



# FCC/IC Test Report

**FOR:**

**Manufacturer: 3SI Security Systems**

**Model Name: GT83000, GT83000VP, GT83000R2, & GT83100**  
**Product Description: Asset Tracking and Alert Device**

**FCC ID: Q6KGT83000A**  
**IC ID: 5043A-GT83000A**

**47 CFR Part 90**  
**RSS-119 Issue 11**

**TEST REPORT #: EMC\_3SISE-020-12001\_VHF**  
**DATE: 2013-04-04**



**FCC:  
Accredited**

**IC recognized #  
3462B-1**

**CETECOM Inc.**

411 Dixon Landing Road ♦ Milpitas, CA 95035 ♦ U.S.A.

Phone: +1 (408) 586 6200 ♦ Fax: +1 (408) 586 6299 ♦ E-mail: [info@cetecomusa.com](mailto:info@cetecomusa.com) ♦ <http://www.cetecom.com>

CETECOM Inc. is a Delaware Corporation with Corporation number: 2905571

**TABLE OF CONTENTS**

<b>1</b>	<b>Assessment</b>	<b>4</b>
<b>2</b>	<b>Administrative Data</b>	<b>5</b>
2.1	Identification of the Testing Laboratory Issuing the Test Report	5
2.2	Identification of the Client	5
2.3	Identification of the Manufacturer	5
2.4	Environmental conditions during Test:	5
2.5	Dates of Testing:	5
<b>3</b>	<b>Equipment under Test (EUT)</b>	<b>6</b>
3.1	Specification of the Equipment under Test	6
3.2	Identification of the Equipment under Test (EUT)	7
<b>4</b>	<b>Subject of Investigation</b>	<b>8</b>
<b>5</b>	<b>Summary of Measurement Results</b>	<b>9</b>
<b>6</b>	<b>Measurements</b>	<b>10</b>
6.1	<b>Radiated Measurement Procedure</b>	<b>10</b>
6.1.1	Measurement Uncertainty	10
6.2	<b>Conducted Output Power Measurement procedure</b>	<b>11</b>
6.2.1	Measurement Settings:	11
6.2.2	Measurement Uncertainty	11
6.3	<b>Maximum Peak Output Power</b>	<b>12</b>
6.3.1	References:	12
6.3.2	Limits	12
6.3.3	Test Conditions:	12
6.3.4	Test Results:	12
6.3.5	Measurement Verdict:	12
6.3.6	Test Data:	13
6.4	<b>99% Occupied Bandwidth</b>	<b>17</b>
6.4.1	References:	17
6.4.2	Limits:	17
6.4.3	Test Result:	17
6.4.4	Test Data/plots:	18
6.5	<b>Modulation Characteristics</b>	<b>20</b>
6.6	<b>Transmit Spectrum Mask</b>	<b>20</b>
6.6.1	References:	20
6.6.2	FCC Limits:	20
6.6.3	Test Data/Plots	20
6.6.4	IC Limits:	21
6.6.5	Test Data/Plots	21
6.6.6	Measurement Verdict:	21
6.7	<b>Frequency Tolerance</b>	<b>22</b>
6.7.1	References:	22



6.7.2	Limits:	22
6.7.3	Test Results:	22
6.7.4	Measurement Verdict:	22
<b>6.8</b>	<b>Transmitter Spurious Emissions - Conducted</b>	<b>23</b>
6.8.1	References:	23
6.8.2	Limits	23
6.8.3	Test data/ plots:	24
<b>6.9</b>	<b>Transmitter Spurious Emissions - Radiated</b>	<b>28</b>
6.9.1	References	28
6.9.2	Limits	28
6.9.3	Radiated out of band measurement procedure:	28
6.9.4	Sample Calculations for Radiated Measurements	29
6.9.5	Test Conditions:	29
6.9.6	Test Result:	30
<b>7</b>	<b><i>Test Equipment and Ancillaries used for tests</i></b>	<b>38</b>
<b>8</b>	<b><i>Test Setup Diagrams</i></b>	<b>39</b>
<b>9</b>	<b><i>Revision History</i></b>	<b>41</b>



**1 Assessment**

**The following device was tested against the applicable criteria specified in FCC rules Parts 90 of Title 47 of the Code of Federal Regulations and Industry Canada Standards RSS 119 Issue 11 and no deviations were ascertained during the course of the tests performed.**

Company	Description	Model #
3SI Security Systems	Asset Tracking and Alert Device	GT83000, GT83000VP, GT83000R2, GT83100

**This report is reviewed by:**

Sajay Jose  
(Test Lab Manager)

2013-04-04 Compliance

Date	Section	Name	Signature
------	---------	------	-----------

**Responsible for the Report:**

Daniel Salinas  
(EMC Engineer)

2013-04-04 Compliance

Date	Section	Name	Signature
------	---------	------	-----------

The test results of this test report relate exclusively to the test item specified in Section 3. CETECOM Inc. USA does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of the CETECOM Inc USA.

## 2 Administrative Data

### 2.1 Identification of the Testing Laboratory Issuing the Test Report

<b>Company Name:</b>	CETECOM Inc.
<b>Department:</b>	Compliance
<b>Address:</b>	411 Dixon Landing Road Milpitas, CA 95035 U.S.A.
<b>Telephone:</b>	+1 (408) 586 6200
<b>Fax:</b>	+1 (408) 586 6299
<b>Responsible Test Lab Manager:</b>	Sajay, Jose
<b>Responsible Project Leader:</b>	Daniel Salinas

### 2.2 Identification of the Client

<b>Applicant's Name:</b>	3SI Security Systems
<b>Street Address:</b>	486 Thomas Jones Way
<b>City/Zip Code</b>	Exton, PA 19341
<b>Country</b>	USA
<b>Contact Person:</b>	Latha Ravi
<b>Phone No.</b>	478-718-5791
<b>e-mail:</b>	latha_ravi@3SISecurity.com

### 2.3 Identification of the Manufacturer

Same as client.

### 2.4 Environmental conditions during Test:

The following environmental conditions were maintained during the course of testing:

Ambient Temperature: 20-25°C

Relative humidity: 40-60%

### 2.5 Dates of Testing:

Feb 21, 2013 - Mar 20, 2013.

### 3 Equipment under Test (EUT)

#### 3.1 Specification of the Equipment under Test

<b>Marketing Name:</b>	Cash Tracker
<b>Model No:</b>	Base Model: GT83000 Variant Models: GT83000VP, GT83000R2, GT83100
<b>Product Type:</b>	Asset Tracking and Alert Device
<b>FCC-ID:</b>	Q6KGT83000A
<b>IC-ID :</b>	5043A-GT83000A
<b>Frequency range of test:</b>	219.6 MHz
<b>Type(s) of Modulation:</b>	None (CW), Pulsed carrier signal with no modulation, 20% duty cycle (200ms/s)
<b>Number of channels:</b>	1
<b>Antenna Info:</b>	Magnetic Loop antenna Manufacturer stated antenna Gain: 1.2-3.3 dBi
<b>Other radios in the device:</b>	GSM/GPRS 850/900/1800/1900 MHz GPS Receiver: 1575.42 MHz
<b>Rated Operating Voltage Range(DC):</b>	Internal Battery Operated 3.3V (Low) / 3.7V (Nominal) / 4.2V (Max)
<b>Rated Operating Temperature Range:</b>	<b>GT83000/GT83000VP/GT83100:</b> -20°C to + 40°C <b>GT83000R2:</b> -20°C to +60°C
<b>Test Sample status:</b>	Production



**3.2 Identification of the Equipment under Test (EUT)**

<b>EUT #</b>	<b>IMEI:</b>	<b>HW Version</b>	<b>SW Version</b>	<b>Model</b>	<b>Notes</b>
1	3529605186885003	1.0.5	9.09.07	GT83000	Radiated and Conducted Sample
2	35466004458020003	1.0.5	9.13.03	GT83000VP	Radiated Sample
3	35466004438038703	1.0.5	9.13.03	GT83000VP	Conducted Sample
4	3525990414093103	1.0.1	9.13.03	GT83000R2	Radiated and Conducted Sample
5	35296405136008003	1.0.1	9.13.03	GT83100 – unfolded	Radiated Sample
6	35466004711704203	1.0.1	9.13.03	GT83100 – folded	Radiated Sample
7	35269904318436003	1.0.1	9.13.03	GT83100	Conducted Sample

#### **4 Subject of Investigation**

The objective of the measurements done by Cetecom Inc. was to measure the performance of the EUT as specified by requirements listed in the following test standards: FCC rules Part 90 of Title 47 of the Code of Federal Regulations and Industry Canada Standards RSS 119 Issue 11.

- 47 CFR 2: Title 47 of the Code of Federal Regulations: Chapter I-Federal Communication Commission Frequency allocations and radio treaty matters; general rules and regulations.
- 47 CFR 90: Title 47 of the Code of Federal Regulations: Chapter I-Federal Communication Commission Private Land Mobile Radio Services
- RSS 119 – Issue 11: Radio Transmitters and Receivers Operating in the Land Mobile and Fixed Services in the Frequency Range 27.41 – 960 MHz

This report is to support a request for a Class 2 Permissive Change under the FCC ID: Q6KGT83000A and IC ID: 5043A-GT83000A; as well as IC Family approvals of the additional models GT83000VP, GT83000R2, GT83100.

Full scope of testing was performed on model GT83000. Based on the manufacturer's product equality declaration that model variants GT83000VP, GT83000R2, & GT83100 incorporate the same VHF portion (Radio, Antenna and associated circuitry) as the base model GT83000, only the output power related test cases have been performed for the model variants to prove compliance against all the above listed FCC/IC rule parts.





**5 Summary of Measurement Results**

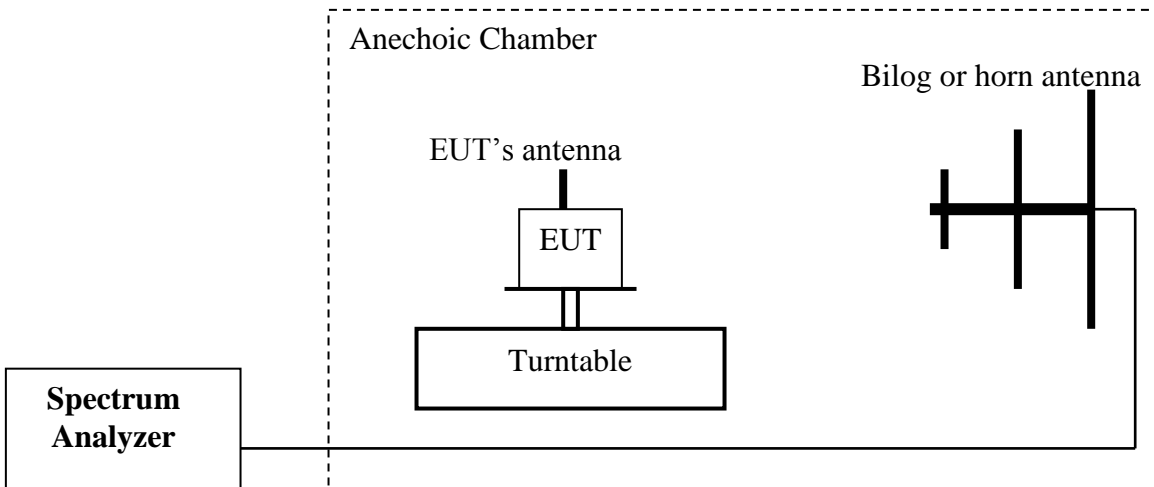
Test Specification	Test Case	Temperature and Voltage Conditions	Pass	Fail	NA	NP	Models Tested	Result
§2.1046 §90.205(e) §90.259(a) RSS119 5.4	RF Output Power	Nominal	■	□	□	□	GT83000, GT83000VP, GT83000R2, GT83100	Complies
§2.1055 §90.213(a) RSS119 5.3	Frequency Tolerance	Nominal	■	□	□	□	GT83000	Complies
§2.1049 §90.209(b) §90.259(8) RSS119 5.5	Occupied Bandwidth	Nominal	■	□	□	□	GT83000	Complies
§90.210(c) RSS119 5.5	Transmit Spectrum Mask	Nominal	■	□	□	□	GT83000	Complies
§2.1051 §90.210(c) RSS119 5.8	Conducted Spurious Emissions	Nominal	■	□	□	□	GT83000, GT83000VP, GT83000R2, GT83100	Complies
§2.1053 §90.210(c) RSS119 5.8	Radiated Spurious Emissions	Nominal	■	□	□	□	GT83000, GT83000VP, GT83000R2, GT83100	Complies

Note: NA = Not Applicable; NP = Not Performed

## 6 Measurements

### 6.1 Radiated Measurement Procedure

Ref: TIA-603C 2004 -2.2.17.2 Effective Radiated Power (ERP) or Effective Isotropic Radiated Power (EIRP)



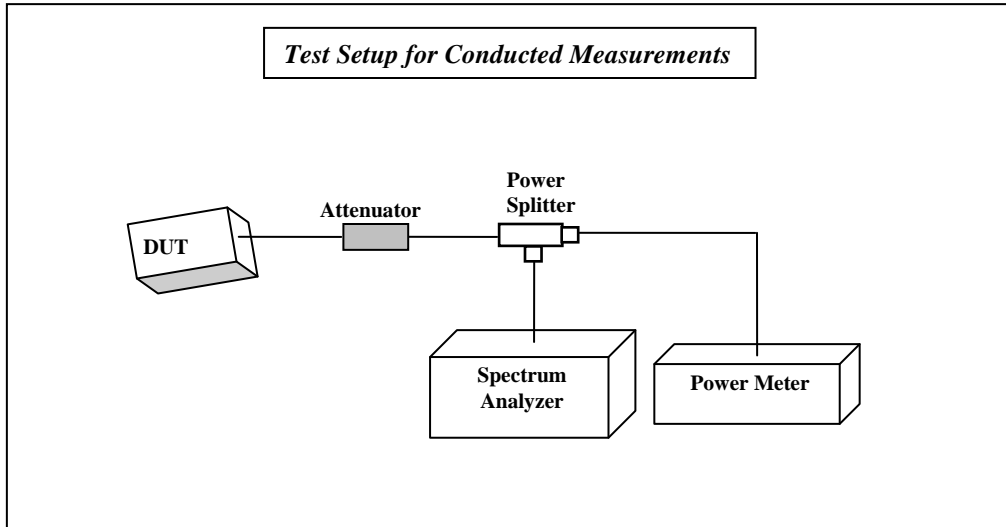
1. Connect the equipment as shown in the above diagram with the EUT's antenna in a vertical orientation.
2. Set the EUT to its maximum power at the required channel.
3. Set the spectrum analyzer to the channel frequency. Set the analyzer to measure peak hold with the required settings.
4. Rotate the EUT 360°. Record the peak level in dBm (**LVL**).
5. Replace the EUT with a vertically polarized half wave dipole or known gain antenna. The center of the antenna should be at the same location as the center of the EUT's antenna.
6. Connect the antenna to a signal generator with known output power and record the path loss in dB (**LOSS**). **LOSS** = Generator Output Power (dBm) – Analyzer reading (dBm).
7. Determine the ERP using the following equation:  
**ERP (dBm) = LVL (dBm) + LOSS (dB)**
8. **EIRP (dBm) = ERP (dBm) + 2.15 (dB)**
9. Measurements are performed with the EUT set at the operating channel.

#### 6.1.1 Measurement Uncertainty

+/- 3 dB

## 6.2 Conducted Output Power Measurement procedure

Ref: TIA-603C 2004 2.2.1 Conducted Carrier Output Power Rating



1. Connect the equipment as shown in the above diagram.
2. Enable the EUT to its maximum power at the required channel.
3. Record the output power level measured Spectrum Analyzer.
4. Correct the measured level for all losses in the RF path.
5. Measurements are to be performed with the EUT set at the operating channel.

### 6.2.1 Measurement Settings:

RBW=VBW=100kHz; Span=200kHz; Detector: Peak- Max Hold;  
Sweep time: Auto.

### 6.2.2 Measurement Uncertainty

+/- 0.5 dB



**6.3 Maximum Peak Output Power**

**6.3.1 References:**

FCC: Part 90.205(e); 90.259(a)  
 RSS 119: 5.4

**6.3.2 Limits**

FCC CFR 90.259(a): 2W, Class C  
 RSS 119: Less than 5 Watts.

**6.3.3 Test Conditions:**

Tnom: 22.7°C; Vnom

**6.3.4 Test Results:**

Model: GT83000		
Frequency (MHz)	Max Peak Output Power- Conducted (dBm)	Radiated ERP (dBm)
219.6 MHz	13.26	-41.64

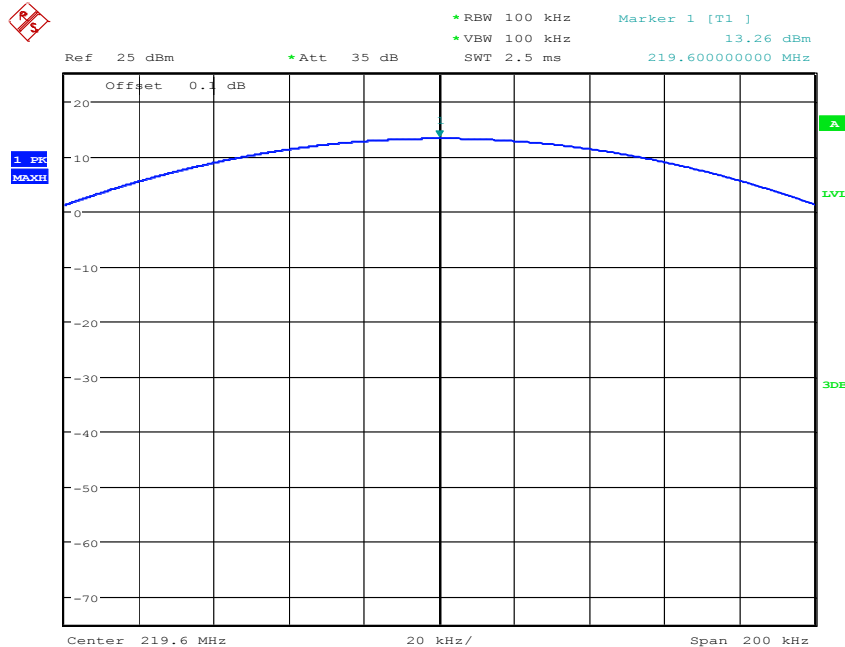
Variant Measurement Results			
Model	Frequency (MHz)	Max Peak Output Power- Conducted (dBm)	Radiated ERP (dBm)
GT83000VP	219.6 MHz	12.88	-43.30
GT83000R2	219.6 MHz	13.69	-33.48
GT83100	219.6 MHz	13.40	-36.03

**6.3.5 Measurement Verdict:**

Pass.

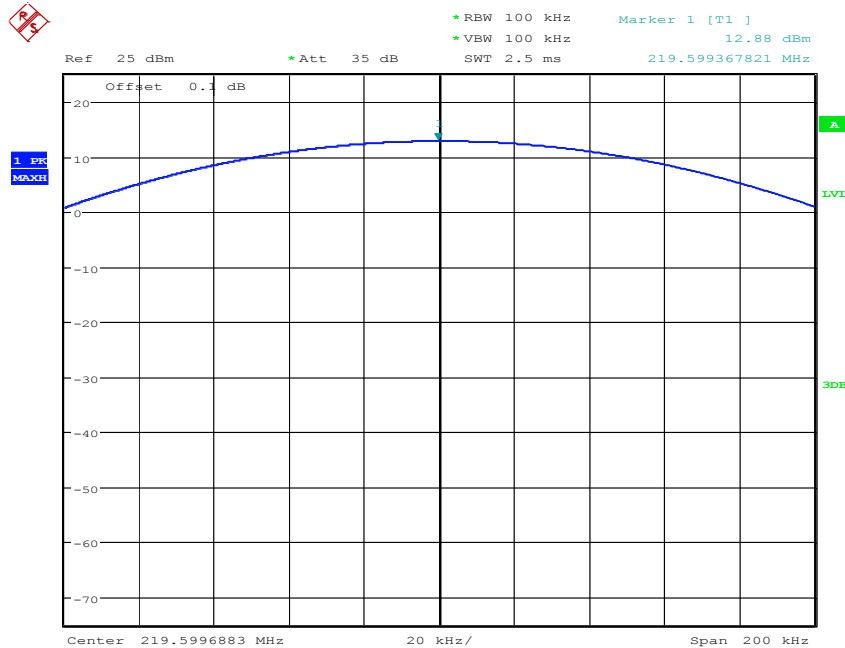
### 6.3.6 Test Data:

#### Conducted Peak Power – GT83000



Date: 27.FEB.2013 11:33:36

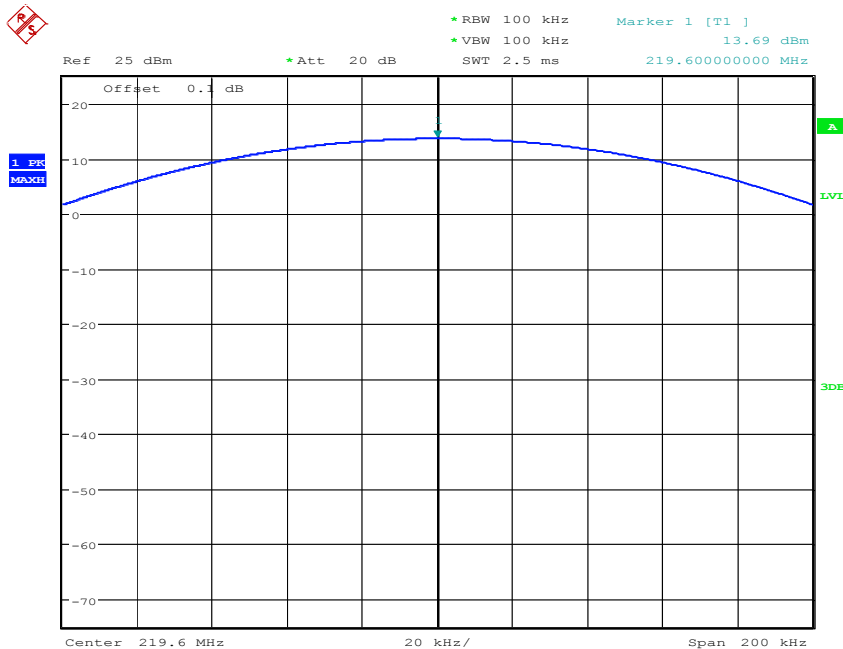
#### Conducted Peak Power – GT83000VP



Date: 27.FEB.2013 12:24:52

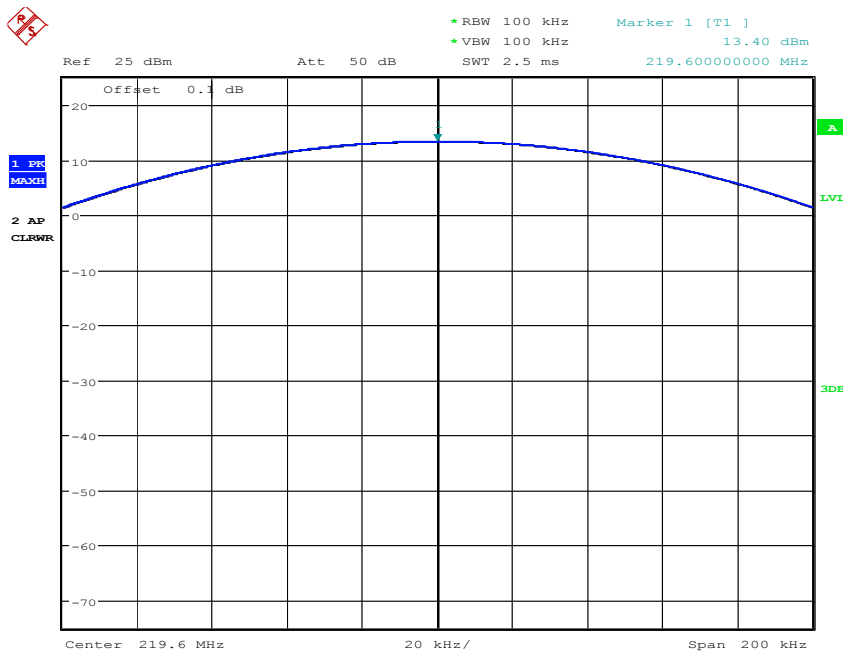


### Conducted Peak Power – GT83000R2



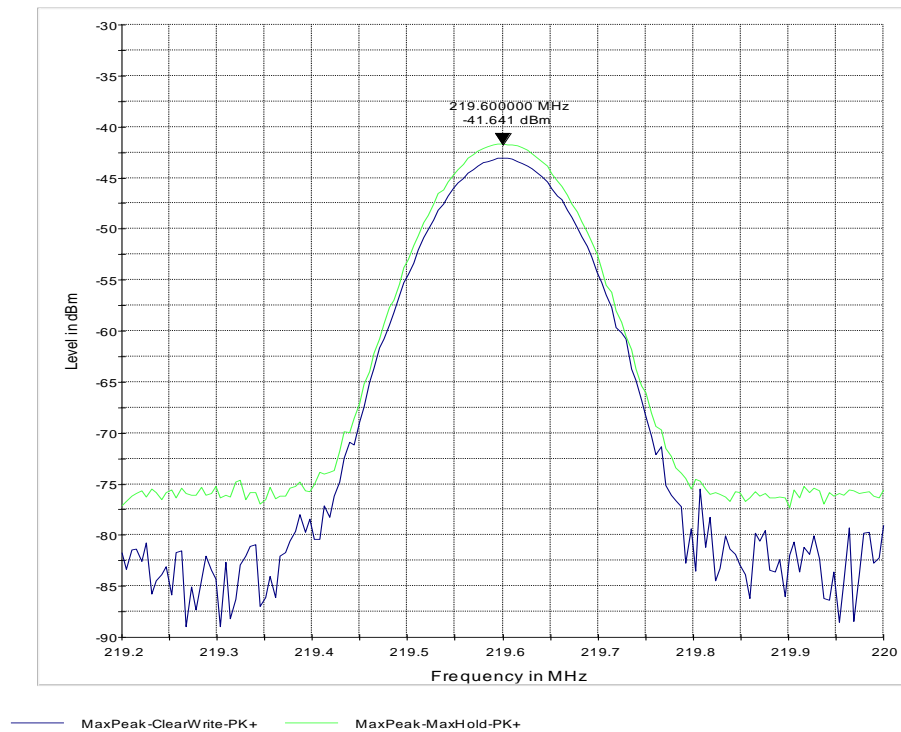
Date: 27.FEB.2013 11:16:48

### Conducted Peak Power – GT83100

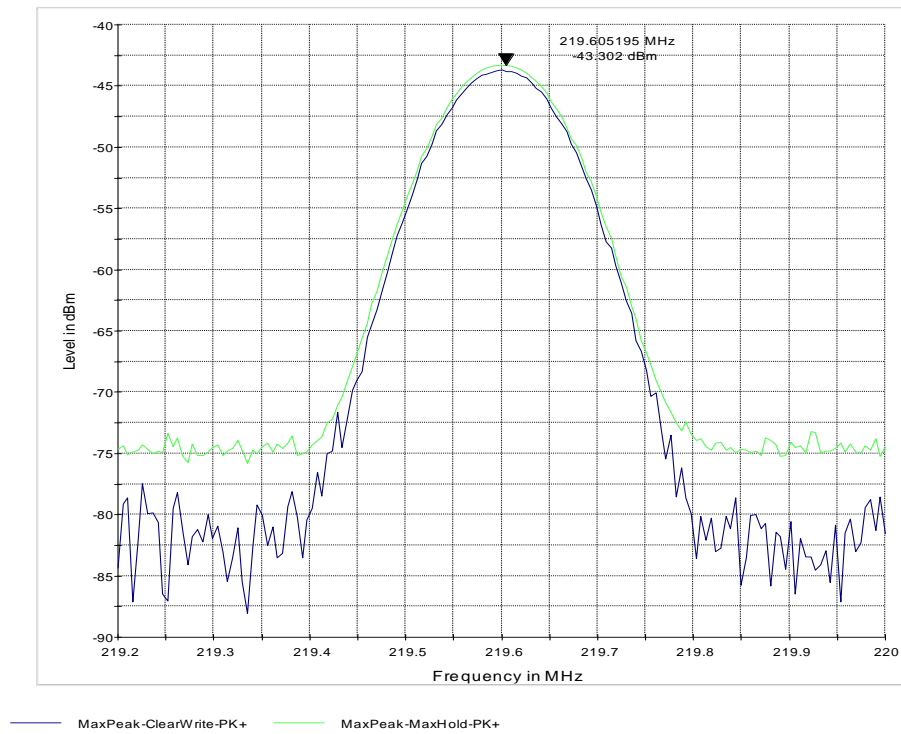


Date: 27.FEB.2013 10:55:14

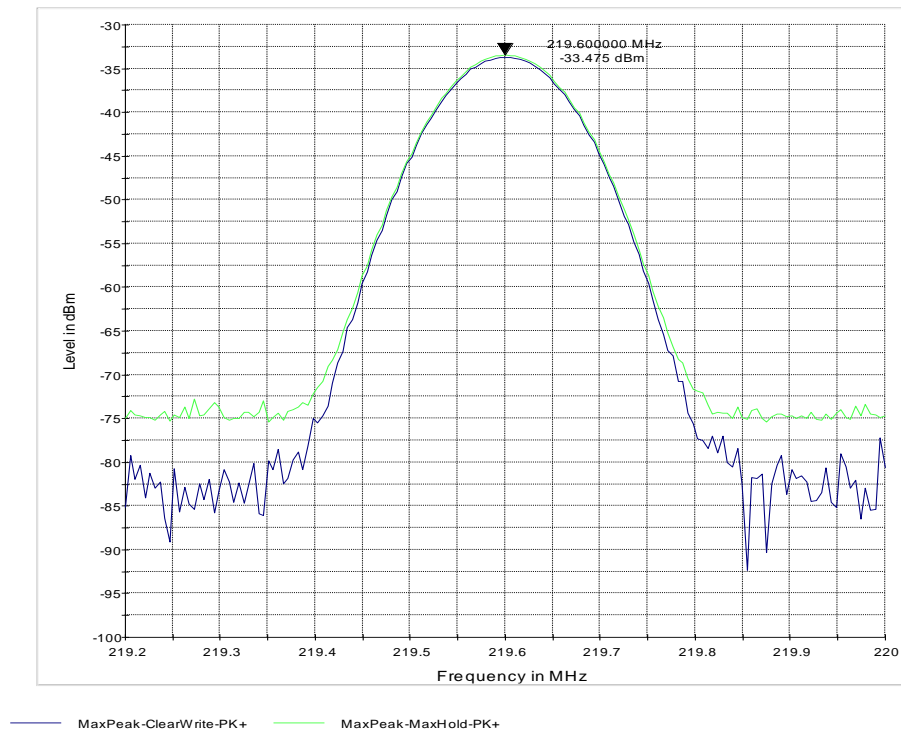
### Radiated Peak Power – GT83000



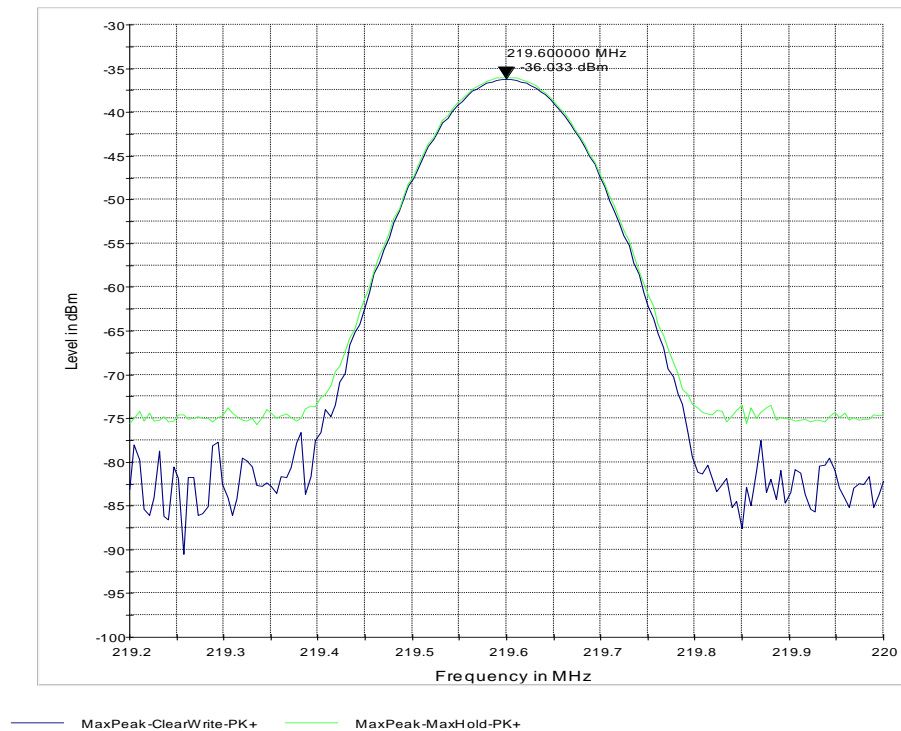
### Radiated Peak Power – GT83000VP



### Radiated Peak Power – GT83000R2



### Radiated Peak Power – GT83100





## 6.4 99% Occupied Bandwidth

### 6.4.1 References:

FCC: 2.1049, 90.209(b),90.259(8)

RSS 119: 5.5

### 6.4.2 Limits:

According to CFR 47 section 90.209, operations using equipment designed to operate with a 6.25 kHz channel bandwidth, the authorized bandwidth is 6 kHz.

According to CFR 47 section 90.259(8), assignable 6.25 kHz channels will occur in increment of 6.25kHz from 217.00625 MHz to 219.99375MHz.

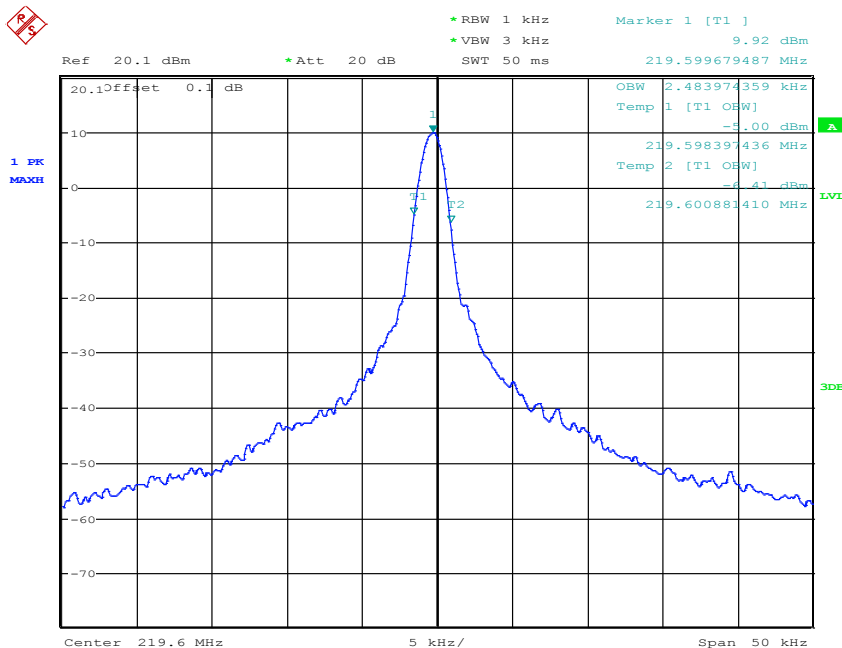
RSS 119: 5.5: Authorized Bandwidth: 11.25kHz

### 6.4.3 Test Result:

Channel	Frequency (MHz)	99% Occupied Bandwidth	26 dB Emission Bandwidth
1	219.6	2.484 kHz	3.446 kHz

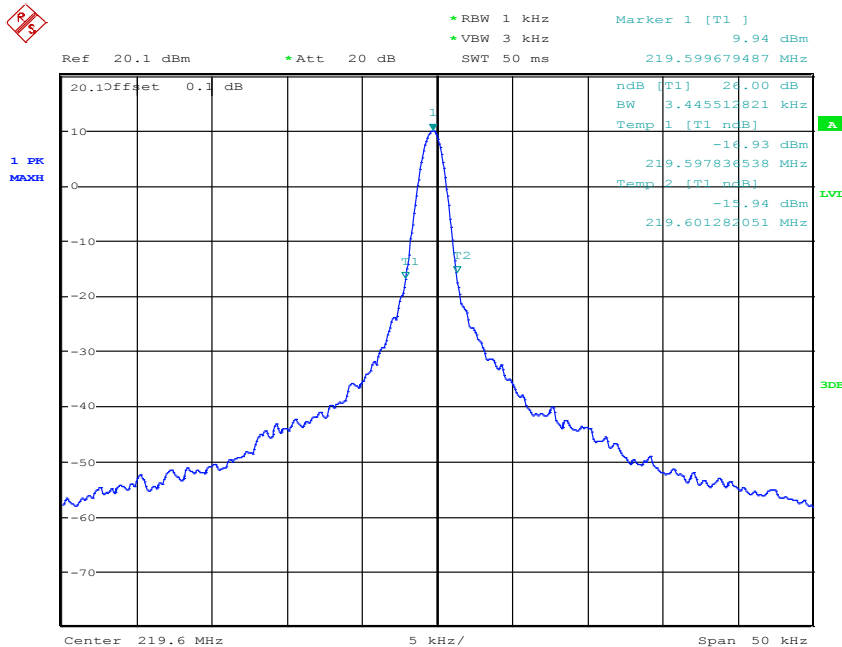
Note: Test performed on GT83000 base model only; and result applicable to all variant models.

### 6.4.4 Test Data/plots: 99% Occupied Bandwidth



Date: 25.FEB.2013 18:19:17

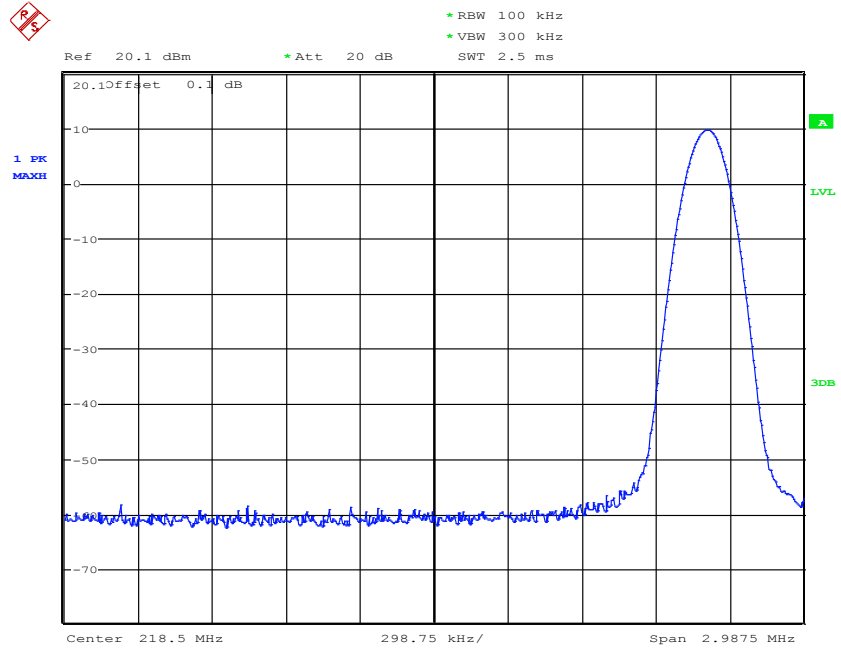
### 26dB Emission Bandwidth



Date: 25.FEB.2013 18:17:58



Spectrum in accordance to 90.259(8)



Date: 25.FEB.2013 18:21:17

### 6.5 Modulation Characteristics

The transmitter emits a pulsed carrier signal without modulation.

### 6.6 Transmit Spectrum Mask

#### 6.6.1 References:

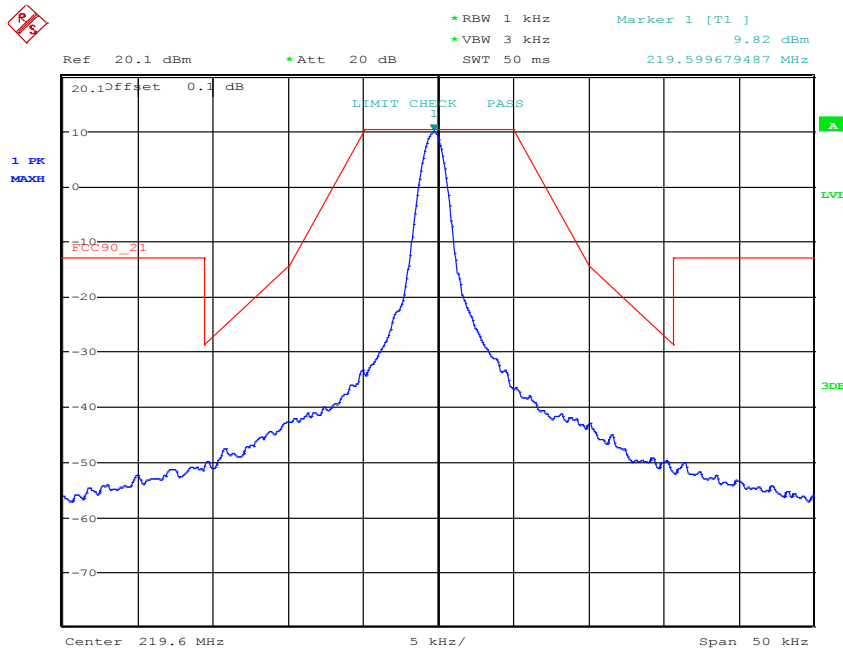
FCC: 90.210(c)  
RSS 119: 5.5

#### 6.6.2 FCC Limits:

According to CFR 47 section 90.210(c), the power of each unwanted emission shall be less than the Transmitted Power as specified below:

- 1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency ( $f_d$  in KHz) of more than 5 KHz, but not more than 10KHz: At least  $83 \log(f_d/5)$  dB.
- 2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency ( $f_d$  in KHz) by more than 10KHz, but not more than 250 percent of the authorized bandwidth: At least  $29 \log(f_d^2/11)$  dB or 50dB, which is the lesser attenuation;
- 3) At least  $43+10 \log_{10}(TP)$  dB on any frequency removed from the center of the authorized bandwidth by more than 250 percent.

#### 6.6.3 Test Data/Plots



Date: 25.FEB.2013 18:26:08

Note: Test performed on GT83000 base model only; result applicable to all model variants.

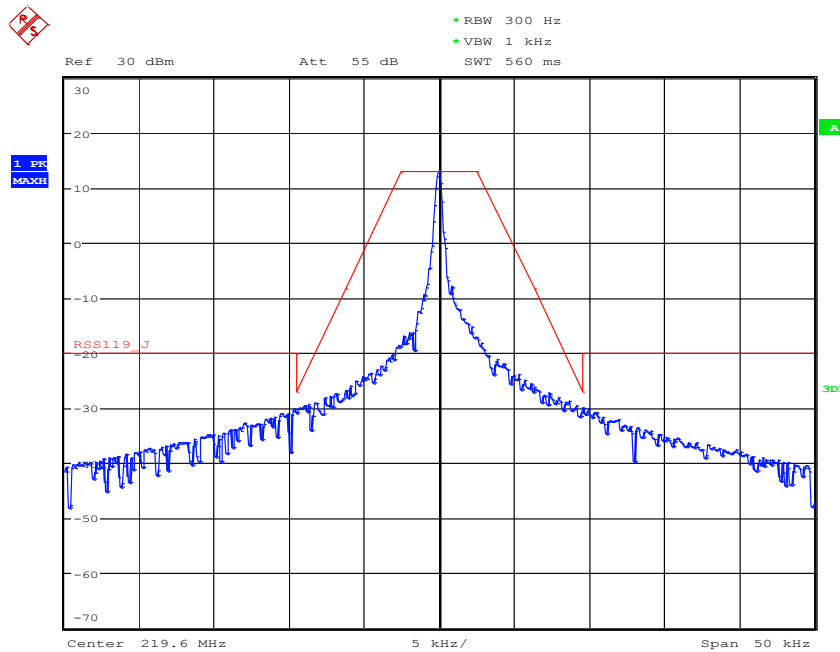
**6.6.4 IC Limits:**

According to RSS119 Section 5.8.8 for Emission Mask J for Transmitters not Equipped with an Audio Low-Pass Filter:

The power of any emission shall be attenuated below the transmitter output power P (dBw) as specified in Table 11.

Table 11 – Emission Mask J		
Displacement frequency, $f_d$ (kHz)	Minimum Attenuation (dB)	Resolution Bandwidth (Hz)
$2.5 < f_d \leq 6.25$	$53 \log_{10}(f_d/2.5)$	300
$6.25 < f_d \leq 9.5$	$103 \log_{10}(f_d/3.9)$	300
$f_d > 9.5$	Whichever is the lesser attenuation: 70 or $157 \log_{10}(f_d/5.3)$ or $50 + 10 \log_{10}(p)$	300 for emissions at $f_d \leq 250\%$ of the authorized bandwidth, Specified in Section 4.2.1 for emissions at $f_d > 250\%$ of the authorized bandwidth.

**6.6.5 Test Data/Plots**



Date: 20.MAR.2013 10:07:14

Note: Test performed on GT83000 base model only; results applicable to all model variants.

**6.6.6 Measurement Verdict:**

Pass.



## 6.7 Frequency Tolerance

### 6.7.1 References:

FCC: 2.1055, 90.213(a)

RSS 119: 5.3

### 6.7.2 Limits:

+/- 1 ppm

### 6.7.3 Test Results:

Note: Test performed on GT83000 base model only; and result applicable to all variant models.

Expected Frequency (MHz)	Measured Frequency (MHz)	Frequency Error (Hz)	Frequency Error (ppm)
<b>219.6</b>	219.59997440	25.60	0.117
<b>Battery End Point: 3.2 VDC</b>	219.60002804	28.04	0.128

Temperature °C	Frequency (MHz)	Frequency Error (Hz)	Frequency Error (ppm)
<b>50</b>	219.6	64.10	0.292
<b>40</b>	219.6	35.26	0.161
<b>30</b>	219.6	16.02	0.073
<b>20</b>	219.6	28.85	0.131
<b>10</b>	219.6	64.10	0.292
<b>0</b>	219.6	134.60	0.613
<b>-10</b>	219.6	201.92	0.920
<b>-20</b>	219.6	171.80	0.782
<b>-30</b>	219.6	197.40	0.899

### 6.7.4 Measurement Verdict:

Pass.

## **6.8 Transmitter Spurious Emissions - Conducted**

### **6.8.1 References:**

FCC: 2.1051, 90.210(c)

RSS 119: 5.8

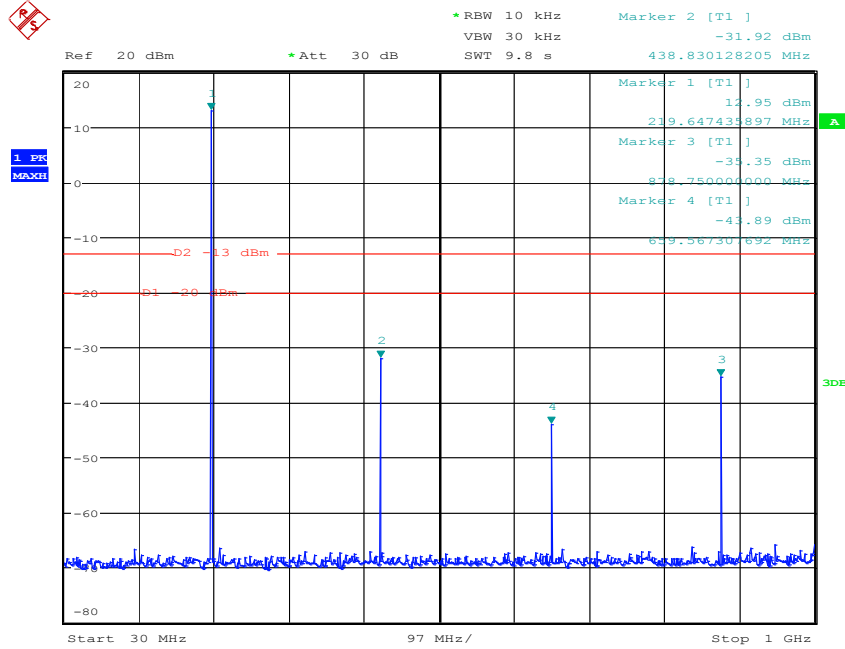
### **6.8.2 Limits**

FCC: -13 dBm

IC: -20 dBm

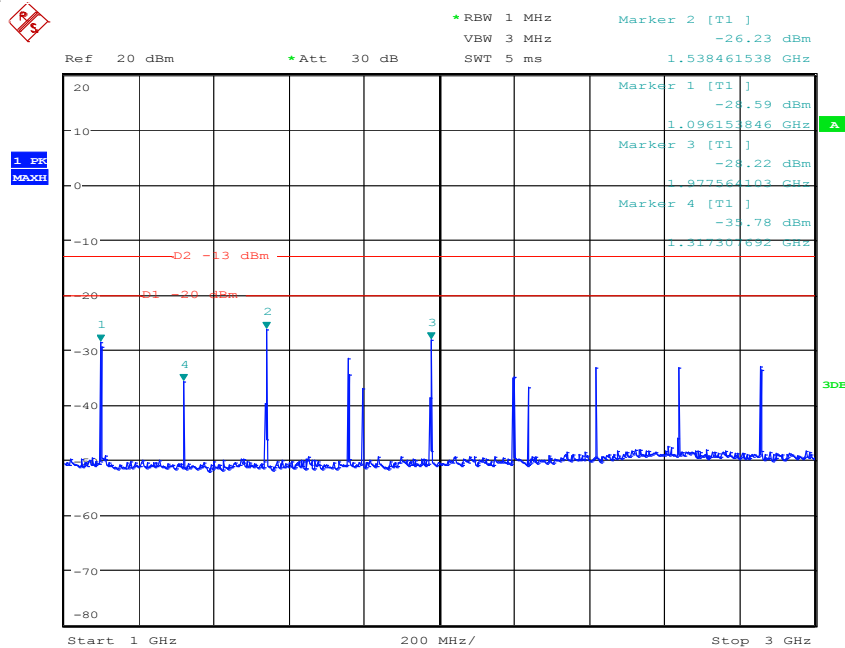
6.8.3 Test data/ plots:

Conducted Spurious Emissions 30 – 1000 MHz – GT83000



Date: 18.MAR.2013 13:46:17

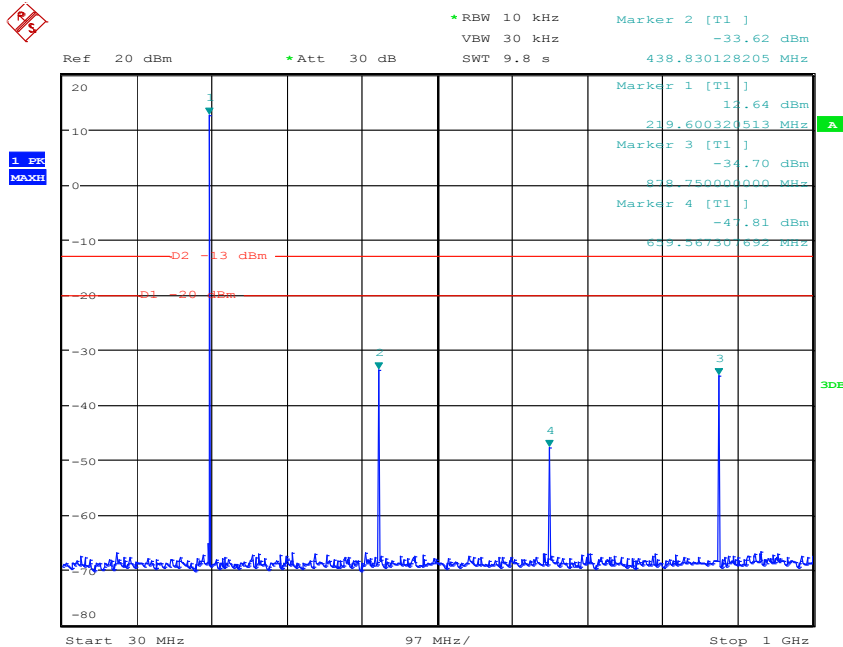
Conducted Spurious Emissions 1 – 3GHz – GT83000



Date: 18.MAR.2013 13:44:12

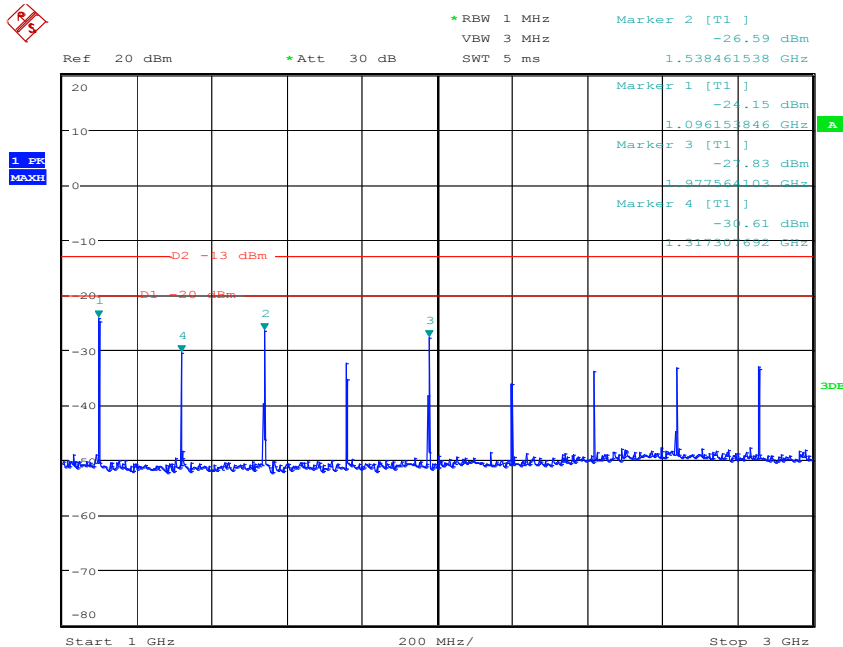


### Conducted Spurious Emissions 30 – 1000 MHz – GT83000VP



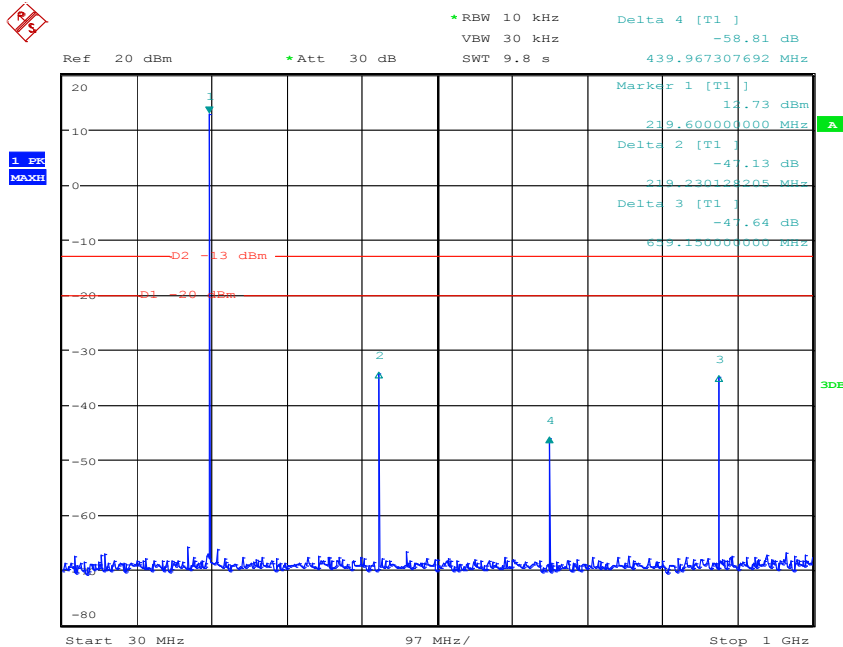
Date: 18.MAR.2013 13:29:56

### Conducted Spurious Emissions 1 – 3GHz – GT83000VP



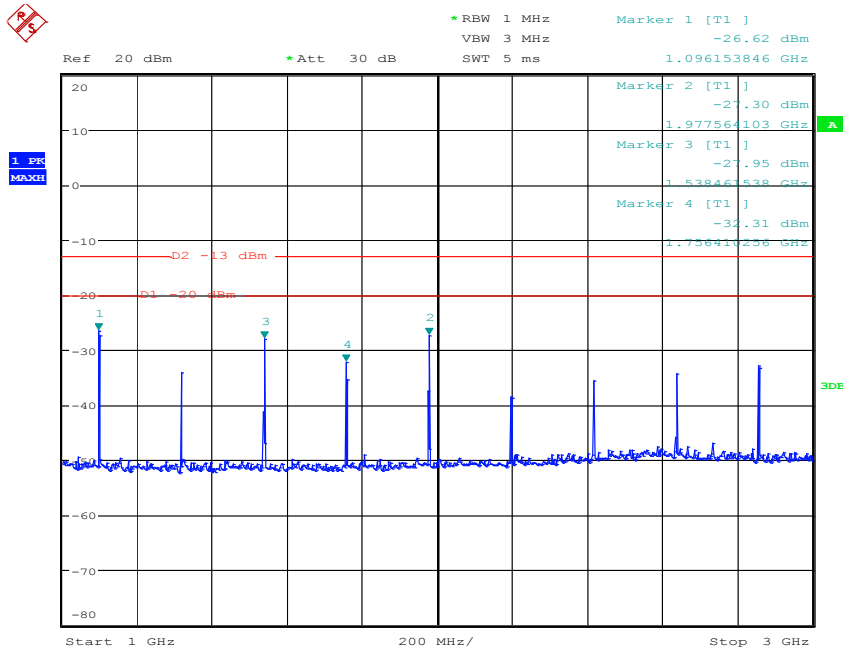
Date: 18.MAR.2013 13:31:27

### Conducted Spurious Emissions 30 – 1000 MHz – GT83000R2



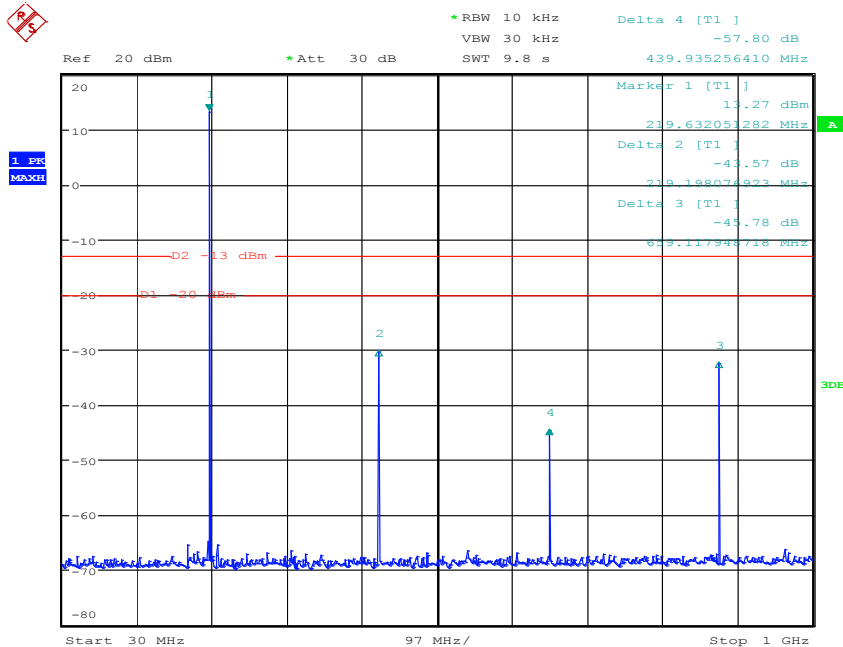
Date: 18.MAR.2013 12:58:54

### Conducted Spurious Emissions 1 – 3GHz – GT83000R2



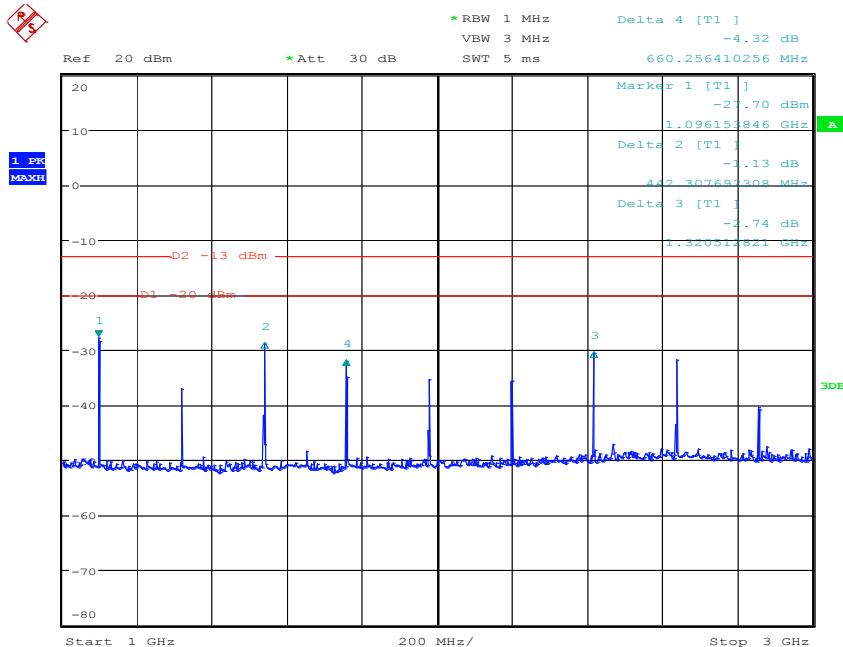
Date: 18.MAR.2013 13:00:24

### Conducted Spurious Emissions 30 – 1000 MHz – GT83100



Date: 18.MAR.2013 11:57:14

### Conducted Spurious Emissions 1 – 3GHz – GT83100



Date: 18.MAR.2013 12:00:29

## 6.9 Transmitter Spurious Emissions - Radiated

### 6.9.1 References

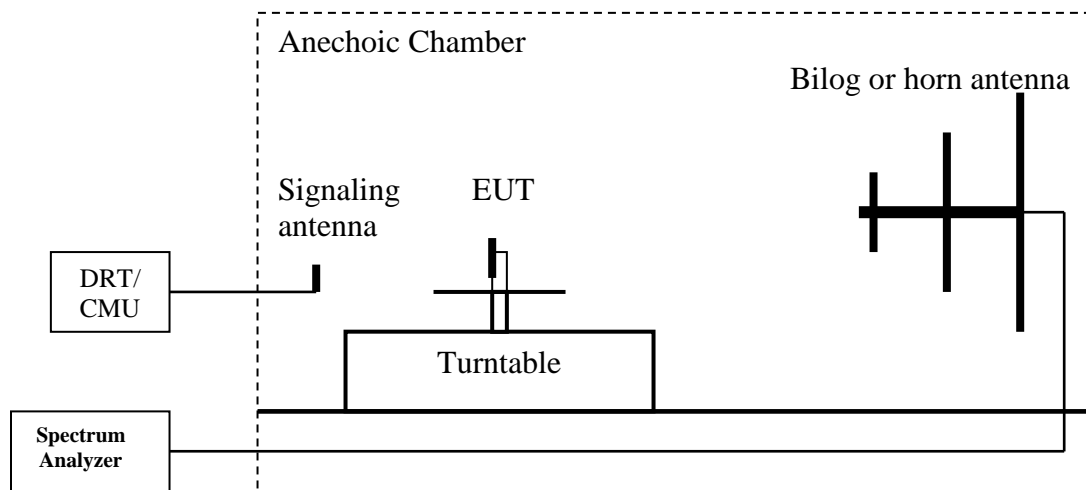
FCC: CFR Part 2.1053, 90.210 (c)  
RSS 119: 5.8

### 6.9.2 Limits

FCC: -13 dBm  
IC: -20 dBm

### 6.9.3 Radiated out of band measurement procedure:

Ref: TIA-603C 2004- 2.2.12 Unwanted emissions: Radiated Spurious



1. Connect the equipment as shown in the above diagram with the EUT's antenna in a horizontal orientation.
2. Adjust the settings of the Digital RadioCommunication Tester (DRT) to set the EUT to its maximum power at the required channel.
3. Set the spectrum analyzer to measure peak hold with the required settings.
4. Place the measurement antenna in a horizontal orientation. Rotate the EUT 360°. Raise the measurement antenna up to 4 meters in 0.5 meters increments and rotate the EUT 360° at each height to maximize all emissions. Measure and record all spurious emissions (**LVL**) up to the tenth harmonic of the carrier frequency.
5. Replace the EUT with a horizontally polarized half wave dipole or known gain antenna. The center of the antenna should be at the same location as the center of the EUT's antenna.
6. Connect the antenna to a signal generator with known output power and record the path loss in dB (**LOSS**).  $LOSS = \text{Generator Output Power (dBm)} - \text{Analyzer reading (dBm)}$ .
7. Determine the level of spurious emissions using the following equation:  
**Spurious (dBm) = LVL (dBm) + LOSS (dB)**
8. Repeat steps 4, 5 and 6 with all antennas vertically polarized.



9. Determine the level of spurious emissions using the following equation:  
**Spurious (dBm) = LVL (dBm) + LOSS (dB)**
10. Measurements are to be performed with the EUT set to the low, middle and high channel of each frequency band.  
 (Note: Steps 5 and 6 above are performed prior to testing and **LOSS** is recorded by test software. Steps 3, 4 and 7 above are performed with test software.)

**6.9.4 Sample Calculations for Radiated Measurements**

**6.9.4.1 Power Measurements using Substitution Procedure:**

The measurement on the Spectrum Analyzer is used as a basis for the Substitution procedure. The EUT is replaced with a Signal Generator and an antenna. The setting on the Signal Generator is varied until the Spectrum Analyzer displays the original reading. EIRP is calculated as-

$EIRP (dBm) = \text{Signal Generator setting (dBm)} - \text{Cable Loss (dB)} + \text{Antenna Gain (dBi)}$

Eg:

Frequency (MHz)	Measured SA (dBμV)	Signal Generator setting (dBm)	Antenna Gain (dBi)	Dipole Gain (dBd)	Cable Loss (dB)	EIRP (dBm)
1000	95.5	24.5	6.5	0	3.5	27.5

**Measurement Survey:**

The site is constructed in accordance with ANSI C63.4 requirements and is recognized by the FCC to be in compliance for a 3m site. The spectrum is scanned from 30MHz to the 10<sup>th</sup> harmonic of the highest frequency generated by the EUT.

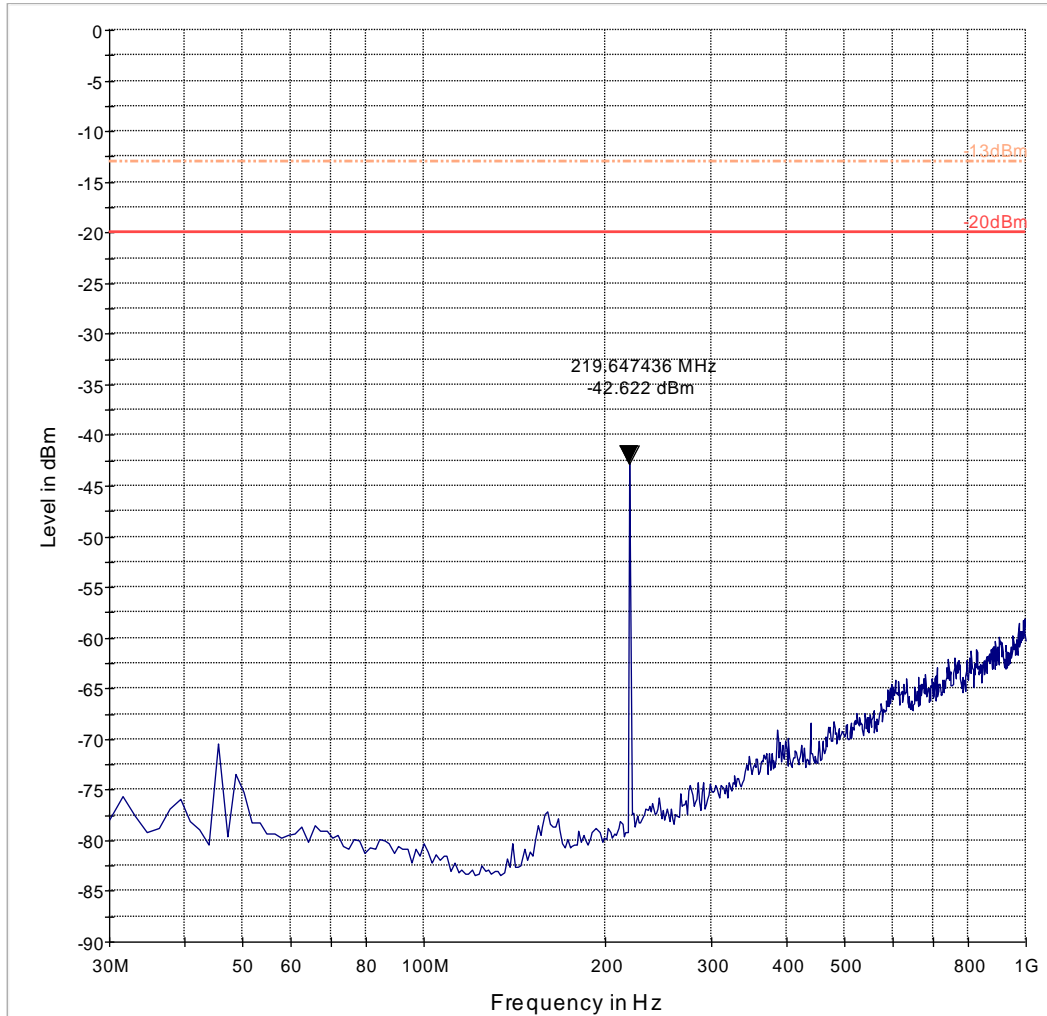
For radiated measurements, all data in this report shows the worst case emissions data between H/V antenna polarizations and for all 3 orthogonal orientations of the EUT.

Measurement Uncertainty= +/- 3.0 dB.

**6.9.5 Test Conditions:**

Tnom: 20°C; Vnom: 3.7 V

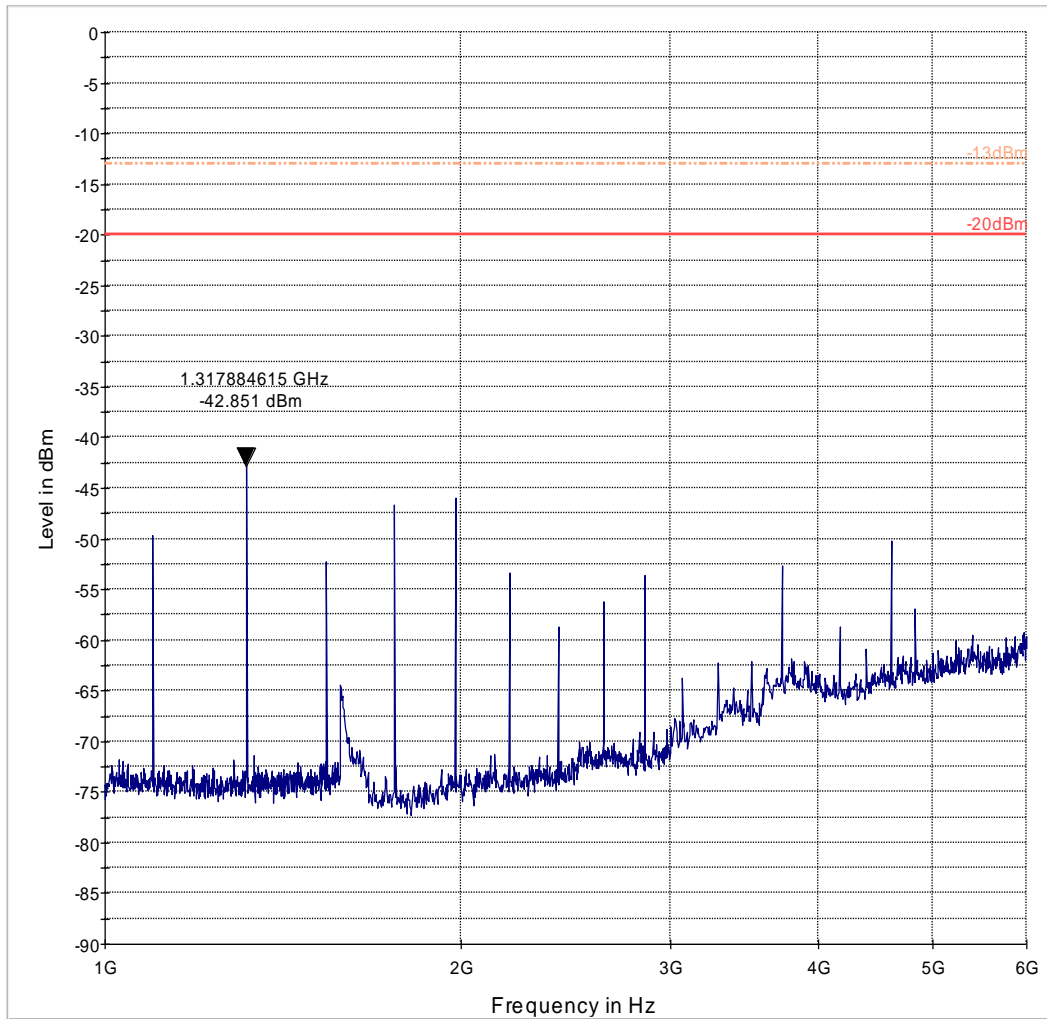
**6.9.6 Test Result:**  
**Spurious Emissions: 30MHz – 1000MHz – GT83000**



— -20dBm    - - - -13dBm.LimitLine    — Preview Result 1-PK+



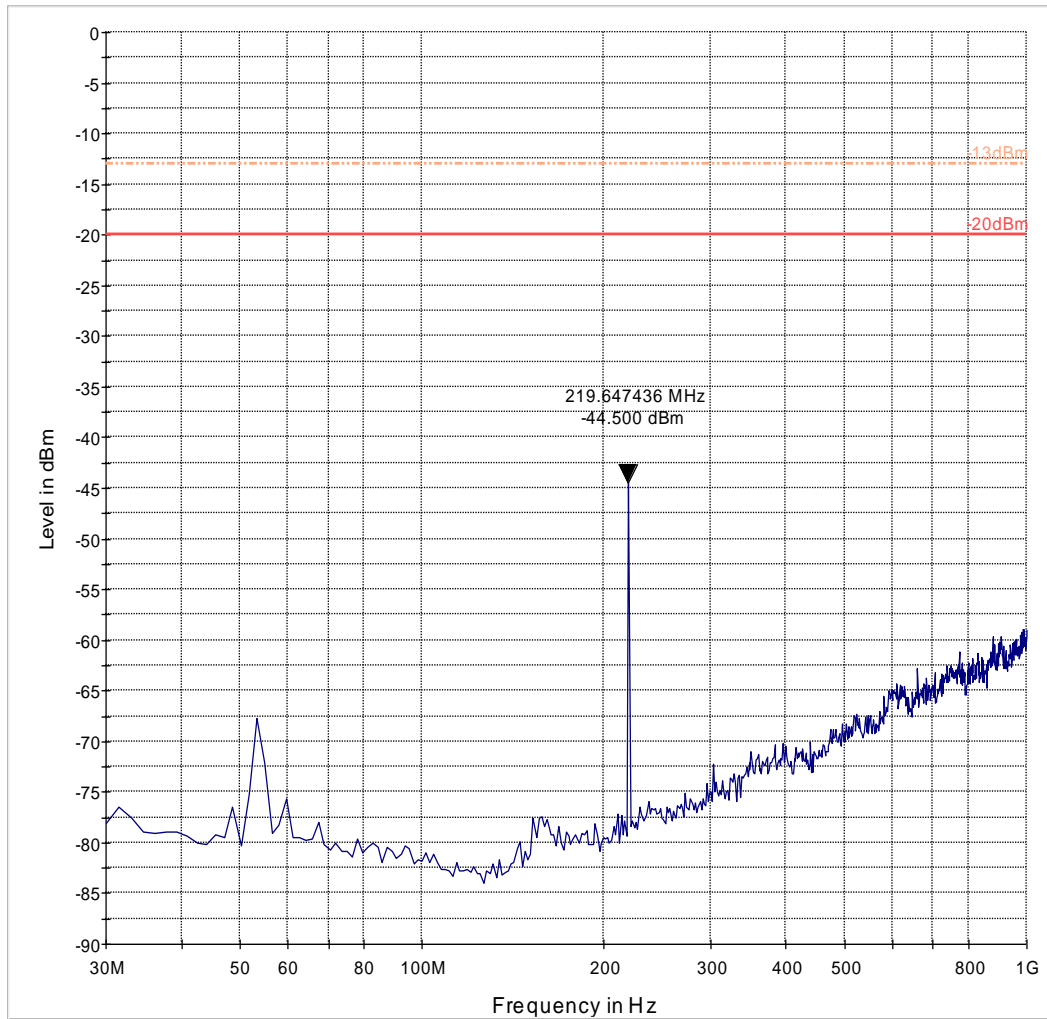
### Spurious Emissions 1GHz – 6GHz – GT83000



— -20dBm    - - - - -13dBm.LimitLine    — Preview Result 1-PK+



Spurious Emissions 30MHz – 1000MHz – GT83000VP

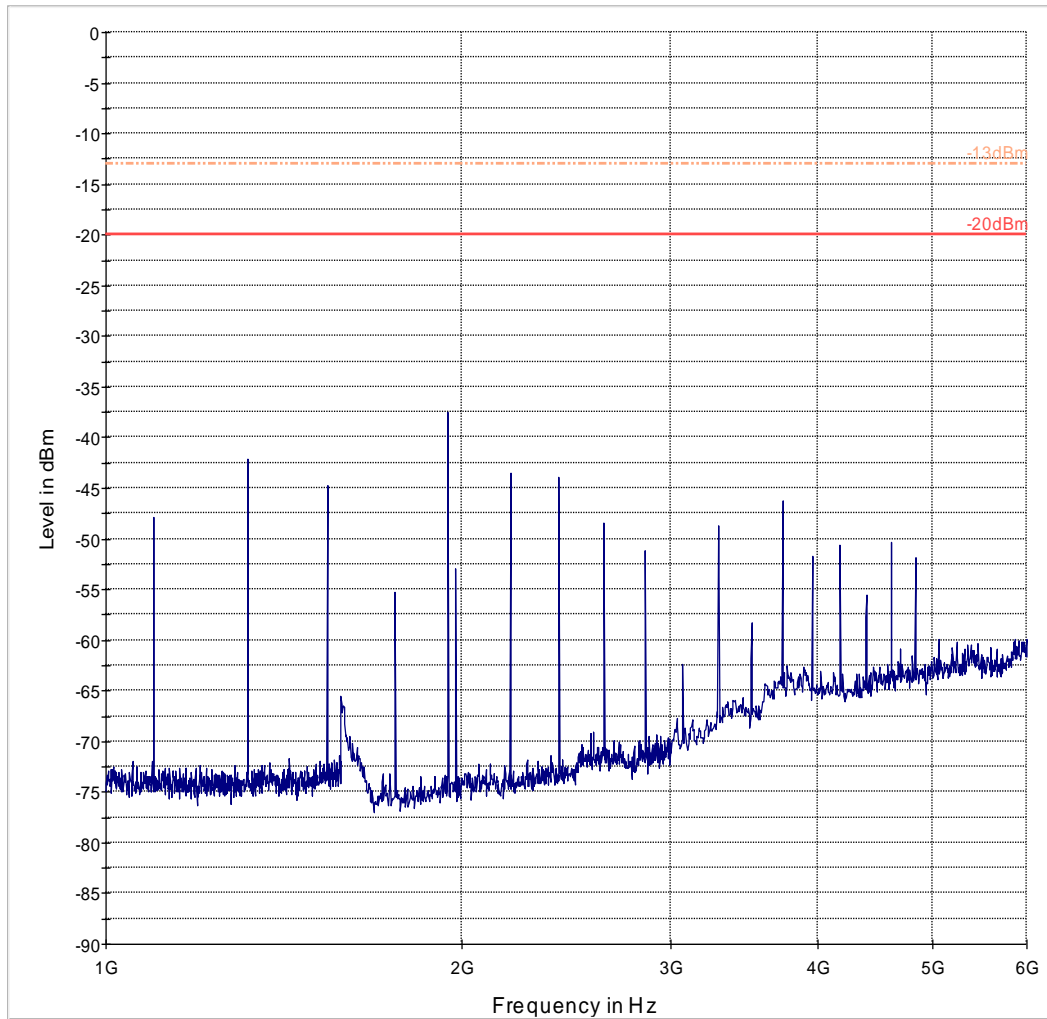


— -20dBm    - - - - -13dBm.LimitLine    — Preview Result 1-PK+





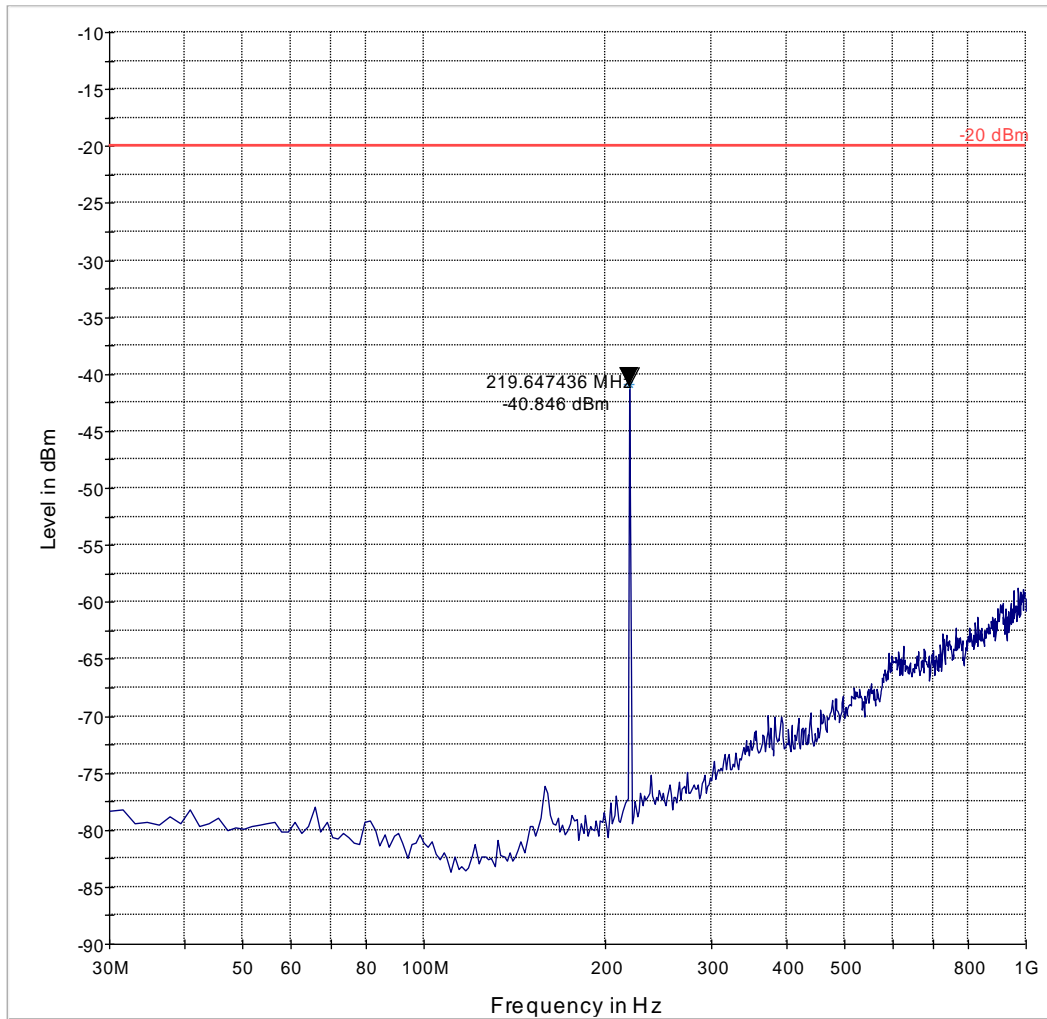
### Spurious Emissions 1GHz – 6GHz – GT83000VP



— -20dBm    - - - -13dBm.LimitLine    — Preview Result 1-PK+



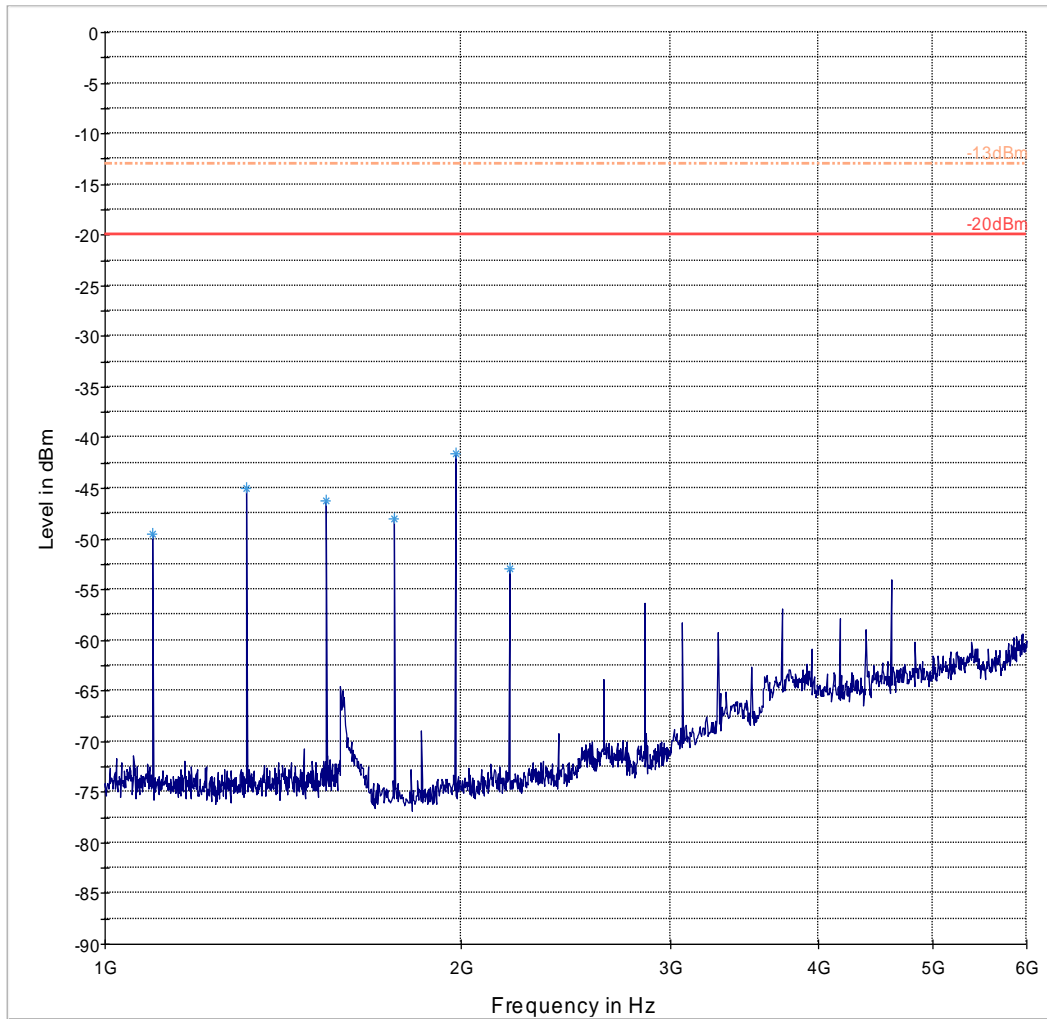
### Spurious Emissions 30MHz – 1000MHz – GT83000R2



— -40dBm    — Preview Result 1-PK+    — -20 dBm    \* Data Reduction Result 1 [2]-PK+



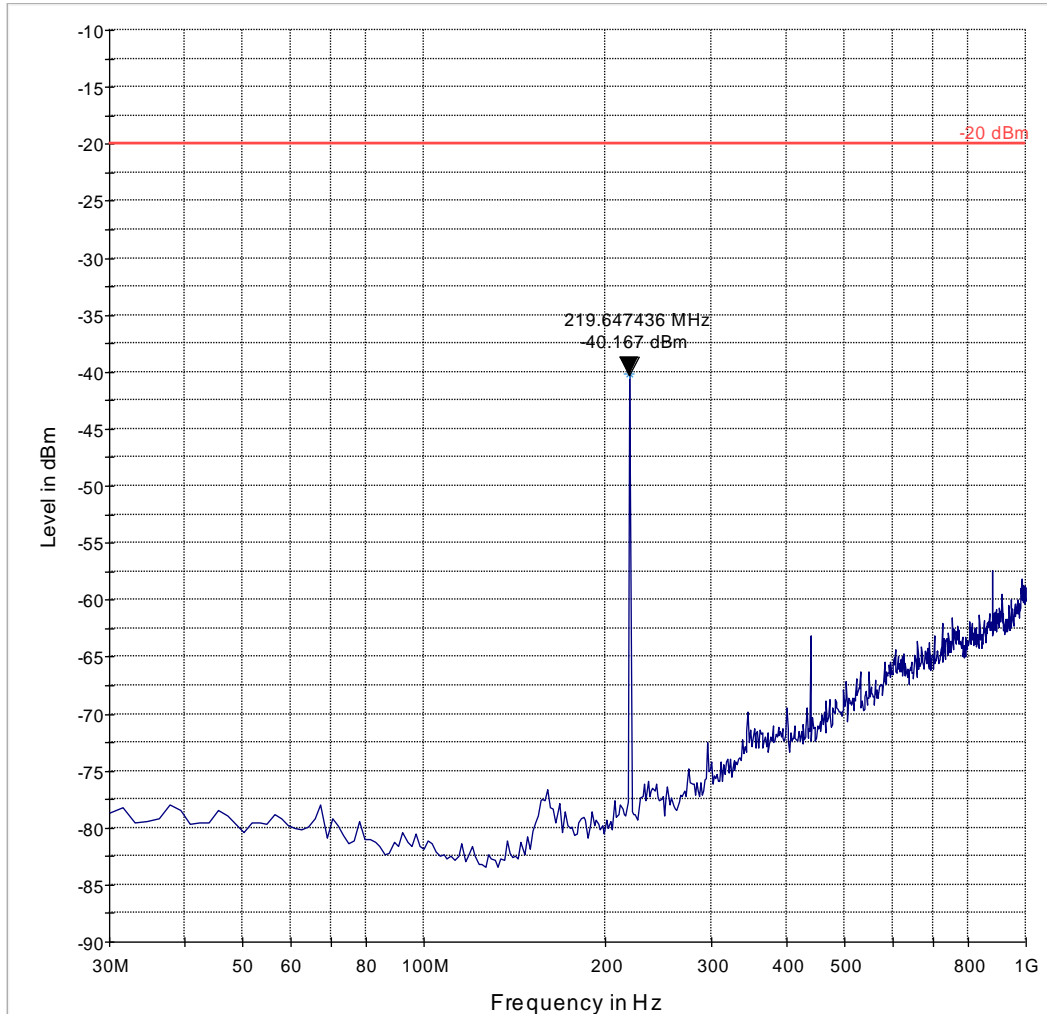
### Spurious Emissions 1GHz – 6GHz – GT83000R2



— -20dBm    - - - -13dBm.LimitLine    — Preview Result 1-PK+    \* Data Reduction Result 1 [3]-PK+



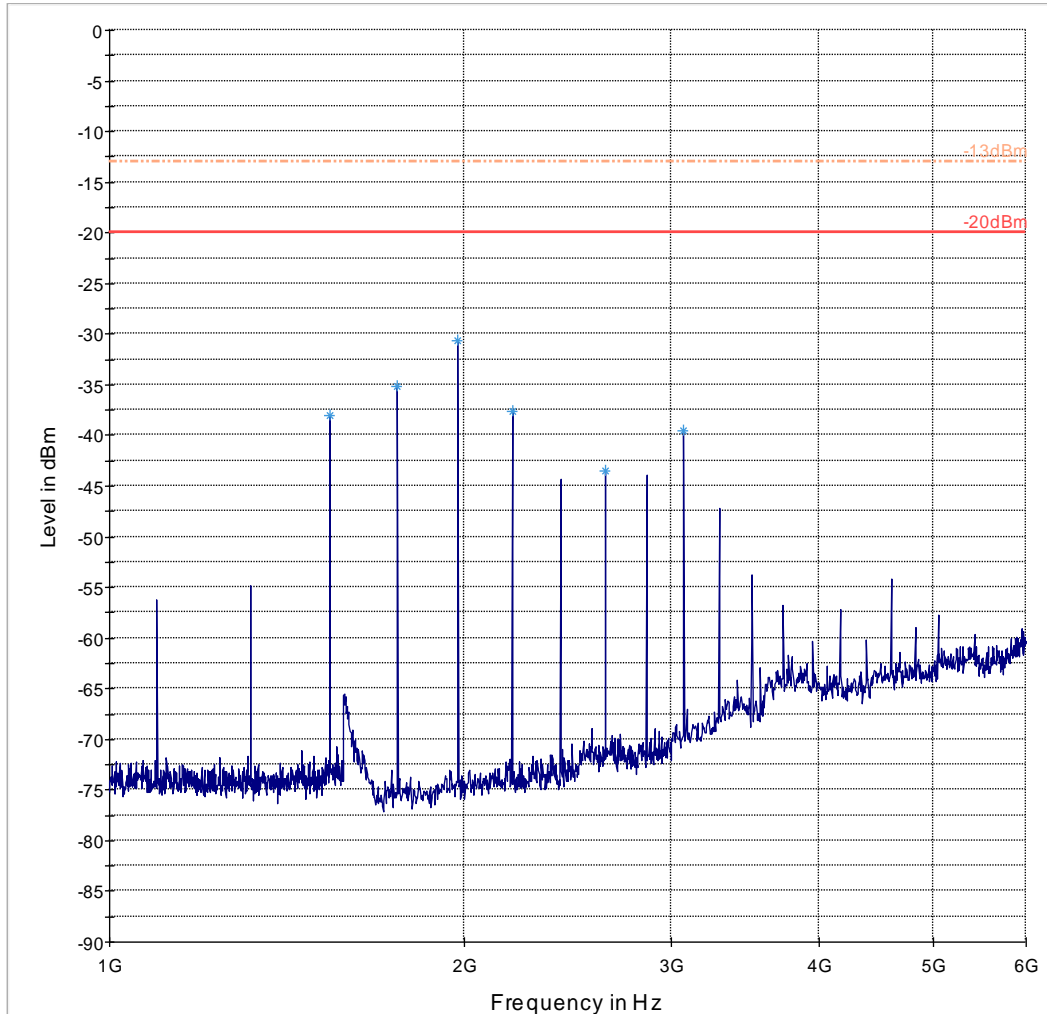
**Spurious Emissions 30MHz – 1000MHz – GT83100**  
Note: Worst Case of Folded and unfolded configuration.



— -40dBm    — Preview Result 1-PK+    — -20 dBm    \* Data Reduction Result 1 [2]-PK+



**Spurious Emissions 1GHz – 6GHz – GT83100**  
Worst Case of Folded and unfolded configuration.

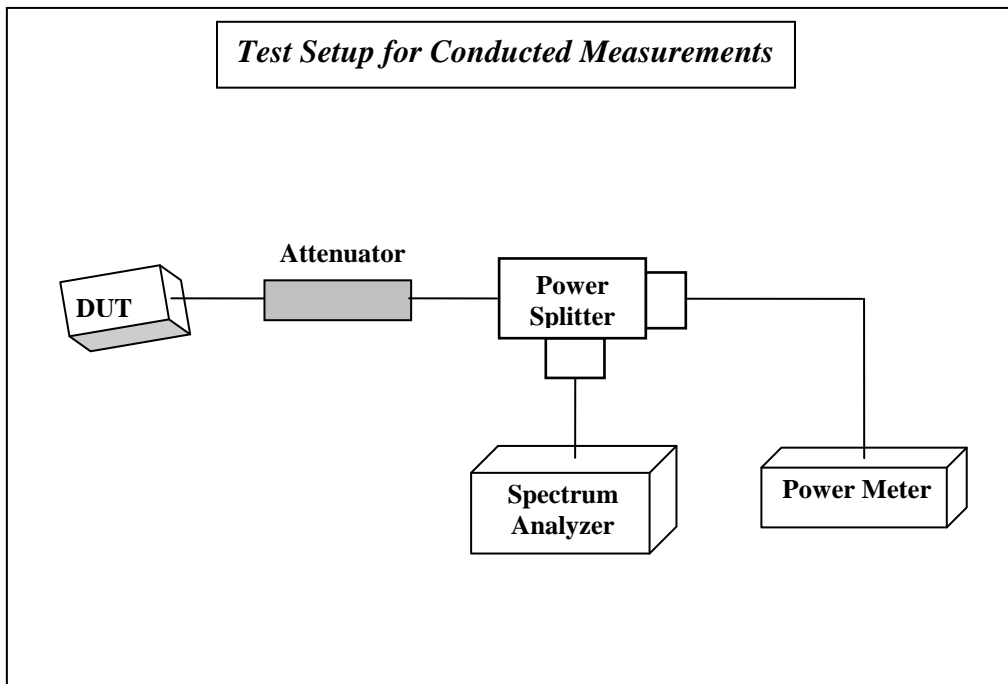


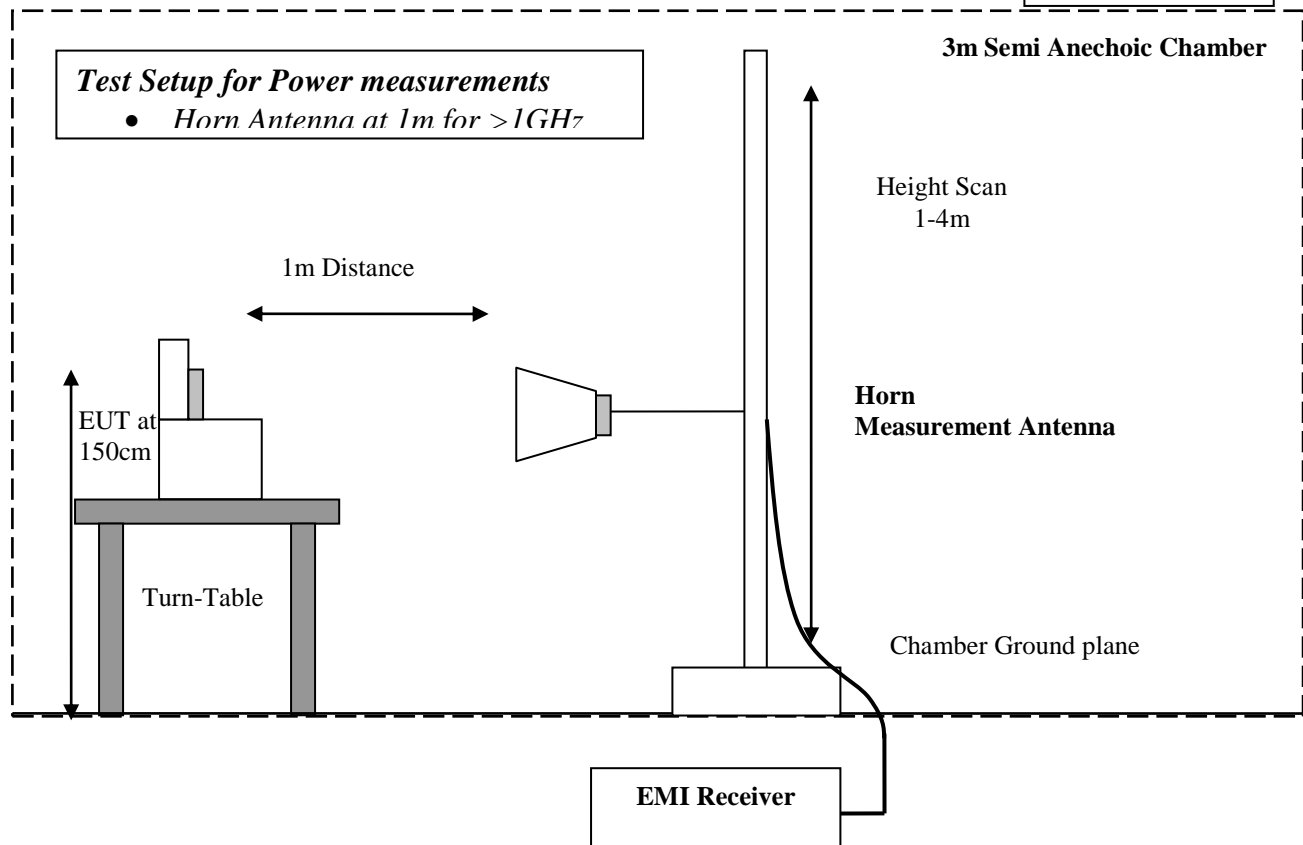
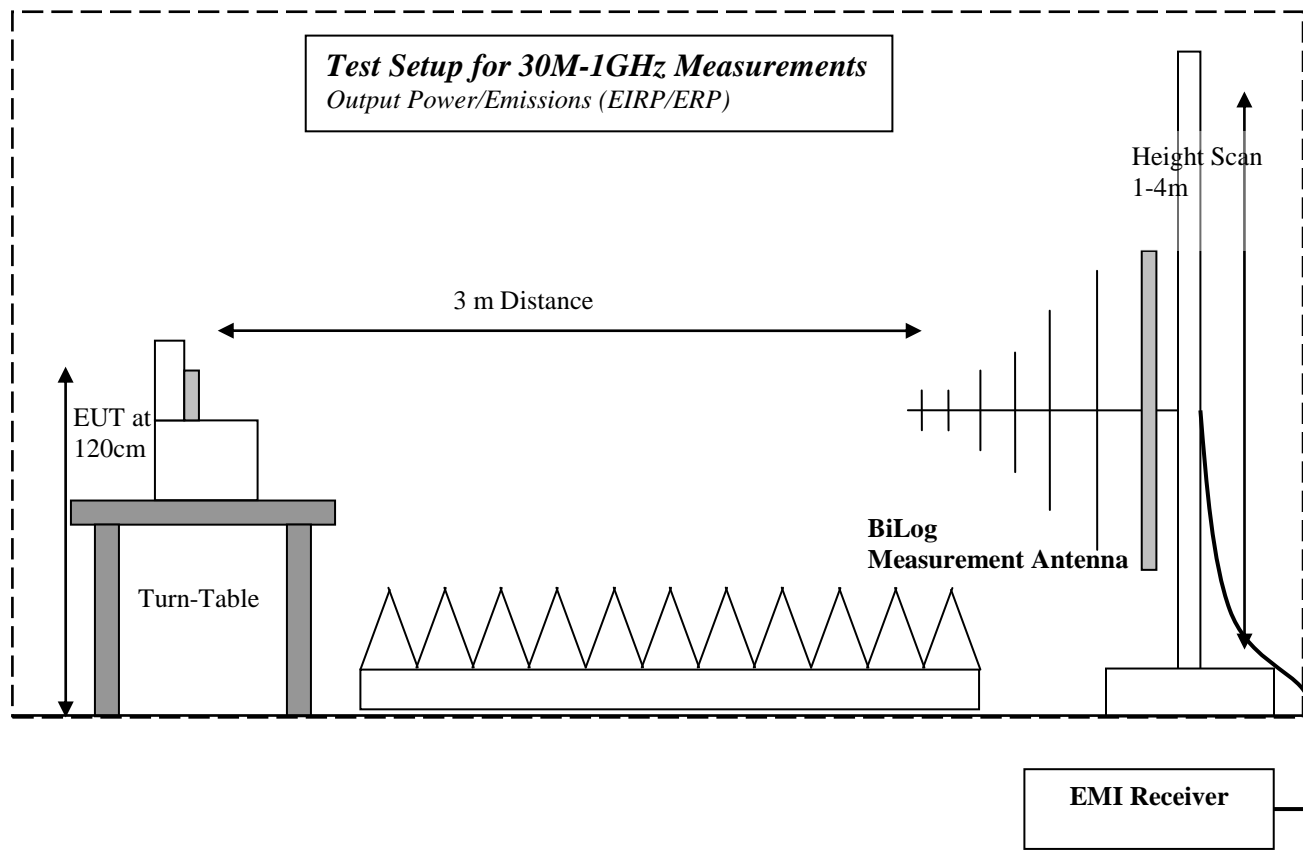
— -20dBm    - - - -13dBm.LimitLine    — Preview Result 1-PK+    \* Data Reduction Result 1 [3]-PK+

## 7 Test Equipment and Ancillaries used for tests

Instrument/Ancillary	Model	Manufacturer	Serial No.	Cal Date	Cal Interval
Radio Communication Tester	CMU 200	Rohde & Schwarz	101821	May 2011	2 Years
Radio Communication Tester	CMU 200	Rohde & Schwarz	109879	May 2011	2 Years
Radio Communication Tester	CMU 200	Rohde & Schwarz	110759	May 2011	2 Years
EMI Receiver/Analyzer	ESU 40	Rohde & Schwarz	100251	Aug 2012	2 Years
Spectrum Analyzer	FSU	Rohde & Schwarz	200302	May 2011	2 Years
Loop Antenna	6512	EMCO	00049838	Apr 2012	3 years
Biconilog Antenna	3141	EMCO	0005-1186	Mar 2012	3 years
Horn Antenna (1-18GHz)	3115	ETS	00035111	Mar 2012	3 years
Horn Antenna (1-18GHz)	3115	ETS	00035114	Apr 2012	3 years
Horn Antenna (18-40GHz)	3116	ETS	00070497	Aug 2011	3 years
Communication Antenna	IBP5-900/1940	Kathrein	n/a	n/a	n/a
High Pass Filter	5HC2700	Trilithic Inc.	9926013	Part of system calibration	
High Pass Filter	4HC1600	Trilithic Inc.	9922307	Part of system calibration	
6GHz High Pass Filter	HPM50106	Microtronics	001	Part of system calibration	
Pre-Amplifier	JS4-00102600	Miteq	00616	Part of system calibration	
LISN	50-25-2-08	FCC	08014	Jan 2012	1 year
Power Smart Sensor	R&S	NRP-Z81	100161	May 2011	2 Years
DC Power Supply	6655A	Hewlett Packard	3403A-00487	n/a	n/a
Multimeter	MM200	Klein	N/A	Apr 2011	2 Years
Temp Hum Logger	TM320	Dickson	03280063	Feb 2012	1 Year
Temp Hum Logger	TM325	Dickson	5285354	Feb 2012	1 Year

8 Test Setup Diagrams







Test Report #: EMC\_3SISE-020-12001\_VHF  
Date of Report : 2013-04-04

FCC ID: Q6KGT83000A  
IC ID: 5043A-GT83000A



## 9 Revision History

Date	Report Name	Changes to report	Report prepared by
2013-04-04	EMC_3SISE-020-12001_VHF	First Version	Daniel Salinas