# REGULATORY COMPLIANCE REPORT

**TITLE:** MC3 Upgrade 45ms message FCC & IC Test Report for FHSS

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| REV | CCO | DESCRIPTION OF CHANGE | DATE | APPROVALS | |
|---|---|---|---|---|---|
| 001 | | INITIAL RELEASE | | Engineering | |
| | | | | Regulatory | |

## REVISION HISTORY

| | | | | | |
|---|---|---|---|---|---|
| | | | | Engineering | |
| | | | | Regulatory | |
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| | | | | Regulatory | |

**Test Data Summary**

# FCC 15.247 / IC RSS-210 A8
## Frequency Hopping Transmitter, 908-923.8MHz
**FCC:EO9DCU5310U**
**IC ID: 864D-DCU5310U**
**Device Models (for IC):** MC Lite DL
MC3-DL

**Serial Numbers: 74005513**

Updated measurements:

| Rule | Description | Previous reading | updated reading | Pass/Fail |
|---|---|---|---|---|
| Part 15.247(a)(1)(i) / RSS-210 A8.1(c) | Time of Occupancy | 108.36 mS | 273.9 mS | Pass |

Validation measurements:

| Rule | Description | Previous reading | Validation/updated reading | Max Variance |
|---|---|---|---|---|
| Part 15.247(b)(2) / RSS-210 A8.4(1) | Power Output – Conducted | 26.2 dBm | 27.78 dBm | 1.58 dBm |

*Rule versions: FCC Part 1 (01-2006), FCC Part 2 (01-2006), FCC Part 15 (02-01-2006), RSS-102 Issue 2 (11-2005), RSS-210 Issue 7 (June 2007), RSS-Gen Issue 2 (06-2007).*
*Reference docs: ANSI C63.4-2003, DA 00-705 (03-30-2000), OET65 (08-1997), OET65C (06-2001), IEEE C95.3-2002.*

**Cognizant Personnel**

| Name | Title |
|---|---|
| Drew Rosenberg | R&D Manager |
| Jay Holcomb | Regulatory Manager |
| Will Mellick | Test Technician |

# CONDITIONS DURING TESTING

No Modifications to the EUT were necessary during the testing.

**EUT Operating Frequency**
The EUT was operating at 908 Mhz – 923.8 Mhz

**Temperature and Humidity During Testing**
The temperature during testing was within +15º C and +35º C.
The Relative humidity was between 20% and 75%.

**EQUIPMENT UNDER TEST (EUT) DESCRIPTION**
Itron declares that the EUT tested was representative of a production unit.

**EQUIPMENT UNDER TEST**

**Transmitter Module**

| | |
|---|---|
| Manuf: | Itron, Inc. |
| Model: | MC3-DL, MC Lite DL |
| Serial: | 74005513 |
| FCC ID: | EO9-DCU5310U |

## 15.247(a) (1) (i) / RSS-210 A8.1 (c)

### Time of Occupancy

*Verify that the transmitted signal does not occupy a single frequency for more than 400 mS in a 20 second period.*

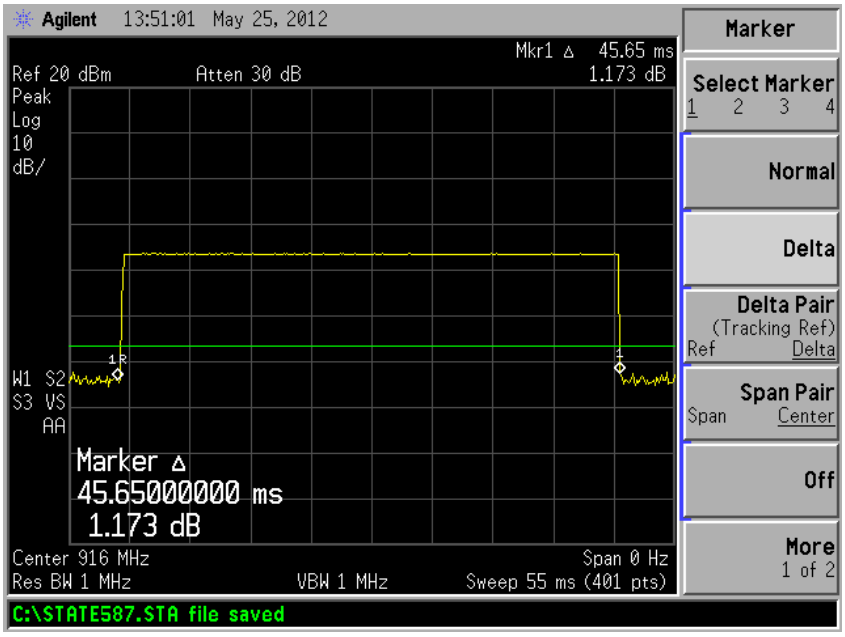
The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:

Span = zero span, centered on a hopping channel
RBW = 1 MHz
VBW ≥ RBW
Sweep = as necessary to capture the entire dwell time per hopping channel
Detector function = peak
Trace = max hold

If possible, use the marker-delta function to determine the dwell time. If this value varies with different modes of operation (e.g., data rate, modulation format, etc.), repeat this test for each variation. Submit this plot(s).

Each transmission is now a *maximum of 45 ms long* (as opposed to the 18.06ms from the original filing). Each transmission takes place on one of 80 different channels in a pseudo-random sequence. All 80 channels are used equally on the average. The algorithm that determines the pseudo-random hop sequence does not allow the device to transmit on the same channel more than 6 times in a 20 second period The maximum possible occupancy time on any one frequency is now 270 mS or 6 times within a 20 second period.

| Equipment Used | Serial Number | Cal Date | Due |
|---|---|---|---|
| HP4407B | MY45107856 | 3/11 | 3/13 |
| Date | Tested by | | |
| 5/30/2012 | Drew Rosenberg | | |



## 15.247(b) (2) / RSS-210 A8.4 (1)

### Power Output

*The maximum peak conducted output power of the intentional radiator shall not exceed the following: For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels.*

Use the following spectrum analyzer settings:

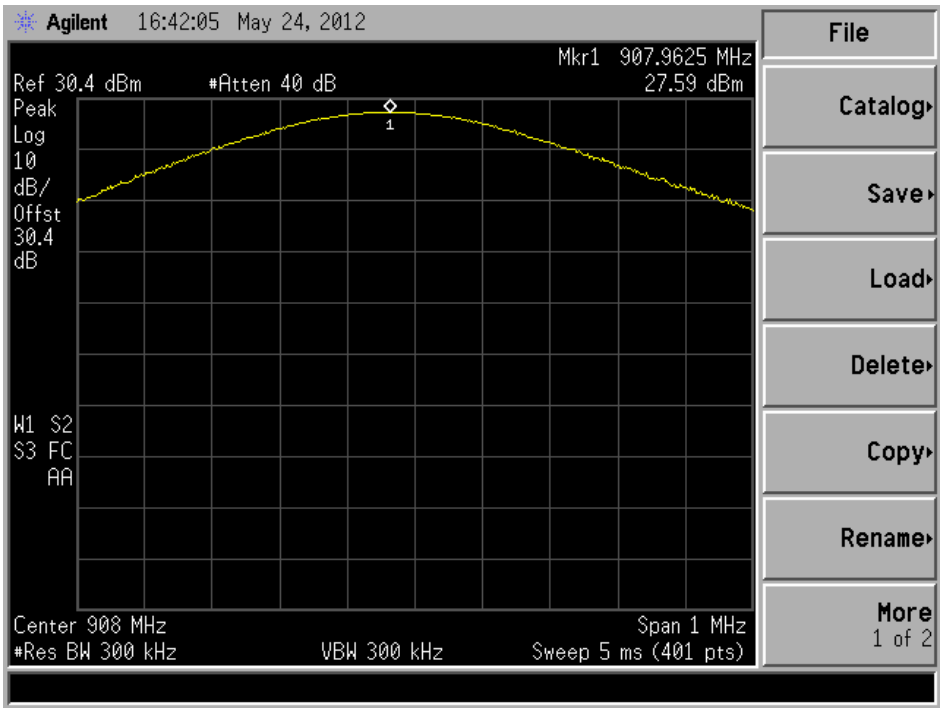
Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel.
RBW > the 20 dB bandwidth of the emission being measured.
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold
Set RF level offset=cable loss

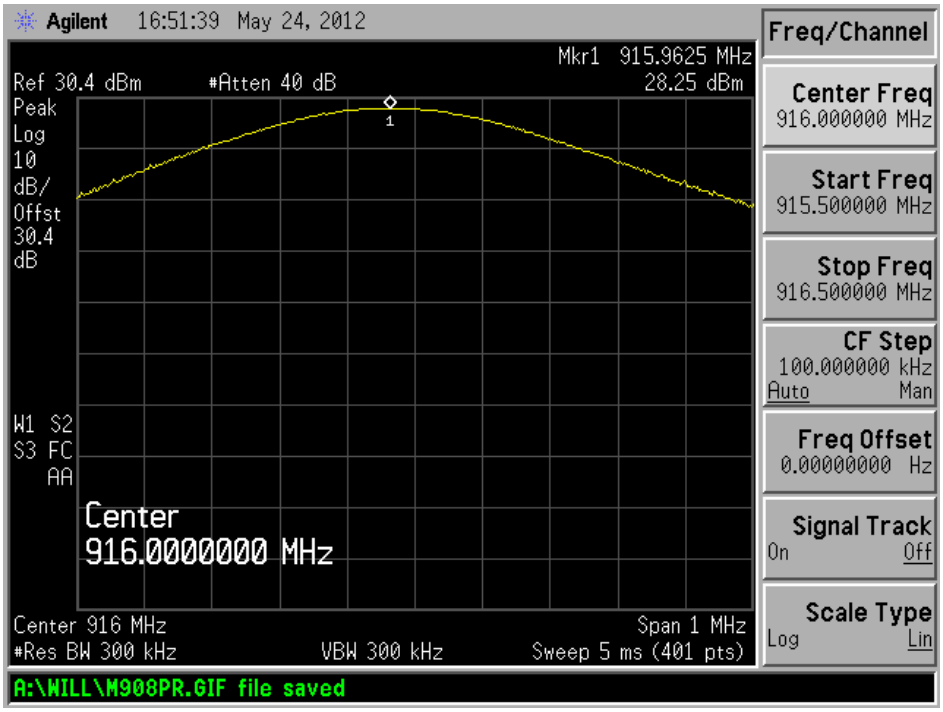
Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power. The limit is specified in one of the subparagraphs of this Section. Submit this plot. A peak responding power meter may be used instead of a spectrum analyzer.

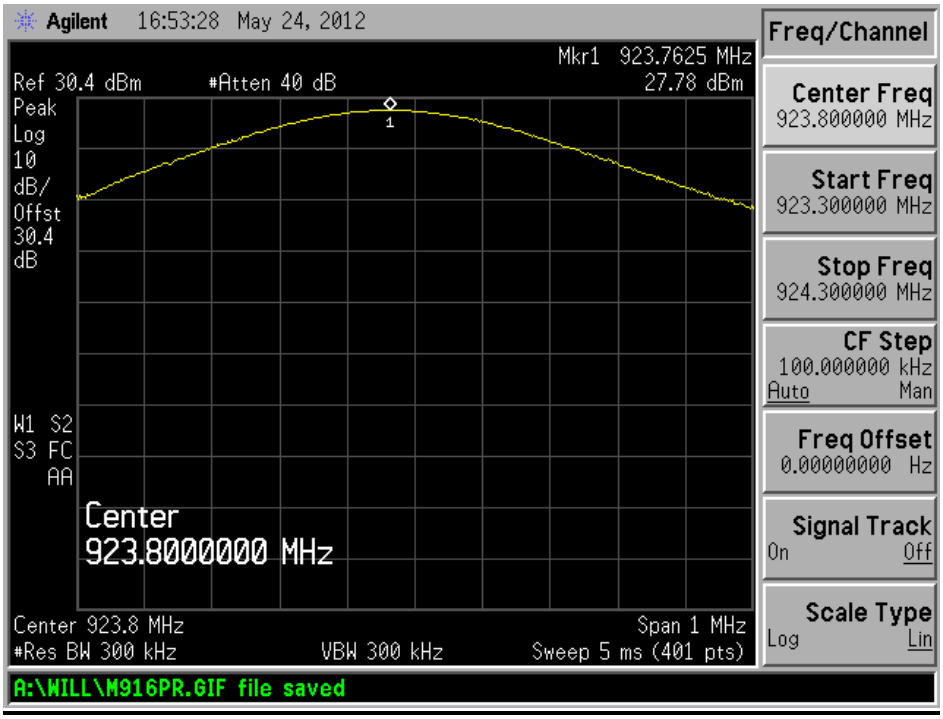
*Note:* The purpose of this test is to validate the report from 2009, since over a year has passed. No changes are being made to this product except for the new maximum message length.

| Equipment Used | Serial Number | Cal Date | Due |
|---|---|---|---|
| HP4407B | MY45107856 | 3/11 | 3/13 |
| Date | Tested by | | |
| 5/24/2012 | Will Mellick | | |

| Frequency (MHz) | Power out (dB) | | Variance dB |
|---|---|---|---|
| | taken 11/1/2010 | taken 5/24/2012 | |
| 908 | 27.9 | 27.59 | 0.31 |
| 916 | 28.8 | 28.25 | 0.55 |
| 923.8 | 26.2 | 27.78 | -1.58 |


Agilent 16:42:05 May 24, 2012
Mkr1 907.9625 MHz
Ref 30.4 dBm
#Atten 40 dB
27.59 dBm
Peak
Log
10
dB/
Offst
30.4
dB
W1 S2
S3 FC
AA
Center 908 MHz
#Res BW 300 kHz
VBW 300 kHz
Span 1 MHz
Sweep 5 ms (401 pts)
File
Catalog
Save
Load
Delete
Copy
Rename
More
1 of 2


Agilent 16:51:39 May 24, 2012
Mkr1 915.9625 MHz
Ref 30.4 dBm
#Atten 40 dB
28.25 dBm
Peak
Log
10
dB/
Offst
30.4
dB
W1 S2
S3 FC
AA
Center
916.0000000 MHz
Center 916 MHz
#Res BW 300 kHz
VBW 300 kHz
Span 1 MHz
Sweep 5 ms (401 pts)
A:\WILL\M908PR.GIF file saved
Freq/Channel
Center Freq
916.000000 MHz
Start Freq
915.500000 MHz
Stop Freq
916.500000 MHz
CF Step
100.000000 kHz
Auto
Man
Freq Offset
0.00000000 Hz
Signal Track
On
Off
Scale Type
Log
Lin


Agilent 16:53:28 May 24, 2012
Mkr1 923.7625 MHz
Ref 30.4 dBm
#Atten 40 dB
27.78 dBm
Peak
Log
10
dB/
Offst
30.4
dB
1
W1 S2
S3 FC
AA
Center
923.8000000 MHz
Center 923.8 MHz
#Res BW 300 kHz
VBW 300 kHz
Span 1 MHz
Sweep 5 ms (401 pts)
Freq/Channel
Center Freq
923.800000 MHz
Start Freq
923.300000 MHz
Stop Freq
924.300000 MHz
CF Step
100.000000 kHz
Auto
Man
Freq Offset
0.00000000 Hz
Signal Track
On
Off
Scale Type
Log
Lin
A:\WILL\M916PR.GIF file saved