FCC Part 15
EMI TEST REPORT

of

E.U.T. : RCA 25450 4-Line Wireless Telephone System

Model : 25450XXX-A

FCC ID. : G9H2-5450A

for

APPLICANT : ATLINKS USA, Inc.

ADDRESS : 101 West 103rd Street Indianapolis, IN 46290-1102 USA

Test Performed by

ELECTRONICS TESTING CENTER, TAIWAN
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Report Number : ET94R-10-018-03

TEST REPORT CERTIFICATION

Applicant : ATLINKS USA, Inc.

101 West 103rd Street Indianapolis, IN 46290-1102 USA

Manufacturer : SENAO INTERNATIONAL CO., LTD.

500 FUSING 3RD RD. GUEISHAN TOWNSHIP TAOYUAN HSIEN 333 TAIWAN

Description of EUT

a) Type of EUT : RCA 25450 4-Line Wireless Telephone System

b) Trade Name : RCA

c) Model No. : 25450XXX-A

d) Power Supply : Adaptor(Base):I/P: 120Vac 60Hz 30W
O/P: 7.5Vdc 1000mA
Adaptor(Handset): I/P 100-240Vac 1.0A 50-60Hz
O/P 5.5Vdc 1.5A

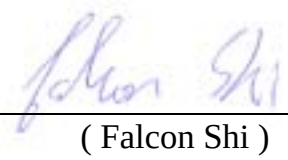
e) Frequency Range : 902.586-927.668MHz

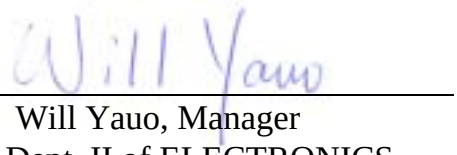
Regulation Applied : FCC Rules and Regulations Part 15 Subpart C (2005)

I HEREBY CERTIFY THAT: The data shown in this report were made in accordance with the procedures given in ANSI C63.4, and the energy emitted by the device was founded to be within the limits applicable. I assume full responsibility for accuracy and completeness of these data.

Note: 1. The result of the testing report relate only to the item tested.
2. The testing report shall not be reproduced expect in full, without the written approval of ETC.

Issued Date : Nov. 16, 2005

Test Engineer : 
(Falcon Shi)

Approve & Authorized Signer : 
Will Yauo, Manager
EMC Dept. II of ELECTRONICS
TESTING CENTER, TAIWAN

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1 GENERAL INFORMATION

1.1 Product Description

a) Type of EUT : RCA 25450 4-Line Wireless Telephone System
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O/P 5.5Vdc 1.5A
e) Frequency Range : 902.586-927.668MHz

1.2 Characteristics of Device

The RCA 25450 4-line Telephone System is ideal for users in various residential and business settings. With sophisticated digital signal processing and high quality hardware designs, the RCA 25450 provides long-range telephone connections and 2-way
handset-to-handset communications in a wide variety of environment from around-the-house, multi-level office buildings, factories, hotels/resorts, warehouses, retail stores, convention facilities, farms, business complexes, construction sites, schools, car dealerships, grocery stores, and many others.

Physical Channel Number	**Centre Frequency (MHz)**	**Physical Channel Number**	**Centre Frequency (MHz)**	**Physical Channel Number**	**Centre Frequency (MHz)**
1	902.586231	19	911.081638	37	920.790675
2	902.990774	20	911.890724	38	921.599761
3	903.395317	21	912.295268	39	922.004305
4	903.799860	22	912.699811	40	922.408848
5	904.608947	23	913.104354	41	922.813391
6	905.013490	24	914.317984	42	923.217934
7	905.418033	25	914.722527	43	924.027021
8	905.822576	26	915.531613	44	924.431564
9	906.227119	27	915.936156	45	925.240650
10	907.036206	28	916.745243	46	925.645193
11	907.440749	29	917.149786	47	926.454280
12	907.845292	30	917.554329	48	926.858823
13	908.249835	31	917.958872	49	927.263366
14	908.654379	32	918.363416	50	927.667910
15	909.463465	33	919.172502		
16	909.868008	34	919.577045		
17	910.272551	35	919.981589		
18	910.677095	36	920.386132		

1.3 Test Methodology

For RCA 25450 4-Line Wireless Telephone System, both conducted and radiated emissions were performed according to the procedures illustrated in ANSI C63.4 (2003). Other required measurements were illustrated in separate sections of this test report for details.

1.4 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located on the roof top of Building at No.34, Lin 5, Ding Fu Tsun, Linkou Hsiang, Taipei Hsien, Taiwan, R.O.C.

This site has been fully described in a report submitted to your office, and accepted in a letter dated Oct. 20, 2005.

2 PROVISIONS APPLICABLE

2.1 Definition

Unintentional radiator:

A device that intentionally generates and radio frequency energy for use within the device, or that sends radio frequency signals by conduction to associated equipment via connecting wiring, but which is not intended to emit RF energy by radiation or induction.

Class A Digital Device:

A digital device which is marketed for use in commercial or business environment; exclusive of a device which is market for use by the general public, or which is intended to be used in the home.

Class B Digital Device :

A digital device which is marketed for use in a residential environment notwithstanding use in a commercial, business of industrial environment. Example of such devices that are marketed for the general public.

Note : A manufacturer may also qualify a device intended to be marketed in a commercial, business, or industrial environment as a Class B digital device, and in fact is encouraged to do so, provided the device complies with the technical specifications for a Class B Digital Device. In the event that a particular type of device has been found to repeatedly cause harmful interference to radio communications, the Commission may classify such a digital device as a Class B Digital Device, Regardless of its intended use.

Intentional radiator:

A device that intentionally generates and emits radio frequency energy by radiation or induction.

2.2 Requirement for Compliance

(1) Conducted Emission Requirement

Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency MHz	Quasi Peak dBμV	Average dBμV
0.15 - 0.5	66-56*	56-46*
0.5 - 5.0	56	46
5.0 - 30.0	60	50

* Decreases with the logarithm of the frequency

For intentional device, according to §15.207(a) Line Conducted Emission Limits is same as above table.

(2) Radiated Emission Requirement

For unintentional device, according to §15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency MHz	Distance Meters	Radiated dBμV/m	Radiated μV/m
30 - 88	3	40.0	100
88 - 216	3	43.5	150
216 - 960	3	46.0	200
Above 960	3	54.0	500

For intentional device, according to §15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table.

(3) Antenna Requirement

For intentional device, according to §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

(4) Hopping Channel Separation

According to 15.247(a)(1), frequency hopping system shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

(5) Number of Hopping frequencies used

According to 15.247(a)(1)(i), for frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period.

(6) Hopping Channel Bandwidth

According to 15.247(a)(1)(i), for frequency hopping systems operating in the 902-928 MHz band, the maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

(7) Dwell Time of each frequency

According to 15.247(a)(1)(i), for frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period.

(8) Output Power Requirement

According to 15.247(b)(2), for frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.

(9) 100 kHz Bandwidth of Frequency Band Edges Requirement

According to 15.247(d), in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

(10) Out-of-Band Conducted Emission Requirement

According to 15.247(d), in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

(11) Peak Power Spectral Density Requirement

According to 15.247(e), for digitally modulated systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

2.3 Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below :

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42-16.423	399.9-410	4.5-5.15
0.495 - 0.505 **	16.69475 - 16.69525	608-614	5.35-5.46
2.1735 - 2.1905	16.80425 - 16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475 - 156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2655-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3360-4400	Above 38.6
13.36-13.41			

** : Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

2.4 Labeling Requirement

The device shall bear the following statement in a conspicuous location on the device :

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

2.5 User Information

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual.

The Federal Communications Commission Radio Frequency Interference Statement includes the following paragraph.

This equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-- Reorient or relocate the receiving antenna.

-- Increase the separation between the equipment and receiver.

-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-- Consult the dealer or an experienced radio / TV technician for help.

3 SYSTEM TEST CONFIGURATION

3.1 Justification

For both radiated and conducted emissions below 1 GHz, the system was configured for testing in a typical fashion as a customer would normally use it. The peripherals other than EUT were connected in normally standing by situation. Measurement was performed under the condition that a computer program was exercised to simulate data communication of EUT, and the transmission rate was set to maximum allowed by EUT. Three highest emissions were verified with varying placement of the transmitting antenna connected to EUT to maximize the emission from EUT.

For conducted emissions, only measured on TX and RX operation, for the digital circuits portion also function normally whenever TX or RX is operated. For radiated emissions, whichever RF channel is operated, the digital circuits' function identically. As the reason, measurement of radiated emissions from digital circuits is only performed with channel 11 by transmitting mode.

3.2 Devices for Tested System

Device	Manufacture	Model / FCC ID.	Description
RCA 25450 4-Line Wireless Telephone System*	SENAO INTERNATIONAL CO., LTD.	25450XXX-A/ G9H2-5450A	

Remark "*" means equipment under test.

4 RADIATED EMISSION MEASUREMENT

4.1 Applicable Standard

According to 15.247(d), in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

4.2 Measurement Procedure

A. Preliminary Measurement For Portable Devices

For portable devices, the following procedure was performed to determine the maximum emission axis of EUT:

1. With the receiving antenna is H polarization, rotate the EUT in turns with three orthogonal axes to determine the axis of maximum emission.
2. With the receiving antenna is V polarization, rotate the EUT in turns with three orthogonal axes to determine the axis of maximum emission.
3. Compare the results derived from above two steps. So, the axis of maximum emission from EUT was determined and the configuration was used to perform the final measurement.

B. Final Measurement

1. Setup the configuration per figure 1 and 2 for frequencies measured below and above 1 GHz respectively. Turn on EUT and make sure that it is in normal function.
2. For emission frequencies measured below 1 GHz, a pre-scan is performed in a shielded chamber to determine the accurate frequencies of higher emissions will be checked on an open test site. As the same purpose, for emission frequencies measured above 1 GHz, a pre-scan also be performed with a 1 meter measuring distance before final test.
3. For emission frequencies measured below and above 1 GHz, set the spectrum analyzer on a 100 kHz and 1 MHz resolution bandwidth respectively for each frequency measured in step 2.
4. The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from 0° to 360° with a speed as slow as possible, and keep the azimuth that highest emission is indicated on the

spectrum analyzer. Vary the antenna position again and record the highest value as a final reading. A RF test receiver is also used to confirm emissions measured.

5. Repeat step 4 until all frequencies need to be measured were complete.
6. Repeat step 5 with search antenna in vertical polarized orientations.
7. Check the three frequencies of highest emission with varying the placement of cables (if any) associated with EUT to obtain the worse case and record the result.

Figure 1 : Frequencies measured below 1 GHz configuration

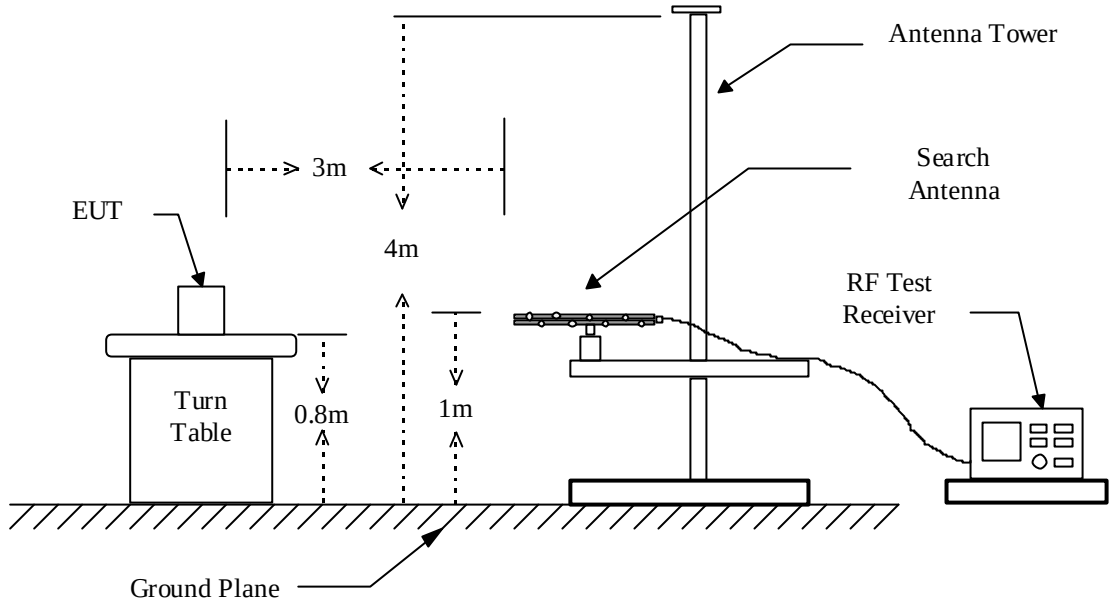
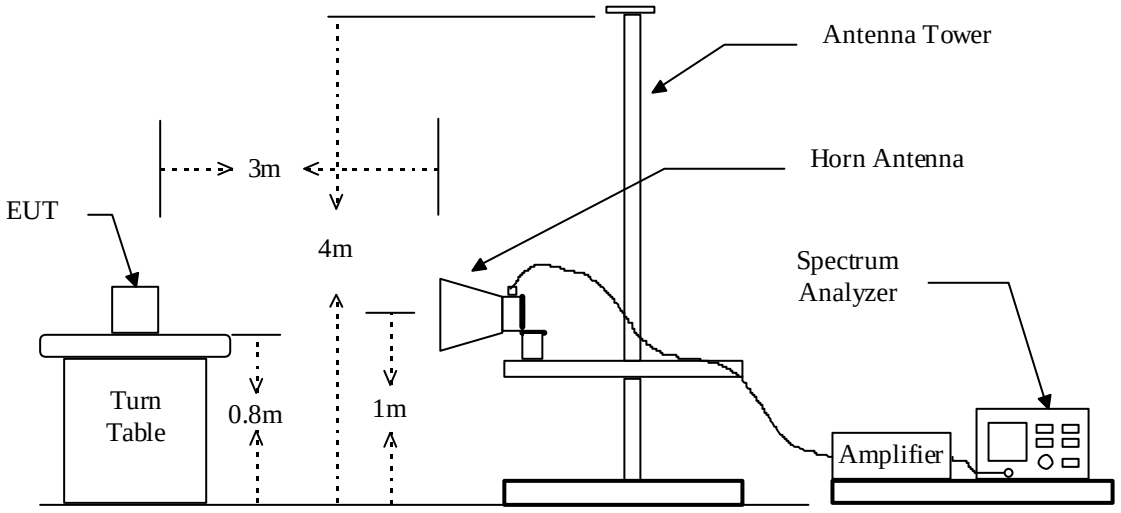


Figure 2 : Frequencies measured above 1 GHz configuration



4.3 Measuring Instrument

The following instrument are used for radiated emissions measurement:

Equipment	Manufacturer	Model No.	Next Cal. Due
Test Receiver	Rohde & Schwarz	ESCS 30	12/06/2005
Amplifier	HP	8447D	10/17/2006
Spectrum	Advantest	R3361C	08/14/2006
Bi-Log Antenna	Schaffner	CBL 6111C	12/22/2005
Log-periodic Antenna	EMCO	3146	10/05/2006
Biconical Antenna	EMCO	3110B	10/05/2006
Double Ridged Antenna	EMCO	3115	08/18/2006
Amplifier	HP	8449B	09/13/2006
Amplifier	HP	83051A	04/18/2006
Spectrum	Rohde & Schwarz	FSP40	07/05/2006

Measuring instrument setup in measured frequency band when specified detector function is used :

Frequency Band (MHz)	Instrument	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	RF Test Receiver	Quasi-Peak	120 kHz	N/A
	Spectrum Analyzer	Peak	100 kHz	100 kHz
Above 1000	Spectrum Analyzer	Peak	1 MHz	1 MHz
	Spectrum Analyzer	Average	1 MHz	10 Hz

4.4 Radiated Emission Data

4.4.1 Tx Portion

Mode : Base Unit

A. CH Low

Operation Mode : Receiving / Transmitting

Fundamental Frequency : 902.562 MHz (Local Frequency : 902.586 MHz)

Test Date : Nov. 02, 2005 Temperature : 23°C Humidity : 51%

Frequency	Reading (dBuV)				Factor	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin	Table	Ant.
	H		V		(dB)	Peak	Ave	Peak	Ave.	(dB)	Deg.	High
(MHz)	Peak	Ave	Peak	Ave	Corr.						(Deg.)	(m)
* 902.586	---	---	---	---	2.1	---	---	66.0	46.0	---	---	---
* 1805.172	---	---	---	---	-5.7	---	---	74.0	54.0	---	---	---
* 2707.758	---	---	---	---	-2.1	---	---	74.0	54.0	---	---	---
* 3610.344	---	---	---	---	0.4	---	---	74.0	54.0	---	---	---
* 4512.930	---	---	---	---	2.0	---	---	74.0	54.0	---	---	---
1805.125	61.9	---	63.7	---	-5.7	58.0	---	97.7	77.7	-39.7	53	1.2
2707.688	49.9	---	48.8	---	-2.1	47.8	---	74.0	54.0	-6.2	83	1.3
3610.251	---	---	---	---	0.4	---	---	74.0	54.0	---	---	---
4512.814	---	---	49.1	---	2.0	51.1	---	74.0	54.0	-2.9	112	1.5
5415.377	---	---	---	---	4.1	---	---	74.0	54.0	---	---	---
6317.940	---	---	---	---	4.5	---	---	74.0	54.0	---	---	---
7220.503	---	---	---	---	5.8	---	---	74.0	54.0	---	---	---
8123.066	---	---	---	---	6.5	---	---	74.0	54.0	---	---	---
9025.629	---	---	---	---	7.0	---	---	74.0	54.0	---	---	---

Note :

1. *Item of margin shown in above table refer to average limit.*
2. *It is considered that the results of average comply with average limit when measuring data with a peak function detector meet the average limit. Mark "***" means that Peak result is meet average limit.*
3. *Remark "---" means that the emissions level is too low to be measured.*
4. *Item "Margin" referred to Average limit while there is only peak result.*
5. *The expanded uncertainty of the radiated emission tests is 3.53 dB.*

B. CH Mid

Operation Mode : Receiving / Transmitting

Fundamental Frequency : 914.785 MHz (Local Frequency : 914.722 MHz)

Test Date : Nov. 02, 2005 Temperature : 23°C Humidity : 51%

Frequency (MHz)	Reading (dBuV) H Peak	H Ave	V Peak	V Ave	Factor (dB) Corr.	Result @3m (dBuV/m) Peak	Result @3m (dBuV/m) Ave	Limit @3m (dBuV/m) Peak	Limit @3m (dBuV/m) Ave.	Margin (dB)	Table Deg. (Deg.)	Ant. High (m)
* 914.722	---	---	---	---	2.3	---	---	66.0	46.0	---	---	---
* 1829.444	---	---	---	---	-5.6	---	---	74.0	54.0	---	---	---
* 2744.166	---	---	---	---	-2.0	---	---	74.0	54.0	---	---	---
* 3658.888	---	---	---	---	0.6	---	---	74.0	54.0	---	---	---
* 4573.610	---	---	---	---	2.1	---	---	74.0	54.0	---	---	---
1829.570	61.0	---	63.4	---	-5.6	57.8	---	98.6	78.6	-40.8	167	1.4
2744.355	50.1	---	49.2	---	-2.0	48.1	---	74.0	54.0	-5.9	83	1.6
3659.140	---	---	---	---	0.6	---	---	74.0	54.0	---	---	---
4573.925	---	---	48.5	---	2.1	50.6	---	74.0	54.0	-3.4	114	1.6
5488.710	---	---	---	---	4.4	---	---	74.0	54.0	---	---	---
6403.495	---	---	---	---	4.5	---	---	74.0	54.0	---	---	---
7318.280	---	---	---	---	5.9	---	---	74.0	54.0	---	---	---
8233.065	---	---	---	---	6.6	---	---	74.0	54.0	---	---	---
9147.850	---	---	---	---	7.1	---	---	74.0	54.0	---	---	---

Note :

1. *Item of margin shown in above table refer to average limit.*
2. *It is considered that the results of average comply with average limit when measuring data with a peak function detector meet the average limit. Mark "***" means that Peak result is meet average limit.*
3. *Remark "---" means that the emissions level is too low to be measured.*
4. *Item "Margin" referred to Average limit while there is only peak result.*
5. *The expanded uncertainty of the radiated emission tests is 3.53 dB.*

C. CH High

Operation Mode : Receiving / Transmitting

Fundamental Frequency : 927.730 MHz (Local Frequency : 927.667 MHz)

Test Date : Nov. 02, 2005 Temperature : 25°C Humidity : 60%

Frequency (MHz)	Reading (dBuV) H Peak	H Ave	V Peak	V Ave	Factor (dB) Corr.	Result @3m (dBuV/m) Peak	Result @3m (dBuV/m) Ave	Limit @3m (dBuV/m) Peak	Limit @3m (dBuV/m) Ave.	Margin (dB)	Table Deg. (Deg.)	Ant. High (m)
* 927.667	---	---	---	---	2.6	---	---	66.0	46.0	---	---	---
* 1855.334	---	---	---	---	-5.4	---	---	74.0	54.0	---	---	---
* 2783.001	---	---	---	---	-1.9	---	---	74.0	54.0	---	---	---
* 3710.668	---	---	---	---	0.8	---	---	74.0	54.0	---	---	---
* 4638.335	---	---	---	---	2.2	---	---	74.0	54.0	---	---	---
1855.460	60.6	---	62.3	---	-5.4	56.9	---	98.6	78.6	-41.7	128	1.4
2783.190	49.2	---	48.7	---	-1.9	47.3	---	74.0	54.0	-6.7	59	1.1
3710.920	---	---	---	---	0.8	---	---	74.0	54.0	---	---	---
4638.650	---	---	48.6	---	2.2	50.8	---	74.0	54.0	-3.2	159	1.4
5566.380	---	---	---	---	4.4	---	---	74.0	54.0	---	---	---
6494.110	---	---	---	---	4.5	---	---	74.0	54.0	---	---	---
7421.840	---	---	---	---	6.1	---	---	74.0	54.0	---	---	---
8349.570	---	---	---	---	6.7	---	---	74.0	54.0	---	---	---
9277.300	---	---	---	---	7.1	---	---	74.0	54.0	---	---	---

Note :

1. *Item of margin shown in above table refer to average limit.*
2. *It is considered that the results of average comply with average limit when measuring data with a peak function detector meet the average limit. Mark "***" means that Peak result is meet average limit.*
3. *Remark "---" means that the emissions level is too low to be measured.*
4. *Item "Margin" referred to Average limit while there is only peak result.*
5. *The expanded uncertainty of the radiated emission tests is 3.53 dB.*

Mode : Handset Unit

A. CH Low

Operation Mode : Receiving / Transmitting

Fundamental Frequency : 902.333 MHz (Local Frequency : 902.586 MHz)

Test Date : Nov. 02, 2005 Temperature : 23°C Humidity : 51%

Frequency (MHz)	Reading (dBuV) H Peak	H Ave	V Peak	V Ave	Factor (dB) Corr.	Result @3m (dBuV/m) Peak	Result @3m (dBuV/m) Ave	Limit @3m (dBuV/m) Peak	Limit @3m (dBuV/m) Ave.	Margin (dB)	Table Deg. (Deg.)	Ant. High (m)
* 902.586	---	---	---	---	2.1	---	---	66.0	46.0	---	---	---
* 1805.172	---	---	---	---	-5.7	---	---	74.0	54.0	---	---	---
* 2707.758	---	---	---	---	-2.1	---	---	74.0	54.0	---	---	---
* 3610.344	---	---	---	---	0.4	---	---	74.0	54.0	---	---	---
* 4512.930	---	---	---	---	2.0	---	---	74.0	54.0	---	---	---
1804.667	50.2	---	55.5	---	-5.7	49.8	---	97.4	77.4	-47.6	67	1.8
2707.001	56.1	54.3	50.8	---	-2.1	54.0	52.2	74.0	54.0	-1.8	102	1.3
3609.335	46.6	---	49.0	---	0.4	49.4	---	74.0	54.0	-4.6	89	1.6
4511.669	44.6	---	---	---	2.0	46.6	---	74.0	54.0	-7.4	159	1.5
5414.003	---	---	---	---	4.1	---	---	74.0	54.0	---	---	---
6316.337	---	---	---	---	4.5	---	---	74.0	54.0	---	---	---
7218.671	---	---	---	---	5.7	---	---	74.0	54.0	---	---	---
8121.005	---	---	---	---	6.5	---	---	74.0	54.0	---	---	---
9023.339	---	---	---	---	7.0	---	---	74.0	54.0	---	---	---

Note :

1. *Item of margin shown in above table refer to average limit.*
2. *It is considered that the results of average comply with average limit when measuring data with a peak function detector meet the average limit. Mark "***" means that Peak result is meet average limit.*
3. *Remark "---" means that the emissions level is too low to be measured.*
4. *Item "Margin" referred to Average limit while there is only peak result.*
5. *The expanded uncertainty of the radiated emission tests is 3.53 dB.*

B. CH Mid

Operation Mode : Receiving / Transmitting

Fundamental Frequency : 914.460 MHz (Local Frequency : 914.722 MHz)

Test Date : Nov. 02, 2005 Temperature : 23°C Humidity : 51%

Frequency (MHz)	Reading (dBuV) H Peak	H Ave	V Peak	V Ave	Factor (dB) Corr.	Result @3m (dBuV/m) Peak	Result @3m (dBuV/m) Ave	Limit @3m (dBuV/m) Peak	Limit @3m (dBuV/m) Ave.	Margin (dB)	Table Deg. (Deg.)	Ant. High (m)
* 914.722	---	---	---	---	2.3	---	---	66.0	46.0	---	---	---
* 1829.444	---	---	---	---	-5.6	---	---	74.0	54.0	---	---	---
* 2744.166	---	---	---	---	-2.0	---	---	74.0	54.0	---	---	---
* 3658.888	---	---	---	---	0.6	---	---	74.0	54.0	---	---	---
* 4573.610	---	---	---	---	2.1	---	---	74.0	54.0	---	---	---
1828.920	51.8	---	54.4	---	-5.6	48.8	---	97.4	77.4	-48.6	110	1.7
2743.380	55.1	---	50.3	---	-2.0	53.1	---	74.0	54.0	-0.9	83	1.5
3657.840	46.2	---	48.6	---	0.6	49.2	---	74.0	54.0	-4.8	59	1.1
4572.300	44.4	---	---	---	2.1	46.5	---	74.0	54.0	-7.5	128	1.6
5486.760	---	---	---	---	4.4	---	---	74.0	54.0	---	---	---
6401.220	---	---	---	---	4.5	---	---	74.0	54.0	---	---	---
7315.680	---	---	---	---	5.9	---	---	74.0	54.0	---	---	---
8230.140	---	---	---	---	6.6	---	---	74.0	54.0	---	---	---
9144.600	---	---	---	---	7.1	---	---	74.0	54.0	---	---	---

Note :

1. *Item of margin shown in above table refer to average limit.*
2. *It is considered that the results of average comply with average limit when measuring data with a peak function detector meet the average limit. Mark "***" means that Peak result is meet average limit.*
3. *Remark "---" means that the emissions level is too low to be measured.*
4. *Item "Margin" referred to Average limit while there is only peak result.*
5. *The expanded uncertainty of the radiated emission tests is 3.53 dB.*

C. CH High

Operation Mode : Receiving / Transmitting

Fundamental Frequency : 927.445 MHz (Local Frequency : 927.667 MHz)

Test Date : Nov. 02, 2005 Temperature : 23°C Humidity : 51%

Frequency (MHz)	Reading (dBuV) H Peak	H Ave	V Peak	V Ave	Factor (dB) Corr.	Result @3m (dBuV/m) Peak	Result @3m (dBuV/m) Ave	Limit @3m (dBuV/m) Peak	Limit @3m (dBuV/m) Ave.	Margin (dB)	Table Deg. (Deg.)	Ant. High (m)
* 927.667	---	---	---	---	2.6	---	---	66.0	46.0	---	---	---
* 1855.334	---	---	---	---	-5.4	---	---	74.0	54.0	---	---	---
* 2783.001	---	---	---	---	-1.9	---	---	74.0	54.0	---	---	---
* 3710.668	---	---	---	---	0.8	---	---	74.0	54.0	---	---	---
* 4638.335	---	---	---	---	2.2	---	---	74.0	54.0	---	---	---
1854.890	52.7	---	54.2	---	-5.4	48.8	---	96.9	76.9	-48.1	38	1.7
2782.335	54.8	---	50.1	---	-1.9	52.9	---	74.0	54.0	-1.1	72	1.2
3709.780	45.5	---	46.6	---	0.8	47.4	---	74.0	54.0	-6.6	106	1.4
4637.225	---	---	---	---	2.2	---	---	74.0	54.0	---	---	---
5564.670	---	---	---	---	4.4	---	---	74.0	54.0	---	---	---
6492.115	---	---	---	---	4.5	---	---	74.0	54.0	---	---	---
7419.560	---	---	---	---	6.1	---	---	74.0	54.0	---	---	---
8347.005	---	---	---	---	6.7	---	---	74.0	54.0	---	---	---
9274.450	---	---	---	---	7.1	---	---	74.0	54.0	---	---	---

Note :

1. *Item of margin shown in above table refer to average limit.*
2. *It is considered that the results of average comply with average limit when measuring data with a peak function detector meet the average limit. Mark "***" means that Peak result is meet average limit.*
3. *Remark "---" means that the emissions level is too low to be measured.*
4. *Item "Margin" referred to Average limit while there is only peak result.*
5. *The expanded uncertainty of the radiated emission tests is 3.53 dB.*

4.4.2 Other Emissions

A. Mode : Base Unit On Line

a) Emission frequencies below 1 GHz

Operation Mode : Receiving / Transmitting

Test Date : Nov. 02, 2005 Temperature : 23°C Humidity : 51 %

Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result @3m (dBuV/m)	Limit @3m (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (m)
33.510	V	47.7	-10.5	37.2	40.0	-2.8	156	1.8
99.120	V	49.5	-13.9	35.6	43.5	-7.9	107	1.2
135.570	V	47.2	-11.1	36.1	43.5	-7.4	183	1.2
196.600	H	47.6	-7.5	40.1	43.5	-3.4	139	1.8
690.588	V	45.8	-1.0	44.8	46.0	-1.2	107	1.6
884.730	H	41.9	2.3	44.2	46.0	-1.8	102	1.4

Note :

1. Remark "---" means that the emissions level is too low to be measured.

2. The expanded uncertainty of the radiated emission tests is 3.53 dB.

b) Emission frequencies above 1 GHz

Radiated emission frequencies above 1 GHz to 25 GHz were too low to be measured with a pre-amplifier of 35 dB.

B. Mode : Base Unit Standby

a) Emission frequencies below 1 GHz

Operation Mode : Receiving / Transmitting

Test Date : Nov. 02, 2005 Temperature : 23°C Humidity : 51 %

Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result @3m (dBuV/m)	Limit @3m (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (m)
282.990	H	46.3	-2.5	43.8	46.0	-2.2	174	1.1
311.200	H	51.7	-6.9	44.8	46.0	-1.2	112	1.3
494.640	V	44.4	-4.4	40.0	46.0	-6.0	83	1.3
592.680	V	44.3	-4.7	39.6	46.0	-6.4	173	1.6
690.588	V	46.0	-1.0	45.0	46.0	-1.0	36	1.3
884.730	H	42.1	2.3	44.4	46.0	-1.6	108	1.4

Note :

1. Remark "---" means that the emissions level is too low to be measured.

2. The expanded uncertainty of the radiated emission tests is 3.53 dB.

b) Emission frequencies above 1 GHz

Radiated emission frequencies above 1 GHz to 25 GHz were too low to be measured with a pre-amplifier of 35 dB.

C. Mode : Handset Unit On Line

a) Emission frequencies below 1 GHz

Operation Mode : Receiving / Transmitting

Test Date : Nov. 02, 2005 Temperature : 23°C Humidity : 51 %

Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result @3m (dBuV/m)	Limit @3m (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (m)
181.200	H	47.2	-9.0	38.2	43.5	-5.3	183	1.2
196.860	V	41.7	-7.5	34.2	43.5	-9.3	87	1.8
213.600	H	45.1	-6.2	38.9	43.5	-4.6	196	1.9
229.800	H	47.4	-5.1	42.3	46.0	-3.7	106	1.2
246.020	H	43.9	-4.1	39.8	46.0	-6.2	116	1.8
312.640	H	43.2	-6.8	36.4	46.0	-9.6	103	1.7

Note :

1. Remark "---" means that the emissions level is too low to be measured.

2. The expanded uncertainty of the radiated emission tests is 3.53 dB.

b) Emission frequencies above 1 GHz

Radiated emission frequencies above 1 GHz to 25 GHz were too low to be measured with a pre-amplifier of 35 dB.

D. Mode : Handset Unit Charging

a) Emission frequencies below 1 GHz

Operation Mode : Receiving / Transmitting

Test Date : Nov. 02, 2005 Temperature : 23°C Humidity : 51 %

Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result @3m (dBuV/m)	Limit @3m (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (m)
147.990	H	43.4	-10.2	33.2	43.5	-10.3	158	1.9
180.660	H	46.1	-9.1	37.0	43.5	-6.5	36	1.8
213.600	H	44.6	-6.2	38.4	43.5	-5.1	187	1.7
230.070	H	47.7	-5.1	42.6	46.0	-3.4	79	1.6
246.020	H	43.3	-4.1	39.2	46.0	-6.8	29	1.8
396.620	V	41.1	-6.3	34.8	46.0	-11.2	149	1.4

Note :

1. Remark "---" means that the emissions level is too low to be measured.

2. The expanded uncertainty of the radiated emission tests is 3.53 dB.

b) Emission frequencies above 1 GHz

Radiated emission frequencies above 1 GHz to 25 GHz were too low to be measured with a pre-amplifier of 35 dB.

4.5 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor, High Pass Filter Loss (if used) and Cable Loss, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

where Corrected Factor

= Antenna FACTOR + Cable Loss + High Pass Filter Loss - Amplifier Gain

4.6 Photos of Radiation Measuring Setup

Mode : Base Unit On Line

B. Mode : Base Unit Standby

Mode : Handset Unit On Line

Mode : Handset Unit Charging

5 CONDUCTED EMISSION MEASUREMENT

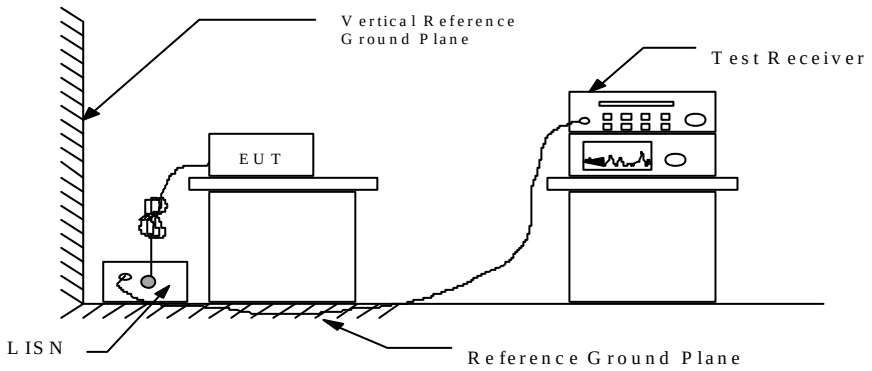
5.1 Standard Applicable

For unintentional and intentional device, Line Conducted Emission Limits are in accordance to 15.107(a) and 15.207(a) respectively.

5.2 Measurement Procedure

1. Setup the configuration per figure 3.
2. A preliminary scan with a spectrum monitor is performed to identify the frequency of emission that has the highest amplitude relative to the limit by operating the EUT in selected modes of operation, typical cable positions, and with a typical system configuration.
3. Record the 6 or 8 highest emissions relative to the limit.
4. Measure each frequency obtained from step 3 by a test receiver set on quasi peak detector function, and then record the accuracy frequency and emission level. If all emissions measured in the specified band are attenuated more than 20 dB from the limit, this step would be ignored, and the peak detector function would be used.
5. Confirm the highest three emissions with variation of the EUT cable configuration and record the final data.
6. Repeat all above procedures on measuring each operation mode of EUT.

Figure 3 : Conducted emissions measurement configuration



5.3 Conducted Emission Data

Mode : Base Unit On Link

Operation Mode : Link

Test Date : Nov. 02, 2005 Temperature : 23 °C Humidity : 51 %

Frequency (MHz)	**Meter Reading** (dBuV)				**Factor** (dB)	**Result** (dBuV)				**Limit** (dBuV)		**Margins** (dBuV)	
	Q.P. Value		AVG. Value			Q.P. Value		AVG. Value		Q.P. Value	AVG. Value	Q.P.	AVG.
	N	L1	N	L1		N	L1	N	L1				
0.153	47.7	47.6	----	----	0.2	47.9	47.8	----	----	65.8	55.8	-17.9	----
0.169	45.6	45.5	----	----	0.2	45.8	45.7	----	----	65.0	55.0	-19.2	----
0.181	44.0	43.9	----	----	0.2	44.2	44.1	----	----	64.4	54.4	-20.2	----
0.208	38.7	38.5	----	----	0.2	38.9	38.7	----	----	63.3	53.3	-24.4	----
0.235	31.9	31.8	----	----	0.2	32.1	32.0	----	----	62.3	52.3	-30.2	----
16.382	31.6	31.8	----	----	1.2	32.8	33.0	----	----	60.0	50.0	-27.0	----

Note : 1. Please see appendix 1 for Plotted Data

2. The expanded uncertainty of the conducted emission tests is 2.45 dB.

Mode : Base Unit Standby

Operation Mode : Standby

Test Date : Nov. 02, 2005 Temperature : 23 ℃ Humidity : 51 %

Frequency (MHz)	**Meter Reading** (dBuV)				**Factor** (dB)	**Result** (dBuV)				**Limit** (dBuV)		**Margins** (dBuV)	
	Q.P. Value		AVG. Value			Q.P. Value		AVG. Value		Q.P. Value	AVG. Value	Q.P.	AVG.
	N	L1	N	L1		N	L1	N	L1				
0.150	47.4	46.9	----	----	0.2	47.6	47.1	----	----	66.0	56.0	-18.4	----
0.165	45.6	45.9	----	----	0.2	45.8	46.1	----	----	65.2	55.2	-19.1	----
0.185	42.9	43.5	----	----	0.2	43.1	43.7	----	----	64.3	54.3	-20.6	----
0.192	41.4	40.7	----	----	0.2	41.6	40.9	----	----	63.9	53.9	-22.3	----
0.216	35.0	35.9	----	----	0.2	35.2	36.1	----	----	63.0	53.0	-26.9	----
16.382	29.9	30.9	----	----	1.2	31.1	32.1	----	----	60.0	50.0	-27.9	----

Note : 1. Please see appendix 1 for Plotted Data

2. The expanded uncertainty of the conducted emission tests is 2.45 dB.

Mode : Handset Unit Charging

Operation Mode : Charging

Test Date : Nov. 02, 2005 Temperature : 23 °C Humidity : 51 %

Frequency (MHz)	**Meter Reading** (dBuV)				**Factor** (dB)	**Result** (dBuV)				**Limit** (dBuV)		**Margins** (dBuV)	
	Q.P. Value		AVG. Value			Q.P. Value		AVG. Value		Q.P. Value	AVG. Value	Q.P.	AVG.
	N	L1	N	L1		N	L1	N	L1				
0.196	37.6	41.5	----	----	0.2	37.8	41.7	----	----	63.8	53.8	-22.1	----
0.341	36.9	41.0	----	----	0.3	37.2	41.3	----	----	59.2	49.2	-17.9	----
0.605	40.2	41.9	----	----	0.3	40.5	42.2	----	----	56.0	46.0	-13.8	----
0.753	38.4	41.5	----	----	0.3	38.7	41.8	----	----	56.0	46.0	-14.2	----
0.867	38.7	41.2	----	----	0.3	39.0	41.5	----	----	56.0	46.0	-14.5	----
1.027	43.6	41.1	----	----	0.3	43.9	41.4	----	----	56.0	46.0	-12.1	----

Note : 1. Please see appendix 1 for Plotted Data

2. The expanded uncertainty of the conducted emission tests is 2.45 dB.

5.4 Result Data Calculation

The result data is calculated by adding the LISN Factor to the measured reading. The basic equation with a sample calculation is as follows:

RESULT = READING + LISN FACTOR

Assume a receiver reading of 22.5 dBμV is obtained, and LISN Factor is 0.1 dB, then the total of disturbance voltage is 22.6 dBμV.

RESULT = 22.5 + 0.1 = 22.6 dBμV

Level in μV = Common Antilogarithm[(22.6 dBμV)/20]

= 13.48 μV

5.5 Conducted Measurement Equipment

The following test equipment are used during the conducted test.

Equipment	Manufacturer	Model No.	Serial No.	Nest Cal. Date
EMI Test Receiver	Rohde and Schwarz	ESCI	N/A	10/27/2006
Line Impedance Stabilization network	Rohde and Schwarz	ESH2-Z5	881362/009	09/11/2006
Line Impedance Stabilization network	Kyoritsu	KNW-407	8-823-6	12/25/2005
Shielded Room	Riken	----	----	N/A
Monitor	IBM	E54	----	N/A
Printer	HP	LASERJET 1000	----	N/A
Computer	ACER	Veriton 7500G	----	N/A

5.6 Photos of Conduction Measuring Setup

Mode : Base Unit On Link

Mode : Base Unit Standby

Mode : Handset Unit Charging

6 ANTENNA REQUIREMENT

6.1 Standard Applicable

For intentional device, according to 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

6.2 Antenna Construction

The antenna of base and handset unit is permanently attached, no consideration of replacement.

7 HOPPING CHANNEL SEPARATION

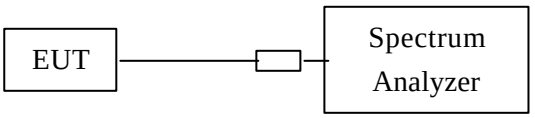
7.1 Standard Applicable

According to 15.247(a)(1), frequency hopping system shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

7.2 Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in figure 4 without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. The EUT must have its hopping function enabled. Then set it to any one convenient frequency within its operating range.
3. Use the following spectrum analyzer settings:
   Span = wide enough to capture the peaks of two adjacent channels
   Resolution (or IF) Bandwidth (RBW) ≥ 1% of the span
   Video (or Average) Bandwidth (VBW) ≥ RBW
   Sweep = auto
   Detector function = peak
   Trace = max hold
4. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. Plot the result on the screen of spectrum analyzer.
5. Repeat above procedures until all frequencies measured were complete.

Figure 4 : Measurement configuration.



7.3 Measurement Equipment

Equipment	Manufacturer	Model No.	Next Cal. Due
Spectrum Analyzer	Rohde & Schwarz	FSP40	07/05/2006
Attenuator	Weinschel Engineering	1	N/A
Plotter	Hewlett-Packard	7440A	N/A

7.4 Measurement Data

Test Date : Nov. 08, 2005 Temperature : 23 °C Humidity : 51 %

Mode : Base Unit

1) CH Low : Adjacent Hopping Channel Separation is 404.800 kHz
2) CH Mid : Adjacent Hopping Channel Separation is 404.800 kHz
3) CH High : Adjacent Hopping Channel Separation is 406.400 kHz

Mode : Handset Unit

1) CH Low : Adjacent Hopping Channel Separation is 412.800 kHz
2) CH Mid : Adjacent Hopping Channel Separation is 403.200 kHz
3) CH High : Adjacent Hopping Channel Separation is 406.400 kHz

Note : 1. Please see appendix 2 for Plotted Data
2. The expanded uncertainty of the hopping channel separation tests is 2dB.

8 NUMBER OF HOPPING FREQUENCY USED

8.1 Standard Applicable

According to 15.247(a)(1)(i), for frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period.

8.2 Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in figure 4 without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. The EUT must have its hopping function enabled.
3. Use the following spectrum analyzer settings:
   Span = the frequency band of operation
   RBW ≥ 1% of the span
   VBW ≥ RBW
   Sweep = auto
   Detector function = peak
   Trace = max hold
4. Allow the trace to stabilize. Plot the result on the screen of spectrum analyzer.
5. Repeat above procedures until all frequencies measured were complete.

8.3 Measurement Equipment

Equipment	Manufacturer	Model No.	Next Cal. Due
Spectrum Analyzer	Rohde & Schwarz	FSP40	07/05/2006
Attenuator	Weinschel Engineering	1	N/A
Plotter	Hewlett-Packard	7440A	N/A

8.4 Measurement Data

Test Date : Nov. 08, 2005 Temperature : 23 °C Humidity : 51 %

Mode : Base Unit

There are 50 hopping frequencies used.

Mode : Handset Unit

There are 50 hopping frequencies used.

Note : 1. Please see appendix 3 for Plotted Data
2. The expanded uncertainty of umber of hopping frequency used tests is 2dB.

9 CHANNEL BANDWIDTH

9.1 Standard Applicable

According to 15.247(a)(1)(i), for frequency hopping systems operating in the 902-928 MHz band, the maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

9.2 Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in figure 4 without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range.
3. Use the following spectrum analyzer settings:
   Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel
   RBW ≥ 1% of the 20 dB bandwidth
   VBW ≥ RBW
   Sweep = auto
   Detector function = peak
   Trace = max hold
4. Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure 20 dB down one side of the emission. Reset the marker-delta function, and move the marker to the other side of the emission, until it is (as close as possible to) even with the reference marker level. The marker-delta reading at this point is the 20 dB bandwidth of the emission. Plot the result on the screen of spectrum analyzer.
5. Repeat above procedures until all frequencies measured were complete.

9.3 Measurement Equipment

Equipment	Manufacturer	Model No.	Next Cal. Due
Spectrum Analyzer	Rohde & Schwarz	FSP40	07/05/2006
Attenuator	Weinschel Engineering	1	N/A
Plotter	Hewlett-Packard	7440A	N/A

9.4 Measurement Data

Test Date : Nov. 08, 2005 Temperature : 23 °C Humidity : 51 %

Mode : Base Unit

1) CH Low : Channel Bandwidth is 88.0 kHz
2) CH Mid : Channel Bandwidth is 88.0 kHz
3) CH High : Channel Bandwidth is 84.0 kHz

Mode : Handset Unit

1) CH Low : Channel Bandwidth is 92.0 kHz
2) CH Mid : Channel Bandwidth is 96.0 kHz
3) CH High : Channel Bandwidth is 88.0 kHz

Note : 1. Please see appendix 4 for Plotted Data
2. The expanded uncertainty ofchannel bandwidth tests is 2dB.

10 DWELL TIME ON EACH CHANNEL

10.1 Standard Applicable

According to 15.247(a)(1)(i), for frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period.

10.2 Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in figure 4 without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. The EUT must have its hopping function enabled.
3. Use the following spectrum analyzer settings:
   Span = zero span, centered on a hopping channel
   RBW = 1 MHz
   VBW ≥ RBW
   Sweep = as necessary to capture the entire dwell time per hopping channel
   Detector function = peak
   Trace = max hold
4. Use the marker-delta function to determine the dwell time. Plot the result on the screen of spectrum analyzer.
5. Repeat above procedures until all frequencies measured were complete.

10.3 Measurement Equipment

Equipment	Manufacturer	Model No.	Next Cal. Due
Spectrum Analyzer	Rohde & Schwarz	FSP40	07/05/2006
Attenuator	Weinschel Engineering	1	N/A
Plotter	Hewlett-Packard	7440A	N/A

10.4 Measurement Data

Test Date : Nov. 08, 2005 Temperature : 23 °C Humidity : 51 %

Mode : Base Unit

1) CH Low : the dwell time is 20x2x5.1ms＝204 ms
2) CH Mid : the dwell time is 20x2x5.1ms＝204 ms
3) CH High : the dwell time is 20x2x5.1ms＝204 ms

Mode : Handset Unit

1) CH Low : the dwell time is 20x2x1.40ms＝56.0 ms
2) CH Mid : the dwell time is 20x2x1.42ms＝56.8 ms
3) CH High : the dwell time is 20x2x1.38ms＝55.2 ms

The maximum time of occupancy for a particular channel is 204 msec in any 20 seconds period, which is less than 0.4 seconds allowed by the rules; therefore, it meets the requirements of this section.

Note : 1. Please see appendix 5 for Plotted Data

2. The expanded uncertainty of dwell time on each channel tests is 2dB.

11 OUTPUT POWER MEASUREMENT

11.1 Standard Applicable

According to 15.247(b)(2), for frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.

11.2 Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in figure 4 without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
3. Use the following spectrum analyzer settings:
   Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel
   RBW > the 20 dB bandwidth of the emission being measured
   VBW ≥ RBW
   Sweep = auto
   Detector function = peak
   Trace = max hold
4. Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power. Plot the result on the screen of spectrum analyzer.
5. Repeat above procedures until all frequencies measured were complete.

11.3 Measurement Equipment

Equipment	Manufacturer	Model No.	Next Cal. Due
Spectrum Analyzer	Rohde & Schwarz	FSP40	07/05/2006
Attenuator	Weinschel Engineering	1	N/A
Plotter	Hewlett-Packard	7440A	N/A

11.4 Measurement Data

Test Date : Nov. 08, 2005 Temperature : 23 °C Humidity : 51 %

Mode : Base Unit

1) CH Low : Output Peak Power is 23.77 dBm = **238.23**mW
2) CH Mid : Output Peak Power is 24.59 dBm = **287.74**mW
3) CH High : Output Peak Power is 24.69 dBm = **294.44**mW

Mode : Handset Unit

1) CH Low : Output Peak Power is 23.46 dBm = **221.82**mW
2) CH Mid : Output Peak Power is 23.45 dBm = **221.31**mW
3) CH High : Output Peak Power is 22.95 dBm = **197.24**mW

Note : 1. Please see appendix 6 for Plotted Data

2. The expanded uncertainty of output power measurement tests is 2dB.

12 100 kHz BANDWIDTH OF BAND EDGES MEASUREMENT

12.1 Standard Applicable

According to 15.247(d), in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

12.2 Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in figure 4 without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
3. Use the following spectrum analyzer settings:

   Span = wide enough to capture the peak level of the emission operating on the channel closest to the bandedge, as well as any modulation products which fall outside of the authorized band of operation

   RBW ≥ 1% of the span

   VBW ≥ RBW

   Sweep = auto

   Detector function = peak

   Trace = max hold
4. Allow the trace to stabilize. Set the marker on the emission at the bandedge, or on the highest modulation product outside of the band, if this level is greater than that at the bandedge. Enable the marker-delta function, then use the marker-to-peak function to move the marker to the peak of the in-band emission. Plot the result on the screen of spectrum analyzer.
5. Repeat above procedures until all measured frequencies were complete.

12.3 Measurement Equipment

Equipment	Manufacturer	Model No.	Next Cal. Due
Spectrum Analyzer	Rohde & Schwarz	FSP40	07/05/2006
Attenuator	Weinschel Engineering	1	N/A
Plotter	Hewlett-Packard	7440A	N/A

12.4 Measurement Data

Test Date : Nov. 08, 2005 Temperature : 23 °C Humidity : 51 %

Mode : Base Unit & Handset Unit

a) Lower Band Edge : All emissions in this 100kHz bandwidth are attenuated more than 20dB from the carrier.
b) Upper Band Edge : All emissions in this 100kHz bandwidth are attenuated more than 20dB from the carrier.

Note : 1. Please see appendix 7 for Plotted Data
2. The expanded uncertainty of the 100 KHz bandwidth of band edges tests is 1000Hz.

13 OUT-OF-BAND CONDUCTED EMISSION MEASUREMENT

13.1 Standard Applicable

According to 15.247(d), in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

13.2 Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in figure 4 without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
3. Use the following spectrum analyzer settings:
   Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span.
   RBW = 100 kHz
   VBW ≥ RBW
   Sweep = auto
   Detector function = peak
   Trace = max hold.
4. Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded. Plot the result on the screen of spectrum analyzer.
5. Repeat above procedures until all measured frequencies were complete.

13.3 Measurement Equipment

Equipment	Manufacturer	Model No.	Next Cal. Due
Spectrum Analyzer	Rohde & Schwarz	FSP40	07/05/2006
Attenuator	Weinschel Engineering	1	N/A
Plotter	Hewlett-Packard	7440A	N/A

13.4 Measurement Data

Test Date : Dec. 23, 2005 Temperature : 23 °C Humidity : 51 %

Mode : Base Unit

Mode : Low Channel

a) 1 GHz to 5 GHz frequency band: All emissions are attenuated more than 20dB from the carrier.
b) 5 GHz to 10 GHz frequency band: All emissions are attenuated more than 20dB from the carrier.

Mode : Mid Channel

a) 1 GHz to5 GHz frequency band: All emissions are attenuated more than 20dB from the carrier.
b) 5 GHz to 10 GHz frequency band: All emissions are attenuated more than 20dB from the carrier.

Mode : High Channel

a) 1 GHz to 5 GHz frequency band: All emissions are attenuated more than 20dB from the carrier.
b) 5 GHz to 10 GHz frequency band: All emissions are attenuated more than 20dB from the carrier

Note : 1. Please see appendix 8 for Plotted Data

2. The expanded uncertainty of the out-of-band conducted emission tests is 2dB.

Mode : Handset Unit

Mode : Low Channel

a) 1 GHz to 5 GHz frequency band: All emissions are attenuated more than 20dB from the carrier.
b) 5 GHz to 10 GHz frequency band: All emissions are attenuated more than 20dB from the carrier.

Mode : Mid Channel

a) 1 GHz to5 GHz frequency band: All emissions are attenuated more than 20dB from the carrier.
b) 5 GHz to 10 GHz frequency band: All emissions are attenuated more than 20dB from the carrier.

Mode : High Channel

a) 1 GHz to 5 GHz frequency band: All emissions are attenuated more than 20dB from the carrier.
b) 5 GHz to 10 GHz frequency band: All emissions are attenuated more than 20dB from the carrier

Note : 1. Please see appendix 8 for Plotted Data

2. The expanded uncertainty of the out-of-band conducted emission tests is 2dB.

Appendix 1 : Ploted Datas of Power Line Conducted Emissions

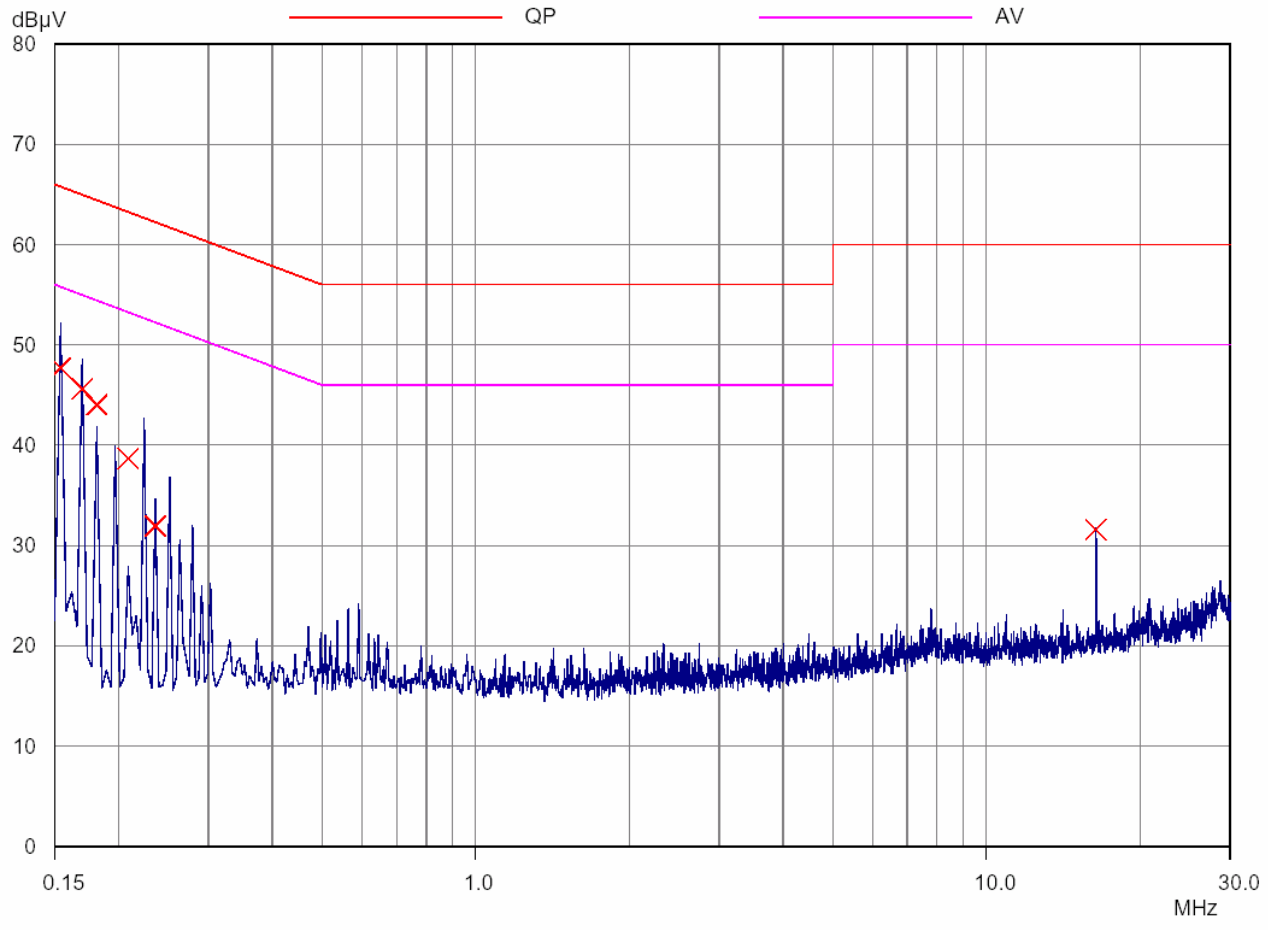
Mode : Base Unit On Link

CONDUCTION EMISSION TEST

Peak Value

EUT:
Manuf:
Op Cond: Base on line
Operator:
Test Spec:
Comment: N
THE MEASUREMENT POLT:PEAK VALUE

Final Measurement: Detector: X QP
Meas Time: 1sec
Peaks: 8
Acc Margin: 25 dB



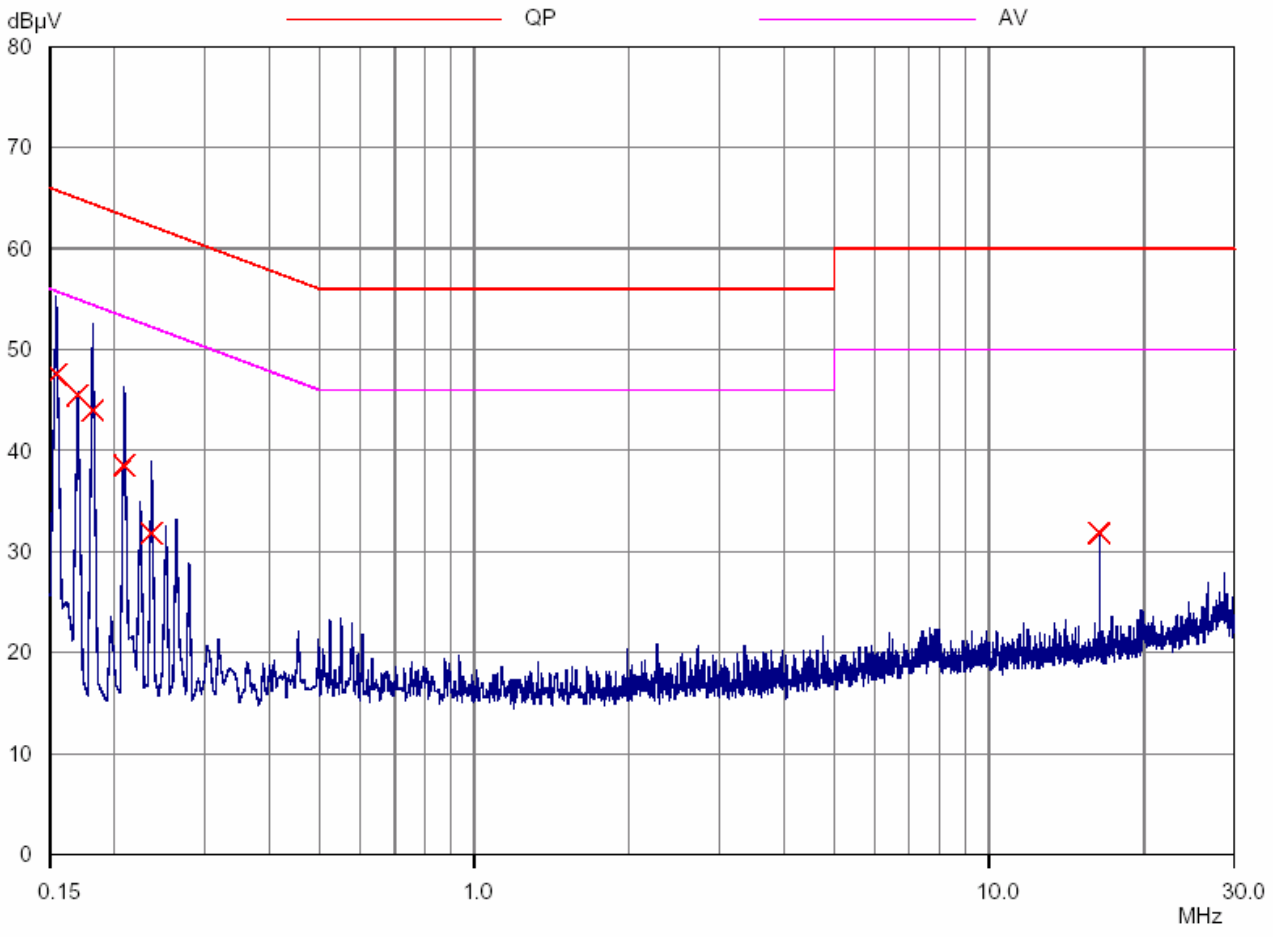
Mode : Base Unit On Link

CONDUCTION EMISSION TEST

Peak Value

EUT:
Manuf:
Op Cond: Base on line
Operator:
Test Spec:
Comment: L1
THE MEASUREMENT POLT:PEAK VALUE

Final Measurement: Detector: X QP
Meas Time: 1sec
Peaks: 8
Acc Margin: 25 dB



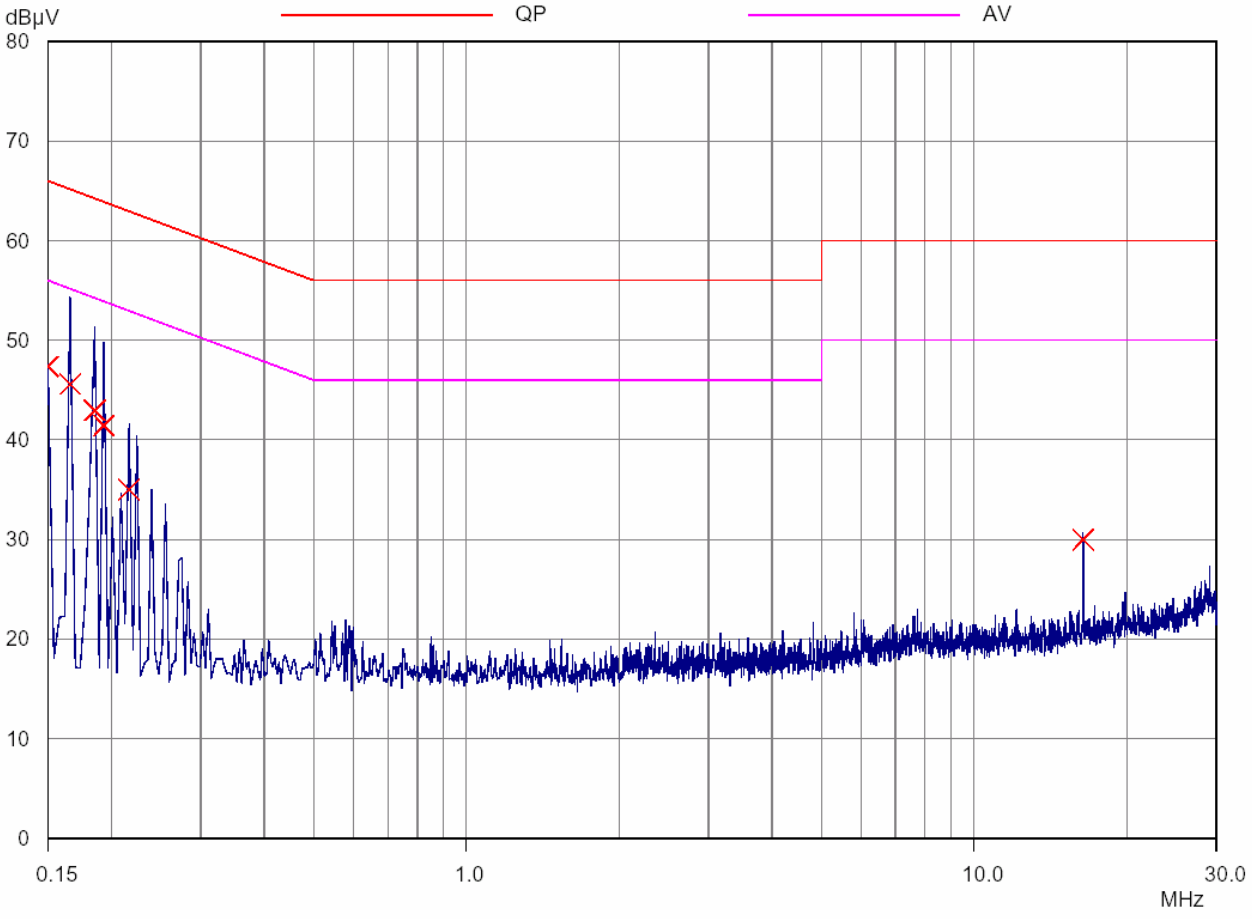
Mode: Base Unit Standby

CONDUCTION EMISSION TEST

Peak Value

EUT:
Manuf:
Op Cond: Base Stand by
Operator:
Test Spec:
Comment: N
THE MEASUREMENT POLT:PEAK VALUE

Final Measurement: Detector: X QP
Meas Time: 1sec
Peaks: 8
Acc Margin: 25 dB



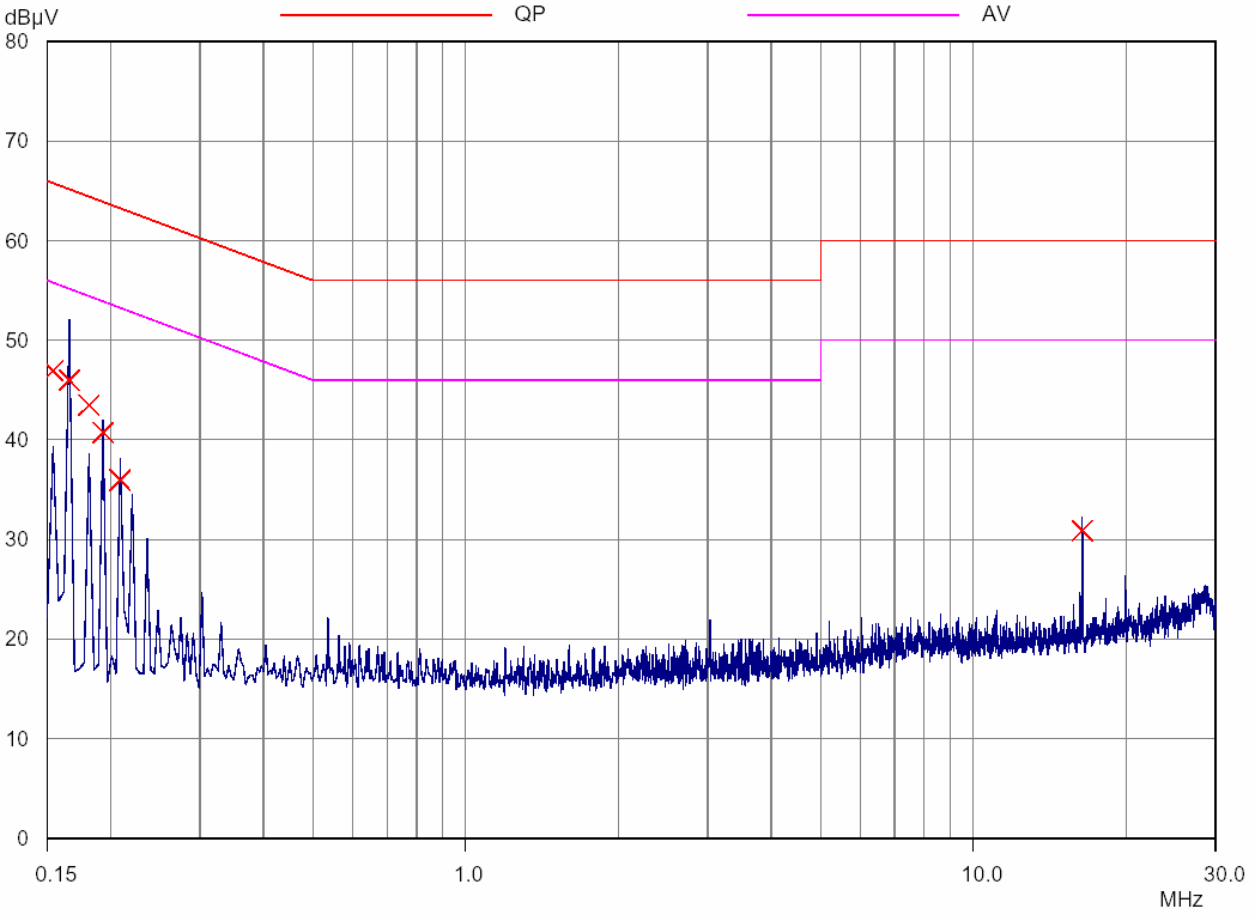
Mode: Base Unit Standby

CONDUCTION EMISSION TEST

Peak Value

EUT:
Manuf:
Op Cond: Base Stand by
Operator:
Test Spec:
Comment: L1
THE MEASUREMENT POLT:PEAK VALUE

Final Measurement: Detector: X QP
Meas Time: 1sec
Peaks: 8
Acc Margin: 25 dB



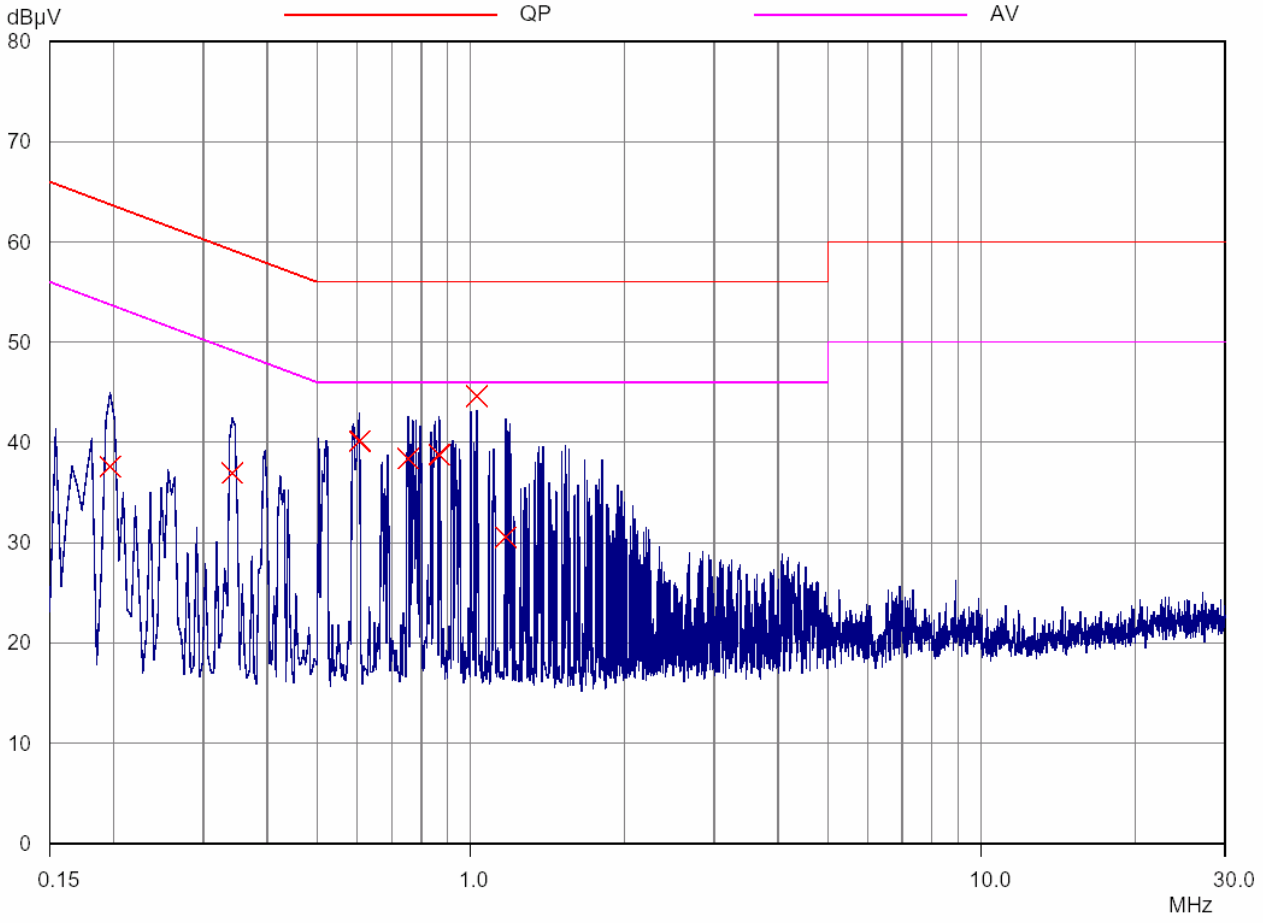
Mode : Handset Unit Charging

CONDUCTION EMISSION TEST

Peak Value

EUT:
Manuf:
Op Cond: Handset Charging
Operator:
Test Spec:
Comment: N
THE MEASUREMENT POLT:PEAK VALUE

Final Measurement: Detector: X QP
Meas Time: 1sec
Peaks: 8
Acc Margin: 25 dB



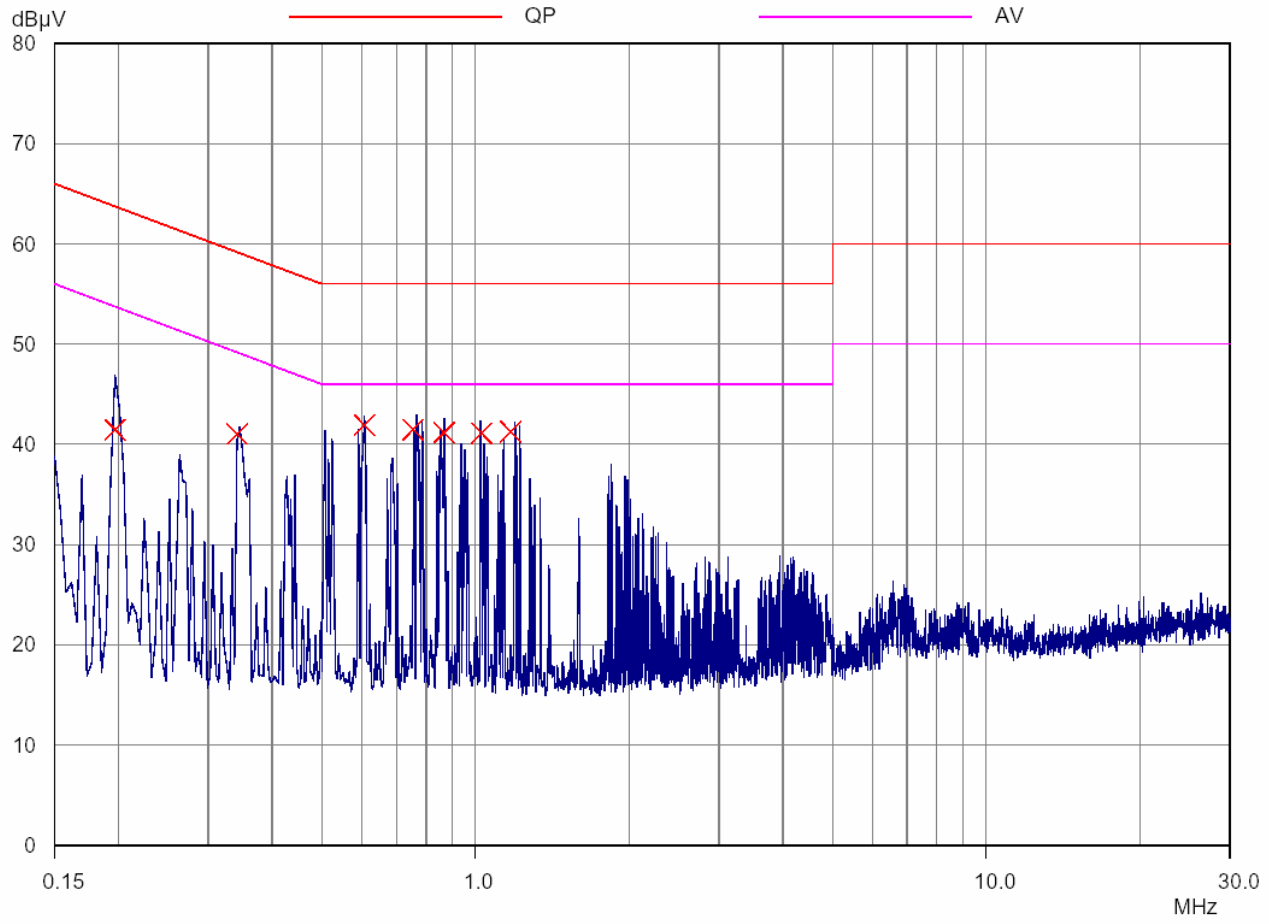
Mode : Handset Unit Charging

CONDUCTION EMISSION TEST

Peak Value

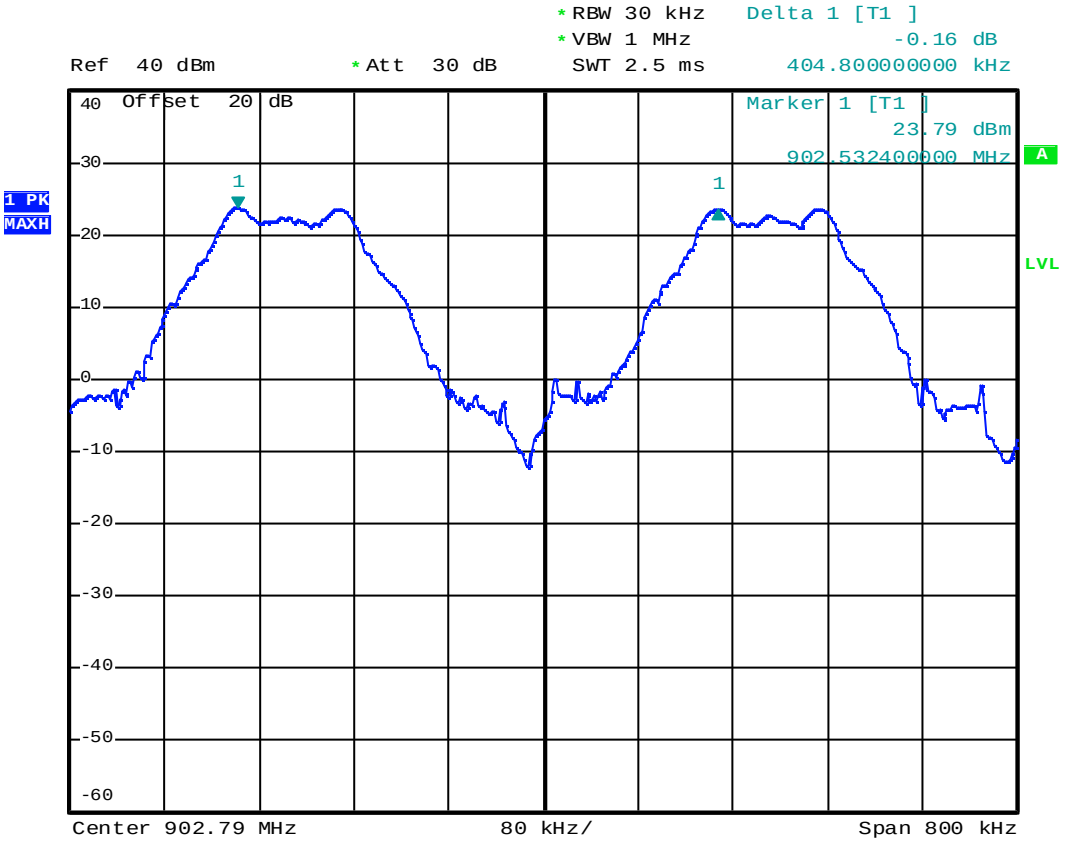
EUT:
Manuf:
Op Cond: Handset Charging
Operator:
Test Spec:
Comment: L1
THE MEASUREMENT POLT:PEAK VALUE

Final Measurement: Detector: X QP
Meas Time: 1sec
Peaks: 8
Acc Margin: 25 dB



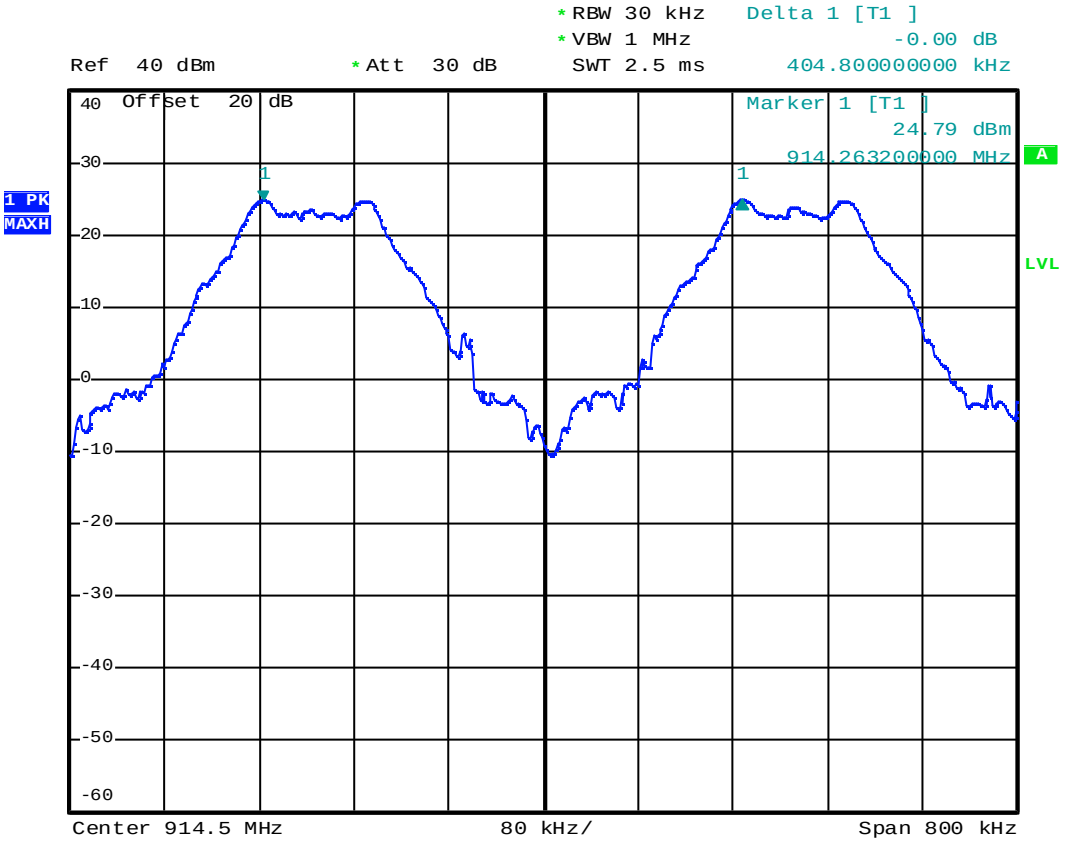
Appendix 2 : Plotted Data for Separation of Adjacent Channel

Mode：Base Unit



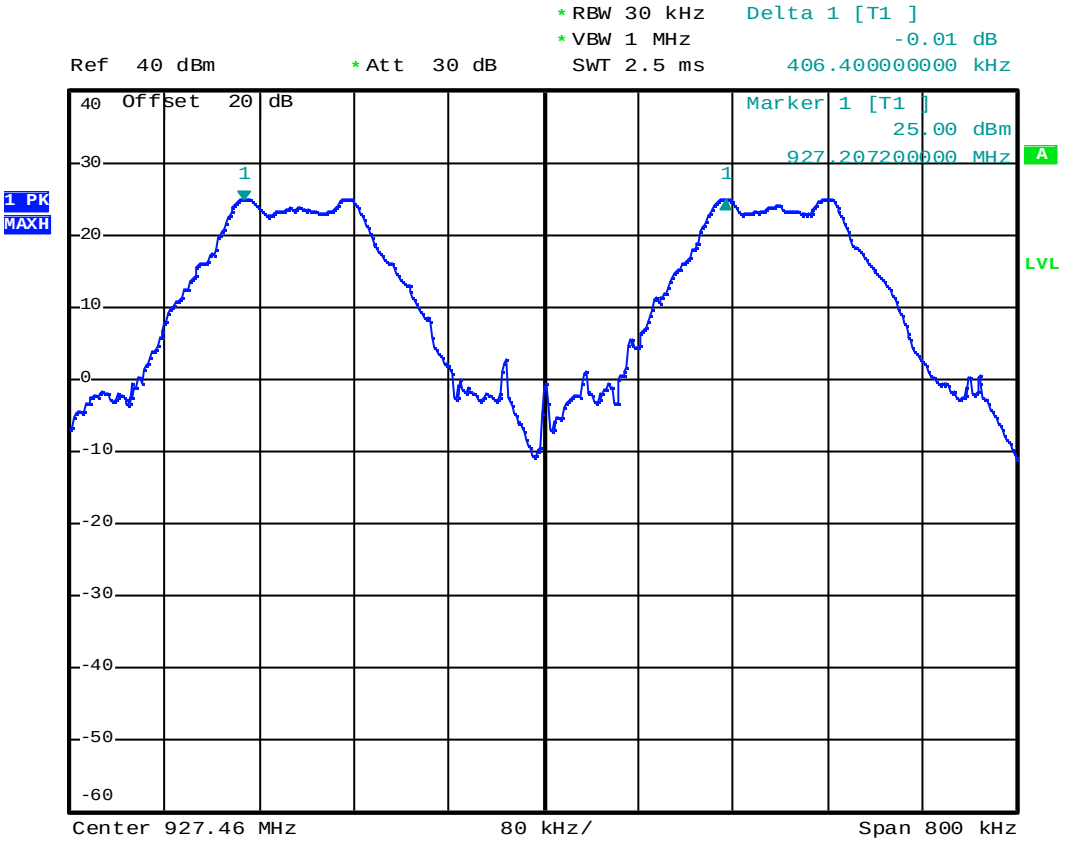
Date: 8.NOV.2005 14:46:49

Mode：Base Unit



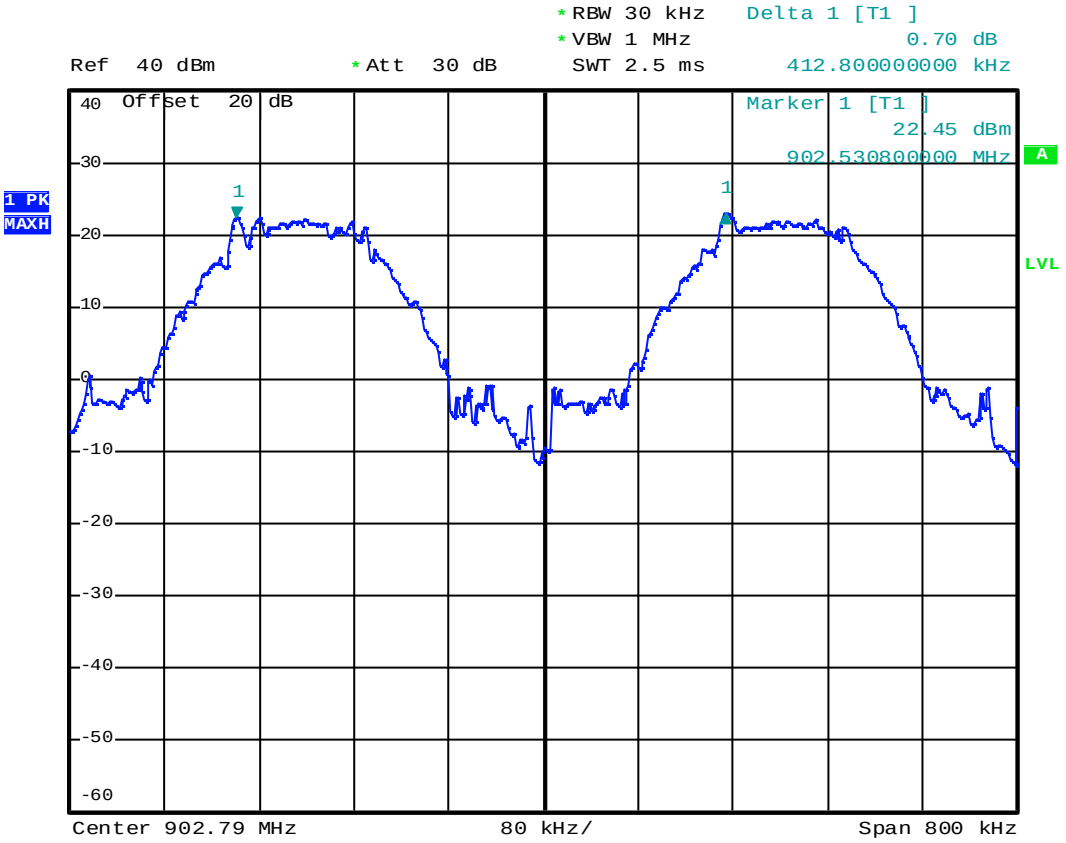
Date: 8.NOV.2005 14:48:01

Mode：Base Unit



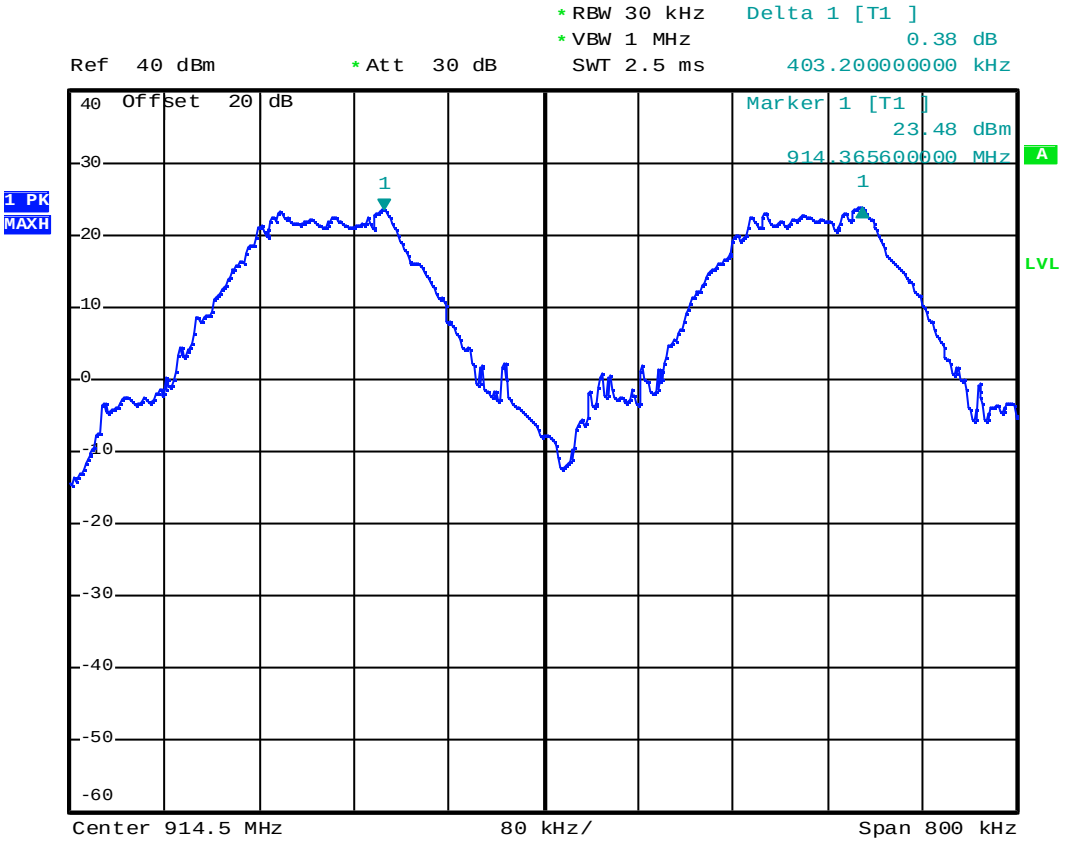
Date: 8.NOV.2005 14:49:08

Mode：Handset



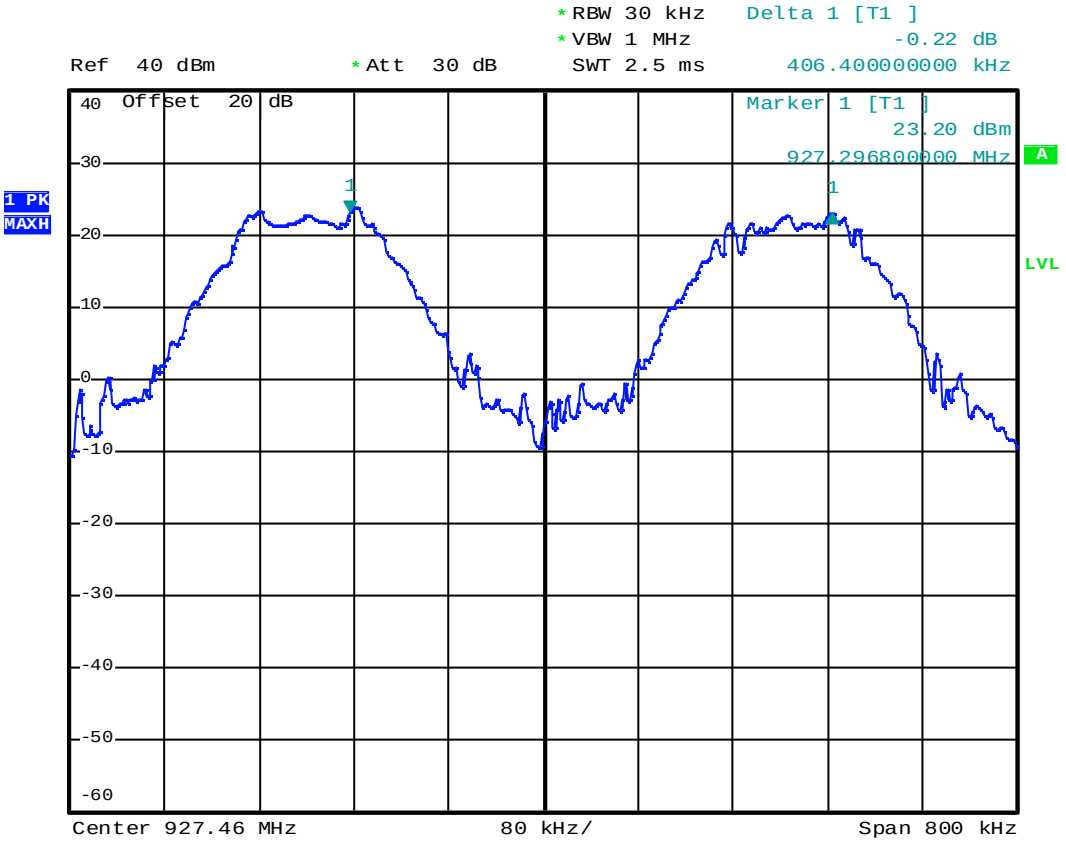
Date: 8.NOV.2005 14:14:20

Mode：Handset Unit



Date: 8.NOV.2005 14:04:58

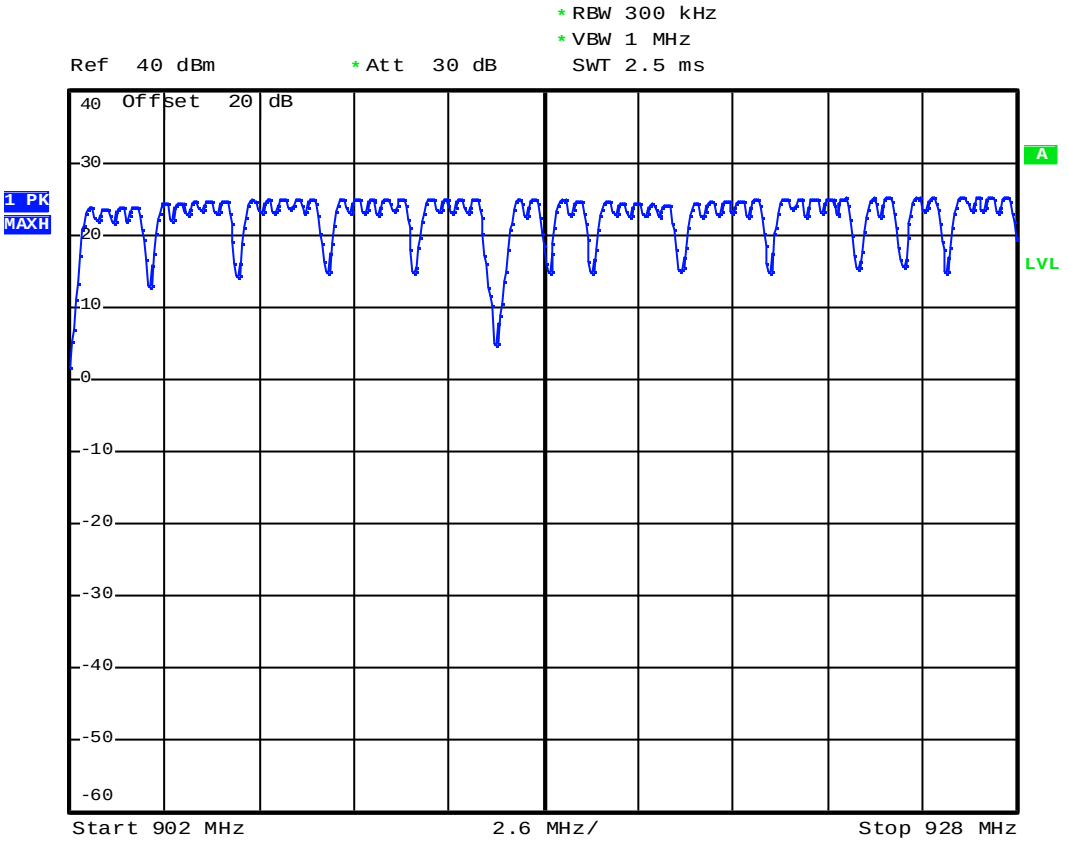
Mode：Handset Unit



Date: 8.NOV.2005 14:07:20

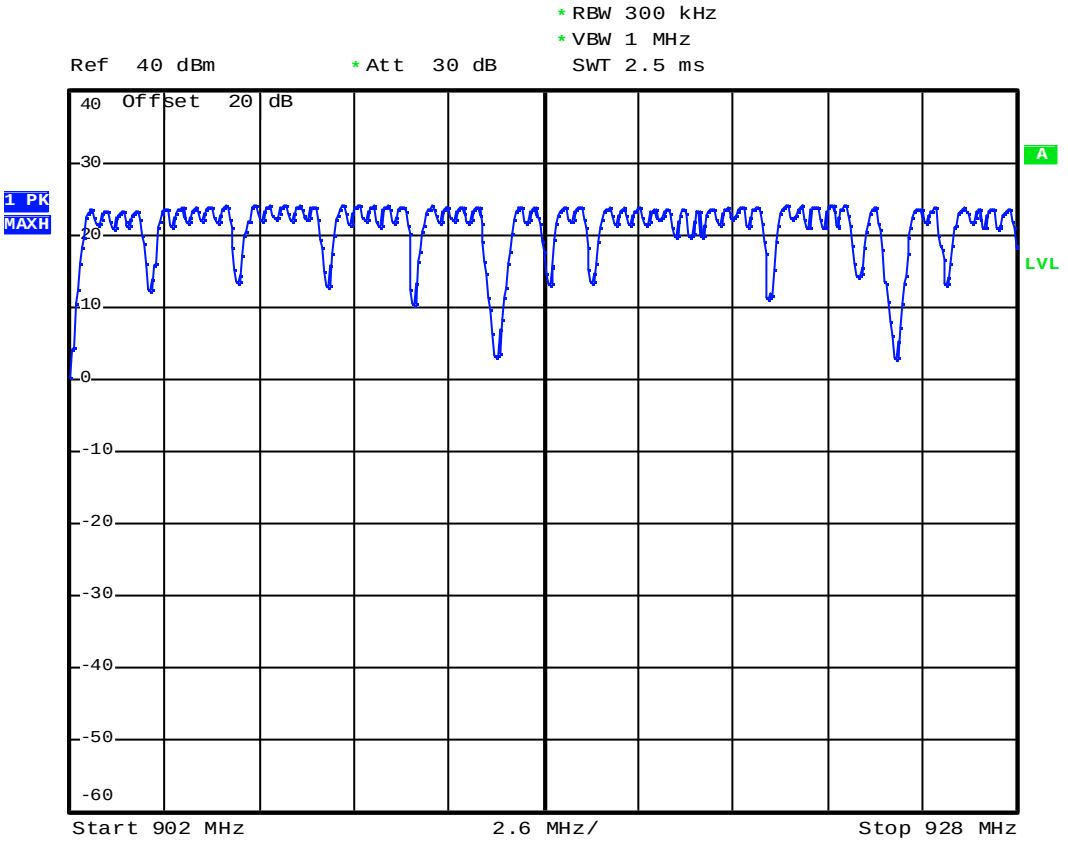
Appendix 3 : Plotted Data for Total Used Hopping Frequencies

Mode：Base Unit



Date: 8.NOV.2005 14:40:16

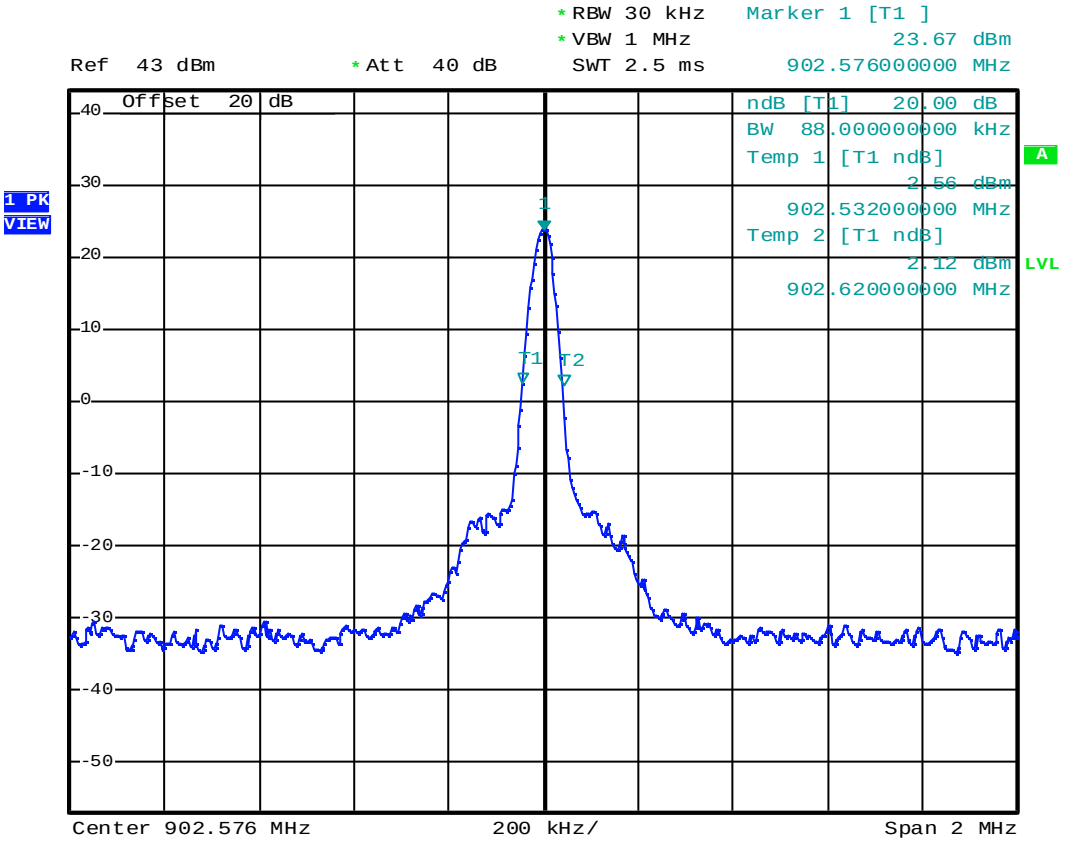
Mode：Handset Unit



Date: 8.NOV.2005 13:51:49

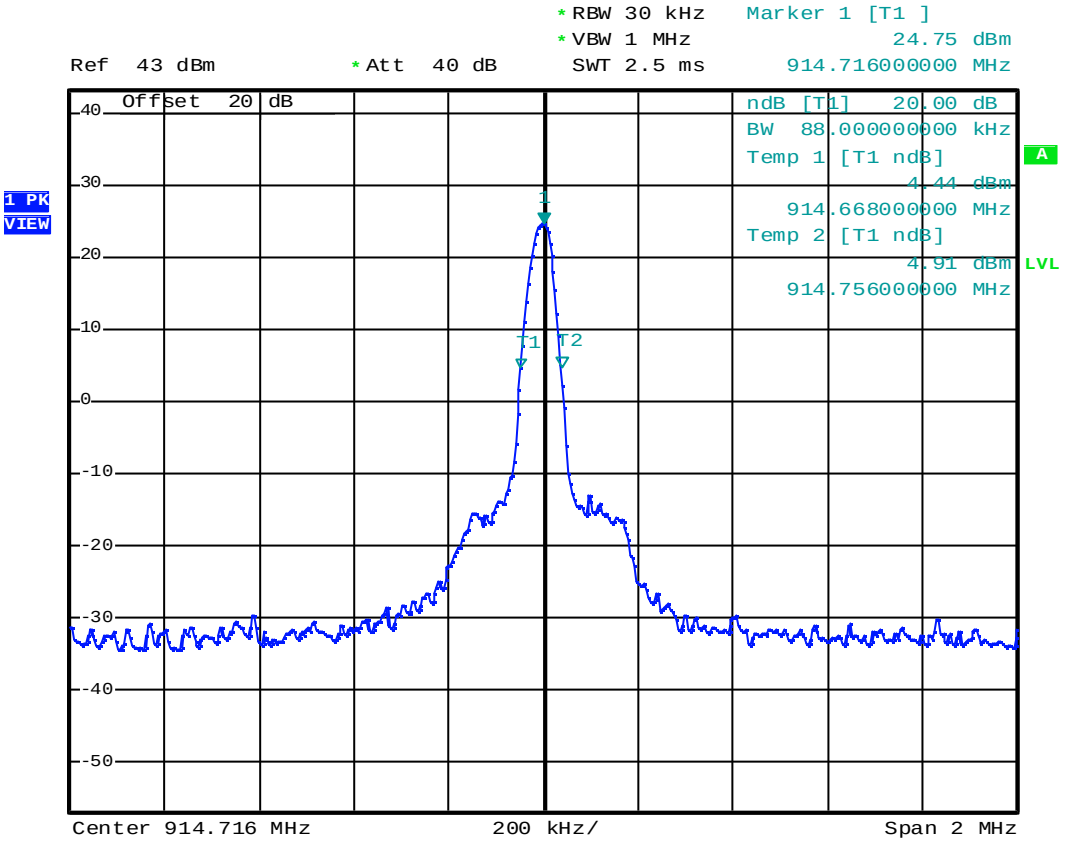
Appendix 4 : Plotted Data for Channel Bandwidth

Mode：Base Unit



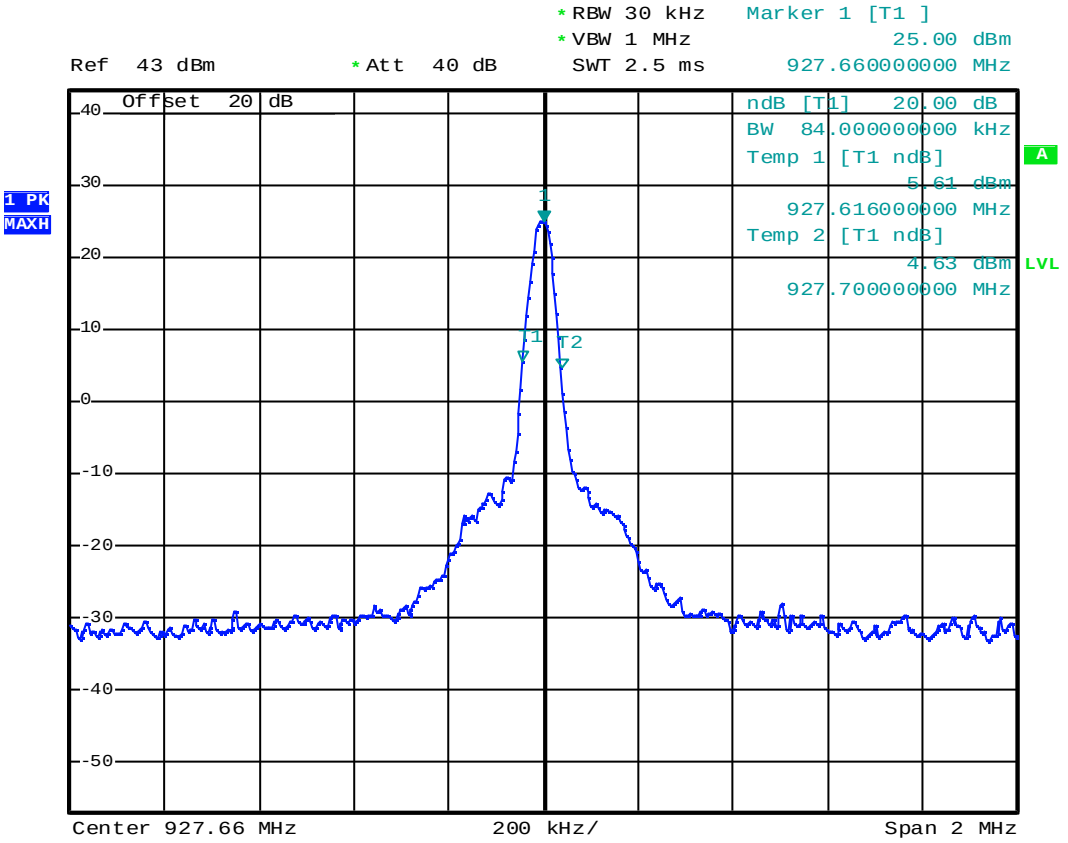
Date: 8.NOV.2005 11:12:58

Mode：Base Unit



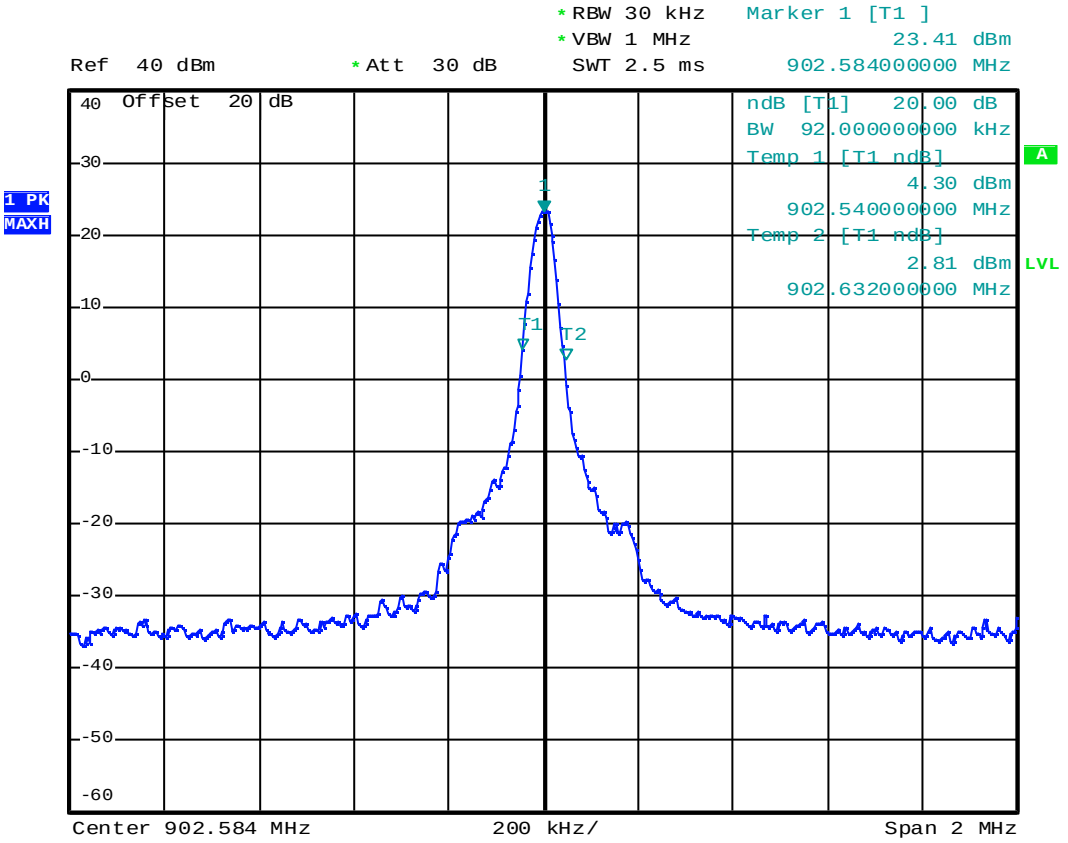
Date: 8.NOV.2005 11:13:25

Mode：Base Unit



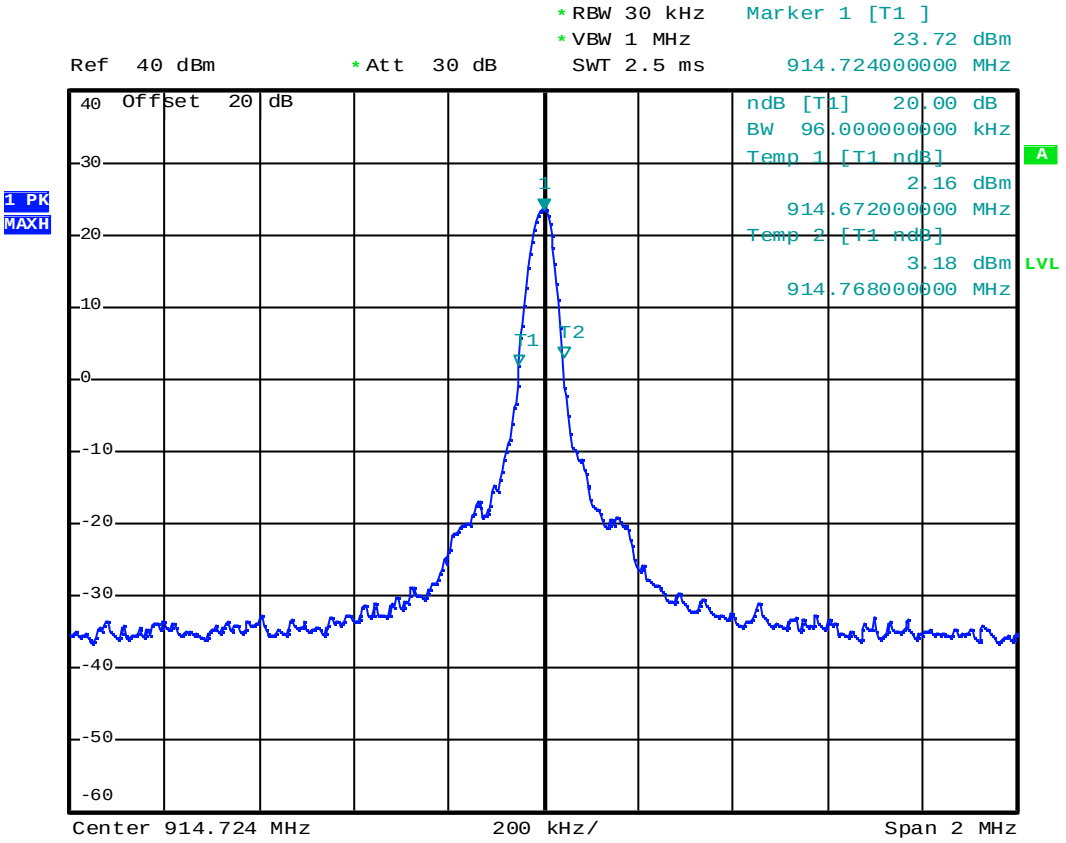
Date: 8.NOV.2005 11:12:37

Mode：Handset Unit



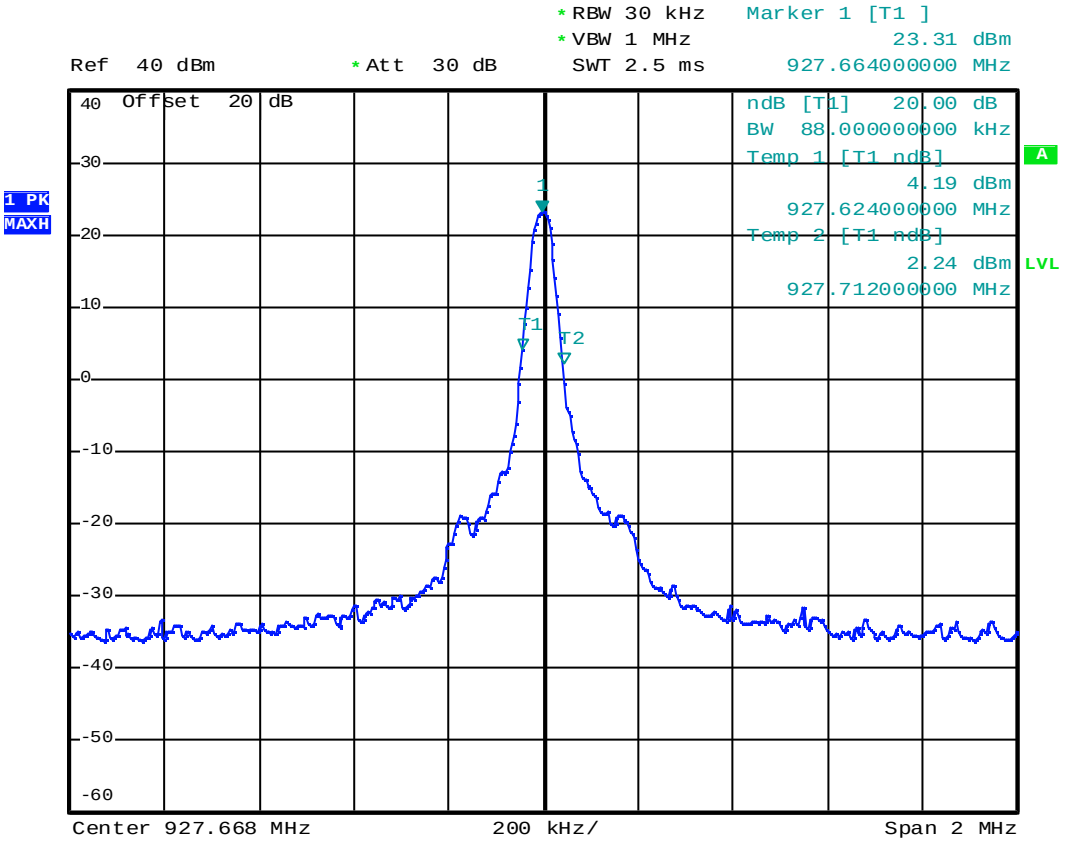
Date: 8.NOV.2005 13:29:36

Mode：Handset Unit



Date: 8.NOV.2005 13:29:02

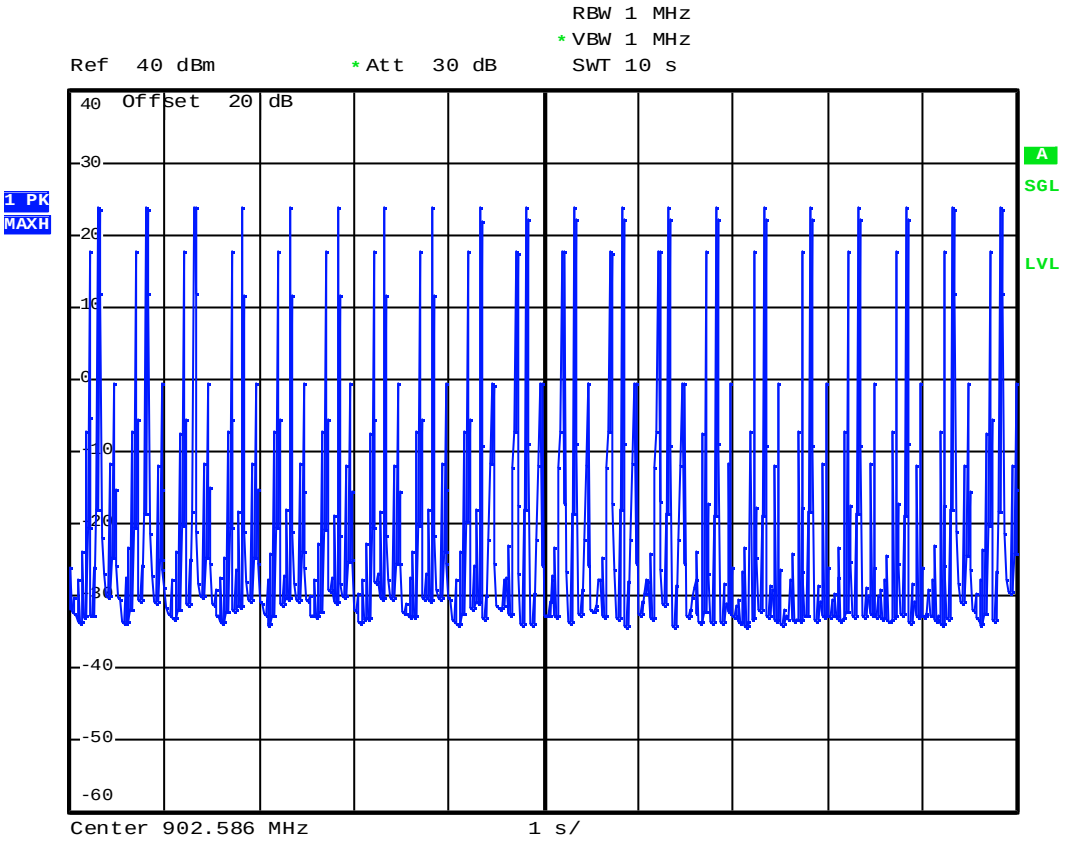
Mode：Handset Unit



Date: 8.NOV.2005 13:28:11

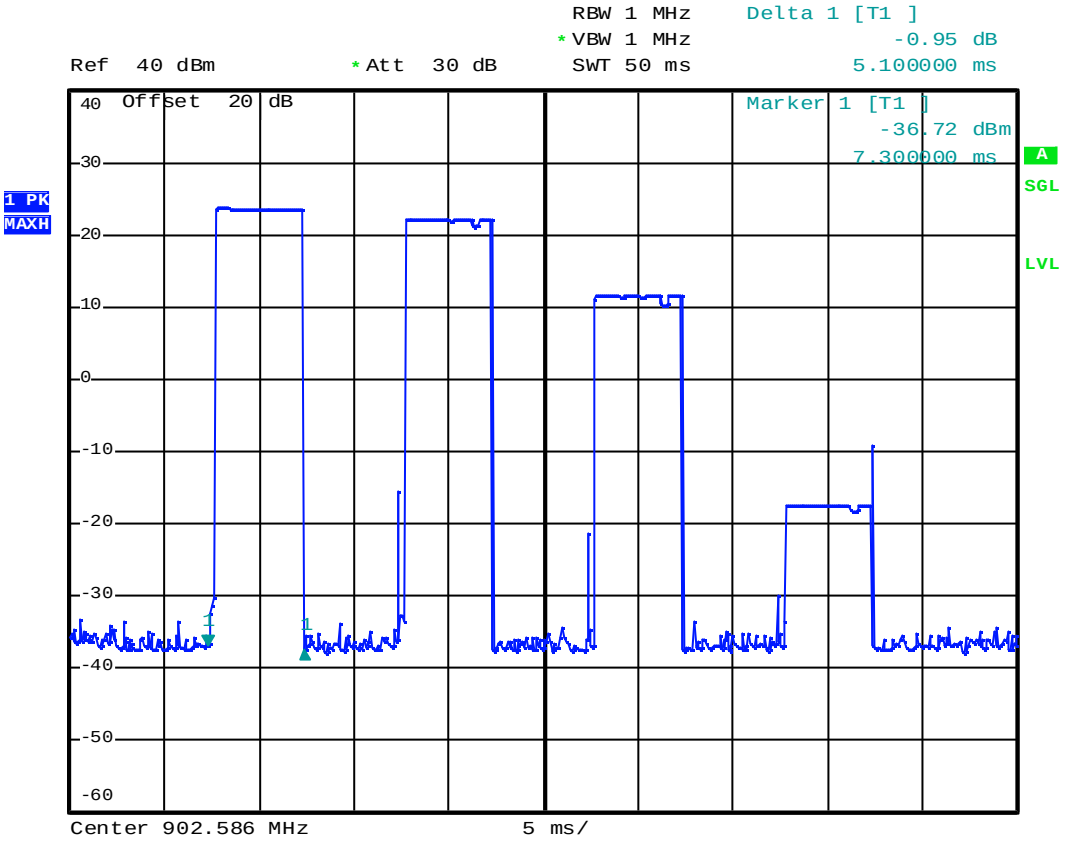
Appendix 5 : Plotted Data for Channel Dwell Time

Mode：Base Unit(CH Low)



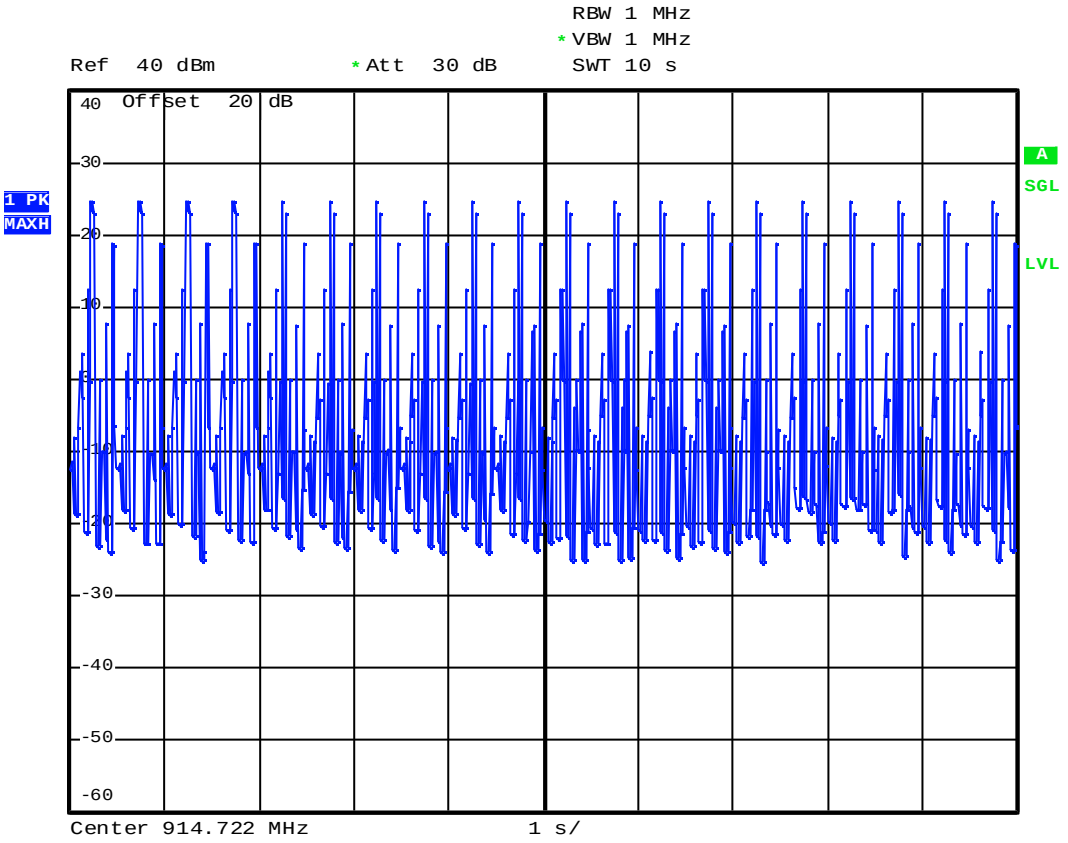
Date: 8.NOV.2005 14:41:12

Mode：Base Unit(CH Low)



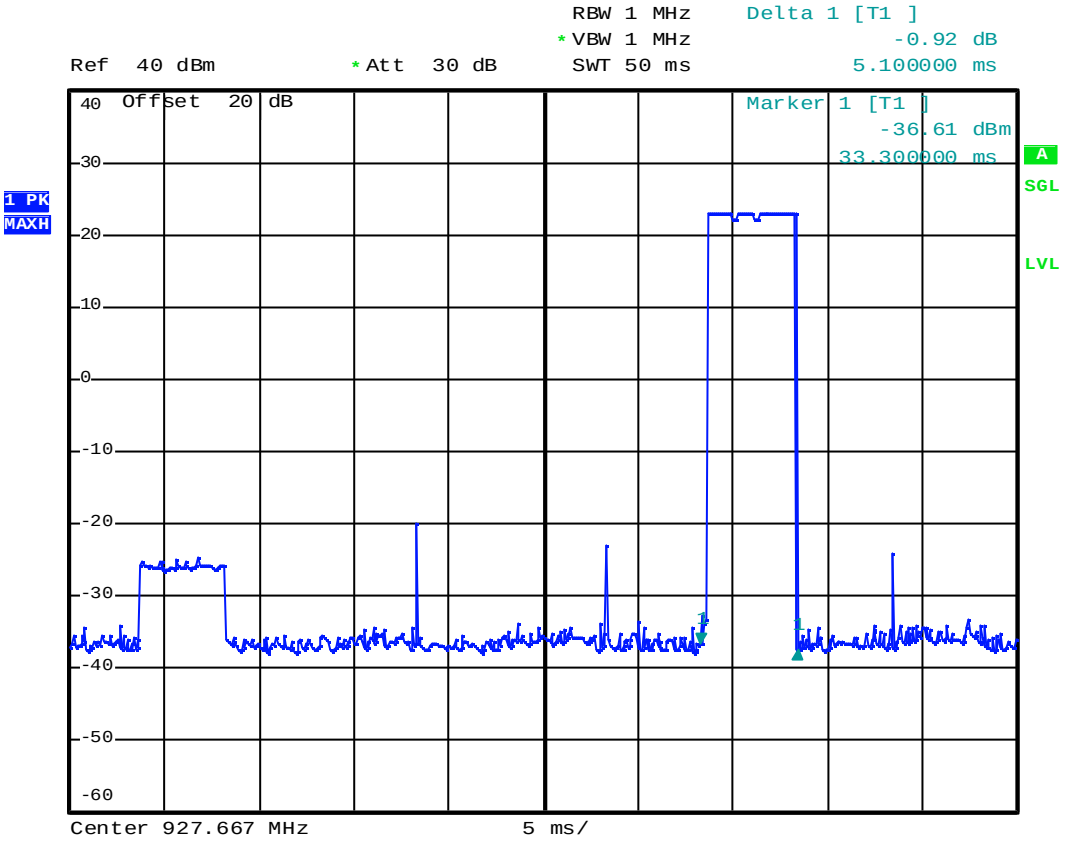
Date: 8.NOV.2005 14:42:19

Mode：Base Unit(CH Middle)



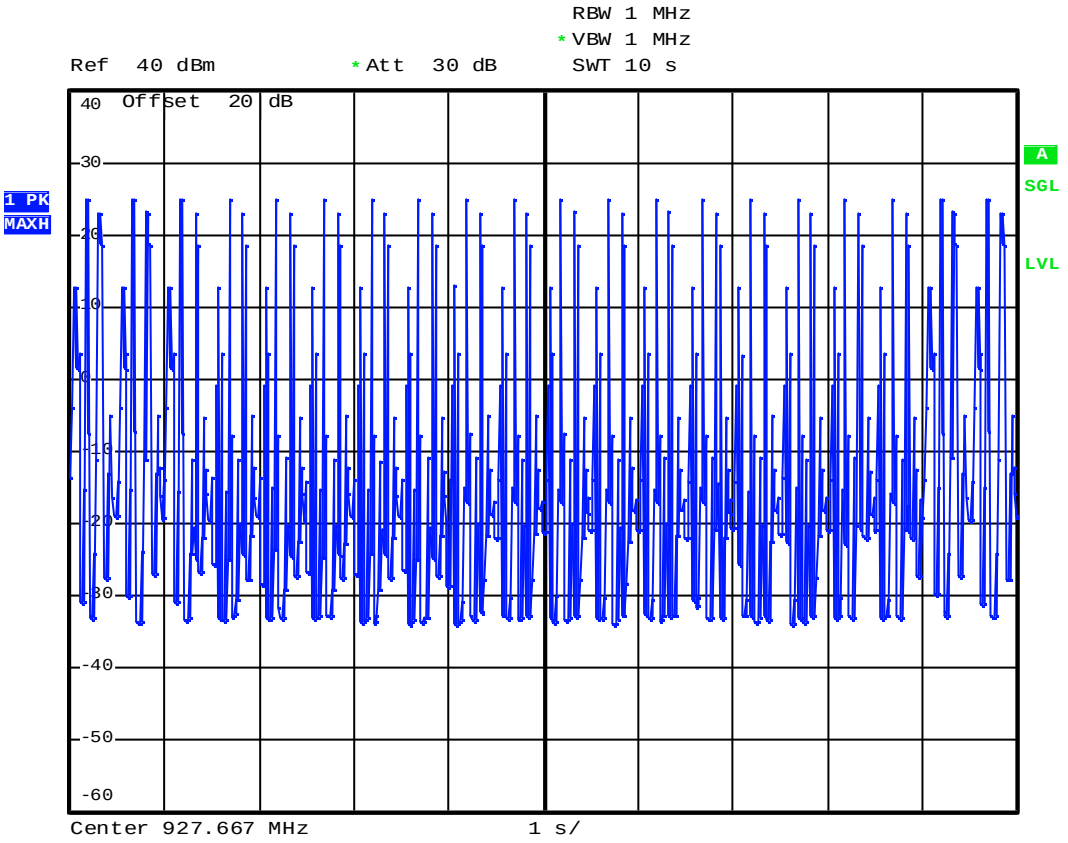
Date: 8.NOV.2005 14:43:51

Mode：Base Unit(CH Middle)



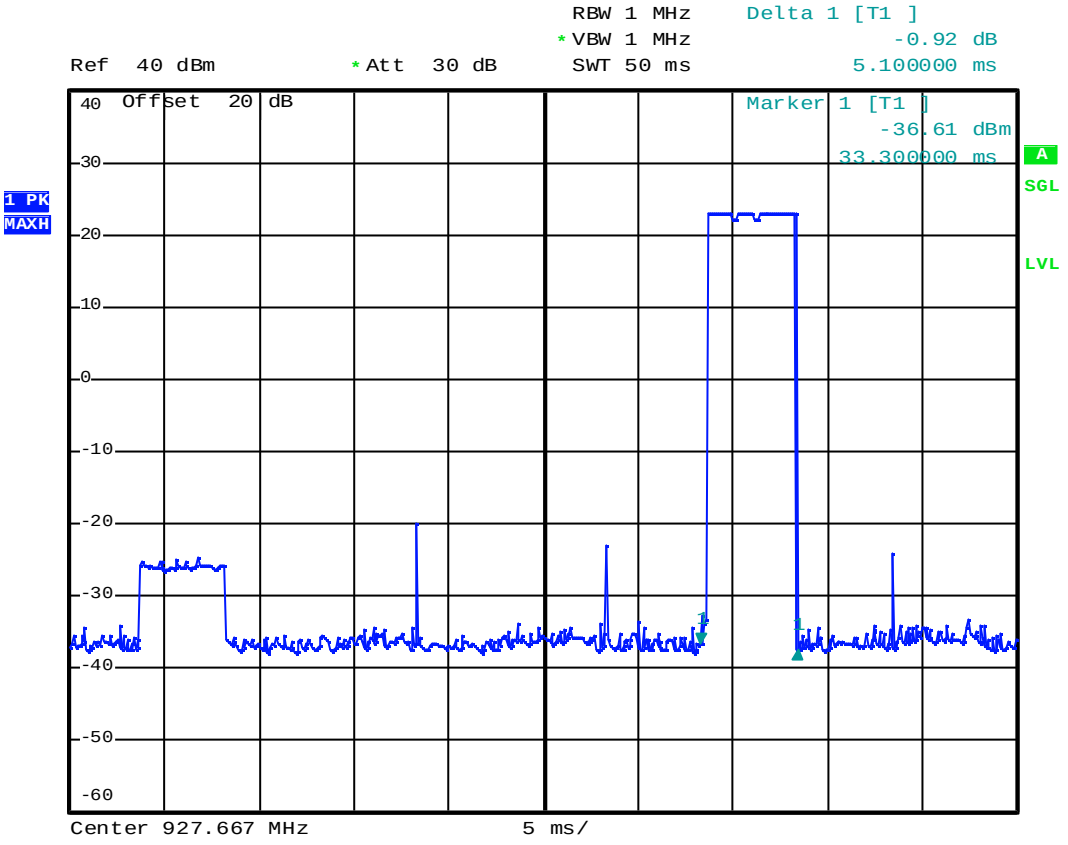
Date: 8.NOV.2005 14:45:24

Mode：Base Unit(CH High)



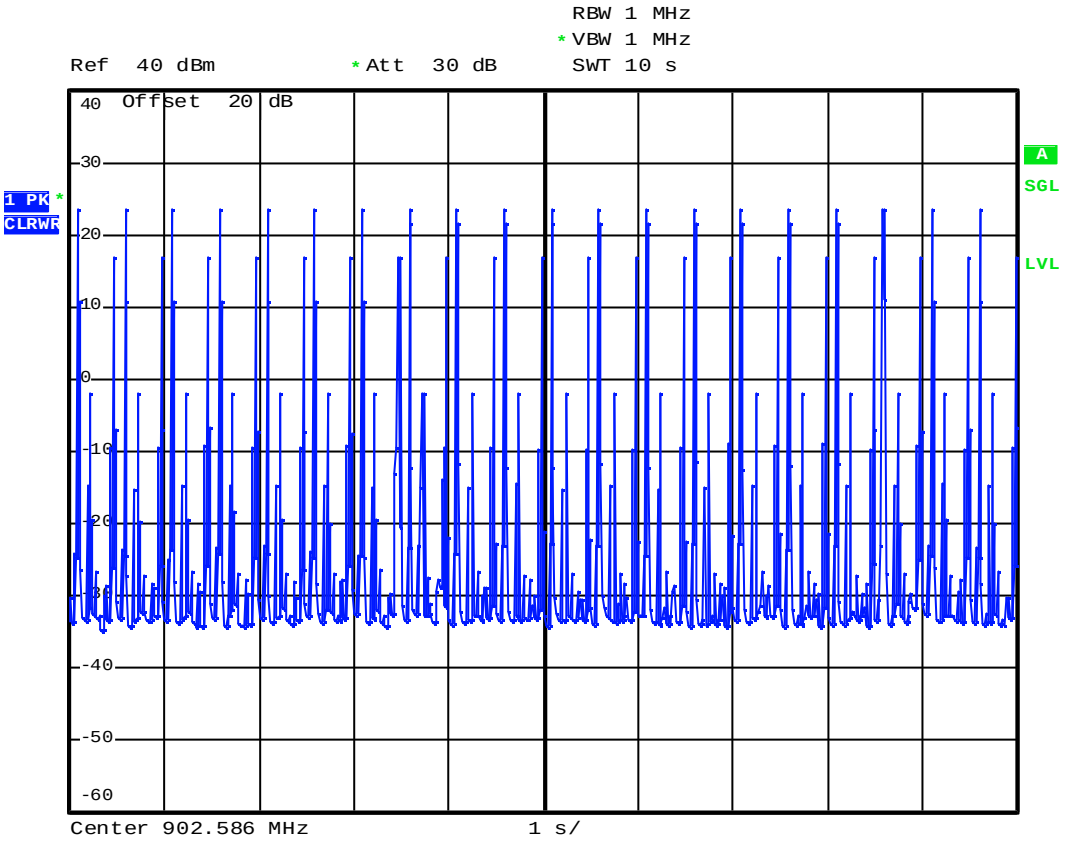
Date: 8.NOV.2005 14:44:45

Mode：Base Unit(CH High)



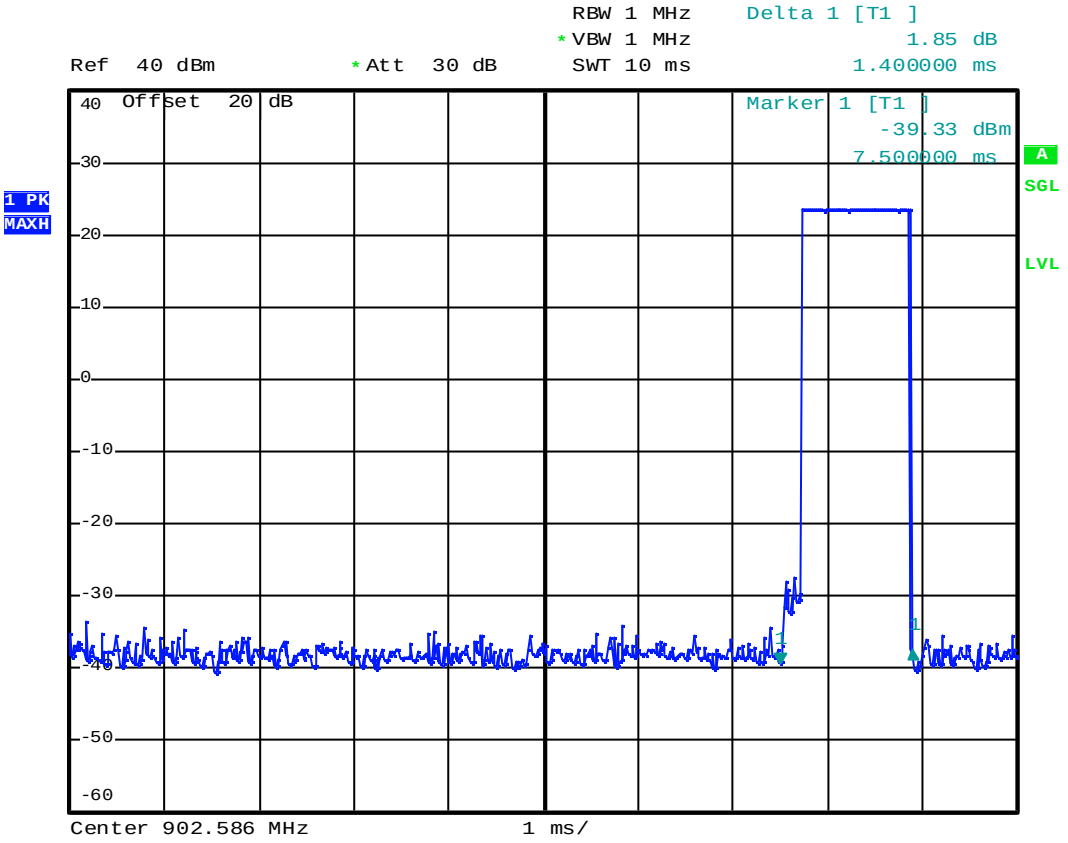
Date: 8.NOV.2005 14:45:24

Mode：Handset Unit(CH Low)



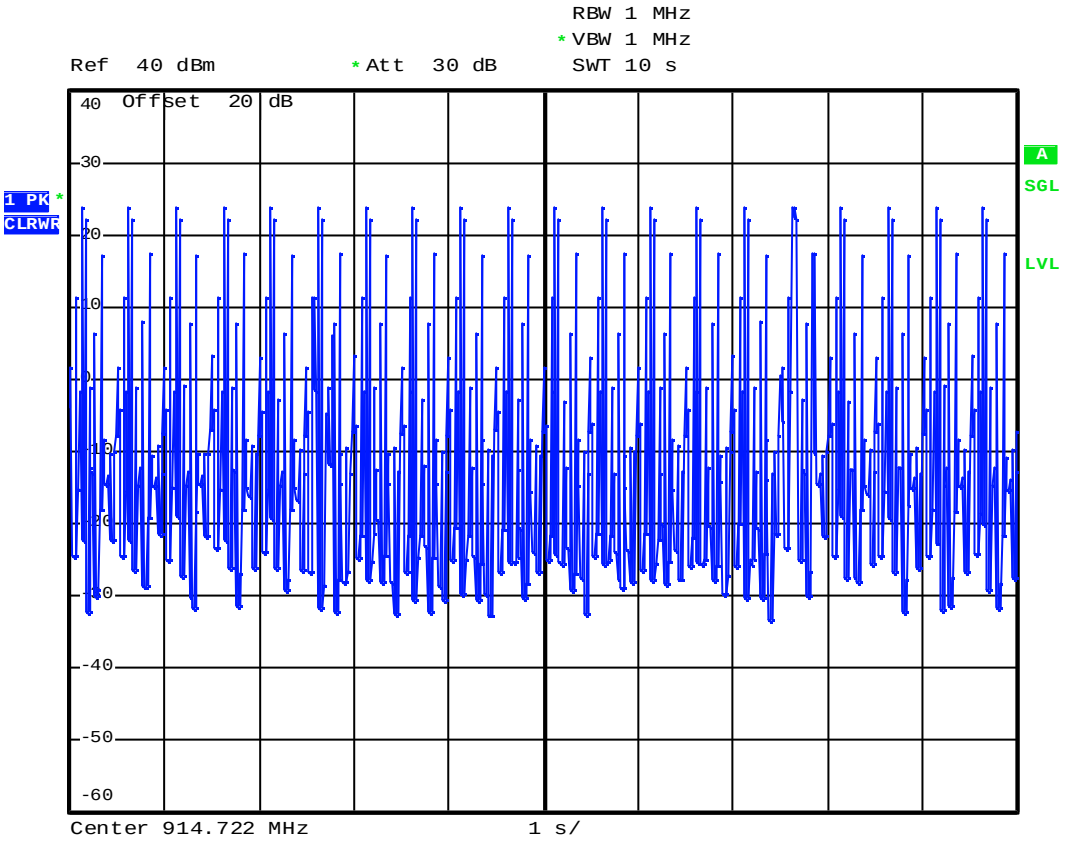
Date: 8.NOV.2005 14:08:19

Mode：Handset Unit(CH Low)



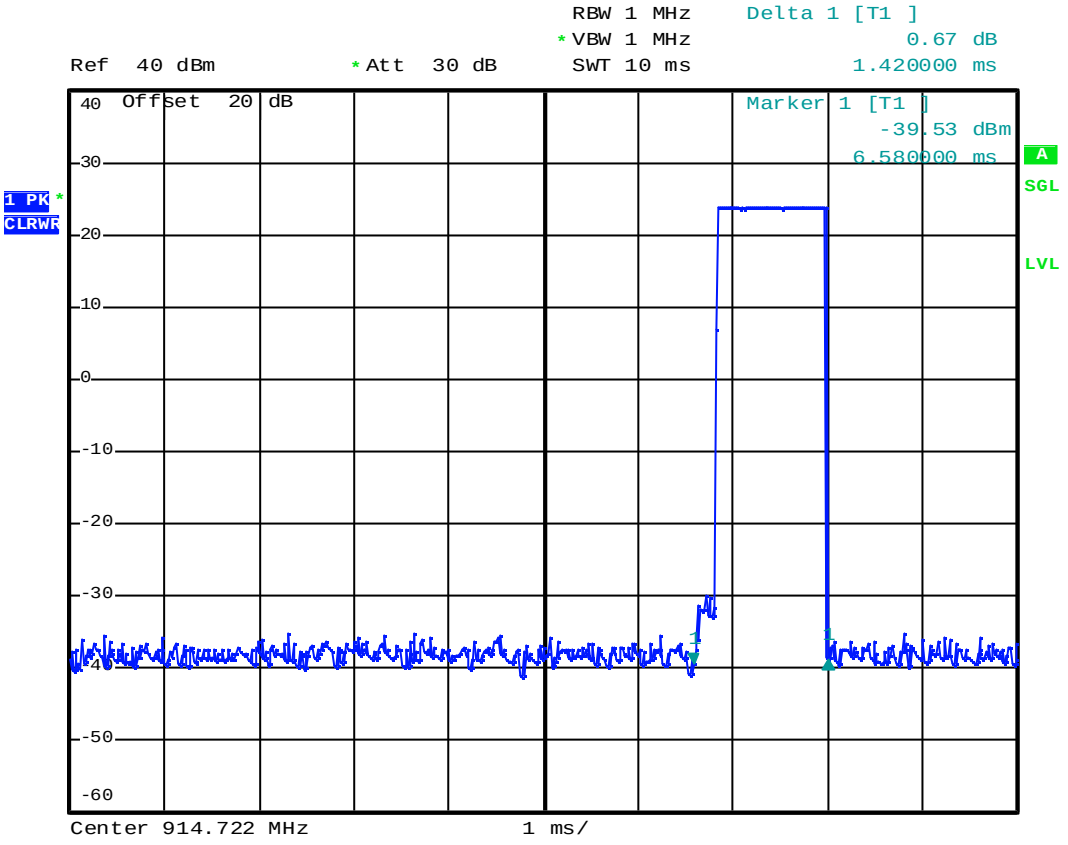
Date: 8.NOV.2005 14:11:28

Mode：Handset Unit(CH Middle)



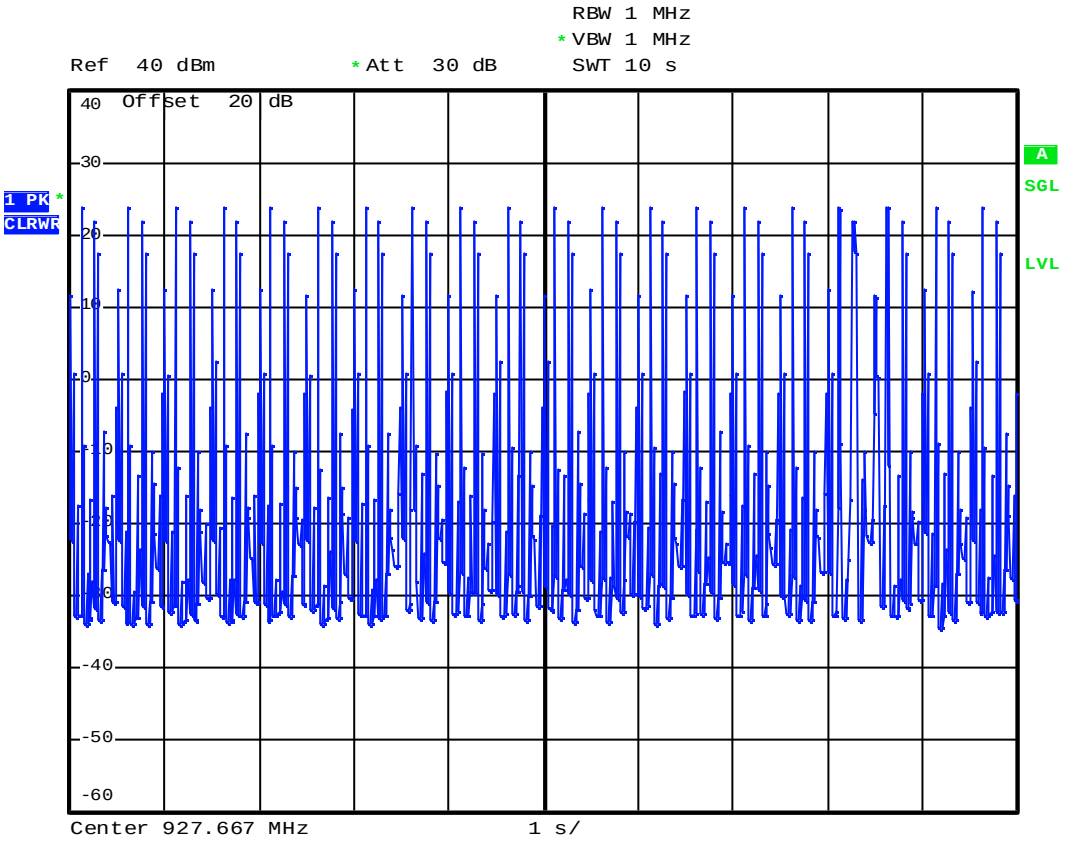
Date: 8.NOV.2005 14:08:55

Mode：Handset Unit(CH Middle)



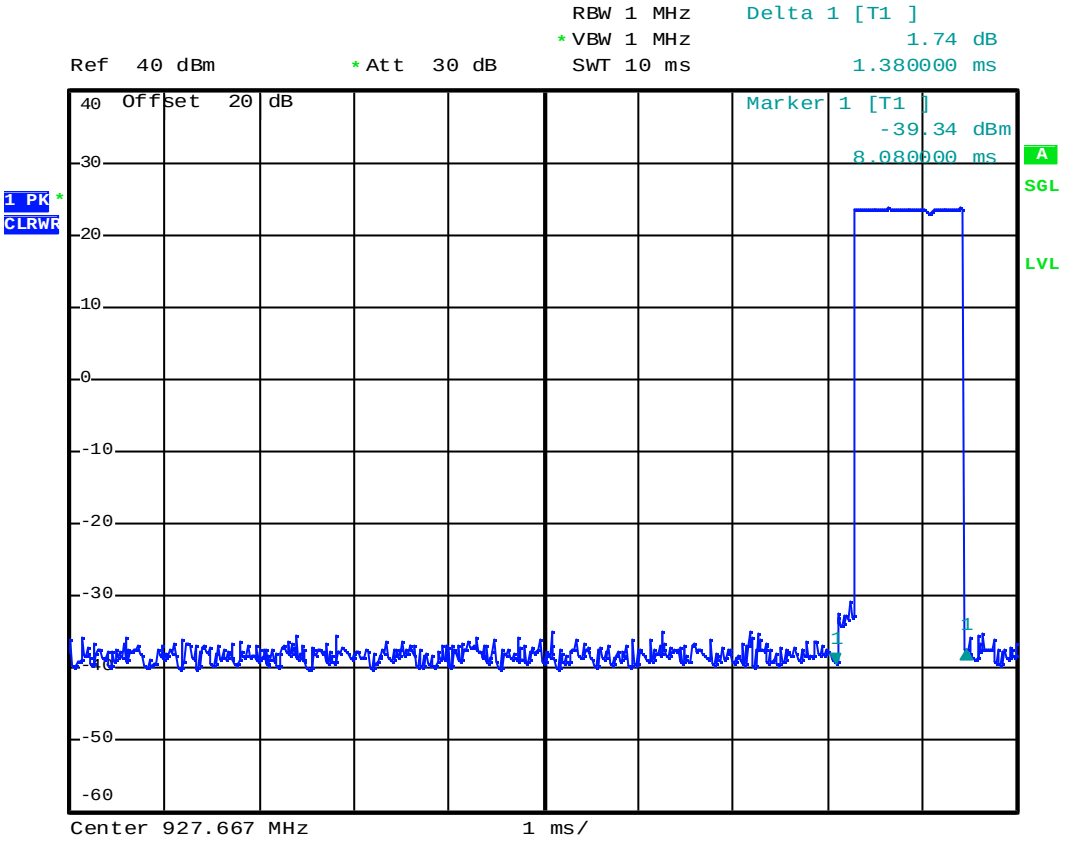
Date: 8.NOV.2005 14:10:51

Mode：Handset Unit(CH High)



Date: 8.NOV.2005 14:09:23

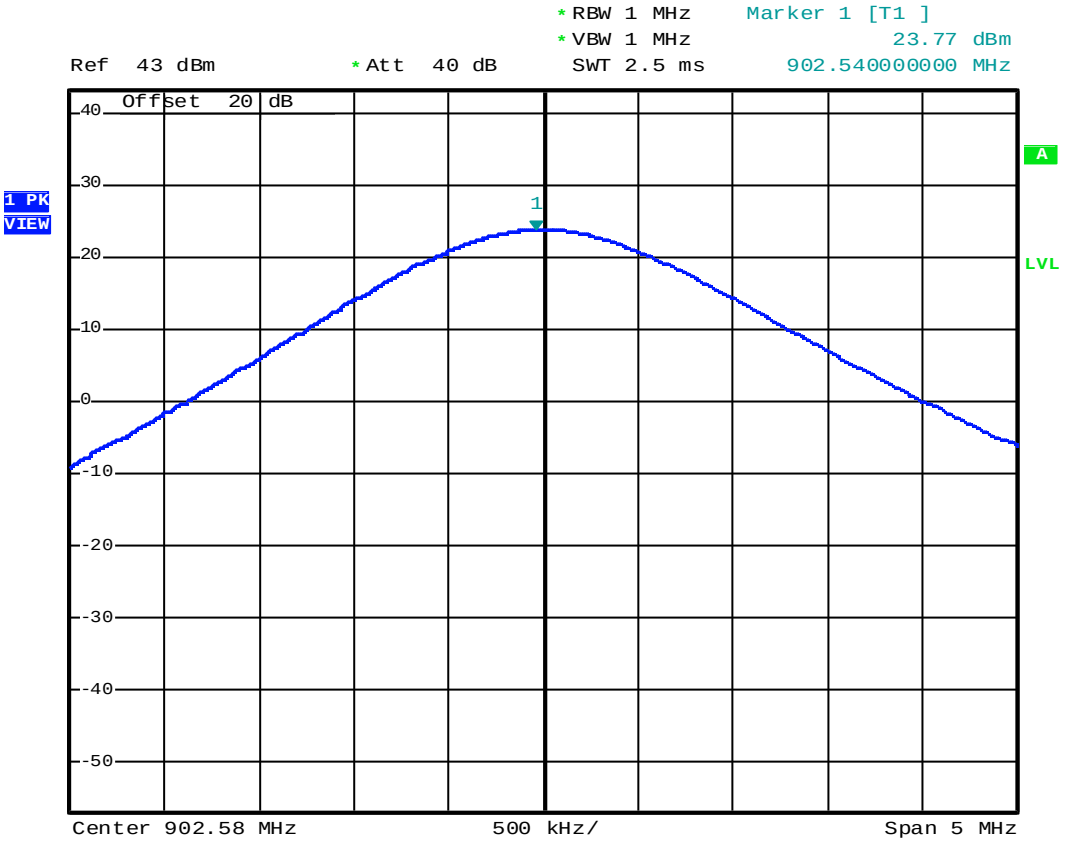
Mode：Handset Unit(CH High)



Date: 8.NOV.2005 14:10:16

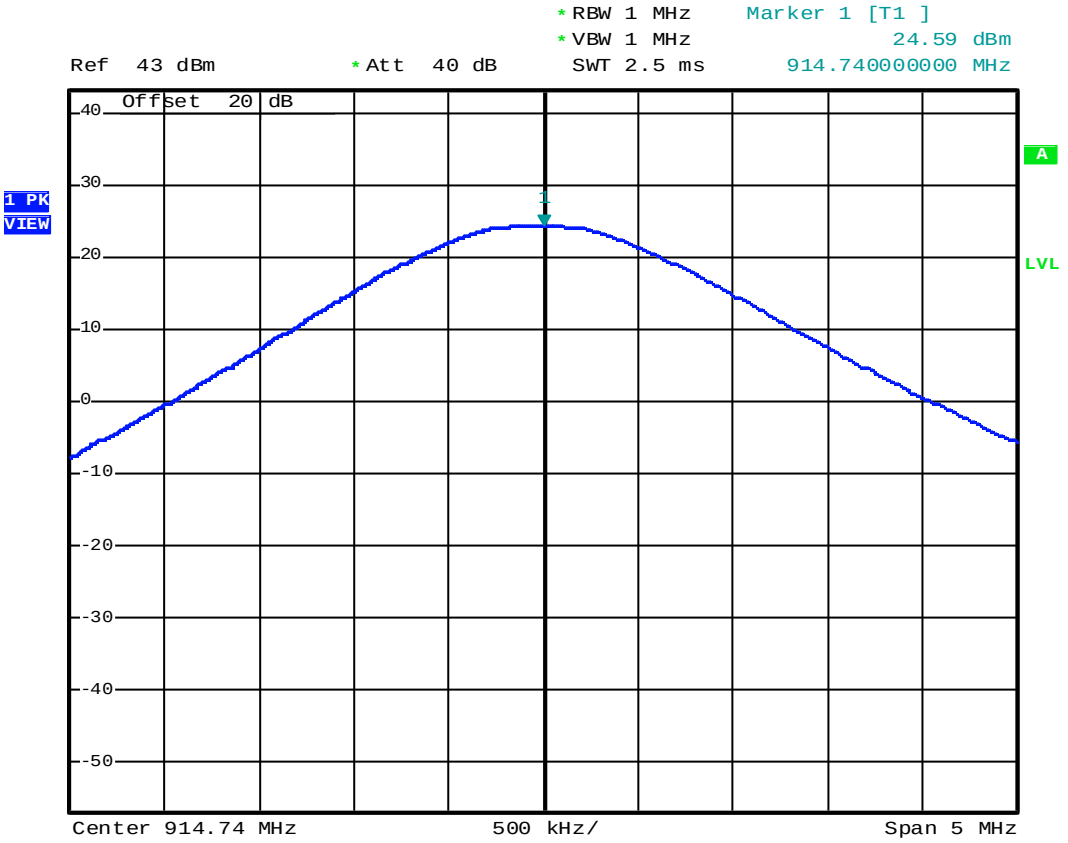
Appendix 6 : Plotted Data for Output Peak Power

Mode：Base Unit



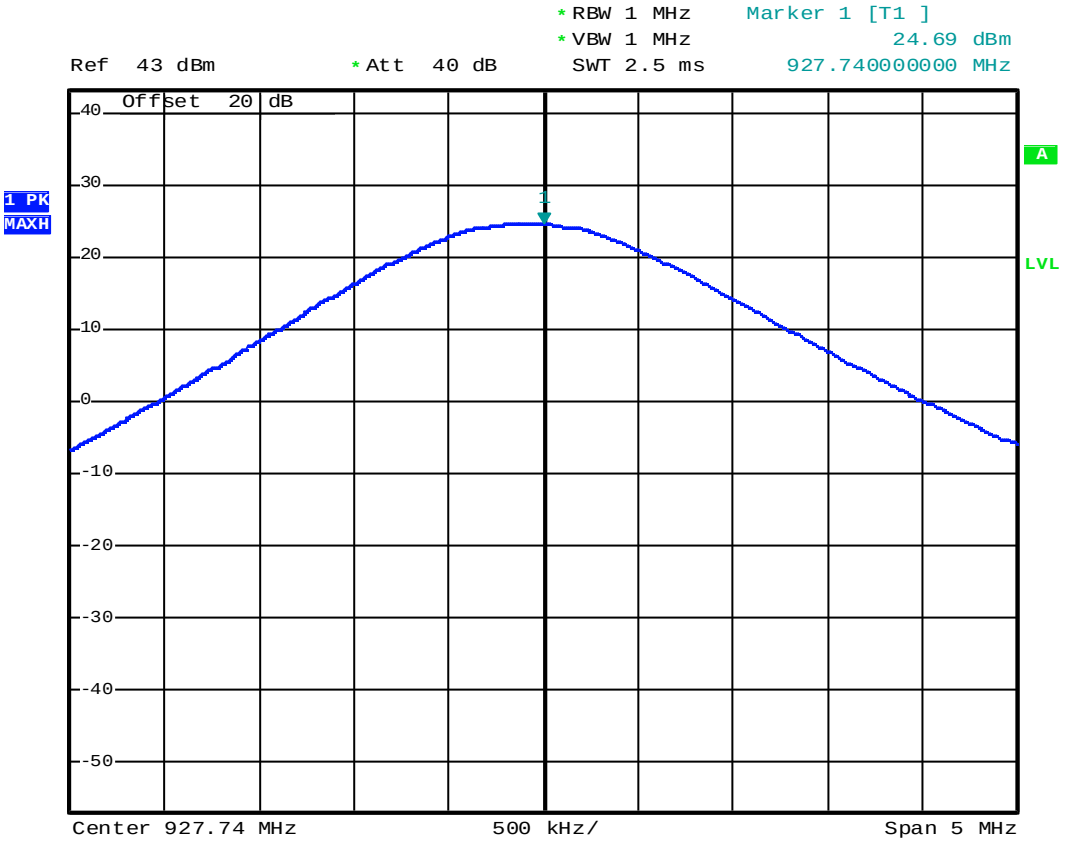
Date: 8.NOV.2005 11:09:41

Mode：Base Unit



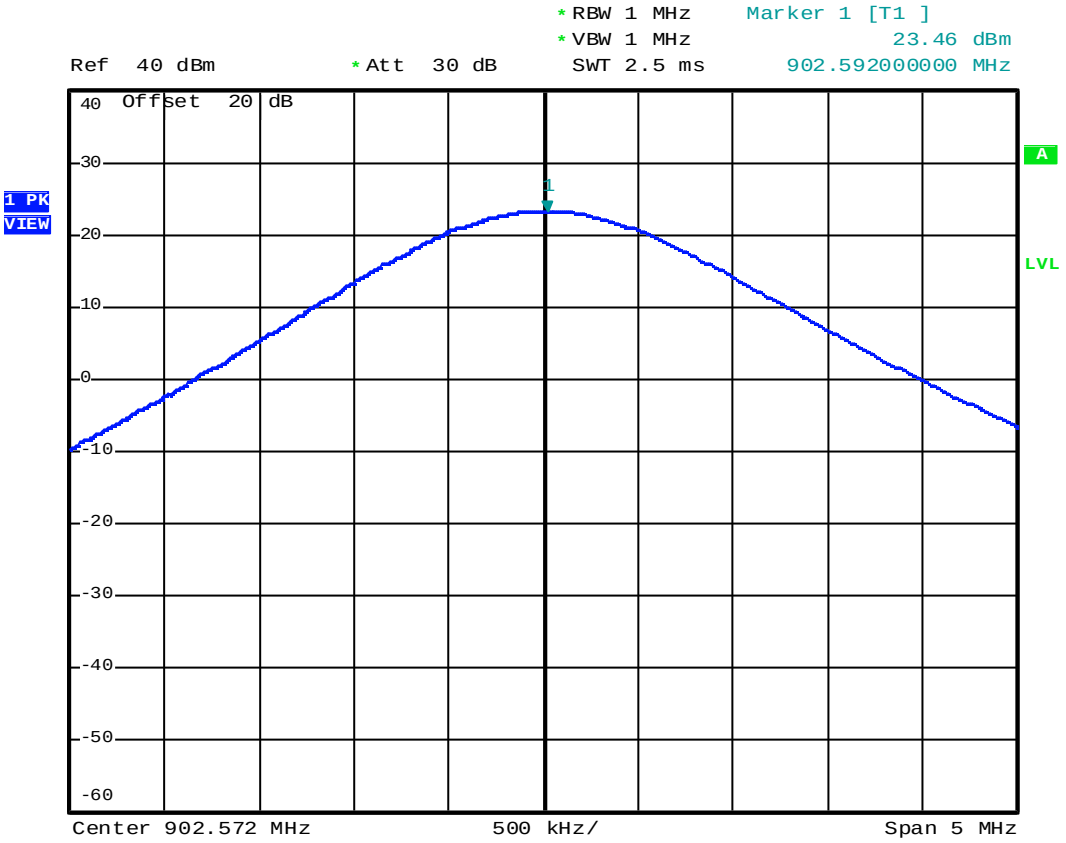
Date: 8.NOV.2005 11:10:05

Mode：Base Unit

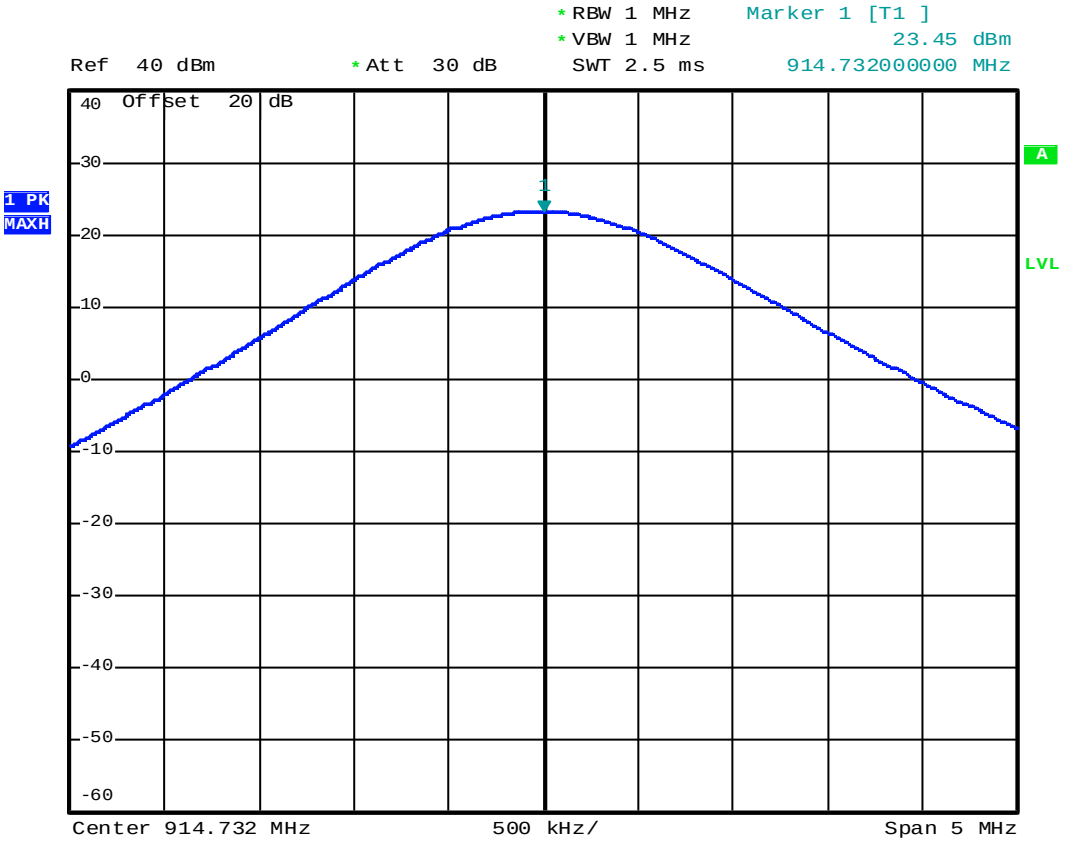


Date: 8.NOV.2005 11:10:26

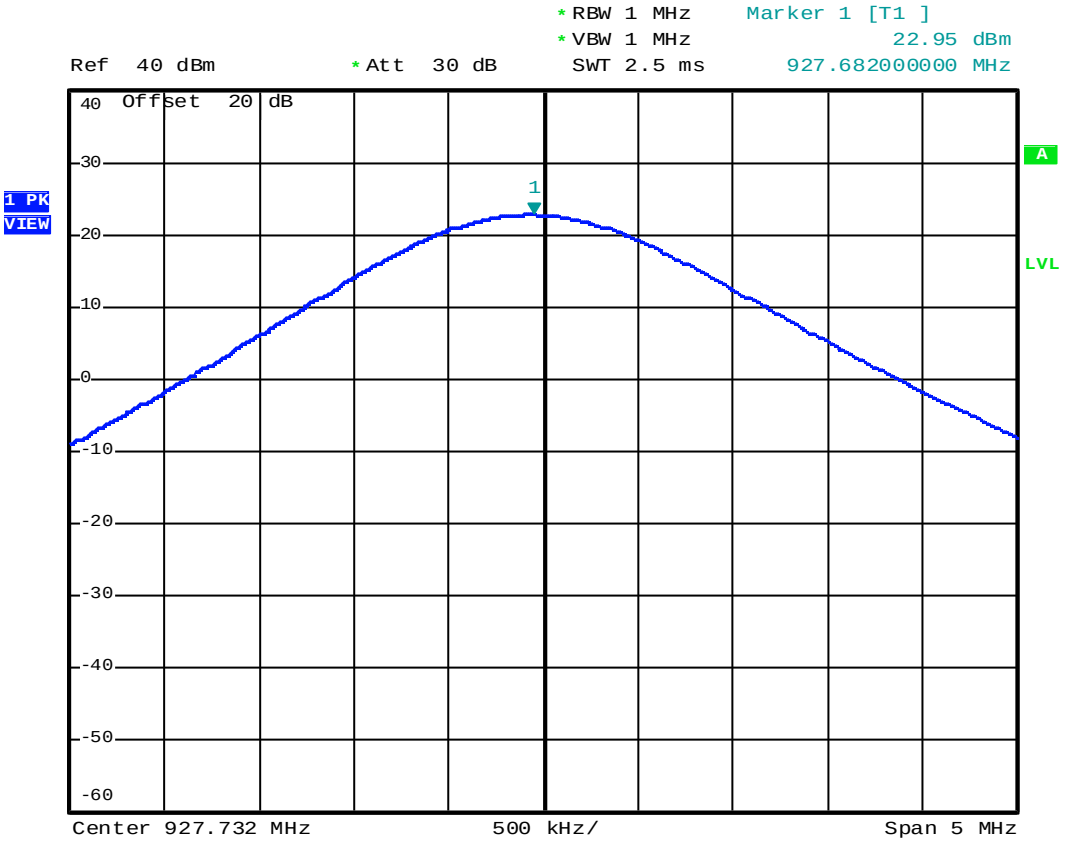
Mode：Handset Unit



Mode：Handset Unit

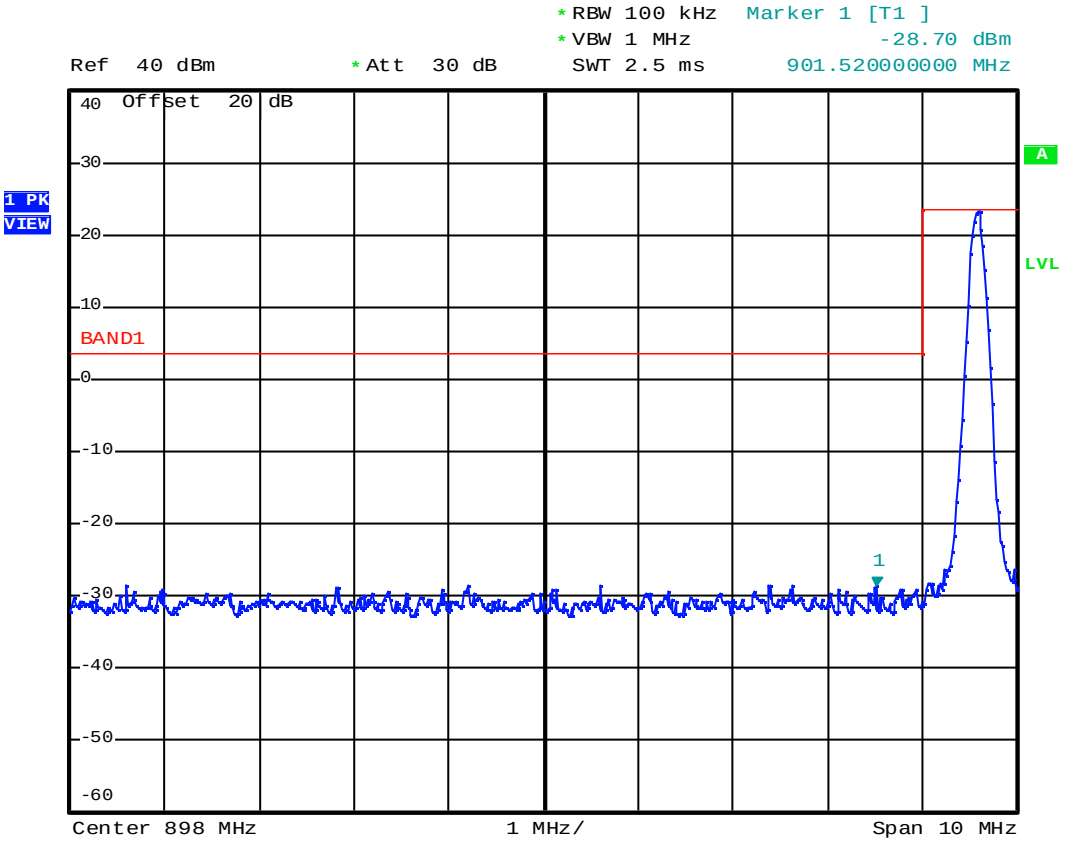


Mode：Handset Unit



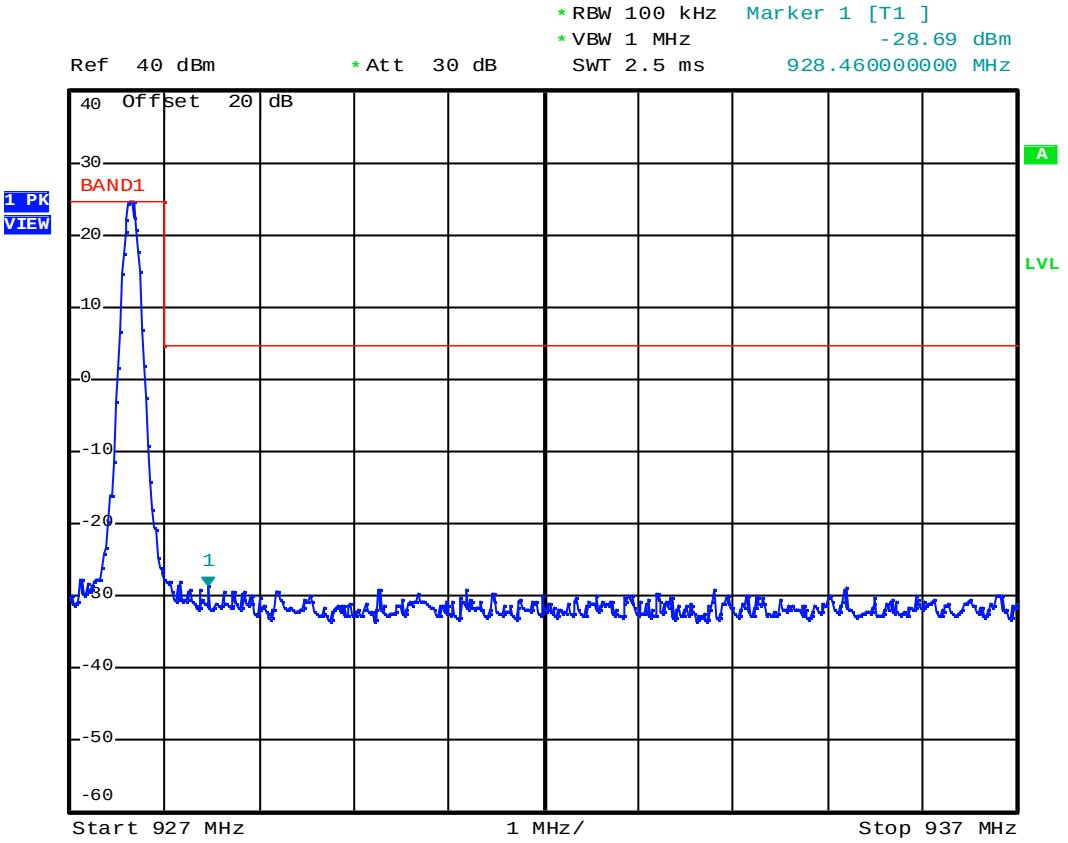
Appendix 7 : Plotted Data for 100 kHz Bandwidth from Band Edge

Mode：Base Unit



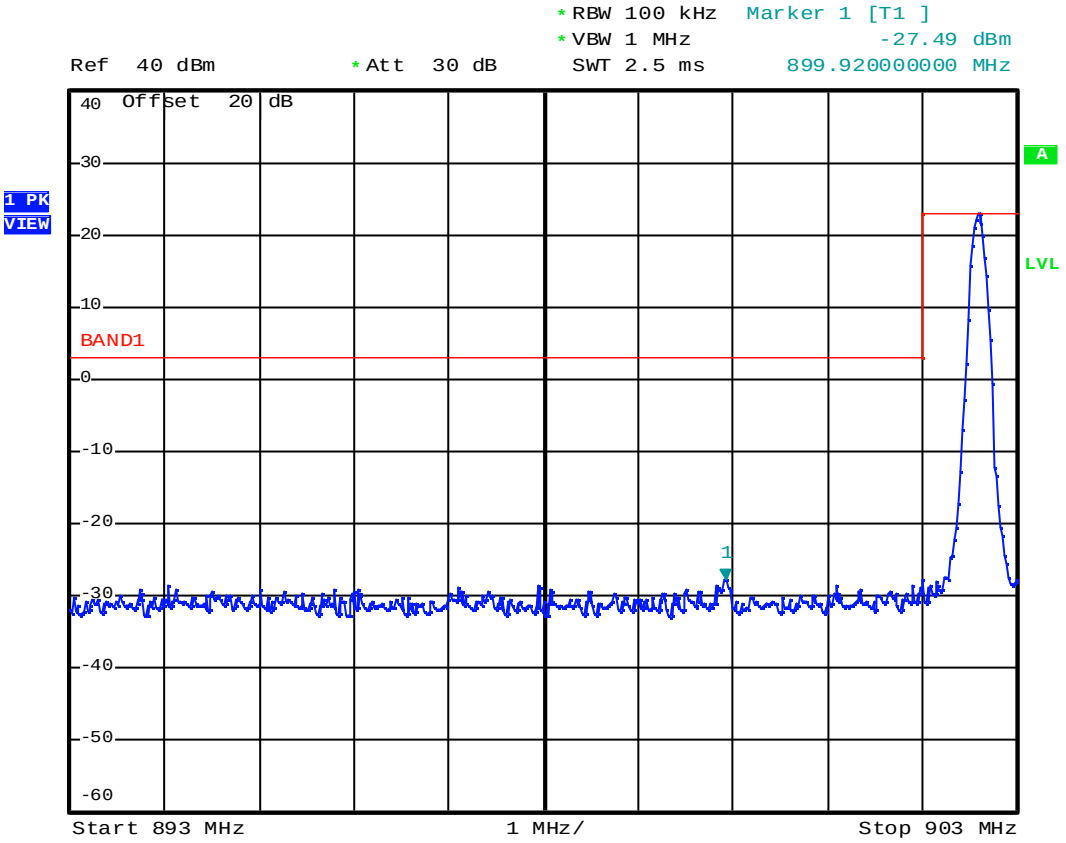
Date: 8.NOV.2005 11:17:28

Mode：Base Unit



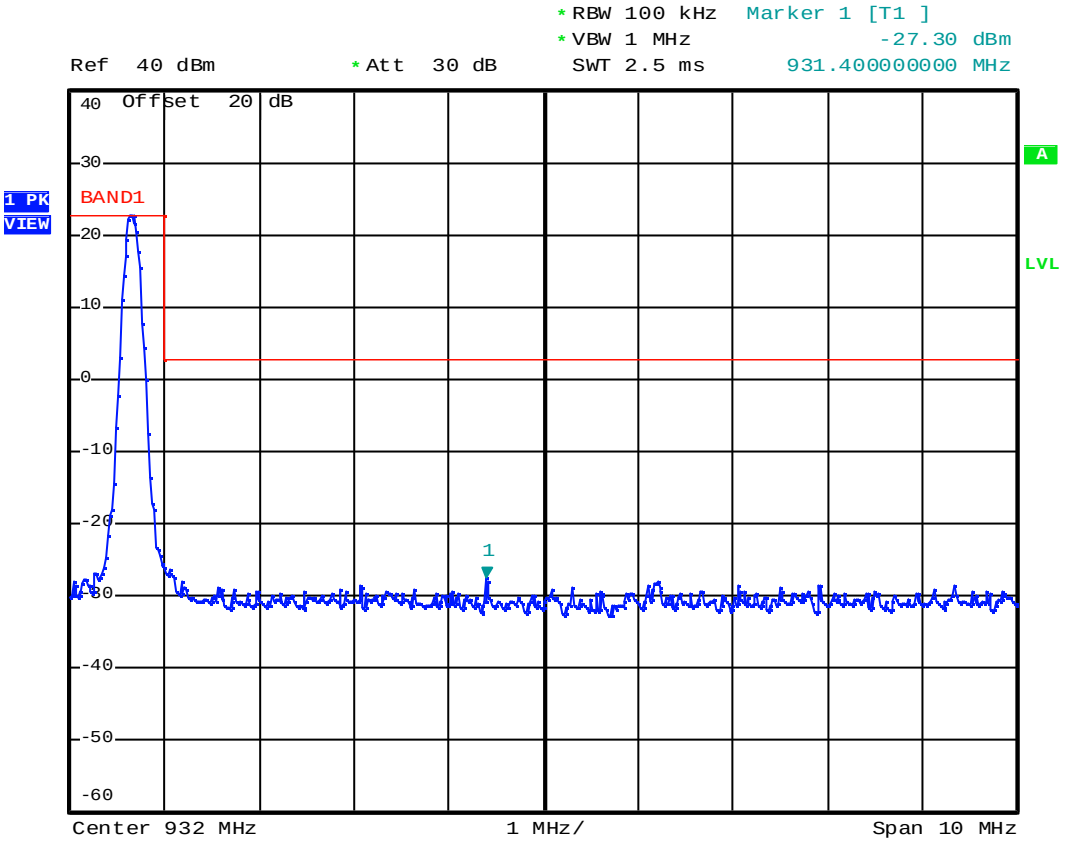
Date: 8.NOV.2005 11:15:48

Mode：Handset Unit



Date: 8.NOV.2005 13:31:21

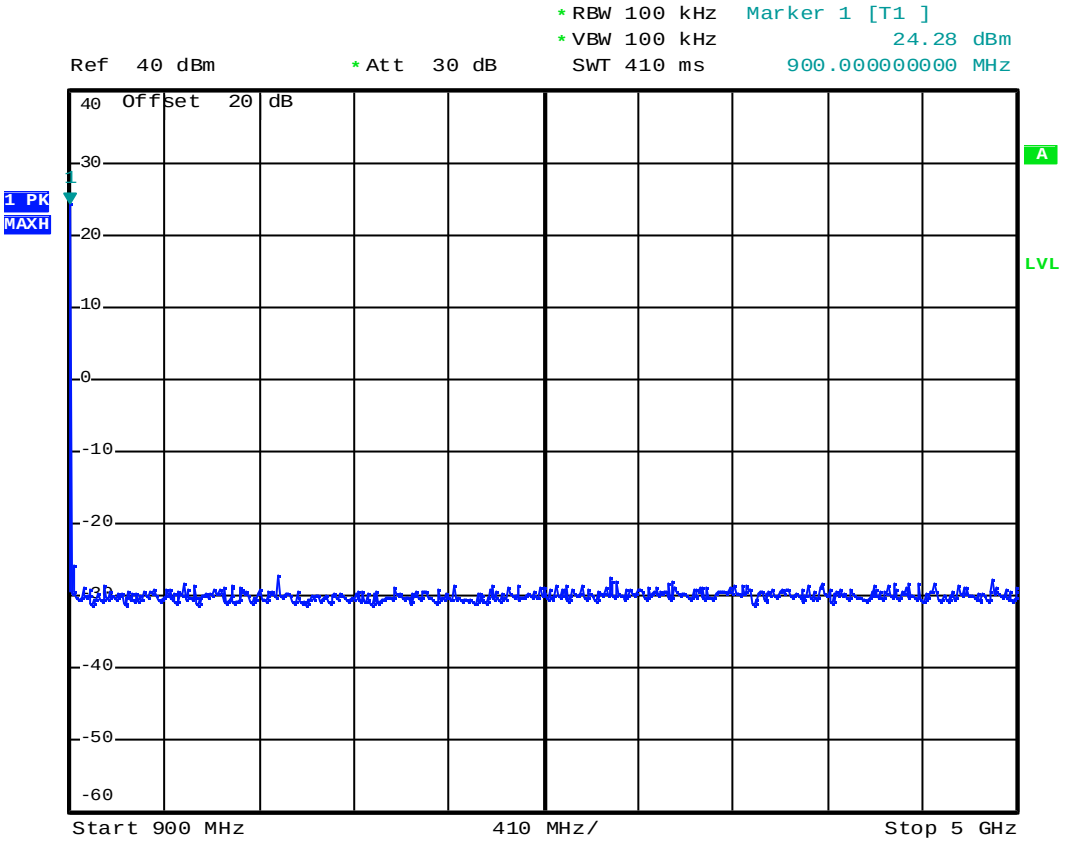
Mode：Handset Unit



Date: 8.NOV.2005 13:33:51

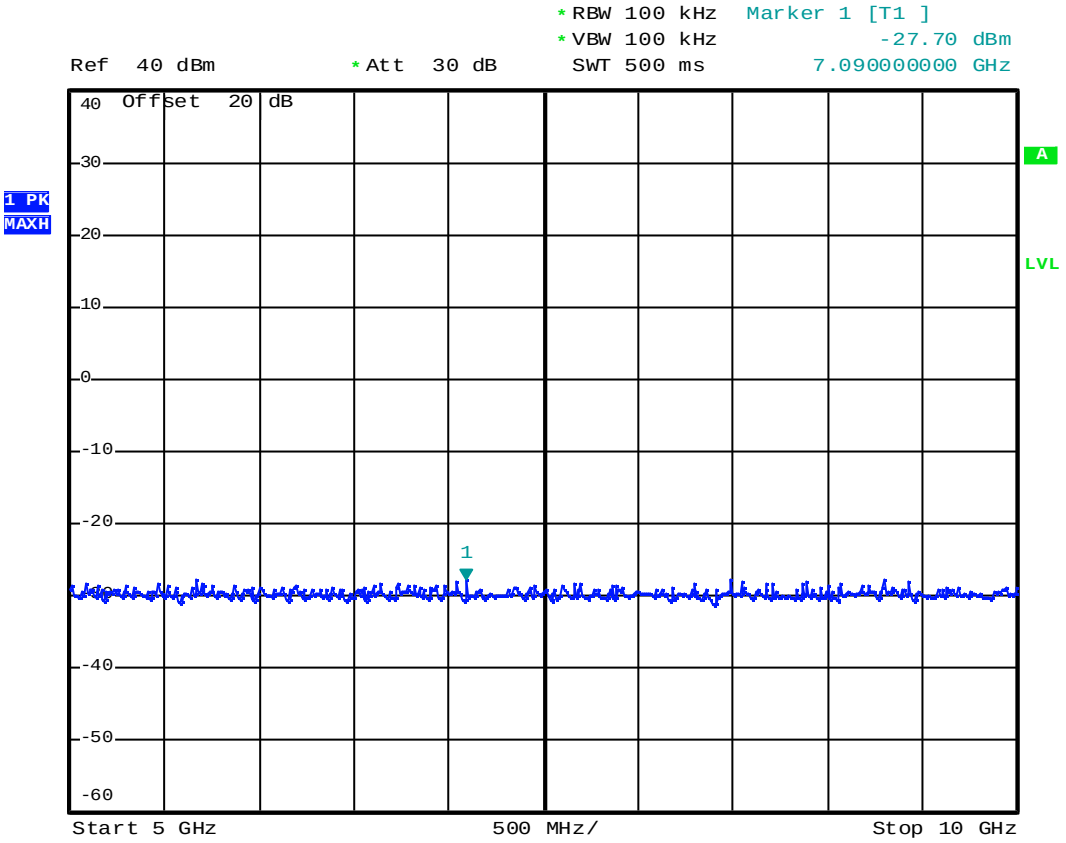
Appendix 8 : Plotted Data for Out-of-Band Conducted Emission

Mode：Base Unit



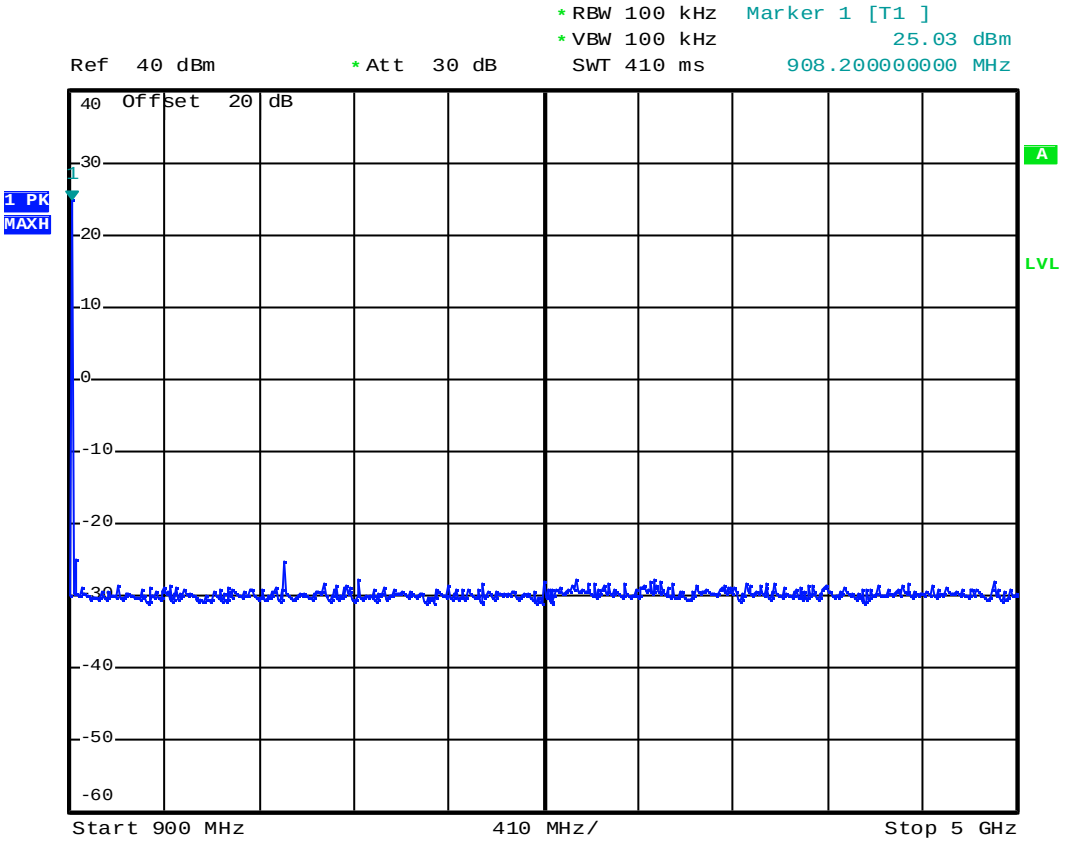
Date: 23.DEC.2005 15:30:07

Mode：Base Unit



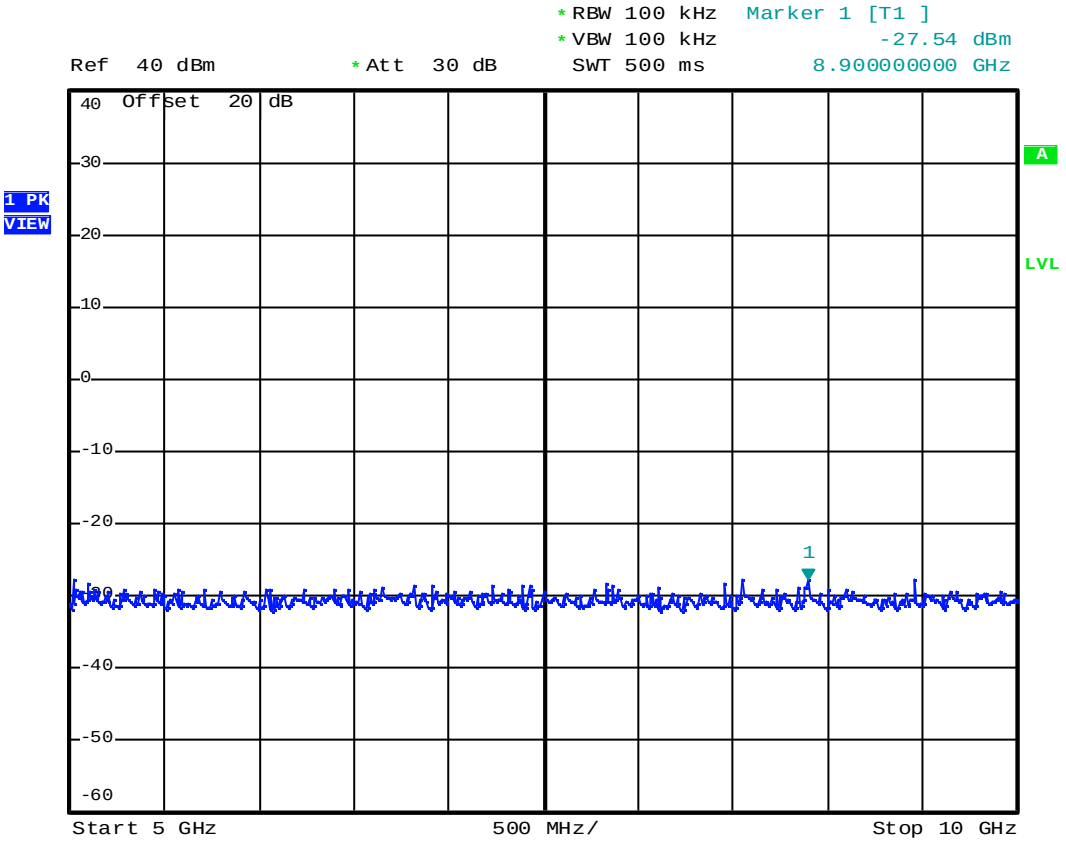
Date: 23.DEC.2005 15:30:29

Mode：Base Unit



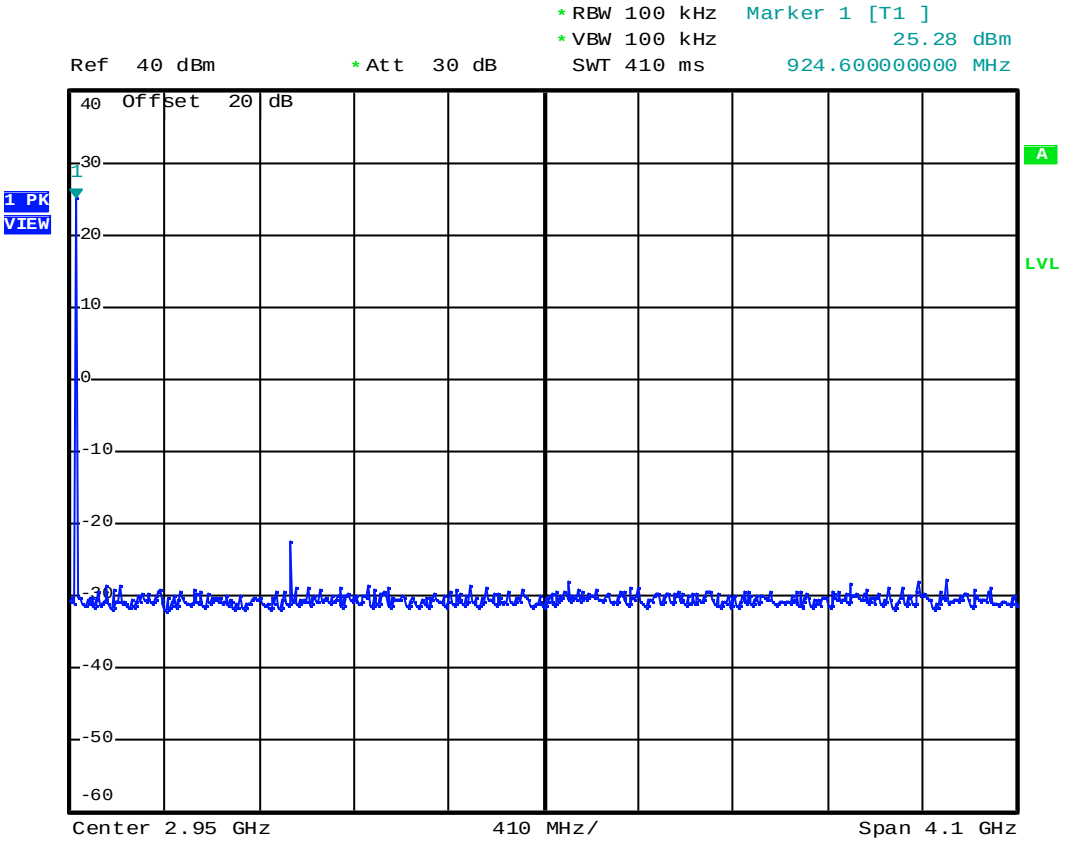
Date: 23.DEC.2005 15:31:14

Mode：Base Unit



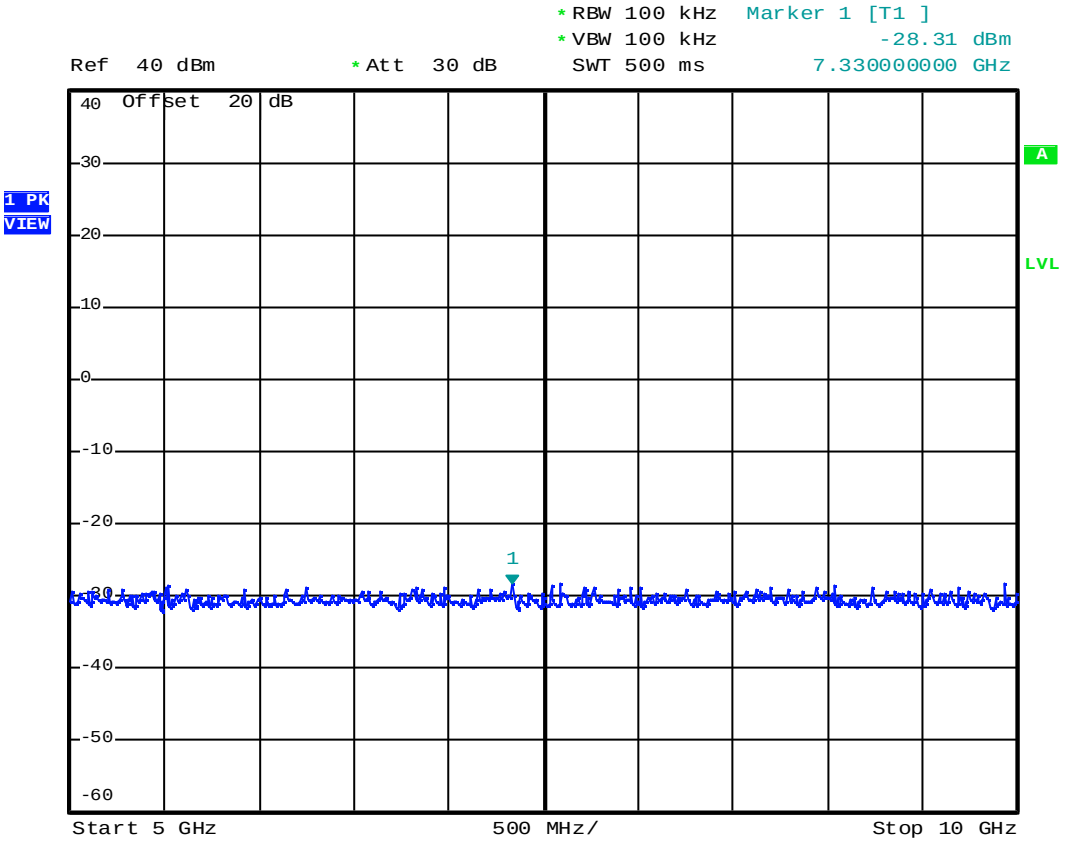
Date: 23.DEC.2005 15:30:48

Mode：Base Unit



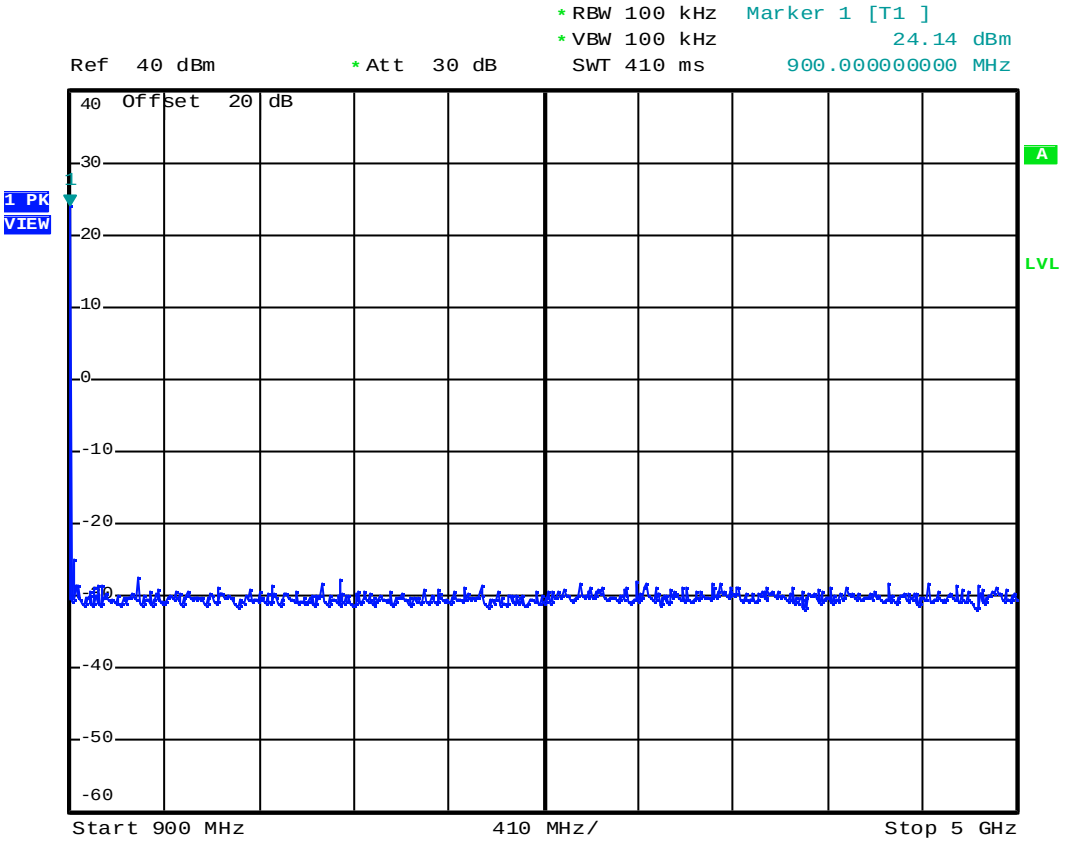
Date: 23.DEC.2005 15:31:37

Mode：Base Unit



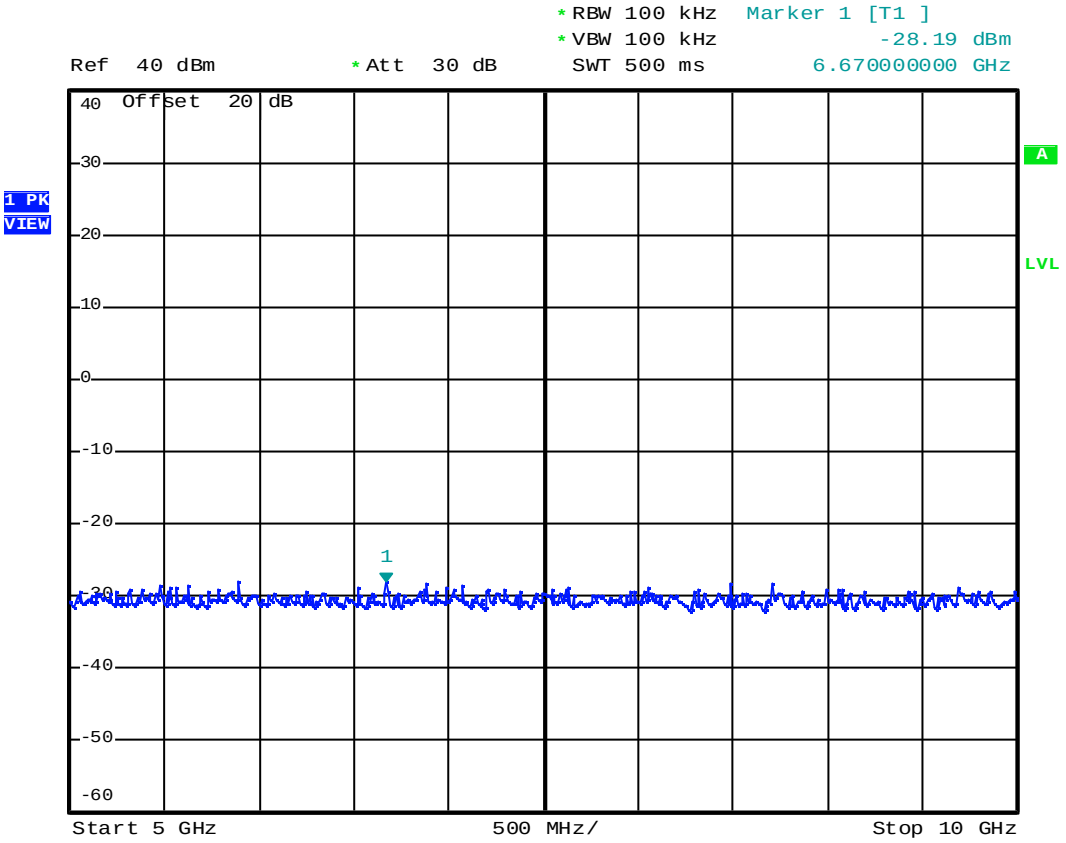
Date: 23.DEC.2005 15:31:56

Mode：Handset Unit



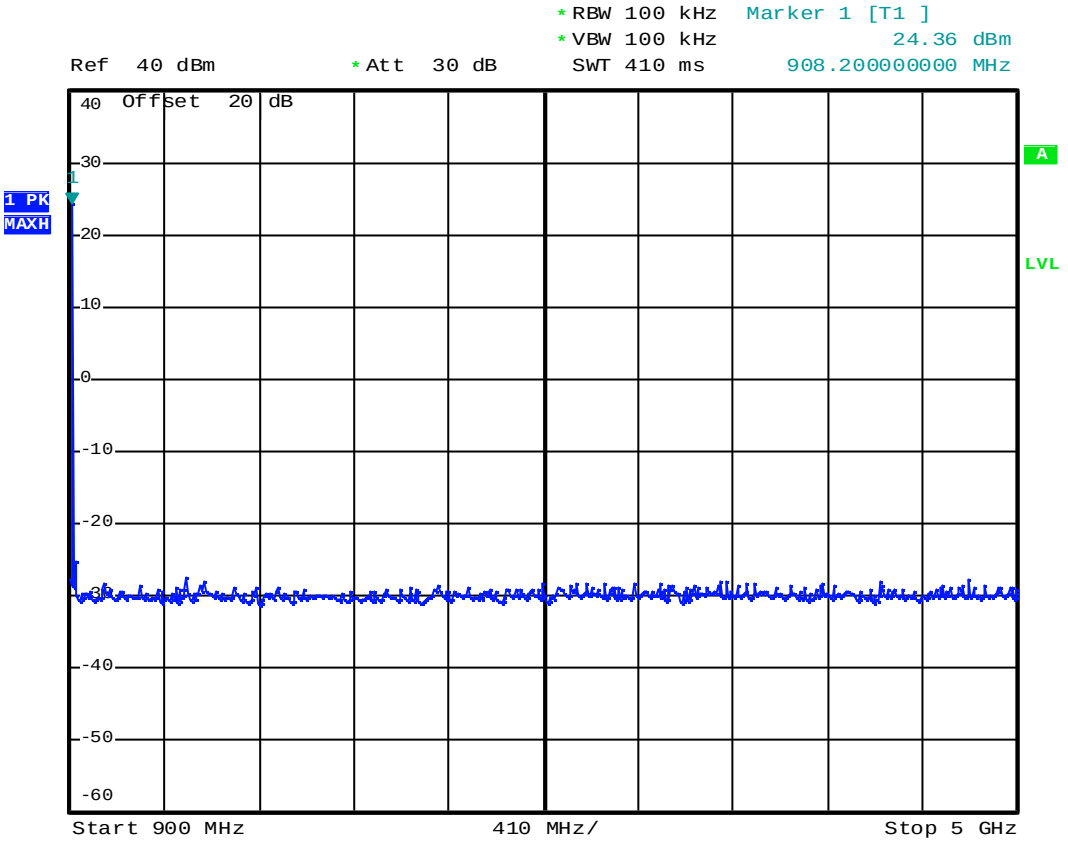
Date: 23.DEC.2005 15:19:22

Mode：Handset Unit



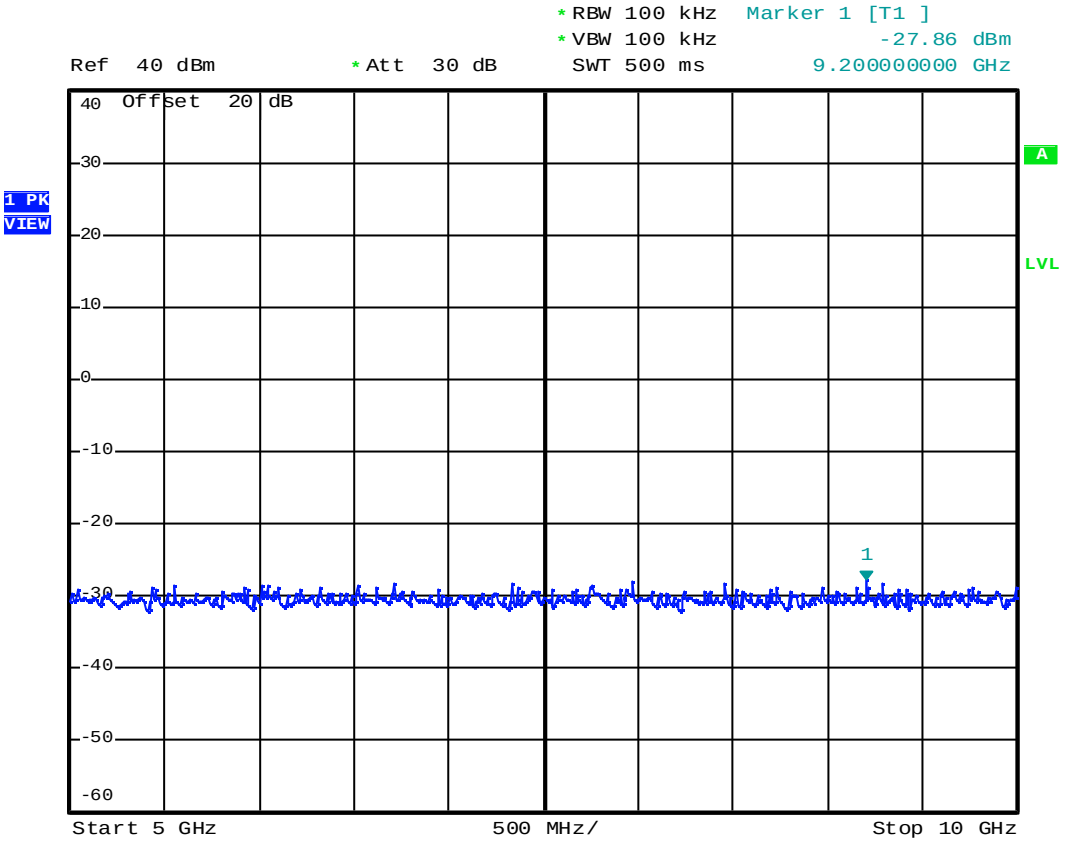
Date: 23.DEC.2005 15:18:55

Mode：Handset Unit



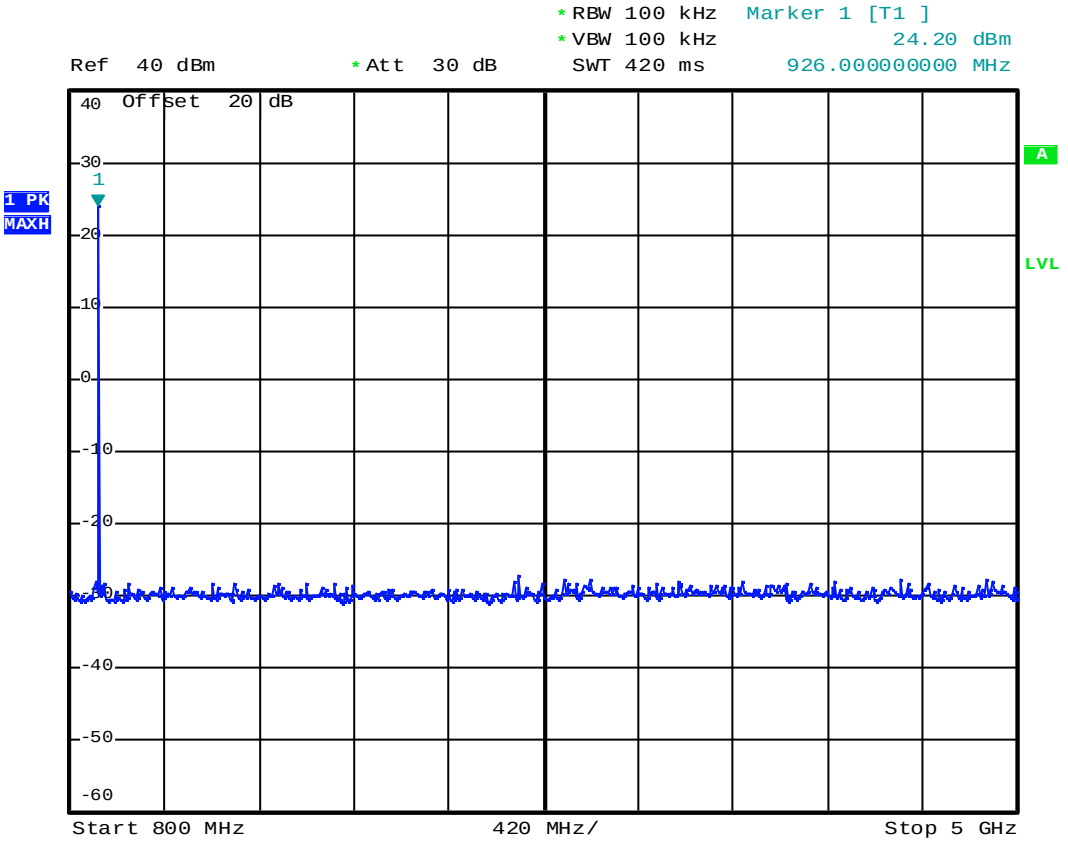
Date: 23.DEC.2005 15:19:49

Mode：Handset Unit



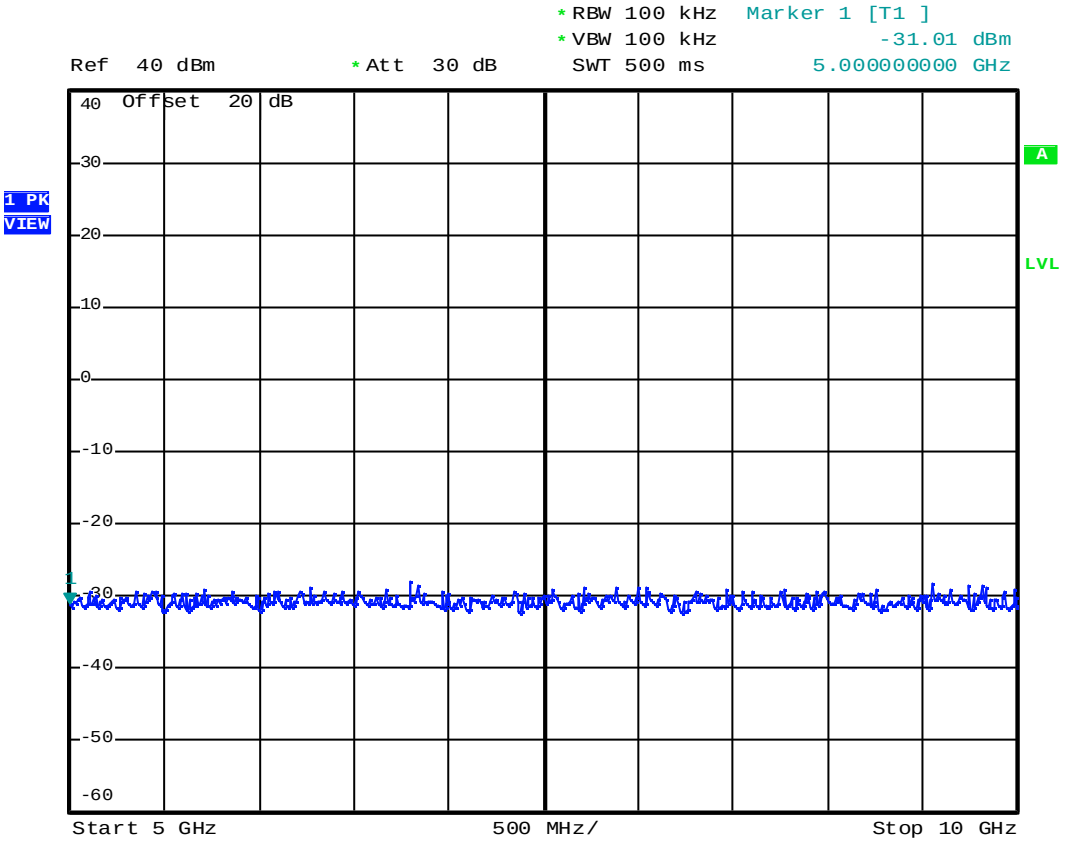
Date: 23.DEC.2005 15:20:13

Mode：Handset Unit



Date: 23.DEC.2005 15:18:09

Mode：Handset Unit



Date: 23.DEC.2005 15:18:28