

***EMC* EMISSION - TEST REPORT**

JQA APPLICATION No. : KL80010018

Name of Product : VHF Transceiver

Model/Type No. : IC-V8

FCC ID : AFJ IC-V8

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

Receive date of EUT : April 11, 2001

Final Judgement : **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.

DIRECTORY

	Page
A) Documentation	
Directory	<u>2</u>
Test Regulation / General Information	<u>3</u>
Test Conditions	<u>4 - 8</u>
Configuration of EUT / Operation mode of the EUT	<u>9 - 11</u>
EUT Modification / Responsible Party / Deviation from Standard	<u>12</u>
Test results / Measurement Uncertainty	<u>13 - 14</u>
Summary	<u>15</u>
Test System-Arrangement (Drawings)	<u>16</u>
Preliminary Test and Test-setup (Drawings)	<u>17 - 20</u>
Test-setup (Photographs) at worst case	<u>21</u>
B) Test data	
Conducted Emission	450 kHz - 30 MHz <u>22</u>
Electromagnetic Field Radiated Emission	30 MHz - 1000 MHz <u>23 - 24</u>
Antenna-Conducted Power	30 MHz - 1000 MHz <u>25 - 26</u>
38dB Rejection Test	<u>27 - 28</u>

TEST REGULATION

FCC Rules and Regulations Part 15 Subpart A and B (February 28, 2001)

- ☐ - Class A Digital Device
- ☐ - Class B Digital Device
- ☒ - Scanning Receiver

Test procedure:

The tests 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.
NVLAP Lab Code: 200191-0

Description of the Equipment Under Test (EUT):

- 1) Name : VHF Transceiver
- 2) Model/Type No. : IC-V8
- 3) Product Type : Pre-Production (S/N: 0011)
- 4) Category : Scanning Receiver
- 5) EUT Authorization : ☐ - Verification ☒ - Certification ☐ - D.o.C.
- 6) Highest frequency used/generated : 152.300 MHz
- 7) Power Rating : DC 8V (Battery Charger BC-146 : 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.
- ☐ - Blank box indicates that the listed condition, standard or equipment is not applicable for this Report.

TEST CONDITIONS

AC Powerline Conducted Emission Measurement

was performed in the following test site.

Test location:

KITA-KANSAI Testing Center

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

● - Shielded room

KAMEOKA EMC Branch

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

○ - Shielded room

○ - On metal plane of open site

Used test instruments and sites:

Model No.	Device ID	Last Cal. Date	Cal. Interval
○ - ESCS 30	A - 1		
● - ESH 2	A - 2	May, 2000	1 Year
○ - ESH 2	A - 3		
● - KNW-407	D - 6	January, 2001	1 Year
○ - KNW-408	D - 11		
○ - KNW-242	D - 7		
○ - ESH3-Z5	D - 12		
○ - KNW-341C	D - 13		
○ - KNW-408	D - 14		
○ - KNW-244C	D - 77		
○ - KNW-408	D - 78		
○ - ESH2-Z5	D - 10		
○ - ESH2-Z3	D - 17		
○ - 65 BNC-50-0-1	H - 26		
○ - 65 BNC-50-0-1	H - 27		
○ - Cable	H - 7		
● - Cable	H - 8	January, 2001	1 Year

Environmental conditions:

Temperature: 26 °C Humidity: 36 %

Electromagnetic Field Radiated Emission Measurement

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, Mino-Shi, Osaka, 562-0027, Japan

○ - 1st open test site (3 meters)

● - 2nd open test site (3 meters)

KAMEOKA EMC Branch

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

○ - 1st open test site ○ - 3 m ○ - 10 m ○ - 30 m

○ - 2nd open test site ○ - 3 m ○ - 10 m

Validation of Site Attenuation:

1) Last Confirmed Date : October 26, 2000

2) Interval : 1 Year

Used test instruments:

Model No.	Device ID	Last Cal. Date	Cal. Interval
○ - ESV/ESV-Z3	A - 7 / A - 17	December, 2000	1 Year
● - ESV/ESV-Z3	A - 6 / A - 18		
○ - ESV/ESV-Z3	A - 4 / A - 20		
○ - ESV/ESV-Z3	A - 8 / A - 19		
○ - ESVS 10	A - 5	November, 2000	1 Year
○ - KBA-511A	C - 12		
○ - KBA-611	C - 22		
● - KBA-511A	C - 13		
● - KBA-611	C - 19	November, 2000	1 Year
○ - KBA-511A	C - 11	November, 2000	1 Year
○ - KBA-611	C - 21		
○ - Cable	H - 1		
○ - Cable	H - 2		
○ - Cable	H - 5	November, 2000	1 Year
● - Cable	H - 6		
○ - Cable	H - 9		

Environmental conditions:

Temperature: 16 °C Humidity: 48 %

Electromagnetic Field Radiated Emission Measurement

was performed in horizontal and vertical polarization, in the frequency range of 1 GHz - 2 GHz, in the following test site.

Test location:

KITA-KANSAI Testing Center

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

○ - 1st open test site (3 meters)

○ - 2nd open test site (3 meters)

KAMEOKA EMC Branch

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

○ - 1st open test site ○ - 3 m ○ - 10 m ○ - 30 m

○ - 2nd open test site ○ - 3 m ○ - 10 m

Used test instruments:

Model No.	Device ID	Last Cal. Date	Cal. Interval
○ - ESCS 30	A - 1		
○ - 8566B	A - 13		
○ - 8593A	A - 15		
○ - ESV	A - 6		
○ - 4T-10	D - 73		
○ - 4T-10	D - 74		
○ - WJ-6611-513	A - 23		
○ - WJ-6882-824	A - 21		
○ - DBL-0618N515	A - 33		
○ - 91888-2	C - 41 - 1		
○ - 91889-2	C - 41 - 2		
○ - 94613-1	C - 41 - 3		
○ - 91891-2	C - 41 - 4		
○ - 94614-1	C - 41 - 5		
○ - 3160-09	C - 48		
○ - 355C	D - 22		
○ - 355D	D - 23		
○ - 8494H/8595H	D - 76		
○ - MZ5010C	D - 81		
○ - Cable	C - 40 - 11		
○ - Cable	C - 40 - 12		

Environmental conditions:

Temperature: _____ °C Humidity: _____ %

Antenna-Conducted Power Measurement

was performed in the frequency range of 30 MHz - 2200 MHz, in the following test site.

Test location:

KITA-KANSAI Testing Center

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

● - Shielded room

○ - Anechoic chamber

KAMEOKA EMC Branch

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

○ - Shielded room

Used test instruments:

Model No.	Device ID	Last Cal. Date	Cal. Interval
● - ESCS 30	A - 1	August, 2000	1 Year
○ - 8566B	A - 13		
○ - 8593A	A - 15		
○ - ESV	A - 6		
○ - LSG-221	B - 15		
○ - 216/1	B - 16		
○ - MP614A	D - 56		
○ - 12B50/75	D - 55		
○ - 12N50/75B	D - 72		
● - 2-10	D - 40		
○ - 1506A	D - 21	June, 2000	1 Year
● - Cable	C - 40 - 9	June, 2000	1 Year

Environmental conditions:

Temperature: 26 °C Humidity: 36 %

38dB Rejection Test (§15.121(b))

was performed in the following test site.

Test location:

KITA-KANSAI Testing Center

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

● - Shielded room

○ - Anechoic chamber

KAMEOKA EMC Branch

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

○ - Shielded room

Used test instruments:

Model No.	Device ID	Last Cal. Date	Cal. Interval
● - MG645A	B - 4	April, 2001	1 Year
● - 339A	--	May, 2000	1 Year

Environmental conditions:

Temperature: 22 °C Humidity: 41 %

CONFIGURATION OF EUT

The Equipment Under Test (EUT) consists of:

Description	Applicant (Manufacturer)	Model No. (Serial No.)	FCC ID
VHF Transceiver	ICOM Incorporated (ICOM Incorporated)	IC-V8 (0011)	AFJ IC-V8
Battery Pack	ICOM Incorporated (ICOM Incorporated)	BP-222 (--)	N/A
Antenna	ICOM Incorporated (ICOM Incorporated)	FA-132E (--)	N/A
DTM Decoder	ICOM Incorporated (ICOM Incorporated)	UT-108 (--)	N/A
Speaker Microphone	ICOM Incorporated (ICOM Incorporated)	HM-75A (--)	N/A
Desktop Charger	ICOM Incorporated (ICOM Incorporated)	BC-146 (--)	N/A
AC Adapter (Desktop Charger)	ICOM Incorporated (ICOM Incorporated)	BP-147A (--)	N/A

The measurement was carried out with the following equipment connected:

Description	Grantee/Distributor	Model No. (Serial No.)	FCC ID
None			

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

	Description	Port	Shielded Cable	Shell Material	Ferrite Core	Cable Length
1	EUT	SP/MIC	NO	--	NO	0.3 m
	Speaker Microphone	--		--		
2	DC Power Cord (Desktop Charger / AC Adapter) 1 ϕ 2-pin plug	--	NO	--	NO	1.8 m

Operation - mode of the EUT:

The EUT was operated during the measurement under "FM receiving" mode with the antenna terminals terminated with a 50Ω termination.

Test system:

The EUT has an ANT port and a SP/MIC port.
The speaker microphone was connected to the SP/MIC port.
The EUT was put on the battery charger.

Detailed receiver portion:

1) Relation between receiving frequency and local frequency

Receiving Frequency	:	136.000 MHz - 174.000 MHz
1st Local Frequency	:	114.300 MHz - 152.300 MHz
2nd Local Frequency	:	450 kHz

2) Respective Intermediate Frequency

1st Intermediate Frequency	:	21.700 MHz (lower)
2nd Intermediate Frequency	:	21.250 MHz (lower)

3) Type of Antenna Terminal	:	BNC-Type 50 Ω (Unbalanced)
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4) Receiving mode	:	FM
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Special accessories:

None

The used (generated) frequencies in the EUT:

CPU : 9.2 MHz

EUT Modification

- - No modifications were conducted by JQA to achieve compliance to applied levels.
- - 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 : N/A Date : N/A

Typed Name : N/A Position : N/A

Responsible Party

Responsible Party of Test Item(Product)

Responsible party :

Contact Person :

Signatory

Deviation from Standard

- - No deviations from the standard described in page 3.
- - The following deviations were employed from the standard described in page 3.

TEST RESULTS

AC Powerline Conducted Emission 450 kHz - 30 MHz

The requirements are	● - Passed	○ - Not Passed
Min. limit margin	<u>15.9</u> dB at <u>0.45</u> MHz	
Max. limit exceeding	<u> </u> dB at <u> </u> MHz	
Uncertainty of measurement results	<u>+ 2.1</u> dB(2σ)	<u>- 2.1</u> dB(2σ)

Remarks: _____

Electromagnetic Field Radiated Emission 30 MHz - 1000 MHz

The requirements are	● - Passed	○ - Not Passed
Min. limit margin	More than <u>18.3</u> dB at <u>933.100</u> MHz	
Max. limit exceeding	<u> </u> dB at <u> </u> MHz	
Uncertainty of measurement results	<u>+ 4.9</u> dB(2σ)	<u>- 5.0</u> dB(2σ)

Remarks: _____

Antenna-Conducted Power 30 MHz - 1000 MHz

The requirements are	● - Passed	○ - Not Passed
Min. limit margin	<u>30.0</u> dB at <u>114.300</u> MHz	
Max. limit exceeding	<u> </u> dB at <u> </u> MHz	
Uncertainty of measurement results	<u>+ 2.3</u> dB(2σ)	<u>- 2.3</u> dB(2σ)

Remarks: _____

38dB Rejection Test (§15.121(b))

The requirements are

● - Passed

○ - Not Passed

Min. limit margin

_____ - _____ dB at _____ - _____ MHz

Max. limit exceeding

_____ dB at _____ MHz

Uncertainty of measurement results

_____ - _____ dB(2 σ) _____ - _____ dB(2 σ)

Remarks: No frequency of response was detected.

SUMMARY

GENERAL REMARKS :

The EUT was tested according to the requirements of FCC Rules and Regulations Part 15 Subpart A and B (February 28, 2001) under the test configuration, as shown in page 16.

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

Begin of testing : April 23, 2001

End of testing : April 27, 2001

- JAPAN QUALITY ASSURANCE ORGANIZATION -

Approved by :

Issued by :

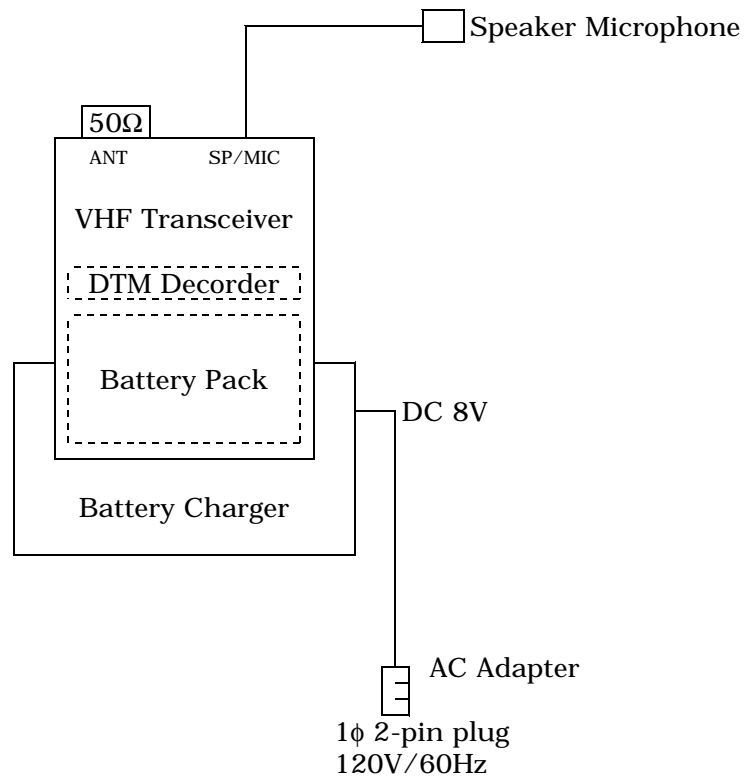


Akio Hosoda
Manager
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JQA KITA-KANSAI Testing Center



Shigeru Kinoshita
Deputy Manager
EMC Div.
JQA KITA-KANSAI Testing Center

Test System-Arrangement (Drawings)

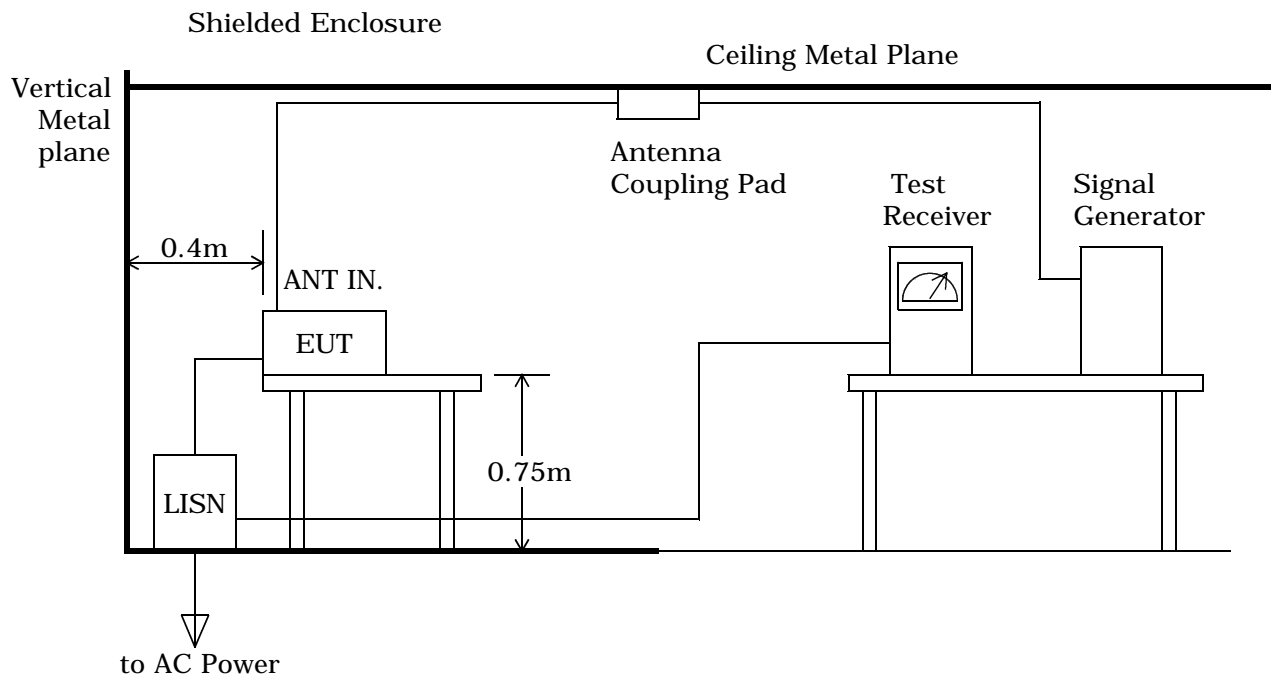


Preliminary Test and Test-setup(Drawings)

AC Powerline Conducted Emission 450 kHz - 30 MHz:

Measurement Procedure: IEEE 213(1987) & ANSI C63.4(1992)

The preliminary test was performed receiving over each band, and the worst result was reported as the final test.



Electromagnetic Field Radiated Emission 30 MHz - 1000 MHz:

The preliminary test was performed according to the description of ANSI C63.4-1992 Sec.8.3.1.1 (Preliminary Radiated Emissions Tests) and Sec.6.2.1 (Tabletop Equipment Tests).

The preliminary test was carried out to investigate the frequency of the emission that has the highest amplitude relative to the limits within normal operating modes, cable positions, and a typical system configuration. In order to find out to the maximum emission, the preliminary test and a final test were performed in accordance with the following steps.

Step 1: One operation mode of the test system was setting.

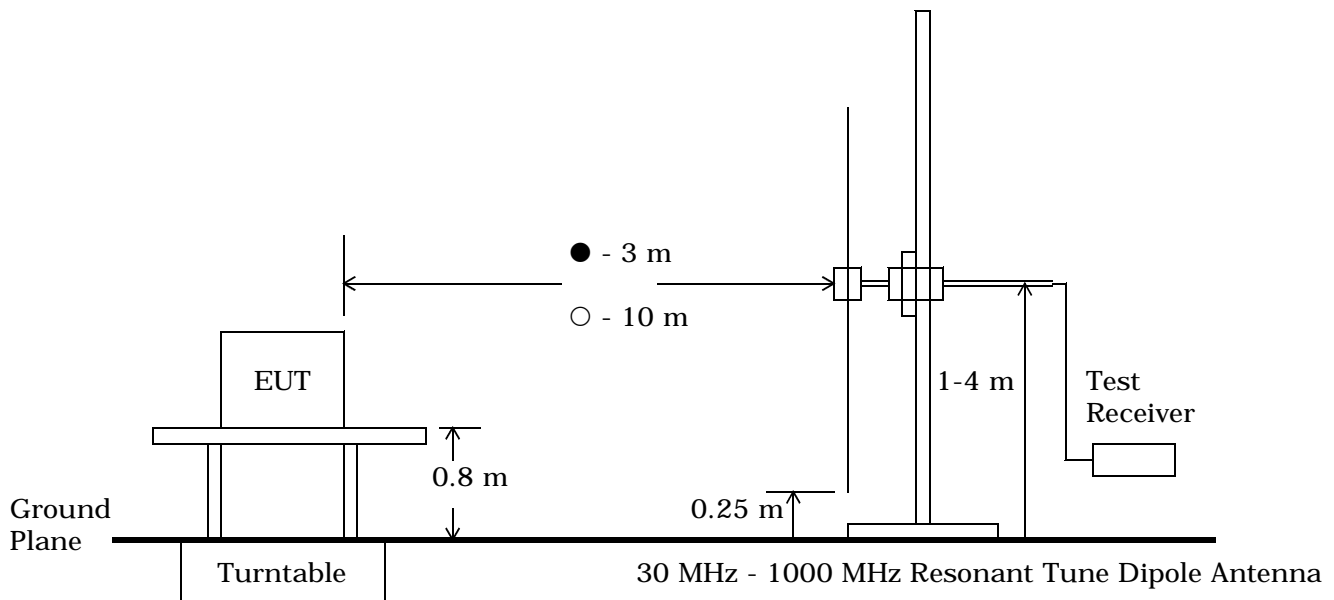
Step 2: Using a test receiver and a test antenna probe, the significant frequency of the emission's circumstance from the test system were investigated. These data were recorded every one of 22 divided bands in the specified frequency band (30 MHz - 1000 MHz).

Step 3: Using a test receiver and a resonant tuned dipole antenna, the emission's circumstance from the test system was measured in according with ANSI C63.4-1992 Sec.8.3.1.2 (Final Radiated Emissions Tests) at each frequency which was found the higher emission referred to level vs. frequency on the list and which was measured by the resonant tuned dipole antenna. The maximum emission was found by changing the cable positions or cable manipulation under a typical system configuration.

Step 4: Return to step 1, if the other operation mode was possible to be setting.

Step 5: The worst result was reported arranging data of which was obtained and performed by one or plural operation modes as the final test.

At the worst point that has the highest amplitude relative to the limit the repeatability of the level was reconfirmed. The photographs of the tests system setup on the worst point were taken and recorded.



Antenna-Conducted Power 30 MHz - 1000 MHz:

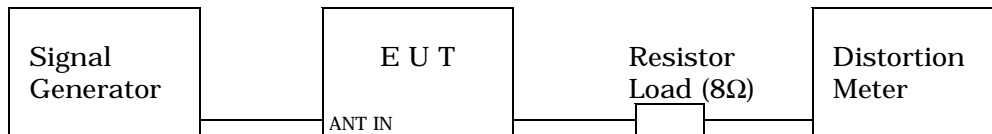
The test was performed according to the description of ANSI C63.4-1992 Sec.12.1.5 (Antenna-Conducted Power Measurements).



38dB Rejection Test (§15.121(b)):

The test(38dB Rejection Test) is carried out in accordance with procedure as follows.

1) Test system is composed as follows.



2) The setting frequencies of the signal generator were selected the bottom, the medium and the top frequency within each of the frequency bands allocated to the Cellular Radiotelephone Service in CFR 47 FCC Rules and Regulations Part 22 Subpart H.

For transmitter in Mobile : 824.040 MHz, 836.505 MHz, 848.970 MHz

For transmitter in Base : 869.040 MHz, 881.505 MHz, 893.970 MHz

The setting output of the signal generator was adjusted to a level 60dB(μV). The setting frequency modulation was adjusted to an 1 kHz tone at 8 kHz deviation.

3) The EUT is capable of receiving 136.000 MHz - 174.000 MHz.

For each frequency in step 2), the band of the EUT was scanned all over the range by stepping up every 1 kHz. Then the squelch of the EUT was adjusted to a minimum threshold level. Whenever the scanning stopped, the detected frequency was noted.

4) The EUT was tuning to the detected frequency under signal generator was setting to the same condition as step 3). At first, The volume position of the EUT was adjusted as the audio nominal power is set to 50mW at 8Ω.

The level of the signal generator(12dB SINAD level at the injected frequency) was adjusted as the distortion meter is set to produce a 12dB SINAD measurement (audio nominal power 50mW at 8Ω, and 25% of distortion).

5) The EUT was tuning to the detected frequency under signal generator was setting to the same detected frequency. At first, The volume position of the EUT was adjusted as the audio nominal power is set to 50mW at 8Ω.

The level of the signal generator(12dB SINAD level at the detected frequency) was adjusted as the distortion meter is set to produce a 12dB SINAD measurement (audio nominal power 50mW at 8Ω, and 25% of distortion).

6) The rejection ratio, i.e. the difference between the 12dB SINAD levels at the injected frequency and the detected frequency, must be at least 38dB.

Test-Setup (Photographs) at worst case

Conducted Emission 450kHz - 30MHz:



Front View

Radiated Emission 30MHz - 1000MHz:



Front View



Side View



Rear View

AC Powerline Conducted Emission Measurement Scanning Receiver

Receiving Frequency : 155.000 MHz

Test Date: April 23, 2001
 Temp.: 26 °C ; Humi.: 36 %

Frequency [MHz]	Correction Factor [dB]	Meter Readings [dB(μV)]				Limits [dB(μV)]	Results [dB(μV)]		Margin [dB]	Remarks (Note 2)
		VA		VB			QP	AV		
		QP	AV	QP	AV		QP	AV		
0.45	0.1	32.0	-	32.0	-	48.0	32.1	-	+15.9	A
0.75	0.1	16.0	-	16.0	-	48.0	16.1	-	+31.9	A
1.40	0.2	<10.0	-	13.0	-	48.0	13.2	-	+34.8	A
3.50	0.3	<10.0	-	<10.0	-	48.0	<10.3	-	>+37.7	A
6.00	0.4	<10.0	-	<10.0	-	48.0	<10.4	-	>+37.6	A
10.00	0.5	<10.0	-	<10.0	-	48.0	<10.5	-	>+37.5	A
13.30	0.6	<10.0	-	<10.0	-	48.0	<10.6	-	>+37.4	A
22.00	0.8	<10.0	-	<10.0	-	48.0	<10.8	-	>+37.2	A
30.00	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 = 32.0 dB(μV)
 Result = 32.1 dB(μV)

Minimum Margin : 48.0 - 32.1 = 15.9(dB)

The point shown on “ ” is the Minimum Margin Point.

Note 1:

1)The correction factor includes the LISN insertion loss and the cable loss.

Remarks:

Note 2	Detector Function	IF Bandwidth
A	CISPR QP	9 kHz
B	Average	10 kHz

Tester : Akio Hosoda

Electromagnetic Field Radiated Emission Measurement

Scanning Receiver

Test Date: April 23, 2001
Temp.: 16 °C ; Humi.: 48 %

Measurement for local frequency

Frequency to which tuned [MHz]	Measured Frequency [MHz]	Antenna Factor [dB(1/m)]	Corr. Factor [dB]	Meter Readings [dB(μV)]		Limits [dB(μV/m)]	Results [dB(μV/m)]		Margin [dB]	Remarks (Note 2)
				Hori.	Vert.		Hori.	Vert.		
136.000	114.300	10.1	1.0	< 0.0	< 0.0	43.5	<11.1	<11.1	>+32.4	A
	228.600	16.1	1.5	< 0.0	< 0.0	46.0	<17.6	<17.6	>+28.4	A
	342.900	19.7	2.0	<-5.0	<-5.0	46.0	<16.7	<16.7	>+29.3	A
	457.200	22.4	2.4	<-5.0	<-5.0	46.0	<19.8	<19.8	>+26.2	A
	571.500	24.6	2.6	<-5.0	<-5.0	46.0	<22.2	<22.2	>+23.8	A
	685.800	26.3	2.9	<-5.0	<-5.0	46.0	<24.2	<24.2	>+21.8	A
	800.100	27.8	3.2	<-5.0	<-5.0	46.0	<26.0	<26.0	>+20.0	A
	914.400	29.0	3.4	<-5.0	<-5.0	46.0	<27.4	<27.4	>+18.6	A
155.000	133.300	11.4	1.1	< 0.0	< 0.0	43.5	<12.5	<12.5	>+31.0	A
	266.600	17.4	1.7	< 0.0	< 0.0	46.0	<19.1	<19.1	>+26.9	A
	399.900	21.1	2.1	<-5.0	<-5.0	46.0	<18.2	<18.2	>+27.8	A
	533.200	23.9	2.5	<-5.0	<-5.0	46.0	<21.4	<21.4	>+24.6	A
	666.500	26.0	2.9	<-5.0	<-5.0	46.0	<23.9	<23.9	>+22.1	A
	799.800	27.8	3.2	<-5.0	<-5.0	46.0	<26.0	<26.0	>+20.0	A
	933.100	29.2	3.5	<-5.0	<-5.0	46.0	<27.7	<27.7	>+18.3	A
174.000	152.300	12.6	1.2	< 0.0	< 0.0	43.5	<13.8	<13.8	>+29.7	A
	304.600	18.5	1.8	<-5.0	<-5.0	46.0	<15.3	<15.3	>+30.7	A
	456.900	22.4	2.4	<-5.0	<-5.0	46.0	<19.8	<19.8	>+26.2	A
	609.200	25.2	2.7	<-5.0	<-5.0	46.0	<22.9	<22.9	>+23.1	A
	761.500	27.3	3.1	<-5.0	<-5.0	46.0	<25.4	<25.4	>+20.6	A
	913.800	29.0	3.4	<-5.0	<-5.0	46.0	<27.4	<27.4	>+18.6	A

Measurement for other disturbance frequency

Frequency [MHz]	Antenna Factor [dB(1/m)]	Cable Loss [dB]	Meter Readings [dB(μV)]		Limits [dB(μV/m)]	Results [dB(μV/m)]		Margin [dB]	Remarks (Note 2)
			Hori.	Vert.		Hori.	Vert.		
30.0	-0.6	0.5	<10.0	<10.0	40.0	<10.1	<10.1	>+30.1	A
45.0	2.0	0.6	<10.0	<10.0	40.0	<12.6	<12.6	>+27.4	A
65.0	5.2	0.8	<10.0	<10.0	40.0	<16.0	<16.0	>+24.0	A
90.0	8.0	0.9	<10.0	<10.0	43.5	<18.9	<18.9	>+24.6	A
150.0	12.4	1.2	< 0.0	< 0.0	43.5	<13.6	<13.6	>+29.9	A
300.0	18.4	1.8	<-5.0	<-5.0	46.0	<15.2	<15.2	>+30.8	A
500.0	23.3	2.4	<-5.0	<-5.0	46.0	<20.7	<20.7	>+25.3	A
700.0	26.5	2.9	<-5.0	<-5.0	46.0	<24.4	<24.4	>+21.6	A

Sample of calculated result at 933.100 MHz, as the Minimum Margin point:

Antenna Factor	=	29.2 dB(1/m)
Cable Loss	=	3.5 dB
+ Meter Reading	=	<-5.0 dB(μV)
Result	=	<27.7 dB(μV/m)

Minimum Margin : 46.0 - <27.7 = >18.3(dB)

The point shown on “_____” is the Minimum Margin Point.

Note 1:

- 1)The highest frequency generated or used in the EUT: 9.2 MHz
- 2)The highest local frequency generated : 152.300 MHz
- 3)The upper frequency of measurement range : 1 GHz

Remarks:

Note 2	Detector Function	IF Bandwidth
A	CISPR QP	120 kHz
B	Average	120 kHz
C	Average	12 kHz
D	Average	7.5 kHz

Tester : Akio Hosoda

Antenna-Conducted Power Measurement Scanning Receiver

Test Date: April 23, 2001
 Temp.: 26 °C ; Humi.: 36 %

Measurement for local frequency

Frequency to which tuned [MHz]	Measured Frequency [MHz]	Attenuation Pad Loss [dB]	Meter Readings [dB(μV)]	Limits at 50 Ω [dB(μV)]	Results [dB(μV)]	Margin [dB]	Remarks (Note 2)
136.000	114.300	10.0	10.0	50.0	20.0	+30.0	A
	228.600	10.0	<10.0	50.0	<20.0	>+30.0	A
	342.900	10.0	<10.0	50.0	<20.0	>+30.0	A
	457.200	10.0	<10.0	50.0	<20.0	>+30.0	A
	571.500	10.0	<10.0	50.0	<20.0	>+30.0	A
	685.800	10.0	<10.0	50.0	<20.0	>+30.0	A
	800.100	10.0	<10.0	50.0	<20.0	>+30.0	A
155.000	914.400	10.0	<10.0	50.0	<20.0	>+30.0	A
	133.300	10.0	<10.0	50.0	<20.0	>+30.0	A
	266.600	10.0	<10.0	50.0	<20.0	>+30.0	A
	399.900	10.0	<10.0	50.0	<20.0	>+30.0	A
	533.200	10.0	<10.0	50.0	<20.0	>+30.0	A
	666.500	10.0	<10.0	50.0	<20.0	>+30.0	A
	799.800	10.0	<10.0	50.0	<20.0	>+30.0	A
136.000	933.100	10.0	<10.0	50.0	<20.0	>+30.0	A
	152.300	10.0	<10.0	50.0	<20.0	>+30.0	A
	304.600	10.0	<10.0	50.0	<20.0	>+30.0	A
	456.900	10.0	<10.0	50.0	<20.0	>+30.0	A
	609.200	10.0	<10.0	50.0	<20.0	>+30.0	A
	761.500	10.0	<10.0	50.0	<20.0	>+30.0	A
	913.800	10.0	<10.0	50.0	<20.0	>+30.0	A

Measurement for other disturbance frequency

Frequency [MHz]	Attenuation Pad Loss [dB]	Meter Readings [dB(μV)]	Limits at 50 Ω [dB(μV)]	Results [dB(μV)]	Margin [dB]	Remarks (Note 2)
30.0	10.0	<10.0	50.0	<20.0	>+30.0	A
50.0	10.0	<10.0	50.0	<20.0	>+30.0	A
100.0	10.0	<10.0	50.0	<20.0	>+30.0	A
130.0	10.0	<10.0	50.0	<20.0	>+30.0	A
200.0	10.0	<10.0	50.0	<20.0	>+30.0	A
300.0	10.0	<10.0	50.0	<20.0	>+30.0	A
500.0	10.0	<10.0	50.0	<20.0	>+30.0	A
700.0	10.0	<10.0	50.0	<20.0	>+30.0	A

Sample of calculated result at 114.300 MHz, as the Minimum Margin point:

Attenuation Pad Loss	=	10.0 dB
+ Meter Reading	=	10.0 dB(μV)
Result	=	20.0 dB(μV)

Minimum Margin : 50.0 - 20.0 = 30.0(dB)

The point shown on “___” is the Minimum Margin Point.

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

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

Note 1:

- 1)The highest frequency generated or used in the EUT: 9.2 MHz
- 2)The highest local frequency generated : 152.300 MHz
- 3)The upper frequency of measurement range : 1 GHz

Remarks:

Note 2	Detector Function	IF Bandwidth
A	CISPR QP	120 kHz
B	Average	120 kHz
C	Average	12 kHz
D	Average	7.5 kHz

Tester : Akio Hosoda

38dB Rejection Test for Mobile Band Scanning Receiver

Test Date: April 27, 2001
Temp.: 22 °C ; Humi.: 41 %

Injected Frequency [MHz]	Detected Frequency [MHz]	12dB SINAD Level at Injected Frequency [dBm]	12dB SINAD Level at Detected Frequency [dBm]	Rejection [dB]	Margin [dB]
824.040	No Point Detected	N/A	N/A	N/A	N/A
836.505	No Point Detected	N/A	N/A	N/A	N/A
848.970	No Point Detected	N/A	N/A	N/A	N/A

Sample of calculated result at N/A MHz, as the Minimum Margin point:

$$\begin{array}{rcl} 12\text{dB SINAD Level at Detected Frequency} & = & \text{N/A dBm} \\ -) 12\text{dB SINAD Level at Injected Frequency} & = & \text{N/A dBm} \\ \hline \text{Rejection} & = & \text{N/A dB} \end{array}$$

Minimum Margin : N/A

The point shown on “____” is the Minimum Margin Point.

Tester : Yasuhisa Sakai

38dB Rejection Test for Base Band Scanning Receiver

Test Date: April 27, 2001
Temp.: 22 °C ; Humi.: 41 %

Injected Frequency [MHz]	Detected Frequency [MHz]	12dB SINAD Level at Injected Frequency [dBm]	12dB SINAD Level at Detected Frequency [dBm]	Rejection [dB]	Margin [dB]
869.040	No Point Detected	N/A	N/A	N/A	N/A
881.505	No Point Detected	N/A	N/A	N/A	N/A
893.970	No Point Detected	N/A	N/A	N/A	N/A

Sample of calculated result at N/A MHz, as the Minimum Margin point:

$$\begin{array}{rcl} 12\text{dB SINAD Level at Detected Frequency} & = & \text{N/A dBm} \\ -) 12\text{dB SINAD Level at Injected Frequency} & = & \text{N/A dBm} \\ \hline \text{Rejection} & = & \text{N/A dB} \end{array}$$

Minimum Margin : N/A

The point shown on “_____” is the Minimum Margin Point.

Tester : Yasuhisa Sakai