# FCC Part 15

#### **TEST REPORT**

For

**GSM MOBILE PHONE** 

**Model Name: MD 110** 

**Brand Name: DYNAMICS** 

FCC ID: YH2-MD110

Report No.: AGC11111004SZ09E4B

Date of Issue: Jun.06, 2010

Prepared For

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#### **VERIFICATION OF COMPLIANCE**

| Applicant:           | C-Mobi Techology Limited   |
|----------------------|--|
| Address              | RM9A, 9/F., JCG Building, 10-16 Mongkok Road,<br>Mongkok, Kin., HongKong |
| Product Description: | GSM MOBILE PHONE   |
| Brand Name:          | DYNAMICS   |
| Model Number:        | MD110  |
| FCC ID               | YH2-MD110  |
| Report Number:       | AGC11111004SZ09E4B   |
| Date of Test:        | Jun. 01, 2010 to Jun.06, 2010  |

#### WE HEREBY CERTIFY THAT:

The above equipment was tested by Shenzhen Attestation of Global Compliance Science & Technology Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2009) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC Rules Part 15.247.

Checked By:

Jekey Zhang Jekey Zhang Jun.06, 2010

Authorized By

King Zhang

Jun.06, 2010

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#### **GENERAL INFORMATION**

#### 1.1 PRODUCT DESCRIPTION

The EUT is a short range, lower power; **GSM MOBILE PHONE** designed as an "Communication Device". It is designed by way of utilizing the FHSS technology to achieve the system operation.

A major technical description of EUT is described as following:

| Operation Frequency | 2.402 GHz to 2.480GHz                       |
|---------------------|---|
| Rated Output Power  | -3.67 dBm                                   |
| Modulation          | GFSK  |
| Number of channels  | 79  |
| Antenna Designation | Integrated Antenna                          |
| Power Supply        | Internal Lion Composite Battery DC 3.6~4.2V |
| Travel Adapter      | Output :DC5.0V                              |

#### 1.2 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: YH2-MD110** filing to comply with Section 15.247 of the FCC Part 15, Subpart C Rules.

#### 1.3 TEST METHODOLOGY

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 (2009). Radiated testing was performed at an antenna to EUT distance 3 meters.

#### 1.4 TEST FACILITY

The test site used to collect the radiated data is located on the address of Shenzhen EMTEK Technology Co., Ltd. The test site is 3m anechoic chamber and calibrated to meet the FCC requirements in documents ANSI C63.4: 2009.

#### 1.5 SPECIAL ACCESSORIES

Not available for this EUT intended for grant.

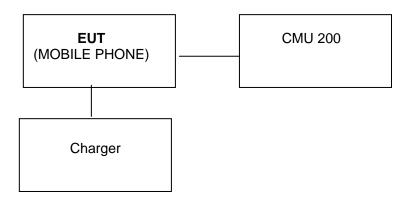
#### 1.6 EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

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## 1. SYSTEM TEST CONFIGURATION

#### 2.1 CONFIGURATION OF TESTED SYSTEM



#### 2.2 EQUIPMENT USED IN TESTED SYSTEM

| Item | Equipment    | Mfr/Brand | Model/Type No. | FCC ID    |
|------|--------------|-----------|----------------|-----------|
| 1    | MOBILE PHONE | DYNAMICS  | MD110          | YH2-MD110 |
| 2    | CMU200       |           |                |           |
| 3    | Charger      |           |                |           |

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#### 3. SUMMARY OF TEST RESULTS

| FCC RULES | DESCRIPTION OF TEST         | RESULT    |
|-----------|-----------------------------|-----------|
| §15.207   | Conduction Emission         | Compliant |
| §15.209   | Radiated Emission           | Compliant |
| §15.247   | Maximum Output Power        | Compliant |
| §15.247   | 20 dB Bandwidth             | Compliant |
| §15.247   | Band Edges                  | Compliant |
| §15.247   | Spurious Emission           | Compliant |
| §15.247   | Frequency Separation        | Compliant |
| §15.247   | Number of Hopping Frequency | Compliant |
| §15.247   | Time of Occupancy           | Compliant |

#### 4. DESCRIPTION OF TEST MODES

- 1. The EUT has been set to operate continuously on the lowest, the middle and the highest operation frequency individually.
- 2. The EUT stays in continuous transmitting mode on the operation frequency being set.

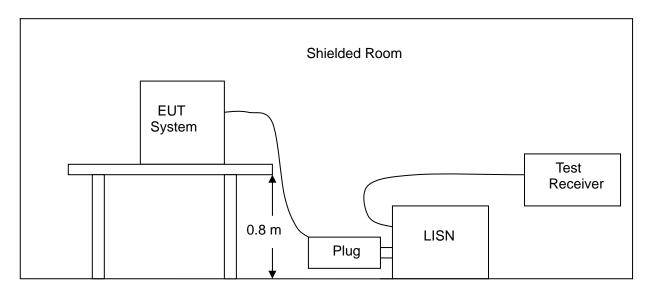
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#### 5. CONDUCTION EMISSIONS

#### 5.1 MEASUREMENT PROCEDURE:

- 1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4.
- 2. Support equipment, if needed, was placed as per ANSI C63.4.
- 3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- 4. The EUT received DC3.7V through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- 5. All support equipments received AC power from a second LISN, if any.
- 6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7. Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
- 8. During the above scans, the emissions were maximized by cable manipulation.

#### 5.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



#### 5.3 MEASUREMENT EQUIPMENT USED:

| Conducted Emission Test Site                                 |                 |         |            |            |  |
|--|-----------------|---------|------------|------------|--|
| Name of Equipment Manufacturer Model Serial Number Cal. Date |                 |         |            |            |  |
| Test Receiver  | Rohde & Schwarz | ESCS30  | 828985/018 | 05/29/2010 |  |
| LISN   | Rohde & Schwarz | ESH2-Z5 | 834549/005 | 05/29/2010 |  |
| LISN   | Rohde & Schwarz | ESH2-Z5 | 834549/005 | 05/29/2010 |  |
| 50 Coaxial Switch  | Anritsu         | MP59B   | M20531     | 05/29/2010 |  |

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#### 5.4 LIMITS AND MEASUREMENT RESULT:

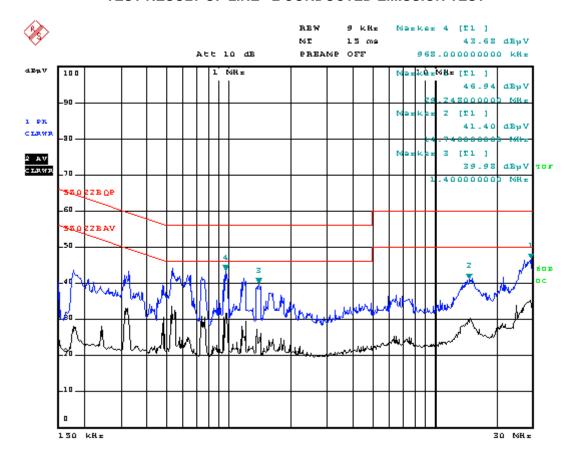
#### LIMITS OF LINE CONDUCTED EMISSION TEST

| Fraguency     | Maximum RF Line Voltage |                |  |
|---------------|-------------------------|----------------|--|
| Frequency     | Q.P.( dBuV)             | Average( dBuV) |  |
| 150kHz~500kHz | 66-56                   | 56-46          |  |
| 500kHz~5MHz   | 56                      | 46             |  |
| 5MHz~30MHz    | 60                      | 50             |  |

<sup>1\*\*</sup>Note: 1. The lower limit shall apply at the transition frequency.2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz

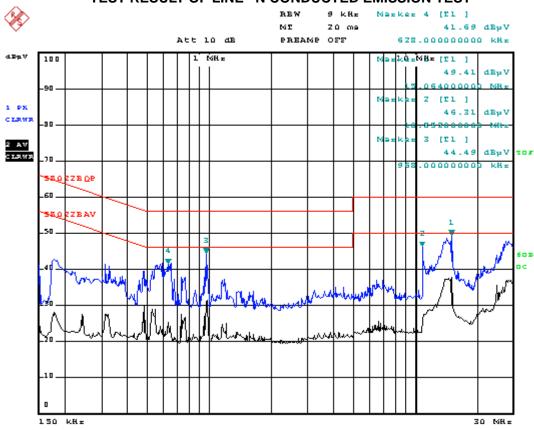
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#### TEST RESULT OF LINE -L CONDUCTED EMISSION TEST



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#### TEST RESULT OF LINE -N CONDUCTED EMISSION TEST



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#### 6. MAXIMUM OUTPUT POWER

#### **6.1 MEASUREMENT PROCEDURE:**

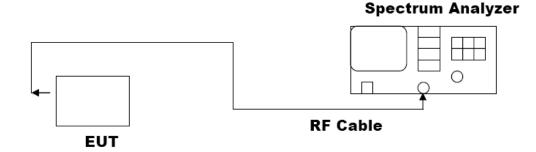
#### **CONDUCTED METHOD**

- 1. The EUT was placed on a turn table which is 0.8m above ground plane.
- 2. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 3. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 4. Set SPA Centre Frequency = Operation Frequency, RBW= 1 MHz, VBW= 1 MHz.
- 5. Set SPA Trace 1 Max hold, then View.

RADIATED METHOD According to ANSI C63.4:2009

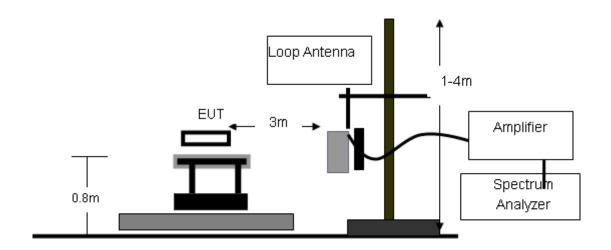
#### 6.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

#### **CONDUCTED METHOD**



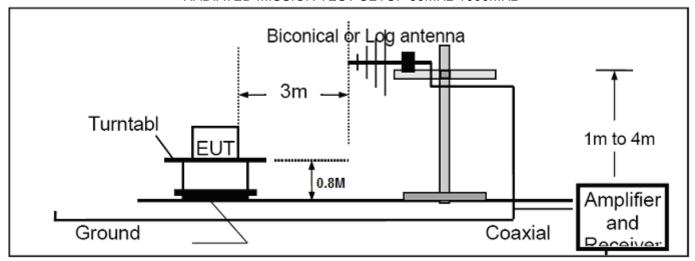
#### **RADIATED EMISSION TEST SETUP**

RADIATED MISSION TEST SETUP BELOW 30MHz

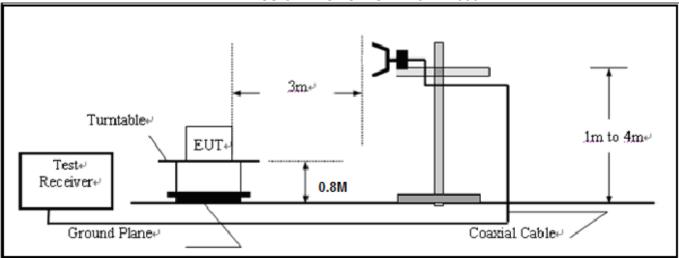


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#### RADIATED MISSION TEST SETUP 30MHz-1000MHz

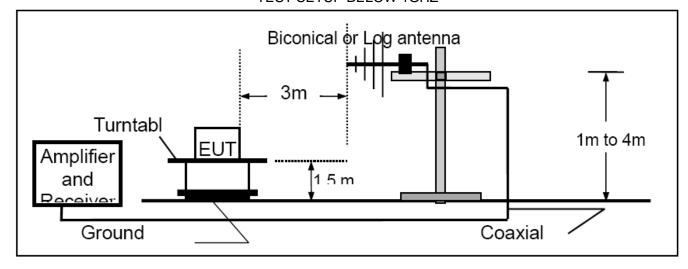


RADIATED MISSION TEST SETUP ABOVE 1000MHz

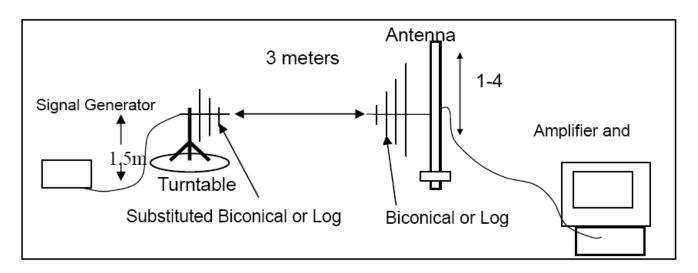


**EIRP TEST SETUP** 

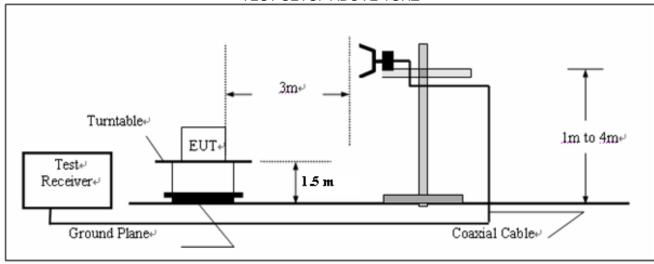
**TEST SETUP BELOW 1GHZ** 

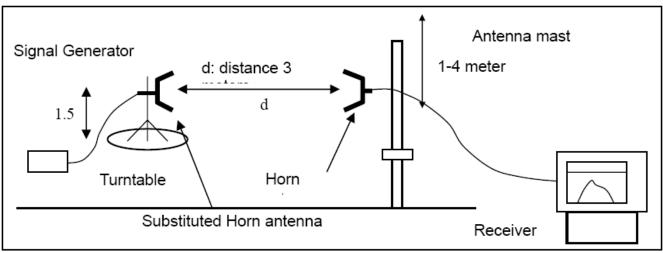


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#### TEST SETUP ABOVE 1GHZ





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### **6.3 MEASUREMENT EQUIPMENT USED:**

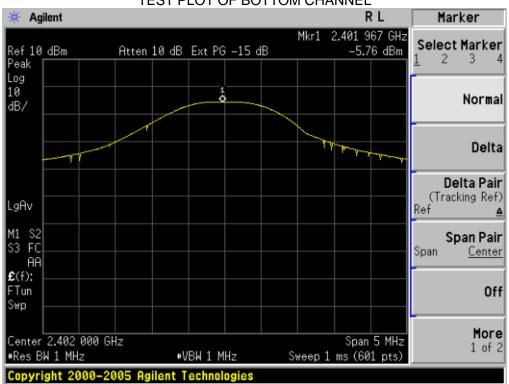
| Description       | Manufacturer      | Model   | SERIAL<br>NUMBER | Cal. Date  | Cal. Due   |
|-------------------|-------------------|---------|------------------|------------|------------|
| Spectrum Analyzer | Rohde & Schwarz   | FSEM30  | 849720/019       | 05/29/2010 | 05/29/2011 |
| Amplifier         | H.P.              | 8449B   | 3008A00277       | 05/29/2010 | 05/29/2011 |
| Horn Antenna      | Sunol Sciences    | DRH-118 | A052604          | 05/29/2010 | 05/29/2011 |
| Horn Antenna      | A.H. Systems Inc. | SAS-574 |                  | 09/05/2009 | 09/05/2010 |
| EMI Test Receiver | Rohde & Schwarz   | ESCI    | 100028           | 05/29/2010 | 05/29/2011 |
| Amplifier         | H.P.              | HP8447E | 1937A01046       | 05/29/2010 | 05/29/2011 |
| Broadband Antenna | Sunol Sciences    | JB1     | A040904-2        | 05/29/2010 | 05/29/2011 |
| LOOP ANTENNA      | R&S               | HM525   |                  | 08/27/2009 | 08/27/2010 |

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#### **6.4 LIMITS AND MEASUREMENT RESULT:**

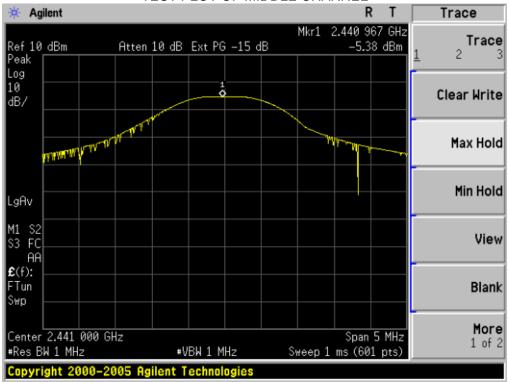
| LIMITS AND MEASUREMENT RESULT |           |            |                    |          |  |
|-------------------------------|-----------|------------|--------------------|----------|--|
| Applicable                    | Fraguanay |            | Measurement Result |          |  |
| Limits                        | Frequency | EIRP (dBm) | Conducted (dBm)    | Criteria |  |
| 30 dBm                        | 2.402GHz  | -4.23      | -5.76              | PASS     |  |
| 30 dBm                        | 2.441GHz  | -3.87      | -5.38              | PASS     |  |
| 30 dBm                        | 2.480GHz  | -3.67      | -4.99              | PASS     |  |

#### TEST PLOT OF BOTTOM CHANNEL

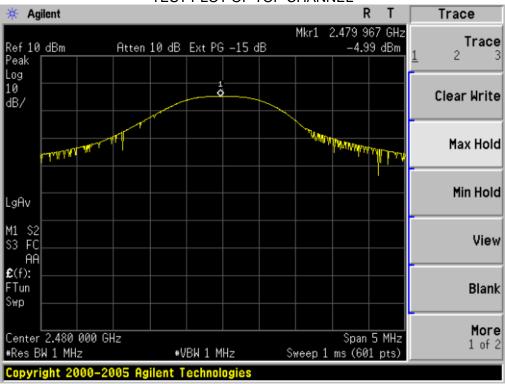


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#### TEST PLOT OF MIDDLE CHANNEL



#### TEST PLOT OF TOP CHANNEL



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#### 7. 20 DB BANDWIDTH

#### 7.1 MEASUREMENT PROCEDURE

- 1. The EUT was placed on a turn table which is 0.8m above ground plane.
- 2. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 3, Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 3. Set SPA Centre Frequency = Operation Frequency, RBW= 100 KHz, VBW= 100 KHz.
- 4. Set SPA Trace 1 Max hold, then View.

#### 7.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The Same as described in Section 6.2

#### 7.3 MEASUREMENT EQUIPMENT USED:

The same as described in Section 6.3

#### 7.4 LIMITS AND MEASUREMENT RESULTS:

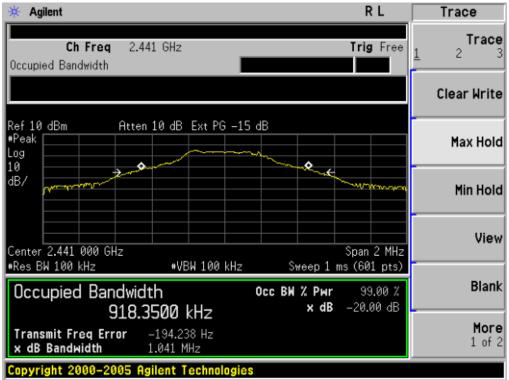
| LIMITS AND MEASUREMENT RESULT |                 |                    |          |  |
|-------------------------------|-----------------|--------------------|----------|--|
| Applicable Limite             |                 | Measurement Result |          |  |
| Applicable Limits             | Test Data (MHz) |                    | Criteria |  |
|                               | Bottom Channel  | 1.043              | PASS     |  |
|                               | Middle Channel  | 1.041              | PASS     |  |
|                               | Top Channel     | 1.054              | PASS     |  |

#### TEST PLOT OF BANDWIDTH FOR BOTTOM CHANNEL

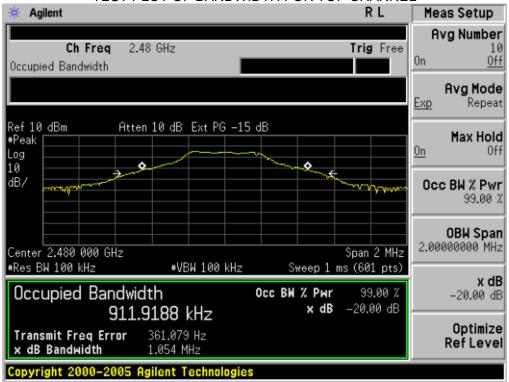


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#### TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



#### TEST PLOT OF BANDWIDTH FOR TOP CHANNEL



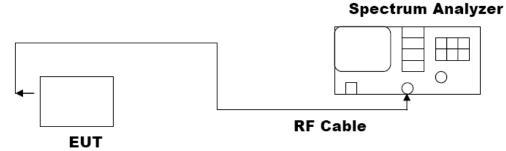
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#### 8. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY (N/A)

#### **8.1 MEASUREMENT PROCEDURE:**

- (1). The EUT was placed on a turn table which is 0.8m above ground plane.
- (2). Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- (3), Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- (4). Set SPA Centre Frequency = Operation Frequency, RBW= 3 KHz, VBW= 10 KHz., Sweep time= Auto
- (5). Set SPA Trace 1 Max hold, then View.

#### 8.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



#### **8.3 MEASUREMENT EQUIPMENT USED:**

| SHIELDING ROOM    |         |                 |                  |              |            |  |
|-------------------|---------|-----------------|------------------|--------------|------------|--|
| EQUIPMENT<br>TYPE | MFR     | MODEL<br>NUMBER | SERIAL<br>NUMBER | LAST<br>CAL. | CAL DUE.   |  |
| Spectrum Analyzer | Agilent | E4440A          | US41421290       | 04/16/2010   | 04/15/2011 |  |

#### **8.4 LIMITS AND MEASUREMENT RESULT:**

| LIMITS AND MEASUREMENT RESULT |                |                      |      |  |  |
|-------------------------------|----------------|----------------------|------|--|--|
| Applicable Limite             |                | Measurement Res      | sult |  |  |
| Applicable Limits             | Test Data (d   | Test Data (dBm/3KHz) |      |  |  |
|                               | Bottom Channel |                      |      |  |  |
| 8 dBm / 3KHz                  | Middle Channel |                      |      |  |  |
|                               | Top Channel    |                      |      |  |  |

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#### 9. OUT OF BAND EMISSION

#### 9.1 MEASUREMENT PROCEDURE:

- 1. The EUT was placed on a turn table which is 0.8m above ground plane.
- 2. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 3, Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 3. Set SPA Centre Frequency = Operation Frequency, RBW= 100 KHz, VBW= 100 KHz.
- 4. Set SPA Trace 1 Max hold, then View.

#### 9.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The Same as described in section 6.2

- 1. Conducted test setup
- 2. Radiated Emission test Setup below 1Ghz and Above 1GHz

#### 9.3 MEASUREMENT EQUIPMENT USED:

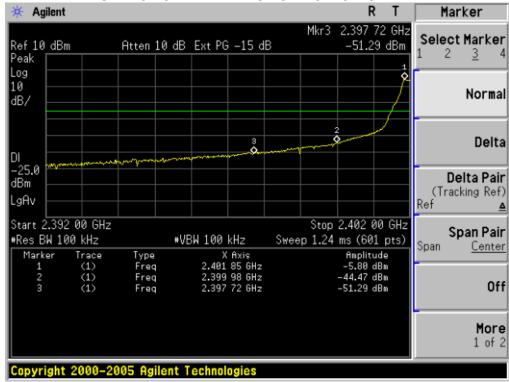
The Same as described in section 6.3

#### 9.4 LIMITS AND MEASUREMENT RESULT:

| LIMITS AND MEASUREMENT RESULT  |  |          |  |  |  |
|--|--|----------|--|--|--|
| Applicable Limite  | Measurement R  | esult    |  |  |  |
| Applicable Limits  | Test Data  | Criteria |  |  |  |
| In any 100 KHz Bandwidth Outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produce by the intentional radiator shall be at least 20 dB below that in 100KHz bandwidth within the band that contains the highest | At least -20dBc than the limit Specified on the BOTTOM Channel | PASS     |  |  |  |
| level of the desired power.  In addition, radiation emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in§15.209(a))   | At least -20dBc than the limit Specified on the TOP Channel    | PASS     |  |  |  |

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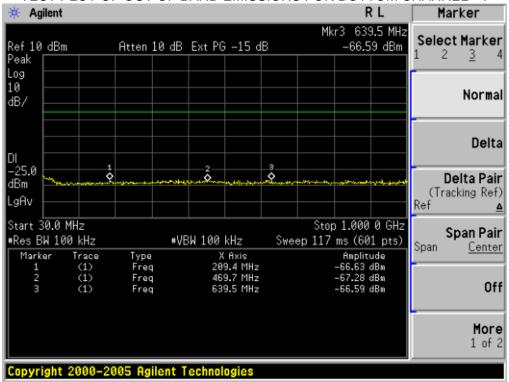


#### TEST PLOT OF BAND ELDG FOR TOP CHANNEL

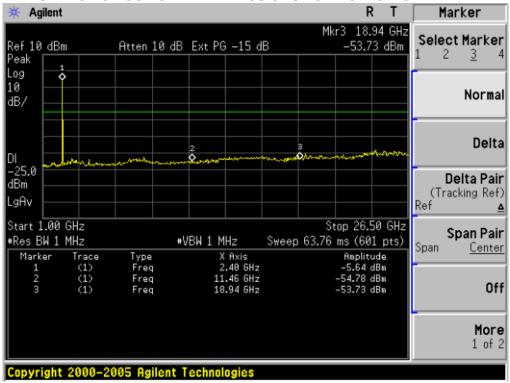


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#### TEST PLOT OF OUT OF BAND EMISSIONS FOR BOTTOM CHANNEL - 1

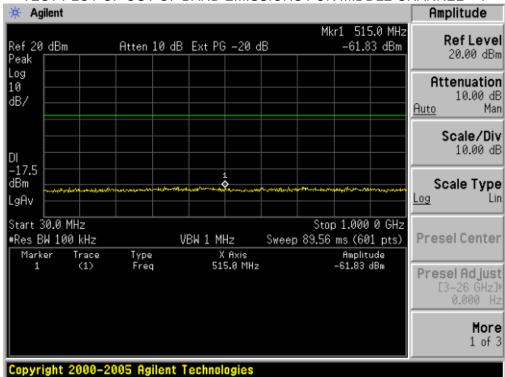


#### TEST PLOT OF OUT OF BAND EMISSIONS FOR BOTTOM CHANNEL - 2

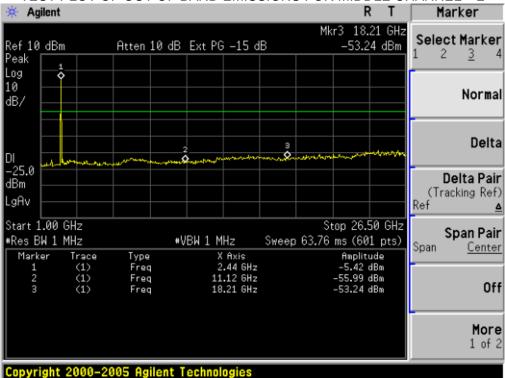


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#### TEST PLOT OF OUT OF BAND EMISSIONS FOR MIDDLE CHANNEL - 1

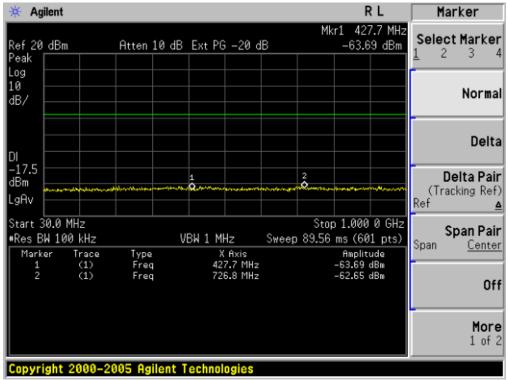


#### TEST PLOT OF OUT OF BAND EMISSIONS FOR MIDDLE CHANNEL - 2

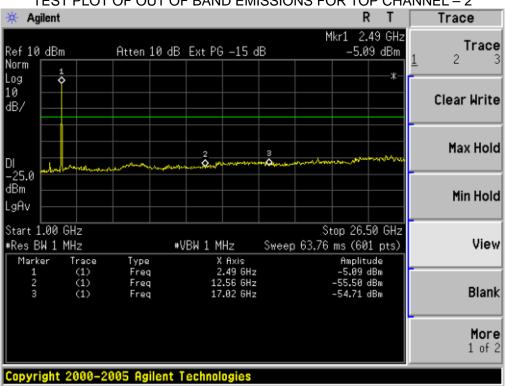


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TEST PLOT OF OUT OF BAND EMISSIONS FOR TOP CHANNEL - 1

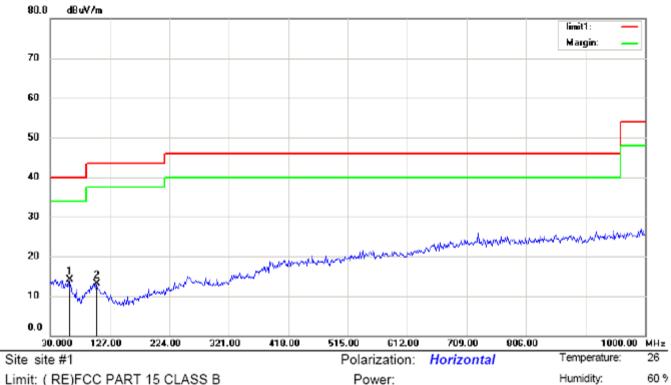


#### TEST PLOT OF OUT OF BAND EMISSIONS FOR TOP CHANNEL - 2



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#### **RADIATED EMISSION BELOW 1GHZ**



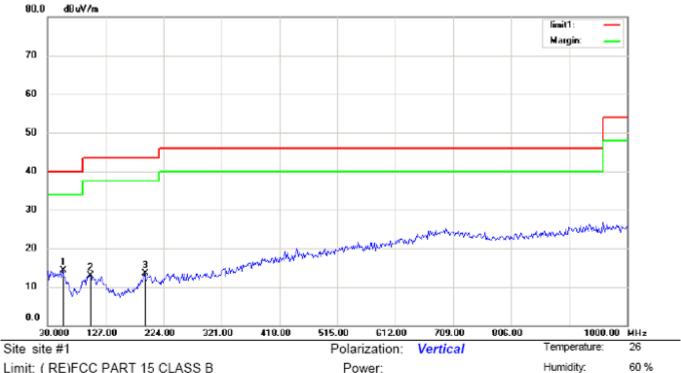
Limit: ( RE)FCC PART 15 CLASS B

EUT: M/N: Mode:

Note:

| No. | Mk. | . Freq.  |       | Correct<br>Factor | Measure-<br>ment | Limit  | Over   |          | Antenna<br>Height |        |         |
|-----|-----|----------|-------|-------------------|------------------|--------|--------|----------|-------------------|--------|---------|
|     |     | MHz      | dBu∀  | dB                | dBu∀/m           | dBuV/m | dB     | Detector | cm                | degree | Comment |
| 1   | *   | 59.5353  | 0.92  | 13.19             | 14.11            | 40.00  | -25.89 | peak     |                   |        |         |
| 2   |     | 104.6154 | -0.06 | 13.13             | 13.07            | 43.50  | -30.43 | peak     |                   |        |         |

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Limit: ( RE)FCC PART 15 CLASS B

EUT: M/N: Mode: Note:

| No. | Mk. | Freq.    | Reading<br>Level |       | Measure-<br>ment |         | Over   |          | Antenna<br>Height | Table<br>Degree |         |
|-----|-----|----------|------------------|-------|------------------|---------|--------|----------|-------------------|-----------------|---------|
|     |     | MHz      | dBu∀             | dB    | dBu∀/m           | dBu\//m | dB     | Detector | cm                | degree          | Comment |
| 1   | *   | 54.8718  | 0.83             | 13.45 | 14.28            | 40.00   | -25.72 | peak     |                   |                 |         |
| 2   | 1   | 101.5064 | -0.73            | 13.58 | 12.85            | 43.50   | -30.65 | peak     |                   |                 |         |
| 3   | 1   | 191.6667 | 0.35             | 13.15 | 13.50            | 43.50   | -30.00 | peak     |                   |                 |         |

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# Band Edge Emission: MEASUREMENT PROCEDURE

- 1, Set the EUT Work on the top, the bottom operation frequency individually.
- 2. Set SPA Centre Frequency = Operation Frequency, span=100MHz, RBW= 1 MHz, VBW= 1MHz.
- 3. The band edges was measured and receorded.

#### **TEST SET-UP**

The Same as described in section 6.2 Radiated Emission test Setup Above 1GHz

|           | Band Edge Emission for Bottom Channel |                |                |            |            |      |  |  |  |
|-----------|---------------------------------------|----------------|----------------|------------|------------|------|--|--|--|
| Frequency | Antenna Pol.                          | Field Strength | Field Strength | Limit (PK) | Limit (AV) | Memo |  |  |  |
| GHz       | H/V                                   | dBuV/m (PK)    | dBuV/m (AV)    | dBuV/m     | dBuV/m     | Memo |  |  |  |
| 2.386     | Н                                     | 59.78          | 46.90          | 74         | 54         | *    |  |  |  |
| 2.400     | Н                                     | 57.12          | 47.35          | 74         | 54         | *    |  |  |  |
| 2.386     | V                                     | 58.34          | 44.43          | 74         | 54         | *    |  |  |  |
| 2.400     | V                                     | 55.21          | 42.35          | 74         | 54         | *    |  |  |  |

|           | Band Edge Emission for Top Channel |                |                |            |            |        |  |  |  |
|-----------|------------------------------------|----------------|----------------|------------|------------|--------|--|--|--|
| Frequency | Antenna Pol.                       | Field Strength | Field Strength | Limit (PK) | Limit (AV) | Memo   |  |  |  |
| GHz       | H/V                                | dBuV/m (PK)    | dBuV/m (AV)    | dBuV/m     | dBuV/m     | iviemo |  |  |  |
| 2.483     | Н                                  | 57.32          | 48.34          | 74         | 54         | *      |  |  |  |
| 2.484     | Н                                  | 55.56          | 47.67          | 74         | 54         | *      |  |  |  |
| 2.496     | Н                                  | 49.67          | 44.23          | 74         | 54         | *      |  |  |  |
| 2.483     | V                                  | 56.78          | 46.34          | 74         | 54         | *      |  |  |  |
| 2.484     | V                                  | 54.54          | 46.45          | 74         | 54         | *      |  |  |  |
| 2.496     | V                                  | 48.56          | 43.55          | 74         | 54         | *      |  |  |  |

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#### **MEASUREMENT PROCEDURE**

- 1, Set the EUT Work on the top, the middle, the bottom operation frequency individually.
- 2. Set SPA Centre Frequency = Operation Frequency, RBW= 1MHz, VBW= 1MHz.
- 3. The Restricted Band Emission was measured and receorded.

#### **TEST SET-UP**

The Same as described in section 6.2 Radiated Emission test Setup Above 1GHz

| Restricted Band Emission for Bottom Channel |              |                |                |            |            |      |  |
|---|--------------|----------------|----------------|------------|------------|------|--|
| Frequency                                   | Antenna Pol. | Field Strength | Field Strength | Limit (PK) | Limit (AV) | Momo |  |
| GHz   | H/V          | dBuV/m (PK)    | dBuV/m (AV)    | dBuV/m     | dBuV/m     | Memo |  |
| 4.81  | Н            | 55.45          | 48.23          | 74         | 54         | *    |  |
| 4.81  | V            | 56.56          | 47.54          | 74         | 54         | *    |  |
| Above                                       | Н            |                |                | 74         | 54         | *    |  |
| 4.81 GHz                                    | V            |                |                | 74         | 54         | *    |  |

|           | Restricted Band Emission for Middle Channel |                |                |            |            |      |  |  |  |
|-----------|---|----------------|----------------|------------|------------|------|--|--|--|
| Frequency | Antenna Pol.                                | Field Strength | Field Strength | Limit (PK) | Limit (AV) | Momo |  |  |  |
| GHz       | H/V   | dBuV/m (PK)    | dBuV/m (AV)    | dBuV/m     | dBuV/m     | Memo |  |  |  |
| 4.88      | Н   | 54.34          | 48.43          | 74         | 54         | *    |  |  |  |
| 4.88      | V   | 56.45          | 46.45          | 74         | 54         | *    |  |  |  |
| Above     | Н   |                |                | 74         | 54         | *    |  |  |  |
| 4.88 GHz  | V   |                |                | 74         | 54         | *    |  |  |  |

| Restricted Band Emission for Top Channel |              |                |                |            |            |      |  |  |
|--|--------------|----------------|----------------|------------|------------|------|--|--|
| Frequency                                | Antenna Pol. | Field Strength | Field Strength | Limit (PK) | Limit (AV) | Momo |  |  |
| GHz                                      | H/V          | dBuV/m (PK)    | dBuV/m (AV)    | dBuV/m     | dBuV/m     | Memo |  |  |
| 4.95                                     | Н            | 57.65          | 47.01          | 74         | 54         | *    |  |  |
| 4.95                                     | V            | 56.23          | 46.66          | 74         | 54         | *    |  |  |
| Above                                    | Н            |                |                | 74         | 54         | *    |  |  |
| 4.95GHz                                  | V            |                |                | 74         | 54         | *    |  |  |

<sup>&</sup>quot;--" Indicated the test value is much lower to limit.

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#### 10. NUMBER OF HOPPING FREQUENCY

#### **10.1 MEASUREMENT PROCEDURE**

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum analyzer.
- 3. Set the spectrum analyzer Start = 2.4GHz Stop = 2.4835GHz, span=20MHz
- 4. Set the Spectrum Analyzer as RBW = VBW = 510KHz

#### 10.2 TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)

Same as described in section 6.2

1. Conducted Method.

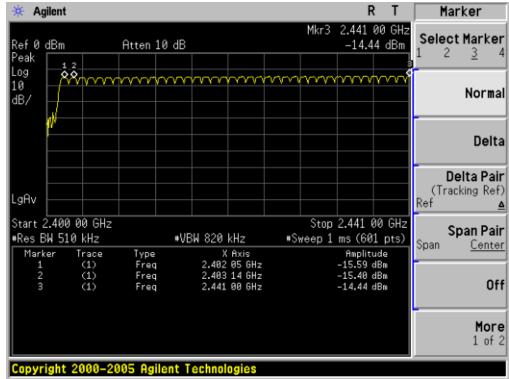
#### **10.3 MEASUREMENT EQUIPMENT USED**

The Same as described in section 6.3

#### **10.4 LIMITS AND MEASUREMENT RESULT:**

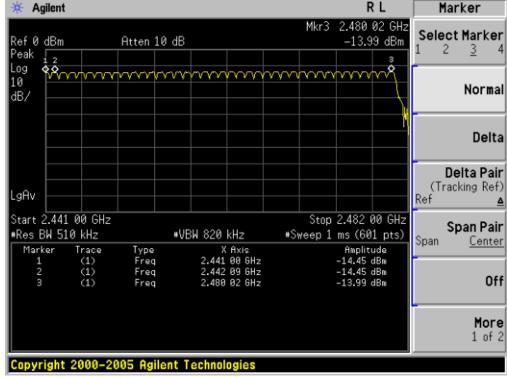
| TOTAL NO. OF    | LIMIT (NO. OF CH) | MEASUREMENT (NO.<br>OF CH) | RESULT |
|-----------------|-------------------|----------------------------|--------|
| HOPPING CHANNEL | >=15              | 79                         | PASS   |





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## TEST PLOT FOR NO. OF TOTAL CHANNELS -2



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#### 11. TIME OF OCCUPANCY (DWELL TIME)

#### 11.1 MEASUREMENT PROCEDURE

- 1. Place the EUT on the table and set it in transmitting mode
- 2. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum analyzer
- 3. Set center frequency of spectrum analyzer = Operating frequency
- 4. Set the spectrum analyzer as RBW, VBW=1MHz, Span = 0 Hz,

#### 11.2 TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)

Same as described in section 6.2 Conducted Method

#### 11.3 MEASUREMENT EQUIPMENT USED

The same as described in section 6.3

#### 11.4 LIMITS AND MEASUREMENT RESULT

```
The dwell time = Time Slot Length * Hop Rate / Number of Hopping Channels * 0.4 * 79 L-CH:

DH1 Time Slot = 0.371 (ms) * (1600/(2*79))*31.6 = 118.9 (ms)

DH3 Time Slot = 1.628(ms) * (1600/(4*79))*31.6 = 260.4 (ms)

DH5 Time Slot = 2.855 (ms) * (1600/(6*79))*31.6 = 304.5 (ms)

M-CH:

DH1 Time Slot = 0.373 (ms) * (1600/(2*79))*31.6 = 119.4 (ms)

DH3 Time Slot = 1.617 (ms) * (1600/(4*79))*31.6 = 258.7 (ms)

DH5 Time Slot = 2.867 (ms) * (1600/(6*79))*31.6 = 305.8 (ms)

H-CH:

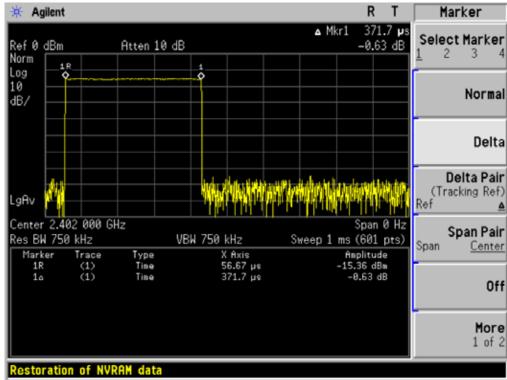
DH1 Time Slot = 0.371(ms) * (1600/(2*79))*31.6 = 118.9 (ms)

DH3 Time Slot = 1.625 (ms) * (1600/(4*79))*31.6 = 260.0 (ms)

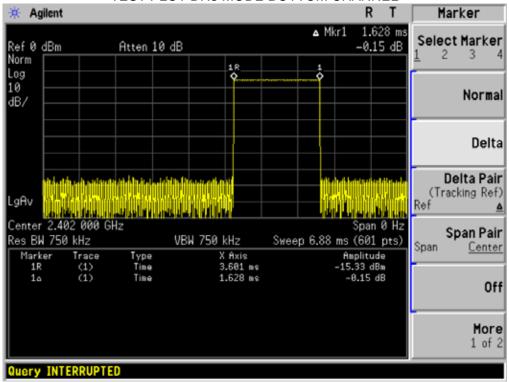
DH5 Time Slot = 2.867(ms) * (1600/(6*79))*31.6 = 305.8 (ms)
```

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#### TEST PLOT DH1 MODE BOTTOM CHANNEL

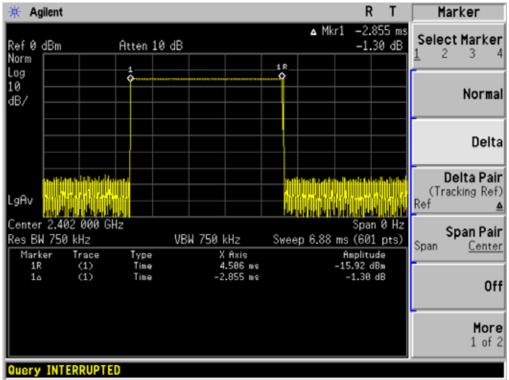


#### TEST PLOT DH3 MODE BOTTOM CHANNEL

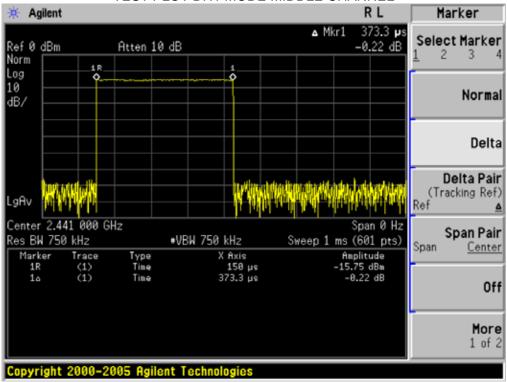


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#### TEST PLOT DH5 MODE BOTTOM CHANNEL

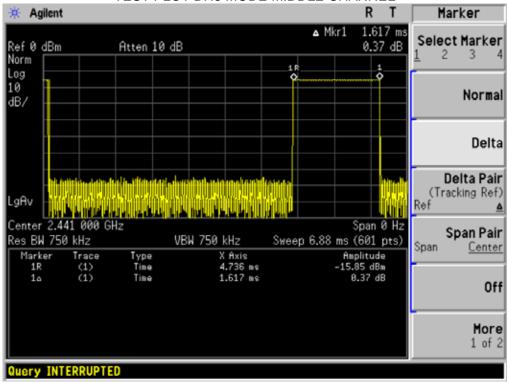


#### TEST PLOT DH1 MODE MIDDLE CHANNEL

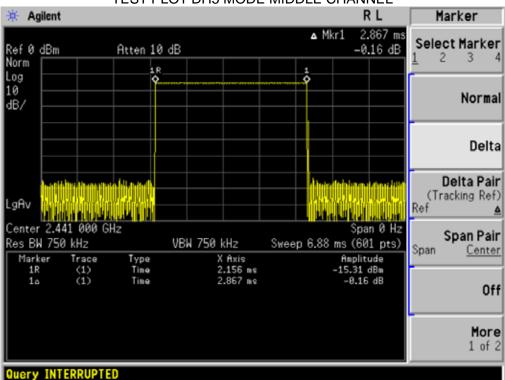


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#### TEST PLOT DH3 MODE MIDDLE CHANNEL

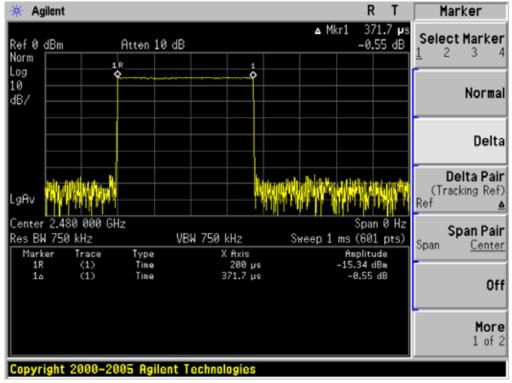


#### TEST PLOT DH5 MODE MIDDLE CHANNEL

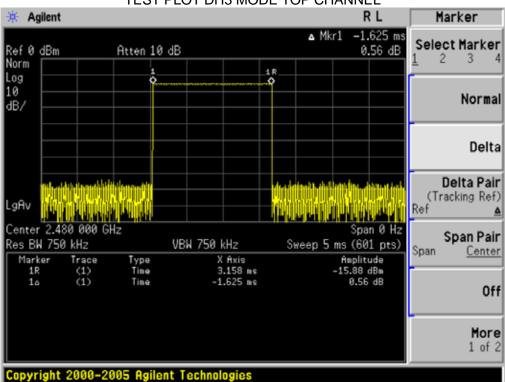


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#### TEST PLOT DH1 MODE TOP CHANNEL

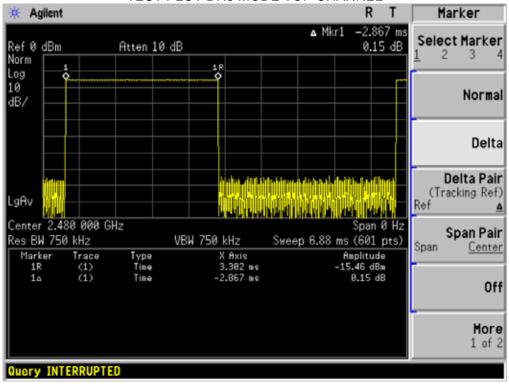


#### TEST PLOT DH3 MODE TOP CHANNEL



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#### TEST PLOT DH5 MODE TOP CHANNEL



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# 12. FREQUENCY SEPARATION 12.1 MEASUREMENT PROCEDURE

- 1. Place the EUT on the table and set it in transmitting mode
- 2. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum analyzer
- 3. Set center frequency of spectrum analyzer = Middele of Operating frequency
- 4. Set the spectrum analyzer as RBW, VBW=100KHz, Span = 5 MHz,

#### 12.2 TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)

Same as described in section 6.2

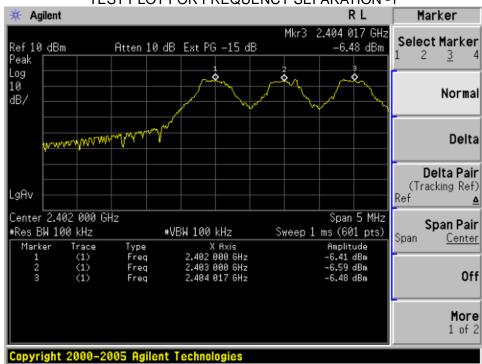
#### 12.3 MEASUREMENT EQUIPMENT USED

The same as described in section 6.3

#### 12.4 LIMITS AND MEASUREMENT RESULT

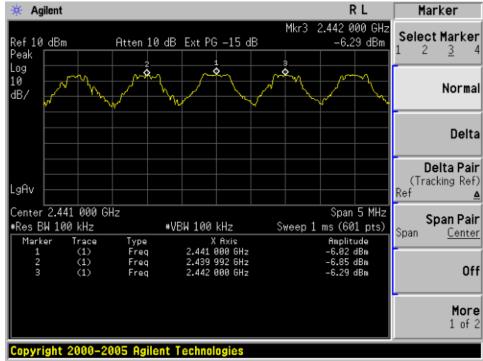
| CHANNEL   | CHANNEL SEPARATION | LIMIT                       | RESULT |
|-----------|--------------------|-----------------------------|--------|
| OHAMMEL   | KHz                | KHz                         |        |
| CH01-CH02 | 1000               |                             | Pass   |
| CH39-CH40 | 1000               | >=25 KHz or 2/3 20 dB<br>BW | 1 433  |
| CH78-CH79 | 1008               |                             |        |



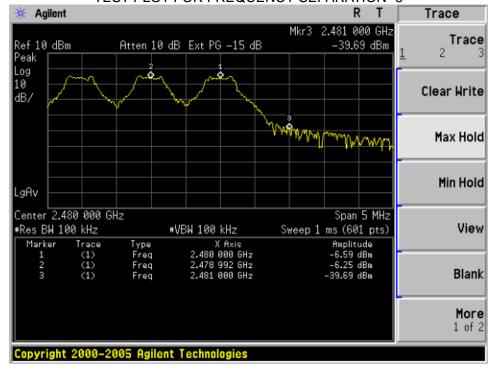


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#### TEST PLOT FOR FREQUENCY SEPARATION -2



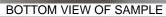
#### TEST PLOT FOR FREQUENCY SEPARATION -3



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# APPENDIX I PHOTOGRAPHS OF THE EUT TOP VIEW OF SAMPLE



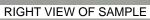




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#### LEFT VIEW OF SAMPLE







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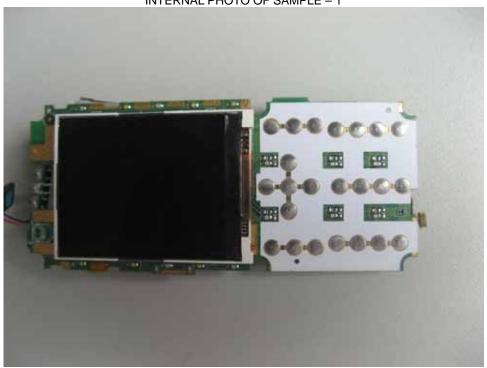
FRONT VIEW OF SAMPLE





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#### INTERNAL PHOTO OF SAMPLE – 1







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## APPENDIX II

PHOTOGRAPHS OF TEST SETUP PHOTOS
CONDUCTED EMISSION TEST



RADIATED EMISSION TEST SETUP



----END OF REPORT----