

EMC EMISSION -TEST REPORT

JQA APPLICATION No. : KL8080582

Model/Type No. : IC-706MK II G

Name of Product : HP/VHF/UHF Transceiver

FCC ID : AFJ IC-706MK2G

Applicant : ICOM Incorporated

Address : 1-6-19, Kuratsukuri, Kami, Hirano-ku, Osaka, Japan

Manufacturer : ICOM Incorporated

Address : 1-6-19, Kuratsukuri, Kami, Hirano-ku, Osaka, Japan

Final Judgment : Passed

TEST RESULTS IN THIS REPORT are obtained in use of equipment that is traceable to Electro-technical Lab. of MITI Japan and Communications Research Lab. of PTT Japan.

THE TEST RESULTS only responds to the test sample. This test report shall not be reproduced except in full.

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TEST REGULATION

FCC Rules and Regulations Part 15 Subpart A and B (April 17, 1997)

- 0 - Class A Digital Device
- 0 - Class B Digital Device
- - Scanning Receiver (employing superheterodyne techniques)

Test procedure:

Conducted emission, radiated emission and antenna conducted power test were performed according to the procedures in ANSI C63.4-1992.

GENERAL INFORMATION

Test facility:

- 1) Test Facility located at Kita-Kansai : 1st and 2nd Open Sites (3 m Site)
Test Facility located at Kameoka Open Site (3, 10 and 30 m, on common plane)
FCC filing No. : **31040/SIT 1300F2**
- 2) KITA-KANSAI TESTING CENTER is recognized under the National Voluntary Laboratory Accreditation Program for satisfactory compliance established in Title 15, Part 285 Code of Federal Regulations.
NAVLAP Lab Code: 200191-o
- 3) Average Measurement Method
FCC filing No. : 950523A **1300F2**

Description of the Equipment Under Test (EUT):

- 1) Name : HF/VHF/UHF Transceiver
- 2) Model/Type No. : IC-706MK II G
- 3) Product Type : Pre-Production (S/N 00008)
- 4) Category : Scanning Receiver
- 5) EUT Authorization : ○ - Verification ● - Certification 0 - D.o.C.
- 6) Highest frequency used/generated : 539.011500 MHz
- 7) Power Rating : DC 13.8 V (DC Power Supply IC-5P : AC120V 60Hz)

Definitions for symbols used in this test report:

- - Black box indicates that the listed condition, standard or equipment is applicable for this Report.
- 0 - Blank box indicates that the listed condition, standard or equipment is not applicable for this Report.

TEST CONDITIONS

The **measurement of the Conducted Emission (Disturbance Voltage)**

was performed in the following test site.

Test location:

KITA-KANSAI Testing Center

7-7, Ishimaru, 1-Chome, Minoh-Shi, Osaka, 562-0027, Japan

● - Shielded room

KAMEOKA EMC Branch

9-1, Ozaki, Inukanno, Nishibetsuin-Cho, Kameoka-Shi, Kyoto, 621-0126, Japan

0 - Shielded room

0 - On metal plane of open site

Used test instruments and sites:

| Model No. | Device I.D No. | Last Cal. Date | Cal. Interval |
|--------------|----------------|----------------|---------------|
| 0 - ESH 3 | A - 1 | | |
| ● - ESH 2 | A - 2 | December, 1998 | 1 Year |
| 0 - ESH 2 | A - 3 | | |
| ● - KNW-407 | D - 6 | February, 1998 | 1 Year |
| 0 - KNW-408 | D - 11 | | |
| 0 - KNW-242 | D - 7 | | |
| 0 - ESH3-Z5 | D - 12 | | |
| 0 - KNW-341C | D - 13 | | |
| 0 - KNW-408 | D - 14 | | |
| 0 - KNW-244C | D - 77 | | |
| 0 - KNW-408 | D - 78 | | |
| 0 - ESH2-Z5 | D - 10 | | |
| 0 - ESH2-Z3 | D - 17 | | |
| 0 - 8568B | A - 10 | | |
| 0 - 8566B | A - 13 | | |
| 0 - 8593A | A - 15 | | |
| ● - Cable | H - 8 | February, 1998 | 1 Year |

Environmental conditions:

Temperature: 18 °C **Humidity:** 34 %

The measurement of the Radiated Emission (Electric Field)

was performed in horizontal and vertical polarization, in the frequency range of 30 MHz - 1000 MHz, in the following test site.

Test location:

KITA-KANSAI Testing Center

7-7, Ishimaru, 1-Chome, Minoh-Shi, Osaka, 562-0027, Japan

0 - 1st site (3 meters)

● - 2nd site (3 meters)

KAMEOKA EMC Branch

9-1, Ozaki, Inukanno, Nishibetsuin-Cho, Kameoka-Shi, Kyoto, 621-0126, Japan

0 - 3 meters

0 - 10 meters

Validation of Site Attenuation:

1) Last Confirmed Date: November 28, 1998

2) Interval : 1 Year

Used test instruments:

| Model No. | Device I.D No. | Last Cal. Date | Cal. | Interval |
|----------------|----------------|----------------|--------|----------|
| 0 - ESV/ESV-Z3 | A - 7 / A - 17 | December, 1998 | 1 Year | |
| ● - ESV/ESV-Z3 | A - 6 / A - 18 | | | |
| 0 - ESV/ESV-Z3 | A - 5 / A - 16 | | | |
| 0 - ESV/ESV-Z3 | A - 4 / A - 20 | | | |
| 0 - ESV/ESV-Z3 | A - 8 / A - 19 | | | |
| 0 - KBA-511A | c - 12 | November, 1998 | 1 Year | |
| 0 - KBA-611 | c - 22 | | | |
| ● - KBA-511A | c - 13 | | | |
| ● - KBA-611 | c - 19 | | | |
| 0 - KBA-511A | c - 11 | | | |
| 0 - KBA-611 | c - 21 | | | |
| ● - Cable | H - 6 | November, 1998 | 1 Year | |

Environmental conditions:

Temperature : 15 °C Humidity: 45 %

The measurement of the Radiated Emission (Electric Field)

was performed in horizontal and vertical polarization, in the frequency range of 1000 MHz ~ 1080 MHz, in the following test site.

Test location:

KITA-KANSAI Testing Center

7-7, Ishimaru, 1-Chome, Minoh-Shi, Osaka, 562-0027, Japan

0 - 1st site (3 meters)

● - 2nd site (3 meters)

KAMEOKA EMC Branch

9-1, Ozaki, Inukanno, Nishibetsuin-Cho, Kameoka-Shi, Kyoto, 621-0126, Japan

0 - 3 meters

0 - 10 meters

Used test instruments:

| Model No. | Device I.D No. | Last Cal. Date | Cal. Interval |
|------------------|----------------|----------------|---------------|
| ● - 8566B | A - 13 | October, 1998 | 1 Year |
| 0 - 8593A | A - 15 | | |
| 0 - ESV | A - 5 | | |
| ● - 4T-10 | D - 73 | May, 1998 | 1 Year |
| ● - 4T-10 | D - 74 | May, 1998 | 1 Year |
| ● - WJ-6611-513 | A - 23 | May, 1998 | 1 Year |
| 0 - WJ-6882-824 | A - 21 | | |
| 0 - DBL-0618N515 | A - 33 | | |
| ● - 91888-2 | c - 4 1 - 1 | May, 1998 | 1 Year |
| 0 - 91889-2 | c - 41 - 2 | | |
| 0 - 94613-1 | c - 41 - 3 | | |
| 0 - 91891-2 | c - 41 - 4 | | |
| 0 - 94614-1 | c - 41 - 5 | | |
| 0 - 3160-09 | C - 48 | | |
| 0 - TRA-603D | D - 24 | | |
| 0 - 8494H/8595H | D - 76 | | |
| 0 - MZ5010C | D - 81 | | |
| ● - Cable | c - 4 0 - 1 1 | May, 1998 | 1 Year |
| ● - Cable | c - 40 - 12 | May, 1998 | 1 Year |

Setting of the spectrum analyzer:

RES B.W : 1 MHz
SCALE : LINEAR

Video B.W : 1 MHz
Sweep Time: 20 msec

Environmental conditions:

Temperature : 15 °C Humidity: 45 %

The measurement of the Antenna Conducted Power

was performed in the frequency range of 30 MHz - 1080 MHz, in the following test site.

Test location:

KITA-KANSAI Testing Center

7-7, Ishimaru, 1-Chome, Minoh-Shi, Osaka, 562-0027, Japan

● - Shielded Room

0 - Anechoic Chamber

KAMEOKA EMC Branch

9-1, Ozaki, Inukanno, Nishibetsuin-Cho, Kameoka-Shi, Kyoto, 621-0126, Japan

0 - Shielded Room

Used test instruments:

| Model No. | Device I.D No. | Last Cal. Date | Cal. Interval |
|---------------|----------------|----------------|---------------|
| ● - ESV | A - 5 | December, 1998 | 1 Year |
| 0 - 8568B | A - 10 | | |
| ● - 8566B | A - 13 | October, 1998 | 1 Year |
| 0 - 8593A | A - 15 | | |
| 0 - LSG-221 | B - 15 | | |
| 0 - 216/1 | B - 16 | | |
| 0 - MP614A | D - 56 | | |
| 0 - 12B50/75 | D - 55 | | |
| 0 - 12N50/75B | D - 72 | | |
| ● - 2-10 | D - 40 | June, 1998 | 1 Year |
| 0 - 1506A | D - 21 | | |
| ● - Cable | c - 41 - 9 | June, 1998 | 1 Year |

Environmental conditions:

Temperature : 21 °C Humidity: 34 %

CONFIGURATION OF EUT

The Equipment Under Test (EUT) consists of:

| Description | Applicant (Manufacturer) | Model No. (Serial No.) | FCC ID |
|---|--|----------------------------|----------------|
| HF/VHF/UHF Transceiver (Base and Display) | ICOM Incorporated (ICOM Incorporated) | IC-706MK II G (00008) | AFJ IC-706MK2G |

The measurement **was** carried out with the following equipment connected:

| Description | Grantee/Distributor | Model No. (Serial No.) | FCC ID |
|------------------|----------------------------|---------------------------|--------|
| DC Power Supply | ICOM Incorporated | IC-5P (1793) | N/A |
| Antenna Tuner 1 | ICOM Incorporated | AT-180 (23) | N/A |
| Antenna Tuner 2 | ICOM Incorporated | AH-4 (0008) | N/A |
| Telereader | TASCO ELECTRONIC CO., LTD. | TNC-291G (3911179) | N / A |
| Telegraph Key | HI -MOUND ELECTRO CO., | HK-706 (--) | N/A |
| External Speaker | ICOM Incorporated | SP-12 (--) | N/A |
| Headphones | P I ONEER | SE-M300 (--) | N/A |
| Microphone | ICOM Incorporated | I-m-103 (--) | N/A |

Type of Interference Cable(s) and the AC Power Cord used with the **EUT**:

| No. | Cable | Shielded | Ferrite Core | Length |
|-----|---|----------|--------------|--------|
| 1 | EUT(Base) "DATA" / Telereader | YES | NO | 1.5m |
| 2 | EUT(Base) "ACC" / Antenna Tuner 1 | YES | NO | 1.0m |
| 3 | EUT(Base) "MIC" / Microphone | NO | NO | 0.4m |
| 4 | EUT(Base) "KEY" / Telegraph Key | NO | NO | 0.7m |
| 5 | EUT(Base) "EXT SP" / External Speaker | NO | NO | 2.0m |
| 6 | EUT(Base) "Tuner" / Antenna Tuner 2 | NO | NO | 4.8m |
| 7 | EUT(Base) "RTTY" / No termination | NO | NO | 1.9m |
| 8 | EUT(Base) "REMOTE" / No termination | NO | NO | 0.8m |
| 9 | EUT(Base) / EUT(Display) | NO | NO | 3.6m |
| 10 | EUT(Display) "PHONES" / Headphones | NO | NO | 2.8m |
| 11 | EUT(Display) "MIC" / No termination | -- | -- | -- |
| 12 | DC Power Cord (EUT / DC Power Supply) | NO | NO | 3.0m |
| 13 | DC Power Cord (Telereader / DC Power Supply) | NO | NO | 1.5m |
| 14 | AC Power Cord (DC Power Supply) with 2-pin plug | NO | NO | 1.5m |
| 15 | Earth Cord (EUT) | NO | NO | 1.9m |
| 16 | Earth Cord (DC Power Supply) | NO | NO | 1.4m |

Operation - mode of the EUT:

The EUT has some receiving modes shown as follows:

1. Double-Superheterodyne techniques

AM : 1st IF / 69.0115 MHz

2nd IF / 9.0115 MHz

WFM : 1st IF / 70.7000 MHz

2nd IF / 10.7000 MHz

2. Triple Superheterodyne techniques

FM : 1st IF / 69.0115 MHz

2nd IF / 9.0115 MHz

3rd IF / 0.4550 MHz

The test was performed "FM receiving (Triple-Superheterodyne techniques)" mode.

Test system:

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The EUT consists of a Base Unit and a Display Unit.

The Base Unit has an ANT 1 port, an ANT 2 port, a DATA port, an ACC port, a MIC port, a KEY port, an EXT SP port, an RTTY port, a REMOTE port, a TUNER port and a DC POWER port.

The Display Unit has a MIC port and a PHONES port.

Special accessories:

None

The used (generated) frequencies in the EUT:

Intermediate Frequency AM : 1st IF / 69.0115 MHz

2nd IF / 9.0115 MHz

WFM : 1st IF / 70.7000 MHz

2nd IF / 10.7000 MHz

FM : 1st IF / 69.0115 MHz

2nd IF / 9.0115 MHz

3rd IF / 0.4550 MHz

Other Clock : 39.98 MHz, 15.99 MHz, 14.7456 MHz, 9.8304 MHz, 0.8 MHz

Local Frequency and VCO Frequency : Refer to Page 11

Detailed receiver portion:

1) Relation between Receiving Frequency and Local Frequency

| No. | Receiving Frequency [MHz] | 1st Local Frequency [MHz] | VCO Frequency [MHz] |
|-----|------------------------------|------------------------------|---------------------------|
| 1 | 0.030000 - 29.999999 | 69.041500 - 99.011499 | 69.0115000 - 99.0114990 |
| 2 | 30.000000 - 59.999999 | 99.011500 - 129.011499 | 99.0115000 - 129.0114990 |
| 3 | 60.000000 - 128.999999 | 129.011500 - 198.011499 | 64.5057500 - 99.0057495 |
| 4 | 129.000000 - 143.999999 | 198.011500 - 213.011499 | 99.0057500 - 106.5057495 |
| 5 | 144.000000 - 148.000000 | 213.011500 - 217.011500 | 106.5057500 - 108.5057500 |
| 6 | 148.000001 - 199.999999 | 217.011501 - 269.011499 | 108.5057505 - 134.5057495 |
| 7 | 400.000000 - 470.000000 | 469.011500 - 539.011500 | 234.5057500 - 269.5057500 |

2nd Local Frequency : 60.000000 MHz

3rd Local Frequency : 9.466500 MHz

- 2) Respective Intermediate Frequency :
1st IF / 69.0115 MHz (Upper)
2nd IF / 9.0115 MHz (Lower)
3rd IF / 0.4550 MHz (Upper)
- 3) The highest Local Frequency : 539.011500 MHz
- 4) Type of Antenna Terminal : **M-Type** connector / 50 Ω (Unbalanced)
- 5) Receiving mode : FM

EUT Modification

● - No modifications were conducted by JQA to achieve compliance to applied levels.

0 - To achieve compliance to applied levels, the following change(s) were made by JQA during the compliance test.

The modification(s) will be implemented in all production models of this equipment.

Applicant : _____ Date :

Typed Name : _____ Position :

Responsible Party

Responsible Party of Test Item(Product) _____

Responsible party :

Contact Person :

Signatory

TEST RESULTS

Conducted Emission 450 kHz - 30 MHz

| | | |
|------------------------------------|---|----------------------------------|
| The requirements are | <input checked="" type="radio"/> - KEPT | <input type="radio"/> - NOT KEPT |
| Min. limit margin | <u>+37.9</u> dB | at <u>M0.45H</u> z |
| Max. limit exceeding | _____ dB | at _____ MHz |
| Uncertainty of measurement results | <u>dB(2σ)</u> | <u>dB(2σ)</u> |

Remarks : _____

Radiated Emission (Electric Field) 30 MHz - 1080 MHz

| | | |
|---|---|---|
| The requirements are | <input checked="" type="radio"/> - KEPT | <input type="radio"/> - NOT KEPT |
| Min. limit margin | <u>+13.2</u> dB | at <u>469.0115</u> MHz (Tuning Frequency 400.0000 MHz) |
| Max. limit exceeding | _____ dB | at _____ MHz |
| Uncertainty of measurement results (below 1000 MHz) | <u>dF(2σ)</u> | <u>dB(2σ)</u> |
| Uncertainty of measurement results (above 1000 MHz) | <u>dF(2σ)</u> | <u>dB(2σ)</u> |

Remarks : _____

Antenna Conducted Power 30 MHz - 1080 MHz

| | | |
|------------------------------------|---|---|
| The requirements are | <input checked="" type="radio"/> - KEPT | <input type="radio"/> - NOT KEPT |
| Min. limit margin | <u>+17.0</u> dB | at <u>504.0115</u> MHz (Tuning Frequency 435.0000 MHz) |
| Max. limit exceeding | a _____ dB | t _____ MHz |
| Uncertainty of measurement results | <u>dB(2σ)</u> | <u>dB(2σ)</u> |

Remarks : _____

SUMMARY

GENERAL REMARKS :

The EUT was tested according to the requirements of FCC Rules and Regulations Part 15 Subpart A and B (April 17, 1997) under the test configuration, as shown in page 15.

The conclusion for the test items of which are required by the applied regulation is indicated under the final judgement.

FINAL JUDGEMENT :

The "as received" sample;

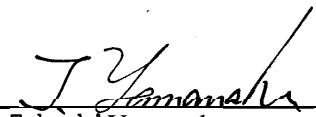
- - fulfill the test requirements of the regulation mentioned on page 3.
- 0 - fulfill the test requirements of the regulation mentioned on page 3, but with certain qualifications.
- 0 - doesn't fulfill the test regulation mentioned on page 3.

Begin of testing : January 5, 1999


End of testing : January 6, 1999

- JAPAN QUALITY ASSURANCE ORGANIZATION -

Approved Signatory :



Takashi Yamanaka
Manager
EMC Div.
JQA KITA-KANSAI Testing Center



Akio Hosoda
Project Manager
EMC Div.
JQA KITA-KANSAI Testing Center

Mains terminal Disturbance Measurement
 Scanning Receiver

Tuning Frequency : 7.094 MHz (AM)
 145.020 MHz (FM)
 432.000 MHz (FM)

Test Date: January 6, 1999
 Temp. : 3 18 °C ; Humi. : %

| Frequency [MHz] | Correction Factor [dB] | Meter Readings dB(μV) | | | | Limits dB(μV) | Results dB(μV) | | Margin [dB] | Remarks (Note 2) |
|--------------------|------------------------------|--------------------------|-------|--------|-------|------------------|-------------------|----|----------------|---------------------|
| | | VA-QE' | VA-AV | VB-QP | VB-AV | | QP | AV | | |
| 0.45 | 0.1 | < 10.0 | - | 10.0 | - | 48.0 | 10.1 | - | +37.9 | A |
| 0.65 | 0.1 | < 10.0 | - | < 10.0 | - | 48.0 | < 10.1 | - | >+37.9 | A |
| 1.45 | 0.2 | < 10.0 | - | < 10.0 | - | 48.0 | < 10.2 | - | >+37.8 | A |
| 2.00 | 0.2 | < 10.0 | - | < 10.0 | - | 48.0 | < 10.2 | - | >+37.8 | A |
| 3.50 | 0.3 | < 10.0 | - | < 10.0 | - | 48.0 | < 10.3 | - | >+37.7 | A |
| 4.43 | 0.3 | < 10.0 | - | < 10.0 | - | 48.0 | < 10.3 | - | H37.7 | A |
| 9.83 | 0.5 | < 10.0 | - | < 10.0 | - | 48.0 | < 10.5 | - | >+37.5 | A |
| 10.50 | 0.5 | < 10.0 | - | < 10.0 | - | 48.0 | < 10.5 | - | >+37.5 | A |
| 19.66 | 0.8 | < 10.0 | - | < 10.0 | - | 48.0 | < 10.8 | - | >+37.2 | A |
| 29.49 | 0.9 | < 10.0 | - | < 10.0 | - | 48.0 | < 10.9 | - | >+37.1 | A |

Sample of calculated result at 0.45 MHz, as the Minimum Margin point:

Correction Factor = 0.1 dB

+) Meter Reading = 10.0 dB(μV)

Result = 10.1 dB(μV)

Minimum Margin : 48.0 - 10.1 = 37.9(dB)

The point shown on "____" is the Minimum Margin Point.

Note 1:

1. The correction factors includes the LISN insertion loss and the cable loss.

Remarks :

| Note 2 | Detector Function | IF Bandwidth |
|--------|-------------------|--------------|
| | CISPR QP | 9 kHz |
| | Average | 10 kHz |

Tester Signature : A. Hosoda

Type Name : Akio Hosoda

Electromagnetic Radiation Disturbance Measurement
 Scanning Receiver

Test Date: January 5, 1999
 Temp. : 15 °C ; Humi. : 45 %

Tuning range : 0.030000 MHz - 29.999999 MHz

| Frequency to which tuned [MHz] | Measured Frequency [MHz] | Correction Factor [dB(1/m)] | Meter Readings [dB(μV/m)] | Polarity | Limits [dB(μV/m)] | Results [dB(μV/m)] | Remarks (Note 2) |
|--------------------------------|--------------------------|-----------------------------|---------------------------|----------|-------------------|--------------------|------------------|
| 0.030000 | 69.0415000 | 6.8 | 2.0 | V | 40.0 | 8.8 | A |
| | 138.0830000 | 13.4 | < 0.0 | | < 13.4 | A | |
| | 207.1245000 | 17.3 | < 0.0 | | < 17.3 | A | |
| | 276.1660000 | 20.1 | < 0.0 | | < 20.1 | A | |
| | 345.2075000 | 22.4 | < 0.0 | | < 22.4 | A | |
| | 414.2490000 | 24.4 | < 0.0 | | < 24.4 | A | |
| | 483.2905000 | 26.1 | < 0.0 | | < 26.1 | A | |
| | 552.3320000 | 27.5 | < 0.0 | | < 27.5 | A | |
| | 621.3735000 | 28.9 | < 0.0 | | < 28.9 | A | |
| | 690.4150000 | 30.1 | < 0.0 | | < 30.1 | A | |
| | 759.4565000 | 31.2 | < 0.0 | | < 31.2 | A | |
| | 828.4980000 | 32.2 | < 0.0 | | < 32.2 | A | |
| | 897.5395000 | 33.3 | < 0.0 | | < 33.3 | A | |
| | 966.5810000 | 34.4 | < 0.0 | | < 34.4 | A | |
| 1035.6225000 | -5.4 | <30.0 | < 24.6 | B | | | |
| 15.000000 | 84.0115000 | 8.7 | 4.0 | H | 40.0 | 12.7 | A |
| | 168.0230000 | 15.2 | < 0.0 | | < 15.2 | A | |
| | 252.0345000 | 19.2 | < 0.0 | | < 19.2 | A | |
| | 336.0460000 | 22.2 | < 0.0 | | < 22.2 | A | |
| | 420.0575000 | 24.6 | < 0.0 | | < 24.6 | A | |
| | 504.0690000 | 26.6 | < 0.0 | | < 26.6 | A | |
| | 588.0805000 | 28.2 | < 0.0 | | < 28.2 | A | |
| | 672.0920000 | 29.7 | < 0.0 | | < 29.7 | A | |
| | 756.1035000 | 31.1 | < 0.0 | | < 31.1 | A | |
| | 840.1150000 | 32.4 | < 0.0 | | < 32.4 | A | |
| | 924.1265000 | 33.7 | < 0.0 | | < 33.7 | A | |
| | 1008.1380000 | -5.2 | <30.0 | | < 24.8 | B | |
| 29.999999 | 99.0114990 | 10.2 | 4.0 | H | 43.5 | 14.2 | A |
| | 198.0229980 | 16.8 | < 0.0 | | < 16.8 | A | |
| | 297.0344970 | 20.9 | < 0.0 | | < 20.9 | A | |
| | 396.0459960 | 24.0 | < 0.0 | | < 24.0 | A | |
| | 495.0574950 | 26.4 | < 0.0 | | < 26.4 | A | |
| | 594.0689940 | 28.3 | < 0.0 | | < 28.3 | A | |
| | 693.0804930 | 30.1 | < 0.0 | | < 30.1 | A | |
| | 792.0919920 | 31.7 | < 0.0 | | < 31.7 | A | |
| | 891.1034910 | 33.2 | < 0.0 | | < 33.2 | A | |
| | 990.1149900 | 34.7 | < 0.0 | | < 34.7 | A | |

Tuning range : 30.000000 MHz - 59.999999 MHz

| Frequency to which tuned [MHz] | Measured Frequency [MHz] | Correction Factor [dB(1/m)] | Meter Readings [dB(μV/m)] | Polarity | Limits [dB(μV/m)] | Results [dB(μV/m)] | Remarks (Note 2) |
|--------------------------------|--------------------------|-----------------------------|---------------------------|----------|-------------------|--------------------|------------------|
| 30.000000 | 99.0115000 | 10.2 | 4.0 | H | 43.5 | 14.2 | A |
| | 198.0230000 | 16.8 | < 0.0 | | 43.5 | < 16.8 | A |
| | 297.0345000 | 20.9 | < 0.0 | - | 46.0 | < 20.9 | A |
| | 396.0460000 | 24.0 | < 0.0 | | 46.0 | < 24.0 | A |
| | 495.0575000 | 26.4 | < 0.0 | | 46.0 | < 26.4 | A |
| | 594.0690000 | 28.3 | < 0.0 | | 46.0 | < 28.3 | A |
| | 693.0805000 | 30.1 | < 0.0 | | 46.0 | < 30.1 | A |
| | 792.0920000 | 31.7 | < 0.0 | | 46.0 | < 31.7 | A |
| | 891.1035000 | 33.2 | < 0.0 | | 46.0 | < 33.2 | A |
| | 990.1150000 | 34.7 | < 0.0 | | 54.0 | < 34.7 | A |
| 45.000000 | 114.0115000 | 11.5 | 1.0 | H | 43.5 | 12.5 | A |
| | 228.0230000 | 18.3 | < 0.0 | | 46.0 | < 18.3 | A |
| | 342.0345000 | 22.3 | < 0.0 | | 46.0 | < 22.3 | A |
| | 456.0460000 | 25.5 | < 0.0 | - | 46.0 | < 25.5 | A |
| | 570.0575000 | 27.9 | < 0.0 | - | 46.0 | < 27.9 | A |
| | 684.0690000 | 30.0 | < 0.0 | - | 46.0 | < 30.0 | A |
| | 798.0805000 | 31.7 | < 0.0 | - | 46.0 | < 31.7 | A |
| | 912.0920000 | 33.5 | < 0.0 | - | 46.0 | < 33.5 | A |
| | 1026.1035000 | -5.3 | <30.0 | - | 54.0 | < 24.7 | B |
| | 59.999999 | 129.0114990 | 12.7 | 2.0 | V | 43.5 | 14.7 |
| 258.0229980 | | 19.4 | < 0.0 | - | 46.0 | < 19.4 | A |
| 387.0344970 | | 23.7 | < 0.0 | - | 46.0 | < 23.7 | A |
| 516.0459960 | | 26.8 | < 0.0 | | 46.0 | < 26.8 | A |
| 645.0574950 | | 29.3 | < 0.0 | | 46.0 | < 29.3 | A |
| 774.0689940 | | 31.4 | < 0.0 | | 46.0 | < 31.4 | A |
| 903.0804930 | | 33.4 | < 0.0 | | 46.0 | < 33.4 | A |
| 1032.0919920 | | -5.4 | x30.0 | | 54.0 | < 24.6 | B |

[Tuning range : 60.000000 MHz - 128.999999 MHz]

| Frequency to which tuned [MHz] | Measured Frequency [MHz] | Correction Factor [dB(1/m)] | Meter Readings [dB(μV/m)] | Polarity | Limits [dB(μV/m)] | Results [dB(μV/m)] | Remarks (Note 2) |
|--------------------------------|--------------------------|-----------------------------|---------------------------|----------|-------------------|--------------------|------------------|
| 60.000000 | 64.5057500 | 6.2 | 3.0 | V | 40.0 | 9.2 | A |
| | 129.0115000 | 12.7 | < 0.0 | - | 43.5 | < 12.7 | A |
| | 193.5172500 | 16.6 | < 0.0 | - | 43.5 | < 16.6 | A |
| | 258.0230000 | 19.4 | < 0.0 | | 46.0 | < 19.4 | A |
| | 322.5287500 | 21.7 | < 0.0 | | 46.0 | < 21.7 | A |
| | 387.0345000 | 23.7 | < 0.0 | | 46.0 | < 23.7 | A |
| | 451.5402500 | 25.4 | < 0.0 | | 46.0 | < 25.4 | A |
| | 516.0460000 | 26.8 | < 0.0 | | 46.0 | < 26.8 | A |
| | 580.5517500 | 28.1 | < 0.0 | | 46.0 | < 28.1 | A |
| | 645.0575000 | 29.3 | < 0.0 | | 46.0 | < 29.3 | A |
| | 709.5632500 | 30.3 | < 0.0 | | 46.0 | < 30.3 | A |
| | 774.0690000 | 31.4 | < 0.0 | | 46.0 | < 31.4 | A |
| | 838.5747500 | 32.4 | < 0.0 | | 46.0 | < 32.4 | A |
| | 903.0805000 | 33.4 | < 0.0 | | 46.0 | < 33.4 | A |
| 967.5862500 | 34.4 | < 0.0 | | 54.0 | < 34.4 | A | |
| 1032.0920000 | -5.4 | <30.0 | | 54.0 | < 24.6 | B | |
| 94.500000 | 81.7557500 | 8.4 | 6.0 | V | 40.0 | 14.4 | A |
| | 163.5115000 | 15.0 | 2.0 | V | 43.5 | 17.0 | A |
| | 245.2672500 | 19.0 | < 0.0 | - | 46.0 | < 19.0 | A |
| | 327.0230000 | 21.8 | < 0.0 | - | 46.0 | < 21.8 | A |
| | 408.7787500 | 24.3 | < 0.0 | - | 46.0 | < 24.3 | A |
| | 490.5345000 | 26.3 | < 0.0 | | 46.0 | < 26.3 | A |
| | 572.2902500 | 28.0 | < 0.0 | | 46.0 | < 28.0 | A |
| | 654.0460000 | 29.4 | < 0.0 | | 46.0 | < 29.4 | A |
| | 735.8017500 | 30.8 | < 0.0 | | 46.0 | < 30.8 | A |
| | 817.5575000 | 32.1 | < 0.0 | | 46.0 | < 32.1 | A |
| | 899.3132500 | 33.3 | < 0.0 | | 46.0 | < 33.3 | A |
| | 981.0690000 | 34.6 | < 0.0 | | 54.0 | < 34.6 | A |
| 1062.8247500 | -5.5 | <30.0 | | 54.0 | < 24.5 | B | |
| 128.999999 | 99.0057495 | 10.2 | 11.0 | H | 43.5 | 21.2 | A |
| | 198.0114990 | 16.8 | 9.0 | H | 43.5 | 25.8 | A |
| | 297.0172485 | 20.9 | 0.0 | H | 46.0 | 20.9 | A |
| | 396.0229980 | 23.9 | < 0.0 | | 46.0 | < 23.9 | A |
| | 495.0287475 | 26.4 | < 0.0 | | 46.0 | < 26.4 | A |
| | 594.0344970 | 28.3 | < 0.0 | | 46.0 | < 28.3 | A |
| | 693.0402465 | 30.1 | < 0.0 | | 46.0 | < 30.1 | A |
| | 792.0459960 | 31.7 | < 0.0 | | 46.0 | < 31.7 | A |
| | 891.0517455 | 33.2 | < 0.0 | | 46.0 | < 33.2 | A |
| | 990.0574950 | 34.7 | < 0.0 | | 54.0 | < 34.7 | A |

Tuning range : 129.000000 MHz - 143.999999 MHz

| Frequency to which tuned [MHz] | Measured Frequency [MHz] | Correction Factor [dB(1/m)] | Meter Readings [dB(μ V/m)] | Polarity | Limits [dB(μ V/m)] | Results [dB(μ V/m)] | Remarks (Note 2) |
|--------------------------------|--------------------------|-----------------------------|---------------------------------|----------|-------------------------|--------------------------|------------------|
| 129.000000 | 99.0057500 | 10.2 | 6.0 | V | 43.5 | 16.2 | A |
| | 198.0115000 | 16.8 | 7.0 | H | 43.5 | 23.8 | A |
| | 297.0172500 | 20.9 | < 0.0 | | 46.0 | < 20.9 | A |
| | 396.0230000 | 23.9 | < 0.0 | | 46.0 | < 23.9 | A |
| | 495.0287500 | 26.4 | < 0.0 | | 46.0 | < 26.4 | A |
| | 594.0345000 | 28.3 | < 0.0 | | 46.0 | < 28.3 | A |
| | 693.0402500 | 30.1 | < 0.0 | | 46.0 | < 30.1 | A |
| | 792.0460000 | 31.7 | < 0.0 | | 46.0 | < 31.7 | A |
| | 891.0517500 | 33.2 | < 0.0 | | 46.0 | < 33.2 | A |
| | 990.0575000 | 34.7 | < 0.0 | | 54.0 | < 34.7 | A |
| 136.500000 | 102.7557500 | 10.5 | 7.0 | V | 43.5 | 17.5 | A |
| | 205.5115000 | 17.3 | 4.0 | H | 43.5 | 21.3 | A |
| | 308.2672500 | 21.3 | < 0.0 | - | 46.0 | < 21.3 | A |
| | 411.0230000 | 24.3 | < 0.0 | - | 46.0 | < 24.3 | A |
| | 513.7787500 | 26.7 | < 0.0 | - | 46.0 | < 26.7 | A |
| | 616.5345000 | 28.8 | < 0.0 | - | 46.0 | < 28.8 | A |
| | 719.2902500 | 30.6 | < 0.0 | - | 46.0 | < 30.6 | A |
| | 822.0460000 | 32.1 | < 0.0 | - | 46.0 | < 32.1 | A |
| | 924.8017500 | 33.8 | < 0.0 | - | 46.0 | < 33.8 | A |
| | 1027.5575000 | -5.3 | < 30.0 | - | 54.0 | < 24.7 | B |
| 143.999999 | 106.5057495 | 10.8 | 7.0 | V | 43.5 | 17.8 | A |
| | 213.0114990 | 17.6 | 4.0 | H | 43.5 | 21.6 | A |
| | 319.5172485 | 21.6 | < 0.0 | - | 46.0 | < 21.6 | A |
| | 426.0229980 | 24.7 | < 0.0 | - | 46.0 | < 24.7 | A |
| | 532.5287475 | 27.2 | < 0.0 | - | 46.0 | < 27.2 | A |
| | 639.0344970 | 29.1 | < 0.0 | - | 46.0 | < 29.1 | A |
| | 745.5402465 | 30.9 | < 0.0 | - | 46.0 | < 30.9 | A |
| | 852.0459960 | 32.6 | < 0.0 | - | 46.0 | < 32.6 | A |
| | 958.5517455 | 34.2 | < 0.0 | - | 46.0 | < 34.2 | A |
| | 1065.0574950 | -5.5 | x30.0 | - | 54.0 | < 24.5 | B |

Tuning range : 144.000000 MHz - 148.000000 MHz

| Frequency to which tuned [MHz] | Measured Frequency [MHz] | Correction Factor [dB(1/m)] | Meter Readings [dB(μV/m)] | Polarity | Limits [dB(μV/m)] | Results [dB(μV/m)] | Remarks (Note 2) |
|--------------------------------|--------------------------|-----------------------------|---------------------------|----------|-------------------|--------------------|------------------|
| 144.000000 | 106.5057500 | 10.8 | 7.0 | V | 43.5 | 17.8 | A |
| | 213.0115000 | 17.6 | 4.0 | H | 43.5 | 21.6 | A |
| | 319.5172500 | 21.6 | 3.0 | H | 46.0 | 24.6 | A |
| | 426.0230000 | 24.7 | < 0.0 | | 46.0 | < 24.7 | A |
| | 532.5287500 | 27.2 | < 0.0 | | 46.0 | < 27.2 | A |
| | 639.0345000 | 29.1 | < 0.0 | | 46.0 | < 29.1 | A |
| | 745.5402500 | 30.9 | < 0.0 | | 46.0 | < 30.9 | A |
| | 852.0460000 | 32.6 | < 0.0 | | 46.0 | < 32.6 | A |
| | 958.5517500 | 34.2 | < 0.0 | | 46.0 | < 34.2 | A |
| | 1065.0575000 | -5.5 | <30.0 | | 54.0 | < 24.5 | B |
| 146.000000 | 107.5057500 | 10.9 | 6.0 | V | 43.5 | 16.9 | A |
| | 215.0115000 | 17.6 | 4.0 | H | 43.5 | 21.6 | A |
| | 322.5172500 | 21.7 | 3.0 | H | 46.0 | 24.7 | A |
| | 430.0230000 | 24.8 | < 0.0 | - | 46.0 | < 24.8 | A |
| | 537.5287500 | 27.3 | < 0.0 | - | 46.0 | < 27.3 | A |
| | 645.0345000 | 29.3 | < 0.0 | - | 46.0 | < 29.3 | A |
| | 752.5402500 | 31.1 | < 0.0 | - | 46.0 | < 31.1 | A |
| | 860.0460000 | 32.8 | < 0.0 | - | 46.0 | < 32.8 | A |
| | 967.5517500 | 34.4 | < 0.0 | - | 54.0 | < 34.4 | A |
| | 1075.0575000 | -5.5 | <30.0 | - | 54.0 | < 24.5 | B |
| 148.000000 | 108.5057500 | 11.0 | 6.0 | V | 43.5 | 17.0 | A |
| | 217.0115000 | 17.7 | 4.0 | H | 46.0 | 21.7 | A |
| | 325.5172500 | 21.8 | 3.0 | H | 46.0 | 24.8 | A |
| | 434.0230000 | 24.9 | < 0.0 | | 46.0 | < 24.9 | A |
| | 542.5287500 | 27.4 | < 0.0 | | 46.0 | < 27.4 | A |
| | 651.0345000 | 29.4 | < 0.0 | | 46.0 | < 29.4 | A |
| | 759.5402500 | 31.2 | < 0.0 | | 46.0 | < 31.2 | A |
| | 868.0460000 | 32.8 | < 0.0 | | 46.0 | < 32.8 | A |
| | 976.5517500 | 34.6 | < 0.0 | | 54.0 | < 34.6 | A |

Tuning range : 148.000001 MHz - 199.999999 MHz

| Frequency to which tuned [MHz] | Measured Frequency [MHz] | Correction Factor [dB(1/m)] | Meter Readings [dB(μV/m)] | Polarity | Limits [dB(μV/m)] | Results [dB(μV/m)] | Remarks (Note 2) |
|--------------------------------|--------------------------|-----------------------------|---------------------------|----------|-------------------|--------------------|------------------|
| 148.000001 | 108.5057505 | 11.0 | 6.0 | V | 43.5 | 17.0 | A |
| | 217.0115010 | 17.7 | 1.0 | H | 46.0 | 18.7 | A |
| | 325.5172515 | 21.8 | < 0.0 | - | 46.0 | < 21.8 | A |
| | 434.0230020 | 24.9 | < 0.0 | - | 46.0 | < 24.9 | A |
| | 542.5287525 | 27.4 | < 0.0 | - | 46.0 | < 27.4 | A |
| | 65 1.0345030 | 29.4 | < 0.0 | - | 46.0 | < 29.4 | A |
| | 759.5402535 | 31.2 | < 0.0 | - | 46.0 | < 31.2 | A |
| | 868.0460040 | 32.8 | < 0.0 | - | 46.0 | < 32.8 | A |
| | 976.5517545 | 34.6 | < 0.0 | - | 54.0 | < 34.6 | A |
| 174.000000 | 121.5057500 | 12.1 | 0.0 | H | 43.5 | 12.1 | A |
| | 243.0115000 | 18.9 | 4.0 | H | 46.0 | 22.9 | A |
| | 364.5172500 | 23.1 | < 0.0 | - | 46.0 | < 23.1 | A |
| | 486.0230000 | 26.2 | < 0.0 | - | 46.0 | < 26.2 | A |
| | 607.5287500 | 28.6 | < 0.0 | - | 46.0 | < 28.6 | A |
| | 729.0345000 | 30.7 | < 0.0 | - | 46.0 | < 30.7 | A |
| | 850.5402500 | 32.6 | < 0.0 | - | 46.0 | < 32.6 | A |
| | 972.0460000 | 34.4 | < 0.0 | - | 54.0 | < 34.4 | A |
| 199.999999 | 134.5057495 | 13.1 | < 0.0 | - | 43.5 | < 13.1 | A |
| | 269.0114990 | 19.9 | 3.0 | H | 46.0 | 22.9 | A |
| | 403.5 172485 | 24.1 | < 0.0 | - | 46.0 | < 24.1 | A |
| | 538.0229980 | 27.3 | < 0.0 | - | 46.0 | < 27.3 | A |
| | 672.5287475 | 29.7 | < 0.0 | - | 46.0 | < 29.7 | A |
| | 807.03449 70 | 31.9 | < 0.0 | - | 46.0 | < 31.9 | A |
| | 941.5402465 | 34.0 | < 0.0 | - | 46.0 | < 34.0 | A |
| | 1076.0459960 | -5.5 | <30.0 | - | 54.0 | < 24.5 | B |

[Tuning range : 400.000000 MHz - 470.000000 MHz]

| Frequency to which tuned [MHz] | Measured Frequency [MHz] | Correction Factor [dB(1/m)] | Meter Readings [dB(μV/m)] | Polarity | Limits [dB(μV/m)] | Results [dB(μV/m)] | Remarks (Note 2) |
|--------------------------------|--------------------------|-----------------------------|---------------------------|----------|-------------------|--------------------|------------------|
| 400.000000 | 234.5057500 | 18.5 | < 0.0 | - | 46.0 | < 18.5 | A |
| | 469.0115000 | 25.8 | 7.0 | H | 46.0 | 32.8 | A |
| | 703.5172500 | 30.2 | < 0.0 | - | 46.0 | < 30.2 | A |
| | 938.0230000 | 33.9 | < 0.0 | - | 46.0 | < 33.9 | A |
| 435.000000 | 252.0057500 | 19.2 | < 0.0 | - | 46.0 | < 19.2 | A |
| | 504.0115000 | 26.6 | 4.0 | V | 46.0 | 30.6 | A |
| | 756.0172500 | 31.1 | < 0.0 | - | 46.0 | < 31.1 | A |
| | 1008.0230000 | -5.2 | <30.0 | - | 54.0 | < 24.8 | B |
| 470.000000 | 269.5057500 | 19.9 | < 0.0 | - | 46.0 | < 19.9 | A |
| | 539.0115000 | 27.3 | < 0.0 | - | 46.0 | < 27.3 | A |
| | 808.5172500 | 32.0 | < 0.0 | - | 46.0 | < 32.0 | A |
| | 1078.0230000 | -5.5 | <30.0 | - | 54.0 | < 24.5 | B |

[Other frequency (include 2nd/3rd local frequency)]

| Frequency to which tuned [MHz] | Measured Frequency [MHz] | Correction Factor [dB(1/m)] | Meter Readings [dB(μV/m)] | Polarity | Limits [dB(μV/m)] | Results [dB(μV/m)] | Remarks (Note 2) |
|--------------------------------|--------------------------|-----------------------------|---------------------------|----------|-------------------|--------------------|------------------|
| 470.000000 | 30.0000 | 0.2 | < 0.0 | - | 40.0 | < 0.2 | A |
| | 37.8660 | 1.5 | < 0.0 | - | 40.0 | < 1.5 | A |
| | 39.3216 | 1.8 | < 0.0 | - | 40.0 | < 1.8 | A |
| | 49.1520 | 3.7 | 1.0 | V | 40.0 | 4.7 | A |
| | 56.7990 | 5.0 | < 0.0 | - | 40.0 | < 5.0 | A |
| | 60.0000 | 5.6 | 16.0 | H | 40.0 | 21.6 | A |
| | 75.7320 | 7.7 | < 0.0 | - | 40.0 | < 7.7 | A |
| | 90.0000 | 9.3 | < 0.0 | - | 43.5 | < 9.3 | A |
| | 108.1344 | 11.0 | 6.0 | H | 43.5 | 17.0 | A |
| | 117.9648 | 11.8 | 6.0 | H | 43.5 | 17.8 | A |
| | 120.0000 | 12.0 | 3.0 | H | 43.5 | 15.0 | A |
| | 132.7104 | 13.0 | 14.0 | H | 43.5 | 27.0 | A |
| | 137.6256 | 13.3 | 16.0 | H | 43.5 | 29.3 | A |
| | 157.2864 | 14.6 | 10.0 | H | 43.5 | 24.6 | A |
| | 201.0656 | 17.0 | 7.0 | H | 43.5 | 24.0 | A |
| | 265.4208 | 19.8 | 8.0 | H | 46.0 | 27.8 | A |
| | 324.4032 | 21.7 | < 0.0 | - | 46.0 | < 16.7 | A |
| | 398.1312 | 24.0 | < 0.0 | - | 46.0 | < 19.0 | A |

Sample of calculated result at 469.0115000 MHz (Tuning frequency 400.000000 MHz),
 as the Minimum Margin point:

$$\begin{aligned} \text{Corretion Factor} &= 25.8 \text{ dB(1/m)} \\ + \text{)Meter Reading} &= 7.0 \text{ dB}(\mu\text{V/m)} \\ \text{Result} &= 32.8 \text{ dB}(\mu\text{V/m)} \end{aligned}$$

Minimum Margin : 46.0 - 32.8 = 13.2(dB)

The point shown on " ____ " is the Minimum Margin Point.

Note 1:

- 1)The highest frequency generated or used in the EUT: 539.0115000 MHz
- 2)The upper frequency of measurement range : 1078.0230000 MHz
- 3)The spectrum was scanned 30 MHz to 1080 MHz and all emissions not reported were more than 20dB below the applied limits.
- 4)Correction Factor (below 1GHz) : Antenna Factor(dB) + Cable Loss(dB)
 Correction Factor (above 1GHz) : Antenna Factor(dB) t Cable Loss(dB) t 20dB Pad Attenuator(dB)
 - Pre-Amp1 if ier Gain(dB)

Remarks :

| Note 2 | Detector Function | IF Bandwidth |
|--------|-------------------|--------------|
| A | CISPR QP | 120 KHz |

| Note 2 | Detector Function | RES. B.W | V.B.W | Sweep T | Span |
|--------|-------------------|---------------|---------|---------|------|
| B | Peak (SP) | 1 MHz | 1 MHz | 20 msec | 0 Hz |
| C | Peak (SP) | 100 kHz | 100 kHz | 20 msec | 0 Hz |
| *) D | Average (ESV) | 1 MHz (3 MHz) | 3 MHz | 20 msec | 0 Hz |

(): Setting of spectrum analyzer

*)For the average measurement method, it is made measurement using a test receiver, a step attenuater and a spectrum analyzer.

Tester Signature : A. Hosoda
 Type Name : Akio Hosoda

Antenna Terminal Disturbance Voltage Measurement
 Scanning Receiver

Test Date: January 6, 1999
 Temp.: 21 °C ; Humi.: 34 %

Tuning range : 0.030000 MHz - 29.999999 MHz

| Frequency to which tuned [MHz] | Measured Frequency [MHz] | Correction Factor [dB] | Meter Readings [dB(μV)] | Limits at 50Ω [dB(μV)] | Results [dB(μV)] | Remarks (Note 2) |
|--------------------------------|--------------------------|------------------------|-------------------------|------------------------|------------------|------------------|
| 0.030000 | 69.0415000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 138.0830000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 207.1245000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 276.1660000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 345.2075000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 414.2490000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 483.2905000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 552.3320000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 621.3735000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 690.4150000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 759.4565000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 828.4980000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 897.5395000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 966.5810000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| 1035.6225000 | 10.0 | < 10.0 | 50.0 | < 20.0 | B | |
| 15.000000 | 84.0115000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 168.0230000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 252.0345000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 336.0460000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 420.0575000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 504.0690000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 588.0805000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 672.0920000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 756.1035000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 840.1150000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 924.1265000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 1008.1380000 | 10.0 | < 10.0 | 50.0 | < 20.0 | B |
| 29.999999 | 99.0114990 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 198.0229980 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 297.0344970 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 396.0459960 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 495.0574950 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 594.0689940 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 693.0804930 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 792.0919920 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 891.1034910 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 990.1149900 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |

Tuning range : 30.000000 MHz - 59.999999 MHz

| Frequency to which tuned [MHz] | Measured Frequency [MHz] | Correct ion Factor [dB] | Meter Readings [dB(μ V)] | Limits at 50 Ω [dB(μ V)] | Results [dB(μ V)] | Remarks (Note 2) |
|--------------------------------|--------------------------|-------------------------|-------------------------------|--------------------------------------|------------------------|------------------|
| 30.000000 | 99.0115000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 198.0230000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 297.0345000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 396.0460000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 495.0575000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 594.0690000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 693.0805000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 792.0920000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 891.1035000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 990.1150000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| 45.000000 | 114.0115000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 228.0230000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 342.0345000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 456.0460000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 570.0575000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 684.0690000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 798.0805000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 912.0920000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 1026.1035000 | 10.0 | < 10.0 | 50.0 | < 20.0 | B |
| | 59.999999 | 129.0114990 | 10.0 | < 10.0 | 50.0 | < 20.0 |
| 258.0229980 | | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| 387.0344970 | | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| 516.0459960 | | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| 645.0574950 | | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| 774.0689940 | | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| 903.0804930 | | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| 1032.0919920 | | 10.0 | < 10.0 | 50.0 | < 20.0 | B |

Tuning range : 60.000000 MHz - 128.999999 MHz

| Frequency to which tuned [MHz] | Measured Frequency [MHz] | Correction Factor [dB] | Meter Readings [dB(μV)] | Limits at 50Ω [dB(μV)] | Results [dB(μV)] | Remarks (Note 2) |
|--------------------------------|--------------------------|------------------------|-------------------------|------------------------|------------------|------------------|
| 60.000000 | 64.5057500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 129.0115000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 193.5172500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 258.0230000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 322.5287500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 387.0345000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 45 1.5402500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 516.0460000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 580.5517500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 645.0575000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 709.5632500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 774.0690000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 838.5747500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 903.0805000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| 967.5862500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A | |
| 1032.0920000 | 10.0 | < 10.0 | < 10.0 | 50.0 | < 20.0 | B |
| 94.500000 | 81.7557500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 163.5115000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 245.2672500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 327.0230000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 408.7787500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 490.5345000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 572.2902500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 654.0460000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 735.8017500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 817.5575000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 899.3132500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 981.0690000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 1062.8247500 | 10.0 | < 10.0 | < 10.0 | 50.0 | < 20.0 |
| 128.999999 | 99.0057495 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 198.0114990 | 10.0 | 13.0 | 50.0 | 23.0 | A |
| | 297.0172485 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 396.0229980 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 495.0287475 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 594.0344970 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 693.0402465 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 792.0459960 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 891.0517455 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 990.0574950 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |

Tuning range : 129.000000 MHz - 143.999999 MHz

| Frequency to which tuned [MHz] | Measured Frequency [MHz] | Correction Factor [dB] | Meter Readings [dB(μV)] | Limits at 50Ω [dB(μV)] | Results [dB(μV)] | Remarks (Note 2) |
|--------------------------------|--------------------------|------------------------|-------------------------|------------------------|------------------|------------------|
| 129.000000 | 99.0057500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 198.0115000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 297.0172500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 396.0230000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 495.0287500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 594.0345000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 693.0402500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 792.0460000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 891.0517500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 990.0575000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| 136.500000 | 102.7557500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 205.5115000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 308.2672500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 411.0230000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 513.7787500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 616.5345000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 719.2902500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 822.0460000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 924.8017500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 1027.5575000 | 10.0 | < 10.0 | 50.0 | < 20.0 | B |
| 143.999999 | 106.5057495 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 213.0114990 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 319.5172485 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 426.0229980 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 532.5287475 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 639.0344970 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 745.5402465 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 852.0459960 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 958.5517455 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 1065.0574950 | 10.0 | < 10.0 | 50.0 | < 20.0 | B |

Tuning range : 144.000000 MHz - 148.000000 MHz

| Frequency to which tuned [MHz] | Measured Frequency [MHz] | Correction Factor [dB] | Meter Readings [dB(μV)] | Limits at 50Ω [dB(μV)] | Results [dB(μV)] | Remarks (Note 2) |
|--------------------------------|--------------------------|------------------------|-------------------------|------------------------|------------------|------------------|
| 144.000000 | 106.5057500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 213.0115000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 319.5172500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 426.0230000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 532.5287500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 639.0345000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 745.5402500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 852.0460000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 958.5517500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 1065.0575000 | 10.0 | < 10.0 | 50.0 | < 20.0 | B |
| 146.000000 | 107.5057500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 215.0115000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 322.5172500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 430.0230000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 537.5287500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 645.0345000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 752.5402500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 860.0460000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 967.5517500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 1075.0575000 | 10.0 | < 10.0 | 50.0 | < 20.0 | B |
| 148.000000 | 108.5057500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 217.0115000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 325.5 172500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 434.0230000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 542.5287500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 65 1.0345000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 759.5402500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 868.0460000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 976.5517500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |

Tuning range : 148.000001 MHz - 199.999999 MHz

| Frequency to which tuned [MHz] | Measured Frequency [MHz] | Correction Factor [dB] | Meter Readings [dB(μ V)] | Limits at 50 Ω [dB(μ V)] | Results [dB(μ V)] | Remarks (Note 2) |
|--------------------------------|--------------------------|------------------------|-------------------------------|--------------------------------------|------------------------|------------------|
| 148.000001 | 108.5057505 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 217.0115010 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 325.5172515 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 434.0230020 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 542.5287525 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 65 1.0345030 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 759.5402535 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 868.0460040 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 976.5517545 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| 174.000000 | 121.5057500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 243.0115000 | 10.0 | 12.0 | 50.0 | 22.0 | A |
| | 364.5172500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 486.0230000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 607.5287500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 729.0345000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 850.5402500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 972.0460000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| 199.999999 | 134.5057495 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 269.0114990 | 10.0 | 13.0 | 50.0 | 23.0 | A |
| | 403.5 172485 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 538.0229980 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 672.5287475 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 807.0344970 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 941.5402465 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 1076.0459960 | 10.0 | < 10.0 | 50.0 | < 20.0 | B |

Tuning range : 400.000000 MHz - 470.000000 MHz

| Frequency to which tuned [MHz] | Measured Frequency [MHz] | Correction Factor [dB] | Meter Readings [dB(μV)] | Limits at 50Ω [dB(μV)] | Results [dB(μV)] | Remarks (Note 2) |
|--------------------------------|--------------------------|------------------------|-------------------------|------------------------|------------------|------------------|
| 400.000000 | 234.5057500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 469.0115000 | 10.0 | 16.0 | 50.0 | 26.0 | A |
| | 703.5172500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 938.0230000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| 435.000000 | 252.0057500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 504.0115000 | 10.0 | 23.0 | 50.0 | 33.0 | A |
| | 756.0172500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 1008.0230000 | 10.0 | < 10.0 | 50.0 | < 20.0 | B |
| 470.000000 | 269.5057500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 539.0115000 | 10.0 | 19.0 | 50.0 | 29.0 | A |
| | 808.5172500 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 1078.0230000 | 10.0 | < 10.0 | 50.0 | < 20.0 | B |

Other frequency (include 2nd/3rd local frequency)

| Frequency to which tuned [MHz] | Measured Frequency [MHz] | Correction Factor [dB] | Meter Readings [dB(μV)] | Limits at 50Ω [dB(μV)] | Results [dB(μV)] | Remarks (Note 2) |
|--------------------------------|--------------------------|------------------------|-------------------------|------------------------|------------------|------------------|
| 470.000000 | 30.0000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 37.8660 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 39.3216 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 56.7990 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 60.0000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 90.0000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 120.0000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 147.4560 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 240.0000 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 398.1312 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 427.6224 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 457.1136 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 486.6048 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |
| | 50 1.3504 | 10.0 | < 10.0 | 50.0 | < 20.0 | A |

Sample of calculated result at 504.0115000 MHz (Tuning frequency 435.000000 MHz),
 as the Minimum Margin point:

$$\begin{aligned} \text{Correction Factor} &= 10.0 \text{ dB} \\ +) \text{Meter Reading} &= 23.0 \text{ dB}(\mu\text{V}) \\ \text{Result} &= 33.0 \text{ dB}(\mu\text{V}) \end{aligned}$$

Minimum Margin : 50.0 - 33.0 = 17.0(dB)

The point shown on "___" is the Minimum Margin Point.

Conversion of applied limits (refer to § 15.111(a))

$$50.0 \text{ [dB}(\mu\text{V})] = 20\log\{\sqrt{2}[\text{nW}] \times 10^{-9} \times 50[\Omega] \times 10^6\}$$

Note 1:

- 1)The highest frequency generated or used in the EUT: 539.0115000 MHz
- 2)The upper frequency of measurement range : 1078.0230000 MHz
- 3)The spectrum was scanned 30 MHz to 1080 MHz and all emissions not reported were more than 20dB below the applied limits.
- 4)Correction Factor = 10dB Pad Attenuator (dB)

Remarks :

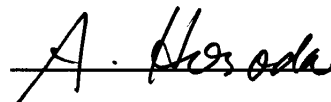
| Note 2 | Detector Function | IF Bandwidth |
|--------|-------------------|--------------|
| A | CISPR QP | 120 KHz |

| Note 2 | Detector Function | RES. B.W | V.B.W | Sweep T | Span |
|--------|-------------------|---------------|---------|---------|------|
| B | Peak (SP) | 1 MHz | 1 MHz | 20 msec | 0 Hz |
| C | Peak (SP) | 100 kHz | 100 kHz | 20 msec | 0 Hz |
| *) D | Average (ESV) | 1 MHz (3 MHz) | 3 MHz | 20 msec | 0 Hz |

(): Setting of spectrum analyzer

*) For the average measurement method, it is made measurement using a test receiver, a step attenuator and a spectrum analyzer.

Tester Signature :



Type Name :

Akio Hosoda