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FCC EVALUATION REPORT FOR CERTIFICATION

Applicant :

Bellwave Co.,Ltd.

23rd~24th FL. Construction Finance Center Bldg,395-70

Shindaebang-dong,Dongjak-gu,Seoul,156-714,Korea

Dates of Issue : August, 01, 2006

Test Report No. : NK2GR152

Test Site : Nemko Korea Co., Ltd.

FCC ID**SY6BPP-UP310****Brand Name**

Bellwave

Bellwave Co., Ltd.

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Shindaebang-dong,Dongjak-gu,Seoul,156-714,Korea

Mr. Ju-Won Seol

Telephone No. : +82 2 829-7415

Applied Standard:

FCC 47 CFR Part 15 & 2

FCC 47 CFR Part 22H & Part 24E

Classification:

FCC Class B Device

Equipment Class:

Public Mobile Services

EUT Type:

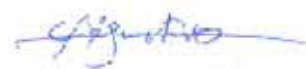
Dual-Band GSM Mobile Phone

The device bearing the brand name and FCC ID specified above has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4-2003.

I attest to the accuracy of data and all measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.



Tested By : S. Lee
Engineer



Reviewed By : H.H. Kim
Manager & Chief Engineer

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1. Scope

Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission under FCC Part 15 & Part 22 & 24.

| | |
|---------------------------|--|
| Responsible Party: | Bellwave Co.,Ltd. |
| Contact Person: | Mr. Ju-Won Seol Tel : +82 2 829-7415 |
| Manufacturer: | Bellwave Co.,Ltd. 23 rd ~24th FL. Construction Finance Center Bldg,395-70 Shindaebang-dong,Dongjak-gu,Seoul,156-714,Korea |

- FCC ID: SY6BPP-UP310
- Model: BPP-UP310
- Brand Name: Bellwave
- EUT Type: Dual-Band GSM Mobile Phone
- Electric Rating: DC3.7V, 760mA
- Equipment Class: Public Mobile Services
- Classification: Licensed Portable Transmitter Held to Ear (PCE)
- Applied Standard: FCC 47 CFR Part 15 & 2
FCC 47 CFR Part 22H &24E
- Test Procedure(s): ANSI C63.4 (2003), TIA/EIA603
- Dates of Test: July 18, 2006 to July 31, 2006
- Place of Tests: Nemko Korea Co., Ltd.
- Test Report No.: NK2GR152

2. Introduction (Site Description)

The measurement procedure described in American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz (ANSI C63.4-2003) was used in determining radiated and conducted emissions emanating from **Bellwave Co.,Ltd.**

FCC ID : **SY6BPP-UP310**

These measurement tests were conducted at **Nemko Korea Co., Ltd.**

The site address is 300-2, Osan-Ri, Mohyun-Myun, Yongin-City, GyungGi-Do, KOREA
The area of Nemko Korea Corporation Ltd. Test Site is located in a mountain area at 80 kilometers (48 miles) southeast and Incheon International Airport (Incheon Airport), 30 kilometers (18miles) south-southeast from central Seoul.

It is located in the valley surrounded by mountains in all directions where ambient radio signal conditions are quiet and a favorable area to measure the radio frequency interference on open field test site for the computing and ISM devices manufactures.

The detailed description of the measurement facility was found to be in compliance with the requirements of § 2.948 according to ANSI C63.4 2003.



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Fig. 1. The map above shows the Seoul in Korea vicinity area.
The map also shows Nemko Korea Corporation Ltd. and Incheon Airport.

3. Test Conditions & EUT Information

Operating During Test

The EUT was tested at the lowest channel, middle channel and the highest channel with the maximum RF Power and all data recorded in the report.

Environmental Conditions

| | |
|-------------------|-----------|
| Temperature | 22 ~ 25 |
| Relative Humidity | 35% ~ 65% |

Description of EUT

| | | |
|------------------------|-------------------------------------|--|
| Frequency Range | GSM850 | Tx : 824.2MHz ~ 848.8MHz Rx : 869.2MHz ~ 893.8MHz |
| | PCS1900 | Tx : 1850.2MHz ~ 1909.8MHz Rx : 1930.2MHz ~ 1989.8MHz |
| Output Power | GSM850 | 2.917W ERP (34.65dBm) |
| | PCS1900 | 1.548W EIRP (31.90dBm) |
| Emission Designator | 250KGXW | |
| Modulation(s) | GSM (GPRS) | |
| Frequency Tolerances | $\pm 0.00025\%$ (2.5ppm) | |
| Antenna Type | Internal | |
| Dimensions (L X W X H) | 166mm X 48 mm X 7.0 mm (95X48X15mm) | |
| Weight | 76g(with Battery) | |
| Operating Conditions | Storage : -30 ~ +60 | |
| DC Input Voltage | +3.7Vdc, 760mA | |

Support Equipment

| | | |
|--|--|-----------------|
| Dual Band GSM Mobile Phone (EUT) | Bellwave Co., Ltd. FCC ID: SY6BPP-UP310 | S/N: N/A |
| Travel Adaptor | Bellwave Co., Ltd. Model : TA-11E 1.5m shielded dc power cable | S/N: N/A |
| Headset | Bellwave Co., Ltd. Model : N/A 1.2m unshielded stereo jack cable | S/N: N/A |
| Wireless Communications Test set | Agilent Model: E5515C 1.8m shielded power cable | S/N: GB43193659 |

4. Measuring Instrument Calibration

All measurements were made with instruments calibrated according to the recommendation by manufacturer. Measurement of radiated emissions and conducted emissions were made with instruments conforming to American National Standards Institute, ANSI C63.4-2003.

The calibration of measuring instrument, including any accessories that may affect test results, were performed according to the recommendation by manufacturer.

- End of page -

5. Summary of Test Results

The EUT has been tested according to the following specification:

| Description of Test | FCC Rule | Result |
|--|--|----------|
| Modulation Characteristics | §2.1047 | Complies |
| ERP / EIRP Measurement | §2.1046 §22.913(a) §24.232(b) | Complies |
| Conducted Output Power | §2.1046(a) §22.913(a) §24.232(a) | Complies |
| Occupied Bandwidth / 26dB Bandwidth | §2.1049(h) | Complies |
| Spurious Emission at antenna Terminals | §2.1051 §22.917(a) §24.238(a) | Complies |
| Field Strength of spurious Radiation | §2.1053 §22.917(a) §24.238(a) | Complies |
| Frequency Stability / Temperature Variation | §2.1055 §22.355 §24.235 | Complies |
| Band Edge | §22.917(a) §24.238(a) | Complies |
| AC Power Line Conducted Emission | §15.207 | Complies |

6. Recommendation / Conclusion

The data collected shows that the Bellwave Dual-Band GSM Mobile Phone.
FCC ID : SY6BPP-UP310 complies with all the requirements of Parts 2 & 22 & 24
of the FCC Rules.

The highest emission observed was at **0.48MHz** for conducted emissions with a
Q.P margin of **7.1 dB**.

7. Test Equipment List

| No. | Instrument | Manufacturer | Model | Serial No. | Calibration Date | Calibration Interval |
|-----|---------------------------------------|---------------|-------------|------------|------------------|----------------------|
| 1 | Test Receiver | R & S | ESCS 30 | 833364/020 | Aug. 17 2005 | 1year |
| 2 | *Test Receiver | R & S | ESCS 30 | 100302 | Dec. 06 2005 | 1year |
| 3 | Amplifier | Agilent | 8447F | 3113A04549 | Aug. 17 2005 | 1year |
| 4 | Amplifier | HP | 8447F | 2944A03956 | Aug. 17 2005 | 1year |
| 5 | *Amplifier | HP | 8447F | 2805A03351 | Oct. 25 2005 | 1year |
| 6 | *Amplifier | HP | 8449B | 3008A00107 | Mar. 12 2006 | 1year |
| 7 | *Spectrum Analyzer | HP | 8566B | 267A03469 | Mar.10 2006 | 1year |
| 8 | Spectrum Analyzer | Advantest | R3265A | 45060401 | Dec.06 2005 | 1year |
| 9 | *Spectrum Analyzer | HP | 8568B | 1912A00573 | Oct.25 2005 | 1year |
| 10 | *Biconical Log-Perio. Antenna | ARA | LBP-2520/A | 1203 | May. 06 2006 | 1year |
| 11 | *Double Ridged Broadband Horn Antenna | Schwarzbeck | BBHA 9120 D | 9120D-474 | Apr. 05 2006 | 1year |
| 12 | *Biconical Log Antenn | ARA | LPB-2520/A | 1180 | Mar. 06 2006 | 1year |
| 13 | Signal Generater | R & S | SMP02 | 833286/003 | Aug. 17 2005 | 1year |
| 14 | *LISN | R & S | ESH3-Z5 | 833874/006 | Oct. 25 2005 | 1year |
| 15 | LISN | Kyoritsu | KNW-407 | 8-1034-10 | Mar. 10 2006 | 1year |
| 16 | *Position Controller | DAEIL EMC | N/A | N/A | N/A | N/A |
| 17 | *Turn Table | DAEIL EMC | N/A | N/A | N/A | N/A |
| 18 | *Antenna Mast | DAEIL EMC | N/A | N/A | N/A | N/A |
| 19 | *Anechoic Chamber | EM Eng. | N/A | N/A | N/A | N/A |
| 20 | *Shielded Room | EM Eng. | N/A | N/A | N/A | N/A |
| 21 | *Position Controller | Seo-Young EMC | N/A | N/A | N/A | N/A |
| 22 | *Turn Table | Seo-Young EMC | N/A | N/A | N/A | N/A |
| 23 | *Antenna Mast | Seo-Young EMC | N/A | N/A | N/A | N/A |
| 24 | *Anechoic Chamber | Seo-Young EMC | N/A | N/A | N/A | N/A |
| 25 | *Double Ridged Broadband Horn Antenna | Schwarzbeck | BBHA 9120 D | 9120D-508 | Oct. 12 2005 | 1year |
| 26 | *Communications Test Set | Agilent | E5515C | GB43193659 | Jun.09 2006 | 1year |
| 27 | *Spectrum Analyzer | Agilent | E4440A | MY44022567 | Dec.31 2005 | 1year |

*) Test equipment used during the test

8. Description of Tests

8.1 Conducted Emissions

The Line conducted emission test facility is located inside a 4 X 7 X 2.5 meter shielded enclosure.

It is manufactured by EM engineering. The shielding effectiveness of the shielded room is in accordance with MIL-STD-285 or NSA 65-6.

A 1m X 1.5m wooden table 0.8m height is placed 0.4m away from the vertical wall and 1.5m away from the side of wall of the shielded room

Rohde & Schwarz (ESH3-Z5) and Kyoritsu (KNW-407) of the 50ohm/50uH Line Impedance Stabilization Network(LISN) are bonded to the shielded room.

The EUT is powered from the Rohde & Schwarz LISN and the support equipment is powered from the Kyoritsu LISN. Power to the LISN s are filtered by high-current high insertion loss Power line filters. The purpose of filter is to attenuate ambient signal interference and this filter is also bonded to shielded enclosure. All electrical cables are shielded by tinned copper zipper tubing with inner diameter of 1/2".

If DC power device, power will be derived from the source power supply it normally will be powered from and this supply lines will be connected to the LISNs,

All interconnecting cables more than 1 meter were shortened by non inductive bundling (serpentine fashion) to a 1 meter length.

Sufficient time for EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the spectrum analyzer to determine the frequency producing the maximum EME from the EUT. The spectrum was scanned from 150kHz to 30MHz with 20msec sweep time.

The frequency producing the maximum level was re-examined using the EMI test receiver. (Rohde & Schwarz ESCS30).

The detector function were set to CISPR quasi-peak mode & average mode.

The bandwidth of receiver was set to 9KHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each EME emission.

Each emission was maximized by; switching power lines; varying the mode of operation or resolution; clock or data exchange speed; scrolling H pattern to the EUT and of support equipment, and powering the monitor from the floor mounted outlet box and computer aux AC outlet, if applicable; which ever determined the worst case emission.

Each EME reported was calibrated using the R&S signal generator.

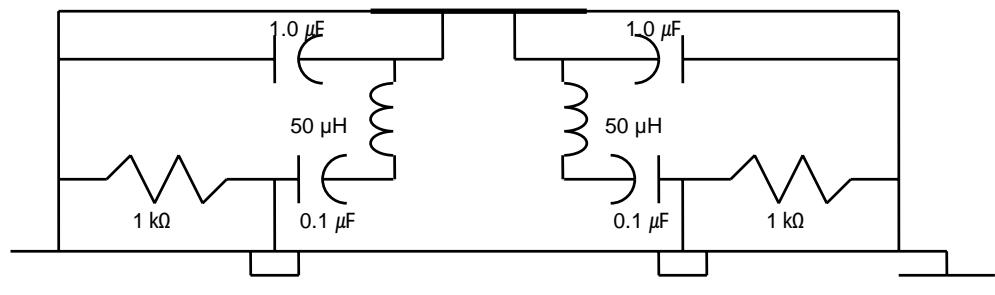


Fig. 2. LISN Schematic Diagram

8.2 Radiated Emissions

Preliminary measurement were made indoors at 3 meter using broad band antennas, broadband amplifier, and spectrum analyzer to determine the frequency producing the maximum EME. Appropriate precaution was taken to ensure that all EME from the EUT were maximized and investigated. The Technology configuration, clock speed, mode of operation or video resolution, turntable azimuth with respect to the antenna was note for each frequency found. The spectrum was scanned from 30 to 1000MHz using Biconical log Antenna (ARA, LPB-2520/A).

Final Measurements were made outdoors at 3 or 10m test range using Logbicon Super Antenna (Schwarzbeck, VULB 9166).

The test equipment was placed on a wooden table.

Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition.

Each frequency found during pre-scan measurements was reexamined and investigated using EMI test receiver.(ESCS30)

The detector function were set to CISPR quasi-peak and peak mode and the bandwidth of the receiver were set to 120KHz and 1MHz depending on the frequency or type of signal. The half wave dipole antenna was tuned to the frequency found during preliminary radiated measurements.

The EUT support equipment and interconnecting cables were re configured to the setup producing the maximum emission for the frequency and were placed on top of a 0.8m high non- metallic 1.0X 1.5 meter table.

The EUT, support equipment and interconnecting cables were re-arranged and manipulated to maximize each EME emission.

The turn table containing the Technology was rotated; the antenna height was varied 1 to 4meter and stopped at the azimuth or height producing the maximum emission. Each emission was maximized by : switching power lines; varying the mode of operation or resolution; clock or data exchange speed; scrolling H pattern to the EUT and of support equipment, and powering the monitor from the floor mounted outlet box and computer aux AC outlet, if applicable; which ever determined the worst case emission.

Each EME reported was calibrated using the R/S signal generator.

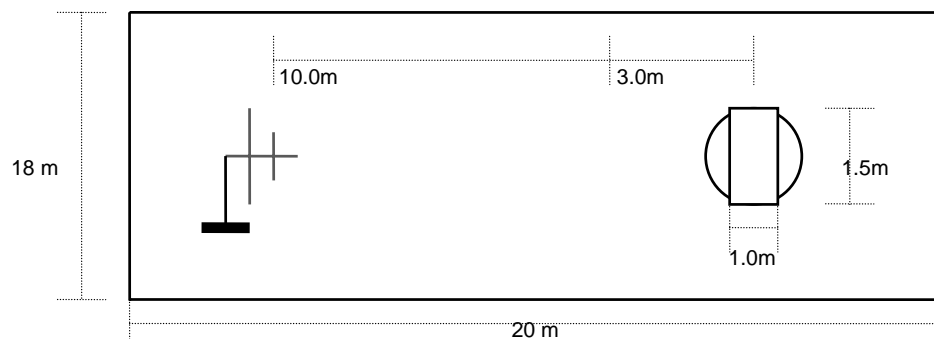


Fig. 3. Dimensions of Outdoor Test Site

8.3 Effective Radiated Power / Equivalent Isotropic Radiated Power

Test Set-up

Effective Radiated Power Output and Equivalent Isotropic Radiated Power output Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2003.

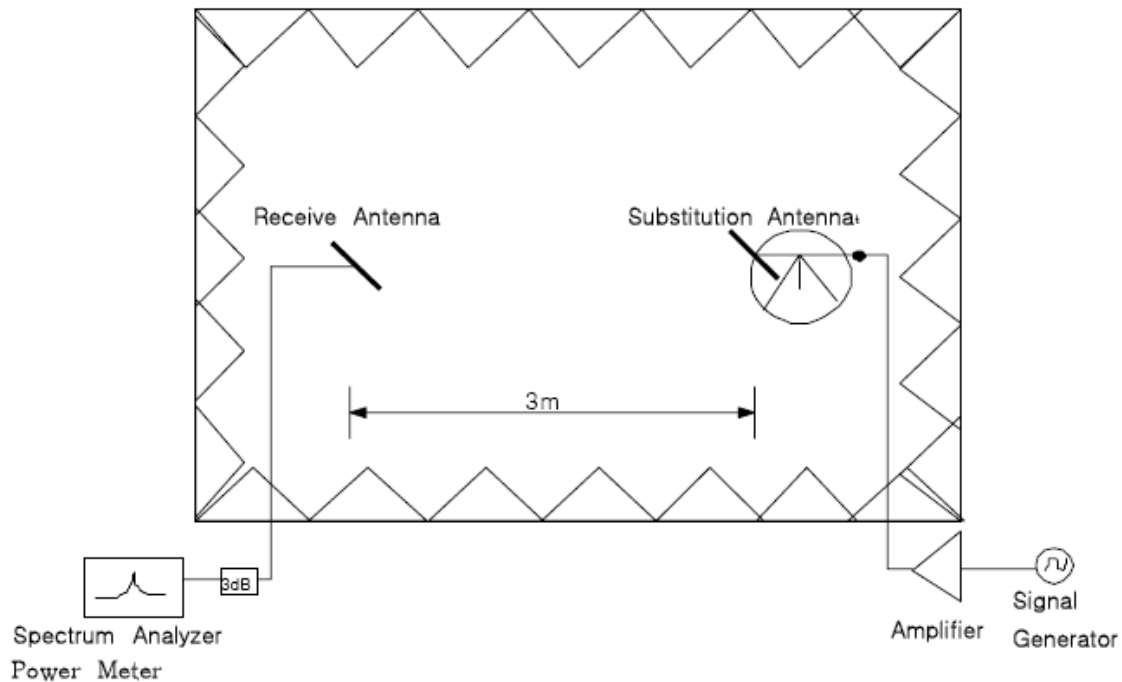


Figure 4. Diagram of ERP/EIRP test Set-up

The EUT was set on a non-conductive turntable in a semi anechoic chamber. In the corner of the chamber there was a communication antenna, which was connected to the BS simulator located outside the chamber. The radiated power from the EUT was measured with an antenna fixed to a antenna tower. The tower and turn table were remotely controlled to turn the EUT and change the antenna polarization. The measured signal was routed from the measuring antenna to the spectrum analyzer. The BS simulator was used to set the TX channel and power level and modulate the TX signal with different bit patterns.

Test Method

- The maximum power level was searched by moving the turn table and measuring antenna and manipulating the EUT. This level (P_{EUT}) was recorded.
- The EUT was replaced with a substituting antenna.
- The substituting antenna was fed with the power (P_{Subst_TX}) giving a convenient reading on the spectrum analyzer. That reading (P_{Subst_RX}) on spectrum analyzer was recorded.

8.4 Radiated Spurious & Harmonic Emission

Test Set-up

Effective Radiated Power Output and Equivalent Isotropic Radiated Power output Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2003.

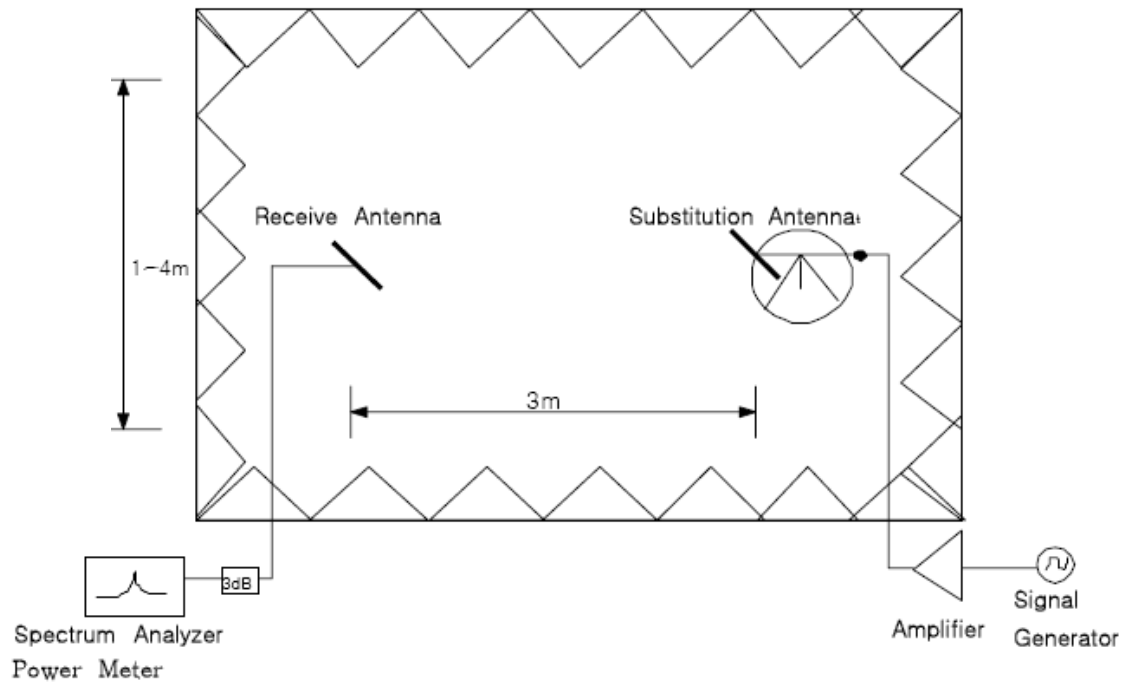


Figure 5. Diagram of Radiated Spurious & Harmonic test Set-up

The EUT was set on a non-conductive turntable in a semi anechoic chamber. In the corner of the chamber there was a communication antenna, which was connected to the BS simulator located outside the chamber. The radiated power from the EUT was measured with an antenna fixed to a antenna tower. The tower and turn table were remotely controlled to turn the EUT and change the antenna polarization. The measured signal was routed from the measuring antenna to the spectrum analyzer. The BS simulator was used to set the TX channel and power level and modulate the TX signal with different bit patterns.

Test Method

- The maximum power level was searched by moving the turn table and measuring antenna and manipulating the EUT. This level (P_{EUT}) was recorded.
- The EUT was replaced with a substituting antenna.
- The substituting antenna was fed with the power (P_{Subst_TX}) giving a convenient reading on the spectrum analyzer. That reading (P_{Subst_RX}) on spectrum analyzer was recorded.

CALCULATION

The formula below was used to calculate the ERP/EIRP of the EUT.

$P_{\text{subst_TX[dBm]}}$, $P_{\text{subst_RX[dBm]}}$, $L_{\text{Cable[dB]}}$ and $G_{\text{substitute_antenna[dBd]}}$ factors are combined in one correction factor.

$$P_{\text{ERP[W]}} = \frac{10^{(P_{\text{sust_Tx[dBm]}} + P_{\text{EUT[dBm]}} - P_{\text{subst_Rx[dBm]}} + G_{\text{subst_antenna[dBd]}} - L_{\text{cable[dB]}}) / 10}}{1000}$$

where the variables are as follows:

| | |
|--|---|
| $P_{\text{EUT [dBm]}}$ | Measured power level from the EUT |
| $P_{\text{Subst_TX [dBm]}}$ | Power fed to the substituting antenna |
| $P_{\text{Subst_RX [dBm]}}$ | Power received with the spectrum analyzer |
| $G_{\text{Substitute_antenna [dBd]}}$ | Gain of the substitutive antenna over dipole (dBi – 2.15dB) |
| $L_{\text{Cable [dB]}}$ | Loss of the cable between signal generator and the substituting antenna |

8.5 Occupied Bandwidth / 26dB Emission Bandwidth

Occupied Bandwidth

The EUT was setup to maximum output power at its lowest channel.
The occupied bandwidth was measured using a spectrum analyzer.
The measurements are repeated for the highest and a middle channel.
The EUT's occupied bandwidth is measured as the width of the signal between two points, one below the carrier center frequency and one above the carrier frequency, outside of which all emissions are attenuated at least 26dB below the transmitter power.
Plots of the EUT's occupied bandwidth are shown.

26dB Emission Bandwidth

The transmitter output is connected to the spectrum analyzer.
The RBW of spectrum analyzer is set to approximately 1% of the emission bandwidth
And peak detection is used.
The emission bandwidth is defined as the total spectrum over which the power is higher than the peak power minus 26dB.

8.6 Spurious and Harmonic Emissions at Antenna Terminal

8.6.1 Occupied Bandwidth Emission Limits

- (a) On any frequency outside a license's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log(P)$ dB.
- (b) Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater.
However, in the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least 1% of the emission bandwidth of the fundamental emission of the transmitter may be employed.
The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.
- (c) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the licensee's frequency block edges, both upper and lower, as the design permits.
- (d) The measurement of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power.

| BLOCK | Frequency Range (MHz) Transmitter (Tx) | Frequency Range (MHz) Receiver (Rx) |
|-----------|---|--|
| A* Low +A | 824 ~ 835 | 869 ~ 880 |
| B | 835 ~ 845 | 880 ~ 890 |
| A* High | 845 ~ 846.5 | 890 ~ 891.5 |
| B* | 846.5 ~ 849 | 891.5 ~ 894 |

Table 1. Cellular Service Frequency Blocks

| BLOCK | Frequency Range (MHz) Transmitter (Tx) | Frequency Range (MHz) Receiver (Rx) |
|-------|---|--|
| A | 1850 ~ 1865 | 1930 ~ 1745 |
| B | 1870 ~ 1885 | 1950 ~ 1965 |
| C | 1895 ~ 1910 | 1975 ~ 1990 |
| D | 1865 ~ 1870 | 1945 ~ 1950 |
| E | 1885 ~ 1890 | 1965 ~ 1970 |
| F | 1890 ~ 1895 | 1970 ~ 1975 |

Table 2. Broadband PCS Service Frequency Blocks

8.6.2 Conducted Spurious Emission

Minimum standard:

On any frequency outside a license frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least $43+10\log(P)$ dB. Limit equivalent to -13dBm, calculation shown below.

$$43 + 10\log(2.917 \text{ W}) = 47.65 \text{ dB}$$

$$34.65\text{dBm} - 47.65 \text{ dB} = -13 \text{ dBm}$$

Compliance with the out-of-band emissions requirement is based on test being performed with an analyzer resolution bandwidth of 1MHz. However in the 1MHz band immediately outside and adjacent to the frequency block a resolution bandwidth of at least 1% of the fundamental emissions bandwidth may be employed.

Test Procedure:

The EUT was setup to maximum output power at its lowest channel.

The Resolution BW of the analyzer is set to 1% of the emission bandwidth to show compliance with the -13dBm limit, in the 1MHz bands immediately outside and adjacent to the edge of the frequency block.

The measurements are repeated for the EUT's highest channel. For the Out-of-Band measurements a 1MHz RBW was used to scan from 10MHz to 20GHz.

A display line was placed at -13dBm to show compliance. The high, lowest and a middle channel were tested for out of band measurements.

Plots are shown.

8.7 Frequency Stability / Temperature Variation

The frequency stability of the transmitter is measured by:

- a.) Temperature: The temperature is carried from -30°C to +60°C using an environmental chamber.
- b.) Primary Supply Voltage: The primary supply voltage is varied from 85% to 115% of the voltage normally at the input to the device or at the power supply terminals if cables are not normally supplied.

Specification: The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ ($\pm 2.5\text{ppm}$) of the center frequency.

Time Period and Procedure:

1. The carrier frequency of the transmitter and the individual oscillators is measured at room temperature (20°C to 25°C to provide a reference).
2. The equipment is subjected to an overnight "soak" at -30°C without any power applied.
3. After the overnight "soak" at -30°C (Usually 14~16 hours), the equipment is turned on in a "standby" condition for one minute before applying power to the transmitter. Measurement of the carrier frequency of the transmitter and the individual oscillators is made within a three minute interval after applying to the transmitter.
4. Frequency measurements are made at 10°C interval up to room temperature. At least a period of one and one half-hour is provided to allow stabilization of the equipment at each temperature level.
5. Again the transmitter carrier frequency and the individual oscillators is measured at room temperature to begin measurement of the upper temperature levels.
6. Frequency measurements are at 10 intervals starting at -30°C up to +60°C allowing at least two hours at each temperature for stabilization. In all measurements the frequency is measured within three minutes after re-applying power to the transmitter.
7. The artificial load is mounted external to the temperature chamber.

Note : The EUT is tested down to the battery endpoint.

9. Test Data

9.1 Effective Radiated Power (ERP)

EUT Mode : GSM850

Measurement Result :

| Frequency (MHz) | *EUT Pol. | Ant. Pol. | P _{EUT} (dBm) | P _{TX} (dBm) | P _{RX} (dBm) | G _{antenna} (dBd) | L _{Cable} (dBm) | ERP (dBm) | Limit (dBm) |
|-----------------|-----------|-----------|------------------------|-----------------------|-----------------------|----------------------------|--------------------------|-----------|-------------|
| 824.2 | H | H | -18.13 | 0 | -42.00 | 0.88 | 2.50 | 22.25 | 38.45 |
| | | V | -6.00 | 0 | -41.60 | 0.88 | 2.50 | 33.98 | |
| | E1 | H | -6.06 | 0 | -42.00 | 0.88 | 2.50 | 34.32 | |
| | | V | -13.39 | 0 | -41.60 | 0.88 | 2.50 | 26.59 | |
| | E2 | H | -6.56 | 0 | -42.00 | 0.88 | 2.50 | 33.82 | |
| | | V | -18.34 | 0 | -41.60 | 0.88 | 2.50 | 21.64 | |
| 836.6 | H | H | -17.96 | 0 | -42.20 | 1.40 | 2.50 | 23.14 | 38.45 |
| | | V | -6.26 | 0 | -40.90 | 1.40 | 2.50 | 33.54 | |
| | E1 | H | -7.03 | 0 | -42.20 | 1.40 | 2.50 | 34.07 | |
| | | V | -13.83 | 0 | -40.90 | 1.40 | 2.50 | 25.97 | |
| | E2 | H | -6.45 | 0 | -42.20 | 1.40 | 2.50 | 34.65 | |
| | | V | -17.80 | 0 | -40.90 | 1.40 | 2.50 | 22.00 | |
| 848.8 | H | H | -17.56 | 0 | -39.40 | 1.66 | 2.60 | 20.90 | 38.45 |
| | | V | -6.95 | 0 | -38.20 | 1.66 | 2.60 | 30.31 | |
| | E1 | H | -6.34 | 0 | -39.40 | 1.66 | 2.60 | 32.12 | |
| | | V | -12.94 | 0 | -38.20 | 1.66 | 2.60 | 24.32 | |
| | E2 | H | -6.27 | 0 | -39.40 | 1.66 | 2.60 | 32.19 | |
| | | V | -16.45 | 0 | -38.20 | 1.66 | 2.60 | 20.81 | |

Table 8. Radiated Measurements at 3meters

9.2 Equivalent Isotropic Radiated Power (EIRP)

EUT Mode : PCS1900

Measurement Result:

| Frequency (MHz) | *EUT Pol. | Ant. Pol. | P _{EUT} (dBm) | P _{TX} (dBm) | P _{RX} (dBm) | G _{antenna} (dBi) | L _{Cable} (dBm) | ERP (dBm) | Limit (dBm) |
|-----------------|-----------|-----------|------------------------|-----------------------|-----------------------|----------------------------|--------------------------|-----------|-------------|
| 1850.2 | H | H | -18.01 | 0 | -37.50 | 10.40 | 3.00 | 26.89 | 33.00 |
| | | V | -14.12 | 0 | -37.40 | 10.40 | 3.00 | 30.68 | |
| | E1 | H | -18.38 | 0 | -37.50 | 10.40 | 3.00 | 26.52 | |
| | | V | -17.86 | 0 | -37.40 | 10.40 | 3.00 | 26.94 | |
| | E2 | H | -17.90 | 0 | -37.50 | 10.40 | 3.00 | 27.00 | |
| | | V | -16.53 | 0 | -37.40 | 10.40 | 3.00 | 28.27 | |
| 1880.0 | H | H | -19.42 | 0 | -37.70 | 10.43 | 3.20 | 25.51 | 33.00 |
| | | V | -13.80 | 0 | -38.00 | 10.43 | 3.20 | 31.43 | |
| | E1 | H | -21.12 | 0 | -37.70 | 10.43 | 3.20 | 23.81 | |
| | | V | -17.09 | 0 | -38.00 | 10.43 | 3.20 | 28.14 | |
| | E2 | H | -19.92 | 0 | -37.70 | 10.43 | 3.20 | 25.01 | |
| | | V | -15.84 | 0 | -38.00 | 10.43 | 3.20 | 29.39 | |
| 1909.8 | H | H | -18.28 | 0 | -38.80 | 10.46 | 2.90 | 28.08 | 33.00 |
| | | V | -13.56 | 0 | -37.90 | 10.46 | 2.90 | 31.90 | |
| | E1 | H | -18.79 | 0 | -38.80 | 10.46 | 2.90 | 27.57 | |
| | | V | -18.69 | 0 | -37.90 | 10.46 | 2.90 | 26.77 | |
| | E2 | H | -19.73 | 0 | -38.80 | 10.46 | 2.90 | 26.63 | |
| | | V | -16.40 | 0 | -37.90 | 10.46 | 2.90 | 29.06 | |

Table 8. Radiated Measurements at 3meters

9.3 Conducted Output Power

Measurement Result:

| EUT Mode | Channel | Frequency (MHz) | Measurement Power (dBm) |
|----------|---------|-----------------|-------------------------|
| GSM850 | 128 | 824.2 | 32.24 |
| | 190 | 836.6 | 32.09 |
| | 251 | 848.8 | 31.98 |

Measurement Result:

| EUT Mode | Channel | Frequency (MHz) | Measurement Power (dBm) |
|----------|---------|-----------------|-------------------------|
| PCS1900` | 512 | 1850.2 | 30.20 |
| | 661 | 1880.0 | 30.40 |
| | 810 | 1909.8 | 30.43 |

9.4 Occupied Bandwidth / 26dB Emission Bandwidth

Measurement Result:

| EUT Mode | Channel | Frequency (MHz) | Occupied BW (KHz) | 26dB Emission BW (KHz) |
|----------|---------|-----------------|-------------------|------------------------|
| GSM850 | 128 | 824.2 | 247 | 308 |
| | 190 | 836.6 | 250 | 319 |
| | 251 | 848.8 | 245 | 314 |

Measurement Result:

| EUT Mode | Channel | Frequency (MHz) | Occupied BW (KHz) | 26dB Emission BW (KHz) |
|----------|---------|-----------------|-------------------|------------------------|
| PCS1900 | 512 | 1850.2 | 248 | 316 |
| | 661 | 1880.0 | 247 | 309 |
| | 810 | 1909.8 | 245 | 319 |

- End of page -

9.5 Radiated Spurious & Harmonic Emission (GSM850)

Measurement Result:

CH128 (824.2MHz)

| Freq. (MHz) | *EUT Pol. | Ant. Pol. | P _{EUT} (dBm) | P _{TX} (dBm) | P _{RX} (dBm) | G _{antenna} (dBd) | L _{Cable} (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|----------------|--------------|--------------|---------------------------|--------------------------|--------------------------|-------------------------------|----------------------------|---------------|----------------|----------------|
| 1648.4 | H | H | -58.53 | 0 | -3.30 | 7.62 | 3.10 | -50.71 | -13.0 | 37.71 |
| 1648.4 | H | V | -51.16 | 0 | -3.10 | 7.62 | 3.10 | -43.54 | -13.0 | 30.54 |
| 2472.6 | H | H | -60.28 | 0 | -4.70 | 8.34 | 3.60 | -50.84 | -13.0 | 37.84 |
| 2472.6 | H | V | -60.48 | 0 | -4.50 | 8.34 | 3.60 | -51.24 | -13.0 | 38.24 |
| 3297.0 | | | --- | | | | | --- | | |
| 3297.0 | | | --- | | | | | --- | | |

CH190 (836.6MHz)

| Freq. (MHz) | *EUT Pol. | Ant. Pol. | P _{EUT} (dBm) | P _{TX} (dBm) | P _{RX} (dBm) | G _{antenna} (dBd) | L _{Cable} (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|----------------|--------------|--------------|---------------------------|--------------------------|--------------------------|-------------------------------|----------------------------|---------------|----------------|----------------|
| 1673.2 | H | H | -58.57 | 0 | -2.20 | 7.79 | 3.00 | -51.58 | -13.0 | 38.58 |
| 1673.2 | H | V | -57.61 | 0 | -1.50 | 7.79 | 3.00 | -51.32 | -13.0 | 38.32 |
| 2509.8 | H | H | -58.15 | 0 | -6.50 | 8.47 | 4.50 | -47.68 | -13.0 | 34.68 |
| 2509.8 | E2 | V | -61.65 | 0 | -6.30 | 8.47 | 4.50 | -51.38 | -13.0 | 38.38 |
| 3346.4 | | | --- | | | | | --- | | |
| 3346.4 | | | --- | | | | | --- | | |

CH251 (848.8MHz)

| Freq. (MHz) | *EUT Pol. | Ant. Pol. | P _{EUT} (dBm) | P _{TX} (dBm) | P _{RX} (dBm) | G _{antenna} (dBd) | L _{Cable} (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|----------------|--------------|--------------|---------------------------|--------------------------|--------------------------|-------------------------------|----------------------------|---------------|----------------|----------------|
| 1697.6 | H | H | -59.40 | 0 | -1.90 | 7.96 | 2.80 | -52.34 | -13.0 | 39.34 |
| 1697.6 | H | V | -55.96 | 0 | -2.00 | 7.96 | 2.80 | -48.80 | -13.0 | 35.80 |
| 2546.4 | H | H | -55.08 | 0 | -5.80 | 8.53 | 4.30 | -45.05 | -13.0 | 32.05 |
| 2546.4 | E2 | V | -57.82 | 0 | -6.30 | 8.53 | 4.30 | -47.29 | -13.0 | 34.29 |
| 3395.2 | | | --- | | | | | --- | | |
| 3395.2 | | | --- | | | | | --- | | |

Note: 1. All modes of operation were investigated and the worst -case emission are reported.

2. “---“ means that the emission level is too low to be measured

- End of page -

9.6 Radiated Spurious & Harmonic Emission (PCS1900)

Measurement Result :

CH512 (1850.2MHz)

| Freq. (MHz) | *EUT Pol. | Ant. Pol. | P _{EUT} (dBm) | P _{TX} (dBm) | P _{RX} (dBm) | G _{antenna} (dBi) | L _{Cable} (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|----------------|--------------|--------------|---------------------------|--------------------------|--------------------------|-------------------------------|----------------------------|---------------|----------------|----------------|
| 3700.4 | E2 | H | -56.78 | 0 | -12.40 | 12.69 | 4.60 | -36.29 | -13.0 | 23.29 |
| 3700.4 | H | V | -52.57 | 0 | -12.90 | 12.69 | 4.60 | -31.58 | -13.0 | 18.58 |
| 5550.6 | H | H | -59.47 | 0 | -12.20 | 13.15 | 4.70 | -38.82 | -13.0 | 25.82 |
| 5550.6 | H | V | -62.11 | 0 | -12.00 | 13.15 | 4.70 | -43.80 | -13.0 | 30.80 |
| 7400.8 | | | --- | | | | | --- | | |
| 7400.8 | | | --- | | | | | --- | | |
| 9251.0 | E2 | H | -45.98 | 0 | -23.60 | 11.70 | 6.60 | -17.28 | -13.0 | 4.28 |
| 9251.0 | H | V | -46.76 | 0 | -23.20 | 11.70 | 6.60 | -18.46 | -13.0 | 5.46 |

CH661 (1880.0MHz)

| Freq. (MHz) | *EUT Pol. | Ant. Pol. | P _{EUT} (dBm) | P _{TX} (dBm) | P _{RX} (dBm) | G _{antenna} (dBi) | L _{Cable} (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|----------------|--------------|--------------|---------------------------|--------------------------|--------------------------|-------------------------------|----------------------------|---------------|----------------|----------------|
| 3760.0 | E2 | H | -54.33 | 0 | -12.30 | 12.73 | 4.40 | -33.70 | -13.0 | 20.70 |
| 3760.0 | H | V | -51.96 | 0 | -12.20 | 12.73 | 4.40 | -31.43 | -13.0 | 18.43 |
| 5640.0 | H | H | -61.47 | 0 | -11.90 | 13.14 | 4.80 | -41.23 | -13.0 | 28.23 |
| 5640.0 | H | V | -62.61 | 0 | -12.00 | 13.14 | 4.80 | -42.27 | -13.0 | 29.27 |
| 7520.0 | | | --- | | | | | --- | | |
| 7520.0 | | | --- | | | | | --- | | |
| 9400.0 | E2 | H | -49.71 | 0 | -23.70 | 11.70 | 6.50 | -20.81 | -13.0 | 7.81 |
| 9400.0 | H | V | -18.24 | 0 | -22.90 | 11.70 | 6.50 | -20.14 | -13.0 | 7.14 |

CH810 (1909.8MHz)

| Freq. (MHz) | *EUT Pol. | Ant. Pol. | P _{EUT} (dBm) | P _{TX} (dBm) | P _{RX} (dBm) | G _{antenna} (dBi) | L _{Cable} (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|----------------|--------------|--------------|---------------------------|--------------------------|--------------------------|-------------------------------|----------------------------|---------------|----------------|----------------|
| 3819.6 | E2 | H | -51.29 | 0 | -12.90 | 12.73 | 4.60 | -30.26 | -13.0 | 17.26 |
| 3819.6 | H | V | -49.03 | 0 | -12.90 | 12.73 | 4.60 | -28.00 | -13.0 | 15.00 |
| 5729.4 | H | H | -64.48 | 0 | -12.80 | 13.11 | 4.90 | -43.47 | -13.0 | 30.47 |
| 5729.4 | H | V | -65.42 | 0 | -12.80 | 13.11 | 4.90 | -44.41 | -13.0 | 31.41 |
| 7639.2 | | | --- | | | | | | --- | |
| 7639.2 | | | --- | | | | | | --- | |
| 9549.0 | E2 | H | -57.63 | 0 | -23.70 | 11.85 | 6.70 | -28.78 | -13.0 | 15.78 |
| 9549.0 | H | V | -63.57 | 0 | -23.40 | 11.85 | 6.70 | -35.02 | -13.0 | 22.02 |

Note: 1. All modes of operation were investigated and the worst -case emission are reported.

2. “---“ means that the emission level is too low to be measured

- End of page -

9.7 Frequency Stability / Temperature Variation (GSM850)

Test Mode : Set to Middle channel (836.6MHz)

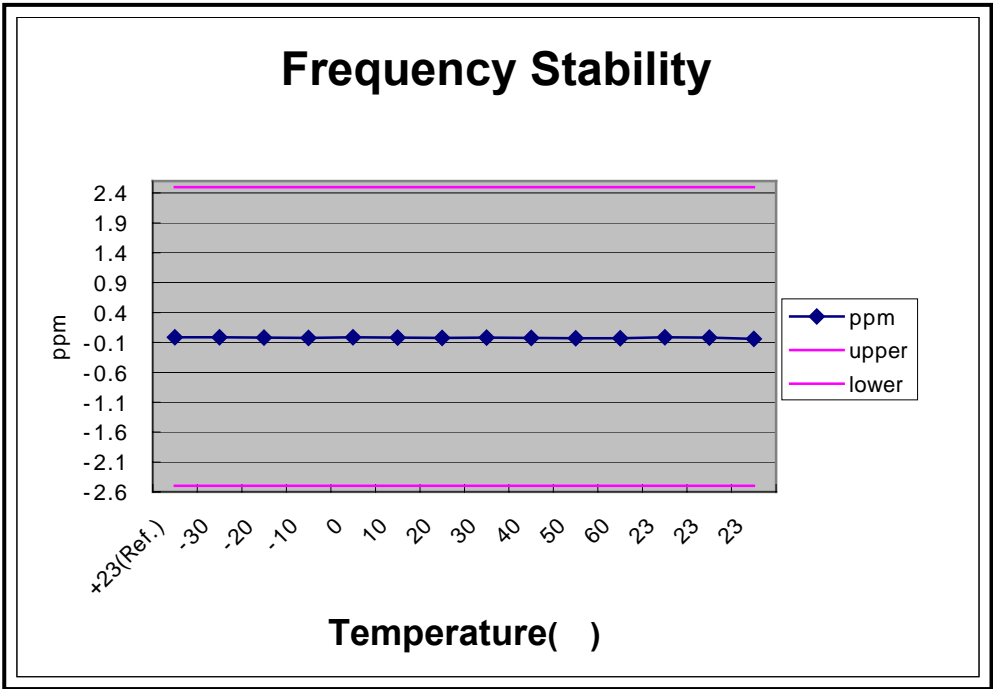
Deviation Limit : $\pm 2.5\text{ppm}$

Measurement Result :

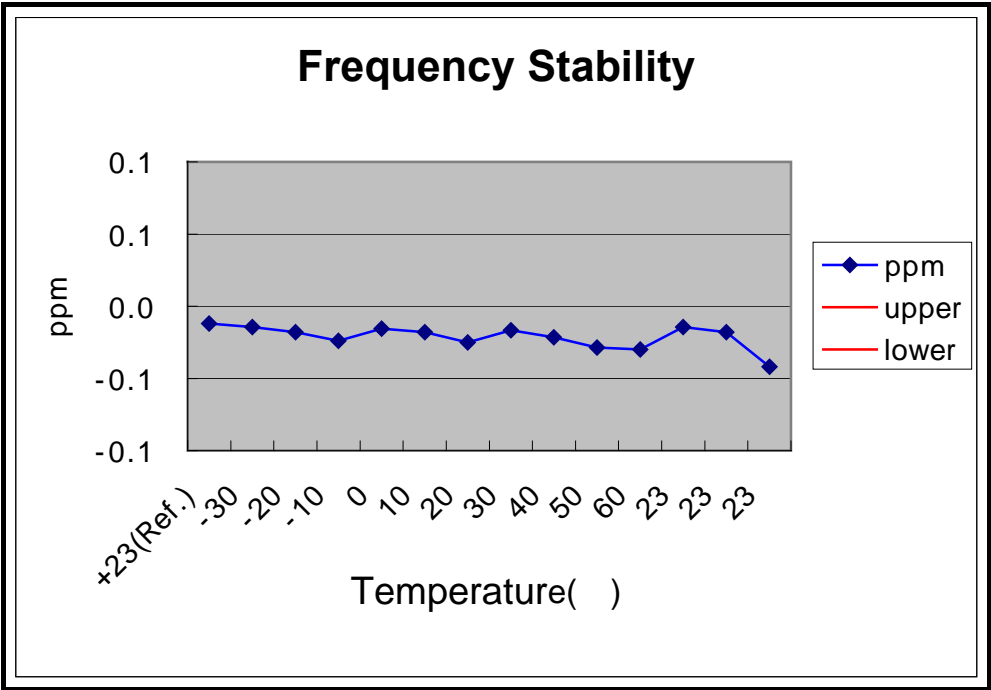
| Voltage (%) | Power (Vdc) | Temp. () | Frequency (Hz) | Frequency Error (Hz) | PPM |
|-------------------|-------------|-----------|----------------|----------------------|--------|
| 100% | 3.7 | +23(Ref.) | 836,599,990 | -10 | -0.012 |
| 100% | | -30 | 836,599,988 | -12 | -0.014 |
| 100% | | -20 | 836,599,985 | -15 | -0.017 |
| 100% | | -10 | 836,599,980 | -20 | -0.023 |
| 100% | | 0 | 836,599,987 | -13 | -0.015 |
| 100% | | 10 | 836,599,985 | -15 | -0.017 |
| 100% | | 20 | 836,599,979 | -21 | -0.025 |
| 100% | | 30 | 836,599,986 | -14 | -0.016 |
| 100% | | 40 | 836,599,982 | -18 | -0.021 |
| 100% | | 50 | 836,599,976 | -24 | -0.028 |
| 100% | | 60 | 836,599,975 | -25 | -0.029 |
| 85% | 3.145 | 23 | 836,599,988 | -12 | -0.014 |
| 115% | 4.255 | 23 | 836,599,985 | -15 | -0.017 |
| Battery End point | 3.05 | 23 | 836,599,965 | -35 | -0.041 |

*The temperature is varied from -30°C to +60°C using an environmental chamber.

9.7.1 Frequency Stability Graph (GSM850)



Zoom In



9.8 Frequency Stability / Temperature Variation (PCS1900)

Test Mode : Set to Middle channel (1880.0MHz)

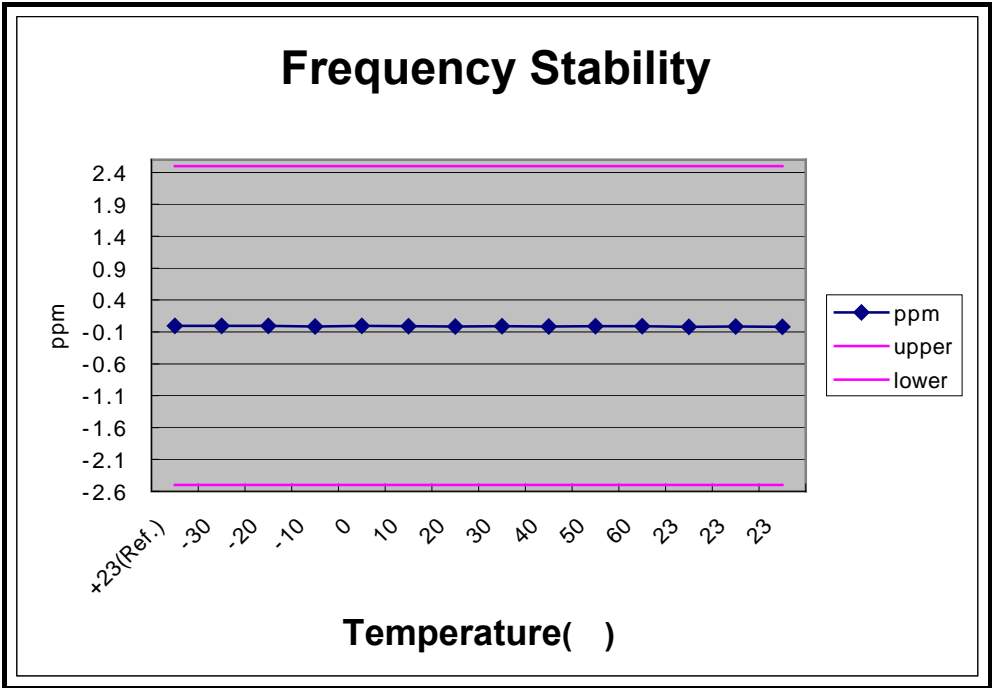
Deviation Limit : $\pm 2.5\text{ppm}$

Measurement Result :

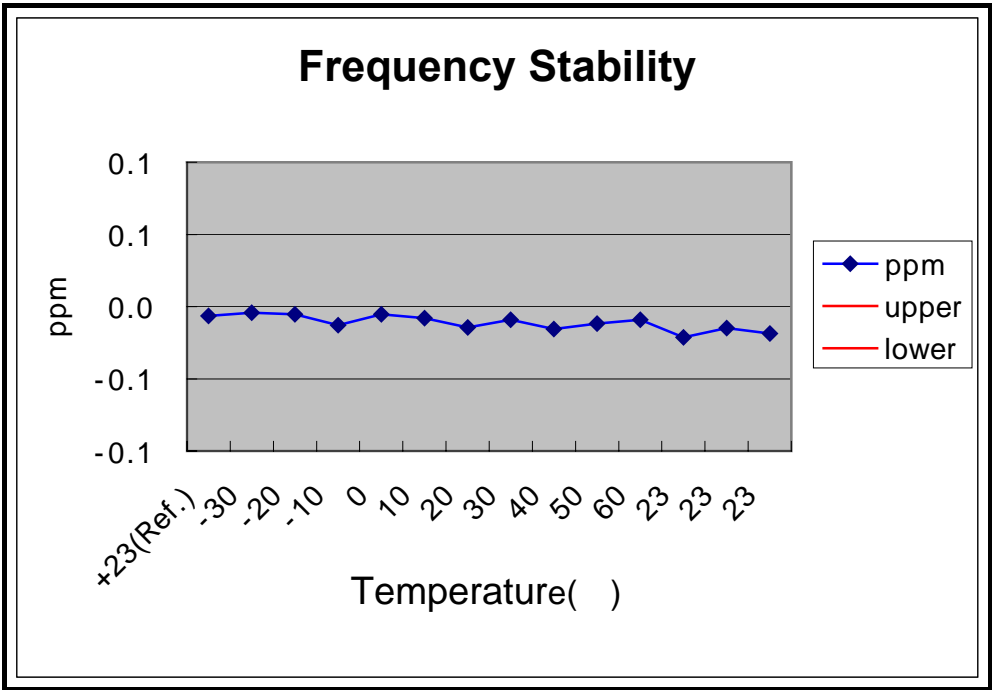
| Voltage (%) | Power (Vdc) | Temp. () | Frequency (Hz) | Frequency Error (Hz) | PPM |
|-------------------|-------------|-----------|----------------|----------------------|--------|
| 100% | 3.7 | +23(Ref.) | 1,879,999,988 | -12 | -0.006 |
| 100% | | -30 | 1,879,999,992 | -8 | -0.004 |
| 100% | | -20 | 1,879,999,990 | -10 | -0.005 |
| 100% | | -10 | 1,879,999,976 | -24 | -0.012 |
| 100% | | 0 | 1,879,999,990 | -10 | -0.005 |
| 100% | | 10 | 1,879,999,985 | -15 | -0.008 |
| 100% | | 20 | 1,879,999,973 | -27 | -0.014 |
| 100% | | 30 | 1,879,999,983 | -17 | -0.009 |
| 100% | | 40 | 1,879,999,971 | -29 | -0.015 |
| 100% | | 50 | 1,879,999,978 | -22 | -0.011 |
| 100% | | 60 | 1,879,999,983 | -17 | -0.009 |
| 85% | 3.145 | 23 | 1,879,999,960 | -40 | -0.021 |
| 115% | 4.255 | 23 | 1,879,999,972 | -28 | -0.014 |
| Battery End point | 3.05 | 23 | 1,879,999,965 | -35 | -0.018 |

*The temperature is varied from -30°C to +60°C using an environmental chamber.

9.8.1 Frequency Stability Graph (PCS1900)



Zoom In



9.9 AC Power LINE Conducted Emission

Measurement Result :

Idle mode

| Frequency (MHz) | Level(dB μ V) | | Line | Limit(dB μ V) | | Margin(dB) | |
|--------------------|-------------------|---------|------|-------------------|---------|------------|---------|
| | Q-Peak | Average | | Q-Peak | Average | Q-Peak | Average |
| 0.24 | 52.1 | 36.1 | N | 62.1 | 52.1 | 10.0 | 16.0 |
| 0.48 | 49.2 | 38.4 | N | 56.3 | 46.3 | 7.1 | 7.9 |
| 0.61 | 43.0 | 23.1 | N | 56.0 | 46.0 | 13.0 | 22.9 |
| 0.85 | 47.6 | 36.1 | N | 56.0 | 46.0 | 8.4 | 9.9 |
| 0.97 | 48.3 | 33.4 | N | 56.0 | 46.0 | 7.7 | 12.6 |
| 2.44 | 47.9 | 32.4 | N | 56.0 | 46.0 | 8.1 | 13.6 |

Table 1. Line Conducted Emissions Tabulated Data

GSM 850MHz TCH mode

| Frequency (MHz) | Level(dB μ V) | | Line | Limit(dB μ V) | | Margin(dB) | |
|--------------------|-------------------|---------|------|-------------------|---------|------------|---------|
| | Q-Peak | Average | | Q-Peak | Average | Q-Peak | Average |
| 0.25 | 42.0 | 31.3 | N | 61.8 | 51.8 | 19.8 | 20.5 |
| 0.46 | 44.2 | 27.1 | N | 56.7 | 46.7 | 12.5 | 19.6 |
| 1.03 | 39.3 | 21.8 | N | 56.0 | 46.0 | 16.7 | 24.2 |
| 1.28 | 40.8 | 25.7 | N | 56.0 | 46.0 | 15.2 | 20.3 |
| 2.72 | 44.1 | 29.2 | N | 56.0 | 46.0 | 11.9 | 16.8 |
| 4.37 | 37.6 | 23.4 | N | 56.0 | 46.0 | 18.4 | 22.6 |

Table 2. Line Conducted Emissions Tabulated Data

PCS TCH mode

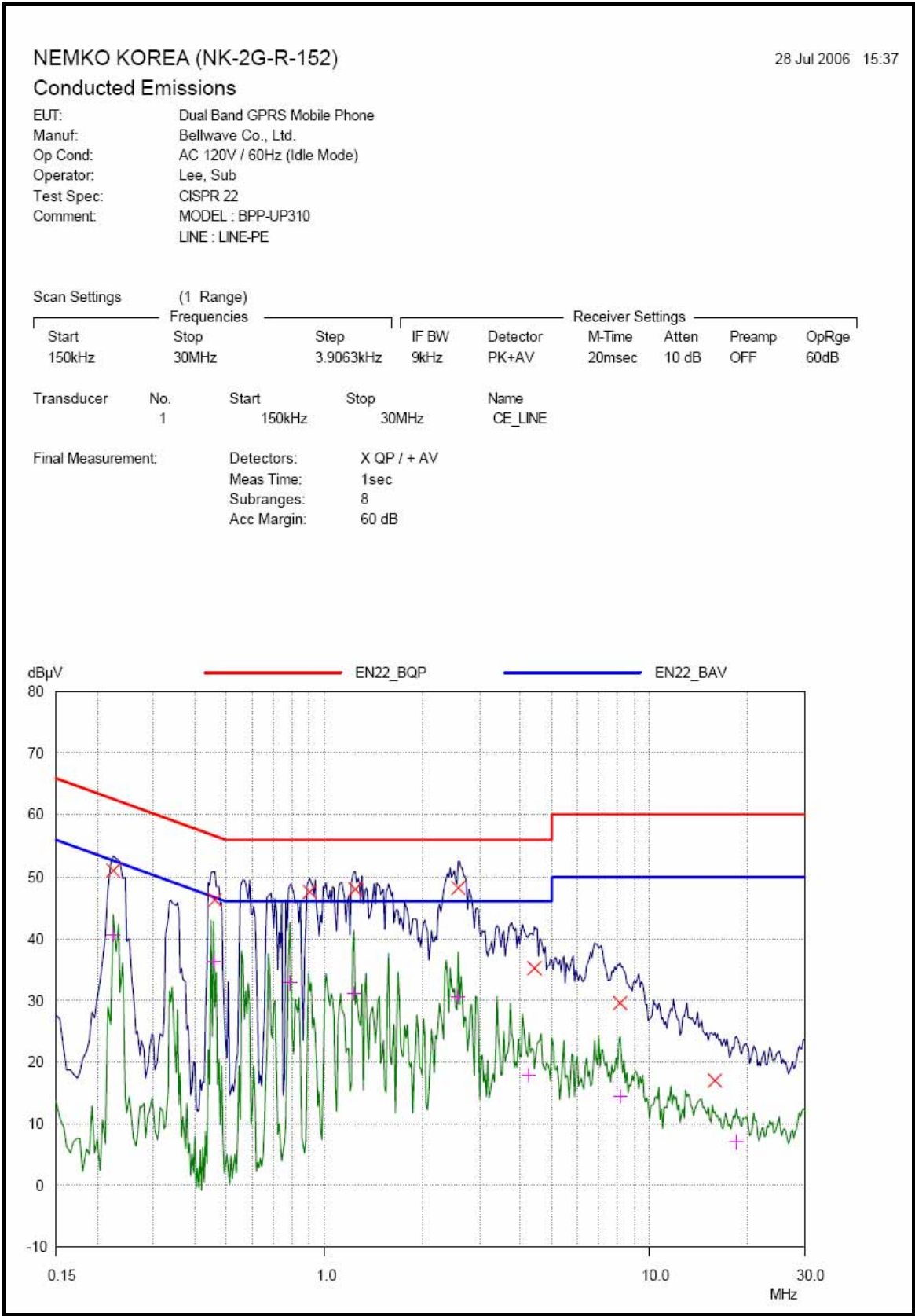
| Frequency (MHz) | Level(dBμV) | | Line | Limit(dBμV) | | Margin(dB) | |
|--------------------|-------------|---------|------|-------------|---------|------------|---------|
| | Q-Peak | Average | | Q-Peak | Average | Q-Peak | Average |
| 0.26 | 43.8 | 33.5 | N | 61.4 | 51.4 | 17.6 | 17.9 |
| 0.52 | 43.4 | 26.7 | N | 56.0 | 46.0 | 12.6 | 19.3 |
| 0.81 | 45.5 | 28.6 | N | 56.0 | 46.0 | 10.5 | 17.4 |
| 1.27 | 45.7 | 27.9 | N | 56.0 | 46.0 | 10.3 | 18.1 |
| 2.63 | 47.4 | 30.1 | N | 56.0 | 46.0 | 8.6 | 15.9 |
| 4.29 | 39.5 | 24.2 | N | 56.0 | 46.0 | 16.5 | 21.8 |

Table 3. Line Conducted Emissions Tabulated Data

NOTES:

1. Measurements using CISPR quasi-peak mode & average mode.
2. All modes of operation were investigated and the worst -case emission are reported. See attached Plots.
3. LINE : L =Line , N = Neutral
4. The limit is on the FCC Part section 15.207(a).

Conducted Disturbance at the mains ports Spectrum (Idle Mode, Line)



Final Measurement:

Detectors:

Meas Time:

Subranges:

Acc Margin:

X QP / + AV

1sec

8

60 dB

dBμV

80

70

60

50

40

30

20

10

0

-10

0.15

1.0

10.0

30.0

MHz

EN22_BQP

EN22_BAV

The figure is a line graph showing the conducted disturbance spectrum for a Dual Band GPRS Mobile Phone in Idle Mode, Line configuration. The y-axis represents the disturbance level in dBμV, ranging from -10 to 80. The x-axis represents the frequency in MHz, ranging from 0.15 to 30.0. Two main curves are plotted: a red line for EN22_BQP and a blue line for EN22_BAV. Both curves show a general downward trend with frequency, with some fluctuations. The red curve (EN22_BQP) is consistently higher than the blue curve (EN22_BAV). There are several red 'X' marks and green '+' marks on the plot, indicating specific measurement points or limits. The plot is overlaid on a grid.

Conducted Disturbance at the mains ports Spectrum (Idle Mode, Neutral)

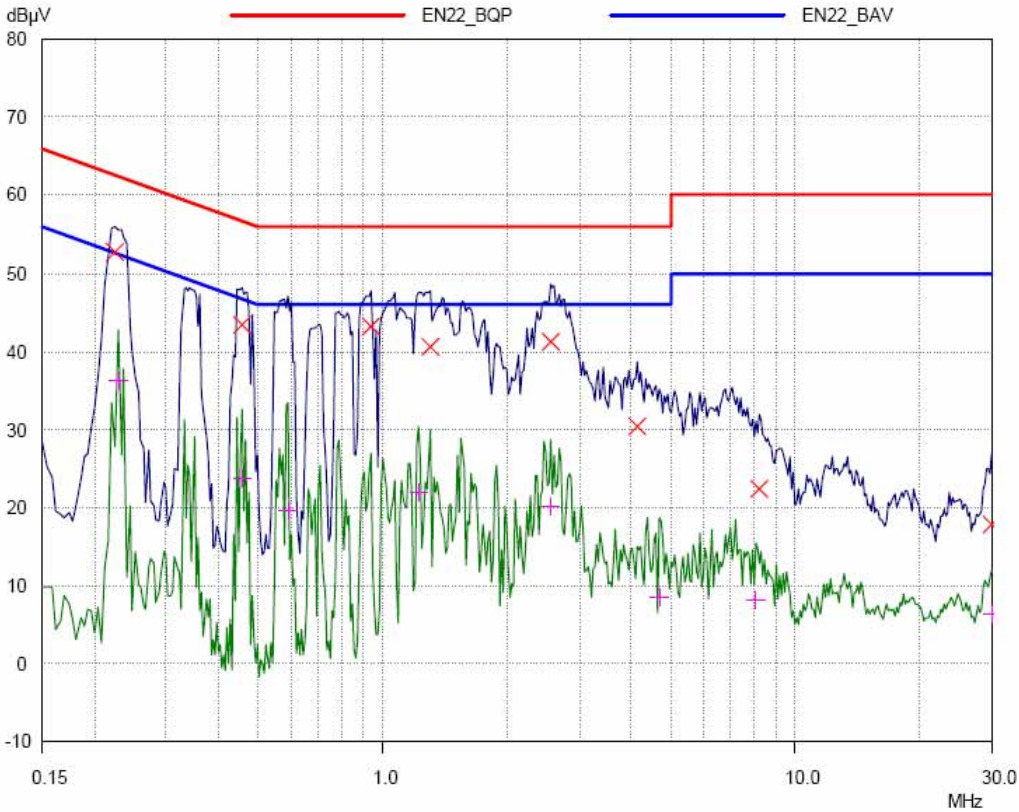
NEMKO KOREA (NK-2G-R-152)

28 Jul 2006 15:52

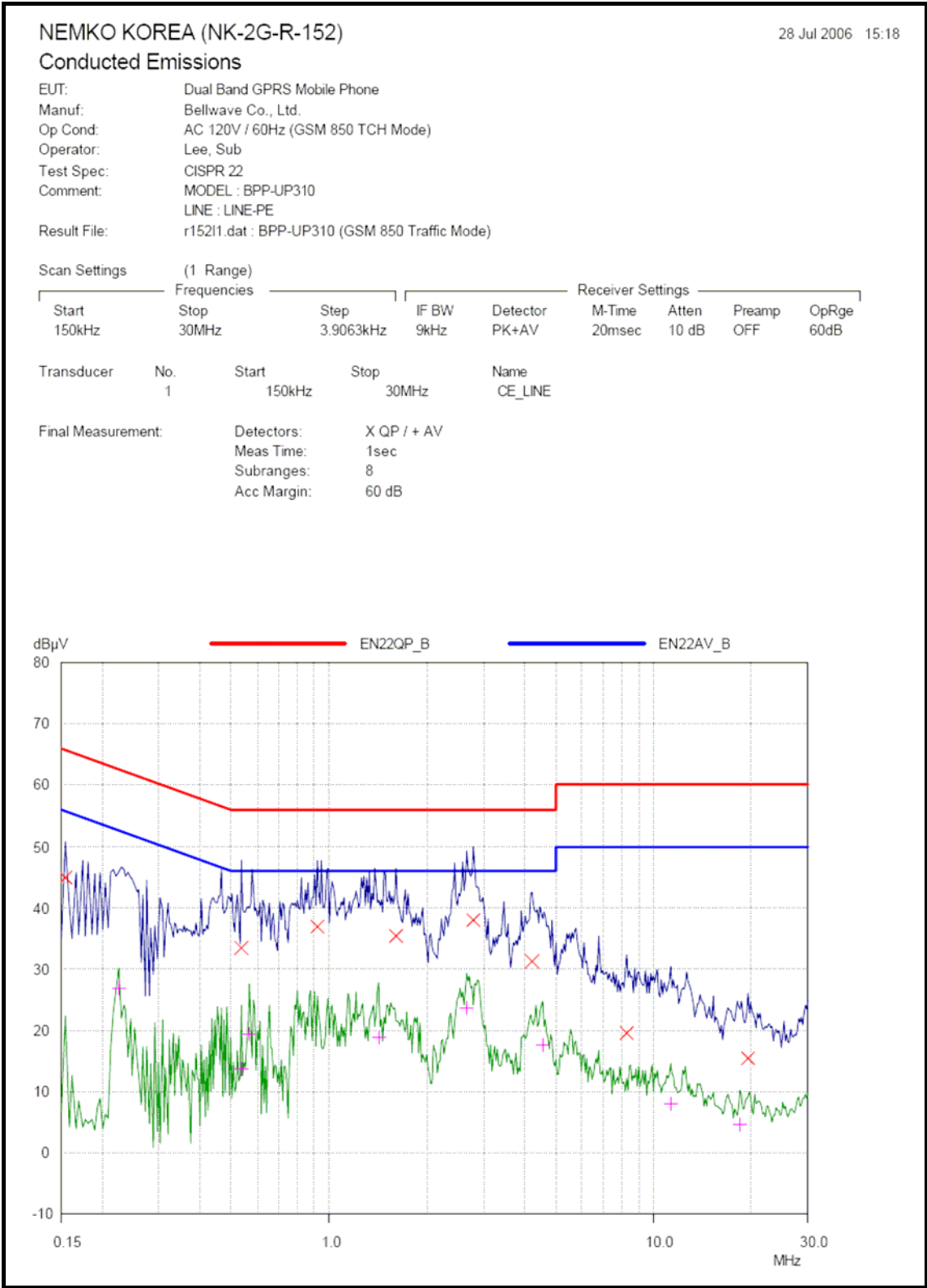
Conducted Emissions

EUT: Dual Band GPRS Mobile Phone
Manuf: Bellwave Co., Ltd.
Op Cond: AC 120V / 60Hz (Idle Mode)
Operator: Lee, Sub
Test Spec: CISPR 22
Comment: MODEL : BPP-UP310
LINE : NEUTRAL-PE

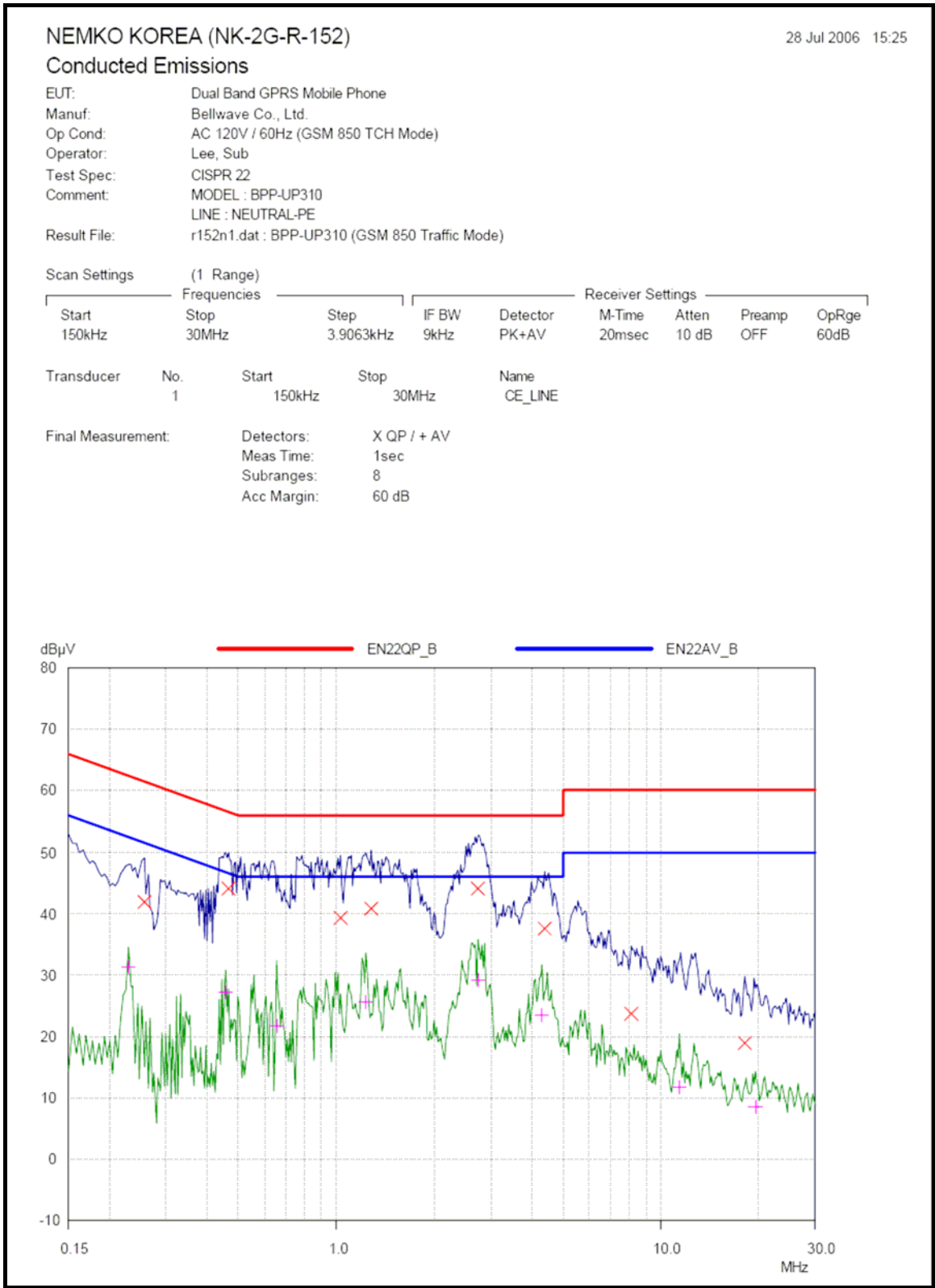
| Scan Settings | | (1 Range) | | | Receiver Settings | | | |
|--------------------|-------|-------------|-------------|----------|-------------------|-------|--------|-------|
| Start | Stop | Step | IF BW | Detector | M-Time | Atten | Preamp | OpRge |
| 150kHz | 30MHz | 3.9063kHz | 9kHz | PK+AV | 20msec | 10 dB | OFF | 60dB |
| Transducer | No. | Start | Stop | Name | | | | |
| | 1 | 150kHz | 30MHz | CE_NEUT | | | | |
| Final Measurement: | | Detectors: | X QP / + AV | | | | | |
| | | Meas Time: | 1sec | | | | | |
| | | Subranges: | 8 | | | | | |
| | | Acc Margin: | 60 dB | | | | | |



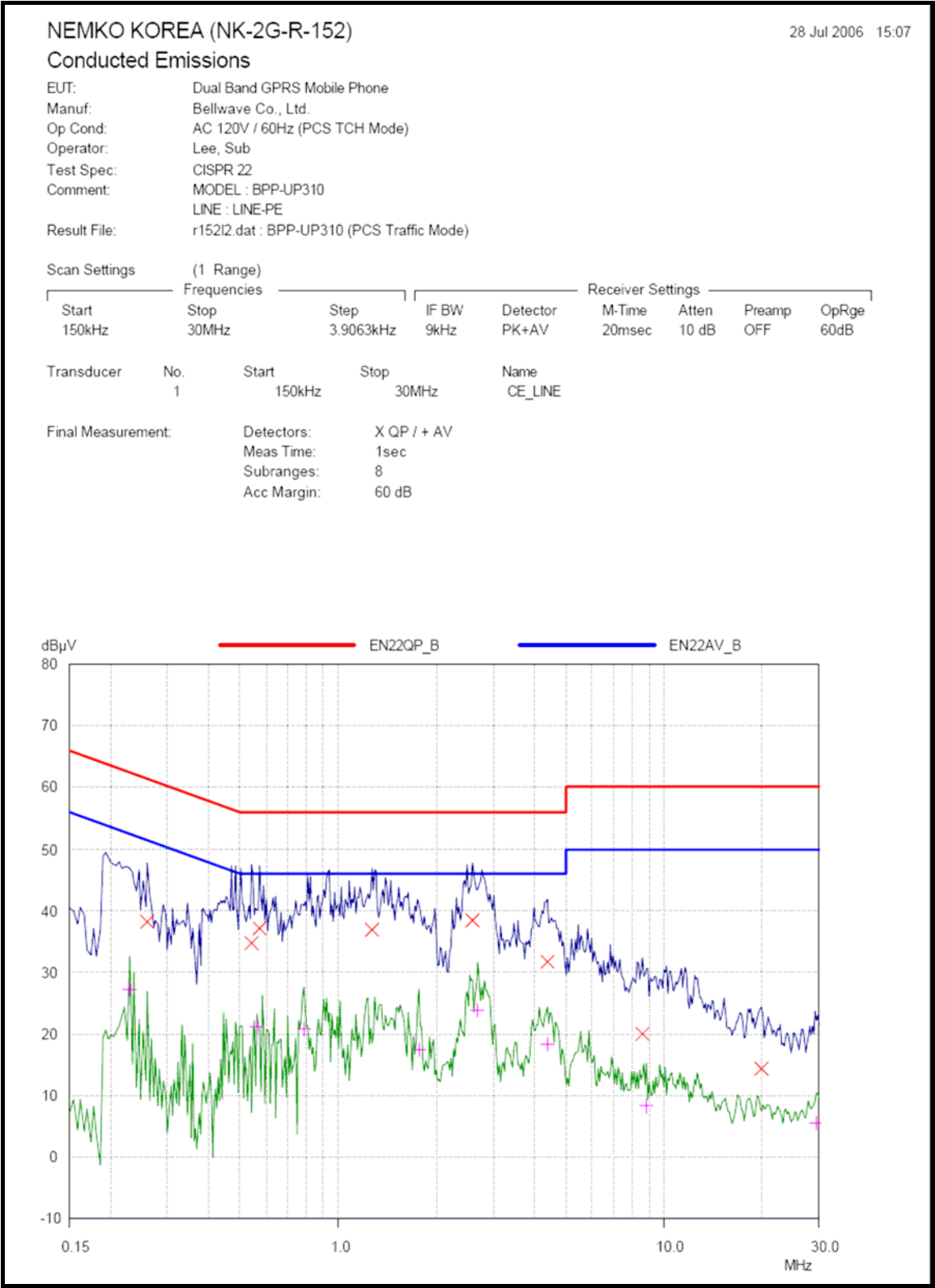
Conducted Disturbance at the mains ports Spectrum (GSM850 Mode, Line)



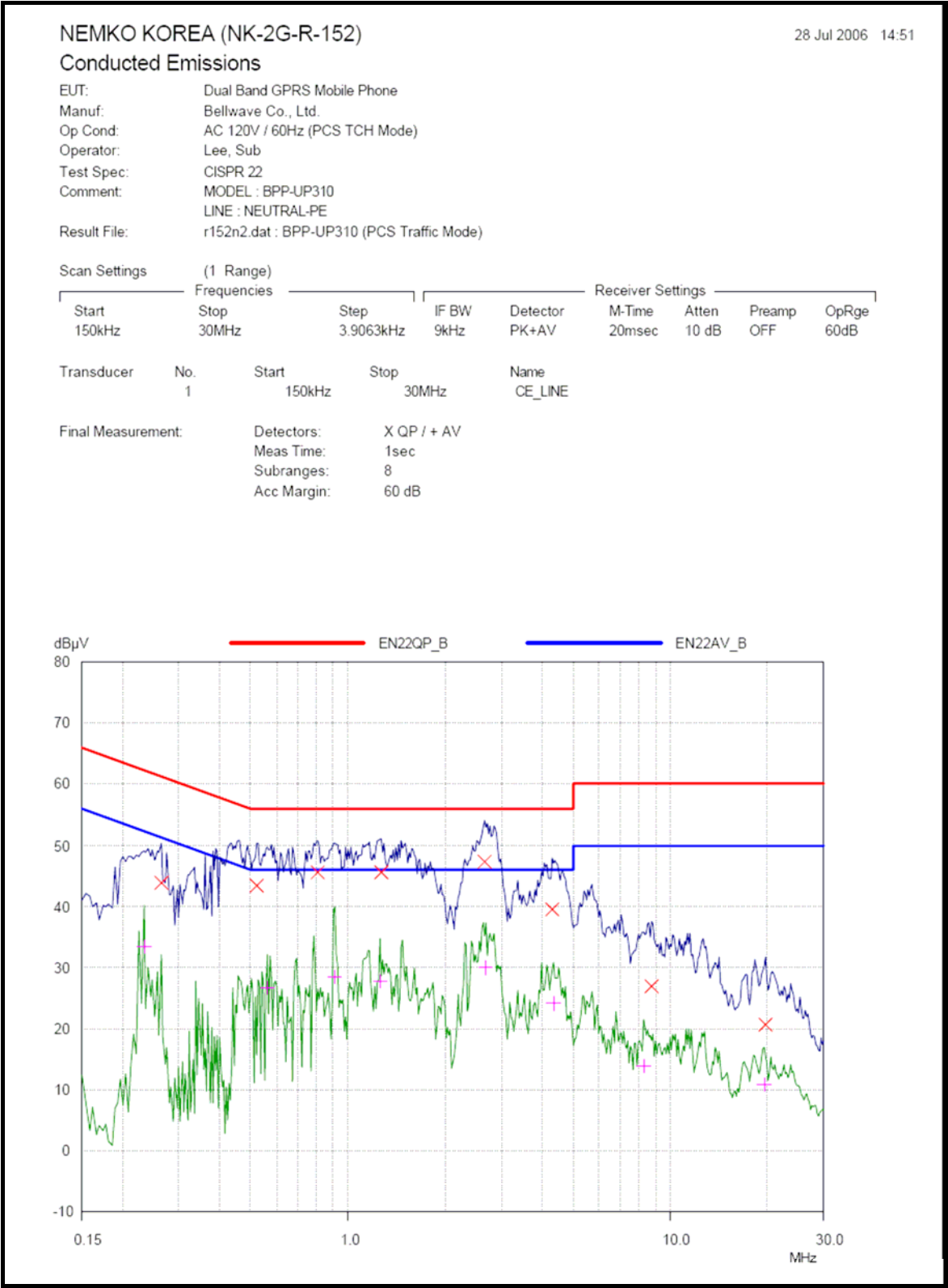
Conducted Disturbance at the mains ports Spectrum (GSM850 Mode, Neutral)



Conducted Disturbance at the mains ports Spectrum (PCS1900 Mode, Line)



Conducted Disturbance at the mains ports Spectrum (PCS1900 Mode, Neutral)



10. Emission Designator

Emission Designator

Emission Designator = 250KGXW

GSM Bandwidth = 250KHz

G = Phase Modulation

X = Cases not otherwise covered

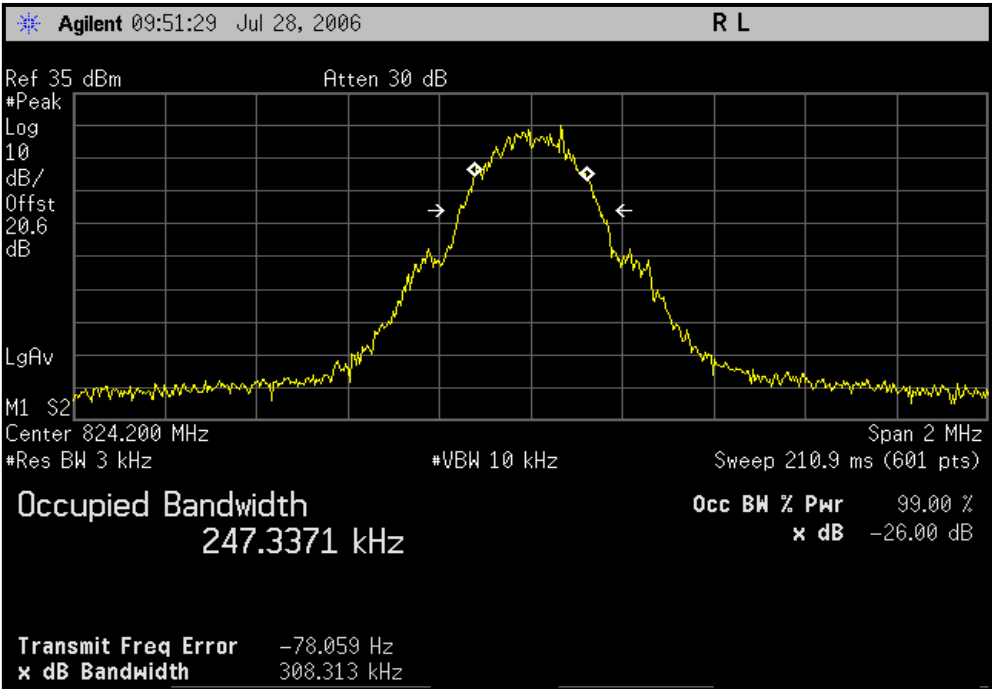
W = Combination (Audio/Data)

- End of page -

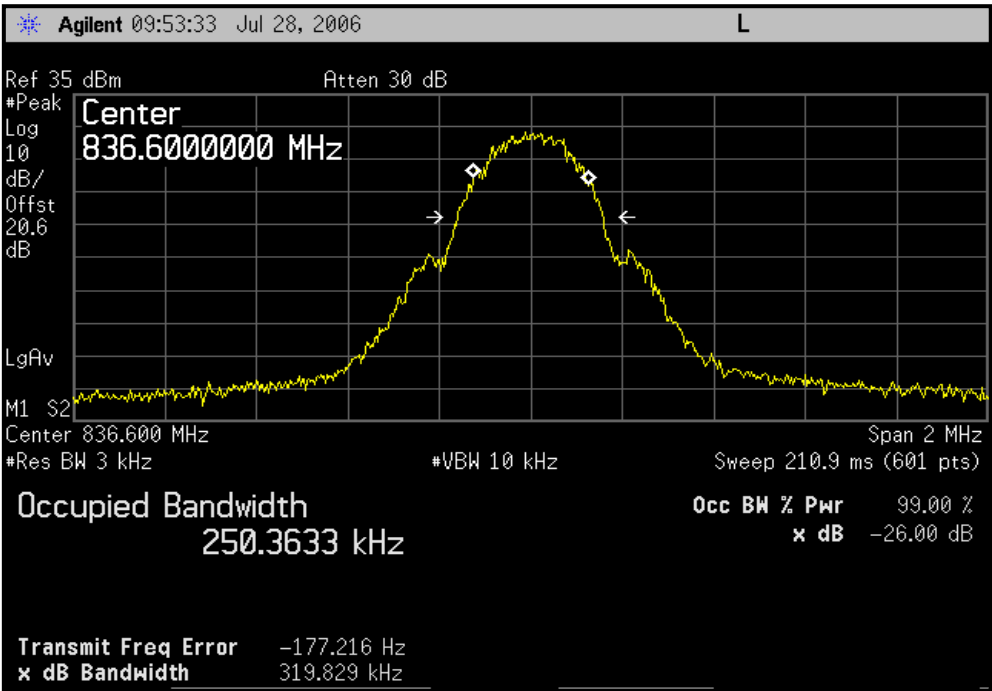
11. Test Plots(GSM850)

Occupied Bandwidth / 26dB Bandwidth

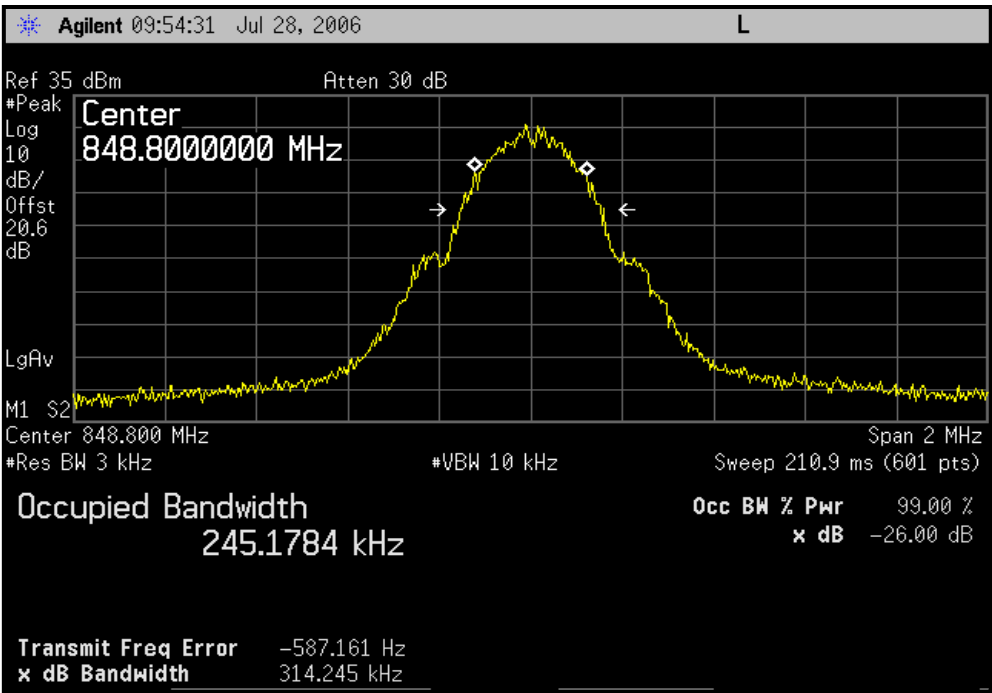
Channel 128



Channel 190



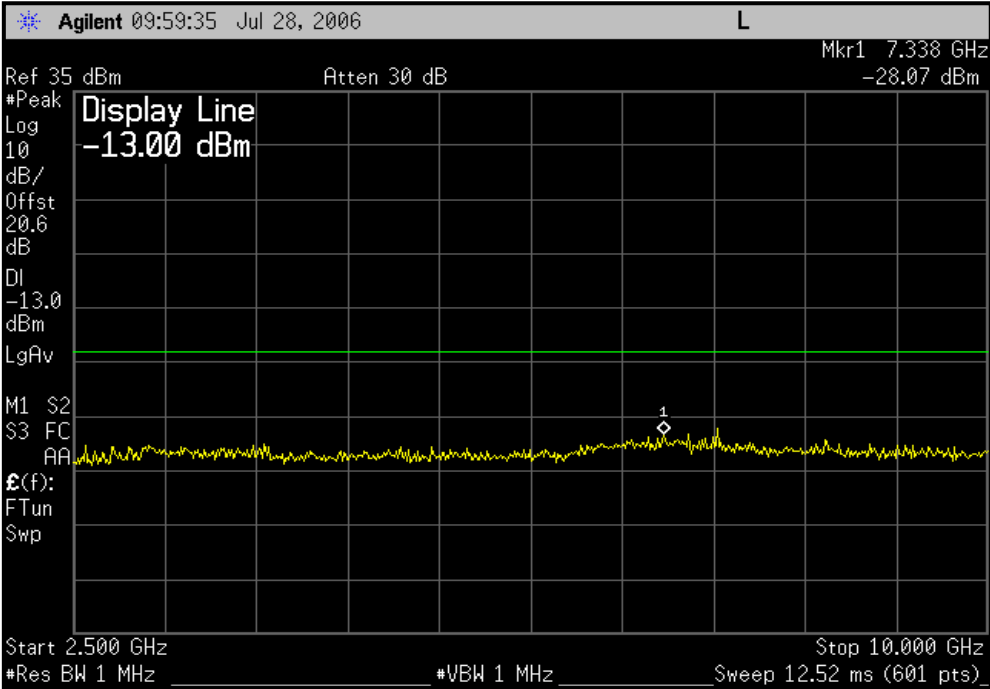
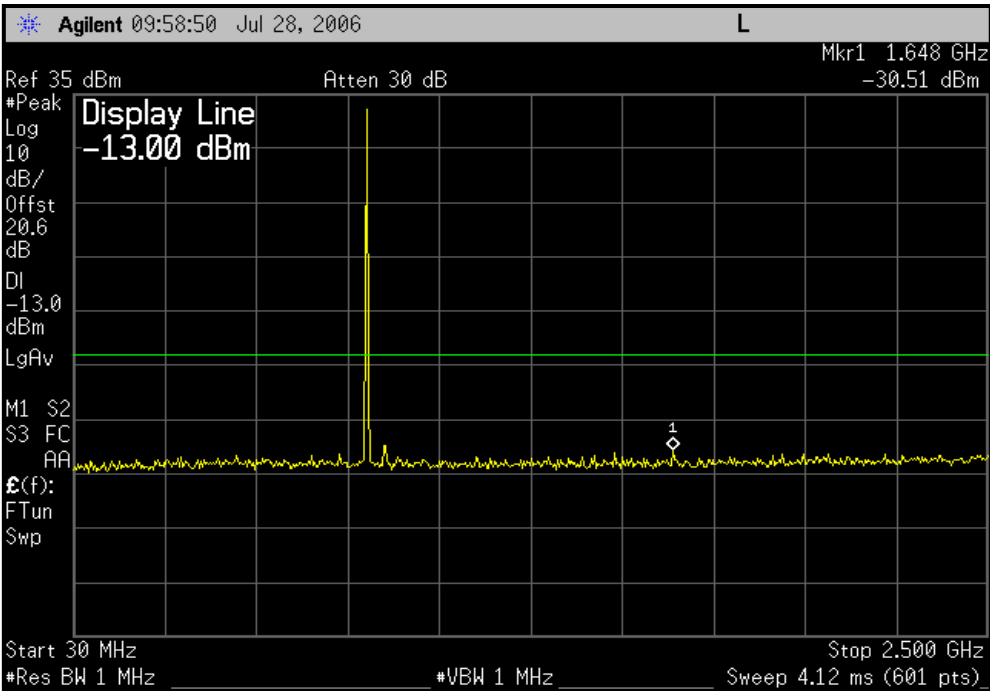
Channel 251



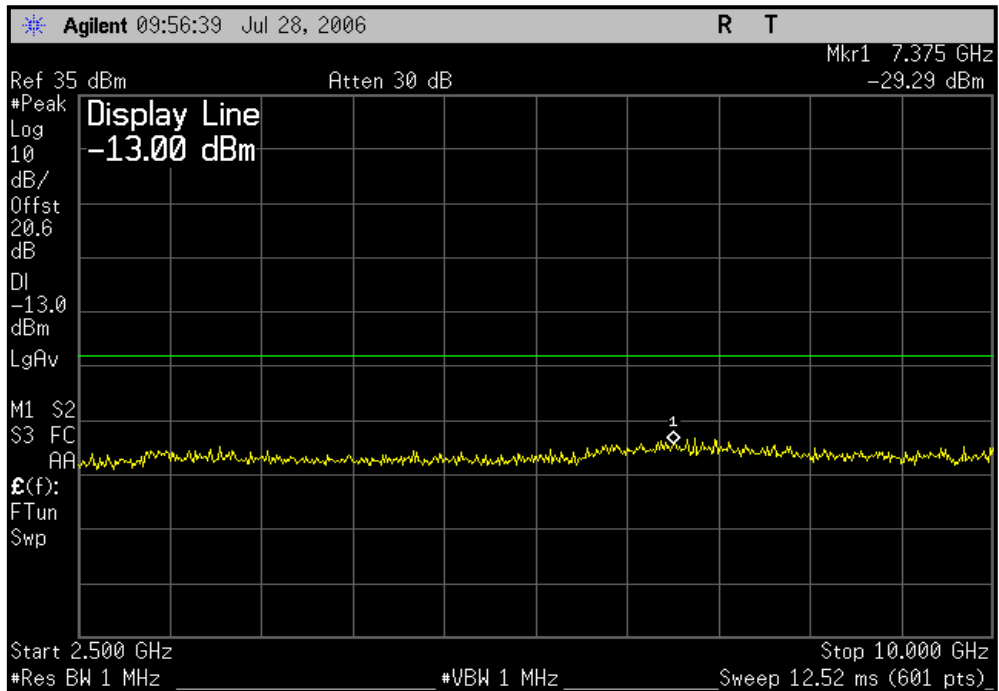
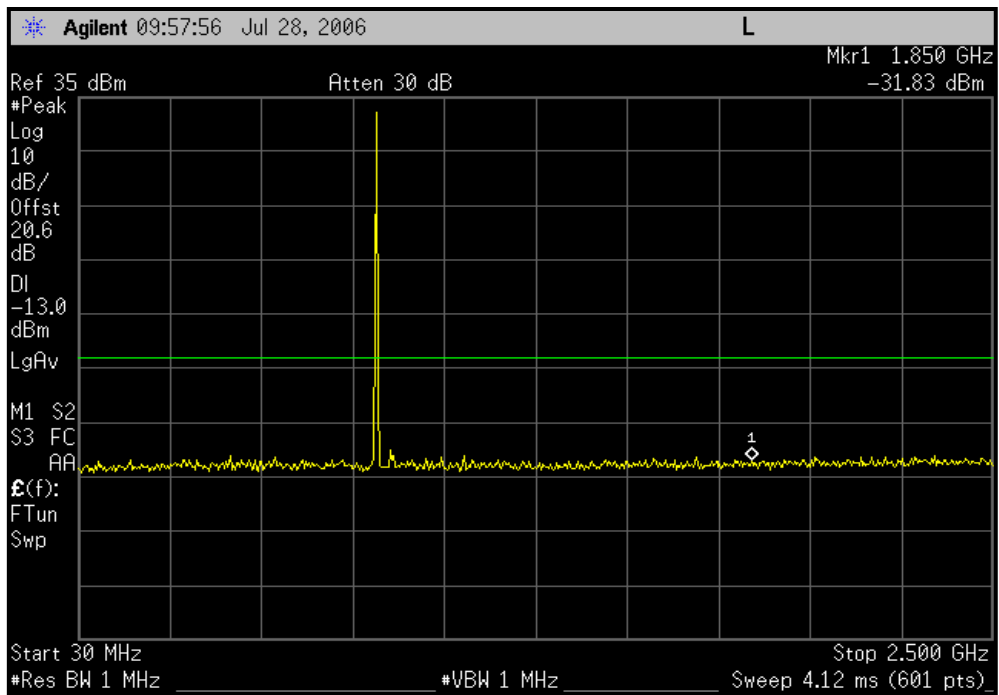
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Spurious Emission at antenna Terminals

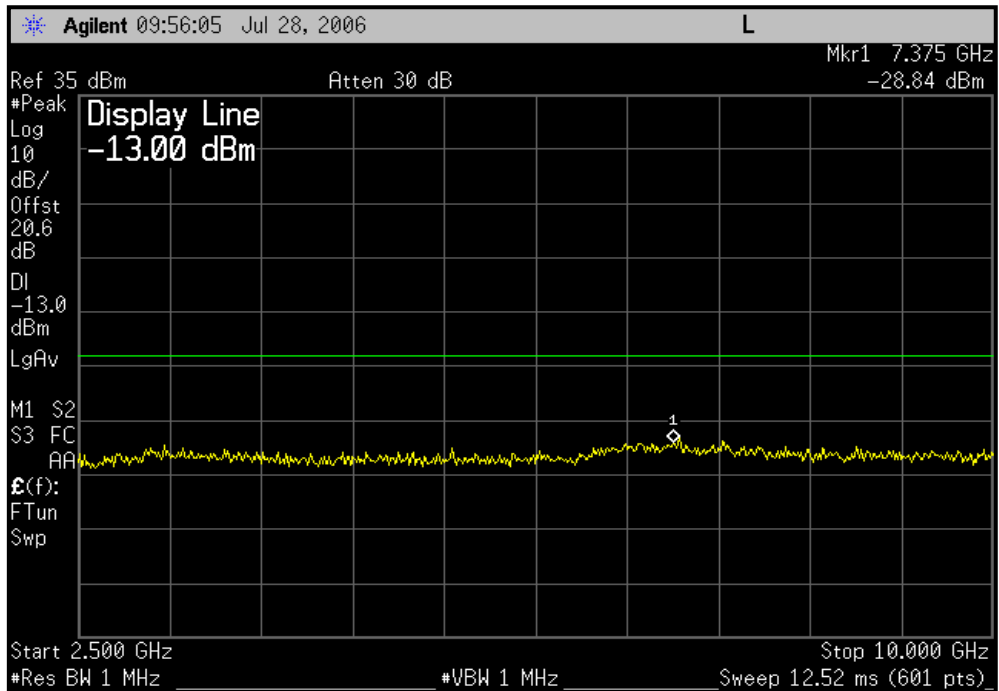
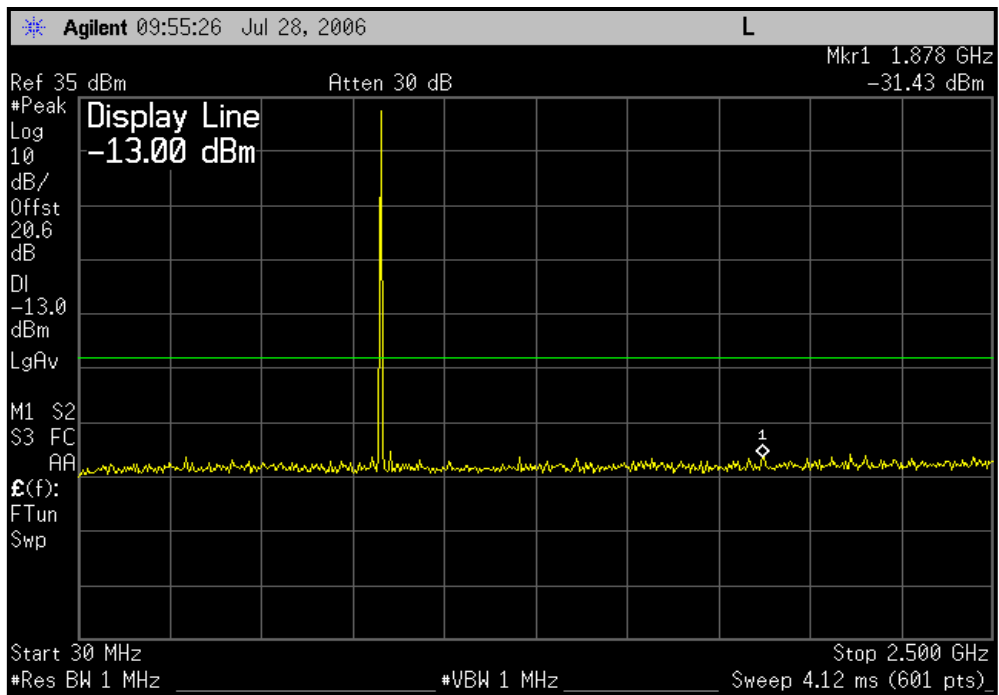
Channel 128



Channel 190

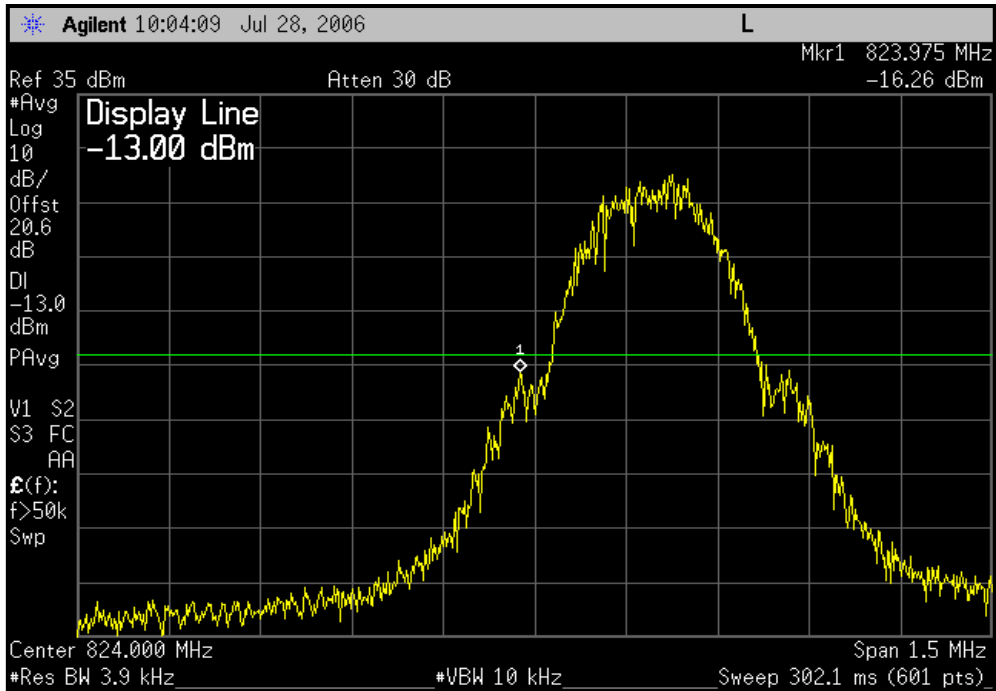


Channel 251

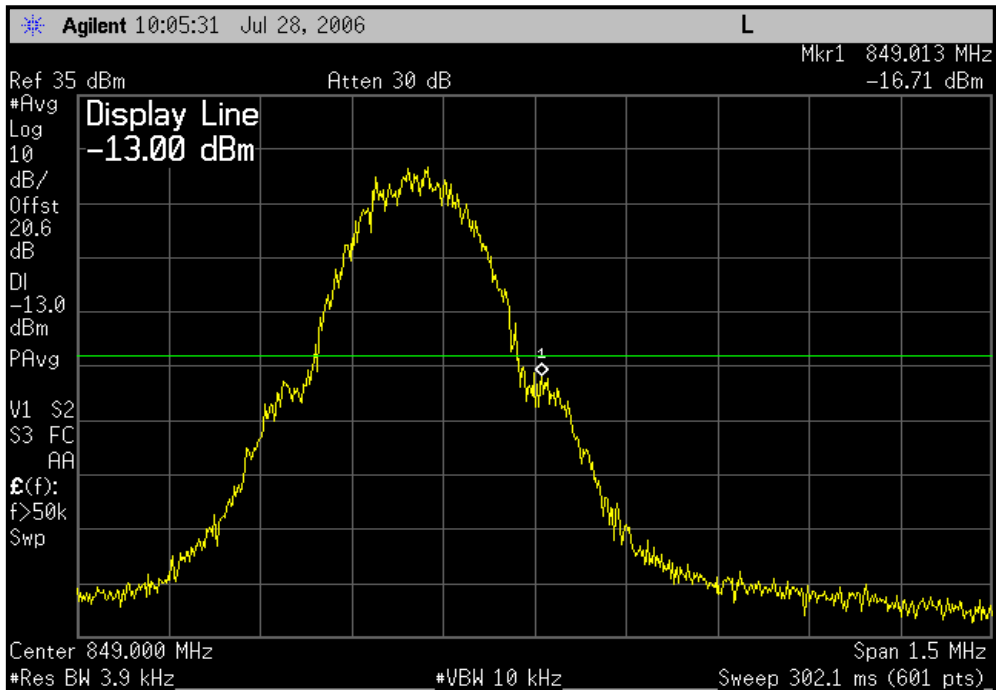


Band Edge

Channel 128



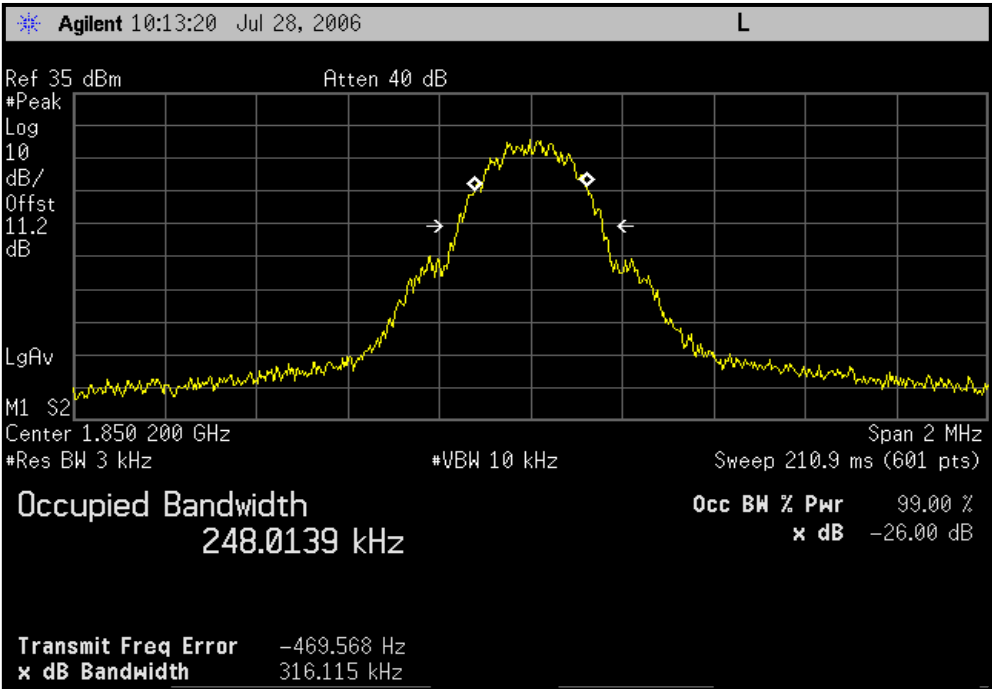
Channel 251



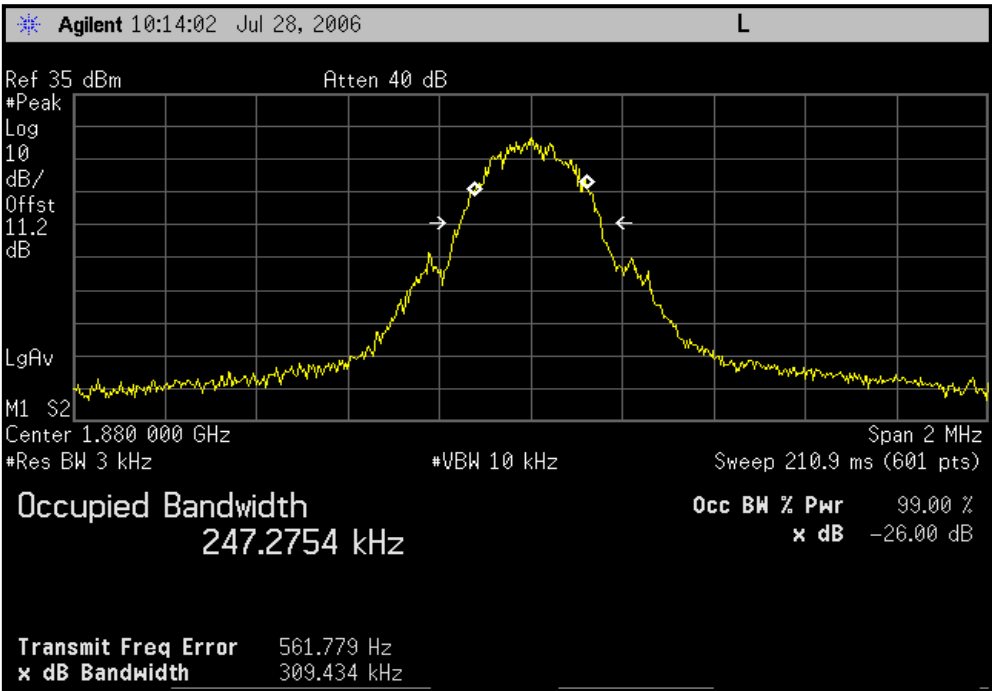
12. Test Plots(PCS1900)

Occupied Bandwidth / 26dB Bandwidth

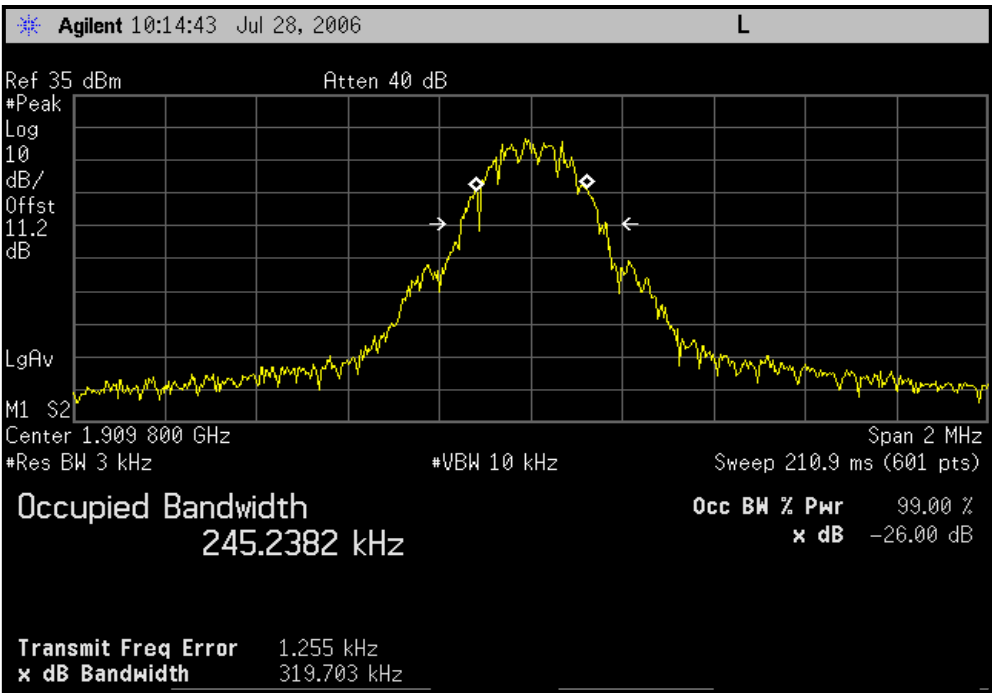
Channel 512



Channel 661



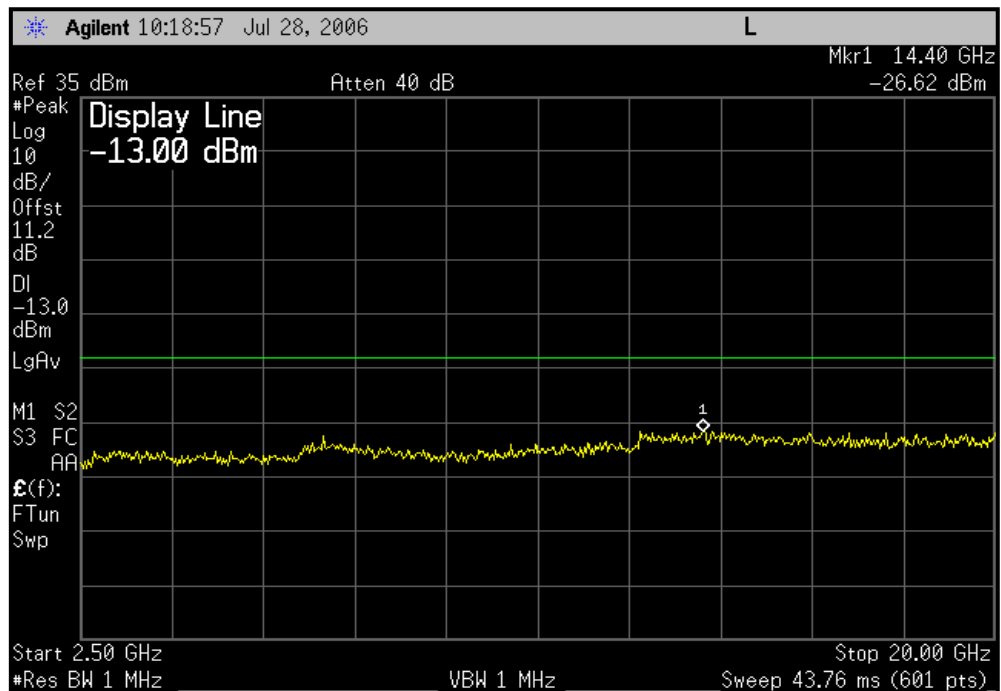
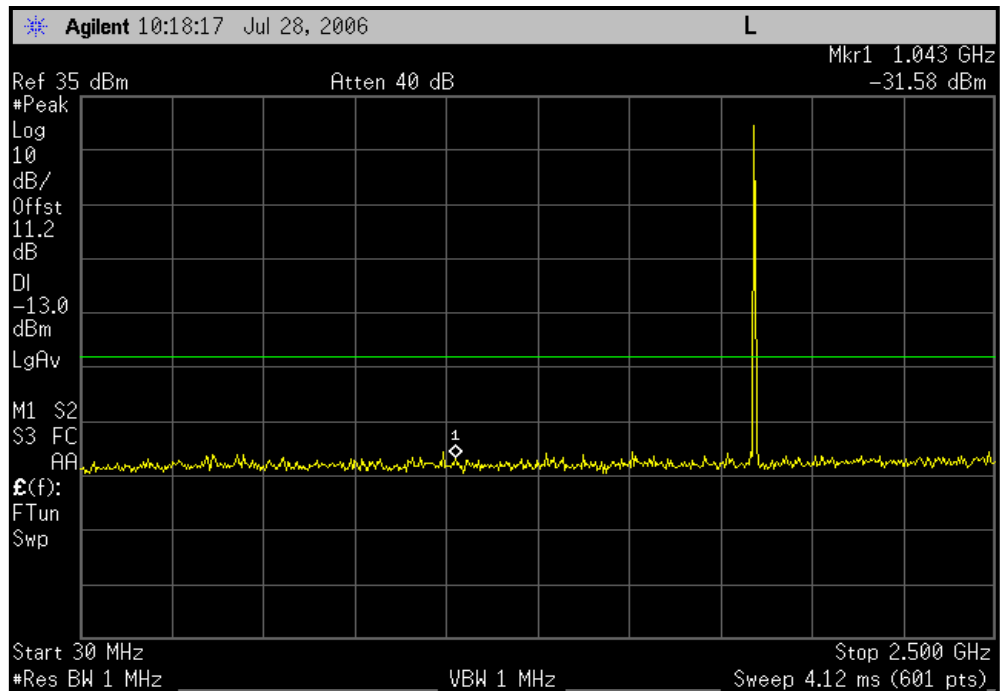
Channel 810



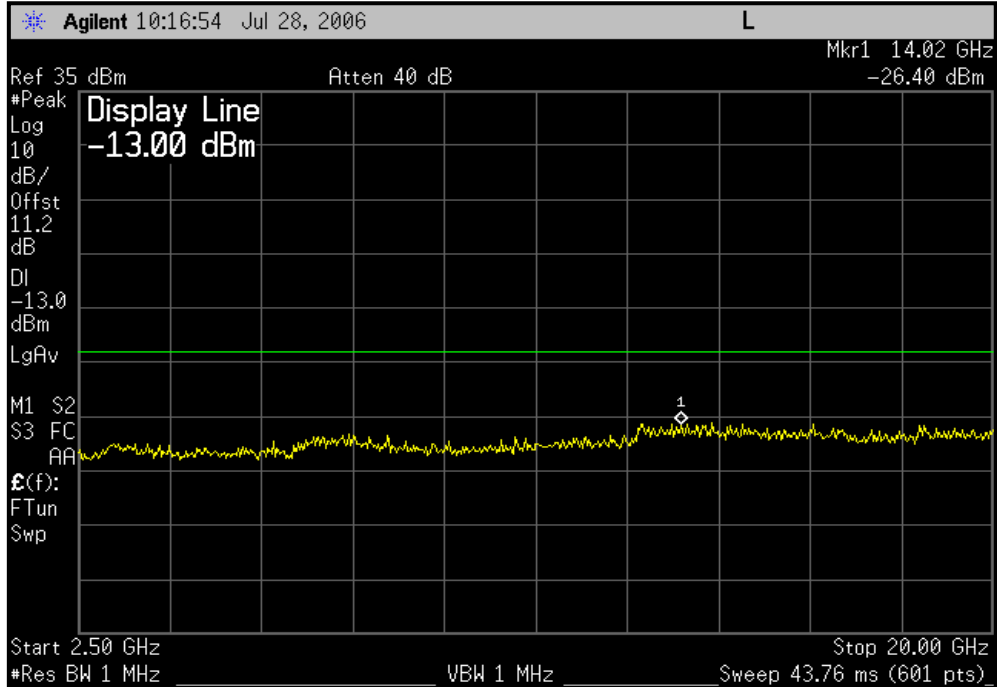
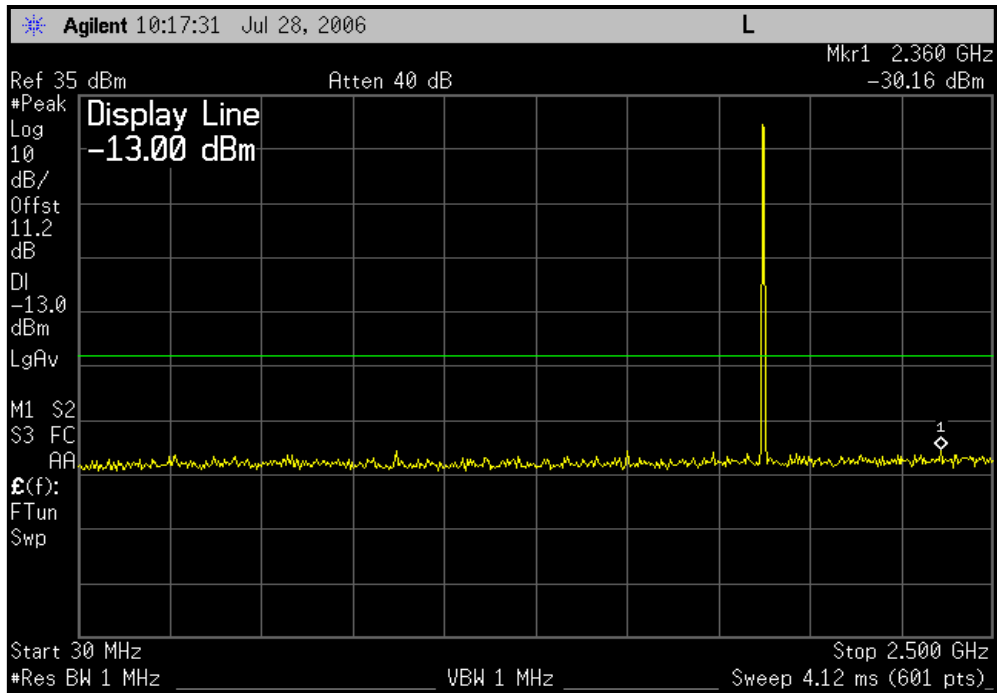
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Spurious Emission at antenna Terminals

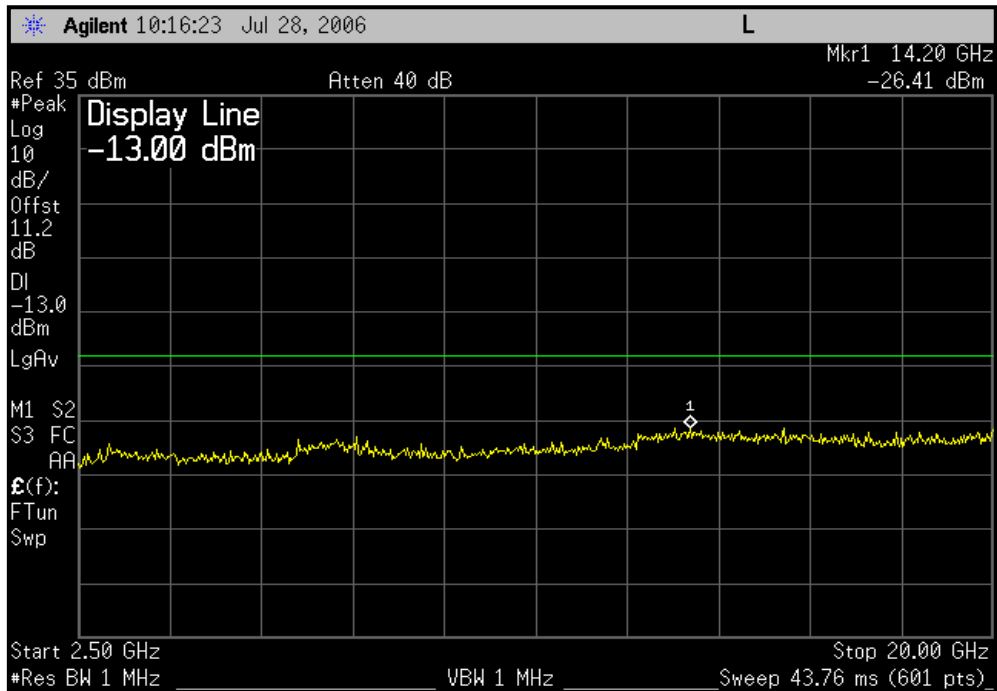
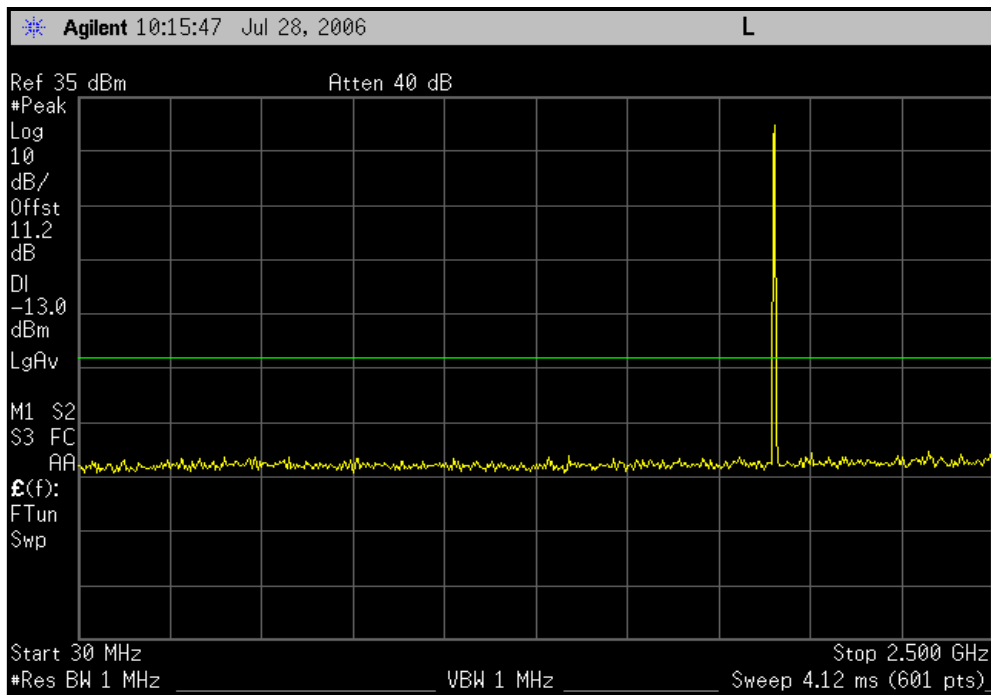
Channel 512



Channel 661

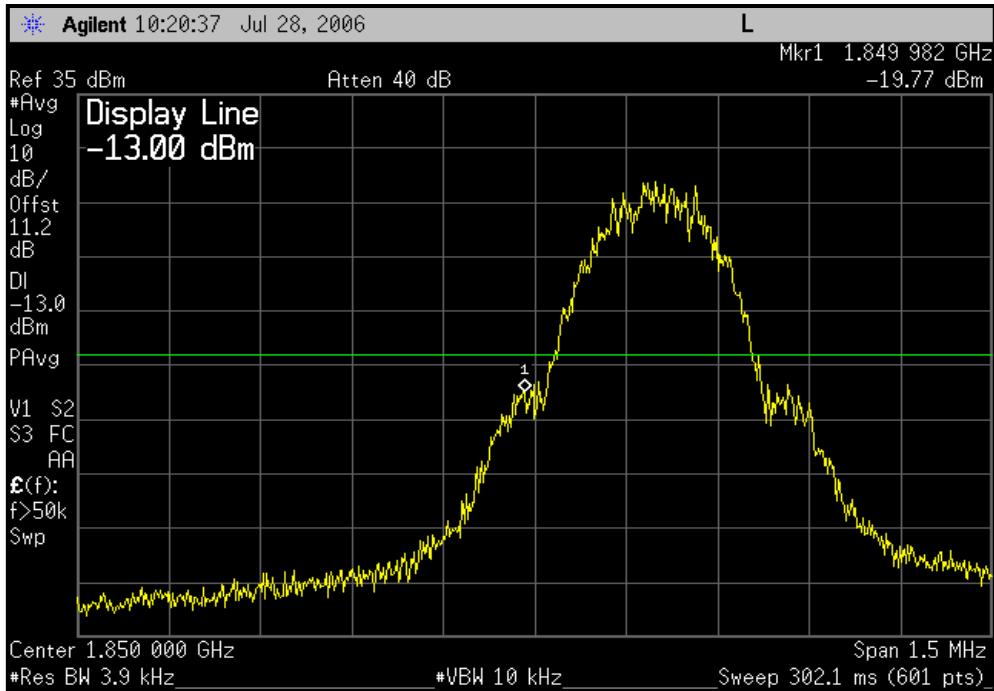


Channel 810

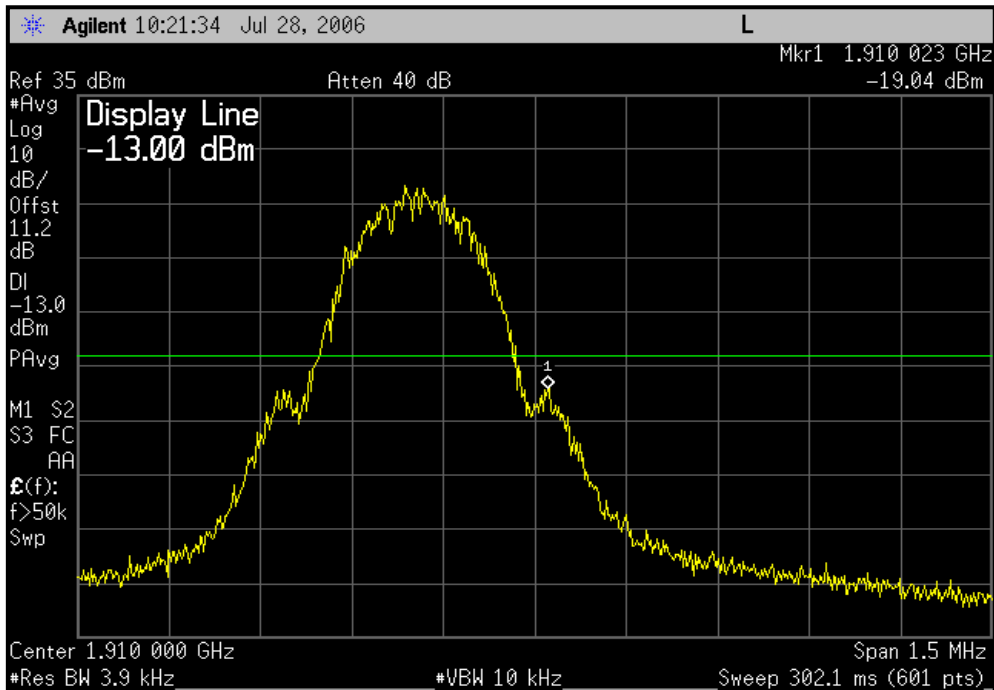


Band Edge

Channel 512



Channel 810



APPENDIX A - Labelling Requirement

Labelling Requirements

The sample label shown shall be *permanently affixed* at a conspicuous location on the device and be readily visible to the user at the time of purchase.

*** The following paragraph specified in the user manual.

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.



Appendix B – Photographs of Test Set-up

The **Conducted Test Picture** and **Radiated Test Picture** and show the worst-case configuration and cable placement.

- **Conducted Test Picture (Front)**



- **Conducted Test Picture (Rear)**



● Temperature Test Picture



Appendix C – EUT Photographs

- Front Side View of EUT



• Rear Side View of EUT



- Right Side View of EUT



- Left Side View of EUT



- Top Side View of EUT



- Bottom Side View of EUT



• Key-pad Side View of EUT



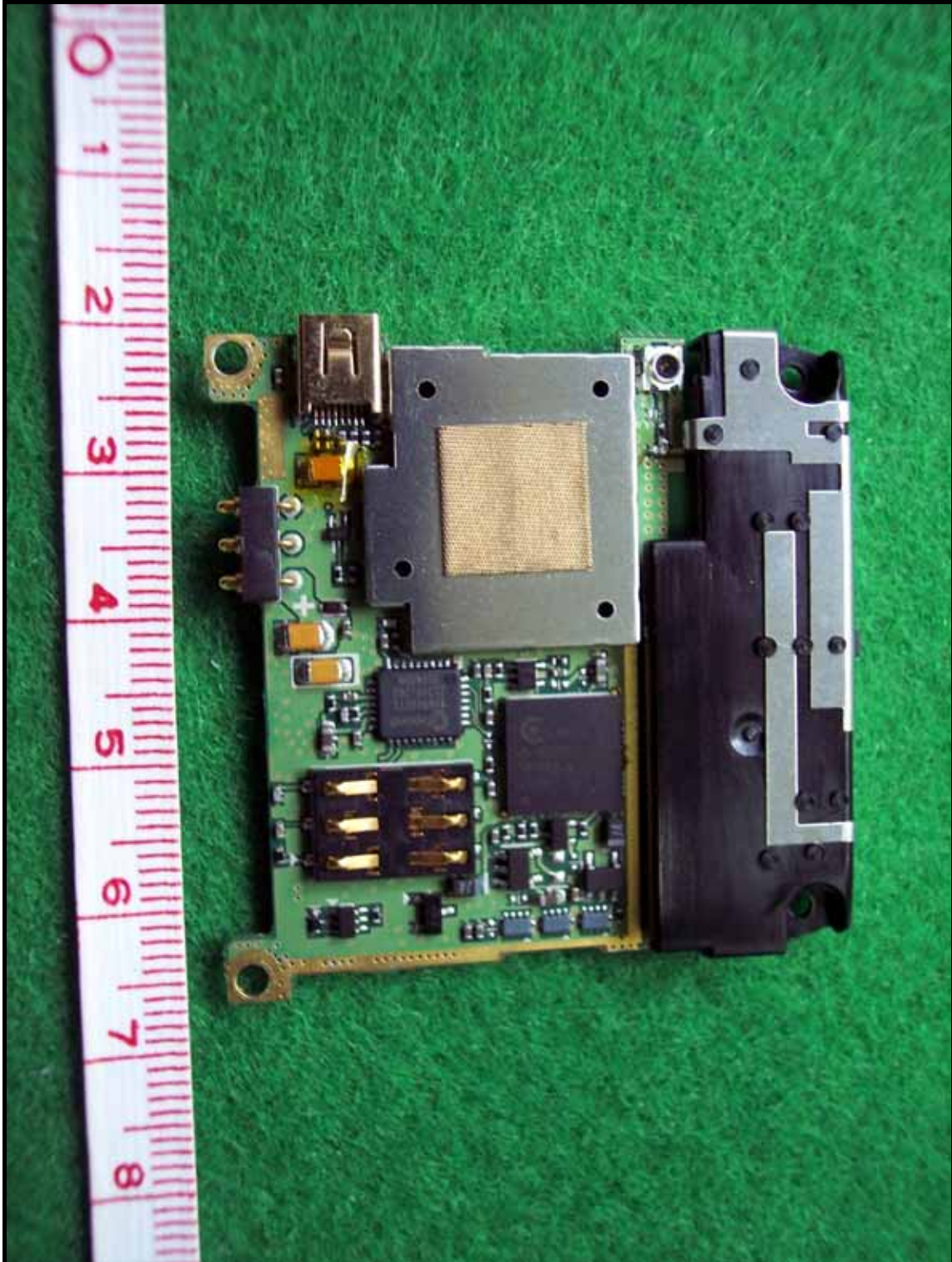
● Label Side View of EUT



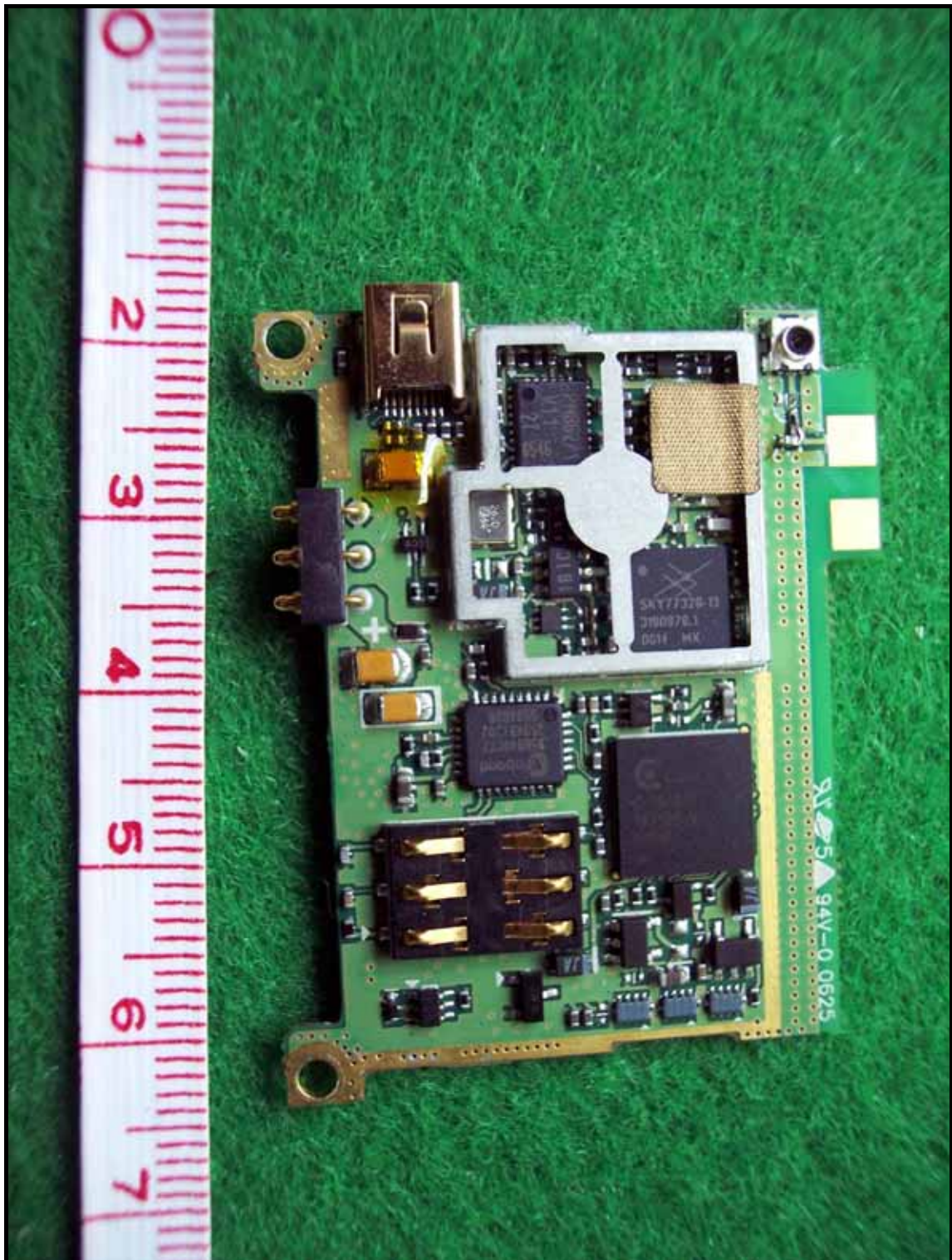
- Front View of Main Board



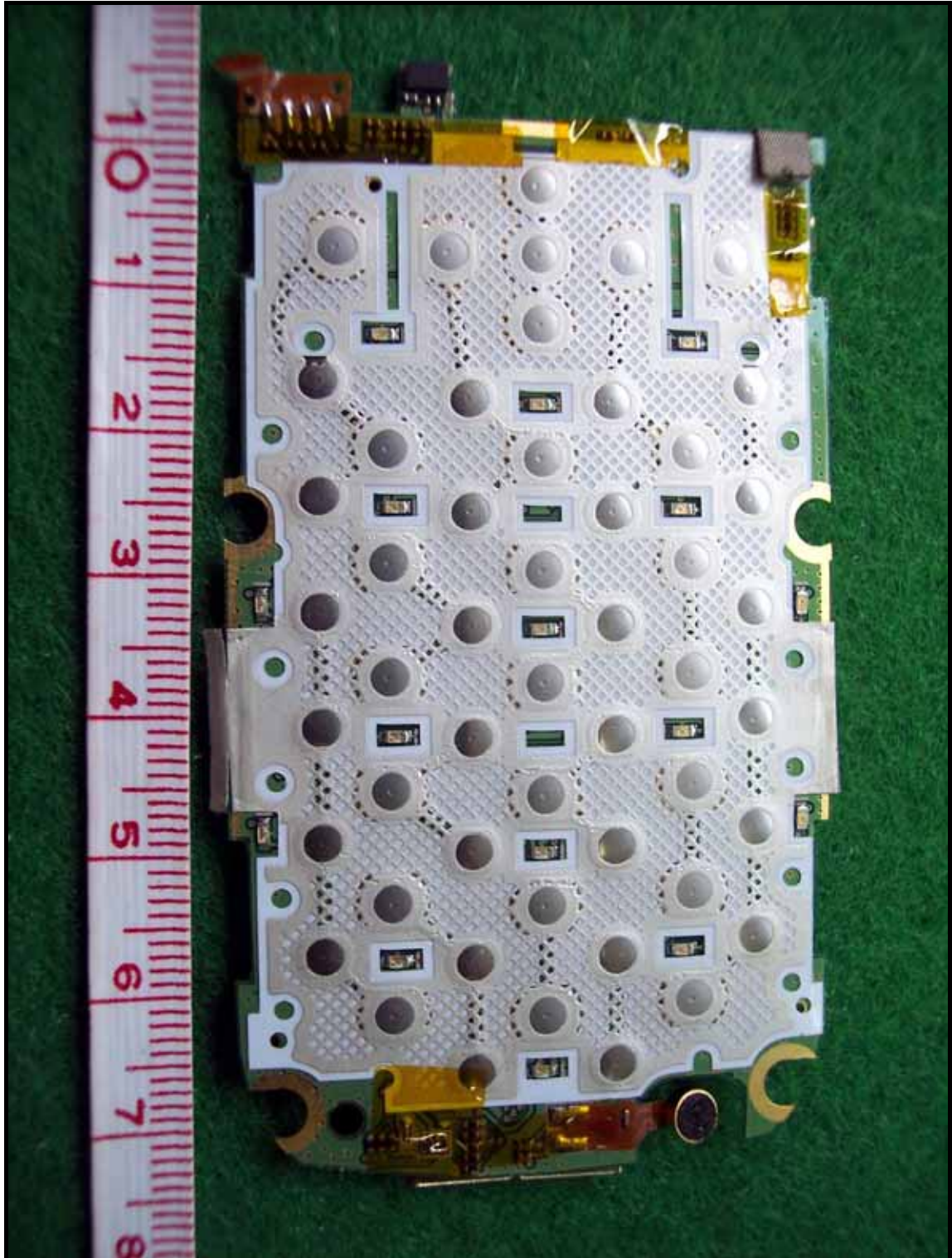
• Rear View of Main Board



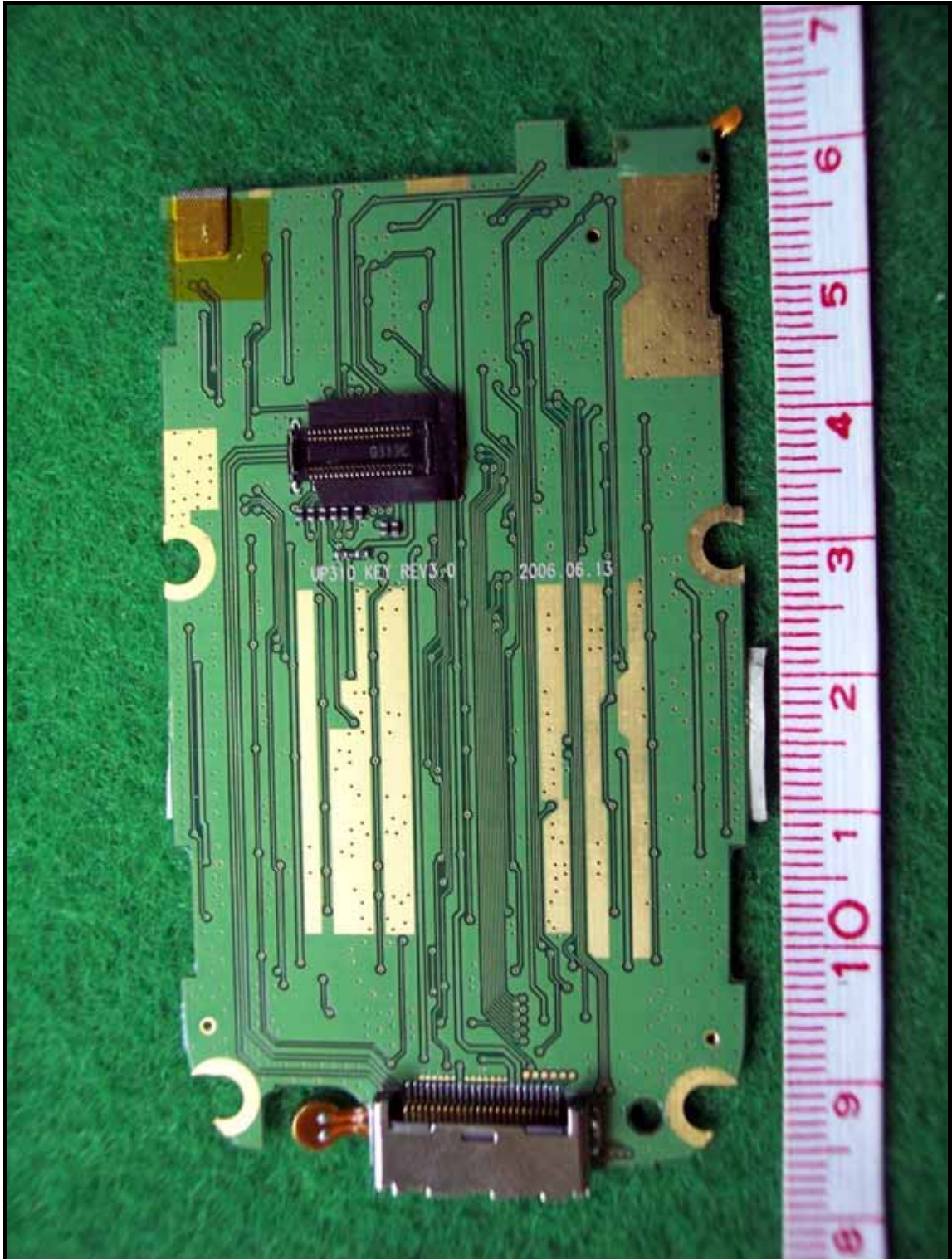
- Rear View of Main Board without Shield



- Key-pad Side View of EUT



- Key-pad Side View of EUT



- LCD Side View of EUT



- Adapter View of EUT



Appendix D – Schematic Diagram

Appendix E – Block Diagram

Appendix F – USER’S Manual

Appendix G – Operational Description

Appendix H – Tune up Procedure
