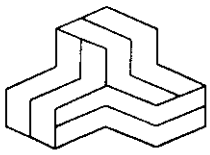


ENGINEERING TEST REPORT

Communications Receiver
MODEL NO.: IC-PCR100

In Accordance With

FCC PART 15, SUBPART B
CLASS B UNINTENTIONAL RADIATORS
& SCANNING RADIO RECEIVERS
FCC ID: AFJIC-PCR100

UltraTech's FILE NO.: ICOM2-RX

Tested for:

ICOM INC.
6-9-16 Kamihigashi
Hirano-ku, Osaka
Japan, 547

Tested by:

ULTRATECH GROUP OF LABS
4181 Sladeview Crescent, Unit 33
Mississauga, Ontario
Canada L5L 5R2

REPORT PREPARED BY: Dan Huynh

DATE: August 14, 1998

TABLE OF CONTENTS

1. EXHIBIT 1 - SUMMARY OF TEST RESULTS & STATEMENT OF CERTIFICATION

SUMMARY OF RESULTS

A representative test sample of **Communications Receiver, Model No.: IC-PCR100**, manufactured by **ICOM INC.** has been tested and found as follows:

AC Power-line Conducted Emissions: Complies with the Class B of FCC Part 15, Subpart B with at least 13.0 dB below the limit @ 120 VAC 60 Hz.

Receiver Antenna Power Conducted Emissions: Complies with the FCC Part 15, Subpart B, para. 15.111(a) with at least 20.1 dB below the limit.

Electric Field Radiated Emissions:

Digital Portion: - Complies with the Class B of FCC Part 15, Subpart B with at least 1.03 dB below the limit @ 3 meters.

Radio Receiver Portion: - Complies with the B of FCC Part 15, Subpart B with at least 13.7 dB below the limit @ 3 meters.

TESTIMONIAL AND STATEMENT OF CERTIFICATION

THIS IS TO CERTIFY:

1) *THAT the application was prepared either by, or under the direct supervision of the undersigned.*

2) *THAT the measurement data supplied with the application was taken under my direction and supervision.*

3) *THAT the data was obtained on representative production units, representative.*

4) *THAT, to the best of my knowledge and belief, the facts set forth in the application and accompanying technical data are true and correct.*

Certified by:

Tri Minh Luu, P. Eng.
V.P., Engineering

DATE: August 14, 1998

2. EXHIBIT 2 - GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

APPLICANT

ICOM INC.
6-9-16 Kamihigashi
Hirano-ku, Osaka
Japan, 547

Applicant's Representative: Mr. K. Asano

MANUFACTURER

ICOM INC.
6-9-16 Kamihigashi
Hirano-ku, Osaka
Japan, Postal Code

DESCRIPTION OF EQUIPMENT UNDER TEST

PRODUCT NAME:	Communications Receiver
MODEL NUMBER:	IC-PCR100
SERIAL NUMBER:	00005
TYPE OF EQUIPMENT:	Scanning Radio Receivers & Computing Devices for Home and Office Use.
OPERATING FREQ.:	0.5 - 1300 MHz
INPUT SUPPLY:	Using an external AC-DC power supply, Icom Model No.: 481210003CO, AC IN: 120VAC 60Hz, DC OUT: 12Vdc
INPUT IMPEDANCE:	50 Ohms
OSC. FREQUENCIES:	10.25 MHz, 9.8304 MHz, 12.8 MHz, 266.7 MHz (1st IF), 255 – 257 MHz (2nd IF), Lo-f: 532.4 – 1066.65 MHz, Lo-f: 266.7 – 532.35 MHz, VCO1: 532.4 – 749.95 MHz and VCO2: 750.0 – 1066.65 MHz
ASSOCIATED DEVICES:	ICOM Transformer, model 481210003CO
FCC ID:	AFJIC-PCR100
INTERFACE PORTS:	(1) RS232 Interface (female DB9) (2) Antenna Interface (BNC) (3) DC Power Interface (4) EXT-SP Interface

2.2. RELATED SUBMITTAL(S)/GRANT

Not applicable.

2.3. TEST METHODOLOGY

These tests were conducted on a sample of the equipment for the purpose of verification compliance with Code of Federal Regulations (CFR47-1991), Part 15, Subpart B, Class B - Unintentional Radiators & Scanning Radio Receivers.

Both conducted and radiated emissions measurements were conducted in accordance with American National Standards Institute ANSI C63.4-1992 - American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

2.4. TEST FACILITY

AC Powerline Conducted Emissions were performed in UltraTech's shielded room, 16'(L) by 12'(W) by 12'(H).

Radiated Emissions were performed at the Ultratech's 3 Meter Open Field Test Site (OFTS) situated in the Town of Oakville, province of Ontario.

The above sites have been calibrated in accordance with ANSI C63.4, and found to be in compliance with the requirements of Sec. 2.948 of the FCC Rules. The descriptions and site measurement data of the Oakville Open Field Test Site has been filed with FCC office (FCC File No.: 31040/SIT 1300B3) and Industry Canada office (Industry Canada File No.: IC2049). Last Date of Site Calibration: July 16, 1997.

The above test site is also filed with Interference Technology International Ltd (ITI - An EC Directive on EMC).

2.5. UNITS OF MEASUREMENTS

Measurements of conducted emissions are reported in units of dB referenced to one microvolt [dB(uV)] or dB of one miliwatts [dBm].

Measurements of radiated emissions are reported in units of dB referenced to one microvolt per meter [dB(uV)/m] at the distance specified in the report, wherever it is applicable.

3. EXHIBIT 3 - SYSTEM TEST CONFIGURATION

3.1. TEST SYSTEM DETAILS

The following peripherals, FCC identifiers and types interconnecting cables were used with the EUT for testing:

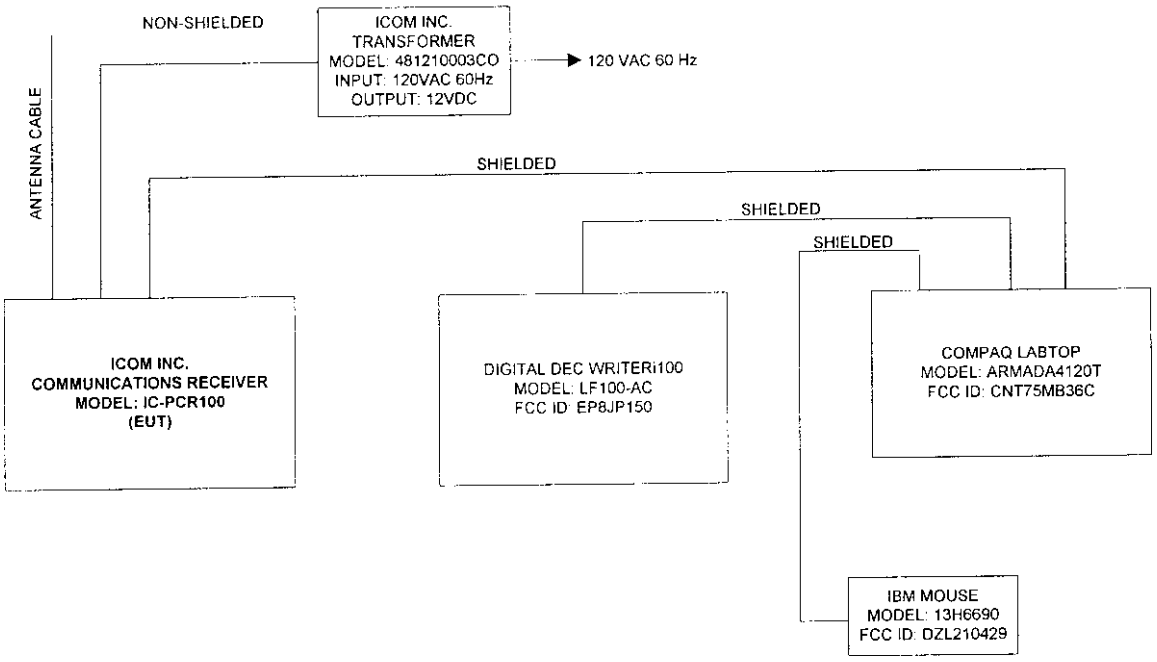
EUT: ICOM INC., Communications Receiver, Model: IC-PCR100, S/N: 00005,
OSC. FREQ: 9.8304 MHz, 10.25 MHz, 12.8 MHz, ID:
I/O Cable: RS232 (shielded), All other cables are non-shielded
Power Supply Cable: Non-shielded

PERIPHERAL: Digital DEC Writeri100 Printer, Model: LJ100-AC, FCC ID: EP8JP150
I/O Cable: All I/O Cables were shielded
Power Supply Cable: Non-shielded

PERIPHERAL: IBM Mouse, Model 13H6690, FCC ID: DZl210429
I/O Cable: Shielded

PERIPHERAL: Compag Labtop, Model: ARMADA4120T, FCC ID: CNT75MB36C
I /O Cable: Shielded
Power Supply Cable: Non-shielded

3.2. BLOCK DIAGRAMS OF TEST SETUP FOR EMISSIONS MEASUREMENTS



3.4. JUSTIFICATION

No deviation, in both configuration and operation manners, different from normal operation were required.

3.5. EUTS' OPERATING CONDITION DURING TESTING

The receiver was operating in the FCC's certified frequency band (30 – 960 MHz) at lowest, middle and highest frequency in this band. Operating frequency below 30 MHz and above 960 MHz are exempted.

3.6. SPECIAL ACCESSORIES

No special accessories were required.

3.7. EQUIPMENT MODIFICATIONS

To achieve compliance to Class B levels, the following change(s) were made by UltraTech's test house during compliance testing:

None noted.

4. EXHIBIT 4 - TEST DATA

4.1. AC POWERLINE CONDUCTED EMISSIONS @ FCC PART 15, PARA. 15.107

PRODUCT NAME: **Communications Receiver, Model No.: IC-PCR100**

FCC LIMIT:

FCC Part 15, Sub. B, Para. 15.107(a) - Radio Receiver and Class B Computer Peripherals.

The RF voltage conducted back onto the public utility lines shall not exceed 250 uV or 48.0 dBuV measured from 450 KHz to 30 MHz.

CLIMATE CONDITION:

Standard Temperature and Humidity:

- Ambient temperature: 23 °C
- Relative humidity: 42 %

POWER INPUT: 12 V dc.

TEST EQUIPMENT:

- Advantest R3271 Spectrum Analyzer, Frequency Range: 100Hz-26.5GHz, with built-in Peak, Quasi-Peak and Average Detectors.
- HP 11947A Transient Limiter, HP, Model 11947A, Frequency Range: 9KHz-200MHz, Attenuation: 10dB HP.
- HP 7475 Plotter
- EMCO 3825/2 LISN, Frequency Range: 9KHz-200MHz
- RF Shielded Enclosure (12x16x12 feet)

METHOD OF MEASUREMENTS:

Refer to ANSI C63.4-1992.

TEST RESULTS: Conforms.

TEST PERSONNEL: Mr. Hien Luu, Technician

TEST DATE: August 11, 1998

MEASUREMENT DATA

AC POWER-LINE CONDUCTED EMISSIONS

REMARKS

- *All rf emissions from 450 KHz to 30 MHz were scanned, and eight highest emission levels were recorded. See attached plots.*
- *P: Peak Detector, 10 KHz RBW, 10 KHz VBW*
- *Q: CISPR QUASI-PEAK, 9 KHz RBW, 1 MHz VBW.*
- *QP/BB: for broadband emission (QP level - AVG level > 6 dB); the recorded level was QP level less 13 dB.*

Operating Condition: Frequency scanned from 30 MHz to 960 MHz

FREQUENCY (MHz)	RF LEVEL (dBuV)	RECEIVER DETECTOR (P/QP/AVG)	QP/NB LIMIT (dBuV)	QP/BB LIMIT (dBuV)	MARGIN (dB)	PASS/ FAIL	LINE TESTED (L1/L2)
8.293	33.3	QP	48.0	61.0	-14.7	PASS	L1
9.580	32.6	QP	48.0	61.0	-15.4	PASS	L1
10.515	30.7	QP	48.0	61.0	-17.3	PASS	L1
20.918	28.9	QP	48.0	61.0	-19.1	PASS	L1
8.296	35.0	QP	48.0	61.0	-13.0	PASS	L2
9.463	33.5	QP	48.0	61.0	-14.5	PASS	L2
10.398	32.2	QP	48.0	61.0	-15.8	PASS	L2

UltraTech
Engineering Labs Inc.

APPLICANT: ICOM AMERICA PRODUCT: COMM RECEIVER FOR PC
MODEL: IC-PCR1000 S/N:
EMI Detector: [ ] Peak [V] Quasi Peak [ ] Average Temp.: 23 °C, Humidity: 55 % Test Date: AUG/4/98
Line Tested: L, Input Voltage: 120VAC, Tested by: HIEN
Test Performed:

14: 35: 36 AUG 11, 1998

Signal	Freq (MHz)	PK Amp	QP Amp	AV Amp	QP Δ L1
1	8.293175	37.1	33.3	28.4	-14.7
2	9.579750	35.3	32.6	28.2	-15.4
3	10.515250	34.0	30.7	26.9	-17.3
4	20.918375	32.2	28.9	24.4	-19.1

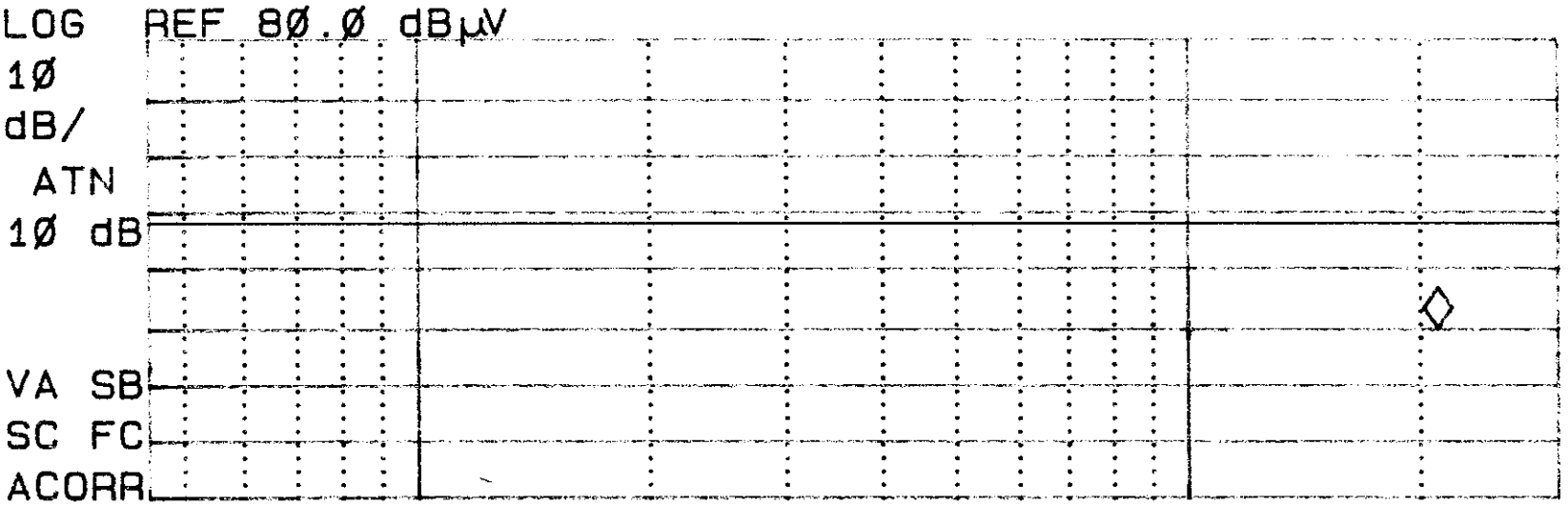
CLEAR WRITE A

MAX HOLD A

START 450 kHz

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 20.95 MHz
29.68 dBµV

VIEW A



BLANK A

Trace
A B C

More
1 of 4

START 450 kHz STOP 30.00 MHz
IF BW 9.0 kHz AVG BW 30 kHz SWP 1.33 sec

UltraTech
Engineering Labs Inc.

APPLICANT: ICOM AMERICA PRODUCT: COMM RECEIVER FOR PC
MODEL: IC-PCR 100 S/N:
EMI Detector: [ ] Peak [X] Quasi Peak [ ] Average Temp.: 23 °C, Humidity: 55 % Test Date: AUG 11/98
Line Tested: II, Input Voltage: 120VAC, Tested by: MIKE
Test Performed:

14: 22: Ø3 AUG 11, 1998

Signal	Freq (MHz)	PK Amp	QP Amp	AV Amp	QP-L1
1	8.296250	37.1	35.Ø	3Ø.6	-13.1
2	9.462875	36.6	33.5	27.1	-14.5
3	1Ø.398450	35.Ø	32.2	26.7	-15.8

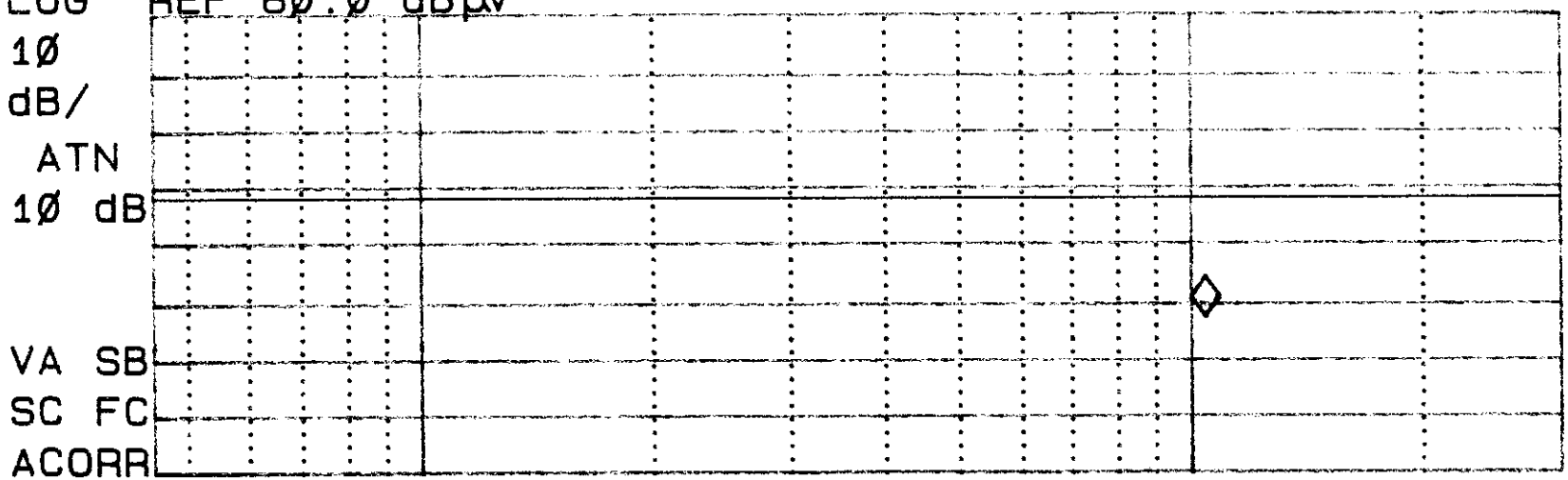
CLEAR
WRITE A

MAX
HOLD A

START
45Ø kHz

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 1Ø.41 MHz
27.15 dBµV

VIEW A



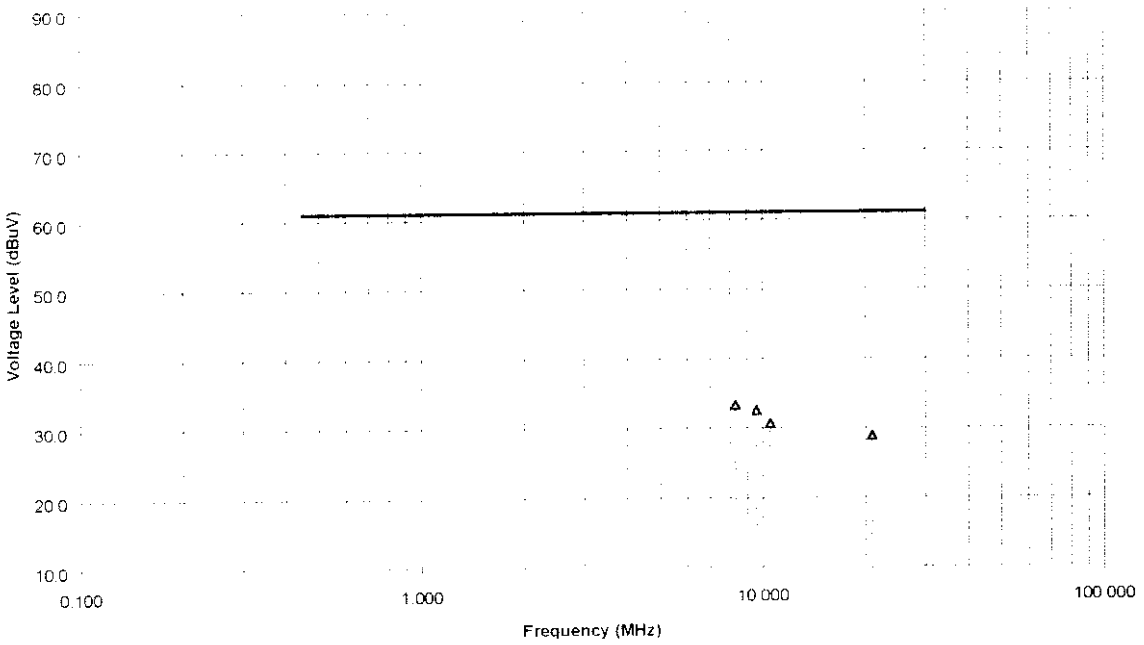
BLANK A

Trace
A B C

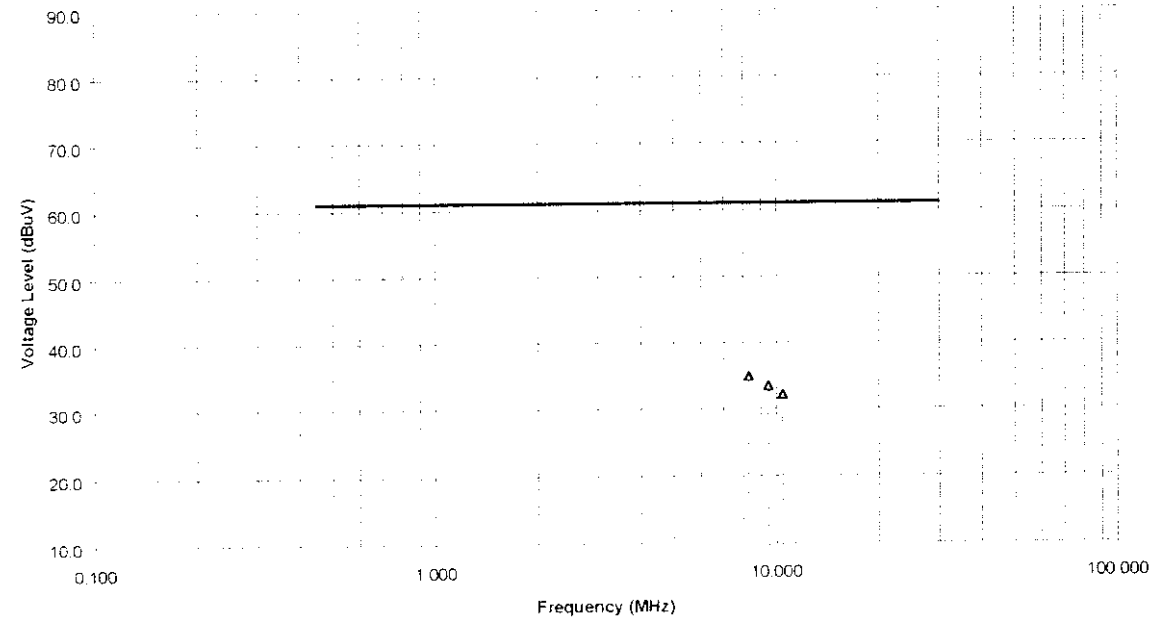
More
1 of 4

START 45Ø kHz
IF BW 9.Ø kHz
AVG BW 3Ø kHz
STOP 3Ø.ØØ MHz
SWP 1.33 sec

Icom INC. Communications Receiver, Model: IC-PCR100
AC Conducted Emissions - Line #1 (Hot)
Ultratech Engineering Labs Inc.



Icom INC. Communications Receiver, Model: IC-PCR100
AC Conducted Emissions - Line #2 (Neutral)
Ultratech Engineering Labs Inc.



4181 Sladeview Cres., Unit 33, Mississauga, Ontario, Canada L5L 5R2
Tel. #: 905-569-2550, Fax. #: 905-569-2480, Wesite: http://www.ultratech-labs.com

- Accredited by ITI (UK) Competent Body, NVLAP (USA) Accreditation Body & ACA/AUSTEL (Australian
- Recognized/Listed by FCC (USA), Industry Canada (Canada)

4.2. RECEIVER ANTENNA POWER CONDUCTED EMISSIONS @ FCC PART 15, PARA. 15.111(A)

PRODUCT NAME: **Communications Receiver, Model No.: IC-PCR100**

FCC LIMIT:

FCC Part 15, Sub. B, Para. 15.111(a):- Receivers that operate (tune) in the frequency range 30 to 960 Mhz and CB receivers that provides terminals for the connection of an external antenna may be tested to demonstrate compliance with the provisions of @ 15.109 with the antenna terminals shielded and terminated with a resistive termination equal to the impedance specified for the antenna, provided these receivers also comply with the following:- ***With the receiver antenna terminal terminal connected to a resistive termination equal to the impedance specified or employed for the antenna, the power at the antenna terminal at frequency within the range from 30 Mhz to 5th harmonic of the highest frequency shall not exceed 2.0 nanowatts (or -57 dBm @ 50 Ohm).***

CLIMATE CONDITION:

Standard Temperature and Humidity:

- Ambient temperature: 23 °C
- Relative humidity: 42 %

POWER INPUT:

12 V dc.

TEST EQUIPMENT:

- Advantest R3271 Spectrum Analyzer, Frequency Range: 100Hz-26.5GHz, with built-in Peak, Quasi-Peak and Average Detectors.
- HP 7475 Plotter

METHOD OF MEASUREMENTS:

Refer to ANSI C63.4-1992.

TEST RESULTS: Conforms.

TEST PERSONNEL: Mr. Hien Luu, Technician

TEST DATE: August 13, 1998

MEASUREMENT DATA

RECEIVER ANTENNA POWER CONDUCTED EMISSIONS

REMARKS

- *All rf emissions from 30 Mhz to 5th harmonic of the highest frequency. See attached plots.*
- *Peak Detector, 100 KHz RBW, 100 KHz VBW*

Antenna Power Conducted Emissions From Rx @ 31.111 MHz

FREQUENCY (MHz)	RF LEVEL (dBm)	DETECTOR USED (PEAK)	LIMIT (dBm)	MARGIN (dB)	PASS/ FAIL
593.0	-77.1	PEAK	-57.0	-20.1	PASS
891.0	-85.6	PEAK	-57.0	-28.6	PASS
No other significant signal were found in the frequency range from 30 MHz to 1.5 GHz. Refer to attached plots for details					

Antenna Power Conducted Emission From Rx @ 495 MHz

FREQUENCY (MHz)	RF LEVEL (dBm)	DETECTOR USED (PEAK)	LIMIT (dBm)	MARGIN (dB)	PASS/ FAIL
*	*	*	*	*	*

* No significant signal was found in the frequency range from 30 MHz to 4 GHz. Refer to attached plots for details.

Antenna Power Conducted Emission From Rx @ 960 MHz

FREQUENCY (MHz)	RF LEVEL (dBm)	DETECTOR USED (PEAK)	LIMIT (dBm)	MARGIN (dB)	PASS/ FAIL
**	**	**	**	**	**

** No significant signal was found in the frequency range from 30 MHz to 6.2 GHz. Refer to attached plots for details.

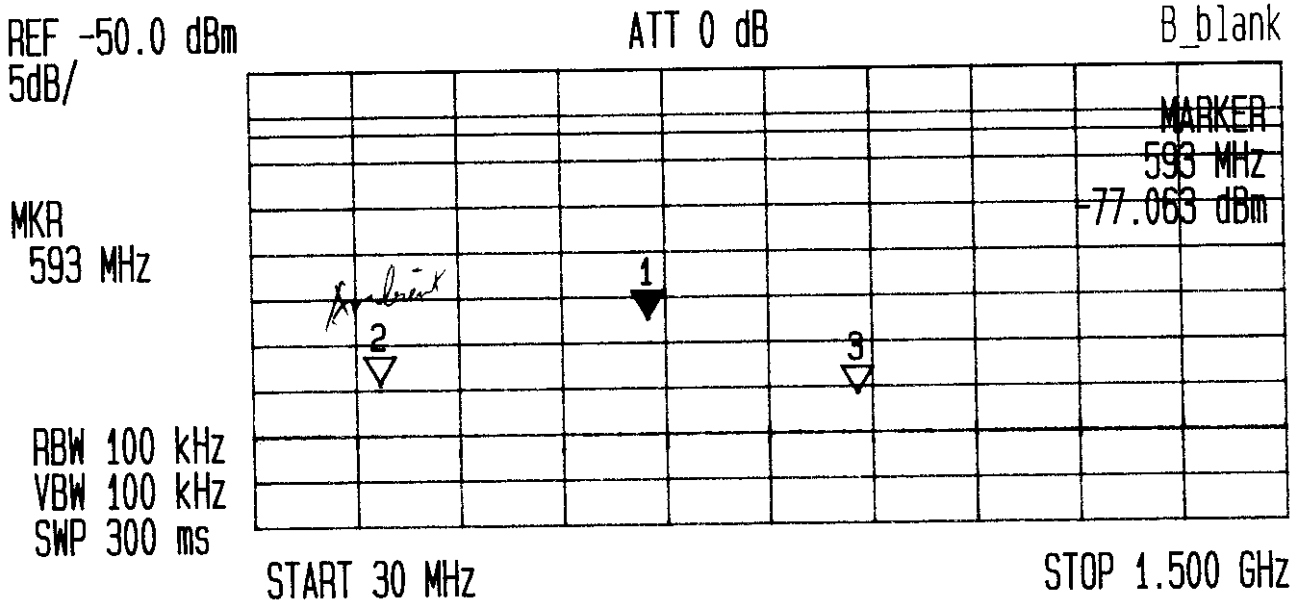
UltraTech Engineering Labs Inc.

RECEIVER ANTENNA POWER CONDUCTED EMISSIONS
ICOM COMMUNICATIONS RECEIVERS, MODEL IC-PCR100

RECEIVER FREQUENCY: 31.111 **MHz**

Rx Loc Freq. = 31.111 MHz + 266.7 MHz = 297.811 MHz

Date: Aug. 13/98
Tested by: Hien Luu, EMI Tech.



*** Multi Marker List ***

No.1:	593 MHz	-77.063 dBm	A
No.2:	211 MHz	-84.047 dBm	A
No.3:	891 MHz	-85.625 dBm	A
No.4:			
No.5:			
No.6:			
No.7:			
No.8:			
Δ:			

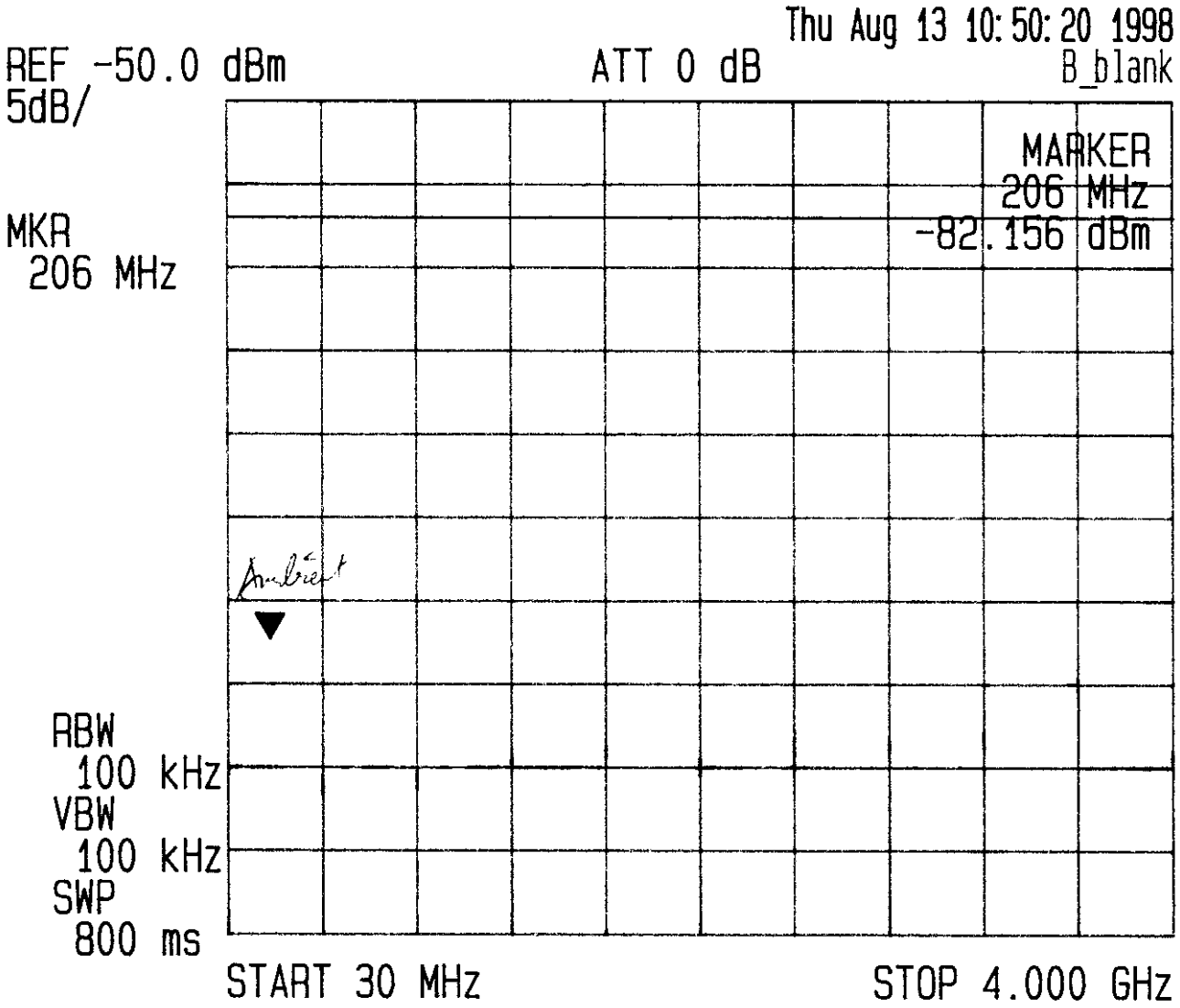
UltraTech Engineering Labs Inc.

RECEIVER ANTENNA POWER CONDUCTED EMISSIONS
ICOM COMMUNICATIONS RECEIVERS, MODEL IC-PCR100

RECEIVER FREQUENCY: 495 **MHz**

Rx Loc Osc. Freq. = 495 + 266.7 = 761.7 MHz

Date: Aug. 13/98
Tested by: Hien Luu, EMI Tech.



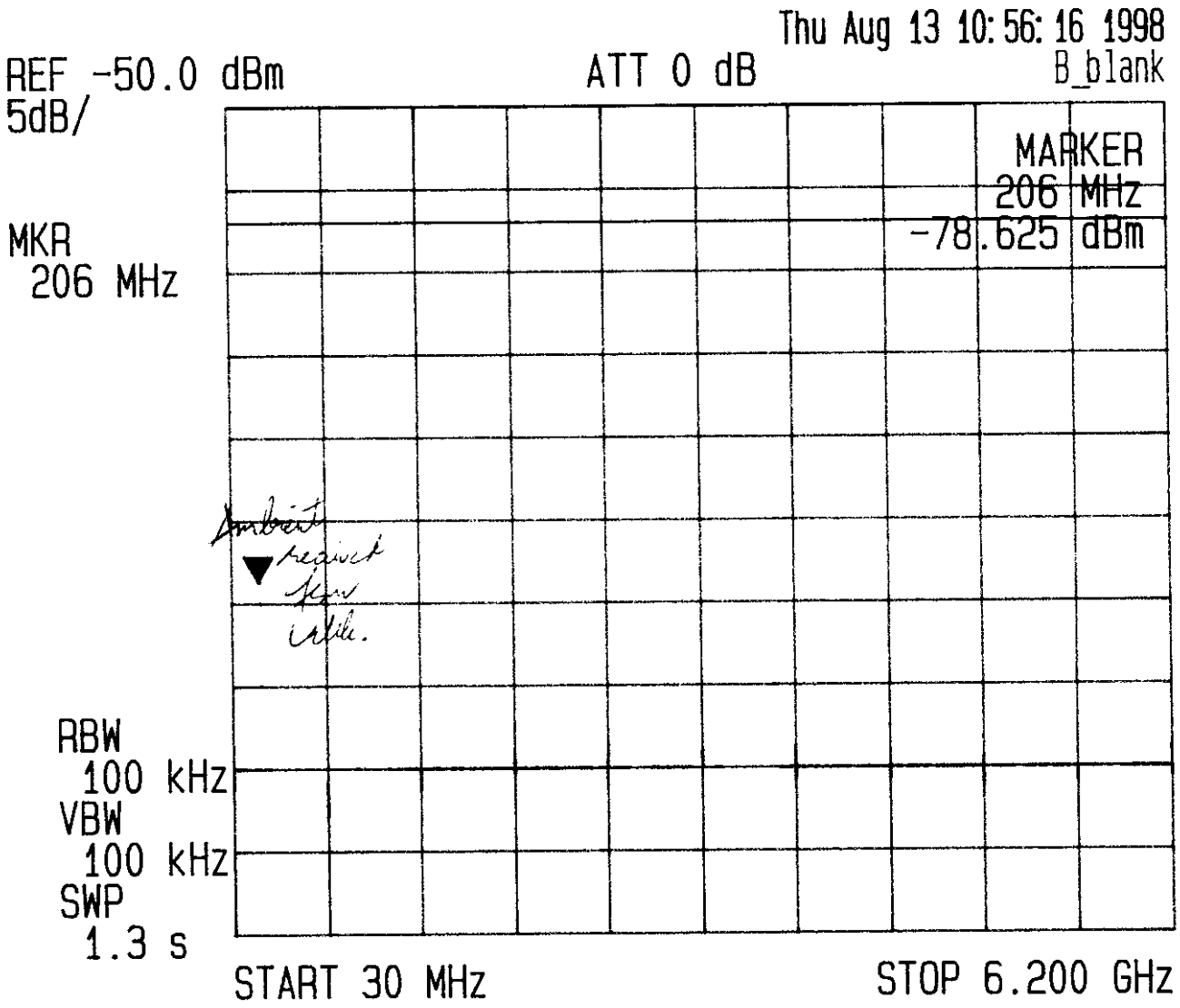
UltraTech Engineering Labs Inc.

RECEIVER ANTENNA POWER CONDUCTED EMISSIONS
ICOM COMMUNICATIONS RECEIVERS, MODEL IC-PCR100

RECEIVER FREQUENCY: 960 **MHz**

Rx Lo. Osc. Freq. = 960 + 266.7 = 1226.7 MHz

Date: Aug. 13/98
Tested by: Hien Luu, EMI Tech.



4.3. RADIATED EMISSIONS @ FCC PART 15, PARA. 15.109

PRODUCT NAME: **Communications Receiver, Model No.: IC-PCR100**

FCC LIMIT:

FCC Part 15, Sub. B, Para. 15.109(a) - Scanning Radio Receivers and Class B Computer Peripherals

The RF radiated emissions measured at 3 Meter distance shall not exceed the field strength below:

FREQUENCY (MHz)	FIELD STRENGTH LIMIT @ 3 Meters (dBuV/m)
30 - 88	40.0
88 - 216	43.5
216 - 960	46.0
Above 960	54.0

CLIMATE CONDITION:

Standard Temperature and Humidity:

- Ambient temperature: 20 °C
- Relative humidity: 43 %

POWER INPUT: 12 V dc

TEST EQUIPMENT:

- **EMI Receiver System/Spectrum Analyzer**, Hewlett Packard, Model 8546A, Input +25dBm max., 9KHz-5.6GHz, 50 Ohms, built-in Peak, Quasi-Peak & Average Detectors, Pre-Amplifier and Tracking Signal Generator. This System includes: (1) HP 85460A RF Filter Section, S/N: 3448A00236 and (2) HP 85462A Receiver RF Section/Display, S/N: 3520A00248.
- **Log Periodic/Bow-Tie Antenna**, Emco, Model 3143, SN 1029, 20 - 1000 MHz, @ 50 ohms.
- **Log Periodic Antenna**, A.H. Systems, Model SAS-200/518, SN 343, Frequency Range: 1 - 18 GHz, @ 50 Ohms.

METHOD OF MEASUREMENTS: Refer to ANSI C63.4-1992.

TEST RESULTS: Conforms

TEST PERSONNEL: Mr. Hien Luu, Technician

TEST DATE: August 13, 1998

MEASUREMENT DATA:

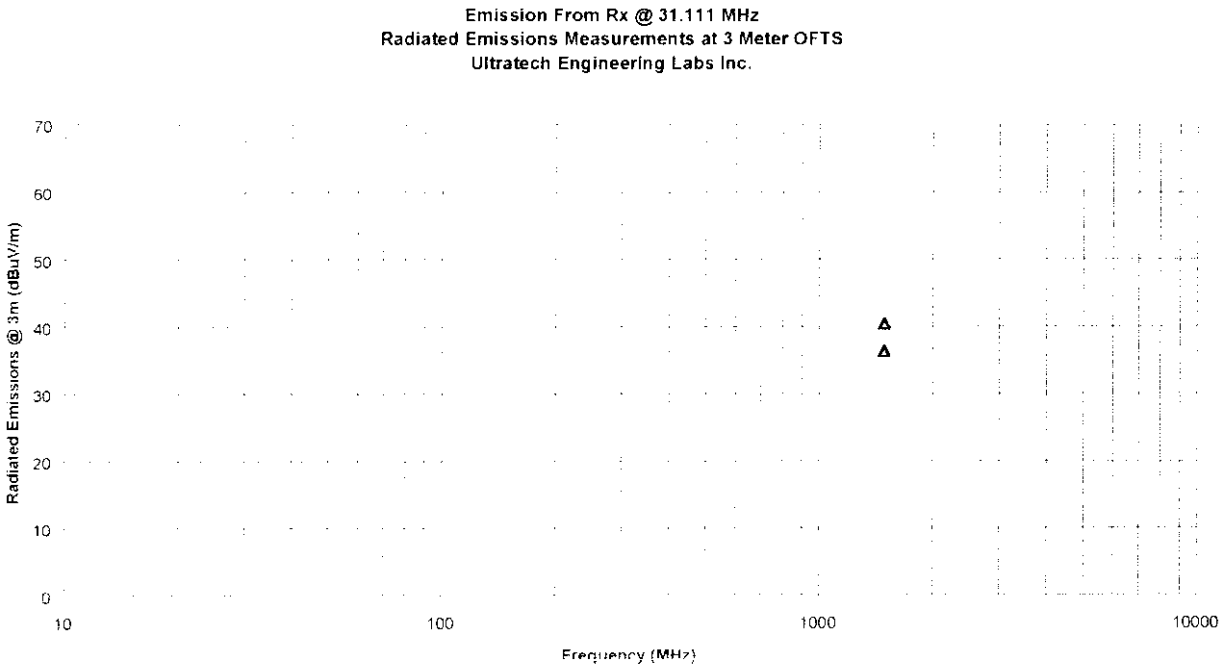
RADIATED EMISSIONS (@ 3 METERS)

REMARKS

- *All rf emissions from 30 to 5th harmonic of the receiver frequency or 1000 MHz (whichever is greater) were scanned, and all emission levels greater than 30 dBuV/m were recorded.*
- *For Frequency range 30 - 1000 MHz*
  - ◊ *Peak Detector, 100KHz RBW, 100KHz VBW*
  - ◊ *CISPR QUASI-PEAK, 120KHz RBW, 1MHz VBW.*
- *For Frequency > 1 Ghz*
  - ◊ *Peak Detector, 1 MHz RBW, 1 MHz VBW*

Radiated Emissions From Rx @ 31.111 MHz

FREQUENCY (MHz)	RF LEVEL (dBuV/m)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBuV/m)	MARGIN (dB)	PASS/ FAIL
1489.60	40.35	PEAK	V	54.0	-13.7	PASS
1489.60	36.34	PEAK	H	54.0	-17.7	PASS
No other significant RF emissions were found in the frequency range from 30 MHz to 1.5 GHz						



Radiated Emissions From Rx @ 495 MHz

FREQUENCY (MHz)	RF LEVEL (dBuV/m)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBuV/m)	MARGIN (dB)	PASS/ FAIL
*	*	*	*	*	*	*

* No significant signal were found in the frequency range of 30 MHz - 4 GHz.

Radiated Emissions From Rx @ 960 MHz

FREQUENCY (MHz)	RF LEVEL (dBuV/m)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBuV/m)	MARGIN (dB)	PASS/ FAIL
**	**	**	**	**	**	**

** No significant signal were found in the frequency range of 30 MHz - 6.2 GHz.

Radiated Emissions From Digital Circuits

FREQUENCY (MHz)	RF LEVEL (dBuV/m)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBuV/m)	MARGIN (dB)	PASS/ FAIL
48.01	36.77	PEAK	V	40.0	-3.2	PASS
48.01	37.27	QP	H	40.0	-2.7	PASS
66.49	36.25	QP	V	40.0	-3.8	PASS
66.49	36.10	PEAK	H	40.0	-3.9	PASS
115.99	32.75	PEAK	V	43.5	-10.8	PASS
115.99	33.02	PEAK	H	43.5	-10.5	PASS
154.66	28.79	PEAK	V	43.5	-14.7	PASS
154.66	33.67	PEAK	H	43.5	-9.8	PASS
181.06	40.67	QP	V	43.5	-2.8	PASS
181.06	38.37	PEAK	H	43.5	-5.1	PASS
232.01	37.35	PEAK	V	46.0	-8.7	PASS
232.01	37.85	PEAK	H	46.0	-8.2	PASS
241.43	34.77	PEAK	V	46.0	-11.2	PASS
241.43	41.10	PEAK	H	46.0	-4.9	PASS
299.24	35.47	PEAK	V	46.0	-10.5	PASS
299.24	40.00	PEAK	H	46.0	-6.0	PASS
301.74	42.50	PEAK	V	46.0	-3.5	PASS
301.74	42.65	QP	H	46.0	-3.4	PASS
322.20	34.60	PEAK	V	46.0	-11.4	PASS
322.20	36.12	PEAK	H	46.0	-9.9	PASS
336.05	31.15	PEAK	V	46.0	-14.9	PASS
336.05	35.77	PEAK	H	46.0	-10.2	PASS
348.00	41.57	PEAK	V	46.0	-4.4	PASS
348.00	40.95	PEAK	H	46.0	-5.1	PASS
386.66	39.95	QP	V	46.0	-6.1	PASS
386.66	42.20	PEAK	H	46.0	-3.8	PASS
415.00	34.40	PEAK	V	46.0	-11.6	PASS
415.00	31.39	PEAK	H	46.0	-14.6	PASS
422.39	35.75	PEAK	V	46.0	-10.3	PASS
422.39	35.20	PEAK	H	46.0	-10.8	PASS
425.34	41.32	QP	V	46.0	-4.7	PASS
425.34	40.50	PEAK	H	46.0	-5.5	PASS
429.60	35.22	PEAK	V	46.0	-10.8	PASS
429.60	31.32	PEAK	H	46.0	-14.7	PASS
448.79	34.47	PEAK	V	46.0	-11.5	PASS
448.79	27.18	PEAK	H	46.0	-18.8	PASS
460.00	35.60	PEAK	V	46.0	-10.4	PASS
460.00	36.52	PEAK	H	46.0	-9.5	PASS

Continued..

FREQUENCY (MHz)	RF LEVEL (dBuV/m)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBuV/m)	MARGIN (dB)	PASS/ FAIL
464.00	40.32	PEAK	V	46.0	-5.7	PASS
464.00	38.30	PEAK	H	46.0	-7.7	PASS
482.93	42.00	PEAK	V	46.0	-4.0	PASS
482.93	36.65	PEAK	H	46.0	-9.4	PASS
498.68	37.35	PEAK	V	46.0	-8.7	PASS
498.68	37.07	PEAK	H	46.0	-8.9	PASS
502.65	39.42	PEAK	V	46.0	-6.6	PASS
515.66	35.27	PEAK	V	46.0	-10.7	PASS
515.66	33.40	PEAK	H	46.0	-12.6	PASS
520.00	33.95	PEAK	V	46.0	-12.1	PASS
520.00	35.65	PEAK	H	46.0	-10.4	PASS
528.42	35.50	PEAK	V	46.0	-10.5	PASS
543.26	40.77	QP	V	46.0	-5.2	PASS
543.26	36.17	PEAK	H	46.0	-9.8	PASS
551.10	37.80	PEAK	V	46.0	-8.2	PASS
551.10	31.52	PEAK	H	46.0	-14.5	PASS
565.18	35.92	PEAK	V	46.0	-10.1	PASS
565.18	33.90	PEAK	H	46.0	-12.1	PASS
580.00	36.00	PEAK	V	46.0	-10.0	PASS
580.00	35.65	PEAK	H	46.0	-10.4	PASS
588.69	35.27	PEAK	V	46.0	-10.7	PASS
588.69	38.07	PEAK	H	46.0	-7.9	PASS
598.40	33.68	PEAK	V	46.0	-12.3	PASS
598.40	37.95	PEAK	H	46.0	-8.1	PASS
603.62	40.27	QP	V	46.0	-5.7	PASS
603.62	42.57	PEAK	H	46.0	-3.4	PASS
618.69	42.17	PEAK	V	46.0	-3.8	PASS
618.69	40.42	PEAK	H	46.0	-5.6	PASS
644.41	36.20	PEAK	V	46.0	-9.8	PASS
644.41	35.95	PEAK	H	46.0	-10.1	PASS
649.02	39.10	QP	V	46.0	-6.9	PASS
649.02	42.12	PEAK	H	46.0	-3.9	PASS
663.88	43.50	QP	V	46.0	-2.5	PASS
663.88	41.20	QP	H	46.0	-4.8	PASS
672.10	37.29	PEAK	V	46.0	-8.7	PASS
672.10	36.79	QP	H	46.0	-9.2	PASS
677.40	37.72	PEAK	V	46.0	-8.3	PASS
677.40	35.35	PEAK	H	46.0	-10.7	PASS
696.00	41.54	PEAK	V	46.0	-4.5	PASS

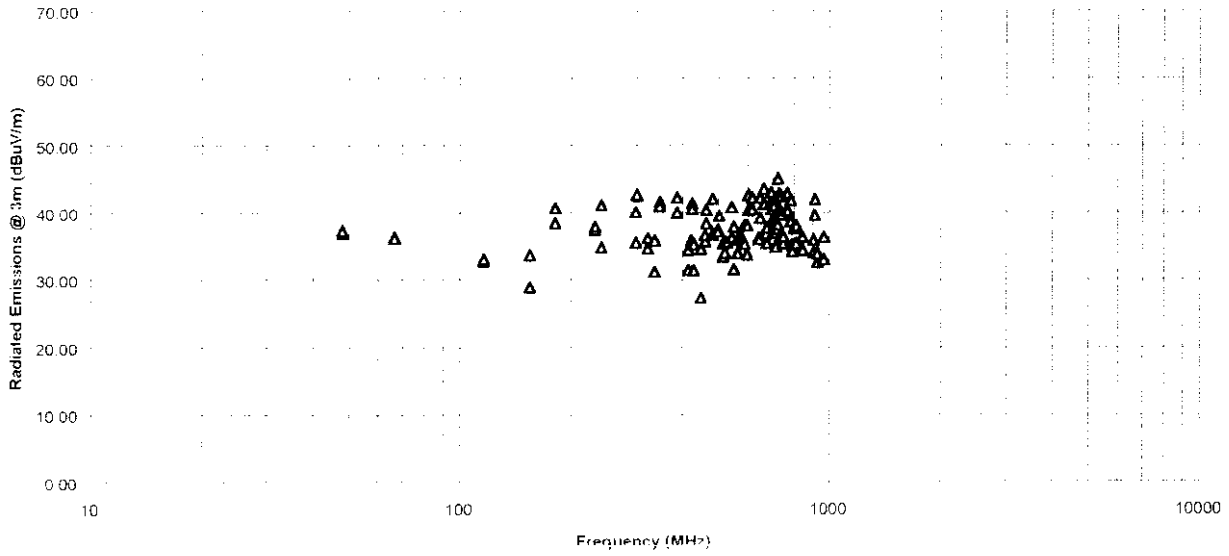
Continued..

FREQUENCY (MHz)	RF LEVEL (dBuV/m)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBuV/m)	MARGIN (dB)	PASS/ FAIL
696.00	42.92	PEAK	H	46.0	-3.1	PASS
698.19	38.67	PEAK	V	46.0	-7.3	PASS
698.19	40.42	PEAK	H	46.0	-5.6	PASS
706.90	41.00	PEAK	V	46.0	-5.0	PASS
706.90	36.90	PEAK	H	46.0	-9.1	PASS
709.31	39.22	QP	V	46.0	-6.8	PASS
709.31	37.85	QP	H	46.0	-8.2	PASS
714.10	37.41	PEAK	V	46.0	-8.6	PASS
714.10	34.85	PEAK	H	46.0	-11.2	PASS
717.90	37.95	PEAK	V	46.0	-8.1	PASS
717.90	37.55	PEAK	H	46.0	-8.5	PASS
724.35	44.97	QP	V	46.0	-1.0	PASS
724.35	38.10	QP	H	46.0	-7.9	PASS
732.40	42.75	PEAK	V	46.0	-3.3	PASS
732.40	40.47	PEAK	H	46.0	-5.5	PASS
734.69	42.60	PEAK	V	46.0	-3.4	PASS
734.69	39.62	PEAK	H	46.0	-6.4	PASS
739.36	39.57	QP	V	46.0	-6.4	PASS
739.36	42.42	PEAK	H	46.0	-3.6	PASS
750.00	35.25	PEAK	V	46.0	-10.8	PASS
750.00	36.27	PEAK	H	46.0	-9.7	PASS
769.66	42.87	PEAK	V	46.0	-3.1	PASS
769.66	40.25	PEAK	H	46.0	-5.8	PASS
784.87	41.75	PEAK	V	46.0	-4.3	PASS
784.87	38.62	PEAK	H	46.0	-7.4	PASS
793.14	35.07	PEAK	V	46.0	-10.9	PASS
793.14	34.22	PEAK	H	46.0	-11.8	PASS
805.59	37.52	PEAK	V	46.0	-8.5	PASS
805.59	37.85	PEAK	H	46.0	-8.2	PASS
812.00	37.95	PEAK	V	46.0	-8.1	PASS
812.00	35.30	PEAK	H	46.0	-10.7	PASS
845.06	36.25	PEAK	V	46.0	-9.8	PASS
845.06	34.37	PEAK	H	46.0	-11.6	PASS
905.30	35.82	PEAK	V	46.0	-10.2	PASS
905.30	34.00	PEAK	H	46.0	-12.0	PASS
912.98	39.52	PEAK	V	46.0	-6.5	PASS
912.98	41.92	PEAK	H	46.0	-4.1	PASS
928.03	32.49	PEAK	V	46.0	-13.5	PASS
928.03	33.89	PEAK	H	46.0	-12.1	PASS

Continued..

FREQUENCY (MHz)	RF LEVEL (dBuV/m)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBuV/m)	MARGIN (dB)	PASS/ FAIL
964.71	36.22	PEAK	V	54.0	-17.8	PASS
964.71	33.00	PEAK	H	54.0	-21.0	PASS

Icom Inc. Communications Receiver, Model IC-PCR100
Radiated Emissions Measurements at 3 Meter OFTS
Ultratech Engineering Labs Inc.



5. EXHIBIT 5 - GENERAL TEST PROCEDURES

5.1. AC POWERLINE CONDUCTED EMISSIONS MEASUREMENTS - GENERAL TEST METHOD

- AC Powerline Conducted Emissions were performed in the shielded room, 16'(L) by 12'(W) by 12'(H).
- Conducted power-line measurements were made over the frequency range from 450 KHz to 30 MHz to determine the line-to-ground radio noise voltage which was conducted from the EUT power-input terminals that were directly connected to a public power network.
- The EUT normally received power from another device that connects to the public utility ac power lines, measurements would be made on that device with the EUT in operation to ensure that the device continues to comply with the appropriate limits while providing the EUT with power.
- If the EUT operates only from internal or dedicated batteries, with no provisions for connection to the public utility ac power lines, ac power-line conducted measurements are not required.
- Table-top devices were placed on a platform of nominal size 1 m by 1.5m raised 80 cm above the conducting ground plane.
- The EUT current-carrying power lead, except the ground (safety) lead, was individually connected through a LISN to the power source. All unused 50-Ohm connectors of the LISN was terminated in 50-ohm when not connected to the measuring instruments.
- The line cord of the EUT connected to one LISN which was connected to the measuring instrument. Those power cords for the units of devices not under measurement were connected to a separate multiple ac outlets. Drawings and photographs of typically conducted emission test setups were shown in the Test Report. Each current-carrying conductor of the EUT shall be individually tested.
- The EUT was normally operated with a ground (safety) connection, the EUT was connected to the ground at the LISN through a conductor provided in the lead from the ac power mains to the LISN.
- The excess length of the power cord was folded back and forth in an 8-shape on a wooden strip with a vertical prong located on the top of the LISN case.
- The EUT was set-up in its typical configuration and operated in its various modes as described in 3.2 of the test report.
- A preliminary scan was made by using spectrum analyzer system with the detector function set to PEAK mode (10 KHz RBW, 10 KHz VBW), frequency span 450KHz-30MHz.
- The maximum conducted emission for a given mode of operation was found by using the following step-by-step procedure:

  Step1. Monitor the frequency range of interest at a fixed EUT azimuth.

  Step2. Manipulate the system cables and peripheral devices to produce highest amplitude signal relative to the limit. Note the amplitude and frequency of the suspect signal.

  Step3. The effects of various modes of operation is examined. This is done by varying equipment operation modes as step 2 is being perfomed.

Step4. After completing step 1 through 3, record EUT and peripheral device configuration, mode of operation, cable configuration, signal levels and frequencies for final test.

- Each highest signal level at the maximized test configuration was zoomed in a small frequency span on the spectrum analyzer's display (the manipulation of cables and peripheral devices and EUT operation modes might have to be repeated to obtain the highest signal level with the spectrum analyzer set to PEAK detector mode 10 KHz RBW and 10 KHz VBW). The spectrum analyzer was then set to CISPR QUASI-PEAK detector mode (9 KHz RBW, 1 MHz VBW) and the final highest RF signal level and frequency was record.

- ***Broad-band ac powerline conducted emissions***:- If the EUT exhibits ac powerline conducted emissions that exceed the limit with the instrument set to the quasi-peak mode, then measurements should be made in the average mode. If the amplitude measured in the quasi-peak mode is at least 6 dB higher than the amplitude measured in the average mode, the level measured in quasi peak mode may be reduced by 13 dB before comparing it to the limit.

5.2. ELECTRICAL FIELD RADIATED EMISSIONS MEASUREMENTS - GENERAL TEST METHOD

- The radiated emission measurements were performed at the Ultratech's 3 Meter Open Field Test Site (OFTS) situated in the Town of Oakville, province of Ontario. The Attenuation Characteristics of OFTS have been filed to FCC.

- Radiated emissions measurements were made using the following test instruments:

1. Calibrated EMCO biconilog antenna in the frequency range from 30 MHz to 2000 MHz.
2. Calibrated A.H. Systems log periodic antenna in the frequency range above 1000 MHz (1GHz - 18 GHz).
3. Calibrated Advantest spectrum analyzer and pre-selector. In general, the spectrum analyzer would be used as follows:

   – The rf electric field levels were measured with the spectrum analyzer set to PEAK detector (100 KHz RBW and VBW $\geq$ RBW).

   – If any rf emission was observed to be a broadband noise, the spectrum analyzer's CISPR QUASI-PEAK detector (120 KHz RBW and VBW $\geq$ RBW) was then set to measure the signal level.

   – If the signal being measured was narrowband and the ambient field was broadband, the bandwidth of the spectrum analyzer was reduced.

- The EUT was set-up in its typical configuration and operated in its various modes as described in 3.2 of the test report.

- The frequencies of emissions was first detected. Then the amplitude of the emissions was measured at the specified measurement distance using required antenna height, polarization, and detector characteristics.

- During this process, cables and peripheral devices were manipulated within the range of likely configuration.

- For each mode of operation required to be tested, the frequency spectrum was monitored. Variations in antenna heights (from 1 meter to 4 meters above the ground plane), antenna polarization (horizontal plane and vertical plane), cable placement and peripheral placement were explored to produce the highest amplitude signal relative to the limit.

The maximum radiated emission for a given mode of operation was found by using the following step-by-step procedure:

Step1: Monitor the frequency range of interest at a fixed antenna height and EUT azimuth.

Step2: Manipulate the system cables to produce highest amplitude signal relative to the limit. Note the amplitude and frequency of the suspect signal.

Step3: Rotate the EUT 360 degrees to maximize the suspected highest amplitude signal. If the signal or another at a different frequency is observed to exceed the previously noted highest amplitude signal by 1 dB or more, go back to the azimuth and repeat Step 2. Otherwise, orient the EUT azimuth to repeat the highest amplitude observation and proceed.

Step4: Move the antenna over its full allowed range of travel (1 to 4 meters) to maximize the suspected highest amplitude signal. If the signal or another at a different frequency is observed to exceed the previously noted highest amplitude signal by 1 dB or more, return to Step 2 with the highest amplitude observation and proceed.

Step5: Change the polarization of the antenna and repeat Step 2 through 4. Compare the resulting suspected highest amplitude signal with that found for the other polarization. Select and note the higher of the two signals. This signal is termed the highest observed signal with respect to the limit for this EUT operational mode.

Step6: The effects of various modes of operation is examined. This is done by varying the equipment modes as steps 2 through 5 are being performed.

Step7: After completing steps 1 through 6, record the final highest emission level, frequency, antenna polarization and detector mode of the measuring instrument.

Calculation of Field Strength:

The field strength is calculated by adding the calibrated antenna factor and cable factor, and subtracting the Amplifier gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CF - AG

Where	FS	=	Field Strength
	RA	=	Receiver/Analyzer Reading
	AF	=	Antenna Factor
	CF	=	Cable Attenuation Factor
	AG	=	Amplifier Gain

Example: If a receiver reading of 60.0 dBuV is obtained, the antenna factor of 7.0 dB/m and cable factor of 1.0 dB are added, and the amplifier gain of 30 dB is subtracted. The actual field strength will be:.

Field Level = 60 + 7.0 + 1.0 - 30 = 38.0 dBuV/m.

Field Level = $10^{(38/20)}$ = 79.43 uV/m.

Notes: The frequency and amplitude of at least six highest conducted emissions relative to the limit are recorded unless such emissions are more than 20 dB below the limit. If less than six emissions are within 20dB of the limit, the background or receiver noise level shall be reported at representative frequencies.

6. EXHIBIT 6 - INFORMATION RELATED TO EQUIPMENT UNDER TESTS

6.1. FCC ID LABELING AND SKETCH OF FCC LABEL LOCATION

Refer to the attached sheets

6.2. PHOTOGRAPHS OF EQUIPMENT UNDER TEST

Refer to the attached photographs

6.3. SYSTEM BLOCK DIAGRAM(S)

Refer to the attached sheets

6.4. SCHEMATIC DIAGRAMS

Refer to the attached sheets

6.5. USER'S MANUAL WITH "FCC INFORMATION TO USER STATEMENTS"

Refer to the attached Users' manual