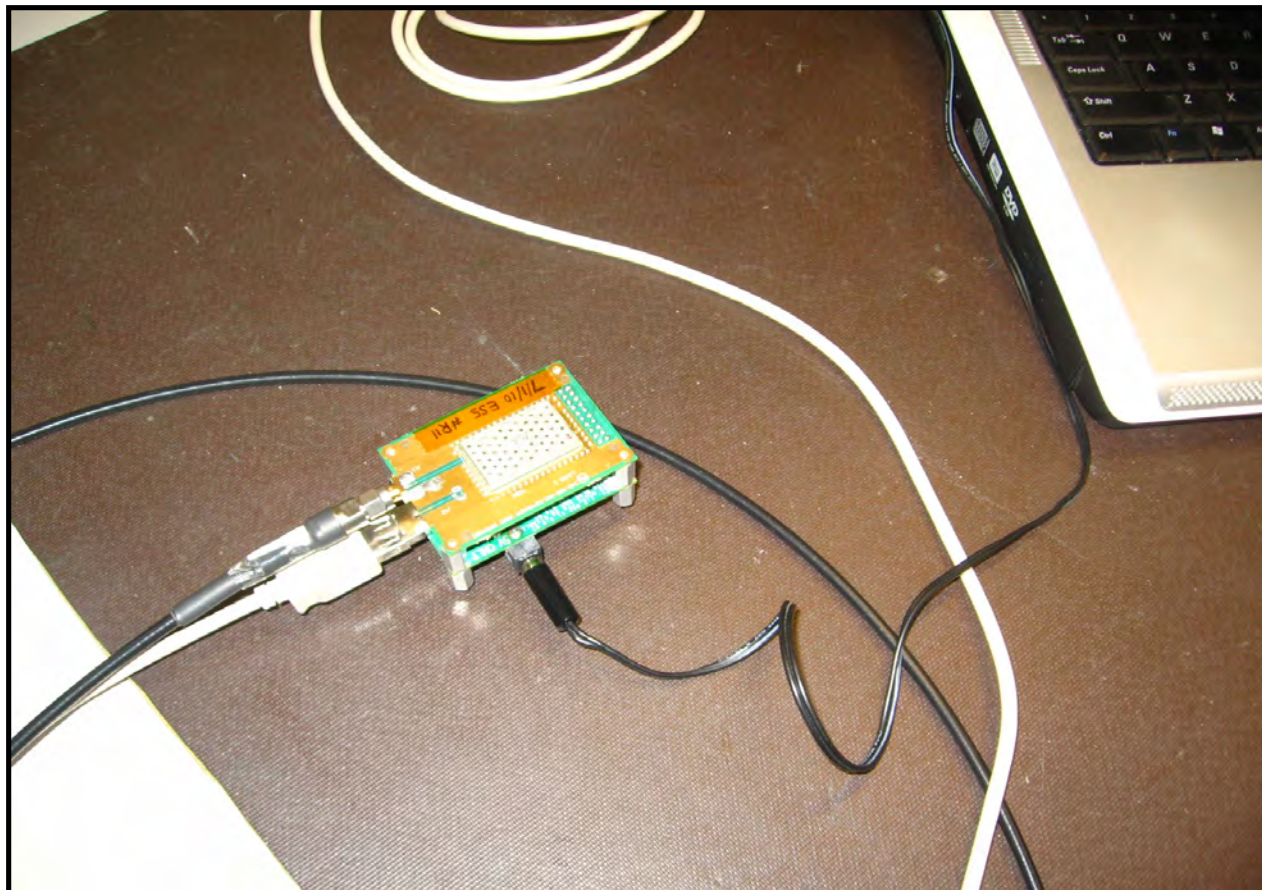
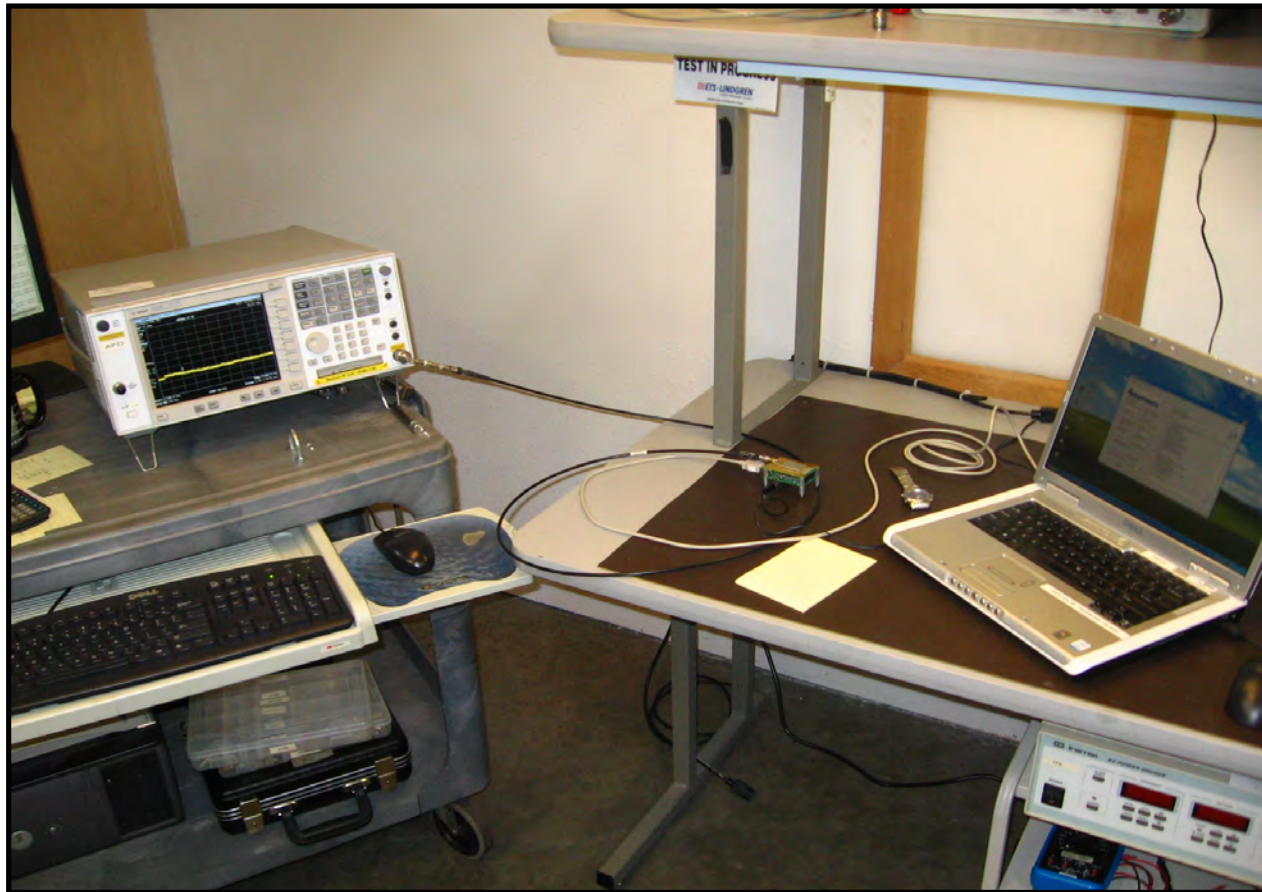
8DPSK, 3DH5, High Channel, 12.4GHz-25GHz

Result: Pass

Value: -53.5 dBc

Limit: < -20 dBc





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.

| TEST EQUIPMENT | | | | | |
|---------------------------------|------------------|---------------|-----|------------|----------|
| Description | Manufacturer | Model | ID | Last Cal. | Interval |
| Spectrum Analyzer | Agilent | E4440A | AFD | 6/1/2009 | 24 |
| 26 GHz DC Block, SMA | Pasternack | PE8210 | AME | 10/19/2009 | 13 |
| Attenuator 20 dB, SMA M/F 26GHz | S.M. Electronics | SA26B-20 | AUY | 7/21/2009 | 13 |
| Attenuator, 6 dB, 'SMA' | N/A | 93459 3330A-6 | AUF | 4/1/2010 | 13 |
| EV06 Direct Connect Cable | ESM Cable Corp. | TT | ECA | NCR | 0 |
| Power Meter | Gigatronics | 8651A | SPM | 1/7/2010 | 13 |
| Power Sensor | Gigatronics | 80701A | SPL | 1/7/2010 | 13 |
| Signal Generator | Agilent | E8257D | TGX | 12/10/2008 | 24 |

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The power spectral density measurements were measured with the EUT set to low, mid, and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate for each modulation type available. ANSI C63.10:2009, Section 6.11.2.3 was followed.

The spectrum analyzer was set as follows:

The emission peak was located and zoomed in on within the passband.

- a) RBW = 3 kHz
- b) VBW = 10 kHz
- c) Span = 300 kHz
- d) Sweep time = 100s
- e) Trace set to MAX
- f) The 1 hz Marker Noise function on the analyzer was used. The data was corrected to 3 kHz by adding 34.8 dB to the reading.

EMC

POWER SPECTRAL DENSITY

| | |
|---|-----------------------------|
| EUT: RC12 | Work Order: INMC0575 |
| Serial Number: R11 | Date: 08/02/10 |
| Customer: Intermec Technologies Corporation | Temperature: 23°C |
| Attendees: none | Humidity: 38% |
| Project: None | Barometric Pres.: 1015.5 mb |
| Tested by: Rod Peloquin | Power: 5VDC |
| | Job Site: EV06 |

| | | |
|---------------------|--|------------------|
| TEST SPECIFICATIONS | | Test Method |
| FCC 15.247:2010 | | ANSI C63.10:2009 |

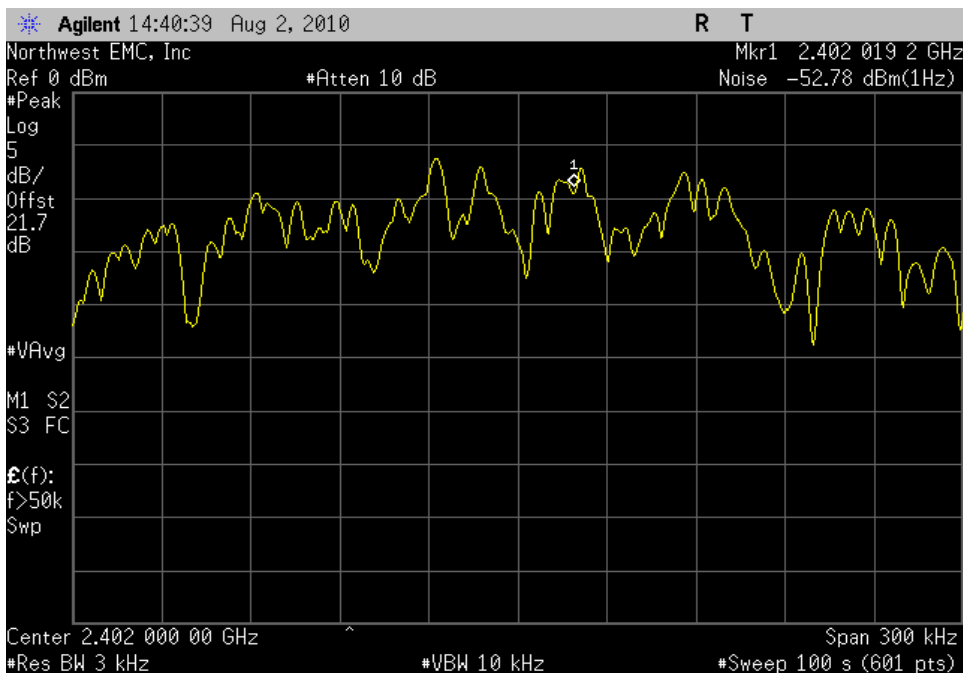
| |
|----------|
| COMMENTS |
| None |

| |
|-------------------------------|
| DEVIATIONS FROM TEST STANDARD |
| No Deviations |

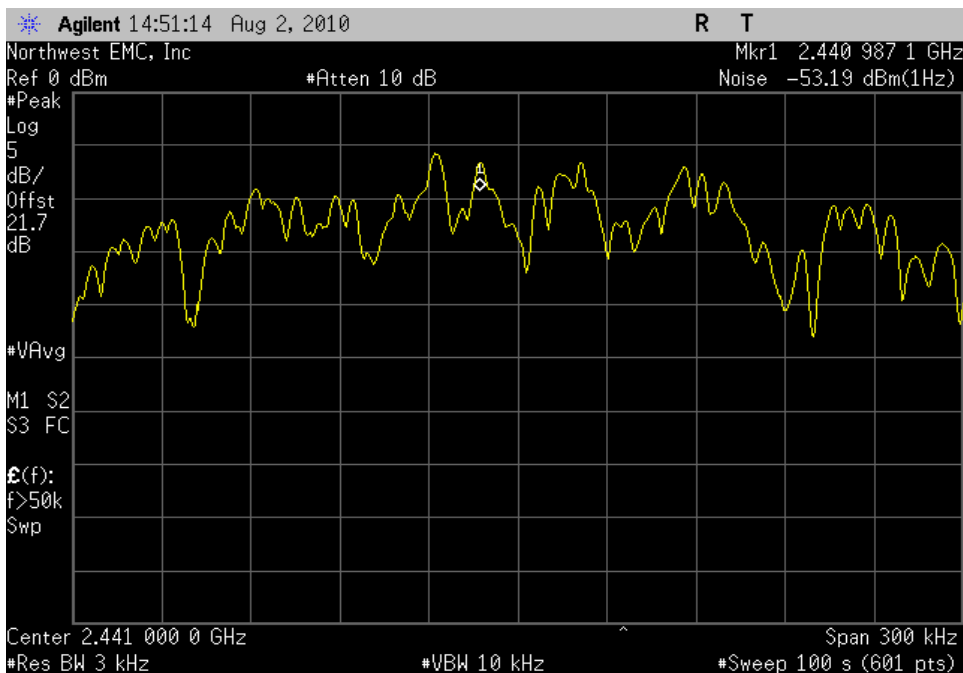
| | | |
|-----------------|---|----------------------------------|
| Configuration # | 2 | <i>Rod Peloquin</i> Signature |
|-----------------|---|----------------------------------|

| | | Value | Limit | Results |
|-------------------|------------------------|-------------------|---------------|---------|
| DH5, GFSK | | | | |
| | Low Channel, 2402 MHz | -18.0 dBm / 3 kHz | 8 dBm / 3 kHz | Pass |
| | Mid Channel, 2441 MHz | -18.4 dBm / 3 kHz | 8 dBm / 3 kHz | Pass |
| | High Channel, 2480 MHz | -17.4 dBm / 3 kHz | 8 dBm / 3 kHz | Pass |
| 2-DH5, Pi/4-DQPSK | | | | |
| | Low Channel, 2402 MHz | -22.4 dBm / 3 kHz | 8 dBm / 3 kHz | Pass |
| | Mid Channel, 2441 MHz | -21.9 dBm / 3 kHz | 8 dBm / 3 kHz | Pass |
| | High Channel, 2480 MHz | -21.7 dBm / 3 kHz | 8 dBm / 3 kHz | Pass |
| 3-DH5, 8-DPSK | | | | |
| | Low Channel, 2402 MHz | -22.0 dBm / 3 kHz | 8 dBm / 3 kHz | Pass |
| | Mid Channel, 2441 MHz | -21.5 dBm / 3 kHz | 8 dBm / 3 kHz | Pass |
| | High Channel, 2480 MHz | -21.3 dBm / 3 kHz | 8 dBm / 3 kHz | Pass |

DH5, GFSK, Low Channel, 2402 MHz
Result: Pass **Value:** -18.0 dBm / 3 kHz **Limit:** 8 dBm / 3 kHz



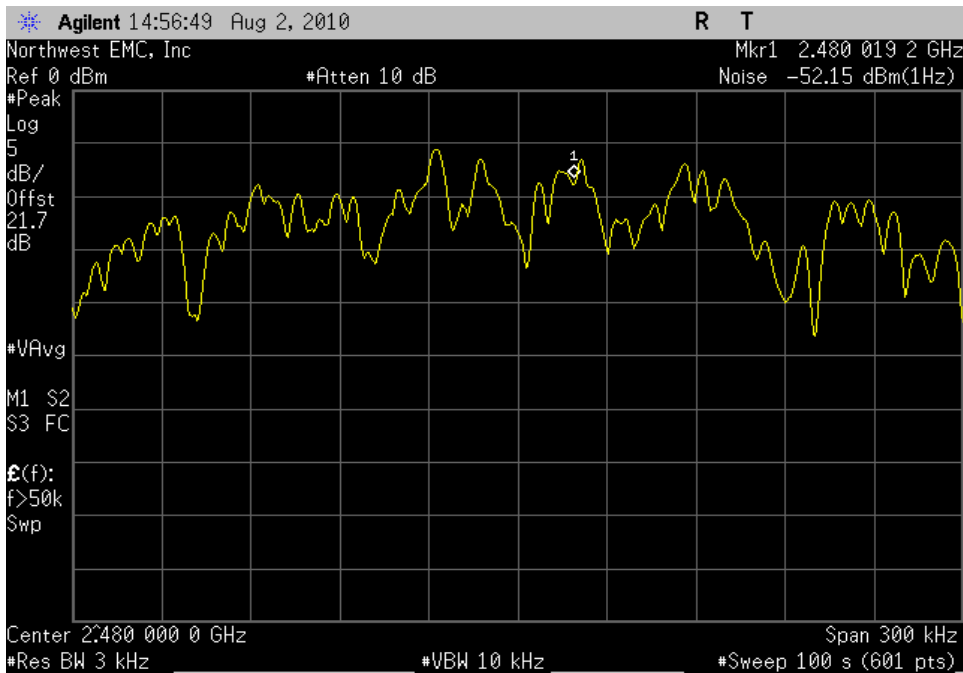
DH5, GFSK, Mid Channel, 2441 MHz
Result: Pass **Value:** -18.4 dBm / 3 kHz **Limit:** 8 dBm / 3 kHz



POWER SPECTRAL DENSITY

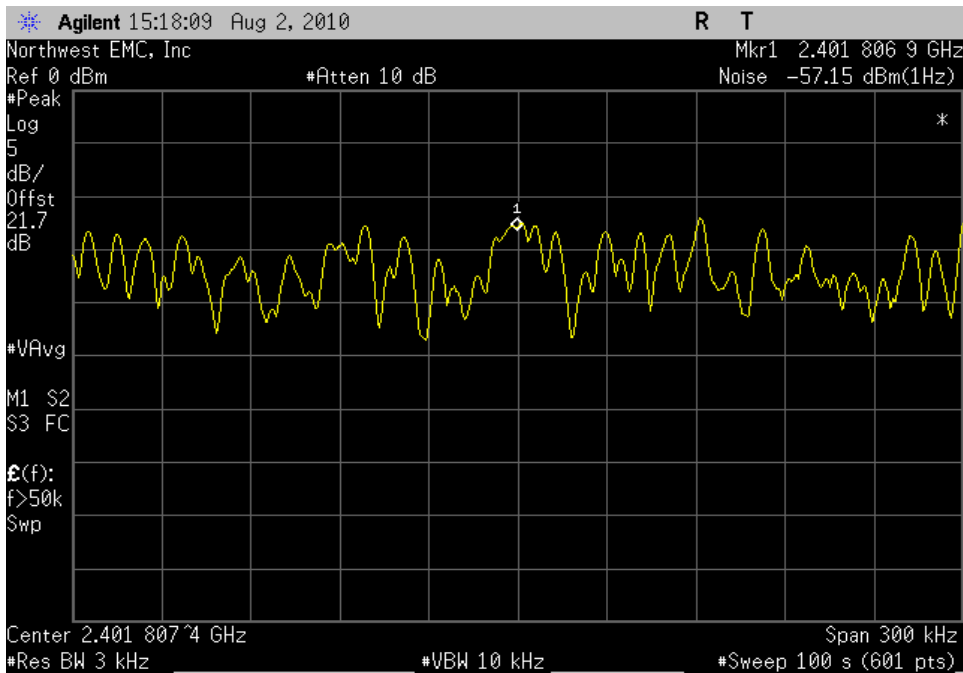
Result: Pass **Value:** -17.4 dBm / 3 kHz **Limit:** 8 dBm / 3 kHz

DH5, GFSK, High Channel, 2480 MHz



Result: Pass **Value:** -22.4 dBm / 3 kHz **Limit:** 8 dBm / 3 kHz

2-DH5, Pi/4-DQPSK, Low Channel, 2402 MHz

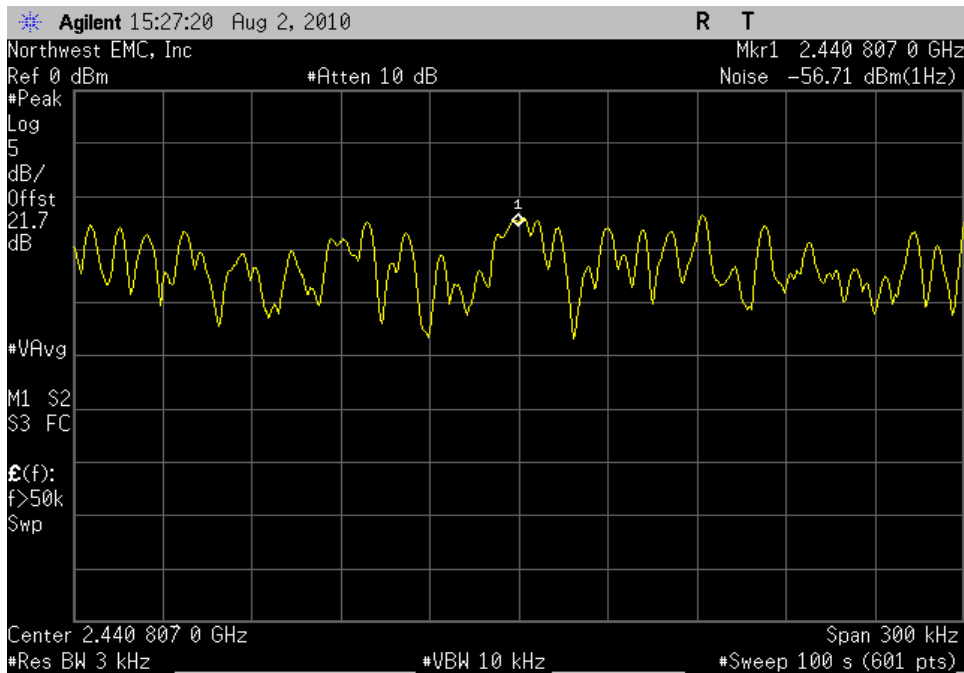


2-DH5, Pi/4-DQPSK, Mid Channel, 2441 MHz

Result: Pass

Value: -21.9 dBm / 3 kHz

Limit: 8 dBm / 3 kHz

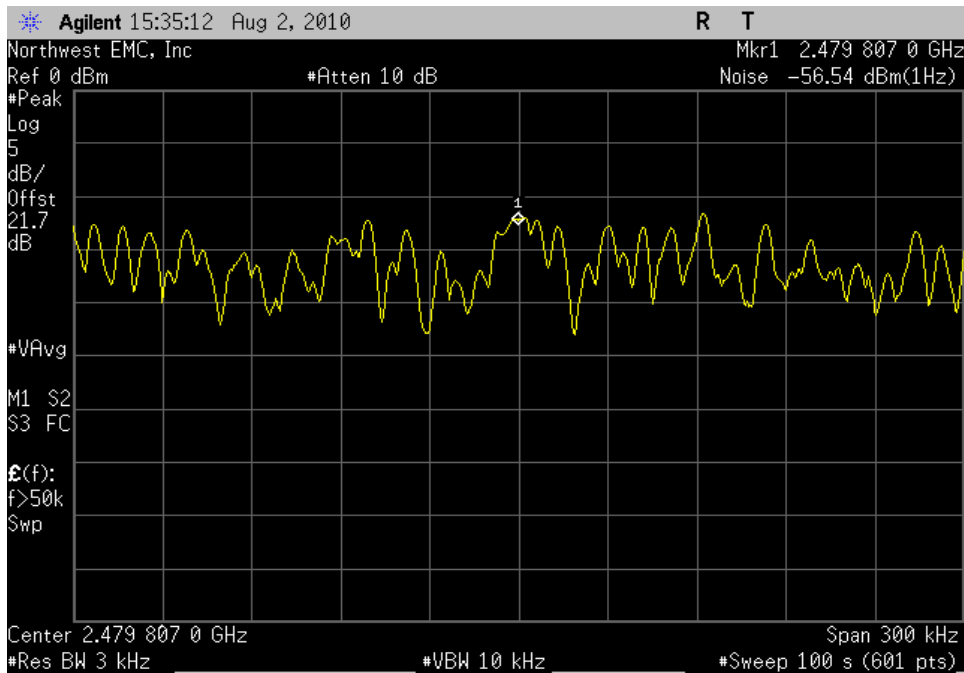


2-DH5, Pi/4-DQPSK, High Channel, 2480 MHz

Result: Pass

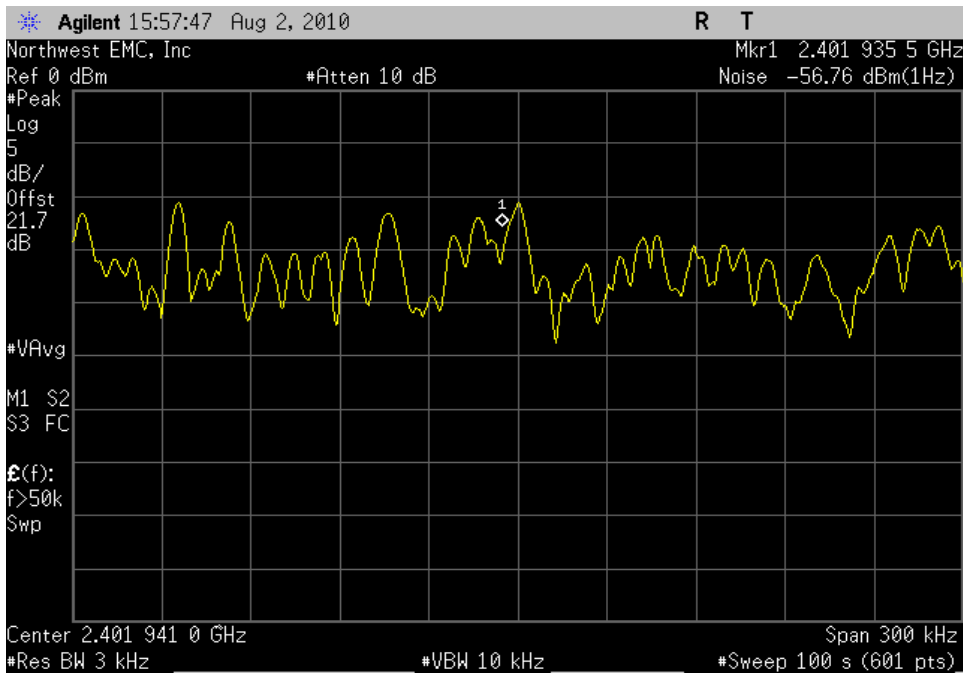
Value: -21.7 dBm / 3 kHz

Limit: 8 dBm / 3 kHz

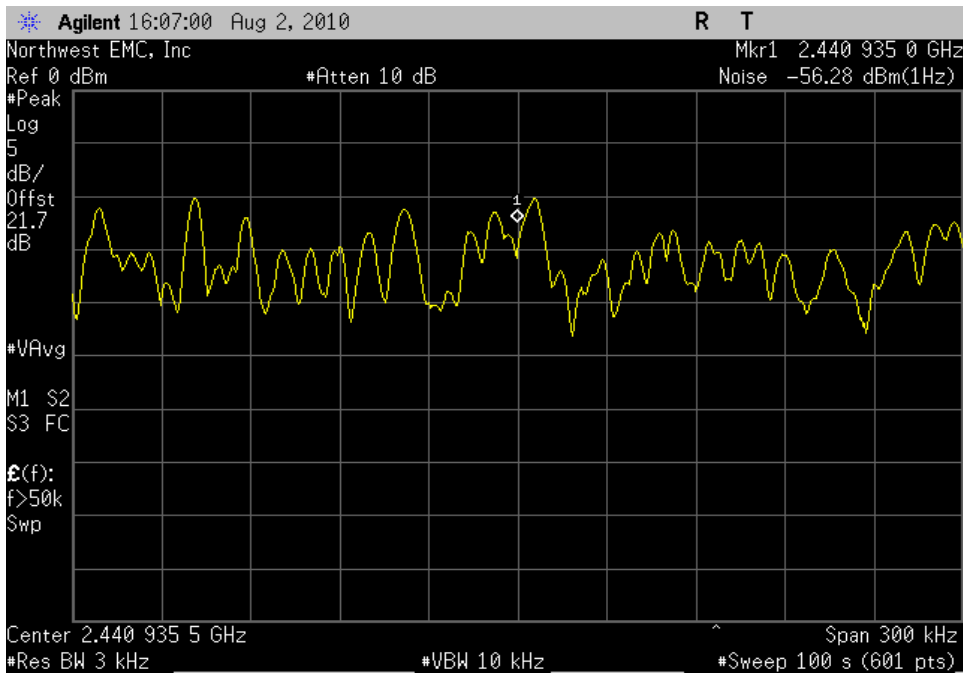


POWER SPECTRAL DENSITY

3-DH5, 8-DPSK, Low Channel, 2402 MHz
Result: Pass **Value:** -22.0 dBm / 3 kHz **Limit:** 8 dBm / 3 kHz



3-DH5, 8-DPSK, Mid Channel, 2441 MHz
Result: Pass **Value:** -21.5 dBm / 3 kHz **Limit:** 8 dBm / 3 kHz

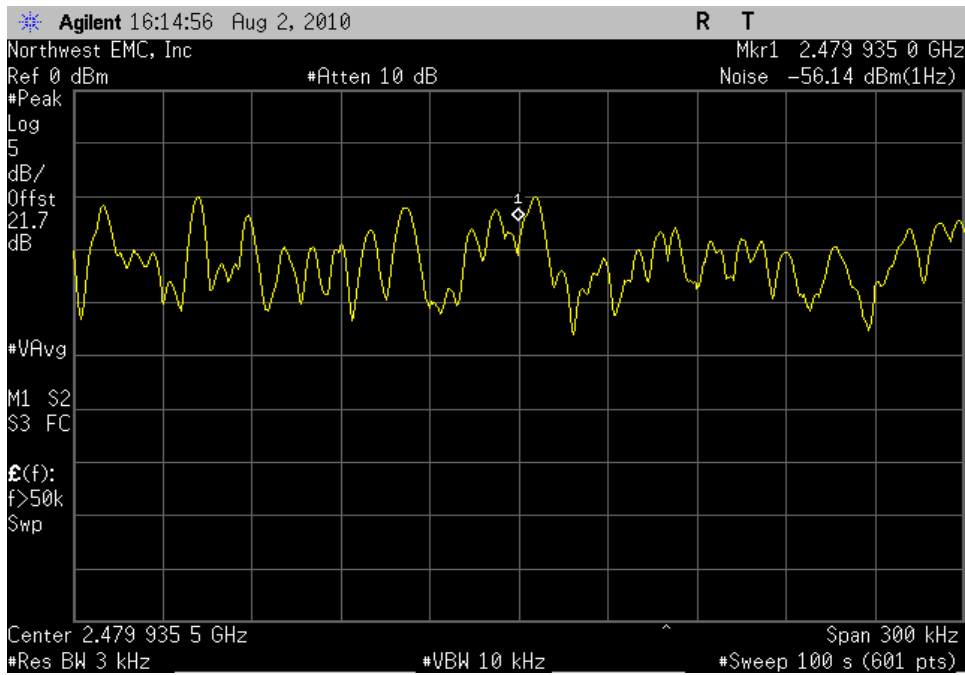


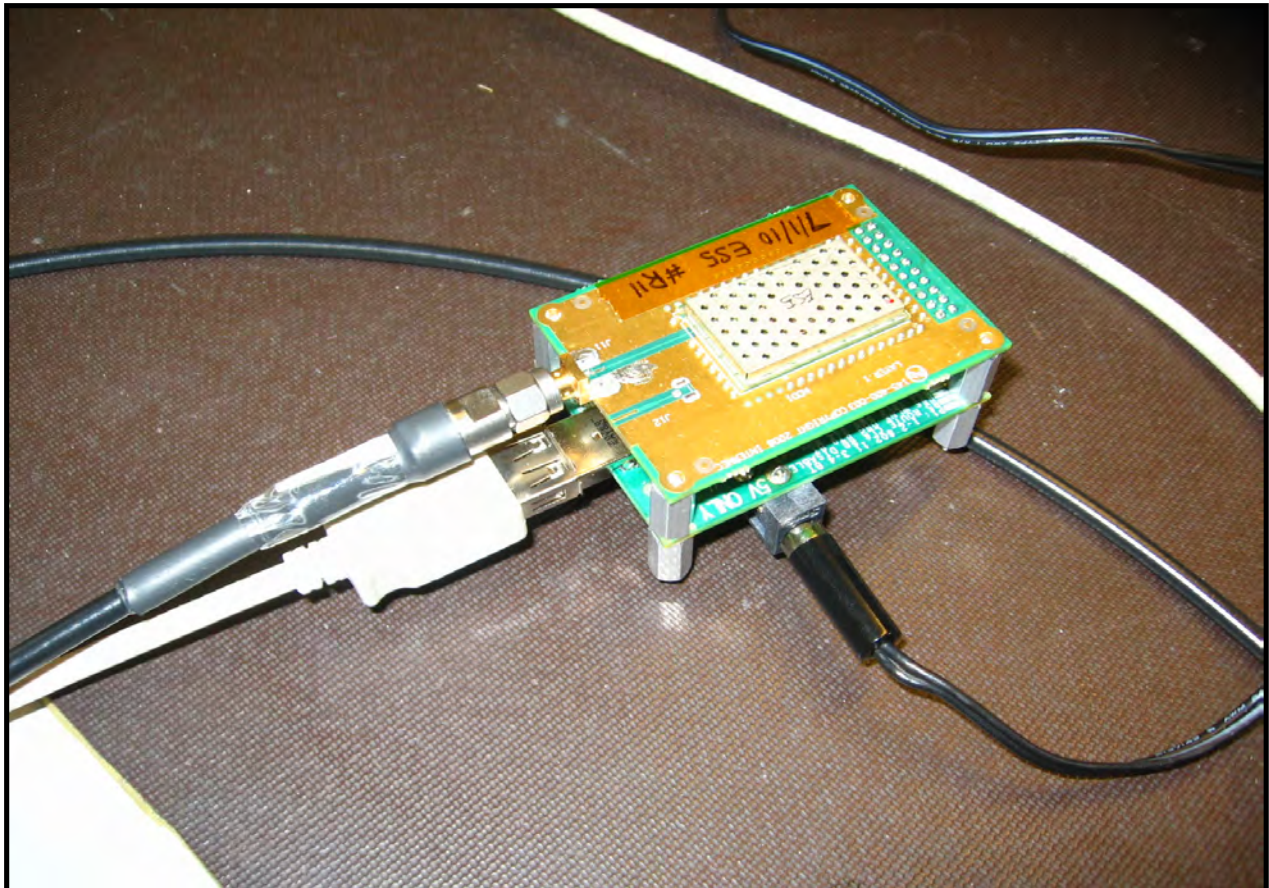
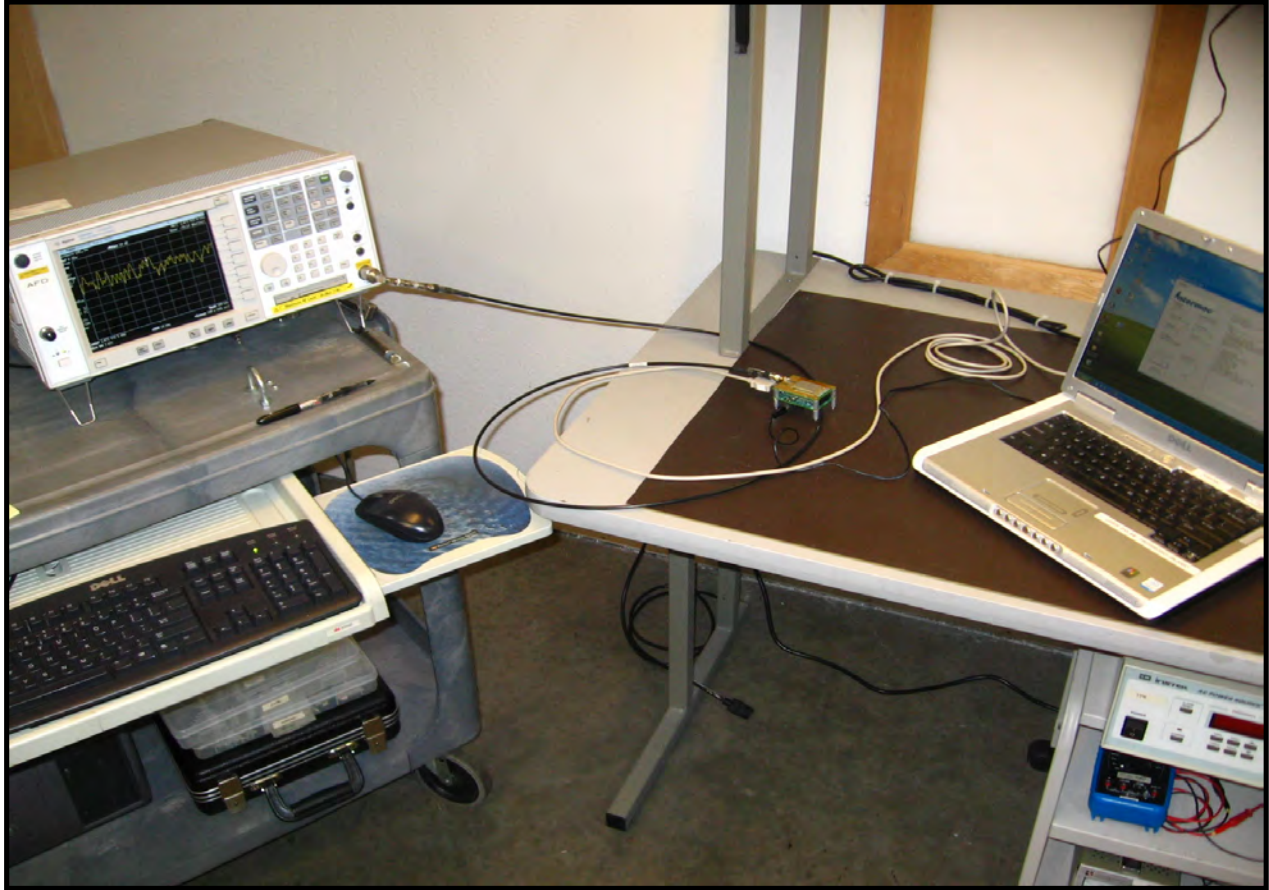
3-DH5, 8-DPSK, High Channel, 2480 MHz

Result: Pass

Value: -21.3 dBm / 3 kHz

Limit: 8 dBm / 3 kHz





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

Continuous Tx. Bluetooth, GFSK/DH5,
Continuous Tx. Bluetooth.

MODE USED FOR FINAL DATA

Continuous Tx. Bluetooth.

POWER SETTINGS INVESTIGATED

5VDC

FREQUENCY RANGE INVESTIGATED

| | | | |
|-----------------|--------|----------------|--------|
| Start Frequency | 30 MHz | Stop Frequency | 25 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 | E4440A | AAX | 5/14/2010 | 12 |
| Attenuator | Pasternack | PE7005-20 | AUN | 7/14/2010 | 13 |
| High Pass Filter | Micro-Tronics | 50111 | HGE | 7/14/2010 | 13 |
| Cable | ESM Cable Corp. | KMKM-72 | EVY | 11/3/2009 | 13 |
| EV12 Cables | N/A | Standard Gain Horn Cables | EVU | 7/14/2010 | 13 |
| EV12 Cables | N/A | Double Ridge Horn Cables | EVT | 10/23/2009 | 13 |
| EV12 Cables | N/A | Bilog Cables | EVS | 7/14/2010 | 13 |
| Pre-Amplifier | Miteq | AMF-6F-18002650-25-10P | AVU | 5/19/2009 | 16 |
| Pre-Amplifier | Miteq | AMF-6F-12001800-30-10P | AVI | 7/14/2010 | 13 |
| Pre-Amplifier | Miteq | AMF-6F-08001200-30-10P | AVH | 7/14/2010 | 13 |
| Pre-Amplifier | Miteq | AMF-3D00100800-32-13P | AVF | 7/14/2010 | 13 |
| Pre-Amplifier | Miteq | AM-1616-1000 | AVM | 7/14/2010 | 13 |
| Antenna, Horn | ETS Lindgren | 3160-09 | AIV | NCR | 0 |
| Antenna, Horn | ETS | 3160-08 | AIA | NCR | 0 |
| Antenna, Horn | ETS | 3160.07 | AHZ | 10/14/2008 | 24 |
| Antenna, Horn | ETS | 3115 | AIB | 8/25/2008 | 24 |
| Antenna, Biconilog | EMCO | 3141 | AXG | 2/15/2010 | 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

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. The measurement uncertainty estimation is available upon request.

TEST DESCRIPTION

The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify compliance. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and the EUT antenna in three orthogonal axis, and adjusting measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.10:2009). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

| | |
|---|-----------------------------|
| EUT: RC12 | Work Order: INMC0575 |
| Serial Number: R14 | Date: 07/30/10 |
| Customer: Intermec Technologies Corporation | Temperature: 19.3 °C |
| Attendees: none | Humidity: 61% |
| Project: None | Barometric Pres.: 1017.9 mb |
| Tested by: Dan Haas | Power: 5VDC |
| | Job Site: EV12 |

| | |
|---------------------|------------------|
| TEST SPECIFICATIONS | Test Method |
| FCC 15.247:2010 | ANSI C63.10:2009 |

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

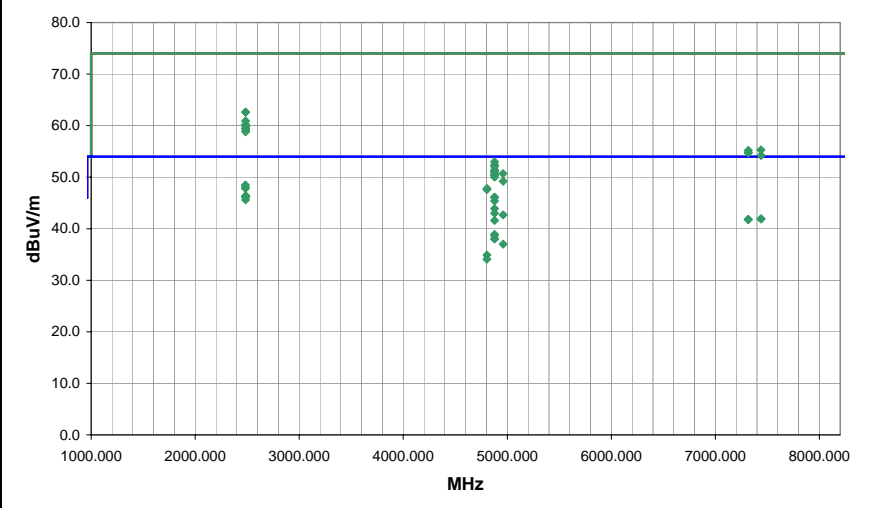
COMMENTS
See note for Channel, Data rate, EUT and antenna orientations.

EUT OPERATING MODES
Continuous Tx. Bluetooth.

DEVIATIONS FROM TEST STANDARD
No deviations.

| | |
|-----------------|------|
| Run # | 5 |
| Configuration # | 1 |
| 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) |
|------------|------------------|-------------|-------------------|-----------------|-------------------|---------------------------|----------|----------|--------------------------|-----------------|--------------------|------------------------|
| 2483.510 | 28.8 | -0.3 | 255.0 | 1.0 | 3.0 | 20.0 | H-Horn | AV | 0.0 | 48.5 | 54.0 | -5.5 |
| 2483.517 | 28.4 | -0.3 | 256.0 | 1.0 | 3.0 | 20.0 | H-Horn | AV | 0.0 | 48.1 | 54.0 | -5.9 |
| 2483.510 | 28.1 | -0.3 | 348.0 | 1.3 | 3.0 | 20.0 | V-Horn | AV | 0.0 | 47.8 | 54.0 | -6.2 |
| 2485.410 | 26.7 | -0.3 | 240.0 | 1.0 | 3.0 | 20.0 | H-Horn | AV | 0.0 | 46.4 | 54.0 | -7.6 |
| 2485.423 | 26.6 | -0.3 | 0.0 | 1.0 | 3.0 | 20.0 | V-Horn | AV | 0.0 | 46.3 | 54.0 | -7.7 |
| 2484.540 | 26.5 | -0.3 | 149.0 | 1.3 | 3.0 | 20.0 | V-Horn | AV | 0.0 | 46.2 | 54.0 | -7.8 |
| 2484.623 | 26.5 | -0.3 | 113.0 | 1.0 | 3.0 | 20.0 | H-Horn | AV | 0.0 | 46.2 | 54.0 | -7.8 |
| 2485.133 | 26.5 | -0.3 | 283.0 | 1.0 | 3.0 | 20.0 | V-Horn | AV | 0.0 | 46.2 | 54.0 | -7.8 |
| 2485.893 | 26.5 | -0.3 | 268.0 | 1.3 | 3.0 | 20.0 | V-Horn | AV | 0.0 | 46.2 | 54.0 | -7.8 |
| 4878.030 | 36.8 | 9.3 | 96.0 | 1.2 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 46.1 | 54.0 | -7.9 |
| 4878.063 | 36.8 | 9.3 | 238.0 | 1.7 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 46.1 | 54.0 | -7.9 |
| 2484.610 | 25.9 | -0.3 | 0.0 | 1.0 | 3.0 | 20.0 | H-Horn | AV | 0.0 | 45.6 | 54.0 | -8.4 |
| 4878.030 | 36.1 | 9.3 | 244.0 | 1.3 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 45.4 | 54.0 | -8.6 |
| 4878.023 | 34.6 | 9.3 | 259.0 | 1.3 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 43.9 | 54.0 | -10.1 |
| 4878.017 | 33.7 | 9.3 | 147.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 43.0 | 54.0 | -11.0 |
| 4960.023 | 33.1 | 9.6 | 348.0 | 1.7 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 42.7 | 54.0 | -11.3 |
| 2483.703 | 42.9 | -0.3 | 255.0 | 1.0 | 3.0 | 20.0 | H-Horn | PK | 0.0 | 62.6 | 74.0 | -11.4 |
| 2484.700 | 42.9 | -0.3 | 348.0 | 1.3 | 3.0 | 20.0 | V-Horn | PK | 0.0 | 62.6 | 74.0 | -11.4 |
| 7439.380 | 23.9 | 18.0 | 350.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 41.9 | 54.0 | -12.1 |
| 7440.143 | 23.9 | 18.0 | 115.0 | 1.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 41.9 | 54.0 | -12.1 |

| Comments |
|---|
| CH:78, ERD-3/DH5, EUT on side, antenna vertical. |
| CH:78, ERD-2/DH5, EUT on side, antenna vertical. |
| CH:78, ERD-3/DH5, EUT vertical, antenna horizontal. |
| CH:78, GFSK/DH5, EUT on side, antenna vertical. |
| CH:78, GFSK/DH5, EUT vertical, antenna horizontal. |
| CH:78, ERD-2/DH5, EUT vertical, antenna horizontal. |
| CH:78, GFSK/DH5, EUT horizontal, antenna vertical. |
| CH:78, GFSK/DH5, EUT horizontal, antenna vertical. |
| CH:78, GFSK/DH5, EUT on side, antenna vertical. |
| CH:37, GFSK/DH5, EUT vertical, antenna horizontal. |
| CH:37, GFSK/DH5, EUT horizontal, antenna vertical. |
| CH:78, GFSK/DH5, EUT vertical, antenna horizontal. |
| CH:37, GFSK/DH5, EUT on side, antenna vertical. |
| CH:37, GFSK/DH5, EUT on side, antenna vertical. |
| CH:37, GFSK/DH5, EUT on side, antenna vertical. |
| CH:78, GFSK/DH5, EUT vertical, antenna horizontal. |
| CH:78, ERD-3/DH5, EUT on side, antenna vertical. |
| CH:78, ERD-3/DH5, EUT vertical, antenna horizontal. |
| CH:78, GFSK/DH5, EUT horizontal, antenna vertical. |

| | |
|---|-----------------------------|
| EUT: RC12 | Work Order: INMC0575 |
| Serial Number: R14 | Date: 08/02/10 |
| Customer: Intermec Technologies Corporation | Temperature: 19.3 °C |
| Attendees: none | Humidity: 62% |
| Project: None | Barometric Pres.: 1017.8 mb |
| Tested by: Dan Haas | Power: 5VDC |
| | Job Site: EV12 |

| | |
|---------------------|------------------|
| TEST SPECIFICATIONS | Test Method |
| FCC 15.247:2010 | ANSI C63.10:2009 |

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

COMMENTS
See note for Channel, Data rate, EUT and antenna orientations.

EUT OPERATING MODES

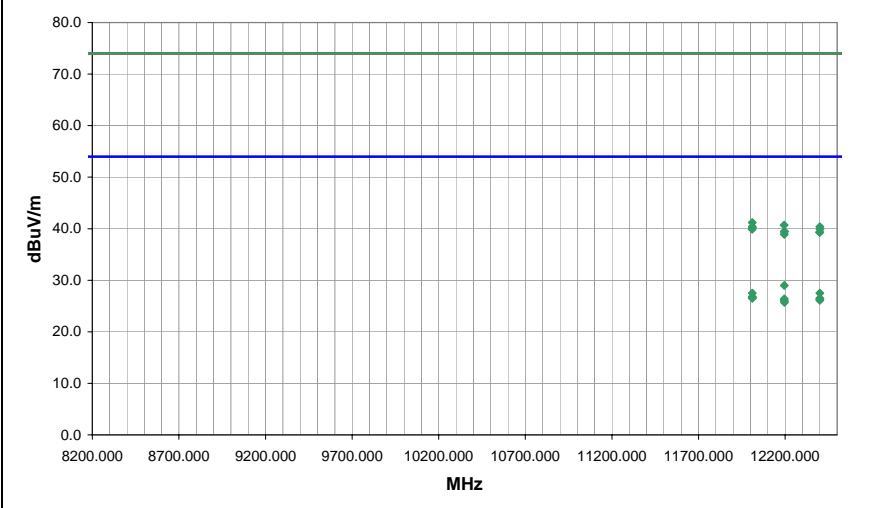
Continuous Tx. Bluetooth.

DEVIATIONS FROM TEST STANDARD

No deviations.

| | |
|-----------------|------|
| Run # | 6 |
| Configuration # | 1 |
| 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 |
|------------|------------------|-------------|-------------------|-----------------|-------------------|---------------------------|----------|----------|--------------------------|-----------------|--------------------|------------------------|--|
| 12195.370 | 38.3 | -9.3 | 25.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 29.0 | 54.0 | -25.0 | CH:37, GFSK/DH5, EUT vertical, antenna horizontal. |
| 12010.580 | 36.9 | -9.4 | 360.0 | 1.3 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 27.5 | 54.0 | -26.5 | CH:0, GFSK/DH5, EUT vertical, antenna horizontal. |
| 12400.490 | 36.8 | -9.3 | 23.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 27.5 | 54.0 | -26.5 | CH:78, GFSK/DH5, EUT vertical, antenna horizontal. |
| 12010.520 | 36.2 | -9.4 | 339.0 | 1.3 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 26.8 | 54.0 | -27.2 | CH:0, GFSK/DH5, EUT horizontal, antenna vertical. |
| 12010.290 | 36.0 | -9.4 | 95.0 | 1.4 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 26.6 | 54.0 | -27.4 | CH:0, GFSK/DH5, EUT horizontal, antenna vertical. |
| 12010.380 | 35.9 | -9.4 | 237.0 | 1.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 26.5 | 54.0 | -27.5 | CH:0, GFSK/DH5, EUT vertical, antenna horizontal. |
| 12400.390 | 35.8 | -9.3 | 354.0 | 1.8 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 26.5 | 54.0 | -27.5 | CH:78, GFSK/DH5, EUT horizontal, antenna vertical. |
| 12195.460 | 35.7 | -9.3 | 0.0 | 1.3 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 26.4 | 54.0 | -27.6 | CH:37, GFSK/DH5, EUT horizontal, antenna vertical. |
| 12400.510 | 35.6 | -9.3 | 290.0 | 1.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 26.3 | 54.0 | -27.7 | CH:78, GFSK/DH5, EUT vertical, antenna horizontal. |
| 12400.000 | 35.4 | -9.3 | 285.0 | 1.3 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 26.1 | 54.0 | -27.9 | CH:78, GFSK/DH5, EUT horizontal, antenna vertical. |
| 12195.620 | 35.3 | -9.3 | 252.0 | 1.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 26.0 | 54.0 | -28.0 | CH:37, GFSK/DH5, EUT horizontal, antenna vertical. |
| 12195.900 | 35.0 | -9.3 | 316.0 | 1.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 25.7 | 54.0 | -28.3 | CH:37, GFSK/DH5, EUT vertical, antenna horizontal. |
| 12010.730 | 50.6 | -9.4 | 360.0 | 1.3 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 41.2 | 74.0 | -32.8 | CH:0, GFSK/DH5, EUT vertical, antenna horizontal. |
| 12194.160 | 50.0 | -9.3 | 25.0 | 1.0 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 40.7 | 74.0 | -33.3 | CH:37, GFSK/DH5, EUT vertical, antenna horizontal. |
| 12010.750 | 49.8 | -9.4 | 237.0 | 1.0 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 40.4 | 74.0 | -33.6 | CH:0, GFSK/DH5, EUT vertical, antenna horizontal. |
| 12400.630 | 49.7 | -9.3 | 23.0 | 1.0 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 40.4 | 74.0 | -33.6 | CH:78, GFSK/DH5, EUT vertical, antenna horizontal. |
| 12010.820 | 49.6 | -9.4 | 339.0 | 1.3 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 40.2 | 74.0 | -33.8 | CH:0, GFSK/DH5, EUT horizontal, antenna vertical. |
| 12009.360 | 49.3 | -9.4 | 95.0 | 1.4 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 39.9 | 74.0 | -34.1 | CH:0, GFSK/DH5, EUT horizontal, antenna vertical. |
| 12400.720 | 49.2 | -9.3 | 354.0 | 1.8 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 39.9 | 74.0 | -34.1 | CH:78, GFSK/DH5, EUT horizontal, antenna vertical. |
| 12195.990 | 48.8 | -9.3 | 316.0 | 1.0 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 39.5 | 74.0 | -34.5 | CH:37, GFSK/DH5, EUT vertical, antenna horizontal. |

| | |
|---|-----------------------------|
| EUT: RC12 | Work Order: INMC0575 |
| Serial Number: R14 | Date: 08/04/10 |
| Customer: Intermec Technologies Corporation | Temperature: 23.2 °C |
| Attendees: none | Humidity: 50% |
| Project: None | Barometric Pres.: 1017.5 mb |
| Tested by: Dan Haas | Power: 5VDC |
| | Job Site: EV12 |

| | |
|----------------------------|------------------|
| TEST SPECIFICATIONS | Test Method |
| FCC 15.247:2010 | ANSI C63.10:2009 |

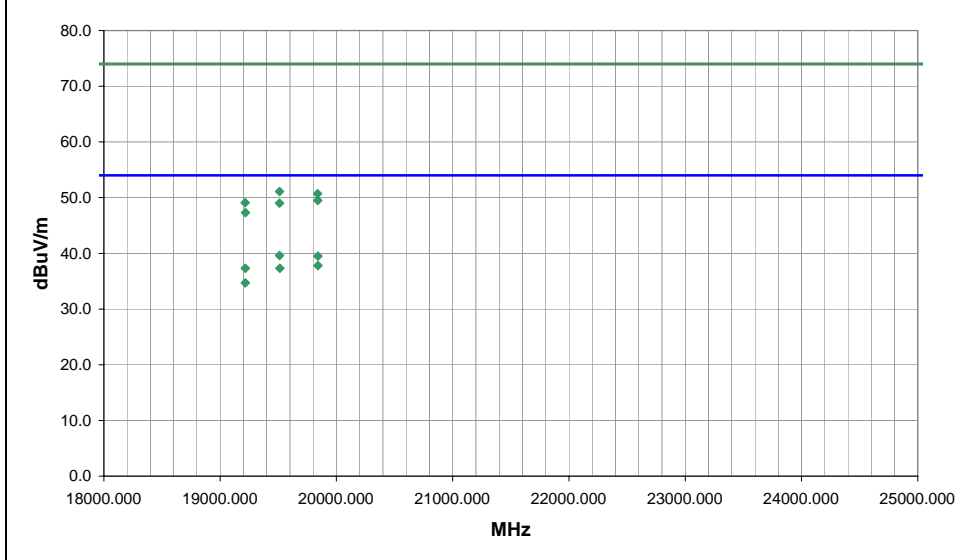
| | |
|-----------------------------|---------------------|
| TEST PARAMETERS | |
| Antenna Height(s) (m) 1 - 2 | Test Distance (m) 3 |

COMMENTS
See comments for channel and EUT orientaon.

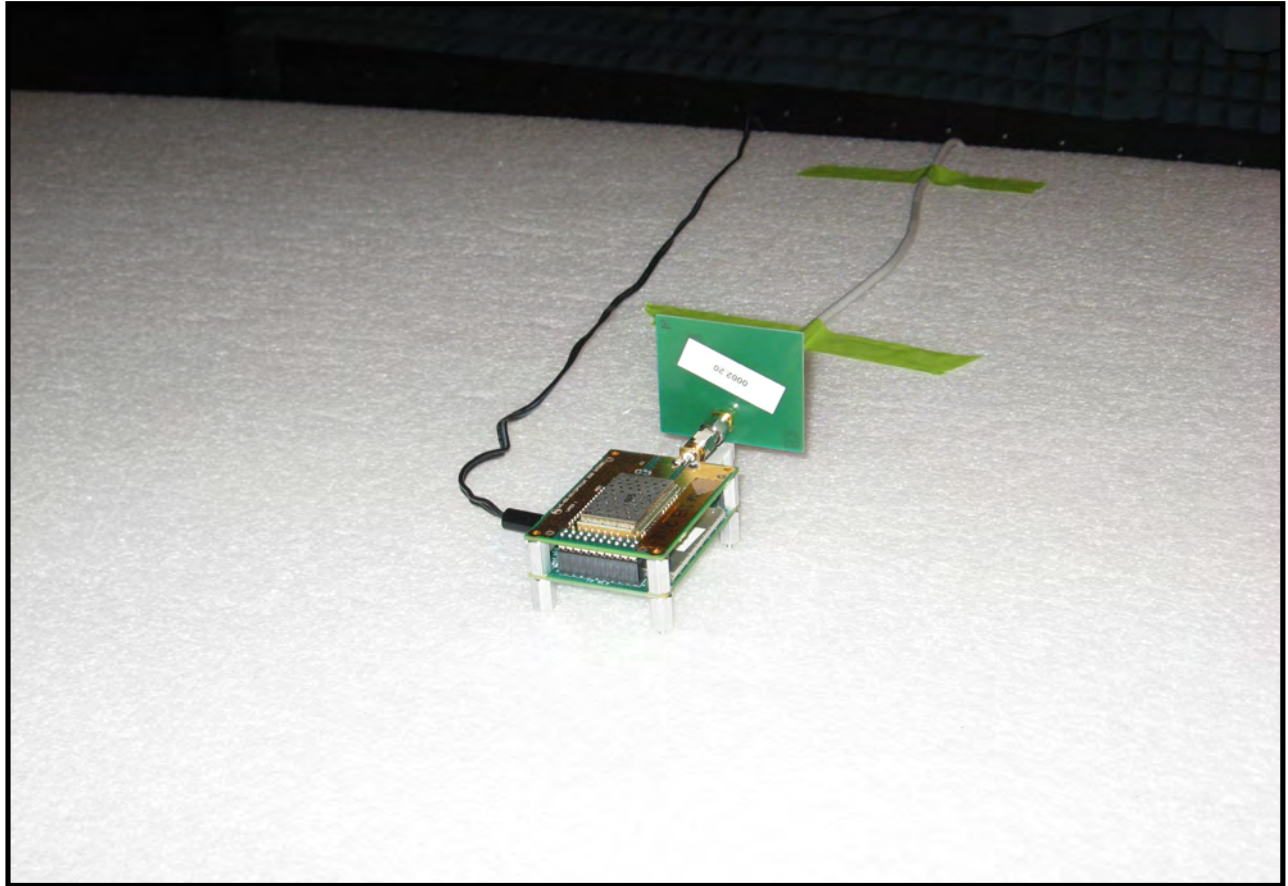
EUT OPERATING MODES
Continuous Tx. Bluetooth, GFSK/DH5.

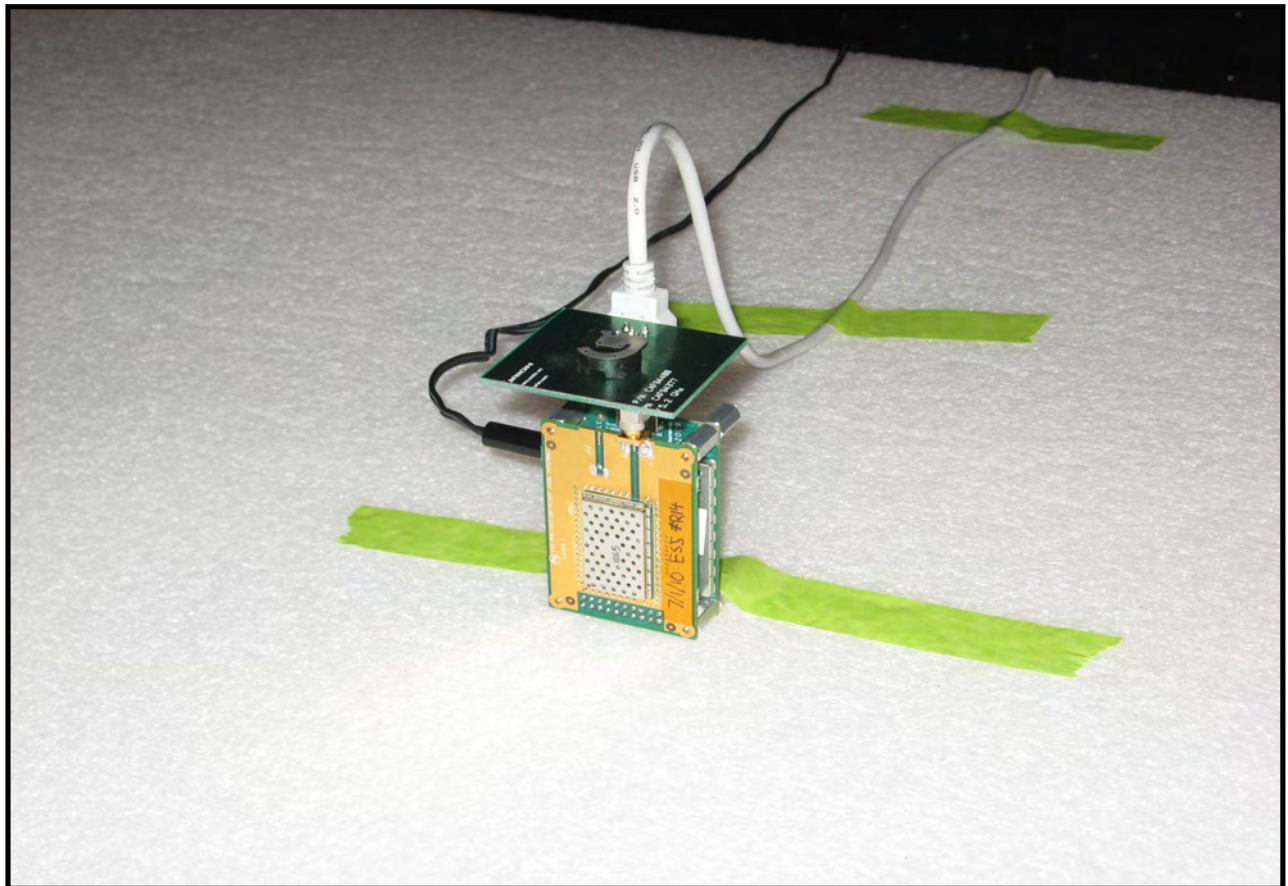
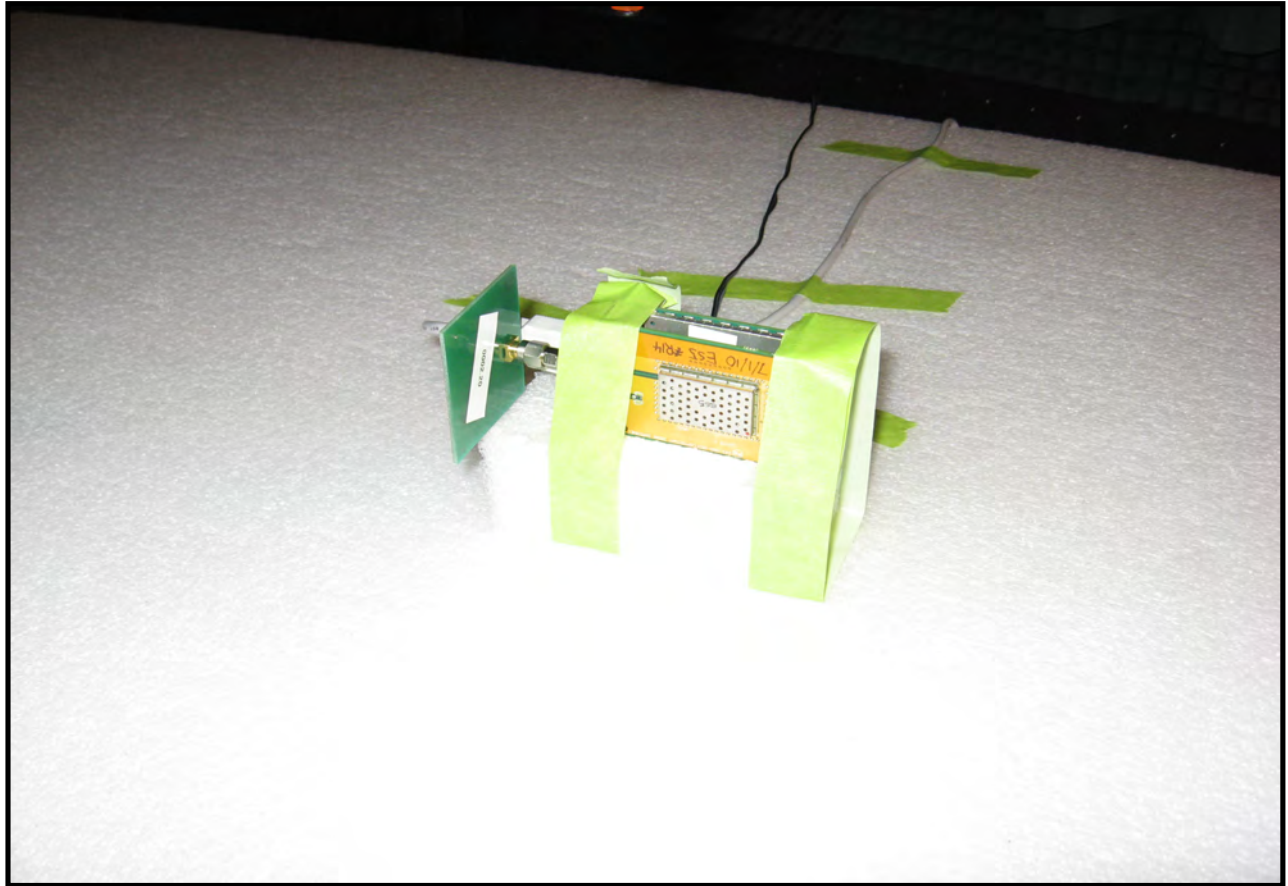
DEVIATIONS FROM TEST STANDARD
No deviations.

| | | |
|-----------------|------|--|
| Run # | 11 | Signature  |
| Configuration # | 1 | |
| Results | Pass | |



| 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 |
|------------|------------------|-------------|-------------------|-----------------|-------------------|---------------------------|------------|----------|--------------------------|-----------------|--------------------|------------------------|--|
| 19511.090 | 48.1 | -8.5 | 45.0 | 1.1 | 3.0 | 0.0 | +High Horr | AV | 0.0 | 39.6 | 54.0 | -14.4 | Ch:37, EUT vertical, antenna horizontal. |
| 19840.920 | 48.1 | -8.6 | 44.0 | 1.1 | 3.0 | 0.0 | +High Horr | AV | 0.0 | 39.5 | 54.0 | -14.5 | Ch:78, EUT vertical, antenna horizontal. |
| 19840.950 | 46.4 | -8.6 | 68.0 | 1.1 | 3.0 | 0.0 | +High Horr | AV | 0.0 | 37.8 | 54.0 | -16.2 | Ch:78, EUT horizontal, antenna vertical. |
| 19217.030 | 45.8 | -8.5 | 51.0 | 1.1 | 3.0 | 0.0 | +High Horr | AV | 0.0 | 37.3 | 54.0 | -16.7 | Ch:0, EUT vertical, antenna horizontal. |
| 19512.980 | 45.8 | -8.5 | 68.0 | 1.1 | 3.0 | 0.0 | +High Horr | AV | 0.0 | 37.3 | 54.0 | -16.7 | Ch:37, EUT horizontal, antenna vertical. |
| 19217.100 | 43.2 | -8.5 | 360.0 | 1.1 | 3.0 | 0.0 | +High Horr | AV | 0.0 | 34.7 | 54.0 | -19.3 | Ch:0, EUT horizontal, antenna vertical. |
| 19510.540 | 59.6 | -8.5 | 45.0 | 1.1 | 3.0 | 0.0 | +High Horr | PK | 0.0 | 51.1 | 74.0 | -22.9 | Ch:37, EUT vertical, antenna horizontal. |
| 19838.690 | 59.3 | -8.6 | 44.0 | 1.1 | 3.0 | 0.0 | +High Horr | PK | 0.0 | 50.7 | 74.0 | -23.3 | Ch:78, EUT vertical, antenna horizontal. |
| 19839.140 | 58.1 | -8.6 | 68.0 | 1.1 | 3.0 | 0.0 | +High Horr | PK | 0.0 | 49.5 | 74.0 | -24.5 | Ch:78, EUT horizontal, antenna vertical. |
| 19214.870 | 57.6 | -8.5 | 51.0 | 1.1 | 3.0 | 0.0 | +High Horr | PK | 0.0 | 49.1 | 74.0 | -24.9 | Ch:0, EUT vertical, antenna horizontal. |
| 19510.550 | 57.5 | -8.5 | 68.0 | 1.1 | 3.0 | 0.0 | +High Horr | PK | 0.0 | 49.0 | 74.0 | -25.0 | Ch:37, EUT horizontal, antenna vertical. |
| 19217.200 | 55.8 | -8.5 | 360.0 | 1.1 | 3.0 | 0.0 | +High Horr | PK | 0.0 | 47.3 | 74.0 | -26.7 | Ch:0, EUT horizontal, antenna vertical. |





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 Bluetooth GFSK/DH5 mode, High Channel |
| Transmitting Bluetooth GFSK/DH5 mode, Mid Channel |
| Transmitting Bluetooth GFSK/DH5 mode, Low Channel |

POWER SETTINGS INVESTIGATED

| |
|---------------------|
| 3.3 VDC from 120VAC |
|---------------------|

CONFIGURATIONS INVESTIGATED

| |
|--------------|
| INMC0575 - 3 |
|--------------|

SAMPLE CALCULATIONS

| |
|---|
| Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator |
|---|

TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Interval |
|------------------|-----------------|------------------|-----|-----------|----------|
| Receiver | Rohde & Schwarz | ESCI | ARE | 4/29/2010 | 12 mo |
| Attenuator | Coaxicom | 66702 2910-20 | ATO | 7/21/2009 | 13 mo |
| High Pass Filter | TTE | H97-100K-50-720B | HFX | 2/16/2010 | 13 mo |
| LISN | Solar | 9252-50-R-24-BNC | LIR | 3/2/2010 | 12 mo |
| LISN | Solar | 9252-50-R-24-BNC | LIN | 5/27/2010 | 12 mo |
| EV07 Cables | N/A | Conducted Cables | EVG | 6/21/2010 | 13 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 |

Measurements were made using the bandwidths and detectors specified. No video filter was used.

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The EUT will be powered indirectly from the AC power line while operating in a host device. Therefore, conducted emissions measurements were made on the DC input of the EUT, or on the DC input of the device used to power the EUT. The AC power line conducted emissions were measured on a linear power supply providing DC power to the module while providing no filtering of the power inputs to the module.

The AC power line conducted emissions were measured with the EUT operating at the lowest, the highest, and a middle channel in the operational band or bands. The EUT was transmitting in the mode which has the highest output power for the band. For each mode, the spectrum was scanned from 150 kHz to 30 MHz. The test setup and procedures were in accordance with ANSI C63.10-2009.

EMC

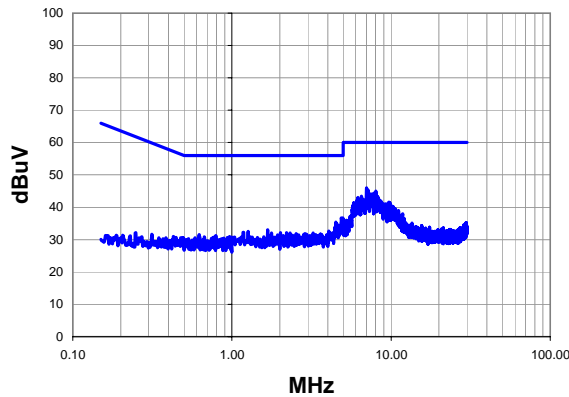
AC POWERLINE CONDUCTED EMISSIONS

| | | | | |
|------------------------|---|--------------------------|-----------|---|
| Work Order: | INMC0575 | Date: | 08/11/10 | <i>Rod Peloquin</i> Tested by: Rod Peloquin |
| Project: | None | Temperature: | 22 °C | |
| Job Site: | EV07 | Humidity: | 53 | |
| Serial Number: | R11 | Barometric Pres.: | 1014.8 mb | |
| EUT: | RC12 | | | |
| Configuration: | 3 - AC Power Conducted Emissions | | | |
| Customer: | Intermec Technologies Corporation | | | |
| Attendees: | none | | | |
| EUT Power: | 3.3 VDC from 120VAC | | | |
| Operating Mode: | Transmitting Bluetooth GFSK/DH5 mode, Low Channel | | | |
| Deviations: | No deviations. | | | |
| Comments: | Linear lab power supply | | | |

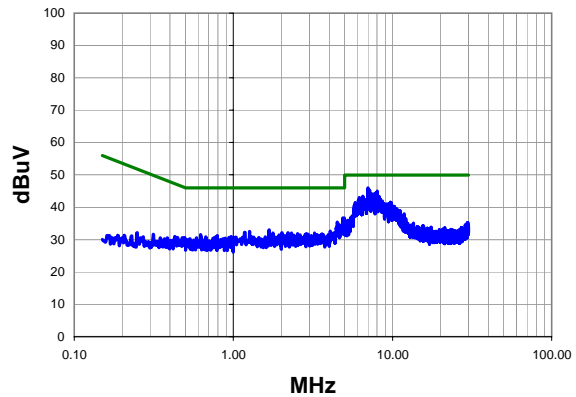
| | |
|---|--|
| Test Specifications FCC 15.207:2010 | Test Method ANSI C63.10:2009 |
|---|--|

| | | | | | | | |
|--------------|----|--------------|-----------|--------------------------|----|----------------|------|
| Run # | 35 | Line: | High Line | Ext. Attenuation: | 20 | Results | Pass |
|--------------|----|--------------|-----------|--------------------------|----|----------------|------|

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 7.000 | 25.6 | 20.4 | 46.0 | 60.0 | -14.0 |
| 7.190 | 24.9 | 20.4 | 45.3 | 60.0 | -14.7 |
| 8.030 | 24.6 | 20.4 | 45.0 | 60.0 | -15.0 |
| 7.850 | 24.0 | 20.4 | 44.4 | 60.0 | -15.6 |
| 7.610 | 23.7 | 20.4 | 44.1 | 60.0 | -15.9 |
| 7.400 | 23.7 | 20.4 | 44.1 | 60.0 | -15.9 |
| 6.520 | 23.1 | 20.3 | 43.4 | 60.0 | -16.6 |
| 8.250 | 22.8 | 20.4 | 43.2 | 60.0 | -16.8 |
| 6.180 | 22.7 | 20.3 | 43.0 | 60.0 | -17.0 |
| 6.660 | 22.1 | 20.3 | 42.4 | 60.0 | -17.6 |
| 6.110 | 22.0 | 20.3 | 42.3 | 60.0 | -17.7 |
| 8.640 | 21.5 | 20.4 | 41.9 | 60.0 | -18.1 |
| 9.690 | 21.1 | 20.4 | 41.5 | 60.0 | -18.5 |
| 6.400 | 21.1 | 20.3 | 41.4 | 60.0 | -18.6 |
| 5.830 | 21.1 | 20.3 | 41.4 | 60.0 | -18.6 |
| 9.820 | 20.9 | 20.4 | 41.3 | 60.0 | -18.7 |
| 9.520 | 20.6 | 20.4 | 41.0 | 60.0 | -19.0 |
| 9.200 | 20.6 | 20.4 | 41.0 | 60.0 | -19.0 |
| 9.360 | 20.4 | 20.4 | 40.8 | 60.0 | -19.2 |
| 9.590 | 20.3 | 20.4 | 40.7 | 60.0 | -19.3 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 7.000 | 25.6 | 20.4 | 46.0 | 50.0 | -4.0 |
| 7.190 | 24.9 | 20.4 | 45.3 | 50.0 | -4.7 |
| 8.030 | 24.6 | 20.4 | 45.0 | 50.0 | -5.0 |
| 7.850 | 24.0 | 20.4 | 44.4 | 50.0 | -5.6 |
| 7.610 | 23.7 | 20.4 | 44.1 | 50.0 | -5.9 |
| 7.400 | 23.7 | 20.4 | 44.1 | 50.0 | -5.9 |
| 6.520 | 23.1 | 20.3 | 43.4 | 50.0 | -6.6 |
| 8.250 | 22.8 | 20.4 | 43.2 | 50.0 | -6.8 |
| 6.180 | 22.7 | 20.3 | 43.0 | 50.0 | -7.0 |
| 6.660 | 22.1 | 20.3 | 42.4 | 50.0 | -7.6 |
| 6.110 | 22.0 | 20.3 | 42.3 | 50.0 | -7.7 |
| 8.640 | 21.5 | 20.4 | 41.9 | 50.0 | -8.1 |
| 9.690 | 21.1 | 20.4 | 41.5 | 50.0 | -8.5 |
| 6.400 | 21.1 | 20.3 | 41.4 | 50.0 | -8.6 |
| 5.830 | 21.1 | 20.3 | 41.4 | 50.0 | -8.6 |
| 9.820 | 20.9 | 20.4 | 41.3 | 50.0 | -8.7 |
| 9.520 | 20.6 | 20.4 | 41.0 | 50.0 | -9.0 |
| 9.200 | 20.6 | 20.4 | 41.0 | 50.0 | -9.0 |
| 9.360 | 20.4 | 20.4 | 40.8 | 50.0 | -9.2 |
| 9.590 | 20.3 | 20.4 | 40.7 | 50.0 | -9.3 |

EMC

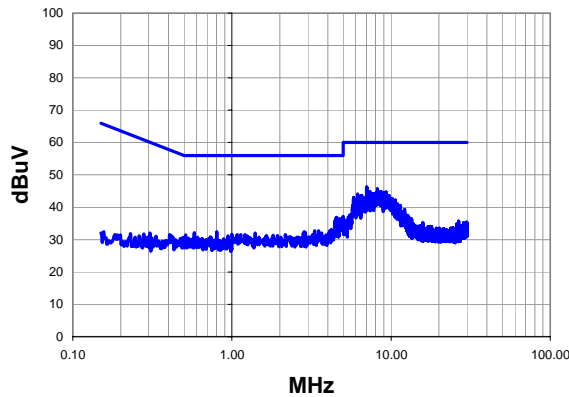
AC POWERLINE CONDUCTED EMISSIONS

| | | | | |
|------------------------|---|--------------------------|-----------|---|
| Work Order: | INMC0575 | Date: | 08/11/10 | <i>Rod Peloquin</i> Tested by: Rod Peloquin |
| Project: | None | Temperature: | 22 °C | |
| Job Site: | EV07 | Humidity: | 53 | |
| Serial Number: | R11 | Barometric Pres.: | 1014.8 mb | |
| EUT: | RC12 | | | |
| Configuration: | 3 - AC Power Conducted Emissions | | | |
| Customer: | Intermec Technologies Corporation | | | |
| Attendees: | none | | | |
| EUT Power: | 3.3 VDC from 120VAC | | | |
| Operating Mode: | Transmitting Bluetooth GFSK/DH5 mode, Low Channel | | | |
| Deviations: | No deviations. | | | |
| Comments: | Linear lab power supply | | | |

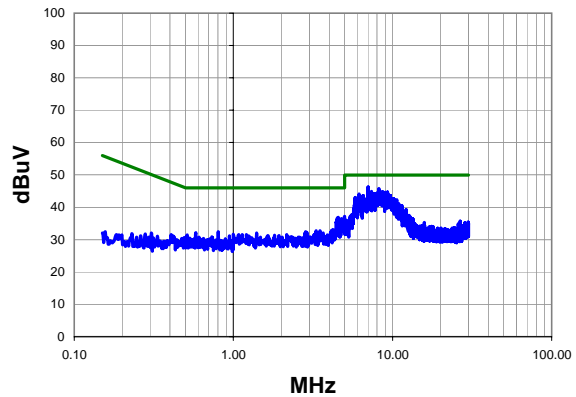
| | |
|---|--|
| Test Specifications FCC 15.207:2010 | Test Method ANSI C63.10:2009 |
|---|--|

| | | | | | | | |
|--------------|----|--------------|---------|--------------------------|----|----------------|------|
| Run # | 36 | Line: | Neutral | Ext. Attenuation: | 20 | Results | Pass |
|--------------|----|--------------|---------|--------------------------|----|----------------|------|

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 7.030 | 25.9 | 20.4 | 46.3 | 60.0 | -13.7 |
| 8.220 | 25.4 | 20.4 | 45.8 | 60.0 | -14.2 |
| 7.370 | 24.5 | 20.4 | 44.9 | 60.0 | -15.1 |
| 8.570 | 24.4 | 20.4 | 44.8 | 60.0 | -15.2 |
| 9.310 | 24.3 | 20.4 | 44.7 | 60.0 | -15.3 |
| 8.710 | 24.3 | 20.4 | 44.7 | 60.0 | -15.3 |
| 9.000 | 24.2 | 20.4 | 44.6 | 60.0 | -15.4 |
| 8.040 | 24.2 | 20.4 | 44.6 | 60.0 | -15.4 |
| 7.690 | 23.8 | 20.4 | 44.2 | 60.0 | -15.8 |
| 7.840 | 23.7 | 20.4 | 44.1 | 60.0 | -15.9 |
| 6.170 | 23.8 | 20.3 | 44.1 | 60.0 | -15.9 |
| 8.880 | 23.5 | 20.4 | 43.9 | 60.0 | -16.1 |
| 7.560 | 23.5 | 20.4 | 43.9 | 60.0 | -16.1 |
| 9.690 | 23.2 | 20.4 | 43.6 | 60.0 | -16.4 |
| 6.540 | 23.3 | 20.3 | 43.6 | 60.0 | -16.4 |
| 9.550 | 23.1 | 20.4 | 43.5 | 60.0 | -16.5 |
| 5.830 | 22.8 | 20.3 | 43.1 | 60.0 | -16.9 |
| 10.150 | 22.2 | 20.4 | 42.6 | 60.0 | -17.4 |
| 5.800 | 22.3 | 20.3 | 42.6 | 60.0 | -17.4 |
| 6.090 | 22.1 | 20.3 | 42.4 | 60.0 | -17.6 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 7.030 | 25.9 | 20.4 | 46.3 | 50.0 | -3.7 |
| 8.220 | 25.4 | 20.4 | 45.8 | 50.0 | -4.2 |
| 7.370 | 24.5 | 20.4 | 44.9 | 50.0 | -5.1 |
| 8.570 | 24.4 | 20.4 | 44.8 | 50.0 | -5.2 |
| 9.310 | 24.3 | 20.4 | 44.7 | 50.0 | -5.3 |
| 8.710 | 24.3 | 20.4 | 44.7 | 50.0 | -5.3 |
| 9.000 | 24.2 | 20.4 | 44.6 | 50.0 | -5.4 |
| 8.040 | 24.2 | 20.4 | 44.6 | 50.0 | -5.4 |
| 7.690 | 23.8 | 20.4 | 44.2 | 50.0 | -5.8 |
| 7.840 | 23.7 | 20.4 | 44.1 | 50.0 | -5.9 |
| 6.170 | 23.8 | 20.3 | 44.1 | 50.0 | -5.9 |
| 8.880 | 23.5 | 20.4 | 43.9 | 50.0 | -6.1 |
| 7.560 | 23.5 | 20.4 | 43.9 | 50.0 | -6.1 |
| 9.690 | 23.2 | 20.4 | 43.6 | 50.0 | -6.4 |
| 6.540 | 23.3 | 20.3 | 43.6 | 50.0 | -6.4 |
| 9.550 | 23.1 | 20.4 | 43.5 | 50.0 | -6.5 |
| 5.830 | 22.8 | 20.3 | 43.1 | 50.0 | -6.9 |
| 10.150 | 22.2 | 20.4 | 42.6 | 50.0 | -7.4 |
| 5.800 | 22.3 | 20.3 | 42.6 | 50.0 | -7.4 |
| 6.090 | 22.1 | 20.3 | 42.4 | 50.0 | -7.6 |

EMC

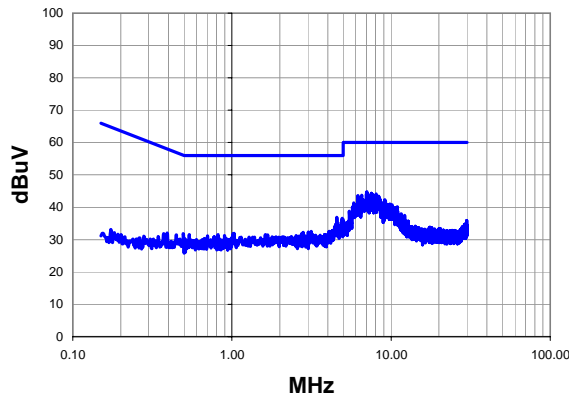
AC POWERLINE CONDUCTED EMISSIONS

| | | | | |
|------------------------|---|--------------------------|-----------|---|
| Work Order: | INMC0575 | Date: | 08/11/10 | <i>Rod Peloquin</i> Tested by: Rod Peloquin |
| Project: | None | Temperature: | 22 °C | |
| Job Site: | EV07 | Humidity: | 53 | |
| Serial Number: | R11 | Barometric Pres.: | 1014.8 mb | |
| EUT: | RC12 | | | |
| Configuration: | 3 - AC Power Conducted Emissions | | | |
| Customer: | Intermec Technologies Corporation | | | |
| Attendees: | none | | | |
| EUT Power: | 3.3 VDC from 120VAC | | | |
| Operating Mode: | Transmitting Bluetooth GFSK/DH5 mode, Mid Channel | | | |
| Deviations: | No deviations. | | | |
| Comments: | Linear lab power supply | | | |

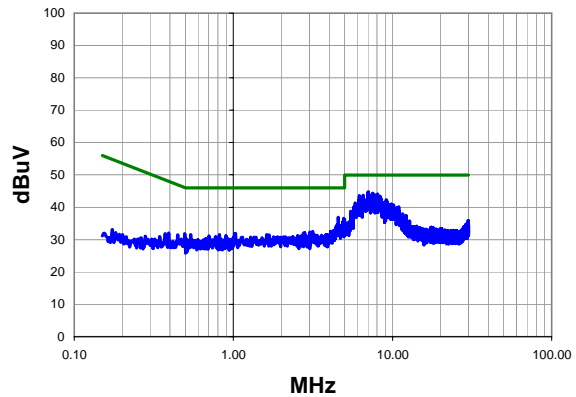
| | |
|---|--|
| Test Specifications FCC 15.207:2010 | Test Method ANSI C63.10:2009 |
|---|--|

| | | | | | | | |
|--------------|----|--------------|-----------|--------------------------|----|----------------|------|
| Run # | 37 | Line: | High Line | Ext. Attenuation: | 20 | Results | Pass |
|--------------|----|--------------|-----------|--------------------------|----|----------------|------|

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 7.030 | 24.4 | 20.4 | 44.8 | 60.0 | -15.2 |
| 7.510 | 23.9 | 20.4 | 44.3 | 60.0 | -15.7 |
| 8.040 | 23.7 | 20.4 | 44.1 | 60.0 | -15.9 |
| 7.700 | 23.4 | 20.4 | 43.8 | 60.0 | -16.2 |
| 6.530 | 23.4 | 20.3 | 43.7 | 60.0 | -16.3 |
| 6.180 | 23.3 | 20.3 | 43.6 | 60.0 | -16.4 |
| 8.350 | 23.0 | 20.4 | 43.4 | 60.0 | -16.6 |
| 7.360 | 23.0 | 20.4 | 43.4 | 60.0 | -16.6 |
| 8.390 | 22.6 | 20.4 | 43.0 | 60.0 | -17.0 |
| 8.500 | 22.1 | 20.4 | 42.5 | 60.0 | -17.5 |
| 8.160 | 22.0 | 20.4 | 42.4 | 60.0 | -17.6 |
| 6.650 | 22.0 | 20.3 | 42.3 | 60.0 | -17.7 |
| 9.110 | 21.9 | 20.4 | 42.3 | 60.0 | -17.7 |
| 7.850 | 21.6 | 20.4 | 42.0 | 60.0 | -18.0 |
| 9.230 | 21.5 | 20.4 | 41.9 | 60.0 | -18.1 |
| 6.280 | 21.5 | 20.3 | 41.8 | 60.0 | -18.2 |
| 5.840 | 21.1 | 20.3 | 41.4 | 60.0 | -18.6 |
| 8.670 | 20.9 | 20.4 | 41.3 | 60.0 | -18.7 |
| 9.830 | 20.5 | 20.4 | 40.9 | 60.0 | -19.1 |
| 9.330 | 20.5 | 20.4 | 40.9 | 60.0 | -19.1 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 7.030 | 24.4 | 20.4 | 44.8 | 50.0 | -5.2 |
| 7.510 | 23.9 | 20.4 | 44.3 | 50.0 | -5.7 |
| 8.040 | 23.7 | 20.4 | 44.1 | 50.0 | -5.9 |
| 7.700 | 23.4 | 20.4 | 43.8 | 50.0 | -6.2 |
| 6.530 | 23.4 | 20.3 | 43.7 | 50.0 | -6.3 |
| 6.180 | 23.3 | 20.3 | 43.6 | 50.0 | -6.4 |
| 8.350 | 23.0 | 20.4 | 43.4 | 50.0 | -6.6 |
| 7.360 | 23.0 | 20.4 | 43.4 | 50.0 | -6.6 |
| 8.390 | 22.6 | 20.4 | 43.0 | 50.0 | -7.0 |
| 8.500 | 22.1 | 20.4 | 42.5 | 50.0 | -7.5 |
| 8.160 | 22.0 | 20.4 | 42.4 | 50.0 | -7.6 |
| 6.650 | 22.0 | 20.3 | 42.3 | 50.0 | -7.7 |
| 9.110 | 21.9 | 20.4 | 42.3 | 50.0 | -7.7 |
| 7.850 | 21.6 | 20.4 | 42.0 | 50.0 | -8.0 |
| 9.230 | 21.5 | 20.4 | 41.9 | 50.0 | -8.1 |
| 6.280 | 21.5 | 20.3 | 41.8 | 50.0 | -8.2 |
| 5.840 | 21.1 | 20.3 | 41.4 | 50.0 | -8.6 |
| 8.670 | 20.9 | 20.4 | 41.3 | 50.0 | -8.7 |
| 9.830 | 20.5 | 20.4 | 40.9 | 50.0 | -9.1 |
| 9.330 | 20.5 | 20.4 | 40.9 | 50.0 | -9.1 |

EMC

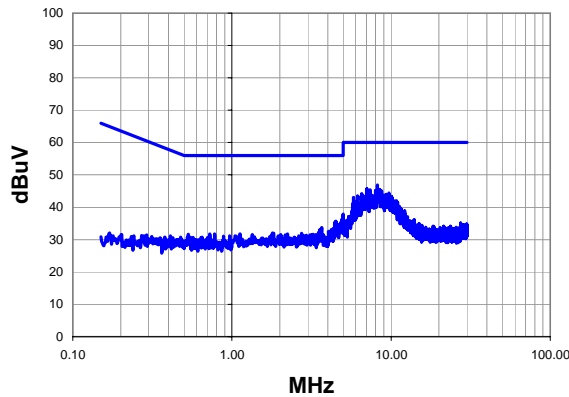
AC POWERLINE CONDUCTED EMISSIONS

| | | | | |
|------------------------|---|--------------------------|-----------|---|
| Work Order: | INMC0575 | Date: | 08/11/10 | <i>Rod Peloquin</i> Tested by: Rod Peloquin |
| Project: | None | Temperature: | 22 °C | |
| Job Site: | EV07 | Humidity: | 53 | |
| Serial Number: | R11 | Barometric Pres.: | 1014.8 mb | |
| EUT: | RC12 | | | |
| Configuration: | 3 - AC Power Conducted Emissions | | | |
| Customer: | Intermec Technologies Corporation | | | |
| Attendees: | none | | | |
| EUT Power: | 3.3 VDC from 120VAC | | | |
| Operating Mode: | Transmitting Bluetooth GFSK/DH5 mode, Mid Channel | | | |
| Deviations: | No deviations. | | | |
| Comments: | Linear lab power supply | | | |

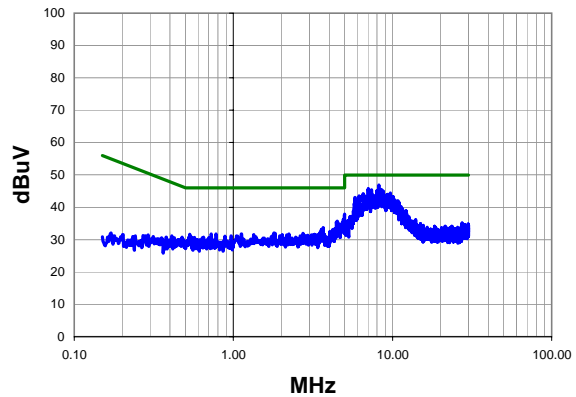
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| Test Specifications FCC 15.207:2010 | Test Method ANSI C63.10:2009 |
|---|--|

| | | | | | | | |
|--------------|----|--------------|---------|--------------------------|----|----------------|------|
| Run # | 38 | Line: | Neutral | Ext. Attenuation: | 20 | Results | Pass |
|--------------|----|--------------|---------|--------------------------|----|----------------|------|

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 8.190 | 26.5 | 20.4 | 46.9 | 60.0 | -13.1 |
| 7.040 | 25.3 | 20.4 | 45.7 | 60.0 | -14.3 |
| 8.480 | 25.1 | 20.4 | 45.5 | 60.0 | -14.5 |
| 7.390 | 25.0 | 20.4 | 45.4 | 60.0 | -14.6 |
| 7.990 | 24.7 | 20.4 | 45.1 | 60.0 | -14.9 |
| 8.360 | 24.7 | 20.4 | 45.1 | 60.0 | -14.9 |
| 8.720 | 24.6 | 20.4 | 45.0 | 60.0 | -15.0 |
| 7.180 | 24.5 | 20.4 | 44.9 | 60.0 | -15.1 |
| 9.710 | 24.0 | 20.4 | 44.4 | 60.0 | -15.6 |
| 6.530 | 23.9 | 20.3 | 44.2 | 60.0 | -15.8 |
| 9.330 | 23.6 | 20.4 | 44.0 | 60.0 | -16.0 |
| 8.590 | 23.5 | 20.4 | 43.9 | 60.0 | -16.1 |
| 9.200 | 23.4 | 20.4 | 43.8 | 60.0 | -16.2 |
| 7.500 | 23.4 | 20.4 | 43.8 | 60.0 | -16.2 |
| 9.450 | 23.3 | 20.4 | 43.7 | 60.0 | -16.3 |
| 9.000 | 23.3 | 20.4 | 43.7 | 60.0 | -16.3 |
| 6.680 | 23.2 | 20.3 | 43.5 | 60.0 | -16.5 |
| 6.170 | 23.2 | 20.3 | 43.5 | 60.0 | -16.5 |
| 7.660 | 23.0 | 20.4 | 43.4 | 60.0 | -16.6 |
| 10.070 | 22.9 | 20.4 | 43.3 | 60.0 | -16.7 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 8.190 | 26.5 | 20.4 | 46.9 | 50.0 | -3.1 |
| 7.040 | 25.3 | 20.4 | 45.7 | 50.0 | -4.3 |
| 8.480 | 25.1 | 20.4 | 45.5 | 50.0 | -4.5 |
| 7.390 | 25.0 | 20.4 | 45.4 | 50.0 | -4.6 |
| 7.990 | 24.7 | 20.4 | 45.1 | 50.0 | -4.9 |
| 8.360 | 24.7 | 20.4 | 45.1 | 50.0 | -4.9 |
| 8.720 | 24.6 | 20.4 | 45.0 | 50.0 | -5.0 |
| 7.180 | 24.5 | 20.4 | 44.9 | 50.0 | -5.1 |
| 9.710 | 24.0 | 20.4 | 44.4 | 50.0 | -5.6 |
| 6.530 | 23.9 | 20.3 | 44.2 | 50.0 | -5.8 |
| 9.330 | 23.6 | 20.4 | 44.0 | 50.0 | -6.0 |
| 8.590 | 23.5 | 20.4 | 43.9 | 50.0 | -6.1 |
| 9.200 | 23.4 | 20.4 | 43.8 | 50.0 | -6.2 |
| 7.500 | 23.4 | 20.4 | 43.8 | 50.0 | -6.2 |
| 9.450 | 23.3 | 20.4 | 43.7 | 50.0 | -6.3 |
| 9.000 | 23.3 | 20.4 | 43.7 | 50.0 | -6.3 |
| 6.680 | 23.2 | 20.3 | 43.5 | 50.0 | -6.5 |
| 6.170 | 23.2 | 20.3 | 43.5 | 50.0 | -6.5 |
| 7.660 | 23.0 | 20.4 | 43.4 | 50.0 | -6.6 |
| 10.070 | 22.9 | 20.4 | 43.3 | 50.0 | -6.7 |

EMC

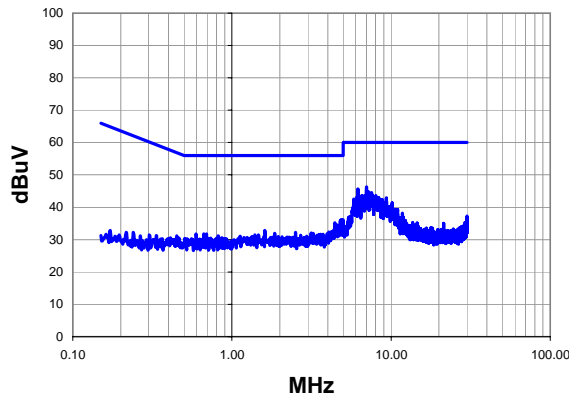
AC POWERLINE CONDUCTED EMISSIONS

| | | | | |
|------------------------|--|--------------------------|-----------|---|
| Work Order: | INMC0575 | Date: | 08/11/10 | <i>Rod Peloquin</i> Tested by: Rod Peloquin |
| Project: | None | Temperature: | 22 °C | |
| Job Site: | EV07 | Humidity: | 53 | |
| Serial Number: | R11 | Barometric Pres.: | 1014.8 mb | |
| EUT: | RC12 | | | |
| Configuration: | 3 - AC Power Conducted Emissions | | | |
| Customer: | Intermec Technologies Corporation | | | |
| Attendees: | none | | | |
| EUT Power: | 3.3 VDC from 120VAC | | | |
| Operating Mode: | Transmitting Bluetooth GFSK/DH5 mode, High Channel | | | |
| Deviations: | No deviations. | | | |
| Comments: | Linear lab power supply | | | |

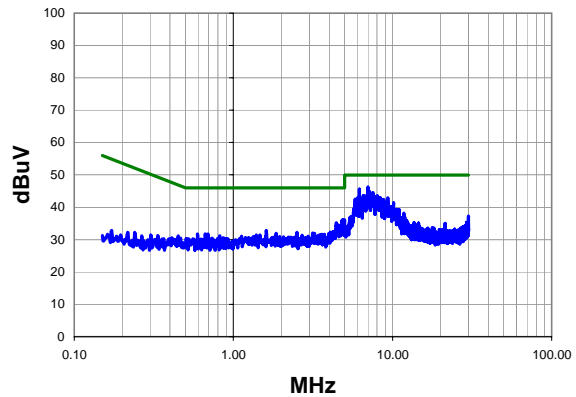
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|---|--|
| Test Specifications FCC 15.207:2010 | Test Method ANSI C63.10:2009 |
|---|--|

| | | | | | | | |
|--------------|----|--------------|-----------|--------------------------|----|----------------|------|
| Run # | 39 | Line: | High Line | Ext. Attenuation: | 20 | Results | Pass |
|--------------|----|--------------|-----------|--------------------------|----|----------------|------|

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 7.000 | 25.9 | 20.4 | 46.3 | 60.0 | -13.7 |
| 6.190 | 25.3 | 20.3 | 45.6 | 60.0 | -14.4 |
| 7.190 | 24.5 | 20.4 | 44.9 | 60.0 | -15.1 |
| 7.540 | 24.1 | 20.4 | 44.5 | 60.0 | -15.5 |
| 8.010 | 23.2 | 20.4 | 43.6 | 60.0 | -16.4 |
| 6.870 | 23.2 | 20.4 | 43.6 | 60.0 | -16.4 |
| 6.650 | 23.2 | 20.3 | 43.5 | 60.0 | -16.5 |
| 6.540 | 23.2 | 20.3 | 43.5 | 60.0 | -16.5 |
| 7.650 | 22.9 | 20.4 | 43.3 | 60.0 | -16.7 |
| 6.070 | 22.9 | 20.3 | 43.2 | 60.0 | -16.8 |
| 9.330 | 22.5 | 20.4 | 42.9 | 60.0 | -17.1 |
| 8.360 | 22.5 | 20.4 | 42.9 | 60.0 | -17.1 |
| 8.150 | 22.4 | 20.4 | 42.8 | 60.0 | -17.2 |
| 6.310 | 22.3 | 20.3 | 42.6 | 60.0 | -17.4 |
| 5.820 | 22.3 | 20.3 | 42.6 | 60.0 | -17.4 |
| 8.810 | 22.0 | 20.4 | 42.4 | 60.0 | -17.6 |
| 8.540 | 22.0 | 20.4 | 42.4 | 60.0 | -17.6 |
| 5.900 | 22.0 | 20.3 | 42.3 | 60.0 | -17.7 |
| 10.150 | 20.9 | 20.4 | 41.3 | 60.0 | -18.7 |
| 8.980 | 20.9 | 20.4 | 41.3 | 60.0 | -18.7 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 7.000 | 25.9 | 20.4 | 46.3 | 50.0 | -3.7 |
| 6.190 | 25.3 | 20.3 | 45.6 | 50.0 | -4.4 |
| 7.190 | 24.5 | 20.4 | 44.9 | 50.0 | -5.1 |
| 7.540 | 24.1 | 20.4 | 44.5 | 50.0 | -5.5 |
| 8.010 | 23.2 | 20.4 | 43.6 | 50.0 | -6.4 |
| 6.870 | 23.2 | 20.4 | 43.6 | 50.0 | -6.4 |
| 6.650 | 23.2 | 20.3 | 43.5 | 50.0 | -6.5 |
| 6.540 | 23.2 | 20.3 | 43.5 | 50.0 | -6.5 |
| 7.650 | 22.9 | 20.4 | 43.3 | 50.0 | -6.7 |
| 6.070 | 22.9 | 20.3 | 43.2 | 50.0 | -6.8 |
| 9.330 | 22.5 | 20.4 | 42.9 | 50.0 | -7.1 |
| 8.360 | 22.5 | 20.4 | 42.9 | 50.0 | -7.1 |
| 8.150 | 22.4 | 20.4 | 42.8 | 50.0 | -7.2 |
| 6.310 | 22.3 | 20.3 | 42.6 | 50.0 | -7.4 |
| 5.820 | 22.3 | 20.3 | 42.6 | 50.0 | -7.4 |
| 8.810 | 22.0 | 20.4 | 42.4 | 50.0 | -7.6 |
| 8.540 | 22.0 | 20.4 | 42.4 | 50.0 | -7.6 |
| 5.900 | 22.0 | 20.3 | 42.3 | 50.0 | -7.7 |
| 10.150 | 20.9 | 20.4 | 41.3 | 50.0 | -8.7 |
| 8.980 | 20.9 | 20.4 | 41.3 | 50.0 | -8.7 |

EMC

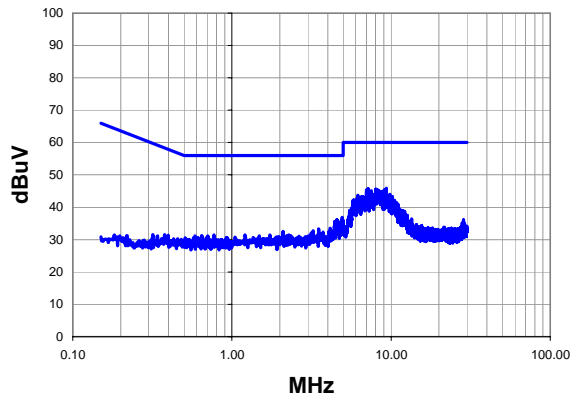
AC POWERLINE CONDUCTED EMISSIONS

| | | | | |
|------------------------|--|--------------------------|-----------|---|
| Work Order: | INMC0575 | Date: | 08/11/10 | <i>Rod Peloquin</i> Tested by: Rod Peloquin |
| Project: | None | Temperature: | 22 °C | |
| Job Site: | EV07 | Humidity: | 53 | |
| Serial Number: | R11 | Barometric Pres.: | 1014.8 mb | |
| EUT: | RC12 | | | |
| Configuration: | 3 - AC Power Conducted Emissions | | | |
| Customer: | Intermec Technologies Corporation | | | |
| Attendees: | none | | | |
| EUT Power: | 3.3 VDC from 120VAC | | | |
| Operating Mode: | Transmitting Bluetooth GFSK/DH5 mode, High Channel | | | |
| Deviations: | No deviations. | | | |
| Comments: | Linear lab power supply | | | |

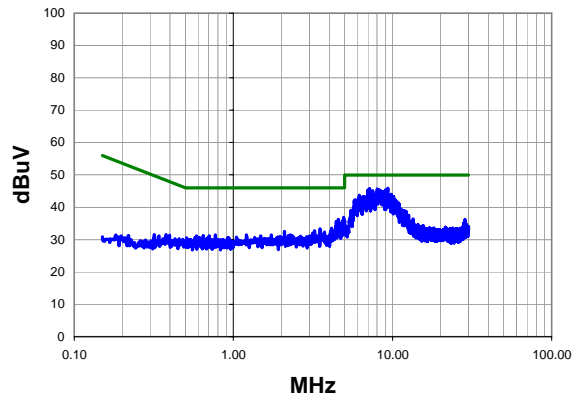
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|---|--|
| Test Specifications FCC 15.207:2010 | Test Method ANSI C63.10:2009 |
|---|--|

| | | | | | | | |
|--------------|----|--------------|---------|--------------------------|----|----------------|------|
| Run # | 40 | Line: | Neutral | Ext. Attenuation: | 20 | Results | Pass |
|--------------|----|--------------|---------|--------------------------|----|----------------|------|

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 9.330 | 25.5 | 20.4 | 45.9 | 60.0 | -14.1 |
| 7.180 | 25.3 | 20.4 | 45.7 | 60.0 | -14.3 |
| 8.020 | 25.2 | 20.4 | 45.6 | 60.0 | -14.4 |
| 9.060 | 25.0 | 20.4 | 45.4 | 60.0 | -14.6 |
| 8.250 | 24.9 | 20.4 | 45.3 | 60.0 | -14.7 |
| 8.170 | 24.8 | 20.4 | 45.2 | 60.0 | -14.8 |
| 7.500 | 24.7 | 20.4 | 45.1 | 60.0 | -14.9 |
| 7.460 | 24.5 | 20.4 | 44.9 | 60.0 | -15.1 |
| 8.720 | 24.4 | 20.4 | 44.8 | 60.0 | -15.2 |
| 8.980 | 24.1 | 20.4 | 44.5 | 60.0 | -15.5 |
| 9.210 | 23.8 | 20.4 | 44.2 | 60.0 | -15.8 |
| 8.870 | 23.8 | 20.4 | 44.2 | 60.0 | -15.8 |
| 9.810 | 23.6 | 20.4 | 44.0 | 60.0 | -16.0 |
| 7.670 | 23.6 | 20.4 | 44.0 | 60.0 | -16.0 |
| 9.680 | 23.3 | 20.4 | 43.7 | 60.0 | -16.3 |
| 6.190 | 23.4 | 20.3 | 43.7 | 60.0 | -16.3 |
| 10.160 | 22.9 | 20.4 | 43.3 | 60.0 | -16.7 |
| 6.520 | 23.0 | 20.3 | 43.3 | 60.0 | -16.7 |
| 6.660 | 22.9 | 20.3 | 43.2 | 60.0 | -16.8 |
| 6.100 | 22.4 | 20.3 | 42.7 | 60.0 | -17.3 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 9.330 | 25.5 | 20.4 | 45.9 | 50.0 | -4.1 |
| 7.180 | 25.3 | 20.4 | 45.7 | 50.0 | -4.3 |
| 8.020 | 25.2 | 20.4 | 45.6 | 50.0 | -4.4 |
| 9.060 | 25.0 | 20.4 | 45.4 | 50.0 | -4.6 |
| 8.250 | 24.9 | 20.4 | 45.3 | 50.0 | -4.7 |
| 8.170 | 24.8 | 20.4 | 45.2 | 50.0 | -4.8 |
| 7.500 | 24.7 | 20.4 | 45.1 | 50.0 | -4.9 |
| 7.460 | 24.5 | 20.4 | 44.9 | 50.0 | -5.1 |
| 8.720 | 24.4 | 20.4 | 44.8 | 50.0 | -5.2 |
| 8.980 | 24.1 | 20.4 | 44.5 | 50.0 | -5.5 |
| 9.210 | 23.8 | 20.4 | 44.2 | 50.0 | -5.8 |
| 8.870 | 23.8 | 20.4 | 44.2 | 50.0 | -5.8 |
| 9.810 | 23.6 | 20.4 | 44.0 | 50.0 | -6.0 |
| 7.670 | 23.6 | 20.4 | 44.0 | 50.0 | -6.0 |
| 9.680 | 23.3 | 20.4 | 43.7 | 50.0 | -6.3 |
| 6.190 | 23.4 | 20.3 | 43.7 | 50.0 | -6.3 |
| 10.160 | 22.9 | 20.4 | 43.3 | 50.0 | -6.7 |
| 6.520 | 23.0 | 20.3 | 43.3 | 50.0 | -6.7 |
| 6.660 | 22.9 | 20.3 | 43.2 | 50.0 | -6.8 |
| 6.100 | 22.4 | 20.3 | 42.7 | 50.0 | -7.3 |

