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ATTACHMENTS

# I. GENERAL INFORMATION

1. Applicant's Name and Mailing Address : Belco International Co., Ltd.
100l-11, Doksan-1-Dong, Kumcheon-Ku, Seoul, Korea 153-011

2. Manufacturer's Name and Mailing Address : Belco International Co., Ltd.
100l-11, Doksan-1-Dong, Kumcheon-Ku, Seoul, Korea 153-011

3. Equipment Descriptions

3.1 Operating Frequency : 902.800MHz ~ 904.750MHz (40 Channel, 50kHz Spacing)
3.2 Type of Emission : Frequency Modulation (F3E)
3.3 Power Supply : DC 9.0 V (AC Adaptor Used)
3.4 Additional Information ;

- PLL Synthesizer : RU0902B14HKA(SAMSUNG)
- PLL Resonator : 451.400MHz ~ 452.375MHz

4. Rules and Regulations : FCC Part 15, Subpart C

5. Measuring Procedure : ANSI C63.4-1992

6. Date of Measurement

6.1 Conducted Emission : November 9, 1998
6.2 Radiated Emission : November 3, 1998

7. Statement of Compliance

**We, KAITECH, HEREBY STATE THAT the measurements shown in this report were made in accordance with the procedures indicated and the emission emitted by this equipment was found to be within the limits applicable.**

* Note : Test report(Verification) on receiver portion of this unit is issued on KAITECH Log No. 341-067-3.

Measured by ;

S. J. Kim

Seok-Jin Kim
Senior Engineer

Review by ;

Chang Ho Ko

Chang-Ho Ko
Team Leader
EMC Team

## II. GENERAL REQUIREMENTS OF THE EUT

1. Labelling Requirement (Section 15.19 and Section 15.214)

> This device complies with Part 15 of the FCC Rules.
> Operation is subject to the following two conditions :
> (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

> Privacy of communication may not be ensured when using this phone.

1.1 Location on Enclosure : Bottom side
1.2 How Applied : By Ink-Printing on Adhesive Label

2. Information to User (Section 15.21)

The following or similar statements were provided in the manual for user instruction.
Please refer page 5 of the attached manual for details.

> CAUTION : Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

3. Special Accessories (Section 15.27)

3.1 Were the special Accessories provided? [ ] yes, [ x ] no

3.2 If yes, details for the special accessories are as follows :

3.3 If yes, were the appropriate instructions provided on the first page of the text concerned with the device? [ ] yes, [ ] no

3.4 Are these accessories provided of the type which can be readily obtained from multiple retail outlets? [ ] yes, [ ] no

And therefore does the manual specify what additional components or accessories are required to used in order to comply with the Rules?
[ ] yes, [ ] no

4. Digital Security Code (Section 15.214)

4.1 Was a circuitry for digital security code provided in the cordless telephone system ?
[ x ] yes, [ ] no

4.2 If yes, refer to the attached statement on the means and procedures used to achieve the required protection.

## Ⅲ. CONDUCTED EMISSION MEASUREMENT (Section 15.207)

1. Test Procedure

The base station(EUT) is designed to transmit on one of 40 channels in the band 902.800 to 904.750MHz. Therefore measurements were performed with the equipment operating on three frequencies, which were the top, middle, and bottom in the band, as per Section 15.31(m).

Conducted emission measurements on the EUT were performed by "AC Power Line Conducted Emissions Testing" procedure as per ANSI C63.4. The EUT was set up on a wooden table 0.8 meters height, 1.0 by 1.5 meters in size, placed in the shielded enclosed with a side of wall of which constituted a vertical conducting surface of 2.2m X 3.1m in size to maintain 40Cm from the rear of EUT

2 LISN's(Line Impedance Stabilization Network, EMCO, 3825/2, 50ohm/50uH) were installed and electrically boned to the conducting ground plane. The EUT was connected to one LISN.

One of two 50ohm output terminals of the LISN was connected to the Spectrum Analyzer (HP, 8566B, 10kHz to 22GHz) with the Quasi-Peak Adapter (HP, 85650A, 10kHz to 1.0GHz) and the other was terminated in 50 ohms. Measurements were again performed after interchanging such a connection oppositely.

The frequency range from 450kHz to 30MHz was examed and the peak values that are within 6dB of the limit would be compared to quasi-peak values using the Quasi-Peak instrument(ROHDE & SCHWARZ, ESH3, 9kHz to 30MHz : Detector Function CISPR Quasi-Peak) or HP Quasi-Peak adapter(85650A, 10kHz to 1.0GHz)

The voltage developed across the 50ohms port in LISN was plotted through the Spectrum Analyzer in a peak hold mode and graphed by the Plotter(HP, 7470A). The 6dB bandwidth of the Spectrum Analyzer and Quasi-Peak Adapter was set to 9kHz with no post detector video filter.

The position of an external connection cable and antenna of the EUT was changed to determine the worst case configuration during measurements. The maximum emission level from the EUT occurred in such configuration as shown in the following photograph.

4. Measurement Data

- Test Channel : Channel 1 (902.800MHz)
- Resolution Bandwidth : x Peak (6dB Bandwidth : 9kHz)
  _____ CISPR Quasi-Peak (6dB Bandwidth : 9kHz)

| Power Lead Tested | Frequency (MHz) | Measured Value | | Emission Level | | Limit | (*) Margin (dB) |
|---|---|---|---|---|---|---|---|
| | | Peak (dBμV) | Q-Peak (dBμV) | (dBμV) | (μV) | (μV) | |
| Live to Ground | 0.45 | 37.2 | - | 37.2 | 72.4 | 250 | -10.8 |
| | - | - | - | - | - | - | - |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Neutral to Ground | 0.45 | 38.3 | - | 38.3 | 82.2 | 250 | -9.7 |
| | - | - | - | - | - | - | - |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

* Margin(dB) : Emission Level (dB) - Limit (dB)

Note : The noise floor level of the spectrum analyzer was observed in 22dBμV. The highest emission level was reported. And refer to measured graphs on next page.

## Ⅳ. RADIATED EMISSION MEASUREMENT (Section 15.249)

1. Test Procedure

1.1 Preliminary Testing for Reference

The base station(EUT) is designed to transmit on one of 40 channels in the band 902.800 to 904.750MHz. Therefore measurements were performed with the equipment operating on three frequencies, which were the top, middle, and bottom in the band, as per Section 15.31(m).

Preliminary testing was performed in a KAITECH absorber-lined room to determine the emission characteristics of the EUT. The EUT was placed on the wooden table which has dimensions of 0.8 meters in height, 1 meter in length and 1.5 meters in width. Receiving antenna(Biconical antenna : 30 to 300MHz, Log-periodic antenna : 200 to 1000MHz or Horn Antenna : 1 to 18GHz) was placed at the distance of 1 meter from the EUT.

An attempt was made to maximize the emission level with the various configurations of the EUT. The position of an external connection cable and antenna of the EUT was changed to find the worst case configuration that produces maximum emission level from the EUT while rotating the table and varying antenna height.

Emissions level from the EUT with various configurations were examined on a Spectrum Analyzer connected with a RF amplifier and graphed by a plotter.

1.2 Final Radiated Emission Test at a Absorber-Lined Room

The final measurement of radiated field strength was carried out in a KAITECH Absorber-Lined Room that was listed up at FCC according to the "Radiated Emissions Testing" procedure specified by ANSI C63.4.

Based on the test results in preliminary test, measurement was made in same test set up and configuration which produced maximum emission level. Receiving antenna was installed at 3-meter distance from the EUT and was connected to an EMI receiver or spectrum analyzer(for above 1GHz) with a RF amplifier.

Turntable was rotated through 360 degrees and receiving antenna height was varied from 1 to 4 meters above the ground plane to read maximum emission level.

If necessary, the radiated emission measurements could be performed at a closer distance than specified distance to ensure higher accuracy and their results were extrapolated to the specified distance using an inverse linear distance extrapolation factor(20dB/decade) as per Section 15.31(f).

The maximum emission level from the EUT occurred in such configuration as shown in the following photograph.

4.2 Test Channel (CH 20 : 903.750MHz)

- Resolution Bandwidth : x CISPR Quasi-Peak (6dB Bandwidth : 120kHz)
  x Peak (3dB Bandwidth : 1MHz)
- Measurement Distance : 3 Meter

| Frequency (MHz) | * D.M. | * A.P. | Measured Value (dBμV) | * A.F. + C.L (dB) | * A.G. (dB) | * D.C.F. (dB) | Emission Level (dBμV/m) | Emission Level (μV/m) | Limit (μV/m) | ** Margin (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| 451.88 | Q | H | 13.7 | 25.8 | - | - | 39.5 | 94.4 | 200 | -6.5 |
| 903.75 | Q | V | 50.5 | 34.7 | - | - | 85.2 | 18197.0 | 50000 | -8.8 |
| 1355.63 | P | H/V | *** <40.0 | 32.2 | -35.0 | - | <37.2 | <72.4 | 500 | <-16.8 |
| 1807.50 | P | H/V | <40.0 | 35.3 | -35.0 | - | <40.3 | <103.5 | 500 | <-13.7 |
| 2259.38 | P | H/V | <40.0 | 39.3 | -35.0 | - | <44.3 | <164.1 | 500 | <-9.7 |
| 2711.26 | P | H/V | <40.0 | 40.7 | -35.0 | - | <45.7 | <192.8 | 500 | <-8.3 |
| - | - | - | - | - | - | - | - | - | - | - |
| | | | | | | | | | | |
| | | | | | | | | | | |

Note

* D.M. : Detect Mode (P : Peak, Q : Quasi-Peak, A : Average)
A.P. : Antenna Polarization (H : Horizental, V : Vertical)
A.F. : Antenna Factor
C.L. : Cable Loss
A.G. : Amplifier Gain
D.C.F. : Distance Correction Factor

** Margin (dB) = Emission Level (dB) - Limit (dB)

*** < means less than. The observed spectrum analyzer noise floor level with RF preamplifier was 40.0 dBμV/m.

4.3 Test Channel (CH 40 : 904.750MHz)

- Resolution Bandwidth : x CISPR Quasi-Peak (6dB Bandwidth : 120kHz)
  x Peak (3dB Bandwidth : 1MHz)
- Measurement Distance : 3 Meter

| Frequency (MHz) | * D.M. | * A.P. | Measured Value (dB$\mu$V) | * A.F. + C.L (dB) | * A.G. (dB) | * D.C.F. (dB) | Emission Level (dB$\mu$V/m) | Emission Level ($\mu$V/m) | Limit ($\mu$V/m) | ** Margin (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| 452.38 | Q | H | 13.8 | 25.8 | - | - | 39.6 | 95.5 | 200 | -6.4 |
| 904.75 | Q | V | 52.3 | 34.7 | - | - | 87.0 | 22387.2 | 50000 | -7.0 |
| 1357.13 | P | H/V | *** <40.0 | 32.2 | -35.0 | - | <37.2 | <72.4 | 500 | <-16.8 |
| 1809.50 | P | H/V | <40.0 | 35.3 | -35.0 | - | <40.3 | <103.5 | 500 | <-13.7 |
| 2261.88 | P | H/V | <40.0 | 39.3 | -35.0 | - | <44.3 | <164.1 | 500 | <-9.7 |
| 2714.26 | P | H/V | <40.0 | 40.7 | -35.0 | - | <45.7 | <192.8 | 500 | <-8.3 |
| - | - | - | - | - | - | - | - | - | - | - |
| | | | | | | | | | | |
| | | | | | | | | | | |

Note

* D.M. : Detect Mode (P : Peak, Q : Quasi-Peak, A : Average)
A.P. : Antenna Polarization (H : Horizental, V : Vertical)
A.F. : Antenna Factor
C.L. : Cable Loss
A.G. : Amplifier Gain
D.C.F. : Distance Correction Factor

** Margin (dB) = Emission Level (dB) - Limit (dB)

*** < means less than. The observed spectrum analyzer noise floor level with RF preamplifier was 40.0 dB$\mu$V/m.

Note ;

(1) Fundamental emissions from the intentional radiators were not located within any of frequency bands described in section 15.205(a) listed below ;

| MHz | MHz | MHz | GHz |
|---|---|---|---|
| 0.090-0.110 | 16.42-16.423 | 399.9-410 | 4.5-5.25 |
| 0.495-0.505 | 16.69475-16.69525 | 608-614 | 5.35-5.46 |
| 2.1735-2.1905 | 16.80425-16.80475 | 960-1240 | 7.25-7.75 |
| 4.125-4.128 | 25.5-25.67 | 1300-1427 | 8.025-8.5 |
| 4.17725-4.1775 | 37.5-38.25 | 1435-1626.5 | 9.0-9.2 |
| 4.20725-4.20775 | 73-74.6 | 1645.5-1646.5 | 9.3-9.5 |
| 6.215-6.218 | 74.8-75.2 | 1660-1710 | 10.6-12.7 |
| 6.26775-6.26825 | 108-121.94 | 1718.8-1722.2 | 13.25-13.4 |
| 6.31175-6.31225 | 123-138 | 2200-2300 | 14.47-14.5 |
| 8.291-8.294 | 149.9-150.05 | 2310-2390 | 15.35-16.2 |
| 8.362-8.366 | 156.52475-156.52525 | 2483.5-2500 | 17.7-21.4 |
| 8.37625-8.38675 | 156.7-156.9 | 2655-2900 | 22.01-23.12 |
| 8.41425-8.41475 | 162.0125-167.17 | 3260-3267 | 23.6-24.0 |
| 12.29-12.293 | 167.72-173.2 | 3332-3339 | 31.2-31.8 |
| 12.51975-12.52025 | 240-285 | 3345.8-3358 | 36.43-36.5 |
| 12.57675-12.57725 | 322-335.4 | 3600-4400 | |
| 13.36-13.41 | | | |

The field strength of emissions appearing within above frequency bands did not exceed the limits shown in section 15.209. At frequency equal to or less than 1000MHz, compliance with the limits section 15.209 was demonstrated using measurement employing a CISPR quasi-peak detector. Above 1000MHz, demonstrated based on the average value of the measured emissions.

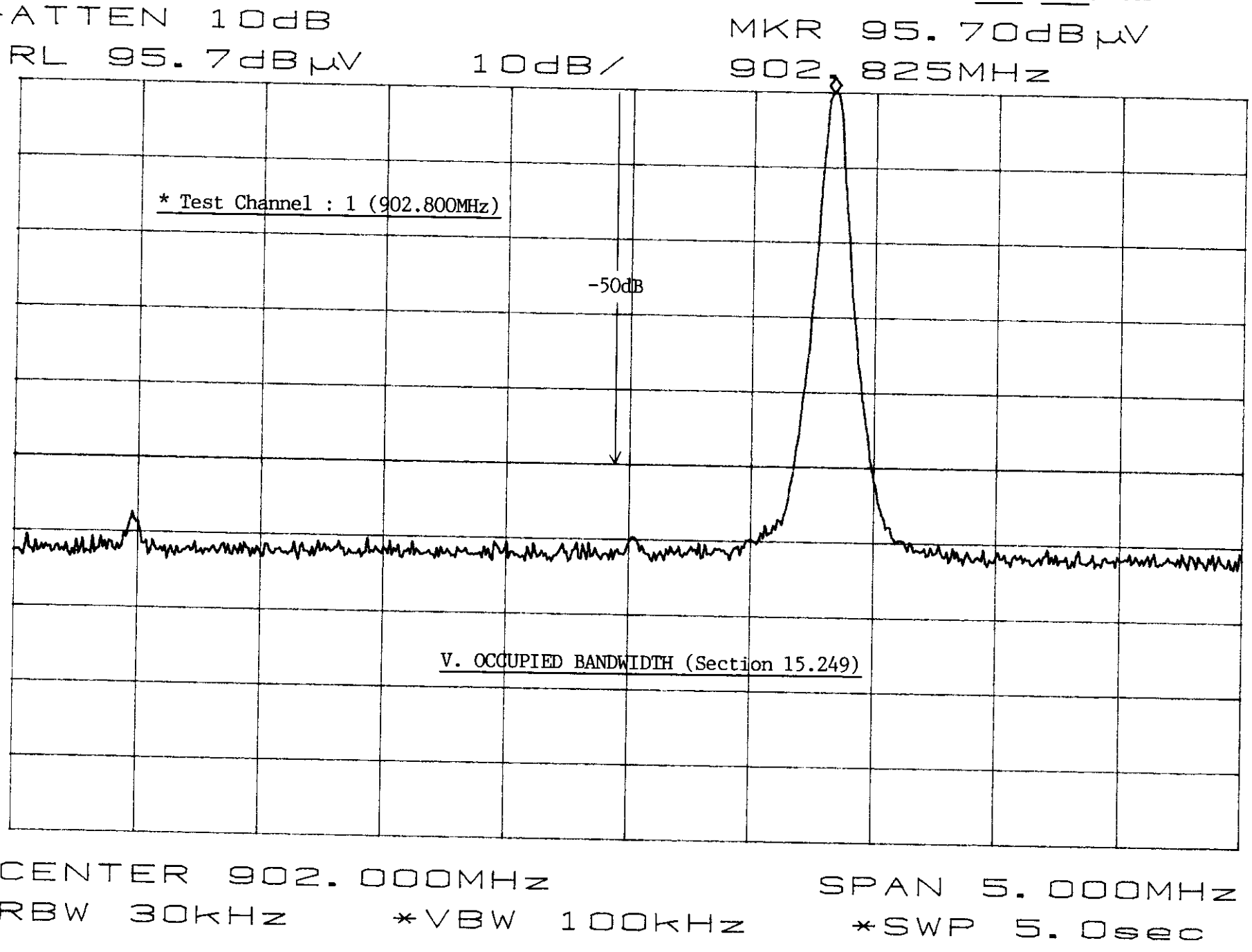
(2) If the intentional radiator was operated under the radiated emission limits of the general requirements of section 15.209, it's fundamental emissions were not located in the frequency bands 54-72MHz, 76-88MHz, 174-216MHz, 470-860MHz.

(3) The level of any unwanted emissions from an intentional radiator did not exceed the level of the fundamental emission.

(4) Radiated and spurious emissions were checked from 30MHz to 10GHz. And all other emissions not reported on data were more than 20 dB below the permitted level.

KAITECH Log No. 341-067-1



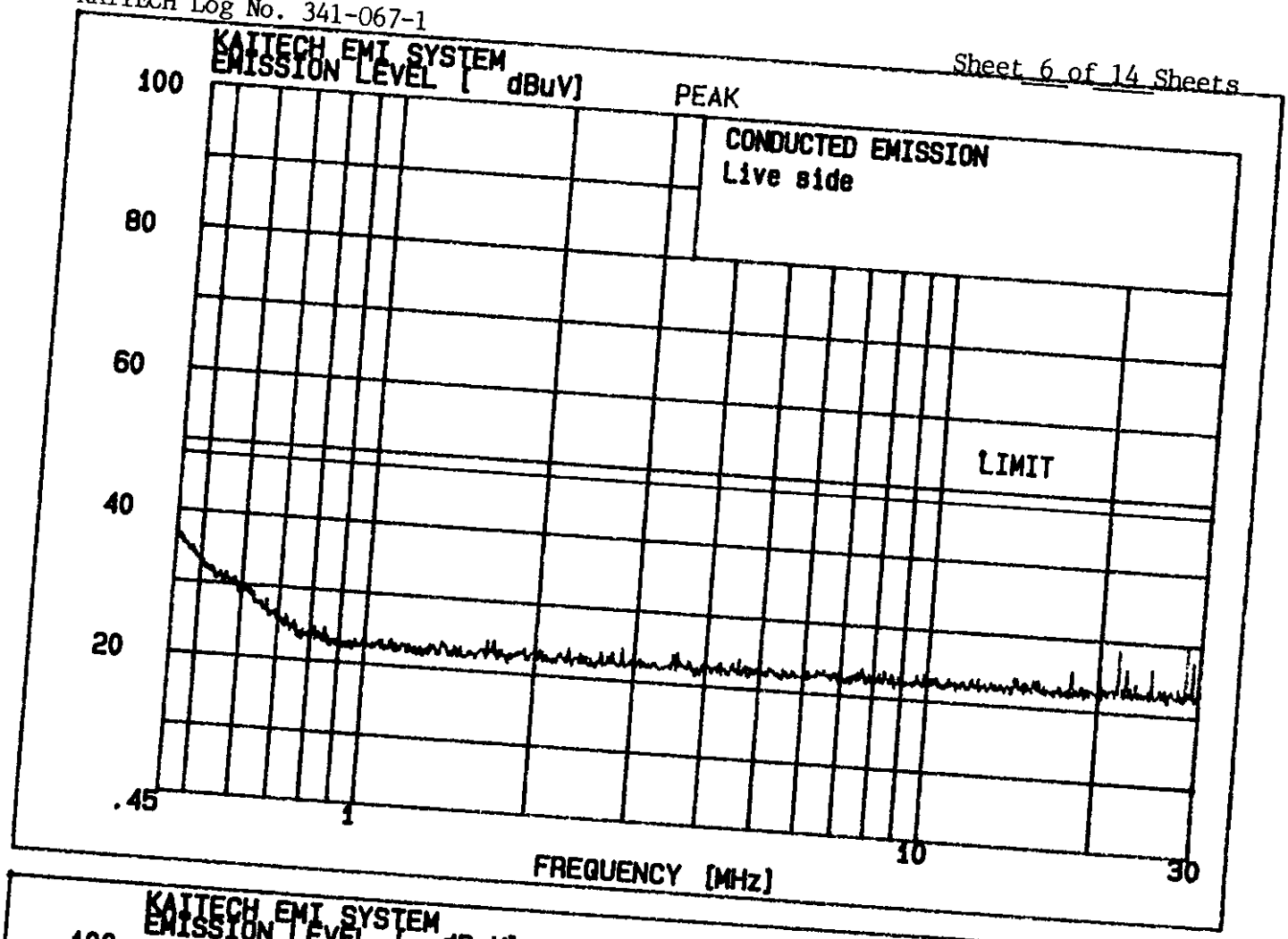


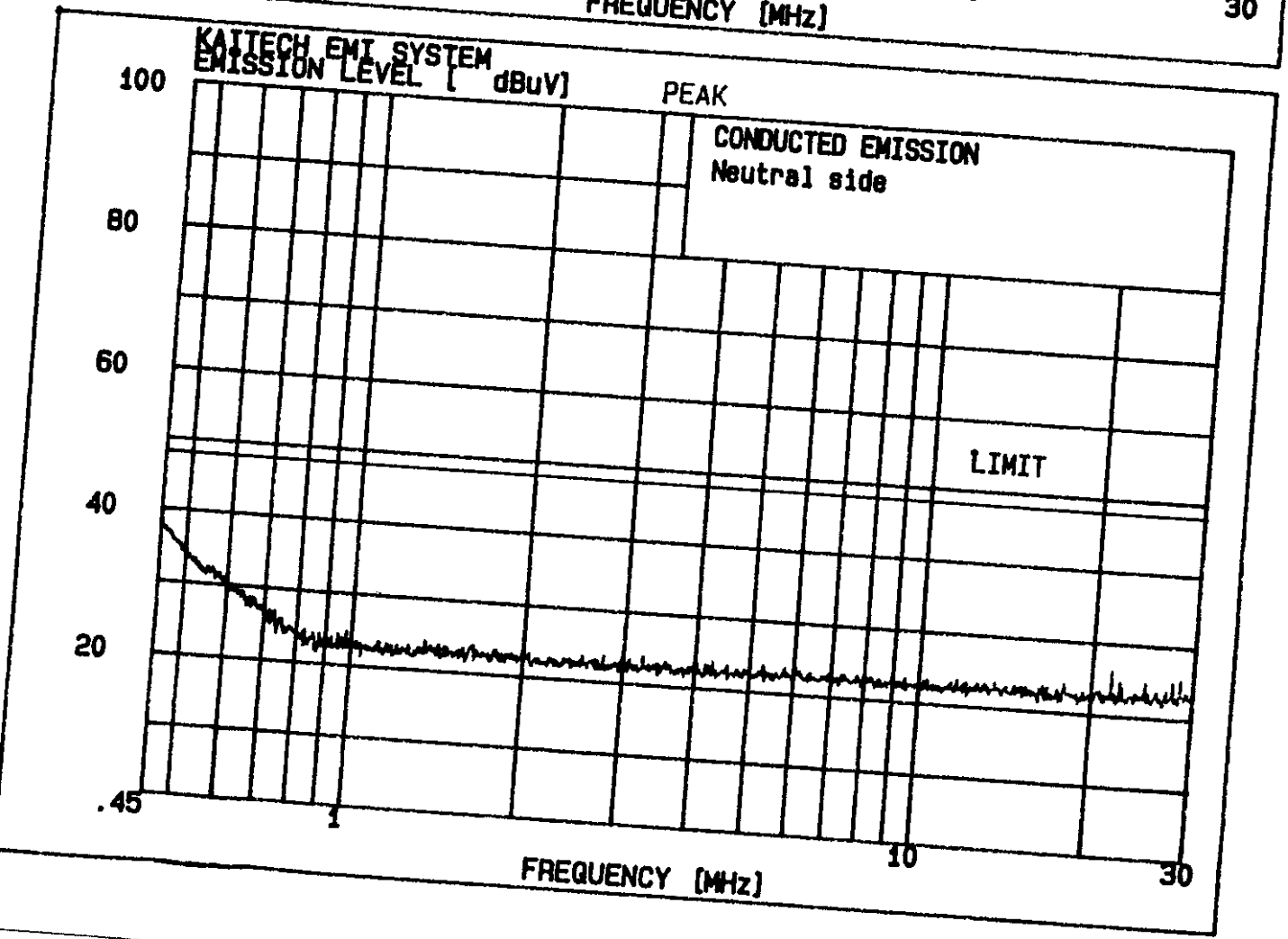
## VI. TEST EQUIPMENT USED FOR FCC COMPLIANCE TESTING

| Equipment | Model No. | Manufacturer | Serial No. | Effective Cal. Duration |
|---|---|---|---|---|
| [x] EMI Receiver (20MHz-1GHz) | ESVS30 | R & S | 830516/002 | 06/29/98-06/29/99 |
| [x] Spectrum Analyzer (9kHz-26.5GHz) | 8563A | H. P. | 3222A02069 | 01/30/98-01/30/99 |
| [x] Spectrum Analyzer (100Hz-22GHz) | 8566B | H. P. | 3014A07057 | 05/29/98-05/29/99 |
| [x] Quasi-Peak Adapter (10kHz-1GHz) | 85650A | H. P. | 3107A01511 | 05/29/98-05/29/99 |
| [x] RF-Preselector (20Hz-2GHz) | 85685A | H. P. | 3010A01181 | 05/29/98-05/29/99 |
| [ ] Test Receiver (9kHz-30MHz) | ESH3 | R & S | 860905/001 | 06/29/98-06/29/99 |
| [x] Pre-Amplifier (0.1-3000MHz, 30dB) | 8347A | H. P. | 2834A00543 | 05/29/98-05/29/99 |
| [x] Pre-Amplifier (1-26.5GHz, 35dB) | 8449B | H. P. | 3008A00302 | 06/29/98-06/29/99 |
| [x] LISN(50Ω, 50μH) (10kHz-100MHz) | 3825/2 | EMCO | 9010-1710 | - |
| [ ] LISN(50Ω, 50μH) (10kHz-100MHz) | 3825/2 | EMCO | 9011-1720 | - |
| [x] Plotter | 7470A | H. P. | 3104A21292 | - |
| [x] Tuned Dipole Ant. (30MHz-300MHz) | VHA 9103 | Schwarzbeck | - | * |
| [x] Tuned Dipole Ant. (300MHz-1GHz) | UHA 9105 | Schwarzbeck | - | * |
| [x] Biconical Ant. (20MHz-200MHz) | BBA9106 | Schwarzbeck | - | * |
| [x] Log Periodic Ant. (200MHz-1GHz) | 3146 | EMCO | - | * |
| [x] Horn Ant. (1GHz-18GHz) | 3115 | EMCO | - | * |
| [ ] Audio Generator | LAV-190 | LEADER | 5020297 | 06/29/98-06/29/99 |
| [ ] Volt Meter | 3438A | H.P. | 1717A-00613 | 05/29/98-05/29/99 |
| [x] Shielded Room | (5.0m x 4.5m) | SIN-MYUNG | - | - |

* Each set of antennas has been calibrated to ensure correlation with ANSI C63.5 standard. The calibration of antennas is traceable to Korea Standard Research Institute(KSRI).

# STATEMENT FOR DIGITAL SECURITY CODE


KAITECH EMI SYSTEM
EMISSION LEVEL [ dBuV]
PEAK
CONDUCTED EMISSION
Live side
LIMIT
100
80
60
40
20
.45
1
10
30
FREQUENCY [MHz]


KAITECH EMI SYSTEM
EMISSION LEVEL [ dBuV]
PEAK
CONDUCTED EMISSION
Neutral side
LIMIT
100
80
60
40
20
.45
1
10
30
FREQUENCY [MHz]

# BELCO INTERNATIONAL CO., LTD.

1001-11 DOKSAN 1-DONG, KUMCHEON-KU, SEOUL 153-011, KOREA
TEL : (02) 806-9513 FAX : (02)894-6484 E-MAIL : belco@chollian.net

Date : 1998. 11. 09

## STATEMENT OF SECURITY CODE

BE-900MHZ

FCC ID : NYCBE-900MHZ

Cordless telephone shall incorporate circuitry which makes use of a digital security code to provide protection against unintentional access to the public switched telephone network by the base unit and unintentional ringing by the handset (FCC Part 15.214(d)).

There must be provision for at least 256 possible discrete digital (FCC Part 15.214(d)).

Manufacturers must use one of the following approaches for facilitating variation in the geographic distribution of individual security codes (FCC Part 15.214(d)(2)).

Provide a fixed code that is continuously varied among at least 256 discrete digital codes as each telephone is manufactured. (FCC Part 15.214 (d)(2)(ii)).

- We provide a fixed code that is continuously varied among 65,536 discrete digital codes as each telephone is manufactured.

Approved by D.P.kim/Director

# REPORT OF MEASUREMENT

## CERTIFICATION

| | | |
|---|---|---|
| Product | : | Cordless Headset Telephone System (Transmitter Portion of Headset) |
| Applicant | : | Belco International Co., Ltd. |
| Grantee Name | : | Belco International Co., Ltd. |
| FCC ID. | : | NYCBE-900MHZ |
| Trade Name | : | BELCO |
| Model No. | : | BE-900MHZ |
| Report No. | : | 341-067-2 |
| Date | : | November 10, 1998 |

KOREA ACADEMY OF INDUSTRIAL TECHNOLOGY(KAITECH)

Address : 222-13, Guro-Dong, Guro-Gu, Seoul, 152-053 Korea
Tel. : (02)860-1462~4. Telefax : (02)860~1468

## TABLE OF CONTENTS

# I. GENERAL INFORMATION

1. Applicant's Name and Mailing Address : Belco International Co., Ltd.
100l-11, Doksan-1-Dong, Kumcheon-Ku, Seoul, Korea 153-011

2. Manufacturer's Name and Mailing Address : Belco International Co., Ltd.
100l-11, Doksan-1-Dong, Kumcheon-Ku, Seoul, Korea 153-011

3. Equipment Descriptions

3.1 Operating Frequency : 925.300MHz ~ 927.250MHz (40 Channel, 50kHz Spacing)
3.2 Type of Emission : Frequency Modulation (F3E)
3.3 Power Supply : DC 3.6 V (Rechargeable Battery)
3.4 Additional Information ;

- PLL Synthesizer : RU0926H14HKA(SAMSUNG)
- PLL Resonator : 462.650MHz ~ 463.625MHz

4. Rules and Regulations : FCC Part 15, Subpart C

5. Measuring Procedure : ANSI C63.4-1992

6. Date of Measurement

6.1 Conducted Emission : Not Applicable
6.2 Radiated Emission : November 4, 1998

7. Statement of Compliance

**We, KAITECH, HEREBY STATE THAT the measurements shown in this report were made in accordance with the procedures indicated and the emission emitted by this equipment was found to be within the limits applicable.**

* Note : Test report(Verification) on receiver portion of this unit is issued on KAITECH Log No. 341-067-4

Measured by ;

S. J. Kim

Seok-Jin Kim
Senior Engineer

Review by ;

Chang Ho Ko

Chang-Ho Ko
Team Leader
EMC Team

## II. GENERAL REQUIREMENTS OF THE EUT

1. Labelling Requirement (Section 15.19 and Section 15.214)

> This device complies with Part 15 of the FCC Rules.
> Operation is subject to the following two conditions :
> (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

> Privacy of communication may not be ensured when using this phone.

1.1 Location on Enclosure : Rear side
1.2 How Applied : By Ink-Printing on Adhesive Label

2. Information to User (Section 15.21)

The following or similar statements were provided in the manual for user instruction.
Please refer page 5 of the attached manual for details.

> CAUTION : Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

3. Special Accessories (Section 15.27)

3.1 Were the special Accessories provided? [ ] yes, [ x ] no

3.2 If yes, details for the special accessories are as follows :

3.3 If yes, were the appropriate instructions provided on the first page of the text concerned with the device? [ ] yes, [ ] no

3.4 Are these accessories provided of the type which can be readily obtained from multiple retail outlets? [ ] yes, [ ] no

And therefore does the manual specify what additional components or accessories are required to used in order to comply with the Rules?
[ ] yes, [ ] no

4. Digital Security Code (Section 15.214)

4.1 Was a circuitry for digital security code provided in the cordless telephone system ?
[ x ] yes, [ ] no

4.2 If yes, refer to the attached statement on the means and procedures used to achieve the required protection.

## III. RADIATED EMISSION MEASUREMENT (Section 15.249)

1. Test Procedure

1.1 Preliminary Testing for Reference

The headset(EUT) is designed to transmit on one of 40 channels in the band 925.300 to 927.250MHz. Therefore measurements were performed with the equipment operating on three frequencies, which were the top, middle, and bottom in the band, as per Section 15.31(m).

Preliminary testing was performed in a KAITECH absorber-lined room to determine the emission characteristics of the EUT. The EUT was placed on the wooden table which has dimensions of 0.8 meters in height, 1 meter in length and 1.5 meters in width. Receiving antenna(Biconical antenna : 30 to 300MHz, Log-periodic antenna : 200 to 1000MHz or Horn Antenna : 1 to 18GHz) was placed at the distance of 1 meter from the EUT.

An attempt was made to maximize the emission level with the various configurations of the EUT. The position of an external connection cable of the EUT was changed to find the worst case configuration that produces maximum emission level from the EUT while rotating the table and varying antenna height.

Emissions level from the EUT with various configurations were examined on a Spectrum Analyzer connected with a RF amplifier and graphed by a plotter.

1.2 Final Radiated Emission Test at a Absorber-Lined Room

The final measurement of radiated field strength was carried out in a KAITECH Absorber-Lined Room that was listed up at FCC according to the "Radiated Emissions Testing" procedure specified by ANSI C63.4.

Based on the test results in preliminary test, measurement was made in same test set up and configuration which produced maximum emission level. Receiving antenna was installed at 3-meter distance from the EUT and was connected to an EMI receiver or spectrum analyzer(for above 1GHz) with a RF amplifier.

Turntable was rotated through 360 degrees and receiving antenna height was varied from 1 to 4 meters above the ground plane to read maximum emission level.

If necessary, the radiated emission measurements could be performed at a closer distance than specified distance to ensure higher accuracy and their results were extrapolated to the specified distance using an inverse linear distance extrapolation factor(20dB/decade) as per Section 15.31(f).

The maximum emission level from the EUT occurred in such configuration as shown in the following photograph.

4. Measurement Data

4.1 Test Channel (CH 1 : 925.300MHz)

- Resolution Bandwidth : x CISPR Quasi-Peak (6dB Bandwidth : 120kHz)
  x Peak (3dB Bandwidth : 1MHz)
- Measurement Distance : 3 Meter

| Frequency (MHz) | * D.M. | * A.P. | Measured Value (dBμV) | * A.F. + C.L (dB) | * A.G. (dB) | * D.C.F. (dB) | Emission Level (dBμV/m) | Emission Level (μV/m) | Limit (μV/m) | ** Margin (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| 462.65 | Q | V | 17.1 | 26.1 | - | - | 43.2 | 144.5 | 200 | -2.8 |
| 925.30 | Q | H | 38.9 | 35.0 | - | - | 73.9 | 4954.5 | 50000 | -20.1 |
| 1387.96 | P | H/V | *** <40.0 | 32.5 | -35.0 | - | <37.5 | <75.0 | 500 | <-16.5 |
| 1850.61 | P | H/V | <40.0 | 35.7 | -35.0 | - | <40.7 | <108.4 | 500 | <-13.3 |
| 2313.26 | P | H/V | <40.0 | 38.6 | -35.0 | - | <43.6 | <151.4 | 500 | <-10.4 |
| 2775.91 | P | H/V | <40.0 | 40.9 | -35.0 | - | <45.9 | <197.2 | 500 | <-8.1 |
| - | - | - | - | - | - | - | - | - | - | - |
| | | | | | | | | | | |
| | | | | | | | | | | |

Note

* D.M. : Detect Mode (P : Peak, Q : Quasi-Peak, A : Average)
A.P. : Antenna Polarization (H : Horizental, V : Vertical)
A.F. : Antenna Factor
C.L. : Cable Loss
A.G. : Amplifier Gain
D.C.F. : Distance Correction Factor

** Margin (dB) = Emission Level (dB) - Limit (dB)

*** < means less than. The observed spectrum analyzer noise floor level with RF preamplifier was 40.0 dBμV/m.

4.2 Test Channel (CH 20 : 926.250MHz)

- Resolution Bandwidth : x CISPR Quasi-Peak (6dB Bandwidth : 120kHz)
  x Peak (3dB Bandwidth : 1MHz)
- Measurement Distance : 3 Meter

| Frequency (MHz) | * D.M. | * A.P. | Measured Value (dBμV) | * A.F. + C.L (dB) | * A.G. (dB) | * D.C.F. (dB) | Emission Level (dBμV/m) | Emission Level (μV/m) | Limit (μV/m) | ** Margin (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| 463.13 | Q | V | 16.9 | 26.1 | - | - | 43.0 | 141.3 | 200 | -3.0 |
| 926.26 | Q | H | 40.6 | 35.0 | - | - | 75.6 | 6025.6 | 50000 | -18.4 |
| 1389.38 | P | H/V | *** <40.0 | 32.5 | -35.0 | - | <37.5 | <75.0 | 500 | <-16.5 |
| 1852.51 | P | H/V | <40.0 | 35.7 | -35.0 | - | <40.7 | <108.4 | 500 | <-13.3 |
| 2315.64 | P | H/V | <40.0 | 38.6 | -35.0 | - | <43.6 | <151.4 | 500 | <-10.4 |
| 2778.77 | P | H/V | <40.0 | 40.9 | -35.0 | - | <45.9 | <197.2 | 500 | <-8.1 |
| - | - | - | - | - | - | - | - | - | - | - |
| | | | | | | | | | | |
| | | | | | | | | | | |

Note

* D.M. : Detect Mode (P : Peak, Q : Quasi-Peak, A : Average)
A.P. : Antenna Polarization (H : Horizental, V : Vertical)
A.F. : Antenna Factor
C.L. : Cable Loss
A.G. : Amplifier Gain
D.C.F. : Distance Correction Factor

** Margin (dB) = Emission Level (dB) - Limit (dB)

*** < means less than. The observed spectrum analyzer noise floor level with RF preamplifier was 40.0 dBμV/m.

4.3 Test Channel (CH 40 : 927.250MHz)

- Resolution Bandwidth : __x__ CISPR Quasi-Peak (6dB Bandwidth : 120kHz)
  __x__ Peak (3dB Bandwidth : 1MHz)
- Measurement Distance : 3 Meter

| Frequency (MHz) | * D.M. | * A.P. | Measured Value (dB$\mu$V) | * A.F. + C.L (dB) | * A.G. (dB) | * D.C.F. (dB) | Emission Level (dB$\mu$V/m) | Emission Level ($\mu$V/m) | Limit ($\mu$V/m) | ** Margin (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| 463.63 | Q | V | 16.3 | 26.1 | - | - | 42.4 | 131.8 | 200 | -3.6 |
| 927.26 | Q | H | 39.7 | 35.0 | - | - | 74.7 | 5432.5 | 50000 | -19.3 |
| 1390.88 | P | H/V | *** <40.0 | 32.5 | -35.0 | - | <37.5 | <75.0 | 500 | <-16.5 |
| 1854.51 | P | H/V | <40.0 | 35.7 | -35.0 | - | <40.7 | <108.4 | 500 | <-13.3 |
| 2318.14 | P | H/V | <40.0 | 38.6 | -35.0 | - | <43.6 | <151.4 | 500 | <-10.4 |
| 2781.77 | P | H/V | <40.0 | 40.9 | -35.0 | - | <45.9 | <197.2 | 500 | <-8.1 |
| - | - | - | - | - | - | - | - | - | - | - |
| | | | | | | | | | | |
| | | | | | | | | | | |

Note

* D.M. : Detect Mode (P : Peak, Q : Quasi-Peak, A : Average)
A.P. : Antenna Polarization (H : Horizental, V : Vertical)
A.F. : Antenna Factor
C.L. : Cable Loss
A.G. : Amplifier Gain
D.C.F. : Distance Correction Factor

** Margin (dB) = Emission Level (dB) - Limit (dB)

*** < means less than. The observed spectrum analyzer noise floor level with RF preamplifier was 40.0 dB$\mu$V/m.

Note ;

(1) Fundamental emissions from the intentional radiators were not located within any of frequency bands described in section 15.205(a) listed below ;

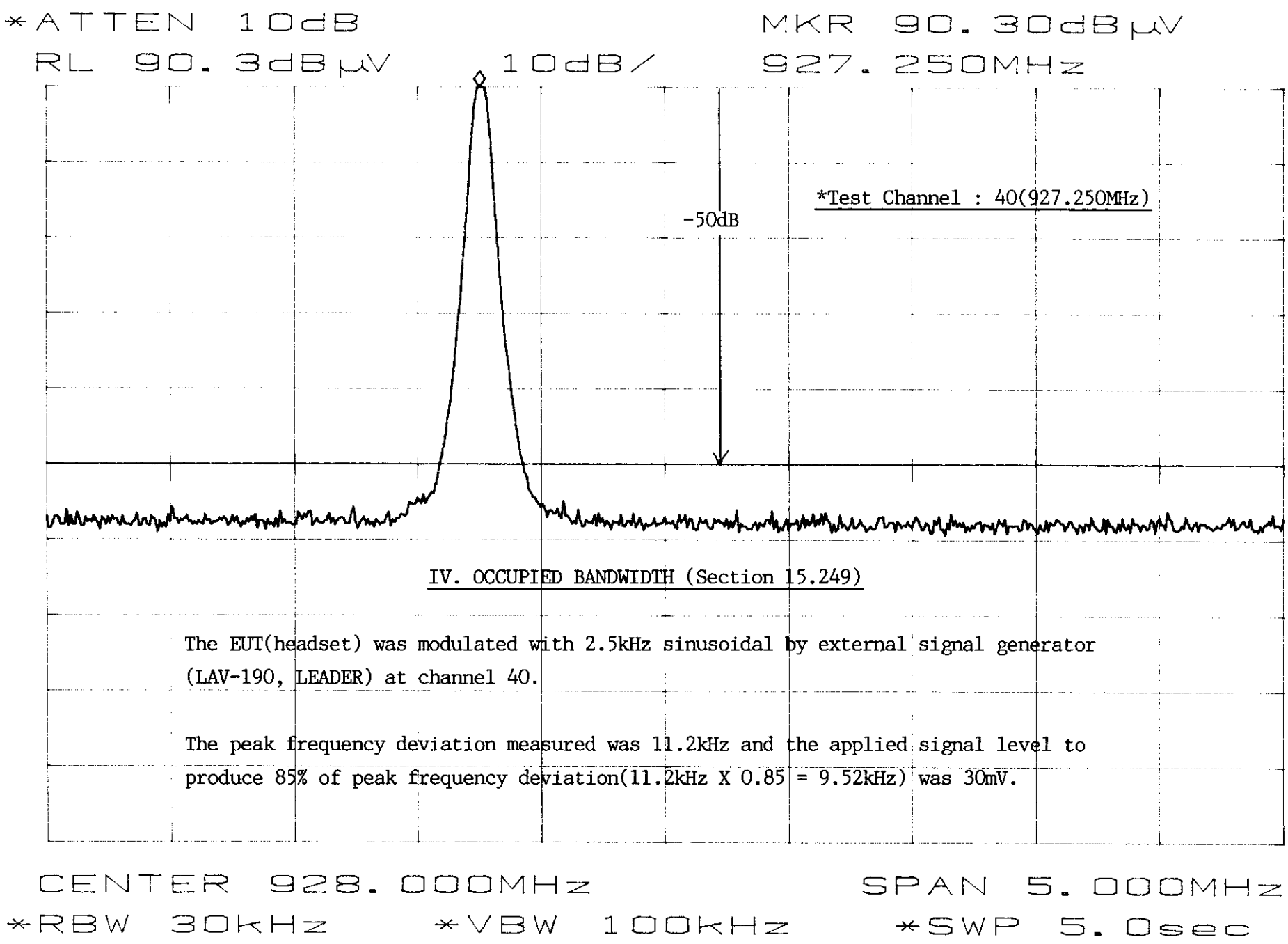
| MHz | MHz | MHz | GHz |
|---|---|---|---|
| 0.090-0.110 | 16.42-16.423 | 399.9-410 | 4.5-5.25 |
| 0.495-0.505 | 16.69475-16.69525 | 608-614 | 5.35-5.46 |
| 2.1735-2.1905 | 16.80425-16.80475 | 960-1240 | 7.25-7.75 |
| 4.125-4.128 | 25.5-25.67 | 1300-1427 | 8.025-8.5 |
| 4.17725-4.1775 | 37.5-38.25 | 1435-1626.5 | 9.0-9.2 |
| 4.20725-4.20775 | 73-74.6 | 1645.5-1646.5 | 9.3-9.5 |
| 6.215-6.218 | 74.8-75.2 | 1660-1710 | 10.6-12.7 |
| 6.26775-6.26825 | 108-121.94 | 1718.8-1722.2 | 13.25-13.4 |
| 6.31175-6.31225 | 123-138 | 2200-2300 | 14.47-14.5 |
| 8.291-8.294 | 149.9-150.05 | 2310-2390 | 15.35-16.2 |
| 8.362-8.366 | 156.52475-156.52525 | 2483.5-2500 | 17.7-21.4 |
| 8.37625-8.38675 | 156.7-156.9 | 2655-2900 | 22.01-23.12 |
| 8.41425-8.41475 | 162.0125-167.17 | 3260-3267 | 23.6-24.0 |
| 12.29-12.293 | 167.72-173.2 | 3332-3339 | 31.2-31.8 |
| 12.51975-12.52025 | 240-285 | 3345.8-3358 | 36.43-36.5 |
| 12.57675-12.57725 | 322-335.4 | 3600-4400 | |
| 13.36-13.41 | | | |

The field strength of emissions appearing within above frequency bands did not exceed the limits shown in section 15.209. At frequency equal to or less than 1000MHz, compliance with the limits section 15.209 was demonstrated using measurement employing a CISPR quasi-peak detector. Above 1000MHz, demonstrated based on the average value of the measured emissions.

(2) If the intentional radiator was operated under the radiated emission limits of the general requirements of section 15.209, it's fundamental emissions were not located in the frequency bands 54-72MHz, 76-88MHz, 174-216MHz, 470-860MHz.

(3) The level of any unwanted emissions from an intentional radiator did not exceed the level of the fundamental emission.

(4) Radiated and spurious emissions were checked from 30MHz to 10GHz. And all other emissions not reported on data were more than 20 dB below the permitted level.




## IV. OCCUPIED BANDWIDTH (Section 15.249)

The EUT(headset) was modulated with 2.5kHz sinusoidal by external signal generator (LAV-190, LEADER) at channel 40.

The peak frequency deviation measured was 11.2kHz and the applied signal level to produce 85% of peak frequency deviation(11.2kHz X 0.85 = 9.52kHz) was 30mV.

## V. TEST EQUIPMENT USED FOR FCC COMPLIANCE TESTING

| Equipment | Model No. | Manufacturer | Serial No. | Effective Cal. Duration |
|---|---|---|---|---|
| [x] EMI Receiver (20MHz-1GHz) | ESVS30 | R & S | 830516/002 | 06/29/98-06/29/99 |
| [x] Spectrum Analyzer (9kHz-26.5GHz) | 8563A | H. P. | 3222A02069 | 01/30/98-01/30/99 |
| [ ] Spectrum Analyzer (100Hz-22GHz) | 8566B | H. P. | 3014A07057 | 05/29/98-05/29/99 |
| [ ] Quasi-Peak Adapter (10kHz-1GHz) | 85650A | H. P. | 3107A01511 | 05/29/98-05/29/99 |
| [ ] RF-Preselector (20Hz-2GHz) | 85685A | H. P. | 3010A01181 | 05/29/98-05/29/99 |
| [ ] Test Receiver (9kHz-30MHz) | ESH3 | R & S | 860905/001 | 06/29/98-06/29/99 |
| [x] Pre-Amplifier (0.1-3000MHz, 30dB) | 8347A | H. P. | 2834A00543 | 05/29/98-05/29/99 |
| [x] Pre-Amplifier (1-26.5GHz, 35dB) | 8449B | H. P. | 3008A00302 | 06/29/98-06/29/99 |
| [ ] LISN(50Ω, 50μH) (10kHz-100MHz) | 3825/2 | EMCO | 9010-1710 | - |
| [ ] LISN(50Ω, 50μH) (10kHz-100MHz) | 3825/2 | EMCO | 9011-1720 | - |
| [x] Plotter | 7470A | H. P. | 3104A21292 | - |
| [x] Tuned Dipole Ant. (30MHz-300MHz) | VHA 9103 | Schwarzbeck | - | * |
| [x] Tuned Dipole Ant. (300MHz-1GHz) | UHA 9105 | Schwarzbeck | - | * |
| [x] Biconical Ant. (20MHz-200MHz) | BBA9106 | Schwarzbeck | - | * |
| [x] Log Periodic Ant. (200MHz-1GHz) | 3146 | EMCO | - | * |
| [x] Horn Ant. (1GHz-18GHz) | 3115 | EMCO | - | * |
| [x] Audio Generator | LAV-190 | LEADER | 5020297 | 06/29/98-06/29/99 |
| [ ] Volt Meter | 3438A | H.P. | 1717A-00613 | 05/29/98-05/29/99 |
| [x] Shielded Room | (5.0m x 4.5m) | SIN-MYUNG | - | - |

* Each set of antennas has been calibrated to ensure correlation with ANSI C63.5 standard. The calibration of antennas is traceable to Korea Standard Research Institute(KSRI).

4. Measurement Data

4.1 Test Channel (CH 1 : 902.800MHz)

- Resolution Bandwidth : x CISPR Quasi-Peak (6dB Bandwidth : 120kHz)
  x Peak (3dB Bandwidth : 1MHz)
- Measurement Distance : 3 Meter

| Frequency (MHz) | * D.M. | * A.P. | Measured Value (dBμV) | * A.F. + C.L (dB) | * A.G. (dB) | * D.C.F. (dB) | Emission Level (dBμV/m) | Emission Level (μV/m) | Limit (μV/m) | ** Margin (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| 451.40 | Q | H | 13.5 | 25.8 | - | - | 39.3 | 92.3 | 200 | -6.7 |
| 902.80 | Q | V | 50.1 | 34.7 | - | - | 84.8 | 17378.0 | 50000 | -9.2 |
| 1345.20 | P | H/V | *** <40.0 | 32.2 | -35.0 | - | <37.2 | <72.4 | 500 | <-16.8 |
| 1805.60 | P | H/V | <40.0 | 35.3 | -35.0 | - | <40.3 | <103.5 | 500 | <-13.7 |
| 2257.00 | P | H/V | <40.0 | 39.3 | -35.0 | - | <44.3 | <164.1 | 500 | <-9.7 |
| 2708.40 | P | H/V | <40.0 | 40.7 | -35.0 | - | <45.7 | <192.8 | 500 | <-8.3 |
| - | - | - | - | - | - | - | - | - | - | - |
| | | | | | | | | | | |
| | | | | | | | | | | |

Note

* D.M. : Detect Mode (P : Peak, Q : Quasi-Peak, A : Average)
A.P. : Antenna Polarization (H : Horizental, V : Vertical)
A.F. : Antenna Factor
C.L. : Cable Loss
A.G. : Amplifier Gain
D.C.F. : Distance Correction Factor

** Margin (dB) = Emission Level (dB) - Limit (dB)

*** < means less than. The observed spectrum analyzer noise floor level with RF preamplifier was 40.0 dBμV/m.