EMISSIONS TEST REPORT

Report Number: 3147916BOX-004
Project Number: 3147916

Testing performed on the

Zigbee Module

Model: MRF24J40MA

To
Industry Canada RSS-210 Issue 7 June 2007
and
CFR47 Telecommunications
FCC Part 15 Subpart C "Intentional Radiators" 15.247

For

Microchip Technology, Inc.

Test Performed by:	Test Authorized by:
Intertek – ETL SEMKO	Microchip Technology, Inc.
70 Codman Hill Road	2355 West Chandler Blvd.
Boxborough, MA 01719	Chandler, AZ 85224

Prepared by: _____ Date: 05/13/2008
Nicholas Abbondante

Reviewed by: _____ Date: 05/13/08
Jeff Goulet

1.0 Job Description

1.1 Client Information

This EUT has been tested at the request of:

Company:	Microchip Technology, Inc. 2355 West Chandler Blvd. Chandler, AZ 85224
Contact:	Mr. Steven Bible
Telephone:	480-792-4298
Fax:	N/A
Email:	Steven.Bible@Microchip.com

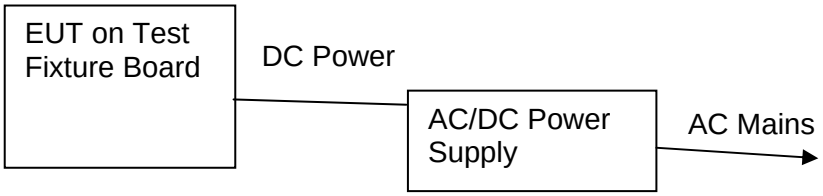
1.2 Equipment Under Test

Equipment Type:	Zigbee Module
Model Number(s):	MRF24J40MA
Serial number(s):	3
Manufacturer:	Microchip Technology, Inc.
EUT receive date:	03/25/2008
EUT received condition:	Prototype in Good Condition
Test start date:	03/25/2008
Test end date:	04/08/2008

1.3 Test Plan Reference: Tested according to the standards listed, FCC Public Notice DA-00-705, FCC KDB 558074, ANSI C63.4:2003, and IC RSS-Gen Issue 2 June 2007

1.4 Test Configuration

1.4.1 Block Diagram



1.4.2. Cables:

Cable	Shielding	Connector	Length (m)	Qty.
AC Power	None	Plastic	1.8	1
DC Power	None	Metal/Jack	1.9	1

1.4.3. Support Equipment:

Name: Test Fixture Board
Model No.: Assembly# 02-01785-R2
Serial No.: BUR071400007

Name: HiTron AC/DC Power Supply
Model No.: HES10-09007-0-7
Serial No.: 17327

1.5 Mode(s) of Operation:

The EUT was tested as a module in a test fixture that supplied power and allowed commands to be issued to control the transmitter. The EUT has an integral antenna. Channels selected for test were Channel 11 (2405 MHz), Channel 18 (2440 MHz), and Channel 26 (2480 MHz). The EUT was activated from nominal 120V/60Hz AC power and was configured to operate in a nearly continuous fashion.

2.0 Test Summary

TEST STANDARD	RESULTS	
FCC Part 15 Subpart C 15.247 IC RSS-210 Annex 8		
SUB-TEST	**TEST PARAMETER**	**COMMENT**
RF Output Power and Human RF Exposure FCC 15.247(b)(3-5) RSS-210 A8.4, RSS-102 4.3	The RF output power must not exceed 36 dBm EIRP. The human RF Exposure limit is 1 mW/cm^2.	Pass
6 dB Bandwidth FCC 15.247(a)(2), RSS-210 A8.2	The 6dB bandwidth must exceed 500 kHz.	Pass
Peak Power Spectral Density FCC 15.247(e), RSS-210 A8.2	The peak power spectral density must not exceed 8 dBm in any 3 kHz bandwidth.	Pass
Band Edge Compliance FCC 15.215, 15.247(d) RSS-210 2.1, A8.5	Spurious emissions at the band edges must be at least 20 dB lower than the fundamental field strength when measured with a 100 kHz bandwidth.	Pass
Radiated Emissions FCC 15.205, 15.209, 15.247(d) RSS-210 2.2, 2.7, A8.5	Spurious emissions must be at least 20 dB lower than the fundamental field strength when measured with a 100 kHz bandwidth. Emissions which fall in the restricted bands of 15.205 must meet the general limits of 15.209. Emissions which fall in the restricted bands of RSS-210 2.2 Table 1 must meet the general limits of RSS-210 2.7 Tables 2 and 3. Receiver spurious emissions must meet the requirements of RSS-Gen Table 1.	Pass
AC Line-Conducted Emissions FCC 15.207, RSS-Gen 7.2.2	AC line-conducted spurious emissions must be below the 15.207 and RSS-Gen 7.2.2 Table 2 limits	Pass

Notes: The EUT was tested as a module. Channels selected for test were Channel 11 (2405 MHz), Channel 18 (2440 MHz), and Channel 26 (2480 MHz).

REVISION SUMMARY – The following changes have been made to this Report:

Date	Project No.	Project Handler	Page(s)	Item	Description of Change
05/13/2008	3147916	Nicholas Abbondante	All	Report number, typo, receiver data, EUT model	Added receiver spurious emissions data, updated EUT model, fixed units typo in RF output power section, amended report number

3.0 Sample Calculations

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CF - AG
Where FS = Field Strength in dBμV/m
RA = Receiver Amplitude (including preamplifier) in dBμV
CF = Cable Attenuation Factor in dB
AF = Antenna Factor in dB
AG = Amplifier Gain in dB

In the following table(s), the reading shown on the data table reflects the preamplifier gain. An example for the calculations in the following table is as follows.

Assume a receiver reading of 52.0 dBμV is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving a field strength of 32 dBμV/m. This value in dBμV/m was converted to its corresponding level in μV/m.

RA = 52.0 dBμV
AF = 7.4 dB/m
CF = 1.6 dB
AG = 29.0 dB
FS = 32 dBμV/m

Level in μV/m = [10(32 dBμV/m)/20] = 39.8 μV/m

The following is how net line-conducted readings were determined:

NF = RF + LF + CF + AF
Where NF = Net Reading in dBμV
RF = Reading from receiver in dBμV
LF = LISN Correction Factor in dB
CF = Cable Correction Factor in dB
AF = Attenuator Loss Factor in dB

To convert from dBμV to μV or mV the following was used:

$UF = 10^{(NF / 20)}$ where UF = Net Reading in μV

Example:

NF = RF + LF + CF + AF = 28.5 + 0.2 + 0.4 + 20.0 = 49.1 dBμV
$UF = 10^{(48.1\ dB\mu V / 20)}$ = 254 μV/m

3.1 Measurement Uncertainty

Compliance of the product is based on the measured value. However, the measurement uncertainty is included for informational purposes.
The expanded uncertainty (k = 2) for radiated emissions from 30 to 1000 MHz has been determined to be:

±3.5 dB at 10m, ±3.8 dB at 3m

The expanded uncertainty (k = 2) for mains conducted emissions from 150 kHz to 30 MHz has been determined to be:

±2.6 dB

The expanded uncertainty (k = 2) for telecom port conducted emissions from 150 kHz to 30 MHz has been determined to be:

±3.2 for ISN and voltage probe measurements
±3.1 for current probe measurements

3.2 Site Description

Test Site(s): 2

Our OATS are 3m and 10m sheltered emissions measurement ranges located in a light commercial environment in Boxborough, Massachusetts. They meet the technical requirements of ANSI C63.4-2003 and CISPR 22:1993/EN 55022:1994 for radiated and conducted emission measurements. The shelter structure is entirely fiberglass and plastic, with outside dimensions of 33 ft x 57 ft. The structure resembles a quonset hut with a center ceiling height of 16.5 ft.

The testing floor is covered by a galvanized sheet metal groundplane that is earth-grounded via copper rods around the perimeter of the site. The joints between individual metal sheets are bridged with a 2 inch wide metal strips to provide low RF impedance contact throughout. The sheets are screwed in place with stainless steel, round-head screws every three inches. Site illumination and HVAC are provided from beneath the ground reference plane through flush entry ports, the port covers are electrically bonded to the ground plane.

A flush metal turntable with 12 ft. diameter and 5000 lb. load capacity (12,000 lb. in Site 3) is provided for floor-standing equipment. A wooden table 80 cm high is used for table-top equipment. The turntable is electrically connected to the ground plane with three copper straps. The straps are connected to the turntable at the center of it with ground braid. The copper strap is directly connected to the groundplane at the edges of the turntable. The turntable is located on the south end of the structure and the antennas are mounted 3 and 10 meters away to the north. The antenna mast is a non-conductive with remote control of antenna height and polarization. The antenna height is adjustable from 1 to 4 meters.

All final radiated emission measurements are performed with the testing personnel and measurement equipment located below the ground reference plane. The site has a full basement underneath the turntable where support equipment may be remotely located. Operation of the antenna, turntable and equipment under test is controlled by remote controls that manipulate the antenna height and polarization and with a turntable control. Test personnel are located below the ellipse when measurements are performed, however the site maintains the ability of having personnel manipulate cables while monitoring test equipment. Ambient radiated emissions are 6 dB or more below the relevant FCC emission limits.

AC mains power is brought to the equipment under test through a power line filter, to remove ambient conducted noise. 50 Hz (240 VAC single phase), 60 Hz power (120 VAC single phase, 208 VAC three phase), and 60 Hz (480 VAC three phase) are available. Conducted emission measurements are performed with a Line Impedance Stabilization Network (LISN) or Artificial Mains Network (AMN) bonded to the ground reference plane. A removable vertical groundplane (2 meter X 2 meter area) is used for line-conducted measurements for table top equipment. The vertical groundplane is electrically connected to the reference groundplane.

The EMC Lab has two Semi-anechoic Chambers and one Shielded Chamber. AC Mains Power is available at 120, 230, and 277 Single Phase; 208, 400, and 480 3-Phase. Large reference groundplanes are installed in the general lab area to facilitate EMC work not requiring a shielded environment.

Test Results: Pass

Test Standard: FCC Part 15 Subpart C, IC RSS-210

Test: RF Output Power and Human RF Exposure

Performance Criterion: The RF output power must not exceed 36 dBm EIRP. The human RF Exposure limit is 1 mW/cm^2.

Test Environment:

Environmental Conditions During Testing:	Ambient (°C):	20	Humidity (%):	23	Pressure (hPa):	1050
Pretest Verification Performed	Yes		Equipment under Test:		MRF24J40MA	
Test Engineer(s):	Nicholas Abbondante		EUT Serial Number:		3	

Test Equipment Used:

TEST EQUIPMENT LIST					
Item	**Equipment Type**	**Make**	**Model No.**	**Serial No.**	**Next Cal. Due**
1	Digital 4 Line Barometer	Mannix	0ABA116	BAR2	05/20/2008
2	Spectrum Analyzer 20Hz - 40 GHz	Rohde & Schwartz	FSEK-30	100225	11/26/2008
3	40GHz Cable	Megaphase	TM40-K1K1-197	7030801 001	05/23/2008
4	40 GHz Cable	Megaphase	TM40-K1K1-197	7030801 002	05/23/2008
5	HORN ANTENNA	EMCO	3115	9602-4675	09/24/2008

Software Utilized:

Name	Manufacturer	Version
EXCEL 2000	Microsoft Corporation	9.0.6926 SP-3
EMI BOXBOROUGH	Intertek	3/07/07 Revision

Test Details:

Notes: The EUT was measured in a radiated fashion. The Effective Isotropic Radiated Power (EIRP) is -2.9 dBm (0.51 mW). The data obtained was adjusted for equipment losses and converted from a field strength reading to a power reading using the provisions of FCC Public Notice DA-00-705 and RSS-Gen 4.6. The human RF exposure limit is 1 mW/cm^2. The plane-wave power density S generated by some value of EIRP at a given distance d is related by the equation:

$S=EIRP / (4\pi d^2)$

The distance, given a maximum EIRP of -2.9 dBm (0.51 mW), at which the radiated power density of the EUT is equal to the human RF exposure limit is 0.202 cm from the antenna. This

result does not take averaging into account.

The EUT is exempt from RF evaluation as referenced in RSS-102 because the operating frequency is above 1.5 GHz and the EIRP does not exceed 5 watts.

Radiated Emissions

Company: Microchip Technology Inc. Antenna & Cables: HF Bands: N, LF, HF, SHF
Model #: MRF24J40MA Antenna: Horn2 V1m 9-24-2008.txt Horn2 H1m 9-24-2008.txt
Serial #: 3 Cable(s): MEG001 05-23-08.txt MEG002 05-23-08.txt
Engineers: Nicholas Abbondante Location: Site 2 Barometer: BAR2
Project #: 3147916 Date(s): 03/25/08
Standard: FCC Part 15 Subpart C 15.247 Temp/Humidity/Pressure: 20c 23% 1050mB
Receiver: R&S FSEK-30 (ROS001) Limit Distance (m): 3
PreAmp: PRE8 11-09-08.txt Test Distance (m): 3
PreAmp Used? (Y or N): N Voltage/Frequency: 120V/60Hz Frequency Range: Frequencies Shown
Net = Reading (dBuV/m) + Antenna Factor (dB1/m) + Cable Loss (dB) - Preamp Factor (dB) - Distance Factor (dB)
Peak: PK Quasi-Peak: QP Average: AVG RMS: RMS; NF = Noise Floor, RB = Restricted Band; Bandwidth denoted as RBW/VBW

Detector Type	Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Distance Factor dB	Net dBm	Limit dBm	Margin dB	Bandwidth	FCC	IC
Note: FCC/IC Output Power													
PK	V	2405.000	57.2	28.6	5.9	0.0	0.0	-3.5	36.0	-39.5	5/10 MHz		
PK	V	2440.000	57.7	28.7	6.0	0.0	0.0	-2.9	36.0	-38.9	5/10 MHz		
PK	V	2480.000	54.8	28.8	6.0	0.0	0.0	-5.6	36.0	-41.6	5/10 MHz		

Setup Photos

Test Results: Pass

Test Standard: FCC Part 15 Subpart C, IC RSS-210

Test: 6 dB Bandwidth

Performance Criterion: The 6dB bandwidth must exceed 500 kHz.

Test Environment:

Environmental Conditions During Testing:		Ambient (°C):	20	Humidity (%):	23	Pressure (hPa):	1050
Pretest Verification Performed		Yes		Equipment under Test:		MRF24J40MA	
Test Engineer(s):	Nicholas Abbondante			EUT Serial Number:		3	

Test Equipment Used:

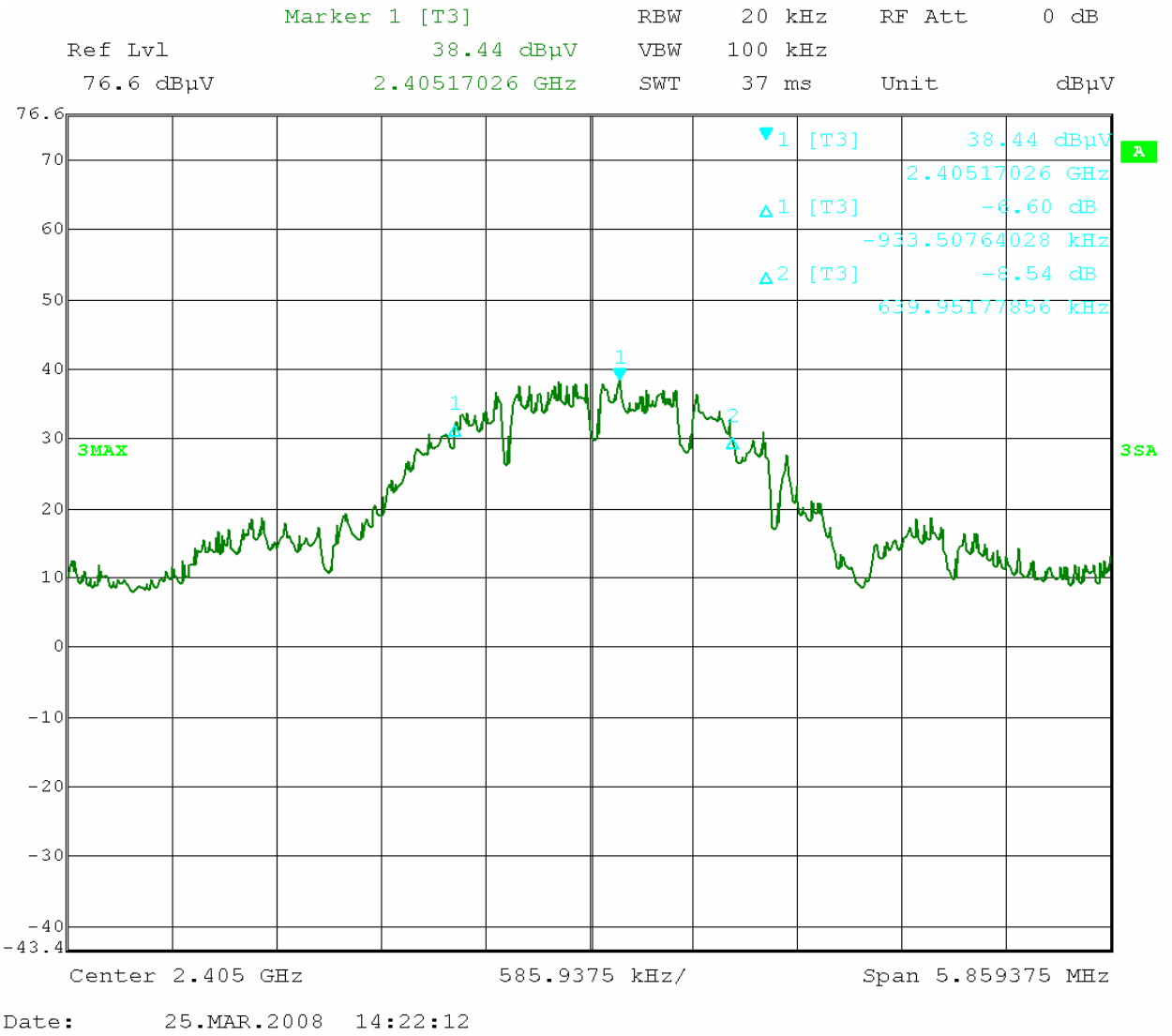
TEST EQUIPMENT LIST					
Item	**Equipment Type**	**Make**	**Model No.**	**Serial No.**	**Next Cal. Due**
1	Digital 4 Line Barometer	Mannix	0ABA116	BAR2	05/20/2008
2	Spectrum Analyzer 20Hz - 40 GHz	Rohde & Schwartz	FSEK-30	100225	11/26/2008
3	40GHz Cable	Megaphase	TM40-K1K1-197	7030801 001	05/23/2008
4	40 GHz Cable	Megaphase	TM40-K1K1-197	7030801 002	05/23/2008
5	HORN ANTENNA	EMCO	3115	9602-4675	09/24/2008

Software Utilized:

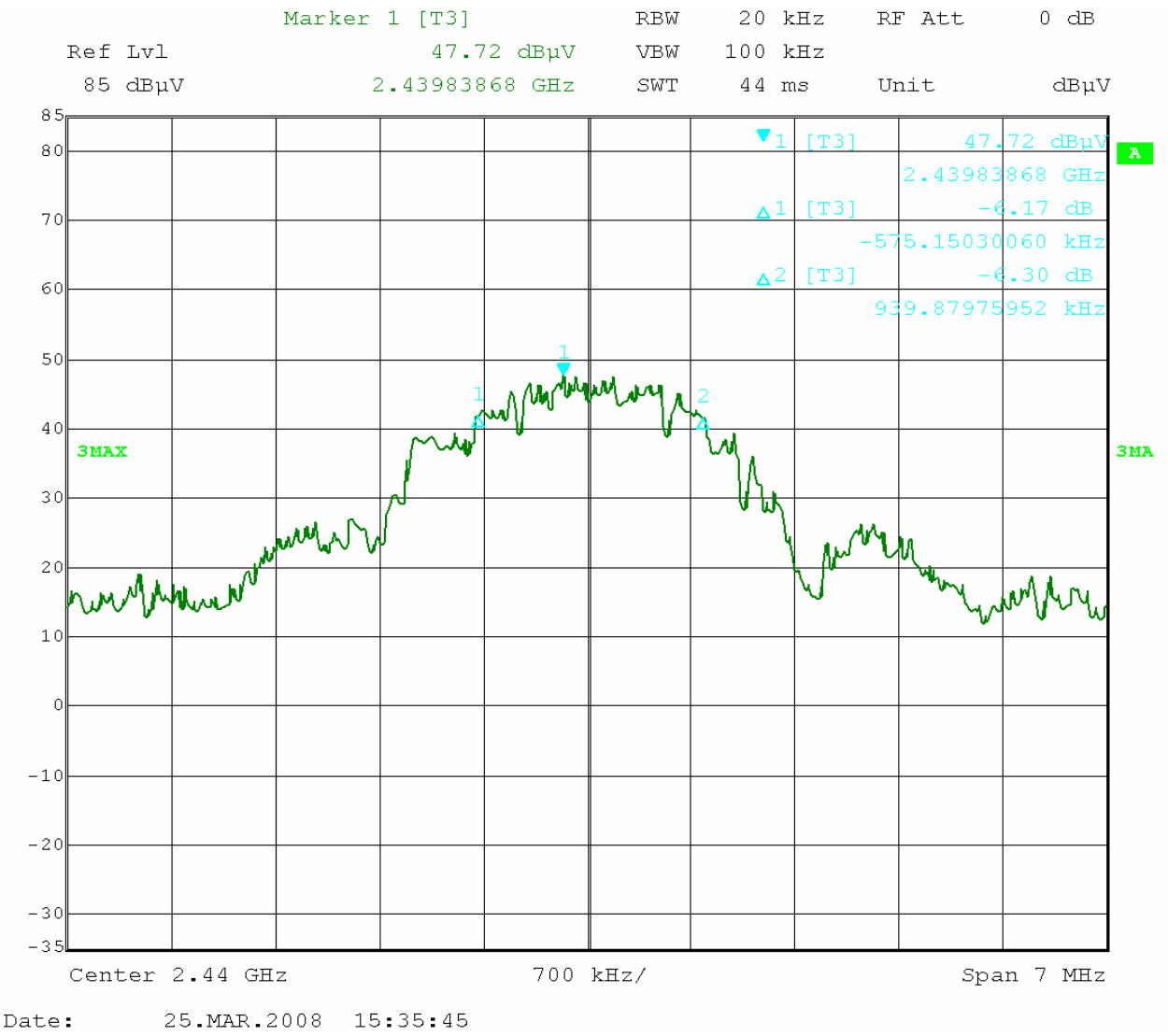
Name	Manufacturer	Version
EXCEL 2000	Microsoft Corporation	9.0.6926 SP-3
EMI BOXBOROUGH	Intertek	3/07/07 Revision

Test Details:

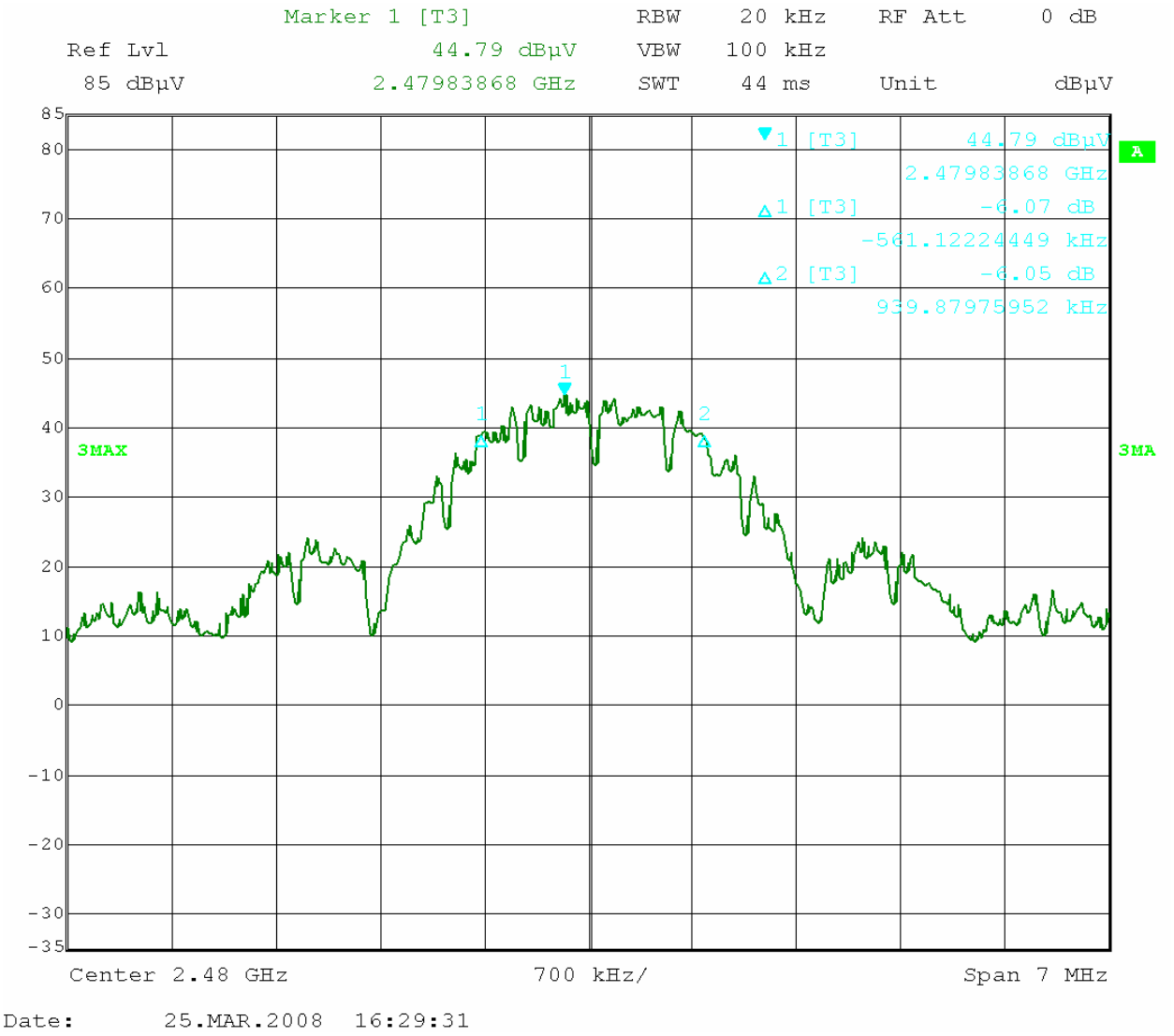
Notes: The RF level in the plots is relative and is not necessarily indicative of maximum RF output power. The 6 dB bandwidth is 1.573 MHz. The 20 dB bandwidth is 2.96 MHz. The emissions designator is 2M96G1D.



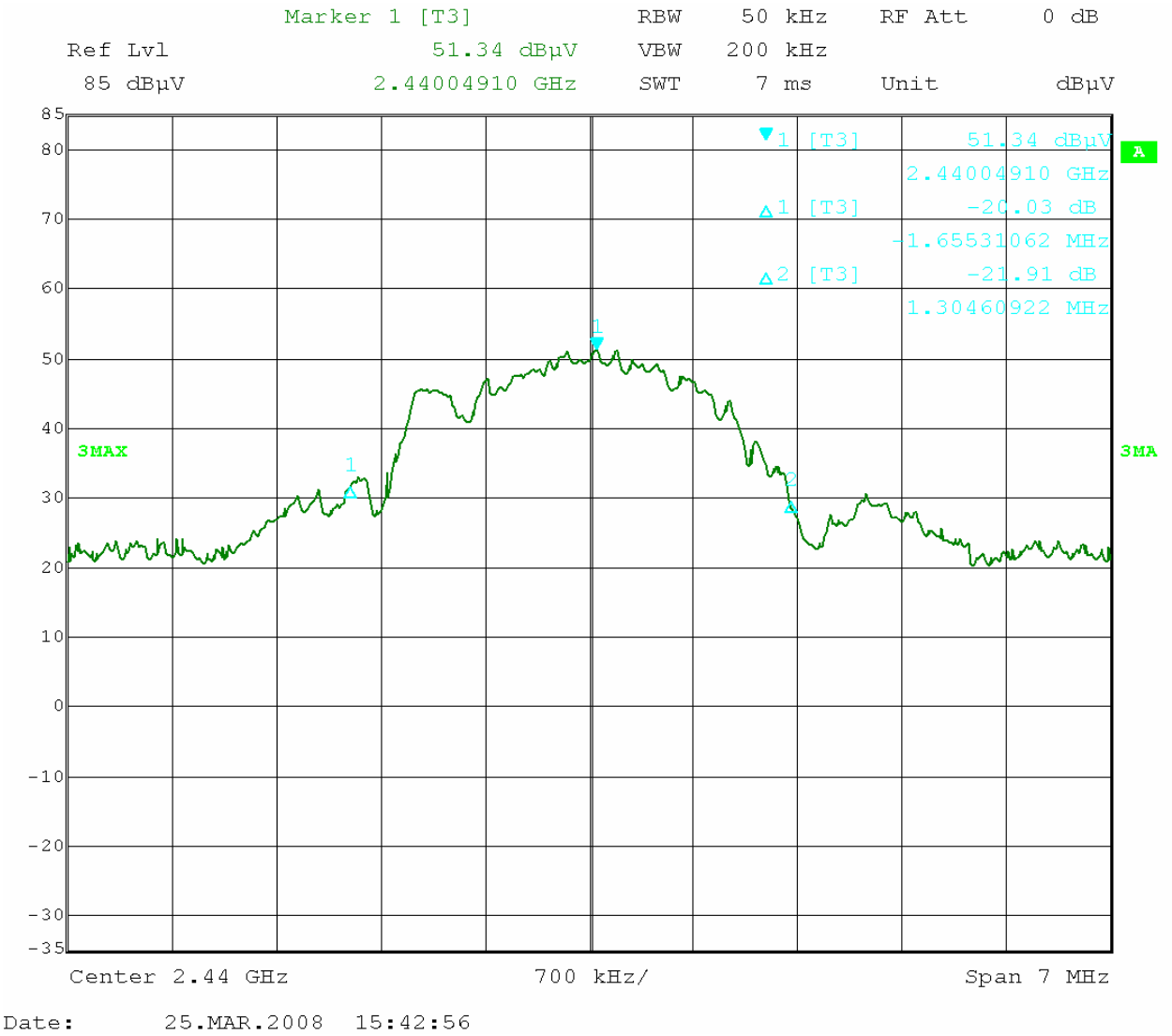
Channel 11 (2405 MHz) 6 dB Bandwidth: 1.573 MHz



Channel 18 (2440 MHz) 6 dB Bandwidth: 1.515 MHz



Channel 26 (2480 MHz) 6 dB Bandwidth: 1.501 MHz



Channel 18 (2440 MHz) 20 dB Bandwidth: 2.96 MHz

Test Results: Pass

Test Standard: FCC Part 15 Subpart C, IC RSS-210

Test: Peak Power Spectral Density

Performance Criterion: The peak power spectral density must not exceed 8 dBm in any 3 kHz bandwidth.

Test Environment:

Environmental Conditions During Testing:	Ambient (°C):	20	Humidity (%):	23	Pressure (hPa):	1050
Pretest Verification Performed	Yes		Equipment under Test:		MRF24J40MA	
Test Engineer(s):	Nicholas Abbondante		EUT Serial Number:		3	

Test Equipment Used:

TEST EQUIPMENT LIST					
Item	**Equipment Type**	**Make**	**Model No.**	**Serial No.**	**Next Cal. Due**
1	Digital 4 Line Barometer	Mannix	0ABA116	BAR2	05/20/2008
2	Spectrum Analyzer 20Hz - 40 GHz	Rohde & Schwartz	FSEK-30	100225	11/26/2008
3	40GHz Cable	Megaphase	TM40-K1K1-197	7030801 001	05/23/2008
4	40 GHz Cable	Megaphase	TM40-K1K1-197	7030801 002	05/23/2008
5	HORN ANTENNA	EMCO	3115	9602-4675	09/24/2008

Software Utilized:

Name	Manufacturer	Version
EXCEL 2000	Microsoft Corporation	9.0.6926 SP-3
EMI BOXBOROUGH	Intertek	3/07/07 Revision

Test Details:

Radiated Emissions

Company: Microchip Technology Inc.
Model #: MRF24J40MA
Serial #: 3
Engineers: Nicholas Abbondante
Project #: 3147916
Standard: FCC Part 15 Subpart C 15.247
Receiver: R&S FSEK-30 (ROS001)
PreAmp: PRE8 11-09-08.txt

Date(s): 03/25/08
Location: Site 2
Limit Distance (m): 3
Test Distance (m): 3

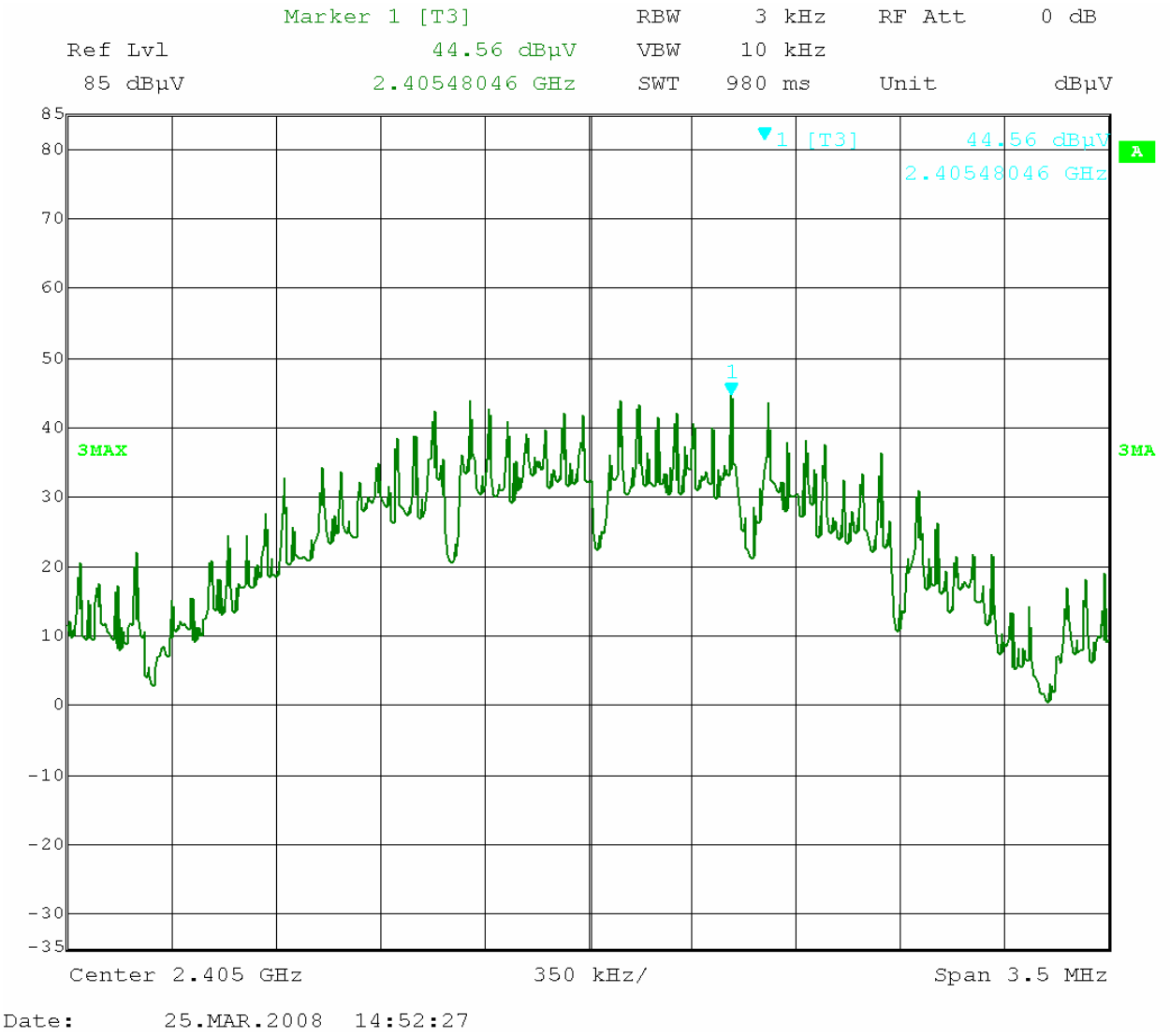
Antenna & Cables: HF Bands: N, LF, HF, SHF
Antenna: Horn2 V1m 9-24-2008.txt Horn2 H1m 9-24-2008.txt
Cable(s): MEG001 05-23-08.txt MEG002 05-23-08.txt
Barometer: BAR2
Temp/Humidity/Pressure: 20c 23% 1050mB

PreAmp Used? (Y or N): N
Voltage/Frequency: 120V/60Hz
Frequency Range: Frequencies Shown

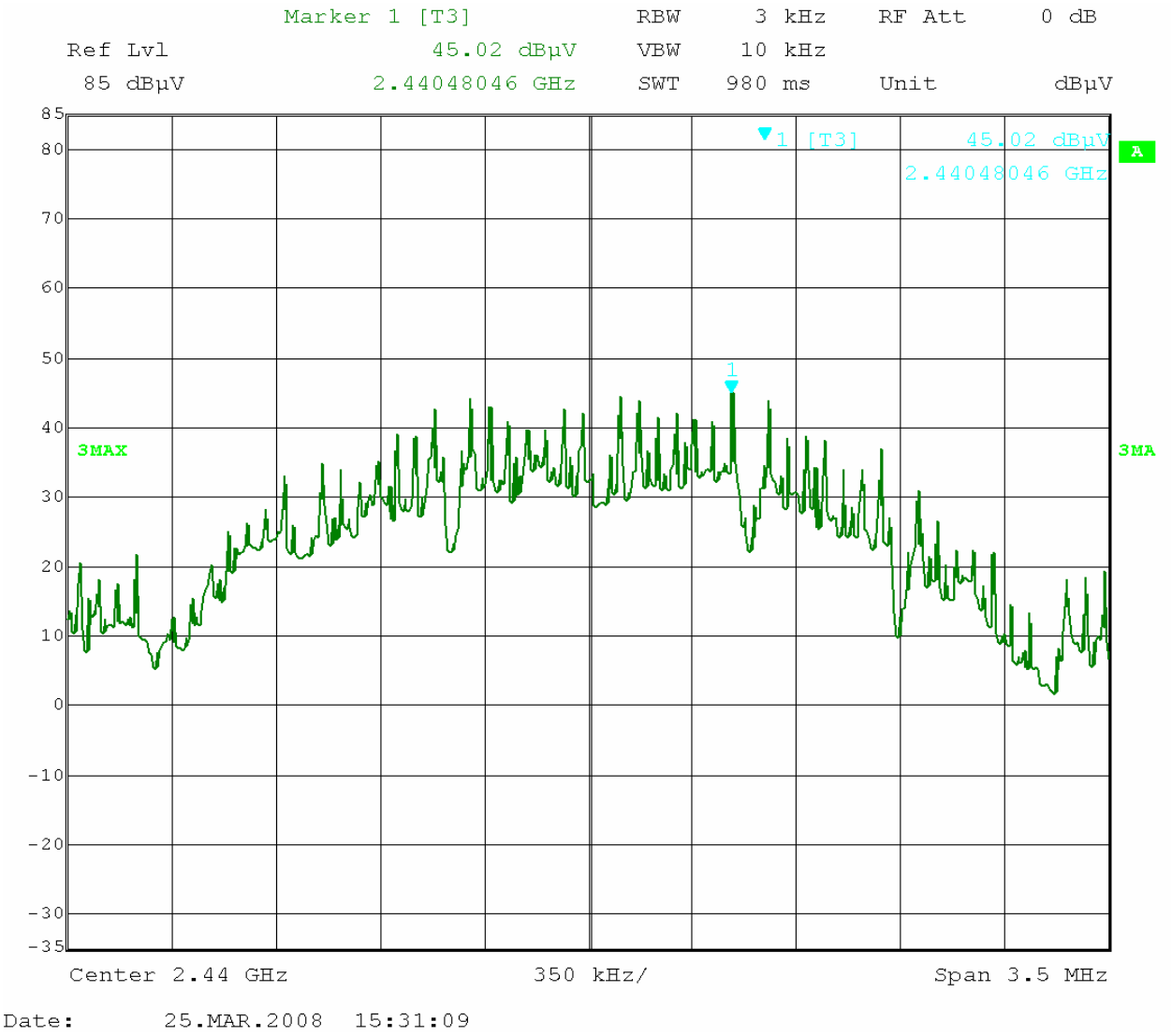
Net = Reading (dBuV/m) + Antenna Factor (dB1/m) + Cable Loss (dB) - Preamp Factor (dB) - Distance Factor (dB)

Peak: PK Quasi-Peak: QP Average: AVG RMS: RMS; NF = Noise Floor, RB = Restricted Band; Bandwidth denoted as RBW/VBW

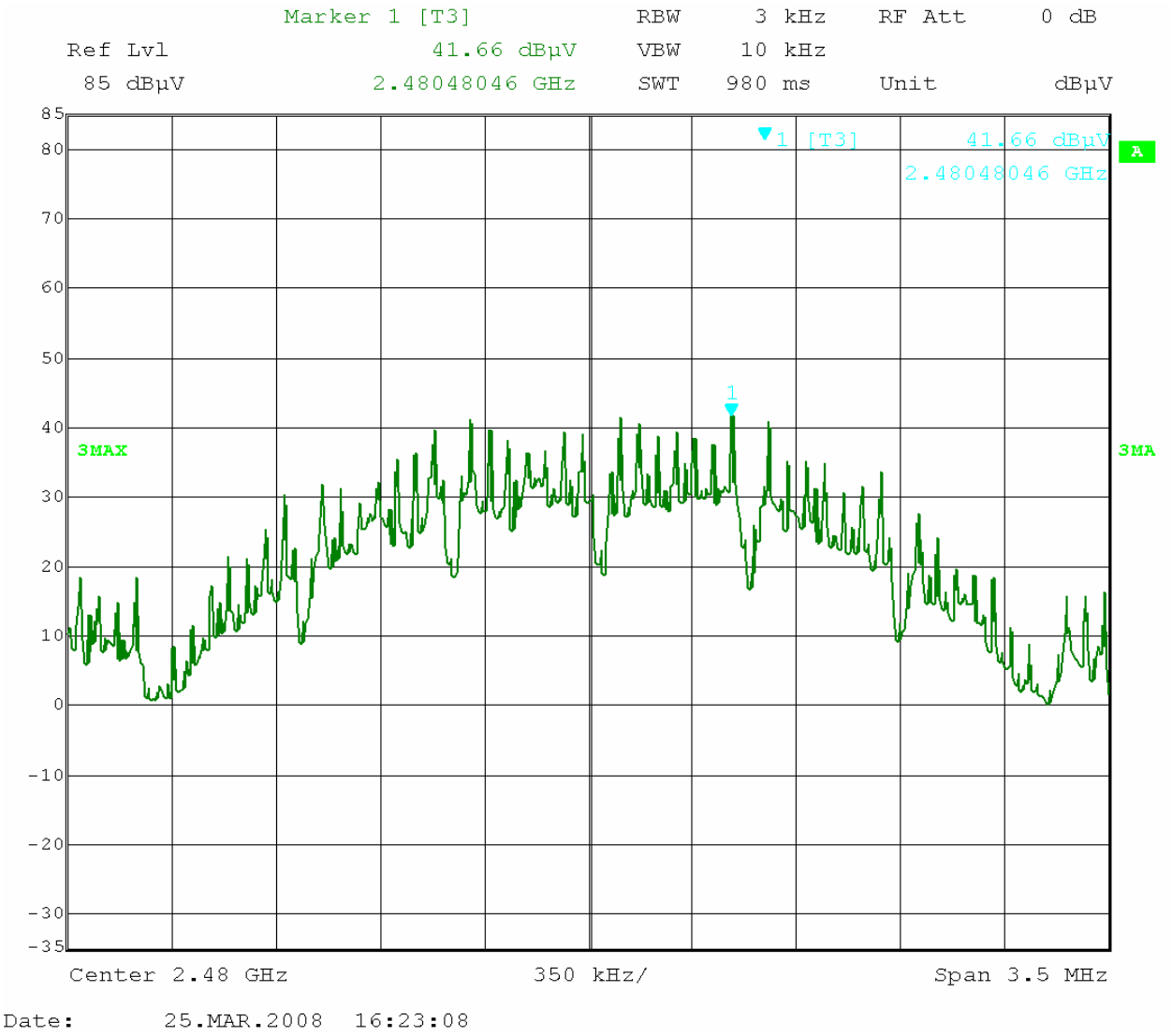
Detector Type	Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Distance Factor dB	Net dB(uV/m)	Limit dB(uV/m)	Margin dB	Bandwidth	FCC	IC
Note: FCC/IC Peak Power Spectral Density													
PK	V	2405.000	44.6	28.6	5.9	0.0	0.0	-16.1	8.0	-24.1	3/10 kHz		
PK	V	2440.000	45.0	28.7	6.0	0.0	0.0	-15.5	8.0	-23.5	3/10 kHz		
PK	V	2480.000	41.7	28.8	6.0	0.0	0.0	-18.8	8.0	-26.8	3/10 kHz		



Channel 11 (2405 MHz) Peak Power Spectral Density



Channel 18 (2440 MHz) Peak Power Spectral Density



Channel 26 (2480 MHz) Peak Power Spectral Density

Setup Photos

Test Results: Pass

Test Standard: FCC Part 15 Subpart C, IC RSS-210

Test: Band Edge Compliance

Performance Criterion: Spurious emissions at the band edges must be at least 20 dB lower than the fundamental field strength when measured with a 100 kHz bandwidth.

Test Environment:

Environmental Conditions During Testing:	Ambient (°C):	20	Humidity (%):	23	Pressure (hPa):	1050
Pretest Verification Performed	Yes		Equipment under Test:		MRF24J40MA	
Test Engineer(s):	Nicholas Abbondante		EUT Serial Number:		3	

Test Equipment Used:

TEST EQUIPMENT LIST					
Item	**Equipment Type**	**Make**	**Model No.**	**Serial No.**	**Next Cal. Due**
1	Digital 4 Line Barometer	Mannix	0ABA116	BAR2	05/20/2008
2	HORN ANTENNA	EMCO	3115	9602-4675	09/24/2008
3	40GHz Cable	Megaphase	TM40-K1K1-197	7030801 001	05/23/2008
4	40 GHz Cable	Megaphase	TM40-K1K1-197	7030801 002	05/23/2008
5	9kHz to 3GHz EMI Test Receiver	Rohde & Schwartz	ESCI 1166.5950K03	100067	01/25/2009
6	Spectrum Analyzer 20Hz - 40 GHz	Rohde & Schwartz	FSEK-30	100225	11/26/2008

Software Utilized:

Name	Manufacturer	Version
EXCEL 2000	Microsoft Corporation	9.0.6926 SP-3
EMI BOXBOROUGH	Intertek	3/07/07 Revision

Test Details:

Notes: The upper band edge compliance was measurement was performed using the marker-delta method, as referenced in public notice DA-00-705. The marker-delta adjustment factor is 26.89 dB. Average values were obtained using a duty cycle correction factor of -12.2 dB.

The duty cycle averaging factor calculation takes into account the typical EUT duty cycle. Word length was measured at 685 uS, with 36 words in a 100 ms time period, for a 24.7% duty cycle. Using the equation dB reduction = 20 * LOG (dwell time/ burst length), the duty cycle average factor obtained is -12.2 dB.

Radiated Emissions

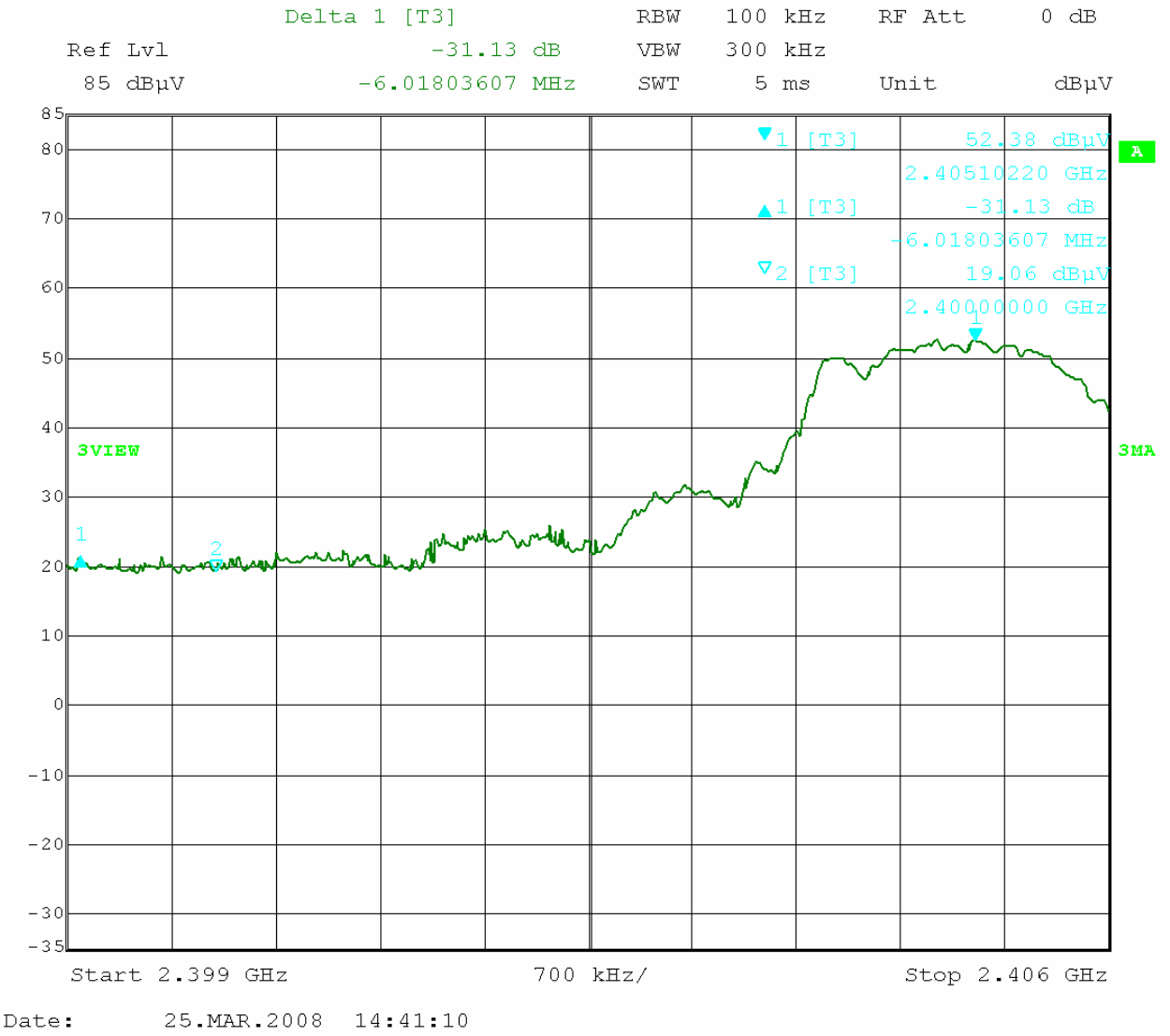
Company: Microchip Technology Inc.
Model #: MRF24J40MA
Serial #: 3
Engineers: Nicholas Abbondante
Project #: 3147916
Standard: FCC Part 15 Subpart C 15.247
Receiver: R&S FSEK-30 (ROS001)
PreAmp: PRE8 11-09-08.txt

Antenna & Cables: HF Bands: N, LF, HF, SHF
Antenna: Horn2 V1m 9-24-2008.txt Horn2 H1m 9-24-2008.txt
Cable(s): MEG001 05-23-08.txt MEG002 05-23-08.txt

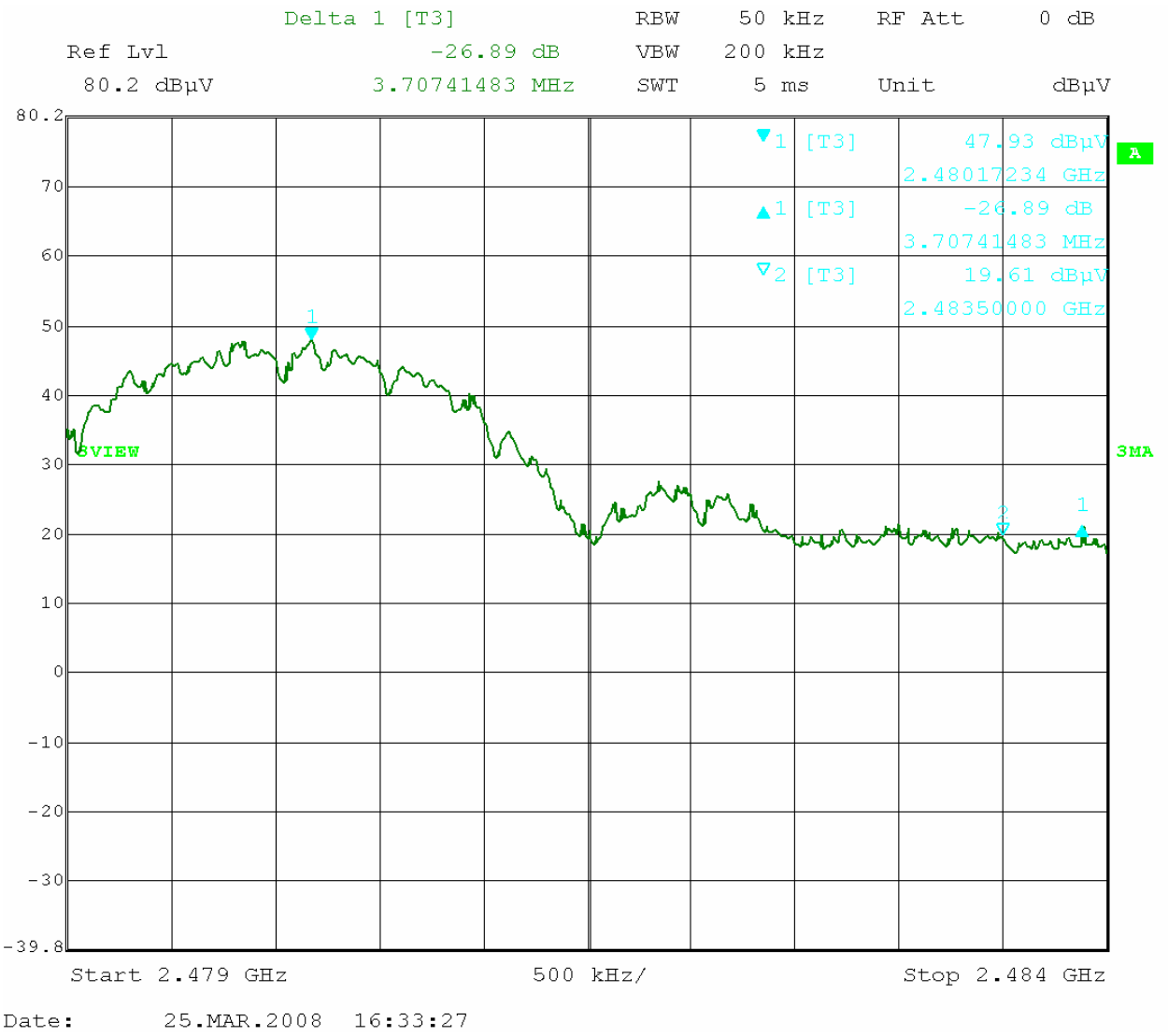
Location: Site 2
Barometer: BAR2
Date(s): 03/25/08
Temp/Humidity/Pressure: 20c 23% 1050mB
Limit Distance (m): 3
Test Distance (m): 3
PreAmp Used? (Y or N): N
Voltage/Frequency: 120V/60Hz
Frequency Range: Frequencies Shown

Net = Reading (dBuV/m) + Antenna Factor (dB1/m) + Cable Loss (dB) - Preamp Factor (dB) - Distance Factor (dB)
Peak: PK Quasi-Peak: QP Average: AVG RMS: RMS; NF = Noise Floor, RB = Restricted Band; Bandwidth denoted as RBW/VBW

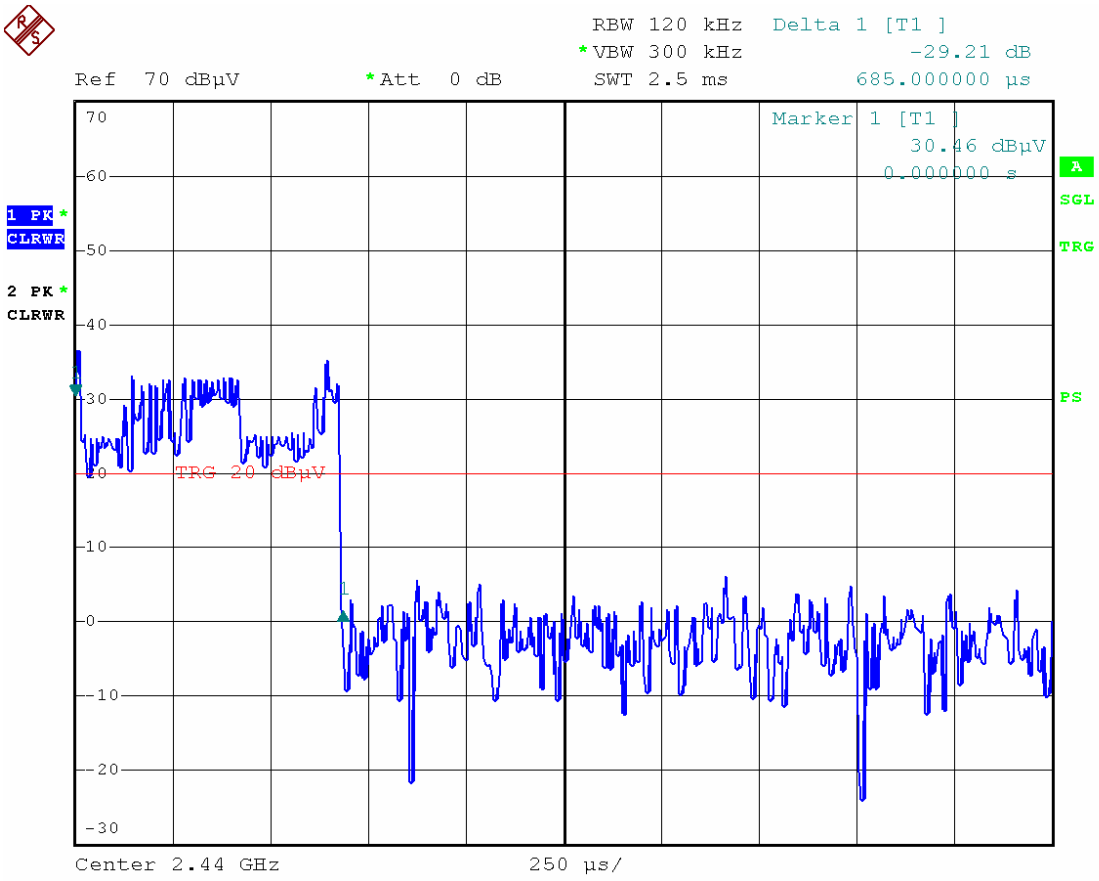
Detector Type	Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Distance Factor dB	Net dB(uV/m)	Limit dB(uV/m)	Margin dB	Bandwidth	FCC	IC
Note: FCC/IC Band Edge Compliance Reference													
PK	V	2480.000	54.1	28.8	6.0	0.0	0.0	88.9	-	-	1/3 MHz		
AVG	V	2480.000	41.9	28.8	6.0	0.0	0.0	76.7	-	-	1/3 MHz		
Note: FCC/IC Band Edge Compliance Using Marker-Delta Method Referenced to 1 MHz values													
PK	V	2483.500	27.2	28.8	6.0	0.0	0.0	62.0	74.0	-12.0	50/200 kHz	RB	
AVG	V	2483.500	15.0	28.8	6.0	0.0	0.0	49.8	54.0	-4.2	50/200 kHz	RB	



Lower Band Edge Compliance

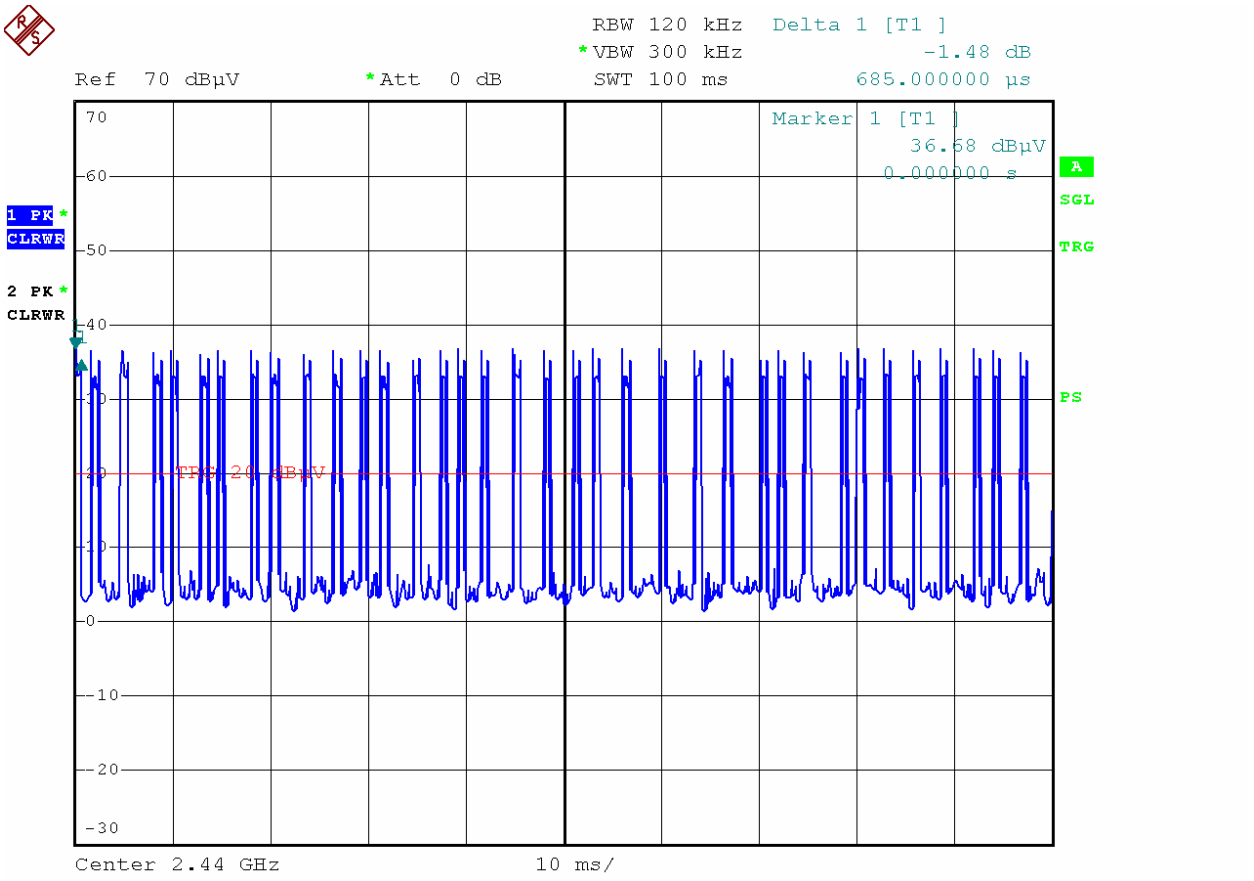


Upper Band Edge Compliance Marker-Delta 26.89 dB



Date: 8.APR.2008 08:58:34

Word Length, 685 uS



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36 Words in a 100 ms Timeframe

Setup Photos

Test Results: Pass

Test Standard: FCC Part 15 Subpart C, IC RSS-210

Test: Radiated Emissions

Performance Criterion: Spurious emissions must be at least 20 dB lower than the fundamental field strength when measured with a 100 kHz bandwidth. Emissions which fall in the restricted bands of 15.205 must meet the general limits of 15.209. Emissions which fall in the restricted bands of RSS-210 2.2 Table 1 must meet the general limits of RSS-210 2.7 Tables 2 and 3. Receiver spurious emissions must meet the requirements of RSS-Gen Table 1.

Test Environment:

Environmental Conditions During Testing:		Ambient (°C):	See Tables	Humidity (%):	See Tables	Pressure (hPa):	See Tables
Pretest Verification Performed		Yes		Equipment under Test:		MRF24J40MA	
Test Engineer(s):	Nicholas Abbondante			EUT Serial Number:		3	

Test Equipment Used:

TEST EQUIPMENT LIST					
Item	**Equipment Type**	**Make**	**Model No.**	**Serial No.**	**Next Cal. Due**
1	Digital 4 Line Barometer	Mannix	0ABA116	BAR2	05/20/2008
2	PREAMPLFIER 1- 40 GHz	MITEQ	NSP4000-NF	507145	11/09/2008
3	Spectrum Analyzer 20Hz - 40 GHz	Rohde & Schwartz	FSEK-30	100225	11/26/2008
4	40GHz Cable	Megaphase	TM40-K1K1-197	7030801 001	05/23/2008
5	40 GHz Cable	Megaphase	TM40-K1K1-197	7030801 002	05/23/2008
6	HORN ANTENNA	EMCO	3115	9602-4675	09/24/2008
7	9kHz to 3GHz EMI Test Receiver	Rohde & Schwartz	ESCI 1166.5950K03	100067	01/25/2009
8	ANTENNA	EMCO	3142	9711-1225	06/05/2008
9	3 Meter In floor cable for site 2	ITS	RG214B/U	S2 3M FLR	09/17/2008
10	High Frequency Cable 40GHz	Megaphase	TM40 K1K1 80	CBL029	12/06/2008
11	High Frequency Cable 40GHz	Megaphase	TM40 K1K1 80	CBL030	12/06/2008
12	ANTENNA, RIDGED GUIDE, 18-40 GHZ	EMCO	3116	2090	12/26/2008

Software Utilized:

Name	Manufacturer	Version
EXCEL 2000	Microsoft Corporation	9.0.6926 SP-3
EMI BOXBOROUGH	Intertek	3/07/07 Revision

Test Results:

Radiated Emissions

Company: Microchip Technology Inc.
Model #: MRF24J40MA
Serial #: 3
Engineers: Nicholas Abbondante
Project #: 3147916
Standard: FCC Part 15 Subpart C 15.247
Receiver: R&S FSEK-30 (ROS001)
PreAmp: PRE8 11-09-08.txt

Date(s): 03/25/08
Location: Site 2
Limit Distance (m): 3
Test Distance (m): 3

Antenna & Cables: HF Bands: N, LF, HF, SHF
Antenna: Horn2 V1m 9-24-2008.txt Horn2 H1m 9-24-2008.txt
Cable(s): MEG001 05-23-08.txt MEG002 05-23-08.txt
Barometer: BAR2
Temp/Humidity/Pressure: 20c 23% 1050mB

PreAmp Used? (Y or N): N
Voltage/Frequency: 120V/60Hz
Frequency Range: Frequencies Shown

Net = Reading (dBuV/m) + Antenna Factor (dB1/m) + Cable Loss (dB) - Preamp Factor (dB) - Distance Factor (dB)

Peak: PK Quasi-Peak: QP Average: AVG RMS: RMS; NF = Noise Floor, RB = Restricted Band; Bandwidth denoted as RBW/VBW

Detector Type	Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Distance Factor dB	Net dB(uV/m)	Limit dB(uV/m)	Margin dB	Bandwidth	FCC	IC
Note: FCC/IC Spurious Reference													
PK	V	2405.000	52.4	28.6	5.9	0.0	0.0	87.0	-	-	100/300 kHz		
PK	V	2440.000	52.9	28.7	6.0	0.0	0.0	87.5	-	-	100/300 kHz		
PK	V	2480.000	49.9	28.8	6.0	0.0	0.0	84.7	-	-	100/300 kHz		

Special Radiated Emissions

Company: Microchip Technology Inc.
Model #: MRF24J40MA
Serial #: 3
Engineers: Nicholas Abbondante
Project #: 3147916
Standard: FCC Part 15 Subpart C 15.247
Receiver: R&S ESCI (ROS002)
PreAmp: PRE8 11-09-08.txt

Antenna & Cables: N
Antenna: LOG4 06-05-08 V3.txt
Cable(s): S2 3M FLR 9-17-08.txt
Bands: N, LF, HF, SHF
LOG4 06-05-08 H3.txt
NONE.

Location: Site 2
Barometer: BAR2
Date(s): 03/26/08
Temp/Humidity/Pressure: 20c 28% 1050mB
Limit Distance (m): 3
Test Distance (m): 3
PreAmp Used? (Y or N): N
Voltage/Frequency: 120V/60Hz
Frequency Range: 30-1000 MHz

Net = Reading (dBuV/m) + Antenna Factor (dB1/m) + Cable Loss (dB) - Preamp Factor (dB) - Distance Factor (dB)
Peak: PK Quasi-Peak: QP Average: AVG RMS: RMS; NF = Noise Floor, RB = Restricted Band; Bandwidth denoted as RBW/VBW

Detector Type	Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Distance Factor dB	Net dB(uV/m)	Limit dB(uV/m)	Margin dB	Bandwidth	FCC	IC
Note: Channel 11 (2405 MHz)													
PK	V	208.200	16.5	11.2	1.9	0.0	0.0	29.5	67.5	-38.0	120/300 kHz		
PK	V	216.900	16.9	11.7	1.9	0.0	0.0	30.5	67.5	-37.0	120/300 kHz		
PK	V	226.900	14.5	12.2	1.9	0.0	0.0	28.6	67.5	-38.9	120/300 kHz		
QP	V	262.800	0.9	12.9	2.1	0.0	0.0	15.9	46.0	-30.1	120/300 kHz	RB	RB
PK	V	427.500	2.2	16.3	2.8	0.0	0.0	21.3	67.5	-46.2	120/300 kHz		
PK	V	946.400	3.6	23.4	4.8	0.0	0.0	31.8	67.5	-35.7	120/300 kHz		
Note: Channel 18 (2440 MHz)													
PK	V	207.700	17.4	11.1	1.9	0.0	0.0	30.4	67.5	-37.1	120/300 kHz		
PK	V	217.900	14.4	11.7	1.9	0.0	0.0	28.1	67.5	-39.4	120/300 kHz		
PK	V	227.600	17.4	12.2	1.9	0.0	0.0	31.5	67.5	-36.0	120/300 kHz		
QP	V	268.260	-1.4	13.0	2.1	0.0	0.0	13.7	46.0	-32.3	120/300 kHz	RB	RB
PK	V	392.800	2.7	15.4	2.6	0.0	0.0	20.7	67.5	-46.8	120/300 kHz		
PK	V	944.600	3.8	23.4	4.8	0.0	0.0	32.0	67.5	-35.5	120/300 kHz		
Note: Channel 26 (2480 MHz)													
PK	V	208.700	18.0	11.2	1.9	0.0	0.0	31.1	67.5	-36.4	120/300 kHz		
PK	V	217.325	19.9	11.7	1.9	0.0	0.0	33.5	67.5	-34.0	120/300 kHz		
PK	V	223.620	16.5	12.1	1.9	0.0	0.0	30.5	67.5	-37.0	120/300 kHz		
QP	V	264.560	3.6	12.9	2.1	0.0	0.0	18.7	46.0	-27.3	120/300 kHz	RB	RB
PK	V	387.200	10.4	15.4	2.6	0.0	0.0	28.4	67.5	-39.1	120/300 kHz		
PK	V	945.200	3.1	23.4	4.8	0.0	0.0	31.3	67.5	-36.2	120/300 kHz		

Special Radiated Emissions

Company: Microchip Technology Inc.
Model #: MRF24J40MA
Serial #: 3
Engineers: Nicholas Abbondante Location: Site 2
Project #: 3147916 Date(s): 03/27/08
Standard: FCC Part 15 Subpart C 15.247
Receiver: R&S FSEK-30 (ROS001) Limit Distance (m): 3
PreAmp: PRE8 11-09-08.txt Test Distance (m): 3
PreAmp Used? (Y or N): N Voltage/Frequency: 120V/60Hz Frequency Range: 1-4 GHz

Antenna & Cables: HF Bands: N, LF, HF, SHF
Antenna: Horn2 V1m 9-24-2008.txt Horn2 H1m 9-24-2008.txt
Cable(s): MEG001 05-23-08.txt MEG002 05-23-08.txt
Barometer: BAR2
Temp/Humidity/Pressure: 21c 24% 1050mB

Net = Reading (dBuV/m) + Antenna Factor (dB1/m) + Cable Loss (dB) - Preamp Factor (dB) - Distance Factor (dB)
Peak: PK Quasi-Peak: QP Average: AVG RMS: RMS; NF = Noise Floor, RB = Restricted Band; Bandwidth denoted as RBW/VBW

Detector Type	Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Distance Factor dB	Net dB(uV/m)	Limit dB(uV/m)	Margin dB	Bandwidth	FCC	IC
Note: Channel 11 (2405 MHz) Noise Floor Readings													
PK	V	2495.100	22.7	28.8	6.1	0.0	0.0	57.6	74.0	-16.4	1/3 MHz	RB	
AVG	V	2495.100	15.3	28.8	6.1	0.0	0.0	50.1	54.0	-3.9	1/3 MHz	RB	
Note: Channel 18 (2440 MHz) Noise Floor Readings													
PK	V	2497.400	22.2	28.8	6.1	0.0	0.0	57.1	74.0	-16.9	1/3 MHz	RB	
AVG	V	2497.400	15.5	28.8	6.1	0.0	0.0	50.3	54.0	-3.7	1/3 MHz	RB	
Note: Channel 26 (2480 MHz) Noise Floor Readings													
PK	V	2490.600	21.9	28.8	6.0	0.0	0.0	56.7	74.0	-17.3	1/3 MHz	RB	
AVG	V	2490.600	14.1	28.8	6.0	0.0	0.0	48.9	54.0	-5.1	1/3 MHz	RB	

Special Radiated Emissions

Company: Microchip Technology Inc.
Model #: MRF24J40MA
Serial #: 3
Engineers: Nicholas Abbondante Location: Site 2
Project #: 3147916 Date(s): 03/28/08 03/31/08
Standard: FCC Part 15 Subpart C 15.247
Receiver: R&S FSEK-30 (ROS001) Limit Distance (m): 3
PreAmp: PRE8 11-09-08.txt Test Distance (m): 3
PreAmp Used? (Y or N): Y Voltage/Frequency: 120V/60Hz Frequency Range: 4-18 GHz

Antenna & Cables: LF Bands: N, LF, HF, SHF
Antenna: Horn2 V1m 9-24-2008.txt Horn2 H1m 9-24-2008.txt
Cable(s): CBL029 12-06-08.txt CBL030 12-06-08.txt
Barometer: BAR2
Temp/Humidity/Pressure: 20c 32% 1050mB

Net = Reading (dBuV/m) + Antenna Factor (dB1/m) + Cable Loss (dB) - Preamp Factor (dB) - Distance Factor (dB)
Peak: PK Quasi-Peak: QP Average: AVG RMS: RMS; NF = Noise Floor, RB = Restricted Band; Bandwidth denoted as RBW/VBW

Detector Type	Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Distance Factor dB	Net dB(uV/m)	Limit dB(uV/m)	Margin dB	Bandwidth	FCC	IC
PK	V	4810.000	33.8	33.5	3.7	22.4	0.0	48.6	74.0	-25.4	1/3 MHz	RB	RB
AVG	V	4810.000	24.9	33.5	3.7	22.4	0.0	39.7	54.0	-14.3	1/3 MHz	RB	RB
PK	V	7215.000	25.5	36.6	4.7	21.4	0.0	45.4	67.5	-22.1	100/300 kHz		
PK	V	9620.000	24.0	38.2	5.6	19.0	0.0	48.8	67.5	-18.7	100/300 kHz		
PK	V	12025.000	28.8	39.1	6.5	19.0	0.0	55.5	74.0	-18.5	1/3 MHz	RB	RB
AVG	V	12025.000	20.6	39.1	6.5	19.0	0.0	47.3	54.0	-6.7	1/3 MHz	RB	RB
PK	V	14430.000	24.8	40.8	7.6	20.5	0.0	52.6	67.5	-14.9	100/300 kHz		
PK	V	16835.000	23.8	40.4	9.6	23.7	0.0	50.1	67.5	-17.4	100/300 kHz		
PK	V	4880.000	32.4	33.7	3.7	22.5	0.0	47.3	74.0	-26.7	1/3 MHz	RB	RB
AVG	V	4880.000	24.2	33.7	3.7	22.5	0.0	39.1	54.0	-14.9	1/3 MHz	RB	RB
PK	V	7320.000	33.3	36.9	4.7	21.3	0.0	53.6	74.0	-20.4	1/3 MHz	RB	RB
AVG	V	7320.000	24.9	36.9	4.7	21.3	0.0	45.2	54.0	-8.8	1/3 MHz	RB	RB
PK	V	9760.000	23.4	38.4	5.6	18.9	0.0	48.5	67.5	-19.0	100/300 kHz		
PK	V	12200.000	33.6	39.1	6.6	19.1	0.0	60.2	74.0	-13.8	1/3 MHz	RB	RB
AVG	V	12200.000	24.8	39.1	6.6	19.1	0.0	51.4	54.0	-2.6	1/3 MHz	RB	RB
PK	V	14640.000	23.2	40.1	7.7	20.8	0.0	50.2	67.5	-17.3	100/300 kHz		
PK	V	17080.000	23.9	41.6	9.9	24.0	0.0	51.4	67.5	-16.1	100/300 kHz		
PK	V	4960.000	32.8	33.9	3.8	22.6	0.0	47.9	74.0	-26.1	1/3 MHz	RB	RB
AVG	V	4960.000	25.2	33.9	3.8	22.6	0.0	40.3	54.0	-13.7	1/3 MHz	RB	RB
PK	V	7440.000	33.5	37.2	4.8	21.2	0.0	54.2	74.0	-19.8	1/3 MHz	RB	RB
AVG	V	7440.000	25.2	37.2	4.8	21.2	0.0	45.9	54.0	-8.1	1/3 MHz	RB	RB
PK	V	9920.000	23.9	38.6	5.7	18.9	0.0	49.3	67.5	-18.2	100/300 kHz		
PK	V	12400.000	34.1	39.2	6.7	19.2	0.0	60.7	74.0	-13.3	1/3 MHz	RB	RB
AVG	V	12400.000	24.8	39.2	6.7	19.2	0.0	51.4	54.0	-2.6	1/3 MHz	RB	RB
PK	V	14880.000	25.6	39.3	7.8	21.1	0.0	51.6	67.5	-15.9	100/300 kHz		
PK	V	17360.000	25.1	43.3	10.3	24.0	0.0	54.6	67.5	-12.9	100/300 kHz		

Special Radiated Emissions

Company: Microchip Technology Inc.
Model #: MRF24J40MA
Serial #: 3
Engineers: Nicholas Abbondante Location: Site 2
Project #: 3147916 Date(s): 03/28/08
Standard: FCC Part 15 Subpart C 15.247
Receiver: R&S FSEK-30 (ROS001) Limit Distance (m): 3
PreAmp: PRE8 11-09-08.txt Test Distance (m): 1
PreAmp Used? (Y or N): Y Voltage/Frequency: 120V/60Hz Frequency Range: 18-26 GHz

Antenna & Cables: SHF Bands: N, LF, HF, SHF
Antenna: EMC04 V 1m 12-26-2008.txt EMC04 H 1m 12-26-2008.txt
Cable(s): CBL029 12-06-08.txt CBL030 12-06-08.txt
Barometer: BAR2
Temp/Humidity/Pressure: 20c 32% 1050mB

Net = Reading (dBuV/m) + Antenna Factor (dB1/m) + Cable Loss (dB) - Preamp Factor (dB) - Distance Factor (dB)
Peak: PK Quasi-Peak: QP Average: AVG RMS: RMS; NF = Noise Floor, RB = Restricted Band; Bandwidth denoted as RBW/VBW

Detector Type	Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Distance Factor dB	Net dB(uV/m)	Limit dB(uV/m)	Margin dB	Bandwidth	FCC	IC
PK	V	19240.000	30.1	45.2	9.8	24.9	9.5	50.7	74.0	-23.3	1/3 MHz	RB	RB
AVG	V	19240.000	22.0	45.2	9.8	24.9	9.5	42.6	54.0	-11.4	1/3 MHz	RB	RB
PK	V	21645.000	25.2	45.4	9.7	22.9	9.5	47.9	67.5	-19.6	100/300 kHz		
PK	V	24050.000	24.0	45.6	10.3	19.9	9.5	50.3	67.5	-17.2	100/300 kHz		
PK	V	19520.000	31.9	45.4	9.7	24.7	9.5	52.8	74.0	-21.2	1/3 MHz	RB	RB
AVG	V	19520.000	21.0	45.4	9.7	24.7	9.5	42.0	54.0	-12.0	1/3 MHz	RB	RB
PK	V	21960.000	26.0	45.3	9.7	22.3	9.5	49.2	67.5	-18.3	100/300 kHz		
PK	V	24400.000	25.0	46.0	10.4	20.8	9.5	51.0	67.5	-16.5	100/300 kHz		
PK	V	19840.000	30.0	45.4	9.7	24.7	9.5	50.9	74.0	-23.1	1/3 MHz	RB	RB
AVG	V	19840.000	21.1	45.4	9.7	24.7	9.5	42.0	54.0	-12.0	1/3 MHz	RB	RB
PK	V	22320.000	31.7	45.4	9.8	21.2	9.5	56.2	74.0	-17.8	1/3 MHz	RB	RB
AVG	V	22320.000	22.2	45.4	9.8	21.2	9.5	46.8	54.0	-7.2	1/3 MHz	RB	RB
PK	V	24800.000	24.8	46.3	10.6	21.8	9.5	50.4	67.5	-17.1	100/300 kHz		

Special Radiated Emissions

Company: Microchip Technology Inc. Antenna & Cables: N Bands: N, LF, HF, SHF
Model #: MRF24J40MA Antenna: LOG4 06-05-08 V3.txt LOG4 06-05-08 H3.txt
Serial #: 3 Cable(s): S2 3M FLR 9-17-08.txt NONE.
Engineers: Nicholas Abbondante Location: Site 2 Barometer: BAR2
Project #: 3147916 Date(s): 03/26/08
Standard: RSS-Gen Table 1 Temp/Humidity/Pressure: 20c 28% 1050mB
Receiver: R&S ESCI (ROS002) Limit Distance (m): 3
PreAmp: PRE8 11-09-08.txt Test Distance (m): 3
PreAmp Used? (Y or N): N Voltage/Frequency: 120V/60Hz Frequency Range: 30-1000 MHz
Net = Reading (dBuV/m) + Antenna Factor (dB1/m) + Cable Loss (dB) - Preamp Factor (dB) - Distance Factor (dB)
Peak: PK Quasi-Peak: QP Average: AVG RMS: RMS; NF = Noise Floor, RB = Restricted Band; Bandwidth denoted as RBW/VBW

Detector Type	Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Distance Factor dB	Net dB(uV/m)	Limit dB(uV/m)	Margin dB	Bandwidth	FCC	IC
Note: Receive Mode													
PK	V	208.000	11.6	11.1	1.9	0.0	0.0	24.6	43.5	-18.9	120/300 kHz		
PK	V	217.960	21.4	11.7	1.9	0.0	0.0	35.1	46.0	-10.9	120/300 kHz		
PK	V	224.800	20.2	12.1	1.9	0.0	0.0	34.3	46.0	-11.7	120/300 kHz		
PK	V	263.600	16.2	12.9	2.1	0.0	0.0	31.2	46.0	-14.8	120/300 kHz	RB	RB
PK	V	375.350	12.8	15.5	2.6	0.0	0.0	30.8	46.0	-15.2	120/300 kHz		
PK	V	945.800	3.5	23.4	4.8	0.0	0.0	31.7	46.0	-14.3	120/300 kHz		

Radiated Emissions Setup Photos

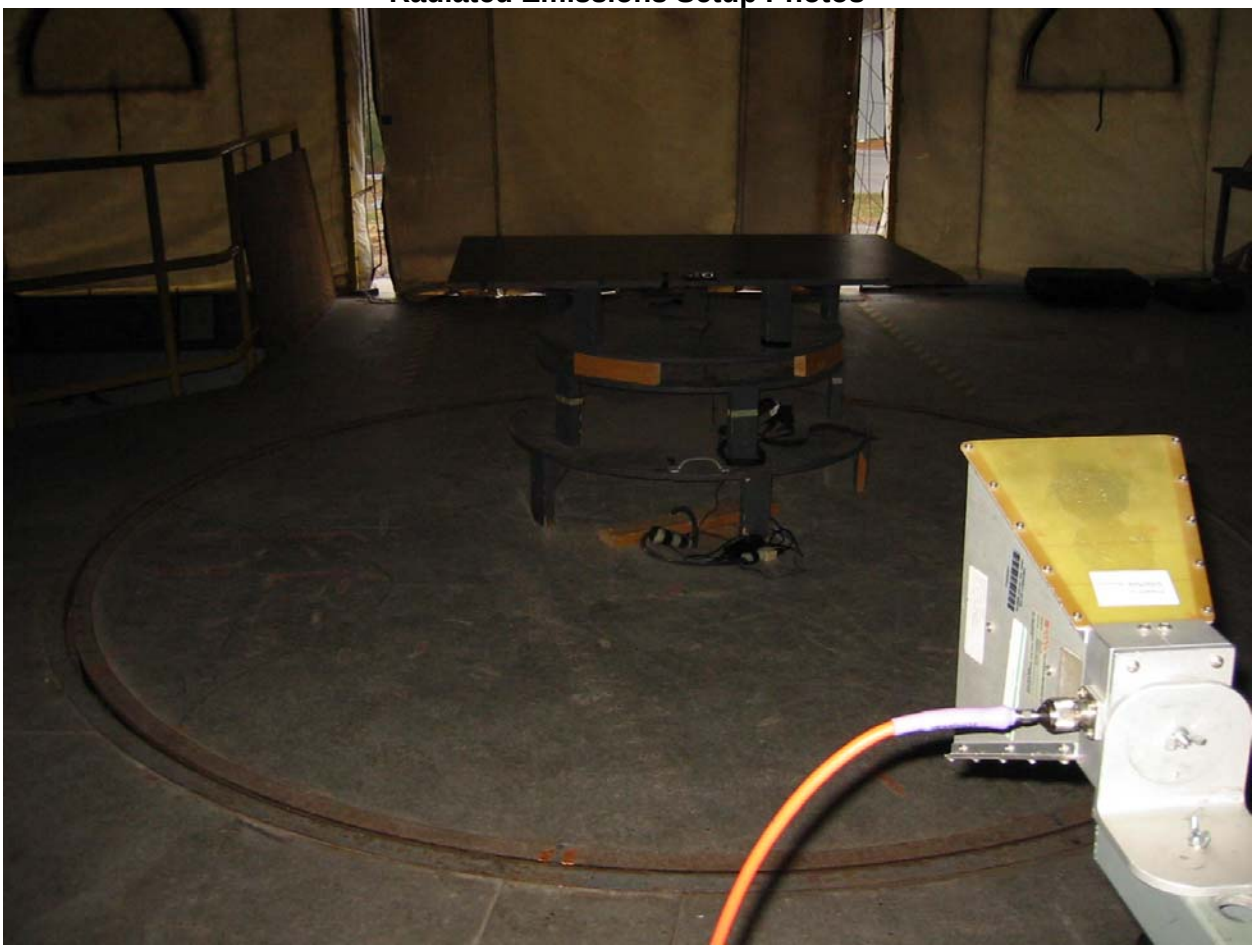
Radiated Emissions Setup Photos

Radiated Emissions Setup Photos

Radiated Emissions Setup Photos

Radiated Emissions Setup Photos

Radiated Emissions Setup Photos



Radiated Emissions Setup Photos

Radiated Emissions Setup Photos

Test Results: Pass

Test Standard: FCC Part 15 Subpart C, IC RSS-210

Test: AC Line-Conducted Emissions

Performance Criterion: AC line-conducted spurious emissions must be below the 15.207 and RSS-Gen 7.2.2 Table 2 limits

Test Environment:

Environmental Conditions During Testing:		Ambient (°C):	20	Humidity (%):	24	Pressure (hPa):	1050
Pretest Verification Performed		Yes		Equipment under Test:		MRF24J40MA	
Test Engineer(s):	Nicholas Abbondante			EUT Serial Number:		3	

Test Equipment Used:

TEST EQUIPMENT LIST					
Item	**Equipment Type**	**Make**	**Model No.**	**Serial No.**	**Next Cal. Due**
1	Digital 4 Line Barometer	Mannix	0ABA116	BAR2	05/20/2008
2	LISN, 50uH, .01 - 50MHz, 24A	Solar Electronics	9252-50-R-24-BNC	941714	10/11/2008
3	RG223 50ohm Coaxial Cable	Intertek	BNC-30	CBLBNC6	12/28/2008
4	9kHz to 3GHz EMI Test Receiver	Rohde & Schwartz	ESCI 1166.5950K03	100067	01/25/2009
5	Attenuator, 20dB	Mini Circuits	20dB, 50 ohm	DS24	09/18/2008

Software Utilized:

Name	Manufacturer	Version
EXCEL 2000	Microsoft Corporation	9.0.6926 SP-3
EMI BOXBOROUGH	Intertek	3/07/07 Revision

Test Results:

Conducted Emissions

Company: Microchip Technology Inc.
Model #: Zigbee Spread Spectrum Transceiver
Serial #: 3
Engineer(s): Nicholas Abbondante
Project #: 3147916
Standard: FCC Part 15 Subpart C 15.247
Barometer: BAR2

Location: Site 2
Date: 03/27/08
Temp/Humidity/Pressure: 20c 24% 1050mB
Voltage/Frequency: 120V/60Hz

Receiver: R&S ESCI (ROS002)
Cable: CBLBNC6 12-28-08.txt
LISN 1: LISN12 [1] 10-11-08.txt
LISN 2: LISN12 [2] 10-11-08.txt
LISN 3: NONE.
LISN 4: NONE.
Attenuator: DS24 9-18-08.txt
Frequency Range: 150 kHz - 30 MHz

Net is the sum of worst-case lisn, cable, & attenuator losses, and initial reading, factors are not shown
Peak: PK Quasi-Peak: QP Average: AVG RMS: RMS; NF = Noise Floor; Bandwidth denoted as RBW/VBW

Detector Type	Frequency MHz	Reading Line 1 dB(uV)	Reading Line 2 dB(uV)	Reading Line 3 dB(uV)	Reading Line 4 dB(uV)	Net dB(uV)	QP Limit dB(uV)	Margin dB	Bandwidth
QP	0.242	14.7	12.4			36.4	62.0	-25.7	9/30 kHz
QP	0.873	4.0	1.9			25.6	56.0	-30.4	9/30 kHz
QP	2.617	11.6	7.8			33.3	56.0	-22.8	9/30 kHz
QP	8.724	7.1	5.1			29.1	60.0	-30.9	9/30 kHz
QP	15.825	11.0	16.2			38.4	60.0	-21.6	9/30 kHz
QP	25.200	5.1	5.2			27.7	60.0	-32.3	9/30 kHz

Detector Type	Frequency MHz	Reading Line 1 dB(uV)	Reading Line 2 dB(uV)	Reading Line 3 dB(uV)	Reading Line 4 dB(uV)	Net dB(uV)	Average Limit dB(uV)	Margin dB	Bandwidth
AVG	0.242	12.3	7.4			34.0	52.0	-18.1	9/30 kHz
AVG	0.873	-2.0	-0.1			21.5	46.0	-24.5	9/30 kHz
AVG	2.617	7.0	2.6			28.7	46.0	-17.4	9/30 kHz
AVG	8.724	6.1	3.6			28.1	50.0	-21.9	9/30 kHz
AVG	15.825	7.6	13.0			35.2	50.0	-14.8	9/30 kHz
AVG	25.200	0.4	0.2			23.0	50.0	-27.0	9/30 kHz

AC Line-Conducted Emissions Setup Photos

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