



# PCTEST ENGINEERING LABORATORY, INC.

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## CERTIFICATE OF COMPLIANCE FCC Part 24 Certification

**Applicant Name:**

NEC Corporation of America  
Radio Communications Systems Division  
6535 N. State Highway 161  
Irving, TX 75039 USA

**Date of Testing:**

October 2, 2007

**Test Site/Location:**

PCTEST Lab, Columbia, MD, USA

**Test Report Serial No.:**

0709281129-R2.A98

**FCC ID:****A98-FOMA-N905IBIZ****APPLICANT:****NEC CORPORATION OF AMERICA****Application Type:** Certification**FCC Classification:** PCS Licensed Transmitter Held to Ear (PCE)**FCC Rule Part(s):** §2; §24(E)**EUT Type:** PCS GSM/GPRS Phone**Model(s):** FOMA N905iBiz**Tx Frequency Range:** 1850.20 - 1909.80MHz (PCS GSM)**Max. RF Output Power:** 1.901 W EIRP PCS GSM (32.79 dBm)**Emission Designator(s):** 238KGXW (PCS GSM)**Test Device Serial No.:** *identical prototype* [S/N: 004401200215032, 004401200215016]

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947.

I attest to the accuracy of data. 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.

\* This revised Test Report (S/N: 0709281129-R2.A98) supersedes and replaces the previously issued test report on the same subject EUT for the same type of testing as indicated. Please discard and destroy the previously issued test report (S/N: 0709281129-R1.A98) and dispose of it accordingly.

**Grant Conditions:** Power output listed is EIRP for Part 24. This device also contains functions that are not operational in U.S. territories. This report is applicable only to U.S. operations.

PCTEST certifies that no party to this application has been denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 862.

  
Randy Ortanez  
President

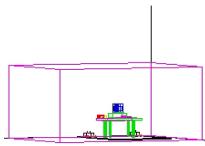
FCC ID: A98-FOMA-N905IBIZ		FCC Pt. 24 GSM / GPRS MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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# MEASUREMENT REPORT

## FCC Part 24



### §2.1033 General Information

**APPLICANT:** NEC Corporation of America  
**APPLICANT ADDRESS:** Radio Communications Systems Division  
6535 N. State Highway 161  
**TEST SITE:** PCTEST ENGINEERING LABORATORY, INC.  
**TEST SITE ADDRESS:** 6660-B Dobbin Road, Columbia, MD 21045 USA  
**FCC RULE PART(S):** §2; §24(E)  
**BASE MODEL:** FOMA N905iBIZ  
**FCC ID:** A98-FOMA-N905IBIZ  
**FCC CLASSIFICATION:** PCS Licensed Transmitter Held to Ear (PCE)  
**EMISSION DESIGNATOR(S):** 238KGXW (PCS GSM)  
**MODE:** GSM / GPRS  
**FREQUENCY TOLERANCE:** ±0.00025 % (2.5 ppm)  
**Test Device Serial No.:** 004401200215032,  Production  Pre-Production  Engineering  
**DATE(S) OF TEST:** October 2, 2007  
**TEST REPORT S/N:** 0709281129-R2.A98

### Test Facility / Accreditations

Measurements were performed at PCTEST Engineering Lab located in Columbia, MD 21045, U.S.A.



- PCTEST facility is an FCC registered (PCTEST Reg. No. 90864) test facility with the site description report on file and has met all the requirements specified in Section 2.948 of the FCC Rules and Industry Canada (IC-2451).
- PCTEST Lab is accredited to ISO 17025 by U.S. National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP Lab code: 100431-0) in EMC, FCC and Telecommunications.
- PCTEST Lab is accredited to ISO 17025-2005 by the American Association for Laboratory Accreditation (A2LA) in Specific Absorption Rate (SAR) testing, Hearing Aid Compatibility (HAC) testing, CTIA Test Plans, and wireless testing for FCC and Industry Canada Rules.
- PCTEST Lab is a recognized U.S. Conformity Assessment Body (CAB) in EMC and R&TTE (n.b. 0982) under the U.S.-EU Mutual Recognition Agreement (MRA).
- PCTEST TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC Guide 65 by the American National Standards Institute (ANSI) in all scopes of FCC Rules and Industry Canada Standards (RSS).
- PCTEST facility is an IC registered (IC-2451) test laboratory with the site description on file at Industry Canada.
- PCTEST is a CTIA Authorized Test Laboratory (CATL) for AMPS, CDMA, and EVDO wireless devices and for Over-the-Air (OTA) Antenna Performance testing for AMPS, CDMA, GSM, GPRS, EGPRS, UMTS (W-CDMA), CDMA 1xEVDO, and CDMA 1xRTT.



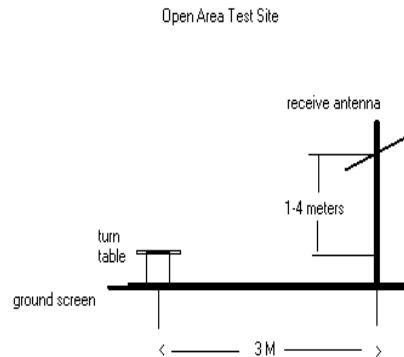
FCC ID: A98-FOMA-N905IBIZ	<b>PCTEST</b> WIRELESS	FCC Pt. 24 GSM / GPRS MEASUREMENT REPORT (CERTIFICATION)	<b>NEC</b>	Reviewed by: Quality Manager
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## 1.0 INTRODUCTION

### 1.1 Measurement Procedure

The radiated spurious measurements were made outdoors at a 3-meter test range (see Figure 1-1). The equipment under test is placed on a wooden turntable 3-meters from the receive antenna. The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. A horn antenna was substituted in place of the EUT. This horn antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This level is recorded. The difference between the gain of the horn and an isotropic antenna are taken into consideration.

**Deviation from Measurement Procedure.....None**



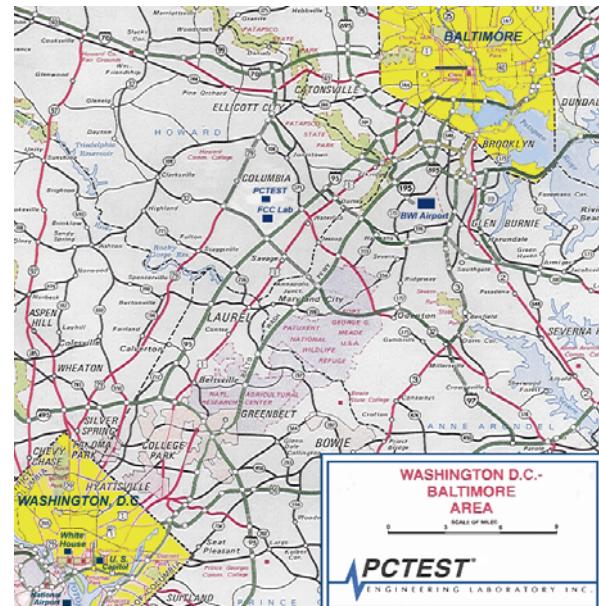
**Figure 1-1. Diagram of 3-meter outdoor test range**

### 1.2 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.

### 1.3 Testing Facility

These measurements were conducted at the PCTEST Engineering Laboratory, Inc. facility in New Concept Business Park, Guilford Industrial Park, Columbia, Maryland. The site address is 6660-B Dobbin Road, Columbia, MD 21045. The test site is one of the highest points in the Columbia area with an elevation of 390 feet above mean sea level. The site coordinates are 39° 11'15" N latitude and 76° 49'38" W longitude. The facility is 1.5 miles North of the FCC laboratory, and the ambient signal and ambient signal strength are approximately equal to those of the FCC laboratory. There are no FM or TV transmitters within 15 miles of the site. 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 on January 27, 2006 and Industry Canada.



**Figure 1-2. Map of the Greater Baltimore and Metropolitan Washington, D.C. area.**

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## 2.0 PRODUCT INFORMATION

### 2.1 Equipment Description

The Equipment Under Test (EUT) is the **NEC PCS GSM/GPRS Phone FCC ID: A98-FOMA-N905IBIZ**. The EUT consisted of the following component(s):

Trade Name / Base Model	FCC ID	Description
NEC / Model: FOMA N905iBiz	A98-FOMA-N905IBIZ	PCS GSM/GPRS Phone

**Table 2-1. EUT Equipment Description**

### 2.2 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and no modifications were made during testing.

### 2.3 Labeling Requirements

Per 15.19; Docket 95-19

The label shall be permanently affixed at a conspicuous location on the device; instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase. However, when the device is so small wherein placement of the label with specified statement is not practical, only the trade name and FCC ID must be displayed on the device per Section 15.19(b)(2).

Please see attachment for FCC ID label and label location.

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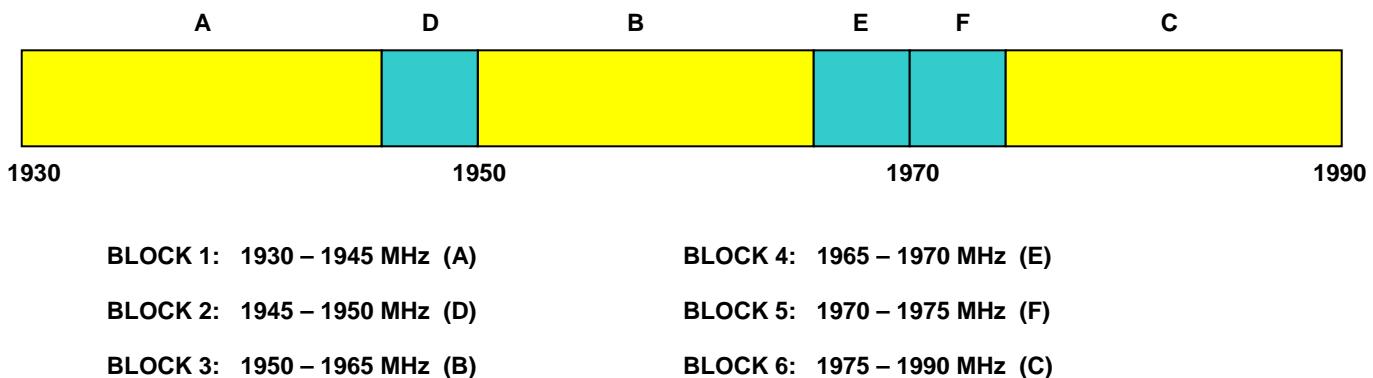
## 3.0 DESCRIPTION OF TESTS

### 3.1 Occupied Bandwidth Emission Limits

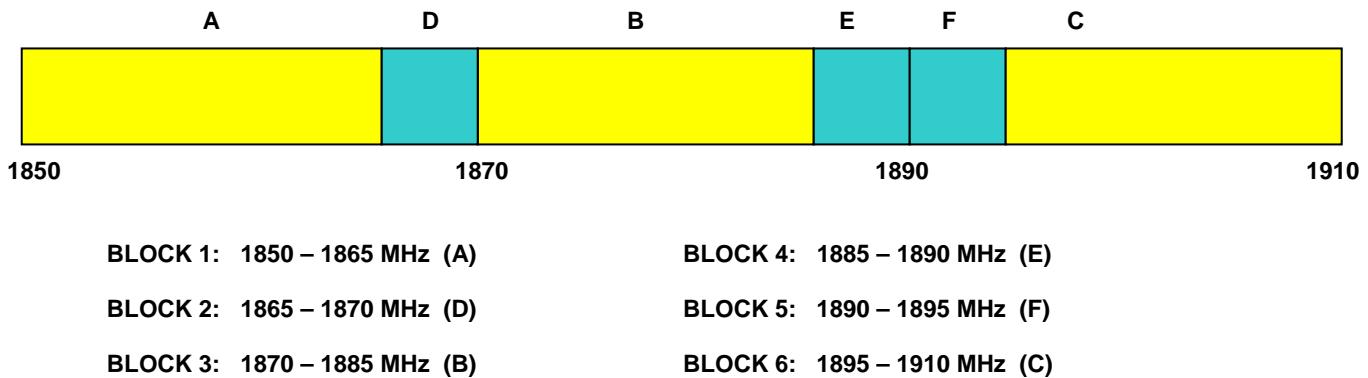
#### §2.1049, 24.238(a)

- a. On any frequency outside a licensee'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 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent 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.

### 3.2 PCS - Base Frequency Blocks



### 3.3 PCS - Mobile Frequency Blocks



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### 3.4 Spurious and Harmonic Emissions at Antenna Terminal

#### §2.1051, 24.238(a); RSS-133 (6.5.1)

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10<sup>th</sup> harmonic.

### 3.5 Radiated Spurious and Harmonic Emissions

#### §2.1053, 24.238(a); RSS-133 (6.5.1(i))

Spurious and harmonic radiated emissions are measured outdoors at our 3-meter test range. The equipment under test is placed on a wooden turntable 3-meters from the receive antenna. The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10<sup>th</sup> harmonic. A horn antenna was substituted in place of the EUT. This horn antenna was driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive spectrum analyzer reading. This level is recorded. The difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration. This device was tested under all configurations and the highest power is reported in GPRS mode with the power set to 30dBm while transmitting with one uplink slot.

### 3.6 Frequency Stability / Temperature Variation

#### §2.1055, 24.235; RSS-133 (6.3)

The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

*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  $\pm 0.00025\%$  ( $\pm 2.5$  ppm) of the center frequency.*

#### **Time Period and Procedure:**

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. 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 is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

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## 4.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST).

Manufacturer	Model / Equipment	Calibration Date	Cal Interval	Calibration Due	Serial No.
Agilent	E4407B ESA Spectrum Analyzer	04/29/07	Annual	04/28/08	US39210313
Agilent	E5515C Wireless Communications Test Set	07/27/06	Biennial	07/26/08	GB41450275
Agilent	E5515C Wireless Communications Test Set	10/06/06	Biennial	10/05/08	GB43193972
Agilent	E5515C Wireless Communications Test Set	10/26/06	Biennial	10/25/08	GB46310798
EMCO	Model 3115 (1-18GHz) Horn Antenna	09/24/06	Biennial	09/23/08	9203-2178
EMCO	Model 3115 (1-18GHz) Horn Antenna	09/25/06	Biennial	09/24/08	9704-5182
Rohde & Schwarz	NRVS Power Meter	07/03/07	Biennial	07/02/09	835360/079
Rohde & Schwarz	NRV-Z53 Power Sensor	07/03/07	Biennial	07/02/09	846076/007
Rohde & Schwarz	CMU200 Base Station Simulator	11/08/06	Annual	11/08/07	107826
Rohde & Schwarz	CMU200 Base Station Simulator	09/07/07	Annual	09/06/08	833855/010
Rohde & Schwarz	CMU200 Base Station Simulator	05/24/07	Annual	05/23/08	836371/079
Agilent	HP 8566B (100Hz-22GHz) Spectrum Analyzer	12/21/06	Annual	12/21/07	3638A08713
Agilent	E8257D (250kHz-20GHz) Signal Generator	03/08/07	Annual	03/07/08	MY45470194
Agilent	HP 85650A Quasi-Peak Adapter	12/21/06	Annual	12/21/07	2043A00301
Agilent	HP 8449B (1-26.5GHz) Pre-Amplifier	12/12/06	Annual	12/12/07	3008A00985
Agilent	HP 85650A Quasi-Peak Adapter	12/21/06	Annual	12/21/07	2043A00301
Agilent	HP 8449B (1-26.5GHz) Pre-Amplifier	12/12/06	Annual	12/12/07	3008A00985
Agilent	HP 11713A Attenuation/Switch Driver	12/12/06	Annual	12/12/07	N/A
Agilent	HP 85685A (20Hz-2GHz) Preselector	12/12/06	Annual	12/12/07	N/A
Agilent	HP 8566B Opt. 462 Impulse Bandwidth	12/12/06	Annual	12/12/07	3701A22204
EMCO	Dipole Pair	09/21/06	Biennial	09/20/08	23951
SOLAR	8012-50 LISN (2)	11/18/05	Biennial	11/18/07	0313233, 0310234
K & L	11SH10 Band Pass Filter	N/A	Annual	N/A	1300/4000
K & L	11SH10 Band Pass Filter	N/A	Annual	N/A	4000/12000
Agilent	HP 8495A (0-70dB) DC-4GHz Attenuator	N/A		N/A	N/A
-	263-10dB (DC-18GHz) 10 dB Attenuator	N/A		N/A	N/A
Paternack	PE2208-6 Bidirectional Coupler	N/A		N/A	N/A
-	No.165 (30MHz - 1000MHz) RG58 Coax Cable	N/A		N/A	N/A
-	No.166 (1000-26500MHz) Microwave RF Cable	N/A		N/A	N/A
-	No.167 (100kHz - 100MHz) RG58 Coax Cable	N/A		N/A	N/A
Rohde & Schwarz	NRVD Dual Channel Power Meter	12/11/06	Biennial	12/10/08	101695
Rohde & Schwarz	NRV-Z33 Peak Power Sensor (1mW-20W)	11/28/06	Biennial	11/27/08	100155

Table 4-1. Test Equipment

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## 5.0 SAMPLE CALCULATIONS

### Emission Designator

**Emission Designator = 250KGXW**

GSM BW = 250 kHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

### Spurious Radiated Emission - PCS Band

**Example: Channel 512 PCS Mode 2<sup>nd</sup> Harmonic (3700.40 MHz)**

The receive analyzer reading at 3 meters with the EUT on the turntable was -81.0 dBm. The gain of the substituted antenna is 8.1 dBi. The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of -81.0 dBm on the receive analyzer. The loss of the cable between the signal generator and the terminals of the substituted antenna is 2.0 dB at 3700.40 MHz. So 6.1 dB is added to the signal generator reading of -30.9 dBm yielding -24.80 dBm. The fundamental EIRP was 25.501 dBm so this harmonic was 25.501 dBm - (-24.80) = 50.3 dBc.

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## 6.0 TEST RESULTS

### 6.1 Summary

Company Name: NEC Corporation of America  
 FCC ID: A98-FOMA-N905IBIZ  
 FCC Classification: PCS Licensed Transmitter Held to Ear (PCE)  
 Mode(s): GSM / GPRS

FCC Part Section(s)	RSS Section	Test Description	Test Limit	Test Condition	Test Result	Reference
<b>TRANSMITTER MODE (TX)</b>						
2.1049, 24.238(a)	N/A	Occupied Bandwidth	N/A	CONDUCTED	PASS	Section 7.0
2.1051, 24.238(a)	RSS-133 (6.5.1)	Band Edge / Conducted Spurious Emissions	< $43 + \log_{10}(P[\text{Watts}])$ at Band Edge and for all out-of-band emissions		PASS	Section 7.0
2.1046	N/A	Transmitter Conducted Output Power	N/A		PASS	Section 6.2
24.232(c)	RSS-133 (6.4) [SRSP-510 (5.1.2)]	Equivalent Isotropic Radiated Power	< 2 Watts max. EIRP	RADIATED	PASS	Section 6.3
2.1053, 24.238(a)	RSS-133 (6.5.1)	Undesirable Emissions	< $43 + \log_{10}(P[\text{Watts}])$ for all out-of-band emissions		PASS	Section 6.4
2.1055, 24.235	RSS-133 (6.3)	Frequency Stability	< 2.5 ppm	CONDUCTED	PASS	Section 6.5
<b>RECEIVER MODE (RX) / DIGITAL EMISSIONS</b>						
15.107	RSS-Gen (7.2.2)	AC Conducted Emissions 150kHz – 30MHz	< FCC 15.207 limits or < RSS-Gen table 2 limits	LINE CONDUCTED	PASS	Pt. 15B Test Report
15.109	RSS-133(6.7(a) / [RSS-Gen (7.2.2)] / RSS-210 (7.3))	General Field Strength Limits (Restricted Bands and Radiated Emissions Limits)	< FCC 15.209 limits or < RSS-210 table 3 limits	RADIATED (30MHz-1GHz) (1-25 GHz)	PASS	Pt. 15B Test Report
<b>RF EXPOSURE</b>						
2.1091 / 2.1093	RSS-102	SAR Test	1.6 W/kg (SAR Limit)	SAR	PASS	SAR Report

**Table 6-1. Summary of Test Results**

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## 6.2 Conducted Output Power

### §2.1046

A base station simulator (Rhode and Schwartz Model: CMU200) was used to establish communication with the **NEC PCS GSM/GPRS Phone FCC ID: A98-FOMA-N905IBIZ**. The base station simulator parameters were set to produce the maximum power from the EUT. This device was tested under all configurations and the highest power is reported in GPRS mode with the power set to 30dBm while transmitting with one uplink slot. The powers are reported below.

Band	Channel	GPRS	
		Uplink / Downlink Slots	Conducted Power
		[dBm]	
PCS	512	1/1	29.27
	661	1/1	29.05
	810	1/1	29.20

Table 6-2. GSM Conducted Output Powers



Figure 6-1. GSM Conducted Power Test Setup Diagram

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### 6.3 Equivalent Isotropic Radiated Power Output Data

§24.232(c); RSS-133 (6.4) [SRSP-510 (5.1.2)]

**POWER: One Uplink Slot at 30dBm (PCS GPRS Mode)**

Frequency [MHz]	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]	Battery Type
1850.20	-8.630	24.79	8.00	H	32.79	1.901	Standard
1880.00	-9.850	23.57	8.00	H	31.57	1.435	Standard
1909.80	-9.930	23.49	8.00	H	31.49	1.409	Standard

**Table 6-3. Equivalent Isotropic Radiated Power Output Data**

**NOTES:**

Equivalent Isotropic Radiated Power Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. A Horn antenna was substituted in place of the EUT. This Horn antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the Horn antenna is measured. The difference between the gain of the horn and an isotropic antenna is taken into consideration and the EIRP is recorded.

This device was tested under all configurations and the highest power is reported in GPRS mode with the power set to 30dBm while transmitting with one uplink slot. This unit was tested with its standard battery.

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## 6.4 PCS GSM Radiated Measurements

§2.1053, 24.238(a); RSS-133 (6.5.1)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1850.20 MHz  
 CHANNEL: 512  
 MEASURED OUTPUT POWER: 32.790 dBm = 1.901 W  
 MODULATION SIGNAL: GSM (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  45.79 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3700.40	-43.03	9.02	-34.01	H	66.8
5550.60	-44.42	10.40	-34.02	H	66.8
7400.80	-42.63	10.50	-32.12	H	64.9
9251.00	-85.47	11.85	-73.62	H	106.4
11101.20	-82.72	12.76	-69.96	H	102.8

Table 6-4. Radiated Spurious Data (PCS GPRS Mode – Ch. 512)

#### NOTES:

Radiated Spurious Emission Measurements by Substitution Method  
according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in GPRS mode with the power set to 30dBm while transmitting with one uplink slot. This unit was tested with its standard battery.

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## PCS GSM Radiated Measurements (Cont'd)

§2.1053, 24.238(a); RSS-133 (6.5.1)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1880.00 MHz  
 CHANNEL: 661  
 MEASURED OUTPUT POWER: 32.790 dBm = 1.901 W  
 MODULATION SIGNAL: GSM (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  45.79 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3760.00	-44.25	8.99	-35.26	H	68.1
5640.00	-42.99	10.40	-32.59	H	65.4
7520.00	-41.46	10.62	-30.84	H	63.6
9400.00	-85.24	11.70	-73.54	H	106.3
11280.00	-81.93	12.69	-69.25	H	102.0

Table 6-5. Radiated Spurious Data (PCS GPRS Mode – Ch. 661)

#### NOTES:

Radiated Spurious Emission Measurements by Substitution Method  
according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in GPRS mode with the power set to 30dBm while transmitting with one uplink slot. This unit was tested with its standard battery.

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## PCS GSM Radiated Measurements (Cont'd)

§2.1053, 24.238(a); RSS-133 (6.5.1)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1909.80 MHz  
 CHANNEL: 810  
 MEASURED OUTPUT POWER: 32.790 dBm = 1.901 W  
 MODULATION SIGNAL: GSM (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  45.79 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
3819.60	-46.69	8.97	-37.72	H	70.5
5729.40	-43.55	10.40	-33.15	H	65.9
7639.20	-42.78	10.71	-32.06	H	64.9
9549.00	-85.03	11.64	-73.39	H	106.2
11458.80	-81.15	12.62	-68.54	H	101.3

Table 6-6. Radiated Spurious Data (PCS GPRS Mode – Ch. 810)

#### NOTES:

Radiated Spurious Emission Measurements by Substitution Method  
 according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the highest power is reported in GPRS mode with the power set to 30dBm while transmitting with one uplink slot. This unit was tested with its standard battery.

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## 6.5 PCS GSM Frequency Stability Measurements

§2.1055, 24.235; RSS-133 (6.3)

OPERATING FREQUENCY: 1,880,000,000 Hz

CHANNEL: 661

REFERENCE VOLTAGE: 3.8 VDC

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

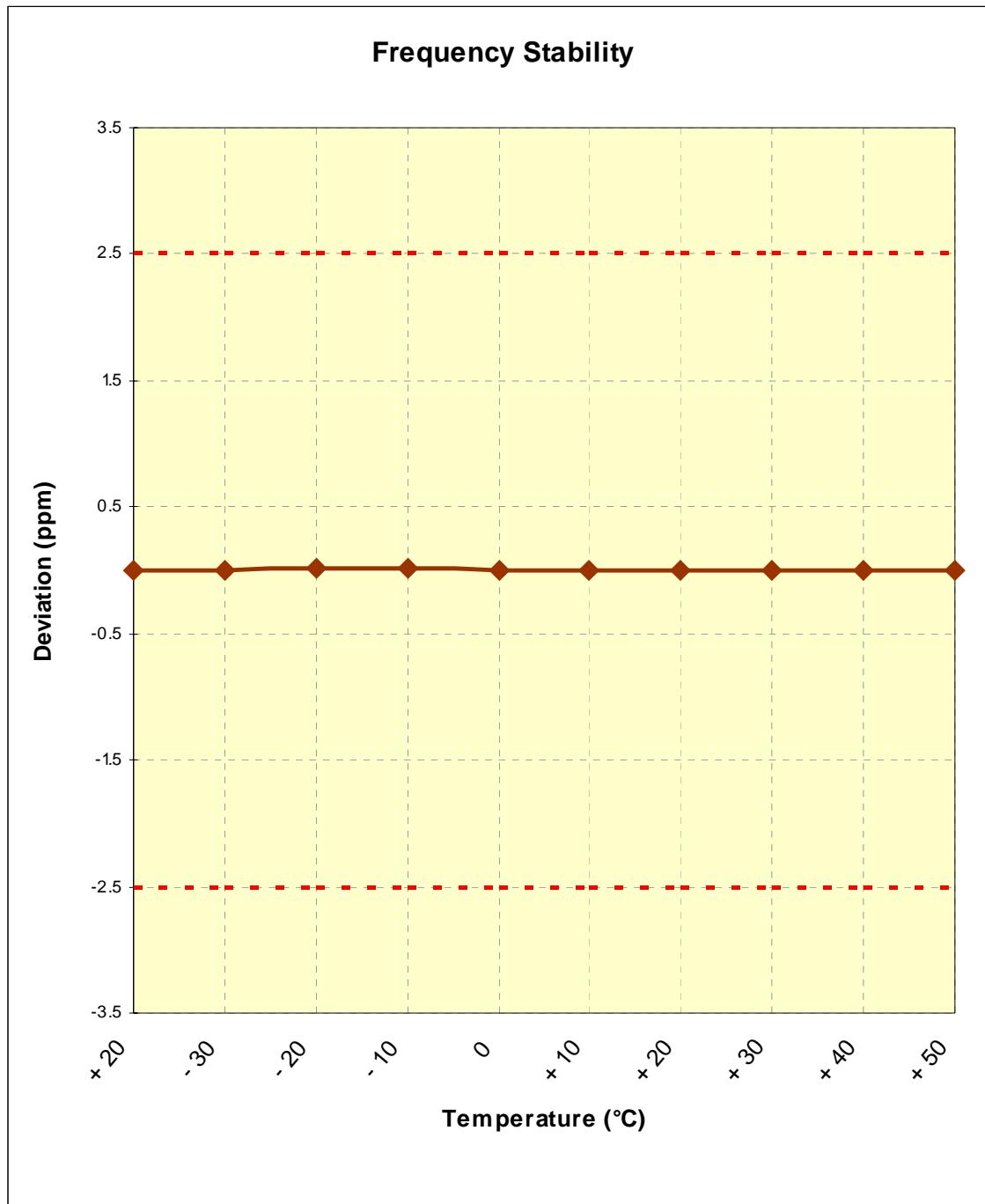
VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQ. (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	1,880,000,005	5	0.000000
100 %		- 30	1,880,000,003	3	0.000000
100 %		- 20	1,880,000,017	17	0.000001
100 %		- 10	1,880,000,018	18	0.000001
100 %		0	1,880,000,014	14	0.000001
100 %		+ 10	1,880,000,012	12	0.000001
100 %		+ 20	1,880,000,010	10	0.000001
100 %		+ 30	1,880,000,003	3	0.000000
100 %		+ 40	1,880,000,005	5	0.000000
100 %		+ 50	1,880,000,010	10	0.000001
115 %		+ 20	1,880,000,007	7	0.000000
BATT. ENDPOINT	3.42	+ 20	1,880,000,002	2	0.000000

Table 6-7. Frequency Stability Data (PCS GPRS Mode – Ch. 661)

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## PCS GSM Frequency Stability Measurements (Cont'd)

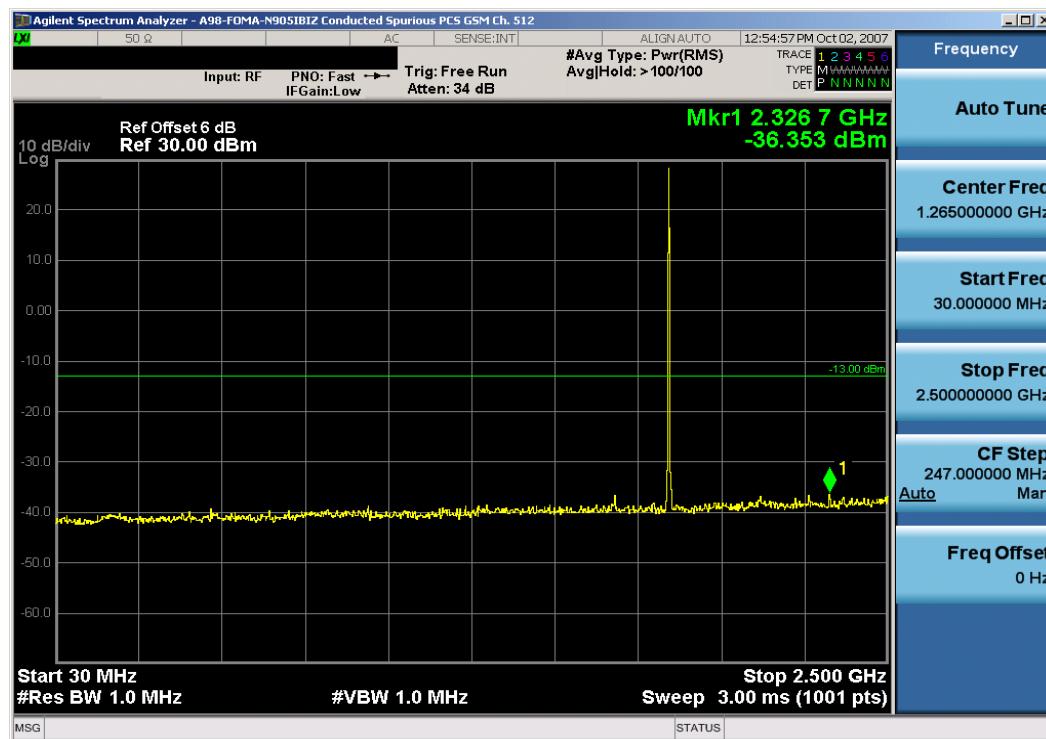
§2.1055, 24.235; RSS-133 (6.3)



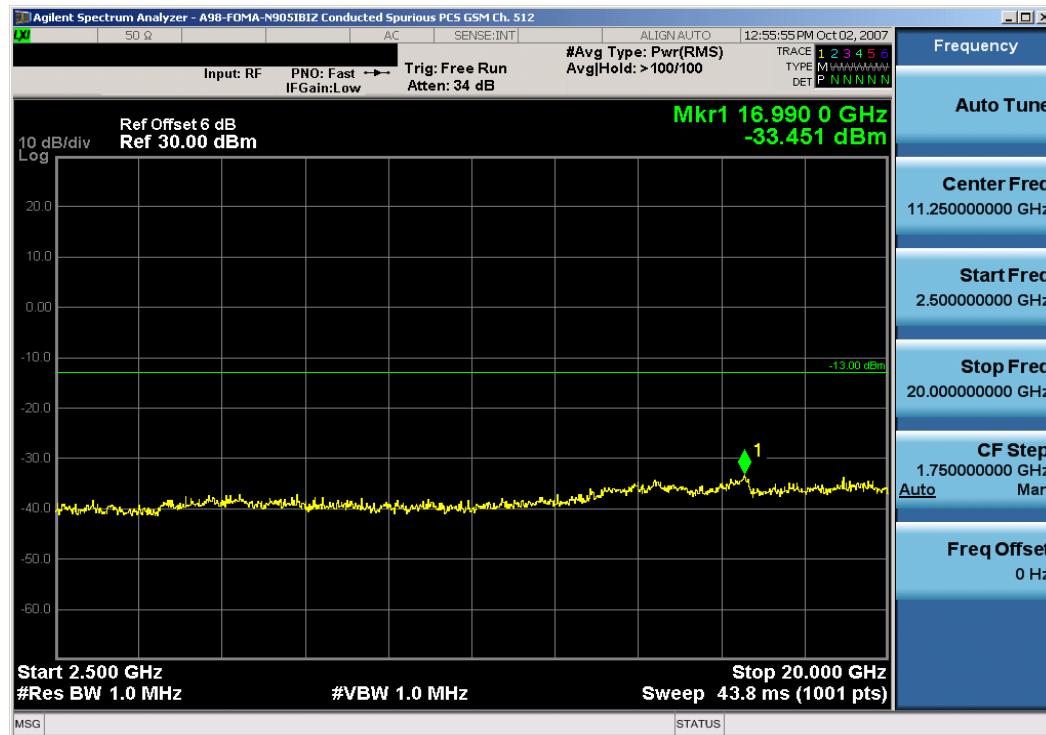
Plot 6-1. Frequency Stability Graph (PCS GPRS Mode – Ch. 661)

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## 7.0 PLOTS OF EMISSIONS

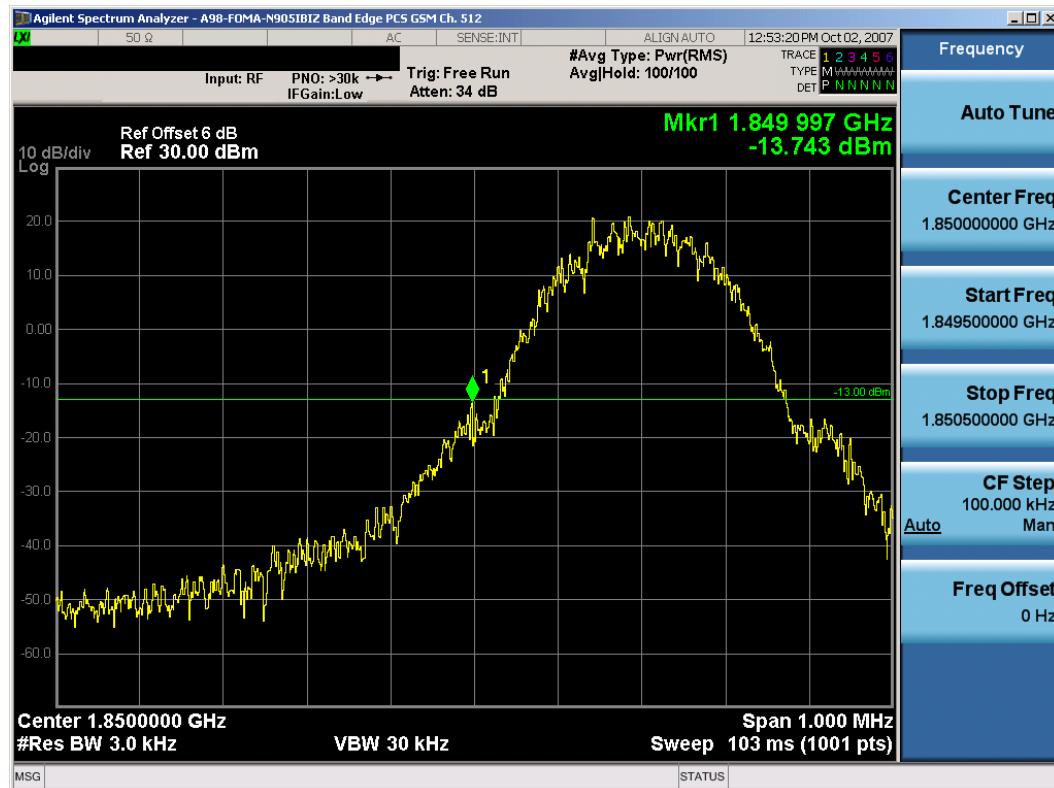


Plot 7-1. Conducted Spurious Plot (PCS GPRS Mode – Ch. 512)

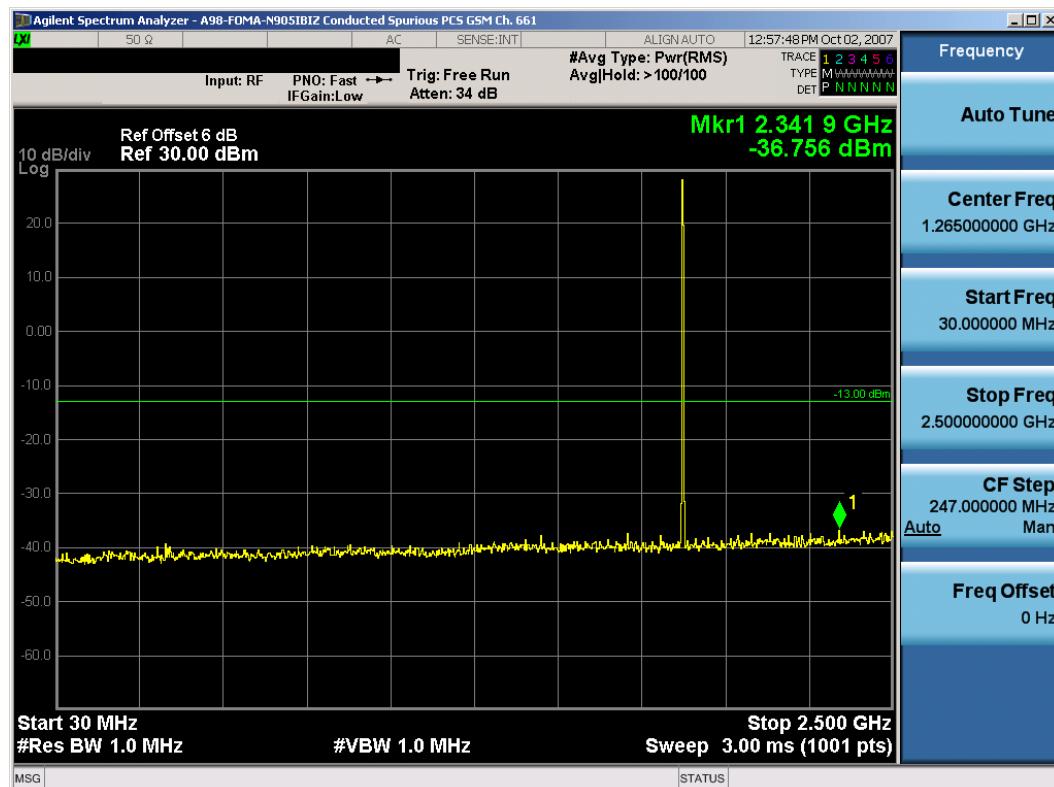


Plot 7-2. Conducted Spurious Plot (PCS GPRS Mode – Ch. 512)

FCC ID: A98-FOMA-N905IBIZ	 PCTEST	FCC Pt. 24 GSM / GPRS MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: <b>NEC</b> Quality Manager
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Plot 7-3. Band Edge Plot (PCS GPRS Mode – Ch. 512)

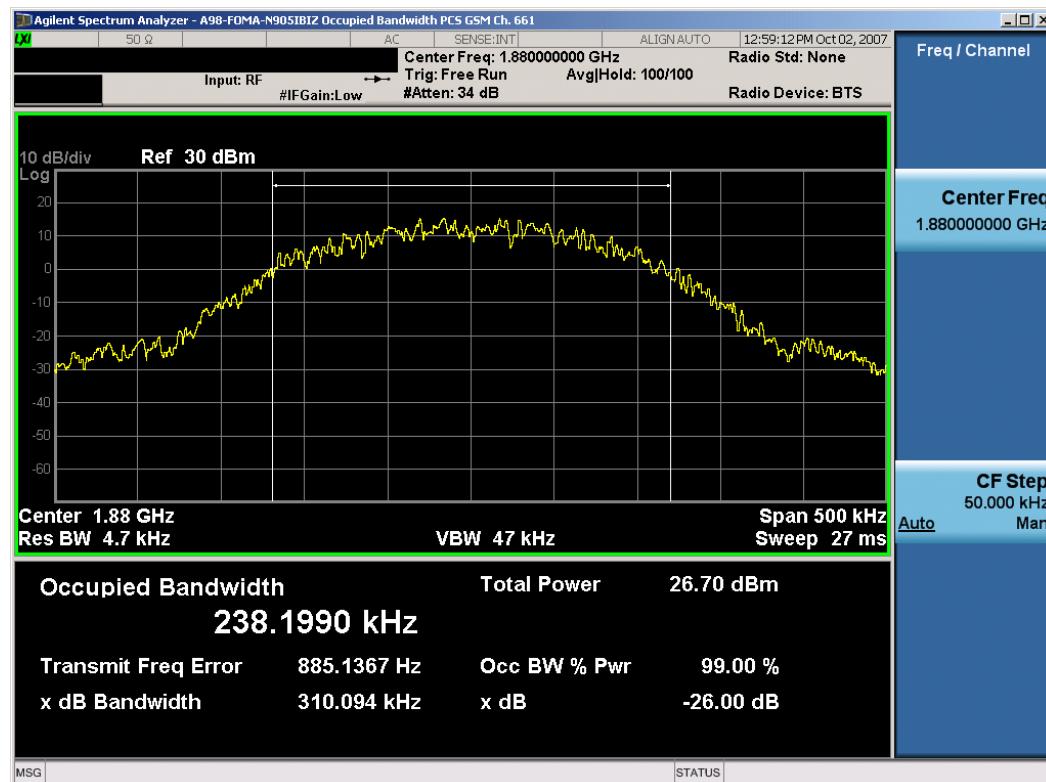


Plot 7-4. Conducted Spurious Plot (PCS GPRS Mode – Ch. 661)

FCC ID: A98-FOMA-N905IBIZ	 PCTEST	FCC Pt. 24 GSM / GPRS MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: <b>NEC</b> Quality Manager
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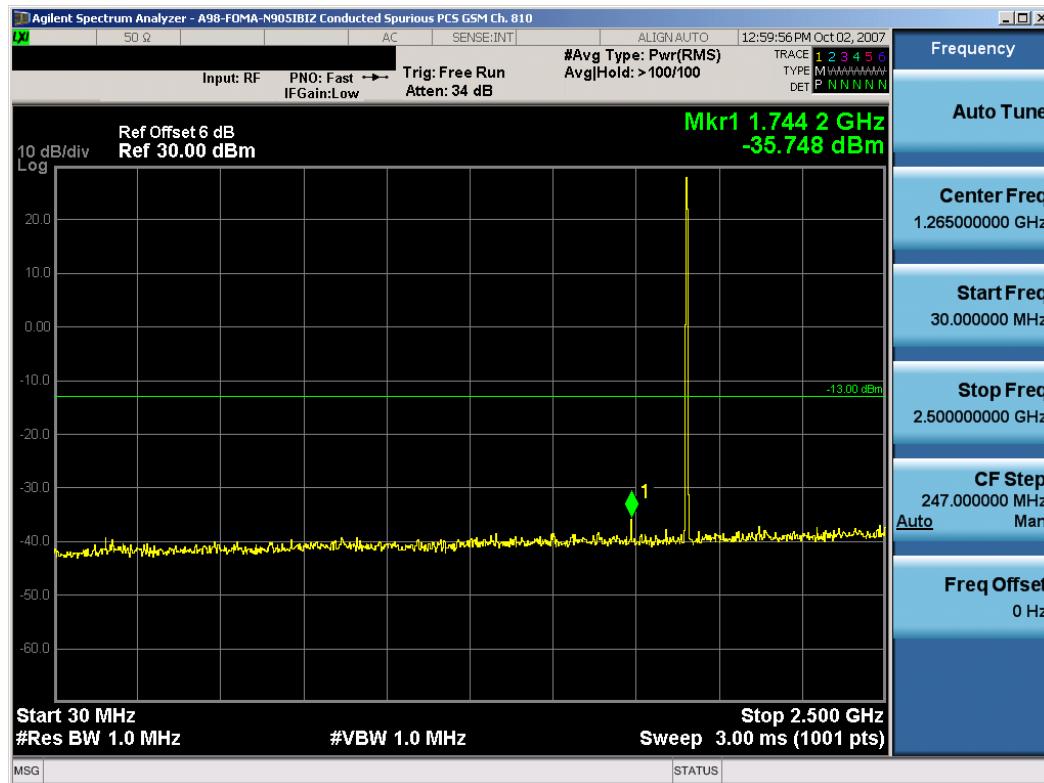


Plot 7-5. Conducted Spurious Plot (PCS GPRS Mode – Ch. 661)



**Plot 7-6. Occupied Bandwidth Plot (PCS GPRS Mode – Ch. 661)**

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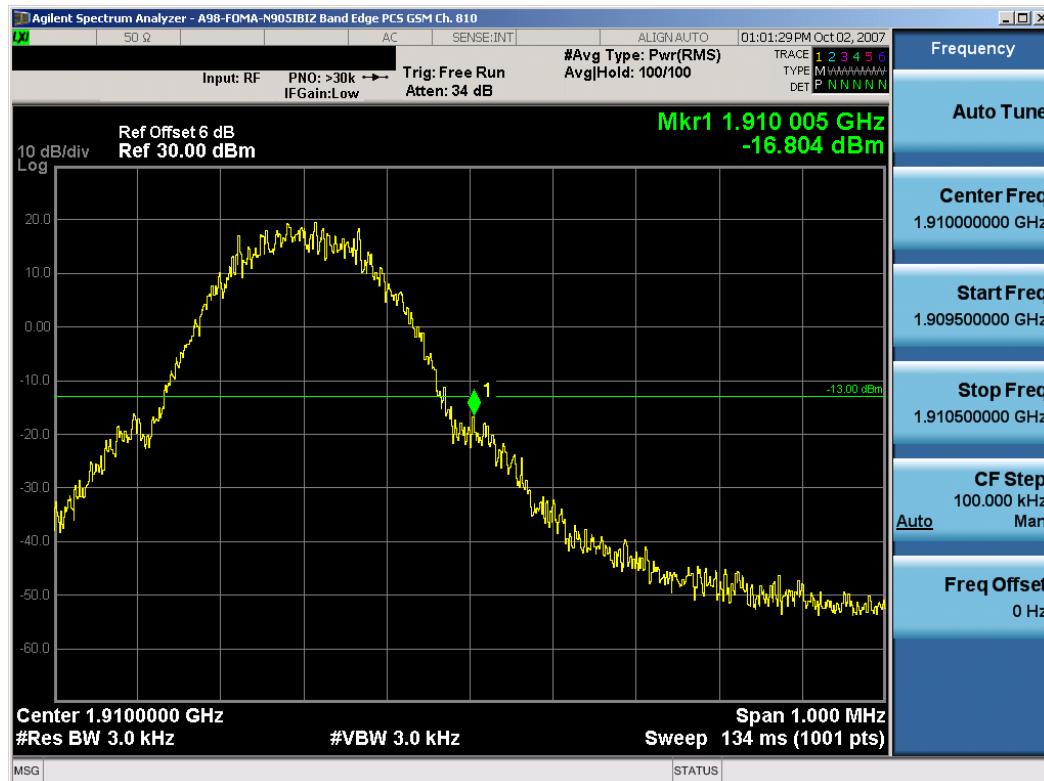


Plot 7-7. Conducted Spurious Plot (PCS GPRS Mode – Ch. 810)



Plot 7-8. Conducted Spurious Plot (PCS GPRS Mode – Ch. 810)

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Plot 7-9. Band Edge Plot (PCS GPRS Mode – Ch. 810)

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## 8.0 CONCLUSION

The data collected show that the **NEC PCS GSM/GPRS Phone FCC ID: A98-FOMA-N905IBIZ** complies with all the requirements of Parts 2 and 24 of the FCC rules.

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