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YONGSAN-GU, SEOUL, KOREA
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Test Report

Product Name: UHF-Band RFID Reader

FCC ID: S8NKIS900RE

Applicant:
KISCOMM Co., Ltd.

#101,Keumho-Town Bldg.,49
Guro5-dong,Guro-gu
Seoul,152-838
Korea

Date Receipt:03/25/2005

Date Tested: 04/08/2005

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APPLICANT: KISCOMM Co., Ltd.

FCC ID: S8NKIS900RE

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TEST REPORT CONTAINING:

EXHIBITS INCLUDING:

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TEST PROCEDURE

GENERAL: This report shall NOT be reproduced except in full without the written approval of ThruLab & ENGINEERING. The UUT was transmitting a test signal during the testing.

15.247(a)(1) CARRIER FREQUENCY SEPARATION & NUMBER OF CHANNELS: A near field probe was used to sense the signal of the UUT. The UUT was made to hop its full range. The spectrum analyzer was set to view the frequency range from 902 to 928MHz and placed in the memory mode. A plot was then made of the display showing the number of channels, 63 and the separation of the channels, 400kHz.

15.247(a)(1)(i) CARRIER FREQUENCY DWELL TIME: A near field probe was used to sense the signal of the UUT. The UUT was made to hop its full range. The spectrum analyzer was set to view the frequency range from 902 to 928MHz and the center of the HOPPING RANGE was centered on the Spectrum Analyzer. The SPAN was then set to ZERO (0) and the SWEEP TIME was set to 120 seconds. Then by analyzing the plot of the total ON TIME of the UUT during the 10 seconds it was determined the dwell time on many frequency was less than 0.4Seconds, 0.173 seconds.

15.247(b)(2) POWER OUTPUT: The RF power output was measured at the antenna feed point by removing the permanent antenna and connecting the UUT to a spectrum analyzer, HP Model No. 8566B.

15.247(c) ANTENNA CONDUCTED EMISSIONS: The RBW=100kHz, VBW =1.0MHz up to 1000MHz and RBW=1.0MHz & VBW=3.0MHz above 1.0GHz. The spectrum was scanned from 30MHz to the 10th Harmonic of the fundamental.

RADIATION INTERFERENCE: The test procedure used was ANSI STANDARD C63.4-1992 using a HEWLETT PACKARD spectrum analyzer with a preselector. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The resolution bandwidth was 100kHz and the video bandwidth was 300kHz up to 1.0GHz and 1.0MHz with a video BW of 3.0MHz above 1.0GHz. The ambient temperature of the UUT was 60.1Deg F with a humidity of 30.5%. The hopping was stopped at the low end, middle and high end of the band in order to test the radiated emissions.

POWER LINE CONDUCTED INTERFERENCE: The procedure used was ANSI STANDARD C63.4-1992 using a 50uH LISN. Both lines were observed. The bandwidth of the spectrum analyzer was 10kHz with an appropriate sweep speed. The ambient temperature of the UUT was 55Deg F with a humidity of 33%.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB. The gain of the Preselector was accounted for in the Spectrum Analyzer Meter Reading.

Example:

Freq (MHz)	METER READING + ACF = FS
33	20 dBuV + 10.36 dB = 30.36 dBuV/m @ 3m

MeasurementUncertainty: All results reported herein relate only to the equipment tested. For the purposes of the measurements performed by thru & engineering, the measurement uncertainty is +-2.3dB This has been calculated for a worst-case situation (radiated emissions measurements performed on an open area test site).The following measurement uncertainty calculation is provided:

Total Uncertainty = (A2 + B2 + C2)1/2/(n-1)

where:
A = Antenna calibration uncertainty, in dB = 2 dB.
B = Spectrum Analyzer uncertainty, in dB = 1 dB
C = Site uncertainty, in dB = 4dB
n = Number of factors in uncertainty calculation = 3
Thus, Total Uncertainty = 0.5(4+1+16)1/2= +-2.3dB.

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INTRODUCTION: GENERAL INFORMATION AND DATA

ANTENNA: The KISCOMM Co., Ltd. incorporates a standard BNC connector, therefore this device must be limited to Professional Installation only.

PRODUCT DESCRIPTION: The KISCOMM Co., Ltd. is a frequency hopping spread spectrum UHF RFID Scanner System, and is designed to read an EM4222 chip based UHF transponders. It consists of several separate blocks. The controller is responsible for all interfacing and receives and responds to all incoming events.

15.247(a): Definition: This EUT uses a pseudo random algorithm to hop over the frequency range of 902 to 928MHz in 63 hops.

15.247(a)(1): The number of hops is 63 hops at a separation of 400kHz; the requirement in the 902-928MHz band is a minimum of 25.

15.247(a) Channel Frequency Separation: The channel frequency separation is 400kHz.

15.247(a)(1)(i) Dwell Time of Hop: The Dwell time of any hopping frequency cannot be greater than 0.4 seconds in any 10 second period. The Dwell time in 10 seconds is 0.173 seconds.

4 X 206(ms) X [(63 X 0.4)/120000(ms)] = 0.173

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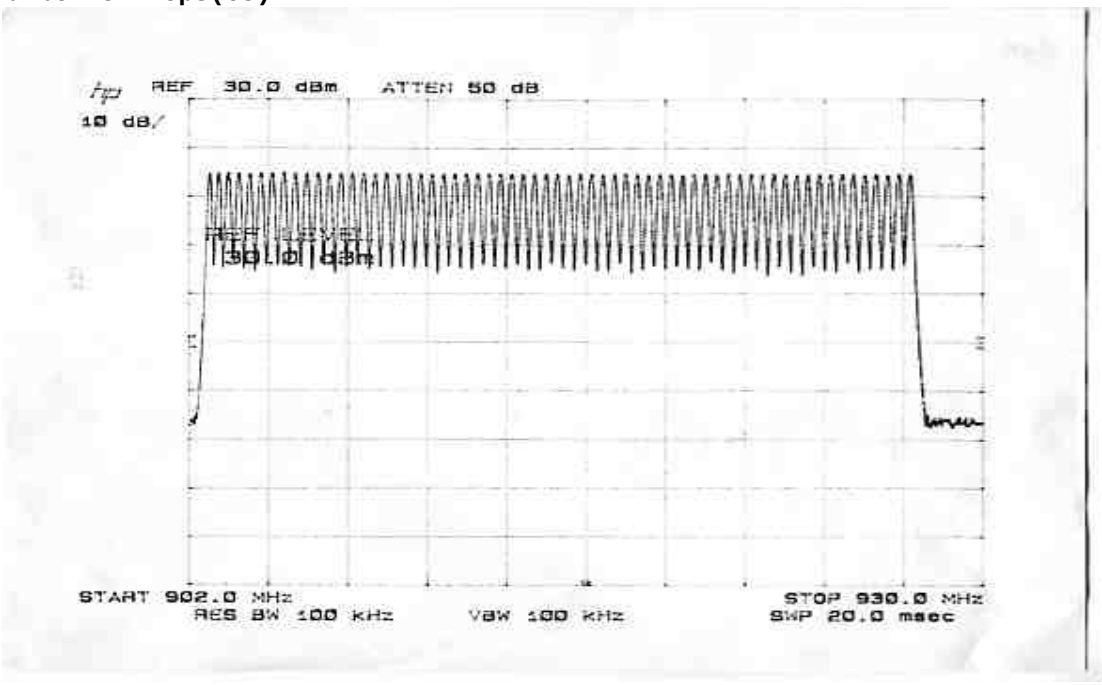
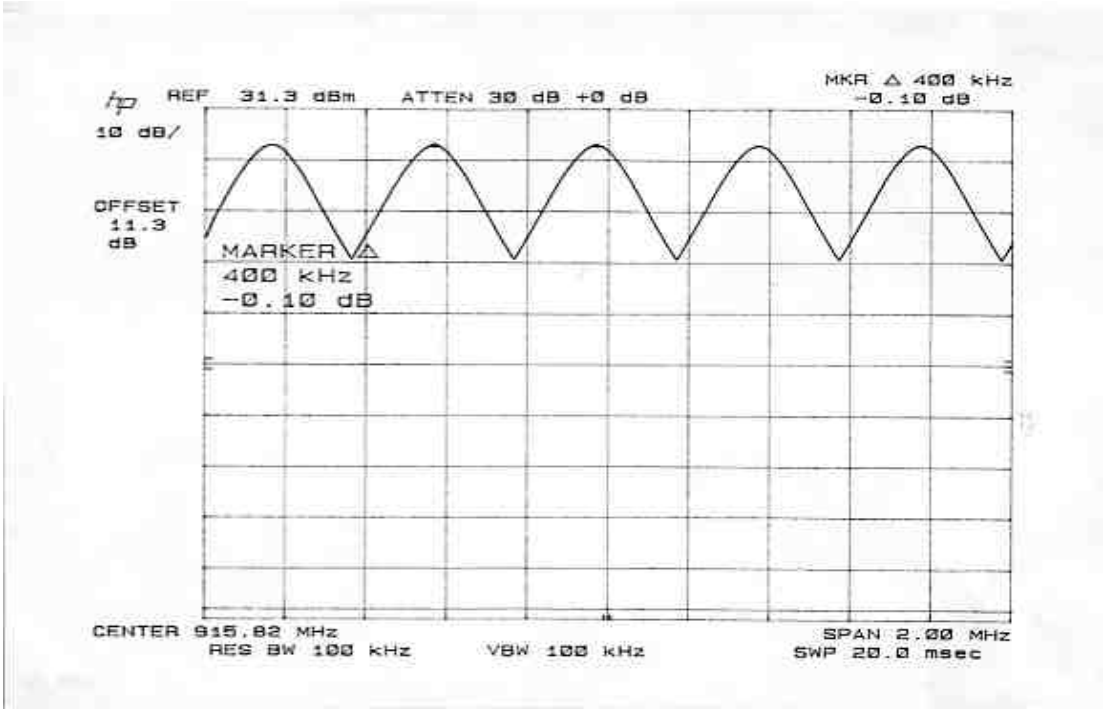
The number of hops(63)



The channel frequency separation(400kHz)



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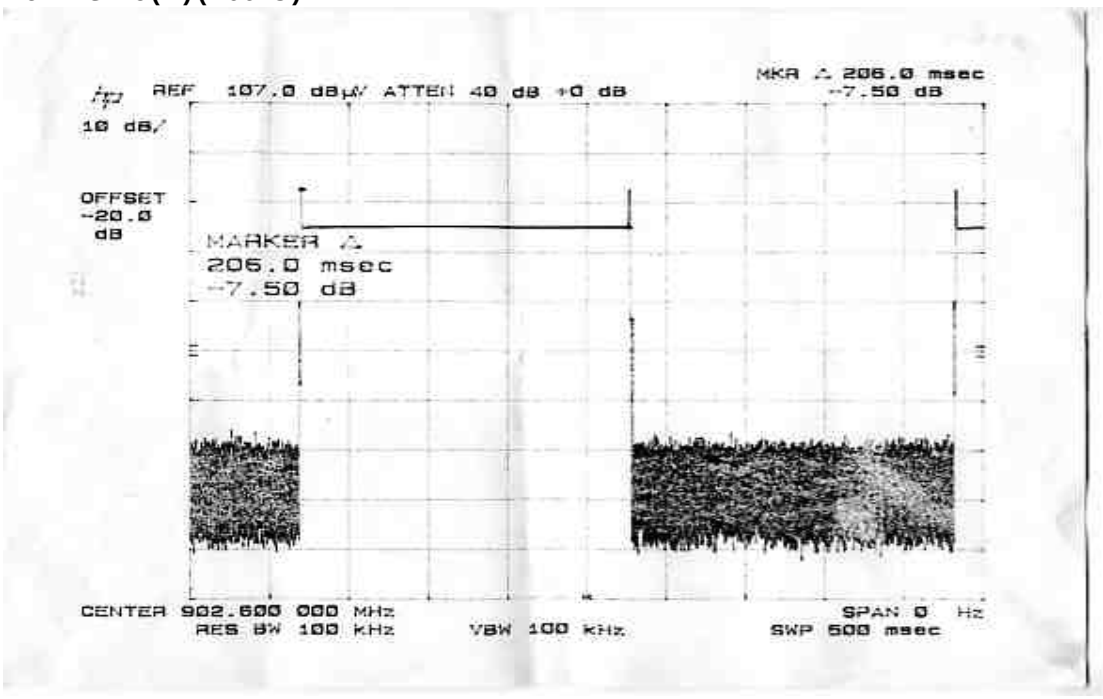
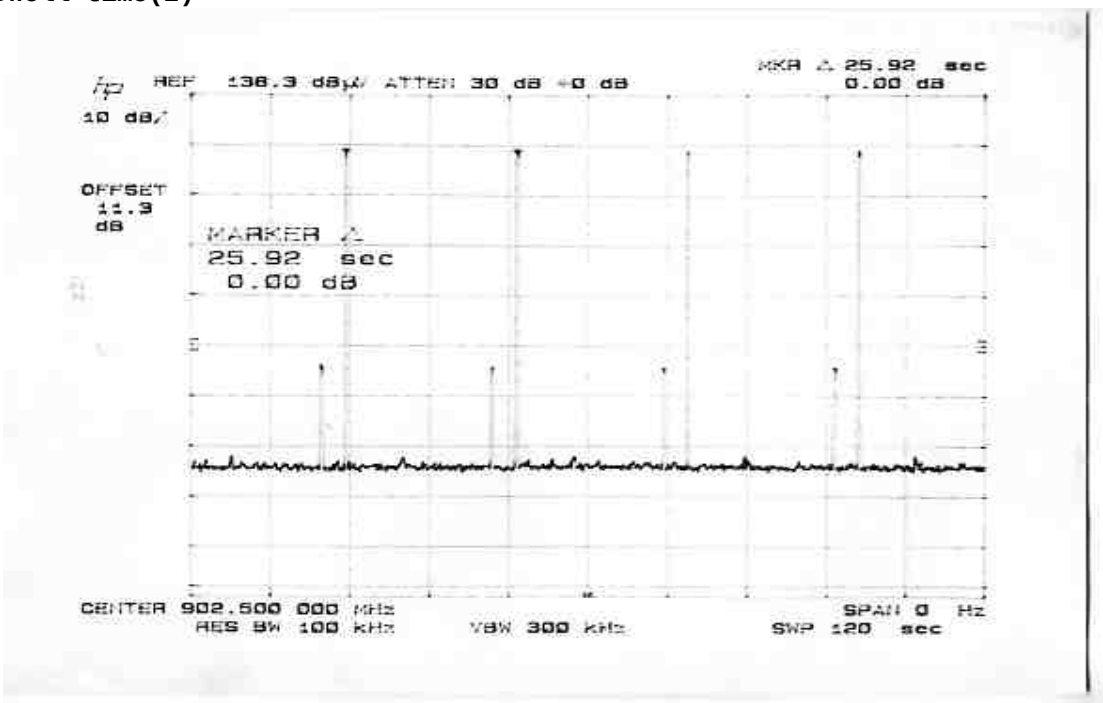
The Dwell time(1)(206ms)



The Dwell time(2)



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15.247(b)(2): POWER OUTPUT (Conducted)
2.1046
To measure the output power the hopping sequence was stopped while the frequency dwelled on a low, high and middle channel. The output from the transmitter was connected to an attenuator and then to the input of the RF Spectrum Analyzer offset was adjusted to compensate for the attenuator and other losses in the system.

The maximum peak output power shall not exceed 1 watt (30 dBm). If directional-transmitting antennas with a gain of more than 6 dBi that are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

The maximum power output was less than +30 dBm. Power was measured by disconnecting the antennas and measuring across a 50 ohm load as recommended by the manufacturer using a HP spectrum analyzer Model 8566B. The antennas are non-directional and do not exceed 6 dBi gain. The power output was measured at three places in the band highest is reported below.

RF Power Output

Frequency	Level	Limit	Pass/Fail
Low Channel 902.498 MHz	25.90 dBm	30 dBm	Pass
Mid Channel 915.760 MHz	25.90 dBm	30 dBm	Pass
High Channel 927.345 MHz	25.90 dBm	30 dBm	Pass

POWER OUTPUT: The RF power output was measured at the antenna feed point by removing the permanent antenna and connecting the UUT to a spectrum analyzer, HP Model No.8566B.

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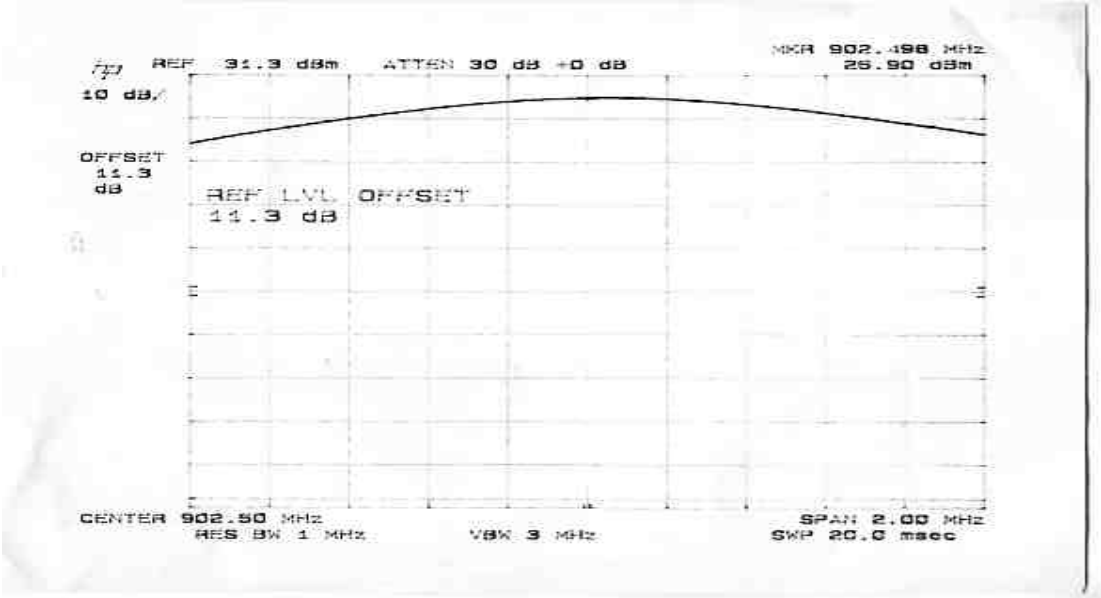
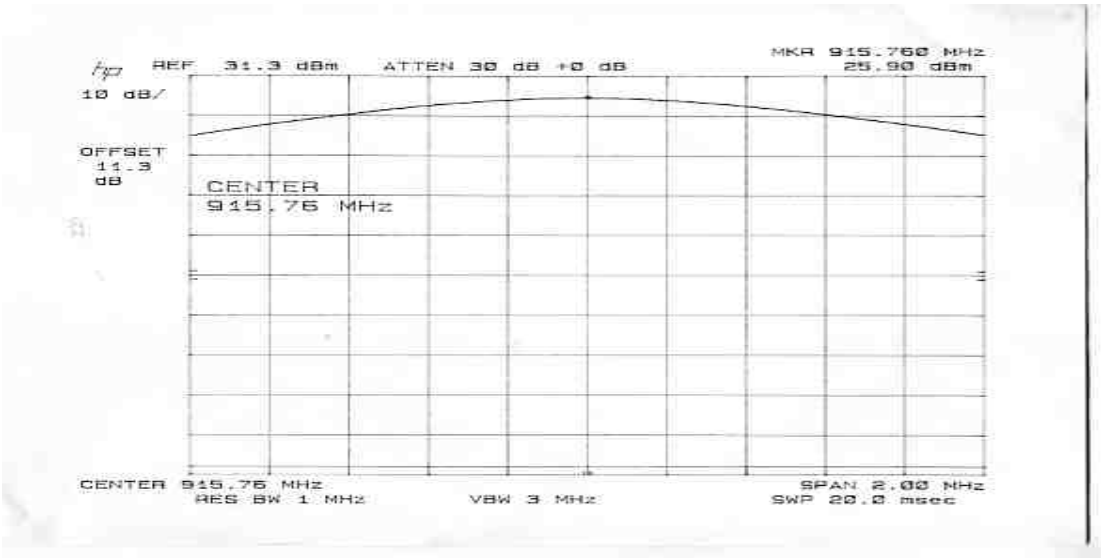
Low channel



Mid channel



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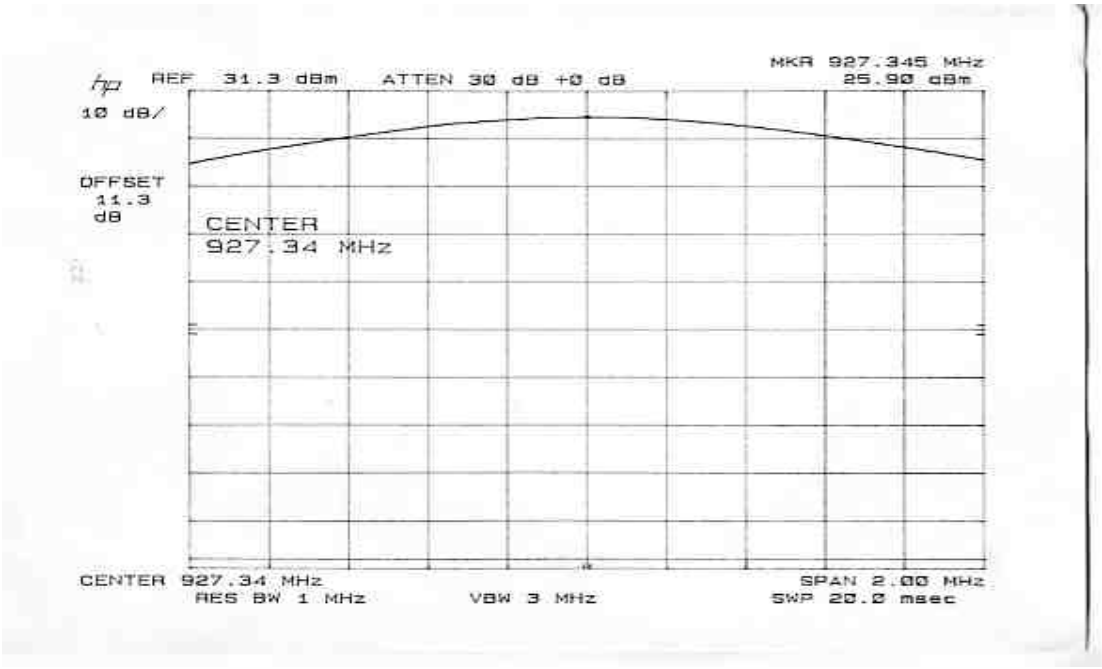
High channel



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2.1049 &
15.247(a)(1)(i) **Occupied Bandwidth**

Occupied bandwidth was performed by coupling the output of the EUT to the input of a spectrum analyzer.

For Frequency Hopping Spread Spectrum Systems, FCC Part 15.247 requires the maximum 20dB bandwidth not exceed 500kHz.

At full modulation, the occupied bandwidth was measured as shown:

Occupied Bandwidth Results

Frequency	Bandwidth	Limit	Pass/Fail
Low Channel 902.498 MHz	360 kHz	500 kHz	Pass
Mid Channel 915.760 MHz	359 kHz	500 kHz	Pass
High Channel 927.345 MHz	363 kHz	500 kHz	Pass

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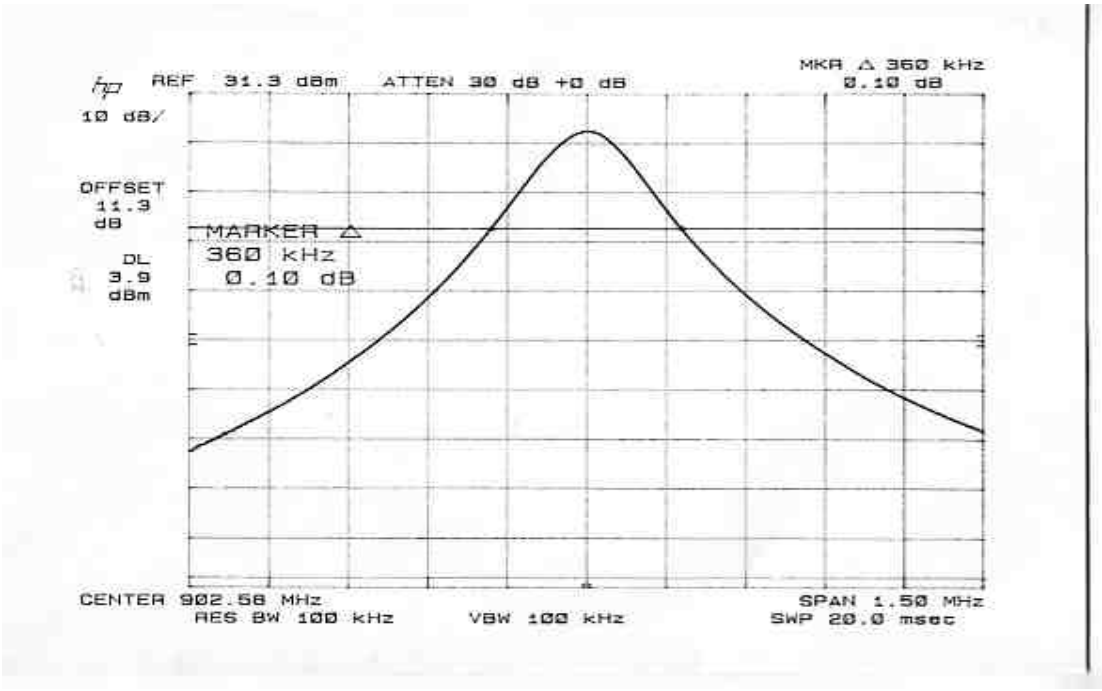
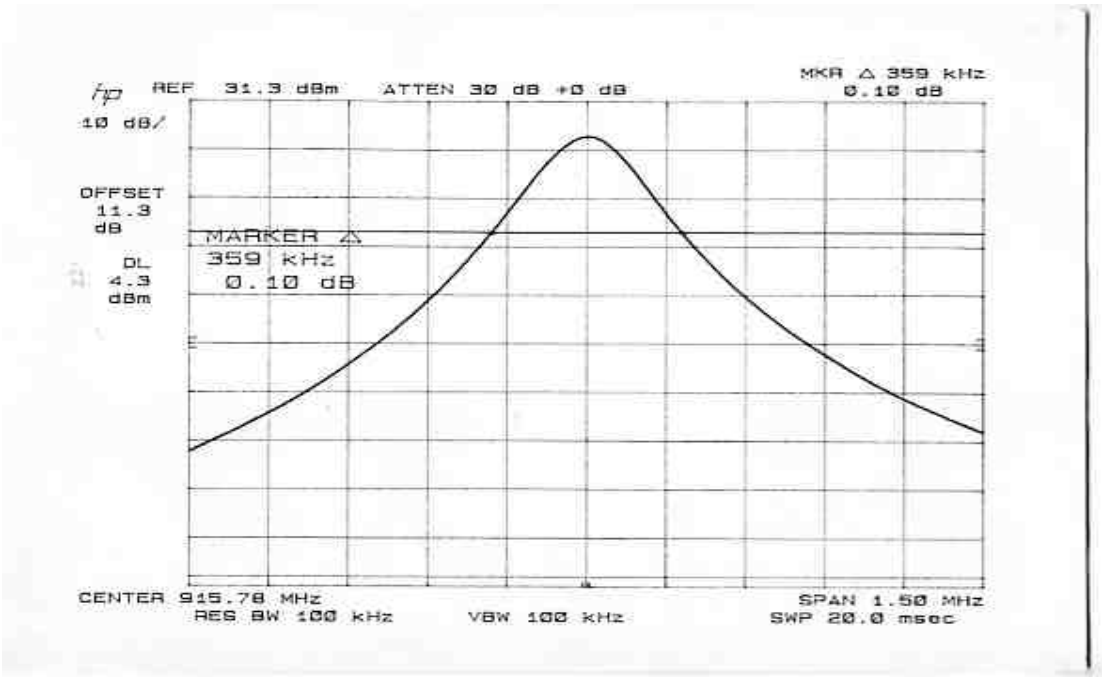
Low channel



Mid channel



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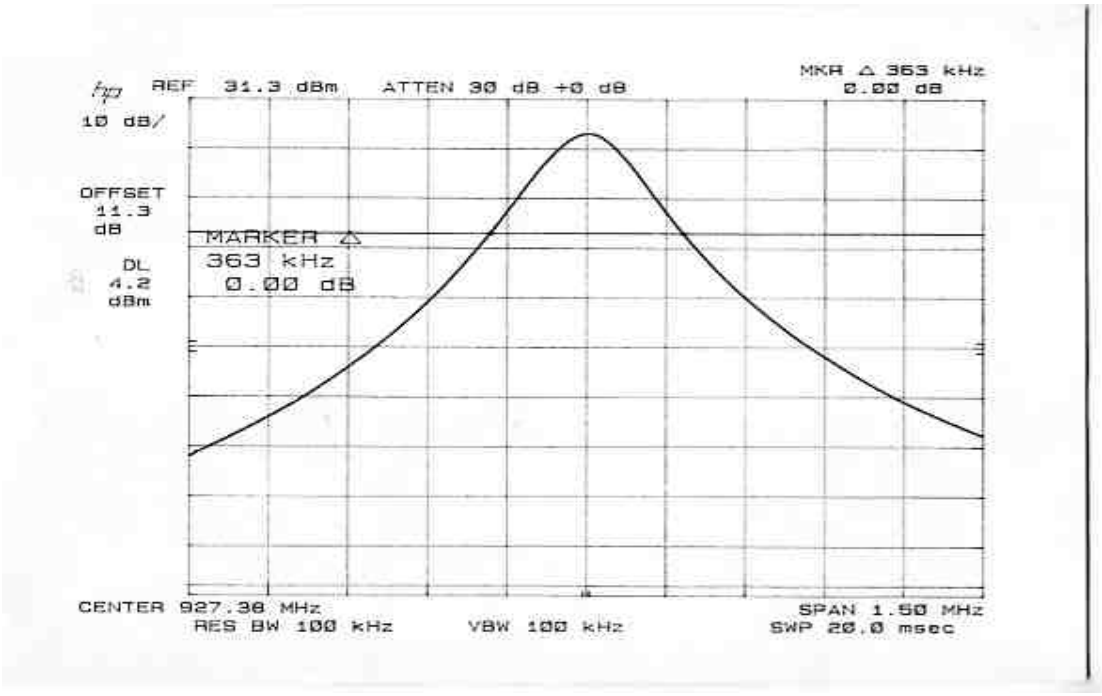
High channel



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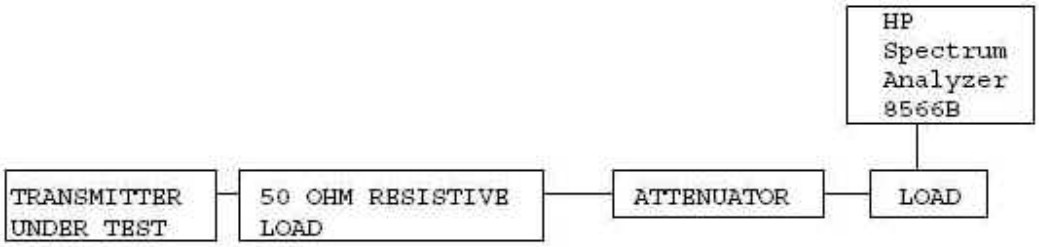
2.1051 **Conducted Spurious Emissions at Antenna Terminals**

The EUT must comply with requirements for spurious emissions at antenna terminals. Per 15.247(c) all spurious emissions in any 100kHz bandwidth outside the frequency band in which the spread spectrum device is operating shall be attenuated 20dB below the highest power level in a 100kHz bandwidth within the band containing the highest level of the desired power.

The EUT antenna was removed and the cable was connected directly into a spectrum analyzer through a 10dB attenuator. An offset was programmed into the spectrum analyzer to compensate for the loss of the external attenuator. The spectrum analyzer resolution bandwidth was set to 100kHz and the video bandwidth was set to 1MHz. The amplitude of the EUT carrier frequency was measured to determine the emissions limit(20dB below the carrier frequency amplitude). The emissions outside of the allocated frequency band were then scanned from 30MHz up to the tenth harmonic of the carrier. Spurious emissions were measured at both the low power and high power settings.

15.247(c) Method of Measuring RF Conducted Spurious Emissions



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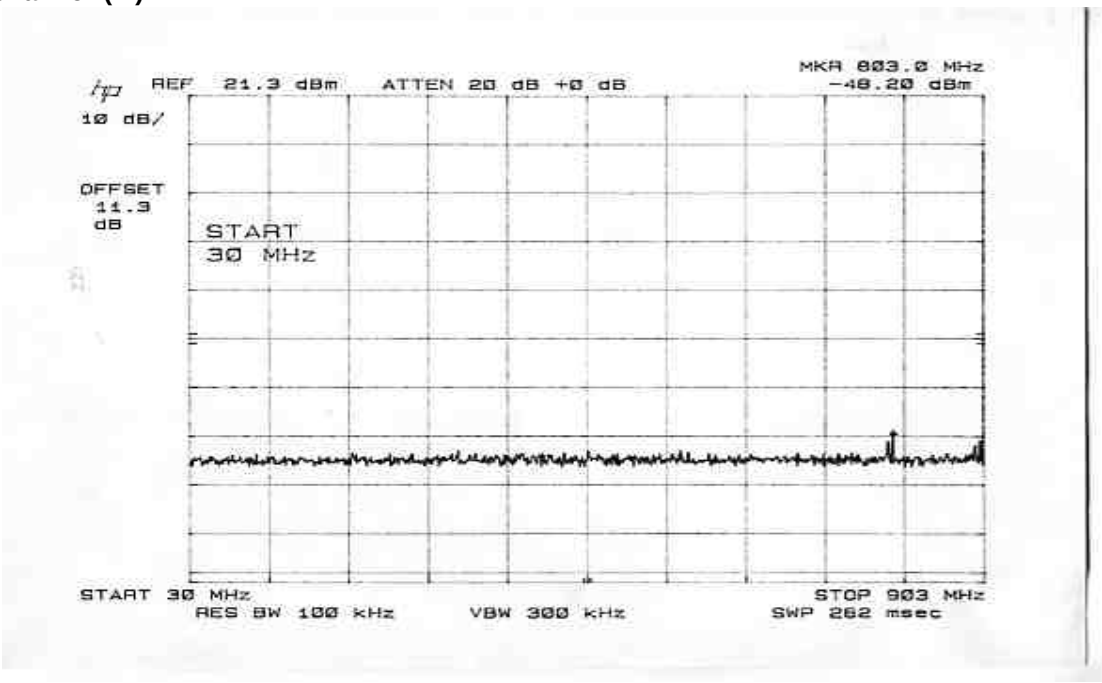
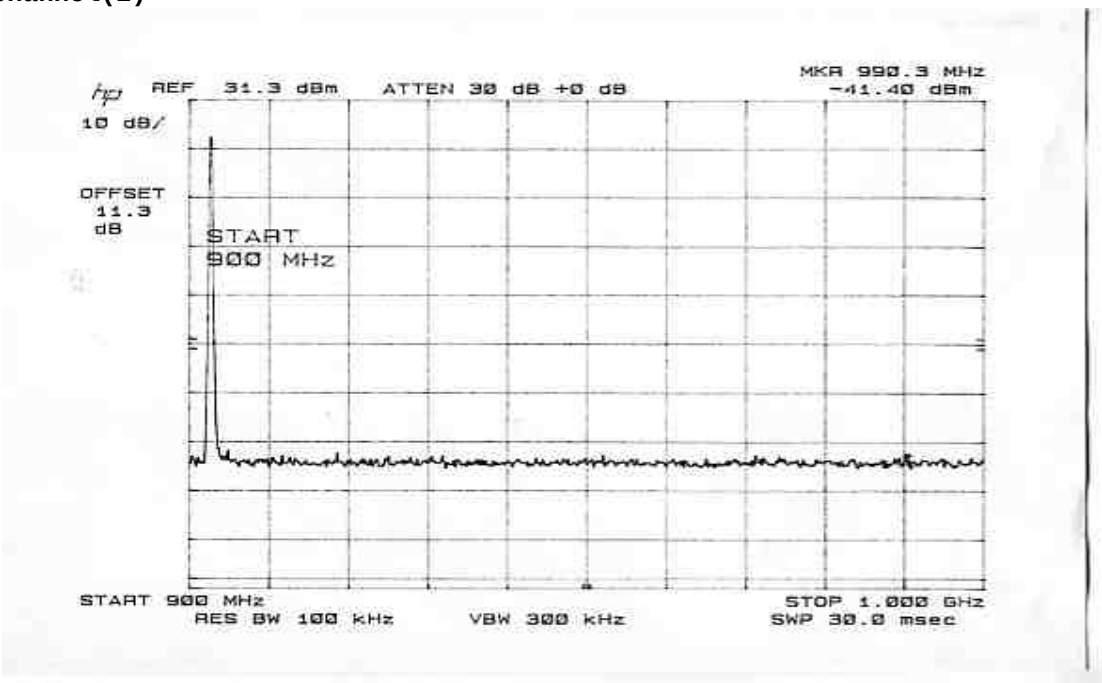
Low channel(1)



Low channel(2)



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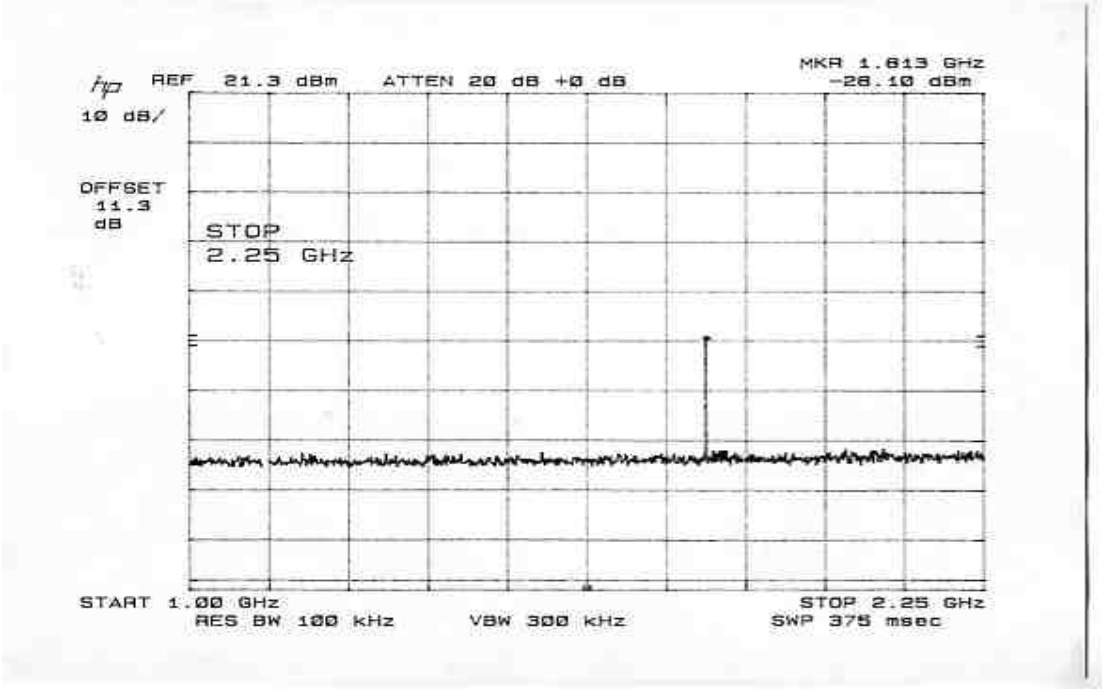
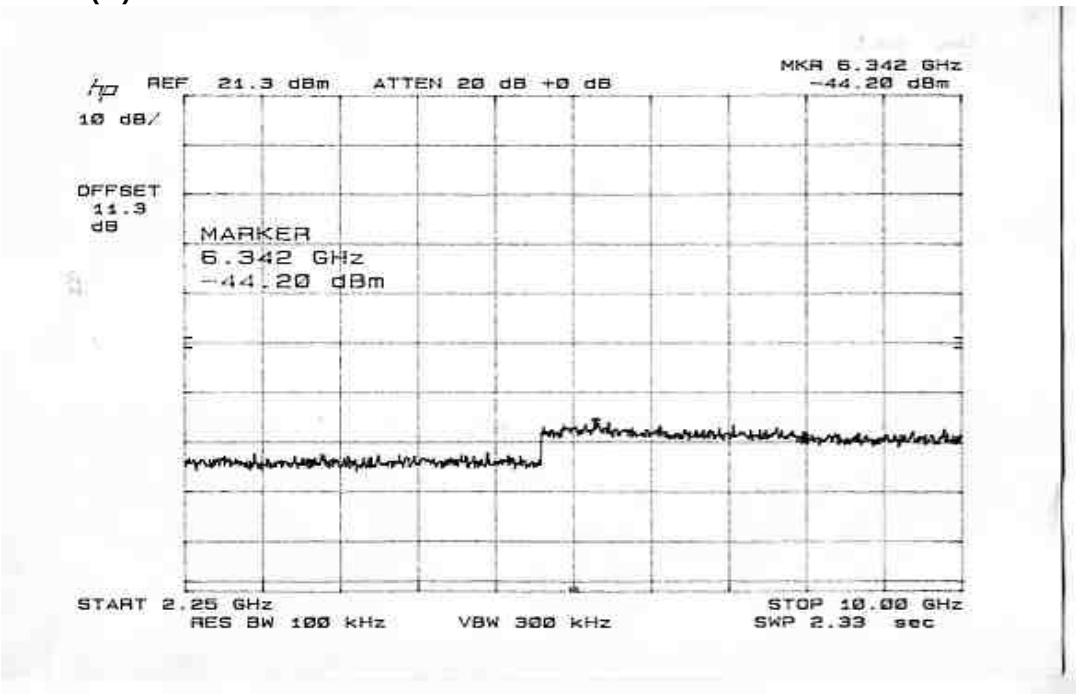
Low channel(3)



Low channel(4)



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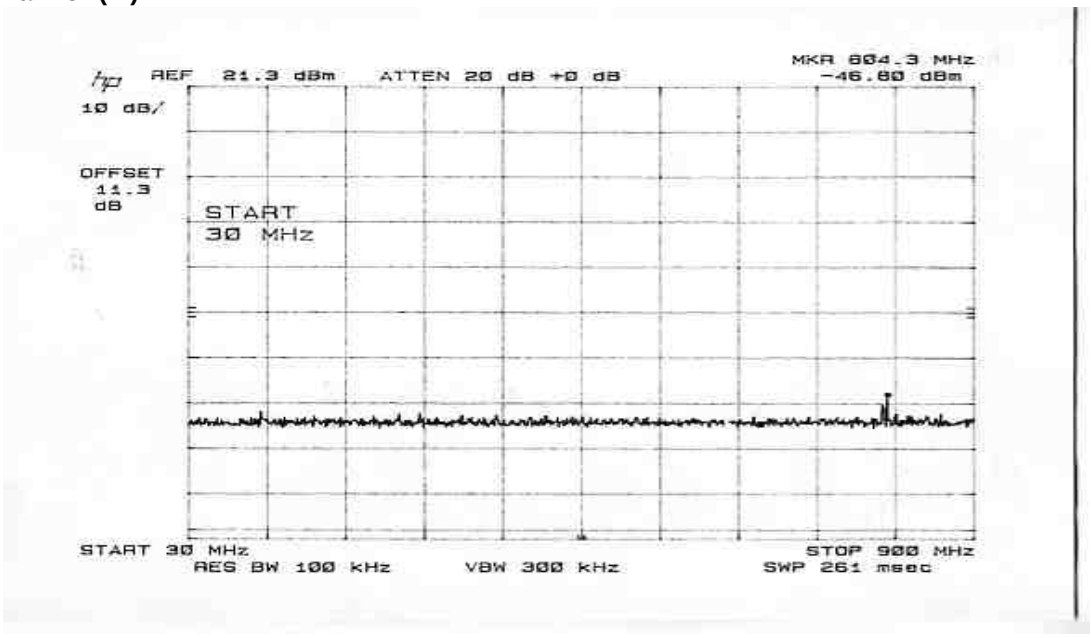
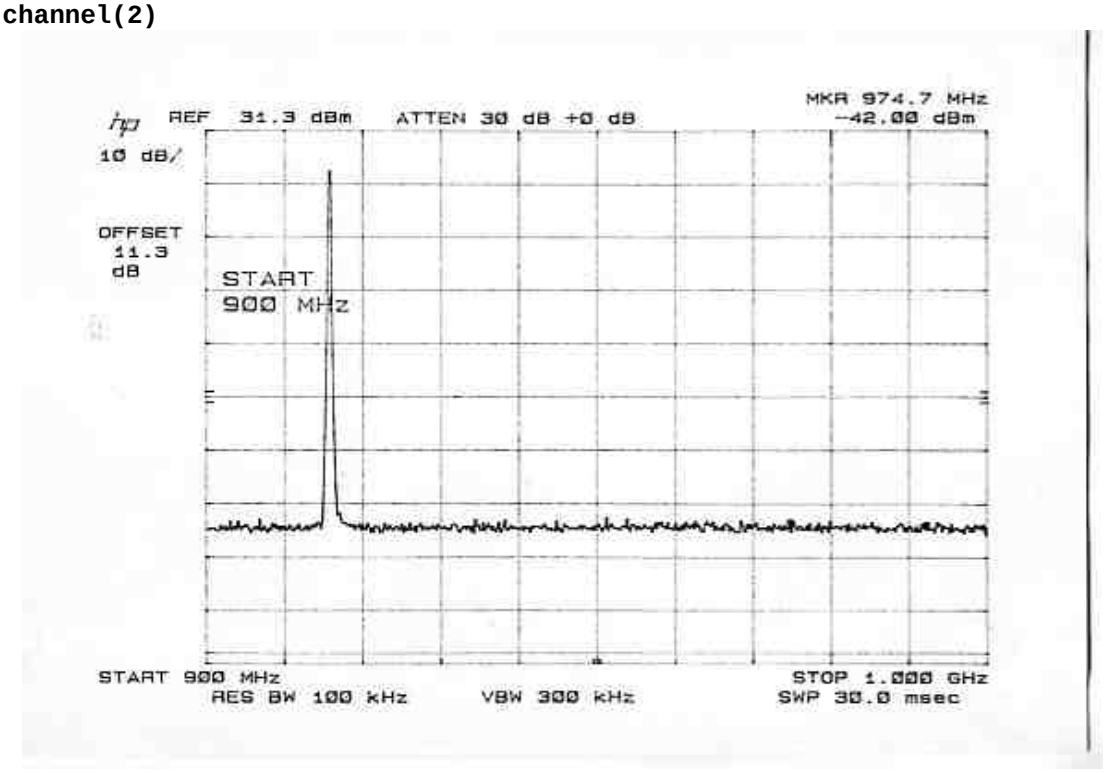
Mid channel(1)



Mid channel(2)



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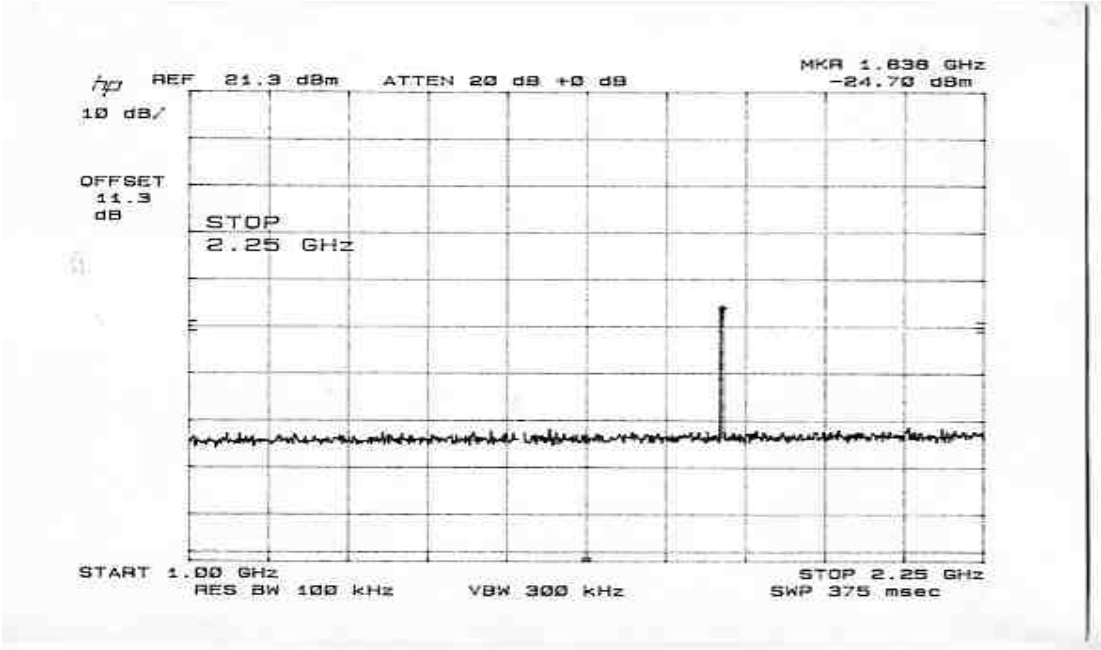
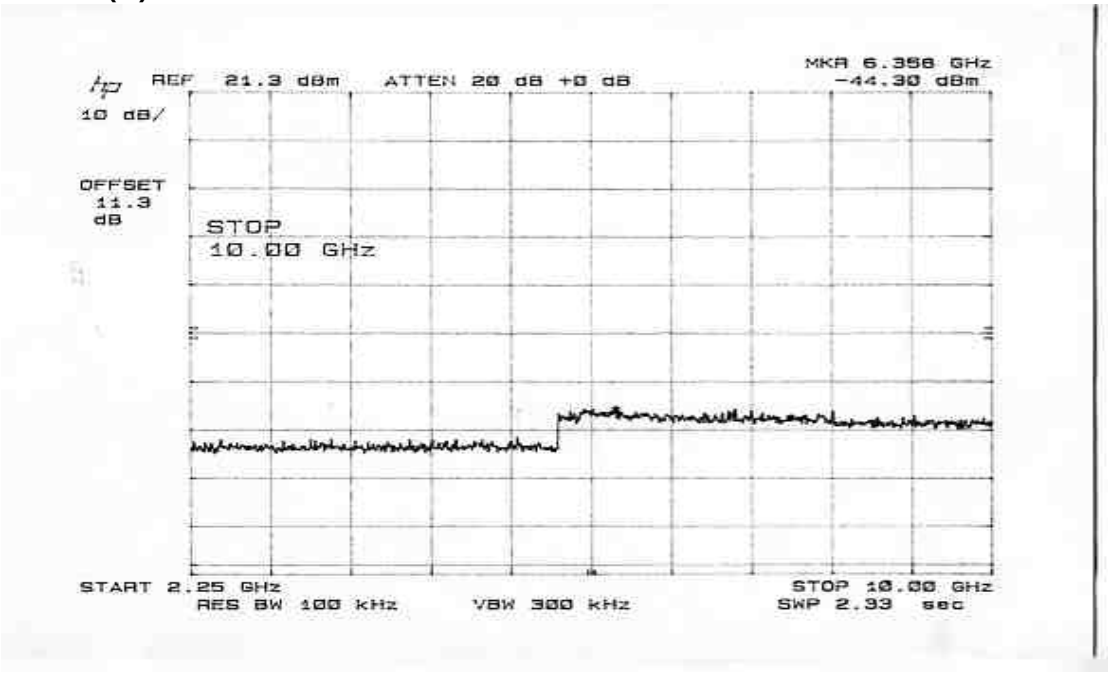
Mid channel(3)



Mid channel(4)



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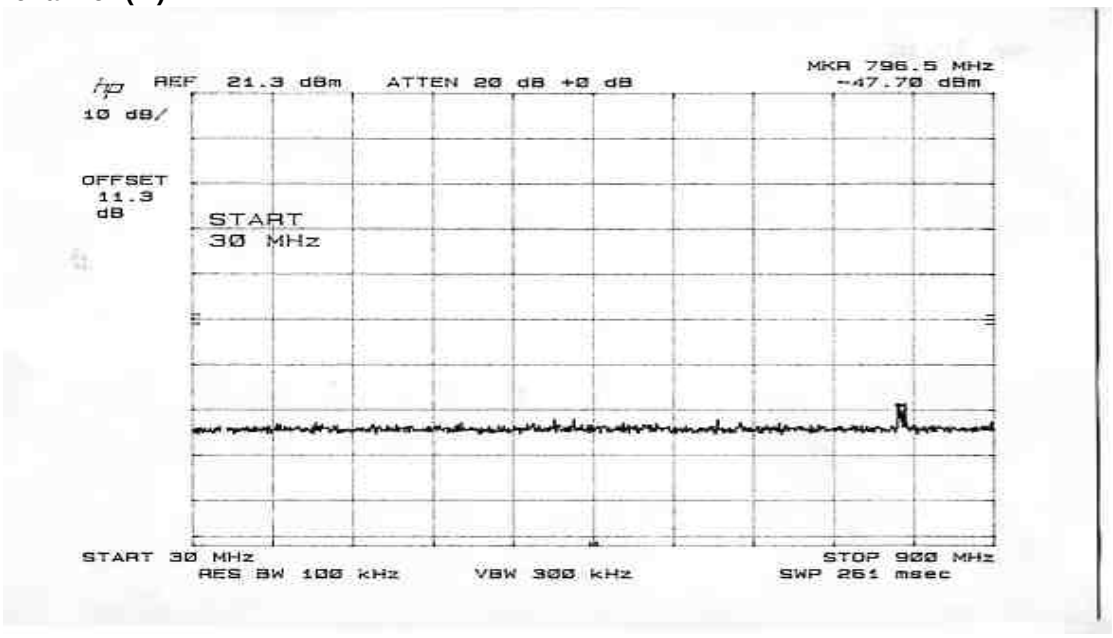
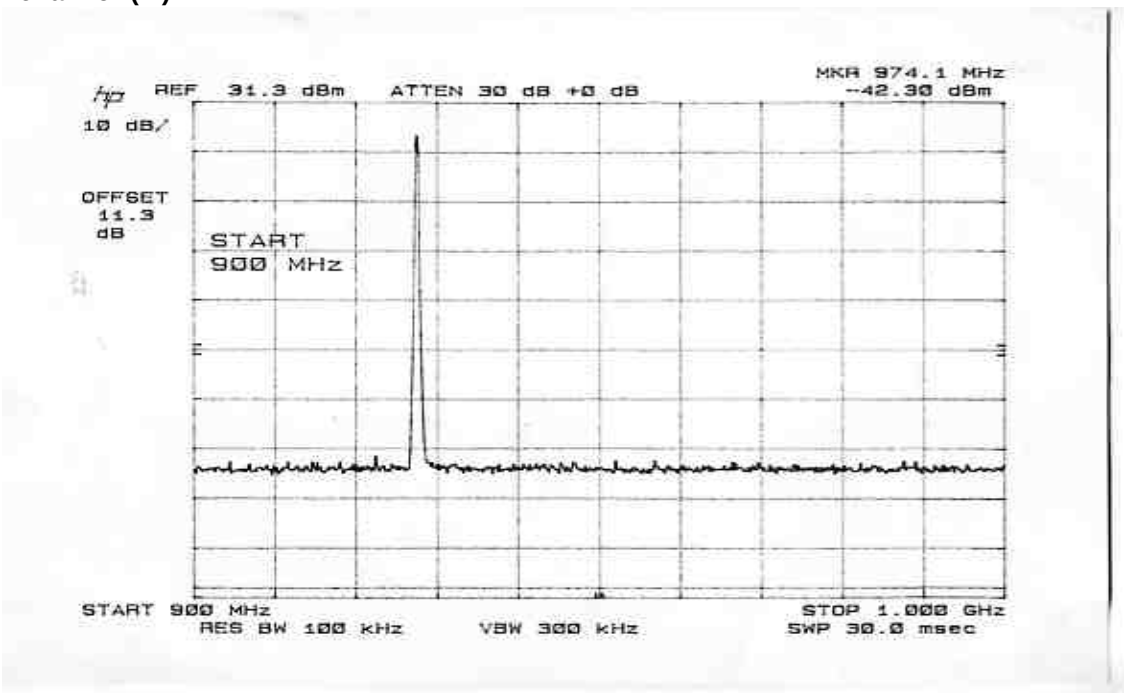
High channel(1)



High channel(2)



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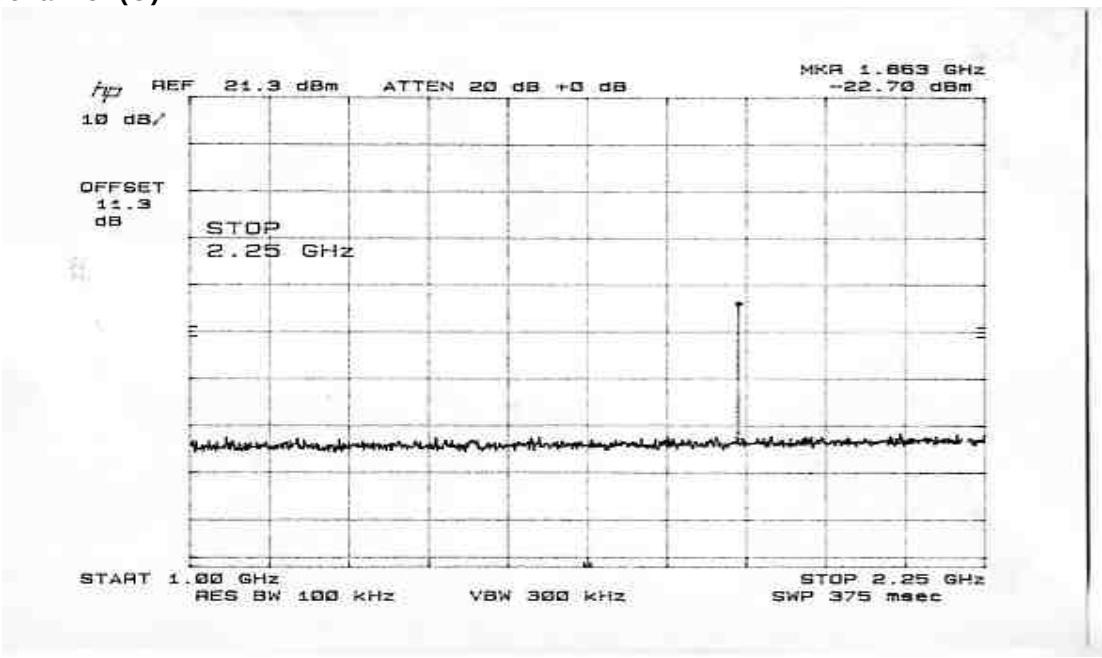
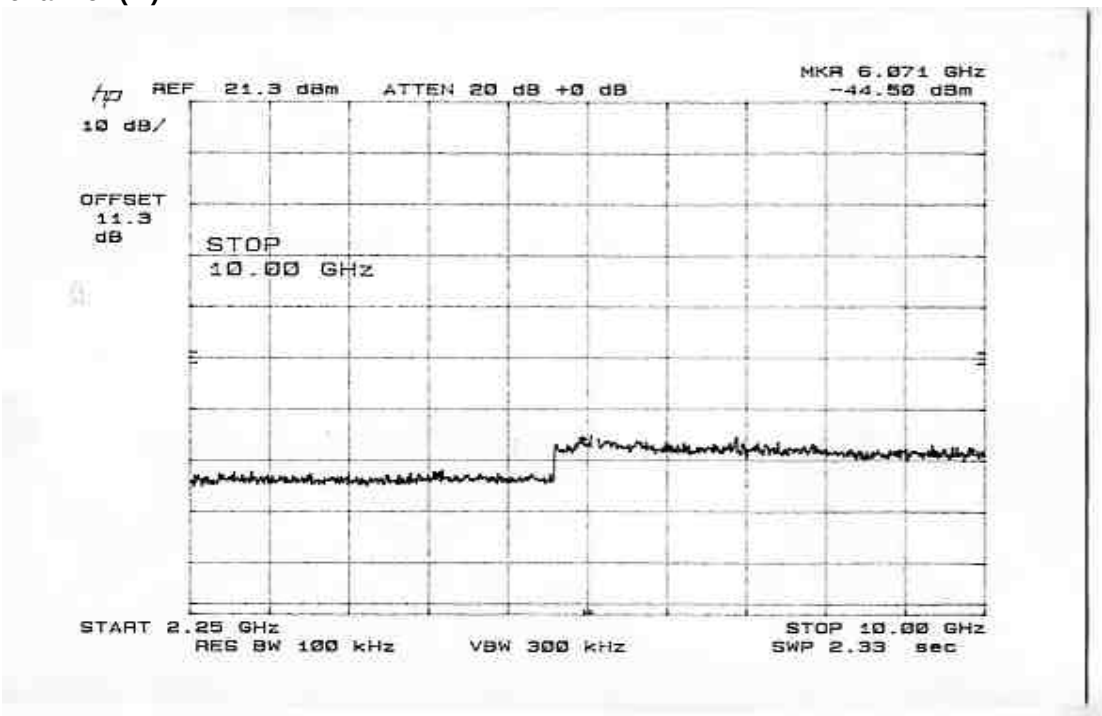
High channel(3)



High channel(4)



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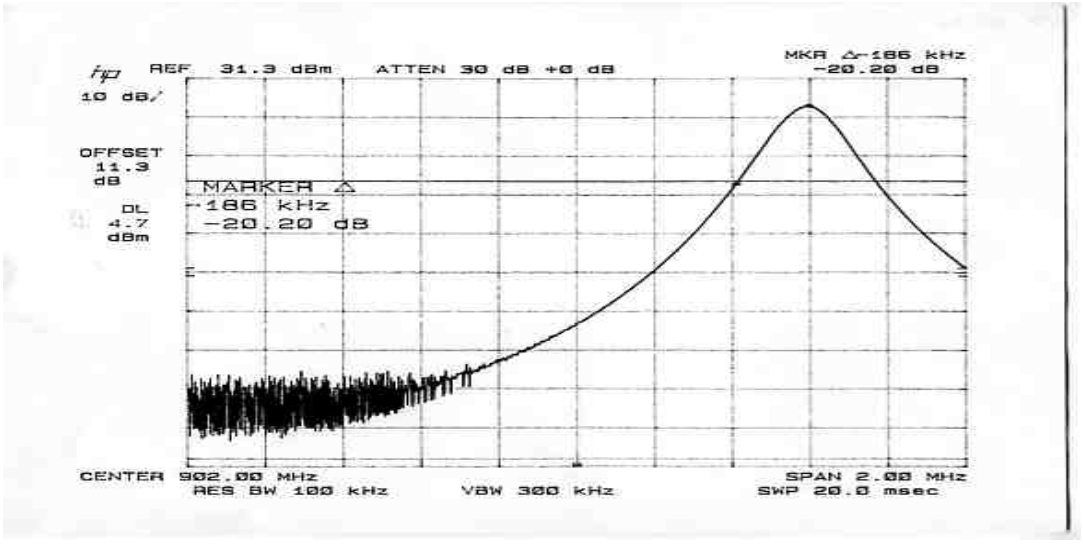
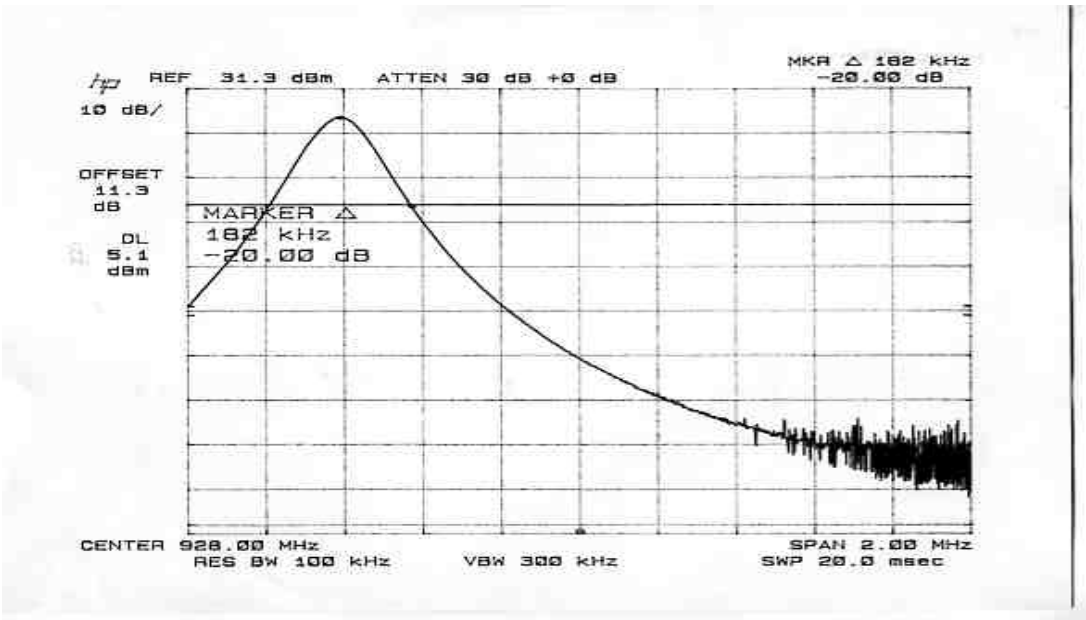
Conducted Emissions at the Band:

The following plots are band edge measurements at both the low and high channels. The band edge is located at the center frequency of each of the following plots.

Low channel



High channel



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APPLICANT: KISCOMM CO., LTD
FCC ID: S8NKIS900RE
NAME OF TEST: RADIATION INTERFERENCE
RULES PART NO.: 15.247 & 15.205(Restricted band)

2.1053 Radiated Spurious Emissions:
Radiated and antenna conducted spurious emissions testing is required. For Antenna Conducted spurious, the limit is 20dBc. For Radiated spurious, the limit is 15.209 limits for emissions falling in the restricted bands(15.205), otherwise the limit is 20dBc.
The EUT must comply with the requirements for radiated spurious emissions that fall within the restricted bands. These emissions must meet the limits specified in 15.209 and 15.35(b) for peak measurements.

Test Procedure
The EUT was placed on motorized turntable for radiated testing on a 3-meter open field test site. The emissions form the EUT were measured continuously at every azimuth by rotating the turntable. Receiving antennas were mounted on an antenna mast to determine the height of maximum emissions. The height of the antenna was varied between 1 and 4 meters. The peripherals were placed on the table in accordance with ANSI C63.4-2001. Cables were varied in position to produce maximum emissions. Both the horizontal and vertical field components were measured.

Test Results: A search was made of the spectrum from 30Mhz to 10^{th} harmonics and the measurements indicate that the unit DOES meet the FCC requirements.

TEST DATA:
Low channel (PK)

Fundamental frequency (MHz)	Emission Frequency (MHz)	Meter Reading dBuV	Ant. Polar	ANT Factor dB	Cable Loss dB	Amp Gain dB	Field Strength dBuv/m	Margin dBuv	Limit dBuv/m	Detector mode
902.458	2707.78	32.6	H	28.7	9.7	32.0	39.0	35.0	74.0	PK
902.458	3610.32	32.2	H	30.6	10.6	31.0	42.4	31.6	74.0	PK
902.458	4512.98	31.4	H	32.7	11.1	30.0	45.2	28.8	74.0	PK
902.458	5415.50	32.0	H	33.8	11.4	30.0	47.2	26.8	74.0	PK
902.458	6318.00	40.0	H	34.8	11.6	30.0	56.4	17.6	74.0	PK
902.458	7220.66	38.6	H	36.1	11.5	30.0	56.2	17.8	74.0	PK
902.458	8412.27	38.2	H	37.2	12.2	30.0	57.7	16.3	74.0	PK
902.458	9025.81	37.7	H	37.3	12.6	30.0	57.6	16.4	74.0	PK
902.458	2707.78	32.6	V	28.7	9.6	30.0	40.9	33.1	74.0	PK
902.458	3610.32	32.2	V	30.6	9.7	32.0	40.5	33.5	74.0	PK
902.458	4512.98	31.4	V	32.7	11.5	31.0	44.6	29.4	74.0	PK
902.458	5415.50	32.0	V	33.8	11.5	30.0	47.3	26.7	74.0	PK
902.458	6318.00	40.0	V	34.8	11.7	30.0	56.5	17.5	74.0	PK
902.458	7220.66	38.6	V	36.1	12.2	30.0	56.9	17.1	74.0	PK
902.458	8412.27	38.2	V	37.2	11.9	30.0	57.4	16.6	74.0	PK
902.458	9025.81	37.7	V	37.3	12.4	30.0	57.4	16.6	74.0	PK

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Mid channel (PK)

Fundamental frequency (MHz)	Emission Frequency (MHz)	Meter Reading dBuV	Ant. Polar	ANT Factor dB	Cable Loss dB	Amp Gain dB	Field Strength (dBuv/m)	Margin (dBuv)	Limit (dBuv/m)	Detector mode
915.78	2743.80	32.3	H	28.8	9.7	32.0	38.8	35.2	74.0	PK
915.78	3658.40	31.8	H	30.8	10.5	31.0	42.1	31.9	74.0	PK
915.78	4573.00	32.0	H	32.9	11.1	30.0	46.1	27.9	74.0	PK
915.78	5487.60	32.1	H	33.7	11.4	30.0	47.2	26.8	74.0	PK
915.78	6402.20	39.7	H	34.8	11.6	30.0	56.2	17.8	74.0	PK
915.78	7313.80	38.7	H	36.2	11.5	30.0	56.4	17.6	74.0	PK
915.78	8231.40	38.3	H	36.9	12.2	30.0	57.5	16.5	74.0	PK
915.78	9146.00	38.2	H	37.3	12.7	30.0	58.2	15.8	74.0	PK
915.78	2743.80	32.8	V	28.8	9.7	30.0	41.3	32.7	74.0	PK
915.78	3658.40	32.5	V	30.8	9.7	32.0	40.9	33.1	74.0	PK
915.78	4573.00	33.0	V	32.9	11.5	31.0	46.4	27.6	74.0	PK
915.78	5487.60	34.1	V	33.7	11.5	30.0	49.3	24.7	74.0	PK
915.78	6402.20	41.1	V	34.8	11.7	30.0	57.7	16.3	74.0	PK
915.78	7313.80	38.7	V	36.2	12.2	30.0	57.1	16.9	74.0	PK
915.78	8231.40	39.1	V	36.9	11.9	30.0	58.0	16.0	74.0	PK
915.78	9146.00	37.5	V	37.3	12.5	30.0	57.3	16.7	74.0	PK

SAMPLE CALCULATION: FSdBuV/m = MR (dBuV) + ACFdB.

TEST PROCEDURE: ANSI STANDARD C63.4-1992 using a Hewlett Packard Model 8566B spectrum analyzer, a Hewlett Packard Model 85685A Preselector, a Hewlett Packard Model 85650A Quasi-Peak adapter, and an appropriate antenna – see the test equipment list. The bandwidth of spectrum analyzer was 100 kHz with an appropriate sweep speed. When an emission was found, the table was rotated to produce the maximum signal strength. The antenna was placed in both the horizontal and vertical planes and the worse case emissions were reported.

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High channel(PK)

Fundamental frequency (MHz)	Emission Frequency (MHz)	Meter Reading dBuV	Ant. Polar	ANT Factor dB	Cable Loss dB	Amp Gain dB	Field Strength dBuv/m	Margin dBuv	Limit dBuv/m	Detector mode
927.38	2782.19	32.2	H	29.0	9.7	32.0	38.9	35.1	74.0	PK
927.38	3709.59	30.7	H	31.0	10.4	31.0	41.1	32.9	74.0	PK
927.38	4636.99	31.7	H	33.1	11.2	30.0	46.0	28.0	74.0	PK
927.38	5564.39	31.5	H	33.8	11.4	30.0	46.7	27.3	74.0	PK
927.38	6491.79	39.8	H	34.9	11.7	30.0	56.4	17.6	74.0	PK
927.38	7419.12	38.9	H	36.3	11.5	30.0	56.7	17.3	74.0	PK
927.38	8346.59	38.5	H	37.1	12.2	30.0	57.9	16.1	74.0	PK
927.38	9273.99	37.1	H	37.3	12.7	30.0	57.1	16.9	74.0	PK
927.38	2782.19	32.8	V	29.0	9.7	30.0	41.4	32.6	74.0	PK
927.38	3709.59	31.8	V	31.0	9.6	32.0	40.4	33.6	74.0	PK
927.38	4636.99	32.5	V	33.1	11.5	31.0	46.2	27.8	74.0	PK
927.38	5564.39	32.6	V	33.8	11.5	30.0	47.9	26.1	74.0	PK
927.38	6491.79	39.5	V	34.9	11.8	30.0	56.2	17.8	74.0	PK
927.38	7419.12	38.5	V	36.3	12.2	30.0	57.0	17.0	74.0	PK
927.38	8346.59	37.9	V	37.1	11.9	30.0	57.0	17.0	74.0	PK
927.38	9273.99	37.8	V	37.3	12.5	30.0	57.6	16.4	74.0	PK

SAMPLE CALCULATION: FSdBuV/m = MR (dBuV) + ACFdB.

TEST PROCEDURE: ANSI STANDARD C63.4-1992 using a Hewlett Packard Model 8566B spectrum analyzer, a Hewlett Packard Model 85685A Preselector, a Hewlett Packard Model 85650A Quasi-Peak adapter, and an appropriate antenna – see the test equipment list. The bandwidth of spectrum analyzer was 100 kHz with an appropriate sweep speed. When an emission was found, the table was rotated to produce the maximum signal strength. The antenna was placed in both the horizontal and vertical planes and the worse case emissions were reported.

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Low channel(AV)

No	Emission Frequency (MHz)	Meter Reading dBuV	Ant. Pola	ANT Factor dB	Cable Loss dB	Amp Gain dB	Duty Cycle dB	Field Strength (dBuv/m)	Margin (dBuv)	Limit (dBuv/m)	Detector mode
902.458	2707.78	31.0	H	28.7	9.7	32.0	0.0	37.4	-16.6	54.0	AV
902.458	3610.32	21.2	H	30.6	10.6	31.0	0.0	31.3	-22.7	54.0	AV
902.458	4512.98	20.9	H	32.7	11.1	30.0	0.0	34.7	-19.3	54.0	AV
902.458	5415.50	21.0	H	33.8	11.4	30.0	0.0	36.2	-17.8	54.0	AV
902.458	6318.00	28.6	H	34.8	11.6	30.0	0.0	45.0	-9.0	54.0	AV
902.458	7220.66	27.7	H	36.1	11.5	30.0	0.0	45.3	-8.7	54.0	AV
902.458	8412.27	27.5	H	37.2	12.2	30.0	0.0	47.0	-7.0	54.0	AV
902.458	9025.81	26.5	H	37.3	12.6	30.0	0.0	46.4	-7.6	54.0	AV
902.458	2707.78	28.8	V	28.7	9.6	30.0	0.0	37.1	-16.9	54.0	AV
902.458	3610.32	21.2	V	30.6	9.7	32.0	0.0	29.5	-24.5	54.0	AV
902.458	4512.98	20.8	V	32.7	11.5	31.0	0.0	34.0	-20.0	54.0	AV
902.458	5415.50	21.0	V	33.8	11.5	30.0	0.0	36.3	-17.7	54.0	AV
902.458	6318.00	28.6	V	34.8	11.7	30.0	0.0	45.1	-8.9	54.0	AV
902.458	7220.66	28.6	V	36.1	12.2	30.0	0.0	46.9	-7.1	54.0	AV
902.458	8412.27	28.0	V	37.2	11.9	30.0	0.0	47.2	-6.8	54.0	AV
902.458	9025.81	26.5	V	37.3	12.4	30.0	0.0	46.2	-7.8	54.0	AV

SAMPLE CALCULATION: FSdBuV/m = MR (dBuV) + ACFdB.

TEST PROCEDURE: ANSI STANDARD C63.4-1992 using a Hewlett Packard Model 8566B spectrum analyzer, a Hewlett Packard Model 85685A Preselector, a Hewlett Packard Model 85650A Quasi-Peak adapter, and an appropriate antenna – see the test equipment list. The bandwidth of spectrum analyzer was 100 kHz with an appropriate sweep speed. When an emission was found, the table was rotated to produce the maximum signal strength. The antenna was placed in both the horizontal and vertical planes and the worse case emissions were reported.

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Mid channel(AV)

Fundamental frequency (MHz)	Emission Frequency (MHz)	Meter Reading dBuV	Ant. Pola	ANT Factor dB	Cable Loss dB	Amp Gain dB	Duty Cycle dB	Field Strength (dBuv/m)	Margin (dBuv)	Limit (dBuv/m)	Detector mode
915.78	2743.80	30.7	H	28.8	9.7	32.0	0.0	37.2	-16.8	54.0	AV
915.78	3658.40	20.7	H	30.8	10.5	31.0	0.0	31.0	-23.0	54.0	AV
915.78	4573.00	21.0	H	32.9	11.1	30.0	0.0	35.1	-18.9	54.0	AV
915.78	5487.60	21.0	H	33.7	11.4	30.0	0.0	36.1	-17.9	54.0	AV
915.78	6402.20	28.3	H	34.8	11.6	30.0	0.0	44.8	-9.2	54.0	AV
915.78	7313.80	27.6	H	36.2	11.5	30.0	0.0	45.3	-8.7	54.0	AV
915.78	8231.40	27.4	H	36.9	12.2	30.0	0.0	46.6	-7.4	54.0	AV
915.78	9146.00	25.4	H	37.3	12.7	30.0	0.0	45.4	-8.6	54.0	AV
915.78	2743.80	31.4	V	28.8	9.7	30.0	0.0	39.9	-14.1	54.0	AV
915.78	3658.40	21.5	V	30.8	9.7	32.0	0.0	29.9	-24.1	54.0	AV
915.78	4573.00	20.9	V	32.9	11.5	31.0	0.0	34.3	-19.7	54.0	AV
915.78	5487.60	22.4	V	33.7	11.5	30.0	0.0	37.6	-16.4	54.0	AV
915.78	6402.20	28.0	V	34.8	11.7	30.0	0.0	44.6	-9.4	54.0	AV
915.78	7313.80	27.5	V	36.2	12.2	30.0	0.0	45.9	-8.1	54.0	AV
915.78	8231.40	28.6	V	36.9	11.9	30.0	0.0	47.5	-6.5	54.0	AV
915.78	9146.00	27.6	V	37.3	12.5	30.0	0.0	47.4	-6.6	54.0	AV

SAMPLE CALCULATION: FSdBuV/m = MR (dBuV) + ACFdB.

TEST PROCEDURE: ANSI STANDARD C63.4-1992 using a Hewlett Packard Model 8566B spectrum analyzer, a Hewlett Packard Model 85685A Preselector, a Hewlett Packard Model 85650A Quasi-Peak adapter, and an appropriate antenna – see the test equipment list. The bandwidth of spectrum analyzer was 100 kHz with an appropriate sweep speed. When an emission was found, the table was rotated to produce the maximum signal strength. The antenna was placed in both the horizontal and vertical planes and the worse case emissions were reported.

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High channel(AV)

Fundamental frequency (MHz)	Emission Frequency (MHz)	Meter Reading dBuV	Ant. Pola	ANT Factor dB	Cable Loss dB	Amp Gain dB	Duty Cycle dB	Field Strength (dBuv/m)	Margin (dBuv)	Limit (dBuv/m)	Detector mode
927.38	2782.19	30.6	H	29.0	9.7	32.0	0.0	37.3	-16.7	54.0	AV
927.38	3709.59	21.2	H	31.0	10.4	31.0	0.0	31.6	-22.4	54.0	AV
927.38	4636.99	21.1	H	33.1	11.2	30.0	0.0	35.4	-18.6	54.0	AV
927.38	5564.39	21.0	H	33.8	11.4	30.0	0.0	36.2	-17.8	54.0	AV
927.38	6491.79	28.2	H	34.9	11.7	30.0	0.0	44.8	-9.2	54.0	AV
927.38	7419.12	27.4	H	36.3	11.5	30.0	0.0	45.2	-8.8	54.0	AV
927.38	8346.59	27.8	H	37.1	12.2	30.0	0.0	47.2	-6.8	54.0	AV
927.38	9273.99	26.9	H	37.3	12.7	30.0	0.0	46.9	-7.1	54.0	AV
927.38	2782.19	31.5	V	29.0	9.7	30.0	0.0	40.1	-13.9	54.0	AV
927.38	3709.59	22.0	V	31.0	9.6	32.0	0.0	30.6	-23.4	54.0	AV
927.38	4636.99	22.4	V	33.1	11.5	31.0	0.0	36.1	-17.9	54.0	AV
927.38	5564.39	23.0	V	33.8	11.5	30.0	0.0	38.3	-15.7	54.0	AV
927.38	6491.79	29.3	V	34.9	11.8	30.0	0.0	46.0	-8.0	54.0	AV
927.38	7419.12	28.6	V	36.3	12.2	30.0	0.0	47.1	-6.9	54.0	AV
927.38	8346.59	28.3	V	37.1	11.9	30.0	0.0	47.4	-6.6	54.0	AV
927.38	9273.99	27.9	V	37.3	12.5	30.0	0.0	47.7	-6.3	54.0	AV

SAMPLE CALCULATION: FSdBuV/m = MR (dBuV) + ACFdB.

TEST PROCEDURE: ANSI STANDARD C63.4-1992 using a Hewlett Packard Model 8566B spectrum analyzer, a Hewlett Packard Model 85685A Preselector, a Hewlett Packard Model 85650A Quasi-Peak adapter, and an appropriate antenna – see the test equipment list. The bandwidth of spectrum analyzer was 100 kHz with an appropriate sweep speed. When an emission was found, the table was rotated to produce the maximum signal strength. The antenna was placed in both the horizontal and vertical planes and the worse case emissions were reported.

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APPLICANT: KISCOMM Co., Ltd.

FCC ID: S8NKIS900RE

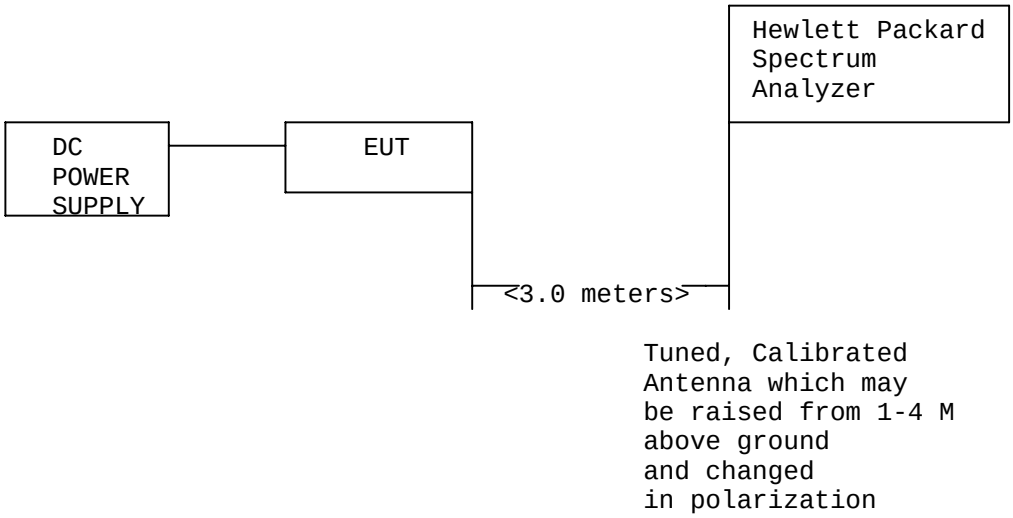
NAME OF TEST: RADIATION INTERFERENCE CONTINUED

RULES PART NO.: 15.247, 15.209

TEST PROCEDURE: ANSI STANDARD C63.4-1992 as described on previous page.

2.993(a)(b) Continued Field strength of spurious emissions:

Method of Measuring Radiated Spurious Emissions



Equipment placed 80 cm above ground on a rotatable platform.

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APPLICANT: KISCOMM Co., Ltd.

FCC ID: S8NKIS900RE

NAME OF TEST: POWER LINE CONDUCTED INTERFERENCE

RULES PART NO.: 15.207

REQUIREMENTS:	**QUASI-PEAK**	**AVERAGE**
.15 – 0.5 MHz	66-56 dBuV	56-46 dBuV
0.5 – 5.0	56	46
5.0 – 30.	60	50

TEST PROCEDURE: ANSI STANDARD C63.4-1992. The spectrum was scanned from .15 to 30 MHz.

The highest emission read for Line 1 was 0.150MHz @ 54.2 dBuv/m

The highest emission read for Line 2 was 0.532MHz @ 43.8 dbuv/m

THE GRAPHS ON THE FOLLOWING PAGES REPRESENT THE EMISSIONS READ FOR POWER LINE CONDUCTED FOR THIS DEVICE.

TEST RESULTS: Both lines were observed. The measurements indicate that the unit DOES appear to meet the FCC requirements for this class of equipment.

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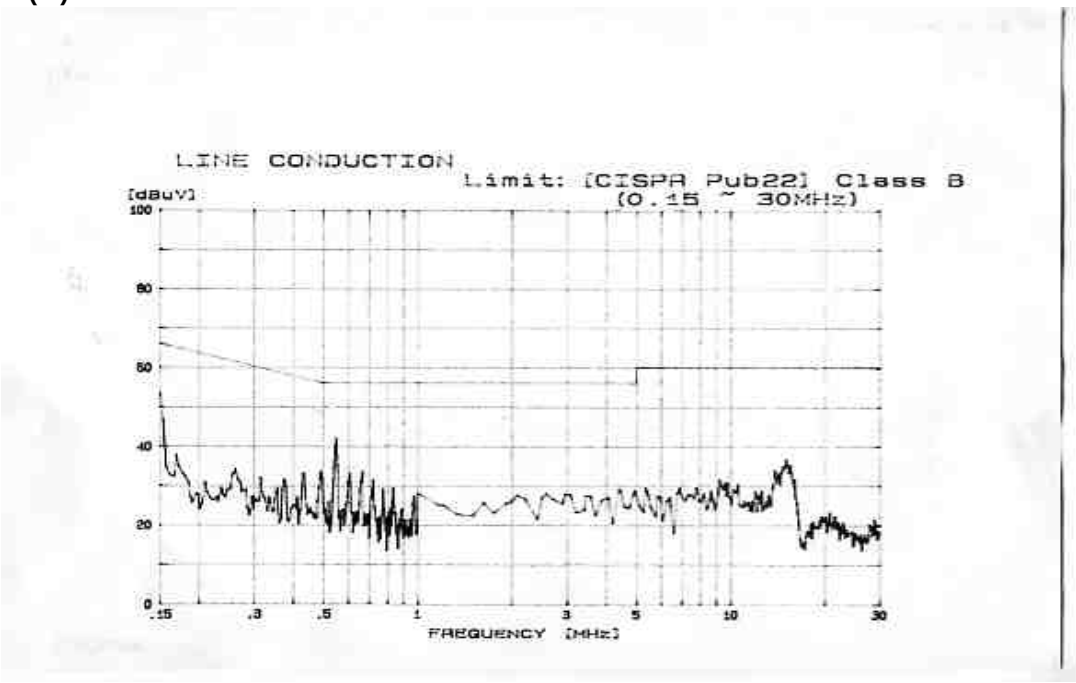
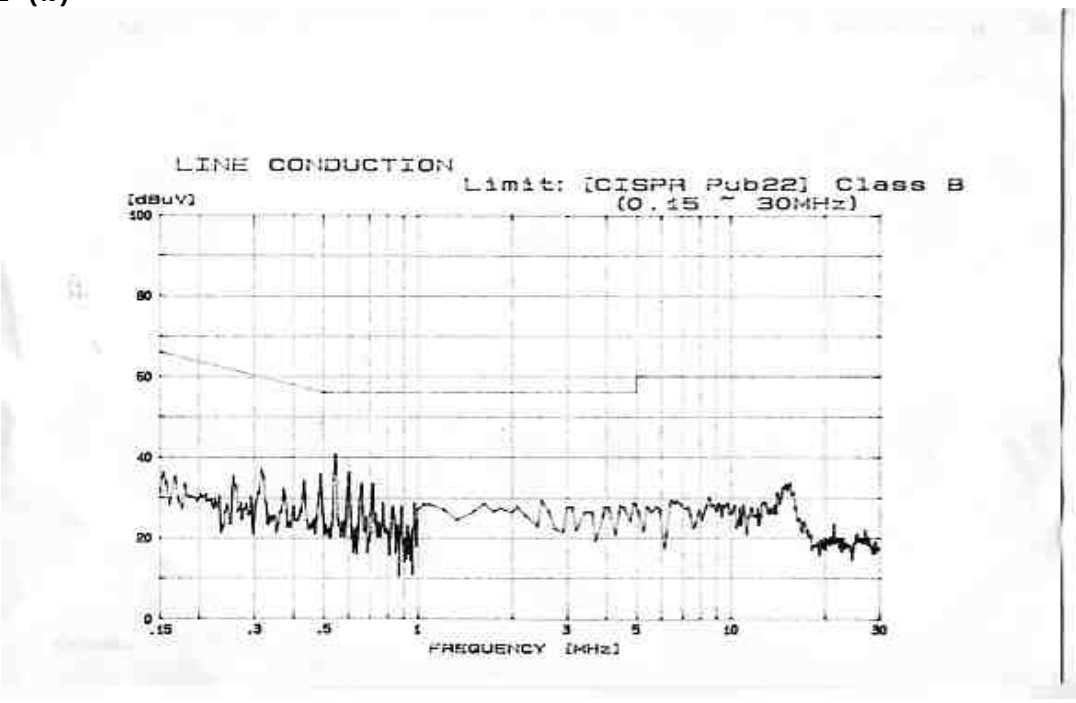
Line 1 (H)



Line 2 (N)



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APPLICANT: KISCOMM Co., Ltd.

FCC ID: S8NKIS900RE

NAME OF TEST: RADIATION INTERFERENCE

RULES PART NO.: 15.209 & 15.109

REQUIREMENTS: 30 to 88 MHz: 40.0 dBuV/M @ 3 METERS
88 to 216 MHz: 43.5 dBuV/M
216 to 960 MHz: 46.0 dBuV/M
ABOVE 960 MHz: 54.0 dBuV/M

TEST RESULTS: A search was made of the spectrum from 30 to 1000MHz and the measurements indicate that the unit DOES meet the FCC requirements.

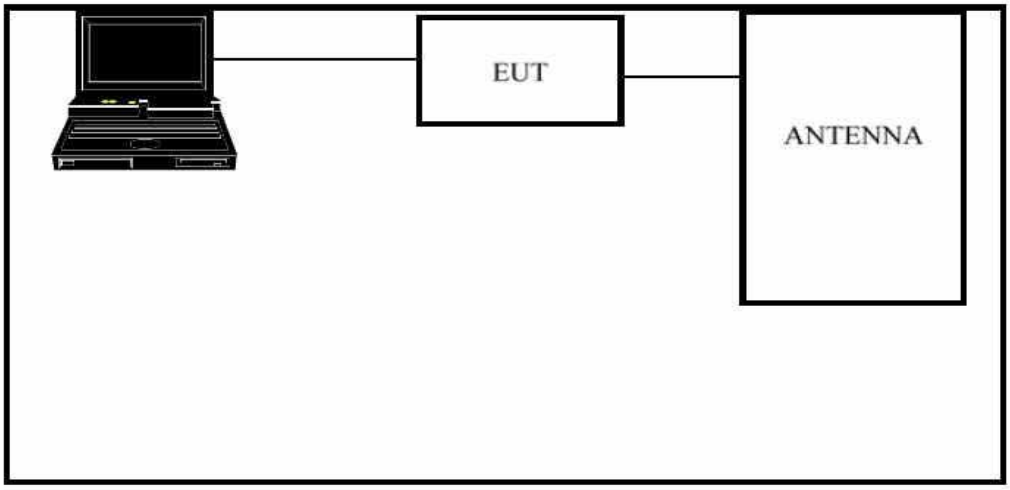
TEST DATA:

No	Emission Frequency (MHz)	Meter Reading dBuV	Ant. Polaritry	Correction Factor dB	Cable Loss dB	Field Strength (dBuv/m)	Margin (dBuv)	Limit (dBuv/m)
1	178.84	11.8	H	14.8	2.3	28.9	-14.6	43.5
2	191.68	9.7	V	14.0	2.5	26.1	-17.4	43.5
3	204.10	7.3	H	10.8	2.6	20.7	-22.8	43.5
4	217.42	10.9	H	10.7	2.7	24.3	-21.7	46.0
5	229.72	13.3	V	10.9	2.9	27.0	-19.0	46.0
6	245.50	8.8	H	11.6	3.1	23.5	-22.5	46.0
7	255.46	8.3	V	12.5	3.1	23.9	-22.1	46.0
8	265.54	10.2	V	13.6	3.2	27.1	-18.9	46.0
9	300.91	9.7	V	16.1	3.4	29.3	-16.7	46.0
10	345.02	11.3	H	15.3	3.8	30.3	-15.7	46.0
11	401.65	8.0	V	15.5	4.2	27.7	-18.3	46.0
12	428.90	7.3	H	15.9	4.4	27.6	-18.4	46.0
13	620.30	5.7	V	20.4	5.7	31.8	-14.2	46.0
14	797.21	7.4	H	21.5	6.7	35.6	-10.4	46.0
15	973.95	13.5	V	23.9	7.4	44.8	-9.2	54.0

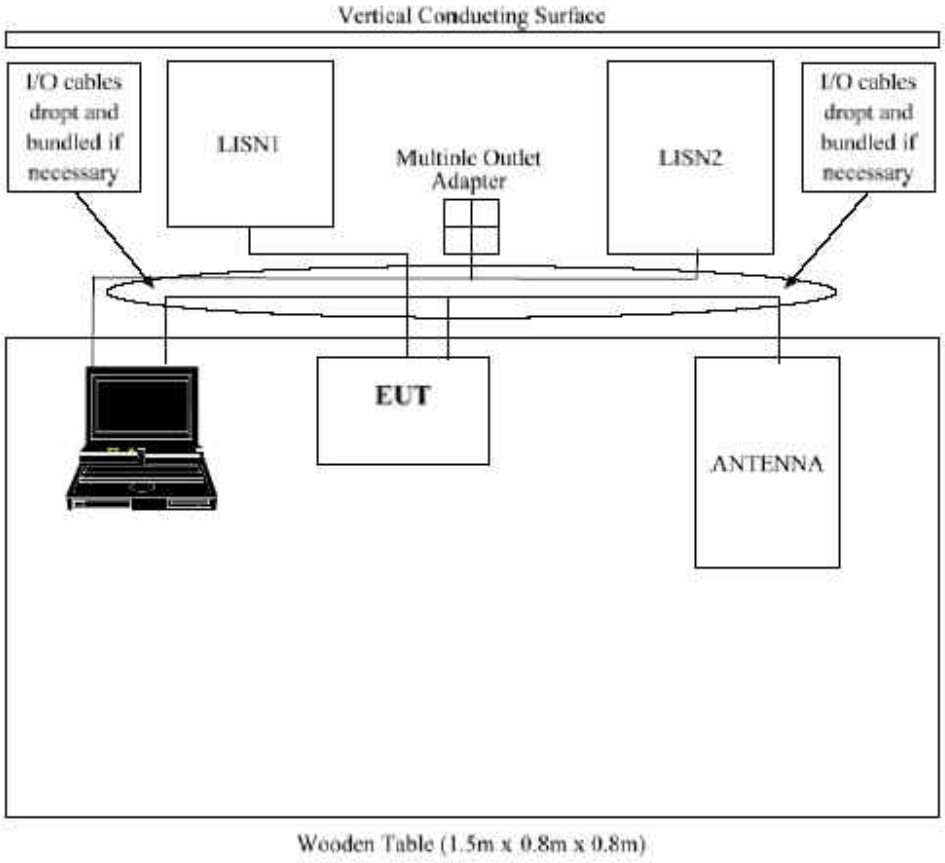
SAMPLE CALCULATION: FSdBuV/m = MR (dBuV) + ACFdB.
TEST PROCEDURE: ANSI STANDARD C63.4-1992 using a Hewlett Packard Model 8566B spectrum analyzer, a Hewlett Packard Model 85685A Preselector, a Hewlett Packard Model 85650A Quasi-Peak adapter, and an appropriate antenna – see the test equipment list. The bandwidth of spectrum analyzer was 100 kHz with an appropriate sweep speed. When an emission was found, the table was rotated to produce the maximum signal strength. The antenna was placed in both the horizontal and vertical planes and the worse case emissions were reported.

PERFORMED BY: K.M.Choi **DATE: 04/08/2005**

2.5 Configuration of Test System



2.6 Conducted Emission Test Setup Block Diagram



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Test Equipment List

DEVICE	MODEL	MFGR	SERNO	DUE.CAL
EMI Test Receiver	ESVS 10	Rohde & Schwarz	830489/001	2005.04.07.
Spectrum Analyzer	8566B	Hewlett Packard	2311A02394	2005.04.07.
Spectrum Display	85662A	Hewlett Packard	2542A12429	2005.04.07.
Quasi-Peak Adapter	85650A	Hewlett Packard	2521A00887	2005.04.07.
RF Preselector	85685A	Hewlett Packard	2648A00504	2005.04.07.
Pre-Amplifier	8449B	Hewlett Packard	3008A00375	2005.04.07.
Pre-Amplifier	8447F	Hewlett Packard	3113A05367	2005.04.07.
Spectrum Monitor	EZM	Rohde & Schwarz	862304/007	2005.04.07.
Bico-Antenna	94455-1	Eaton	977	2005.03.17.
Log-Periodic Antenna	3146	EMCO	2051	2005.03.17.
Dipole Antenna	TDA25/1/2	Electro Metrics	176/200/200	2005.03.17.
Horn Antenna	SAS-571	A.H Systems	414	2005.03.17.
Spectrum Analyzer	R3261C	Advantest	71720189	2005.04.07.
LISN	KNW-242	Kyoritsu	8-923-2	2004.07.17.
LISN	8012-50-R-24	Solar	8379121	2004.07.17.
Loop Ant	6507	EMCO	1435	2004.10.06.
Signal Generator	SMS	Rohde & Schwarz	872165/100	2005.04.07.
Modulation Analyzer	8901B	Hewlett Packard	3438A05094	2005.04.07.
Frequency Counter	CMC251	Tektronic	CMC-251TW52489	2005.04.07.
Oscilloscope	TDS460A	tektronic	D02021366	2005.04.07

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APPLICANT: KISCOMM CO., LTD
FCC ID: S8NKIS900RE
REPORT #: THRU-504002

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