13005188



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FCC Part 15 TEST REPORT



TÜV Rheinland Group

November 3, 2005
TUV Rheinland Korea Ltd.

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TEST REPROT CERTIFICATION

Applicant : Yestelkorea Co., Ltd.

Adderss : Hando Bldg, 18-6, Namsan-dong, Jung-gu, Seoul, Korea

EUT Name : Stereo Headset

Model No. : ED8800

Serial No. : Engineering Sample

FCCID : TRJED8800

Testing location : LG Innotek Co.,Ltd.

133, Gongdan-dong, Gumi-City, Gyeongbuk 730-703, R.O.K

Applied : FCC Part 15

specification

Test result : The above mentioned test item passed.

Tested by: Gye-Woog Lee Reviewed by: Uon-Chae Song

November 3, 2005 November 3, 2005

Date Signature Date Signature

I HEREBY CERTIFY THAT the data shown in this report were made in accordance with the procedures given in the applied specification and I assume full responsibility for accuracy and completeness of these data.

Note: This test report relates to the a. m. test item. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark on this or similar products.

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1. General Information

1.1 Product Description

Product Name : Stereo Headset

Product ID : ED8800
Serial No. : Prototype
FCC ID : TRJED8800

1.2 Project data

Receipt of EUT : October 25, 2005

Date of Test : November 1, 2005

Data of report : November 3, 2005

1.3 Applicant

Company Name : Yestelkorea Co., Ltd.

Address : Hando Bldg, 18-6, Namsan-dong, Jung-gu, Seoul, Korea

Contact Person : Mr. Jin-soo So

1.4 Manufacturer

Company Name : Yestelkorea Co., Ltd.

Address : Hando Bldg, 18-6, Namsan-dong, Jung-gu, Seoul, Korea

Contact Person : Mr. Jin-soo So

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2. EUT Information

2.1 General EUT Information

| Туре | Transmitter Receive | | | |
|---------------------------|--|----------------------|---------------------------------|--|
| FCC Classification | FHSS Sequence Spread | FHSS Sequence Spread | | |
| | Spectrum (FHSS) | Spectrum (FHSS) | | |
| Operating frequency range | 2402 – 2480 MHz 2402 – 2480 MHz | | 2402 – 2480 MHz 2402 – 2480 MHz | |
| Bands of operation | 2.400 - 2.4835 GHz | 2.400 - 2.4835 GHz | | |
| Number of Channels | 79 | 79 | | |
| Channel Separation | 1MHz 1MHz | | | |
| Type of Antenna | Chip Antenna | Chip Antenna | | |
| Power Supply | DC 3.7 V Lithum Polymer DC 3.7 V Lithum Po | | | |

2.2 Center Frequency of Tested Channel

| Frequency | Tx (MHz) | Rx (MHz) |
|-----------|------------|-----------|
| Lowest | 2402 | 2402 |
| Middle | 2441 | 2441 |
| Highest | 2480 | 2480 |

2.3 Test Environment

| Temperature | 25°C |
|-------------------|----------|
| Relative Humidity | 30 ~ 60% |
| Voltage | DC 3.7V |

2.4 Accessories and Ancillary Equipment

| Equipment | Model No. | Serial Number | Maker |
|-----------|--------------|---------------|---------|
| Laptop PC | PS428L-OE142 | 30014068J | Toshiba |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

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3. Testing Facilities

LG Innotek Co.,Ltd.

133, Gongdan-dong, Gumi-City, Gyeongbuk 730-703, R.O.K

4. EUT Description and Operational Description

This Product is a Bluetooth Stereo Headset featuring a state of the art Bluetooth Wireless technology.

It has excellent stereo audio quality, and surely is in its class by itself.

Using this Stereo Headset, users can listen to the MP3 music without touching their cell phones.

This product has following specification:

* General Specification

| Item | Description |
|--------------------------------|--------------------------------|
| Bluetooth Specification | V1.2 |
| Supported Profile | AV profile |
| Rx. Sensitivity | Typ80 dBm |
| Battery | Li-Polymer 3.7V, 230mAh Li-ion |
| Low Power Current (Sleep Mode) | \leq 3 mA (Avg.) |
| Standby Time (Sniff Mode) | ≤ 250 Hr |
| Full Charging Time | ≤ 3 Hr |
| Operating Temperature | -20℃ ~ 60℃ |
| Operating Humidity | 5% ~ 85% RH |
| Storage Temperature | -20℃ ~ 60℃ |
| Storage Humidity | 85% RH |

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5. Test Set-up

5.1 Principle of configuration

Conducted : The equipment under test (EUT) was configured with a temporary SMA Connector and EUT transmits the related packet type with PRBS 9 as payload.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes and test settings were adapted accordingly in reference to the instructions for use.

For details, please refer to the Operation mode in chapter 7.

5.2 Operational Modes

Page Scan, Inquiry Scan Hopping Mode Fixed mode (2402Mhz, 2441Mhz and 2480Mhz)

5.3 Applied Specification

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6. Test Report Summary

| Related | Test Cases | FCC Part | Result |
|---------|--------------------------------|----------|----------|
| Clause | | Sections | (Note1) |
| 7.1 | Antenna Connector Requirements | 15.203 | С |
| | | 15.204 | |
| 7.2 | AC Connected Emission | 15.207 | N/A |
| 7.3 | Carrier Frequency Separation | 15.247 | Pass |
| 7.4 | Time of Occupancy(Dwell time) | 15.247 | Pass |
| 7.5 | 20dB Bandwidth | 15.247 | Pass |
| 7.6 | Number of Hopping Frequencies | 15.247 | С |
| | Requirements | | |
| 7.7 | Pseudorandom Frequency Hopping | 15.247 | С |
| | Sequence and Equal Hopping | | |
| | Frequency use Requirements | | |
| 7.8 | Receiver Input Bandwidth | 15.247 | С |
| | Requirements | | |
| 7.9 | Peak Output Power | 15.247 | Pass |
| 7.10 | Band-edge Compliance | 15.247 | Pass |
| 7.11 | Spurious Conducted emissions | 15.247 | Pass |
| 7.12 | Spurious Radiated emissions | 15.247 | Pass |

^{*} Note1: C: Complies, Pass: Passed, Fail : Failed and NA : Not Applicable

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7. Test Results

7.1 Antenna Connector Requirements

Requirements

Subclause 15.203 and 15.204(c)

According to the Part 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section.

The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. And according to the Part 15.204(c), only the antenna with which an intentional radiator is authorized may be used with the intentional radiator.

Test results

RESULT: Complies

The antenna is permanently attached on the PCB.

The EUT has a Chip Antenna soldered to the circuit board.

For more information on the antenna:

Antenna gain : 0 dBi

Manufacturer : Amotech Co. Ltd.

Model No. : AMAN903010U2P5

Type : Surface Chip Antenna

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7.2 AC Connected Emission

Test Mode and conditions

The power is supplied by a DC 3.7 V Li-ion Polymer from the device but it doesn't radiate during the charging.

Requirements

Subclause15.207(a)

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a $50 \, \mu H/50$ ohms line impedance stabilization network (LISN).

| Frequency of Emission (M | Conducted Limit (dBµV) | | |
|--------------------------|------------------------|---------|--|
| Hz) | Quasi-peak | Average | |
| 0.15-0.5 | 66-56* | 56-46* | |
| 0.5-5 | 56 | 46 | |
| 5-30 | 60 | 50 | |

^{*} Decreases with the logarithm of the frequency.

Test results

N/A

it is designed not to be operated during the charging.

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7.3 Carrier Frequency Separation

Test Mode and conditions

Mode of operation : Tx mode (hopping on), DH1 packet with PRBS9 payload

Measurement Method: Conducted

Detector : PK

Trace : Max hold

RBW/VBW : 100kHz/300kHz

Requirements

Subclause 15.247(a)(1)

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25kHz or the 20dB bandwidth of the hopping channel, whichever is greater.

Test results

| Reference frequency | Channel Separation | Limit | Results |
|---------------------|--------------------|---------------------|---------|
| (MHz) | (kHz) | | |
| 2441.000 | 997.5 | Minimum of 25kHz or | Pass |
| | | the 20dB bandwidth | |

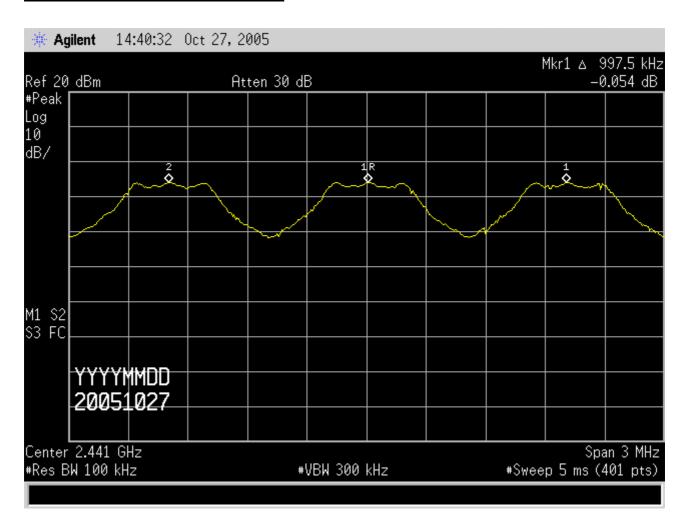
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Carrier Frequency Separation Plot



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7.4 Time of Occupancy(Dwell time)

Test Mode and conditions

Mode of operation : Hopping on , DH5 packet with PRBS9 payload

Measurement Method: Conducted

Detector : PK

Trace : Max hold

RBW/VBW : 100kHz/300kHz

Requirements

Subclause 15.247(a)(1)(iii)

Frequency hopping systems in the 2400 – 2483.5 MHz band shall use at least 75 hopping frequencies. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

Test results

The system makes 1600 hops per second or has a length of 625us.

Let take DH5 packet in worst case. A DH5 packet has 5 slots for transmitting and 1 slot for receiving. It means it can have maximum 266.67 (=1600/6) hops per second.

Therefore it has 3.38 hops(=266.67/79) per second for each channel.

And it has 106.81hops appearance for 31.6 seconds (= 0.4x79channels).

| Length per | Number slots | Dwell Time | Limit | Results |
|------------|--------------|--------------|-------------|---------|
| slot(L) | (N) | (=L*N) | | |
| 2.925 ms | 106.81 | 312.41925 ms | 0.4 seconds | Pass |

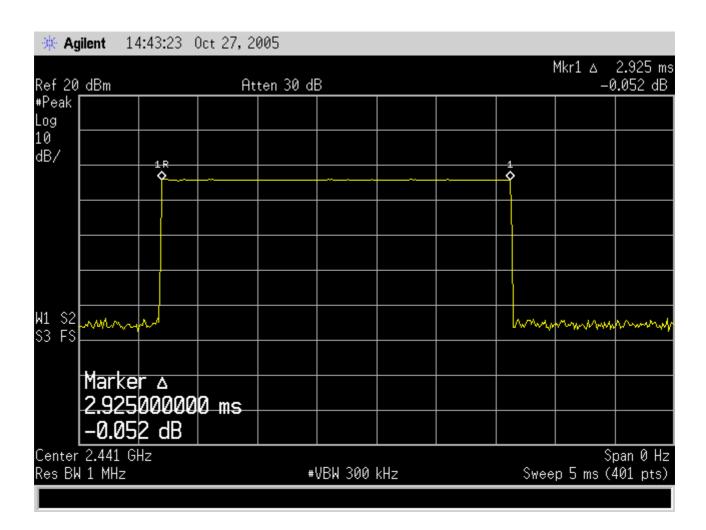
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Time of Occupancy Plot



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7.5 20dB Bandwidth

Test Mode and conditions

Mode of operation : Tx mode (2402MHz, 2441MHz, 2480MHz),

DH5 packet with PRBS9 payload

Measurement Method: Conducted

Detector : PK

Trace : Max hold

RBW/VBW : 30kHz/100kHz

Requirements Subclause 15.247(a)(1)

It is mentioned implicitly as the maximum 20dB bandwidth of the hopping channel is 1Mhz.

Test results

| Operating frequency (MHz) | 20dB Bandwidth (MHz) | Limit | Results |
|---------------------------|----------------------|---------|---------|
| 2402 | 0.930 | < 1 Mhz | Pass |
| 2441 | 0.925 | < 1 Mhz | Pass |
| 2480 | 0.925 | < 1 Mhz | Pass |

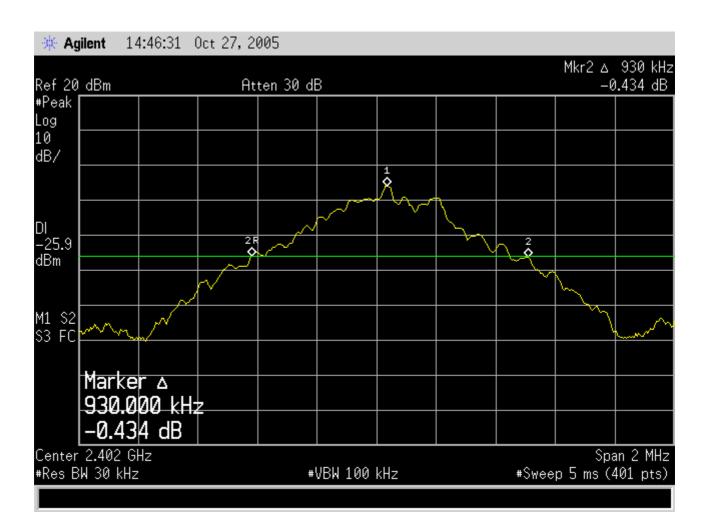
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20dB Bandwidth Plot - 2402Mhz



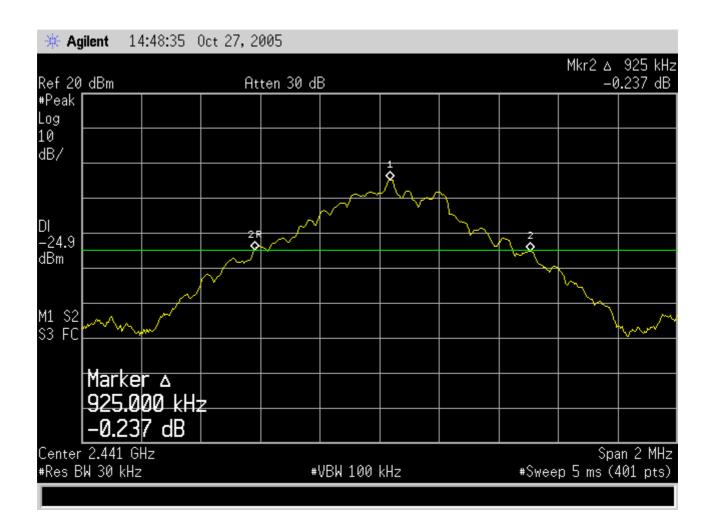
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20dB Bandwidth Plot - 2441Mhz



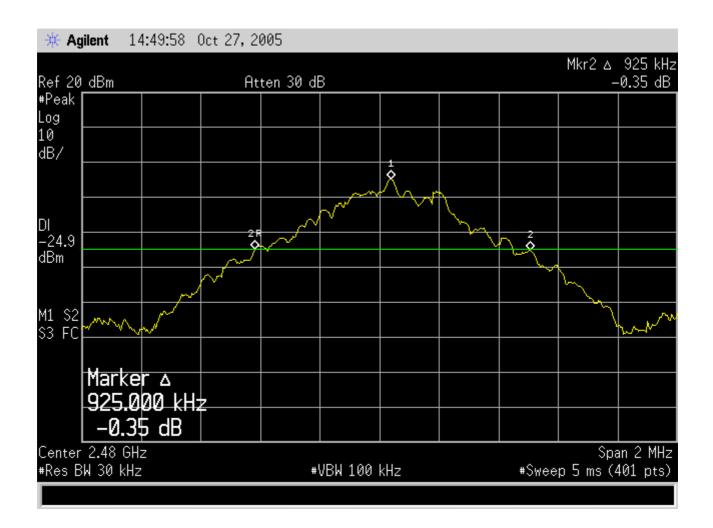
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20dB Bandwidth Plot - 2480Mhz



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7.6 Number of Hopping Frequencies Requirements

Test Mode and conditions

Mode of operation : Hopping, DH1 with PRBS9 payload

Measurement Method: Conducted

Detector : PK

Trace : Max hold

RBW/VBW : 100kHz/100kHz

Requirements 15.247(a)(1)(iii)

Frequency hopping systems in the 2400-2483.5 Mhz band shall use at least 15 non-overlapping Channels.

Test results

| Operating frequency (MHz) | equency (MHz) Number of Hopping | | Results |
|---------------------------|---------------------------------|------|---------|
| 2402~2480 | 79 | ≥ 15 | Pass |

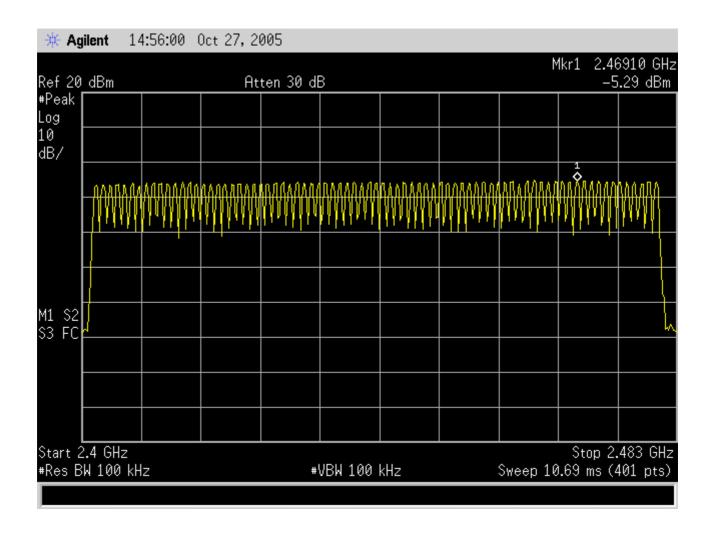
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Number of Hopping Frequencies Plot



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7.7 Pseudorandom FHS and Equal Hopping Frequency use Requirements

Requirements

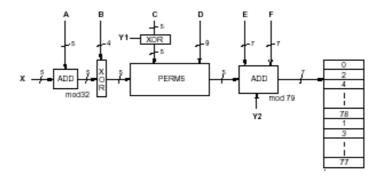
Subclause 15.247 (a)(1)

The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudorandomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter.

<u>RESULT</u> Complies

The channel is represented by a pseudo-random hopping sequence hopping throug h the 79 RF channels. The hopping sequence is unique for the piconet and is determined by the Bluetooth device address of the master. For details, refer to the figure 1. The X input determines the phase in the 32-hop segment, whereas Y1 and Y2 selects between master-to-slave and slave-to-master transmission. The inputs A to D determine the ordering within the segment, the inputs E and F determine the mapping onto thehop frequencies.

The algorism in the Bluetooth specifications shows the each of its hoping channels Is used equally on average also.



< Figure 1 : Block diagram of hop selection kernel for 79 hop system >

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7.8 Receiver Input Bandwidth Requirements

Requirements

Subclause 15.247 (a)(1)

The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in the synchronization with the transmitted signals.

<u>RESULT</u> Complies

The receiver bandwidth is equal to the receiver bandwidth in the 79 hopping channel mode, which is 1 MHz. The receiver bandwidth is indirectly verified during Bluetooth RF conformance testing.

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7.9 Peak Output Power

Test Mode and conditions

Mode of operation : Tx mode (2402MHz, 2441MHz, 2480MHz),

DH1 packet with PRBS 9 payload

Measurement Method: Conducted

Detector : PK

Trace : Max hold RBW/VBW : 1MHz/3MHz

Requirements

Subclause 15.247(b)(1)

For frequency hopping systems operating in the 2400~2483.5 Mhz band employing at least 75hopping channels, the maximum output power of the intentional radiator shall not exceeded 1 watt.

Test results

| Operating | Reading | Cable | Actual | Limit | Results |
|-----------|---------|-------------|-------------|-------|---------|
| Frequency | (dBm) | attenuation | Value | (W) | |
| (MHz) | | (dB) | (W) | | |
| 2402 | -4.686 | 1.80 | 0.000514517 | <1.0 | Pass |
| 2441 | -3.958 | 1.83 | 0.000612600 | <1.0 | Pass |
| 2480 | -4.169 | 1.85 | 0.000586273 | <1.0 | Pass |

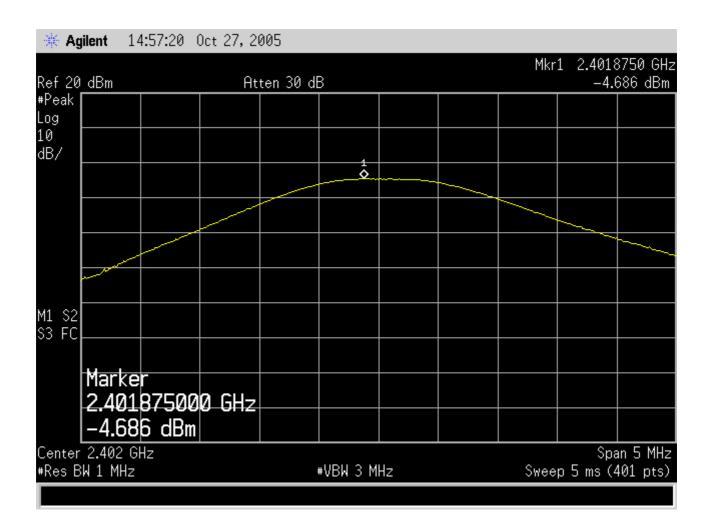
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Peak Output Power Plot - 2402



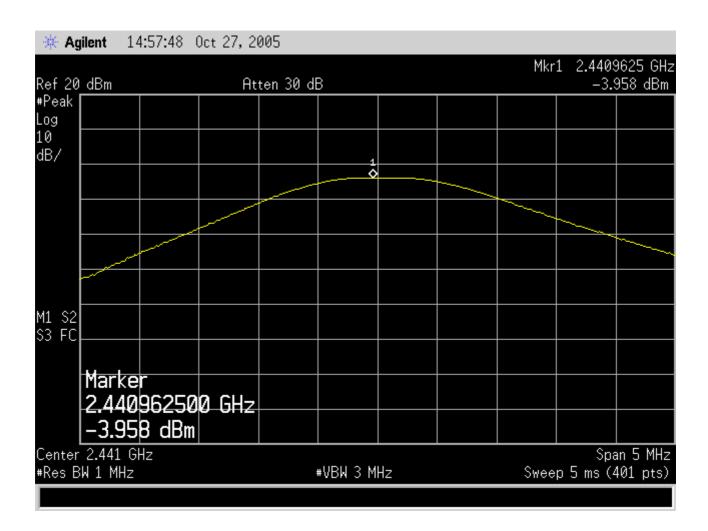
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Peak Output Power Plot - 2441



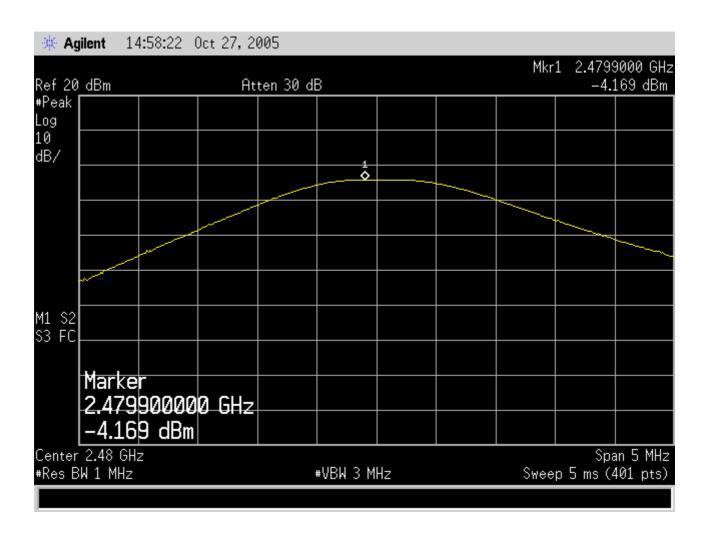
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Peak Output Power Plot - 2480



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7.10 Band-edge Compliance

Test Mode and conditions

Mode of operation : Tx mode (2402MHz, 2441MHz, 2480MHz), DH1 packet

Measurement Method: Conducted

Detector : PK

Trace : Max hold

RBW/VBW : 300kHz/1.0MHz

Requirements

Subclause 15.247(c)

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100k Hz bandwidth within the band that contains the highest level of the desired power, b ased on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required.

Test results

There is no peak found outside any 100kHz bandwidth of the operating frequency band in the three transmit frequency.

| Tx Frequency (MHz) | RF power outside 100kHz BW (MHz) | Limit | Results |
|------------------------|-------------------------------------|------------|---------|
| 2402 | No peak above 20dB | 20dB below | Pass |
| 2441 | No peak above 20dB | 20dB below | Pass |
| 2480 | No peak above 20dB | 20dB below | Pass |

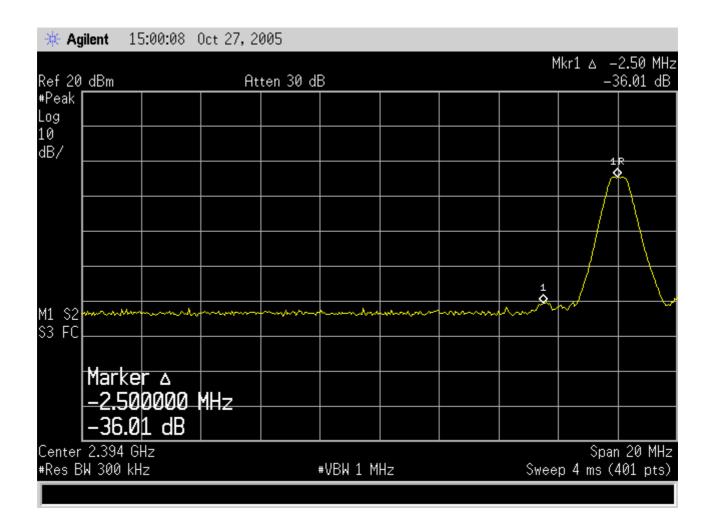
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Band-edge Compliance Plot - 2402



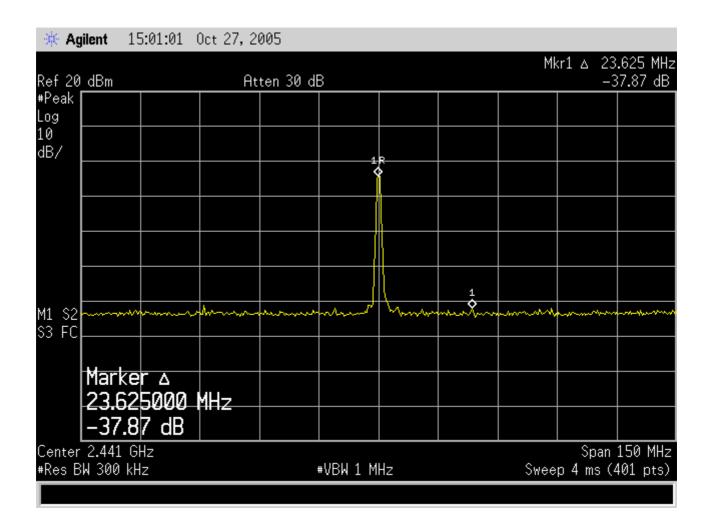
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Band-edge Compliance Plot - 2441



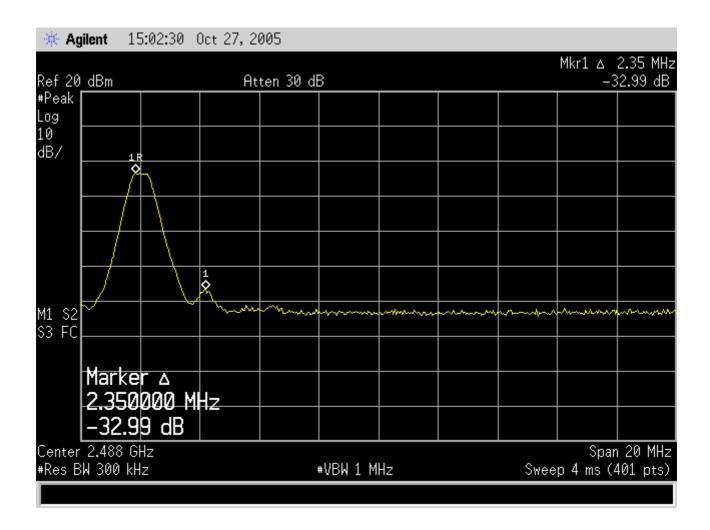
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Band-edge Compliance Plot - 2480



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7.11 Spurious Conducted emissions

Test Mode and conditions

Mode of operation : Tx mode (2402MHz, 2441MHz, 2480MHz), DH1 packet

Measurement Method: Conducted

Detector : PK

Trace : Max hold

RBW/VBW : 100kHz/300kHz

Requirements Subclause 15.247(c)

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100k Hz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required.

Test results

| Tool Toodito | | | | | | |
|--------------------|-------------------------------|------------------------------|------------------|--------------------------|-------------------------------|--|
| Frequency (MHz) | Reading Value (dBm) | Correction Factor (dB) | Results (dBm) | Reference Value (dBm) | Delta to Reference (dB) | |
| | Operating frequency : 2402MHz | | | | | |
| 6785 | -41.15 | 3.4 | -37.75 | -22.886 | 14.864 | |
| 13275 | -48.12 | 6.7 | -41.42 | -22.886 | 18.534 | |
| 24637.5 | -46.82 | 6.7 | -40.12 | -22.886 | 17.234 | |
| | | | | | | |
| | | | | | | |

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| Frequency (MHz) | Reading Value (dBm) | Correction Factor (dB) | Results (dBm) | Reference Value (dBm) | Delta to Reference (dB) |
|--------------------|---------------------------|------------------------------|------------------|--------------------------|-------------------------------|
| | (| Operating frequ | iency : 2441Mi | Hz | |
| 4890 | -47.22 | 3.4 | -43.82 | -22.128 | 21.69 |
| 13300 | -47.44 | 6.7 | -40.74 | -22.128 | 18.612 |
| 24662.5 | -46.56 | 6.7 | -39.86 | -22.128 | 17.732 |
| | | | | | |
| | | | | | |

| Frequency (MHz) | Reading Value (dBm) | Correction Factor (dB) | Results (dBm) | Reference Value (dBm) | Delta to Reference (dB) | |
|--------------------|-------------------------------|------------------------------|------------------|--------------------------|-------------------------------|--|
| | Operating frequency : 2480MHz | | | | | |
| 4965 | -45.07 | 3.4 | -41.67 | -22.319 | 19.351 | |
| 13250 | -47.81 | 6.0 | -41.81 | -22.319 | 19.491 | |
| 24662.5 | -46.55 | 6.7 | -39.85 | -22.319 | 17.531 | |
| | | | | | | |
| | | | | | | |

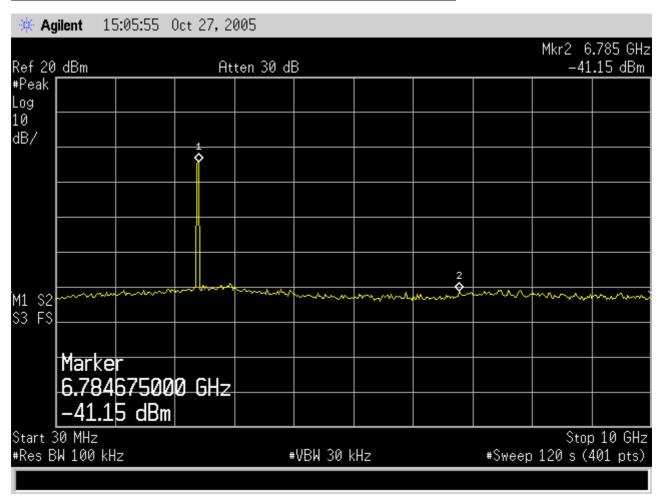
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Spurious Conducted emissions plot- 2402 (30MHz~10GHz)



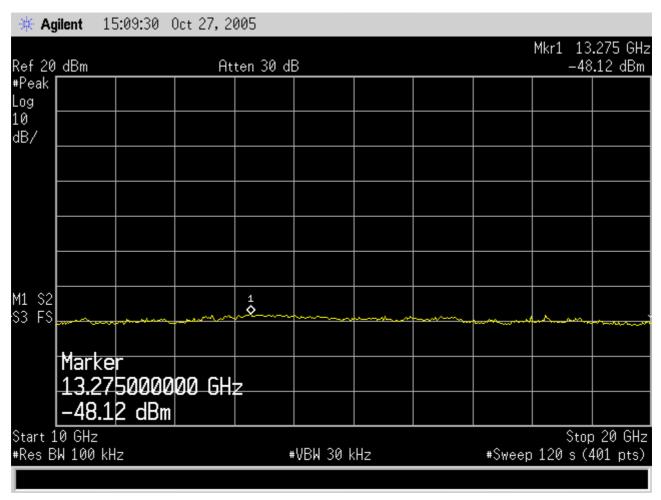
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Spurious Conducted emissions plot- 2402 (10GHz~20GHz)



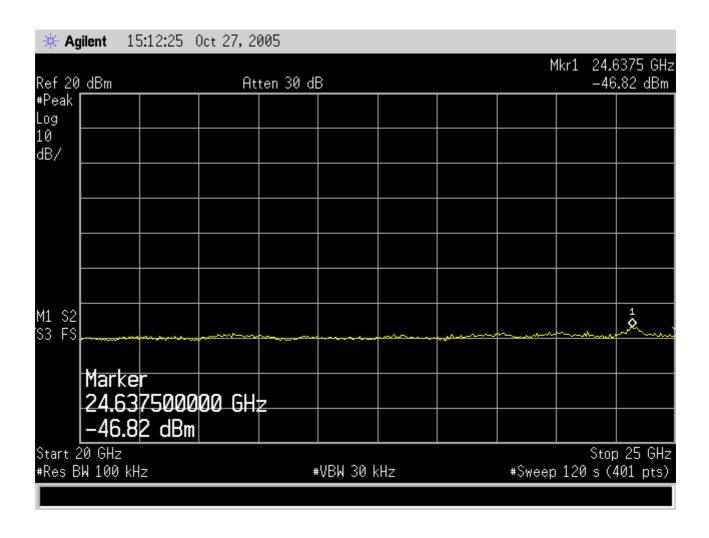
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Spurious Conducted emissions plot- 2402 (20GHz~25GHz)



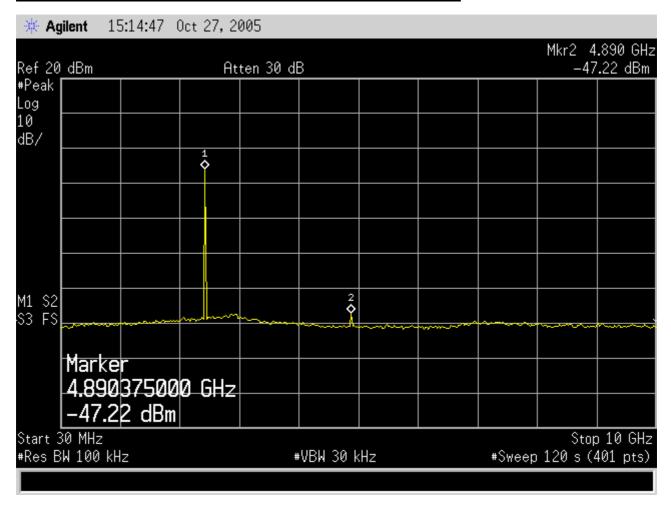
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Spurious Conducted emissions plot- 2441 (30MHz~10GHz)



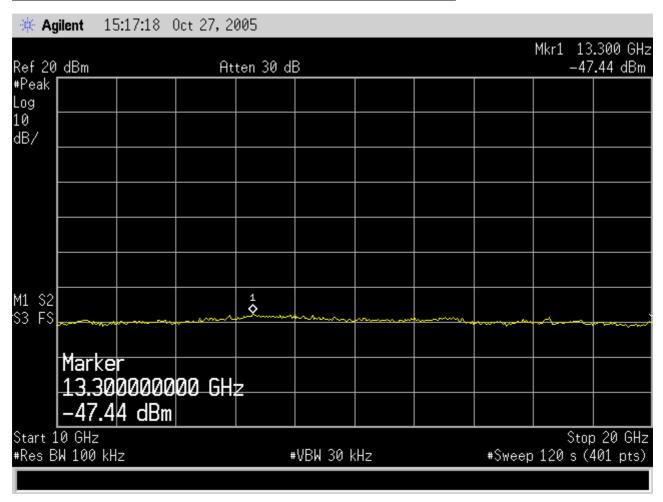
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Spurious Conducted emissions plot- 2441 (10GHz~20GHz)



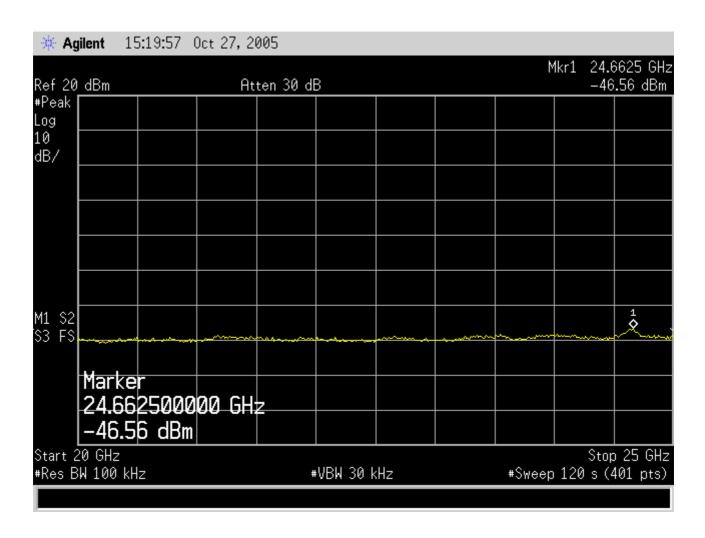
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Spurious Conducted emissions plot- 2441 (20GHz~25GHz)



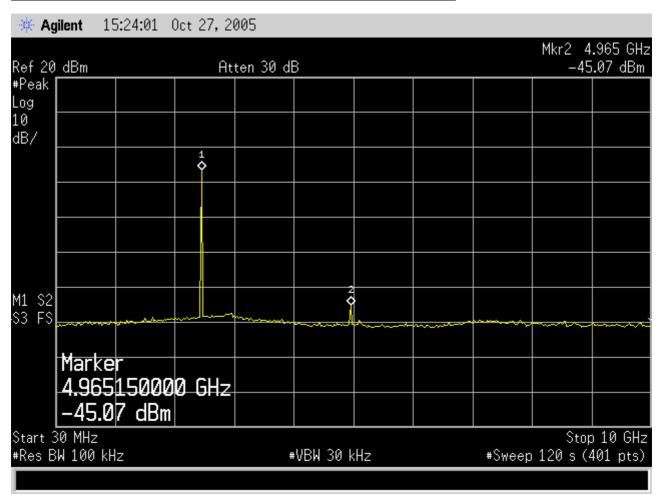
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Spurious Conducted emissions plot- 2480 (30MHz~10GHz)



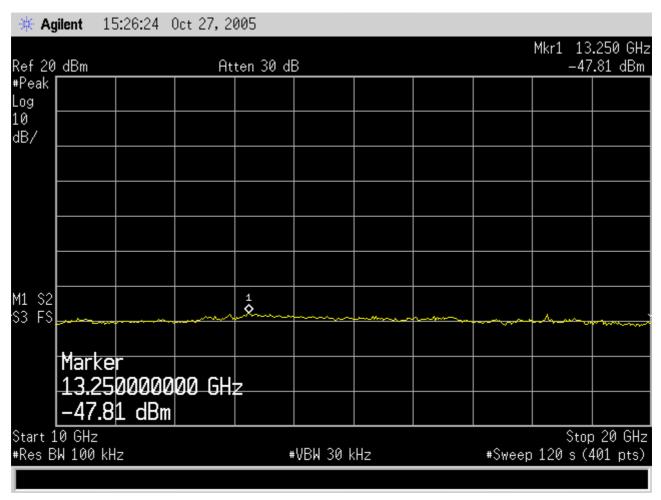
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Spurious Conducted emissions plot- 2480 (10GHz~20GHz)



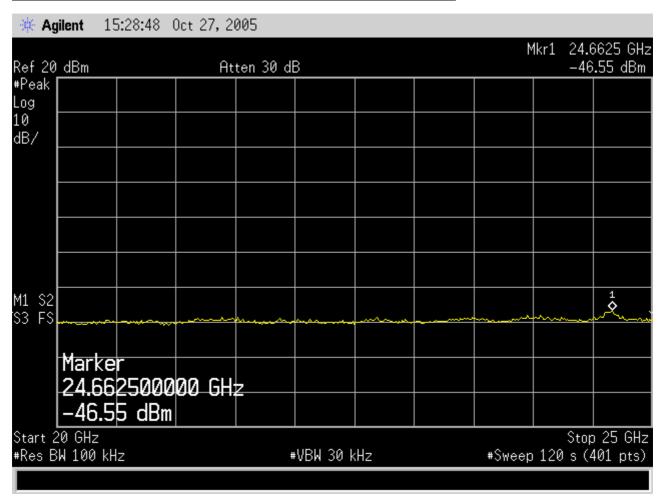
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Spurious Conducted emissions plot- 2480 (20GHz~25GHz)



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7.12 Spurious Radiated emissions

Test Mode and conditions

Mode of operation : Tx mode (2402MHz, 2441MHz, 2480MHz),

DH1 packet

Detector : PK

Trace Max hold

:

Measurement Method Radiated- Enclosure

:

Measurement Distance: 3m

Measurement BW : 1 MHz for $f \ge 1$ GHz, 100kHz for f < 1 GHz

Requirements

Subclause 15.247(c)

In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

According to Section 15.209(a), except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

| Frequency | Field strength (microvolts/meter) | Field strength | Measurement |
|-----------|-----------------------------------|-----------------------|-------------|
| (MHz) | | (dBμV/m) | distance |
| | | | (meters) |
| 30-88 | 100** | $20*\log(100) = 40.0$ | 3 |
| 88-216 | 150** | $20*\log(150) = 43.5$ | 3 |
| 216-960 | 200 | $20*\log(200) = 46.0$ | 3 |
| 960-2500 | 500 | $20*\log(500) = 54.0$ | 3 |

^{**} Except as provided in paragraph(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72Mhz, 76-88Mhz, 174-216Mhz or 470-806Mhz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241. According to section 15.35(b), on any frequency or frequencies above 1000 MHz the radiated limits shown are based upon the use of measurement instrumentation

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employing an average detector function. When average radiated emission measurements are specified in this part, including emission measurements below 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit for the frequency being investigated

Test results

| Frequ- ency | Polariz- ation | Corr. Factor | | sult V/m) | Lir (dBuV | mit /m) | Ma (d | Ū | Table Angle | Ant. Height |
|----------------|-------------------|-----------------|---------|--------------|--------------|------------|----------|------|----------------|----------------|
| (MHz) | (H/V) | (dB) | A | P | A | P | Α | P | (Deg.) | (m) |
| | | (| Operati | ng free | quency | : 240 | 2Mhz | | | |
| 1601 | V | 1.2 | 26.5 | 38.7 | 54 | 74 | 27.5 | 35.3 | 125 | 240 |
| 4789 | V | 10.8 | 34.6 | 45.9 | 54 | 74 | 19.4 | 28.1 | 125 | 240 |
| 1195 | Η | 1.2 | 28.3 | 39.1 | 54 | 74 | 25.7 | 34.9 | 125 | 240 |
| 4775 | Н | 10.8 | 35.4 | 44.6 | 54 | 74 | 18.6 | 29.4 | 125 | 240 |
| | | | | | | | | | | |
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| Frequ- ency | Polariz- ation | Corr. Factor | | sult V/m) | Lir (dBuV | mit /m) | Ma (d | rgin B) | Table Angle | Ant. Height |
|----------------|------------------------------|-----------------|------|--------------|--------------|------------|----------|------------|----------------|----------------|
| (MHz) | (H/V) | (dB) | A | P | A | Р | A | P | (Deg.) | (m) |
| | Operating frequency: 2441Mhz | | | | | | | | | |
| 1192 | V | -1.8 | 27.4 | 39.4 | 54 | 74 | 26.6 | 34.6 | 125 | 240 |
| 4890 | V | 17.1 | 36.4 | 47.2 | 54 | 74 | 17.6 | 26.8 | 125 | 240 |
| 1192 | Н | -1.8 | 27.8 | 42.6 | 54 | 74 | 26.2 | 31.4 | 125 | 240 |
| 4887 | Н | 17.1 | 36.3 | 46.9 | 54 | 74 | 17.7 | 27.1 | 125 | 240 |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

| Frequ- | Polariz- | Corr. | Re | sult | Lir | nit | Ma | rgin | Table | Ant. |
|--------|------------------------------|--------|------|------|-------|-----|------|------|--------|--------|
| ency | ation | Factor | (dBu | V/m) | (dBuV | /m) | (d | B) | Angle | Height |
| (MHz) | (H/V) | (dB) | Α | Р | Α | Р | Α | Р | (Deg.) | (m) |
| | Operating frequency: 2480Mhz | | | | | | | | | |
| 1648 | V | 1.3 | 27.8 | 40.1 | 54 | 74 | 26.2 | 33.9 | 125 | 240 |
| 4958 | V | 16.5 | 37.8 | 48.4 | 54 | 74 | 16.2 | 25.6 | 125 | 240 |
| 1647 | Н | 1.3 | 28.3 | 41.8 | 54 | 74 | 25.7 | 32.2 | 125 | 240 |
| 4954 | Н | 16.5 | 37.8 | 47.9 | 54 | 74 | 16.2 | 26.1 | 125 | 240 |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Note:

- 1. Remark "*" means that the emission frequency is produced by local oscillator.
- 2. Remark" -- " means that the emission level is too low to be measured.
- 3. The measurement uncertainty of the radiated emission test is $\pm 3 dB$
- 4. "A" and "P" mean average and peak measurement respectively.
- 5. There are no spurious emissions found between the lowest internal oscillating frequency and 30 MHz.

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8. List of Test and Measurement Instruments

| Kind of Equipment | Туре | Manufacturer | S/N |
|-----------------------|----------------|--------------|--------------|
| EMI Test Receiver | ESMI | R/S | 1032.5510.53 |
| Spectrum Analyzer | FSP30 | R/S | 1093.4495.30 |
| Tracking Generator | ESMI-B1 | R/S | 1033.3240.52 |
| Spectrum Analyzer | 8566B | HP | 3638A0857E |
| Spectrum Analyzer | E4407B | HP | MY41310181 |
| Wave Dipole Antenn | HZ-12 | R/S | 842006/0012 |
| а | | | |
| Wave Dipole Antenn | HZ-12 | R/S | 846556/0004 |
| а | | | |
| Biconical Antenna | 3104C | EMCO | 9408-4667 |
| Biconical Antenna | 3109 | EMCO | 9405-2812 |
| Log-Periodic Antenna | 3146A | EMCO | 1064 |
| Biconilog Antenna | 3142 | EMCO | 9710-1220 |
| V-Network | ESH3-Z5 | R/S | 847265/030 |
| V-Network | ESH3-Z6 | R/S | 847250/016 |
| T-Network | E-Z10 | R/S | 84480/011 |
| LISN | 6338-5-PJ-50-N | Solar | 953938/95393 |
| | | | 9 |
| Turn Table | 2081 | EMCO | |
| Antenna Tower | 2075 | EMCO | |
| Multi Device Controll | 2090 | EMCO | 9708-1255 |
| er | | | |
| Printer | C4569A | HP | SG78K1H1FS |
| Absorbing Clamp | MDS 21 | R/S | 847905/005 |
| Signal Generator | 2023 | MARCONI | 112246067 |
| Swept Signal Genera | 83620B | HP | 3722A00549 |
| tor | | | |
| 10dB Attenuator | 23-10-34 | Weinschel co | BD4316 |
| 10dB Attenuator | 33-10-34 | Weinschel co | BB9784 |
| Antenna | 3142 | EMCO | 9710-1220 |
| Antenna | 3115 | EMCO | 9511-4612 |

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|-------------|------------------------|----------|---------------|------------|
| \boxtimes | Antenna | 3160-08 | EMCO | 1168 |
| | Antenna | 3160-09 | EMCO | 1304 |
| \boxtimes | Amplifier | HP8447F | HP | 3113A06911 |
| | Amplifier | HP83006 | HP | 3104A00611 |
| \boxtimes | Amplifier | HP8449B | HP | 3008A00859 |
| | EMI test receiver | ESCS30 | R&S | 839809/003 |
| | Artificial mains netwo | ESH2-Z5 | R&S | 829991/009 |
| | rk | | | |
| | Artificial hand | FCC-AH-1 | Fischer custo | 2008 |
| | | | m communicat | |
| | | | ions Inc. | |

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- 9.2 Operational Description
- 9.3 Test Setup Photos
- 9.4 Internal Photos
- 9.5 External Photos
- 9.6 User Manual
- 9.7 Technical Documents
 - Schematics
 - Block Diagram
 - Bill of Materials

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