FCC ID: V4B-CWAP819

# Application for Certification For an RF amplifier

Intelligent Wireless Products, Inc. 1000 Second Avenue, 12th Floor Seattle, WA 98104

RF amplifier

FCC ID: V4B-CWAP819 IC ID: 7614A-CWAP819

**REPORT # UT86010A-002** 

This report was prepared in accordance with the requirements of the FCC Rules and Regulations Part 2, Subpart J, 2.1031 through 2.1057, and Parts 22, and 24 and in accordance with Industry Canada Radio Standards Specification RSS-131 for Zone Enhancers and any other applicable sections of the rules as indicated herein.

Prepared By:

DNB Engineering, Inc. 1100 E Chalk Creek Road Coalville, UT 84017

Industry Canada Lab Code: IC 3386A-1

20 Dec 2007 (revised 18 Mar 2008)

#### FCC ID: V4B-CWAP819

## **TEST LAB PERSONNEL**

Test Performed by:	Date	Signature
Yancey Staples	20 Dec 2007	YS

### **APPROVALS**

Quality Approval	Date	Signature
Les Payne Facility Manager	20 Dec 2007	Coffame If

**Dated 20 Dec 2007** 

Original report UT86010A-001 Revised report UT86010A-002 Dated 18 Mar 2008 (name change)

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#### 1.0 ADMINISTRATIVE DATA

#### 1.1 Certifications and Qualifications

I certify that DNB Engineering, Inc conducted the tests performed in order to obtain the technical data presented in this application. Also, based on the results of the enclosed data, I have concluded that the equipment tested meets or exceeds the requirements of the Rules and Regulations governing this application.

#### 1.2 Measurement Repeatability Information

The test data presented in this report has been acquired using the guidelines set forth in FCC Part 2.1031 through 2.1057, and Parts 22, and 24. Also included in this report is compliancy data for Industry Canada RS-131 for Zone Enhancers. The test results presented in this document are valid only for the equipment identified herein under the test conditions described. Repeatability of these test results will only be achieved with identical measurement conditions. These conditions include: The same test distance, EUT Height, Measurement Site Characteristics, and the same EUT System Components. The system must have the same Interconnecting Cables arranged in identical placement to that in the test set-up, with the system and/or EUT functioning in the identical mode of operation (i.e. software and so on) as on the date of the test. Any deviation from the test conditions and the environment on the date of the test may result in measurement repeatability difficulties.

All changes made to the EUT during the course of testing as identified in this test report must be incorporated into the EUT or identical models to ensure compliance with the FCC regulations.

C. L. Payne III (Para. 1.1)

Sr Engineering Manager

DNB Engineering, Inc.

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Co Fayne It

E-mail Les@dnbenginc.com

## 1.3 Test Methodology

The tests were performed in accordance with FCC Part 2 Subpart J, 2.1031 through 2.1057, 15, and 22, 24, Industry Canada RSS-131 on a sample of the production model.

## 1.4 Test Equipment

FIGURE 1: TEST EQUIPMENT

Description	Manufacturer	M/N	S/N	Cal Due Date	Test Used On
Signal Generator	Rhode & Schwarz	SMU 200A	100094	11/28/07	RF Power Out put, Inter- Mod, Cond Spur, Rad Spur, Characteristics
Spectrum Analyzer	Agilent	E4407B	MY45103462	08/18/08	RF Power Out put, Inter- Mod, Cond Spur, Rad Spur, Characteristics, RE
S/A Display	H/P	85662A	2318A05282	10/06/08	RE
Spectrum Analyzer	H/P	85680B	2330A02791	10/06/08	RE
Q-P Adapter	H/P	85650A	2811A01240	10/06/08	RE
RF- Preselector	H/P	8566B	259101-2	10/06/08	RE
Bicon Antenna	AH Systems	SAS-200/540	524	01/02/09	RE
Logarithmic Antenna	EMCO	3146	1284	01/03/09	RE
DRG Antenna	EMCO	3115	2280	02/03/08	RE
DRG Antenna	EMCO	3115	2281	10/04/08	RE,Rad spur
50 ohm Load	Decibel	DB4303G	2309	1/11/08	RF Power Out put, Inter- Mod, Cond Spur, Rad Spur, Characteristics, RE
Directional Coupler	DNB	DNBDCRIV	12401	09/08/08	RF Power Out put, Inter- Mod, Cond Spur, Characteristics

### 1. 5 DEVIATIONS

**Deviations/Modifications to the EUT** 

None.

Deviations/Modifications from test standard.

None

#### 1.6 TEST DESCRIPTION

#### 1.6.1 RF Power Output

For RF amplifier.

#### 1.6.2 Emissions Limitation and Occupied Bandwidth

Occupied Bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are equal to 0.5 percent of the total mean power radiated by a given emission. (also known as the 99% bandwidth)

#### 1.6.3 Conducted Spurious Emissions at Antenna Terminals

Conducted Spurious Emissions are emissions at the antenna terminals on a frequency or frequencies which are outside an occupied band sufficient to ensure transmission of information of required quality for the class of communication desired. The reduction in the level of these spurious emissions will not affect the quality of the information being transmitted.

#### 1.6.4 Radiated Field Strength of Spurious Emissions

Emissions from the equipment when connected into a non-radiating load on a frequency or frequencies which are outside an occupied band sufficient to ensure transmission of information of required quality for the class of communication desired. The reduction in the level of these spurious emissions will not affect the quality of the information being transmitted.

#### 1.6.5 Conducted Emissions

Emissions which are conducted onto the AC power mains.

#### 1.6.6 Radiated Emissions

Emissions which emanate from the EUT.

### 2.1033 (C) (1) Application for Certification

Name of Applicant: Intelligent Wireless Products, Inc.

1000 Second Avenue, 12th Floor

Seattle, WA 98104

FRN: 0017492612

Applicant is: X Manufacturer

Vendor Licensee

Prospective Licensee

Other

Name of Manufacturer Intelligent Wireless Products, Inc.

Description: RF amplifier

Part Number: CWAP819

Anticipated Production Quantity: Multiple Units

Applicable FCC Parts: 22, and 24

Applicable IC Standard: RSS-131

FCC ID No: V4B-CWAP819

IC ID No: 7614A-CWAP819

FCC Emissions Designator: 22H F1D and F8W

22H GXW 22.901(d) DXW

F1D and F8W

24E GXW
 24E DXW
 24E F9W

Frequency Range: Uplink 824.025-848.975 MHz

Uplink 1850.025-1909.975 MHz Downlink 869.025-893.975 MHz Downlink 1930.025-1989.975 MHz

Rated Conducted Output: 1.032W (30.14dBm) 824.025-848.975 MHz

0.796W (29.01dBm) 1850.025-1909.975 MHz 0.054W (17.35dBm) 869.025-893.975 MHz 0.0272W (14.34dBm) 1930.025-1989.975 MHz

2.1033 (C) (2)	FCC Identifier			
	FCC ID: V4B-CWAP8	319		
2.1033 (C) (3)	Installation Instruction a	ind Manual	Customer wil	l provide.
2.1033 (C) (4)	Type of Emission			
	824.025 - 848.975 MHz 824.200 - 848.800 MHz 824.025 - 848.975 MHz 1850.025 - 1909.975 MHz 1850.200 - 1909.800 MHz 1850.025 - 1909.975 MHz 1851.000 - 1909.000 MHz	22H 22H 22.901(d) 24E 24E 24E 24E	F1D and F8W GXW 300K0 DXW 30K0I F1D and F8W GXW 300K0 DXW 30K0I F9W 1M25	GXW DXW 7 40K0F1D GXW DXW
2.1033 (C) (5)	Frequency Range			
Uplink Uplink	824.025 – 848.975 MHz 1850.025 – 1909.975 MHz	Downlink Downlink	869.025 - 893 1930.025 - 19	
2.1033 (C) (6)	Operating Power (Cond	ducted)		
2.1033 (C) (7)	Downlink 1930.025 – 19	3.975 MHz 909.975 MHz 989.975 MHz	1.032W 0.054W 0.796W 0.0272W	(30.14dBm) (17.35dBm) (29.01dBm) (14.34dBm)
	Waximani i owei Allow			— Control Nation
	RULES PART	MAXIMUM	POWER (WAT	<u>ΓΤS</u> )
	Part 22 Part 24	7 2		
2.1033 (C) (8)	Input Power Character	istics	19.00 mW M	aximum
2.1033 (C) (9)	Tune Up Procedure		Customer wil	l provide.

FCC ID: V4B-CWAP819

## 2.1033 (C) (10) Schematic Diagram and Circuit Description

**Customer will provide.** 

## 2.1033 (C) (11) Equipment Identification Plate

**Customer will provide.** 

## 2.1033 (C) (12) Equipment Photographs - Internal

**Customer will provide.** 

## 2.1033 (C) (12) Equipment Photographs - External

**Customer will provide.** 

#### 2.1033 (C) (13) Digital Modulation Techniques

AMPS / CDMA / TDMA /GSM

## 2.1033 (c) (14) Test Data

See 2.1046-2.1053 and Radiated Emissions

FIGURE 2: TEST RESULT SUMMARY

NAME OF TEST	FCC PARA. NO.	Industry Canada No.	RESULTS
		(RSS-131)	
RF Power Output	2.1046	RSS-131 Cl 4.3	Complies
Emissions	2.1049	RSS-131 Cl 4.2	Complies
Limitations: TDMA			
Emissions	2.1049	RSS-131 Cl 4.2	Complies
Limitations: GSM			
Occupied Bandwidth:	2.1049	RSS-131 Cl 4.2	Complies
TDMA/GSM			
Conducted Spurious	2.1051	RSS-131 Cl4.4	Complies
Emissions at Antenna			
Terminals			
Radiated Field	2.1053	RSS-131 Cl 4.4	Complies
Strength of Spurious			
Emissions			
Radiated Emissions	15 Class B	CIPSR 22 Class B	Complies
Intermodulation		RSS-131 Cl 4.3	Complies
		RSS-131 Cl 4.4	_



## 2.1033 (c) (14)

FIGURE 3: TEST SET UP BLOCK DIAGRAM FOR RF POWER OUTPUT, EMISSIONS LIMITATIONS GSM/TDMA, OCCUPIED BANDWIDTH GSM/TDMA, CONDUCTED SPURIOUS EMISSIONS AT ANTENNA TERMINALS.

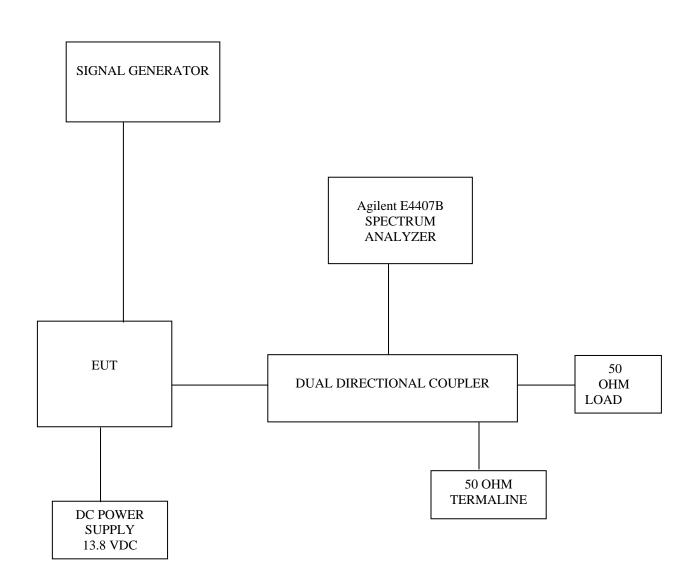
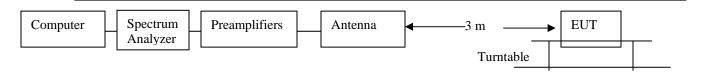


FIGURE 4: TEST SET UP BLOCK DIAGRAM FOR RADIATED EMISSIONS



## **Measurement of RF Power Output**

<u>Definition:</u> For RF amplifier

Test Method: See FIGURE 1.

Output Power is measured across a precision 50 ohm load with a Spectrum Analyzer. For all measurements the maximum signal was determined by input the signal until the unit would no longer amplify the signal. This signal has been plotted in the section as modulation characteristics as input (EUT removed form circuit) and output (EUT inserted in circuit). For the power measurement, typical signal is used. (GSM / TDMA)

Test Results: Frequency Range 824 - 894

U	p	li	n	k
0	М	••	• •	.,

Signal	Freq	Power	Power	Cha	acteristic	cs (dBm)
<u>Type</u>	(MHz)	<u>(dBm)</u>	<u>(W)</u>	<u>In</u>	<u>Out</u>	<u>Gain</u>
GSM	824.200	29.12	0.817	-26.90	21.57	48.47
GSM	836.500	30.14	1.032	-25.79	22.43	48.22
GSM	848.800	28.39	0.690	-25.87	20.65	46.52
TDMA	824.025	26.27	0.424	-17.67	29.25	46.92
TDMA	836.500	28.57	0.719	-17.66	29.72	47.38
TDMA	848.975	24.07	0.255	-18.23	26.69	44.92

#### **Downlink**

Signal	Freq	Power	Power	Cha	aracteristi	cs (dBm)
<u>Type</u>	<u>(MHz)</u>	(dBm)	<u>(W)</u>	<u>In</u>	<u>Out</u>	Gain
GSM	869.200	15.22	0.033	-27.79	6.616	34.41
GSM	881.500	17.35	0.054	-27.17	8.705	35.88
GSM	893.800	16.81	0.048	-27.13	8.520	35.65
TDMA	869.025	15.53	0.036	-17.21	15.390	32.60
TDMA	881.500	17.18	0.052	-17.50	17.310	34.81
TDMA	893.975	17.14	0.052	-18.47	16.770	35.24

## **Measurement of RF Power Output**

<u>Definition:</u> For RF amplifier

Test Method: See FIGURE 1.

Output Power is measured across a precision 50 ohm load with a Spectrum Analyzer. For all measurements the maximum signal was determined by input the signal until the unit would no longer amplify the signal. This signal has been plotted in the section as modulation characteristics as input (EUT removed form circuit) and output (EUT inserted in circuit). For the power measurement, typical signal is used. (GSM / TDMA / CDMA)

Test Results: Frequency Range 1850 - 1990:

## **Uplink**

Freq	Power	Power	Cha	racteristic	cs (dBm)
(MHz)	<u>(dBm)</u>	<u>(W)</u>	<u>In</u>	<u>Out</u>	<u>Gain</u>
1850.200	28.60	0.724	-26.75	18.48	45.23
1880.000	28.18	0.658	-26.70	14.65	41.35
1909.800	25.64	0.366	-26.71	18.21	44.92
1850.025	29.01	0.796	-19.94	21.47	41.41
1880.000	28.20	0.661	-20.18	28.80	48.98
1909.975	25.24	0.334	-20.23	25.84	46.07
1851.000	22.33	0.171	-41.67	15.62	57.29
1880.000	21.55	0.143	-41.46	15.53	56.99
1909.000	14.84	0.030	-41.71	11.05	52.76
	(MHz) 1850.200 1880.000 1909.800 1850.025 1880.000 1909.975 1851.000 1880.000	(MHz)     (dBm)       1850.200     28.60       1880.000     28.18       1909.800     25.64       1850.025     29.01       1880.000     28.20       1909.975     25.24       1851.000     22.33       1880.000     21.55	(MHz)         (dBm)         (W)           1850.200         28.60         0.724           1880.000         28.18         0.658           1909.800         25.64         0.366           1850.025         29.01         0.796           1880.000         28.20         0.661           1909.975         25.24         0.334           1851.000         22.33         0.171           1880.000         21.55         0.143	(MHz)         (dBm)         (W)         In           1850.200         28.60         0.724         -26.75           1880.000         28.18         0.658         -26.70           1909.800         25.64         0.366         -26.71           1850.025         29.01         0.796         -19.94           1880.000         28.20         0.661         -20.18           1909.975         25.24         0.334         -20.23           1851.000         22.33         0.171         -41.67           1880.000         21.55         0.143         -41.46	(MHz)         (dBm)         (W)         In         Out           1850.200         28.60         0.724         -26.75         18.48           1880.000         28.18         0.658         -26.70         14.65           1909.800         25.64         0.366         -26.71         18.21           1850.025         29.01         0.796         -19.94         21.47           1880.000         28.20         0.661         -20.18         28.80           1909.975         25.24         0.334         -20.23         25.84           1851.000         22.33         0.171         -41.67         15.62           1880.000         21.55         0.143         -41.46         15.53

#### **Downlink**

Signal	Freq	Power	Power	Char	acteristic	es (dBm)
<u>Type</u>	(MHz)	(dBm)	(W)	<u>In</u>	Out	<u>Gain</u>
GSM	1930.200	11.69	.0148	-30.99	3.634	34.62
GSM	1960.000	14.16	.0261	-31.01	6.317	37.31
GSM	1989.800	13.85	.0243	-31.50	5.100	36.60
TDMA	1930.025	11.28	.0134	-21.47	11.550	33.02
TDMA	1960.000	14.34	.0272	-21.22	14.390	35.61
TDMA	1989.975	14.16	.0261	-21.72	13.730	35.45
CDMA	1931.000	11.23	.0133	-43.50	4.873	48.37
CDMA	1960.000	13.92	.0246	-43.29	7.738	51.03
CDMA	1989.000	12.49	.0177	-43.63	6.534	50.16

FCC ID: V4B-CWAP819

#### 2.1046 Measurement of Mean Output Power (IC RSS-131 Cl 4.3)

<u>Definition:</u> For RF amplifier

Test Method: See FIGURE 1.

IC RSS-131 Clause 4.3 Mean Output Power

4.3.1 Multi-channel Enhancer

The following subscript "o" denotes a parameter at the enhancer output point.

Connect two signal generators to the input of the Device Under Test (DUT), via a proper impedance matching network (and preferably via a variable attenuator) so that the two input signals are equal sinusoids (and can be raised equally).

Connect a dummy load of suitable load rating to the enhancer output point. Connect also a spectrum analyser to this output point via a coupling network and attenuator, so that only a portion of the output signal is coupled to the spectrum analyser. The coupling attenuation shall be stated in the test report.

Set the two generator frequencies  $f_1$  and  $f_2$  such that they and their third-order intermodulation product frequencies,  $f_3$ =  $2f_1$ - $f_2$  and  $f_4$  =  $2f_2$  -  $f_1$ , are all within the passband of the DUT. Raise the input level to the DUT while observing the output tone levels,  $P_{01}$  and  $P_{02}$ , and the intermodulation product levels,  $P_{03}$  and  $P_{04}$ .

For enhancers rated 500 watts or less: Raise the input level to the DUT until the greater level of the intermodulation products at the enhancer output terminals, Po3 or Po4, equals -43 dBW.

Record all signal levels and their frequencies. Calculate the mean output power ( $P_{mean}$ ) under this testing condition using  $P_{mean} = P_{01} + 3$  dB. (Reference Intermodulation plots on pages 108-127)

#### IC RSS-131 Clause 6.2 Output Power

The manufacturer's output power rating Prated MUST NOT be greater than Pmean for all types of enhancers.

# **Uplink** Range 824 - 849

Signal Type	Freq (MHz)	P <sub>MEAN</sub> (dBm)	P <sub>MEASURED</sub> (dBm)	P <sub>RATED</sub> (dBm)
GSM GSM TDMA	824.200 848.800 824.025	22.46 23.64 23.00	29.12 28.39 26.27	22.00 23.50 22.50
TDMA	848.975	21.90	24.07	21.50

# **Downlink** Range 869 - 894

Signal <u>Type</u>	Freq (MHz)	P <sub>MEAN</sub> (dBm)	P <sub>MEASURED</sub> (dBm)	P <sub>RATED</sub> (dBm)
GSM	869.200	10.30	15.22	10.00
GSM	893.800	11.78	16.81	11.50
TDMA	869.025	7.65	15.53	7.50
TDMA	893.975	11.43	17.14	11.00

# **Uplink** Range 1850 - 1910

Signal Type	Freq (MHz)	P <sub>MEAN</sub> (dBm)	P <sub>MEASURED</sub> (dBm)	P <sub>RATED</sub> (dBm)
GSM	1850.200	24.30	28.60	24.00
GSM	1909.800	22.02	25.64	21.50
TDMA	1850.025	19.86	29.01	19.50
TDMA	1909.975	19.10	25.24	19.00
CDMA	1851.000	19.87	22.33	19.50
CDMA	1909.000	22.07	14.84	22.00

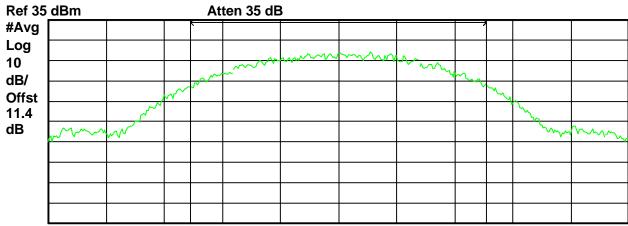
## **Downlink** <u>Range</u> 1930 - 1990

Signal Type	Freq (MHz)	P <sub>MEAN</sub> (dBm)	P <sub>MEASURED</sub> (dBm)	P <sub>RATED</sub> (dBm)
GSM	1930.200	4.79	11.69	4.50
GSM	1989.800	9.11	13.85	9.00
TDMA	1930.025	7.29	11.28	7.00
TDMA	1989.975	7.71	14.16	7.50
CDMA	1931.000	5.41	11.23	5.00
CDMA	1989.000	7.82	12.49	7.50

FIGURE 5: OUTPUT POWER PLOTS, UPLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Uplink GSM 824.200 MHz			





Center 824.2 MHz Span 500 kHz #VBW 30 kHz Sweep 88.13 ms (401 pts)

Channel Power Spectral Density

29.12 dBm / 255.0000 kHz -24.94 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, UPLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Uplink GSM 836.500 MHz			]

\* Agilent 13:12:01 Oct 11, 2007



Center 836.5 MHz #Res BW 3 kHz

#VBW 30 kHz

Span 500 kHz Sweep 88.13 ms (401 pts)

**Channel Power** 

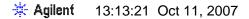
**Power Spectral Density** 

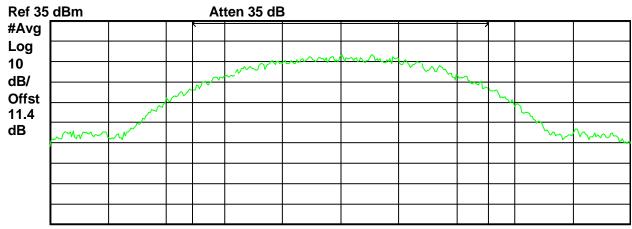
30.14 dBm / 255.0000 kHz

-23.92 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, UPLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Uplink GSM 848.800 MHz			1





Center 848.8 MHz #Res BW 3 kHz #VBW 30 kHz Span 500 kHz Sweep 88.13 ms (401 pts)

**Channel Power** 

**Power Spectral Density** 

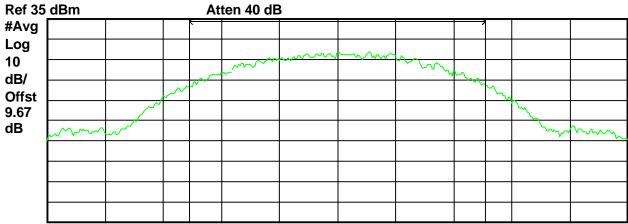
28.39 dBm / 255.0000 kHz

-25.67 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, UPLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Uplink GSM 1850.200 MHz			





Center 1.85 GHz Span 500 kHz #Res BW 3 kHz #VBW 30 kHz Sweep 88.13 ms (401 pts)

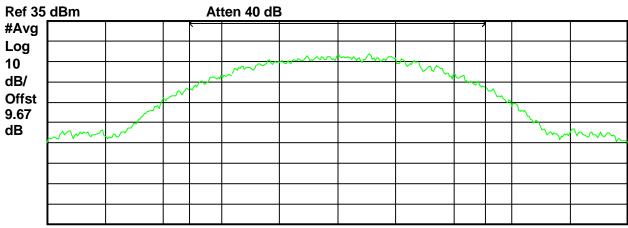
Channel Power Spectral Density

28.60 dBm / 255.0000 kHz -25.47 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, UPLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Uplink GSM 1880.000 MHz			]





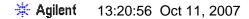
Center 1.88 GHz Span 500 kHz #Res BW 3 kHz #VBW 30 kHz Sweep 88.13 ms (401 pts)

Channel Power Spectral Density

28.18 dBm / 255.0000 kHz -25.89 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, UPLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Uplink GSM 1909.800 MHz			





Center 1.91 GHz Span 500 kHz #Res BW 3 kHz #VBW 30 kHz Sweep 88.13 ms (401 pts)

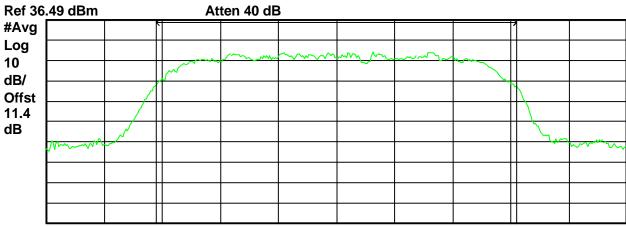
Channel Power Spectral Density

25.64 dBm / 255.0000 kHz -28.43 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, UPLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Uplink TDMA 824.025 MHz			





Center 824 MHz
Res BW 1 kHz

#VBW 10 kHz

Span 50 kHz

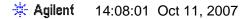
Sweep 79.32 ms (401 pts)

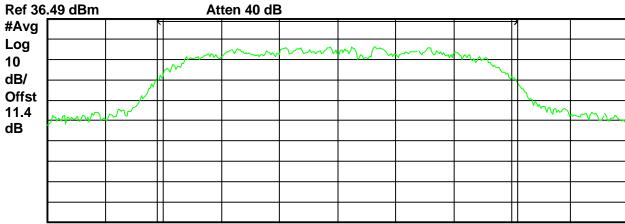
Channel Power Spectral Density

26.27 dBm / 31.0000 kHz -18.65 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, UPLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			Standards
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Uplink TDMA 836.5 MHz			]





Center 836.5 MHz

Res BW 1 kHz

#VBW 10 kHz

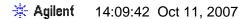
Syeep 79.32 ms (401 pts)

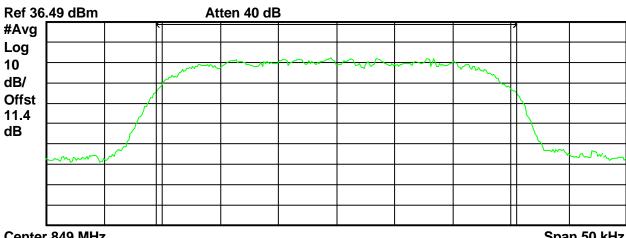
Channel Power Spectral Density

28.57 dBm / 31.0000 kHz -16.35 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, UPLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Uplink TDMA 848.975 MHz			





Center 849 MHz
Res BW 1 kHz
#VBW 10 kHz
Sweep 79.32 ms (401 pts)

**Channel Power** 

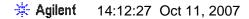
Power Spectral Density

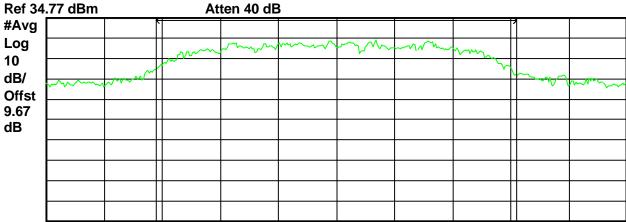
24.07 dBm/31.0000 kHz

-20.84 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, UPLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Uplink TDMA 1850.025 MHz			]





Center 1.85 GHz

Res BW 1 kHz

#VBW 10 kHz

Sweep 79.32 ms (401 pts)

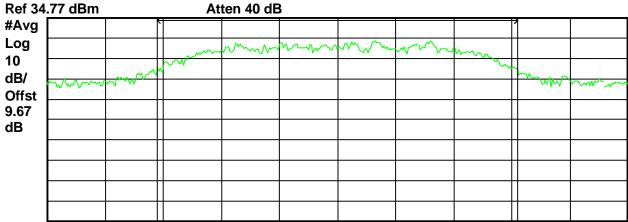
Channel Power Spectral Density

29.01 dBm / 31.0000 kHz -15.91 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, UPLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Uplink TDMA 1880.000 MHz			1





Center 1.88 GHz

Res BW 1 kHz

#VBW 10 kHz

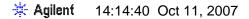
Sweep 79.32 ms (401 pts)

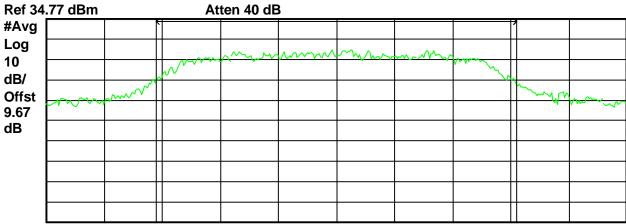
Channel Power Spectral Density

28.20 dBm / 31.0000 kHz -16.72 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, UPLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Uplink TDMA 1909.975 MHz			





Center 1.91 GHz

Res BW 1 kHz

#VBW 10 kHz

Syan 50 kHz

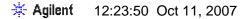
Sweep 79.32 ms (401 pts)

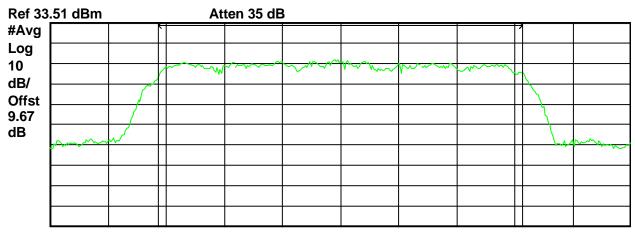
Channel Power Spectral Density

25.24 dBm / 31.0000 kHz -19.68 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, UPLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Uplink CDMA 1851.000 MHz			1





Center 1.851 GHz #Res BW 30 kHz

**#VBW 300 kHz** 

Span 2 MHz Sweep 8 ms (401 pts)

**Channel Power** 

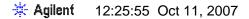
**Power Spectral Density** 

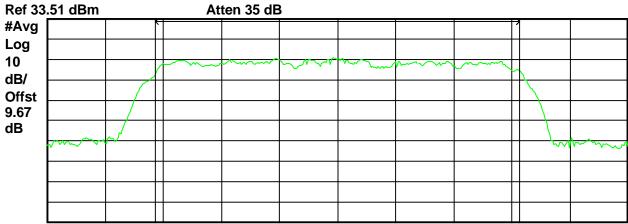
22.33 dBm / 1.2500 MHz

-38.64 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, UPLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Uplink CDMA 1880 MHz			



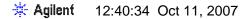


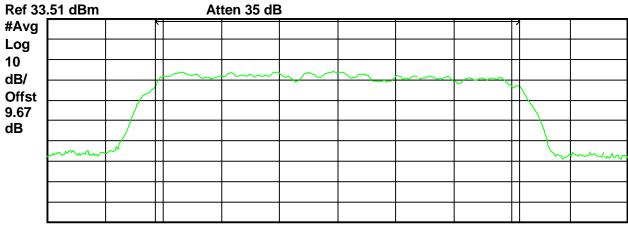
Center 1.88 GHz Span 2 MHz #Res BW 30 kHz #VBW 300 kHz Sweep 8 ms (401 pts)

21.55 dBm / 1.2500 MHz -39.42 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, UPLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Uplink CDMA 1909.000MHz			1





Center 1.91 GHz
#Res BW 30 kHz

Span 2 MHz
#VBW 300 kHz

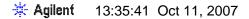
Sweep 8 ms (401 pts)

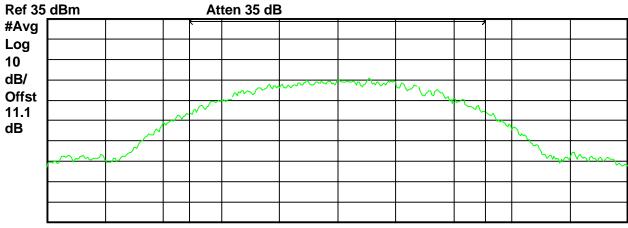
Channel Power Spectral Density

14.84 dBm / 1.2500 MHz -46.13 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, DOWNLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Downlink GSM 869.200 MHz			





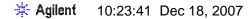
Center 869.2 MHz Span 500 kHz #VBW 30 kHz Sweep 88.13 ms (401 pts)

Channel Power Spectral Density

15.22 dBm / 255.0000 kHz -38.84 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, DOWNLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	18 Dec 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Downlink GSM 881.5 MHz			





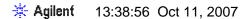
Center 881.5 MHz Span 500 kHz #VBW 30 kHz Sweep 88.13 ms (401 pts)

Channel Power Spectral Density

17.35 dBm / 255.0000 kHz -36.72 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, DOWNLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Downlink GSM 893.800 MHz			]





#Res BW 3 kHz

#VBW 30 kHz

Sweep 88.13 ms (401 pts)

**Channel Power** 

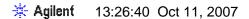
**Power Spectral Density** 

16.81 dBm / 255.0000 kHz

-37.26 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, DOWNLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Downlink GSM 1930.200 MHz			





#Res BW 3 kHz

#VBW 30 kHz

Sweep 88.13 ms (401 pts)

**Channel Power** 

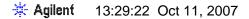
**Power Spectral Density** 

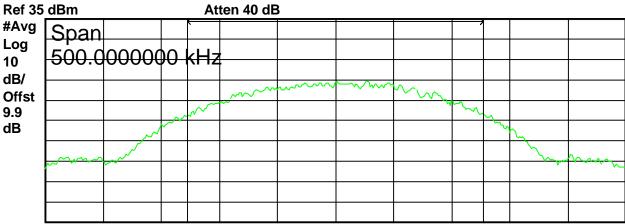
11.69 dBm / 255.0000 kHz

-42.38 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, DOWNLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Downlink GSM 1960.000 MHz			]





Center 1.96 GHz Span 500 kHz #Res BW 3 kHz #VBW 30 kHz Sweep 88.13 ms (401 pts)

Channel Power

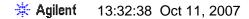
Power Spectral Density

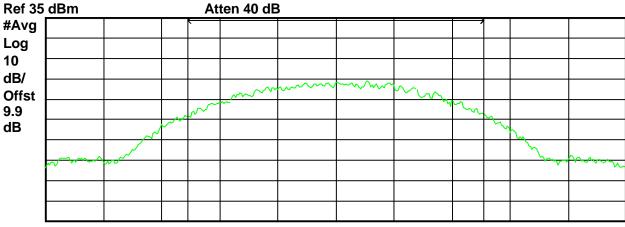
14.16 dBm / 255.0000 kHz

-39.91 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, DOWNLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Downlink GSM 1989.800 MHz			





Center 1.99 GHz Span 500 kHz #VBW 30 kHz Sweep 88.13 ms (401 pts)

**Channel Power** 

**Power Spectral Density** 

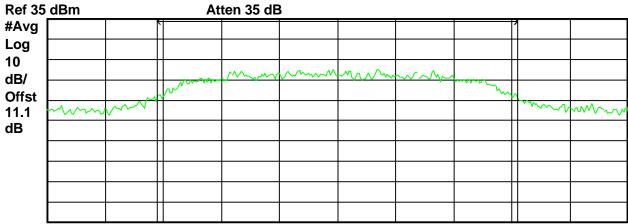
13.85 dBm / 255.0000 kHz

-40.22 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, DOWNLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Downlink TDMA 869.025 MHz			





Center 869 MHz
Res BW 1 kHz

#VBW 10 kHz

Span 50 kHz

Sweep 79.32 ms (401 pts)

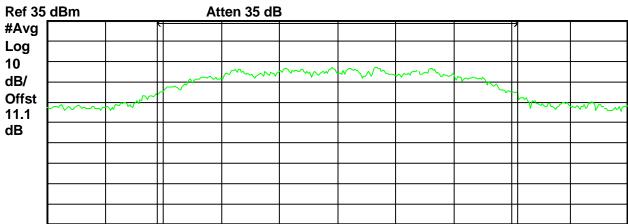
Channel Power Spectral Density

15.53 dBm / 31.0000 kHz -29.38 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, DOWNLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	Power
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Downlink TDMA 881.5 MHz			

\* Agilent 13:51:53 Oct 11, 2007



Center 881.5 MHz

Res BW 1 kHz

#VBW 10 kHz

Span 50 kHz

Sweep 79.32 ms (401 pts)

Channel Power

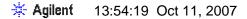
**Power Spectral Density** 

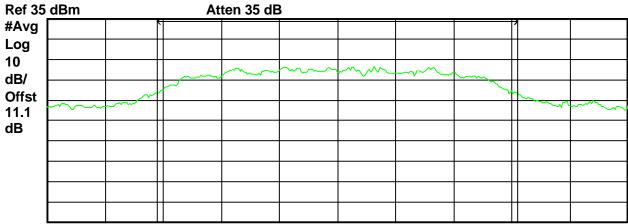
17.18 dBm/31.0000 kHz

-27.74 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, DOWNLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	Power
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Downlink TDMA 893.975 MHz			1





Center 894 MHz
Res BW 1 kHz

#VBW 10 kHz

Span 50 kHz

Sweep 79.32 ms (401 pts)

Channel Power Power Spectral Density

17.14 dBm / 31.0000 kHz -27.78 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, DOWNLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Downlink TDMA 1930.025 MHz			

\* Agilent 13:56:50 Oct 11, 2007



Center 1.93 GHz

Res BW 1 kHz

#VBW 10 kHz

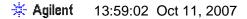
Sweep 79.32 ms (401 pts)

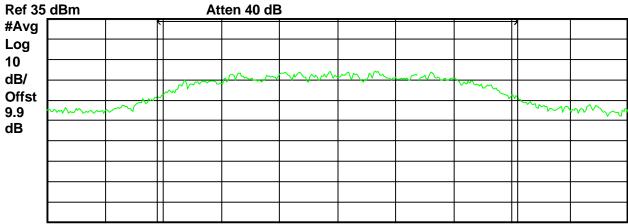
Channel Power Spectral Density

11.28 dBm / 31.0000 kHz -33.63 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, DOWNLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Downlink TDMA 1960.000 MHz			





Center 1.96 GHz

Res BW 1 kHz

#VBW 10 kHz

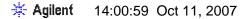
Sweep 79.32 ms (401 pts)

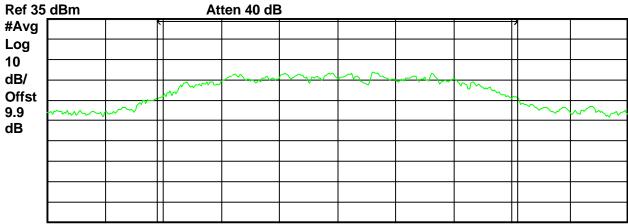
Channel Power Spectral Density

14.34 dBm / 31.0000 kHz -30.57 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, DOWNLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Downlink TDMA 1989.975 MHz			





Center 1.99 GHz

Res BW 1 kHz

#VBW 10 kHz

Sweep 79.32 ms (401 pts)

**Channel Power** 

**Power Spectral Density** 

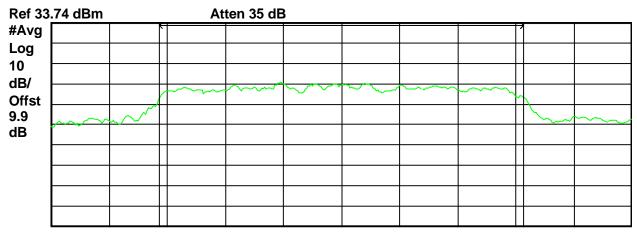
14.16 dBm/31.0000 kHz

-30.75 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, DOWNLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	Power
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Downlink CDMA 1931.000 MHz			

\* Agilent 12:46:55 Oct 11, 2007



Center 1.931 GHz #Res BW 30 kHz

**#VBW 300 kHz** 

Span 2 MHz Sweep 8 ms (401 pts)

**Channel Power** 

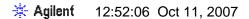
**Power Spectral Density** 

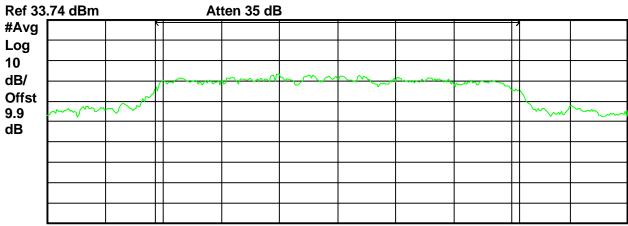
11.23 dBm / 1.2500 MHz

-49.74 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, DOWNLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Downlink CDMA 1960 MHz			





Center 1.96 GHz Span 2 MHz #VBW 300 kHz Sweep 8 ms (401 pts)

Channel Power

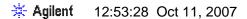
**Power Spectral Density** 

13.92 dBm / 1.2500 MHz

-47.05 dBm/Hz

FIGURE 5: OUTPUT POWER PLOTS, DOWNLINK.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Output P	ower
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Downlink CDMA 1989.000 MHz			





Center 1.989 GHz #Res BW 30 kHz

**#VBW 300 kHz** 

Span 2 MHz Sweep 8 ms (401 pts)

**Channel Power** 

**Power Spectral Density** 

12.49 dBm / 1.2500 MHz

-48.48 dBm/Hz

# 2.1049 Measurement of Occupied Bandwidth (IC RSS-131 Clause 4.2)

## **Definition:**

Occupied Bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are equal to 0.5 percent of the total mean power radiated by a given emission.

Test Method: Connect the Equipment per FIGURE 1.

For all measurements the maximum signal was determined by input the signal until the unit would no longer amplify the signal. This signal has been plotted in the section as modulation characteristics as input (EUT removed form circuit) and output (EUT inserted in circuit).

Measurements were made while the driving source generated the following:

TDMA Signal GSM Signal (AMPS) CDMA Signal

Test Results: See Plots

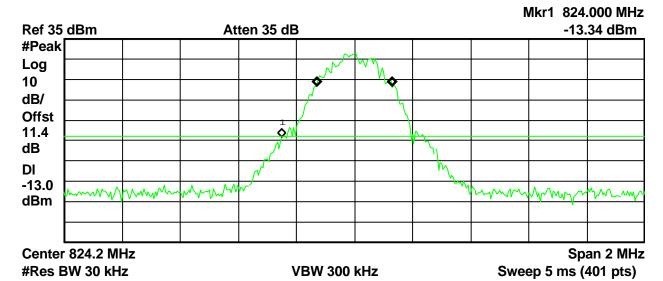
The center frequency of the signal did not shift with modulation. The Spectrum Bandwidth was well within the limits specified in the FCC Regulations.

Modulation characteristic plots are shown in this section.

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Uplink GSM 824.200 MHz			





Occupied Bandwidth 262.9154 kHz

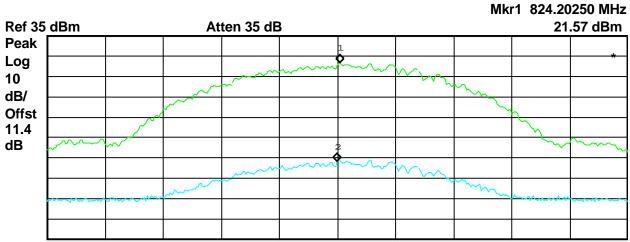
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error 231.524 Hz x dB Bandwidth 339.047 kHz

## FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Modulation	Characteristics
DNB Job Number:	86010	Date: 11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.		Standards
Model Number:	CWAP819		[X] IC RSS-131
Description:	RF amplifier		[X] FCC Part 22 [X] FCC Part 24
			[A] FCC Part 24
	Uplink GSM 824.200 MHz- Input / O	utput	

**Agilent** 07:45:28 Oct 11, 2007

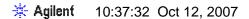


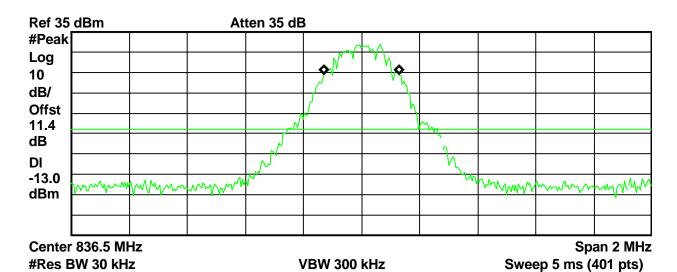
Center 824.2 MHz		Span 500 kHz
#Res BW 3 kHz	VBW 30 kHz	Sweep 55.74 ms (401 pts)

Marker 1 2	Trace (1) (2)	Type Freq Freq	X Axis 824.20250 MHz 824.20000 MHz	Amplitude 21.57 dBm -26.9 dBm	

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Uplink GSM 836.500 MHz			





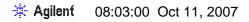
Occupied Bandwidth 257.2654 kHz

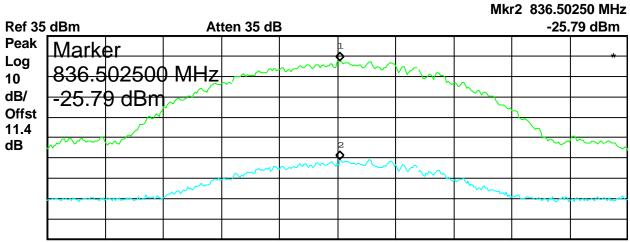
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error 1.099 kHz x dB Bandwidth 335.040 kHz

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Modulation (	Characteristics
DNB Job Number:	86010	Date: 11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.		<b>Standard</b> s
Model Number:	CWAP819		[X] IC RSS-131
Description:	RF amplifier		[X] FCC Part 22 [X] FCC Part 24
			[A] FCC Part 24
	Uplink GSM 836.500 MHz – Input / 0	Output	



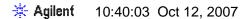


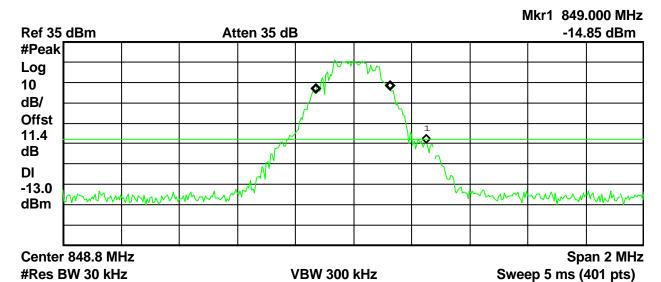
Center 836.5 MHz		Span 500 kHz
#Res BW 3 kHz	VBW 30 kHz	Sweep 55.74 ms (401 pts)

Trace	Type	X Axis	Amplitude	
(1)	Freq	836.50250 MHz	22.43 dBm	
(2)	Freq	836.50250 MHz	-25.79 dBm	
	(1)	(1) Freq	(1) Freq 836.50250 MHz	(1) Freq 836.50250 MHz 22.43 dBm

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Uplink GSM 848.800 MHz			





Occupied Bandwidth 258.7939 kHz

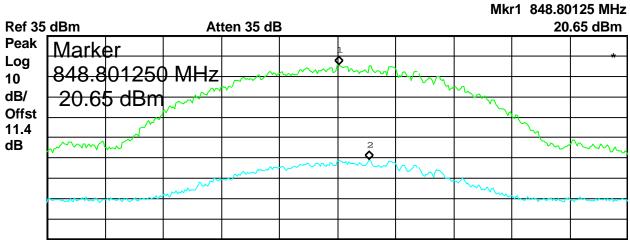
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error -2.127 kHz x dB Bandwidth 341.450 kHz

#### FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Modulation	Characteristics
DNB Job Number:	86010	Date: 11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.		Standards
Model Number:	CWAP819		[X] IC RSS-131
Description:	RF amplifier		[X] FCC Part 22 [X] FCC Part 24
			[X] FCC Part 24
	Uplink GSM 848.800 MHz- Input / O	utput	



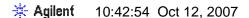


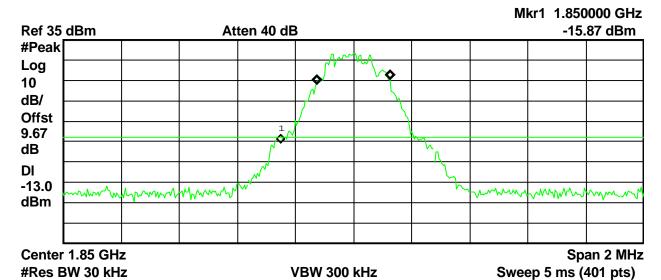
Center	848.8 MI	Hz					Span	500 kHz
#Res B	3W 3 kHz			<b>VBW 30 I</b>	κHz	Sweep 5	5.74 ms (4	101 pts)

Marker	Trace	Type	X Axis	Amplitude	
1	(1)	Freq	848.80125 MHz	20.65 dBm	
2	(2)	Freq	848.82750 MHz	-25.87 dBm	

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Uplink GSM 1850.200 MHz			





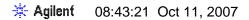
Occupied Bandwidth 250.2233 kHz

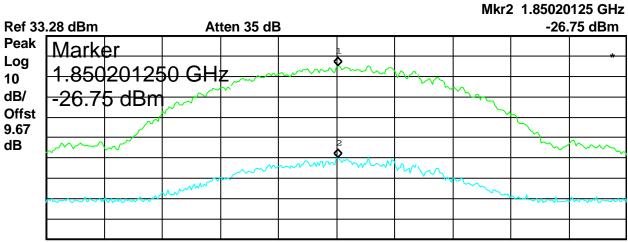
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error -1.658 kHz x dB Bandwidth 333.715 kHz

#### FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Modulation Cl	haracteristics
DNB Job Number:	86010	Date: 11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.		Standards
Model Number:	CWAP819		[X] IC RSS-131
Description:	RF amplifier		[X] FCC Part 22 [X] FCC Part 24
			[A] FCC Part 24
	Uplink GSM 1850.200 MHz – Input /	Output	



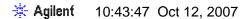


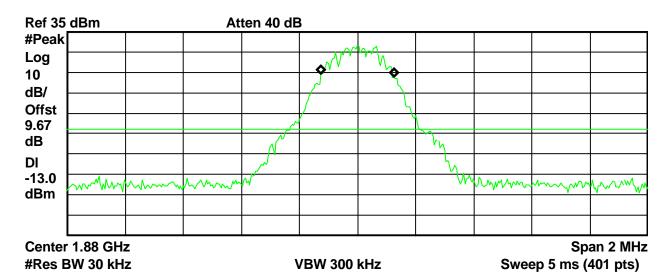
Center 1.85 GHz Span 500 kHz #Res BW 3 kHz VBW 30 kHz Sweep 55.74 ms (401 pts)

Marker 1	Trace (1)	Type Freq	X Axis 1.85020125 GHz	Amplitude 18.48 dBm	
2	(2)	Freq	1.85020125 GHz	-26.75 dBm	

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Uplink GSM 1880 MHz			





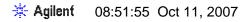
Occupied Bandwidth 251.8674 kHz

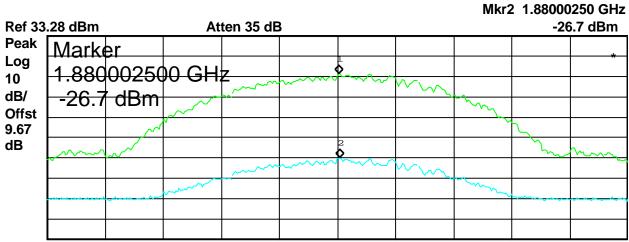
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error 740.441 Hz x dB Bandwidth 332.672 kHz

#### FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Mo	odulation Ch	aracteristics
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			Standards
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 - [X] FCC Part 24
				[A] FCC Part 24
	Uplink GSM 1880 MHz – Input / Out	put		



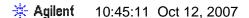


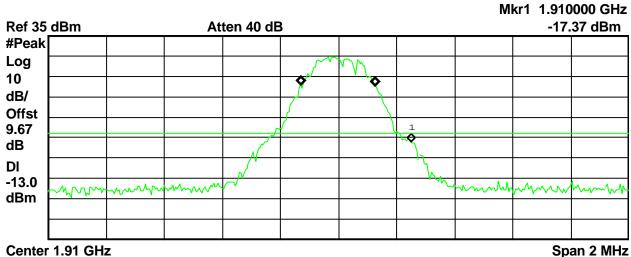
Center 1.88 GHz		Span 500 kHz
#Res BW 3 kHz	VBW 30 kHz	Sweep 55.74 ms (401 pts)

	<del>• • • • • • • • • • • • • • • • • • • </del>		1211 00 1411	
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.88000125 GHz	14.65 dBm
2	(2)	Freq	1.88000250 GHz	-26.7 dBm

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Uplink GSM 1909.800 MHz			





#Res BW 30 kHz
Occupied Bandwidth

VBW 300 kHz

Sweep 5 ms (401 pts)

Occupied Bandwidth 254.5666 kHz

Occ BW % Pwr

99.00 %

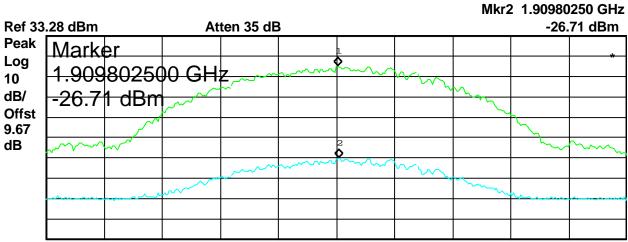
x dB -26.00 dB

Transmit Freq Error -974.774 Hz x dB Bandwidth 336.538 kHz

#### FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Modulation C	haracteristics
DNB Job Number:	86010	Date: 11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.		Standards
Model Number:	CWAP819		[X] IC RSS-131
Description:	RF amplifier		[X] FCC Part 22
			[X] FCC Part 24
	Uplink GSM 1909.800 MHz – Input /	Output	

\* Agilent 08:58:09 Oct 11, 2007



Center 1.91 GHz
#Res BW 3 kHz

VBW 30 kHz

Span 500 kHz

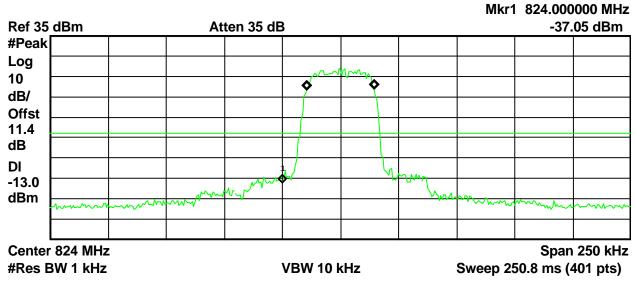
Weep 55.74 ms (401 pts)

Marker 1	Trace (1)	Type Freq	X Axis 1.90980125 GHz	Amplitude 18.21 dBm	
2	(2)	Freq	1.90980250 GHz	-26.71 dBm	

Figure 6: Occupied Bandwidth

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Uplink TDMA 824.025 MHz			

\* Agilent 11:04:17 Oct 12, 2007



Occupied Bandwidth 28.8515 kHz

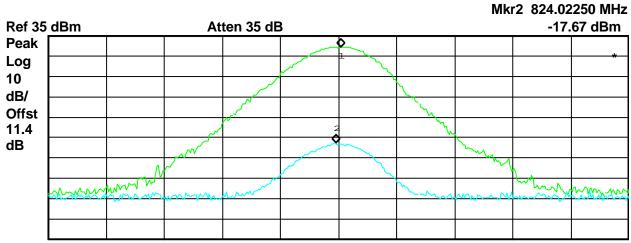
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error -121.028 Hz x dB Bandwidth 33.626 kHz

FIGURE 6: OCCUPIED BANDWIDTH

<u>ONB</u>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Modulation	Characteristics
DNB Job Number:	86010	Date: 10 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.		Standards
Model Number:	CWAP819		[X] IC RSS-131
Description:	RF amplifier		[X] FCC Part 22 [X] FCC Part 24
			[A] FCC Part 24
	Uplink TDMA 824.025 MHz – Input	/ Output	

**Agilent** 10:36:27 Oct 10, 2007

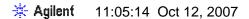


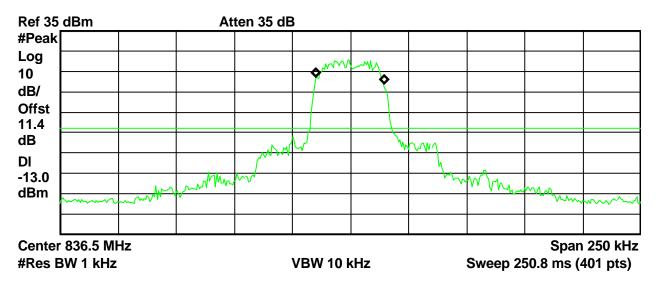
Center 824 MHz Span 500 kHz #Res BW 30 kHz VBW 30 kHz Sweep 5 ms (401 pts)

	<del></del>		1211 00 1111		0 11 0 0 p 0 1110 ( 10 1 p 10
Marker	Trace	Type	X Axis	Amplitude	
1	(1)	Freq	824.02750 MHz	29.25 dBm	
2	(2)	Freq	824.02250 MHz	-17.67 dBm	

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Uplink TDMA 836.5 MHz			





Occupied Bandwidth 29.0000 kHz

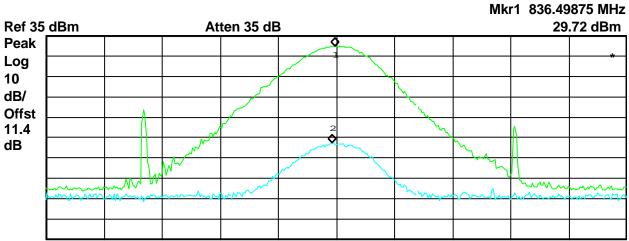
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error -405.177 Hz x dB Bandwidth 33.608 kHz

#### FIGURE 6: OCCUPIED BANDWIDTH

<u>ONB</u>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Mo	odulation Ch	aracteristics
DNB Job Number:	86010	Date:	10 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			Standards
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier	[X] FCC Part 22 - [X] FCC Part 24		
				[A] FCC Part 24
	Uplink TDMA 836.5 MHz – Input / C			

\* Agilent 10:53:27 Oct 10, 2007

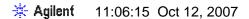


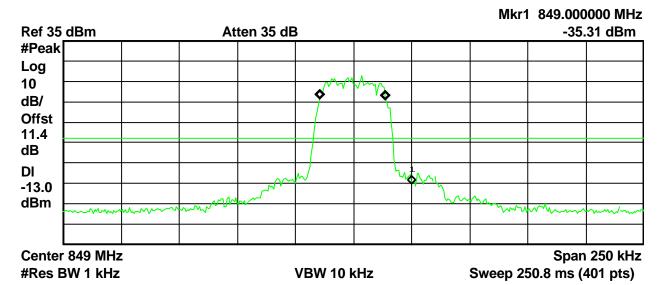
Center 836.5 MHz Span 500 kHz #Res BW 30 kHz VBW 30 kHz Sweep 5 ms (401 pts)

Marker	Trace	Type	X Axis	Amplitude	
1	(1)	Freq	836.49875 MHz	29.72 dBm	
2	(2)	Freq	836.49625 MHz	-17.66 dBm	

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	andwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 - [X] FCC Part 24
				[A] FCC Part 24
	Uplink TDMA 848.975 MHz			





Occupied Bandwidth 28.4895 kHz

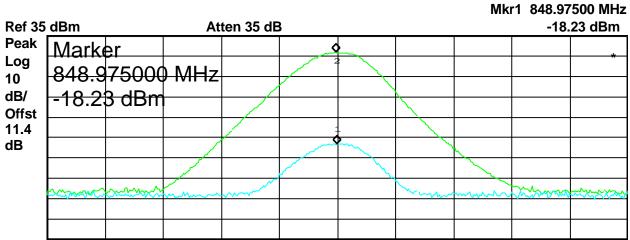
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error -188.829 Hz x dB Bandwidth 33.449 kHz

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Modulation	Characteristics
DNB Job Number:	86010	Date: 10 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.		Standards
Model Number:	CWAP819		[X] IC RSS-131
Description:	RF amplifier	[X] FCC Part 22 [X] FCC Part 24	
			[A] FCC Part 24
	Uplink TDMA 848.975 MHz – Input		

\* Agilent 12:39:37 Oct 10, 2007



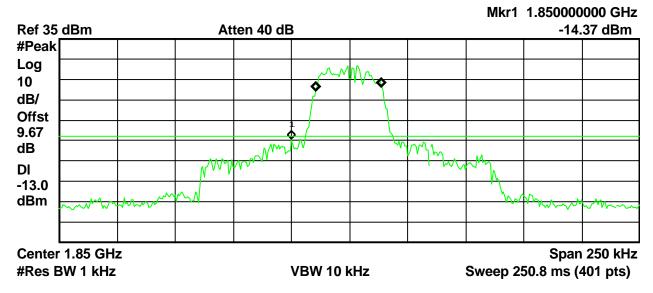
Center 849 MHz Span 500 kHz #Res BW 30 kHz VBW 30 kHz Sweep 5 ms (401 pts)

Trace	Type	X Axis	Amplitude	
(2)	Freq	848.97500 MHz	-18.23 dBm	
(1)	Freq	848.97375 MHz	26.69 dBm	
	(2)	(2) Freq	(2) Freq 848.97500 MHz	(2) Freq 848.97500 MHz -18.23 dBm

Figure 6: Occupied Bandwidth

<u>ONB</u>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Uplink TDMA 1850.025 MHz			

\* Agilent 11:11:20 Oct 12, 2007



Occupied Bandwidth 28.6001 kHz

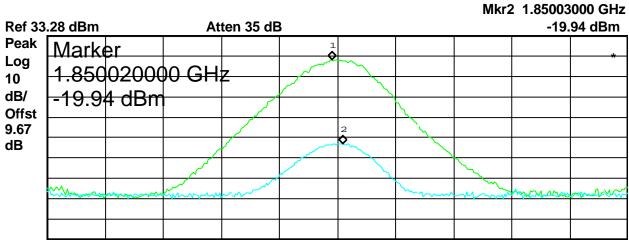
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error -273.039 Hz x dB Bandwidth 33.763 kHz

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Modulation Ch	aracteristics
DNB Job Number:	86010	Date: 10 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.		<b>Standard</b> s
Model Number:	CWAP819		[X] IC RSS-131
Description:	RF amplifier	[X] FCC Part 22	
		[X] FCC Part 24	
	Uplink TDMA 1850.025 MHz – Inpu		





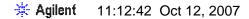
 Center 1.85 GHz
 Span 500 kHz

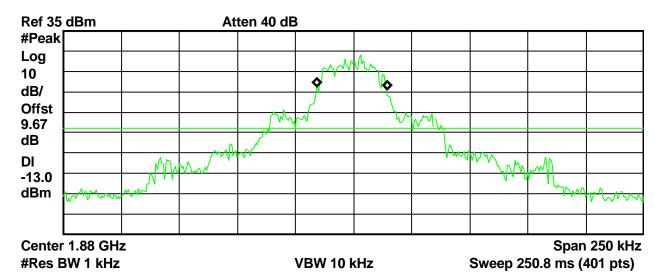
 #Res BW 30 kHz
 VBW 30 kHz
 Sweep 5 ms (401 pts)

Marker	Trace	Type	X Axis	Amplitude	
1	(1)	Freq	1.85002000 GHz	21.47 dBm	
2	(2)	Freq	1.85003000 GHz	-19.94 dBm	

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth		
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance		
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s		
Model Number:	CWAP819			[X] IC RSS-131		
Description:	RF amplifier			[X] FCC Part 22		
				[X] FCC Part 24		
	Uplink TDMA 1880 MHz	Jplink TDMA 1880 MHz				





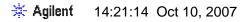
Occupied Bandwidth 29.8493 kHz

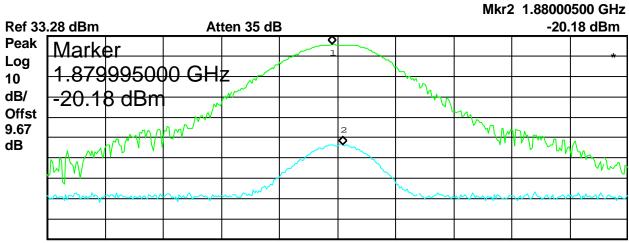
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error -832.557 Hz x dB Bandwidth 35.929 kHz

FIGURE 6: OCCUPIED BANDWIDTH

<u>ONB</u>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Modi	ulation Cha	aracteristics
DNB Job Number:	86010	Date: 10	Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier	[X] FCC Part 22 [X] FCC Part 24		
		[A] FCC Part 24		
	Uplink TDMA 1880 MHz – Input / O			





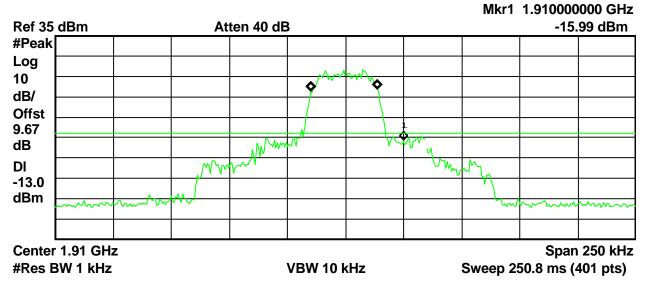
Center 1.88 GHz		Span 500 kHz
#Res BW 30 kHz	VBW 30 kHz	Sweep 5 ms (401 pts)

NC3 DII	30 KI IZ		V D V V SU KI IZ		Owcep o mo (+o i pio
Marker 1	Trace (1)	Type Freq	X Axis 1.87999500 GHz	Amplitude 28.8 dBm	
2	(2)	Freq	1.88000500 GHz	-20.18 dBm	

Figure 6: Occupied Bandwidth

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Occupied Bandwidth		ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Uplink TDMA 1909.975 MHz			

\* Agilent 11:14:30 Oct 12, 2007



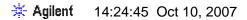
Occupied Bandwidth 28.8358 kHz

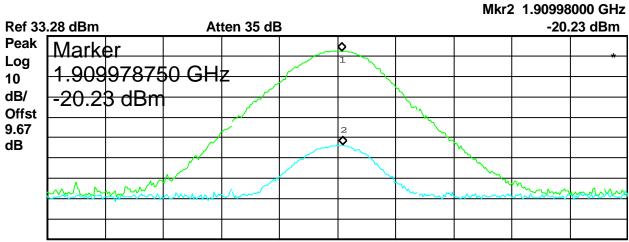
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error -423.630 Hz x dB Bandwidth 33.966 kHz

FIGURE 6: OCCUPIED BANDWIDTH

<u>ONB</u>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	haracteristics	
DNB Job Number:	86010	Date: 10 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.		<b>Standard</b> s
Model Number:	CWAP819	[X] IC RSS-131	
Description:	RF amplifier	[X] FCC Part 22 [X] FCC Part 24	
			[A] FCC Part 24
	Uplink TDMA 1909.975 MHz – Inpu		



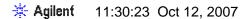


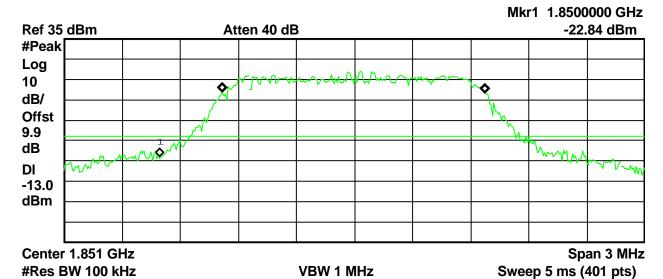
Center 1.91 GHz		Span 500 kHz
#Res BW 30 kHz	VBW 30 kHz	Sweep 5 ms (401 pts)

Marker	Trace	Type	X Axis	Amplitude	
1	(1)	Freq	1.90997875 GHz	25.84 dBm	
2	(2)	Freq	1.90998000 GHz	-20.23 dBm	

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Occupied Bandwidth		ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Uplink CDMA 1851 MHz			





Occupied Bandwidth
1.3553 MHz

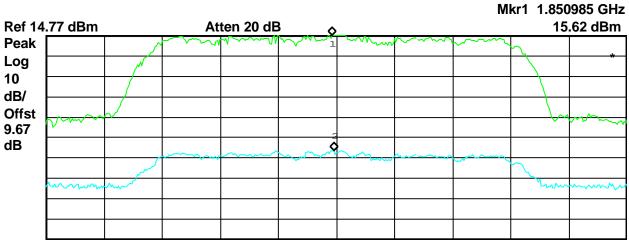
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error -4.322 kHz x dB Bandwidth 1.591 MHz

FIGURE 6: OCCUPIED BANDWIDTH

<u>ONB</u>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Modu	ılation Cha	aracteristics
DNB Job Number:	86010	Date: 11	Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier	[X] FCC Part 22 [X] FCC Part 24		
		[A] FCC Part 24		
	Uplink CDMA 1851 MHz – Input / O			



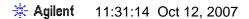


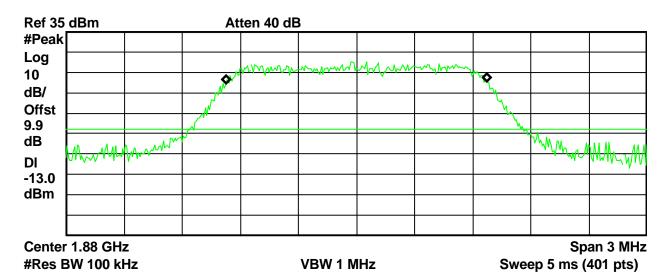
Center 1.851 GHz		Span 2 MHz
#Res BW 30 kHz	VBW 300 kHz	Sweep 5 ms (401 pts)

ICS DII	30 KHZ		V D V V 300 K 12		Owcep o mo (+o) pe
Marker 1 2	Trace (1) (2)	Type Freq Freq	X Axis 1.850985 GHz 1.850990 GHz	Amplitude 15.62 dBm -41.67 dBm	
2	(2)	Freq	1.850990 GHz	-41.67 dBm	

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Uplink CDMA 1880 MHz			





Occupied Bandwidth 1.3525 MHz

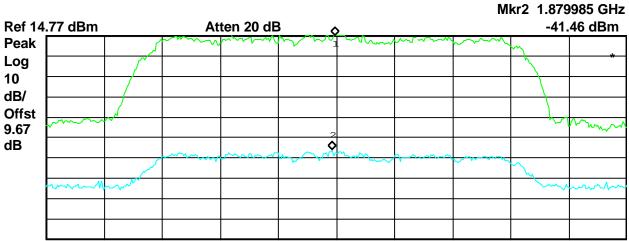
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error 578.135 Hz x dB Bandwidth 1.606 MHz

# FIGURE 6: OCCUPIED BANDWIDTH

<u>ONB</u>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Mod	dulation Cha	aracteristics
DNB Job Number:	86010	Date: 1	1 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier	[X] FCC Part 22 [X] FCC Part 24		
		[A] FCC Part 24		
	Uplink CDMA 1880 MHz – Input / O			

\* Agilent 12:09:26 Oct 11, 2007



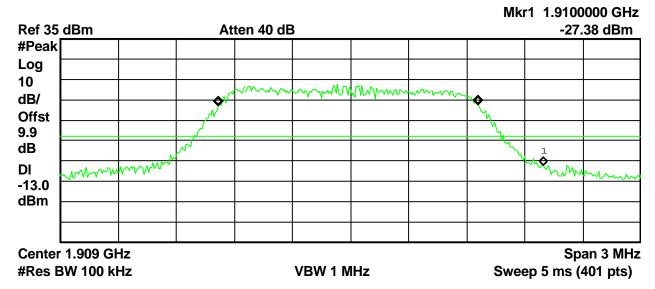
Center 1.88 GHz Span 2 MHz #Res BW 30 kHz VBW 300 kHz Sweep 5 ms (401 pts)

Marker	Trace	Type	X Axis	Amplitude	
1	(1)	Freq	1.879995 GHz	15.43 dBm	
2	(2)	Freq	1.879985 GHz	-41.46 dBm	

Figure 6: Occupied Bandwidth

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Uplink CDMA 1909 MHz			

\* Agilent 11:32:04 Oct 12, 2007



Occupied Bandwidth
1.3434 MHz

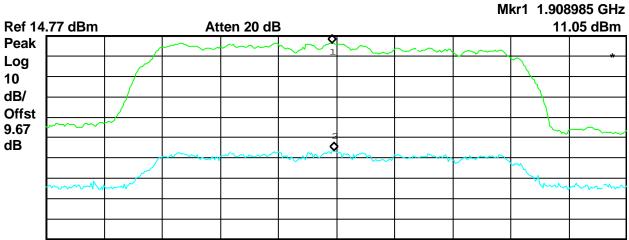
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error -9.571 kHz x dB Bandwidth 1.601 MHz

# FIGURE 6: OCCUPIED BANDWIDTH

<u>ONB</u>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Mo	dulation Cha	aracteristics
DNB Job Number:	86010	Date:	11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier	[X] FCC Part 22 [X] FCC Part 24		
		[A] FCC Part 24		
	Uplink CDMA 1909 MHz – Input / O			

\* Agilent 12:06:44 Oct 11, 2007



Center 1.909 GHz
#Res BW 30 kHz

Span 2 MHz
WBW 300 kHz

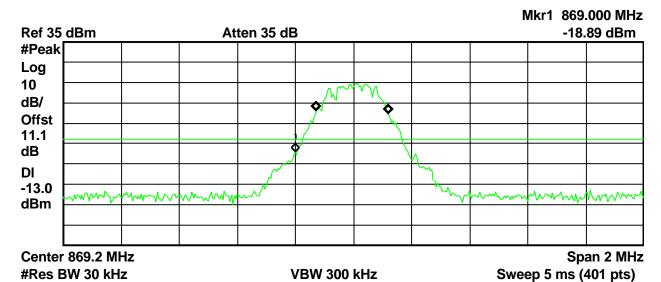
Sweep 5 ms (401 pts)

	<del></del>		1211 000 1111		
Marker	Trace	Туре	X Axis	Amplitude	
1	(1)	Freq	1.908985 GHz	11.05 dBm	
2	(2)	Freq	1.908990 GHz	-41.71 dBm	

Figure 6: Occupied Bandwidth

<u>ONB</u>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Downlink GSM 869.200 MHz			

\* Agilent 10:51:16 Oct 12, 2007



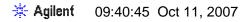
Occupied Bandwidth 246.7766 kHz

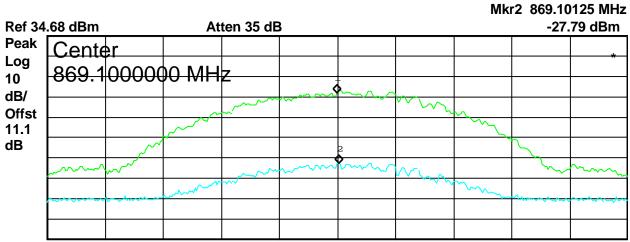
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error -4.349 kHz x dB Bandwidth 335.921 kHz

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Modulation Ch	aracteristics		
DNB Job Number:	86010	Date: 11 Oct 2007	Conformance		
Customer:	Intelligent Wireless Products, Inc.		<b>Standard</b> s		
Model Number:	CWAP819		[X] IC RSS-131		
Description:	RF amplifier	[X] FCC Part 22 [X] FCC Part 24			
			[A] FCC Part 24		
	Downlink GSM 869.2000 MHz – Input / Output				





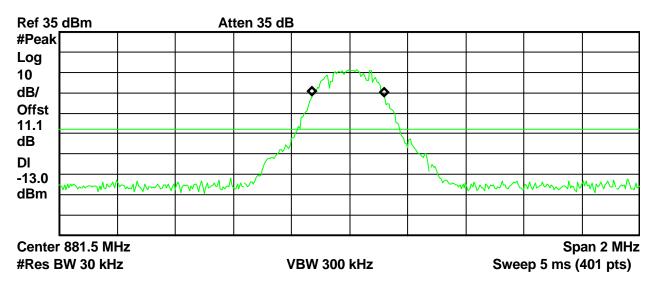
Center	869.1 MI	Hz					Span	500 kHz
#Res B	3W 3 kHz			<b>VBW 30 </b>	κHz	Sweep 55	5.74 ms (4	401 pts)

	<u> </u>		7211 00 111 12	<u> </u>
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	869.10000 MHz	6.616 dBm
2	(2)	Freq	869.10125 MHz	-27.79 dBm

Figure 6: Occupied Bandwidth

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	nndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Downlink GSM 881.500 MHz			

\* Agilent 10:52:07 Oct 12, 2007



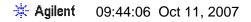
Occupied Bandwidth 249.7157 kHz

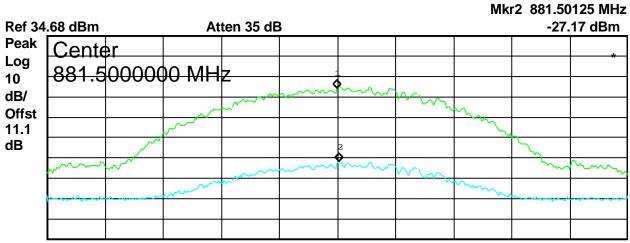
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error -3.867 kHz x dB Bandwidth 331.913 kHz

# FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Modulation Ch	aracteristics
DNB Job Number:	86010	Date: 11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.		<b>Standard</b> s
Model Number:	CWAP819		[X] IC RSS-131
Description:	RF amplifier		[X] FCC Part 22
			[X] FCC Part 24
	Downlink GSM 881.500 MHz – Inpu	t / Output	





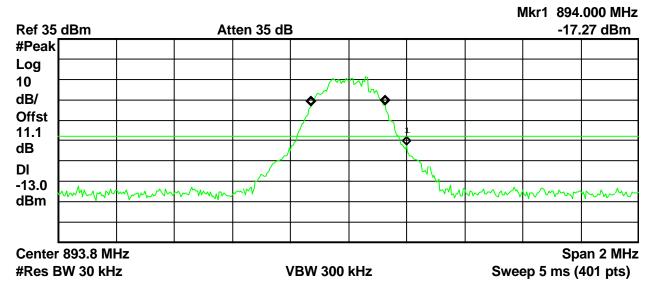
Center 881.5 MHz		Span 500 kHz
#Res BW 3 kHz	VBW 30 kHz	Sweep 55.74 ms (401 pts)

Marker	Trace	Type	X Axis	Amplitude	
1	(1)	Freq	881.50000 MHz	8.705 dBm	
2	(2)	Freq	881.50125 MHz	-27.17 dBm	

Figure 6: Occupied Bandwidth

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Downlink GSM 893.800 MHz			

\* Agilent 10:53:08 Oct 12, 2007



Occupied Bandwidth 251.9401 kHz

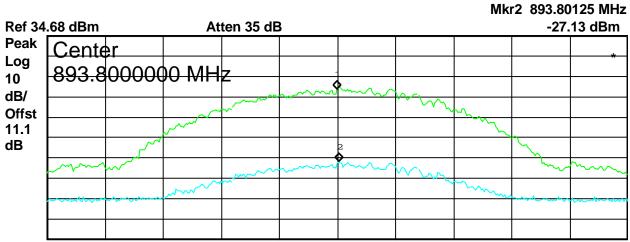
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error -2.522 kHz x dB Bandwidth 326.969 kHz

# FIGURE 6: OCCUPIED BANDWIDTH

<u>ONB</u>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Modulation Cl	naracteristics
DNB Job Number:	86010	Date: 11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.		<b>Standard</b> s
Model Number:	CWAP819		[X] IC RSS-131
Description:	RF amplifier		[X] FCC Part 22 [X] FCC Part 24
			[A] FCC Part 24
	Downlink GSM 893.800 MHz – Input		

\* Agilent 09:47:13 Oct 11, 2007



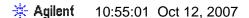
 Center 893.8 MHz
 Span 500 kHz

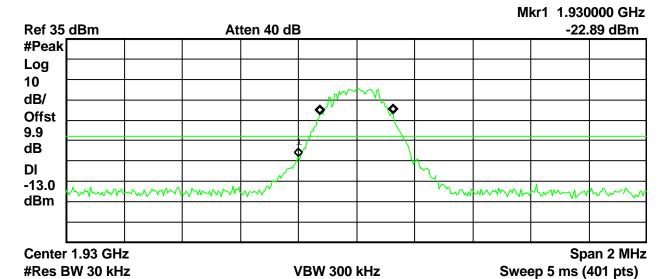
 #Res BW 3 kHz
 VBW 30 kHz
 Sweep 55.74 ms (401 pts)

Marker 1 2	Trace (1) (2)	Type Freq Freq	X Axis 893.80000 MHz 893.80125 MHz	Amplitude 8.52 dBm -27.13 dBm	

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Downlink GSM 1930.200 MHz			





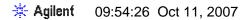
Occupied Bandwidth 251.6481 kHz

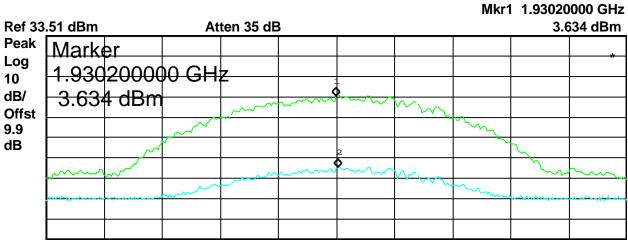
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error -1.218 kHz x dB Bandwidth 340.271 kHz

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Modulation Ch	aracteristics
DNB Job Number:	86010	Date: 11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.		<b>Standard</b> s
Model Number:	CWAP819		[X] IC RSS-131
Description:	RF amplifier		[X] FCC Part 22
		[X] FCC Part 24	
	Downlink GSM 1930.200 MHz - Inp	ut / Output	





Center 1.93 GHz
#Res BW 3 kHz

VBW 30 kHz

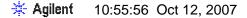
Span 500 kHz

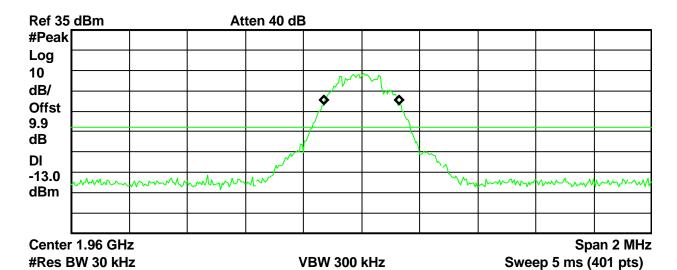
Weep 55.74 ms (401 pts)

Marker	Trace	Type	X Axis	Amplitude	
1	(1)	Freq	1.93020000 GHz	3.634 dBm	
2	(2)	Freq	1.93020125 GHz	-30.99 dBm	

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Downlink GSM 1960 MHz			1





Occupied Bandwidth 256.8405 kHz

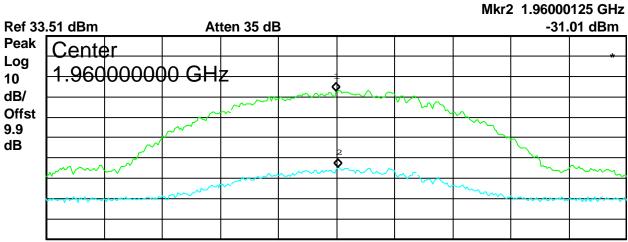
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error -304.177 Hz x dB Bandwidth 336.175 kHz

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Modulation (	Characteristics
DNB Job Number:	86010	Date: 11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.		<b>Standard</b> s
Model Number:	CWAP819		[X] IC RSS-131
Description:	RF amplifier		[X] FCC Part 22
			[X] FCC Part 24
	Downlink GSM 1960 MHz – Input / 0	Output	

\* Agilent 09:57:02 Oct 11, 2007



Center 1.96 GHz
#Res BW 3 kHz

VBW 30 kHz

Span 500 kHz

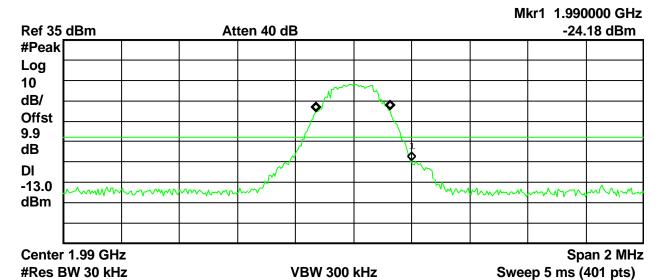
Weep 55.74 ms (401 pts)

	<u> </u>		1211 00 1111	Chief cent i me ( ie i pie
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.96000000 GHz	6.317 dBm
2	(2)	Freq	1.96000125 GHz	-31.01 dBm

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Downlink GSM 1989.800 MHz			





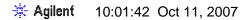
Occupied Bandwidth 253.3050 kHz

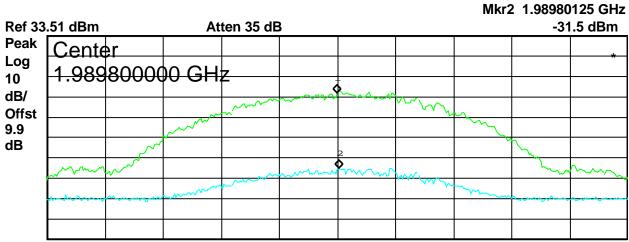
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error -2.085 kHz x dB Bandwidth 332.656 kHz

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Modulation Ch	aracteristics
DNB Job Number:	86010	Date: 11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.		<b>Standard</b> s
Model Number:	CWAP819		[X] IC RSS-131
Description:	RF amplifier		[X] FCC Part 22 [X] FCC Part 24
			[A] FCC Part 24
	Downlink GSM 1989.800 MHz – Inp	ut / Output	





Center 1.99 GHz
#Res BW 3 kHz

VBW 30 kHz

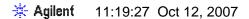
Span 500 kHz

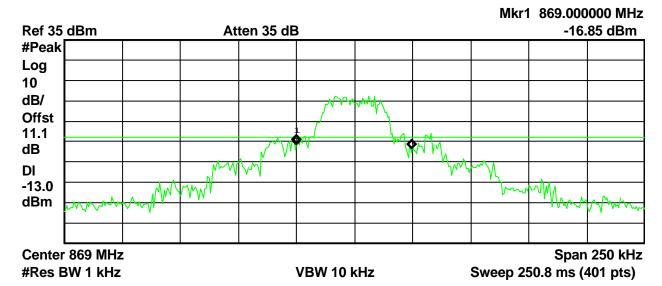
Weep 55.74 ms (401 pts)

Marker 1	Trace (1)	Type Freq	X Axis 1.98980000 GHz	Amplitude 5.1 dBm	
2	(2)	Freq	1.98980125 GHz	-31.5 dBm	

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Downlink TDMA 869.025 MHz			





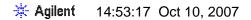
Occupied Bandwidth 49.5736 kHz

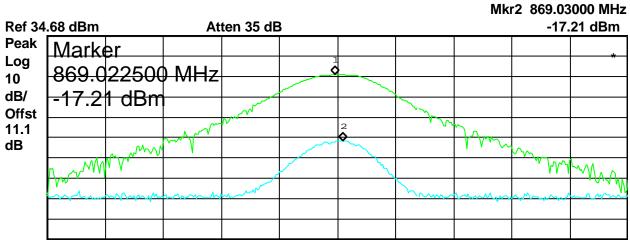
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error -143.476 Hz x dB Bandwidth 75.572 kHz

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Modulation Ch	aracteristics
DNB Job Number:	86010	Date: 10 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.		Standards
Model Number:	CWAP819		[X] IC RSS-131
Description:	RF amplifier		[X] FCC Part 22 [X] FCC Part 24
			[A] FCC Part 24
	Downlink TDMA 869.025 MHz – Inp	out / Output	



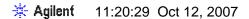


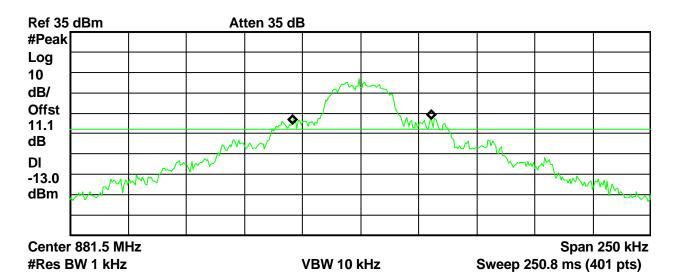
Center 869 MHz Span 500 kHz #Res BW 30 kHz VBW 30 kHz Sweep 5 ms (401 pts)

Marker         Trace         Type         X Axis         Amplitude           1         (1)         Freq         869.02250 MHz         15.39 dBm           2         (2)         Freq         869.03000 MHz         -17.21 dBm	
•	
2 (2) Freq 869.03000 MHz -17.21 dBm	

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Downlink TDMA 881.5 MHz			





Occupied Bandwidth 60.0553 kHz

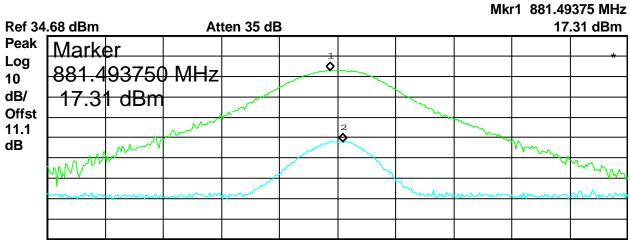
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error 554.224 Hz x dB Bandwidth 76.653 kHz

FIGURE 6: OCCUPIED BANDWIDTH

<u>ONB</u>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Mo	odulation Cha	aracteristics
DNB Job Number:	86010	Date:	10 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			Standards
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 - [X] FCC Part 24
				[A] FCC Part 24
	Downlink TDMA 881.5 MHz – Input	/ Output		

\* Agilent 13:31:03 Oct 10, 2007



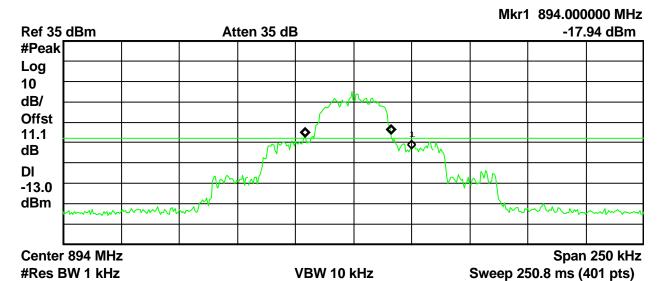
Center 881.5 MHz Span 500 kHz #Res BW 30 kHz VBW 30 kHz Sweep 5 ms (401 pts)

TICS DIT	00 Ki iz		V D V V OU IXI IZ		Office of the (+o) pla
Marker	Trace	Туре	X Axis	Amplitude	
1	(1)	Freq	881.49375 MHz	17.31 dBm	
2	(2)	Freq	881.50500 MHz	-17.5 dBm	

Figure 6: Occupied Bandwidth

<u>ONB</u>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Downlink TDMA 893.975 MHz			

\* Agilent 11:21:54 Oct 12, 2007



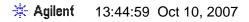
Occupied Bandwidth 36.6328 kHz

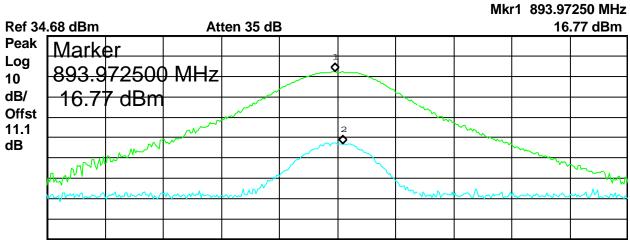
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error -2.256 kHz x dB Bandwidth 71.168 kHz

FIGURE 6: OCCUPIED BANDWIDTH

<u>ONB</u>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Modulation Ch	aracteristics
DNB Job Number:	86010	Date: 10 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.		<b>Standard</b> s
Model Number:	CWAP819		[X] IC RSS-131
Description:	RF amplifier		[X] FCC Part 22 [X] FCC Part 24
			[A] FCC Part 24
	Downlink TDMA 893.975 MHz – Inp		





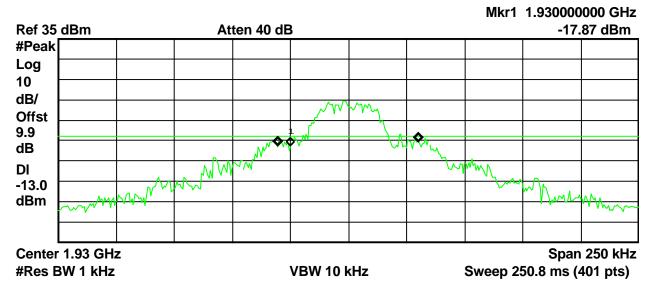
Center 894 MHz		Span 500 kHz
#Res BW 30 kHz	VBW 30 kHz	Sweep 5 ms (401 pts)

	<del></del>		1211001111		Circop Circo (101 pt
Marker	Trace	Type	X Axis	Amplitude	
1	(1)	Freq	893.97250 MHz	16.77 dBm	
2	(2)	Freq	893.98000 MHz	-18.47 dBm	

Figure 6: Occupied Bandwidth

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Downlink TDMA 1930.025 MHz			

\* Agilent 11:24:35 Oct 12, 2007



Occupied Bandwidth 60.9910 kHz

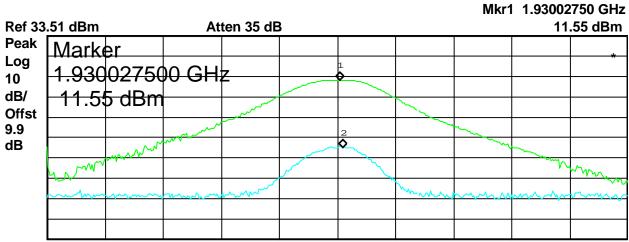
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error -186.368 Hz x dB Bandwidth 78.553 kHz

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Modulation Ch	aracteristics	
DNB Job Number:	86010	Date: 10 Oct 2007	Conformance	
Customer:	Intelligent Wireless Products, Inc.		<b>Standard</b> s	
Model Number:	CWAP819		[X] IC RSS-131	
Description:	RF amplifier		[X] FCC Part 22	
			[X] FCC Part 24	
	Downlink TDMA 1930.025 MHz – Ir	Downlink TDMA 1930.025 MHz – Input / Output		

\* Agilent 13:54:20 Oct 10, 2007

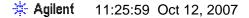


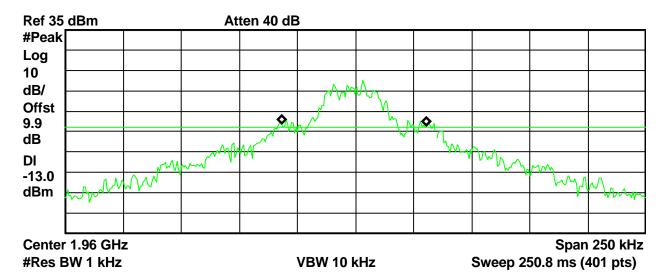
Center 1.93 GHz Span 500 kHz #Res BW 30 kHz VBW 30 kHz Sweep 5 ms (401 pts)

1100 011	00 IXI IE		TETT OF ICIT		Omoop o mo ( io i più
Marker	Trace	Туре	X Axis	Amplitude	
1	(1)	Freq	1.93002750 GHz	11.55 dBm	
2	(2)	Freq	1.93003000 GHz	-21.47 dBm	

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Downlink TDMA 1960 MHz			]





Occupied Bandwidth 62.5024 kHz

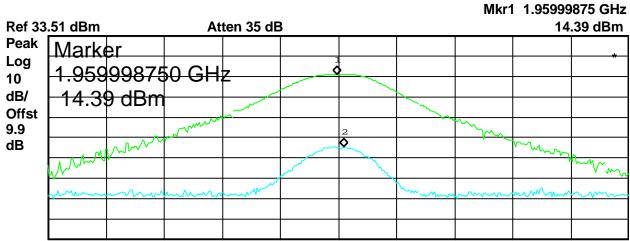
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error -465.644 Hz x dB Bandwidth 74.479 kHz

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Modulation (	Characteristics	
DNB Job Number:	86010	Date: 10 Oct 2007	Conformance	
Customer:	Intelligent Wireless Products, Inc.		<b>Standard</b> s	
Model Number:	CWAP819		[X] IC RSS-131	
Description:	RF amplifier		[X] FCC Part 22 [X] FCC Part 24	
			[A] FCC Part 24	
	Downlink TDMA 1960 MHz – Input	Downlink TDMA 1960 MHz – Input / Output		

\* Agilent 13:59:46 Oct 10, 2007

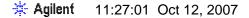


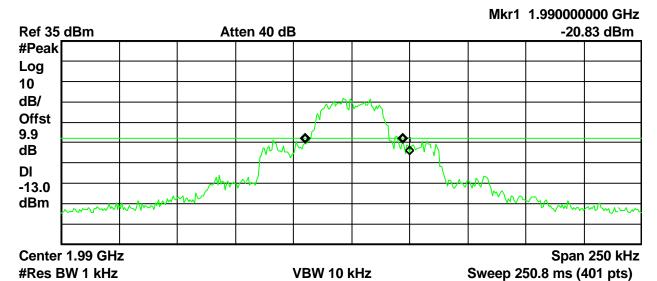
Center 1.96 GHz Span 500 kHz #Res BW 30 kHz VBW 30 kHz Sweep 5 ms (401 pts)

Marker	Trace	Type	X Axis	Amplitude	
1	(1)	Freq	1.95999875 GHz	14.39 dBm	
2	(2)	Freq	1.96000500 GHz	-21.22 dBm	

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Downlink TDMA 1989.975 MHz			1





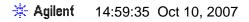
Occupied Bandwidth 41.6417 kHz

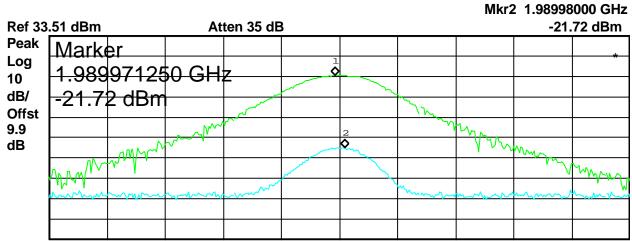
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error 899.980 Hz x dB Bandwidth 75.996 kHz

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Modulation Ch	aracteristics
DNB Job Number:	86010	Date: 10 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.		<b>Standard</b> s
Model Number:	CWAP819		[X] IC RSS-131
Description:	RF amplifier		[X] FCC Part 22
			[X] FCC Part 24
	Downlink TDMA 1989.975 MHz – In		





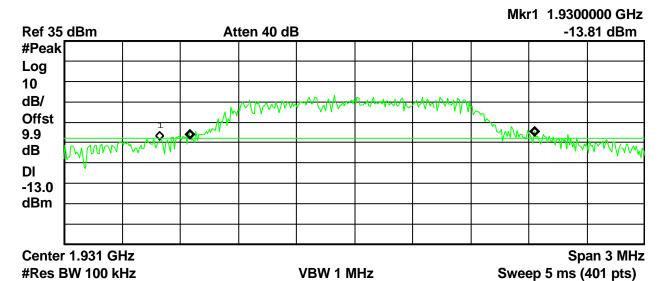
Center 1.99 GHz		Span 500 kHz
#Res BW 30 kHz	VBW 30 kHz	Sweep 5 ms (401 pts)

. 100 D11	<u> </u>		TETTOORIE		Ottoop o mo (101 pt
Marker	Trace	Туре	X Axis	Amplitude	
1	(1)	Freq	1.98997125 GHz	13.73 dBm	
2	(2)	Freq	1.98998000 GHz	-21.72 dBm	

Figure 6: Occupied Bandwidth

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Downlink CDMA 1931 MHz			

\* Agilent 11:36:01 Oct 12, 2007



Occupied Bandwidth 1.7710 MHz

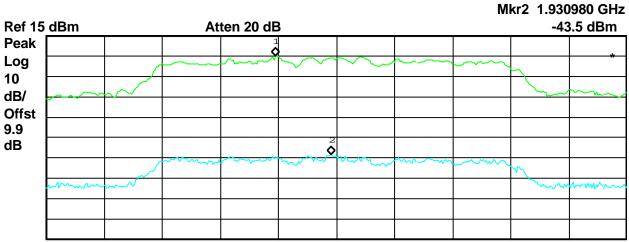
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error 41.499 kHz x dB Bandwidth 2.981 MHz

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Modulation C	haracteristics
DNB Job Number:	86010	Date: 11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.		Standards
Model Number:	CWAP819		[X] IC RSS-131
Description:	RF amplifier		[X] FCC Part 22 [X] FCC Part 24
			[A] FCC Part 24
	Downlink CDMA 1931 MHz – Input		

**Agilent** 10:29:56 Oct 11, 2007



Center 1.931 GHz
#Res BW 30 kHz

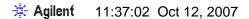
Span 2 MHz
WBW 300 kHz

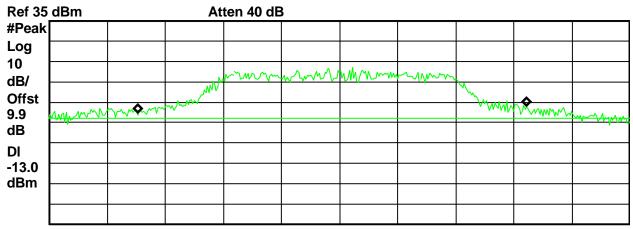
Sweep 5 ms (401 pts)

Marker         Trace         Type         X Axis         Amplitude           1         (1)         Freq         1.930790 GHz         4.873 dBm           2         (2)         Freq         1.930980 GHz         -43.5 dBm	<u>, 10 . ptc</u>	on o dooms		T D TT OOD IN IE		00 IXI IE	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
· ·			Amplitude			Trace	Marker
2 (2) Freq 1.930980 GHz -43.5 dBm			4.873 dBm	1.930790 GHz	Freq	(1)	1
			-43.5 dBm	1.930980 GHz	Freq	(2)	2

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Downlink CDMA 1960 MHz			





Center 1.96 GHz Span 3 MHz #Res BW 100 kHz VBW 1 MHz Sweep 5 ms (401 pts)

Occupied Bandwidth 2.0128 MHz

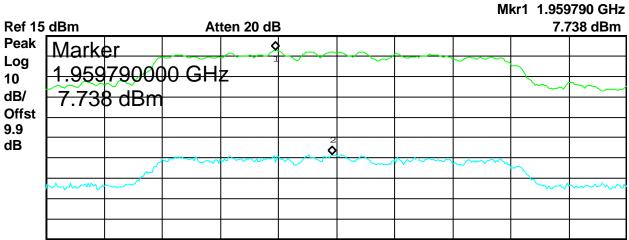
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error -37.820 kHz x dB Bandwidth 2.982 MHz

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Modulation C	haracteristics
DNB Job Number:	86010	Date: 11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.		Standards
Model Number:	CWAP819		[X] IC RSS-131
Description:	RF amplifier		[X] FCC Part 22 [X] FCC Part 24
			[A] FCC Part 24
	Downlink CDMA 1960 MHz – Input		

\* Agilent 10:42:07 Oct 11, 2007



Center 1.96 GHz
#Res BW 30 kHz

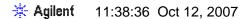
Span 2 MHz
WBW 300 kHz

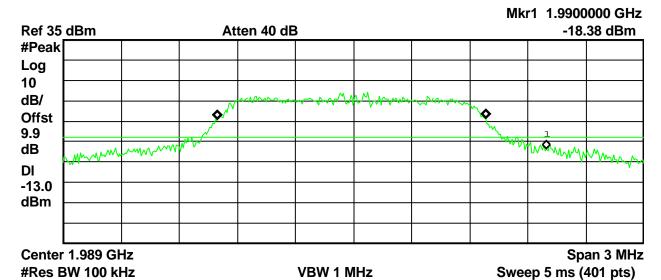
Sweep 5 ms (401 pts)

<del></del>		1211 000 11112		On dop o mo ( .o. pto
Trace	Туре	X Axis	Amplitude	
(1)	Freq	1.959790 GHz	7.738 dBm	
(2)	Freq	1.959985 GHz	-43.29 dBm	
	Trace (1)	Trace Type (1) Freq	Trace Type X Axis (1) Freq 1.959790 GHz	Trace         Type         X Axis         Amplitude           (1)         Freq         1.959790 GHz         7.738 dBm

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Occupied Ba	ndwidth
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Downlink CDMA 1989 MHz			





Occupied Bandwidth
1.3851 MHz

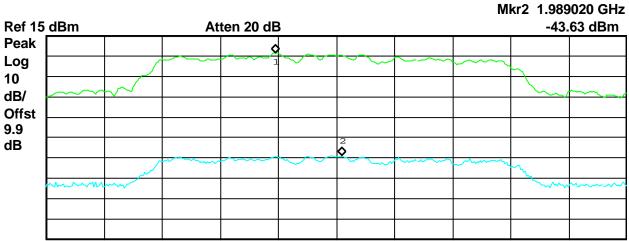
Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error -11.521 kHz x dB Bandwidth 1.969 MHz

FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Modulation (	Characteristics
DNB Job Number:	86010	Date: 11 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.		Standards
Model Number:	CWAP819		[X] IC RSS-131
Description:	RF amplifier		[X] FCC Part 22
			[X] FCC Part 24
	Downlink CDMA 1989 MHz – Inpu		

**Agilent** 11:40:32 Oct 11, 2007



Center 1.989 GHz
#Res BW 30 kHz
VBW 300 kHz
Sweep 5 ms (401 pts)

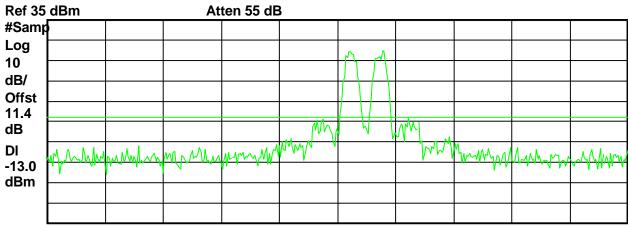
Marker Trace Type X Axis Amplitude

Marker	Trace (1)	Type Freq	X Axis 1.988790 GHz	Amplitude 6.534 dBm	
2	(2)	Freq	1.989020 GHz	-43.63 dBm	
_	(-)			.0.00 02	

# FIGURE 6: OCCUPIED BANDWIDTH

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Inter-Mod	ulation
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 - [X] FCC Part 24
	Uplink			[A] FCC Part 24
	Signal Source - GSM – Input – Low			

\* Agilent 13:37:56 Oct 12, 2007

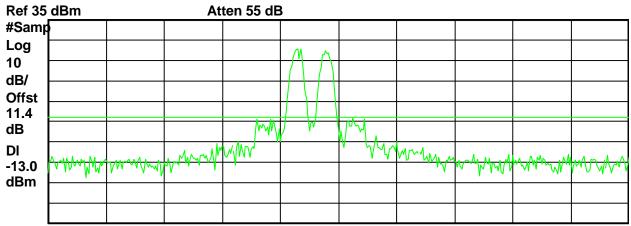


Center 824 MHz Span 10 MHz #Res BW 30 kHz VBW 300 kHz Sweep 17.63 ms (401 pts)

	Freq	dBm	dBc	Intercept
Base Lower	824.225 MHz	19.46	-0.49	•
Base Upper	824.800 MHz	19.95	0.00	
Worst Case	825.225 MHz	-13.43	-33.37	36.39 dBm
3rd Order Lower	823.750 MHz	-14.01	-33.96	36.44 dBm
3rd Order Upper	825.225 MHz	-13.43	-33.37	36.39 dBm

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Inter-Mod	ulation
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
	Uplink	•	_	[A] FCC Part 24
	Signal Source - GSM – Input – Low Band – Upper edge			

\* Agilent 13:41:19 Oct 12, 2007

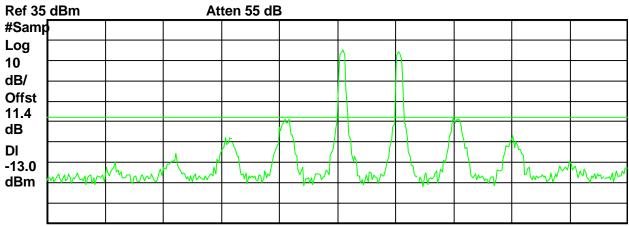


Center 849 MHz Span 10 MHz #Res BW 30 kHz VBW 300 kHz Sweep 17.63 ms (401 pts)

	Freq	dBm	dBc	Intercept
Base Lower	848.300 MHz	20.64	0.00	•
Base Upper	848.775 MHz	19.68	-0.95	
Worst Case	849.250 MHz	-13.23	-33.87	36.62 dBm
3rd Order Lower	847.825 MHz	-13.98	-34.62	37.47 dBm
3rd Order Upper	849.250 MHz	-13.23	-33.87	36.62 dBm

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Inter-Mod	ulation
DNB Job Number:	86010	Date:	13 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
	Uplink			[X] FCC Part 24
	Signal Source - TDMA - Input - Lov	Signal Source - TDMA - Input - Low Band - Low Edge		

\* Agilent 08:49:35 Oct 13, 2007

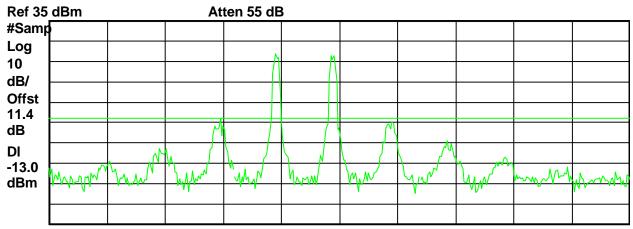


Center 824 MHz Span 2.5 MHz #Res BW 3 kHz VBW 30 kHz Sweep 440.7 ms (401 pts)

	Freq	dBm	dBc	Intercept
Base Lower	824.025 MHz	20.00	0.00	•
Base Upper	824.263 MHz	19.27	-0.73	
Worst Case	824.500 MHz	-13.20	-33.21	35.88 dBm
3rd Order Lower	823.775 MHz	-13.60	-33.60	36.44 dBm
3rd Order Upper	824.500 MHz	-13.20	-33.21	35.88 dBm

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Inter-Mod	ulation
DNB Job Number:	86010	Date:	13 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			Standards
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
	Uplink	•		[A] FCC Part 24
	Signal Source - TDMA – Input – Low Band – Upper Edge			

\* Agilent 08:51:44 Oct 13, 2007

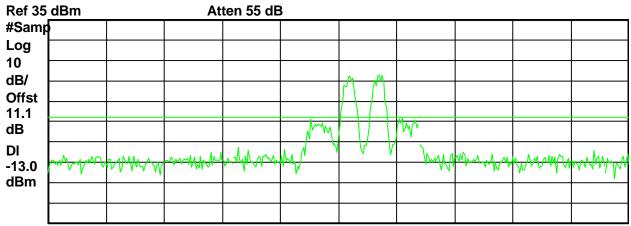


Center 849 MHz Span 2.5 MHz #Res BW 3 kHz VBW 30 kHz Sweep 440.7 ms (401 pts)

	Freq	dBm	dBc	Intercept
Base Lower	848.725 MHz	18.90	0.00	•
Base Upper	848.975 MHz	18.02	-0.89	
Worst Case	848.488 MHz	-13.01	-31.92	34.42 dBm
3rd Order Lower	848.488 MHz	-13.01	-31.92	34.42 dBm
3rd Order Upper	849.225 MHz	-14.84	-33.74	34.89 dBm

<u>ONB</u>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Inter-Mod	ulation
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			Standards
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
	Downlink	•		[A] FCC Part 24
	Signal Source - GSM - Input - Low	Band – L	Low Edge	

\* Agilent 15:34:41 Oct 12, 2007

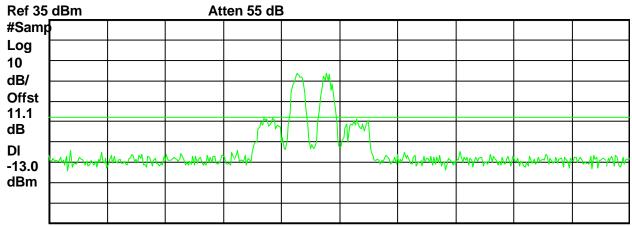


Center 869 MHz Span 10 MHz #Res BW 30 kHz VBW 300 kHz Sweep 17.63 ms (401 pts)

	Freq	dBm	dBc	Intercept
Base Lower	869.200 MHz	7.30	-0.59	-
Base Upper	869.675 MHz	7.90	0.00	
Worst Case	870.100 MHz	-13.41	-21.31	18.25 dBm
3rd Order Lower	868.525 MHz	-14.01	-21.90	18.25 dBm
3rd Order Upper	870.100 MHz	-13.41	-21.31	18.25 dBm

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Inter-Mod	ulation
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			Standards
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 - [X] FCC Part 24
	Downlink	•		[A] FCC Part 24
	Signal Source - GSM – Input – Low Band – Upper Edge			

\* Agilent 15:36:51 Oct 12, 2007

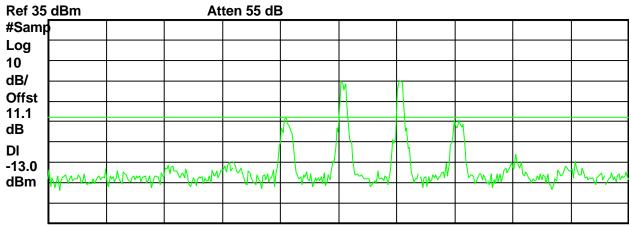


Center 894 MHz Span 10 MHz #Res BW 30 kHz VBW 300 kHz Sweep 17.63 ms (401 pts)

	Freq	dBm	dBc	Intercept
Base Lower	893.275 MHz	8.78	-0.07	•
Base Upper	893.775 MHz	8.84	0.00	
Worst Case	892.850 MHz	-13.12	-21.96	19.76 dBm
3rd Order Lower	892.850 MHz	-13.12	-21.96	19.76 dBm
3rd Order Upper	894.300 MHz	-13.76	-22.60	20.11 dBm

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Inter-Mod	ulation
DNB Job Number:	86010	Date:	13 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
	Downlink	•	_	[A] FCC Part 24
	Signal Source - TDMA – Input – Low Band – Lower Edge			

\* Agilent 08:56:35 Oct 13, 2007

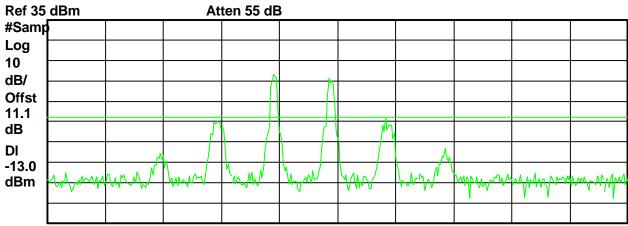


Center 869 MHz Span 2.5 MHz #Res BW 3 kHz VBW 30 kHz Sweep 440.7 ms (401 pts)

	Freq	dBm	dBc	Intercept
Base Lower	869.012 MHz	4.65	-0.80	•
Base Upper	869.263 MHz	5.45	0.00	
Worst Case	868.775 MHz	-13.09	-18.53	13.92 dBm
3rd Order Lower	868.775 MHz	-13.09	-18.53	13.92 dBm
3rd Order Upper	869.519 MHz	-14.30	-19.75	14.92 dBm

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Inter-Mod	ulation
DNB Job Number:	86010	Date:	13 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			Standards
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
	Downlink	•		[A] FCC Part 24
	Signal Source - TDMA – Input – Low Band – Upper Edge			

\* Agilent 09:07:51 Oct 13, 2007

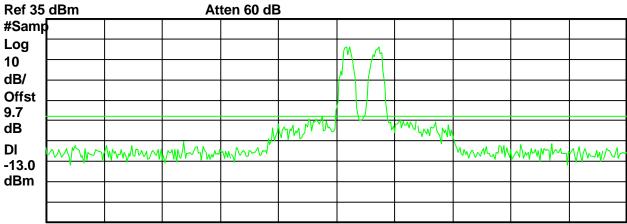


Center 894 MHz Span 2.5 MHz #Res BW 3 kHz VBW 30 kHz Sweep 440.7 ms (401 pts)

	Freq	dBm	dBc	Intercept
Base Lower	893.725 MHz	8.43	0.00	•
Base Upper	893.962 MHz	6.45	-1.98	
Worst Case	894.206 MHz	-13.47	-21.90	17.40 dBm
3rd Order Lower	893.481 MHz	-14.94	-23.37	19.12 dBm
3rd Order Upper	894.206 MHz	-13.47	-21.90	17.40 dBm

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Inter-Mod	ulation
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
	Uplink			[A] FCC Part 24
	Signal Source - GSM – Input – High	Signal Source - GSM – Input – High Band – Lower Edge		

\* Agilent 15:42:04 Oct 12, 2007



Center 1.85 GHz Span 10 MHz #Res BW 30 kHz VBW 300 kHz Sweep 17.63 ms (401 pts)

5	Freq	dBm	dBc	Intercept
Base Lower	1.85023 GHz	21.30	0.00	
Base Upper	1.85072 GHz	20.96	-0.34	
Worst Case	1.84975 GHz	-12.60	-33.90	38.08 dBm
3rd Order Lower	1.84975 GHz	-12.60	-33.90	38.08 dBm
<b>3rd Order Upper</b>	1.85110 GHz	-14.66	-35.96	38.94 dBm

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Inter-Mod	ulation
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			Standards
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
	Uplink	•		[A] FCC Part 24
	Signal Source - GSM – Input – High Band – Upper Edge			

\* Agilent 15:46:00 Oct 12, 2007



Center 1.91 GHz
#Res BW 30 kHz

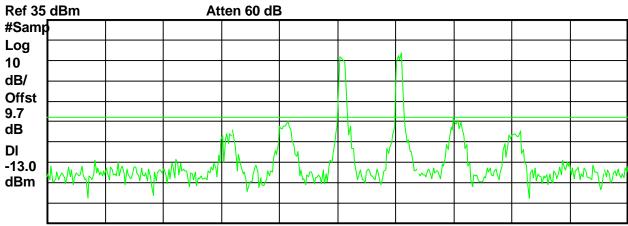
Span 10 MHz
VBW 300 kHz

Sweep 17.63 ms (401 pts)

	Freq	dBm	dBc	Intercept
Base Lower	1.90935 GHz	19.02	0.00	•
Base Upper	1.90980 GHz	18.49	-0.52	
Worst Case	1.90872 GHz	-13.39	-32.41	34.96 dBm
3rd Order Lower	1.90872 GHz	-13.39	-32.41	34.96 dBm
3rd Order Upper	1.91040 GHz	-15.04	-34.06	35.52 dBm

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Inter-Mod	ulation
DNB Job Number:	86010	Date:	13 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
	Uplink			[A] FCC Part 24
	Signal Source - TDMA – Input – High Band – Lower Edge			

\* Agilent 09:13:33 Oct 13, 2007

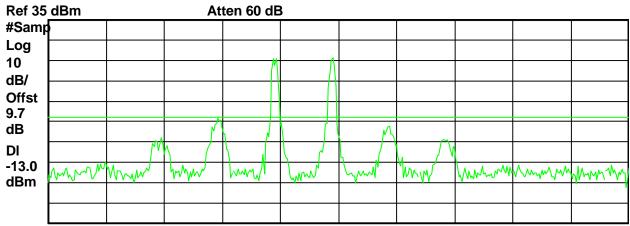


Center 1.85 GHz Span 2.5 MHz #Res BW 3 kHz VBW 30 kHz Sweep 440.7 ms (401 pts)

	Freq	dBm	dBc	Intercept
Base Lower	1.85001 GHz	16.86	-2.06	•
Base Upper	1.85028 GHz	18.93	0.00	
Worst Case	1.84979 GHz	-14.72	-33.65	33.69 dBm
3rd Order Lower	1.84979 GHz	-14.72	-33.65	33.69 dBm
3rd Order Upper	1.85050 GHz	-13.45	-32.38	34.08 dBm

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Inter-Mod	ulation
DNB Job Number:	86010	Date:	13 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			Standards
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
	Uplink			[A] FCC Part 24
	Signal Source - TDMA – Input – High Band – Upper Edge			

\* Agilent 09:16:17 Oct 13, 2007



Center 1.91 GHz
#Res BW 3 kHz

Span 2.5 MHz
VBW 30 kHz

Sweep 440.7 ms (401 pts)

	Freq	dBm	dBc	Intercept
Base Lower	1.90972 GHz	16.10	-0.02	•
Base Upper	1.90998 GHz	16.12	0.00	
Worst Case	1.90948 GHz	-13.15	-29.27	30.74 dBm
3rd Order Lower	1.90948 GHz	-13.15	-29.27	30.74 dBm
3rd Order Upper	1.91022 GHz	-17.28	-33.41	32.82 dBm

<u>ONB</u>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Inter-Mod	ulation
DNB Job Number:	86010	Date:	13 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			Standards
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
	Uplink			[A] FCC Part 24
	Signal Source - CDMA – Input – High Band – Lower Edge			

\* Agilent 09:39:14 Oct 13, 2007



Center 1.85 GHz Span 20 MHz #Res BW 100 kHz VBW 1 MHz Sweep 4 ms (401 pts)

	Freq	dBm	dBc	Intercept
Base Lower	1.85095 GHz	16.87	-1.86	
Base Upper	1.85290 GHz	18.72	0.00	
Worst Case	1.85465 GHz	-12.50	-31.23	33.41 dBm
3rd Order Lower	1.84905 GHz	-14.57	-33.30	33.52 dBm
3rd Order Upper	1.85465 GHz	-12.50	-31.23	33.41 dBm

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Inter-Mod	ulation
DNB Job Number:	86010	Date:	13 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			Standards
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
	Uplink			[A] FCC Part 24
	Signal Source - CDMA – Input – Hig	Signal Source - CDMA – Input – High Band – Upper Edge		

**Agilent** 09:42:25 Oct 13, 2007



Center 1.91 GHz
#Res BW 100 kHz

VBW 1 MHz

Syeap 4 ms (401 pts)

	Freq	dBm	dBc	Intercept
Base Lower	1.90705 GHz	19.07	0.00	•
Base Upper	1.90910 GHz	14.26	-4.81	
Worst Case	1.90475 GHz	-9.33	-28.40	30.86 dBm
3rd Order Lower	1.90475 GHz	-9.33	-28.40	30.86 dBm
3rd Order Upper	1.91125 GHz	-17.13	-36.20	32.36 dBm

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Inter-Mod	ulation
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			Standards
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
	Downlink	•		[A] FCC Part 24
	Signal Source - GSM – Input – High Band – Lower Edge			

\* Agilent 15:51:00 Oct 12, 2007

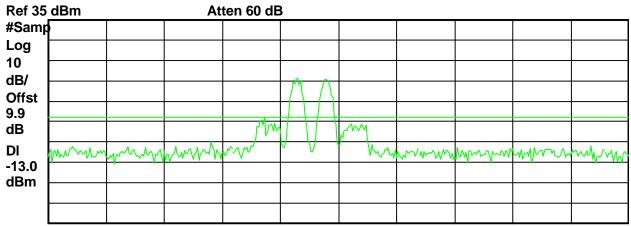


Center 1.93 GHz Span 10 MHz #Res BW 30 kHz VBW 300 kHz Sweep 17.63 ms (401 pts)

	Freq	dBm	dBc	Intercept
Base Lower	1.93020 GHz	1.79	-2.17	•
Base Upper	1.93073 GHz	3.97	0.00	
Worst Case	1.92958 GHz	-14.65	-18.62	11.10 dBm
3rd Order Lower	1.92958 GHz	-14.65	-18.62	11.10 dBm
3rd Order Upper	1.93115 GHz	-13.31	-17.27	11.52 dBm

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Inter-Mod	ulation
DNB Job Number:	86010	Date:	12 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			Standards
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
	Downlink			[A] FCC Part 24
	Signal Source - GSM – Input – High Band – Upper Edge			

\* Agilent 15:52:49 Oct 12, 2007

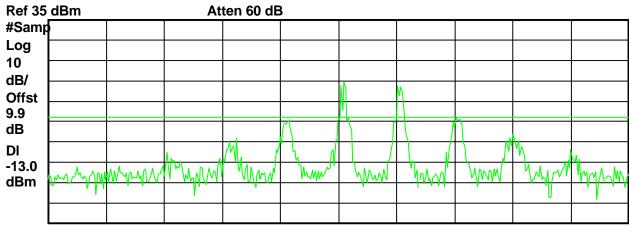


Center 1.99 GHz Span 10 MHz #Res BW 30 kHz VBW 300 kHz Sweep 17.63 ms (401 pts)

	Freq	dBm	dBc	Intercept
Base Lower	1.98930 GHz	6.11	0.00	•
Base Upper	1.98977 GHz	5.91	-0.20	
Worst Case	1.98873 GHz	-13.08	-19.19	15.60 dBm
3rd Order Lower	1.98873 GHz	-13.08	-19.19	15.60 dBm
3rd Order Upper	1.99040 GHz	-15.95	-22.06	16.94 dBm

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Inter-Mod	ulation
DNB Job Number:	86010	Date:	13 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			Standards
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
	Downlink			[A] FCC Part 24
	Signal Source - TDMA - Input - Hig	h Band –	- Lower Edge	

**Agilent** 09:19:47 Oct 13, 2007



Center 1.93 GHz
#Res BW 3 kHz

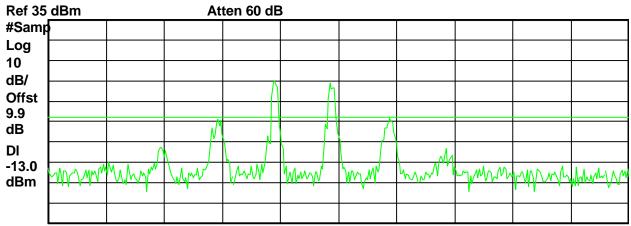
Span 2.5 MHz
VBW 30 kHz

Sweep 440.7 ms (401 pts)

	Freq	dBm	dBc	Intercept
Base Lower	1.93002 GHz	4.29	0.00	•
Base Upper	1.93026 GHz	2.45	-1.84	
Worst Case	1.93051 GHz	-12.83	-17.12	11.01 dBm
3rd Order Lower	1.92979 GHz	-14.14	-18.43	12.59 dBm
3rd Order Upper	1.93051 GHz	-12.83	-17.12	11.01 dBm

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Inter-Mod	ulation
DNB Job Number:	86010	Date:	13 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			Standards
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
	Downlink			[A] FCC Part 24
	Signal Source - TDMA - Input - Hig	Signal Source - TDMA – Input – High Band – Upper Edge		

**Agilent** 09:22:17 Oct 13, 2007



Center 1.99 GHz Span 2.5 MHz #Res BW 3 kHz VBW 30 kHz Sweep 440.7 ms (401 pts)

	Freq	dBm	dBc	Intercept
Base Lower	1.98972 GHz	4.71	0.00	•
Base Upper	1.98996 GHz	4.11	-0.60	
Worst Case	1.99022 GHz	-13.35	-18.06	13.14 dBm
3rd Order Lower	1.98948 GHz	-13.72	-18.43	13.62 dBm
3rd Order Upper	1.99022 GHz	-13.35	-18.06	13.14 dBm

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Inter-Mod	ulation
DNB Job Number:	86010	Date:	13 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
	Downlink			[A] FCC Part 24
	Signal Source - CDMA – Input – Hig	gh Band -	– Lower Edge	

\* Agilent 09:45:09 Oct 13, 2007

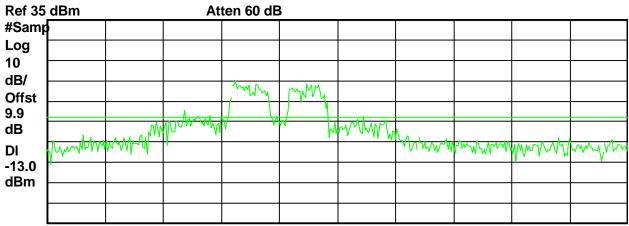


Center 1.93 GHz Span 20 MHz #Res BW 100 kHz VBW 1 MHz Sweep 4 ms (401 pts)

	Freq	dBm	dBc	Intercept
Base Lower	1.93145 GHz	2.41	-3.74	
Base Upper	1.93335 GHz	6.15	0.00	
Worst Case	1.92995 GHz	-11.75	-17.90	11.36 dBm
3rd Order Lower	1.92995 GHz	-11.75	-17.90	11.36 dBm
3rd Order Upper	1.93490 GHz	-12.54	-18.68	13.62 dBm

<u>ONB</u>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433			ulation
DNB Job Number:	86010	Date:	13 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			Standards
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
	Downlink			[A] FCC Part 24
	Signal Source - CDMA – Input – High Band – Upper Edge			

\* Agilent 10:21:50 Oct 13, 2007



Center 1.99 GHz Span 20 MHz #Res BW 100 kHz VBW 1 MHz Sweep 4 ms (401 pts)

	Freq	dBm	dBc	Intercept
Base Lower	1.98650 GHz	4.82	0.00	•
Base Upper	1.98895 GHz	3.34	-1.47	
Worst Case	1.99165 GHz	-14.39	-19.21	12.95 dBm
3rd Order Lower	1.98375 GHz	-15.26	-20.08	14.12 dBm
3rd Order Upper	1.99165 GHz	-14.39	-19.21	12.95 dBm

# 2.1051 Spurious Emissions at Antenna Terminals (IC RSS-131 Clause 4.4)

### Definition:

Conducted Spurious Emissions are emissions at the antenna terminals on a frequency or frequencies which are outside an occupied band sufficient to ensure transmission of information of required quality for the class of communication desired. The reduction in the level of these spurious emissions will not affect the quality of the information being transmitted.

Conducted Spurious Emissions shall be attenuated below the maximum level of the carrier frequency in accordance with the following formula:

-13dB= Measured Power - (43+10 log10 (Rated Power))

<u>Test Method:</u> Per EIA RS 152-B, Paragraph 4 as modified below.

Connect the equipment as shown in FIGURE 1.

Use Industry Canada RSS-131 4.4 Spurious Emission

4.4.1 Multi-channel Enhancer

The spurious emissions of the equipment under test shall be measured using the two-tone method in Industry Canada RSS-131 section 4.3.1, with the two tones  $P_01$  and  $P_02$  set to the required levels.

Using a spectrum analyser with a resolution bandwidth set at 100 kHz, search for spurious emissions from 30 MHz to at least 5 times the highest RF passband frequency. The search may omit the band that contains the test tones and intermodulation products.

In addition to the above to satisfy FCC requirements scan the frequency spectrum from the lowest radio frequency generated in the equipment through the  $10^{\rm th}$  harmonic of the carrier frequency.

Test Results: See Plots

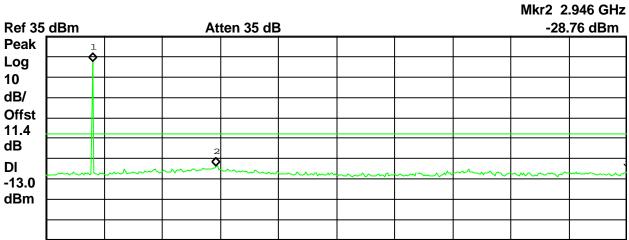
All spurious emissions at the antenna terminals are below the IC/FCC specifications

1 Iguic 7. Conducted bpt	irious Elilissions at Amelina Terminais,	opinik.	
<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Antenna Con	ducted Spurious
DNB Job Number:	86010	Date: 15 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.		<b>Standard</b> s
Model Number:	CWAP819		[X] IC RSS-131
Description:	RF amplifier		[X] FCC Part 22
			[X] FCC Part 24
	Uplink GSM 824.200 MHz		

🔆 Agilent 09:42:01 Oct 15, 2007

Freq

2



Start 30 MHz Stop 10 GHz #Res BW 100 kHz VBW 300 kHz Sweep 1.033 s (401 pts) Marker Trace X Axis Amplitude Туре (1) (1) 828 MHz 22.76 dBm Freq

-28.76 dBm

2.946 GHz

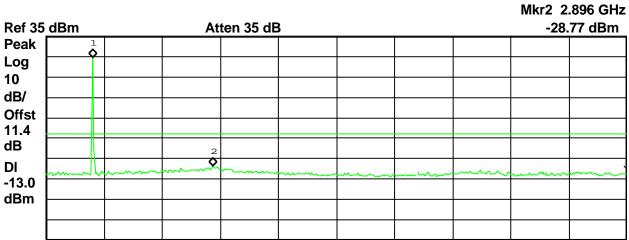
1	20
1	47

Tigure 7. Conducted Spe	inous Emissions at Amelina Terminais,	ориик.	
<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Antenna Co	onducted Spurious
DNB Job Number:	86010	Date: 15 Oct 20	O7 Conformance
Customer:	Intelligent Wireless Products, Inc.		<b>Standard</b> s
Model Number:	CWAP819		[X] IC RSS-131
Description:	RF amplifier		[X] FCC Part 22
			[X] FCC Part 24
	Uplink GSM 836.5 MHz		

🔆 Agilent 09:43:12 Oct 15, 2007

Freq

2



Stop 10 GHz Start 30 MHz #Res BW 100 kHz VBW 300 kHz Sweep 1.033 s (401 pts) Marker Trace Amplitude X Axis Type (1) (1) 828 MHz 24.59 dBm Freq

-28.77 dBm

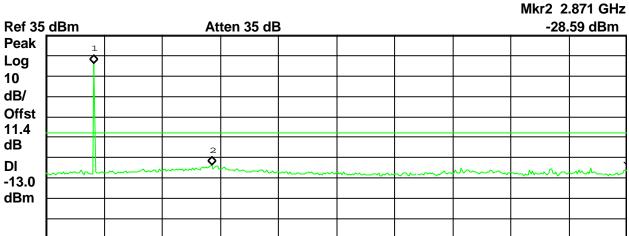
2.896 GHz

1 Iguic 7. Conducted bpt	irious Elilissions at America Terminais,	ериик.		
<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Anto	enna Condu	cted Spurious
DNB Job Number:	86010	Date:	15 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Uplink GSM 848.800 MHz			

🔆 Agilent 09:44:24 Oct 15, 2007

Freq

2



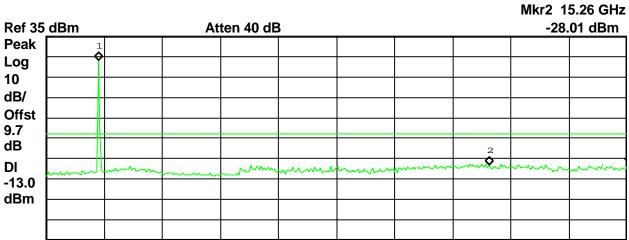
Start 30 MHz Stop 10 GHz #Res BW 100 kHz VBW 300 kHz Sweep 1.033 s (401 pts) Marker Trace Amplitude X Axis Type (1) (1) 853 MHz 21.16 dBm Freq

-28.59 dBm

2.871 GHz

rigure 7. Conducted Spi	inous Emissions at Amemia Terminais,	Opinik.	
<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Antenna Con	ducted Spurious
DNB Job Number:	86010	Date: 15 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.		<b>Standard</b> s
Model Number:	CWAP819		[X] IC RSS-131
Description:	RF amplifier		[X] FCC Part 22
			[X] FCC Part 24
	Uplink GSM 1850.200 MHz		

\* Agilent 09:47:50 Oct 15, 2007



Start 30 MHz Stop 20 GHz #Res BW 100 kHz VBW 300 kHz Sweep 2.069 s (401 pts) Marker Trace Amplitude X Axis Type (1) (1) 1.83 GHz 22.8 dBm Freq 2 Freq 15.26 GHz -28.01 dBm

1 Igure 7. Conducted bpt	illous Ellissions at Antenna Terminais,	оринк.		
<u>ONB</u>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	An	tenna Condu	icted Spurious
DNB Job Number:	86010	Date:	15 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier		•	[X] FCC Part 22
			•	[X] FCC Part 24
	Uplink GSM 1880 MHz			

🔆 Agilent 09:53:17 Oct 15, 2007

Freq

2



Start 30 MHz Stop 20 GHz #Res BW 100 kHz VBW 300 kHz Sweep 2.069 s (401 pts) Marker Trace Amplitude X Axis Type (1) (1) 1.88 GHz 23.65 dBm Freq

-26.82 dBm

18.70 GHz

v-		

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	An	tenna Conduc	ted Spurious
DNB Job Number:	86010	Date:	15 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Uplink GSM 1909.800 MHz			1

🔆 Agilent 09:55:39 Oct 15, 2007

Freq

2

Mkr2 13.21 GHz Ref 35 dBm Atten 40 dB -27.18 dBm Peak Log 10 dB/ Offst 9.7 dΒ DI -13.0 dBm

Start 30 MHz Stop 20 GHz #Res BW 100 kHz VBW 300 kHz Sweep 2.069 s (401 pts) Marker Trace X Axis Amplitude Туре (1) (1) 1.93 GHz 16.58 dBm Freq

-27.18 dBm

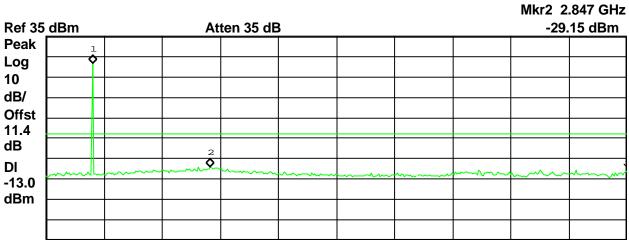
13.21 GHz

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	An	tenna Condu	cted Spurious
DNB Job Number:	86010	Date:	15 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Uplink TDMA 824.025 MHz			

🔆 Agilent 09:59:24 Oct 15, 2007

Freq

2



Start 30 MHz Stop 10 GHz #Res BW 100 kHz VBW 300 kHz Sweep 1.033 s (401 pts) Marker Trace Amplitude X Axis Type (1) (1) 828 MHz 21.48 dBm Freq

-29.15 dBm

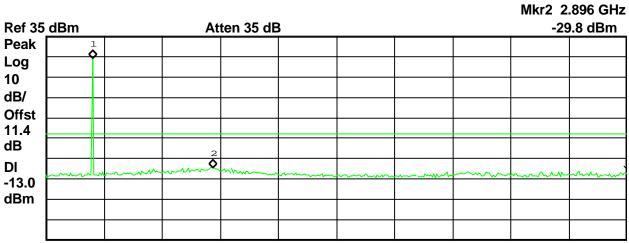
2.847 GHz

I Igure 7. Conducted Span	ious Ellissions at Afficilia Terminais, O	P		
<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Ant	enna Conduc	eted Spurious
DNB Job Number:	86010	Date:	15 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Uplink TDMA 836.5 MHz			

🔆 Agilent 10:00:14 Oct 15, 2007

Freq

2



Stop 10 GHz Start 30 MHz #Res BW 100 kHz VBW 300 kHz Sweep 1.033 s (401 pts) Marker Trace X Axis Amplitude Туре (1) (1) 828 MHz 24.01 dBm Freq

-29.8 dBm

2.896 GHz

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	An	tenna Conduc	eted Spurious
DNB Job Number:	86010	Date:	15 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier		_	[X] FCC Part 22
				[X] FCC Part 24
	Uplink TDMA 848.975 MHz			1

🔆 Agilent 10:01:29 Oct 15, 2007

Freq

2



Start 30 MHz Stop 10 GHz #Res BW 100 kHz VBW 300 kHz Sweep 1.033 s (401 pts) Marker Trace Amplitude X Axis Type (1) (1) 853 MHz 20.71 dBm Freq

-29.44 dBm

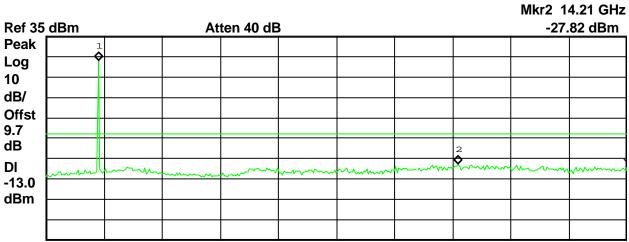
2.946 GHz

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	An	tenna Conduc	eted Spurious
DNB Job Number:	86010	Date:	15 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Uplink TDMA 1850.025 MHz			

🔆 Agilent 10:04:35 Oct 15, 2007

Freq

2



Start 30 MHz Stop 20 GHz #Res BW 100 kHz VBW 300 kHz Sweep 2.069 s (401 pts) Marker Trace Amplitude X Axis Type (1) (1) 1.83 GHz 23.06 dBm Freq

-27.82 dBm

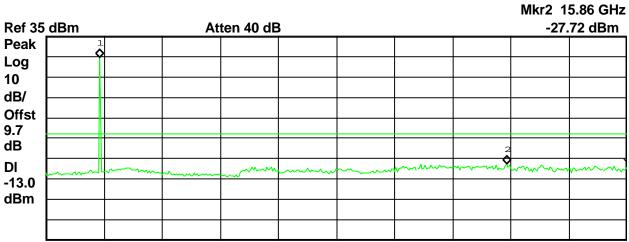
14.21 GHz

Tigure 7. Conducted bpt	illous Ellissions at Antenna Terminais,	o primir.		
<u>ONB</u>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	An	tenna Condu	icted Spurious
DNB Job Number:	86010	Date:	15 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
		•		[X] FCC Part 24
	Uplink TDMA 1880 MHz			

🔆 Agilent 10:05:55 Oct 15, 2007

Freq

2



Start 30 MHz Stop 20 GHz #Res BW 100 kHz VBW 300 kHz Sweep 2.069 s (401 pts) Marker Trace Amplitude Туре X Axis (1) (1) 1.88 GHz 24.4 dBm Freq

-27.72 dBm

15.86 GHz

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433	Antenna Conduc	eted Spurious
DNB Job Number: Customer: Model Number:	FAX (435) 336-4436 86010 Intelligent Wireless Products, Inc. CWAP819	Date: 15 Oct 2007	Conformance Standards [X] IC RSS-131
Description:	RF amplifier Uplink TDMA 1909.975 MHz		[X] FCC Part 22 [X] FCC Part 24

\* Agilent 10:07:20 Oct 15, 2007

Ref 35	dBm	At	ten 40 dE	3			4.06 GHz 99 dBm
Peak Log 10 dB/ Offst 9.7 dB	( )			·······	 ·····	2	

 Start 30 MHz
 Stop 20 GHz

 #Res BW 100 kHz
 VBW 300 kHz
 Sweep 2.069 s (401 pts)

Marker	Trace	Type	X Axis	Amplitude	
1	(1)	Freq	1.93 GHz	16.73 dBm	
2	(1)	Freq	14.06 GHz	-27.99 dBm	

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Ant	tenna Conduc	ted Spurious
DNB Job Number:	86010	Date:	15 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819		[X] IC RSS-131	
Description:	RF amplifier	•		[X] FCC Part 22
				[X] FCC Part 24
	Uplink CDMA 1851 MHz			

🔆 Agilent 10:10:16 Oct 15, 2007

Freq

2



Start 30 MHz Stop 20 GHz #Res BW 100 kHz VBW 300 kHz Sweep 2.069 s (401 pts) Marker Trace Amplitude X Axis Type (1) (1) 1.88 GHz 20.34 dBm Freq

-28.14 dBm

16.06 GHz

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Ant	tenna Conduc	eted Spurious
DNB Job Number:	86010	Date:	15 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Uplink CDMA 1880 MHz			

🔆 Agilent 10:11:15 Oct 15, 2007

Freq

2

Mkr2 15.11 GHz Ref 35 dBm Atten 40 dB -27.95 dBm Peak Log 10 dB/ Offst 9.7 dΒ ·Šw.~ DI -13.0 dBm

Start 30 MHz Stop 20 GHz #Res BW 100 kHz VBW 300 kHz Sweep 2.069 s (401 pts) Marker Trace Amplitude Туре X Axis (1) (1) 1.88 GHz 22.16 dBm Freq

-27.95 dBm

15.11 GHz

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Ant	tenna Conduc	ted Spurious
DNB Job Number:	86010	Date:	15 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819		[X] IC RSS-131	
Description:	RF amplifier	•	_	[X] FCC Part 22
				[X] FCC Part 24
	Uplink CDMA 1909 MHz			1

🔆 Agilent 10:12:30 Oct 15, 2007

Freq

2



Start 30 MHz Stop 20 GHz #Res BW 100 kHz VBW 300 kHz Sweep 2.069 s (401 pts) Marker Trace X Axis Amplitude Туре (1) (1) 1.93 GHz 15.9 dBm Freq

-27.69 dBm

14.81 GHz

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Ant	tenna Conduc	ted Spurious
DNB Job Number:	86010	Date:	15 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.	<b>Standard</b> s		
Model Number:	CWAP819	[X] IC RSS-131		
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Downlink GSM 869.200 MHz			

🔆 Agilent 10:16:51 Oct 15, 2007

Freq

2



Start 30 MHz Stop 10 GHz #Res BW 100 kHz VBW 300 kHz Sweep 1.033 s (401 pts) Marker Trace Amplitude X Axis Type (1) (1) 877 MHz 9.444 dBm Freq

-28.15 dBm

2.597 GHz

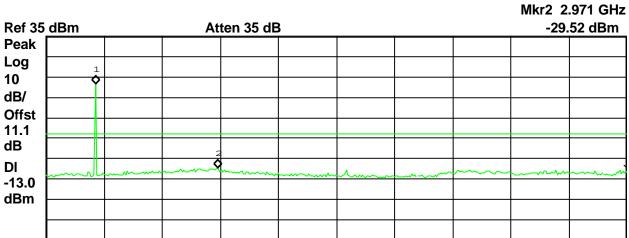
$\vdash$			

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	An	tenna Condu	cted Spurious
DNB Job Number:	86010	Date:	15 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Downlink GSM 881.5 MHz			

🔆 Agilent 10:18:09 Oct 15, 2007

Freq

2



Stop 10 GHz Start 30 MHz #Res BW 100 kHz VBW 300 kHz Sweep 1.033 s (401 pts) Marker Trace X Axis Amplitude Type (1) (1) 877 MHz 11.43 dBm Freq

-29.52 dBm

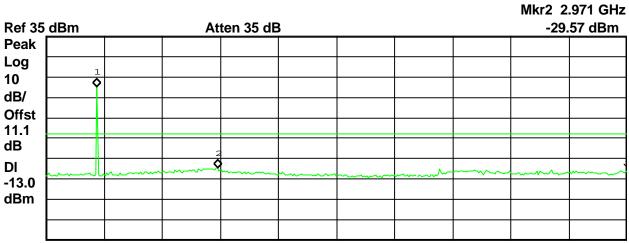
2.971 GHz


1 Iguic 7. Conducted bpt	irious Emissions at Amemia Terminais,	DOWIIIII.	
<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Antenna Cond	ucted Spurious
DNB Job Number:	86010	Date: 15 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.		<b>Standard</b> s
Model Number:	CWAP819		[X] IC RSS-131
Description:	RF amplifier		[X] FCC Part 22
			[X] FCC Part 24
	Downlink GSM 893.800 MHz		

🔆 Agilent 10:19:22 Oct 15, 2007

Freq

2



Stop 10 GHz Start 30 MHz #Res BW 100 kHz VBW 300 kHz Sweep 1.033 s (401 pts) Marker Trace Amplitude X Axis Type (1) (1) 902 MHz 9.988 dBm Freq

-29.57 dBm

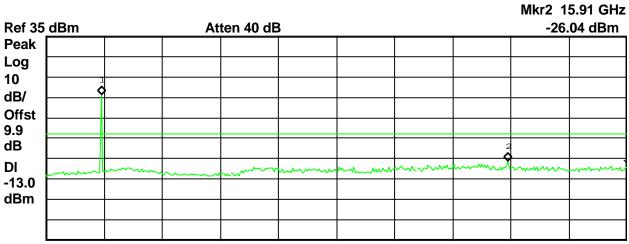
2.971 GHz

1 Iguic 7. Conducted bpt	irious Emissions at Amemia Terminais,	DOWIIIII.	
<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Antenna Cond	ucted Spurious
DNB Job Number:	86010	Date: 15 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.		<b>Standard</b> s
Model Number:	CWAP819		[X] IC RSS-131
Description:	RF amplifier		[X] FCC Part 22
			[X] FCC Part 24
	Downlink GSM 1930.200 MHz		

🔆 Agilent 10:25:19 Oct 15, 2007

Freq

2



Start 30 MHz Stop 20 GHz #Res BW 100 kHz VBW 300 kHz Sweep 2.069 s (401 pts) Marker Trace Amplitude X Axis Type (1) (1) 1.93 GHz 6.163 dBm Freq

-26.04 dBm

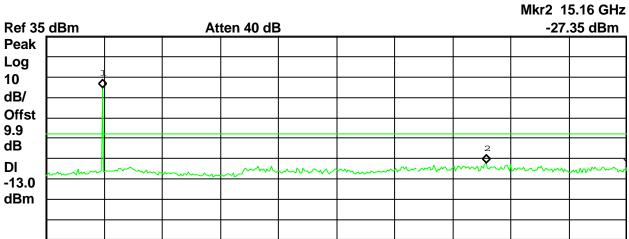
15.91 GHz

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	An	tenna Condu	cted Spurious
DNB Job Number:	86010	Date:	15 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Downlink GSM 1960 MHz			

🔆 Agilent 10:26:23 Oct 15, 2007

Freq

2



Start 30 MHz Stop 20 GHz #Res BW 100 kHz VBW 300 kHz Sweep 2.069 s (401 pts) Marker Trace Amplitude X Axis Type (1) (1) 1.98 GHz 9.588 dBm Freq

-27.35 dBm

15.16 GHz

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	An	tenna Condu	cted Spurious
DNB Job Number:	86010	Date:	15 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Downlink GSM 1989.800 MHz			

🔆 Agilent 10:27:37 Oct 15, 2007

Freq

Freq

2



Start 30 MHz Stop 20 GHz #Res BW 100 kHz VBW 300 kHz Sweep 2.069 s (401 pts) Marker Trace Amplitude X Axis Type (1) (1) 1.98 GHz 6.625 dBm

-28.17 dBm

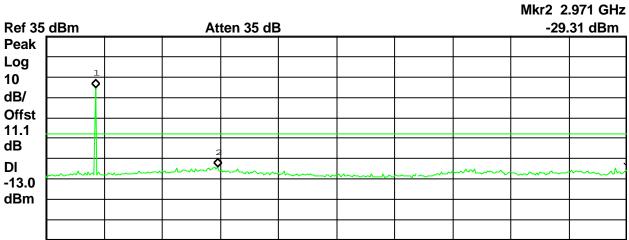
15.16 GHz

1 15 are 7. Conducted bpt	irious Elilissions at America Terminais, i	o william.	1	
<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	An	tenna Condu	acted Spurious
DNB Job Number:	86010	Date:	15 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Downlink TDMA 869.025 MHz			

🔆 Agilent 10:30:32 Oct 15, 2007

Freq

2



Start 30 MHz Stop 10 GHz #Res BW 100 kHz VBW 300 kHz Sweep 1.033 s (401 pts) Marker Trace X Axis Amplitude Type (1) (1) 877 MHz 9.856 dBm Freq

-29.31 dBm

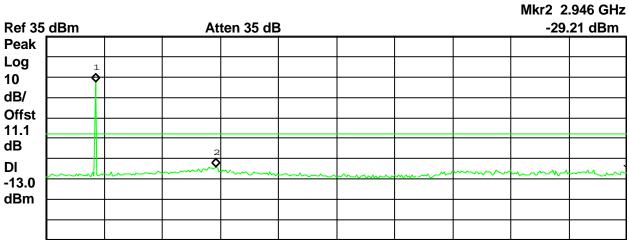
2.971 GHz

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	An	tenna Condu	cted Spurious
DNB Job Number:	86010	Date:	15 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier	•		[X] FCC Part 22
				[X] FCC Part 24
	Downlink TDMA 881.5 MHz			

🔆 Agilent 10:31:45 Oct 15, 2007

Freq

2



Start 30 MHz Stop 10 GHz #Res BW 100 kHz VBW 300 kHz Sweep 1.033 s (401 pts) Marker Trace X Axis Amplitude Type (1) (1) 877 MHz 12.29 dBm Freq

-29.21 dBm

2.946 GHz

rigure 7. Conducted Spurious Emissions at America Terminais, Downmik.					
<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	An	tenna Condu	icted Spurious	
DNB Job Number:	86010	Date:	15 Oct 2007	Conformance	
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s	
Model Number:	CWAP819			[X] IC RSS-131	
Description:	RF amplifier		•	[X] FCC Part 22	
				[X] FCC Part 24	
	Downlink TDMA 893.975 MHz				

🔆 Agilent 10:32:53 Oct 15, 2007



,	Start 30 N	1Hz	<u>'</u>		<u> </u>	<u>'</u>		p 10 GHz
3	#Res BW	100 kHz		VBW 300	) kHz	Sw	eep 1.033 s (4	01 pts)
Ī	Marker	Trace	Туре	X Axis		Amplitude		
	1	(1)	Freq	902 MHz		10.23 dBm		
	2	(1)	Freq	2.847 GHz		-29.72 dBm		

1	52
-	22

rigure 7. Conducted Spurious Emissions at Antenna Terminais, Downmik.					
<u>ONB</u>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	An	tenna Condu	icted Spurious	
DNB Job Number:	86010	Date:	15 Oct 2007	Conformance	
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s	
Model Number:	CWAP819			[X] IC RSS-131	
Description:	RF amplifier			[X] FCC Part 22	
				[X] FCC Part 24	
	Downlink TDMA 1930.025 MHz				

🔆 Agilent 10:35:43 Oct 15, 2007

Freq

2



Start 30 MHz Stop 20 GHz #Res BW 100 kHz VBW 300 kHz Sweep 2.069 s (401 pts) Marker Trace X Axis Amplitude Туре (1) (1) 1.93 GHz 6.757 dBm Freq

-28.36 dBm

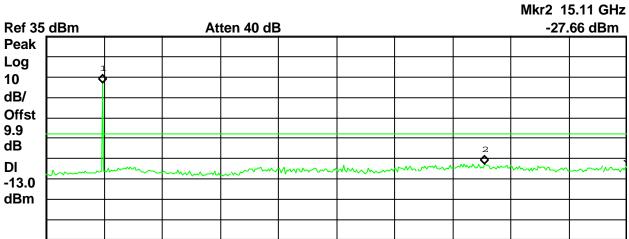
14.11 GHz

rigure 7. Conducted Spurious Emissions at Antenna Terminais, Downink.					
<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Antenna Cond	ducted Spurious		
DNB Job Number:	86010	Date: 15 Oct 2007	Conformance		
Customer:	Intelligent Wireless Products, Inc.		<b>Standard</b> s		
Model Number:	CWAP819		[X] IC RSS-131		
Description:	RF amplifier		[X] FCC Part 22		
			[X] FCC Part 24		
	Downlink TDMA 1960 MHz				

🔆 Agilent 10:36:49 Oct 15, 2007

Freq

2



Start 30 MHz Stop 20 GHz #Res BW 100 kHz VBW 300 kHz Sweep 2.069 s (401 pts) Marker Trace Amplitude X Axis Type (1) (1) 1.98 GHz 11.97 dBm Freq

-27.66 dBm

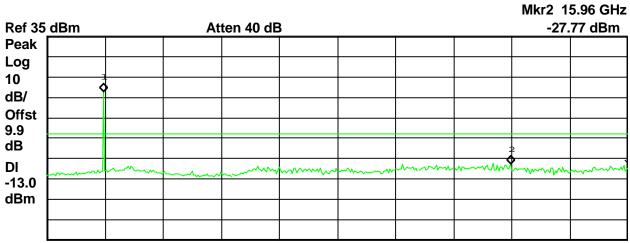
15.11 GHz

Figure 7. Conducted Spurious Emissions at Antenna Terminals, Downlink.					
<u>ONB</u>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	An	tenna Condu	icted Spurious	
DNB Job Number:	86010	Date:	15 Oct 2007	Conformance	
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s	
Model Number:	CWAP819			[X] IC RSS-131	
Description:	RF amplifier			[X] FCC Part 22	
				[X] FCC Part 24	
	Downlink TDMA 1989.975 MHz				

🔆 Agilent 10:37:52 Oct 15, 2007

Freq

2



Start 30 MHz Stop 20 GHz #Res BW 100 kHz VBW 300 kHz Sweep 2.069 s (401 pts) Marker Trace Amplitude X Axis Type (1) (1) 1.98 GHz 7.522 dBm Freq

-27.77 dBm

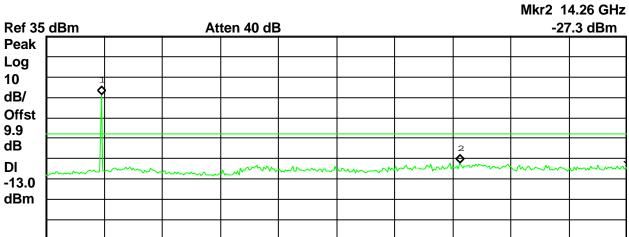
15.96 GHz

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	An	tenna Condu	cted Spurious
DNB Job Number:	86010	Date:	15 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Downlink CDMA 1931 MHz			

🔆 Agilent 10:41:14 Oct 15, 2007

Freq

2



Start 30 MHz Stop 20 GHz #Res BW 100 kHz VBW 300 kHz Sweep 2.069 s (401 pts) Marker Trace Amplitude X Axis Type (1) (1) 1.93 GHz 6.084 dBm Freq

-27.3 dBm

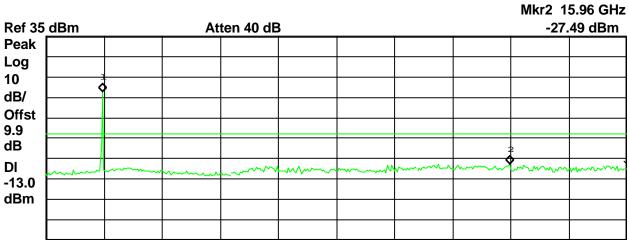
14.26 GHz

Figure 7. Conducted Spurious Emissions at Affectina Terminals, Downlink.					
<u>ONB</u>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Ant	tenna Condu	icted Spurious	
DNB Job Number:	86010	Date:	15 Oct 2007	Conformance	
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s	
Model Number:	CWAP819			[X] IC RSS-131	
Description:	RF amplifier	•		[X] FCC Part 22	
				[X] FCC Part 24	
	Downlink CDMA 1960 MHz				

🔆 Agilent 10:42:14 Oct 15, 2007

Freq

2



Start 30 MHz Stop 20 GHz #Res BW 100 kHz VBW 300 kHz Sweep 2.069 s (401 pts) Marker Trace X Axis Amplitude Type (1) (1) 7.814 dBm 1.98 GHz Freq

-27.49 dBm

15.96 GHz

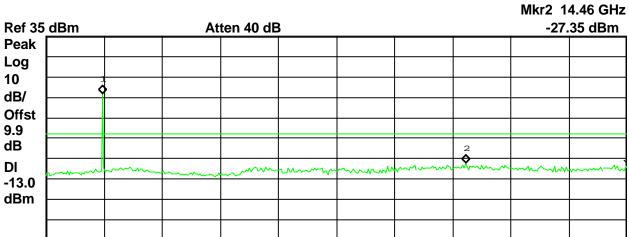
	$\neg$
_,	- /

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	An	tenna Condu	cted Spurious
DNB Job Number:	86010	Date:	15 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Downlink CDMA 1989 MHz			

🔆 Agilent 10:43:36 Oct 15, 2007

Freq

2



Start 30 MHz Stop 20 GHz #Res BW 100 kHz VBW 300 kHz Sweep 2.069 s (401 pts) Marker Trace Amplitude X Axis Type (1) (1) 1.98 GHz 6.832 dBm Freq

-27.35 dBm

14.46 GHz

#### 2.1053 Field Strength of Spurious Radiation (IC RSS-131 Clause 4.4)

#### Definition:

Emissions from the equipment when connected into a non-radiating load on a frequency or frequencies which are outside an occupied band sufficient to ensure transmission of information of required quality for the class of communication desired. The reduction in the level of these spurious emissions will not affect the quality of the information being transmitted.

Test Method: Per TIA /EIA 603.

Connect the equipment and follow the procedure described in paragraph 2.2.1.12. Measure the amplitude of each spurious radiated signal through the 10<sup>th</sup> harmonic. The spurious signals are then measured on the 3 meter range. First the EUT is measured using a tuned reference dipole below 1GHz and a double ridge guide Horn antenna above 1GHz. Then a dipole to dipole (or drg to drg) measurement is conducted to determine the actual power at each harmonic being generated by the EUT. If the DRG antenna is used the appropriate gain factor for the antenna is added for the final measurement. If no noticeable emission can be observed the ground floor is recorded in the data sheets.

<u>Test Results:</u> All readings were at the spectrum analyzer ground floor above the fundamental.

All radiated spurious emissions are below the IC/FCC Specifications.

TIGORE O. RAIDIATED TIEL	D STRENGTH OF SPURIOUS EMISSIONS, C	JI LII VIX.		
	1100 E Chalk Creek Road			
	Coalville, UT 84017			
VI VI	(435) 336-4433		Radiated S	purious
	FAX (435) 336-4436			•
DNB Job Number:	86010	Date:	16 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Uplink – Low Channel – Low Band			

	Freq	Antenna	dBm	-13dB	
Harmonics	In MHz	Polar	Reading	Limit	Margin
2nd	1648.050	Н	-56.3	-13	-43.3
	1648.050	V	-45.3	-13	-32.3
3rd	2472.075	Н	-52.3	-13	39.3
	2472.075	V	-37.3	-13	-24.3
4th	3296.100	Н	* N/A	-13	* N/A
	3296.100	V	* N/A	-13	* N/A
5th	4120.125	Н	* N/A	-13	* N/A
	4120.125	V	* N/A	-13	* N/A
6th	4944.150	Н	* N/A	-13	* N/A
	4944.150	V	* N/A	-13	* N/A
7th	5768.175	Н	* N/A	-13	* N/A
	5768.175	V	* N/A	-13	* N/A
8th	6592.200	Н	* N/A	-13	* N/A
	6592.200	V	* N/A	-13	* N/A
9th	7416.225	Н	* N/A	-13	* N/A
	7416.225	V	* N/A	-13	* N/A
10th	8240.250	Н	* N/A	-13	* N/A
	8240.250	V	* N/A	-13	* N/A

<sup>\*</sup> Measurement made at instrument ground floor – no discernible reading

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Radiated S	purious
DNB Job Number:	86010	Date:	16 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 - [X] FCC Part 24
				[A] FCC Falt 24
	Uplink – Mid Channel Low Band			

Harmonics	Freq In MHz	Antenna Polar	dBm Reading	-13dB Limit	Margin
2nd	1673.0	Н	-55.3	-13	-42.3
	1673.0	V	-62.3	-13	-49.3
3rd	2536.5	Н	* N/A	-13	* N/A
	2536.5	V	* N/A	-13	* N/A
4th	3373.0	Н	* N/A	-13	* N/A
	3373.0	V	* N/A	-13	* N/A
5th	4209.5	Н	* N/A	-13	* N/A
	4209.5	V	* N/A	-13	* N/A
6th	5046.0	Н	* N/A	-13	* N/A
	5046.0	V	* N/A	-13	* N/A
7th	5882.5	Н	* N/A	-13	* N/A
	5882.5	V	* N/A	-13	* N/A
8th	6719.0	Н	* N/A	-13	* N/A
	6719.0	V	* N/A	-13	* N/A
9th	7555.5	Н	* N/A	-13	* N/A
	7555.5	V	* N/A	-13	* N/A
10th	8392.0	Н	* N/A	-13	* N/A
	8392.0	V	* N/A	-13	* N/A

<sup>\*</sup> Measurement made at instrument ground floor – no discernible reading

TIGORE O. REIDERTED TIEF	D STRENGTH OF SPURIOUS EMISSIONS, C	/I LIIVIX.		
	1100 E Chalk Creek Road			
	Coalville, UT 84017			
VI VI	(435) 336-4433		Radiated S	purious
	FAX (435) 336-4436		•	•
DNB Job Number:	86010	Date:	16 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Uplink – High Channel – Low Band			

Harmonics	Freq In MHz	Antenna Polar	dBm Reading	-13dB Limit	Margin
2nd	1697.950	Н	-43.3	-13	-30.3
	1697.950	V	-50.0	-13	-37.0
3rd	2546.925	Н	-54.3	-13	-41.3
	2546.925	V	-46.3	-13	-33.3
4th	3395.900	Н	* N/A	-13	* N/A
	3395.900	V	* N/A	-13	* N/A
5th	4244.875	Н	* N/A	-13	* N/A
	4244.875	V	* N/A	-13	* N/A
6th	5093.850	Н	* N/A	-13	* N/A
	5093.850	V	* N/A	-13	* N/A
7th	5942.825	Н	* N/A	-13	* N/A
	5942.825	V	* N/A	-13	* N/A
8th	6791.800	Н	* N/A	-13	* N/A
	6791.800	V	* N/A	-13	* N/A
9th	7640.775	Н	* N/A	-13	* N/A
	7640.775	V	* N/A	-13	* N/A
10th	8489.750	Н	* N/A	-13	* N/A
	8489.750	V	* N/A	-13	* N/A

<sup>\*</sup> Measurement made at instrument ground floor – no discernible reading

TIGURE 6. RADIATED TIELD STRENGTH OF SPURIOUS EMISSIONS, UPLINK.					
	1100 E Chalk Creek Road				
	Coalville, UT 84017				
VI VI	(435) 336-4433		Radiated S	purious	
	FAX (435) 336-4436			_	
DNB Job Number:	86010	Date:	16 Oct 2007	Conformance	
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s	
Model Number:	CWAP819			[X] IC RSS-131	
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24	
				[A] FCC Part 24	
	Uplink – Low Channel – High Band				

Harmonics	Freq In MHz	Antenna Polar	dBm Reading	-13dB Limit	Margin
2nd	3700.050	H	-63.8	-13	-50.8
2110	3700.050	V	-59.9	-13	-46.9
3rd	5550.075	Н	-52.6	-13	-39.6
	5550.075	V	-49.3	-13	-36.3
4th	7400.100	Н	* N/A	-13	* N/A
	7400.100	V	* N/A	-13	* N/A
5th	9250.125	Н	* N/A	-13	* N/A
	9250.125	V	* N/A	-13	* N/A
6th	11100.150	Н	* N/A	-13	* N/A
	11100.150	V	* N/A	-13	* N/A
7th	12950.180	Н	* N/A	-13	* N/A
	12950.180	V	* N/A	-13	* N/A
8th	14800.200	Н	* N/A	-13	* N/A
	14800.200	V	* N/A	-13	* N/A
9th	16650.230	Н	* N/A	-13	* N/A
	16650.230	V	* N/A	-13	* N/A
10th	18500.250	Н	* N/A	-13	* N/A
	18500.250	V	* N/A	-13	* N/A

<sup>\*</sup> Measurement made at instrument ground floor – no discernible reading

TIGORE OF TRIBITIES THE	1100 E Chalk Creek Road			
	Coalville, UT 84017 (435) 336-4433		Radiated S	nurious
To and the second	FAX (435) 336-4436			purious
DNB Job Number:	86010	Date:	16 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Uplink – Mid Channel – High Band			

Harmonics	Freq In MHz	Antenna Polar	dBm Reading	-13dB Limit	Margin
2nd	3760	H	-60.2	-13	-47.2
	3760	V	-56.0	-13	-43.0
3rd	5640	Н	-51.9	-13	-38.9
	5640	V	-46.2	-13	-33.2
4th	7520	Н	* N/A	-13	* N/A
	7520	V	* N/A	-13	* N/A
5th	9400	Н	* N/A	-13	* N/A
	9400	V	* N/A	-13	* N/A
6th	11280	Н	* N/A	-13	* N/A
	11280	V	* N/A	-13	* N/A
7th	13160	Н	* N/A	-13	* N/A
	13160	V	* N/A	-13	* N/A
8th	15040	Н	* N/A	-13	* N/A
	15040	V	* N/A	-13	* N/A
9th	16920	Н	* N/A	-13	* N/A
	16920	V	* N/A	-13	* N/A
10th	18800	Н	* N/A	-13	* N/A
	18800	V	* N/A	-13	* N/A

<sup>\*</sup> Measurement made at instrument ground floor – no discernible reading

TIGURE O. RADIATED TIEL	D STRENGTH OF SPURIOUS EMISSIONS, C	T LIIVIX.			
	1100 E Chalk Creek Road				
	Coalville, UT 84017				
VI VI	(435) 336-4433 <b>Radiate</b>		Radiated S	d Spurious	
	FAX (435) 336-4436		•	•	
DNB Job Number:	86010	Date:	16 Oct 2007	Conformance	
Customer:	Intelligent Wireless Products, Inc.			Standards [X] IC RSS-131	
Model Number:	CWAP819				
Description:	RF amplifier			[X] FCC Part 22	
				[X] FCC Part 24	
	Uplink – High Channel – High Band	]			

	Freq	Antenna	dBm	-13dB	
Harmonics	In MHz	Polar	Reading	Limit	Margin
2nd	3819.950	Н	-64.9	-13	-51.9
	3819.950	V	-63.2	-13	-50.2
3rd	5729.925	Н	-58.2	-13	-45.2
	5729.925	V	-53.3	-13	-40.3
4th	7639.900	Н	* N/A	-13	* N/A
	7639.900	V	* N/A	-13	* N/A
5th	9549.875	Н	* N/A	-13	* N/A
	9549.875	V	* N/A	-13	* N/A
6th	11459.850	Н	* N/A	-13	* N/A
	11459.850	V	* N/A	-13	* N/A
7th	13369.830	Н	* N/A	-13	* N/A
	13369.830	V	* N/A	-13	* N/A
8th	15279.800	Н	* N/A	-13	* N/A
	15279.800	V	* N/A	-13	* N/A
9th	17189.780	Н	* N/A	-13	* N/A
	17189.780	V	* N/A	-13	* N/A
10th	19099.750	Н	* N/A	-13	* N/A
	19099.750	V	* N/A	-13	* N/A

<sup>\*</sup> Measurement made at instrument ground floor – no discernible reading

I IOURE O. KADIATED I IEE	D STRENGTH OF SPURIOUS EMISSIONS, C	I LIIVIX.		
	1100 E Chalk Creek Road			
	Coalville, UT 84017			
VI VI	(435) 336-4433 <b>Radiated S</b>		Spurious	
	FAX (435) 336-4436		•	-
DNB Job Number:	86010	Date:	17 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			Standards [X] IC RSS-131
Model Number:	CWAP819			
Description:	RF amplifier			[X] FCC Part 22
		•	_	[X] FCC Part 24
	Downlink – Low Channel – Low Band			

Harmonics	Freq In MHz	Antenna Polar	dBm Reading	-13dB Limit	Margin
2nd	1738.050	Н	* N/A	-13	* N/A
	1738.050	V	* N/A	-13	* N/A
3rd	2607.075	Н	-56.8	-13	-43.8
	2607.075	V	-49.0	-13	-36.0
4th	3476.100	Н	* N/A	-13	* N/A
	3476.100	V	* N/A	-13	* N/A
5th	4345.125	Н	* N/A	-13	* N/A
	4345.125	V	* N/A	-13	* N/A
6th	5214.150	Н	* N/A	-13	* N/A
	5214.150	V	* N/A	-13	* N/A
7th	6083.175	Н	* N/A	-13	* N/A
	6083.175	V	* N/A	-13	* N/A
8th	6952.200	Н	* N/A	-13	* N/A
	6952.200	V	* N/A	-13	* N/A
9th	7821.225	Н	* N/A	-13	* N/A
	7821.225	V	* N/A	-13	* N/A
10th	8690.250	Н	* N/A	-13	* N/A
	8690.250	V	* N/A	-13	* N/A

<sup>\*</sup> Measurement made at instrument ground floor – no discernible reading

I IOUKE O. KADIATED I IE	LD STRENGTH OF SPURIOUS EMISSIONS, C	JI LIIVIX.		
	1100 E Chalk Creek Road			
	Coalville, UT 84017			
TI VI	(435) 336-4433	Radiated Spuriou		Spurious
	FAX (435) 336-4436			-
DNB Job Number:	86010	Date:	17 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Downlink – Mid Channel – Low Ban			

Harmonics	Freq In MHz	Antenna Polar	dBm Reading	-13dB Limit	Margin
2nd	1763.0	Н	-60.3	-13	-47.3
	1763.0	V	-60.8	-13	-47.8
3rd	2644.5	Н	-51.8	-13	-38.8
	2644.5	V	-53.8	-13	-40.8
4th	3526.0	Н	* N/A	-13	* N/A
	3526.0	V	* N/A	-13	* N/A
5th	4407.5	Н	* N/A	-13	* N/A
	4407.5	V	* N/A	-13	* N/A
6th	5289.0	Н	* N/A	-13	* N/A
	5289.0	V	* N/A	-13	* N/A
7th	6170.5	Н	* N/A	-13	* N/A
	6170.5	V	* N/A	-13	* N/A
8th	7052.0	Н	* N/A	-13	* N/A
	7052.0	V	* N/A	-13	* N/A
9th	7933.5	Н	* N/A	-13	* N/A
	7933.5	V	* N/A	-13	* N/A
10th	8815.0	Н	* N/A	-13	* N/A
	8815.0	V	* N/A	-13	* N/A

<sup>\*</sup> Measurement made at instrument ground floor – no discernible reading

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Radiated S	purious
DNB Job Number:	86010	Date:	17 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			Standards [X] IC RSS-131
Model Number:	CWAP819			
Description:	RF amplifier			[X] FCC Part 22
				[X] FCC Part 24
	Downlink - High Channel - Low Bar			

Harmonics	Freq In MHz	Antenna Polar	dBm Reading	-13dB Limit	Margin
2nd	1787.950	Н	* N/A	-13	* N/A
	1787.950	V	* N/A	-13	* N/A
3rd	2681.925	Н	-61.3	-13	-48.3
	2681.925	V	-58.3	-13	-45.3
4th	3575.900	Н	* N/A	-13	* N/A
	3575.900	V	* N/A	-13	* N/A
5th	4469.875	Н	* N/A	-13	* N/A
	4469.875	V	* N/A	-13	* N/A
6th	5363.850	Н	* N/A	-13	* N/A
	5363.850	V	* N/A	-13	* N/A
7th	6257.825	Н	* N/A	-13	* N/A
	6257.825	V	* N/A	-13	* N/A
8th	7151.800	Н	* N/A	-13	* N/A
	7151.800	V	* N/A	-13	* N/A
9th	8045.775	Н	* N/A	-13	* N/A
	8045.775	V	* N/A	-13	* N/A
10th	8939.750	Н	* N/A	-13	* N/A
	8939.750	V	* N/A	-13	* N/A

<sup>\*</sup> Measurement made at instrument ground floor – no discernible reading

<u>ONB</u>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Radiated S	purious
DNB Job Number:	86010	Date:	17 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			<b>Standard</b> s
Model Number:	CWAP819			[X] IC RSS-131
Description:	RF amplifier			[X] FCC Part 22 [X] FCC Part 24
				[A] FCC Part 24
	Downlink – Low Channel - High Band			

	Freq	Antenna	dBm	-13dB	
Harmonics	In MHz	Polar	Reading	Limit	Margin
2nd	3860.050	Н	-66.0	-13	-53.0
	3860.050	V	-63.3	-13	-50.3
3rd	5790.075	Н	-56.2	-13	-43.2
	5790.075	V	-54.7	-13	-41.7
4th	7720.100	Н	* N/A	-13	* N/A
	7720.100	V	* N/A	-13	* N/A
5th	9650.125	Н	* N/A	-13	* N/A
	9650.125	V	* N/A	-13	* N/A
6th	11580.150	Н	* N/A	-13	* N/A
	11580.150	V	* N/A	-13	* N/A
7th	13510.180	Н	* N/A	-13	* N/A
	13510.180	V	* N/A	-13	* N/A
8th	15440.200	Н	* N/A	-13	* N/A
	15440.200	V	* N/A	-13	* N/A
9th	17370.230	Н	* N/A	-13	* N/A
	17370.230	V	* N/A	-13	* N/A
10th	19300.250	Н	* N/A	-13	* N/A
	19300.250	V	* N/A	-13	* N/A

<sup>\*</sup> Measurement made at instrument ground floor – no discernible reading

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Radiated S	purious
DNB Job Number:	86010	Date:	17 Oct 2007	Conformance
Customer:	Intelligent Wireless Products, Inc.			Standards [X] IC RSS-131
Model Number:	CWAP819			
Description:	RF amplifier			[X] FCC Part 22
		•		[X] FCC Part 24
	Downlink - Mid Channel - High Ban			

Harmonics	Freq In MHz	Antenna Polar	dBm Reading	-13dB Limit	Margin
2nd	3920	Н	-64.0	-13	-51.0
	3920	V	-63.0	-13	-50.0
3rd	5880	Н	* N/A	-13	* N/A
	5880	V	* N/A	-13	* N/A
4th	7840	Н	* N/A	-13	* N/A
	7840	V	* N/A	-13	* N/A
5th	9800	Н	* N/A	-13	* N/A
	9800	V	* N/A	-13	* N/A
6th	11760	Н	* N/A	-13	* N/A
	11760	V	* N/A	-13	* N/A
7th	13720	Н	* N/A	-13	* N/A
	13720	V	* N/A	-13	* N/A
8th	15680	Н	* N/A	-13	* N/A
	15680	V	* N/A	-13	* N/A
9th	17640	Н	* N/A	-13	* N/A
	17640	V	* N/A	-13	* N/A
10th	19600	Н	* N/A	-13	* N/A
	19600	V	* N/A	-13	* N/A

<sup>\*</sup> Measurement made at instrument ground floor – no discernible reading

I IOURE O. KADIATED I IEE	D STRENGTH OF SPURIOUS EMISSIONS, C	T LINK.					
	1100 E Chalk Creek Road						
	Coalville, UT 84017						
VI VI	(435) 336-4433	Spurious					
	FAX (435) 336-4436		•	-			
DNB Job Number:	86010	Date:	17 Oct 2007	Conformance			
Customer:	Intelligent Wireless Products, Inc.	Intelligent Wireless Products, Inc.					
Model Number:	CWAP819		[X] IC RSS-131				
Description:	[X] FCC Part 22						
		[X] FCC Part 24					

Harmonics	Freq In MHz	Antenna Polar	dBm Reading	-13dB Limit	Margin	
2nd	3979.950	Н	-67.0	-13	-54.0	
	3979.950	V	-63.6	-13	-50.6	
3rd	5969.925	Н	-60.7	-13	-47.7	
	5969.925	V	-56.8	-13	-43.8	
4th	7959.900	Н	* N/A	-13	* N/A	
	7959.900	V	* N/A	-13	* N/A	
5th	9949.875	Н	* N/A	-13	* N/A	
	9949.875	V	* N/A	-13	* N/A	
6th	11939.850	Н	* N/A	-13	* N/A	
	11939.850	V	* N/A	-13	* N/A	
7th	13929.830	Н	* N/A	-13	* N/A	
	13929.830	V	* N/A	-13	* N/A	
8th	15919.800	Н	* N/A	-13	* N/A	
	15919.800	V	* N/A	-13	* N/A	
9th	17909.780	Н	* N/A	-13	* N/A	
	17909.780	V	* N/A	-13	* N/A	
10th	19899.750	Н	* N/A	-13	* N/A	
	19899.750	V	* N/A	-13	* N/A	

<sup>\*</sup> Measurement made at instrument ground floor – no discernible reading

#### RADIATED EMISSIONS

#### **Definition:**

Emissions which emanate from the EUT.

Test Method: FCC Part 15 Class B (CISPR 22)

To measure radiated emissions, the EUT was set up on the 3 meter open air test site. The EUT is placed on a wooden Table, which rests upon a wooden turntable. The top of the table is one meter above the ground, and the turntable can be rotated 360 degrees. For each frequency measured, the antenna is raised and lowered for both horizontal and vertical polarities to obtain the maximum reading on the analyzer. The turntable is also rotated throughout the 360 degrees in azimuth to determine the position of the maximum emissions. The applicable frequency range is searched using the antennas listed below. The respective antenna and preamplifier were connected to an HP 8568B Spectrum Analyzer. Preamplifiers were used for all ranges to achieve the needed dynamic range.

<u>Test Results:</u> All readings were below the expectable limit.

FIGURE 9: RADIATED EMISSIONS.

<b>©</b>	<u>NB</u>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436						Radiated Emissions								
DNB Job	Number:		860	10				]	Date:	16 O	et 200	)7	C	Conformance		
Custome	r:		Inte	lligeı	nt Wire	eless	Produc	ts, Inc						Standa	rds	
Model N	umber:		CW	AP8	19											
Descripti	on:		RF	ampl	ifier							[]	K] FC	C Part 1	5 Cla	ass B
			All	read	ings ar	e at	groun	d floo	r							
			Correc	tion F	actors		ii	n dBuV	/m	i	n uV/r	n	Positions			
FREQ	METER	Bcn	Log	Cbl	Amp	Dis	Corr	Lim	Delta	Corr	Lim	Delta	Тур	Tbl	PI	Hgt
30.870	20.0	17.3	0	1.5	-26.5	0	12.3	40.0	-27.7	4	100	-96	QP	0	V	1.00
42.000	24.4	12.3	0	1.8	-26.4	0	12.1	40.0	-27.9	1	100	-99	QP	180	٧	1.00
71.300	33.8	5.5	0	2.3	-26.3	0	15.3	40.0	-24.7	6	100	-94	QP	0	٧	1.00
75.495	31.6	5.9	0	2.4	-26.3	0	13.6	40.0	-26.4	5	100	-95	QP	0	٧	1.00
244.180	21.0	0	17.3	4.7	-25.8	0	17.2	46.0	-28.8	7	200	-93	QP	0	V	1.00
261.600	17.4	0	18.8	5.2	25.7	0	15.7	46.0	-30.3	6	200	-94	QP	0	V	1.00

#### **CONDUCTED EMISSIONS**

#### Definition:

Emissions which emanate from AC Mains of the EUT.

<u>Test Method:</u> FCC Part 15 Class B (CISPR 22)

To measure conducted emissions, the EUT was set upon a wooden table in the shielded enclosure. AC power was fed into the EUT from the Artificial Mains Network. With the Artificial Mains Network connected to an HP 8568B Spectrum Analyzer, and using the HP 9825 Computer/Controller and the HP 85864B EMI Measurement Software, the spectrum was searched from 0.15 - 30 MHz for emissions emanating from the EUT.

<u>Test Results:</u> All readings were below the expectable limit.

FIGURE 10: CONDUCTED EMISSIONS.

<b>ONB</b>	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Conducte	ed Emissions			
DNB Job Number:	NB Job Number: 86010 Date: 16 Oct 2007						
Customer:	Customer: Intelligent Wireless Products, Inc.						
Model Number:	Model Number: CWAP819						
Description:	[X] FCC Part 15 Class B						
			•				

Freq	Meter	LISN	Cable	Corrected	Limit	Delta	Limit	Line	Туре	Comments
17.344	28.00	0.1	0.8	28.90	50.0	-21.10	AVE	L2	QP	Run 2 Downlink mode
18.143	30.50	0.2	8.0	31.50	50.0	-18.50	AVE	L2	QP	Run 2 Downlink mode
18.677	30.10	0.2	8.0	31.10	50.0	-18.90	AVE	L2	QP	Run 2 Downlink mode
18.943	32.10	0.2	0.9	33.20	50.0	-16.80	AVE	L2	QP	Run 2 Downlink mode
19.744	29.20	0.2	0.9	30.30	50.0	-19.70	AVE	L2	QP	Run 2 Downlink mode
20.278	29.30	0.2	0.9	30.40	50.0	-19.60	AVE	L2	QP	Run 2 Downlink mode
17.343	35.40	0.1	0.8	36.30	50.0	-13.70	AVE	L1	QP	Run 1 Uplink mode
17.343	30.00	0.1	0.8	30.90	50.0	-19.10	AVE	L2	QP	Run 1 Uplink mode
18.143	32.30	0.2	0.8	33.30	50.0	-16.70	AVE	L2	QP	Run 1 Uplink mode
18.143	36.90	0.1	0.8	37.80	50.0	-12.20	AVE	L1	QP	Run 1 Uplink mode
18.677	33.70	0.2	0.8	34.70	50.0	-15.30	AVE	L2	QP	Run 1 Uplink mode
18.677	38.70	0.1	0.8	39.60	50.0	-10.40	AVE	L1	QP	Run 1 Uplink mode
18.943	37.50	0.1	0.9	38.50	50.0	-11.50	AVE	L1	QP	Run 1 Uplink mode
18.943	33.30	0.2	0.9	34.40	50.0	-15.60	AVE	L2	QP	Run 1 Uplink mode
19.477	33.80	0.2	0.9	34.90	50.0	-15.10	AVE	L2	QP	Run 1 Uplink mode
19.477	38.60	0.1	0.9	39.60	50.0	-10.40	AVE	L1	QP	Run 1 Uplink mode
20.278	36.60	0.1	0.9	37.60	50.0	-12.40	AVE	L1	QP	Run 1 Uplink mode
20.278	31.90	0.2	0.9	33.00	50.0	-17.00	AVE	L2	QP	Run 1 Uplink mode

## 2.1055 Measurement of Frequency Stability (IC RSS-131)

The EUT is a power amplifier and contains no circuitry for generating or stabilizing the RF signal. The driver will be responsible for this task.

## 2.1057 Frequency Spectrum to be Investigated

The Frequency was searched from the lowest radio frequency generated in the equipment through the  $10^{\rm th}$  harmonic of the carrier frequency.

### **RF Exposure**

The CWAP819 (800 / 1900 MHz) dual band RF Compensator is operated as a signal booster as defined in 2.1091(b) based on its design and installation. The compensator is installed in such a way that it is physically secured and is generally located more than 40 cm from the end-user. This information is included in the user manual. It is suggested that the antenna be installed such that there is at least 40 cm of separation between user and the antenna.

#### **RF Exposure – MPE Calculations**

#### <u>Input</u>

Transmitter Power: 1.032W @ 824-849MHz (Uplink)

54.0mW @ 869-894MHz (Downlink) 0.796mW @ 1850-1910MHz (Uplink) 27.2mW @ 1930-1990MHz (Downlink)

Antenna Gain: 5 dBi all cases

Cable loss: 1.5 dB @ 824–849 MHz and 869-894MHz

2.5 dB @ 1850-1910 MHz and 1930-1990MHz

Frequency range: 824-849MHz and 1850-1910MHz (Uplink)

869-894MHz and 1930-1990MHz (Downlink)

#### **Assumptions**

1. A single ¼ wavelength radiating antenna is assumed.

2. Closest exposure distance is assumed to be 40 cm

3. Using the formula Level 1/Limit1 + Level2/Limit2 to show predicted total RF exposure if both bands are operating simultaneously, result must be less than 1.

Where: Limit 1 is the limit in the uplink band

Limit 2 is the limit in the downlink band

Level 1 is the calculated maximum RF exposure in the uplink band Level 2 is the calculated maximum RF exposure in the downlink band

824-894 Band (Uplink and Downlink)

Combined Worst Case Exposure = 0.3521472 is less than 1 = compliant

1850-1990 Band (Uplink and Downlink)

Combined Worst Case Exposure = 0.0161025 is less than 1 = compliant

#### **RF Exposure – MPE Calculations**

#### Calculations for Uplink

The following results shall be assumed to be accurate for the far-field only. These predictions will over-estimate power density in the near-field. Based on the use of a ¼ wavelength radiator, a distance of 40 cm is considered to be in the far-field for all cases.

 $S = PG/4*PI*R^2$ 

@ 824 – 849 MHz

P is 1032 mW

G is 4.5 dBi (Antenna gain – loss) or  $10^{(4.5/10)}$  or 2.818 Numerical R is 40 cm

#### $S = 0.145 \text{mW/cm}^2$

For Occupational/Controlled Exposure

From 300 to 1500 MHz, power density limit is f/300 mW/cm<sup>2</sup> @ 824 MHz, power density limit is 2.747 mW/cm<sup>2</sup> for 6 minutes.

For General Population/Uncontrolled Exposure

From 300 to 1500 MHz, power density limit is f/1500 mW/cm<sup>2</sup> @ 824 MHz, Power density limit is **0.549 mW/cm<sup>2</sup> for 30 minutes.** 

#### Conclusion: Meets MPE limits

@ 1850 - 1910 MHz

P is 796 mW G is 3.5 dBi (Antenna gain – loss) or  $10^{(3.5/10)}$  or 2.24 Numerical R is 40 cm

## $S = 0.088675 \text{mW/cm}^2$

For Occupational/Controlled Exposure

From 1,500 to 100,000 MHz, power density limit is 5 mW/cm<sup>2</sup> for 6 minutes.

For General Population/Uncontrolled Exposure

From 1,500 to 100,000 MHz, power density limit is 1 mW/cm<sup>2</sup> for 30 minutes.

#### Conclusion: Meets MPE limits

#### **RF Exposure – MPE Calculations**

#### Calculations for Downlink

The following results shall be assumed to be accurate for the far-field only. These predictions will over-estimate power density in the near-field. Based on the use of a ½ wavelength radiator, a distance of 40 cm is considered to be in the far-field for all cases.

 $S = PG/4*PI*R^2$ 

@ 869 – 894 MHz

P is 54 mW

G is 4.5 dBi (Antenna gain – loss) or  $10^{(4.5/10)}$  or 2.818 Numerical

R is 40 cm

#### $S = 0.008 \text{mW/cm}^2$

For Occupational/Controlled Exposure

From 300 to 1500 MHz, power density limit is f/300 mW/cm<sup>2</sup> @ 869 MHz, power density limit is **2.897 mW/cm<sup>2</sup> for 6 minutes.** 

For General Population/Uncontrolled Exposure

From 300 to 1500 MHz, power density limit is f/1500 mW/cm<sup>2</sup> @ 869 MHz, Power density limit is **0.579 mW/cm<sup>2</sup> for 30 minutes**.

#### Conclusion: Meets MPE limits

@ 1930 – 1990 MHz

P is 27.2 mW

G is 3.5 dBi (Antenna gain – loss) or  $10^{(3.5/10)}$  or 1.12 Numerical

R is 40 cm

## $S = 0.003030 \text{mW/cm}^2$

For Occupational/Controlled Exposure

From 1,500 to 100,000 MHz, power density limit is 5 mW/cm<sup>2</sup> for 6 minutes.

For General Population/Uncontrolled Exposure

From 1,500 to 100,000 MHz, power density limit is 1 mW/cm<sup>2</sup> for 30 minutes.

#### Conclusion: Meets MPE limits

Appendix A Photographs

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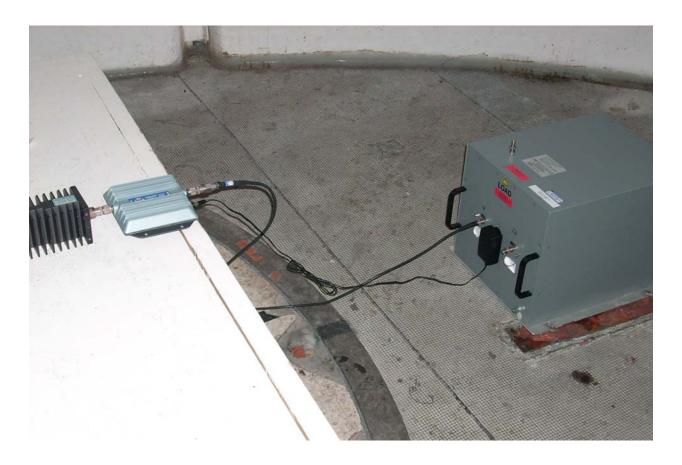
# PHOTOS: RADIATED EMISSIONS: EUT SET UP

Notes: Receive antennas located outside weather dome 3 meters away from EUT.



# PHOTOS: CONDUCTED EMISSIONS: EUT SET UP

# Notes:



## PHOTOS: RADIATED FIELD STRENGTH OF SPURIOUS EMISSIONS

Notes: Transmit Antenna



# PHOTOS: RADIATED FIELD STRENGTH OF SPURIOUS EMISSIONS

Notes: Transmit Antenna



## PHOTOS: RADIATED FIELD STRENGTH OF SPURIOUS EMISSIONS

Notes: Receive Antenna



# PHOTO: RF POWER OUTPUT, EMISSIONS LIMITATIONS GSM/TDMA, OCCUPIED BANDWIDTH GSM/TDMA, CONDUCTED SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Notes:

