

EMI TEST REPORT

Test Report No. : 22CE0007-YW

Applicant: SHARP CORPORATION

Type of Equipment: Bluetooth CF Card

Model No.: DC2C1BZ001

FCC ID: APYSJY0007

Test standard: FCC Part15 Subpart C, Section 15.247 (c)

Stand alone tests

Test Result: Complied

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The results in this report apply only to the sample tested.

Date of test: January 25, 2002 **Issued date:** January 28, 2002

Tested by: 

Naoki Sakamoto

Group Leader of EMC section

Approved by: 

Kazutoyo Nakanishi

Site Operation Manager of EMC section

A-pex International Co., Ltd.

YOKOWA LAB.

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1 GENERAL INFORMATION

APPLICANT : SHARP CORPORATION

ADDRESS : 22-22, Nagaike-cho, Abeno-ku, Osaka, 545-8522 Japan
TEL : 81-6-6624-3857
FAX : 81-6-6622-9289

REGULATION(S) : FCC Part15 Subpart C, Section 15.247(c)
Stand alone tests

MODEL NUMBER : DC2C1BZ001

SERIAL NUMBER : 011203521

KIND OF EQUIPMENT : Bluetooth CF Card

TESTED DATE : January 25, 2002

RECEIPT DATE OF SAMPLE : January 23, 2002

REPORT FILE NUMBER : 22CE0007-YW

TEST SITE : A-PEX Yokowa No.3 Open Test Sites

1.1 Tested Methodology

The measurement was performed according to the procedures in ANSI C63.4(1992).

1.2 Test Facility

The open area site measurement facilities used to collect the radiated data are located at 108, Yokowa-cho, Ise-shi, Mie-ken, 516-1106 Japan.

These sites have been fully described in reports submitted to the FCC office.

No.1 and No.3 test site has filed to the FCC on September 12, 2000 as number: 90412 and is accepted by Industry Canada on May 01, 2001 as number IC2973-3.

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2 PRODUCT DESCRIPTION

SHARP CORPORATION, Model DC2C1BZ001 (referred to as the EUT in this report) is a Bluetooth CF Card.
The EUT is based on the Bluetooth SPEC. V1.1 and CF Card Rev. 1.4.

The specification is as following :

| | |
|-----------------------------------|--|
| Frequency characteristics | : 2402MHz through 2480MHz |
| No. of channels / channel spacing | : 79 channels / 1MHz channel spacing |
| Modulation | : GFSK (Low power Frequency Hopping Spread Spectrum(FHSS)) |
| Antenna type | : Integral |
| Antenna Gain | : -2.4dBi |
| Operating Voltage | : DC3.3V |

3 SYSTEM TEST CONFIGURATION

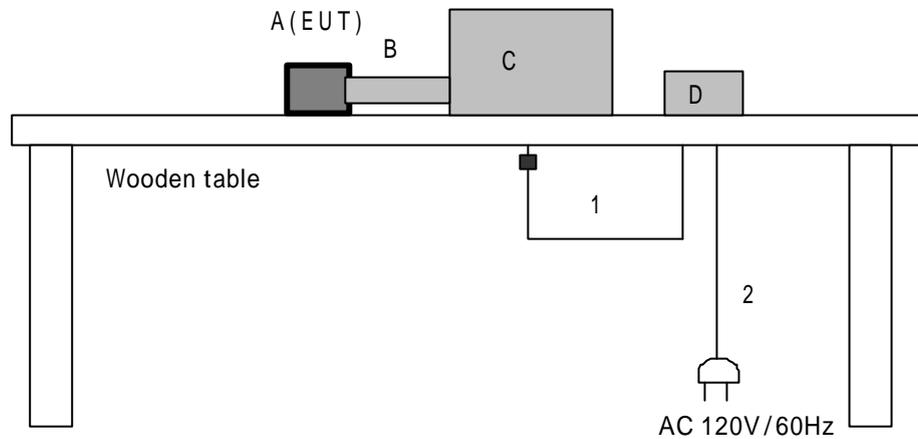
3.1 Justification

The system was configured in typical fashion (as a customer would normally use it) for testing.

Test mode : Transmitting mode
 Performed the test about channels 2(low:2402MHz),and 80(high:2480MHz)
 among 79 channels of all Carrier frequencies.
 Receiving mode

3.2 Configuration of Tested System

Figure 3.2.1 Configuration of Tested System



■ : Ferrite Core

Description of EUT and support equipment

| No. | Item | Model number | Serial number | Manufacturer | Remark (FCC ID) |
|-----|----------------------|---------------|---------------|-------------------|-----------------|
| A | Bluetooth CF Card | DC2C1BZ001 | 011203521 | SHARP | APYSJY007 (EUT) |
| B | PCMCIA CARD EXTENDER | PCCextend 100 | C100-13320 | SYCARD TECHNOLOGY | - |
| C | Notebook PC | PC-PJ100S | 09047864 | SHARP | A00-0198JP |
| D | AC Adaptor | EA-J03V | LTD0015016173 | SHARP | - |

List of cables used

| No. | Name | Length (m) | Shield | Backshell material | Remark |
|-----|----------------|------------|--------|--------------------|--------|
| 1 | DC Power Cable | 1.2 | N | Polyvinyl chloride | - |
| 2 | AC Power Cable | 1.8 | N | Polyvinyl chloride | - |

4 Measurement Uncertainty

Radiated Emission Test

The measurement uncertainty (with a 95% confidence level) for this test using Biconical antenna is ± 4.4 dB.

The measurement uncertainty (with a 95% confidence level) for this test using Logperiodic antenna is ± 4.8 dB.

The measurement uncertainty (with a 95% confidence level) for this test using Horn antenna is ± 5.8 dB.

A-pex International Co., Ltd.

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Test report
FCC ID :APYSJY0007
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Issued date :January 28, 2002

5 TEST EQUIPMENT USED

| <u>Name</u> | <u>Manufacturer</u> | <u>Model</u> | <u>Control No.</u> | <u>Calibrated Until</u> |
|---------------------|---------------------|--------------|--------------------|-------------------------|
| Pre Amplifier | Hewlett Packard | 8447D | AF-01 | March 30, 2002 |
| Pre Amplifier | Hewlett Packard | 8449B | AF-04 | November 3, 2002 |
| Biconical Antenna | Schwarzbeck | BBA9106 | BA-03 | April 30, 2002 |
| Logperiodic Antenna | Schwarzbeck | UKLP9140-A | LA-06 | April 30, 2002 |
| Horn Antenna | AH System, Inc | SAS-200/571 | HA-01 | May 19 , 2002 |
| Horn Antenna | Schwarzbeck | BBHA9170 | EST-10 | October 16 , 2004 |
| High Pass Filter | Tokimec | TF323DCA | HF-04 | October 14, 2002 |
| Spectrum Analyzer | Hewlett packard | 8567A | SA-04 | March 30, 2002 |
| Spectrum Analyzer | Advantest | R3271 | SA-05 | January 31, 2002 |
| Test Receiver | Rohde & Schwarz | ESCS30 | TR-07 | October 1, 2002 |

All measurement equipment is traceable to national standards.

6.1 § 15.247(c) Out of Band Emissions(Radiated)

Test Procedure

EUT was placed on a platform of nominal size, 1m by 1.0m, raised 80cm above the conducting ground plane.

I/O cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30cm to 40cm long and were hanged 40cm height to the ground plane. Test was made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna was varied in height above the conducting ground plane to obtain the maximum signal strength.

The Radiated Electric Field Strength intensity has been measured on an open test site with a ground plane and at a distance of 1m and 3m.

*Test distance 3m : 30MHz to 10GHz / 1m : 10GHz to 26GHz

The measuring antenna height was varied between 1 to 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.

The measurements were performed for both vertical and horizontal antenna polarization.

Radiated Spurious emissions

In any 100kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator confirmed 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on a radiated measurement. The result was also satisfied the general limits specified in Sec.15.209(a).

Measurement range : 30MHz to 1000MHz CISPR QP Detector, IF BW 120kHz

: 1GHz to 26GHz PK(RBW 1MHz, VBW 1MHz) and AV(RBW 1MHz, VBW 10Hz) Detector

Test data : APPENDIX A1 to A3: 30 - 1000MHz
: APPENDIX A4 to A6: 1 - 26GHz
: APPENDIX A7 to A10: Restricted band charts

Photographs of test setup : Page10

Test result : Pass

Test instruments : AF-01, AF-04, BA-03, LA-06, HA-01, EST-10, HF-04, SA-04,
SA-05, TR-07

A-pex International Co., Ltd.

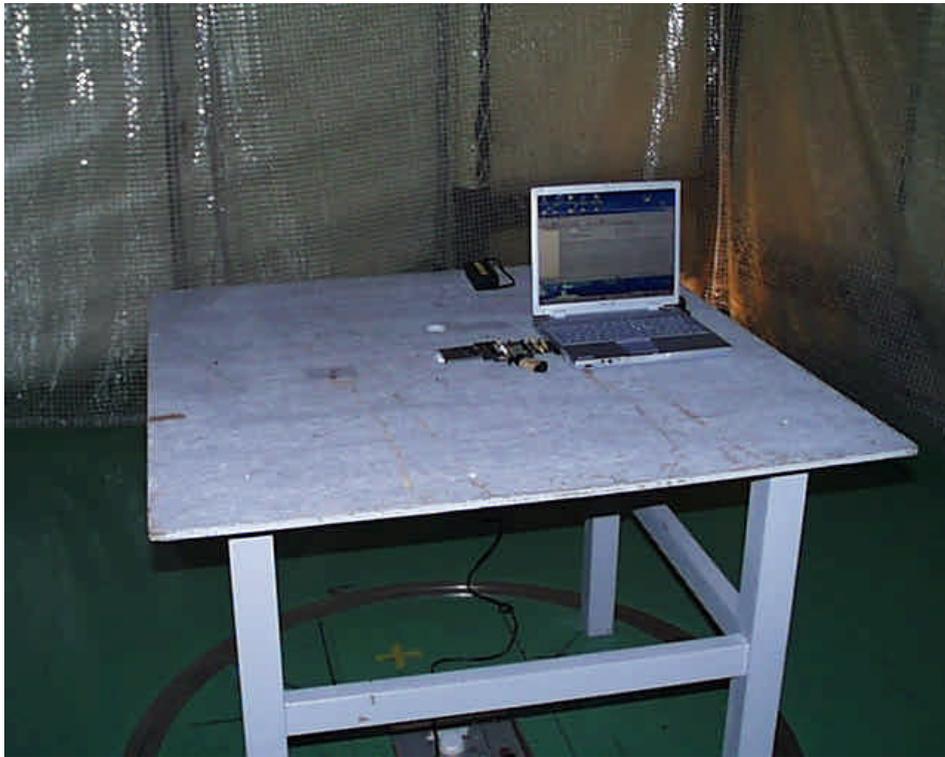
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Photographs of test setup(1)



APPENDIX

Test Data

- | | | |
|---|--|-------------------|
| 1 | § 15.247(c) Out of Band Emissions(Radiated : 30MHz to 1000MHz) | <u>A 1 to A 3</u> |
| 2 | § 15.247(c) Out of Band Emissions(Radiated : 1GHz to 26GHz) | <u>A 4 to A 6</u> |
| 3 | § 15.247(c) Restricted Band charts | <u>A 7 to A10</u> |

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 22CE0007-YW

Applicant : SHARP CORPORATION
 Kind of Equipment : Bluetooth CF Card
 Model No. : DC2C1BZ001
 Serial No. :
 Power : AC120V/60Hz
 Mode : Transmitting (2402MHz)
 Remarks : FCC ID : APYSJY0007
 Date : 1/25/2002
 Test Distance : 3 m
 Temperature : 22 °C
 Humidity : 39 %
 Regulation : Fcc 15C § 15. 209 (a)


Engineer : Naoki Sakamoto

| No. | FREQ. [MHz] | ANT TYPE | READING | | ANT FACTOR [dB/m] | AMP GAIN [dB] | CABLE LOSS [dB] | ATTEN. [dB] | RESULT | | LIMITS | | MARGIN | |
|-----|----------------|-------------|-----------------|------|-------------------------|---------------------|-----------------------|----------------|-------------------|------|-------------|------|--------|--|
| | | | HOR [dB μ V] | VER | | | | | HOR [dB μ V/m] | VER | HOR [dB] | VER | | |
| 1. | 208.90 | BB | 43.0 | 35.0 | 16.4 | 27.8 | 2.9 | 5.9 | 40.4 | 32.4 | 43.5 | 3.1 | 11.1 | |
| 2. | 221.19 | BB | 45.7 | 36.5 | 16.5 | 27.8 | 3.0 | 5.9 | 43.3 | 34.1 | 46.0 | 2.7 | 11.9 | |
| 3. | 233.47 | BB | 46.3 | 37.7 | 16.5 | 27.7 | 3.1 | 5.9 | 44.1 | 35.5 | 46.0 | 1.9 | 10.5 | |
| 4. | 270.35 | BB | 45.7 | 35.3 | 17.7 | 27.6 | 3.3 | 5.8 | 44.9 | 34.5 | 46.0 | 1.1 | 11.5 | |
| 5. | 300.79 | BB | 38.3 | 36.8 | 14.2 | 27.6 | 3.5 | 5.8 | 34.2 | 32.7 | 46.0 | 11.8 | 13.3 | |
| 6. | 307.44 | BB | 39.1 | 38.2 | 14.3 | 27.6 | 3.5 | 5.8 | 35.1 | 34.2 | 46.0 | 10.9 | 11.8 | |
| 7. | 320.82 | BB | 39.4 | 40.1 | 14.4 | 27.6 | 3.6 | 5.8 | 35.6 | 36.3 | 46.0 | 10.4 | 9.7 | |
| 8. | 373.39 | BB | 41.0 | 40.5 | 15.1 | 27.6 | 4.0 | 5.8 | 38.3 | 37.8 | 46.0 | 7.7 | 8.2 | |
| 9. | 498.68 | BB | 38.4 | 36.8 | 18.1 | 27.5 | 4.8 | 5.9 | 39.7 | 38.1 | 46.0 | 6.3 | 7.9 | |
| 10. | 516.10 | BB | 32.4 | 32.9 | 18.2 | 27.5 | 4.9 | 5.9 | 33.9 | 34.4 | 46.0 | 12.1 | 11.6 | |

CALCULATION: READING + ANT. FACTOR + CABLE LOSS - AMP. GAIN + ATTEN.

All other spurious emissions were less than 20dB for the limit.
 ANT. TYPE: 30-300MHz Biconical, 300-1000MHz Logperiodic

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 22CE0007-YW

Applicant : SHARP CORPORATION
 Kind of Equipment : Bluetooth CF Card
 Model No. : DC2C1BZ001
 Serial No. :
 Power : AC120V/60Hz
 Mode : Transmitting (2480MHz)
 Remarks : FCC ID : APYSJY0007
 Date : 1/25/2002
 Test Distance : 3 m
 Temperature : 22 °C
 Humidity : 39 %
 Regulation : Fcc 15C § 15. 209 (a)



 Engineer : Naoki Sakamoto

| No. | FREQ. [MHz] | ANT TYPE | READING | | ANT FACTOR [dB/m] | AMP GAIN [dB] | CABLE LOSS [dB] | ATTEN. [dB] | RESULT | | LIMITS | | MARGIN | |
|-----|----------------|-------------|-----------------|------|-------------------------|---------------------|-----------------------|----------------|-------------------|------|-------------|------|--------|--|
| | | | HOR [dB μ V] | VER | | | | | HOR [dB μ V/m] | VER | HOR [dB] | VER | | |
| 1. | 208.90 | BB | 42.8 | 36.1 | 16.4 | 27.8 | 2.9 | 5.9 | 40.2 | 33.5 | 43.5 | 3.3 | 10.0 | |
| 2. | 221.19 | BB | 45.5 | 36.2 | 16.5 | 27.8 | 3.0 | 5.9 | 43.1 | 33.8 | 46.0 | 2.9 | 12.2 | |
| 3. | 233.47 | BB | 46.0 | 37.9 | 16.5 | 27.7 | 3.1 | 5.9 | 43.8 | 35.7 | 46.0 | 2.2 | 10.3 | |
| 4. | 270.35 | BB | 45.9 | 35.5 | 17.7 | 27.6 | 3.3 | 5.8 | 45.1 | 34.7 | 46.0 | 0.9 | 11.3 | |
| 5. | 300.79 | BB | 39.2 | 36.9 | 14.2 | 27.6 | 3.5 | 5.8 | 35.1 | 32.8 | 46.0 | 10.9 | 13.2 | |
| 6. | 307.44 | BB | 39.4 | 38.5 | 14.3 | 27.6 | 3.5 | 5.8 | 35.4 | 34.5 | 46.0 | 10.6 | 11.5 | |
| 7. | 320.82 | BB | 39.1 | 39.8 | 14.4 | 27.6 | 3.6 | 5.8 | 35.3 | 36.0 | 46.0 | 10.7 | 10.0 | |
| 8. | 373.39 | BB | 40.8 | 40.2 | 15.1 | 27.6 | 4.0 | 5.8 | 38.1 | 37.5 | 46.0 | 7.9 | 8.5 | |
| 9. | 498.68 | BB | 38.9 | 37.1 | 18.1 | 27.5 | 4.8 | 5.9 | 40.2 | 38.4 | 46.0 | 5.8 | 7.6 | |
| 10. | 516.10 | BB | 32.5 | 33.3 | 18.2 | 27.5 | 4.9 | 5.9 | 34.0 | 34.8 | 46.0 | 12.0 | 11.2 | |

CALCULATION: READING + ANT. FACTOR + CABLE LOSS - AMP. GAIN + ATTEN.

All other spurious emissions were less than 20dB for the limit.
 ANT. TYPE: 30-300MHz Biconical, 300-1000MHz Logperiodic

DATA OF RADIATION TEST

A-PEX INTERNATIONAL CO., LTD.
YOKOWA No.3 OPEN TEST SITE
Report No. : 22CE0007-YW

Applicant : SHARP CORPORATION
 Kind of Equipment : Bluetooth CF Card
 Model No. : DC2C1BZ001
 Serial No. :
 Power : AC120V/60Hz
 Mode : Receiving
 Remarks : FCC ID : APYSJY0007
 Date : 1/25/2002
 Test Distance : 3 m
 Temperature : 22 °C
 Humidity : 39 %
 Regulation : Fcc 15C § 15. 209 (a)


 Engineer : Naoki Sakamoto

| No. | FREQ. [MHz] | ANT TYPE | READING | | ANT FACTOR [dB/m] | AMP GAIN [dB] | CABLE LOSS [dB] | ATTEN. [dB] | RESULT | | LIMITS | | MARGIN | |
|-----|----------------|-------------|-----------------|------|-------------------------|---------------------|-----------------------|----------------|-------------------|------|-------------|------|--------|--|
| | | | HOR [dB μ V] | VER | | | | | HOR [dB μ V/m] | VER | HOR [dB] | VER | | |
| 1. | 208.90 | BB | 43.0 | 36.3 | 16.4 | 27.8 | 2.9 | 5.9 | 40.4 | 33.7 | 43.5 | 3.1 | 9.8 | |
| 2. | 221.19 | BB | 45.2 | 35.9 | 16.5 | 27.8 | 3.0 | 5.9 | 42.8 | 33.5 | 46.0 | 3.2 | 12.5 | |
| 3. | 233.47 | BB | 45.7 | 38.1 | 16.5 | 27.7 | 3.1 | 5.9 | 43.5 | 35.9 | 46.0 | 2.5 | 10.1 | |
| 4. | 270.35 | BB | 45.6 | 35.8 | 17.7 | 27.6 | 3.3 | 5.8 | 44.8 | 35.0 | 46.0 | 1.2 | 11.0 | |
| 5. | 300.79 | BB | 39.8 | 37.1 | 14.2 | 27.6 | 3.5 | 5.8 | 35.7 | 33.0 | 46.0 | 10.3 | 13.0 | |
| 6. | 307.44 | BB | 39.8 | 38.2 | 14.3 | 27.6 | 3.5 | 5.8 | 35.8 | 34.2 | 46.0 | 10.2 | 11.8 | |
| 7. | 320.82 | BB | 38.9 | 39.9 | 14.4 | 27.6 | 3.6 | 5.8 | 35.1 | 36.1 | 46.0 | 10.9 | 9.9 | |
| 8. | 373.39 | BB | 40.4 | 40.8 | 15.1 | 27.6 | 4.0 | 5.8 | 37.7 | 38.1 | 46.0 | 8.3 | 7.9 | |
| 9. | 498.68 | BB | 39.4 | 38.2 | 18.1 | 27.5 | 4.8 | 5.9 | 40.7 | 39.5 | 46.0 | 5.3 | 6.5 | |
| 10. | 516.10 | BB | 33.0 | 34.0 | 18.2 | 27.5 | 4.9 | 5.9 | 34.5 | 35.5 | 46.0 | 11.5 | 10.5 | |

CALCULATION: READING + ANT. FACTOR + CABLE LOSS - AMP. GAIN + ATTEN.

All other spurious emissions were less than 20dB for the limit.
 ANT. TYPE: 30-300MHz Biconical, 300-1000MHz Logperiodic

DATA OF SUPURIOUS EMISSIONS(1GHz to 26GHz)

A-PEX INTERNATIONAL CO., LTD.
YOKOWA NO.3 OPEN SITE

COMPANY : SHARP CORPORATION
EQUIPMENT : Bluetooth CF Card
MODEL : DC2C1BZ0001
FCC ID : APYSJY0007
POWER : AC120V/60Hz
Mode : Transmitting(ch02:2402MHz)

REPORT NO : 22CE0007-YW
REGULATION : Fcc Part15SubpartC 247/209
TEST DISTANCE : 3m(1 to 10GHz)/1m(10 to 26GHz)
DATE : 2002 / 1 / 25
Temp. / Humi. : 22deg.C / 39%

ENGINEER : Naoki Sakamoto

PK DETECT(S/A : RBW 1MHz and VBW 1MHz)

| No. | FREQ [GHz] | S/A READING | | ANT Factor [dB] | AMP GAIN [dB] | CABLE LOSS [dB] | H.P.Filter [dB] | RESULT | | Limit PK [dBuV/m] | MARGIN | |
|-----|---------------|---------------|---------------|-----------------------|---------------------|-----------------------|--------------------|-----------------|-----------------|-------------------------|-------------|-------------|
| | | HOR [dBuV] | VER [dBuV] | | | | | HOR [dBuV/m] | VER [dBuV/m] | | HOR [dB] | VER [dB] |
| #1 | 1.30019 | 56.2 | 59.9 | 26.3 | 35.0 | 2.6 | 0.0 | 50.1 | 53.8 | 74.0 | 24.7 | 24.2 |
| #2 | 1.90268 | 52.1 | 53.7 | 29.7 | 34.5 | 3.3 | 0.0 | 50.6 | 52.2 | 74.0 | 23.4 | 21.8 |
| #3 | 2.39000 | 46.8 | 45.5 | 31.3 | 38.1 | 3.6 | 0.0 | 43.6 | 42.3 | 74.0 | 30.4 | 31.7 |
| 4 | 4.80400 | 41.9 | 41.7 | 35.4 | 34.5 | 8.0 | 1.1 | 51.9 | 51.7 | 74.0 | 22.1 | 22.3 |
| 5 | 7.20606 | 42.1 | 44.4 | 39.1 | 34.8 | 9.4 | 0.5 | 56.3 | 58.6 | 74.0 | 17.7 | 15.4 |
| 6 | 9.60799 | 43.0 | 43.4 | 39.2 | 35.0 | 11.0 | 0.5 | 58.7 | 59.1 | 74.0 | 15.3 | 14.9 |
| *7 | 12.01000 | 42.8 | 43.3 | 43.5 | 34.4 | 12.1 | 0.5 | 64.5 | 65.0 | 83.5 | 19.0 | 18.5 |
| *8 | 14.41200 | 43.1 | 42.9 | 42.2 | 33.1 | 13.5 | 0.6 | 66.3 | 66.1 | 83.5 | 17.2 | 17.4 |
| *9 | 16.81400 | 43.8 | 44.0 | 43.8 | 33.4 | 14.8 | 0.6 | 69.6 | 69.8 | 83.5 | 13.9 | 13.7 |
| *10 | 19.21600 | 43.9 | 43.9 | 38.0 | 33.4 | 15.8 | 1.0 | 65.3 | 65.3 | 83.5 | 18.2 | 18.2 |
| *11 | 21.61800 | 44.0 | 43.6 | 37.8 | 33.0 | 16.5 | 0.6 | 65.9 | 65.5 | 83.5 | 17.6 | 18.0 |
| *12 | 24.02000 | 44.6 | 44.1 | 39.6 | 33.2 | 15.8 | 0.7 | 67.5 | 67.0 | 83.5 | 16.0 | 16.5 |

AV DETECT(S/A : RBW 1MHz and VBW 10Hz)

| No. | FREQ [GHz] | S/A READING | | ANT Factor [dB] | AMP GAIN [dB] | CABLE LOSS [dB] | H.P.Filter [dB] | RESULT | | Limit AV [dBuV/m] | MARGIN | |
|-----|---------------|---------------|---------------|-----------------------|---------------------|-----------------------|--------------------|-----------------|-----------------|-------------------------|-------------|-------------|
| | | HOR [dBuV] | VER [dBuV] | | | | | HOR [dBuV/m] | VER [dBuV/m] | | HOR [dB] | VER [dB] |
| #1 | 1.30019 | 40.0 | 42.7 | 26.3 | 35.0 | 2.6 | 0.0 | 33.9 | 36.6 | 54.0 | 20.1 | 17.4 |
| #2 | 1.90268 | 37.5 | 53.6 | 29.7 | 34.5 | 3.3 | 0.0 | 36.0 | 52.1 | 54.0 | 18.0 | 1.9 |
| #3 | 2.39000 | 35.3 | 34.4 | 31.3 | 38.1 | 3.6 | 0.0 | 32.1 | 31.2 | 54.0 | 21.9 | 22.8 |
| 4 | 4.80400 | 31.8 | 31.0 | 35.4 | 34.5 | 8.0 | 1.1 | 41.8 | 41.0 | 54.0 | 12.2 | 13.0 |
| 5 | 7.20606 | 33.0 | 34.3 | 39.1 | 34.8 | 9.4 | 0.5 | 47.2 | 48.5 | 54.0 | 6.8 | 5.5 |
| 6 | 9.60799 | 32.5 | 33.2 | 39.2 | 35.0 | 11.0 | 0.5 | 48.2 | 48.9 | 54.0 | 5.8 | 5.1 |
| *7 | 12.01000 | 32.1 | 32.3 | 43.5 | 34.4 | 12.1 | 0.5 | 53.8 | 54.0 | 63.5 | 9.7 | 9.5 |
| *8 | 14.41200 | 31.9 | 32.1 | 42.2 | 33.1 | 13.5 | 0.6 | 55.1 | 55.3 | 63.5 | 8.4 | 8.2 |
| *9 | 16.81400 | 32.8 | 32.9 | 43.8 | 33.4 | 14.8 | 0.6 | 58.6 | 58.7 | 63.5 | 4.9 | 4.8 |
| *10 | 19.21600 | 32.5 | 32.6 | 38.0 | 33.4 | 15.8 | 1.0 | 53.9 | 54.0 | 63.5 | 9.6 | 9.5 |
| *11 | 21.61800 | 32.9 | 32.9 | 37.8 | 33.0 | 16.5 | 0.6 | 54.8 | 54.9 | 63.5 | 8.7 | 8.7 |
| *12 | 24.02000 | 33.6 | 33.3 | 39.6 | 33.2 | 15.8 | 0.7 | 56.5 | 56.2 | 63.5 | 7.1 | 7.4 |

Sample Calculation :

RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass Filter

Except for the above table : All other spurious emissions are more than 20dB below the limit.

* Test Distance 1m, 1m Limit=3m Limit(54dB)+20log(3/1)

The point don't use high pass filter.

DATA OF SUPURIOUS EMISSIONS(1GHz to 26GHz)

A-PEX INTERNATIONAL CO., LTD.
YOKOWA NO.3 OPEN SITE

COMPANY : SHARP CORPORATION
EQUIPMENT : Bluetooth CF Card
MODEL : DC2C1BZ0001
FCC ID : APYSJY0007
POWER : AC120V/60Hz
Mode : Transmitting(ch80:2480MHz)

REPORT NO : 22CE0007-YW
REGULATION : Fcc Part15SubpartC 247/209
TEST DISTANCE : 3m(1 to 10GHz)/1m(10 to 26GHz)
DATE : 2002 / 1 / 25
Temp. / Humi. : 22deg.C / 39%


ENGINEER : Naoki Sakamoto

PK DETECT(S/A : RBW 1MHz and VBW 1MHz)

| No. | FREQ [GHz] | S/A READING | | ANT Factor [dB] | AMP GAIN [dB] | CABLE LOSS [dB] | H.P.Filter [dB] | RESULT | | Limit PK [dBuV/m] | MARGIN | |
|-----|---------------|---------------|---------------|-----------------------|---------------------|-----------------------|--------------------|---------------|---------------|-------------------------|-------------|-------------|
| | | HOR [dBuV] | VER [dBuV] | | | | | HOR dBuV/m | VER dBuV/m | | HOR [dB] | VER [dB] |
| #1 | 1.29736 | 56.1 | 58.1 | 26.3 | 35.0 | 2.6 | 0.0 | 50.0 | 52.0 | 74.0 | 24.0 | 22.0 |
| #2 | 1.89636 | 51.4 | 53.1 | 29.7 | 34.5 | 3.3 | 0.0 | 49.9 | 51.6 | 74.0 | 24.1 | 22.4 |
| #3 | 2.48350 | 54.3 | 55.4 | 31.6 | 38.1 | 3.7 | 0.0 | 51.5 | 52.6 | 74.0 | 22.5 | 21.4 |
| 4 | 4.96000 | 40.4 | 40.7 | 35.8 | 34.5 | 7.9 | 1.1 | 50.7 | 51.0 | 74.0 | 23.3 | 23.0 |
| 5 | 7.44000 | 41.5 | 40.9 | 39.2 | 34.9 | 9.5 | 0.5 | 55.8 | 55.2 | 74.0 | 18.2 | 18.8 |
| 6 | 9.92000 | 41.5 | 41.3 | 39.2 | 34.9 | 11.0 | 0.5 | 57.3 | 57.1 | 74.0 | 16.7 | 16.9 |
| *7 | 12.39999 | 43.3 | 42.8 | 43.3 | 34.2 | 12.3 | 0.5 | 65.2 | 64.7 | 83.5 | 18.3 | 18.8 |
| *8 | 14.87999 | 44.2 | 43.0 | 42.9 | 33.0 | 13.7 | 0.5 | 68.3 | 67.1 | 83.5 | 15.2 | 16.4 |
| *9 | 17.35999 | 43.5 | 44.1 | 43.9 | 33.1 | 14.8 | 0.6 | 69.7 | 70.3 | 83.5 | 13.8 | 13.2 |
| *10 | 19.84000 | 43.8 | 43.7 | 38.0 | 33.4 | 16.0 | 1.6 | 66.0 | 65.9 | 83.5 | 17.5 | 17.6 |
| *11 | 22.32000 | 43.1 | 43.4 | 38.3 | 33.0 | 16.5 | 0.3 | 65.2 | 65.5 | 83.5 | 18.4 | 18.1 |
| *12 | 24.80000 | 43.6 | 44.2 | 39.4 | 33.2 | 15.4 | 1.0 | 66.2 | 66.8 | 83.5 | 17.3 | 16.7 |

AV DETECT(S/A : RBW 1MHz and VBW 10Hz)

| No. | FREQ [GHz] | S/A READING | | ANT Factor [dB] | AMP GAIN [dB] | CABLE LOSS [dB] | H.P.Filter [dB] | RESULT | | Limit AV [dBuV/m] | MARGIN | |
|-----|---------------|---------------|---------------|-----------------------|---------------------|-----------------------|--------------------|---------------|---------------|-------------------------|-------------|-------------|
| | | HOR [dBuV] | VER [dBuV] | | | | | HOR dBuV/m | VER dBuV/m | | HOR [dB] | VER [dB] |
| #1 | 1.29736 | 41.4 | 42.6 | 26.3 | 35.0 | 2.6 | 0.0 | 35.3 | 36.5 | 54.0 | 18.7 | 17.5 |
| #2 | 1.89636 | 39.2 | 39.7 | 29.7 | 34.5 | 3.3 | 0.0 | 37.7 | 38.2 | 54.0 | 16.3 | 15.8 |
| #3 | 2.48350 | 53.8 | 54.9 | 31.6 | 38.1 | 3.7 | 0.0 | 51.0 | 52.1 | 54.0 | 3.0 | 1.9 |
| 4 | 4.96000 | 31.1 | 31.3 | 35.8 | 34.5 | 7.9 | 1.1 | 41.4 | 41.6 | 54.0 | 12.6 | 12.4 |
| 5 | 7.44000 | 31.4 | 30.7 | 39.2 | 34.9 | 9.5 | 0.5 | 45.7 | 45.0 | 54.0 | 8.3 | 9.0 |
| 6 | 9.92000 | 29.8 | 30.5 | 39.2 | 34.9 | 11.0 | 0.5 | 45.6 | 46.3 | 54.0 | 8.4 | 7.7 |
| *7 | 12.39999 | 31.8 | 31.7 | 43.3 | 34.2 | 12.3 | 0.5 | 53.7 | 53.6 | 63.5 | 9.8 | 9.9 |
| *8 | 14.87999 | 32.0 | 32.2 | 42.9 | 33.0 | 13.7 | 0.5 | 56.1 | 56.3 | 63.5 | 7.4 | 7.2 |
| *9 | 17.35999 | 32.6 | 32.9 | 43.9 | 33.1 | 14.8 | 0.6 | 58.8 | 59.1 | 63.5 | 4.7 | 4.4 |
| *10 | 19.84000 | 32.6 | 32.9 | 38.0 | 33.4 | 16.0 | 1.6 | 54.8 | 55.1 | 63.5 | 8.7 | 8.5 |
| *11 | 22.32000 | 32.5 | 32.8 | 38.3 | 33.0 | 16.5 | 0.3 | 54.6 | 54.9 | 63.5 | 9.0 | 8.7 |
| *12 | 24.80000 | 33.7 | 33.8 | 39.4 | 33.2 | 15.4 | 1.0 | 56.3 | 56.4 | 63.5 | 7.2 | 7.1 |

Sample Calculation :

RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS

Except for the above table : All other spurious emissions are more than 20dB below the limit.

* Test Distance 1m, 1m Limit=3m Limit(54dB)+20log(3/1)

The point don't use high pass filter.

DATA OF SUPURIOUS EMISSIONS(1GHz to 26GHz)

A-PEX INTERNATIONAL CO., LTD.
YOKOWA NO.3 OPEN SITE

COMPANY : SHARP CORPORATION
EQUIPMENT : Bluetooth CF Card
MODEL : DC2C1BZ0001
FCC ID : APYSJY0007
POWER : AC120V/60Hz
Mode : Receiving

REPORT NO : 22CE0007-YW
REGULATION : Fcc Part15SubpartC 247/209
TEST DISTANCE : 3m
DATE : 2002 / 1 / 25
Temp. / Humi. : 22deg.C / 39%


ENGINEER : Naoki Sakamoto

PK DETECT(S/A : RBW 1MHz and VBW 1MHz)

| No. | FREQ [GHz] | S/A READING | | ANT Factor [dB] | AMP GAIN [dB] | CABLE LOSS [dB] | RESULT | | Limit PK [dBuV/m] | MARGIN | |
|-----|---------------|---------------|---------------|-----------------------|---------------------|-----------------------|-----------------|-----------------|-------------------------|-------------|-------------|
| | | HOR [dBuV] | VER [dBuV] | | | | HOR [dBuV/m] | VER [dBuV/m] | | HOR [dB] | VER [dB] |
| 1 | 1.29736 | 55.5 | 58.9 | 26.3 | 35.0 | 2.6 | 49.4 | 52.8 | 74.0 | 24.6 | 21.2 |
| 2 | 1.89636 | 52.2 | 53.5 | 29.7 | 34.5 | 3.3 | 50.7 | 52.0 | 74.0 | 23.3 | 22.0 |

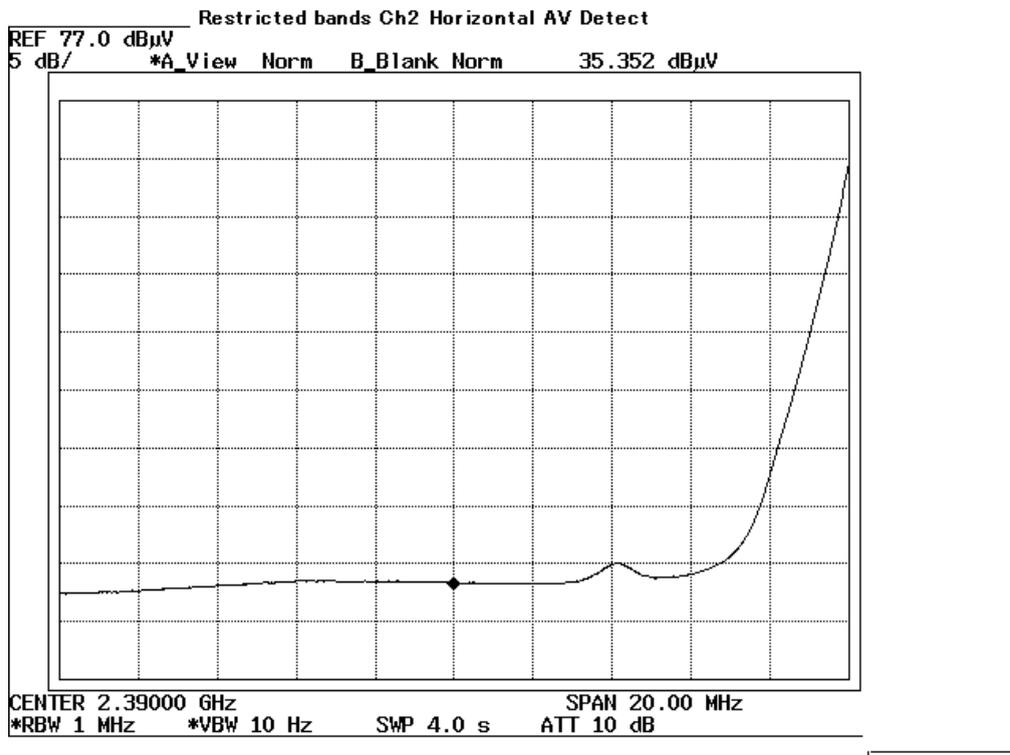
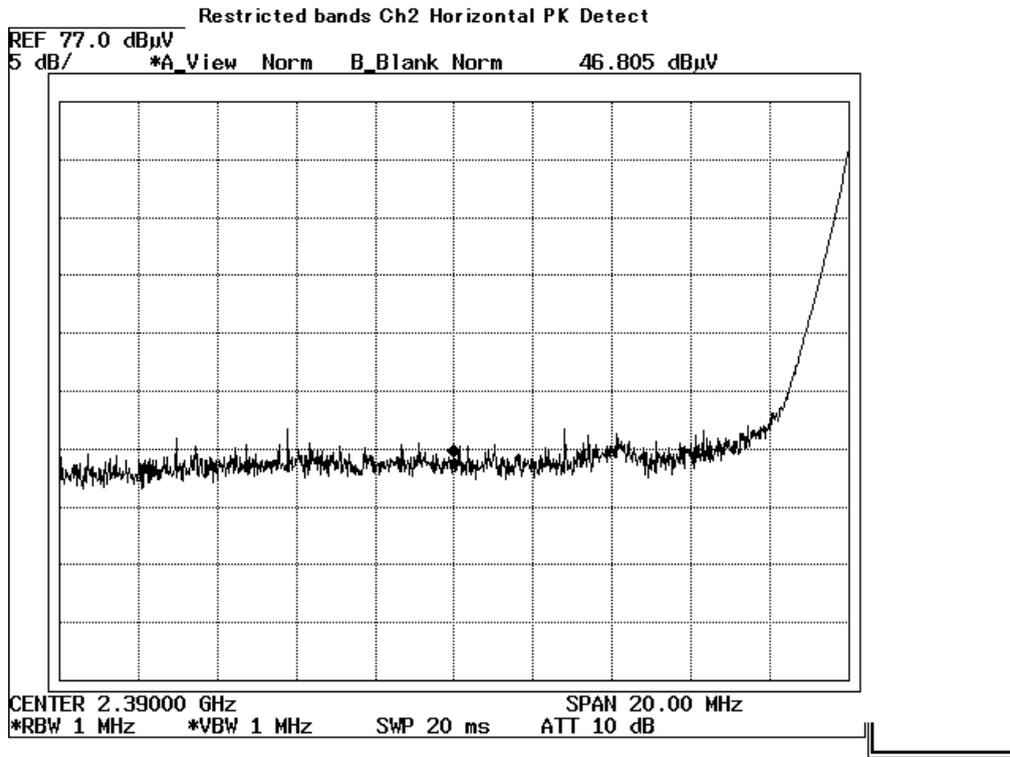
AV DETECT(S/A : RBW 1MHz and VBW 10Hz)

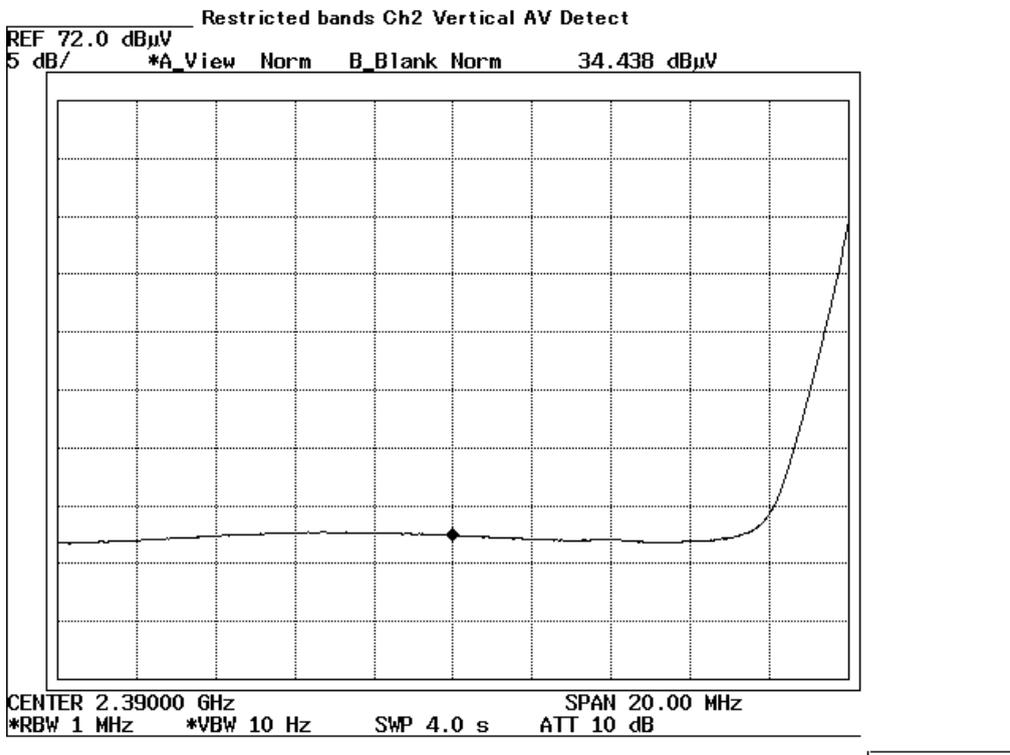
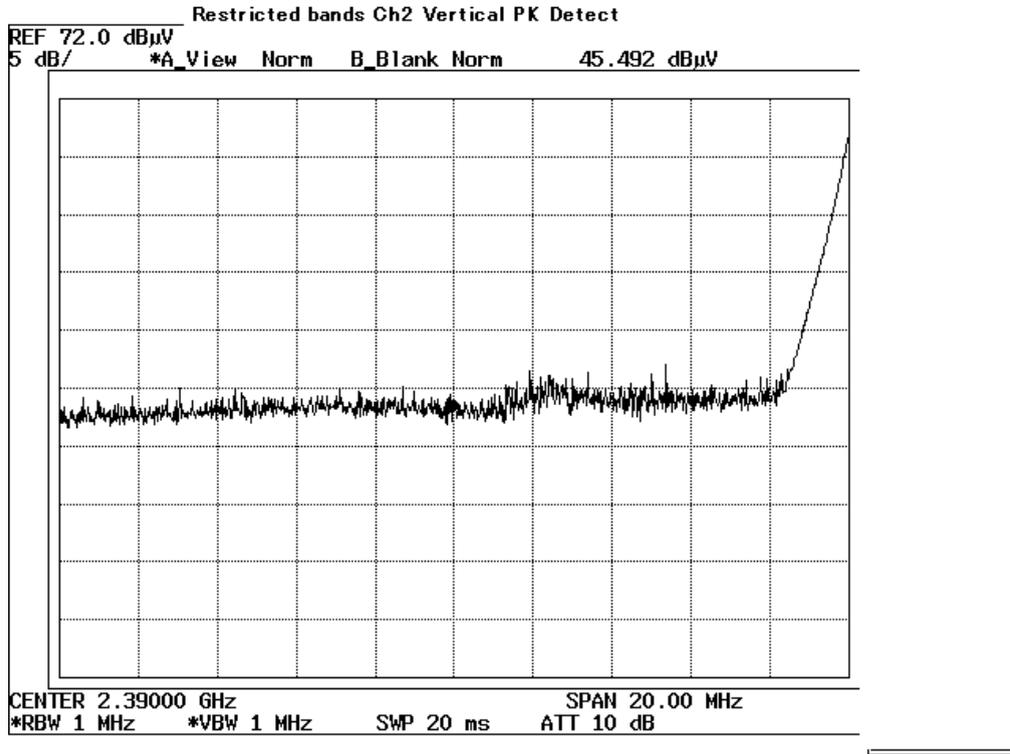
| No. | FREQ [GHz] | S/A READING | | ANT Factor [dB] | AMP GAIN [dB] | CABLE LOSS [dB] | RESULT | | Limit AV [dBuV/m] | MARGIN | |
|-----|---------------|---------------|---------------|-----------------------|---------------------|-----------------------|-----------------|-----------------|-------------------------|-------------|-------------|
| | | HOR [dBuV] | VER [dBuV] | | | | HOR [dBuV/m] | VER [dBuV/m] | | HOR [dB] | VER [dB] |
| 1 | 1.29736 | 41.0 | 43.1 | 26.3 | 35.0 | 2.6 | 34.9 | 37.0 | 54.0 | 19.1 | 17.0 |
| 2 | 1.89636 | 39.2 | 39.6 | 29.7 | 34.5 | 3.3 | 37.7 | 38.1 | 54.0 | 16.3 | 15.9 |

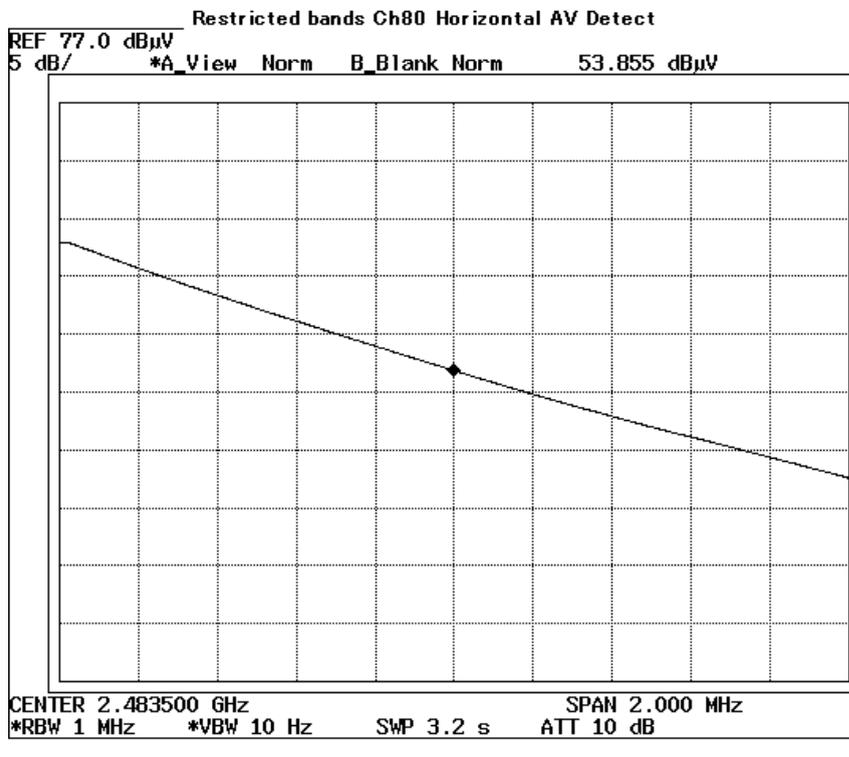
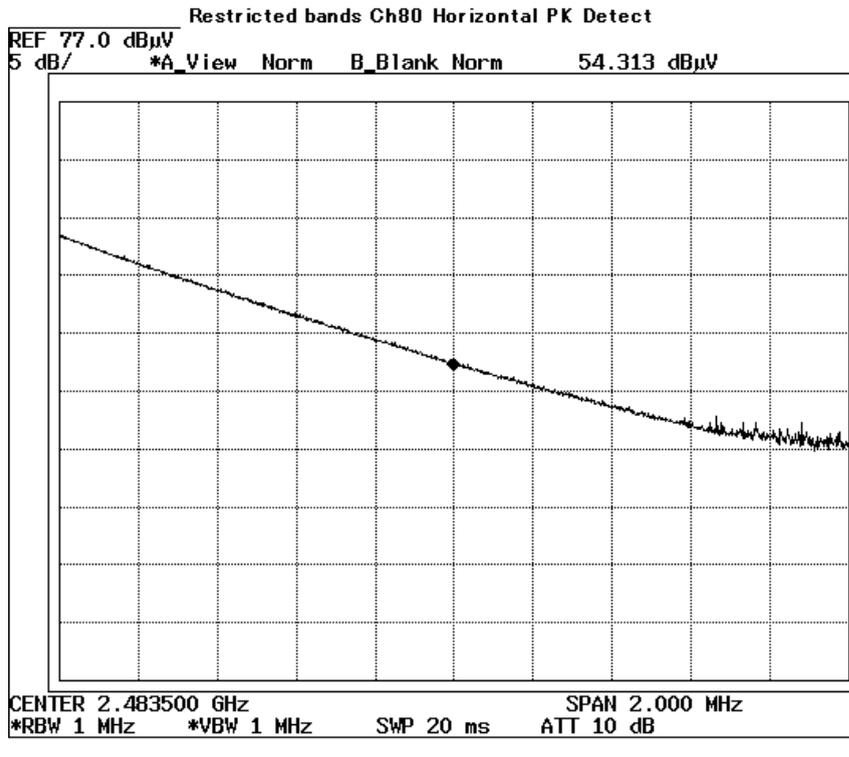
Sample Calculation :

RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS.

Except for the above table : All other spurious emissions are more than 20dB below the limit.

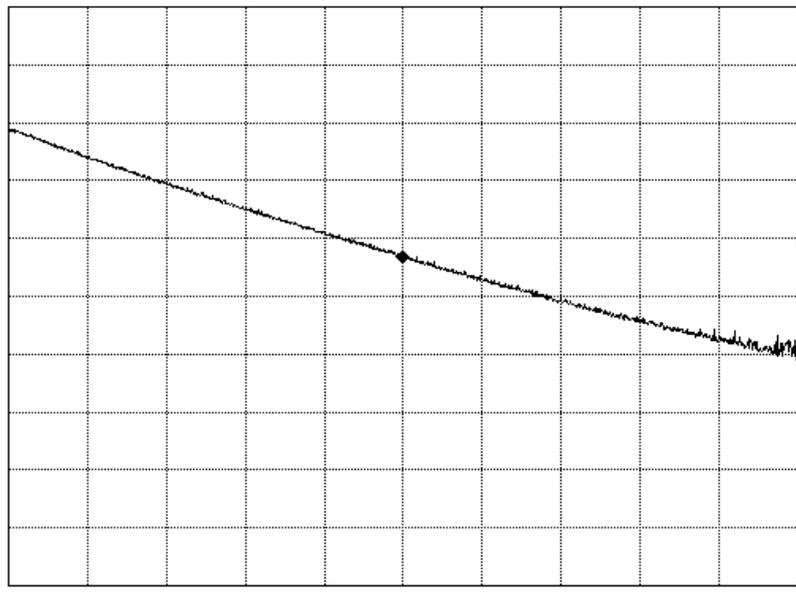






Restricted bands Ch80 Vertical PK Detect

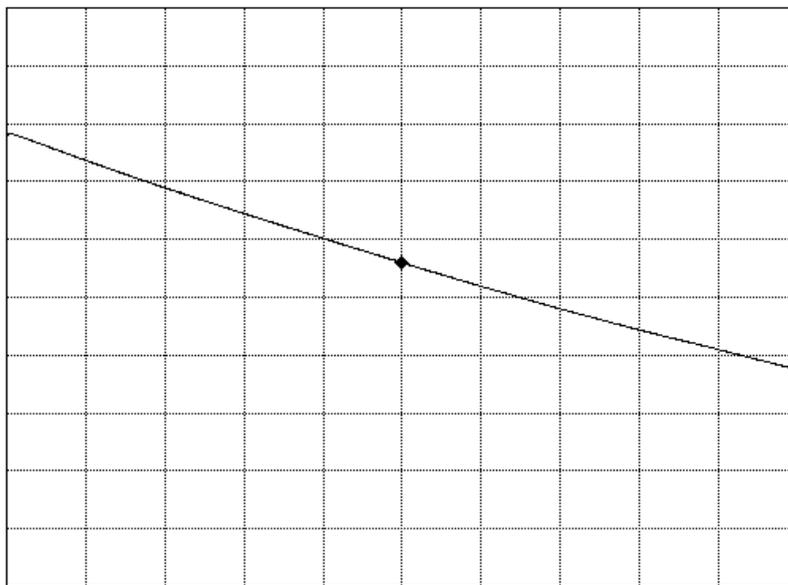
REF 77.0 dB μ V
5 dB/ *A_View Norm B_Blank Norm 55.449 dB μ V



CENTER 2.483500 GHz SPAN 2.000 MHz
*RBW 1 MHz *VBW 1 MHz SWP 20 ms ATT 10 dB

Restricted bands Ch80 Vertical AV Detected

REF 77.0 dB μ V
5 dB/ *A_View Norm B_Blank Norm 54.973 dB μ V



CENTER 2.483500 GHz SPAN 2.000 MHz
*RBW 1 MHz *VBW 10 Hz SWP 3.2 s ATT 10 dB