EXHIBIT VI

Test Report – New Certification

FCC ID: AZ489FT7006

Test Report No: MOT100203

Issued on: February 10, 2003

Product Name

MW 800 – DISPLAY

Model: FLN3134A, FLN3135A

Tested under

Part 15.247

Tests Performed for

Motorola, Inc.

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ACCREDITED
1633.01

Table of Content

1. General

BLUETOOTH APPROVALS

The following exhibit indicates the FCC Spread Spectrum requirements in Section 15.247(only) for devices meeting the Bluetooth Specifications for devices operating in the USA. The purpose of this exhibit is to help expedite the approval process for Bluetooth devices. This exhibit provides items that vary for each device and also provides a list of items that are common to Bluetooth devices that explains the remaining requirements. The list of common items can be submitted for each application for equipment authorization. This Bluetooth transmitter is a Frequency Hopping Spread Spectrum (FHSS) transmitter in the data mode and a Hybrid transmitter in the acquisition mode.

For each individual device, the following items, 1-6, will vary from one device to another and must be submitted.
1) The occupied bandwidth in Section 15.247(a)1ii.
2) Conducted output power specified in Section 15.24 7(b)1.
3) EIRP limit in Section 15.247(b)3.
4) RF safety requirement in Section 15.24 7(b)4
5) Spurious emission limits in Section 15.247(c).
6) Power spectral density in the acquisition mode.

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

1.1. Output power and channel separation of a Bluetooth device in the different Operating modes:

The different operating modes (data-mode, acquisition-mode) of a Bluetooth device don't influence the output power and the channel spacing. There is only one transmitter which is driven by identical input parameters concerning these two parameters.
Only a different hopping sequence will be used. For this reason the check of these RF parameters in one op-mode is sufficient.

1.2. Frequency range of a Bluetooth device:

Hereby we declare that the maximum frequency of this device is: 2402 - 2480 MHz.
This is according the Bluetooth Core Specification V 1.0B (+ critical errata) for devices which will be operated in the USA. This was checked during the Bluetooth Qualification tests (Test Case: TRM/CN04-E). Other frequency ranges (e.g. for Spain, France, Japan) which are allowed according the Core Specification are not supported by this device.

1.3. Co-ordination of the hopping sequence in data mode to avoid simultaneous Occupancy by multiple transmitters:

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

1.4. Example of a hopping sequence in data mode:

Example of a 79 hopping sequence in data mode:
40,21,44,23,42,53,46,55,48,33,52,35,50,65,54,67,
56,37,60,39,58,69,62,71,64,25,68,27,66,57,70,59,
72,29,76,31,74,61,78,63,01,41,05,43,03,73,07,75,
09,45,13,47,11,77,15,00,64,49,66,53,68,02,70,06,
01,51,03,55,05,04

1.5. Equally average use of frequencies in data mode and behavior for short Transmissions:

The generation of the hopping sequence in connection mode depends essentially on two input values:
1. LAP/UAP of the master of the connection
2. Internal master clock
The LAP (lower address part) are the 24 LSB's of the 48 BD_ADDRESS. The BD_ADDRESS is an unambiguous number of every Bluetooth unit. The UAP (upper address part) are the 24 MSB's of the 48 BD_ADDRESS. The internal clock of a Bluetooth unit is derived from a free running clock which is never adjusted and is never turned off. For synchronization with other units only offset are used. It has no relation to the time of the day. Its resolution is at least half the RXlTX slot length of 312.5 IJS. The clock has a cycle of about one day (23h30). In most case it is implemented as 28 bit counter. For the deriving of the hopping sequence the entire LAP (24 bits), 4 LSB's (4 bits) (Input 1) and the 27 MSB's of the clock (Input 2) are used. With this input values different mathematical procedures (permutations, additions, XOR-operations) are performed to generate the sequence. This will be done at the beginning of every new transmission. .
Regarding short transmissions the Bluetooth system has the following behaviour:
The first connection between the two devices is established, a hopping sequence was generated. For transmitting the wanted data the complete hopping sequence was not used. The connection ended. The second connection will be established. A new hopping sequence is generated. Due to the fact that the Bluetooth clock has a different value, because the period between the two transmission is longer (and it cannot be shorter) than the minimum resolution of the clock (312.5IJs). The hopping sequence will always differ from the first one.

1.6. Receiver input bandwidth and behavior for repeated single or multiple packets:

The input bandwidth of the receiver is 1 MHz.
In every connection one Bluetooth device is the master and the other one is the slave. The master determines the hopping sequence (see chapter 5). The slave follows this sequence. Both devices shift between RX and TX time slot according to the clock of the master. Additionally the type of connection (e.g. single or multislot packet) is set up at the beginning of the connection. The master adapts its hopping frequency and its TX/RX timing according to the packet type of the connection. Also the slave of the connection will use these settings. Repeating of a packet has no influence on the hopping sequence. The hopping sequence generated by the master of the connection will be followed in any case. That means, a repeated packet will not be send on the same frequency, it is send on the next frequency of the hopping sequence 7 Dwell time in data mode
The dwell time of 0.3797s within a 30 second period in data mode is independent from the packet type (packet length). The calculation for a 30 second period is a follows:
Dwell time = time slot length * hop rate *1* number of hopping channels *30s
Example for a DH1 packet (with a maximum length of one time slot)
Dwell time = 625 µs * 1600 *1/s 179* * 30s = 0.3797s (in a 30s period)
For multislot packet the hopping is reduced according to the length of the packet.
Example for a DH5 packet (with a maximum length of five time slots)
Dwell time = 5 * 625 µs * 1600 * *1/5 *1/s 179* * 30s = 0.3797s (in a 30s period)
This is according the Bluetooth Core Specification V 1.0B (+ critical errata) for all Bluetooth devices. Therefore all Bluetooth devices **comply** with the FCC dwell time requirement in data mode.
This was checked during the Bluetooth Qualification tests.
The Dwell time in hybrid mode is approximately 2.6 mS (in a 12.8 s period)

1.7. Channel Separation in hybrid mode

The nominal channel spacing of the Bluetooth system is 1 MHz independent of the operating mode.
The maximum "initial carrier frequency tolerance" which is allowed for Bluetooth is fcenter = 75 kHz.
This was checked during the Bluetooth Qualification tests (Test Case: TRM/CA/07 -E) for three frequencies (2402, 2441, 2480 MHz).

1.8. Derivation and examples for a hopping sequence in hybrid mode

For the generation of the inquiry and page hop sequences the same procedures as described for the data mode are used (see item 5), but this time with different input vectors:
**For the inquiry hop sequence, a predefined fixed address is always used. This results in the same 32 frequencies used by all devices doing an inquiry but every time with a different start frequency and phase in this sequence.
**For the page hop sequence, the device address of the paged unit is used as input vector. This results in the use of a subset of 32 frequencies which is specific for that initial state of the connection establishment between the two units. A page to different devices would result in a different subset of 32 frequencies.
So it is ensured that also in hybrid mode the frequency use equally averaged.
Example of a hopping sequence in inquiry mode:
4S, 50,09,13,52,54,41,45, 56,5S, 11, 15,60,62,43,47,00,02,64, 6S, 04, 06,
17,21, OS, 10,66,70,12,14,19,23
Example of a hopping sequence in paging mode:
OS, 57,6S, 70,51,02,42,40,04,61,44,46,63, 14,50,4S, 16,65,52, 54,67, 1S,
5S, 56,20, 53,60, 62, 55, 06, 66, 64

1.9. Receiver input bandwidth and synchronization in hybrid mode:

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

1.10. Spread rate 1 data rate of the direct sequence signal

The Spread rate *1* Data rate in inquiry and paging mode can be defined via the access code. The access code is the only criterion for the system to check if there is a valid transmission or not. If you regard the presence of a valid access code as one bit of information, and compare it with the length of the access code of 68 bits, the Spread rate / Data rate will be *6S/1*.

1.11. Spurious emission in hybrid mode

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

2. Test Results

2.1. 20 dB BANDWIDTH

Date of Test: 03.03.2003
Relative Humidity: 49%
Ambient Temperature: 22°c

Test performed by: Rami Nataf

Minimum Standard Specified:

FCC reply to TCB council 10/08/02, Frequency hoppers in the 2.4 GHz band are required to use a minimum of 15 non-overlapping channels. The hopping channel bandwidth can be wider than 1 MHz as long as the channels do not over lap and all emissions stay within the 2400- 2483.5 MHz band. For example a system that uses the minimum 15 channels can have hopping channel bandwidth that are up to 5 MHz wide.

Test Method: **Part 2.1049**

Measured Maximum 20dB BW: **885 kHz**

Test Procedure:

1. The output of the EUT was connected directly via an adapter and cable to the input of the HP8593EM spectrum analyzer.
2. The measured channels covered the Low, middle and high channels of the operational frequency range requested for this intentional radiator.
3. The EUT was modulated but not hopping channels during this test. The data rate was 1 mbps per the Bluetooth standard. The data type was periodic data.
4. Measurements done according to DA 00-705 Filing and Measurement Guide for FHSS Systems.

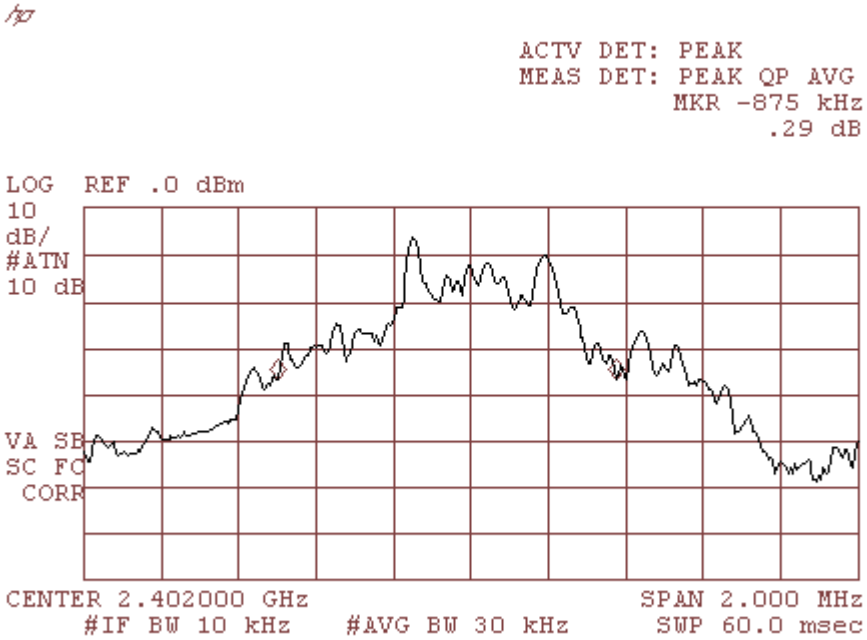
Test Results:

The measured 20 dB bandwidth complies with the non-over lapping channel requirements of the FCC interpretation referenced above.

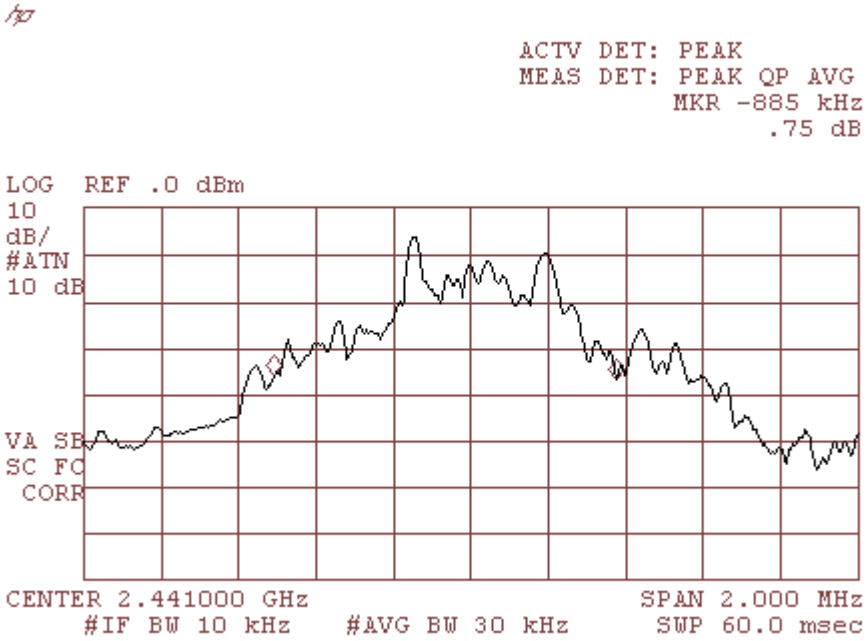
Measurements Results of Modulated Occupies Bandwidth

Channel	Channel Frequency [GHz]	Measured Maximum 20dB BW EUT Modulated	Limit Non-overlapping Channels, all emissions Within band	Plot #
Low	2.402	875 kHz	Complies	2.1.1
Middle	2.441	885 kHz	Complies	2.1.2
High	2.480	880 kHz	Complies	2.1.3

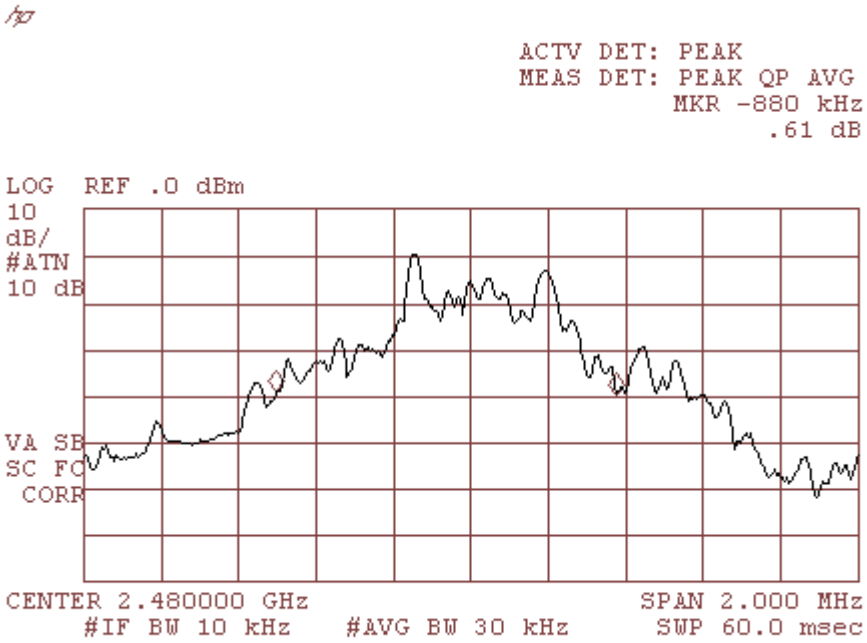
Plot 2.1.1



Plot 2.1.2



Plot 2.1.3


ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR -880 kHz
.61 dB
LOG REF .0 dBm
10
dB/
#ATN
10 dB
VA SB
SC FC
CORR
CENTER 2.480000 GHz
SPAN 2.000 MHz
#IF BW 10 kHz
#AVG BW 30 kHz
SWP 60.0 msec

2.2. CONDUCTED PEAK OUTPUT POWER (CW MODE)

Date of Test: 03.03.2003
Relative Humidity: 49%
Ambient Temperature: 22°c

Test performed by: Rami Nataf

Minimum Standard Specified:

Part 15.247(b)1 is 1 Watt Maximum

Test Method: **Part 2.1046**

Rated Output Power: **0 dBm, 1 mW - Class II Bluetooth**

Measured Output Power: **-0.16dBm (0.964mW) conducted**

Test Procedure:

1. The output of the EUT was connected directly via an adapter and cable to the input of the HP8593EM & Agilent E7405A spectrum analyzers.
2. The measured channels covered the low, middle and high channel of the operational frequency range requested for this intentional radiator.
3. Measurements done according to DA 00-705 Filing and Measurement Guide for FHSS Systems.

Test Results:

The measured output power level of the sample shows compliance with the maximum permissible 1Watt limit.

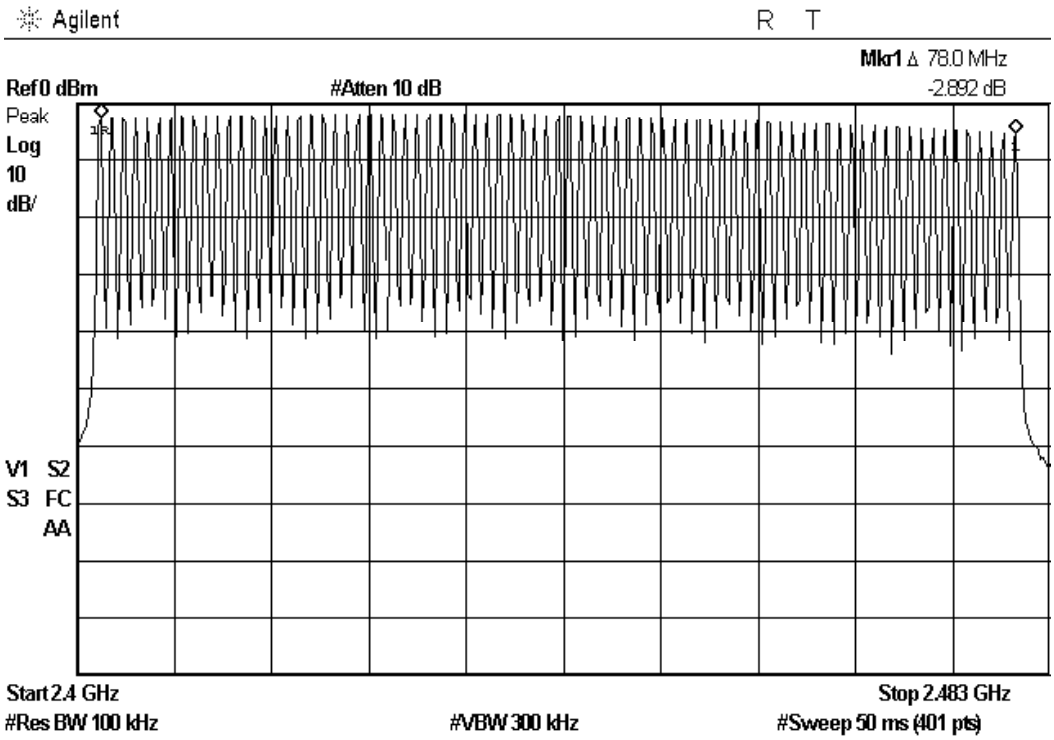
Channel	Channel Frequency [GHz]	Measured Peak Output Power [mW]	Measured Peak Output Power [dBm]	Internal EUT Cable loss	Corrected Peak Output Power [dBm]	Corrected Peak Output Power [mW]	Plot No.
Low	2.402	0.574	-2.41	1.8	-0.61	0.869	2.2.2
Middle	2.441	0.637	-1.96	1.8	-0.16	0.964	2.2.3
High	2.480	0.286	-5.43	1.8	-3.63	0.434	2.2.4

Equivalent Isotropic Radiated Power:

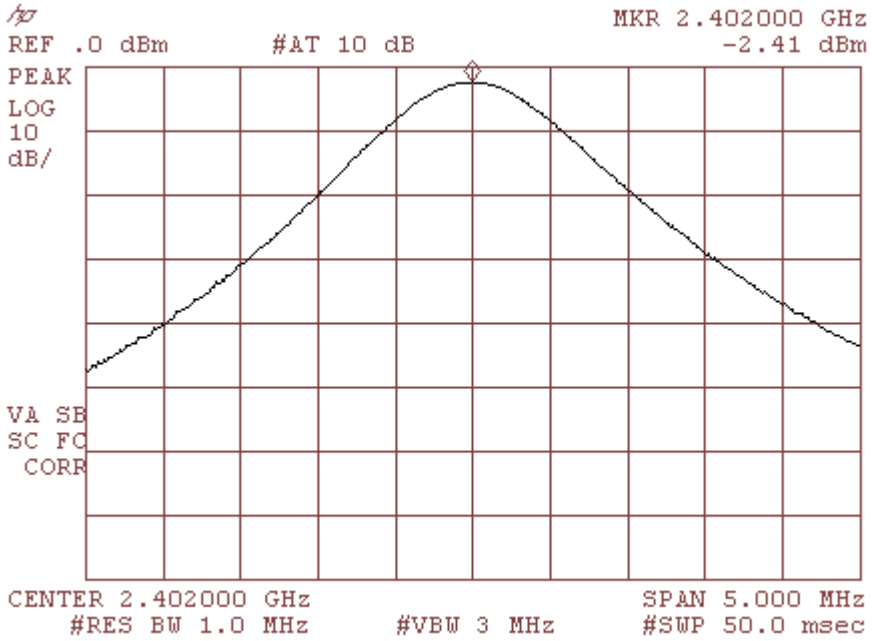
-0.16 dBm (max. conducted power)
+2.89 dBi (max. antenna gain)
=2.73 dBm EIRP

This Bluetooth Intentional Radiator complies with the maximum de-facto EIRP limit with the only antenna that can be used with this device.

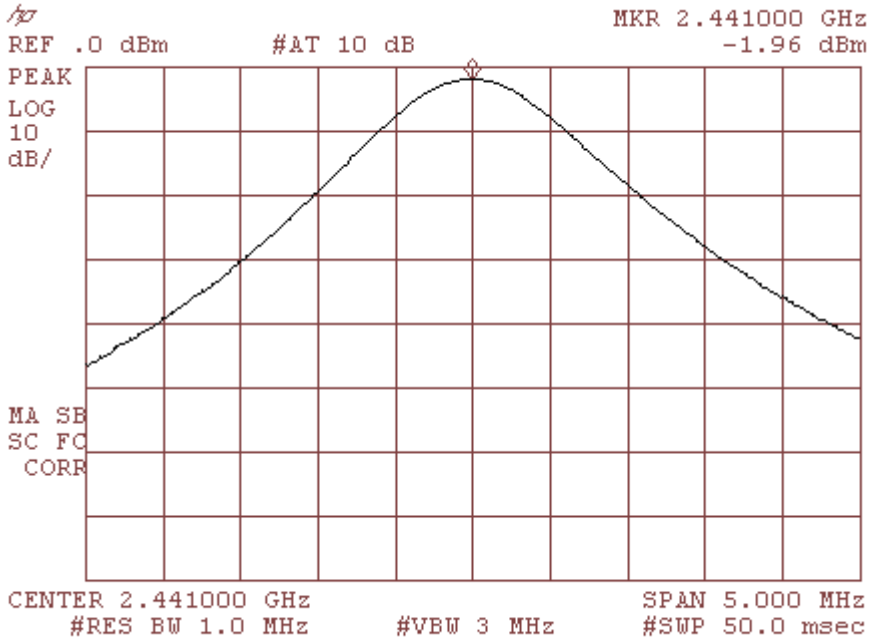
Plot 2.2.1



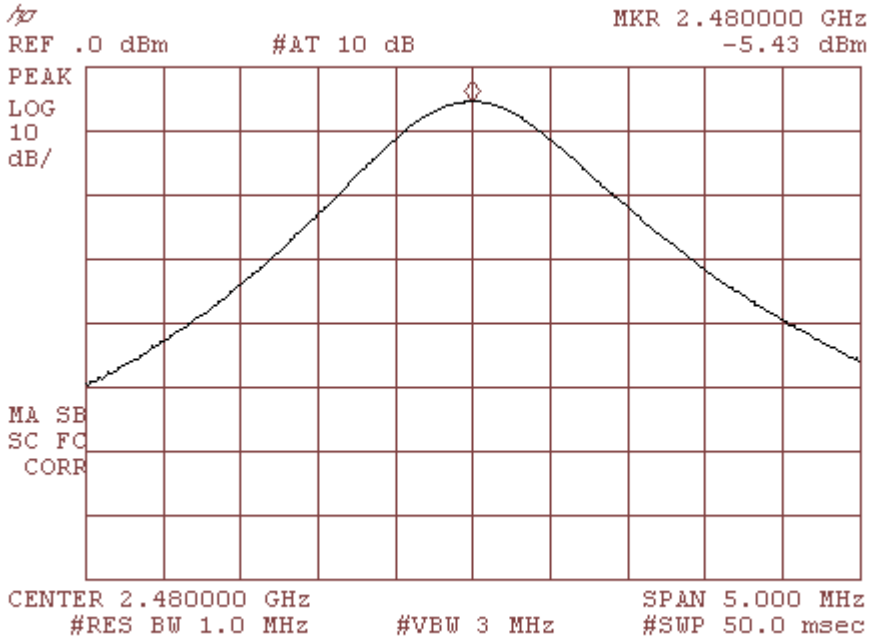
Plot 2.2.2



Plot 2.2.3



Plot 2.2.4



2.3. CONDUCTED SPURIOUS EMISSIONS (CW MODE)

Date of Test: 03.03.2003
Relative Humidity: 49%
Ambient Temperature: 22°c

Test performed by: Rami Nataf

Minimum Standard Specified:

Part 15.247(c) In any 100 kHz bandwidth outside the 2.400 -2.4835 band RF power shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest power.

Authorization Procedure: **Part 2.1051**

Frequency Range Observed: **Up to 25GHz**

Operating Frequencies: **2.402, 2.441, & 2.480 GHz (2.402 - 2.480 GHz band)**

Measured output power: **-40.72.72 dBm (20.7 dB below limit) conducted**

Test Procedure:

1) The output of the EUT was connected directly via an adapter and cable to the input of the HP8593EM/Agilent E7405A spectrum analyzer.
2) The measured channels cover the low, middle and high channels of the operational frequency range requested for this intentional radiator.
3) Measurements done according to DA 00-705 Filing and Measurement Guide for FHSS Systems.

Test Results:

Equipment complies with standard

Highest conducted Spurious Emission Measured for Each Channel

Channel	Channel Frequency [GHz]	Emission level [dBm]	Limit in dBm	Margin below limit [dB]	Plot No.
2Fo, Low	4.804	-40.72	-20.0	22.82	2.3.1 & 2.3.2
2Fo, Middle	4.882	-43.80	-20.0	25.9	2.3.1 & 2.3.2
2Fo, High	4.960	-44.20	-20.0	26.3	2.3.1 & 2.3.2

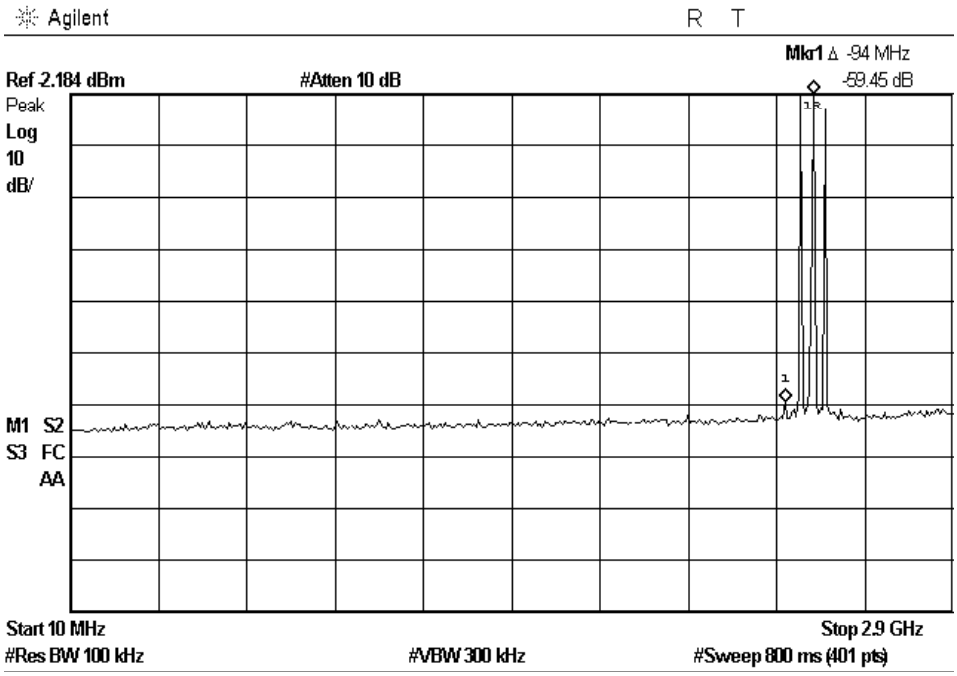
Note: All three channels displayed max hold collectively on 2 plots to cover the wide frequency range.

BAND-EDGE COMPLIANCE Of RF CONDUCTED EMISSIONS (DATA MODULATON MODE)

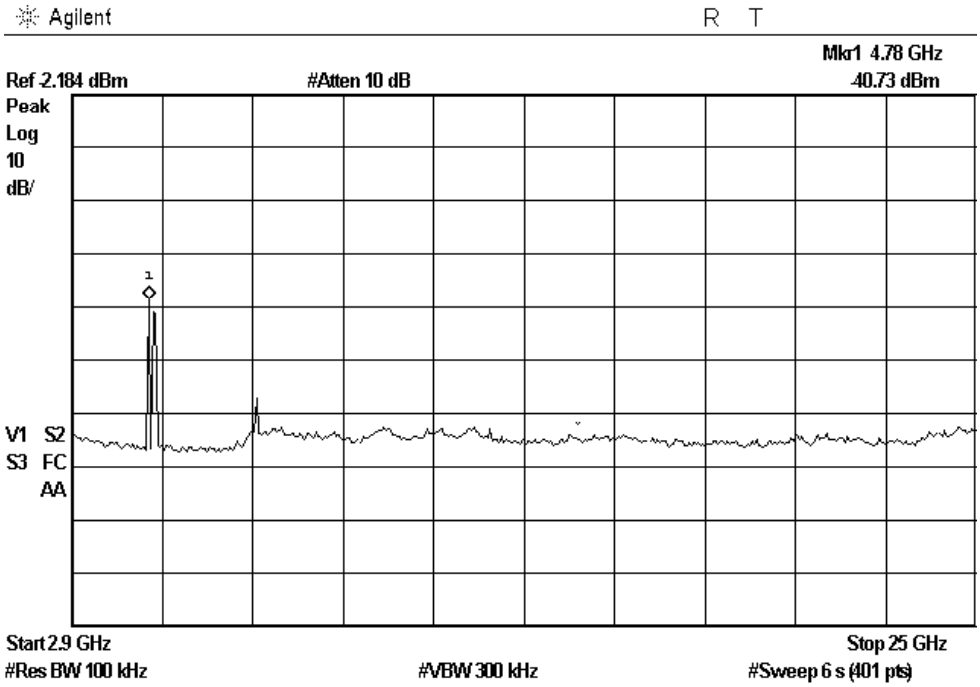
Please refer to Plots 2.3.3 and 2.3.4 for the lower and upper band-edge measurements.

Trace A - Band-edge channel modulated, hopping disabled
Trace B - All channels modulated, hopping enabled (indication of spreading function evident)

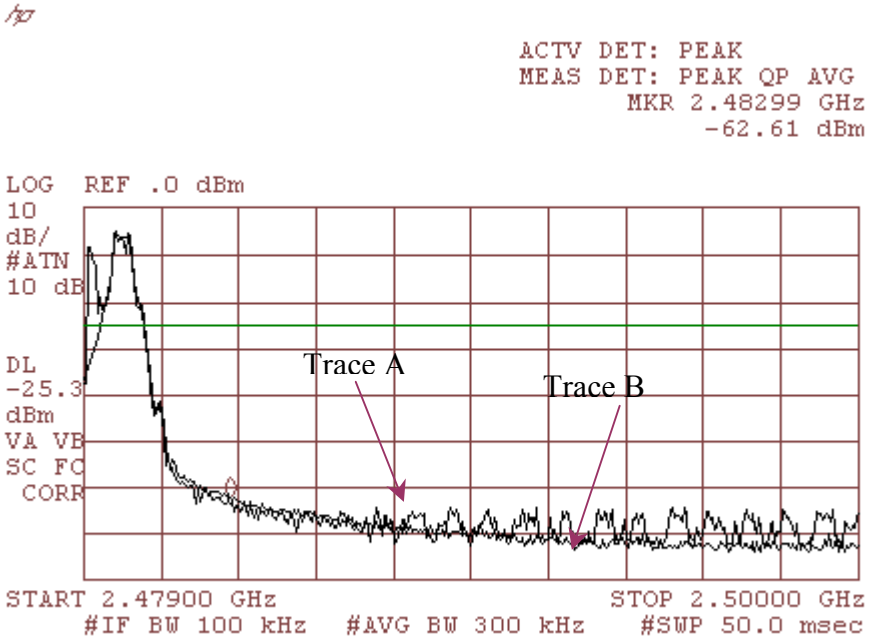
Plot 2.3.1



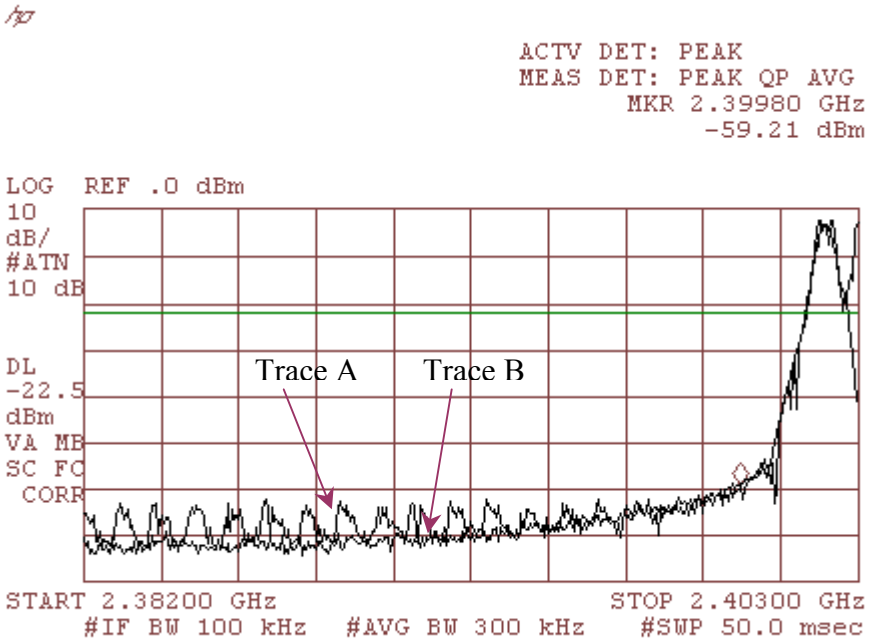
Plot 2.3.2



Plot 2.3.3
Upper Band-Edge



Plot 2.3.4
Low Band-Edge



2.4. FIELD STRENGTH OF SPURIOUS RADIATION EMISSIONS (DATA MODULATION MODE)

Date of Test: 03.03.2003
Relative Humidity: 49%
Ambient Temperature: 22°c

Test performed by: Rami Nataf

Minimum Standard Specified: **Part 15.247(c)**

Authorization Procedure: **Part 2.1053**

Test Equipment Set Up: **See Block Diagram in Exhibit 7**

Frequency Range Observed: **Up to 25 GHz**

Test Results:

Equipment complies with standard

Frequency [GHz]	Antenna Vertical or Horizontal	Peak or Average Reading	Antenna Factor [dB]	Cable loss [dB]	Amp Gain [dB]	Corrected Reading [dBuV/m]*	Corrected Reading [uV/m]	Peak Limit [dBuV/m]	Average Limit [dBuV/m]
Fo – 2.402									
4.804	V	Peak	35.3	3.7	51.72	48.75	273.84	74	-
4.804	H	Peak	35.3	3.7	51.72	52.50	421.70	74	-
4.804	V	Average	35.3	3.7	51.72	25.87	19.66	-	54
4.804	H	Average	35.3	3.7	51.72	27.78	24.49	-	54
Fo – 2.441									
4.882	V	Peak	35.8	3.7	51.75	52.01	398.57	74	-
4.882	H	Peak	35.8	3.7	51.75	54.3	545.3	74	-
4.882	V	Average	35.8	3.7	51.75	26.63	21.45	-	54
4.882	H	Average	35.8	3.7	51.75	28.02	25.18	-	54
Fo – 2.480									
4.960	V	Peak	35.8	3.7	51.75	50.13	321.00	74	-
4.960	H	Peak	35.8	3.7	51.75	51.47	374.54	74	-
4.960	V	Average	35.8	3.7	51.75	26.28	20.61	-	54
4.960	H	Average	35.8	3.7	51.75	27.17	22.83	-	54

*Corrected Reading [dBµV/m] = Measured [dBµV] + Correction-factor [dB1/m]
Correction Factor = Antenna factor + Cable Loss – Amp Gain

3Fo-10 Fo: Emissions on all three channels at or below noise floor

Channel	Frequency in [GHz]	Harmonics Observed	Limit 74 dBuV/m Peak & Average 54 dBuV/m
Low Channel	2.402		
3Fo – 10 Fo	7.206-24.020	None – at or < noise floor @ 3m	All emissions < 54 dBuV/m or 500 uV/m
Middle Channel	2.441		
3Fo – 10 Fo	7.323-24.410	None – at or < noise floor @ 3m	All emissions < 54 dBuV/m or 500 uV/m
High Channel	2.480		
3Fo – 10 Fo	7.440-24.800	None – at or < noise floor @ 3m	All emissions < 54 dBuV/m or 500 uV/m

2.5. FIELD STRENGTH OF SPURIOUS RADIATION AT UPPER BAND EDGE (DATA MODULATION MODE)

Date of Test: 03.03.2003
Relative Humidity: 49%
Ambient Temperature: 22°c

Test performed by: Rami Nataf

Minimum Standard Specified: **Part 15.247(c)**

Authorization Procedure: **Part 2.1053**

Test Equipment Set Up: **See Block Diagram in Exhibit 7**

Frequency Range Observed: **2.480 – 2.482 GHz**

Note: No emissions were observed in the restricted band 2.835 - 2.5 GHz so a band-edge measurement was made.

Test Results:

Equipment complies with standard

Frequency [GHz]	Antenna Polar.	Peak or Average Reading	Antenna Factor [dB]	Cable & filter Loss [dB]	Amp. Gain [dB]	Corrected Reading [dBuV/m]	Corrected Reading [uV/m]	Peak Limit [dBuV]	Average Limit [dBuV]
2.4835	V	Peak	31.7	2.44	47.4	48.26	258.82	74	-
2.4835	H	Peak	31.7	2.44	47.4	47.15	227.77	74	-
2.4835	V	Average	31.7	2.44	47.4	36.78	69.02	-	54
2.4835	H	Average	31.7	2.44	47.4	35.31	58.28	-	54

Radiated Test Notes

1) All spurious and harmonics in the restricted bands listed in Part 15.205 are below the Part 15.209 limit.
2) No peak emissions above 1 GHz are more than 20 dB above the average limit.
3) Peak measurements made with 1 MHz RBW & VBW. Average made with 1MHz RBW & 10 Hz VBW.
4) The EUT was modulated but not hopping channels during this test. The data rate was 1 mbps per the Bluetooth standard. The data type was periodic data.
5) Measurements done according to DA 00-705 Filing and Measurement Guide for FHSS systems.
6) No overload condition was verified.

End of Test Report