EXHIBIT B

Measurement Report

MEASUREMENT REPORT
of
CORDLESS TELEPHONE

Applicant	:	Sinoca Enterprises Co., Ltd.
Model	:	MH9060XX
EUT	:	900 MHz S.S.T. Cordless Phone
FCC ID	:	AOMMH9060
Report No.	:	S0315685

Test by :

Training Research Co., Ltd.

TEL : 886-2-27820280 FAX : 886-2-27857408

No. 5-3, Lane 21, Yen Chiu Yuan Rd., Sec. 4, Taipei, 11521 Taiwan R.O.C.

CERTIFICATION

We here by verify that:

The test data, data evaluation, test procedures and equipment configurations shown in this report were made mainly in accordance with the procedures given in ANSI C63.4 (1992) as a reference. All test were conducted by ***Training Research Co., Ltd.***, No. 5-3, Lane 21, Yen-Chiu-Yuan Rd., Sec. 4, Taipei, 11521 Taiwan, R.O.C. Also, we attest to the accuracy of each.

We further submit that the energy emitted by the sample EUT tested as described in the report is **in compliance with** the technical requirements set forth in the FCC Rules Part 15 Subpart C Section 15.233.

Applicant	:	Sinoca Enterprises Co., Ltd.
Model	:	MH9060XX
EUT	:	900 MHz S.S.T. Cordless Phone
FCC ID	:	AOMMH9060
Report No.	:	S0315685
Test Date	:	JUL. 16, 1998

Prepared by: JACK TSAI

Approved by: JACOB LIN

Test by :

Training Research Co., Ltd.

TEL: 886-2-27881332 FAX: 886-2-7857408

No. 5-3, Lane 21, Yen Chiu Yuan Rd., Sec. 4, Taipei, 11521 Taiwan R.O.C.

Tables of Contents

I. GENERAL

1.1 Introduction

The following measurement report is submitted on behalf of Applicant in support of a Cordless Telephone certification in accordance with Part 2 Subpart J and Part 15 Subpart A and C of the Commission's Rules and Regulations.

1.2 Description of EUT

EUT	:	900MHz S.S.T. Cordless Phone
Model	:	MH9060XX
FCC ID	:	AOMMH9060
Frequency Range	:	Base: 902 - 928 MHz
		Handset: 902 - 928 MHz
Support Channel	:	20 Channel
Modulation Skill	:	TDMA / Spread spectrum
Security Code	:	12-bit P/N code, 8-bit scramble, 16-bit 2D
Power Type	:	Base Powered by 120 Vac 60 Hz / 9 Vdc 500 mA
		Handset powered by 3.6 V / 600 mA.
Power Cord	:	Nonshielded
Phone Line	:	RJ-11C => Nonshielded, 7' long, Plastic hoods, No bead
Applicant	:	Sinoca Enterprises Co., Ltd.
		7F, No. 48, Sec. 3, Nankang Rd.,
		Taipei, Taiwan, R.O.C.

1.3 Description of Support Equipment

In order to construct the minimum testing, following equipment were used as the support units.

PSTN Simulator: TRC Public Switched Telephone Network Simulator
Model No. : RC-PSTN-130
Serial No. : N/A
Notebook : CER Notebook
Model No. : 386SL
Serial No. : 001855
Power Type: Linear
Power Core: unshielded, 6' long, Plastic hoods, No ferrite bead
FCC ID : Q8V486S

1.4 Configuration of System Under Test

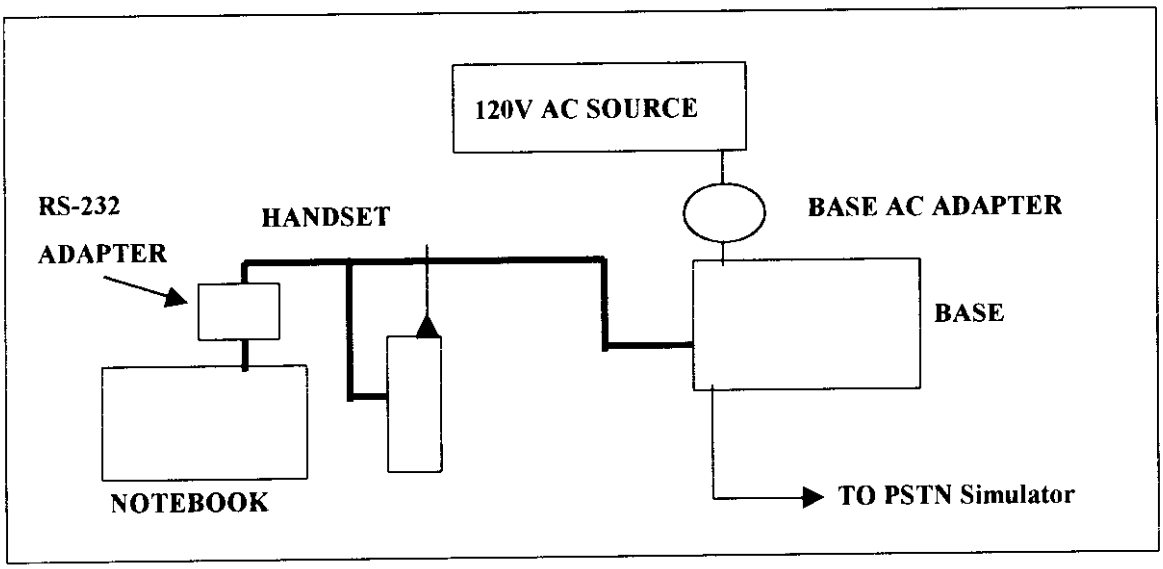


Fig. 1 Configuration of system under test

The tests below are run with the DCT transmitter set at high power in TDD mode .A serial port from a computer to the DCT UUT is needed to force selection of output power level and channel number.

The setting up procedure was recorded in Appendix A.

1.5 Verify the frequency and channel

1.5.1 Verify the Frequency Pairs

Channel	Base (MHz)	Handset (MHz)	Channel	Base (MHz)	Handset (MHz)
1	904.38800	903.26300	11	915.60359	915.59869
2	904.82246	904.79800	12	916.79847	916.80179
3	906.02345	906.01008	13	918.04580	918.04787
4	907.21980	907.21802	14	919.25851	919.26128
5	908.42290	908.40859	15	920.39992	920.39899
6	909.59995	909.59888	16	921.59879	921.61846
7	910.81590	910.79086	17	922.79998	922.79989
8	912.00870	912.01846	18	924.00846	924.00588
9	913.21660	913.20247	19	925.22828	925.21818
10	914.52500	914.58800	20	926.07500	926.07500

Note:

1. This is for sure that all frequencies are in 902 MHz to 928 MHz.
2. Section 15.31(m): Measurements on intentional radiators or receivers shall be performed at three frequencies for operating frequency range over 10 MHz. (The locations of these frequencies one near the top, one near the middle and one near the bottom.)
3. After test, the EUT operating frequencies are in 904 MHz to 927 MHz. So all the items as followed in testing report are need to test these three frequencies: top: channel 1, middle: channel 10, bottom: channel 20.

1.6 Test Procedure

All measurements contained in this report were performed mainly according to the techniques described in ANSI C63.4 (1992) and the pre-setup was written on Appendix A, the detail setup was written on each test item.

1.7 Location of the Test Site

The radiated emissions measurements required by the rules were performed on the three-meter, open-field test site maintained by Training Research Co., Ltd. No. 5-3, Lane 21, Yen-Chiu-Yuan Rd., Sec. 4, Taipei, Taiwan, R.O.C. Complete description and measurement data have been placed on file with the commission. The conducted power line emissions tests and other test items were performed in a shielded enclosure also located at Training Research Co., Ltd. 1F, No. 569, Chung Hsiao E. Sec. 7, Taipei, Taiwan, R.O.C. Training Research Co., Ltd. is listed by the FCC as a facility available to do measurement work for others on a contract basis.

1.8 General Test Condition

The conditions under which the EUT operates were varied to determine their effect on the equipment's emission characteristics. The final configuration of the test system and the mode of operation used during these tests was chosen as that which produced the highest emission levels. However, only those conditions which the EUT was considered likely to encounter in normal use were investigated.

In test , the base and handset are tested separately. They were set in high power and continuously transmitting mode that controlled by computer. The ch01, ch10 and ch20 of base and handset were all tested .The setting up procedure is recorded on Appendix A.

II. Section 15.207: Power line conducted emissions for AC powered units

2.1 Test Condition & Setup

The power line conducted emission measurements were performed in a shielded enclosure. The EUT was assembled on a wooden table which is 80 centimeters high, was placed 40 centimeters from the backwall and at least 1 meter from the sidewall.

Power was fed to the EUT from the public utility power grid through a line filter and EMCO Model 3825/2 Line Impedance Stabilization Networks (LISNs). The LISN housing, measuring instrumentation case, ground plane, etc., were electrically bonded together at the same RF potential. The Spectrum analyzer was connected to the AC line through an isolation transformer. The 50-ohm output of the LISN was connected to the spectrum analyzer directly. Conducted emission levels were in the CISPER quasi-peak detection mode. The analyzer's 6 dB bandwidth was set to 9 KHz. No post-detector video filter was used.

The spectrum was scanned from 450 KHz to 30 MHz. The physical arrangement of the test system and associated cabling was varied (within the scope of arrangements likely to be encountered in actual use) to determine the effect on the unit's emanations in amplitude and frequency. All spurious emission frequencies were observed. The highest emission amplitudes relative to the appropriate limit were measured and have been recorded in paragraph 2.4.

There are tree test condition apply in this test item, the test procedure description as the following:

1. Base station transmit only:
   Using the RS-232 port of notebook and Rockwell software to control the base, handset.
   Then making access to the mode of continuous transmission. Three channel is tested, one in the top (CH01), one in the middle (CH10) and the other in bottom (CH20).
2. Idle state (handset park, on hook mode)

The setting up procedure is recorded on Appendix A.

2.2 List of Test Instruments

Manufacturer	Device	Model	Input impedance
Hewlett Packard	100Hz-1.5GHz Spectrum Analyzer	HP8591EM	50.00
EMCO	Line Impedance Stabilization Network	3825/2	50.00
TRC	Shielded Room	TRC-SR!	N/A

2.4 Test Result of Conducted Emissions

2.4.1 Base station transmit only

The following table shows a summary of the highest emissions of power line conducted emissions on the HOT and NATURAL conductors of the EUT power cord.

Model No. : MH9060XX

EUT : 900MHz S.S.T. Cordless Phone

Table 1 Power Line Conducted Emissions (Channel 01)

(Channel 01)Power Connected Emissions			FCC Class B	
Conductor	Frequency (MHz)	Peak Amplitude (dBuV)	Limit (dBuV)	Margin (dB)
Line 1	7.400	24.59	48	-23.41
	11.110	24.52	48	-23.48
	20.000	25.51	48	-22.49
	22.160	26.35	48	-21.65
	23.200	25.93	48	-22.07
	24.120	30.09	48	-17.91
	25.00	27.97	48	-20.03
	26.910	25.07	48	-22.93
	28.160	27.88	48	-20.12
	30.000	30.53	48	-17.47
LINE 2	7.550	31.75	48	-16.25
	19.240	27.20	48	-20.8
	20.000	27.89	48	-20.11
	22.160	27.79	48	-20.21
	23.350	28.41	48	-19.59
	24.120	33.37	48	-14.63
	25.000	30.44	48	-17.56
	26.390	26.82	48	-21.18
	28.160	26.49	48	-21.51
	30.000	28.95	48	-19.05

NOTE:

1. Margin = Peak Amplitude - Limit
2. A "+" sign in the margin column means the emission is OVER the Class B Limit and "-" sign of means UNDER the Class B limit.

Table 2 Power Line Conducted Emissions (Channel 10)

Power	Connected	Emissions	FCC Class B	
Conductor	Frequency (MHz)	Peak Amplitude (dBuV)	Limit (dBuV)	Margin (dB)
LINE1	7.310	24.50	48	-23.50
	7.660	25.97	48	-22.03
	20.000	26.11	48	-21.89
	22.160	28.08	48	-19.92
	24.120	31.41	48	-16.59
	26.220	26.26	48	-21.74
	27.090	24.25	48	-23.75
	28.160	26.09	48	-21.91
	29.390	26.16	48	-21.84
	30.000	29.50	48	-18.50
LINE2	7.120	26.06	48	-21.94
	7.550	30.46	48	-17.54
	19.240	25.97	48	-22.03
	20.000	28.89	48	-19.11
	22.160	30.33	48	-17.67
	24.120	33.82	48	-14.18
	25.000	29.85	48	-18.15
	26.220	28.83	48	-19.17
	28.160	29.90	48	-18.10
	30.000	28.56	48	-19.44

NOTE:

1. Margin = Peak Amplitude - Limit
2. A "+" sign in the margin column means the emission is OVER the Class B Limit and "-" sign of means UNDER the Class B limit.

Table 3 Power Line Conducted Emissions (Channel 20)

Power Conductor	Connected Frequency (MHz)	Emissions Peak Amplitude (dBuV)	FCC Class B Limit (dBuV)	Margin (dB)
LINE1	7.310	23.55	48	-24.45
	7.450	25.48	48	-22.52
	16.040	23.86	48	-24.14
	20.000	26.30	48	-21.70
	22.160	25.03	48	-22.97
	24.120	31.81	48	-16.19
	25.000	28.72	48	-19.28
	26.220	23.90	48	-24.10
	28.160	28.20	48	-19.80
	30.000	28.47	48	-19.53
LINE2	11.110	26.62	48	-21.38
	19.240	28.37	48	-19.63
	20.000	29.41	48	-18.59
	22.160	30.26	48	-17.74
	23.200	28.77	48	-19.23
	24.120	32.85	48	-15.15
	25.000	29.40	48	-18.60
	26.220	28.11	48	-19.89
	28.160	28.96	48	-19.04
	30.000	27.17	48	-20.83

NOTE:

1. Margin = Peak Amplitude- Limit
2. A "+" sign in the margin column means the emission is OVER the Class B Limit and "-" sign of means UNDER the Class B limit.

Table 4 Power Line Conducted Emissions (Idle State)

Power	Connected	Emissions	FCC Class B	
Conductor	Frequency (MHz)	Peak Amplitude (dBuV)	Limit (dBuV)	Margin (dB)
LINE1	0.773	21.78	48	-26.22
	19.240	26.93	48	-21.07
	***			
LINE2	19.240	24.35	48	-23.65
	25.170	22.87	48	-25.13
	***			

NOTE:

1. Margin = Peak Amplitude - Limit.
2. A "+" sign in the margin column means the emission is OVER the Class B Limit and "-" sign of means UNDER the Class B limit.

III. Section 15.247(a)(2): Bandwidth for direct sequence system.

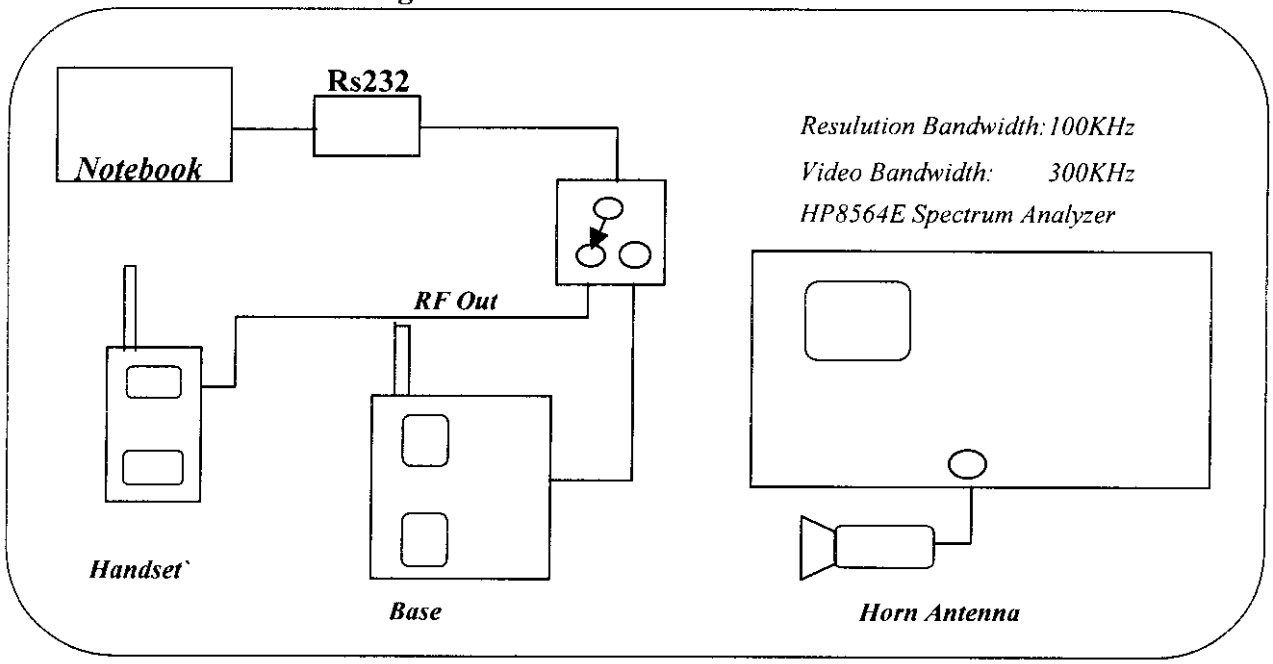
3.1 Test Condition & Setup

The transmitter bandwidth measurements were performed in a shielded enclosure. The EUT was placed on a wooded table which is 0.8 meters height. The EUT was set to transmit continuously. Various channels were also investigated to find the maximum occupied bandwidth. The minimum 6 dB bandwidth shall be at least 500 KHz.

Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 KHz. Set the span>> RBW. The detector function was set to peak and hold mode to clearly observe the components.

Setting up procedure is written on Appendix A.

3.2 Test Instruments Configuration



P.S.A serial port from notebook computer to control the EUT at maximal power output and channel Number.

Fig 10. Test Configuration of bandwidth for direct sequence system

3.3 List of Test Instruments

Manufacturer	Device	Model	Input	Impedance
Hewlett Packard	.9KHz – 40 GHz Spectrum Analyzer	HP8564E		50.00

3.4 Test Result of Bandwidth

Bandwidth of Channel 1

Bandwidth of Base : 1.57 MHz
Bandwidth of Handset : 1.57 MHz
The min. 6 dB BW at least : 500 KHz

Bandwidth of Channel 10

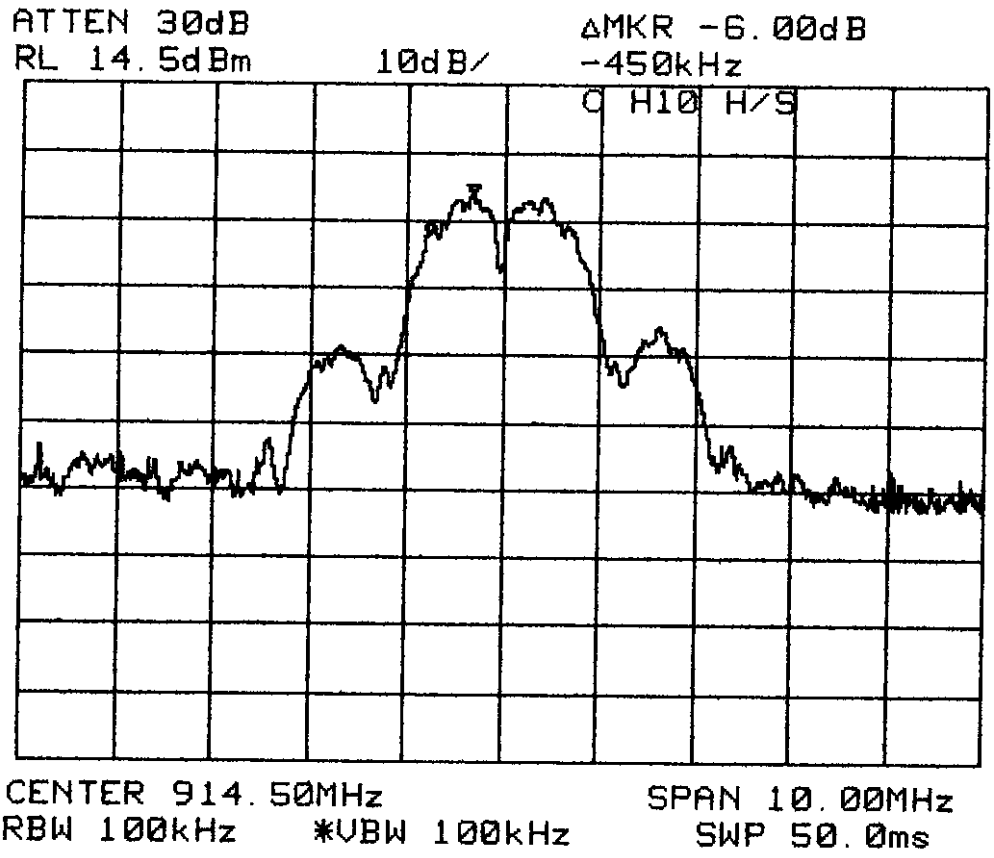
Bandwidth of Base : 1.58 MHz
Bandwidth of Handset : 1.52 MHz
The min. 6 dB BW at least : 500 KHz

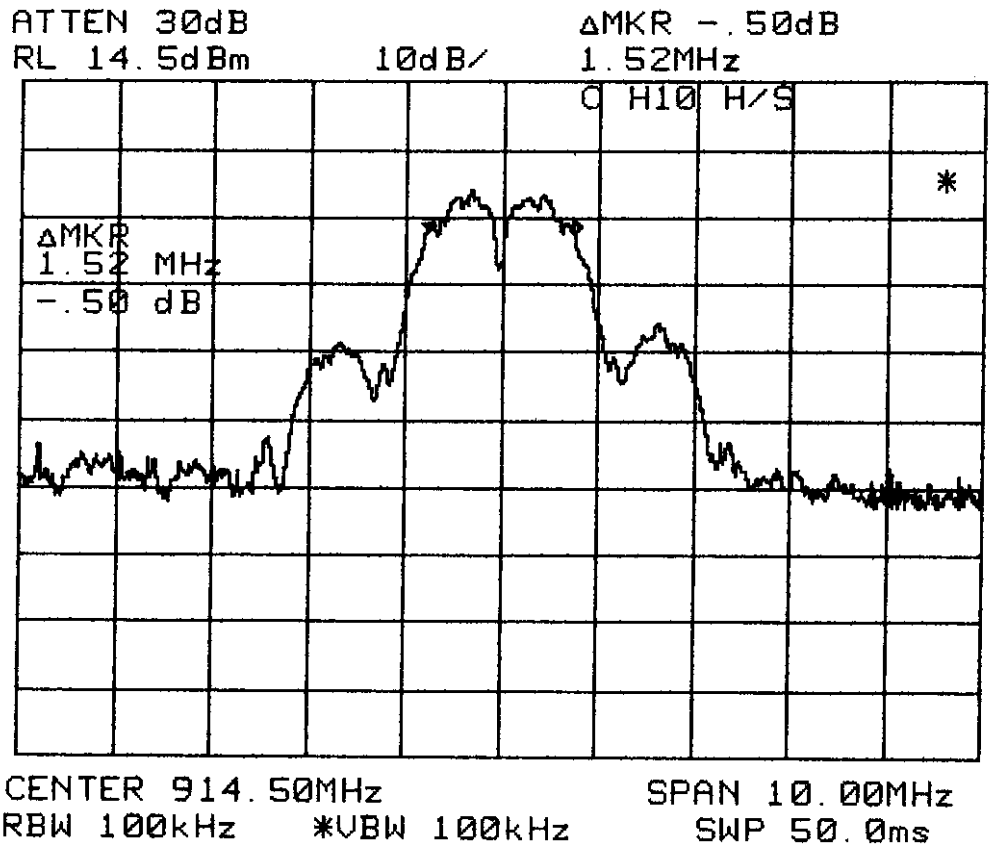
Bandwidth of Channel 20

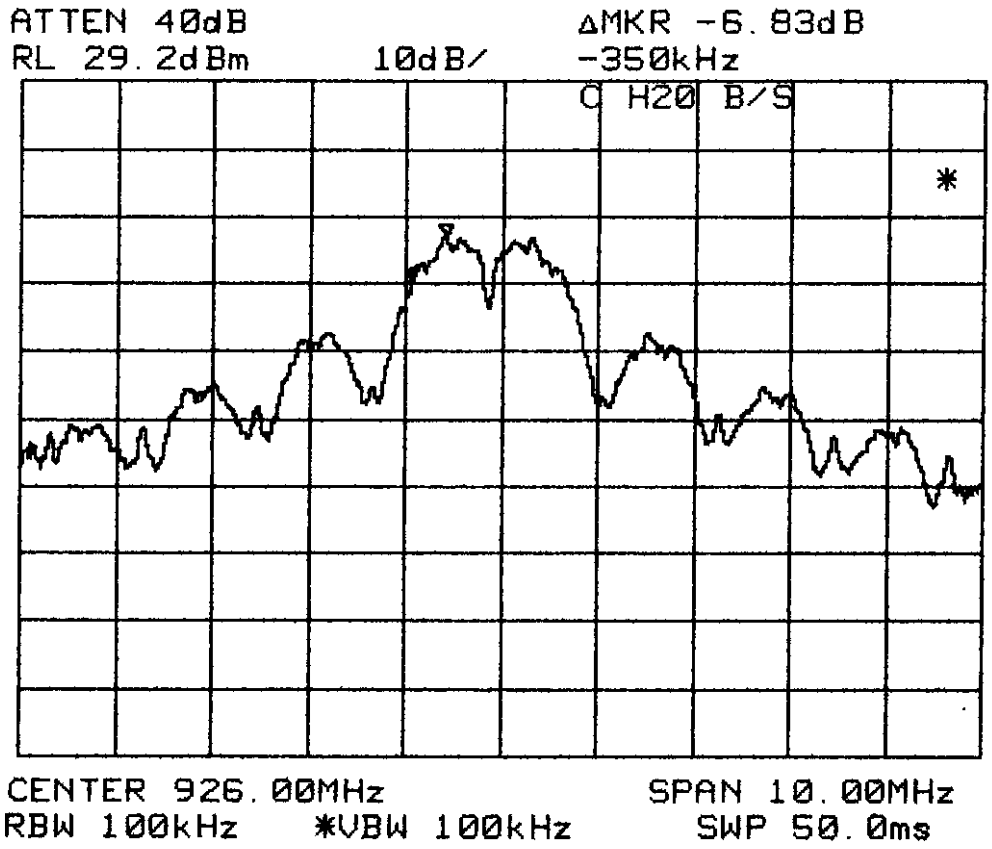
Bandwidth of Base : 1.58 MHz
Bandwidth of Handset : 1.50 MHz
The min. 6 dB BW at least : 500 KHz

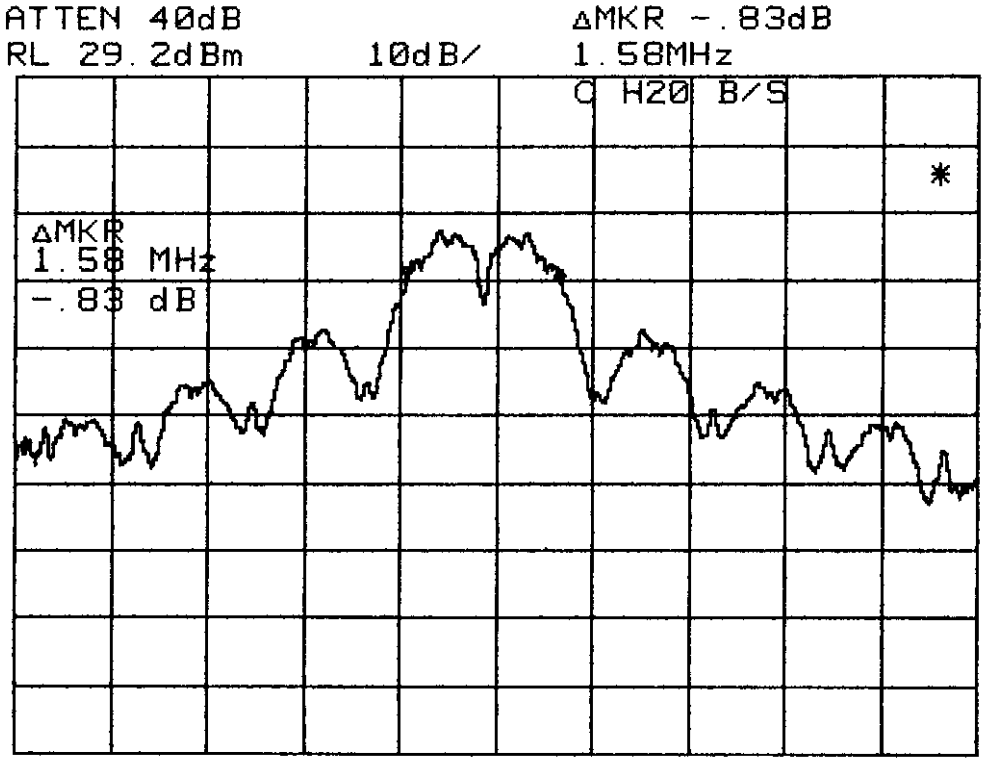
Note:

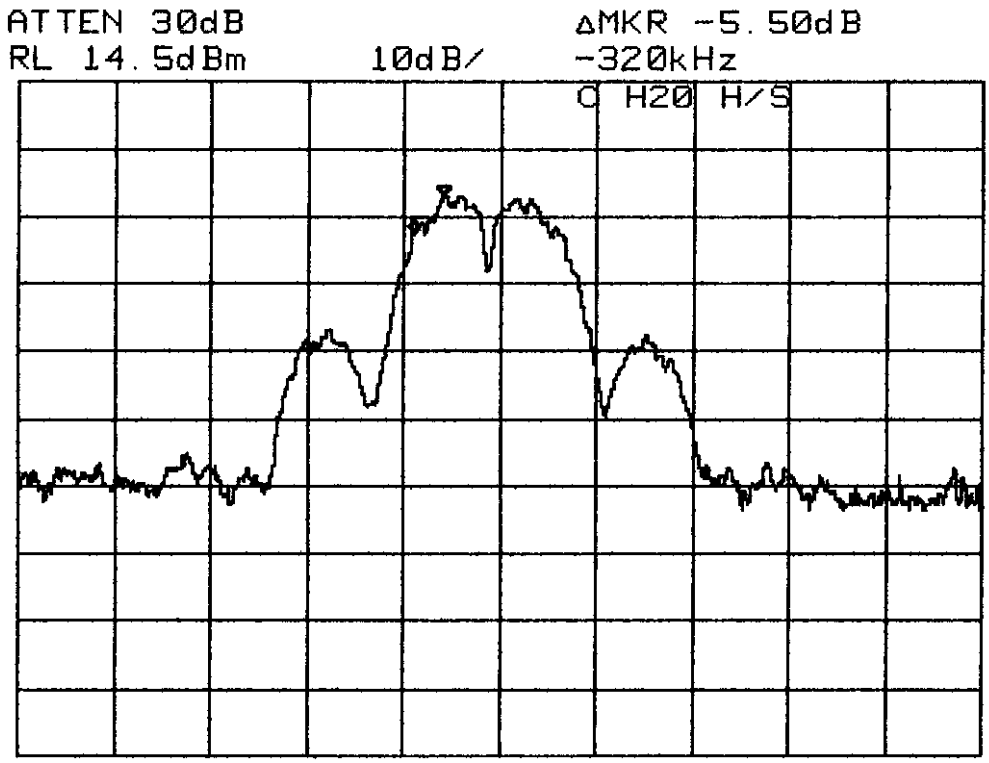
1. The data in the above table are summarize the following attachment spectrum analyzer hard copy.
2. The attachment follow by this page and there is no page number.

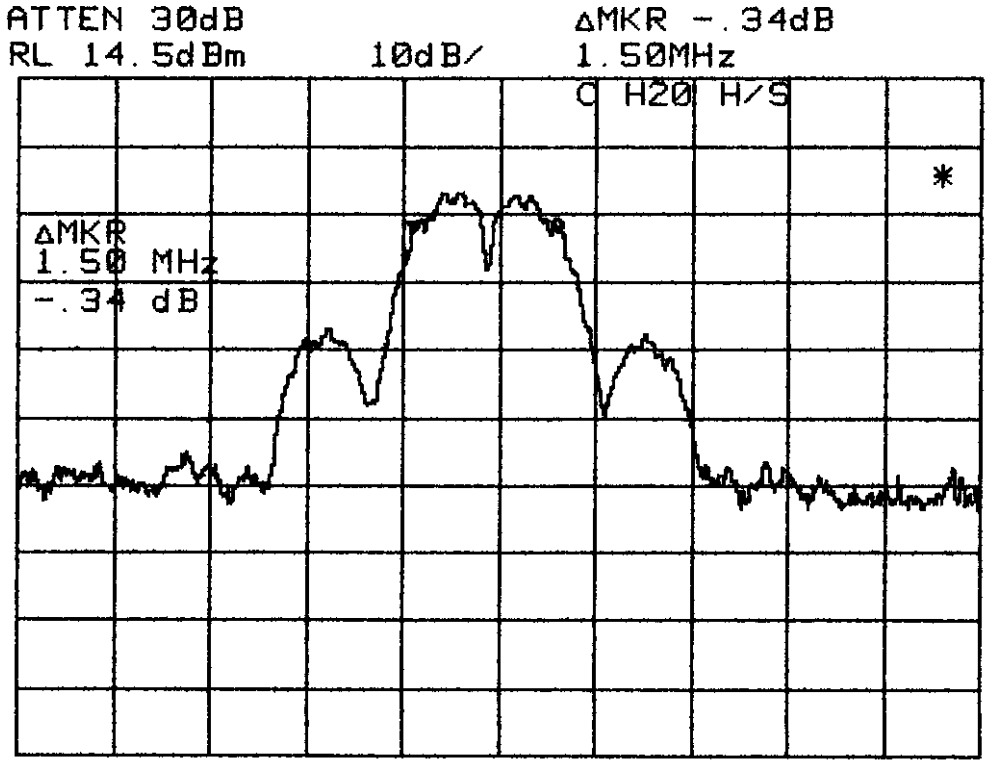

ATTEN 30dB
RL 14.5dBm
10dB/
ΔMKR -6.00dB
-450kHz
C H10 H/S
CENTER 914.50MHz
SPAN 10.00MHz
RBW 100kHz
*VBW 100kHz
SWP 50.0ms

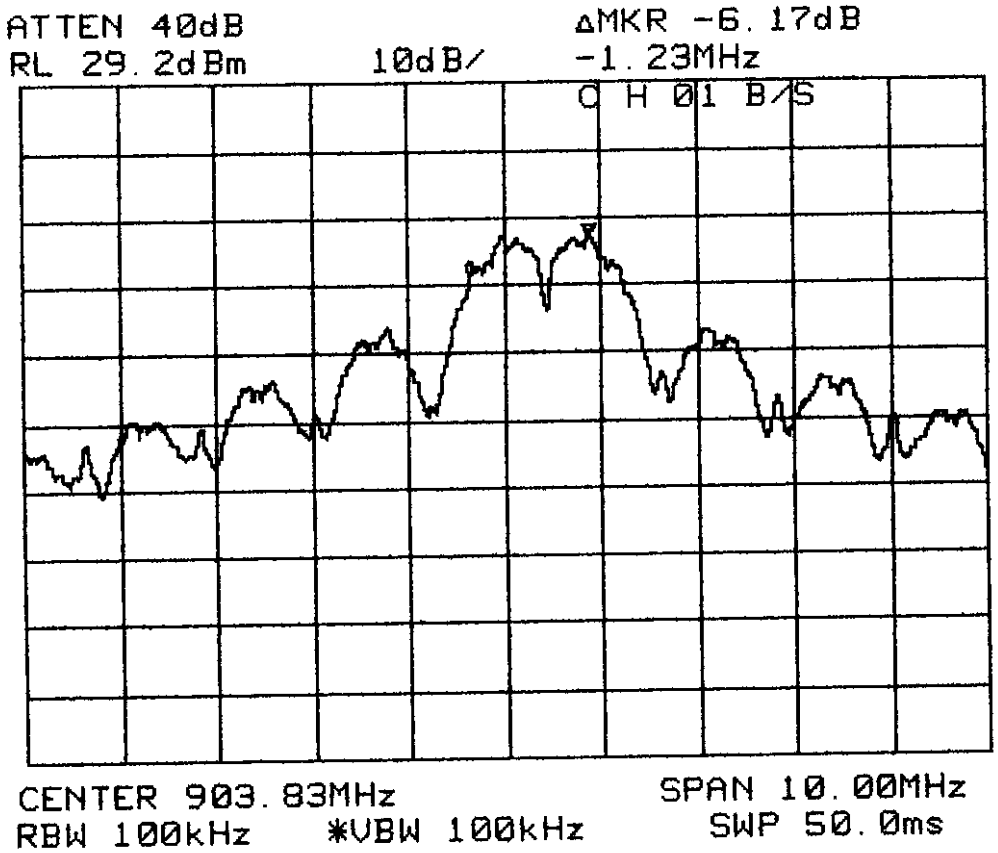

ATTEN 30dB
RL 14.5dBm
10dB/
ΔMKR -.50dB
1.52MHz
C H10 H/S
*
ΔMKR
1.52 MHz
-.50 dB
CENTER 914.50MHz
SPAN 10.00MHz
RBW 100kHz
*VBW 100kHz
SWP 50.0ms

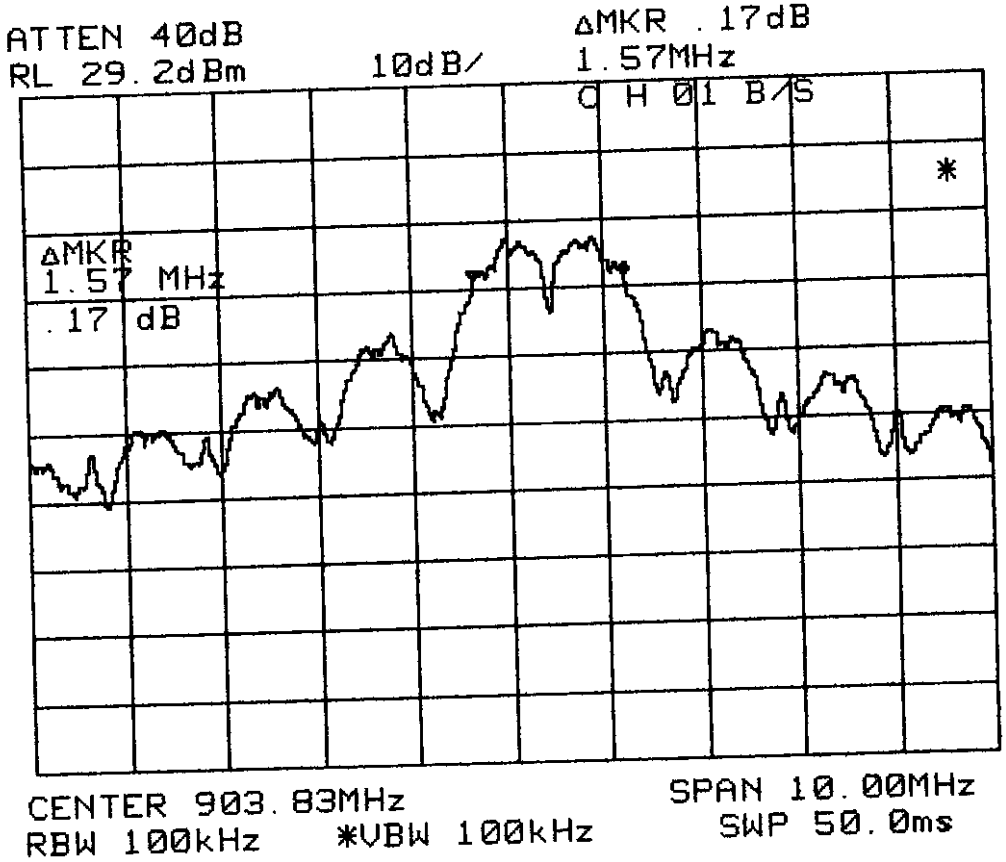

ATTEN 40dB
RL 29.2dBm
10dB/
ΔMKR -6.83dB
-350kHz
Q H20 B/S
CENTER 926.00MHz
SPAN 10.00MHz
RBW 100kHz
*VBW 100kHz
SWP 50.0ms

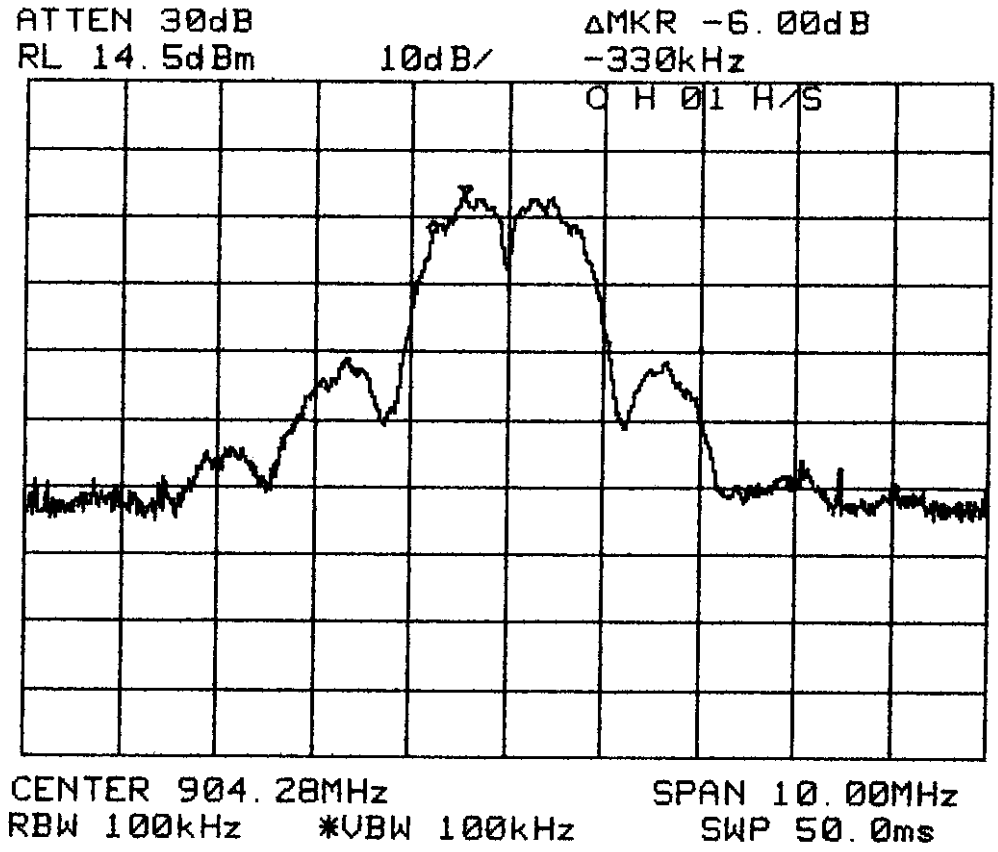

ATTEN 40dB
RL 29.2dBm
10dB/
ΔMKR -.83dB
1.58MHz
Q H20 B/S
ΔMKR
1.58 MHz
-.83 dB
CENTER 926.00MHz
SPAN 10.00MHz
RBW 100kHz
*VBW 100kHz
SWP 50.0ms

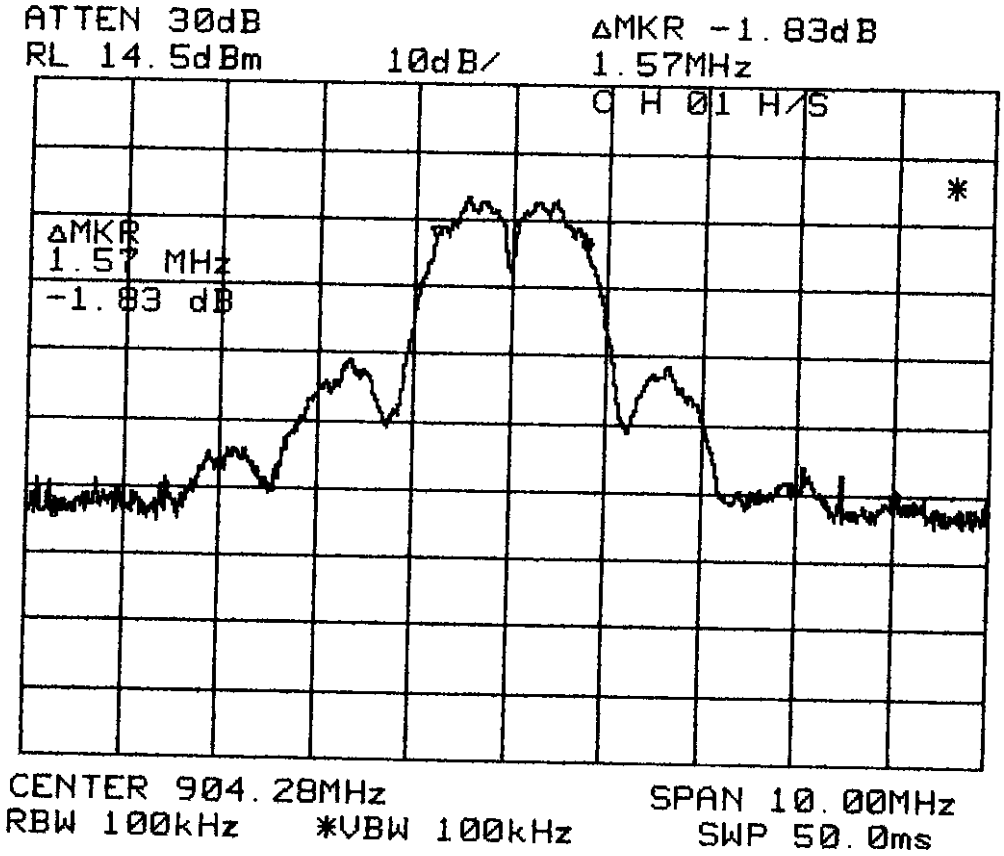

ATTEN 30dB
RL 14.5dBm
10dB/
ΔMKR -5.50dB
-320kHz
C H20 H/S
CENTER 926.00MHz
SPAN 10.00MHz
RBW 100kHz
*VBW 100kHz
SWP 50.0ms

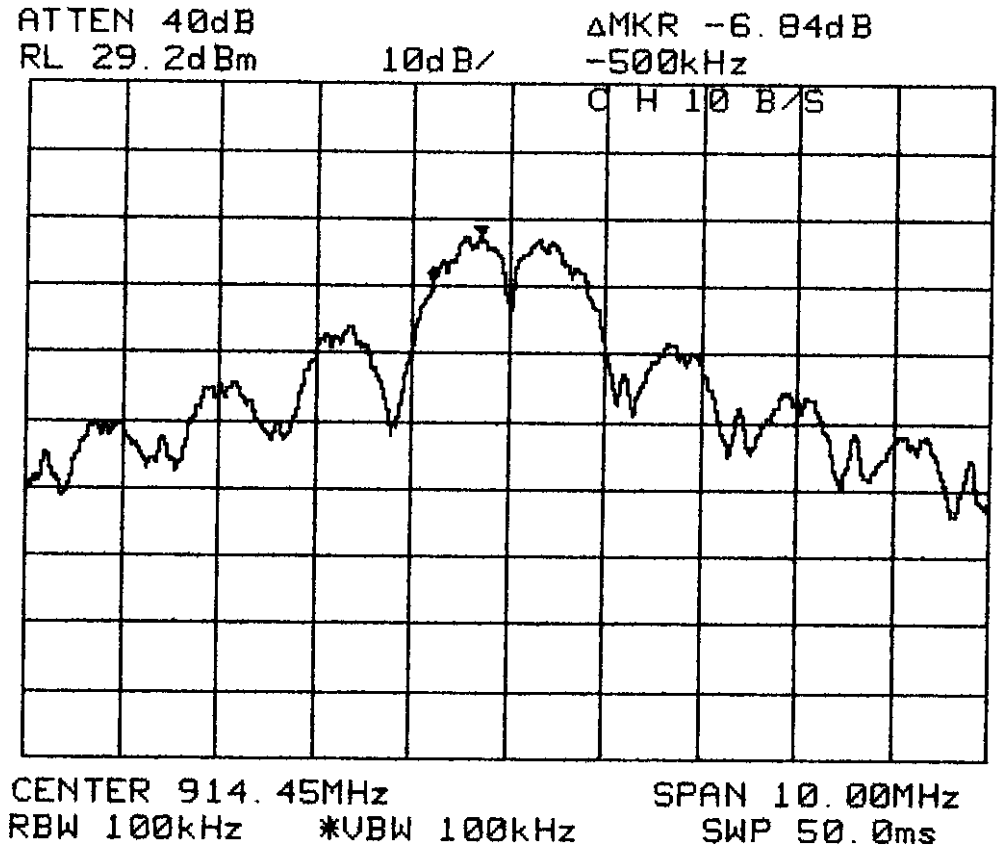

ATTEN 30dB
RL 14.5dBm
10dB/
ΔMKR -.34dB
1.50MHz
C H20 H/S
*
ΔMKR
1.50 MHz
-.34 dB
CENTER 926.00MHz
SPAN 10.00MHz
RBW 100kHz
*VBW 100kHz
SWP 50.0ms

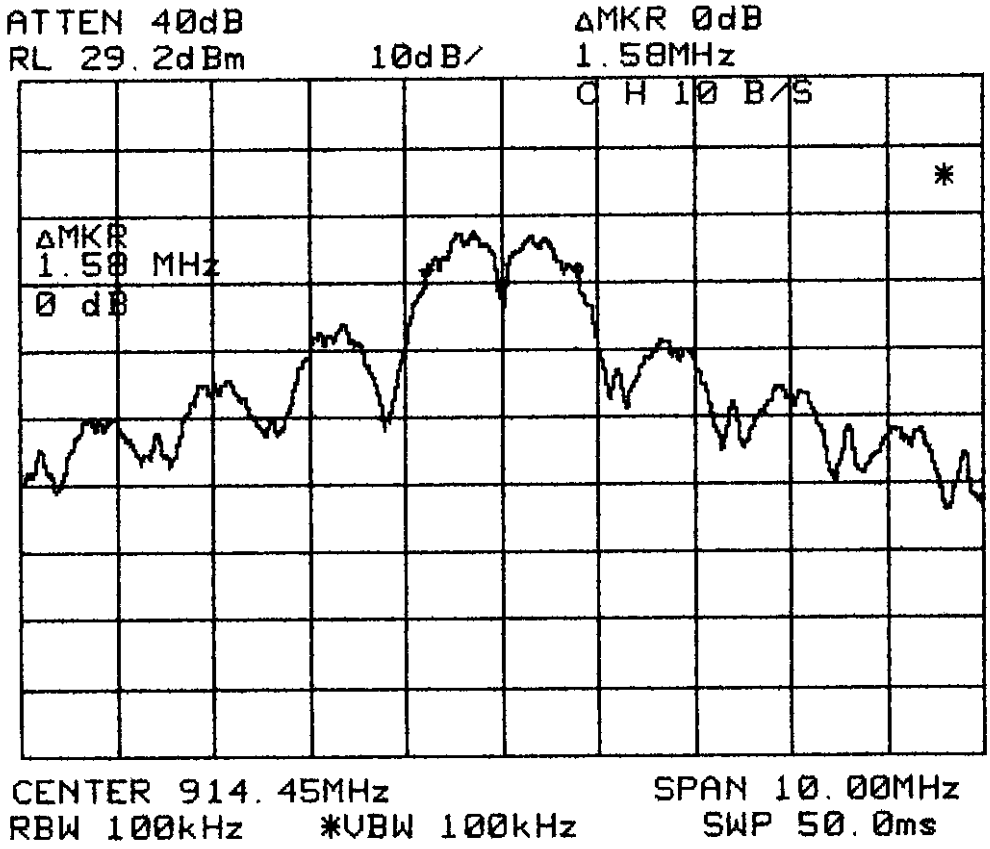

ATTEN 40dB
RL 29.2dBm
10dB/
ΔMKR -6.17dB
-1.23MHz
C H 01 B/S
CENTER 903.83MHz
SPAN 10.00MHz
RBW 100kHz
*VBW 100kHz
SWP 50.0ms


ATTEN 40dB
RL 29.2dBm
10dB/
ΔMKR .17dB
1.57MHz
C H 01 B/S
*
ΔMKR
1.57 MHz
.17 dB
CENTER 903.83MHz
SPAN 10.00MHz
RBW 100kHz
*VBW 100kHz
SWP 50.0ms


ATTEN 30dB
RL 14.5dBm
10dB/
ΔMKR -6.00dB
-330kHz
CLR H 01 H/S
CENTER 904.28MHz
SPAN 10.00MHz
RBW 100kHz
*VBW 100kHz
SWP 50.0ms


ATTEN 30dB
RL 14.5dBm
10dB/
ΔMKR -1.83dB
1.57MHz
CLR H 01 H/S
*
ΔMKR
1.57 MHz
-1.83 dB
CENTER 904.28MHz
SPAN 10.00MHz
RBW 100kHz
*VBW 100kHz
SWP 50.0ms


ATTEN 40dB
RL 29.2dBm
10dB/
ΔMKR -6.84dB
-500kHz
C H 10 B/S
CENTER 914.45MHz
SPAN 10.00MHz
RBW 100kHz
*VBW 100kHz
SWP 50.0ms


ATTEN 40dB
RL 29.2dBm
10dB/
ΔMKR 0dB
1.58MHz
C H 10 B/S
*
ΔMKR
1.58 MHz
0 dB
CENTER 914.45MHz
SPAN 10.00MHz
RBW 100kHz
*VBW 100kHz
SWP 50.0ms

IV. Section 15.247(B): Power Output

4.1 Test Condition & Setup

Prior to open-field testing, the EUT was placed in a shielded enclosure and scanned at a close distance to determine its emission characteristics. The physical arrangement of the EUT was varied (within the scope of arrangements likely to be encountered in actual use) to determine the effect on the unit's emanations in amplitude, directivity, and frequency. The exact system configuration which produced the highest emissions was noted so it could be reproduced later during the open-field tests. This was done to ensure that the final measurements would demonstrate the worst-case interference potential of the EUT.

Final radiation measurements were made on a three-meter, open-field test site. The EUT system was placed on a nonconductive turntable which is 0.8 meters height, top surface 1.0 x 1.5 meter.

The spectrum was examined from 30 MHz to 1000 MHz using an Hewlett Packard 8591A Spectrum Analyzer, EMCO Biconical Antenna (Model 3110) for 30 - 200 MHz, EMCO Log-Periodic Antenna (Model 3146) for 200 - 1000 MHz.

At each frequency, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters to find the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarization.

Appropriate preamplifiers were used for improving sensitivity and precautions were taken to avoid overloading or desensitizing the spectrum analyzer. The spectrum analyzer HP8568b used on this testing for frequency 30MHz to 1000MHz. No post-detector video filters were used in the test. Set the RB= 3 MHz, VB = 3MHz and the span = 5 MHz. The analyzer was operated in the maximum hold mode.

There are two test condition apply in this test item, the test procedure description as the following:

(1) Base and handset station transmit only:

Using the RS-232 port of notebook and Rockwell software to control the base, handset. Then making access to the mode of continuous transmission. Three channel is tested, one in the top (CH01), one in the middle (CH10) and the other in bottom (CH20).

With the transmitter operating from a fully charged battery and using the internal antenna,

Radiates spurious emissions falling within the restricted bands of 15.209 were measured at operating frequencies corresponding to low, mid and high channels in the 902-928 MHz band.

The actual field intensity in decibels referenced to 1 microvolt per meter (dBuV/m) is determined by algebraically adding the measured reading in dBuV, the antenna factor (dB), and cable loss (dB) at the appropriate frequency.

4.2 List of Test Instruments

Manufacturer	Device	Model	Input Impedance
Hewlett Packard	100Hz-1.5GHz Spectrum Analyze	HP8568B	50.00
Hewlett Packard	50kHz-22GHz Spectrum Analyzer	HP8592B	50.00
Hewlett Packard	10KHz-1GHz Quasi-peak Adapte	HP85650A	50.00
Hewlett Packard	20Hz-2GHz RF Preselector	HP85685A	50.00
Anritsu	0.1-1200MHz Preamplifier	MH648A	50.00
EMCO	20-300MHz Biconical Antenna	3110.00	50.00
EMCO	200-1000MHz Log-Periodic Antenna	3146.00	50.00
TRC	Open Field Test Site	TRC-OFTS1	N/A
TRC	Notch Filter	N/A	50.00

4.3 Test Result of Fundamental Emissions

The peak values of fundamental emissions from the EUT at various antenna heights, antenna polarization, EUT orientation, etc. are recorded on the following.

Model No. : MH9060XX

EUT : 900MHz S.S.T. Cordless Phone

Table 6 Open Field Fundamental Emissions

Channel	Frequency (MHz)	A.P. (H/V)	A.H. (CM)	Table (degree)	Amplitude (Peak) (dBuV/m)	E.R.P.(Peak)	
						mW	dBm
Base 01	904.388	H	100.00	126.00	100.42	2.02	3.04
		V	100.00	40.00	106.95	9.06	9.57
Base 10	914.525	H	100.00	16.00	99.86	1.77	2.48
		V	100.00	68.00	106.27	7.75	8.89
Base 20	926.075	H	100.00	296.00	96.79	0.87	-0.59
		V	100.00	34.00	106.35	7.89	8.97
Handset 01	904.263	H	100.00	340.00	101.35	2.50	3.97
		V	100.00	352.00	109.08	14.80	11.70
Handset 10	914.588	H	100.00	200.00	103.55	4.14	6.17
		V	100.00	210.00	108.42	12.71	11.04
Handset 20	926.075	H	100.00	188.00	102.01	2.91	4.63
		V	100.00	297.00	107.70	10.77	10.32

Note:

1. A.P. means antenna polarization, horizontal and vertical.
2. A.H. means antenna height.
3. Table means turntable turning position.
4. Amplitude means the fundamental emission measured.
5. Effective Radiation Power (E.R.P.) = $(E\ d)^2 / 30G$

E is the measured maximum field strength in V/m utilizing the maximum hold mode RBW (3MHz).

G is the numeric gain of the transmitting antenna over an isotropic radiator (1.64).

d is the distance in meters from which the field strength was measured (3M).

Example: the Max Radiation Emission of base ch01 = 100.42 dBuV/m

$10^{(100.42/20)} \times 10^{-6} = 0.10495$ V

E.R.P. = $(0.10495 \times 3)^2 / 49.2 = 2.02$ mW = 10 x log (0.02 mW/1mW)

= 3.04 dBm

V. Section 15.247 (C)(2): Spurious emissions (Radiated)

5.1 Test Condition & Setup

Prior to open-field testing, the EUT was placed in a shielded enclosure and scanned at a close distance to determine its emission characteristics. The physical arrangement of the EUT was varied (within the scope of arrangements likely to be encountered in actual use) to determine the effect on the unit's emanations in amplitude, directivity, and frequency. The exact system configuration which produced the highest emissions was noted so it could be reproduced later during the open-field tests. This was done to ensure that the final measurements would demonstrate the worst-case interference potential of the EUT.

Final radiation measurements were made on a three-meter, open-field test site. The EUT system was placed on a nonconductive turntable which is 0.8 meters height, top surface 1.0 x 1.5 meter.

The spectrum was examined from 30 MHz to 1000 MHz using an Hewlett Packard 8591A Spectrum Analyzer, EMCO Biconical Antenna (Model 3110) for 30 - 200 MHz, EMCO Log-Periodic Antenna (Model 3146) for 200 - 1000 MHz and spectrum was examined from 1 GHz to 18GHz using an Hewlett Packard 8592A Spectrum Analyzer, EMCO Horn Antenna (Model 3115) for 1 G - 18 GMHz.

At each frequency, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters to find the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarizations.

Appropriate preamplifiers were used for improving sensitivity and precautions were taken to avoid overloading or desensitizing the spectrum analyzer. There are two spectrum analyzers use on this testing ,HP8568b for frequency 30MHz to 1000MHz, and HP8592A for frequency 1 GHz to 18 GHz. No post-detector video filters were used in the test. The spectrum analyzer's 6 dB bandwidth was set to 120 KHz (spectrum was examined from 30 MHz to 1000 MHz), the spectrum analyzer's 6 dB bandwidth was set to 1 MHz (spectrum was examined from 1 GHz to 18GHz) and the analyzer was operated in the maximum hold mode.

There are two test condition apply in this test item, the test procedure description as the following:

(1) Base and handset station transmit only:

Using the RS-232 port of notebook and Rockwell software to control the base , handset. Then making access to the mode of continuous transmission. Three channel is tested, one in the top (CH01), one in the middle (CH10) and the other in bottom (CH20).

With the transmitter operating from a fully charged battery and using the internal antenna, radiates spurious emissions falling within the restricted bands of 15.209 were measured at operating frequencies corresponding to low, mid and high channels in the 902-928 MHz band.

The actual field intensity in decibels referenced to 1 microvolt per meter (dBuV/m) is determined by algebraically adding the measured reading in dBuV, the antenna factor (dB), and cable loss (dB) at the appropriate frequency.

For frequency between 30MHz to 1000MHz

FIa (dBuV/m) = FIr (dBuV) + Correction Factors

FIa : Actual Field Intensity

FIr : Reading of the Field Intensity

Correction Factors = Antenna Factor + Cable Loss

For frequency between 1 GHz to 18 GMHz

FIa(dBuV/m) = FIr(dBuV) + Correction Factor - Duty Cycle

FIa : Actual Field Intensity

FIr : Reading of the Field Intensity

Correction Factors = Antenna Factor + Cable Loss – Distance Factor (9.54dB)- Amplifier Gain

The setting up procedure is recorded on Appendix A.

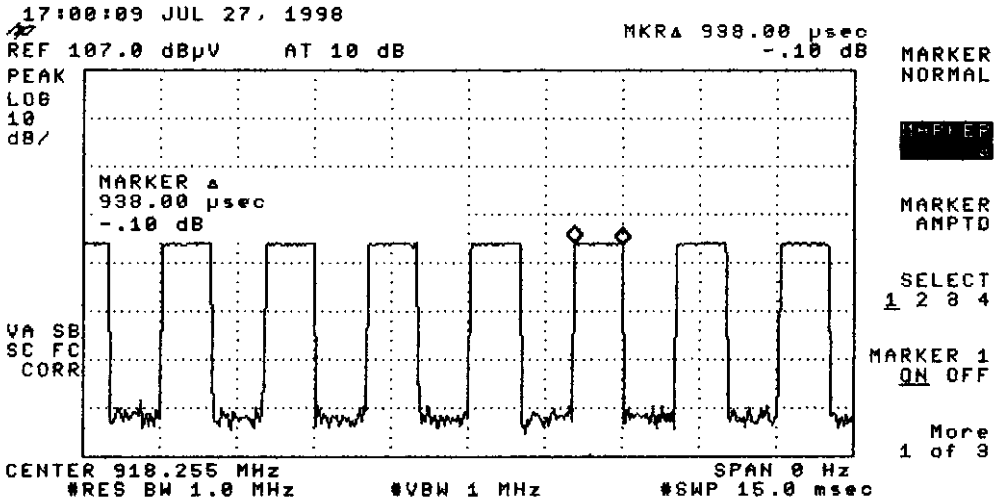
5.2 List of Test Instruments

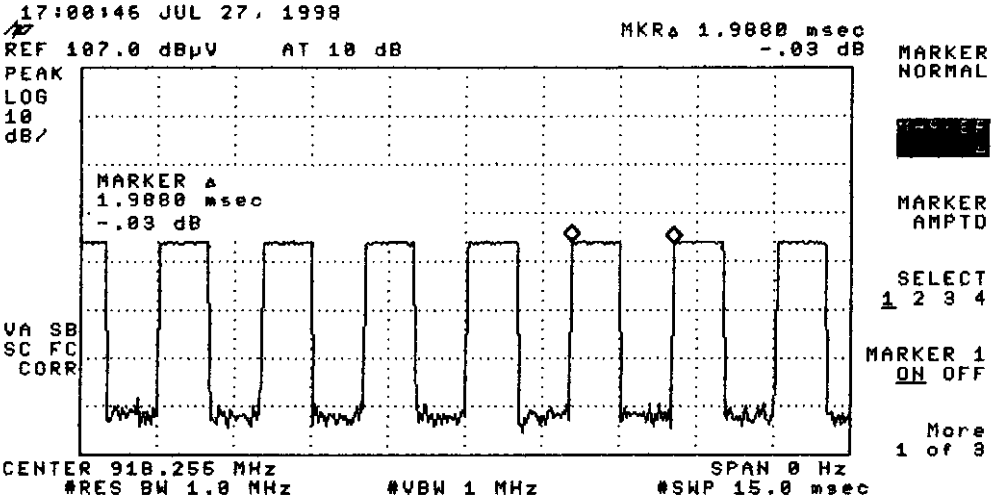
Manufacturer	Device	Model	Input Impedance
Hewlett Packard	9KHz-2.9 GHz Spectrum Analyze	HP8594EM	50.00
Hewlett Packard	50kHz-22GHz Spectrum Analyzer	HP8592A	50.00
Hewlett Packard	10KHz-1GHz Quasi-peak Adapte	HP85650A	50.00
Hewlett Packard	20Hz-2GHz RF Preselector	HP85685A	50.00
Hewlett Packard	1GHz-26.5GHz Preamplifier	HP8449B	50.00
Anritsu	0.1-1200MHz Preamplifier	MH648A	50.00
EMCO	20-300MHz Biconical Antenna	3110.00	50.00
EMCO	200-1000MHz Log-Periodic Antenna	3146.00	50.00
EMCO	1G-18GMHz Double Ridge Antenna	3115.00	50.00
TRC	Open Field Test Site	TRC-OFTS1	N/A
TRC	Notch Filter	N/A	50.00
TRC	Horn Antenna with Amplifier	TRC1	50.00

5.2.1 Duty Cycle Factor Measurement

The duty cycle factor measurement is performed in a shield enclosure. The test condition and setup is as same as paragraph III . Set the RB = 1MHz, VB=1MHz, and span = 0 MHz. Link the base and handset ,then get the Time of duty and cycle as follow page.

The duty cycle factor = 20 log (T_{duty} / T_{cycle}) = 20 log (0.998/1.9880)= -6.52


17:00:09 JUL 27, 1998
REF 107.0 dBµV
AT 10 dB
MKRΔ 938.00 µsec
-.10 dB
PEAK
LOG
10
dB/
MARKER Δ
938.00 µsec
-.10 dB
VA SB
SC FC
CORR
MARKER
NORMAL
MARKER
AMPTD
SELECT
1 2 3 4
MARKER 1
ON OFF
More
1 of 3
CENTER 918.255 MHz
#RES BW 1.0 MHz
#VBW 1 MHz
SPAN 0 Hz
#SWP 15.0 msec


17:00:46 JUL 27, 1998
REF 107.0 dBµV
AT 10 dB
MKRΔ 1.9880 msec
-.03 dB
PEAK
LOG
10
dB/
MARKER Δ
1.9880 msec
-.03 dB
VA SB
SC FC
CORR
MARKER
NORMAL
MARKER
AMPTD
SELECT
1 2 3 4
MARKER 1
ON OFF
More
1 of 3
CENTER 918.255 MHz
#RES BW 1.0 MHz
#VBW 1 MHz
SPAN 0 Hz
#SWP 15.0 msec

5.4 Test Result of Second Harmonic

Set the spectrum RB= 3 MHz, VB = 3MHz and span = 5MHz. The correction factors of the second harmonic is. The second harmonic must lower 20 dB than the fundamental.

Model No. : MH9060XX

EUT : 900MHz S.S.T. Cordless Phone

Table 31. Second Harmonic Attendation

Channel	Fundamental (MHz)	Fundamental (dBuV/m)	2nd Harmonic (MHz)	2nd Har. (dBuV/m)	Result (F/H dB)	Limit (dB)	Margin (dB)
B/S CH 01	904.388	106.95	1808.7	34.35	72.60	20.00	52.60
B/S CH 10	914.525	106.27	1829.0	34.35	71.92	20.00	51.92
B/S CH 20	926.075	106.35	1852.1	32.18	74.17	20.00	54.17
H/S CH 01	904.263	109.08	1808.7	36.35	72.73	20.00	52.73
H/S CH 10	914.588	108.42	1829.0	36.18	72.24	20.00	52.24
H/S CH 20	926.075	107.70	1852.1	37.18	70.52	20.00	50.52

Note:

1. The data in the above table are summarize the following attachment spectrum analyzer hard copy.
2. Result = Fundamental – 2nd Harmonic must over 20 dB.

5.5 Test Result of Spurious Radiated Emissions

5.5.1 Base and handset station transmit only

The highest peak values of radiated emissions form the EUT at various antenna heights, antenna polarizations, EUT orientation, etc. are recorded on the following.

Model No. : MH9060XX

EUT : 900MHz S.S.T. Cordless Phone

Table 7. Open Field Radiated Emissions For 30MHz -1 GMHz [Channel 1, Base Horizontal]

Radiated Emission				Correction Factors	Corrected Amplitude (dBuV/m)	FCC Class B (3 M)	
Frequency (MHz)	Amplitude (dBuV/m)	Ant.H. (cm)	Table (°)	(dB)		Limit (dBuV/m)	Margin (dB)
384.020	44.89	1.00	231	-13.45	31.44	46.00	-14.56
441.620	45.66	1.00	125	-7.87	37.79	46.00	-8.21
796.840	43.30	1.00	156	-11.99	31.31	46.00	-14.69
846.640	51.78	1.00	213	-13.61	38.17	46.00	-7.83
913.840	49.48	1.00	68	-14.48	35.00	46.00	-11.00
940.840	47.42	1.00	259	-15.16	32.26	46.00	-13.74

Note:

1. Margin = Corrected - Limit.
2. Peak Amplitude +Correction Factors = Corrected

Table 8. Open Field Radiated Emissions For 1 GHz -18 GMHz [Channel 1, Base Horizontal]

Radiated Emission				Correction Factors	Duty Cycle	Corrected Amplitude (dBuV/m)	FCC Class B (3 M)	
Frequency (MHz)	Amplitude (dBuV/m)	Ant.H. (cm)	Table (°)	(dB)	(dB)		Limit (dBuV/m)	Margin (dB)
2713	42.54	100.00	240	-6.84	-6.52	29.18	54	-24.82
3617	36.67	100.00	99	-5.64	-6.52	24.51	54	-29.49
4572	30.46	100.00	58	3.91	-6.52	27.85	54	-26.15
5486	34.81	100.00	295	9.72	-6.52	38.01	54	-15.99

Note:

1. Margin = Corrected - Limit.
2. peak amplitude+ Correction Factor + Duty Cycle = Corrected

Table 9. Open Field Radiated Emissions For 30MHz -1 GMHz [Channel 1, Base Vertical]

Radiated Emission				Correction Factors	Corrected Amplitude (dBuV/m)	FCC Class B (3 M)	
Frequency (MHz)	Amplitude (dBuV/m)	Ant.H. (cm)	Table ( )	(dB)		Limit (dBuV/m)	Margin (dB)
384.020	42.24	1.00	306	-13.45	28.79	46.00	-17.21
441.620	46.26	1.00	60	-7.87	38.39	46.00	-7.61
796.840	45.20	1.00	44	-11.99	33.21	46.00	-12.79
846.640	56.52	1.00	31	-13.61	42.91	46.00	-3.09
913.840	52.32	1.00	33	-14.48	37.84	46.00	-8.16
940.840	52.56	1.00	72	-15.16	37.40	46.00	-8.60
***							

Note:

1. Margin = Corrected - Limit
2. Peak Amplitude + Correction Factors= Corrected

Table 10. Open Field Radiated Emissions For 1 GHz -18 GMHz [Channel 1, Base Vertical]

Radiated Emission				Correction Factors	Duty Cycle	Corrected Amplitude (dBuV/m)	FCC Class B (3 M)	
Frequency (MHz)	Amplitude (dBuV/m)	Ant.H. (cm)	Table ( )	(dB)	(dB)		Limit (dBuV/m)	Margin (dB)
2713	44.37	100.00	25	-6 84	-6.52	31.01	54	-22.99
3617	39.17	100.00	99	-5.64	-6.52	27.01	54	-26.99
4572	32.46	100.00	125	3.91	-6.52	29.85	54	-24.15
5486	36.48	100.00	147	9.72	-6.52	39.68	54	-14.32

Note:

1. Margin = Corrected - Limit.
2. Peak amplitude+ Correction Factor + Duty Cycle = Corrected

Table 11. Open Field Radiated Emissions for 30 MHz -1 GMHz [Channel 10, Base Horizontal]

Radiated Emission				Correction Factors	Corrected Amplitude	FCC Class B (3 M)	
Frequency (MHz)	Amplitude (dBuV/m)	Ant.H. (cm)	Table (°)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin (dB)
384.011	44.82	1.00	226	-13.45	31.37	46.00	-14.63
441.620	46.97	1.00	121	-7.87	39.10	46.00	-6.90
856.840	54.47	1.00	54	-13.79	40.68	46.00	-5.32
904.840	50.19	1.00	264	-14.21	35.98	46.00	-10.02
924.040	48.87	1.00	61	-14.78	34.09	46.00	-11.91
940.850	47.81	1.00	259	-15.16	32.65	46.00	-13.35
***							

Note :

1. Margin = Corrected - Limit.
2. Peak Amplitude + Correction Factors = Corrected

Table 12. Open Field Radiated Emissions For 1 GHz -18 GMHz [Channel 10, Base Horizontal]

Radiated Emission				Correction Factors	Duty Cycle	Corrected Amplitude	FCC Class B (3 M)	
Frequency (MHz)	Amplitude (dBuV/m)	Ant.H. (cm)	Table (°)	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin (dB)
2743	43.21	100.00	258	-6.84	-6.52	29.85	54	-24.15
3657	38.21	100.00	125	-5.64	-6.52	26.05	54	-27.95
4572	30.45	100.00	145	3.91	-6.52	27.84	54	-26.16
5486	34.44	100.00	149	9.72	-6.52	37.64	54	-16.36

Note :

1. Margin = Corrected - Limit.
2. peak amplitude + Correction Factor+ Duty Cycle = Corrected

Table 13. Open Field Radiated Emissions for 30 MHz -1 GMHz [Channel 10, Base Vertical]

Radiated Emission				Correction Factors	Corrected Amplitude (dBuV/m)	FCC Class B (3 M)	
Frequency (MHz)	Amplitude (dBuV/m)	Ant.H. (cm)	Table (°)	(dB)		Limit (dBuV/m)	Margin (dB)
384.011	42.03	1.00	305	-13.45	28.58	46.00	-17.42
441.620	47.09	1.00	55	-7.87	39.22	46.00	-6.78
856.840	58.36	2.03	46	-13.79	44.57	46.00	-1.43
904.840	53.61	1.00	37	-14.21	39.40	46.00	-6.60
924.040	52.00	1.00	259	-14.78	37.22	46.00	-8.78
940.850	52.55	1.00	70	-15.16	37.39	46.00	-8.61
***							

Note :

1. Margin = Corrected - Limit.
2. Peak Amplitude + Correction Factors = Corrected

Table 14. Open Field Radiated Emissions For 1 GHz -18 GMHz [Channel 10, Base Vertical]

Radiated Emission				Correction Factors	Duty Cycle	Corrected Amplitude (dBuV/m)	FCC Class B (3 M)	
Frequency (MHz)	Amplitude (dBuV/m)	Ant.H. (cm)	Table (°)	(dB)	(dB)		Limit (dBuV/m)	Margin (dB)
2743	42.00	100.00	135	-6.84	-6.52	28.64	54	-25.36
3657	38.41	100.00	345	-5.64	-6.52	26.25	54	-27.75
4572	30.46	100.00	158	3.91	-6.52	27.85	54	-26.15
5486	34.15	100.00	154	9.72	-6.52	37.35	54	-16.65

Note:

1. Margin = Corrected - Limit.
2. peak amplitude + Correction Factor + Duty Cycle = Corrected

Table 15. Open Field Radiated Emissions for 30 MHz -1 GMHz [Channel 20, Base Horizontal]

Radiated Emission				Correction Factors	Corrected Amplitude	FCC Class B (3 M)	
Frequency (MHz)	Amplitude (dBuV/m)	Ant.H. (cm)	Table (°)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin (dB)
441.620	47.67	1.00	124	-7.87	39.80	46.00	-6.20
700.830	45.02	1.00	185	-12.83	32.19	46.00	-13.81
868.240	54.23	2.02	49	-13.79	40.44	46.00	-5.56
883.230	46.90	2.02	283	-13.86	33.04	46.00	-12.96
916.240	48.32	2.02	48	-14.55	33.77	46.00	-12.23
935.440	47.83	1.00	261	-15.04	32.79	46.00	-13.21
***							

Note :

1. Margin = Corrected - Limit.
2. Peak Amplitude + Correction Factors = Corrected

3. Table 16. Open Field Radiated Emissions For 1 GHz -18 GMHz [Channel 20, Base Horizontal]

Radiated Emission				Correction Factors	Duty Cycle	Corrected Amplitude	FCC Class B (3 M)	
Frequency (MHz)	Amplitude (dBuV/m)	Ant.H. (cm)	Table (°)	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin (dB)
2778	40.71	100.00	124	-6.84	-6.52	27.35	54	-26.65
3704	38.34	100.00	144	-5.64	-6.52	26.18	54	-27.82
4630	31.12	100.00	245	3.91	-6.52	28.51	54	-25.49
5556	36.98	100.00	258	9.72	-6.52	40.18	54	-13.82

Note:

1. Margin = Corrected - Limit.
2. peak amplitude + Correction Factor + Duty Cycle = Corrected

Table 17. Open Field Radiated Emissions for 30 MHz -1 GMHz [Channel 20, Base Vertical]

Radiated Emission				Correction Factors	Corrected Amplitude (dBuV/m)	FCC Class B (3 M)	
Frequency (MHz)	Amplitude (dBuV/m)	Ant.H. (cm)	Table (°)	(dB)		Limit (dBuV/m)	Margin (dB)
441.620	46.82	1.00	48	-7.87	38.95	46.00	-7.05
700.830	45.77	1.00	226	-12.83	32.94	46.00	-13.06
868.240	58.27	1.00	296	-13.79	44.48	46.00	-1.52
883.230	50.26	1.00	35	-13.86	36.40	46.00	-9.60
916.240	53.54	1.00	294	-14.55	38.990	46.00	-7.010
935.440	52.71	1.00	16	-15.04	37.67	46.00	-8.33
***							

Note:

1. Margin = Corrected - Limit.
2. Peak Amplitude + Correction Factors = Corrected

Table 18. Open Field Radiated Emissions For 1 GHz -18 GMHz [Channel 20, Base Vertical]

Radiated Emission				Correction Factors	Duty Cycle	Corrected Amplitude (dBuV/m)	FCC Class B (3 M)	
Frequency (MHz)	Amplitude (dBuV/m)	Ant.H. (cm)	Table (°)	(dB)	(dB)		Limit (dBuV/m)	Margin (dB)
2778	42.37	100.00	22	-6.84	-6.52	29.01	54	-24.99
3704	38.51	100.00	54	-5.64	-6.52	26.35	54	-27.65
4630	30.12	100.00	87	3.91	-6.52	27.51	54	-26.49
5556	36.15	100.00	125	9.72	-6.52	39.35	54	-14.65

Note:

1. Margin = Corrected - Limit.
2. peak amplitude + Correction Factor + Duty Cycle = Corrected

Table 19. Open Field Radiated Emissions for 30 MHz -1 GMHz [Channel 01, Handset Horizontal]

Radiated Emission				Correction Factors	Corrected Amplitude (dBuV/m)	FCC Class B (3 M)	
Frequency (MHz)	Amplitude (dBuV/m)	Ant.H. (cm)	Table (°)	(dB)		Limit (dBuV/m)	Margin (dB)
331.580	45.16	1.00	99	-14.43	30.73	46.00	-15.27
856.840	41.00	1.00	168	-13.79	27.21	46.00	-18.79
873.640	43.68	3.02	196	-13.75	29.93	46.00	-16.07
892.840	43.05	1.00	84	-14.00	29.05	46.00	-16.95
952.240	59.43	3.02	119	-15.42	44.01	46.00	-1.99
961.840	50.14	1.00	164	-15.58	34.56	54.00	-19.44
***							

Note :

1. Margin = Corrected - Limit.
2. Peak Amplitude + Correction Factors= Corrected

Table 20. Open Field Radiated Emissions For 1 GHz -18 GMHz [Channel 01, Handset Horizontal]

Radiated Emission				Correction Factors	Duty Cycle	Corrected Amplitude (dBuV/m)	FCC Class B (3 M)	
Frequency (MHz)	Amplitude (dBuV/m)	Ant.H. (cm)	Table (°)	(dB)	(dB)		Limit (dBuV/m)	Margin (dB)
2713	40.41	100.00	65	-6.84	-6.52	27.05	54	-26.95
3617	38.08	100.00	45	-5.64	-6.52	25.92	54	-28.08
4572	38.96	100.00	78	3.91	-6.52	36.35	54	-17.65
5486	31.65	100.00	55	9.72	-6.52	34.85	54	-19.15

Note :

1. Margin = Corrected - Limit.
2. peak amplitude + Correction Factor + Duty Cycle = Corrected

Table 21. Open Field Radiated Emissions for 30 MHz -1 GMHz [Channel 01, Handset Vertical]

Radiated Emission				Correction Factors	Corrected Amplitude (dBuV/m)	FCC Class B (3 M)	
Frequency (MHz)	Amplitude (dBuV/m)	Ant.H. (cm)	Table (°)	(dB)		Limit (dBuV/m)	Margin (dB)
331.580	48.19	3.02	148	-14.43	33.76	46.00	-12.24
856.840	46.87	1.00	89	-13.79	33.08	46.00	-12.92
873.640	49.52	1.00	21	-13.75	35.77	46.00	-10.23
892.840	49.42	1.00	71	-14.00	35.42	46.00	-10.58
952.240	58.89	1.00	36	-15.42	43.47	46.00	-2.53
961.840	55.47	1.00	294	-15.58	39.89	46.00	-6.11
***							

Note:

1. Margin = Corrected - Limit.
2. Peak Amplitude + Correction Factors = Corrected

Table 22. Open Field Radiated Emissions for 1 GHz -18 GMHz [Channel 01, Handset Vertical]

Radiated Emission				Correction Factors	Duty Cycle	Corrected Amplitude (dBuV/m)	FCC Class B (3 M)	
Frequency (MHz)	Amplitude (dBuV/m)	Ant.H. (cm)	Table (°)	(dB)	(dB)		Limit (dBuV/m)	Margin (dB)
2713	41.54	100.00	25	-6.84	-6.52	28.18	54	-25.82
3617	39.67	100.00	35	-5.64	-6.52	27.51	54	-26.49
4572	37.12	100.00	14	3.91	-6.52	34.51	54	-19.49
5486	30.98	100.00	74	9.72	-6.52	34.18	54	-19.82

Note:

1. Margin = Corrected - Limit.
2. peak amplitude + Correction Factor + Duty Cycle = Corrected

Table 23. Open Field Radiated Emissions for 30 MHz -1 GMHz [Channel 10, Handset Horizontal]

Radiated Emission				Correction Factors	Corrected Amplitude	FCC Class B (3 M)	
Frequency (MHz)	Amplitude (dBuV/m)	Ant.H. (cm)	Table (°)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin (dB)
854.440	43.04	3.02	180	-13.78	29.26	46.00	-16.74
856.840	43.82	1.00	308	-13.79	30.03	46.00	-15.97
866.440	45.92	3.02	189	-13.79	32.13	46.00	-13.87
873.640	44.71	1.00	162	-13.75	30.96	46.00	-15.04
903.74	42.90	1.00	49	-14.17	28.73	46.00	-17.27
904.840	46.87	1.00	273	-14.21	32.66	46.00	-13.34
943.240	45.21	1.00	183	-15.22	29.99	46.00	-16.01

Note:

1. Margin = Corrected - Limit.
2. Peak Amplitude + Correction Factors= Corrected

Table 24. Open Field Radiated Emissions For 1 GHz -18 GMHz [Channel 10, Handset Horizontal]

Radiated Emission				Correction Factors	Duty Cycle	Corrected Amplitude	FCC Class B (3 M)	
Frequency (MHz)	Amplitude (dBuV/m)	Ant.H. (cm)	Table (°)	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin (dB)
2743	44.21	100.00	8	-6.84	-6.52	30.85	54	-23.15
3657	45.17	100.00	75	-5.64	-6.52	33.01	54	-20.99
4572	38.62	100.00	98	3.91	-6.52	36.01	54	-17.99
5486	30.81	100.00	24	9.72	-6.52	34.01	54	-19.99

Note:

1. Margin = Corrected - Limit.
2. peak amplitude + Correction Factor + Duty Cycle = Corrected

Table 25. Open Field Radiated Emissions for 30 MHz -1 GMHz [Channel 10, Handset Vertical]

Radiated Emission				Correction Factors	Corrected Amplitude	FCC Class B (3 M)	
Frequency (MHz)	Amplitude (dBuV/m)	Ant.H. (cm)	Table (°)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin (dB)
854.440	49.16	1.00	189	-13.78	35.38	46.00	-10.62
856.840	46.88	1.00	138	-13.79	33.09	46.00	-12.91
866.440	51.18	1.00	189	-13.79	37.39	46.00	-8.61
873.640	51.59	1.00	50	-13.75	37.84	46.00	-8.16
903.740	55.57	1.00	310	-14.17	41.40	46.00	-4.60
904.840	58.12	1.00	130	-14.21	43.91	46.00	-2.09
943.240	49.24	1.00	137	-15.22	34.02	46.00	-11.98

Note:

1. Margin = Corrected - Limit.
2. Peak Amplitude + Correction Factors= Corrected

Table 26. Open Field Radiated Emissions For 1 GHz -18 GMHz [Channel 10, Handset Vertical]

Radiated Emission				Correction Factors	Duty Cycle	Corrected Amplitude	FCC Class B (3 M)	
Frequency (MHz)	Amplitude (dBuV/m)	Ant.H. (cm)	Table (°)	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin (dB)
2743	39.54	100.00	25	-6.84	-6.52	26.18	54	-27.82
3657	43.01	100.00	87	-5.64	-6.52	30.85	54	-23.15
4572	35.46	100.00	95	3.91	-6.52	32.85	54	-21.15
5486	30.15	100.00	68	9.72	-6.52	33.35	54	-20.65

Note:

1. Margin = Corrected - Limit.
2. peak amplitude + Correction Factor + Duty Cycle = Corrected

Table 27. Open Field Radiated Emissions for 30 MHz -1 GMHz [Channel 20, Handset Horizontal]

Radiated Emission				Correction Factors	Corrected Amplitude (dBuV/m)	FCC Class B (3 M)	
Frequency (MHz)	Amplitude (dBuV/m)	Ant.H. (cm)	Table (°)	(dB)		Limit (dBuV/m)	Margin (dB)
633.500	46.41	3.02	15	-13.47	32.94	46.00	-13.06
853.240	43.12	1.00	31	-13.16	29.96	46.00	-16.04
835.660	44.14	1.00	197	-13.81	30.33	46.00	-15.67
868.240	44.49	1.00	121	-13.79	30.70	46.00	-15.30
877.840	49.36	1.00	208	-13.78	35.58	46.00	-10.42
935.440	47.71	1.00	166	-15.04	32.67	46.00	-13.33
***							

Note:

1. Margin = Corrected - Limit.
2. Peak Amplitude + Correction Factors = Corrected

Table 28. Open Field Radiated Emissions for 1 GHz -18 GMHz [Channel 20, Handset Horizontal]

Radiated Emission				Correction Factors	Duty Cycle	Corrected Amplitude (dBuV/m)	FCC Class B (3 M)	
Frequency (MHz)	Amplitude (dBuV/m)	Ant.H. (cm)	Table (°)	(dB)	(dB)		Limit (dBuV/m)	Margin (dB)
2778	41.87	100.00	36	-6.84	-6.52	28.51	54	-25.49
3704	45.67	100.00	98	-5.64	-6.52	33.51	54	-20.49
4630	39.11	100.00	57	3.91	-6.52	36.5	54	-17.5
5556	30.15	100.00	48	9.72	-6.52	33.35	54	-20.65

Note:

1. Margin = Corrected - Limit.
2. peak amplitude + Correction Factor + Duty Cycle = Corrected

Table 29. Open Field Radiated Emissions for 30 MHz -1 GMHz [Channel 20, Handset Vertical]

Radiated Emission				Correction Factors	Corrected Amplitude	FCC Class B (3 M)	
Frequency (MHz)	Amplitude (dBuV/m)	Ant.H. (cm)	Table (°)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin (dB)
633.500	52.26	1.00	16	-13.47	38.79	46.00	-7.21
835.240	47.49	3.02	26	-13.16	34.33	46.00	-11.67
858.660	51.31	1.00	133	-13.81	37.50	46.00	-8.5
868.240	53.40	1.00	192	-13.79	39.61	46.00	-6.39
877.840	56.77	1.00	136	-13.78	42.99	46.00	-3.01
935.440	51.78	1.00	23	-15.04	36.74	46.00	-9.26
***							

Note:

1. Margin = Corrected - Limit.
2. Peak Amplitude + Correction Factors = Corrected

Table 30. Open Field Radiated Emissions for 1 GHz -18 GMHz [Channel 20, Handset Vertical]

Radiated Emission				Correction Factors	Duty Cycle	Corrected Amplitude	FCC Class B (3 M)	
Frequency (MHz)	Amplitude (dBuV/m)	Ant.H. (cm)	Table (°)	(dB)	(dB)	(dBuV/m)	Limit (dBuV/m)	Margin (dB)
2778	42.21	100.00	35	-6.84	-6.52	28.85	54	-25.15
3704	42.51	100.00	68	-5.64	-6.52	30.35	54	-23.65
4630	34.12	100.00	97	3.91	-6.52	31.51	54	-22.49
5556	31.65	100.00	88	9.72	-6.52	34.85	54	-19.15

Note:

1. Margin = Corrected - Limit.
2. peak amplitude + Correction Factor + Duty Cycle = Corrected

VI Section 15.247(d): Power spectral density.

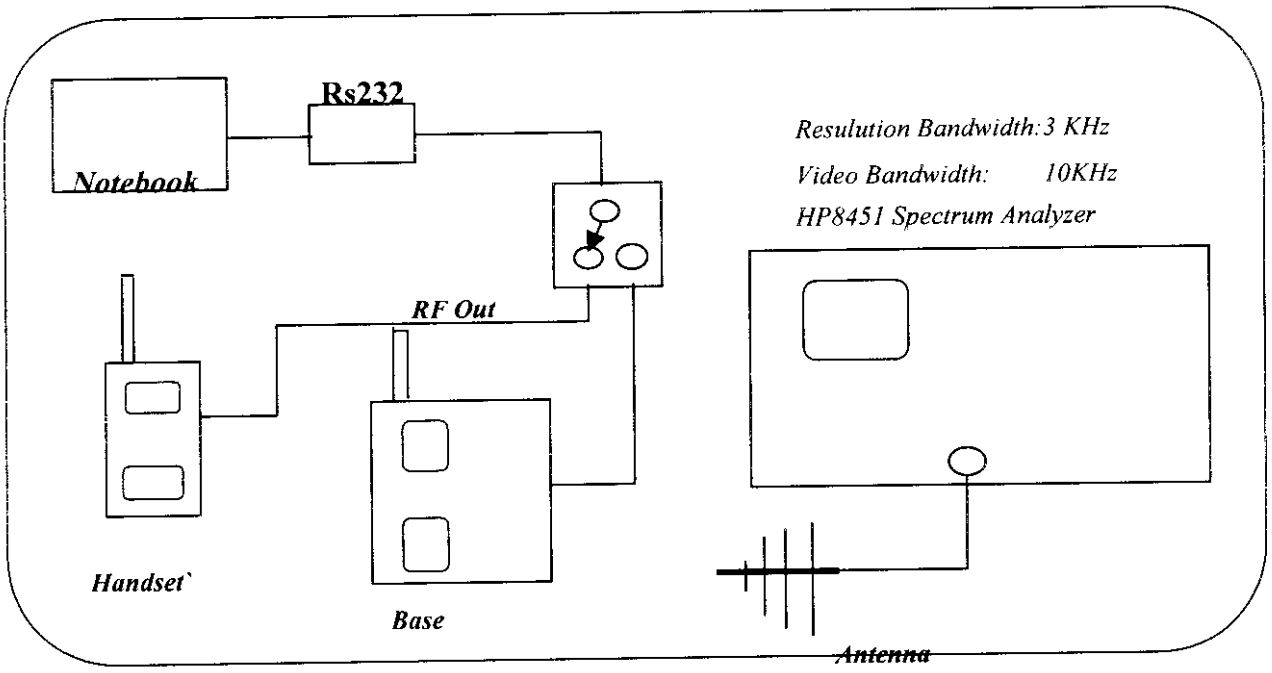
6.1 Test Condition & Setup

The tests below are running with the DCT transmitter set at high power in TDD mode .A serial port from a computer to the DCT UUT is needed to force selection of output power level and channel number. While testing, EUT was set to transmit continuously. A log antenna was connected with the spectrum analyzer.

The EUT is tested in open field site. Put EUT on the middle of a wooden table. Set spectrum analyzer RBW = 3 KHz, VBW > RBW (e.g. VBW = 10 KHz), Span = 1.5 MHz. Turn around the table to find maximum emission. Then set the Span = 300 KHz and sweep time = 100 sec. Peak the maximum emission again. The peak level measured must be no greater than +8 dBm.

The setting up procedure is recorded on Appendix A.

6.2 Test Instruments Configuration



P.S.A serial port from notebook computer to control the EUT at maximal power output and channel Number.

Fig 12. Test Configuration of power spectral density

6.3 List of Test Instruments

Manufacturer	Device	Model	Input Impedance
Hewlett Packard	9KHz-2.9 GHz Spectrum Analyze	HP8594EM	50.00

6.4 Test Result of Power spectral density.

The following table shows a summary of the highest power out of UT.

Model No. : MH9060XX

EUT : 900MHz S.S.T. Cordless Phone

Table 33. Power Spectral Density

Channel	Frequency (MHz)	Ppr (dBuV)	CF (dB)	Ppq (dBm)	Limit (dB)	Margin (dB)
B/S CH 01	903.6835	107.14	-14.17	-4.41	8.00	-12.41
B/S CH 10	913.9840	105.12	-14.48	-6.74	8.00	-14.74
B/S CH 20	925.3840	106.54	-14.81	-5.65	8.00	-13.65
H/S CH 01	903.7840	109.34	-14.17	-2.21	8.00	-10.21
H/S CH 10	914.8835	110.13	-14.51	-1.76	8.00	-9.76
H/S CH 20	925.3848	110.14	-14.81	-2.05	8.00	-10.05

Note:

1. The attachment follow by this page and there is no page number.
2. Ppr: spectrum read power density (using peak search mode), CF: correct factor Ppq: actual peak power density in the spread spectrum band.
3. Ppq = Ppr + CF
4. Effective Radiation Power (E.R.P.) = $(E\ d)^2 / 30G$

E is the measured maximum field strength in V/m utilizing the maximum hold mode

RBW (3KHz).

G is the numeric gain of the transmitting antenna over an isotropic radiator (1.64).

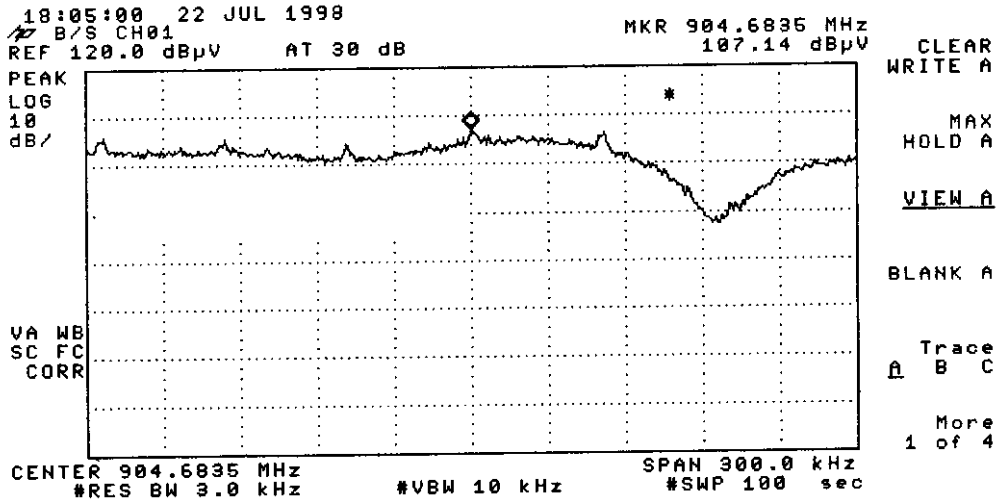
d is the distance in meters from which the field strength was measured (3M).

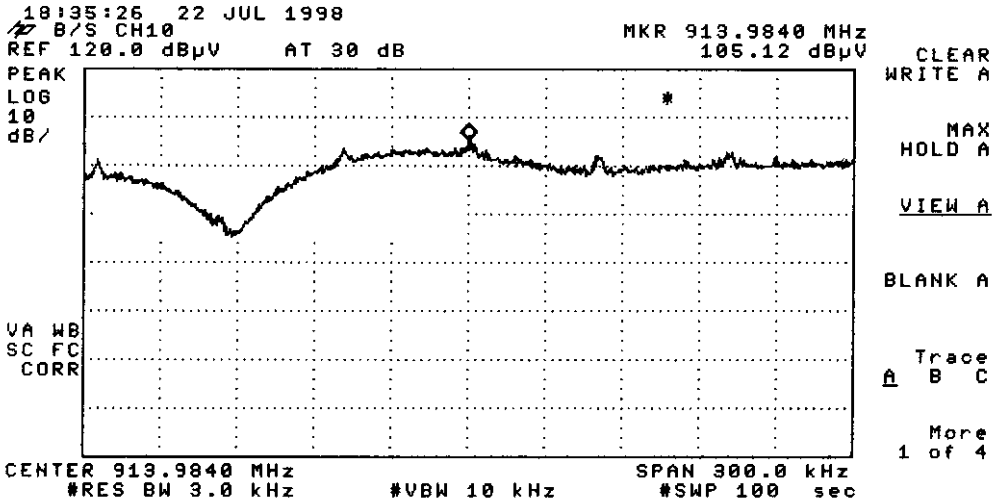
Example: the Max Radiation Emission of base ch01 = 107.14-14.17=92.97 dBuV/m

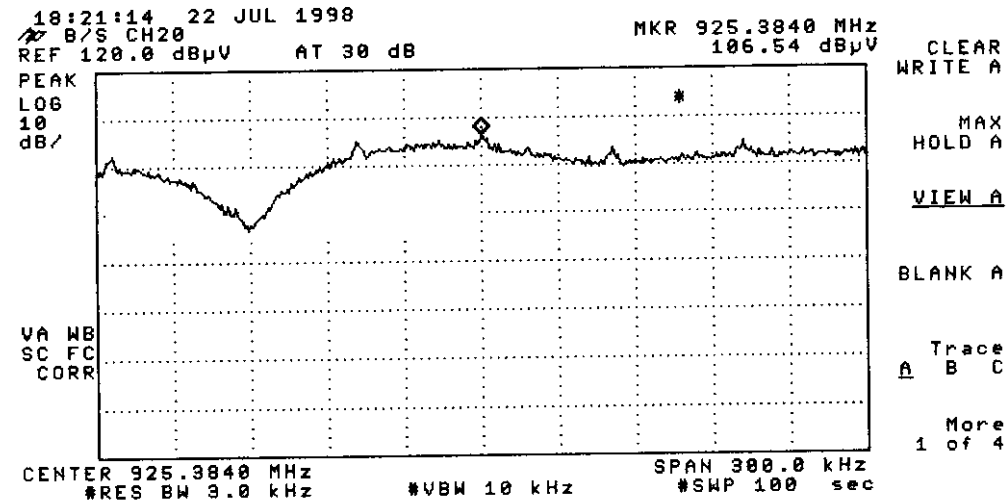
$10^{(92.97/20)} \times 10^{-6} = 0.04451V$

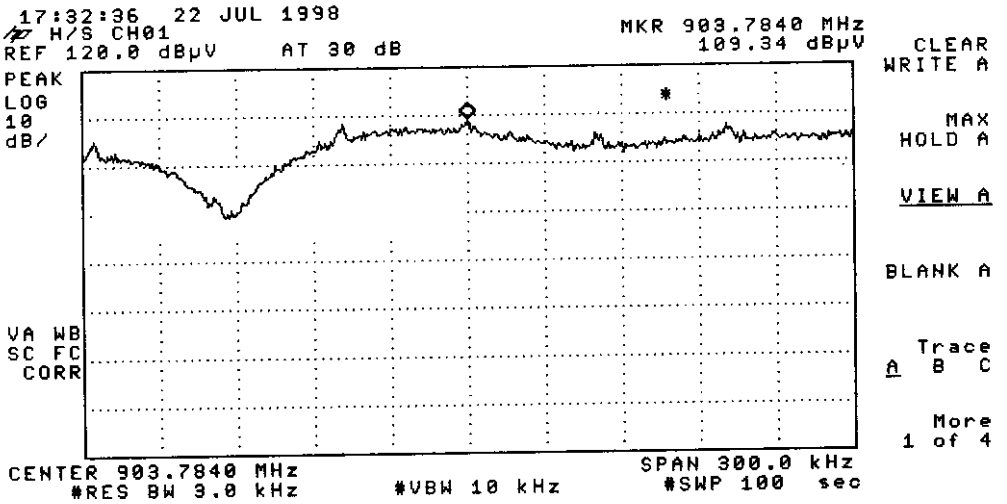
E.R.P. = $(0.0.4451 \times 3)^2 / 49.2 = 0.362$ mW = 10 x log (0.362 mW/1mW)

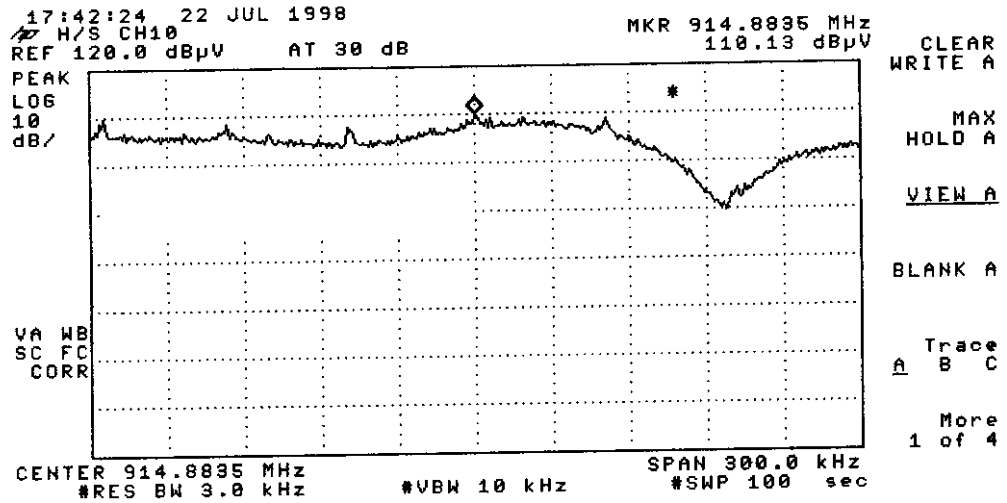
= -4.41 dBm

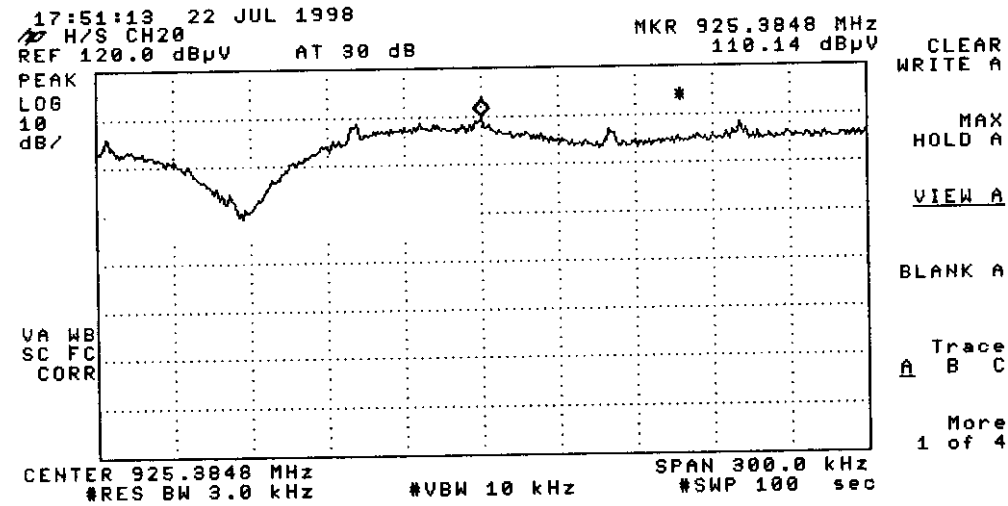

18:05:00 22 JUL 1998
B/S CH01
REF 120.0 dBµV
AT 30 dB
MKR 904.6835 MHz
107.14 dBµV
PEAK
LOG
10
dB/
VA WB
SC FC
CORR
CLEAR
WRITE A
MAX
HOLD A
VIEW A
BLANK A
Trace
A B C
More
1 of 4
CENTER 904.6835 MHz
#RES BW 3.0 kHz
#VBW 10 kHz
SPAN 300.0 kHz
#SWP 100 sec


18:35:26 22 JUL 1998
B/S CH10
REF 120.0 dBµV
AT 30 dB
MKR 913.9840 MHz
105.12 dBµV
PEAK
LOG
10
dB/
VA WB
SC FC
CORR
CLEAR
WRITE A
MAX
HOLD A
VIEW A
BLANK A
Trace
A B C
More
1 of 4
CENTER 913.9840 MHz
#RES BW 3.0 kHz
#VBW 10 kHz
SPAN 300.0 kHz
#SWP 100 sec


18:21:14 22 JUL 1998
B/S CH20
REF 120.0 dBµV
AT 30 dB
MKR 925.3840 MHz
106.54 dBµV
PEAK
LOG
10
dB/
VA WB
SC FC
CORR
CLEAR
WRITE A
MAX
HOLD A
VIEW A
BLANK A
Trace
A B C
More
1 of 4
CENTER 925.3840 MHz
#RES BW 3.0 kHz
#VBW 10 kHz
SPAN 300.0 kHz
#SWP 100 sec


17:32:36 22 JUL 1998
H/S CH01
REF 120.0 dBµV
AT 30 dB
MKR 903.7840 MHz
109.34 dBµV
CLEAR
WRITE A
PEAK
LOG
10
dB/
MAX
HOLD A
VIEW A
BLANK A
VA WB
SC FC
CORR
Trace
A B C
More
1 of 4
CENTER 903.7840 MHz
#RES BW 3.0 kHz
#VBW 10 kHz
SPAN 300.0 kHz
#SWP 100 sec


17:42:24 22 JUL 1998
H/S CH10
REF 120.0 dBµV
AT 30 dB
MKR 914.8835 MHz
110.13 dBµV
CLEAR
WRITE A
PEAK
LOG
10
dB/
MAX
HOLD A
VIEW A
BLANK A
VA WB
SC FC
CORR
Trace
A B C
More
1 of 4
CENTER 914.8835 MHz
#RES BW 3.0 kHz
#VBW 10 kHz
SPAN 300.0 kHz
#SWP 100 sec


17:51:13 22 JUL 1998
H/S CH20
REF 120.0 dBµV
AT 30 dB
MKR 925.3848 MHz
110.14 dBµV
CLEAR
WRITE A
PEAK
LOG
10
dB/
MAX
HOLD A
VIEW A
BLANK A
VA WB
SC FC
CORR
Trace
A B C
More
1 of 4
CENTER 925.3848 MHz
#RES BW 3.0 kHz
#VBW 10 kHz
SPAN 300.0 kHz
#SWP 100 sec

VII Section 15.247(e): Processing Gain.

7.1 Test Condition & Setup

A. Bit Error Rate (Pe)

The subjective device RF module (base & handset) digital modulation by Differential Phase -Shift Keying (DPSK), the DPSK can use it's previous waveform as the phase reference for demodulation and thus requires no coherent detection, which greatly simplifies the receiver structure but with some Bit Error Rate (BER) degradation because of noisy phase reference. There is tradeoff between system complexity and system performance. In order to driver the DPSK error probability , we observe that DPSK using differential coding , we observable that DPSK using different coding is essentially an orthogonal signal scheme. A binary 1 is transmitted a sequence of two pulse (P,P) or (-P,-P) over 2 To seconds (no transition). Similarly, a binary 0 is transmitted by a sequence of two plus (P,-P) or (-P,P) over 2 TO seconds (transition). Either of the pulse sequences used for binary 1 is orthogonal to either of the pulse sequences used for binary 0. Because no local carrier is generated for demodulation, the detection is noncoherent , with an effective pulse energy equal to 2 Ep (twice the energy of pulse P). The actual energy transmitted per digit only Ep, however. the same as in noncoherent FSK, Consequently, the performance of DPSK is 3 dB superior to that of noncoherent FSK, We can write Pe for DPSK as :

The major component inside the subjective device are supplied by Rock well , Included RF block transmitter (RF101), Receiver (RF 100), and Base band block ASIC (c8502-13), CODEC (10497-14), above 4 IC chips are affected the processing gain as following :

J/S = (W/RD) / (ED/NO) [without CODING]

Where : W= Spread Chip Rate = Required Transmitted Base band Bandwidth.

Rb = Information Data Rate

Eb/No = Require Energy per Bit over noise Spectral Density for a Specific Bit Error Probability.

The subjective Device Information Data Rate are 80k and the Spread Chip Rate are 960k So the processing gain (10 log w/Rb) at least 10.79 dB(without Coding).

The ASIC (c8502-13) and CODEC (10497-14) these two chip included the coding function, So, it is great improve the processing gain and also improve the J/S ratio.

The Engineer work for Rock well System in Taiwan had pass us the information about the probability of error rate (Pe) must be lower than 0.001 that the system performance will satisfy for communication between Handset and Base station.

Why we need the Pe lower than 0.001, the Rockwell Semiconductor System is not explained , Since it relative with ASIC and Codec, it is confidential area that Rockwell is not allow to disdouse to the public.

When Pe = 0.001 and then Signal to Noise Ratio (S/N) = 6.2194 = 7.9dB.

B. Jamming Margin Method

The Rockwell Semiconductor System give us a software operated in the personal computer, and use the computer series port COM1 and COM2 connect Handset and Base than we can measure the Bit Error Rate.

Using this software we can perform Jamming Margin method testing, The test consists of stepping a signal generator in 50 KHz increments across the pass band of the system (up to 960 KHz away in RI's DCT). At each point, the generator level required to produce the recommend Bit Error Rate (BER = 10e - 3) is recorded. This level is the jamming level. The maximum implementation loss a system can claim in calculating processing gain is 2 dB. The equation to calculate the processing gain (Gp) is the following:

$$Gp = (S/N) + Mj + Lsys$$

$$Gp = 8\ dB + Mj + 2\ dB$$

FCC regulation section 15.247 (e) rewire the processing gain of a direct sequence system shall be at least 10 dB, when Gp must be greater than 10 dB, then the Jammer must be greater than 0 dB.

The processing gain may be measured using the CW jamming margin method. The Jammer to Signal (J/S) ratio is then calculated. Discard the worst 20% of the J/S data points.

1. For avoid the handset and basestation are situation, so, the UUT were in low power mode.

2. The signal generator was selected in interference band, using this software we can perform Jamming Margin method testing, the test consists of stepping a signal generator is 50 KHz increments across the pass band of the system (up to 960 KHz away in RI's DCT). So, the BER will keep in 0.1%.

The setting up procedure is recorded on Appendix A.

7.2Test Instruments Configuration

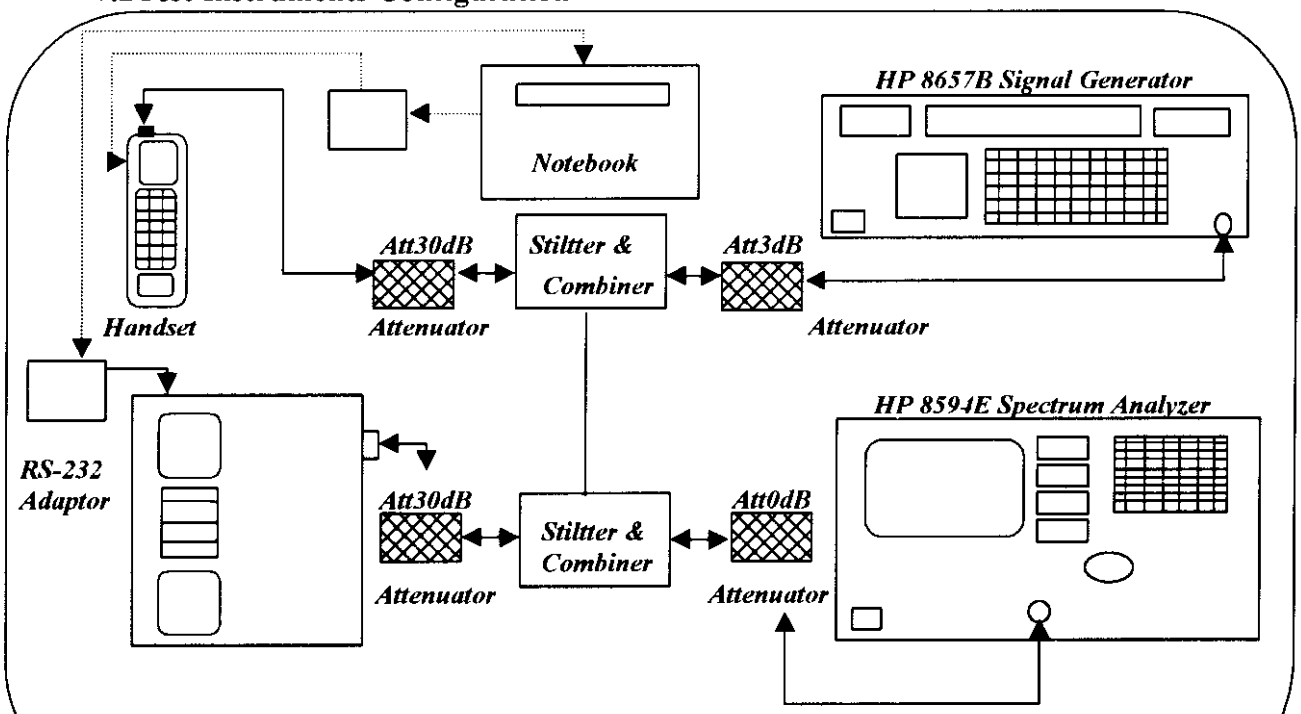


Fig 13. Test Configuration of processing gain for base station

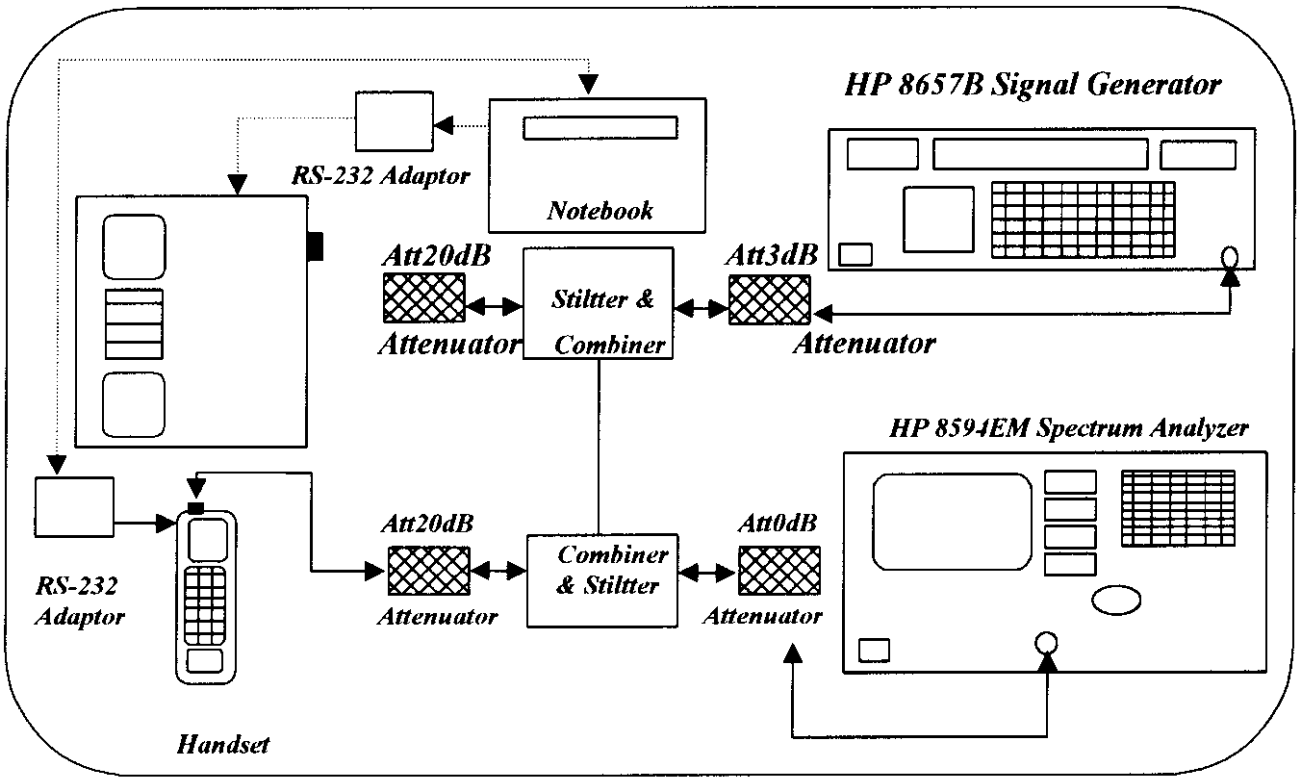


Fig. 14, Test Configuration of processing gain for handset

7.3 List of Test Instruments

Manufacturer	Device	Model	Input Impedance
Hewlett Packard	100Hz-1.8GHz Spectrum Analyzer	HP8592A	50.00
Hewlett Packard	100Hz-2.6GHz Signal Generator	HP8657B	50.00
Mini Circuits	10MHz-2GHz Power Stlitter/Combiner	ZESC-2-11	50.00
Mini Circuits	DC-1.5GHz 3dB Attenuator	CAT-3	50.00
Mini Circuits	DC-1.5GHz 20dB Attenuator	CAT-20	50.00
Mini Circuits	DC-1.5GHz 30dB Attenuator	CAT-30	50.00

7.4 Test Procedure

According to the Fig. 13 of the page 42, combine the stuffs.

Measure the low power output of the channel 10 of the handset while the handset is in "Transmit-Only-Test" and the whole circuit is as same as Fig. 13. What we measure in this step is "S".

Change to the "BER Test " program. Increase the RF output of the signal generator till the BER is close to the 0.1% but under 0.1%.

Stop the program and turn off the base, handset then record the highest point of the spectrum. What we measure in this step is "J".

Star the Program again and test the next point.

7.5 Test Result of Processing Gain.

Model No. : MH9060XX

EUT : 900MHz S.S.T. Cordless Phone

Table. 34 Processing Gain [Channel 10, Base]

Jammer Frequency (MHz)	S (dBm)	J (dBm)	Mj (J/S)	Process Gain (dB)
914.600	-39.43	-35.98	3.45	13.35
914.650	-39.43	-37.91	1.52	11.42
914.700	-39.43	-35.85	3.58	13.48
914.750	-39.43	-36.01	3.42	13.32
914.800	-39.43	-35.98	3.45	13.35
914.850	-39.43	-35.50	3.93	13.83
914.900	-39.43	-35.91	3.52	13.42
914.950	-39.43	-36.01	3.42	13.32
915.000	-39.43	-36.36	3.07	12.97
915.050	-39.43	-36.30	3.13	13.03
915.100	-39.43	-35.01	4.42	14.32
915.150	-39.43	-35.65	3.78	13.68
915.200	-39.43	-35.55	3.88	13.78
915.250	-39.43	-36.93	2.50	12.40
915.300	-39.43	-36.24	3.19	13.09
915.350	-39.43	-36.21	3.22	13.12
915.400	-39.43	-37.15	2.28	12.18
915.450	-39.43	-36.17	3.26	13.16
915.500	-39.43	-35.78	3.65	13.55
915.550	-39.43	-35.10	4.33	14.23
915.600	-39.43	-35.26	4.17	14.07
915.650	-39.43	-37.10	2.33	12.23
915.700	-39.43	-37.05	2.38	12.28
915.750	-39.43	-37.15	2.28	12.18
915.800	-39.43	-36.37	3.06	12.96
915.850	-39.43	-36.53	2.90	12.80
915.900	-39.43	-36.06	3.37	13.27
915.950	-39.43	-36.16	3.27	13.17
916.000	-39.43	-36.26	3.17	13.07
915.050	-39.43	-37.06	2.37	12.27

Test -Result:

Processing Gain: 12.40 dB

Note:

1. GP=(S/No)+Mj+Lsys=7.9dB+Mj+2 dB
2. S = Signal Level
3. J = Signal Generator RF Output

Table 35. Processing Gain [Channel 10, Handset]

Jammer Frequency (MHz)	S (dBm)	J (dBm)	Mj (J/S)	Process Gain (dB)
914.600	-40.83	-39.80	1.03	10.93
914.650	-40.83	-36.18	4.65	14.55
914.700	-40.83	-35.80	5.03	14.93
914.750	-40.83	-38.66	2.17	12.07
914.800	-40.83	-39.86	0.97	10.87
914.850	-40.83	-38.01	2.82	12.72
914.900	-40.83	-35.96	4.87	14.77
914.950	-40.83	-38.40	2.43	12.33
915.000	-40.83	-37.70	3.13	13.03
915.050	-40.83	-34.85	5.98	15.88
915.100	-40.83	-37.83	3.00	12.9
915.150	-40.83	-37.98	2.85	12.75
915.200	-40.83	-37.42	3.41	13.31
915.250	-40.83	-38.90	1.93	11.83
915.300	-40.83	-37.90	2.93	12.83
915.350	-40.83	-37.41	3.42	13.32
915.400	-40.83	-36.91	3.92	13.82
915.450	-40.83	-37.93	2.90	12.8
915.500	-40.83	-38.98	1.85	11.75
915.550	-40.83	-37.06	3.77	13.67
915.600	-40.83	-36.98	3.85	13.75
915.650	-40.83	-36.06	4.77	14.67
915.700	-40.83	-37.06	3.77	13.67
915.750	-40.83	-37.06	3.77	13.67
915.800	-40.83	-39.06	1.77	11.67
915.850	-40.83	-36.39	4.44	14.34
915.900	-40.83	-37.06	3.77	13.67
915.950	-40.83	-38.06	2.77	12.67
916.000	-40.83	-37.31	3.52	13.42
915.050	-40.83	-37.39	3.44	13.34

Test Result:

Processing Gain: 12.33dB

Note:

1. GP = (S/No) + Mj + Lsys = 7.9 dB + Mj + 2 dB
2. S = Signal Level
3. J = Signal Generator RF Output

Appendix A

Setting up Procedure

1. Using an RS-232 Adaptor that is given by customer connected with the COM 1 of the computer.
2. The other end of the RS-232 Adaptor is connected with the EUT.
3. Use the software that is given by the customer and operated in the windows to control the EUT's continuous transmission.

Appendix B

Antenna Sketch

HOW TSEN

承　認　書

APPLICATION FOR APPROVAL

型別
MODEL　Outline of Handset Antenna

機種
MODEL NO.　D-274W

客戶機種
CUSTOMER'S

日期
DATE　MAR,23,1998

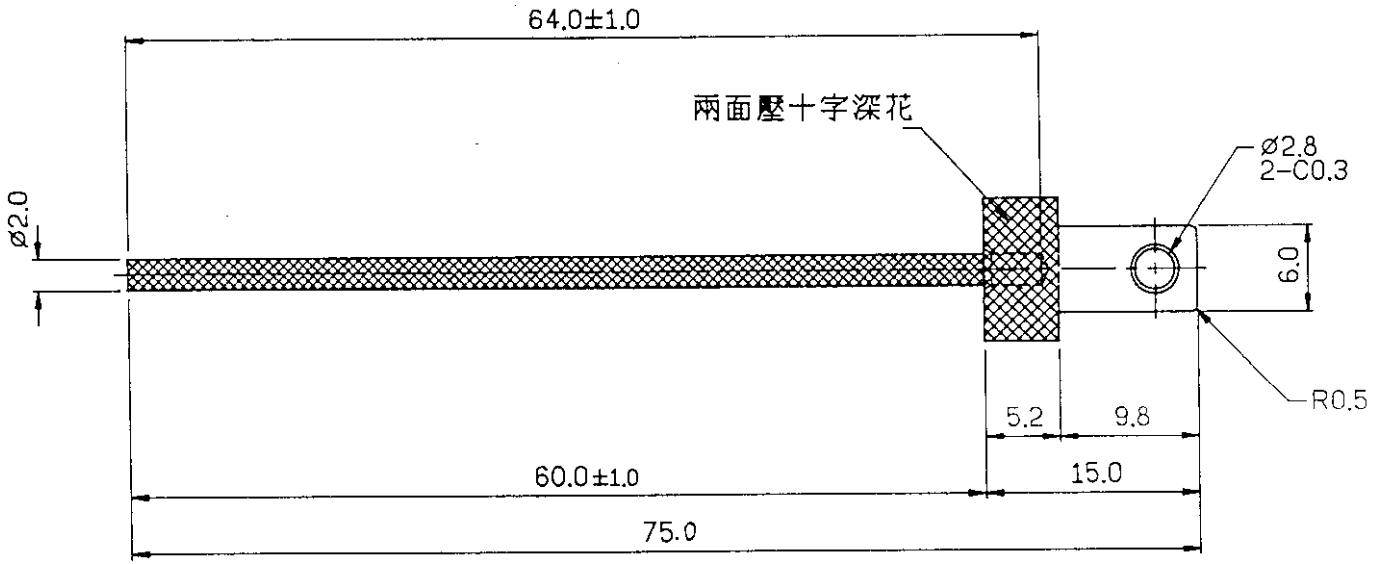
承認印 APPROVED BY

R & D
87.4.1
陳文啓

豪岑電子金屬股份有限公司
HOW TSEN ELECTRONICS METAL CO., LTD.
桃園縣新屋鄉中山東路2段130巷12號
NO. 12, LANE 130, CHUNG SAN E. RD. SEC 2,
SHIN WU HSIANG TAOYUAN HSIEN.
TAIWAN. R.O.C.

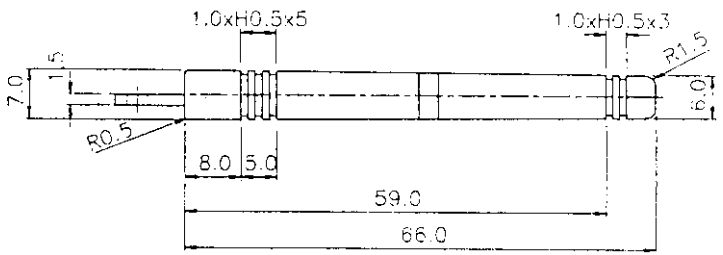
最終承認 APPROVED BY	內容確認 CHECKED BY	原案作成 WRITTEN BY
經理 87.3.26	工程部 87.3.26 葉時宏	87.3.26 邱志鴻

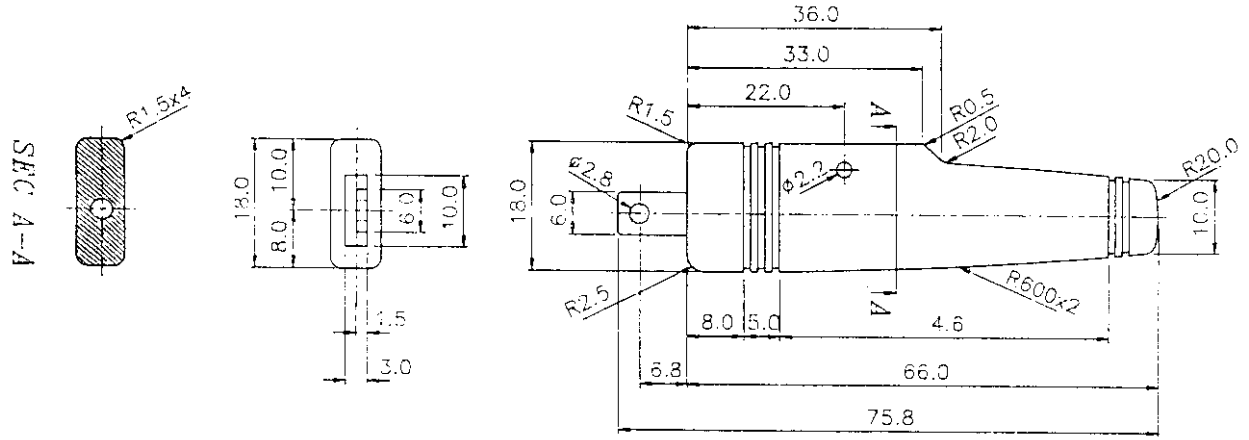
內部材質：RG-174（全剝線）



鋼索連接器組立圖

HOW TSEN	料號		材質		單位	MM	備註	一般公差 ⚠4
								～ 6 ±0.10 ⚠3
	品名		處理		繪圖	L.I. Lee	D-274B W	7 ～ 30 ±0.15 ⚠2
								31 ～ 80 ±0.20 ⚠1
	日期	1998.04.18	比例	2:1	核准	經理		81 ～ 250 ±0.30 變更說明





NO	PARTS NAME	MATERIAL	QTY	FINISH	NOTE
2	TUBE	Pu	1	Black	
1	CLING PLATE	BSBM			

TOLERANCES	SYMBOL	REVISION DESCRIPTION	ISSUED BY	DATE
~ 6 ±0.10	4			
7 ~ 30 ±0.15	3			
31 ~ 80 ±0.20	2			
81 ~ 250 ±0.30	1			
251 ~ 500 ±0.40				

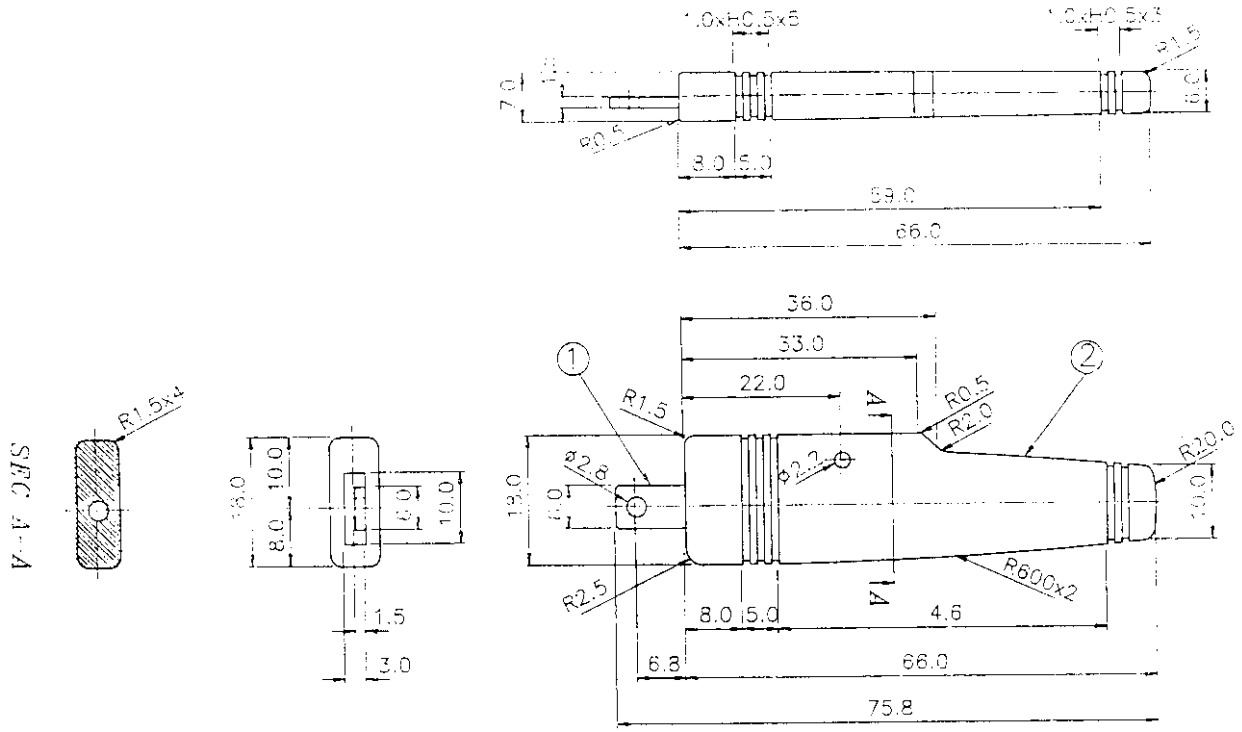
SCALE 2:1 | UNIT : mm | THIRD ANGLE

DESIGNED: S.H. Yeh | CHECKED: 經理 87.3.26 | APPROVED: 核定章 87.3.26 | DATE: 1998 03 20

HOW TSEN ELECTRONICS METAL CO., LTD.

MODEL NO. D-274B (MS-710)

Outline of Handset Antenna



NO	PARTS NAME	MATERIAL	QTY	FINISH	NOTE
2	TUBE	PU	1	Wnit	
1	CLING PLATE	BSBM	1		

TOLERANCES	SYMSOL	REVISION DESCRIPTION	ISSUED BY	DATE
~ 6 ±0.10	4			
7 ~ 30 ±0.15	3			
31 ~ 80 ±0.20	2			
81 ~ 250 ±0.30	1			
251 ~ 500 ±0.40				

SCALE 2:1 | UNIT : mm | THIRD ANGLE

DESIGNED S.H. Yeh | CHECKED 總理 87.3.26 李春宏 | APPROVED | DATE 1998.03.23

HOW TSEN ELECTRONICS METAL CO., LTD.

MODEL NAME: Outline of Handset Antenna

MODEL NO.: D-274W

工程課 87.3.26 核定

豪岑電子金屬股份有限公司
(HOW TSEN ELECTRONICS METAL CO., LTD)

天線規格承認書
(ANTENNA SPECIFICATIONS APPROVAL)

1. 適用機種 : (Model Applicable)
   客戶機種 (Customer's Model) : ~~D-274B~~
   豪岑機種 (How Tsen's Model) : D-274W

2. 外型尺寸 : (Outline and Dimensions)
   2.1 依客戶圖面或實樣 (Customer's Drawing or Sample) ☑
   2.2 依豪岑圖面或實樣 (How Tsen's Drawing or Sample) ☑
   2.3 依雙方共同討論決定 (Decieded by both parties) ☑

3. 外觀 : (Appearance)
   不得有明顯的傷痕, 凸凹點, 污點等缺點.(必要時提出作成限度樣品,並以之為依據)
   (All surfaces shall be free of flows , convexity, concavity, or dirty spot, excessive corrosion).

4. 電氣特性 : (Electrical Characteristics)
   4.1 頻率帶 (Frequency band) : _ ± _ MHz. } 見實測值
   4.2 電壓駐波比 (V.S.W.R.) : ≦ _ .
   4.3 公稱阻抗 (Nominal Impedance) : 50 ohm.
   4.4 耐電壓 (Voltage Resistance) : _ VAC
   4.5 增益值 (Gain Value) : _ dBi (_ dBd) .

5. 機械特性 : (Mechanical Properties)
   5.1 伸縮型天線適用 (For Rod Model Antennas)
      5.1.1 銅管組合伸縮力 : (Assembled extension & retraction force)
      0.15 ~ 2.0 kgf, 且動作順暢,其耐久次數在500次以上.
      (It's motion should be smoothly with the force range 0.15 ~ 2.0 kgf and the endurance shoulde be 500 cycles of extension and retraction.)
      5.1.2 摺動力 : (Extended and collapsed force)
      外套管與基管間之摺動力應在 2.0 kgf至 4.0 kgf, 且要順暢.
      (It's motion should be smoothly and the force range should be 2.0 to 4.0 kgf.)
      5.1.3 抗張力 : (Tensile strength)
      底塞固定後,向下垂直全伸長之, 於先端飾玉部置吊靜重10kgf 持續1分鐘以上.
      (Fix the base downward and hanging 10 kgf at the top with 1 minute held).
      5.1.4 抗震動 : (Anti-Vibration ability)
      基管底塞固定後, 全伸長並保持垂直狀態, 並施以水平振幅 2 m/m 每鐘 1500次 連續 5 分鐘後, pole之長度收縮率應在全長之 3% 以內.
      (Fix the base vertically and fully extended, applying 2 m/m horizontal amplitude, 1,500 C.P.M and 5 minutes held, the elongation to the total length should within 3%).

5.1.6 曲折扭力 : (Folding bending Test)
初期以3.0 ～ 7.0 kgf-cm.
(3.0 to 7.0 kgf-cm Initially)

5.1.7 AB座迴轉扭力 : (Rotation Torque Test)
初期以1.5 ～ 6.5 kgf-cm
(1.5 ～ 6.5 kgf-cm Initially).

5.1.8 打點扭力強度 : (Punching Torque Test)
扭力4kgf-cm 以上.
(4kgf-cm Min.)

5.2 C.B型天線適用 : (For Citizen Band Model Antennas)

5.2.1 彎曲試驗 : (Bending Test)
基管固定成垂直狀態, 拉頂端成左右或前後各60° 持續15秒鐘,其自然回復量在20m/m 以內.
(Fix the base vertically, the bending the top L. & R. or F. & B, the permanent set should within 20 m/m.)

5.2.2 垂直試驗 : (Vertical Test)
垂直擺置, 觀其偏移量在10m/m 內.
(The off-set should within 10 m/m while at the vertical position.)

5.2.3 吊重試驗 : (Tenle Test)
固定一端另一端拉之, 其拉力強度在3kgf以上.
(Fix one end, to pull other end, the tensile strength should not less than 3 kgf.)

5.2.4 扭力試驗 : (Torque Test)
接頭端固定後作正逆轉扭力測試在3kgf-cm以上.
(Fix the connector, then twist the tube or cap, the torque should be 3 kgf-cm min.)

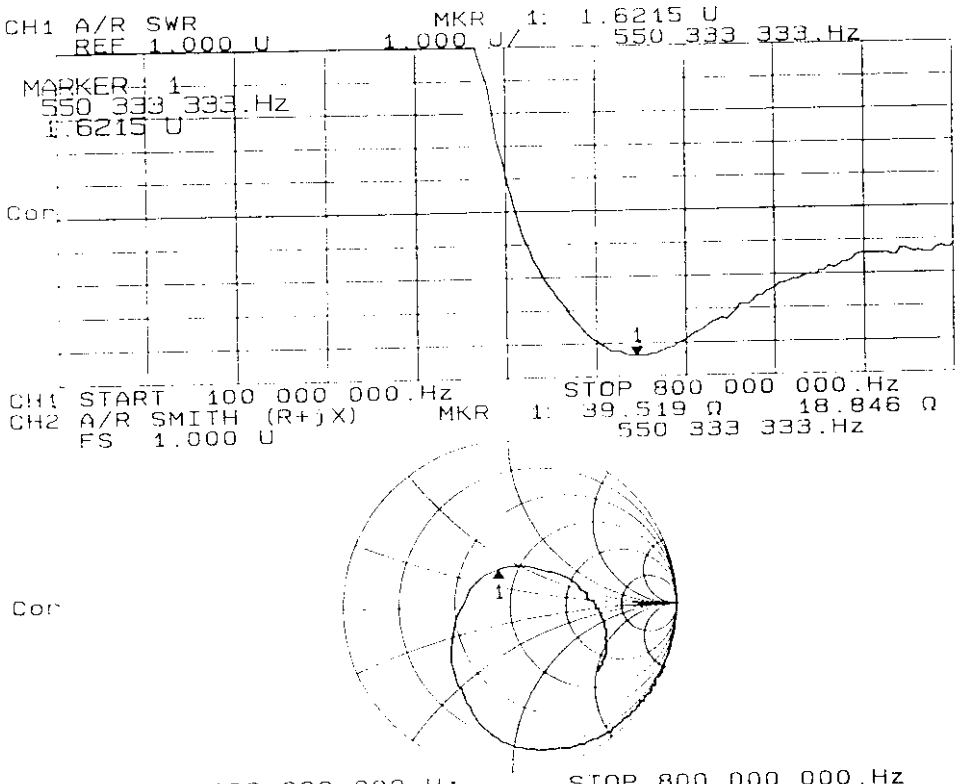
6. 檢驗標準 : (Inspection standard):
依據MIL-STD-105 D Ⅱ 單次抽樣計劃實施.
(According to MIL-STD-105 D Ⅱ sampling plan.)

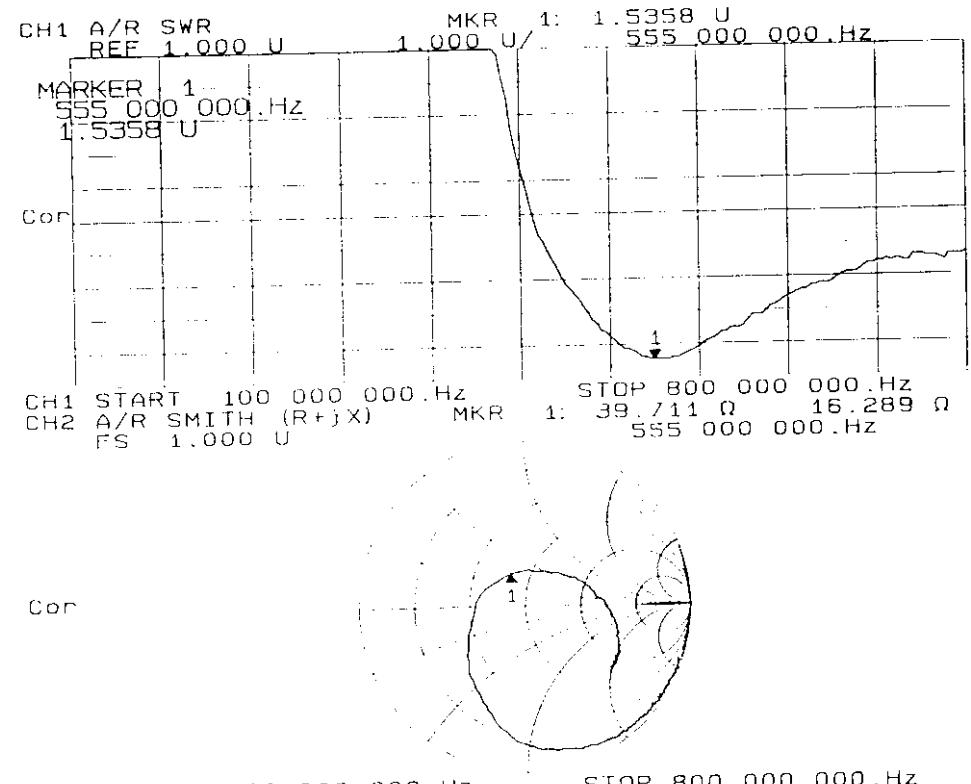
項 次 (Item No.)	項目名稱 & (Item Name)	檢驗項目 (Inspection Item)	標 準 (A Q L)
6.1	3	外 觀 (Appearance)	1.0
6.2	4.1 ～ 4.5	電氣特性 (Electricals)	1.0
6.3	5.1.1	組合伸縮力 (Assembled Ext-Ret force)	1.0
6.4	5.1.2	摺動力 (Ext-col force)	1.0
6.5	5.1.1, 5.1.6 5.1.7	伸縮力,曲折扭力(Ext-Ret, Folding bending Rotation Torque test)	n = 5 Ac = 0 Re = 1

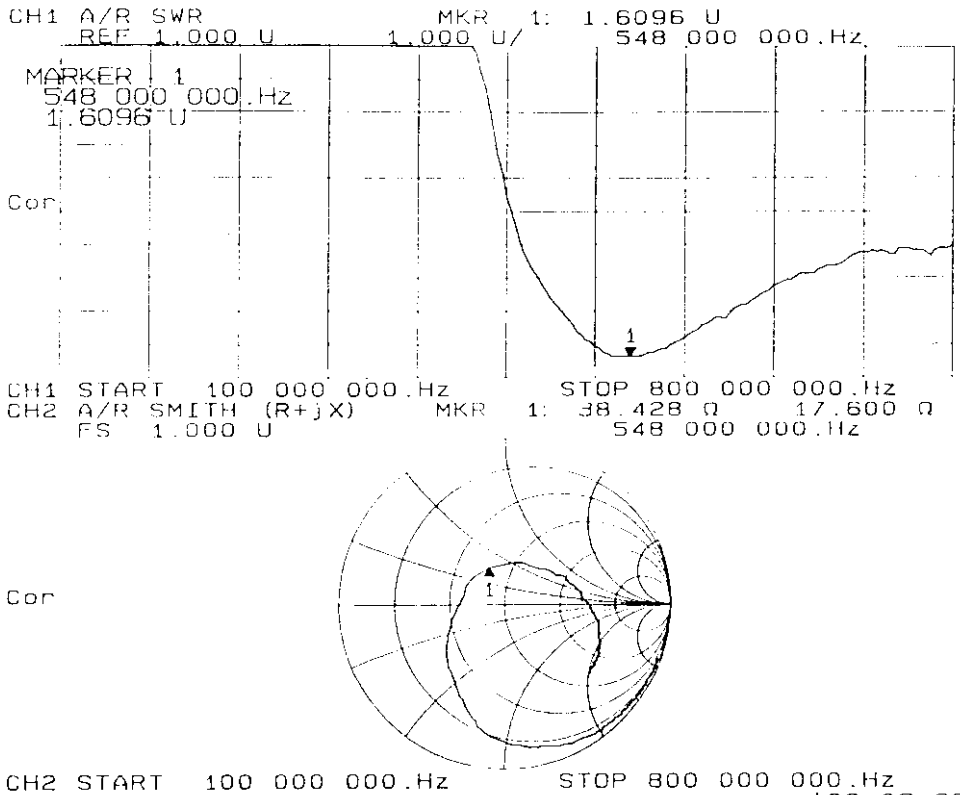
註: 上述各檢驗項目之實施 , 有可能因為設備上或費用分擔上的緣故而省略不作而不預行通知.
(Note: Because of the " Inspection/Test equipment and/or the expenditure charge reason" Some of above Inspection/Test items will not to be performed without pre-notified.)

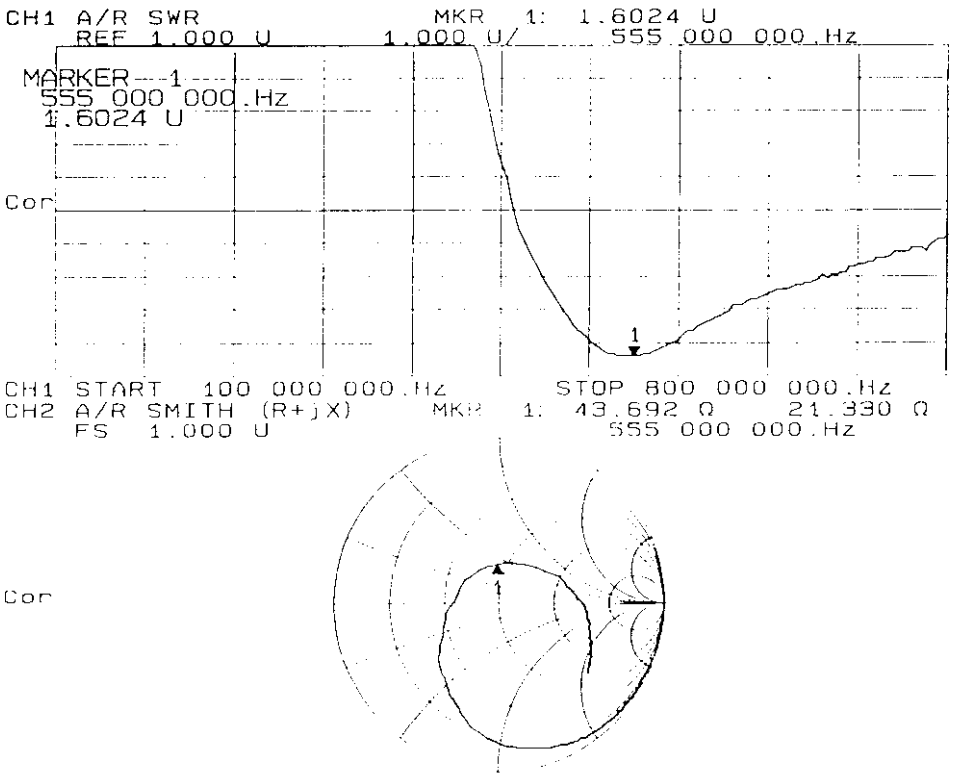
7. 包裝方式 : (Packing Style)
客戶如無特別規定悉依本公司包裝為準, 不另行承認.
(According to our standard packing specification & style unless otherwise specified by the customer.)

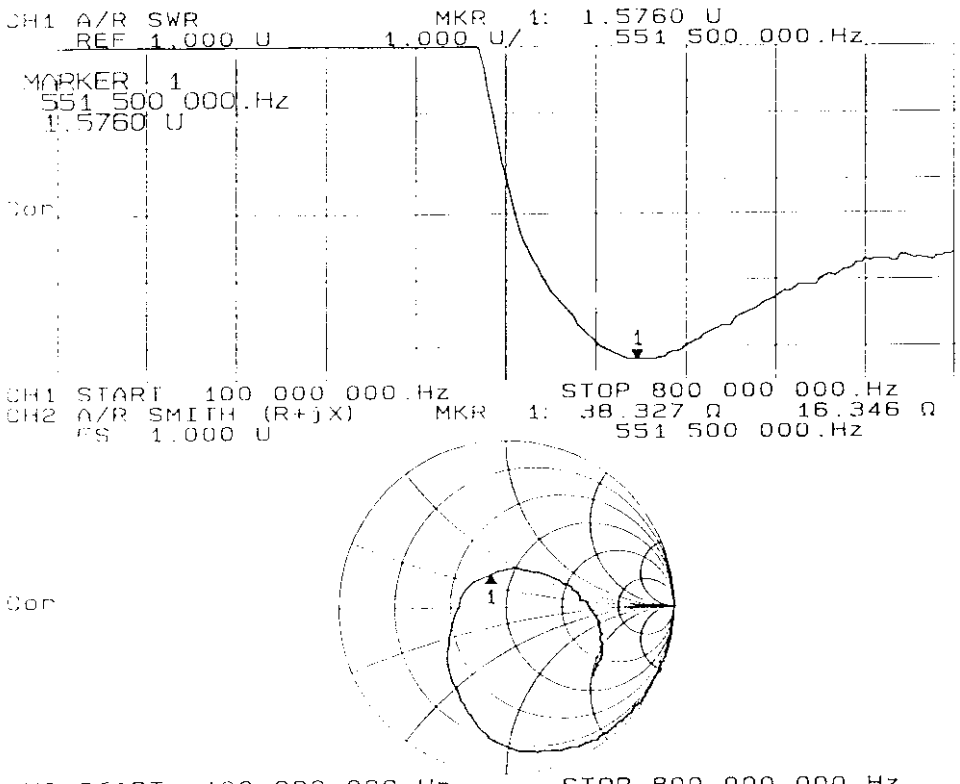
8. 其它 : (Others)
本規格如有變更時由雙方同意後行之.
(Any changes in this specification should be agreed by both parties.)


CH1 A/R SWR
REF 1.000 U
MKR 1: 1.6215 U
1.000 U/
550 333 333.Hz
MARKER 1
550 333 333.Hz
1.6215 U
Cor
CH1 START 100 000 000.Hz
STOP 800 000 000.Hz
CH2 A/R SMITH (R+jX)
MKR 1: 39.519 Ω 18.846 Ω
550 333 333.Hz
FS 1.000 U
Cor
CH2 START 100 000 000.Hz
STOP 800 000 000.Hz
Sample: D-274 NO: 6
'98, 03, 26 Thu 15: 45


CH1 A/R SWR
REF 1.000 U
MKR 1: 1.5358 U
1.000 U/
555 000 000.Hz
MARKER 1
555 000 000.Hz
1.5358 U
Cor
CH1 START 100 000 000.Hz
STOP 800 000 000.Hz
CH2 A/R SMITH (R+jX)
MKR 1: 39.711 Ω 16.289 Ω
555 000 000.Hz
FS 1.000 U
Cor
CH2 START 100 000 000.Hz
STOP 800 000 000.Hz
Sample: D-274 NO: 7
'98, 03, 26 Thu 15: 49


CH1 A/R SWR
REF 1.000 U
MKR 1: 1.6096 U
1.000 U/
548 000 000.Hz
MARKER 1
548 000 000.Hz
1.6096 U
Cor
CH1 START 100 000 000.Hz
STOP 800 000 000.Hz
CH2 A/R SMITH (R+jX)
MKR 1: 38.428 Ω 17.600 Ω
FS 1.000 U
548 000 000.Hz
Cor
CH2 START 100 000 000.Hz
STOP 800 000 000.Hz
Sample: D-274 NO: 8
'98, 03, 26 Thu 15: 54


CH1 A/R SWR
REF 1.000 U
MKR 1: 1.6024 U
1.000 U/
555 000 000.Hz
MARKER 1
555 000 000.Hz
1.6024 U
Cor
CH1 START 100 000 000.Hz
STOP 800 000 000.Hz
CH2 A/R SMITH (R+jX)
MKR 1: 43.692 Ω 21.330 Ω
FS 1.000 U
555 000 000.Hz
Cor
CH2 START 100 000 000.Hz
STOP 800 000 000.Hz
Sample: D-274 NO: 9
'98, 03, 26 Thu 15: 58


CH1 A/R SWR
MKR 1: 1.5760 U
REF 1.000 U
1.000 U/
551 500 000.Hz
MARKER 1
551 500 000.Hz
1.5760 U
Cor
1
CH1 START 100 000 000.Hz
STOP 800 000 000.Hz
CH2 A/R SMITH (R+jX)
MKR 1: 38.327 Ω 16.346 Ω
551 500 000.Hz
FS 1.000 U
Cor
1
CH2 START 100 000 000.Hz
STOP 800 000 000.Hz
Sample: D-274 NO: 10
'98. 03. 26 Thu 16: 03

承　認　書

APPLICATION FOR APPROVAL

型別
MODEL　　Outline of Base Antenna

機種
MODEL NO.　　D-275B
D-275W

客戶機種
CUSTOMER'S　　MS-713

日期
DATE　　MAR,20,1998

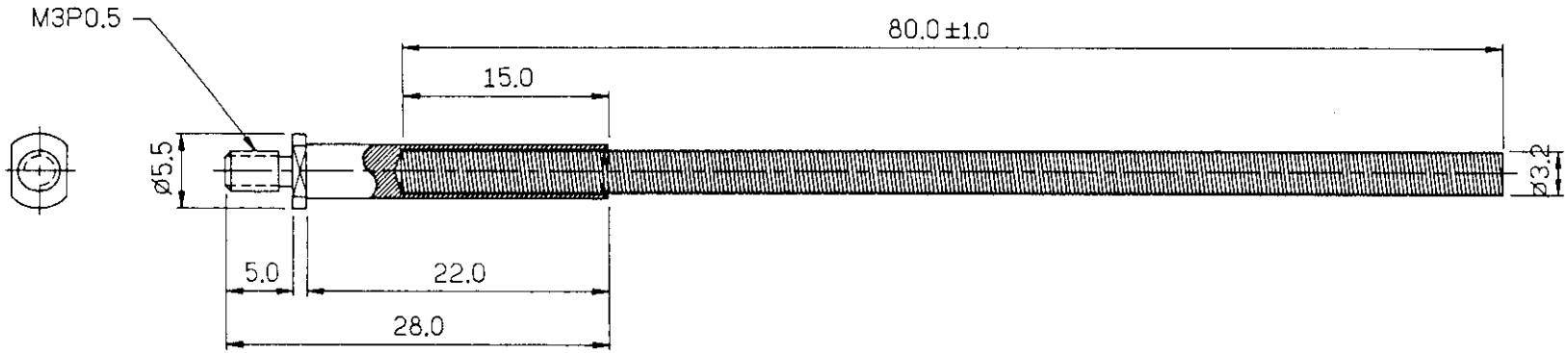
承認印 APPROVED BY

R & D
87.4.7
陳文啓

豪岑電子金屬股份有限公司
HOW TSEN ELECTRONICS METAL CO., LTD.
桃園縣新屋鄉中山東路2段130巷12號
NO. 12, LANE 130, CHUNG SAN E. RD. SEC 2,
SHIN WU HSIANG TAOYUAN HSIEN.
TAIWAN. R.O.C.

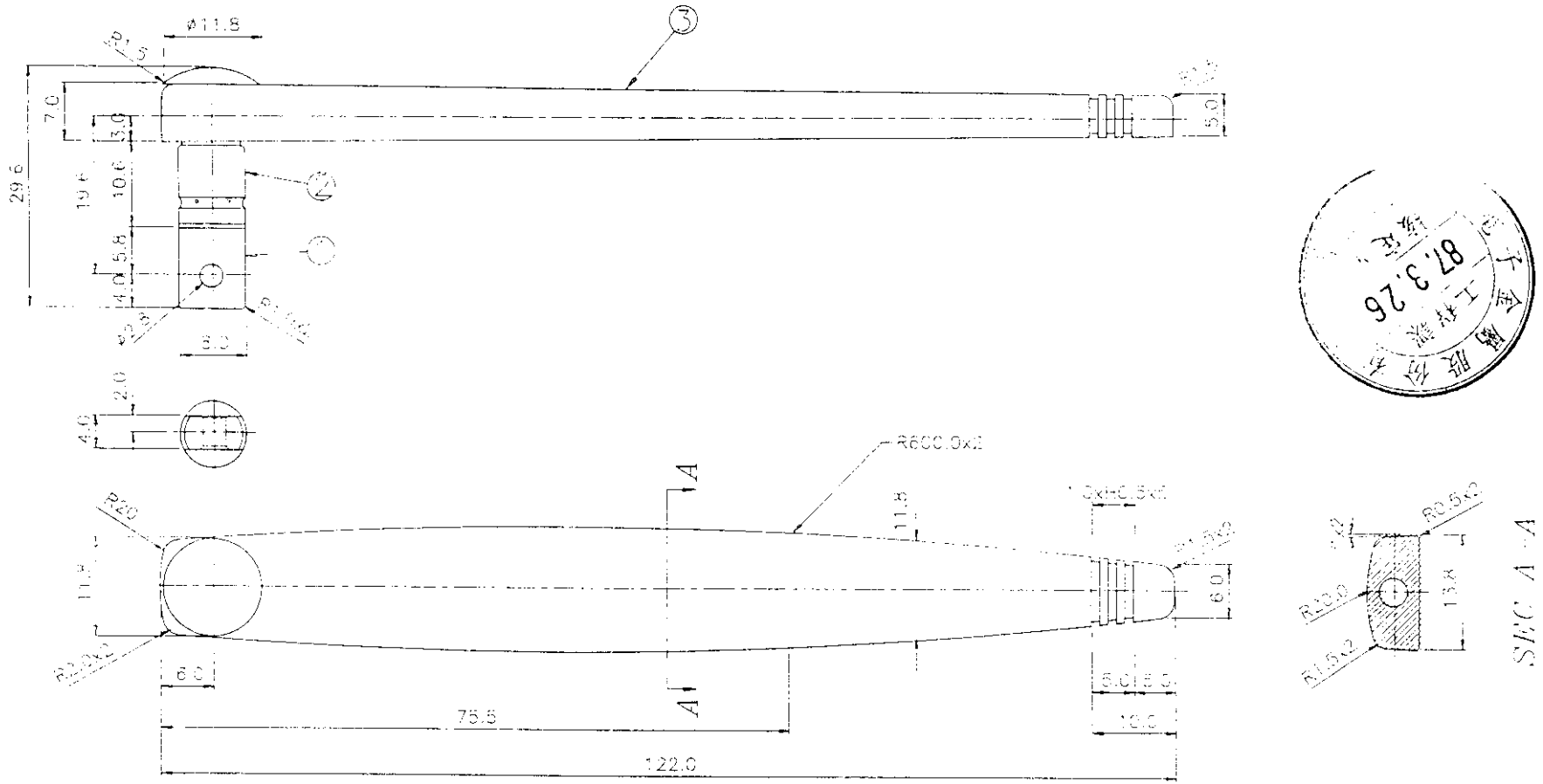
最終承認 APPROVED BY	內容確認 CHECKED BY	原案作成 WRITTEN BY
經理 87.3.26 李松	工程部 87.3.26 葉時宏	工程部 87.3.26 邱志鴻

內部材質 鋼索



鋼索連接器組立圖

HOW TSEN	料號		材質		單位	MM	備註	一般公差	④
								~ 6 ±0.10	③
	品名		處理		繪圖	L.I. Lee	D-275B	7 ~ 30 ±0.15	②
								31 ~ 80 ±0.20	①
	日期	1998.04.18	比例	2:1	核准	經理 07.4.18 李春松		81 ~ 250 ±0.30	變更說明



NO	PARTS NAME	MATERIAL	QTY	FINISH	NOTE
3	TUBE	Pu	1	Black	
2	GUIDE PIPE	BST	1	Cr	
1	GUIDE BASE	BSBM	1	Cr	

TOLERANCES		REVISION DESCRIPTION	ISSUED BY	DATE
~ 6 ±0.10	5			
~ 30 ±0.15	4			
31 ~ 80 ±0.20	3			
81 ~ 250 ±0.30	2			
251 ~ 500 ±0.40	1			
	SYMBOL			

SCALE 5:1 | DESIGNED | CHECKED | APPROVED | MODEL NAME: *Outline of Base Antenna*

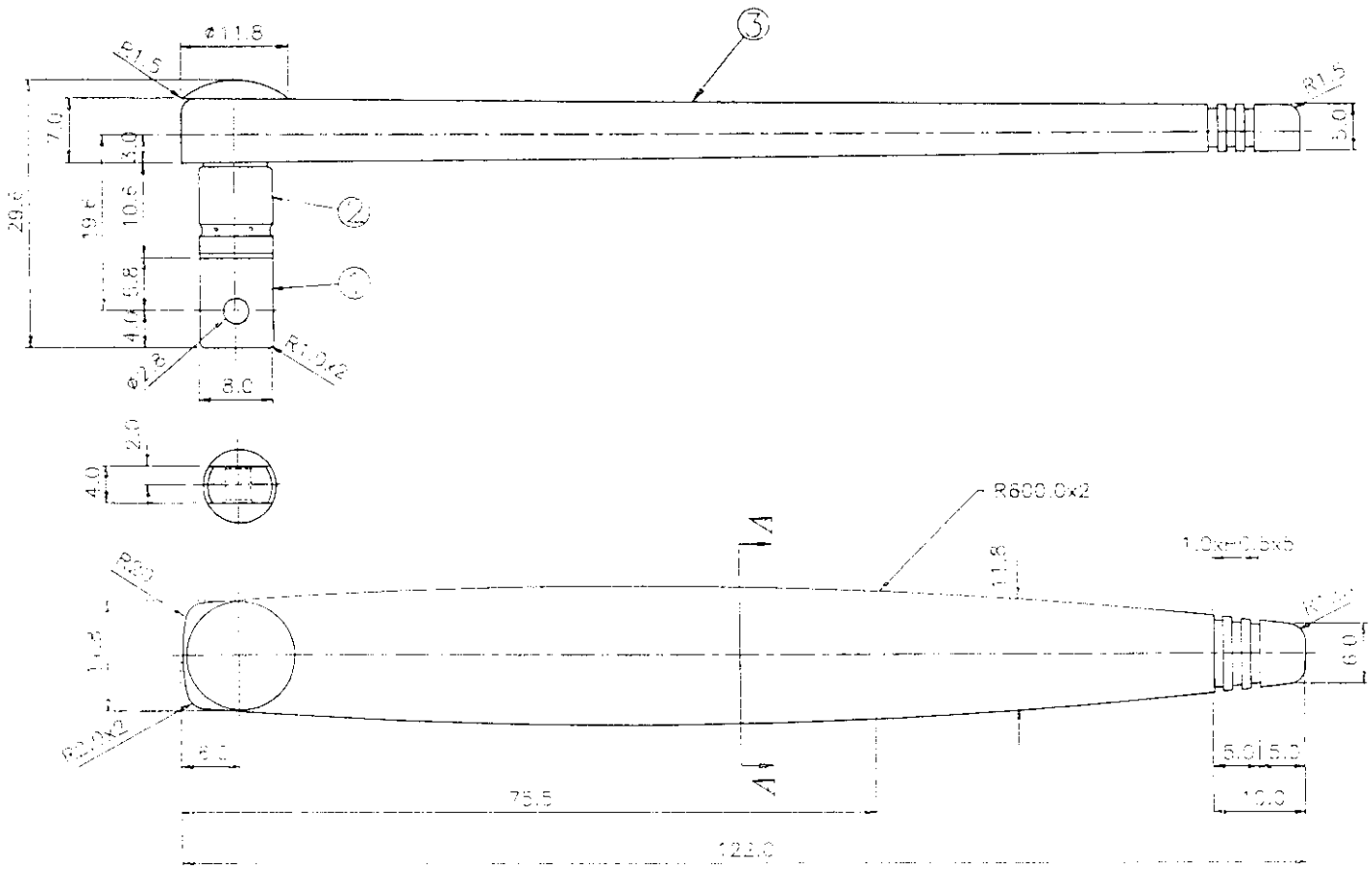
UNIT : mm | *L.I. Lee*

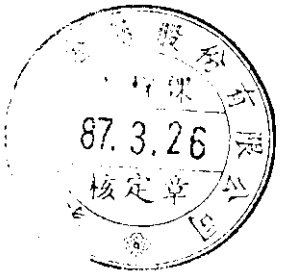
DATE *1998.08.20*

THIRD ANGLE

HOW TSEN ELECTRONICS METAL CO., LTD.

MODEL NO. *D-275B (MS-713)*





NO	PARTS NAME	MATERIAL	QTY	FINISH	NOTE
3	TUBE	Pu		White	
2	GUIDE PIPE	BUT		Cr	
1	GUIDE BASE	BSBM	1	Cr	

TOLERANCES					
~ 6	±0.10				
7 ~ 30	±0.15				
31 ~ 80	±0.20				
81 ~ 250	±0.30				
251 ~ 500	±0.40	SYMBOL	REVISION DESCRIPTION	ISSUED BY	DATE

SCALE 5:1
UNIT mm
THIRD ANGLE

DESIGNED	CHECKED	APPROVED
L.I. Lee	經理 87.3.26 李春松	
DATE 1998		

HOW TSEN ELECTRONICS METAL CO., LTD.

MODEL NAME
Outline of Base Antenna

MODEL NO.
D-275W

豪岑電子金屬股份有限公司
(HOW TSEN ELECTRONICS METAL CO., LTD)

天線規格承認書
(ANTENNA SPECIFICATIONS APPROVAL)

1. 適用機種 : (Model Applicable)
   客戶機種 (Customer's Model) : MS-713

   豪岑機種 (How Tsen's Model) : D-275B

2. 外型尺寸 : (Outline and Dimensions)
   2.1 依客戶圖面或實樣 (Customer's Drawing or Sample) ☑
   2.2 依豪岑圖面或實樣 (How Tsen's Drawing or Sample) ☑
   2.3 依雙方共同討論決定 (Decieded by both parties) ☑

3. 外觀 : (Appearance)
   不得有明顯的傷痕，凸凹點，污點等缺點.(必要時提出作成限度樣品,並以之為依據)
   (All surfaces shall be free of flows , convexity, concavity, or dirty spot, excessive corrosion).

4. 電氣特性 : (Electrical Characteristics)
   4.1 頻率帶 (Frequency band) : _ ± _ MHz.
   4.2 電壓駐波比 (V.S.W.R.) : ≦ _ (包含測值)
   4.3 公稱阻抗 (Nominal Impedance) : 50 ohm.
   4.4 耐電壓 (Voltage Resistance) : _ VAC
   4.5 增益值 (Gain Value) : _ dBi (_ dBd)

5. 機械特性 : (Mechanical Properties)
   5.1 伸縮型天線適用 (For Rod Model Antennas)
      5.1.1 銅管組合伸縮力 : (Assembled extension & retraction force)
      0.15 ～ 2.0 kgf, 且動作順暢,其耐久次數在500次以上.
      (It's motion should be smoothly with the force range 0.15 ～ 2.0 kgf and the endurance shoulde be 500 cycles of extension and retraction.)
      5.1.2 摺動力 : (Extended and collapsed force)
      外套管與基管間之摺動力應在 2.0 kgf至 4.0 kgf, 且要順暢.
      (It's motion should be smoothly and the force range should be 2.0 to 4.0 kgf.)
      5.1.3 抗張力 : (Tensile strength)
      底塞固定後,向下垂直全伸長之, 於先端飾玉部置吊靜重10kgf 持續1分鐘以上.
      (Fix the base downward and hanging 10 kgf at the top with 1 minute held).
      5.1.4 抗震動 : (Anti-Vibration ability)
      基管底塞固定後, 全伸長並保持垂直狀態, 並施以水平振幅 2 m/m 每鐘 1500次連續 5 分鐘後, pole之長度收縮率應在全長之 3% 以內.
      (Fix the base vertically and fully extended, applying 2 m/m horizontal amplitude, 1,500 C.P.M and 5 minutes held, the elongation to the total length should within 3%).

5.1.6 曲折扭力 : (Folding bending Test)
初期以3.0 ～ 7.0 kgf-cm.
(3.0 to 7.0 kgf-cm Initially)

5.1.7 AB座迴轉扭力 : (Rotation Torque Test)
初期以1.5 ～ 6.5 kgf-cm
(1.5 ～ 6.5 kgf-cm Initially).

5.1.8 打點扭力強度 : (Punching Torque Test)
扭力4kgf-cm 以上.
(4kgf-cm Min.)

5.2 C.B型天線適用 : (For Citizen Band Model Antennas)

5.2.1 彎曲試驗 : (Bending Test)
基管固定成垂直狀態, 拉頂端成左右或前後各60° 持續15秒鐘,其自然回復量在20m/m 以內.
(Fix the base vertically, the bending the top L. & R. or F. & B, the permanent set should within 20 m/m.)

5.2.2 垂直試驗 : (Vertical Test)
垂直擺置, 觀其偏移量在10m/m 內.
(The off-set should within 10 m/m while at the vertical position.)

5.2.3 吊重試驗 : (Tenle Test)
固定一端另一端拉之, 其拉力強度在3kgf以上.
(Fix one end, to pull other end, the tensile strength should not less than 3 kgf.)

5.2.4 扭力試驗 : (Torque Test)
接頭端固定後作正逆轉扭力測試在3kgf-cm以上.
(Fix the connector, then twist the tube or cap, the torque should be 3 kgf-cm min.)

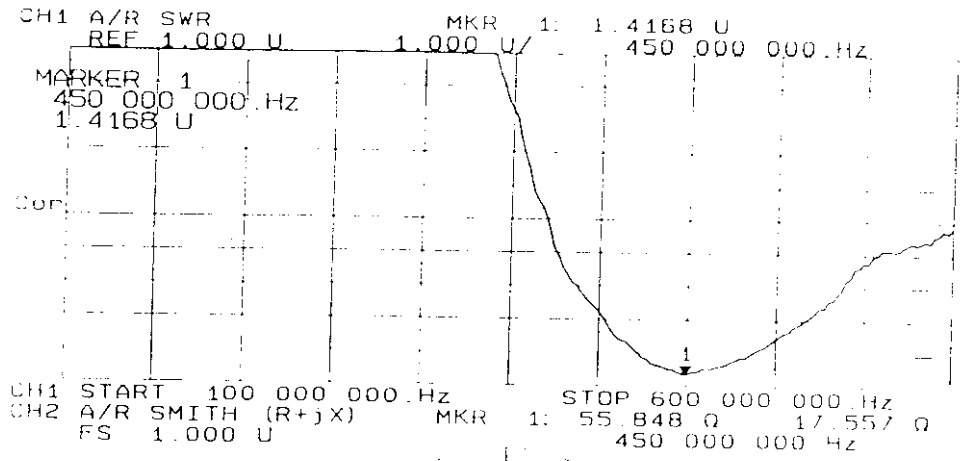
6. 檢驗標準 : (Inspection standard):
依據MIL-STD-105 D Ⅱ 單次抽樣計劃實施.
(According to MIL-STD-105 D Ⅱ sampling plan.)

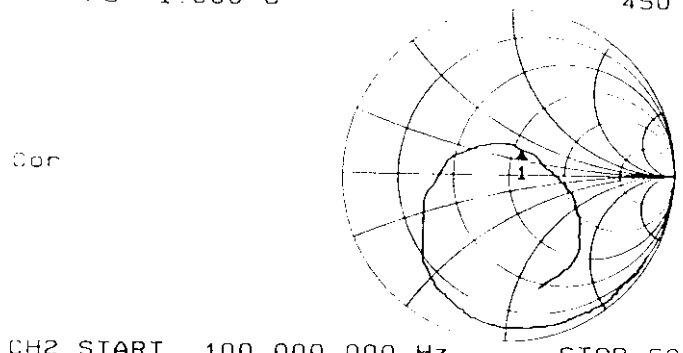
項 次 (Item No.)	項目名稱 & (Item Name)	檢驗項目 (Inspection Item)	標 準 (A Q L)
6.1	3	外 觀 (Appearance)	1.0
6.2	4.1 ～ 4.5	電氣特性 (Electricals)	1.0
6.3	5.1.1	組合伸縮力 (Assembled Ext-Ret force)	1.0
6.4	5.1.2	摺動力 (Ext-col force)	1.0
6.5	5.1.1, 5.1.6 5.1.7	伸縮力,曲折扭力(Ext-Ret, Folding bending Rotation Torque test)	n = 5 Ac = 0 Re = 1

註: 上述各檢驗項目之實施 , 有可能因為設備上或費用分擔上的緣故而省略不作而不預行通知.
(Note: Because of the " Inspection/Test equipment and/or the expenditure charge reason" Some of above Inspection/Test items will not to be performed without pre-notified.)

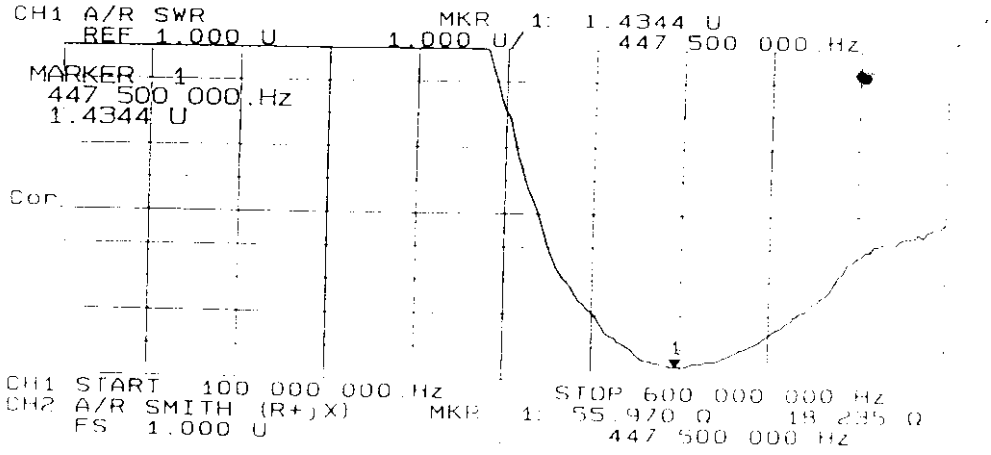
7. 包裝方式 : (Packing Style)
客戶如無特別規定悉依本公司包裝為準, 不另行承認.
(According to our standard packing specification & style unless otherwise specified by the customer.)

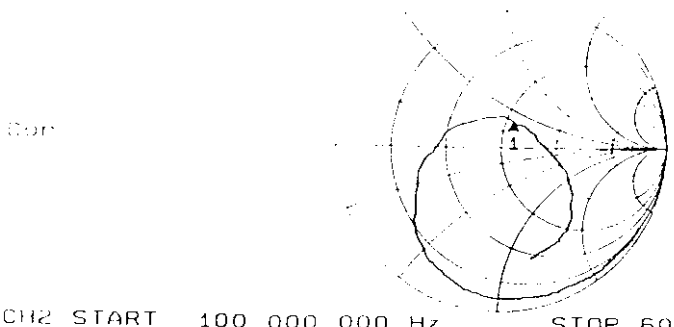
8. 其它 : (Others)
本規格如有變更時由雙方同意後行之.
(Any changes in this specification should be agreed by both parties.)



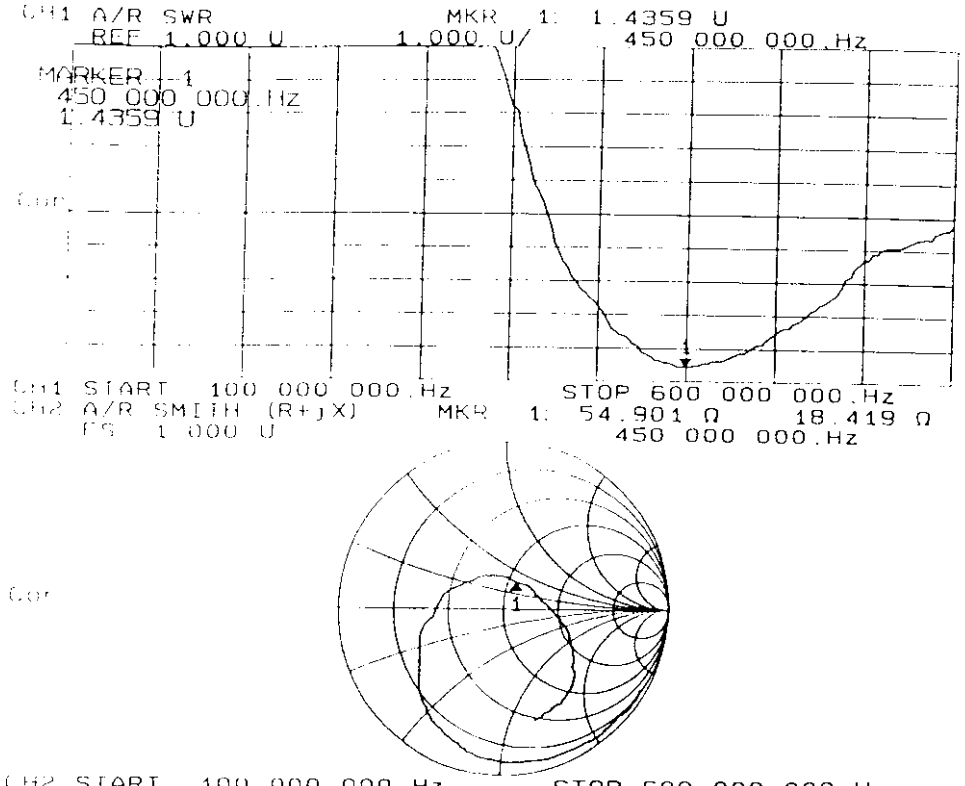


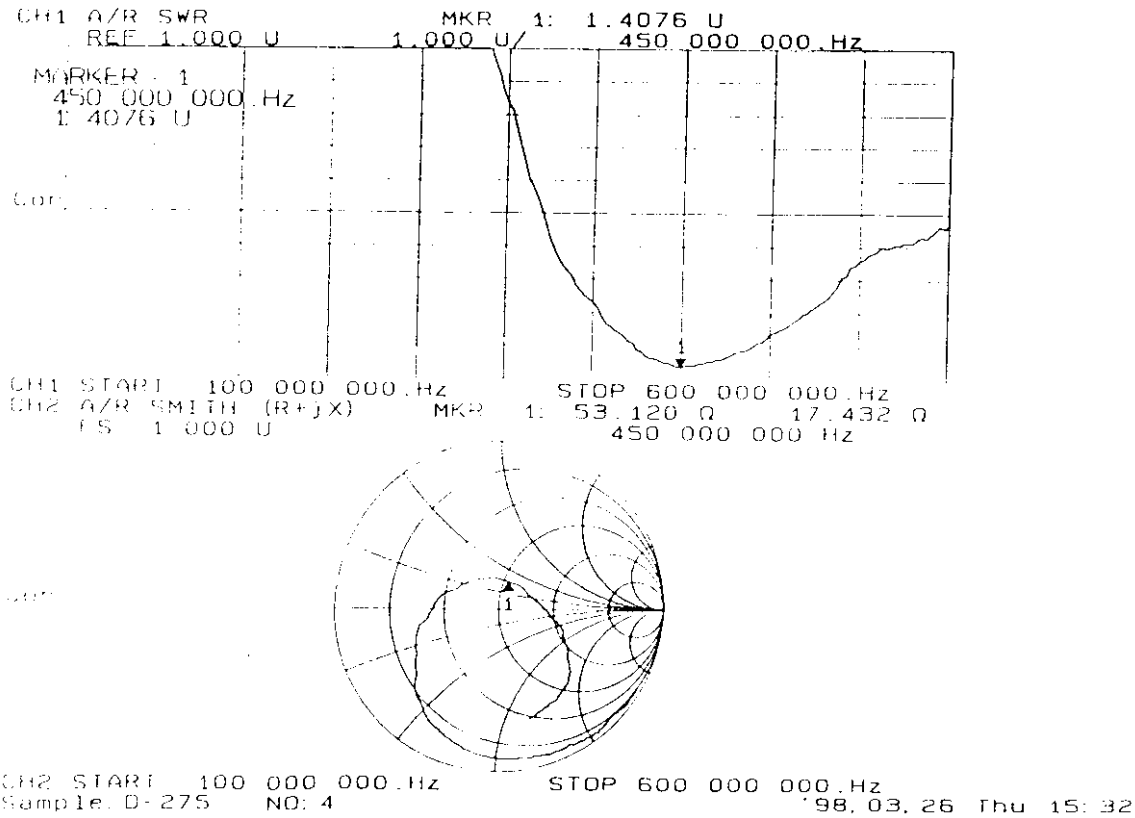
CH2 START 100 000 000.Hz STOP 600 000 000.Hz
Sample: D-275 NO: 1
'98.03.26 Thu 15:15

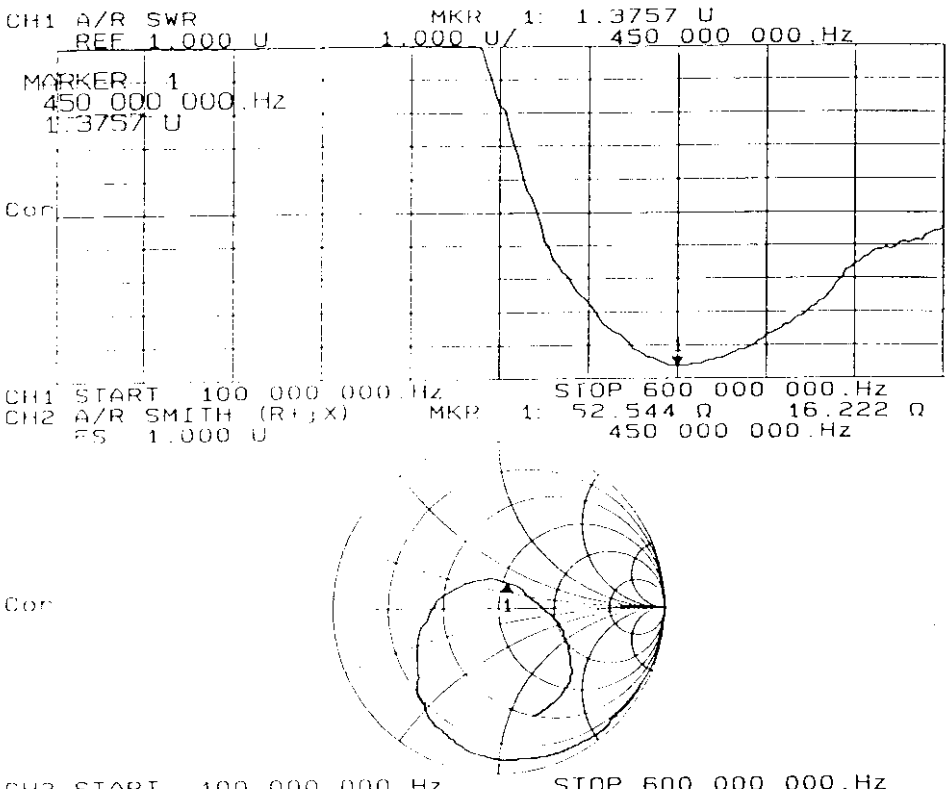




CH2 START 100 000 000.Hz STOP 600 000 000.Hz
Sample: D-275 NO: 2
'98.03.26 Thu 15:20


CH1 A/R SWR
MKR 1: 1.4359 U
REF 1.000 U
1.000 U/
450 000 000.Hz
MARKER 1
450 000 000.Hz
1.4359 U
Cor
CH1 START 100 000 000.Hz
STOP 600 000 000.Hz
CH2 A/R SMITH (R+jX)
MKR 1: 54.901 Ω 18.419 Ω
FS 1.000 U
450 000 000.Hz
Cor
CH2 START 100 000 000.Hz
STOP 600 000 000.Hz
Sample. D-275 NO: 3
'98. 03. 26 Thu 15: 28


CH1 A/R SWR
MKR 1: 1.4076 U
REF 1.000 U
1.000 U/
450 000 000.Hz
MARKER 1
450 000 000.Hz
1.4076 U
Cor
CH1 START 100 000 000.Hz
STOP 600 000 000.Hz
CH2 A/R SMITH (R+jX)
MKR 1: 53.120 Ω 17.432 Ω
FS 1.000 U
450 000 000 Hz
CH2 START 100 000 000.Hz
STOP 600 000 000.Hz
Sample. D-275 NO: 4
'98. 03. 26 Thu 15: 32


CH1 A/R SWR
MKR 1: 1.3757 U
REF 1.000 U
1.000 U/
450 000 000.Hz
MARKER 1
450 000 000.Hz
1.3757 U
Cor
CH1 START 100 000 000.Hz
STOP 600 000 000.Hz
CH2 A/R SMITH (R+jX)
MKR 1: 52.544 Ω 16.222 Ω
450 000 000.Hz
FS 1.000 U
Cor
CH2 START 100 000 000.Hz
STOP 600 000 000.Hz
Sample: D-275 NO. 5
'98. 03. 26 Thu 15: 37

Appendix C

The antenna of the device is screwed inside the device, the user can not remove it freely without any tools from outside the device. This is comply with the FCC rules part 15.203

4.3 Test Result of Fundamental Emissions

The peak values of fundamental emissions from the EUT at various antenna heights, antenna polarization, EUT oricntation, etc. are recorded on the following.

Model No. : MH9060XX

EUT : 900MHz S.S.T. Cordless Phone

Table 6 Open Field Fundamental Emissions

Channel	Frequency (MHz)	A.P. (H/V)	A.H. (M)	Table (degree)	Amplitude (dBuV/m)	CF (dB)	Corrected Amplitude (dBuV/m)	E.R.P.(Peak)	
								mW	dBm
Base 01	904.388	H	1.00	126.00	114.61	-14.19	100.42	2.02	3.04
		V	1.00	40.00	121.14	-14.19	106.95	9.06	9.57
Base 10	914.525	H	1.00	16.00	113.36	-14.50	98.86	1.40	1.48
		V	1.00	68.00	120.77	-14.50	106.27	7.75	8.89
Base 20	926.075	H	1.00	296.00	111.62	-14.83	96.79	0.87	-0.59
		V	1.00	34.00	121.18	-14.83	106.35	7.89	8.97
Handset 01	904.263	H	1.00	340.00	115.54	-14.19	101.35	2.50	3.97
		V	1.00	352.00	123.27	-14.19	109.08	14.80	11.70
Handset 10	914.588	H	1.00	200.00	118.05	-14.50	103.55	4.14	6.17
		V	1.00	210.00	122.92	-14.50	108.42	12.71	11.04
Handset 20	926.075	H	1.00	188.00	116.84	-14.83	102.01	2.91	4.63
		V	1.00	297.00	122.53	-14.83	107.70	10.77	10.32

Note:

1. A.P. means antenna polarization, horizontal and vertical.
2. A.H. means antenna height.
3. Table means turntable turning position.
4. Corrected Factor (C.F.) = Cable Loss + Antenna Factor – Amplified Gain
   Corrected Amplitude = Peak Amplitude + Corrected Factor
5. Amplitude means the fundamental emission measured.
6. Effective Radiation Power (E.R.P.) = $(E\ d)^2 / 30G$

E is the measured maximum field strength in V/m utilizing the maximum hold mode RBW (3MHz).

G is the numeric gain of the transmitting antenna over an isotropic radiator (1.64).

d is the distance in meters from which the field strength was measured (3M).

Example: the Max Radiation Emission of base ch01 = 100.42 dBuV/m

$10^{(100.42/20)} \times 10^{-6} = 0.10495$ V

E.R.P. = $(0.10495 \times 3)^2 / 49.2 = 2.02$ mW = 10 x log (2.02 mW/1mW)

= 3.04 dBm

6.4 Test Result of Power spectral density.

The following table shows a summary of the highest power out of UT.

Model No. : MH9060XX
EUT : 900MHz S.S.T. Cordless Phone

Table 33. Power Spectral Density

Channel	Frequency (MHz)	Ppr (dBuV)	CF (dB)	Ppq (dBm)	Limit (dB)	Margin (dB)
B/S CH 01	903.6835	107.14	-14.17	-4.41	8.00	-12.41
B/S CH 10	913.9840	105.12	-14.48	-6.74	8.00	-14.74
B/S CH 20	925.3840	106.54	-14.81	-5.65	8.00	-13.65
H/S CH 01	903.7840	109.34	-14.17	-2.21	8.00	-10.21
H/S CH 10	914.8835	110.13	-14.51	-1.76	8.00	-9.76
H/S CH 20	925.3848	110.14	-14.81	-2.05	8.00	-10.05

Note:

1. The attachment follow by this page and there is no page number.
2. Ppr: spectrum read power density (using peak search mode), CF: correct factor Ppq: actual peak power density in the spread spectrum band.
3. Ppq = Ppr + CF
4. Corrected Factor (C.F.) = Cable Loss + Antenna Factor – Amplified Gain
5. Effective Radiation Power (E.R.P.) = $(E\ d)^2 / 30G$

   E is the measured maximum field strength in V/m utilizing the maximum hold mode RBW (3KHz).

   G is the numeric gain of the transmitting antenna over an isotropic radiator (1.64).

   d is the distance in meters from which the field strength was measured (3M).

   Example: the Max Radiation Emission of base ch01 = 107.14-14.17=92.97 dBuV/m

   $10^{(92.97/20)} \times 10^{-6} = 0.04451V$

   E.R.P. = $(0.0.4451 \times 3)^2 / 49.2 = 0.362$ mW = 10 x log (0.362 mW/1mW)

   = -4.41 dBm