

## HCT CO., LTD.

Product Compliance Division

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# FCC Certification Applicant Name: Date of Issue: Pantech Co., Ltd. November 23, 2010 Address: Location: Pantech Building, I-2, DMC, Sangam-dong, Mapo-gu, Seoul, Korea(ZIP: 121-792) HCT CO., LTD., 105-1, Jangam-ri, Majang-Myeon, Icheon-si, Kyunggi-Do, Korea(Lab) Test Report No.: HCTR1011FR19 HCT FRN: 0005866421

IC Recognition No.: IC 5944A-2

FCC ID

# : JYCP8000

APPLICANT	: Pantech Co., Ltd.
FCC Model(s):	P8000
EUT Type:	GSM/WCDMA Phone with Bluetooth&WLAN
FCC Classification:	Licensed Portable Transmitter Held to Ear (PCE)
Tx Frequency:	824.20 - 848.80 MHz (GSM850) 826.40 - 846.60 MHz (WCDMA850) 1 850.20 - 1 909.80 MHz (GSM1900) 1 852.4 – 1 907.6 MHz (WCDMA1900)
Rx Frequency:	869.20 - 893.80 MHz (GSM850) 871.40 - 891.60 (WCDMA850) 1 930.20 - 1 989.80 MHz (GSM1900) 1 932.4 – 1 987.6 MHz (WCDMA1900)
Max. RF Output Power:	0.782 W ERP GSM850 (28.93 dBm) / 0.468 W EIRP GSM1900 (26.70 dBm) 0.627 W ERP EDGE850 (27.97 dBm) / 0.394 W EIRP EDGE1900 (25.95 dBm) 0.204 W ERP WCDMA850(23.10 dBm) / 0.214 W EIRP WCDMA1900(23.30 dBm)
Emission Designator(s):	250KGXW (GSM850) 249KGXW (GSM1900) 243 KG7W (GSM850 EDGE) 248 KG7W (GSM1900 EDGE) 4M19F9W (WCDMA850) 4M18F9W (WCDMA1900)
FCC Rule Part(s):	§22, §24, §2

The measurements shown in this report were made in accordance with the procedures specified in §2.947. I assume full responsibility

for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998,21 U.S. C.853(a)

Report prepared by : Hyo Sun Kwak Test engineer of RF Team

Approved by : Sang Jun Lee Manager of RF Team

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FCC CERTIFICATION REPORT			www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 1 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



# <u>Version</u>

TEST REPORT NO.	DATE	DESCRIPTION
HCTR1011FR19	November 23, 2010	First Approval Report

FCC CERTIFICATION REPORT			www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 2 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



# **Table of Contents**

1. GENERAL INFORMATION
2. INTRODUCTION
2.1. EUT DESCRIPTION
2.2. MEASURING INSTRUMENT CALIBRATION
2.3. TEST FACILITY
3. DESCRIPTION OF TESTS
3.1 EFFECTIVE RADIATED POWER/EQUIVALENT ISOTROPIC RADIATED POWER
3.2 PEAK- TO- AVERAGE RATIO
3.3 OCCUPIED BANDWIDTH
3.4 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL
3.5 RADIATED SPURIOUS AND HARMONIC EMISSIONS
3.6 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE11
4. LIST OF TEST EQUIPMENT 12
5. SUMMARY OF TEST RESULTS
6. SAMPLE CALCULATION
7. TEST DATA
7.1 CONDUCTED OUTPUT POWER 15
7.2 PEAK-TO-AVERAGE RATIO
7.3 OCCUPIED BANDWIDTH 18
7.4 CONDUCTED SPURIOUS EMISSIONS 19
7.4.1 BAND EDGE
7.5 EFFECTIVE RADIATED POWER OUTPUT (GSM / WCDMA)
7.6 EQUIVALENT ISOTROPIC RADIATED POWER (GSM / WCDMA)
7.7 RADIATED SPURIOUS EMISSIONS
7.7.1 RADIATED SPURIOUS EMISSIONS (GSM850)
7.7.2 RADIATED SPURIOUS EMISSIONS (GSM1900)23
7.7.3 RADIATED SPURIOUS EMISSIONS (WCDMA850)
7.7.4 RADIATED SPURIOUS EMISSIONS (WCDMA1900)
7.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE
7.8.1 FREQUENCY STABILITY (GSM850)
7.8.2 FREQUENCY STABILITY (GSM1900)
7.8.2 FREQUENCY STABILITY (GSM1900)

FCC CERTIFICATION REPORT			www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 3 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



# **MEASUREMENT REPORT**

# **1. GENERAL INFORMATION**

Applicant Name:	Pantech Co., Ltd.
Address:	Pantech Building, I-2, DMC, Sangam-dong, Mapo-gu, Seoul, Korea(ZIP: 121-792)
FCC ID:	JYCP8000
Application Type:	Certification
FCC Classification:	Licensed Portable Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§22, §24, §2
EUT Type:	GSM/WCDMA Phone with Bluetooth&WLAN
FCC Model(s):	P8000
Battery Model Name: Power Rating: Type: Tx Frequency:	PBR-65B(Standard) 3.7 V, 1500 mAh, 5.6 Wh Lithium-Ion Battery 824.20 - 848.80 MHz (GSM850) 826.40 - 846.60 MHz (WCDMA850) 1 850.20 - 1 909.80 MHz (GSM1900)
Rx Frequency:	1 852.4 – 1 907.6 MHz (WCDMA1900) 869.20 - 893.80 MHz (GSM850) 871.40 - 891.60 (WCDMA850) 1 930.20 - 1 989.80 MHz (GSM1900) 1 932.4 – 1 987.6 MHz (WCDMA1900)
Max. RF Output Power:	0.782 W ERP GSM850 (28.93 dBm) / 0.468 W EIRP GSM1900 (26.70 dBm) 0.627 W ERP EDGE850 (27.97 dBm) / 0.394 W EIRP EDGE1900 (25.95 dBm) 0.204 W ERP WCDMA850(23.10 dBm) / 0.214 W EIRP WCDMA1900(23.30 dBm)
Emission Designator(s):	250KGXW (GSM850) 249KGXW (GSM1900) 243 KG7W (GSM850 EDGE) 248 KG7W (GSM1900 EDGE) 4M19F9W (WCDMA850) 4M18F9W (WCDMA1900)
Antenna Specification	Manufacturer: DONGNAM C)., Ltd. Antenna type: Inverted F Antenna
Date(s) of Tests:	Peak Gain: 2.85 dBi November 15, 2010 ~ November 19, 2010

FCC CERTIFICATION REPORT			www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 4 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



# 2. INTRODUCTION

# 2.1. EUT DESCRIPTION

The Pantech Co., Ltd. P8000 GSM/WCDMA Phone with Bluetooth&WLAN consists of GSM850, GSM1900, GPRS Class10, EDGE, WCDMA850, WCDMA1900 and HSDPA.

## 2.2. MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

## 2.3. TEST FACILITY

The SAC(Semi-Anechoic Chamber) and conducted measurement facility used to collect the radiated data are located at the 105-1, Jangam-ri, Majang-Myeon, Icheon-si, Kyunggi-Do, 467-811, Korea. The site is constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. Detailed description of test facility was submitted to the Commission and accepted dated June 10, 2009 (Registration Number: 90661)

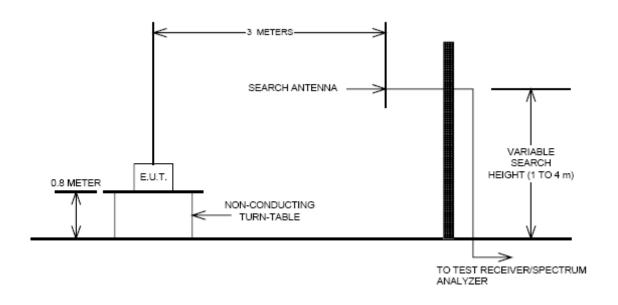
FCC CERTIFICATION REPORT			www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 5 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



# **3. DESCRIPTION OF TESTS**

# 3.1 EFFECTIVE RADIATED POWER/EQUIVALENT ISOTROPIC RADIATED POWER

## Test Set-up



#### **Test Procedure**

Radiated emission measurements were performed at an SAC(Semi-Anechoic Chamber)

The equipment under test is placed on a non-conductive styrofoam resin table 3-meters from the receive antenna. A styrofoam turntable was rotated 360° and the receiving antenna scanned from 1-4m in order to capture the maximum emission. A half wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the previously recorded signal was duplicated.

The maximum EIRP was calculated by adding the forward power to the calibrated source plus its appropriate gain value. These steps were carried out with the receiving antenna in both vertical and horizontal polarization. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic antenna are taken into consideration.

FCC CERTIFICATION REPORT			www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 6 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



# 3.2 PEAK- TO- AVERAGE RATIO

A peak to average ratio measurement is performed at the conducted port of the EUT. For CDMA and WCDMA signals, the spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level. For GSM signals, an average and a peak trace are used on a

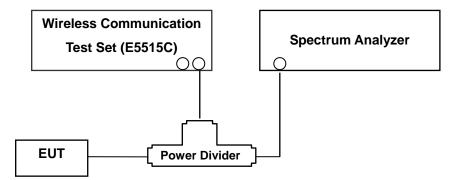
spectrum analyzer to determine the largest deviation between the average and the peak power of the EUT in a bandwidth greater than the emission bandwidth. Plots of the EUT's Peak- to- Average Ratio are shown herein.

FCC CERTIFICATION REPORT			www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 7 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



## 3.3 OCCUPIED BANDWIDTH.

Test set-up



(Configuration of conducted Emission measurement) Test Procedure

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 26 dB below the transmitter power. Plots of the EUT's occupied bandwidth are shown herein.

FCC CERTIFICATION REPORT			www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 8 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



# 3.4 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL.

**Test Procedure** 

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer.

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 – 13 dBm limit, in the 1 MHz bands immediately outside and adjacent to the edge of the frequency block. The 1 MHz RBW was used to scan from 10 MHz to 10 GHz. (GSM1900 Mode: 10 MHz to 20 GHz). A display line was placed at – 13 dBm to show compliance. The high, lowest and a middle channel were tested for out of band measurements.

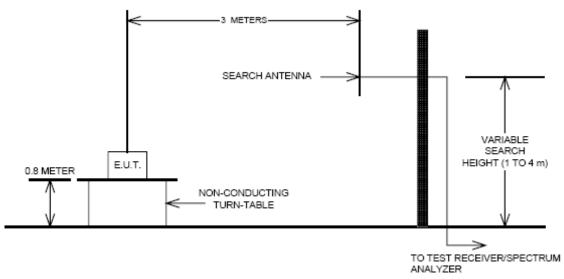
- Band Edge Requirement : In the 1MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions. Limit, -13dBm.

FCC CERTIFICATION REPORT			www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 9 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



# 3.5 RADIATED SPURIOUS AND HARMONIC EMISSIONS

# Test Set-up



The measurement facilities used for this test have been documented in previous filings with the commission pursuant to section § 2.948. The SAC(Semi-Anechoic Chamber) meets requirements in ANSI C63.4 –2003. A mast capable of lifting the receiving antenna from a height of one to four meters is used together with a rotatable styrofoam platform mounted at three from the antenna mast.

- 1) The unit mounted on a styrofoam turntable 1.5 m × 1.0 m × 0.80 m is 0.8 meter above test site ground level.
- 2) During the emission test, the turntable is rotated and the EUT is manipulated to find the configuration resulting in maximum emission under normal condition of installation and operation.
- 3) The antenna height and polarization are also varied from 1 to 4 meters until the maximum signal is found.
- 4) The spectrum shall be scanned up to the 10<sup>th</sup> harmonic of the fundamental frequency.

#### Test Procedure

The equipment under test is placed on a non-conductive styrofoam resin table 3-meters from the receive antenna. A styrofoam turntable was rotated 360° and the receiving antenna scanned from 1-4m in order to capture the maximum emission. A half wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the previously recorded signal was duplicated.

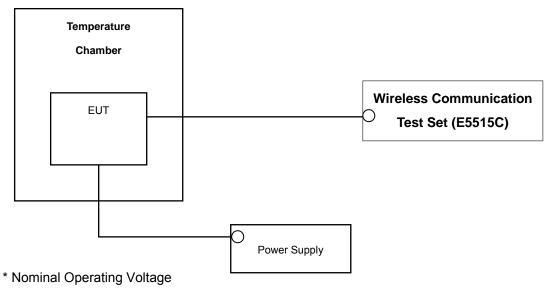
The maximum EIRP was calculated by adding the forward power to the calibrated source plus its appropriate gain value. These steps were carried out with the receiving antenna in both vertical and horizontal polarization. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic antenna are taken into consideration.

FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 10 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



# **3.6 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE**

# Test Set-up



#### Test Procedure

The frequency stability of the transmitter is measured by:

a.) **Temperature:** The temperature is varied from - 30 °C to + 50 °C using an environmental chamber.

b.) **Primary Supply Voltage:** The primary supply voltage is varied from battery end point 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  $\pm$  0.000 25 %( $\pm$  2.5 ppm) of the center frequency.

#### Time Period and Procedure:

The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).

1. 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.

2. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one halfhour is provided to allow stabilization of the equipment at each temperature level. **NOTE: The EUT is tested down to the battery endpoint.** 

FCC CERTIFICATION REPORT			www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 11 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



# **4. LIST OF TEST EQUIPMENT**

Manufacture	Model/ Equipment	Serial Number	Calibration Interval	Calibration Due
R&S	ESI40/ Spectrum Analyzer	831564/003	Annual	10/29/2011
Agilent	E4416A/ Power Meter	GB41291412	Annual	01/14/2011
Agilent	E9327A/ Power Sensor	MY4442009	Annual	07/23/2011
Agilent	8960 (E5515C)/ Base Station	GB44400269	Annual	02/10/2011
MITEQ	AMF-6D-001180-35-20P/AMP	990893	Annual	05/20/2011
Wainwright	WHK1.2/15G-10EF/H.P.F	2	Annual	06/25/2011
Wainwright	WHK3.3/18G-10EF/H.P.F	1	Annual	06/25/2011
Agilent	775D/ Dual Directional Coupler	12922	Annual	12/24/2010
Agilent	11636B/ Power Divider	11377	Annual	12/24/2010
Digital	EP-3010/ Power Supply	3110117	Annual	01/08/2011
Schwarzbeck	UHAP/ Dipole Antenna	585	Biennial	02/13/2011
Schwarzbeck	UHAP/ Dipole Antenna	558	Biennial	02/13/2011
Korea Engineering	KR-1005L / Chamber	KRAB07063-2CH	Annual	12/28/2010
Schwarzbeck	BBHA 9120D/ Horn Antenna	296	Biennial	09/23/2011
Schwarzbeck	BBHA 9120D/ Horn Antenna	147	Biennial	04/13/2012
Agilent	E4440A/Spectrum Analyzer	US45303008	Annual	06/09/2011

FCC CERTIFICATION REPORT			www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 12 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



# **5. SUMMARY OF TEST RESULTS**

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result
2.1049, 22.917(a), 24.238(a)	Occupied Bandwidth	N/A		PASS
2.1051, 22.917(a), 24.238(a)	Band Edge / Spurious and Harmonic Emissions at Antenna Terminal.	< 43 + 10log10 (P[Watts]) at Band Edge and for all out-of-band emissions		PASS
2.1046	Conducted Output Power	-	CONDUCTED	PASS
24.232(d)	Peak- to- Average Ratio	< 13 dB		PASS
2.1055, 22.355, 24.235	Frequency stability / variation of ambient temperature	< 2.5 ppm		PASS
22.913(a)(2)	Effective Radiated Power	< 7 Watts max. ERP		PASS
24.232(c)	Equivalent Isotropic Radiated Power	< 2 Watts max. EIRP	RADIATED	PASS
2.1053, 22.917(a), 24.238(a)	Radiated Spurious and Harmonic Emissions	< 43 + 10log10 (P[Watts]) for all out-of band emissions		PASS

FCC CERTIFICATION REPORT			www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 13 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



# **6. SAMPLE CALCULATION**

# **A. ERP Sample Calculation**

Mode	Ch./ Freq.		Measured Substitude		itude Ant. Gain		Pol.	ERP	
Wode	channel	Freq.(MHz)	Level(dBm)	LEVEL(dBm)	Ant. Gain	C.L	F0I.	w	dBm
GSM850	128	824.20	-11.56	34.28	-8.32	1.17	Н	0.30	24.79

#### ERP = SubstitudeLEVEL(dBm) + Ant. Gain – CL(Cable Loss)

1) The EUT mounted on a wooden tripod is 0.8 meter above test site ground level.

2) During the test, the turn table is rotated and the antenna height is also varied from 1 to 4 meters until the maximum signal is found.

3) Record the field strength meter's level.

4) Replace the EUT with dipole/Horn antenna that is connected to a calibrated signal generator.

5) Increase the signal generator output till the field strength meter's level is equal to the item (3).

6) The signal generator output level with Ant. Gain and cable loss are the rating of effective radiated power (**ERP**).

# **B. Emission Designator**

## **GSM Emission Designator**

Emission Designator = 249KGXW

GSM BW = 249 kHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

# WCDMA Emission Designator

#### Emission Designator = 4M17F9W

WCDMA BW = 4.17 MHz

- F = Frequency Modulation
- 9 = Composite Digital Info

W = Combination (Audio/Data)

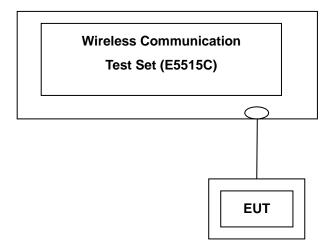
FCC CERTIFICATION REPORT			www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 14 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



# 7. TEST DATA

# 7.1 CONDUCTED OUTPUT POWER

A base station simulator was used to establish communication with the EUT. 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. Conducted Output Powers of EUT are reported below.



**Test Result** 

		Voice	GPRS	5 Data
Band	Channel	GSM (dBm)	GPRS 1 TX Slot (dBm)	GPRS 2 TX Slot (dBm)
GSM	128	32.63	32.62	32.60
850	190	32.57	32.57	32.54
000	251	32.54	32.54	32.52
GSM	512	30.31	30.31	30.27
1900	661	30.28	30.28	30.25
1900	810	30.19	30.19	30.17

(GSM Conducted Maximum Output Powers)

FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 15 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



		EDGE	Data
Band	Channel	EDGE 1 TX Slot (dBm)	EDGE 2 TX Slot (dBm)
GSM	128	27.22	27.22
850	190	27.17	27.17
650	251	27.15	27.14
COM	512	26.38	26.37
GSM 1900	661	26.38	26.36
1900	810	26.29	26.28

(GSM EDGE Conducted Output Powers)

		3GPP 34.121	Cellu	lar Band [	dBm]	
3GPP Release	Mode		UL 4132	UL 4183	UL 4233	MPR
Version		Subtest	(826.4) DL	(836.6) DL	(846.6) DL	
			4357	4408	4458	
99	WCDMA	12.2 kbps RMC	22.76	22.76	22.82	-
99	WCDMA	12.2 kbps AMR	22.81	22.77	22.84	-
5		Subtest 1	22.80	22.82	22.77	0
5	HSDPA	Subtest 2	22.69	22.74	22.68	0
5		Subtest 3	22.23	22.39	22.27	- 0.5
5		Subtest 4	22.27	22.38	22.18	- 0.5

FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 16 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



3GPP		3GPP 34.121	PC	PCS Band [dBm]		
Release	Mode	Subtest	UL 9262 (1852.4)	UL 9400 (1880.0)	UL 9538 (1907.6)	MPR
Version			DL 9662	DL 9800	DL 9938	
99	WCDMA	12.2 kbps RMC	22.62	22.87	22.72	-
99	WCDMA	12.2 kbps AMR	22.63	22.89	22.69	-
5		Subtest 1	22.71	22.95	22.64	0
5	HSDPA	Subtest 2	22.67	22.93	22.60	0
5		Subtest 3	22.36	22.51	22.27	- 0.5
5		Subtest 4	22.24	22.50	22.21	- 0.5

(WCDMA Conducted	Output Powers)
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Note : Detecting mode is average.

# 7.2 PEAK-TO-AVERAGE RATIO

- Plots of the EUT's Peak- to- Average Ratio are shown Page 35, 38.

FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 17 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



# 7.3 OCCUPIED BANDWIDTH

Band	Channel	Frequency(MHz)	Data (GSM: kHz / WCDMA : MHz)
	128	824.20	248.5836
GSM850	190	836.60	249.5885
	251	848.80	245.7285
GSM850 EDGE	190	836.60	243.1983
	512	1850.20	245.7049
GSM1900	661	1880.00	248.9751
	810	1909.80	249.3889
GSM1900 EDGE	810	1909.80	247.5076
	4132	826.40	4.1889
WCDMA850	4183	836.60	4.1817
	4233	846.60	4.1649
	9262	1852.40	4.1711
WCDMA1900	9400	1880.00	4.1733
	9538	1907.60	4.1839

- Plots of the EUT's Occupied Bandwidth are shown Page 31 ~ 34, 35 ~ 38.

FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 18 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



# 7.4 CONDUCTED SPURIOUS EMISSIONS

Band	Channel	Frequency of Maximum Harmonic (GHz)	Maximum Data (dBm)
	128	7.1625	-30.41
GSM850	190	7.2875	-30.62
	251	7.1125	-30.86
	512	14.5600	-27.83
GSM1900	661	13.7600	-28.17
	810	15.333	-27.49
	4132	7.3000	-39.98
WCDMA850	4183	7.7500	-41.00
	4233	7.1500	-40.88
	9262	13.8670	-38.05
WCDMA1900	9400	14.5330	-38.16
	9538	14.0800	-37.92

- Plots of the EUT's Conducted Spurious Emissions are shown Page 51 ~ 62.

#### 7.4.1 BAND EDGE

- Plots of the EUT's Band Edge are shown Page 39 ~ 50.

FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 19 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



# 7.5 EFFECTIVE RADIATED POWER OUTPUT (GSM / WCDMA)

#### (GSM850 Mode)

Ch./	Freq.	Measured	Substitude	Ant. Gain	C.L Pol.		ERP	
channel	Freq.(MHz)	Level(dBm)	LEVEL (dBm)	(dBd)	U.L	FUI.	W	dBm
128	824.20	-8.74	39.02	-10.24	1.17	Н	0.58	27.61
190	836.60	-8.48	40.15	-10.36	1.19	Н	0.72	28.60
251	848.80	-8.87	40.61	-10.48	1.20	Н	0.78	28.93
EDGE 190	836.60	-9.11	39.52	-10.36	1.19	Н	0.63	27.97

#### (WCDMA850 Mode)

Ch./	Ch./ Freq.		Substitude	Ant. Gain		C.L Pol.	ERP		
channel	Freq.(MHz)	Level(dBm)	LEVEL (dBd) (dBm)	C.L	w		dBm		
4132	826.40	-15.56	32.35	-10.26	1.17	Н	0.12	20.92	
4183	836.60	-15.31	33.32	-10.36	1.19	Н	0.15	21.77	
4233	846.60	-14.57	34.76	-10.46	1.20	Н	0.20	23.10	

Note: Standard batteries are the only options for this phone

#### NOTES:

#### Effective Radiated Power Output 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. The conducted power at the terminals of the dipole is measured. The ERP is recorded.

This device was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery. Also, we have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna. The worst case of the EUT is x plane in GSM850 and WCDMA850 mode. Also worst case of detecting Antenna is Horizontal polarization in GSM850 and WCDMA850 mode.

The EDGE mode testing were performed using 1Tx because 1Tx is highest power in EDGE mode.

FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 20 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



# 7.6 EQUIVALENT ISOTROPIC RADIATED POWER (GSM / WCDMA)

#### (GSM1900 Mode)

Ch./	/ Freq. Substitude Ant. Gai		Ant Cain			EIRP		
channel	Freq.(MHz)	Level(dBm)	LEVEL (dBm)	(dBi)	C.L	Pol.	W	dBm
512	1,850.20	-13.04	18.21	10.40	1.91	Н	0.47	26.70
661	1,880.00	-13.74	17.70	10.43	1.95	Н	0.41	26.18
810	1,909.80	-14.71	16.78	10.47	1.97	Н	0.34	25.28
EDGE 512	1,850.20	-13.79	17.46	10.40	1.91	Н	0.39	25.95

#### (WCDMA1900 Mode)

Ch./	Freq.	Measured	Substitude	Ant. Gain			EIRP	
channel	Freq.(MHz)	Level(dBm)	LEVEL (dBm)	(dBi)	C.L	Pol.	w	dBm
9262	1,852.40	-16.87	14.39	10.40	1.91	Н	0.19	22.88
9400	1,880.00	-16.62	14.82	10.43	1.95	н	0.21	23.30
9538	1,907.60	-17.31	14.20	10.47	1.97	н	0.19	22.70

Note: Standard batteries are the only options for this phone

#### 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 = 5MHz. 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 WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1" and in GSM mode and using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band. This unit was tested with its standard battery. Also, we have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna. The worst case of the EUT is x plane in GSM1900 and WCDMA1900 mode. Also worst case of detecting Antenna is in horizontal polarization in GSM1900 and WCDMA1900 mode.

The EDGE mode testing were performed using 1Tx because 1Tx is highest power in EDGE mode.

FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 21 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



# 7.7 RADIATED SPURIOUS EMISSIONS 7.7.1 RADIATED SPURIOUS EMISSIONS (GSM850)

MEASURED OUTPUT POWER:	28.93 dBm = 0.782W

MODULATION SIGNAL: GSM850 <u>3 meters</u>

DISTANCE:

LIMIT: - (43 + 10 log10 (W)) = - 41.93 dBc

Ch.	Freq.(MHz)	Measured Level	Ant. Gain (dBd)	<u>Substitute</u> Level [dBm]	C.L	Pol.	ERP (dBm)	dBc
	1,648.40	-42.94	8.57	-54.95	1.73	V	-48.11	-77.04
128 (824.2)	2,472.60	-41.80	11.10	-51.89	2.28	V	-43.07	-72.00
	3,296.80	_	_	_	-	-	_	_
	1,673.20	-47.06	8.57	-59.16	1.79	Н	-52.38	-81.31
190 (836.6)	2,509.80	-43.30	11.15	-53.44	2.33	Н	-44.62	-73.55
	3,346.40	_	_	_	_	_	_	_
	1,697.60	-49.92	8.57	-61.69	1.83	V	-54.95	-83.88
251 (848.8)	2,546.40	-42.82	11.15	-53.04	2.34	Н	-44.23	-73.16
	3,395.20	_	_	_	_	_	_	_

# NOTES: 1. Radiated Spurious Emission Measurements at 3 meters by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

2. The magnitude of spurious emissions attenuated more than 20dB below the limit above 5<sup>th</sup> Harmonic for all channel.

	FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 22 of 62	
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000		



# 7.7.2 RADIATED SPURIOUS EMISSIONS (GSM1900)

- MEASURED OUTPUT POWER: 26.70 dBm = 0.468 W
- MODULATION SIGNAL:
   GSM1900
- DISTANCE:
- LIMIT: (43 + 10 log10 (W)) = \_\_\_\_\_ 39.70 dBc

Ch.	Freq.(MHz)	Measured Level	Ant. Gain (dBi)	<u>Substitute</u> Level [dBm]	C.L	Pol.	EIRP (dBm)	dBc
	3,700.40	-41.78	12.25	-47.84	2.73	Н	-38.32	-65.02
-512 (1850.2)	5,550.60	-44.90	12.59	-46.37	3.60	Н	-37.38	-64.08
( )	7,400.80	_	_	_	_	-	-	-
	3,760.00	-42.02	12.25	-47.77	2.73	Н	-38.25	-64.95
661 (1880.0)	5,640.00	-44.23	12.51	-45.64	3.60	Н	-36.73	-63.43
	7,520.00	_	_	-	-	-	-	_
	3,819.60	-43.42	12.37	-49.18	2.73	Н	-39.54	-66.24
810 (1909.8)	5,729.40	-44.08	12.43	-45.02	3.60	Н	-36.19	-62.89
	7,639.20	-	_	-	-	-	_	_

3 meters

# NOTES: <u>1. Radiated Spurious Emission Measurements at 3 meters by Substitution Method</u>

according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

2. The magnitude of spurious emissions attenuated more than 20dB below the limit above 5<sup>th</sup> Harmonic for <u>all channel.</u>

	FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 23 of 62	
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000		



#### 7.7.3 RADIATED SPURIOUS EMISSIONS (WCDMA850)

MEASURED OUTPUT POWER: 23.10 dBm = 0.204 W

\_\_\_\_\_

MODULATION SIGNAL:

DISTANCE:

3 meters

WCDMA850

LIMIT: - (43 + 10 log10 (W)) = - 36.10 dBc

Ch.	Freq.(MHz)	Measured Level	Ant. Gain (dBd)	<u>Substitute</u> Level [dBm]	C.L	Pol.	ERP (dBm)	dBc
	1,652.80	-54.60	8.57	-66.64	1.73	V	-59.80	-82.90
4,132 (826.4)	2,479.20	-47.57	11.10	-57.67	2.28	V	-48.85	-71.95
, , ,	3,305.60	-45.57	12.65	-56.06	2.57	V	-45.98	-69.08
	1,673.20	-55.45	8.57	-67.55	1.79	V	-60.77	-83.87
4,183 (836.6)	2,509.80	-46.02	11.15	-56.16	2.33	V	-47.34	-70.44
	3,346.40	-43.39	12.65	-54.08	2.66	V	-44.09	-67.19
	1,693.20	-54.71	8.57	-66.53	1.83	V	-59.79	-82.89
4,233 (846.6)	2,539.80	-46.40	11.15	-56.60	2.34	V	-47.79	-70.89
	3,386.40	-41.79	12.69	-52.22	2.85	V	-42.38	-65.48

# **NOTES:** <u>1. Radiated Spurious Emission Measurements at 3 meters by Substitution Method</u> <u>according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:</u>

2. The magnitude of spurious emissions attenuated more than 20dB below the limit above 5<sup>th</sup> Harmonic for all channel.

	FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 24 of 62	
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000		



#### 7.7.4 RADIATED SPURIOUS EMISSIONS (WCDMA1900)

MEASURED OUTPUT POWER: 23.30 dBm = 0.214 W

MODULATION SIGNAL: WCDMA1900

DISTANCE:

3 meters

LIMIT: - (43 + 10 log10 (W)) = - 36.30 dBc

Ch.	Freq.(MHz)	<u>Measured Level</u> [dBm]	Ant. Gain (dBi)	<u>Substitute</u> Level [dBm]	C.L	Pol.	EIRP (dBm)	dBc
	3,704.80	-33.22	12.46	-39.46	2.73	Н	-29.73	-53.03
9262	5,557.20	_	_	-	-	-	-	_
	7,409.60	_	_	_	-	-	-	_
	3,760.00	-37.40	12.47	-43.37	2.73	V	-33.63	-56.93
9400	5,640.00	_	Ι	_	_	_	_	_
	7,520.00	_	_	_	_	-	_	_
	3,815.20	-37.46	12.46	-43.33	2.73	Н	-33.60	-56.90
9538	5,722.80	_	_	-	-	-	-	_
	7,630.40	_	_	_	_	_	_	_

# **NOTES:** <u>1. Radiated Spurious Emission Measurements at 3 meters by Substitution Method</u> <u>according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:</u>

2. The magnitude of spurious emissions attenuated more than 20dB below the limit above 5<sup>th</sup> Harmonic for all channel.

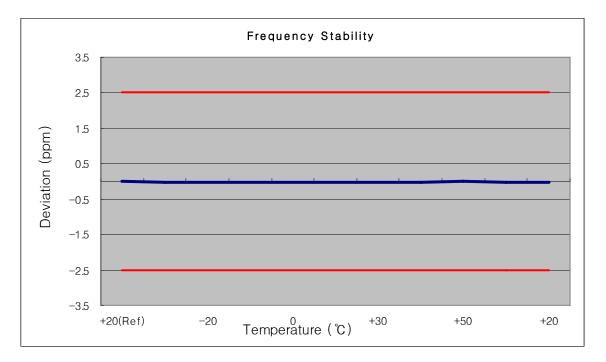
	FCC CERTIFICATION REPORT					
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 25 of 62		
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000			



# 7.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE 7.8.1 FREQUENCY STABILITY (GSM850)

OPERATING FREQUENCY:	836,600,000 Hz
CHANNEL:	190
REFERENCE VOLTAGE:	3.7 VDC
DEVIATION LIM IT:	± 0.000 25 % or 2.5 ppm

Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°°)	(Hz)	Error (Hz)	(%)	ppm
100%		+20(Ref)	836 600 021	0	0.000 000	0.000
100%		-30	836 599 981	-19.29	-0.000 002	-0.023
100%		-20	836 599 967	-32.71	-0.000 004	-0.039
100%	3.700	-10	836 599 978	-21.70	-0.000 003	-0.026
100%		0	836 599 983	-17.26	-0.000 002	-0.021
100%		+10	836 599 971	-28.95	-0.000 003	-0.035
100%		+30	836 599 976	-24.45	-0.000 003	-0.029
100%		+40	836 599 983	-17.19	-0.000 002	-0.021
100%		+50	836 599 991	-8.99	-0.000 001	-0.011
115%	4.255	+20	836 599 985	-15.32	-0.000 002	-0.018
Batt. Endpoint	3.400	+20	836 599 984	-16.12	-0.000 002	-0.019



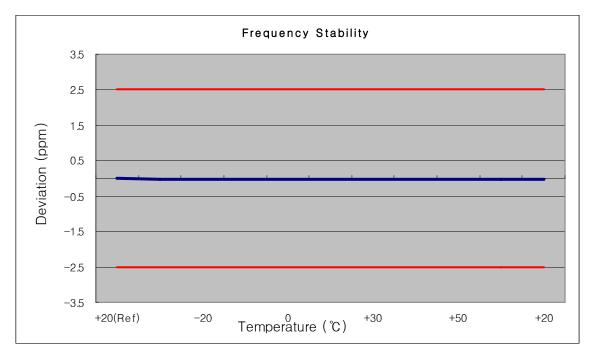
FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 26 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



# 7.8.2 FREQUENCY STABILITY (GSM1900)

OPERATING FREQUENCY:	1880,000,000 Hz
CHANNEL:	661
REFERENCE VOLTAGE:	3.7 VDC
DEVIATION LIM IT:	± 0.000 25 % or 2.5 ppm

Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°°)	(Hz)	Error (Hz)	(%)	ppm
100%		+20(Ref)	1880 000 053	0	0.000 000	0.000
100%		-30	1879 999 938	-61.62	-0.000 003	-0.033
100%		-20	1879 999 949	-50.75	-0.000 003	-0.027
100%	3.700	-10	1879 999 946	-53.82	-0.000 003	-0.029
100%		0	1879 999 956	-43.98	-0.000 002	-0.023
100%		+10	1879 999 938	-61.58	-0.000 003	-0.033
100%		+30	1879 999 954	-46.49	-0.000 002	-0.025
100%		+40	1879 999 968	-31.82	-0.000 002	-0.017
100%		+50	1879 999 958	-42.12	-0.000 002	-0.022
115%	4.255	+20	1879 999 963	-37.33	-0.000 002	-0.020
Batt. Endpoint	3.400	+20	1879 999 971	-29.12	-0.000 002	-0.015



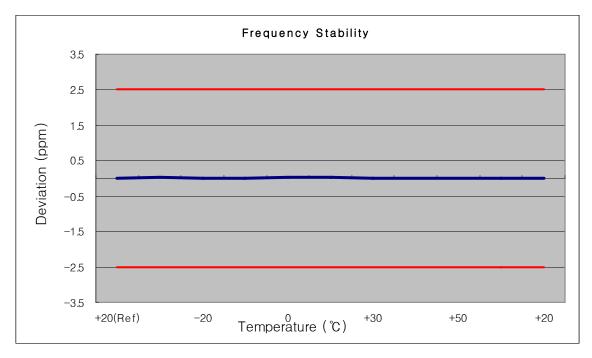
FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 27 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



# 7.8.3 FREQUENCY STABILITY (WCDMA850)

OPERATING FREQUENCY:	836,600,000 Hz
CHANNEL:	4183
REFERENCE VOLTAGE:	3.7 VDC
DEVIATION LIM IT:	± 0.000 25 % or 2.5 ppm

Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°°)	(Hz)	Error (Hz)	(%)	ppm
100%		+20(Ref)	836 600 011	0	0.000 000	0.000
100%		-30	836 600 016	16.13	0.000 002	0.019
100%		-20	836 599 998	-1.58	0.000 000	-0.002
100%	3.700	-10	836 599 995	-5.16	-0.000 001	-0.006
100%		0	836 600 016	15.93	0.000 002	0.019
100%		+10	836 600 014	13.74	0.000 002	0.016
100%		+30	836 599 996	-4.09	0.000 000	-0.005
100%		+40	836 599 990	-10.40	-0.000 001	-0.012
100%		+50	836 600 011	10.88	0.000 001	0.013
115%	4.255	+20	836 600 010	9.51	0.000 001	0.011
Batt. Endpoint	3.400	+20	836 599 994	-6.40	-0.000 001	-0.008



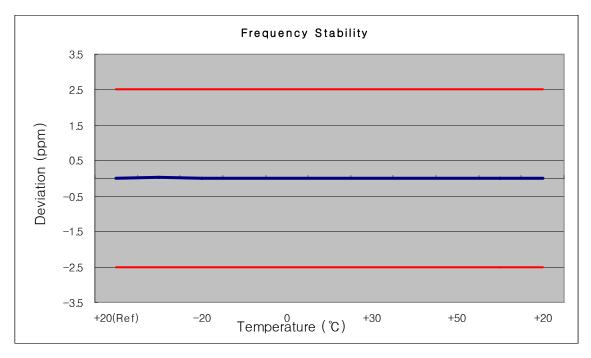
FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 28 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



# 7.8.4 FREQUENCY STABILITY (WCDMA1900)

OPERATING FREQUENCY:	1,880,000,000 Hz
CHANNEL:	9400
REFERENCE VOLTAGE:	3.7 VDC
DEVIATION LIM IT:	± 0.000 25 % or 2.5 ppm

Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°°)	(Hz)	Error (Hz)	(%)	ppm
100%		+20(Ref)	1879 999 975	0	0.000 000	0.000
100%		-30	1880 000 028	28.28	0.000 002	0.015
100%		-20	1879 999 992	-8.27	0.000 000	-0.004
100%	3.700	-10	1880 000 020	20.07	0.000 001	0.011
100%		0	1879 999 983	-17.31	-0.000 001	-0.009
100%		+10	1879 999 989	-11.47	-0.000 001	-0.006
100%		+30	1880 000 021	20.92	0.000 001	0.011
100%		+40	1879 999 981	-18.55	-0.000 001	-0.010
100%		+50	1879 999 980	-20.06	-0.000 001	-0.011
115%	4.255	+20	1879 999 991	-9.04	0.000 000	-0.005
Batt. Endpoint	3.400	+20	1880 000 026	26.02	0.000 001	0.014



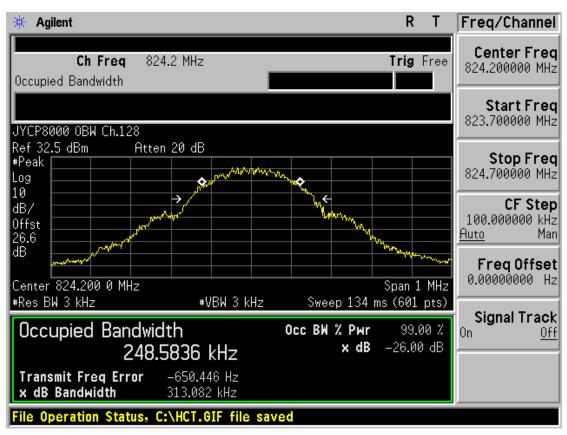
FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 29 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



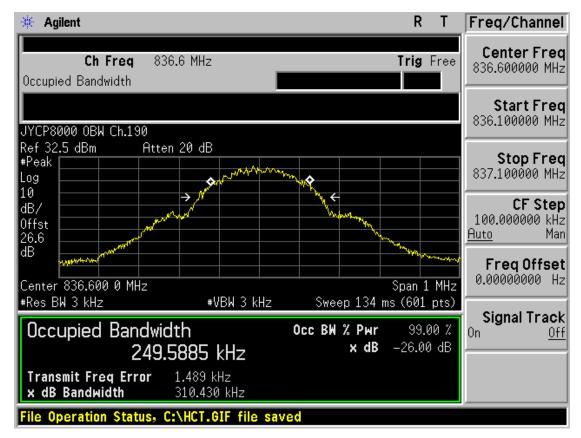
FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 30 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



#### ■ GSM850 MODE (128 CH.) Occupied Bandwidth



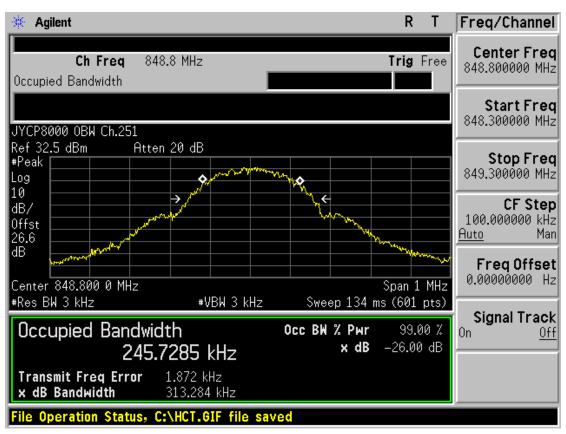
#### ■ GSM850 MODE (190 CH.) Occupied Bandwidth



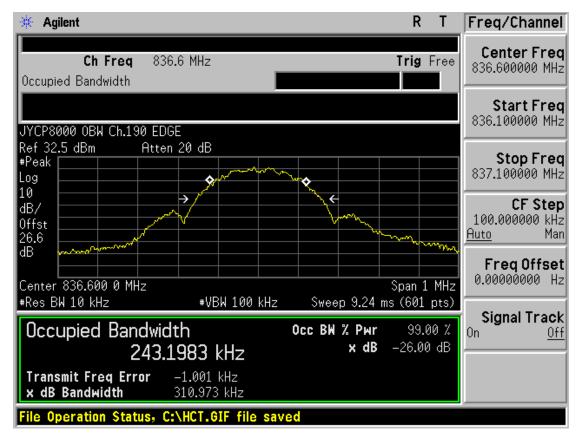
FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 31 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



#### ■ GSM850 MODE (251 CH.) Occupied Bandwidth



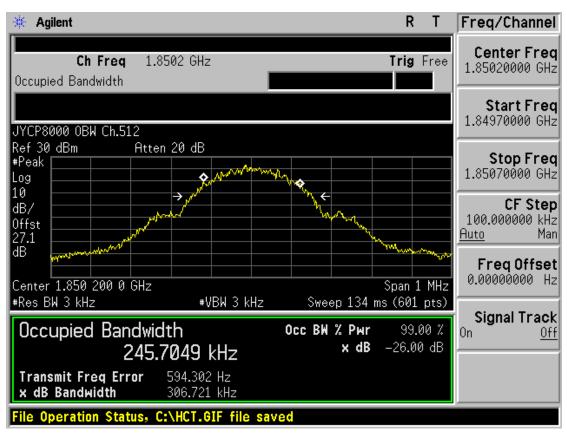
#### ■ GSM850 EDGE (190 CH.) Occupied Bandwidth



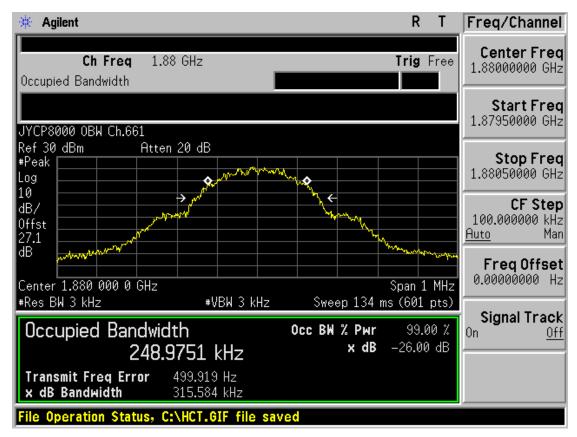
FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 32 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



#### ■ GSM1900 MODE (512 CH.) Occupied Bandwidth



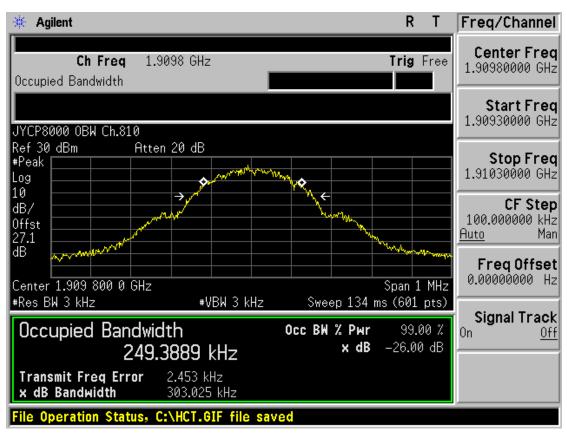
#### ■ GSM1900 MODE (661 CH.) Occupied Bandwidth



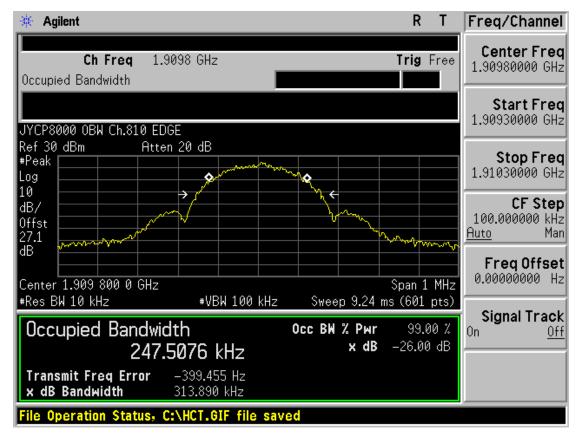
FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 33 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



#### ■ GSM1900 MODE (810 CH.) Occupied Bandwidth



## GSM1900 EDGE (810 CH.) Occupied Bandwidth



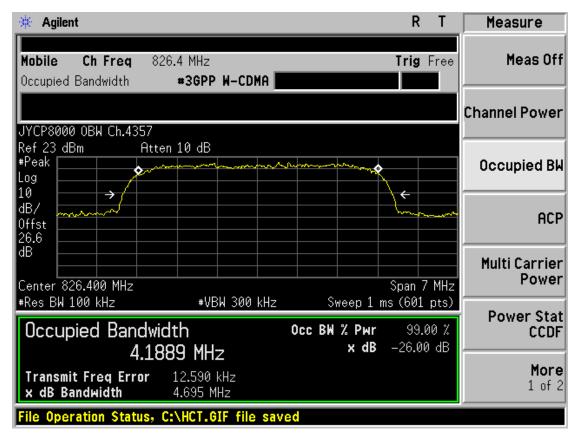
FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 34 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



🔆 Agilent				R	Т	Freq/Channel
JYCP8000 P.A.R Ch.0 Ref 33 dBm	661 Atten 20 dB		∆ Mi	kr1 –8 0.00	3 kHz 0 dB	Center Freq 1.88000000 GHz
#Avg _og 10		1R			*	Start Freq
dB/ Offst 27.1 dB						1.87750000 GHz
				$\setminus$		1.88250000 GHz
⊧LgAv						500.000000 kHz <u>Auto</u> Mar
6(f):					turne.	Freq Offset 0.00000000 Hz
Tun Swp						<b>Signal Track</b> On <u>Off</u>
Center 1.880 000 GH #Res BW 1 MHz		BW 1 MHz		Span 5 (601		
⊭Res BW 1 MHz File Operation Stat		BW 1 MHz <b>IF file save</b> c	Sweep 1 ms	(601	pts)	

#### ■ GSM1900 MODE (661 CH.) Peak-to-Average Ratio

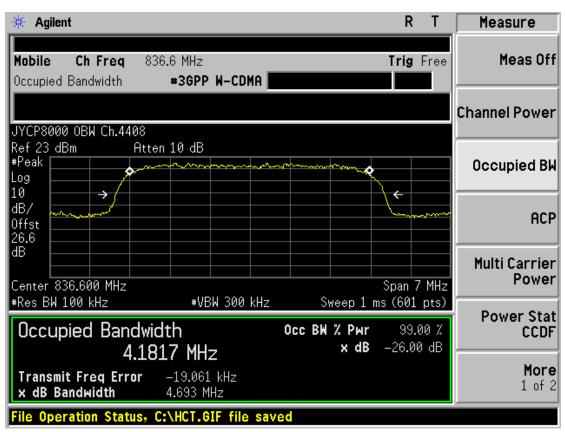
#### ■ WCDMA850 MODE (4132 CH.) Occupied Bandwidth



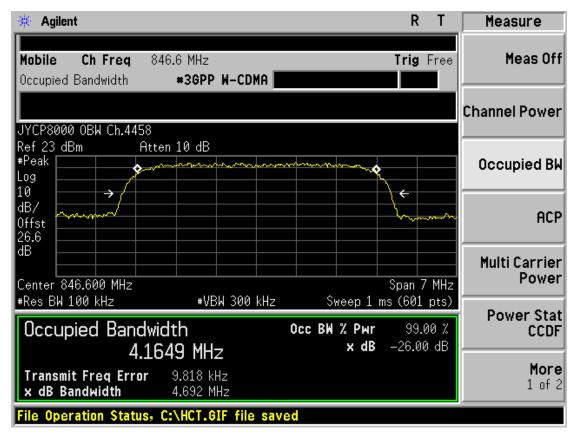
FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 35 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



#### ■ WCDMA850 MODE (4183 CH.) Occupied Bandwidth



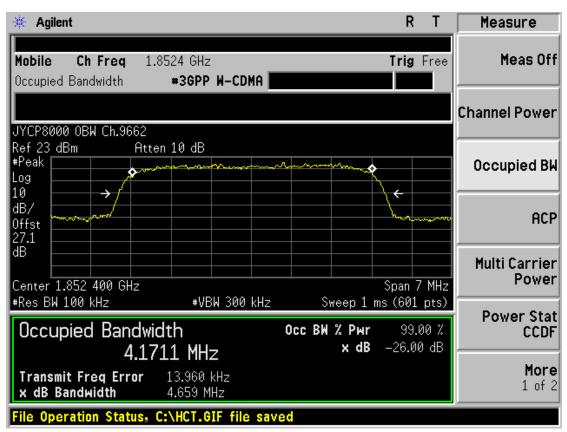
## ■ WCDMA850MODE (4233 CH.) Occupied Bandwidth



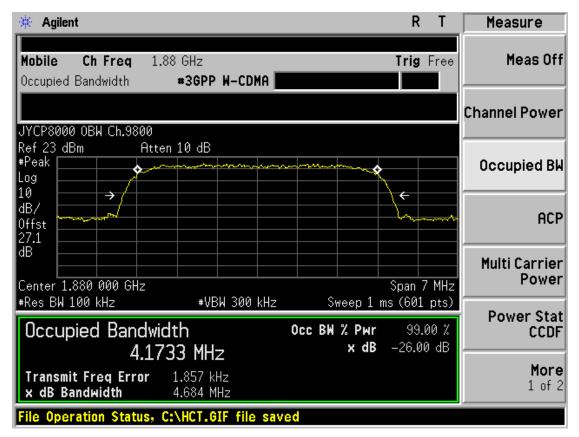
FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 36 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



### ■ WCDMA1900 MODE (9262 CH.) Occupied Bandwidth



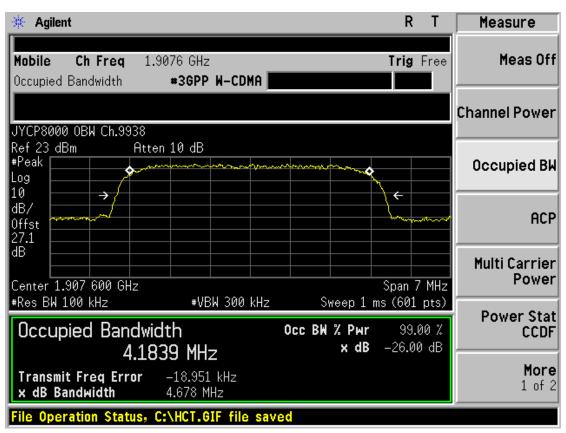
### ■ WCDMA1900 MODE (9400 CH.) Occupied Bandwidth



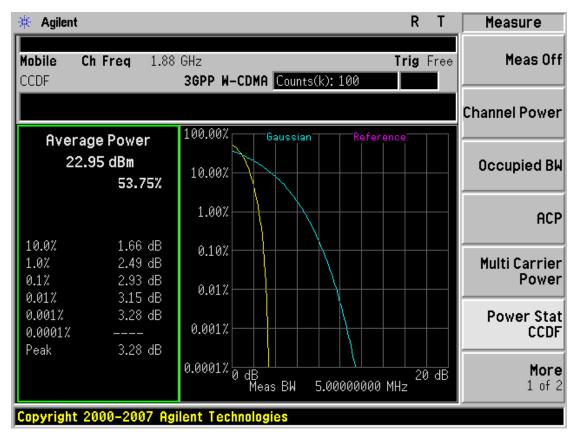
FCC CERTIFICATION REPORT				www.hct.co.kr
	Date of Issue: November 23, 2010	EUT Type: GSM/WCDMA Phone with Bluetooth&WLAN	FCC ID: JYCP8000	Page 37 of 62



#### ■ WCDMA1900 MODE (9538 CH.) Occupied Bandwidth



### ■ WCDMA1900 MODE (9400 CH.) Peak-to-Average Ratio



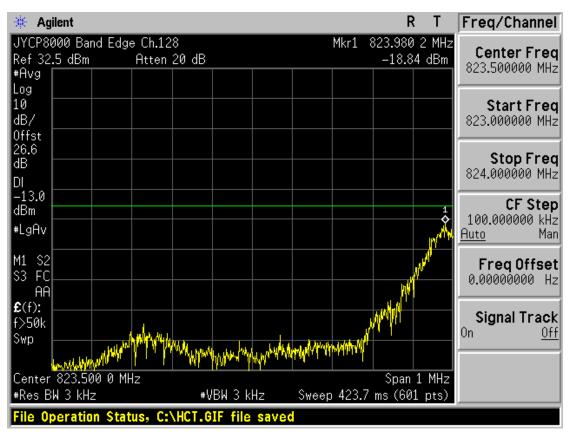
FCC CERTIFICATION REPORT			www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 38 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



#### Agilent R Т Freg/Channel ¥. JYCP8000 Band Edge Ch.128 Center Frea Ref 32.5 dBm Atten 20 dB 824.000000 MHz #Avg Log 10 Start Fred dB/ 823.500000 MHz Offst 26.6 Stop Freq dB 824.500000 MHz DI -13.0 **CF** Step dBm 100.000000 kHz #LgAv Auto Man M1 S2 Freq Offset S3 FC 0.00000000 Hz AA £(f): WY M Signal Track f>50k 0n Off Swp the set Minterport Lord a Martin Center 824.000 0 MHz Span 1 MHz #Res BW 3 kHz ₩VBW 3 kHz Sweep 423.7 ms (601 pts) File Operation Status, C:\HCT.GIF file saved

#### ■ GSM850 MODE (128 CH.) Block Edge 1

### ■ GSM850 MODE (128 CH.) Block Edge 2



 FCC CERTIFICATION REPORT
 www.hct.co.kr

 Test Report No.
 Date of Issue:
 EUT Type:
 FCC ID:
 Page 39 of 62

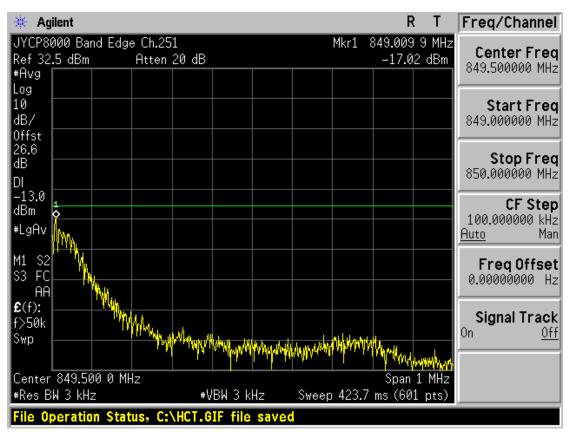
 HCTR1011FR19
 November 23, 2010
 GSM/WCDMA Phone with Bluetooth&WLAN
 JYCP8000
 Page 39 of 62



#### Agilent R Т Freg/Channel -44 - E JYCP8000 Band Edge Ch.251 Center Frea Ref 32.5 dBm Atten 20 dB 849.000000 MHz #Avg Log 10 Start Freq dB/ 848.500000 MHz Offst 26.6 Stop Freq dB 849.500000 MHz DI -13.0 **CF** Step dBm 100.000000 kHz #LgAv Auto Man Μ1 S2 Freq Offset S3 FC 0.00000000 Hz AΑ £(f): Signal Track f>50k 0n Off Swp Center 849.000 0 MHz Span 1 MHz #Res BW 3 kHz ₩VBW 3 kHz Sweep 423.7 ms (601 pts) File Operation Status, C:\HCT.GIF file saved

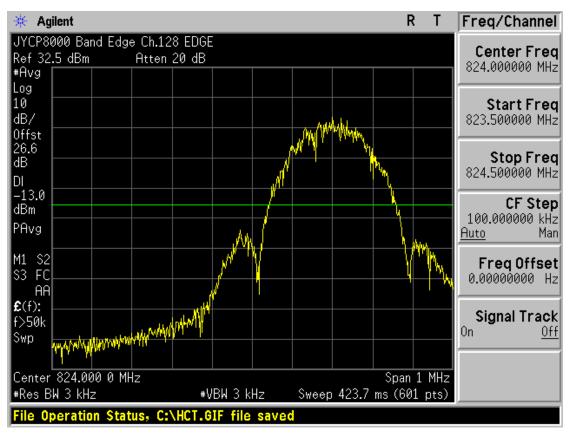
#### ■ GSM850 MODE (251 CH.) Block Edge 1

#### ■ GSM850 MODE (251 CH.) Block Edge 2



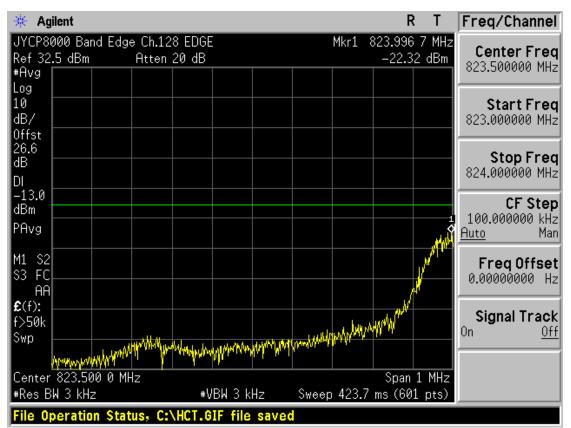
FCC CERTIFICATION REPORT			www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 40 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	





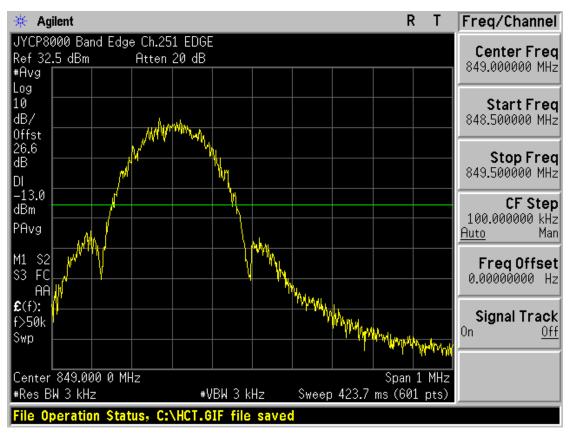
#### ■ EDGE MODE (128 CH.) Block Edge 1

■ EDGE MODE (128 CH.) Block Edge 2



FCC CERTIFICATION REPORT			www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 41 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	





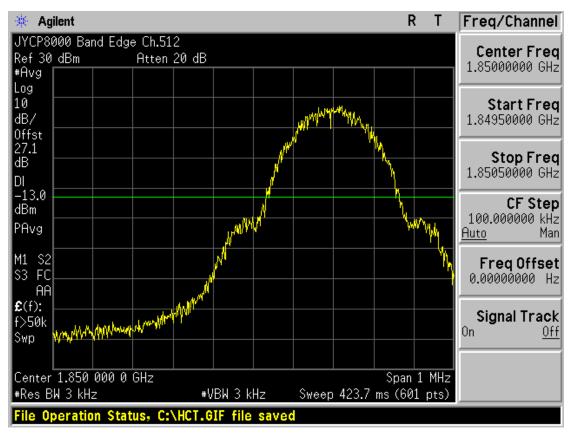
#### ■ EDGE MODE (251 CH.) Block Edge 1

■ EDGE MODE (251 CH.) Block Edge 2



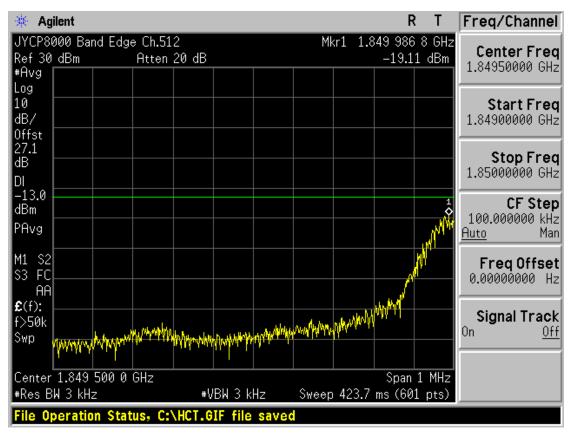
FCC CERTIFICATION REPORT			www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 42 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	





#### ■ GSM1900 MODE (512 CH.) Block Edge 1

### ■ GSM1900 MODE (512 CH.) Block Edge 2



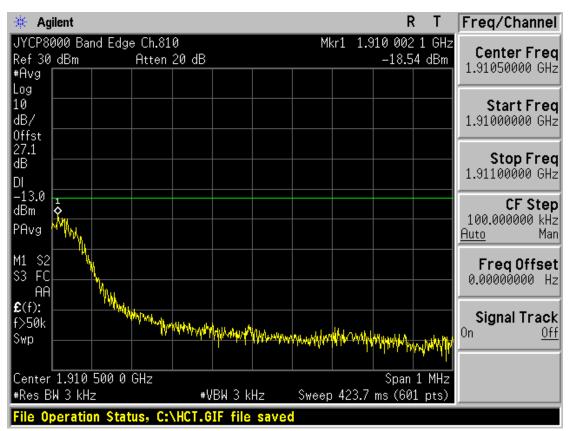
FCC CERTIFICATION REPORT				www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 43 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



#### Agilent R Т Freg/Channel -44 - E JYCP8000 Band Edge Ch.810 Center Frea Ref 30 dBm Atten 20 dB 1.91000000 GHz #Avg Log all at the state of the 10 Start Freq dB/ 1.90950000 GHz Offst 27.1 Stop Freq dB 1.91050000 GHz DI -13.0 **CF** Step dBm 100.000000 kHz PAvg Auto Man M1 S2 Freq Offset S3 FC 0.00000000 Hz AΑ £(f): anyon many properties and properties Signal Track f>50k 0n Off Swp Center 1.910 000 <u>0 GHz</u> Span 1 MHz #Res BW 3 kHz ₩VBW 3 kHz Sweep 423.7 ms (601 pts) File Operation Status, C:\HCT.GIF file saved

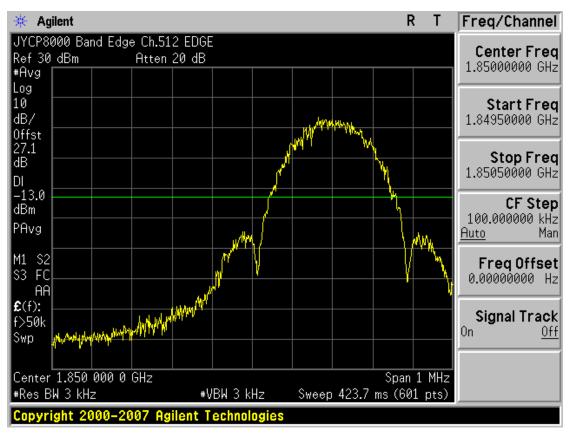
#### ■ GSM1900 MODE (810 CH.) Block Edge 1

### ■ GSM1900 MODE (810 CH.) Block Edge 2



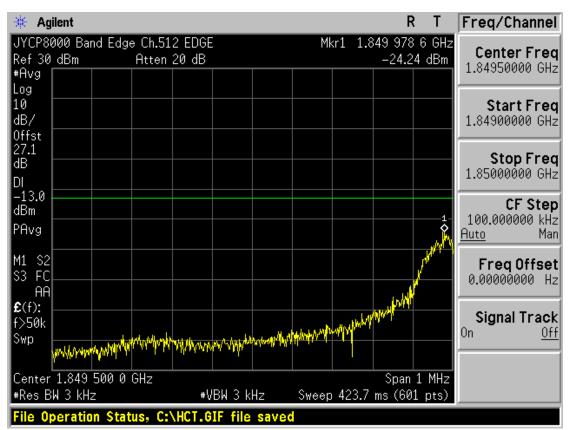
FCC CERTIFICATION REPORT			www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 44 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	





#### ■ EDGE MODE (512 CH.) Block Edge 1

■ EDGE MODE (512 CH.) Block Edge 2



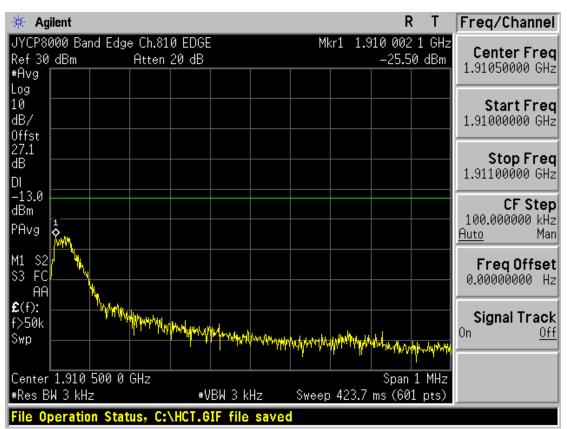
FCC CERTIFICATION REPORT			www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 45 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



#### Freg/Channel Agilent R Т -44 - E JYCP8000 Band Edge Ch.810 EDGE Center Frea Ref 30 dBm Atten 20 dB 1.91000000 GHz #Avg Log 10 Start Freq dB/ 1.90950000 GHz Offst 27.1 Stop Freq dB 1.91050000 GHz DI -13.0 **CF** Step dBm 100.000000 kHz PAvg Auto Man M1 S2 Freq Offset S3 FC 0.00000000 Hz AΑ £(f): Mater Martin Manufact Signal Track f>50k 0n Off Swp Center 1.910 000 0 GHz Span 1 MHz Sweep 423.7 ms (601 pts) #Res BW 3 kHz ₩VBW 3 kHz File Operation Status, C:\HCT.GIF file saved

#### ■ EDGE MODE (810 CH.) Block Edge 1

■ EDGE MODE (810 CH.) Block Edge 2



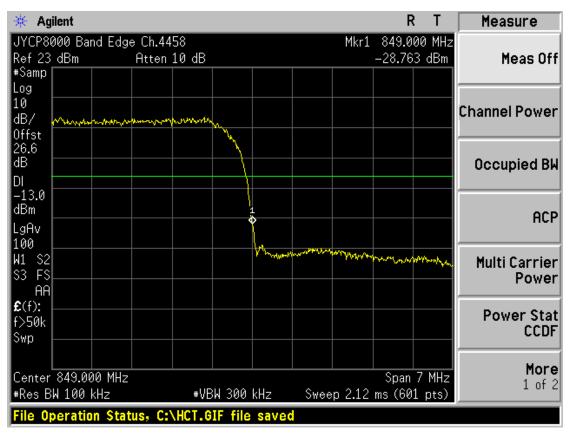
FCC CERTIFICATION REPORT			www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 46 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



🔆 Agilent				R	Т	Measure
JYCP8000 Band Edge			Mkr1			
Ref 23 dBm #Samp	Atten 10 dB			-26.591	dBm	Meas Off
Log						
10 dB/			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	and the second second	entry way	Channel Power
0ffst 26.6 dB		/vr'				Occupied BW
DI						occupied bh
-13.0 dBm		1 •				ACP
LgAv 100	wander and the second and the	margan				
W1 S2 S3 FS AA						Multi Carrier Power
£(f): f>50k Swp						Power Stat CCDF
				Sec. 7	MU	More
Center 824.000 MHz #Res BW 100 kHz	#VE	3W 300 kHz	Sweep 2.12	Span 7 ms (601		1 of 2
File Operation Stat	us, C:\HCT.G	IF file save	d			

### ■ WCDMA850 MODE (4132 CH.) Block Edge

### ■ WCDMA850MODE (4233 CH.) Block Edge



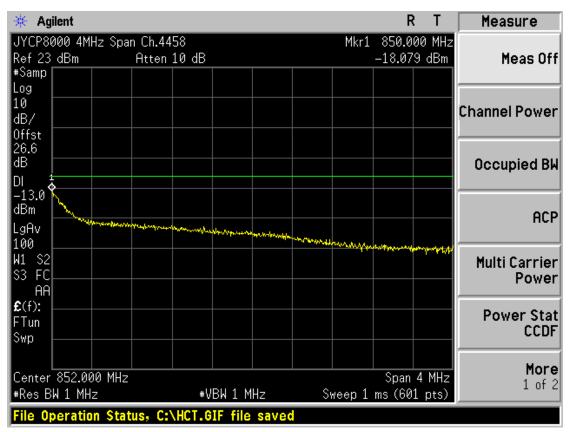
FCC CERTIFICATION REPORT			www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 47 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



🔆 Agilent				RT	Measure
JYCP8000 4MHz Sp			Mkr1	822.993 MHz	
Ref 23 dBm	Atten 10 dB			–18.601 dBm	Meas Off
#Samp					
Log 10					
dB/					Channel Power
Offst					
26.6					
dB					Occupied BW
DI				1	
-13.0					
dBm				and a strategy of the state of	ACP
LgAv	with many many many property	ward and a mar when	alle and a second and a second and		nor
100 minuter	M. Marshand Marshand				
W1 S2					Multi Carrier
\$3 FC					Power
AA					
<b>£</b> (f):					Power Stat
FTun					CCDF
Swp					
					Maura
Center 821.000 MH	lz			Span 4 MHz	<b>More</b> 1 of 2
#Res BW 1 MHz		3W1 MHz	Sweep 1	ms (601 pts)	1 01 2
File Operation St	atus, C:\HCT.G	F file saved			
The operation of					

### ■ WCDMA850 MODE (4132 CH.) – 4 MHz Span

### ■ WCDMA850MODE (4233 CH.) – 4 MHz Span



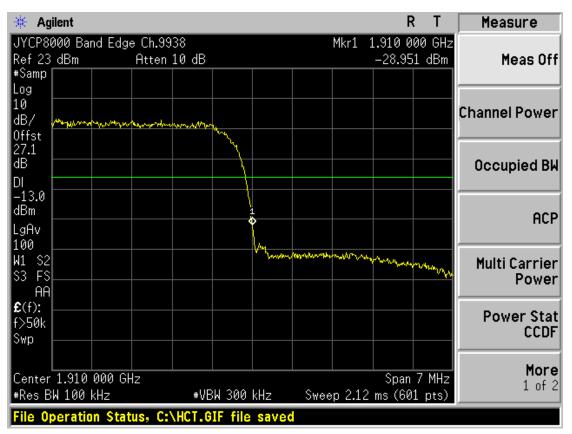
	FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 48 of 62	
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000		



🔆 Agilent				R	Т	Measure
JYCP8000 Band Edge Ref 23 dBm	e Ch.9662 Atten 10 dB		Mkr1	1.850 00 -29.457		Meas Off
#Samp Log 10						
dB/ Offst			warmen and	www.w	- Andrewight	Channel Power
27.1 dB						Occupied BW
-13.0 dBm LgAv		1 •				ACP
100 W1 S2 mm/mm/mm S3 FS AA	arean and a second a	man and				Multi Carrier Power
£(f): f>50k Swp						Power Stat CCDF
Center 1.850 000 GH #Res BW 100 kHz		300 kHz	Sweep 2.12	Span 7 2 ms (601		More 1 of 2
File Operation Stat	us, C:\HCT.O	OIF file save				

### ■ WCDMA1900 MODE (9262 CH.) Block Edge

### ■ WCDMA1900 MODE (9538 CH.) Block Edge



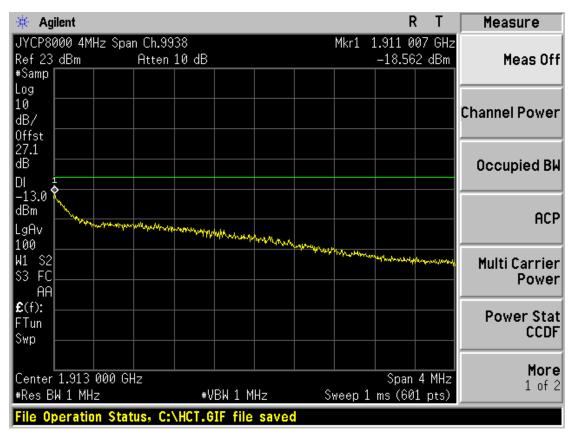
FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 49 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



🔆 Agilent				R	Т	Measure
JYCP8000 4MHz Spar Ref 23 dBm	ι Ch.9662 Atten 10 dB		Mkr1	1.849 00		Meas Off
#Samp					uDiii	
Log 10 dB/ Offst						Channel Power
27.1 dB						Occupied BW
-13.0 dBm LgAv		yn-thylogogen (new gradaesterne)	nannonnannanna	angeres, opportunite	and the second sec	ACP
100 W1 S2 S3 FC AA	and an owned by the owned					Multi Carrier Power
£(f): FTun Swp						Power Stat CCDF
Center 1.847 000 GH #Res BW 1 MHz		BW 1 MHz	Sweep	Span 4 1 ms (601		<b>More</b> 1 of 2
File Operation State	us, C:\HCT.G	IF file saved				

#### ■ WCDMA1900 MODE (9262 CH.) – 4 MHz Span

#### ■ WCDMA1900 MODE (9538 CH.) – 4 MHz Span



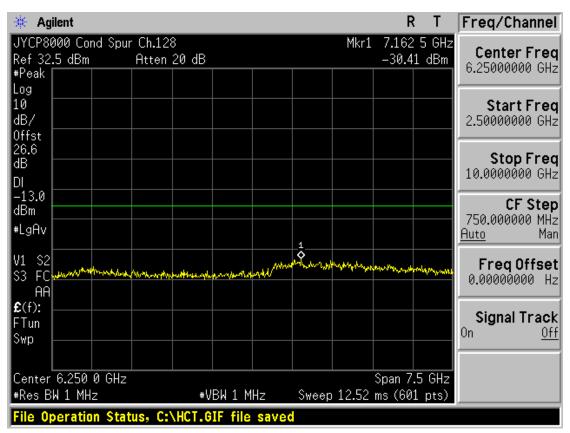
	FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 50 of 62	
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000		



🔆 Agilent							F	₹ T	Freq/Channel
JYCP8000 Cond Spur						Mk		48 GHz	Center Freq
Ref 32.5 dBm #Peak	Atten 2	20 dB					-34.5	3 dBm	1.26500000 GHz
Log									
10 dB/									Start Freq 30.000000 MHz
Offst 26.6									
dB DI									Stop Freq 2.5000000 GHz
-13.0									CF Step
dBm #LgAv									247.000000 MHz <u>Auto</u> Man
V1 S2 S3 FC		www.ww	Nunn	aleful an an an		مرمو <sup>يي</sup> وواجمو مرمور م	Ju-boyanaa	utran	FreqOffset 0.00000000 Hz
£(f):									Circul Track
FTun									Signal Track On Off
Swp									
Center 1.265 GHz						S	pan 2.4	47 GHz	
#Res BW 1 MHz		₩V	BW1M	Hz	Swee	p <b>4.</b> 12	ms (60	1 pts)	
File Operation Stat	us, C:\	HCT.G	IF file	saved					

#### ■ GSM850 MODE (128 CH.) Conducted Spurious Emissions1

### ■ GSM850 MODE (128 CH.) Conducted Spurious Emissions2



FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 51 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



🔆 Agilent				RT	Freq/Channel
JYCP8000 Cond Spur			Mkr	1 2.438 GHz	Center Freq
Ref 32.5 dBm #Peak	Atten 20 dB			-34.44 dBm	1.26500000 GHz
Log					
10 dB/					Start Freq 30.000000 MHz
Offst					
26.6 dB DI					Stop Freq 2.50000000 GHz
-13.0					CF Step
dBm #LgAv					247.000000 MHz <u>Auto</u> Man
V1 S2 S3 FC مېرمېر کې	un and the second second	ار بر رویو در ایک میروند. میرو میرو میروند این م	uhan manghadh an daoine an dag	1 1	FreqOffset 0.00000000 Hz
£(f): FTun Swp					Signal Track
Center 1.265 GHz #Res BW 1 MHz	#	VBW 1 MHz	Sp Sweep 4.12 m	oan 2.47 GHz ns (601 pts)	
File Operation Stat	us, C:\HCT.(	GIF file save	d		

# ■ GSM850 MODE (190 CH.) Conducted Spurious Emissions1

## ■ GSM850 MODE (190 CH.) Conducted Spurious Emissions2

🔆 Agilent				F	2 Т	Freq/Channel
JYCP8000 Cond Spu	r Ch.190		Mk	r1 7.287	'5 GHz	Conton Enor
Ref 32.5 dBm	Atten 20 dB			-30.6	2 dBm	Center Freq 6.25000000 GHz
#Peak						0.23000000 012
Log						Charles 17
10 dB/						Start Freq
Offst						2.50000000 GHz
26.6						
dB						Stop Freq
DI						10.0000000 GHz
-13.0						05.01
dBm						CF Step
#LgAv						750.000000 MHz Auto Man
			1			<u>Auto</u> Man
V1 S2			Mar Jumphing			Freq Offset
S3 FC White Warman	and the short and provident war	the advertige the down	a self an American	where we want	and the second s	0.00000000 Hz
AA						
<b>£</b> (f):						Circul Tracely
FTun						Signal Track
Swp						On <u>Off</u>
Center 6.250 0 GHz				 Span 7	5 GHz	
#Res BW 1 MHz	#	/BW 1 MHz	Sweep 12.5			
				<u>, 1115 (00</u>	1-pt3/	
File Operation Stat	us, C:\HCL.	our file save				

	FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 52 of 62	
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000		



🔆 Agilent				R	T Freq/Channel
JYCP8000 Cond Spur			Mk	r1 1.903	
Ref 32.5 dBm #Peak	Atten 20 dB			-33.96 d	Bm 1.26500000 GHz
10 dB/					Start Freq 30.0000000 MHz
Offst 26.6 dB					Stop Freq
DI					2.50000000 GHz
-13.0 dBm					CF Step 247.000000 MHz
#LgAv					<u>Auto</u> Man
V1 S2 S3 FC Announced Anno- AA	ungerter have been been a	han alah ang katalah sa sa kang kan	happet down and when	an a	
£(f): FTun Swp					Signal Track
Center 1.265 GHz #Res BW 1 MHz	#\	/BW 1 MHz	Sweep 4.12	601 pan 2.47 Span 2.47 ms (601 p	
File Operation Stat	us, C:\HCT.0	IF file save	d		

# ■ GSM850 MODE (251 CH.) Conducted Spurious Emissions1

# ■ GSM850 MODE (251 CH.) Conducted Spurious Emissions2

🔆 Agilent				R	Т	Freq/Channel
JYCP8000 Cond Spur	Ch.251		Mkr1	7.112	5 GHz	Conton Enor
	Atten 20 dB			-30.86	∂dBm	Center Freq 6.25000000 GHz
#Peak						0.23000000 012
Log				<u> </u>		Charles France
10 JP7						Start Freq
dB/ Offst						2.50000000 GHz
26.6						
dB				$\vdash$		Stop Freq
DI						10.0000000 GHz
-13.0						
dBm						CF Step
#LgAv						750.000000 MHz
			1			<u>Auto</u> Man
V1 S2						Freq Offset
S3 FC	not at many population of a	as a short where a sol where a	and the second sec	and the state of the	renducently	0.00000000 Hz
AA						0.00000000 112
<b>£</b> (f):						
FTun						Signal Track
Swp						On <u>Off</u>
				<u> </u>		
Center 6.250 0 GHz	1		0	Span 7.		
#Res BW 1 MHz	#\	'BW 1 MHz	Sweep 12.52	ms (601	pts)	
File Operation State	us, C:\HCT.G	IF file save				

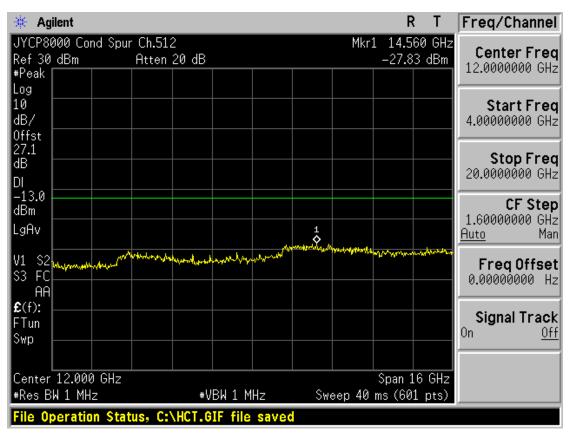
FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 53 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



#Peak         2.       #Peak         2.       10     dB/       30       0ffst        30       0ffst        31       1       33       0       33       0       33       0       33       0       33       0	req/Channel
#Peak         2.       Iog        30       10        30       0ffst        30       0ffst        30       0ffst        30       0        30       0        30       0        30       0	Center Freq
Log 10 dB/ 0ffst 27.1 dB DI -13.0 dBm LgAv V1 S2 S3 FC vl. mm Market market for the formula of the	.01500000 GHz
dB/     0ffst     30       27.1     31       dB     4.       DI     31       -13.0     33       dBm     33       LgAv     1       V1     S2       S3     FC	
27.1 dB DI -13.0 dBm LgAv V1 S2 S3 FC JU V1 S2 S3 FC	Start Freq 0.0000000 MHz
dB     DI     4.       -13.0     1       dBm     1       LgAv     1       V1     S2       S3     FC	
LgAv V1 S2 S3 FC Jul Market Ma	<b>Stop Freq</b> .00000000 GHz
LgAv V1 S2 S3 FC helmen Marken	CF Step
V1 S2 S3 FC Malman My Marken My Jan Barris and Marken My Marken My Marken My Marken My Marken My My Marken My My Marken My My Marken My	97.000000 MHz
S3 FC when why have been have been and the stand of the s	<u>ito</u> Man
	<b>Freq Offset</b> 0.00000000 Hz
£(f)	<u></u>
n run	Signal Track
Swp	<u></u>
Center 2.015 GHz Span 3.97 GHz #Res BW 1 MHz #VBW 1 MHz Sweep 6.64 ms (601 pts)	
Copyright 2000-2007 Agilent Technologies	

#### ■ GSM1900 MODE (512 CH.) Conducted Spurious Emissions1

### ■ GSM1900 MODE (512 CH.) Conducted Spurious Emissions2



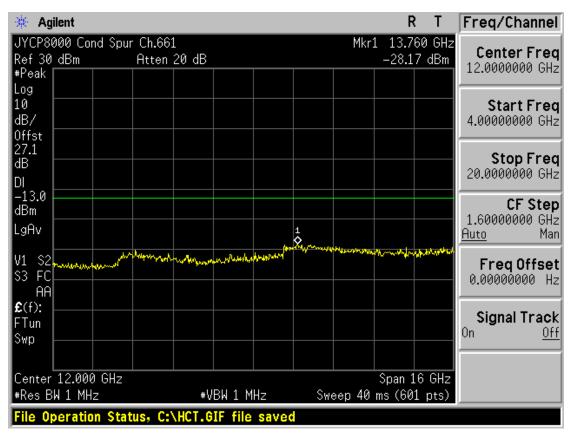
FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 54 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



🔆 Agilent			1	۲	Freq/Channel
JYCP8000 Cond Sp			Mkr1 3.1		Center Freq
Ref 30 dBm	Atten 20 dB		-32.4	12 dBm	2.01500000 GHz
#Peak Log					
10					Start Freq
dB/					30.0000000 MHz
Offst					
27.1					Stop Freq
dB					4.00000000 GHz
					4.00000000 0112
-13.0 dBm					CF Step
					397.000000 MHz
LgAv			1		<u>Auto</u> Man
V1 S2			the start for the start of the		
\$3 FC	monortowardenterstandenter	Angenter weeken weeken Mart	And the could be a set of the set	1,000 F. P. 100 F. 100	Freq Offset 0.00000000 Hz
AA					0.00000000 HZ
<b>£</b> (f):					
FTun					Signal Track
Swp					0n <u>0ff</u>
Center 2.015 GHz			Span 3.	97 GHz	
#Res BW 1 MHz	#VBW 1	. MHz Swe	eep 6.64 ms (60		
	atus, C:\HCT.GIF f				

#### ■ GSM1900 MODE (661 CH) Conducted Spurious Emissions1

### ■ GSM1900 MODE (661 CH.) Conducted Spurious Emissions2



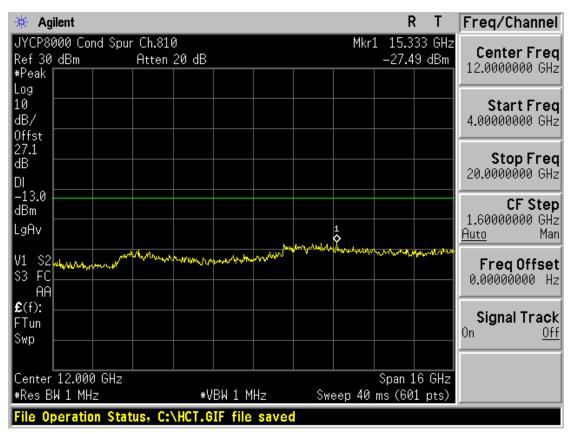
FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 55 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



dB	🔆 Agilent				۲ ۲	Freq/Channel
APPeak						Contor From
Image: Start Freq           10		Atten 20 dB		-32.8	38 dBm	
L0         Start Freq 30.0000000 MHz           dB/ Dffst 27.1         Start Freq 30.0000000 MHz           27.1         Stop Freq 4.0000000 GHz           dBm         CF Step 397.000000 MHz           gAv         1           23         Freq Offset 0.0000000 Hz           233         FC 4AB         Start Freq 30.0000000 GHz           Start Freq 30.0000000 GHz         Stop Freq 4.00000000 MHz           Start Stop Freq 4.00000000 Hz         Stop Freq 9.0000000 MHz           Start Stop Freq 0.0000000 MHz         Stop Freq 9.0000000 MHz           Start Stop Freq 0.0000000 Mz         Stop Freq 9.0000000 Mz           Start Stop Freq 0.0000000 Mz         Stop Freq 9.0000000 Mz           Start Stop Freq 0.0000000 Mz         Stop Freq 9.0000000 Mz           Start Stop Freq 0.0000000 Mz         Start Stop Freq 0.0000000 Mz           Start Stop Freq 0.0000000 Mz         Stop Freq 0.0000000 Mz           Start Stop Freq 0.0000000 Mz         Stop Freq 0.0000000 Mz           Start Stop Freq 0.0000000 Mz         Stop Freq 0.0000000 Mz           Stop Freq 0.0000000 Mz         Stop Freq 0.000000						
JB/       30.0000000 MHz         Offst       30.0000000 MHz         27.1       30.0000000 MHz         JB       1       1         JB       1 <t< td=""><td></td><td></td><td></td><td></td><td></td><td>Stort From</td></t<>						Stort From
Offst         Stop Freq           27.1         38           38         397.000000 GHz           39Av         1           39Av						
27.1       Image: Constraint of the second sec						50.0000000 1112
HB       Image: Stop Freq 4.0000000 GHz         Image: Stop Freq 4.0000000 Hz         Image: Stop Freq 0.0000000 Hz         I	27.1					
JI       -13.0       -1	dB 🛛 👘					
dBm	DI					4.00000000 GHZ
.gAv	-13.0					CE Stop
-gHv /1 S2 G3 FC AAA C(f): Tun Swp Center 2.015 GHz +Res BW 1 MHz *VBW 1 MHz Sweep 6.64 ms (601 pts) AAA Sweep 6.64 ms (601 pts) AAA AAA Sweep 6.64 ms (601 pts) AAA AAA AAA AAA AAA AAA AAA A	dBm					
/1       S2         G3       FC         AAA         Cf(f):         Tun         Swp         Center 2.015 GHz         #Res BW 1 MHz         #VBW 1 MHz         #VBW 1 MHz	LgAv					
Freq Offset         G3 FC         AA         AA         E(f):         Tun         Swp         Center 2.015 GHz         #Res BW 1 MHz         #VBW 1 MHz         Sweep 6.64 ms (601 pts)				1		
S3 FC       0.00000000 Hz         AA       0.00000000 Hz         C(f):       Signal Track         Tun       Signal Track         Swp       Signal Track         Center 2.015 GHz       Span 3.97 GHz         +Res BW 1 MHz       Sweep 6.64 ms (601 pts)		and a deal to state and state for	A monter address of	how many many many	a solution to	Freq Offset
E(f):       Signal Track         Tun       Swp         Swp       Signal Track         Center 2.015 GHz       Span 3.97 GHz         +Res BW 1 MHz       Sweep 6.64 ms (601 pts)		urade sur "A" (), "A" Alfanda () (Alfanda () () () () () () () () () () () () ()				
Tun Swp Center 2.015 GHz *Res BW 1 MHz *VBW 1 MHz Sweep 6.64 ms (601 pts)						
Swp     On     Off       Swp     Span 3.97 GHz     On       Center 2.015 GHz     Span 3.97 GHz       +Res BW 1 MHz     Sweep 6.64 ms (601 pts)						Signal Track
Eenter 2.015 GHz Span 3.97 GHz #VBW 1 MHz Sweep 6.64 ms (601 pts)						
*Res BW 1 MHz	Змр —					<u></u>
*Res BW 1 MHz						
+Res BW 1 MHz	Center 2.015 GHz			Span 3.	97 GHz	
	#Res BW 1 MHz	#VBW 1	.MHz Swe			
He Uneration Status, L'SHI LIGHT THE Saven	File Operation Stat	US. C.\HCT GIE F				

#### ■ GSM1900 MODE (810 CH.) Conducted Spurious Emissions1

### ■ GSM1900 MODE (810 CH.) Conducted Spurious Emissions2



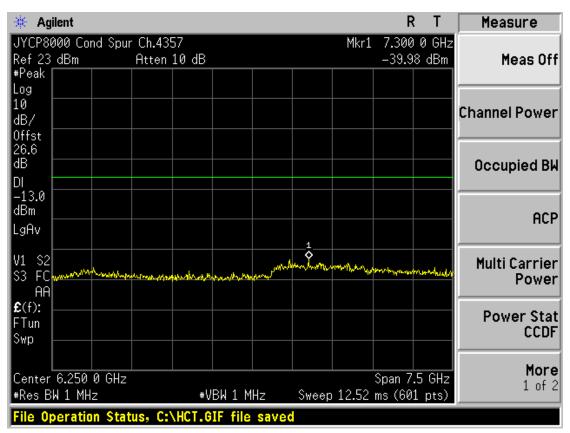
FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 56 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



🔆 Agilent					R	Т	Measure
JYCP8000 Cond Spur		D			2.49		He
Ref 23 dBm #Peak	Atten 10 d				-44.01	авт	Meas Off
Log 10							
dB/							Channel Power
Offst 26.6							
dB							Occupied BW
DI							
dBm							ACP
LgAv							псг
V1 S2						1	Multi Carrier
S3 FC	man water	and all and the second states	and and a start and a start of the start of	nsyer- <sub>wate</sub> nder/	and the stands	demonstrated	Power
AA £(f):							
FTun							Power Stat CCDF
Ѕwp							
Center 1.265 GHz				 Sn	an 2.47	7 GHz	More
#Res BW 1 MHz		∗VBW 1 MH:	z Swee	p 4.12 m			1 of 2
File Operation Stat	us, C:\HCT	.GIF file s	aved				

■ WCDMA850 MODE (4132 CH.) Conducted Spurious Emissions1

### ■ WCDMA850 MODE (4132 CH.) Conducted Spurious Emissions2



FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 57 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



🔆 Agilent			RT	Measure
JYCP8000 Cond Spur		Mk	r1 1.677 GHz	
	Atten 10 dB		-44.15 dBm	Meas Off
#Peak Log				
10				
dB/				Channel Power
Offst				
26.6				
dB				Occupied BW
-13.0 dBm				
LgAv				ACP
Laur				
V1 S2		1		Multi Carrier
S3 FC	and the second of the state of a second second	have been and the factor of the second secon	winderson growing marine	Power
AA				
<b>£</b> (f):				Power Stat
FTun				CCDF
Swp				
				More
Center 1.265 GHz			Span 2.47 GHz	1 of 2
#Res BW 1 MHz	#VBW 1	MHz Sweep 4.12	ms (601 pts)	
File Operation Statu	s, C:\HCT.GIF fil	e saved		

# ■ WCDMA850 MODE (4183 CH.) Conducted Spurious Emissions1

# WCDMA850 MODE (4183 CH.) Conducted Spurious Emissions2

* Agilent				R	Т	Measure
JYCP8000 Cond Spur			Mkr1			
Ref 23_dBm	Atten 10 dB			-41.00	∣dBm	Meas Off
#Peak						
Log 10						
dB/						Channel Power
Offst						
26.6						
dB 🛛 🚽 🚽						Occupied BW
DI 🚽 🚽						•
-13.0						
dBm						ACP
LgAv						
			11			
V1 S2		ملاسيس	Mar and the second	hard a bear and	Warnerste	Multi Carrier
	mblernperness	hope when provided that the state			1.16. MAY	Power
AA £(f):						
FTun						Power Stat
Swp						CCDF
						More
Center 6.250 0 GHz				Span 7.5		1 of 2
#Res BW 1 MHz	#\	/BW 1 MHz	Sweep 12.52	ms (601	pts)	
File Operation Stat	us, C:\HCT.0	IF file save				

FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 58 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



🔆 Agilent						RΤ	Measure
JYCP8000 Cond Spu				М		767 MH	
Ref 23 dBm	Atten 10 d	Β			-44.	35 dBm	Meas Off
#Peak Log							
10							
dB/							Channel Power
Offst 🛛							
26.6							
dB							Occupied BW
DI -13.0							
dBm							
LgAv							ACP
V1 S2							Multi Carrier
S3 FC	man and the	when an an an and a second	ne former Wilson and days	wy. harmand	der here	and the second	Power
AA CON							
£(f): FTun							Power Stat
Swp							CCDF
Center 1.265 GHz				<u> </u>		⊥ .47 GHz	More
#Res BW 1 MHz		₩VBW 1 MHz	Swaa	ېږ p 4.12 r			
				<del>р ч.12</del> I	13 (0)	or ptay	
File Operation Stat	us; C:\HUI	.GIF THE S	avea				

■ WCDMA850MODE (4233 CH.) Conducted Spurious Emissions1

## ■ WCDMA850MODE (4233 CH.) Conducted Spurious Emissions2

🔆 Agilent					R	Т	Measure
JYCP8000 Cond Spu	r Ch.4458			Mkr1		0 GHz	
Ref 23_dBm	Atten 10	dB			-40.88	3 dBm	Meas Off
#Peak							
Log 10							
dB/							<b>Channel Power</b>
Offst							
26.6							
dB 👘							Occupied BW
DI							
-13.0							
dBm							ACP
LgAv							
			1-				
V1 S2 S3 FC			Martin	how and how when the	markhallow	Westward	Multi Carrier
S3 FC	"WWWWWWWWWWWWWWW	Mayoring from Prove	Agrice.				Power
<b>£</b> (f):							
FTun							Power Stat
Swp							CCDF
Center 6.250 0 GHz					Suco 7		More
		#VBW1M	ш <u>ы с.</u>		Span 7.		1 of 2
#Res BW 1 MHz				eep 12.52	IIIS (60)	, pts)	
File Operation Stat	tus, C:\H	CT.GIF file	saved				

FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 59 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



🔆 Agilent				R	Т	Measure
JYCP8000 Cond Spur Ref 23 dBm #Peak	<sup>r</sup> Ch.9662 Atten 10 dB			3.146 -42.79		Meas Off
Log 10 dB/ Offst						Channel Power
27.1 dB DI -13.0						Occupied BW
dBm LgAv						ACP
V1 S2 S3 FC AA	astrontostatadastatumastanaa	adatal transformation	Hardwichster mar and hard	<sup>wa</sup> p'u <sub>ph-2</sub> kguwith	matheme	Multi Carrier Power
£(f): FTun Swp						Power Stat CCDF
Center 2.015 GHz #Res BW 1 MHz	#\	/BW 1 MHz	Sweep 6.64 m	an 3.97 s (601 ;		More 1 of 2
File Operation Stat	us, C:\HCT.G	OIF file save	d			

■ WCDMA1900 MODE (9262 CH.) Conducted Spurious Emissions1

## ■ WCDMA1900 MODE (9262 CH.) Conducted Spurious Emissions2

🔆 Agilent				RT	Measure
JYCP8000 Cond Sp				13.867 GH	
Ref 23 dBm	Atten 10 dB			38.05 dBi	n Meas Off
#Peak Log					
10					
dB/					Channel Power
Offst					
27.1					
dB 👘					Occupied Bl
DI 📃 🗌					
-13.0					
dBm					ACF
LgAv		1			
V1 S2	mush how how how how how how how how how ho	Harring March Martin	many managements	without	indici currici
53 FUMMANN					Power
AA £(f):					
FTun					Power Stat
Swp					CCDF
4"V					<b></b>
					More
Center 12.000 GHz				ban 16 GH	Z 1 of 3
ŧRes BW 1 MHz	#VBW	1 MHz	Sweep 40 ms	(601 pts	)
ile Operation St	atus, C:\HCT.GIF	file saved			

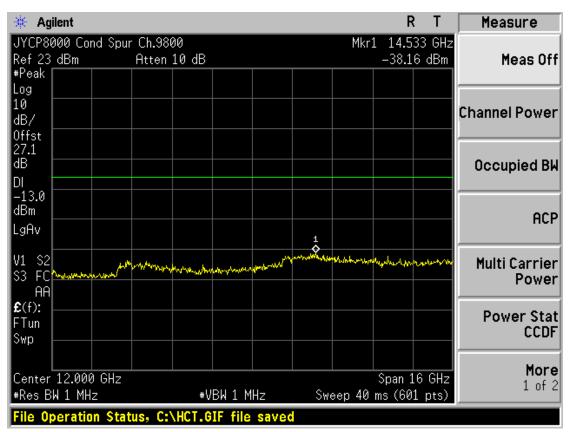
FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 60 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



🔆 Agilent				RT	Measure
JYCP8000 Cond Spur Ref 23 dBm #Peak	<sup>r</sup> Ch.9800 Atten 10 dB			. 2.955 GHz -42.32 dBm	Meas Off
Log 10 dB/ Offst					Channel Power
27.1 dB DI -13.0					Occupied BW
dBm LgAv					ACP
V1 S2 S3 FC AA	mhyyluniantatan	man hannata	a share and a series	Anapathantarada	Multi Carrier Power
<b>£</b> (f): FTun Swp					Power Stat CCDF
Center 2.015 GHz #Res BW 1 MHz	#V	BW 1 MHz	Sp Sweep 6.64 m	an 3.97 GHz s (601 pts)	More 1 of 2
File Operation Stat	us, C:\HCT.G	IF file save	d		

■ WCDMA1900 MODE (9400 CH.) Conducted Spurious Emissions1

## ■ WCDMA1900 MODE (9400 CH.) Condcted Spurious Emissions2



FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 61 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	



🔆 Agilent				R	Т	Measure
JYCP8000 Cond Spur Ref 23 dBm #Peak	r Ch.9938 Atten 10 dB			-42.83		Meas Off
Log 10 dB/ Offst						Channel Power
27.1 dB DI -13.0						Occupied BW
dBm LgAv						ACP
V1 S2 S3 FC Marine Malana Malana AA	to the factor of the sector of	And Anno and		1 Automatication	1,- <b>1</b> /w	Multi Carrier Power
£(f): FTun Swp						Power Stat CCDF
Center 2.015 GHz #Res BW 1 MHz	#\	/BW 1 MHz	Sp Sweep 6.64 m	an 3.97 Is (601		More 1 of 2
File Operation Stat	us, C:\HCT.G	IF file save	d			

■ WCDMA1900 MODE (9538 CH.) Conducted Spurious Emissions1

## ■ WCDMA1900 MODE (9538 CH.) Conducted Spurious Emissions2

🔆 Agilent					R	Т	Measure
JYCP8000 Cond Spi					14.080		
Ref 23 dBm	Atten 10 d	IB			-37.92	dBm	Meas Off
#Peak							
Log 10							
dB/							Channel Power
Offst							
27.1							
dB							Occupied BW
DI 📃 📃							
-13.0							
dBm							ACP
LgAv			1				
V1 S2	An Alwanne	A martin market	Well	wanter	a water and the	Andrew	Multi Carrier
S3 FC							Power
£(f):							
FTun							Power Stat
Swp							CCDF
					~ 10		More
Center 12.000 GHz			~		Span 16		1 of 2
#Res BW 1 MHz		₩VBW 1 MHz		eep 40 m	IS (601	pts)	
File Operation Sta	tus, C:\HCT	.GIF file sa	ved				

FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:	Page 62 of 62
HCTR1011FR19	November 23, 2010	GSM/WCDMA Phone with Bluetooth&WLAN	JYCP8000	