FCC Test Report

Product Name : Mobile Computer
Model No : PT-9130-1-1, PT-9230-1-1
FCC ID : NBF-9X30-1-1

Applicant : Argox Information Co.,Ltd.
Address : 7F., No.126, Ln. 235, Baociao Rd., Sindian Dist.,
New Taipei City 231, Taiwan (R.O.C.)

Date of Receipt : 2012/12/20
Issued Date : 2013/03/18
Report No. : 12C330R-HPUSP07V01
Report Version : V1.0

Testing Laboratory
0914

Test Report Certification

Issued Date : 2013/03/18
Report No.: 12C330R-HPUSP07V01

Accredited by NIST (NVLAP)
NVLAP Lab Code: 200533-0

Product Name	:	Mobile Computer
Applicant	:	Argox Information Co.,Ltd.
Address	:	7F., No.126, Ln. 235, Baociao Rd., Sindian Dist., New Taipei City 231, Taiwan (R.O.C.)
Manufacturer	:	Argox Information Co.,Ltd.
Trade Name	:	ARGOX
Model No.	:	PT-9130-1-1, PT-9230-1-1
EUT Voltage	:	DC 3.8V(Battery) ,DC 5V (Adapter)
Measurement Standard	:	FCC CFR Title 47 Part 2 22 24
Measurement Reference	:	TIA/EIA 603-C
Test Result	:	Complied

Test results relate only to the samples tested.
The test report shall not be reproduced except in full without the written approval of Quie Tek Corporation.
This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

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(Adm. Assistant / April Chen)

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(Engineer / Wen Lee)

Approved By :
(Manager /Vincent Lin)

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Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

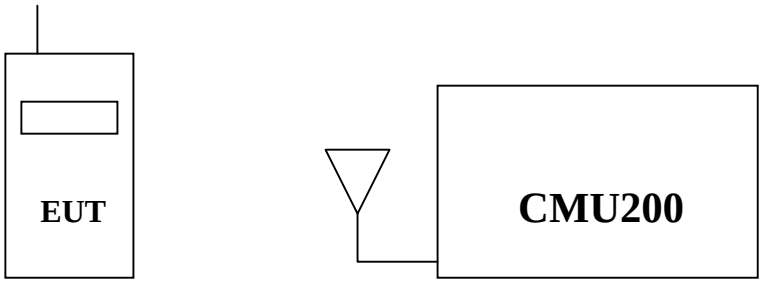
Product Name	Mobile Computer
Model No.	PT-9130-1-1, PT-9230-1-1
Trade Name	ARGOX
WWAN Modular	MFR: CINTERION, M/N: MC75i
IMEI No.	356497-xx-xxxxxx-x
FCC ID	NBF-9X30-1-1
Antenna Type	PIFA
Antenna Kit	MFR: Aristotle Enterprises, M/N: RFA-09-G124-70-30, Gain : 1.0 dBi
TX Frequency	824MHz~849MHz(GSM 850) 1850MHz ~ 1910MHz(PCS 1900)
Rx Frequency	869MHz~894MHz(GSM 850) 1930MHz ~ 1990MHz(PCS 1900)
Function	GPRS/EGPRS

Note: The EUT is including two models for different as below :

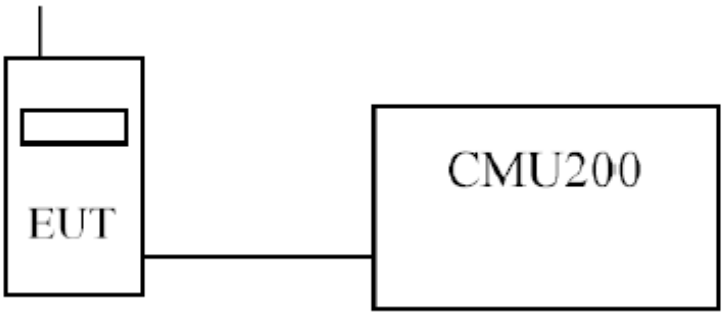
No.	Model Number	Scan tech
1	PT-9130-1-1	Laser
	PT-9230-1-1	2D

1.3. Configuration of tested System

(a) Configuration of Radiated measurement



(b) Configuration of Conducted measurement



1.4. EUT Setup Procedures

(1) Setup the EUT and simulators as shown on 1.3
(2) Turn on the power of all equipments.
(3) The EUT was set to communicate with CMU200.
(4) Repeat the above procedure (3).

1.5. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	21
Humidity (%RH)	25-75	53
Barometric pressure (mbar)	860-1060	982

Site Description: File on

Federal Communications Commission

FCC Engineering Laboratory

7435 Oakland Mills Road

Columbia, MD 21046

FCC Registration Number :92195

July 03, 2001 Accreditation on NVLAP
NVLAP Lab Code: 200533-0

Site Name: Quie Tek Corporation

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TEL : 886-2-8601-3788 / FAX : 886-2-8601-3789
E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

1.6. Type of Emission

GSM/GPRS: 300KGXW
EGPRS: 300KG7W

1.7. voltages and DC currents

GSM 850 GPRS		
EUT Transmitting (in maximum power)	:	DC voltage : 3.7V , DC current : 0.64A
EUT Standby	:	DC voltage : 3.7V , DC current : 0.28A
GSM 850 EGPRS		
EUT Transmitting (in maximum power)	:	DC voltage : 3.7V , DC current : 0.49A
EUT Standby	:	DC voltage : 3.7V , DC current : 0.28A
PCS 1900 GPRS		
EUT Transmitting (in maximum power)	:	DC voltage : 3.7V , DC current : 0.46A
EUT Standby	:	DC voltage : 3.7V , DC current : 0.28A
PCS 1900 EGPRS		
EUT Transmitting (in maximum power)	:	DC voltage : 3.7V , DC current : 0.42A
EUT Standby	:	DC voltage : 3.7V , DC current : 0.28A

2. Peak Power Output

2.1. Test Equipment

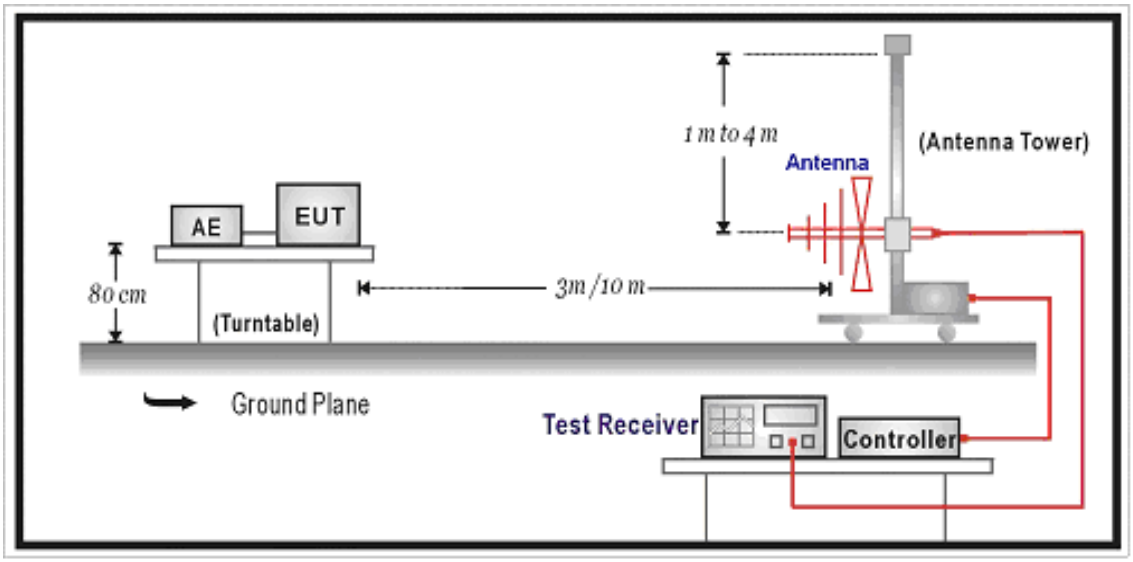
The following test equipments are used during the radiated emission test:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒CTR	Spectrum Analyzer	Agilent	N9020A / MY48010570	2012/05/31
	Dual Directional couple	Agilent	778D / 50550	2012/09/14
	Directional coupler	Agilent	87300C / 3239A01864	2012/09/10
☒Site#3	Test Receiver	R & S	ESCS 30/ 100367	2012/11/30
	Universal Radio Communication Tester	R&S	CMU200/104846	2012/05/14
	Spectrum Analyzer	Agilent	N9000A/ MY50510070	2012/03/12
	Bilog Antenna	Schaffner Chase	CBL6112B/ 2707	2012/07/14
	Horn Antenna	Schwarzbeck	9120D / 556	2012/12/22
	Pre-Amplifier	QTK	QTK-LK-E-I-AMP4/ CHM-0201003	2012/07/02

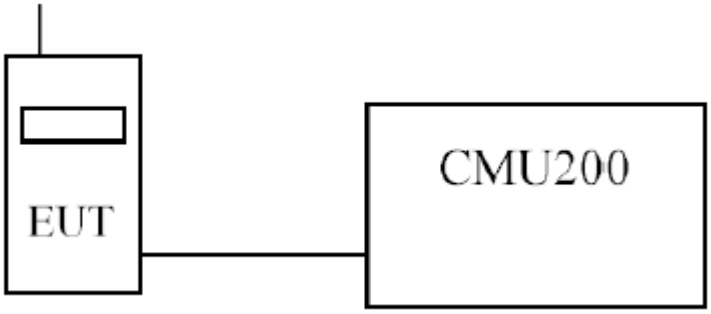
Note: All equipments that need to be calibrated are with calibration period of 1 year.

2.2. Test Setup

Radiated Power Measurement



Conducted Power Measurement



2.3. Limits

Cellular Band 850	**<7W**

PCS Band 1900	**<2W or +33dBm**

2.4. Test Procedure

➢RF Out Power (Radiated)

The Spectrum Analyzer was tuned to the test frequency. The EUT was tested in three The device was put into Transmit mode then rotated through 360 degrees until the highest power level was observed in both horizontal and vertical polarization. The device was then replaced with a substitution antenna, which input signal was adjusted until the received level matched that of the previously detected emission.

(1) The EUT is tested with maximum rated TX power via the Base Station simulator.

(2) The EUT is tested in three orthogonal planes , The worst case test configuration was found in the horizontal position.

➢RF Out Power (Conducted)

The EUT is tested with maximum rated TX power via the Base Station simulator, and the output power was measured at the antenna terminals of the EUT.

2.5. Test Specification

According to Part 2.1046, 22.913, 24.232.

2.6. Test Result of Peak Power Output

Product	Mobile Computer		
Test Mode	RF Output Power (Conducted)		
Date of Test	2013/03/07	Test Site	CTR

GPRS 850 (↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	32.09	0.4	32.49	**1.77**
836.4	31.94	0.4	32.34	1.71
848.8	31.74	0.4	32.14	1.64
GPRS 1900 (↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	28.75	0.6	29.35	**0.86**
1880	28.57	0.6	29.17	0.83
1909.8	28.48	0.6	29.08	0.81
Note: The output power are measurement in external connector of device's case.				

EGPRS 850 (↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	27.04	0.4	27.44	**0.55**
836.4	26.89	0.4	27.29	0.54
848.8	26.71	0.4	27.11	0.51
EGPRS 1900 (↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	25.63	0.6	26.23	**0.42**
1880	25.47	0.6	26.07	0.40
1909.8	25.37	0.6	25.97	0.40
Note: The output power are measurement in external connector of device's case.				

GPRS 850 (↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	30.10	0.4	30.50	**1.12**
836.4	29.97	0.4	30.37	1.09
848.8	29.76	0.4	30.16	1.04
GPRS 1900 (↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	26.81	0.6	27.41	**0.55**
1880	26.65	0.6	27.25	0.53
1909.8	26.57	0.6	27.17	0.52
Note: The output power are measurement in external connector of device's case.				

EGPRS 850 (↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	25.12	0.4	25.52	**0.36**
836.4	24.97	0.4	25.37	0.34
848.8	24.81	0.4	25.21	0.33
EGPRS 1900 (↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	23.69	0.6	24.29	**0.27**
1880	23.55	0.6	24.15	0.26
1909.8	23.41	0.6	24.01	0.25
Note: The output power are measurement in external connector of device's case.				

GPRS 850 (↑ ↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	28.20	0.4	28.60	**0.72**
836.4	28.06	0.4	28.46	0.70
848.8	27.87	0.4	28.27	0.67
GPRS 1900 (↑ ↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	24.96	0.6	25.56	**0.36**
1880	24.81	0.6	25.41	0.35
1909.8	24.72	0.6	25.32	0.34
Note: The output power are measurement in external connector of device's case.				

EGPRS 850 (↑ ↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	23.03	0.4	23.43	**0.22**
836.4	22.92	0.4	23.32	0.21
848.8	22.67	0.4	23.07	0.20
EGPRS 1900 (↑ ↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	21.93	0.6	22.53	**0.18**
1880	21.71	0.6	22.31	0.17
1909.8	21.59	0.6	22.19	0.17
Note: The output power are measurement in external connector of device's case.				

GPRS 850 (↑ ↑ ↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	26.28	0.4	26.68	**0.47**
836.4	26.16	0.4	26.56	0.45
848.8	25.94	0.4	26.34	0.43
GPRS 1900 (↑ ↑ ↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	23.01	0.6	23.61	**0.23**
1880	22.86	0.6	23.46	0.22
1909.8	22.75	0.6	23.35	0.22
Note: The output power are measurement in external connector of device's case.				

EGPRS 850 (↑ ↑ ↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	21.20	0.4	21.60	**0.14**
836.4	20.98	0.4	21.38	0.14
848.8	20.71	0.4	21.11	0.13
EGPRS 1900 (↑ ↑ ↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	19.97	0.6	20.57	**0.11**
1880	19.84	0.6	20.44	0.11
1909.8	19.69	0.6	20.29	0.11
Note: The output power are measurement in external connector of device's case.				

Product	Mobile Computer		
Test Mode	RF Output Power (Radiated)		
Date of Test	2013/03/07	Test Site	Site3
Test Condition	GSM 850 GPRS		

Maximum Power-GSM 850 GPRS

Frequency (MHz)	Reading Level (dBm)	Substitution Level (dBm)	Substitution Antenna Gain (dBd)	Cable Loss (dB)	Result ERP (dBm)	Result ERP (W)
824.2	14.183	21.05	1.75	0.6	22.20	0.17
836.4	14.983	21.80	1.75	0.6	22.95	0.20
848.8	15.502	22.28	1.75	0.6	23.43	**0.22**

Note:

1. The EUT meets the requirements of FCC CFR 47: Part 22, Section 22.913(a) for Effective Radiated Power.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz
3. Result ERP = Substitution Level + Substitution Antenna Gain - Cable Loss

Product	Mobile Computer		
Test Mode	RF Output Power (Radiated)		
Date of Test	2013/03/07	Test Site	Site3
Test Condition	EGSM 850 EGPRS		

Maximum Power-GSM 850 EGPRS

Frequency (MHz)	Reading Level (dBm)	Substitution Level (dBm)	Substitution Antenna Gain (dBd)	Cable Loss (dB)	Result ERP (dBm)	Result ERP (W)
824.2	11.721	18.74	1.75	0.6	19.89	0.10
836.4	12.691	19.66	1.75	0.6	20.81	0.12
848.8	13.042	19.99	1.75	0.6	21.14	**0.13**

Note:

1. The EUT meets the requirements of FCC CFR 47: Part 22, Section 22.913(a) for Effective Radiated Power.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz
3. Result ERP = Substitution Level + Substitution Antenna Gain - Cable Loss

Product	Mobile Computer		
Test Mode	RF Output Power (Radiated)		
Date of Test	2013/03/07	Test Site	Site3
Test Condition	PCS 1900 GPRS		

Maximum Power-PCS 1900 GPRS

Frequency (MHz)	Reading Level (dBm)	Substitution Level (dBm)	Substitution Antenna Gain (dBi)	Cable Loss (dB)	Result EIRP (dBm)	Result EIRP (W)
1850.2	-13.579	18.608	10.4	1.02	27.988	0.63
1880.0	-13.792	18.610	10.4	1.02	27.99	**0.63**
1909.8	-14.831	17.610	10.4	1.02	26.99	0.50

Note:

1. The EUT meets the requirements of FCC CFR 47: Part 24, Section 24.232(b) for Effective Isotropically Radiated Power.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz
3. Result EIRP = Substitution Level + Substitution Antenna Gain - Cable Loss

Product	Mobile Computer		
Test Mode	RF Output Power (Radiated)		
Date of Test	2013/03/07	Test Site	Site3
Test Condition	PCS 1900 EGPRS		

Maximum Power-PCS 1900 EGPRS

Frequency (MHz)	Reading Level (dBm)	Substitution Level (dBm)	Substitution Antenna Gain (dBi)	Cable Loss (dB)	Result EIRP (dBm)	Result EIRP (W)
1850.2	-14.505	17.682	10.4	1.02	27.062	0.51
1880.0	-14.418	17.984	10.4	1.02	27.364	**0.55**
1909.8	-15.209	17.232	10.4	1.02	26.612	0.46

Note:

1. The EUT meets the requirements of FCC CFR 47: Part 24, Section 24.232(b) for Effective Isotropically Radiated Power.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz
3. Result EIRP = Substitution Level + Substitution Antenna Gain - Cable Loss

3. Occupied Bandwidth

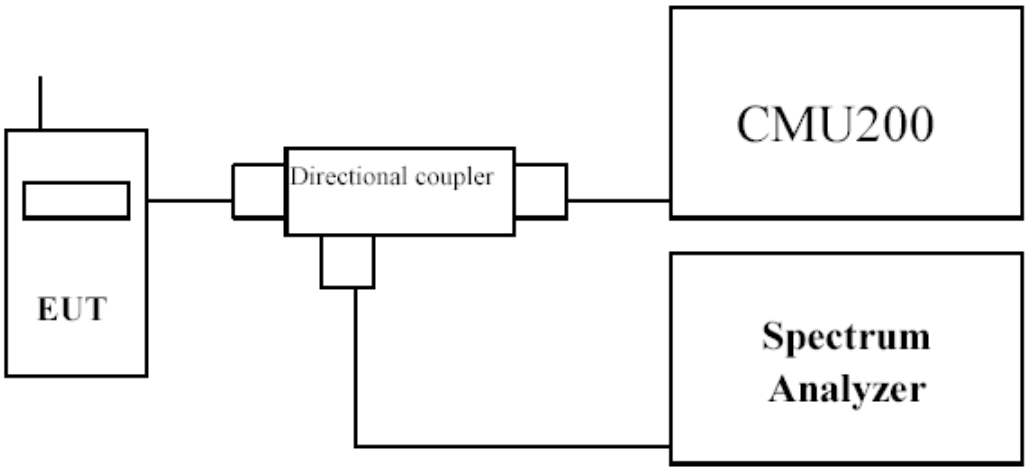
3.1. Test Equipment

The following test equipments are used during the occupied bandwidth tests:

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Spectrum Analyzer	Agilent	N9020A / MY48010570	2012/05/31
Universal Radio Communication Tester	R & S	CMU200 / 104846	2012/05/14
Directional coupler	Agilent	87300C / MY44300353	2011/09/13
Directional coupler	Agilent	778D-012 / 50550	2012/09/14

Note: All equipments upon which need to be calibrated are with calibration period of 1 year.

3.2. Test Setup



3.3. Test Procedure

The EUT is tested with maximum rated TX power via the Base Station simulator, and the occupied bandwidth was measured at the antenna terminals of the EUT.

The Resolution BW of the analyzer is set to 1 % of the emission bandwidth. The EUT's occupied bandwidth is measured as the width of the signal between two points, one below the carrier center frequency and one above the carrier frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.
The plots below show the resultant display from the Spectrum Analyser.

3.4. Test Specification

According to Part 2.1049, 22.917, 24.238.

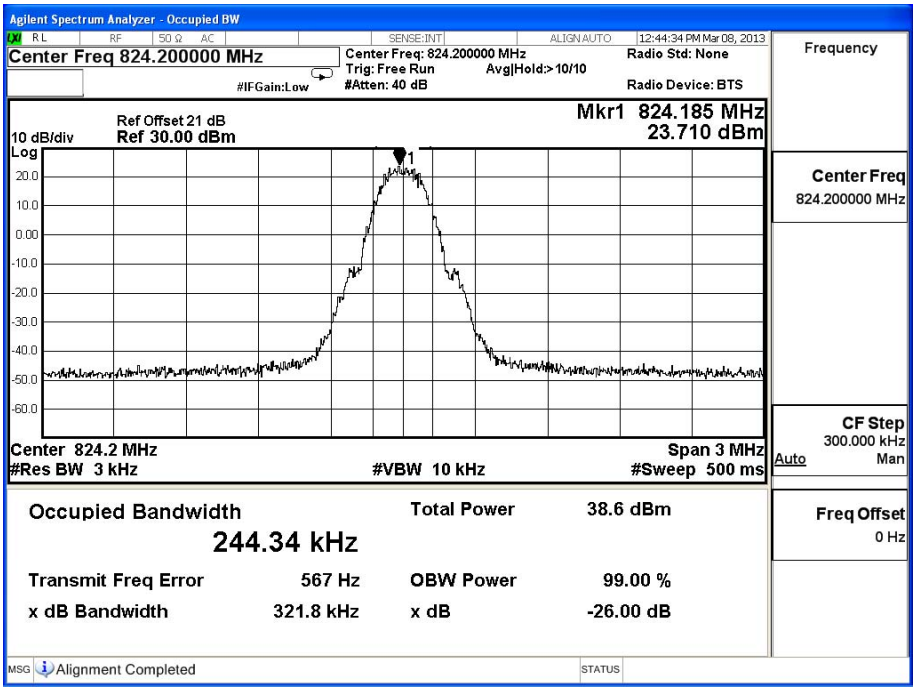
3.5. Test Result of Occupied Bandwidth

Product	Mobile Computer
Test Mode	Occupied Bandwidth
Test Site	CTR

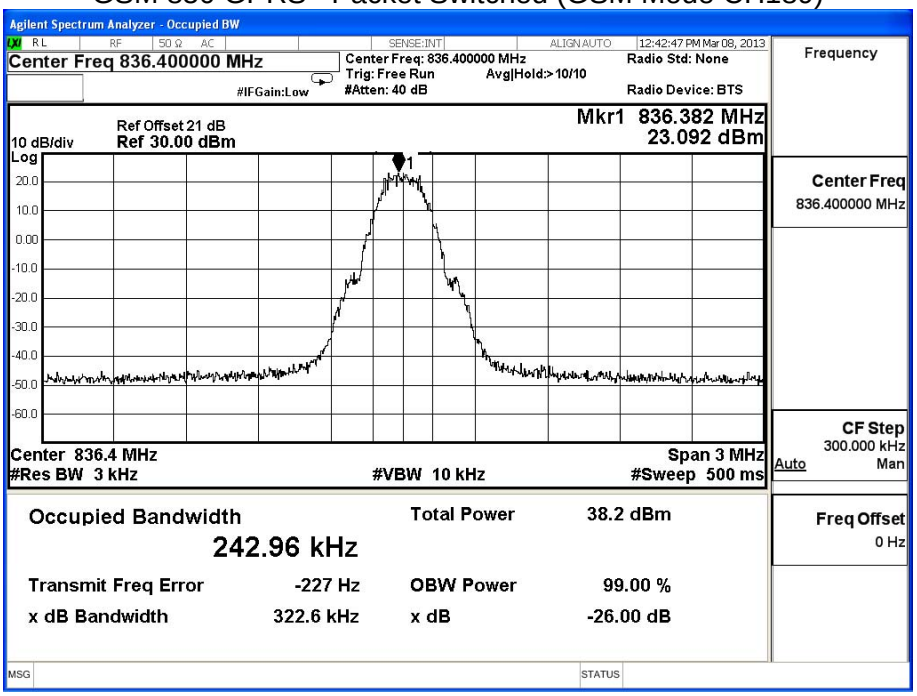
Test Mode	Channel & TX Frequency (MHz)	99% Occupied Bandwidth (KHz)	26 dB bandwidth (KHz)	Required Limit (MHz)	Result
GSM 850 GPRS	128(824.2)	244.34	321.8	N/A	Pass
	189(836.4)	242.96	322.6	N/A	Pass
	251(848.8)	243.96	321.2	N/A	Pass
GSM 850 EGPRS	128(824.2)	241.14	307.4	N/A	Pass
	189(836.4)	242.22	311.9	N/A	Pass
	251(848.8)	240.75	308.7	N/A	Pass
PCS 1900 GPRS	512(1850.2)	244.77	317.2	N/A	Pass
	661(1880)	248.22	317.0	N/A	Pass
	810(1909.8)	248.33	317.7	N/A	Pass
PCS 1900 EGPRS	512(1850.2)	239.95	309.3	N/A	Pass
	661(1880)	241.47	307.1	N/A	Pass
	810(1909.8)	243.65	311.6	N/A	Pass

Product	Mobile Computer		
Test Mode	Occupied Bandwidth		
Date of Test	2013/03/08	Test Site	CTR
Test Condition	GSM 850 GPRS		

GSM 850 GPRS - Packet Switched (GSM Mode CH 128)

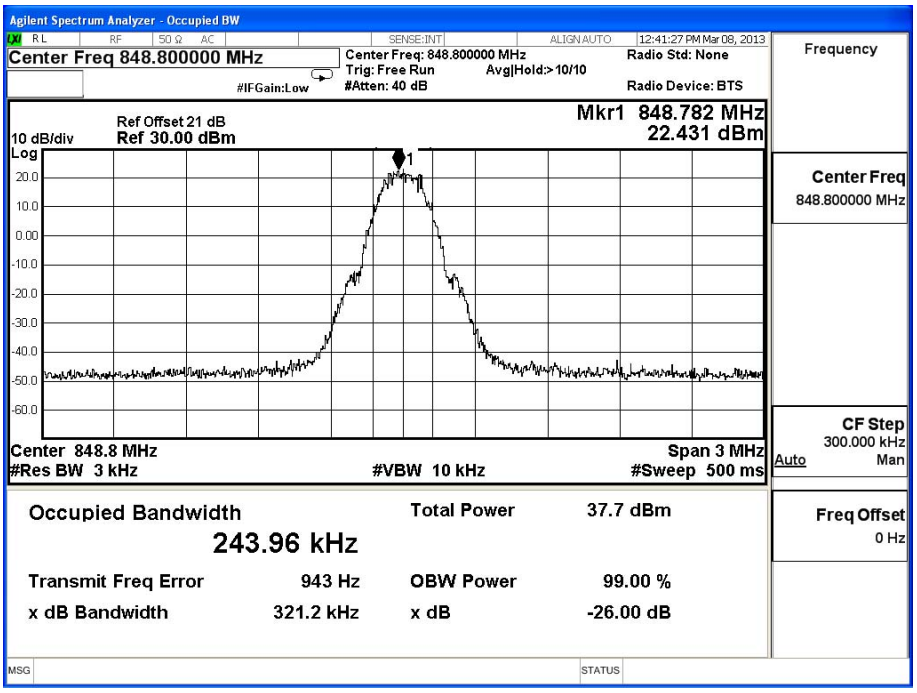


GSM 850 GPRS - Packet Switched (GSM Mode CH189)



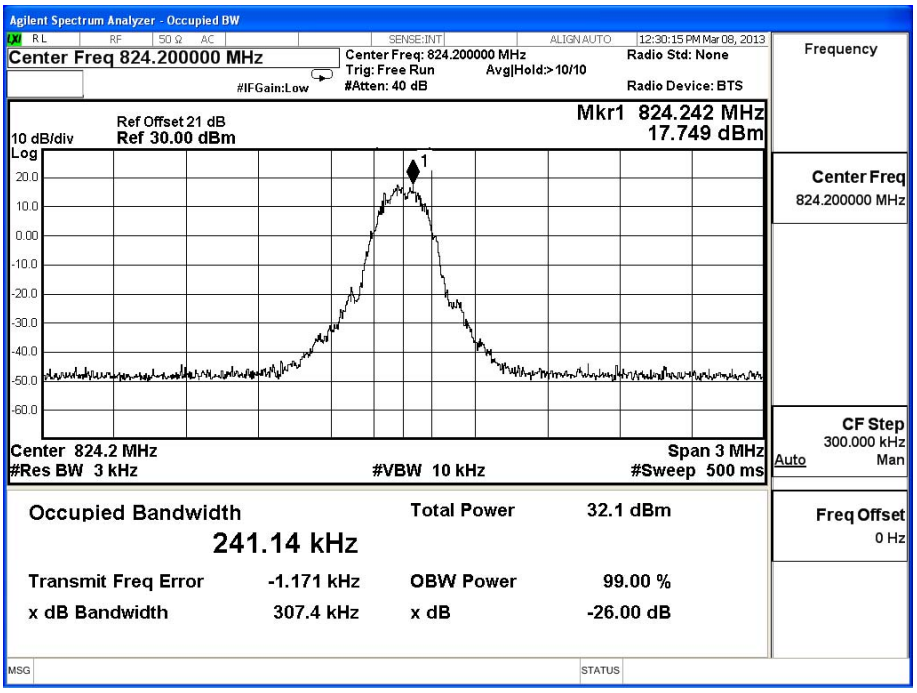
Product	Mobile Computer		
Test Mode	Occupied Bandwidth		
Date of Test	2013/03/08	Test Site	CTR
Test Condition	GSM 850 GPRS		

GSM 850 GPRS - Packet Switched (GSM Mode CH 251)

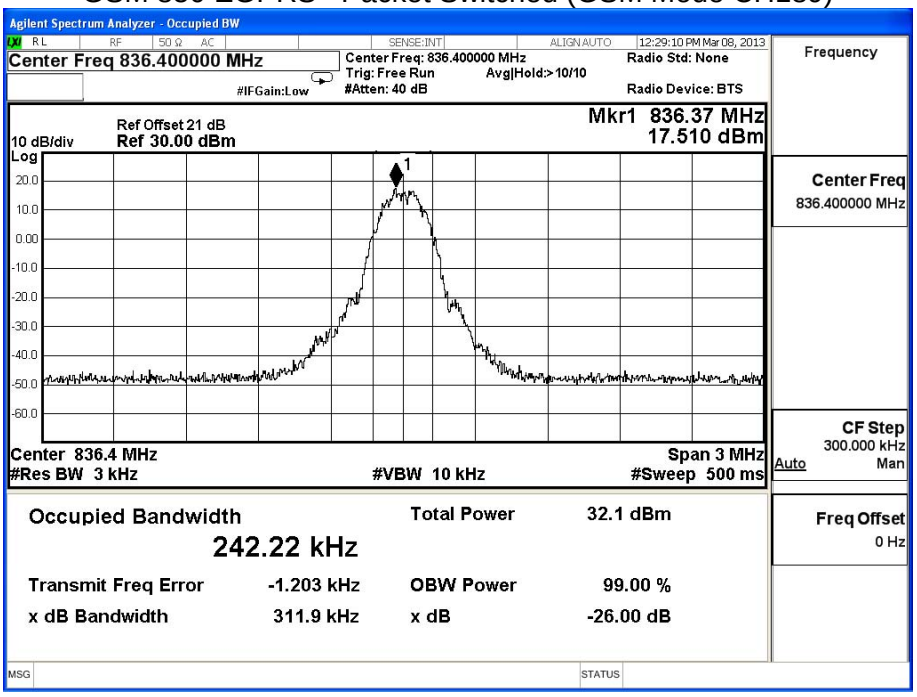


Product	Mobile Computer		
Test Mode	Occupied Bandwidth		
Date of Test	2013/03/08	Test Site	CTR
Test Condition	GSM 850 EGPRS		

GSM 850 EGPRS - Packet Switched (GSM Mode CH 128)

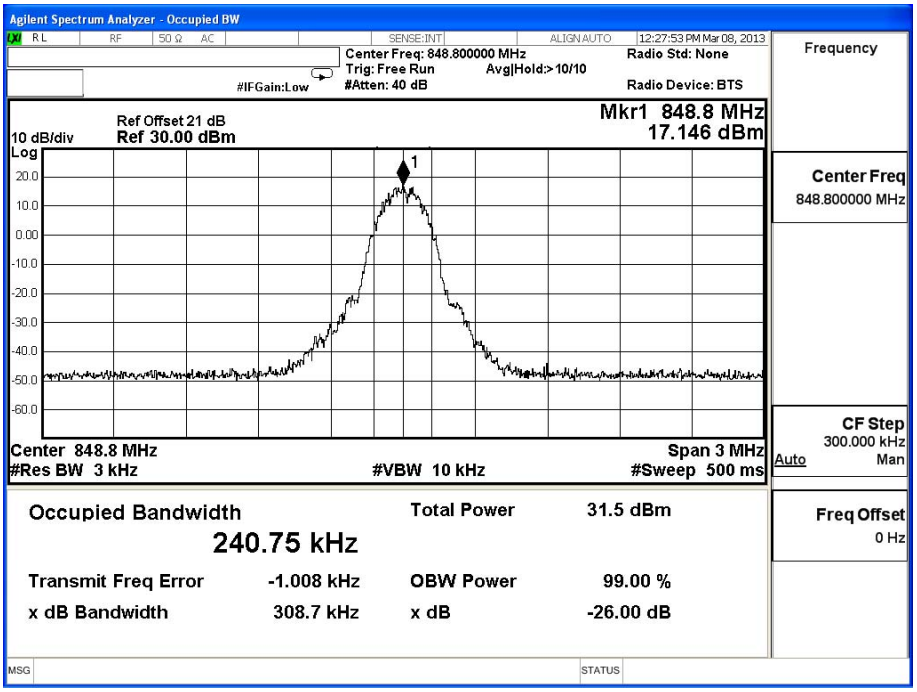


GSM 850 EGPRS - Packet Switched (GSM Mode CH189)



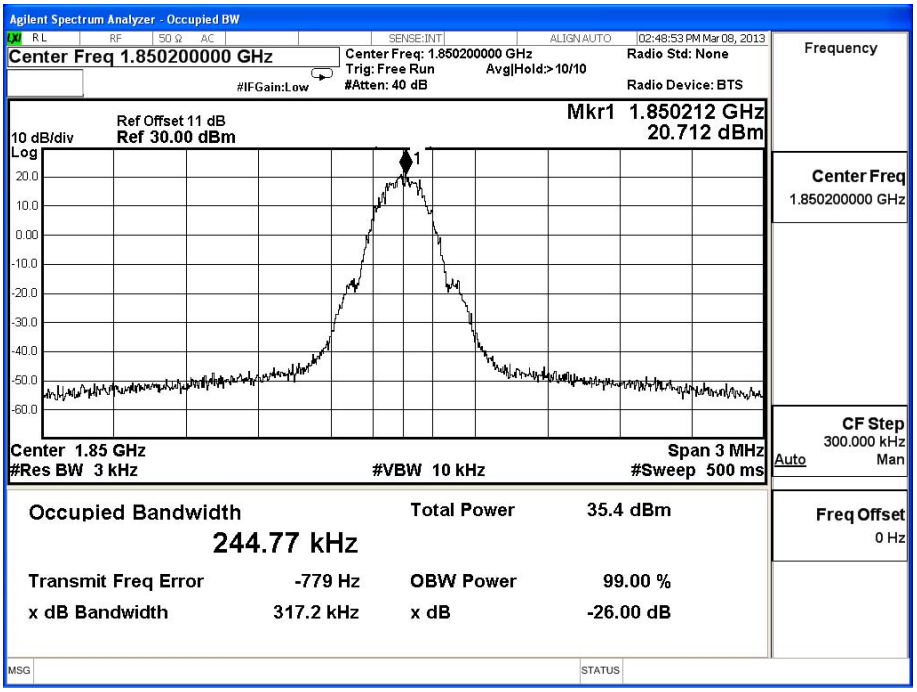
Product	Mobile Computer		
Test Mode	Occupied Bandwidth		
Date of Test	2013/03/08	Test Site	CTR
Test Condition	GSM 850 EGPRS		

GSM 850 EGPRS - Packet Switched (GSM Mode CH 251)

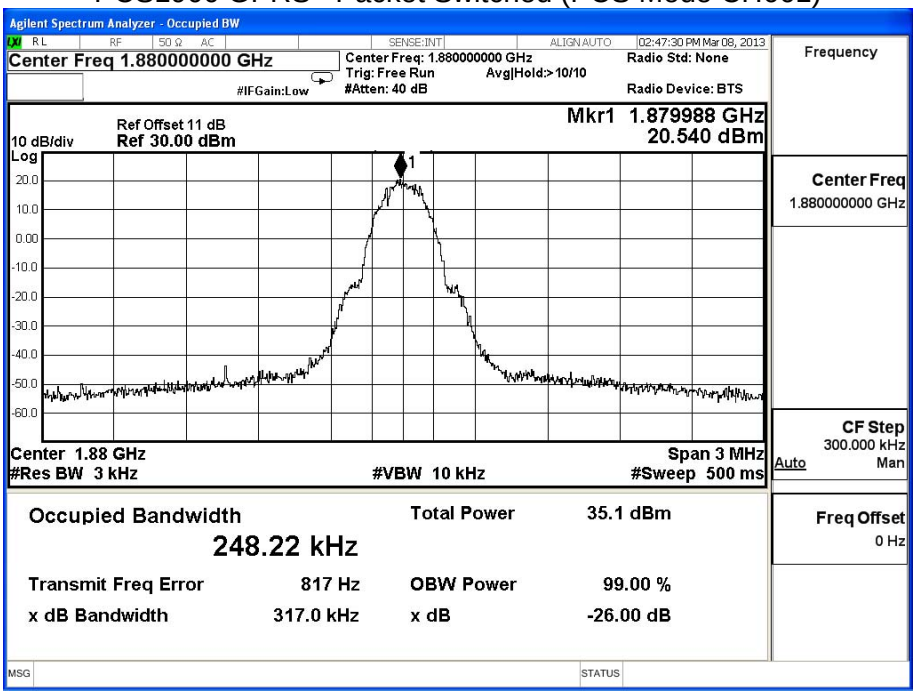


Product	Mobile Computer		
Test Mode	Occupied Bandwidth		
Date of Test	2013/03/08	Test Site	CTR
Test Condition	PCS1900 GPRS		

PCS1900 GPRS - Packet Switched (PCS Mode CH 512)

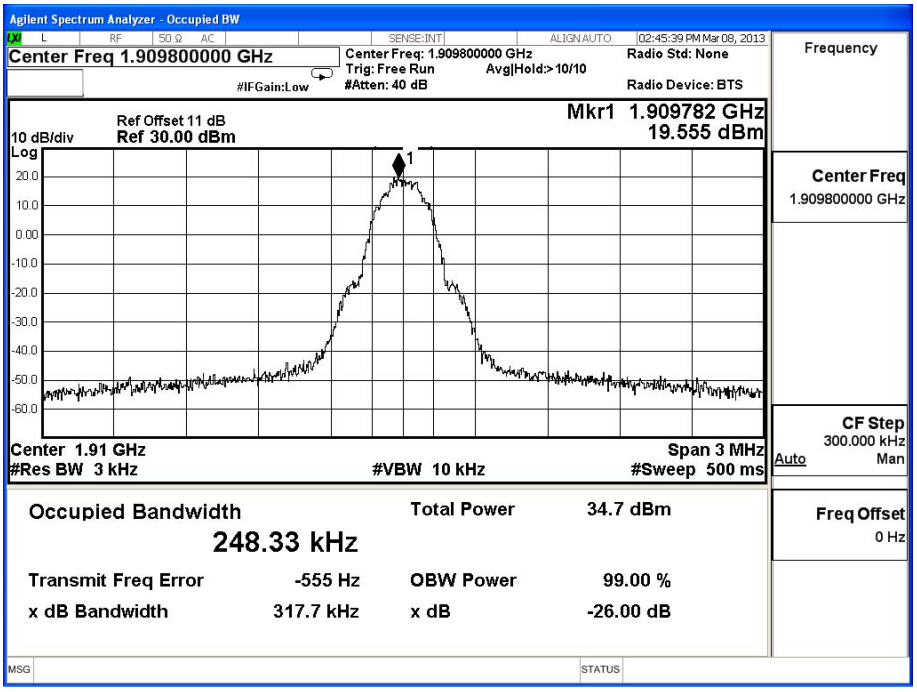


PCS1900 GPRS - Packet Switched (PCS Mode CH661)



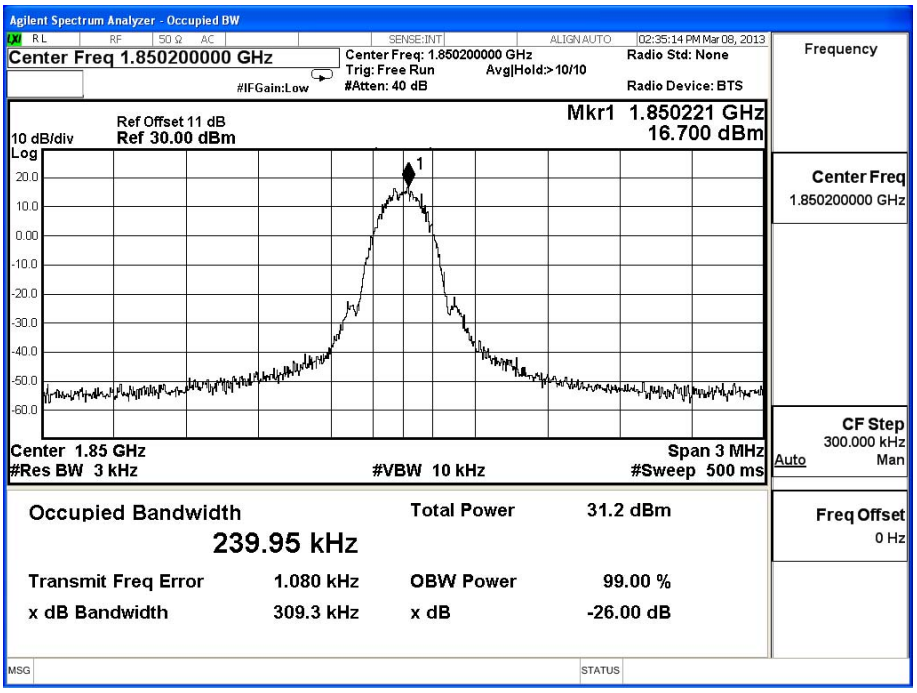
Product	Mobile Computer		
Test Mode	Occupied Bandwidth		
Date of Test	2013/03/08	Test Site	CTR
Test Condition	PCS1900 GPRS		

PCS1900 GPRS - Packet Switched (PCS Mode CH 810)

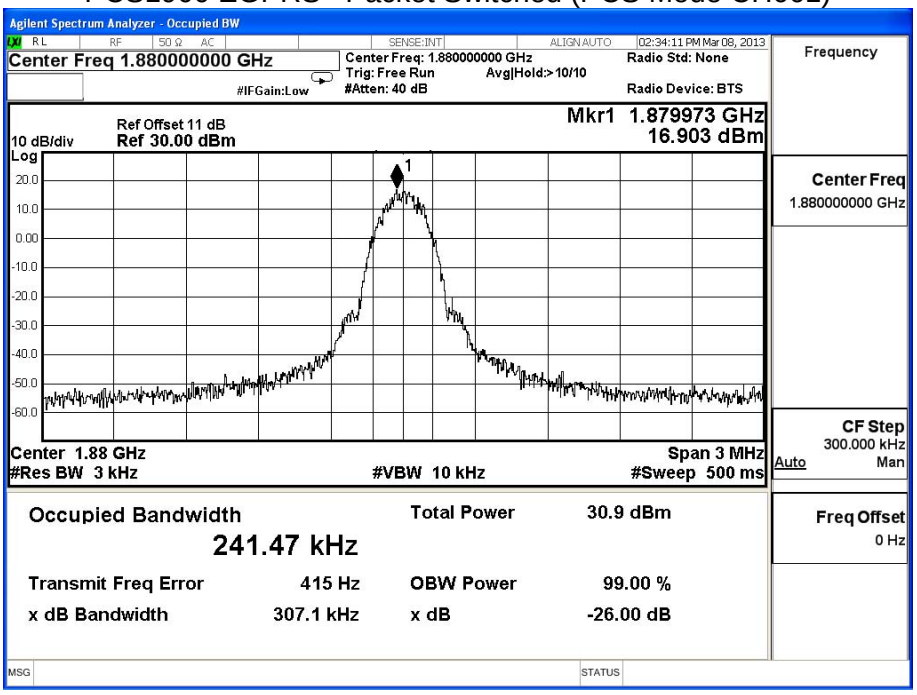


Product	Mobile Computer		
Test Mode	Occupied Bandwidth		
Date of Test	2013/03/08	Test Site	CTR
Test Condition	PCS1900 EGPRS		

PCS1900 EGPRS - Packet Switched (PCS Mode CH 512)



PCS1900 EGPRS - Packet Switched (PCS Mode CH661)



Product	Mobile Computer		
Test Mode	Occupied Bandwidth		
Date of Test	2013/03/08	Test Site	CTR
Test Condition	PCS1900 EGPRS		

PCS1900 EGPRS - Packet Switched (PCS Mode CH 810)