

Test Report

TEST PROCEDURES AND TEST SITE DESCRIPTION

MEASUREMENT ITEMS

Section No.

5-1 Field Strength of Radiated Emissions

15.249(a)(b)
15.205 / 15.209

5-2 Power Line Conducted Emissions

15.207

SUPPLEMENT DATA - BAND EDGE EMISSIONS

5-1 Field Strength of Radiated Emissions

15.249(a)(b)
15.205 / 15.209

The measurements were performed in accordance with the ANSI C63.4-1992. Field Strength measurements of radiated spurious emissions were made at the open test site of a 3 meter range maintained by Uniden Corporation in Japan. Complete description and measurement data of this test site have been placed on file with the Commission.

The radio frequency spectrum was scanned in the range of 30 MHz to 10 GHz in accordance with the section 15.33(b) of the FCC Rules. The frequency below 1 GHz, the measurement was carried out by using CISPR quasi-peak detector, Rohde Schwartz EUS-2 Test Receiver or the Spectrum Analyzer in accordance with the sections 15.33(a) and 15.35(a). The frequency above 1 GHz, the measurement was carried out by using the Hewlett Packard 8566B Spectrum Analyzer in accordance with the section 15.35(b).

A bilog antenna CBL6111 was used to cover the range from 30 MHz to 1000 MHz. Narrowband tuned dipole antennas SINGER DM-105 were used over the entire 25 to 1000 MHz range for precision measurements of field strength. Above 1000 MHz, a horn antenna EMCO 3115 was used.

For each spurious or harmonic frequency, the antenna was raised and lowered to obtain a maximum reading on the Spectrum Analyzer with antenna horizontally polarized. Then the turntable, on which the equipment under test was placed, was rotated a minimum of 360 degrees to further increase the reading on the Spectrum Analyzer. This procedure was repeated with the antenna vertically polarized. The equipment under test was placed in its normal operating position on a turntable approximately 1 meter in height.

In order to convert the measured emission levels into field strength in dBuV/m, the actual field strength (E_f) is determined by algebraically adding the measured emission level (E_m) and the antenna correction factor (ACF) including the cable loss at the appropriate frequency. $E_f \text{ [dBuV/m]} = E_m \text{ [dBuV/m]} + \text{ACF [dB]}$

FCC Limits:

- a) Fundamental emission: 94 dBuV/m (50,000 uV/m)
- b) Spurious emissions:

30 - 88 MHz	40 dBuV/m	(100 uV/m)
88 - 216 MHz	43.5 dBuV/m	(150 uV/m)
216 - 960 MHz	46 dBuV/m	(200 uV/m)
Above 960 MHz	54 dBuV/m	(500 uV/m)

Test Results: Refer to the attached test reports. All emissions not reported were more than 20 dB below the limits.

NOTE:

For measurement of the handset, all of the testing were made with the internal battery that is fully charged.

For measurement of base unit, all of the testing were made with the AC Adapter which connected to a standard voltage source.

5-2 Power Line Conducted Emissions

15.207

The measurements were performed in accordance with the ANSI C63.4-1992. During the measurements, a standard voltage source is fed into the unit under test through a power line impedance stabilization network.

FCC Limits:

The radio frequency voltage that is conducted back into the AC power line on any frequencies within the band from 450kHz to 30MHz shall not exceed 250uV (48 dBuV).

Test Results: Refer to the attached test reports. All emissions not reported were more than 20 dB below the limits.

NOTE:

Regarding the Handset, this FCC requirement is not applicable to it since the Handset is intended to use the battery only.

SUPPLEMENT DATA - BAND EDGE EMISSION

Attached data show the handset's transmission on lowest channel and base unit's transmission on highest channel.

At the frequency on 902 and 928MHz, emissions are well reduced against the operational channel frequency of the units.

TEST CONDITIONS:

Modulation : 1,000 Hz

Max. Deviation:

+/-30 kHz Dev. for Base unit

+/-30 kHz Dev. for Portable unit

TEST DATA

FCC ID	MODEL
AAO4301109	43-1109
AJXFD4809	FD-4809(XX)
AMWUC619	EXLI8962

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SUPPLEMENT DATA - BAND EDGE EMISSIONS

5-1 Field Strength of Radiated Emissions (Test Result)

a) Handset: Fundamental Emissions

Emission	Measured Level		ACF	Field Strength	FCC Limit	Margin
(MHz)	(dBuV)	(V/H)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
902.119024	56.2	H	36.6	92.8	94.0	1.2
905.016195	56.0	H	36.6	92.6	94.0	1.4

b) Handset: Spurious Emissions

Transmitting Frequency: 902.119024MHz						
Emission	Measured Level		ACF	Field Strength	FCC Limit	Margin
(MHz)	(dBuV)	(V/H)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
451.8088	7.7	H	21.3	29.0	46.0	17.0
937.0349	13.0	H	28.5	41.5	46.0	4.5
1807.2351	2.5	H	38.5	41.0	54.0	13.0
1874.0699	6.9	V	38.6	45.5	54.0	8.5

c) Base unit: Fundamental Emissions

Emission	Measured Level		ACF	Field Strength	FCC Limit	Margin
(MHz)	(dBuV)	(V/H)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
924.996683	56.0	H	37.0	93.0	94.0	1.0
927.893854	56.2	H	37.0	93.2	94.0	0.8

d) Base unit: Spurious Emissions

Transmitting Frequency: 927.8938545MHz						
Emission	Measured Level		ACF	Field Strength	FCC Limit	Margin
(MHz)	(dBuV)	(V/H)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
463.1477	15.2	H	21.3	36.5	46.0	9.5
892.8780	8.5	H	28.5	37.0	46.0	9.0
1785.7561	7.2	H	38.3	45.5	54.0	8.5
1852.5908	1.4	H	38.6	40.0	54.0	14.0

NOTE: All emissions not reported were more than 20 dB below the FCC limit.

5-2 Power Line Conducted Emissions

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Test Result

<u>Transmitting frequency</u>	<u>Emissions Frequency</u>	<u>Measured Level</u>
927.893854MHz	NO EMISSIONS EXCEEDS 20dB BELOW THE FCC LIMIT.	

All emissions not reported were more than 20 dB below the FCC limit.
(See attached graphs as an example.)

Handset:

The FCC requirement do not apply to the handset
since the handset is designed to operate with internal battery only.

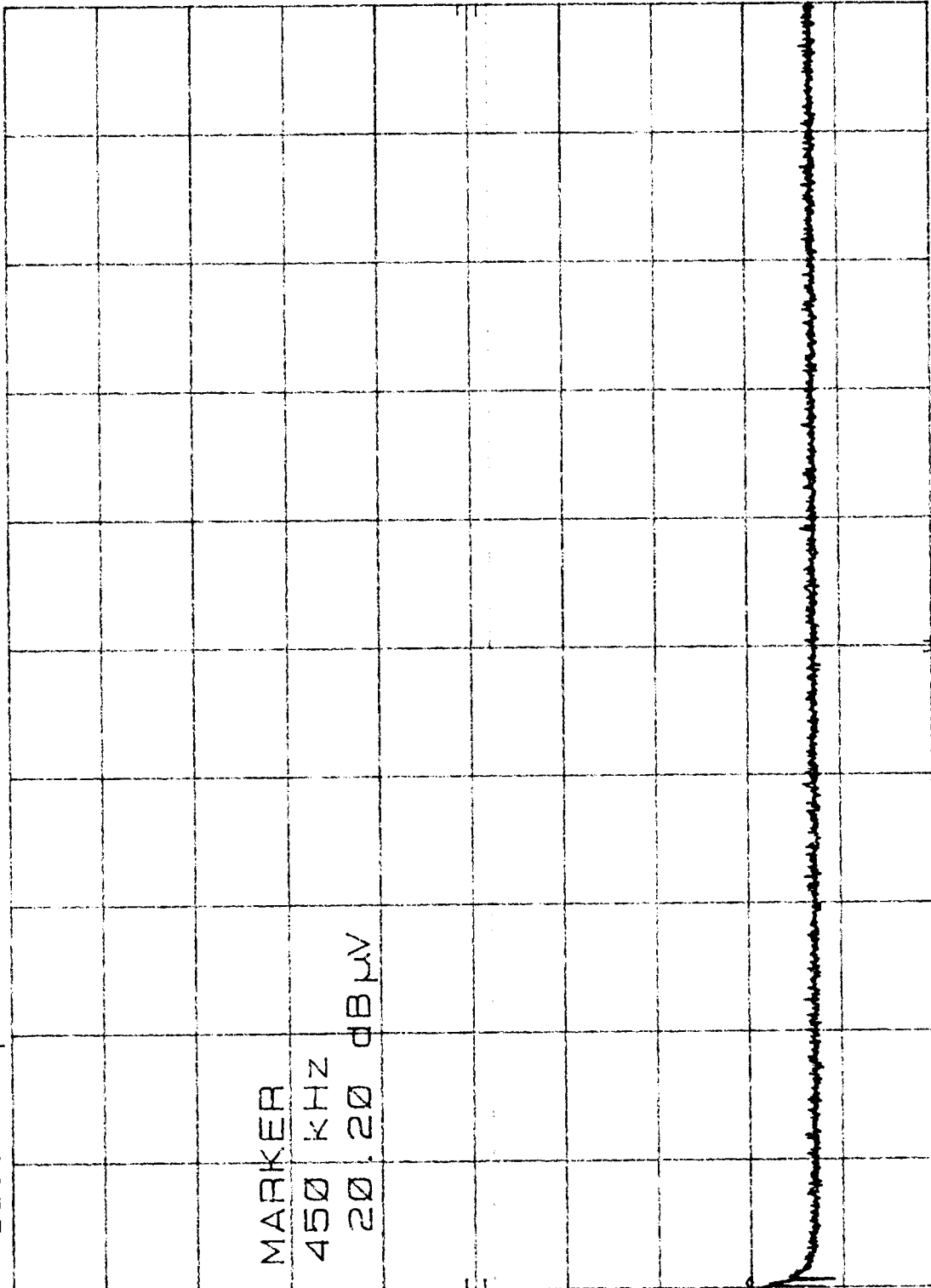
Power Line Conducted Emissions

1-26-1999 EUT: UC617ZL BASE #3 MKR 450 KHZ
 REF 100.0 dBµV ATTN 10 dB 20.20 dBµV

V_A (A)

hp

10 dB/

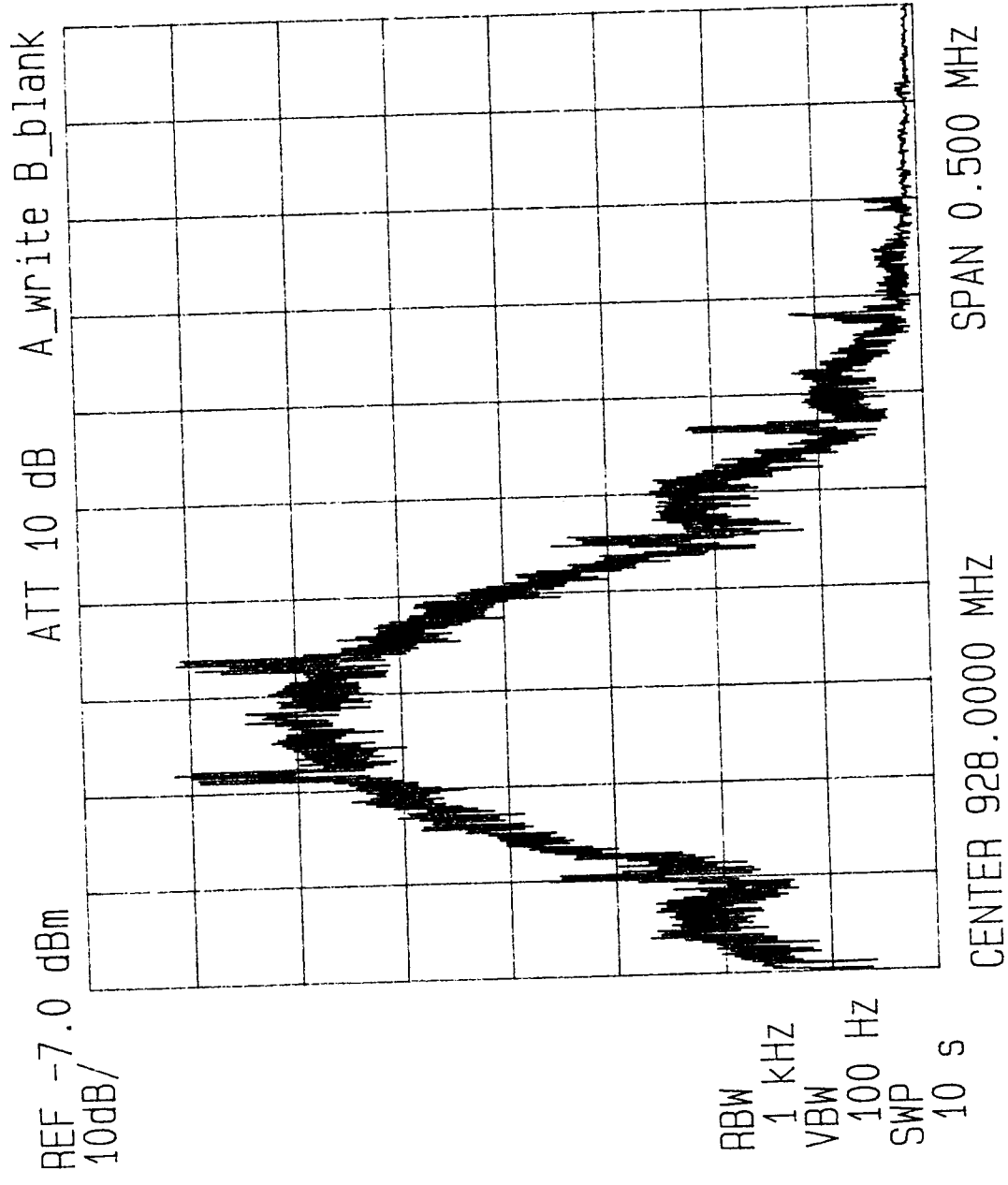


MARKER

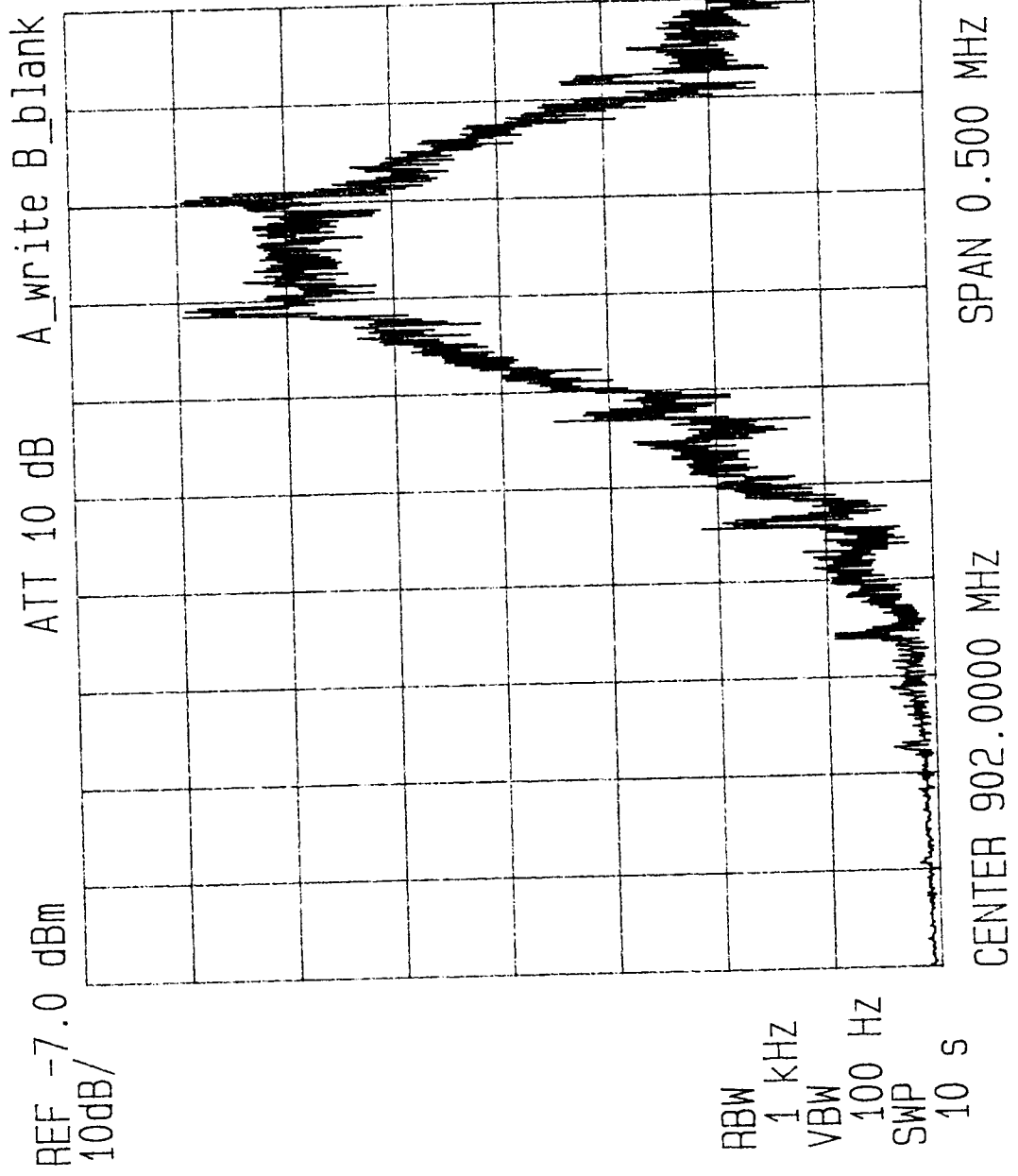
450 KHZ

20.20 dBµV

START 450 KHZ STOP 30.0 MHz
 RES BW 30 KHZ SWP 8.87 sec
 VBW 300 Hz



Base (ch.30)



LIST OF MEASUREMENT EQUIPMENTS

ENG-NO	TEST EQUIPMENT	TYPE	MFR	SERIAL NO.	CATEGORY	CODE
1287	AMPLIFIER	AFS30010040020	MITEQ	138315	2171	D
1294	ANTENNA (B I LOG)	CBL6111	CHASE	1057	2121	D
1602	ANTENNA (DIPOLE)	3120-B1	EMCO	0075		D
1603	ANTENNA (DIPOLE)	3120-B2	EMCO	0076		D
1604	ANTENNA (DIPOLE)	3120-B3	EMCO	0076		D
1560	ANTENNA (HORN)	3115	EMCO	2167		D
1388	L I S N	KNW407	KYOURITSU	8-833-21		4
0682	POWER SUPPLY	AA300	TAKASAGO	31783013	2171	4
1305	SPECTRUM ANALYZER	8566B	HP	2504A01433	2171	D
0205	SPECTRUM ANALYZER	R3265	ADVANTEST	25060158	2171	4