Test Report

Product Name	:	HE863-NAG
Model No	:	HE863-NAG
FCC ID	:	RI7HE863NAG

Applicant	:	Telit Communications S.p.A.
Address	:	Viale Stazione di Prosecco 5/b

Date of Receipt	:	2011/03/30
Issued Date	:	2011/04/28
Report No.	:	114040R-HPUSP07V01
Report Version	:	V 1.0

Test Report Certification

Issued Date : 2011/04/28

Report No.: 114040R-HPUSP07V01

Accredited by NIST (NVLAP)

NVLAP Lab Code: 200533-0

Product Name	:	HE863-NAG
Applicant	:	Telit Communications S.p.A.
Address	:	Viale Stazione di Prosecco 5/b
Manufacturer	:	TELIT COMMUNICATIONS S.P.A.
Trade Name	:	Telit
Model No.	:	HE863-NAG
EUT Rated Voltage	:	DC 3.4V~4.2V
EUT Test Voltage	:	DC 3.8V
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

Documented By : Anny Chou

(Adm. Assistant / Anny Chou)

Tested By : Vorana Chen

(Engineer / Vorana Chen)

Approved By :

(Manager /Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	HE863-NAG
Model No.	HE863-NAG
Trade Name	Telit
IMEI No.	355322-xx-xxxxxx-x
FCC ID.	RI7HE863NA
Antenna Type	Dipole
Antenna Kit	M/N: UC864 - G ;Gain: 4.2dBi
TX Frequency	824MHz~849MHz(GSM 850/WCDMA Band V) 1850MHz ~ 1910MHz(PCS 1900/WCDMA Band II)
Rx Frequency	869MHz~894MHz(GSM 850/WCDMA Band V) 1930MHz ~ 1990MHz(PCS 1900/WCDMA Band II)
Function	GSM/GPRS/EGPRS/WCDMA/HSDPA/HSUPA
HW Version	1.00
SW version	11.00.110-B004

1.2. Operational Description

The information contained within this report is intended to show verification of compliance of the 850/1900MHz Notebook to the requirements of FCC 47 CFR Part 2, 22 and 24.

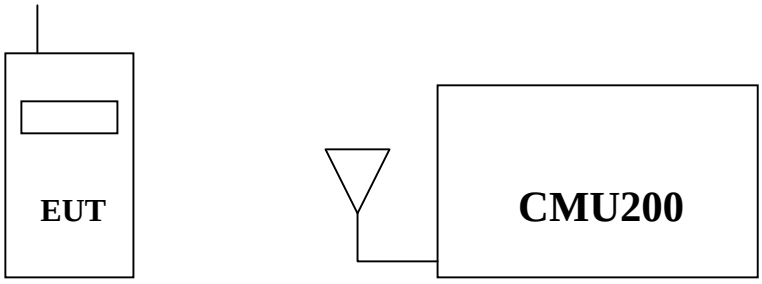
The EUT provide all functions described as above. The EUT is tested with maximum rated TX power via the Base Station simulator.

QuieTek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

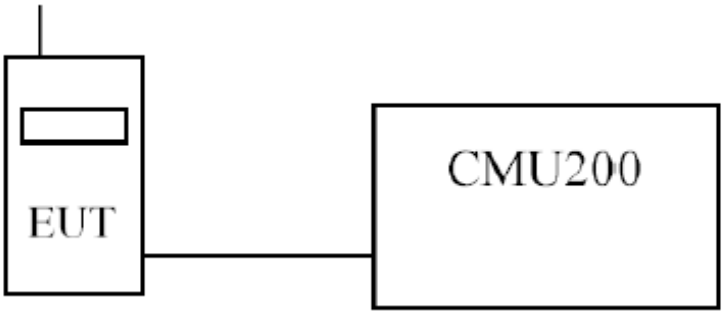
Test Mode:	GSM 850 VOICE
	GSM 850 GPRS
	GSM 850 EGPRS
	PCS 1900 VOICE
	PCS 1900 GPRS
	PCS 1900 EGPRS
	WCDMA BAND V
	WCDMA BAND V HSDPA
	WCDMA BAND V HSUPA
	WCDMA BAND II
	WCDMA BAND II HSDPA
	WCDMA BAND II HSUPA

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

LinKou Testing Laboratory:

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E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

1.6. Type of Emission

GSM/GPRS: 300KGXW
EGPRS: 300KG7W
WCDMA/HSDPA/HSUPA: 4M20F9W

1.7. DC voltages and DC currents

GSM 850 Voice		
EUT Transmitting (in maximum power)	:	DC voltage : 3.8V , DC current : 0.30A
EUT Standby	:	DC voltage : 3.8V , DC current : 0.09A
GSM 850 GPRS		
EUT Transmitting (in maximum power)	:	DC voltage : 3.8V , DC current : 0.29A
EUT Standby	:	DC voltage : 3.8V , DC current : 0.09A
GSM 850 EGPRS		
EUT Transmitting (in maximum power)	:	DC voltage : 3.8V , DC current : 0.23A
EUT Standby	:	DC voltage : 3.8V , DC current : 0.09A
PCS 1900 Voice		
EUT Transmitting (in maximum power)	:	DC voltage : 3.8V , DC current : 0.25A
EUT Standby	:	DC voltage : 3.8V , DC current : 0.10A
PCS 1900 GPRS		
EUT Transmitting (in maximum power)	:	DC voltage : 3.8V , DC current : 0.25A
EUT Standby	:	DC voltage : 3.8V , DC current : 0.09A
PCS 1900 EGPRS		
EUT Transmitting (in maximum power)	:	DC voltage : 3.8V , DC current : 0.22A
EUT Standby	:	DC voltage : 3.8V , DC current : 0.09A
WCDMA Band V Voice		
EUT Transmitting (in maximum power)	:	DC voltage : 3.8V , DC current : 0.59A
EUT Standby	:	DC voltage : 3.8V , DC current : 0.09A
WCDMA Band V HSDPA		
EUT Transmitting (in maximum power)	:	DC voltage : 3.8V , DC current : 0.60A
EUT Standby	:	DC voltage : 3.8V , DC current : 0.09A
WCDMA Band V HSUPA		
EUT Transmitting (in maximum power)	:	DC voltage : 3.8V , DC current : 0.64A
EUT Standby	:	DC voltage : 3.8V , DC current : 0.09A
WCDMA Band II Voice		
EUT Transmitting (in maximum power)	:	DC voltage : 3.8V , DC current : 0.60A
EUT Standby	:	DC voltage : 3.8V , DC current : 0.09A
WCDMA Band II HSDPA		
EUT Transmitting (in maximum power)	:	DC voltage : 3.8V , DC current : 0.65A
EUT Standby	:	DC voltage : 3.8V , DC current : 0.09A
WCDMA Band II HSUPA		
EUT Transmitting (in maximum power)	:	DC voltage : 3.8V , DC current : 0.64A
EUT Standby	:	DC voltage : 3.8V , DC current : 0.09A

2. Peak Power Output

2.1. Test Equipment

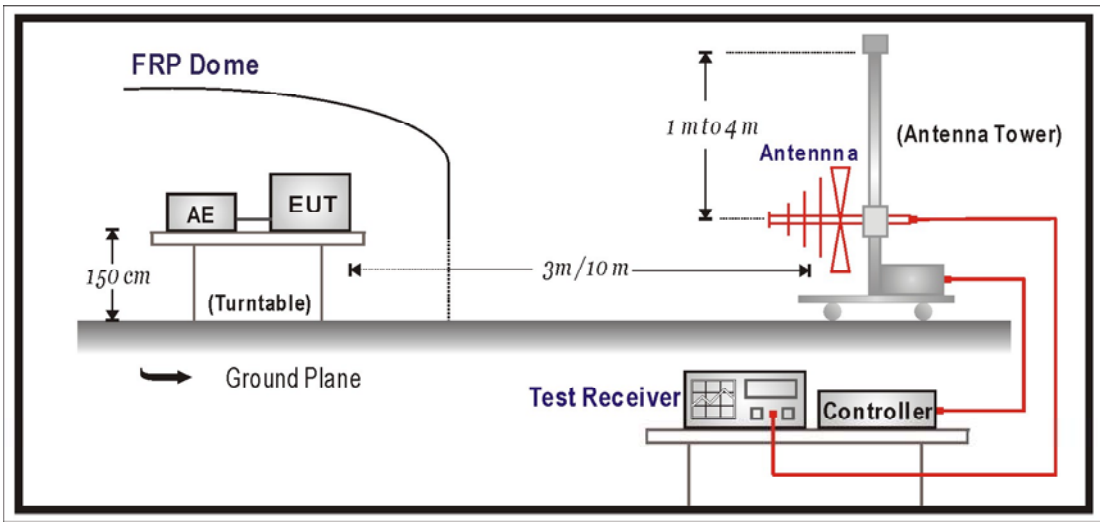
The following test equipments are used during the radiated emission test:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒OATS 1	Test Receiver	R & S	ESCS 30 / 100122	Feb., 2011
	Universal Radio Communication Tester	R & S	CMU200 / 104846	May., 2010
	Spectrum Analyzer	Agilent	E4408B/ MY45102743	Aug., 2010
	Pre-Amplifier	QTK	AP-180C	Sep., 2010
	Bilog Antenna	SCHAFFNER	CBL6112B / 2697	May., 2010
	Horn Antenna	Schwarzbeck	BBHA9120D / D305	Oct., 2010
	Pre-Amplifier	QTK	QTK-AMP-01 / 0001	Jul., 2010

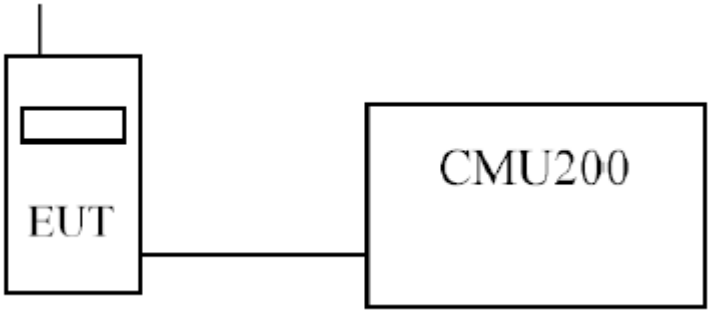
Note: 1. All equipments that need to be calibrated are with calibration period of 1 year.

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 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.

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

➢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	HE863-NAG		
Test Mode	RF Output Power (Conducted)		
Date of Test	2011/04/07	Test Site	CTR

GSM 850 VOICE				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	32.65	0.2	32.85	1.93
836.4	32.69	0.2	32.89	**1.95**
848.8	32.66	0.2	32.86	1.93
PCS 1900 VOICE				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	29.45	0.4	29.85	**0.97**
1880	29.41	0.4	29.81	0.96
1909.8	29.44	0.4	29.84	0.96

GPRS 850 (↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	32.73	0.2	32.93	1.96
836.4	32.75	0.2	32.95	**1.97**
848.8	32.74	0.2	32.94	1.97
GPRS 1900 (↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	29.40	0.4	29.80	0.95
1880	29.44	0.4	29.84	0.96
1909.8	29.45	0.4	29.85	**0.97**

EGPRS 850 (↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	26.00	0.2	26.20	0.42
836.4	26.08	0.2	26.28	**0.42**
848.8	26.07	0.2	26.27	0.42
EGPRS 1900 (↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	25.35	0.4	25.75	0.38
1880	25.36	0.4	25.76	0.38
1909.8	25.39	0.4	25.79	**0.38**

GPRS 850 (↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	32.67	0.2	32.87	1.93
836.4	32.76	0.2	32.96	**1.97**
848.8	32.74	0.2	32.94	1.96
GPRS 1900 (↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	29.43	0.4	29.83	0.96
1880	29.50	0.4	29.90	0.97
1909.8	29.53	0.4	29.93	**0.98**

EGPRS 850 (↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	26.00	0.2	26.20	0.42
836.4	26.05	0.2	26.25	**0.42**
848.8	26.04	0.2	26.24	0.42
EGPRS 1900 (↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	25.39	0.4	25.79	**0.38**
1880	25.32	0.4	25.72	0.37
1909.8	25.34	0.4	25.74	0.37

GPRS 850 (↑ ↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	32.11	0.2	32.31	1.70
836.4	32.17	0.2	32.37	**1.73**
848.8	32.15	0.2	32.35	1.72
GPRS 1900 (↑ ↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	29.26	0.4	29.66	0.92
1880	29.30	0.4	29.70	0.93
1909.8	29.32	0.4	29.72	**0.94**

EGPRS 850 (↑ ↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	26.01	0.2	26.21	0.42
836.4	26.07	0.2	26.27	0.42
848.8	26.08	0.2	26.28	**0.42**
EGPRS 1900 (↑ ↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	25.32	0.4	25.72	0.37
1880	25.37	0.4	25.77	**0.38**
1909.8	25.34	0.4	25.74	0.37

GPRS 850 (↑ ↑ ↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	30.98	0.2	31.18	1.31
836.4	31.00	0.2	31.20	**1.32**
848.8	30.98	0.2	31.18	1.31
GPRS 1900 (↑ ↑ ↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	28.12	0.4	28.52	0.71
1880	28.18	0.4	28.58	0.72
1909.8	28.31	0.4	28.71	**0.74**

EGPRS 850 (↑ ↑ ↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	25.10	0.2	25.30	0.34
836.4	25.18	0.2	25.38	**0.35**
848.8	25.12	0.2	25.32	0.34
EGPRS 1900 (↑ ↑ ↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	24.40	0.4	24.80	0.30
1880	24.55	0.4	24.95	0.31
1909.8	24.55	0.4	24.95	**0.31**

WCDMA V				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
826.4	22.86	0.2	23.06	0.20
836.6	22.83	0.2	23.03	0.20
846.6	22.97	0.2	23.17	**0.21**

WCDMA V HSDPA								
	Set 1		Set 2		Set 3		Set 4	
Frequency (MHz)	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)
826.4	**23.14**	0.21	23.06	0.20	22.85	0.19	22.56	0.18
836.6	23.11	0.20	23.08	0.20	22.85	0.19	22.53	0.18
846.6	23.12	0.21	23.11	0.20	22.93	0.20	22.61	0.18
β_c	2		12		15		15	
β_d	15		15		8		4	
Δ_{ACK}, Δ_{NACK} Δ_{CQI}	8		8		8		8	
Cable loss: 0.2dB for 850MHz ; 0.4dB for 1900MHz								

All HSDPA testing was done in Set1 configuration.

WCDMA V HSUPA										
	Set 1		Set 2		Set 3		Set 4		Set 5	
Frequency (MHz)	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)
826.4	22.29	0.17	20.59	0.11	21.46	0.14	21.16	0.13	**22.38**	0.17
836.6	22.33	0.17	20.62	0.12	21.32	0.14	21.12	0.13	22.26	0.17
846.6	22.31	0.17	20.74	0.12	21.48	0.14	21.23	0.13	22.31	0.17
β_c	11		6		15		2		15	
β_d	15		15		9		15		15	
Δ_{ACK}, Δ_{NACK} Δ_{CQI}	8		8		8		8		8	
AGV	20		12		15		17		21	
Cable loss: 0.2dB for 850MHz ; 0.4dB for 1900MHz										

Note:All HSUPA testing was done in Set5 configuration.

WCDMA II				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1852.4	22.82	0.4	23.22	**0.21**
1880	22.80	0.4	23.20	0.21
1907.6	22.59	0.4	22.99	0.20

WCDMA II HSDPA								
	Set 1		Set 2		Set 3		Set 4	
Frequency (MHz)	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)
1852.4	23.12	0.21	22.91	0.20	22.64	0.18	22.41	0.17
1880	23.17	0.21	23.05	0.20	22.78	0.19	22.53	0.18
1907.6	**23.22**	0.21	22.84	0.19	22.58	0.18	22.33	0.17
β_c	2		12		15		15	
β_d	15		15		8		4	
Δ_{ACK}, Δ_{NACK} Δ_{CQI}	8		8		8		8	
Cable loss: 0.2dB for 850MHz ; 0.4dB for 1900MHz								

Note : All HSDPA testing was done in Set1 configuration.

WCDMA II HSUPA										
	Set 1		Set 2		Set 3		Set 4		Set 5	
Frequency (MHz)	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)
1852.4	22.24	0.17	20.85	0.12	21.19	0.13	21.09	0.13	22.25	0.17
1880	22.31	0.17	20.94	0.12	21.22	0.13	21.15	0.13	22.31	0.17
1907.6	**22.35**	0.17	21.01	0.13	21.27	0.13	21.14	0.13	22.15	0.16
β_c	11		6		15		2		15	
β_d	15		15		9		15		15	
Δ_{ACK}, Δ_{NACK} Δ_{CQI}	8		8		8		8		8	
AGV	20		12		15		17		21	
Cable loss: 0.2dB for 850MHz ; 0.4dB for 1900MHz										

Note: All HSUPA testing was done in Set5 configuration.

Product	HE863-NAG		
Test Mode	RF Output Power (Radiated)		
Date of Test	2011/04/08	Test Site	OATS 1
Test Condition	GSM 850 VOICE		

Maximum Power-GSM 850 VOICE

Frequency (MHz)	Reading Level (dBm)	Substitution Level (dBm)	Substitution Antenna Gain (dBd)	Cable Loss (dB)	Result ERP (dBm)	Result ERP (W)
824.2	18.558	27.08	1.85	0.6	28.33	**0.68**
836.4	17.911	26.45	1.85	0.6	27.70	0.59
848.8	17.632	26.18	1.85	0.6	27.43	0.55

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	HE863-NAG		
Test Mode	RF Output Power (Radiated)		
Date of Test	2011/04/08	Test Site	OATS 1
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	17.726	26.27	1.85	0.6	27.52	**0.56**
836.4	17.070	25.63	1.85	0.6	26.88	0.49
848.8	16.818	25.39	1.85	0.6	26.64	0.46

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	HE863-NAG		
Test Mode	RF Output Power (Radiated)		
Date of Test	2011/04/08	Test Site	OATS 1
Test Condition	GSM 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	14.675	23.38	1.85	0.6	24.63	**0.29**
836.4	14.166	22.90	1.85	0.6	24.15	0.26
848.8	13.659	22.43	1.85	0.6	23.68	0.23

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	HE863-NAG		
Test Mode	RF Output Power (Radiated)		
Date of Test	2011/04/08	Test Site	OATS 1
Test Condition	PCS 1900 VOICE		

Maximum Power-PCS 1900 VOICE

Frequency (MHz)	Reading Level (dBm)	Substitution Level (dBm)	Substitution Antenna Gain (dBi)	Cable Loss (dB)	Result EIRP (dBm)	Result EIRP (W)
1850.2	-13.516	19.779	10.4	1.02	29.159	0.82
1880.0	-13.549	20.665	10.4	1.02	30.045	1.01
1909.8	-13.100	21.377	10.4	1.02	30.757	**1.19**

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	HE863-NAG		
Test Mode	RF Output Power (Radiated)		
Date of Test	2011/04/08	Test Site	OATS 1
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	-13.516	20.336	10.4	1.02	29.716	0.94
1880.0	-13.280	20.934	10.4	1.02	30.314	1.07
1909.8	-13.157	21.320	10.4	1.02	30.700	**1.17**

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	HE863-NAG		
Test Mode	RF Output Power (Radiated)		
Date of Test	2011/04/08	Test Site	OATS 1
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	-14.807	18.488	10.4	1.02	27.868	0.61
1880.0	-14.547	19.667	10.4	1.02	29.047	0.80
1909.8	-14.720	19.757	10.4	1.02	29.137	**0.82**

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	HE863-NAG		
Test Mode	RF Output Power (Radiated)		
Date of Test	2011/04/07	Test Site	OATS 1
Test Condition	WCDMA BAND V		

Maximum Power- WCDMA BAND V

Frequency (MHz)	Reading Level (dBm)	Substitution Level (dBm)	Substitution Antenna Gain (dBd)	Cable Loss (dB)	Result ERP (dBm)	Result ERP (W)
826.4	12.728	21.56	1.85	0.6	22.81	**0.19**
836.6	11.866	20.76	1.85	0.6	22.01	0.16
846.6	12.177	21.05	1.85	0.6	22.30	0.17

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:5MHz; VBW:5MHz
3. Result ERP = Substitution Level + Substitution Antenna Gain - Cable Loss

Product	HE863-NAG		
Test Mode	RF Output Power (Radiated)		
Date of Test	2011/04/07	Test Site	OATS 1
Test Condition	WCDMA BAND V HSDPA		

Maximum Power- WCDMA BAND V HSDPA

Frequency (MHz)	Reading Level (dBm)	Substitution Level (dBm)	Substitution Antenna Gain (dBd)	Cable Loss (dB)	Result ERP (dBm)	Result ERP (W)
826.4	13.109	21.92	1.85	0.6	23.17	**0.21**
836.6	12.097	20.97	1.85	0.6	22.22	0.17
846.6	12.283	21.15	1.85	0.6	22.40	0.17

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:5MHz; VBW:5MHz
3. Result ERP = Substitution Level + Substitution Antenna Gain - Cable Loss

Product	HE863-NAG		
Test Mode	RF Output Power (Radiated)		
Date of Test	2011/04/07	Test Site	OATS 1
Test Condition	WCDMA BAND V HSUPA		

Maximum Power- WCDMA BAND V HSUPA

Frequency (MHz)	Reading Level (dBm)	Substitution Level (dBm)	Substitution Antenna Gain (dBd)	Cable Loss (dB)	Result ERP (dBm)	Result ERP (W)
826.4	14.034	22.78	1.85	0.6	24.03	**0.25**
836.6	12.983	21.80	1.85	0.6	23.05	0.20
846.6	13.184	21.99	1.85	0.6	23.24	0.21

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:5MHz; VBW:5MHz
3. Result ERP = Substitution Level + Substitution Antenna Gain - Cable Loss

Product	HE863-NAG		
Test Mode	RF Output Power (Radiated)		
Date of Test	2011/04/07	Test Site	OATS 1
Test Condition	WCDMA BAND II		

Maximum Power- WCDMA BAND II

Frequency (MHz)	Reading Level (dBm)	Substitution Level (dBm)	Substitution Antenna Gain (dBi)	Cable Loss (dB)	Result EIRP (dBm)	Result EIRP (W)
1852.4	-14.568	19.311	10.4	1.02	28.691	0.74
1880	-14.909	19.305	10.4	1.02	28.685	0.74
1907.6	-14.331	20.144	10.4	1.02	29.524	**0.90**

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:5MHz; VBW:5MHz
3. Result EIRP = Substitution Level + Substitution Antenna Gain - Cable Loss

Product	HE863-NAG		
Test Mode	RF Output Power (Radiated)		
Date of Test	2011/04/07	Test Site	OATS 1
Test Condition	WCDMA BAND II HSDPA		

Maximum Power- WCDMA BAND II HSDPA

Frequency (MHz)	Reading Level (dBm)	Substitution Level (dBm)	Substitution Antenna Gain (dBi)	Cable Loss (dB)	Result EIRP (dBm)	Result EIRP (W)
1852.4	-14.559	19.320	10.4	1.02	28.700	0.74
1880	-14.245	19.969	10.4	1.02	29.349	0.86
1907.6	-13.803	20.672	10.4	1.02	30.052	**1.01**

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:5MHz; VBW:5MHz
3. Result EIRP = Substitution Level + Substitution Antenna Gain - Cable Loss

Product	HE863-NAG		
Test Mode	RF Output Power (Radiated)		
Date of Test	2011/04/07	Test Site	OATS 1
Test Condition	WCDMA BAND II HSUPA		

Maximum Power- WCDMA BAND II HSUPA

Frequency (MHz)	Reading Level (dBm)	Substitution Level (dBm)	Substitution Antenna Gain (dBi)	Cable Loss (dB)	Result EIRP (dBm)	Result EIRP (W)
1852.4	-14.310	19.569	10.4	1.02	28.949	0.79
1880	-14.295	19.919	10.4	1.02	29.299	0.85
1907.6	-14.446	20.029	10.4	1.02	29.409	**0.87**

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:5MHz; VBW:5MHz
3. Result EIRP = Substitution Level + Substitution Antenna Gain - Cable Loss

3. Occupied Bandwidth

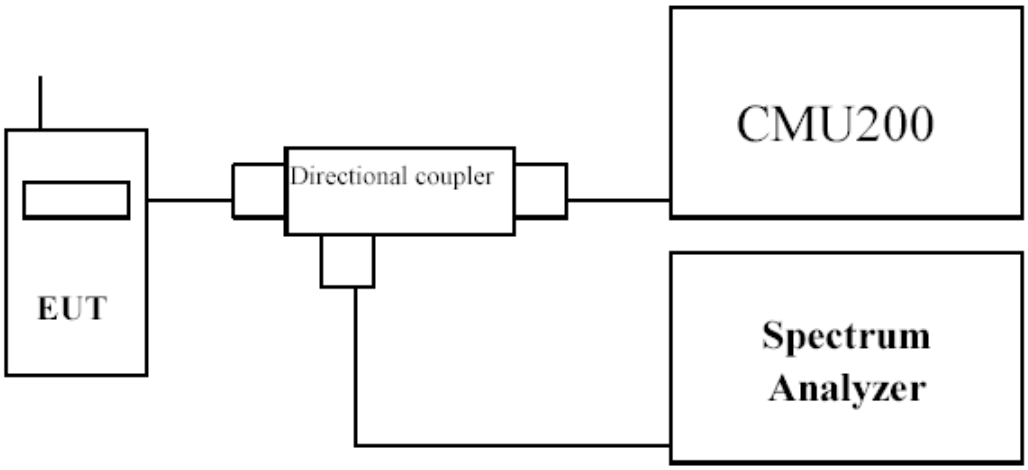
3.1. Test Equipment

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

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Spectrum Analyzer	Agilent	N9020A/ MY48010570	May., 2010
Universal Radio Communication Tester	R & S	CMU200 / 104846	May., 2010
Directional coupler	Agilent	87300C / MY44300353	Sep., 2010
Directional coupler	Agilent	778D-012/ 50550	Sep., 2010

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(b), 24.238(b).

3.5. Test Result of Occupied Bandwidth

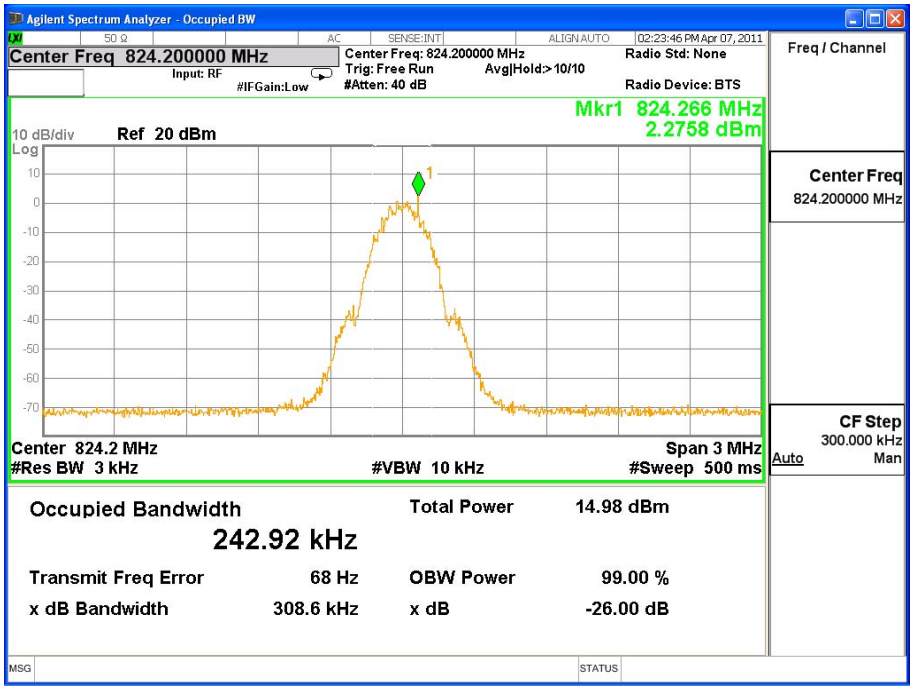
Product	HE863-NAG
Test Mode	Occupied Bandwidth
Test Site	CTR

Test Mode	Channel & TX Frequency (MHz)	99% Occupied Bandwidth (KHz)	26 dB bandwidth (KHz)	Required Limit (MHz)	Result
GSM 850 VOICE	128(824.2)	242.92	308.6	N/A	Pass
	189(836.4)	242.07	316.6	N/A	Pass
	251(848.8)	242.19	313.8	N/A	Pass
GSM 850 GPRS	128(824.2)	243.40	316.6	N/A	Pass
	189(836.4)	246.32	312.5	N/A	Pass
	251(848.8)	239.94	307.8	N/A	Pass
GSM 850 EGPRS	128(824.2)	244.34	315.4	N/A	Pass
	189(836.4)	249.33	313.5	N/A	Pass
	251(848.8)	245.30	311.1	N/A	Pass
PCS 1900 VOICE	512(1850.2)	244.74	315.3	N/A	Pass
	661(1880)	241.99	304.8	N/A	Pass
	810(1909.8)	242.92	308.1	N/A	Pass
PCS 1900 GPRS	512(1850.2)	242.38	315.3	N/A	Pass
	661(1880)	244.98	305.5	N/A	Pass
	810(1909.8)	245.28	313.5	N/A	Pass
PCS 1900 EGPRS	512(1850.2)	245.74	309.2	N/A	Pass
	661(1880)	243.94	315.3	N/A	Pass
	810(1909.8)	243.34	307.2	N/A	Pass

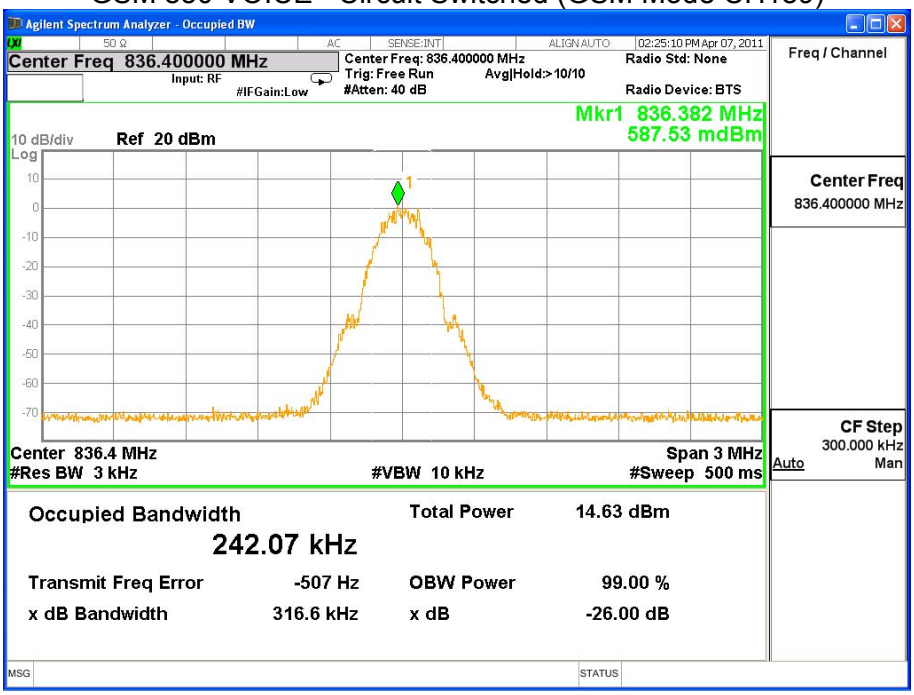
Test Mode	Channel & TX Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB bandwidth (MHz)	Required Limit (MHz)	Result
WCDMA V	4132(826.4)	4.0494	4.604	N/A	Pass
	4183(836.6)	4.0461	4.599	N/A	Pass
	4233(846.6)	4.0405	4.593	N/A	Pass
WCDMA V HSDPA	4132(826.4)	4.0499	4.600	N/A	Pass
	4183(836.6)	4.0501	4.601	N/A	Pass
	4233(846.6)	4.0541	4.595	N/A	Pass
WCDMA V HSUPA	4132(826.4)	4.0489	4.605	N/A	Pass
	4183(836.6)	4.0481	4.603	N/A	Pass
	4233(846.6)	4.0463	4.600	N/A	Pass
WCDMA II	9262(1852.4)	4.0729	4.623	N/A	Pass
	9400(1880)	4.0745	4.644	N/A	Pass
	9538(1907.6)	4.0722	4.630	N/A	Pass
WCDMA II HSDPA	9262(1852.4)	4.0681	4.619	N/A	Pass
	9400(1880)	4.0670	4.637	N/A	Pass
	9538(1907.6)	4.0688	4.618	N/A	Pass
WCDMA II HSUPA	9262(1852.4)	4.0669	4.618	N/A	Pass
	9400(1880)	4.0649	4.632	N/A	Pass
	9538(1907.6)	4.0700	4.621	N/A	Pass

Product	HE863-NAG		
Test Mode	Occupied Bandwidth		
Date of Test	2011/04/07	Test Site	CTR
Test Condition	GSM 850 VOICE		

GSM 850 VOICE - Circuit Switched (GSM Mode CH 128)

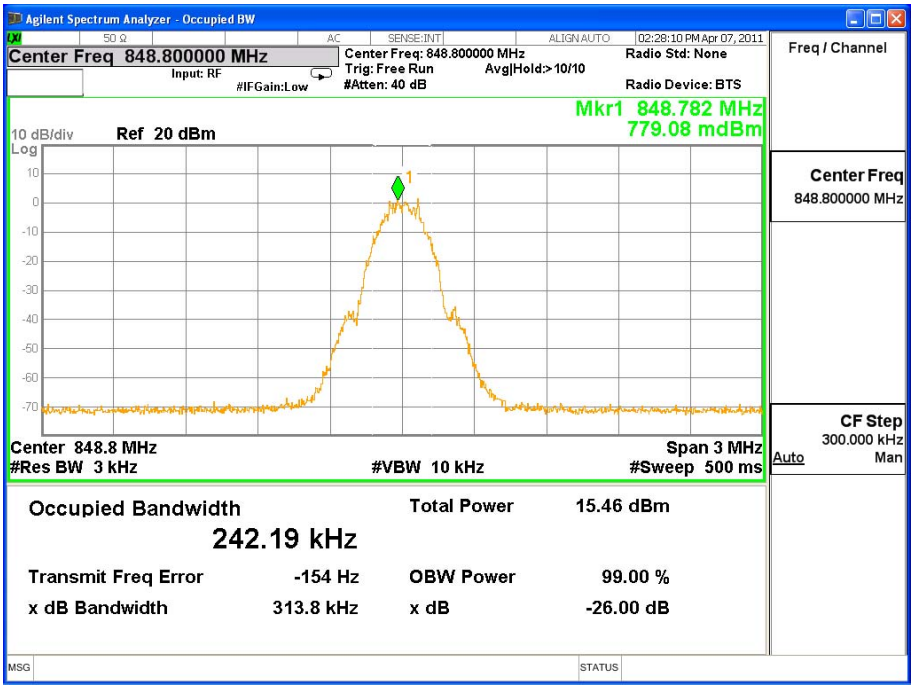


GSM 850 VOICE - Circuit Switched (GSM Mode CH189)



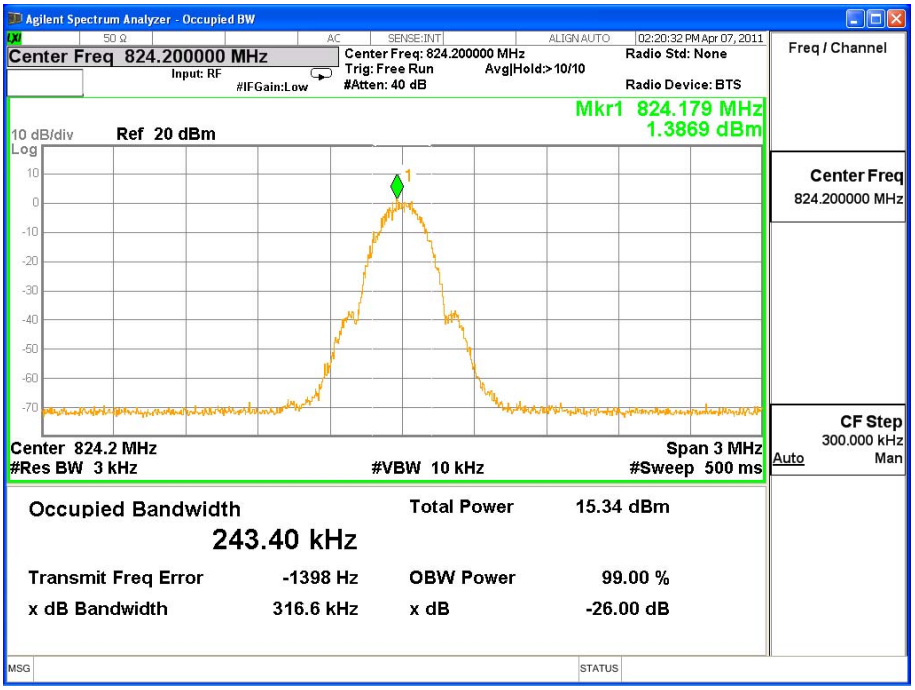
Product	HE863-NAG		
Test Mode	Occupied Bandwidth		
Date of Test	2011/04/07	Test Site	CTR
Test Condition	GSM 850 VOICE		

GSM 850 VOICE - Circuit Switched (GSM Mode CH 251)

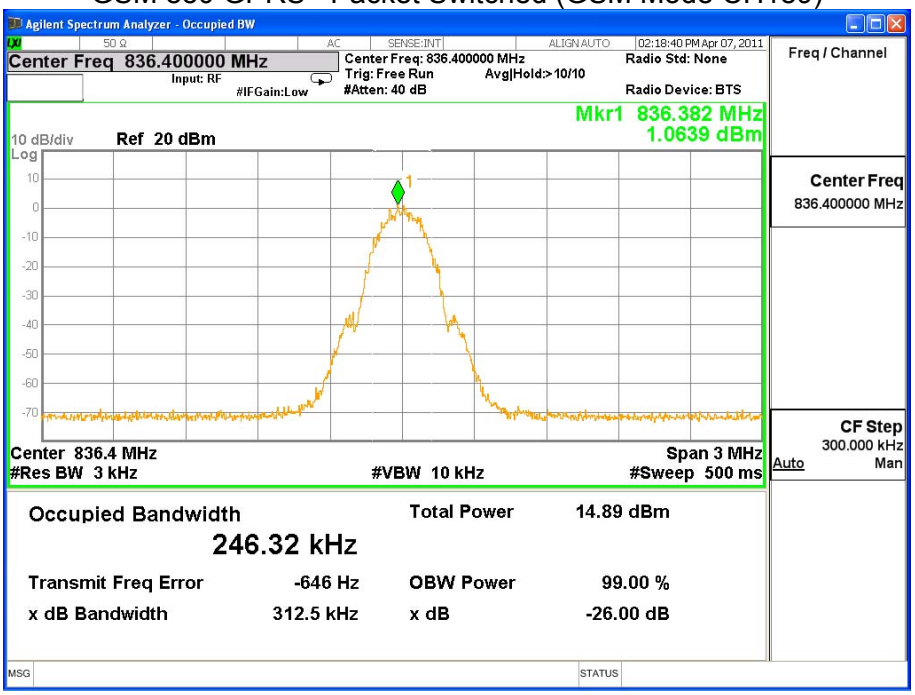


Product	HE863-NAG		
Test Mode	Occupied Bandwidth		
Date of Test	2011/04/07	Test Site	CTR
Test Condition	GSM 850 GPRS		

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

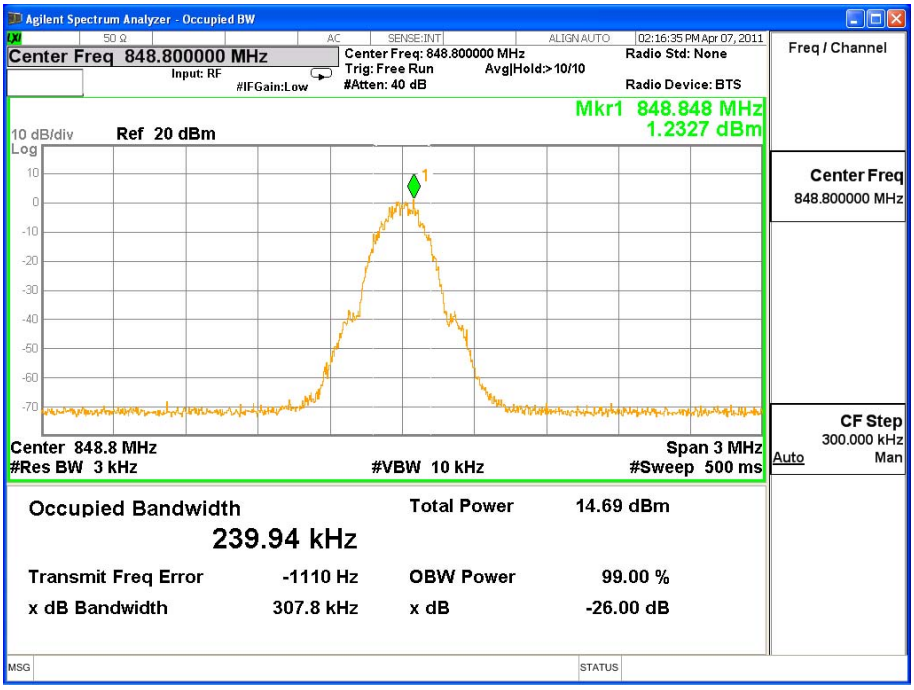


GSM 850 GPRS - Packet Switched (GSM Mode CH189)



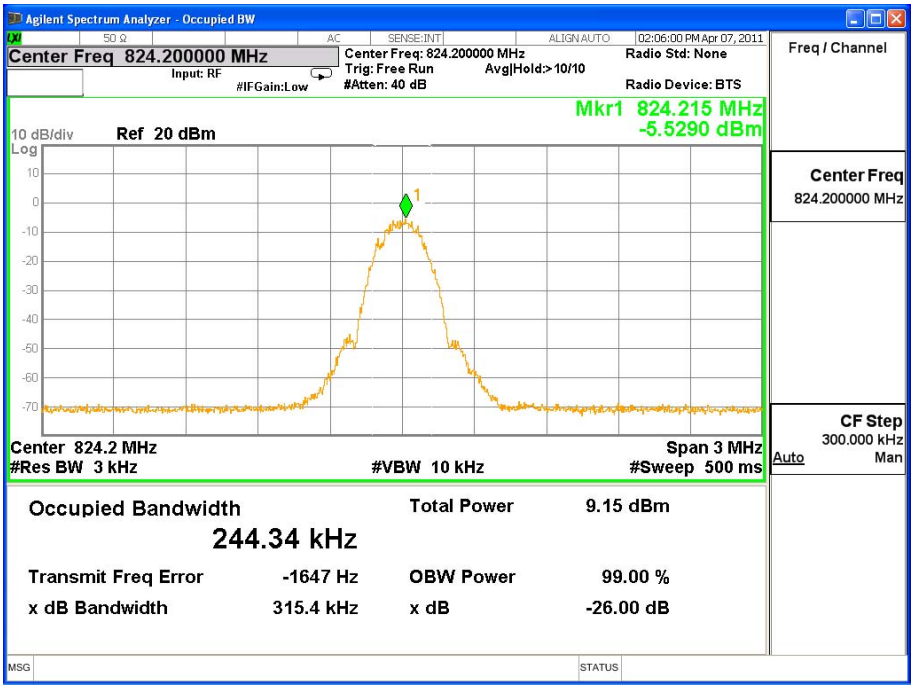
Product	HE863-NAG		
Test Mode	Occupied Bandwidth		
Date of Test	2011/04/07	Test Site	CTR
Test Condition	GSM 850 GPRS		

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

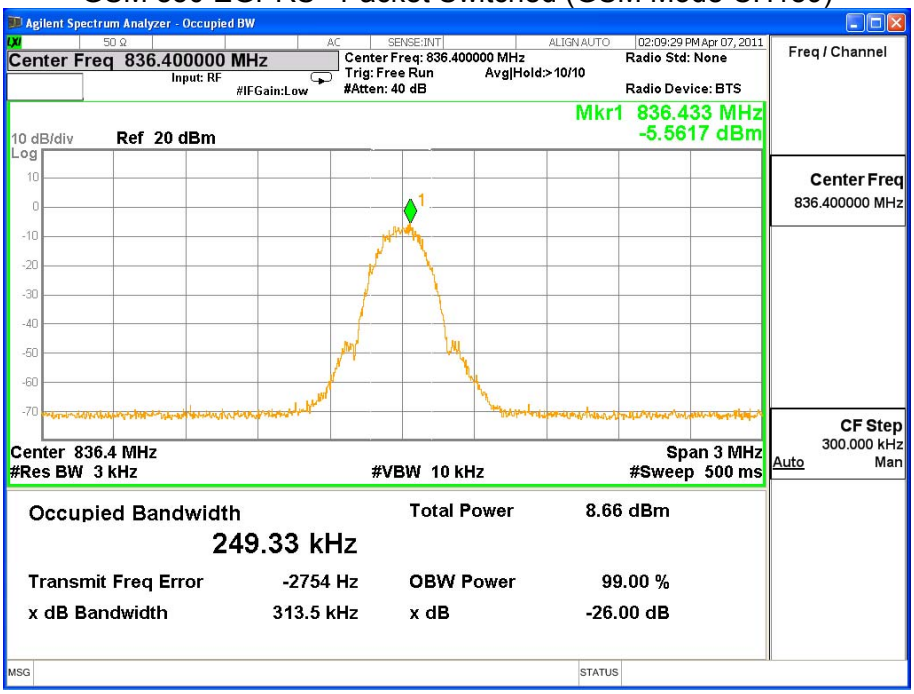


Product	HE863-NAG		
Test Mode	Occupied Bandwidth		
Date of Test	2011/04/07	Test Site	CTR
Test Condition	GSM 850 EGPRS		

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

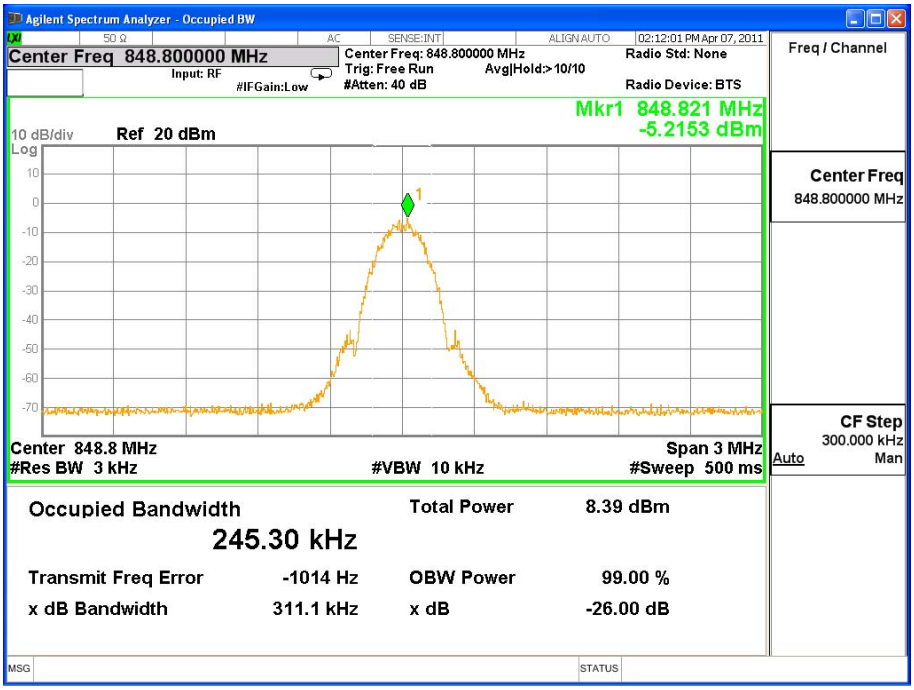


GSM 850 EGPRS - Packet Switched (GSM Mode CH189)



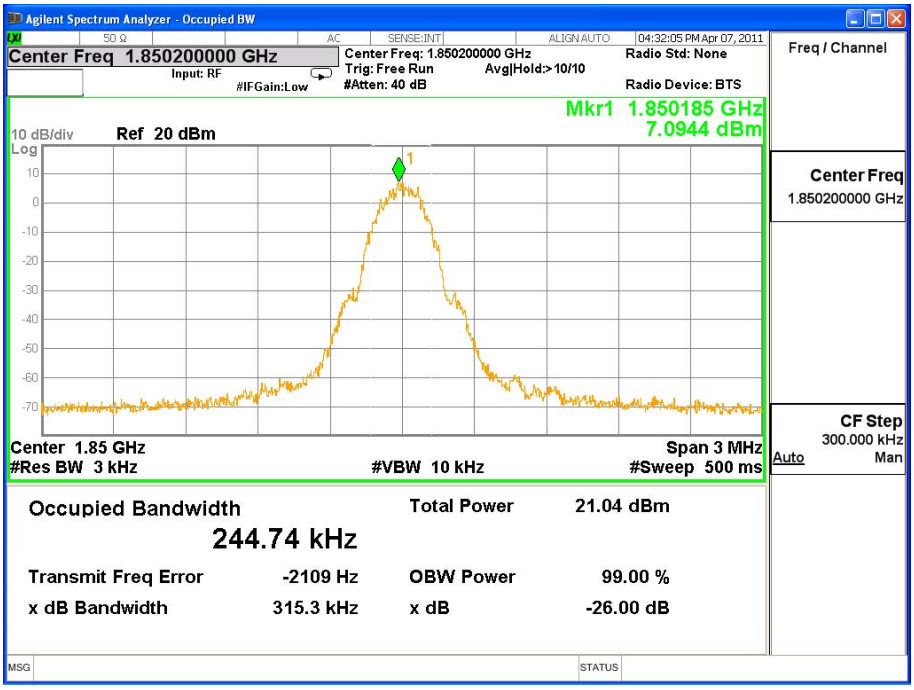
Product	HE863-NAG		
Test Mode	Occupied Bandwidth		
Date of Test	2011/04/07	Test Site	CTR
Test Condition	GSM 850 EGPRS		

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

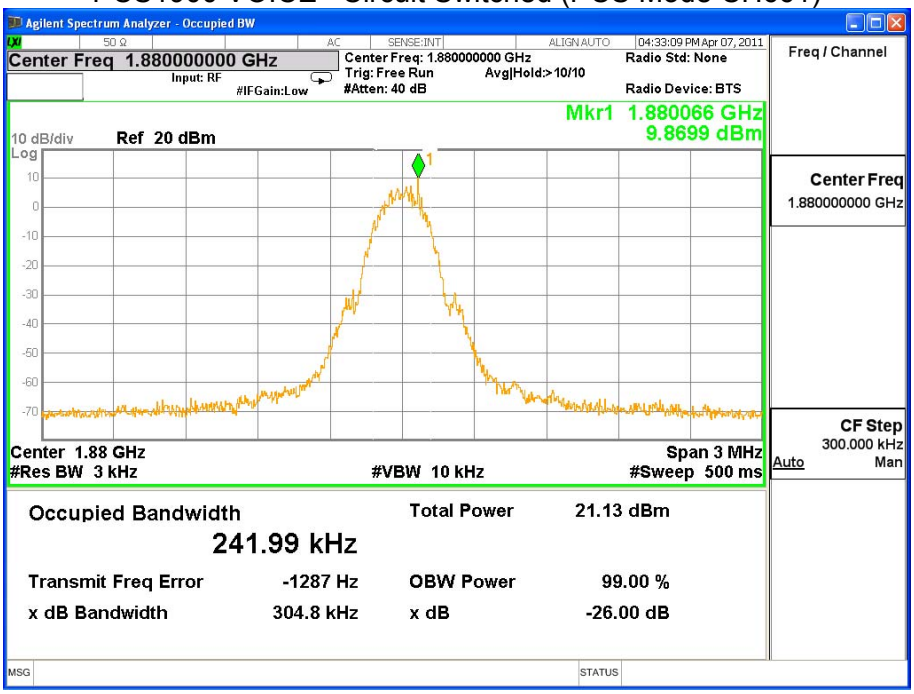


Product	HE863-NAG		
Test Mode	Occupied Bandwidth		
Date of Test	2011/04/07	Test Site	CTR
Test Condition	PCS1900 VOICE		

PCS1900 VOICE - Circuit Switched (PCS Mode CH 512)

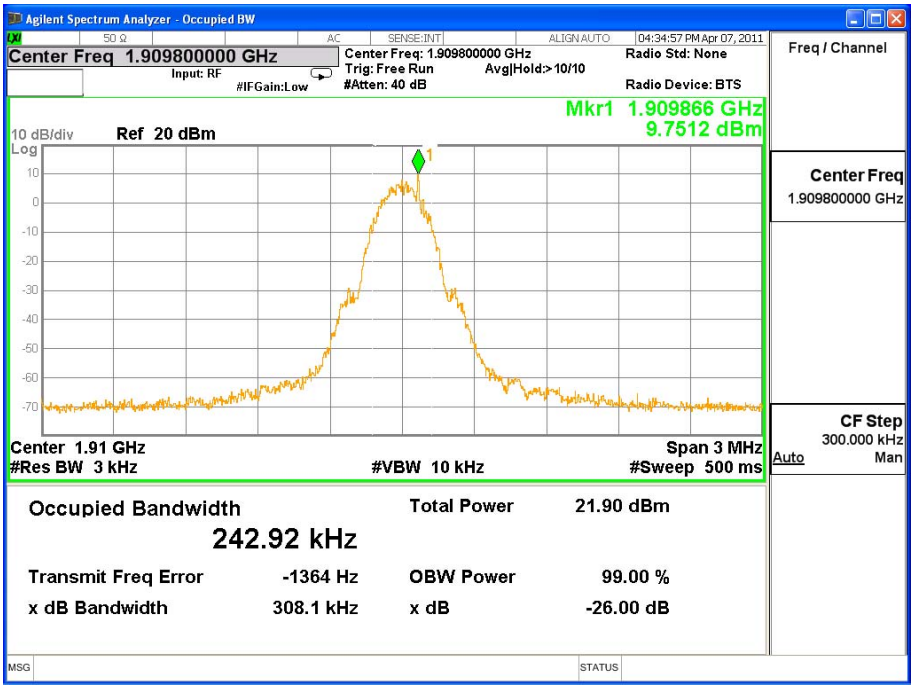


PCS1900 VOICE - Circuit Switched (PCS Mode CH661)



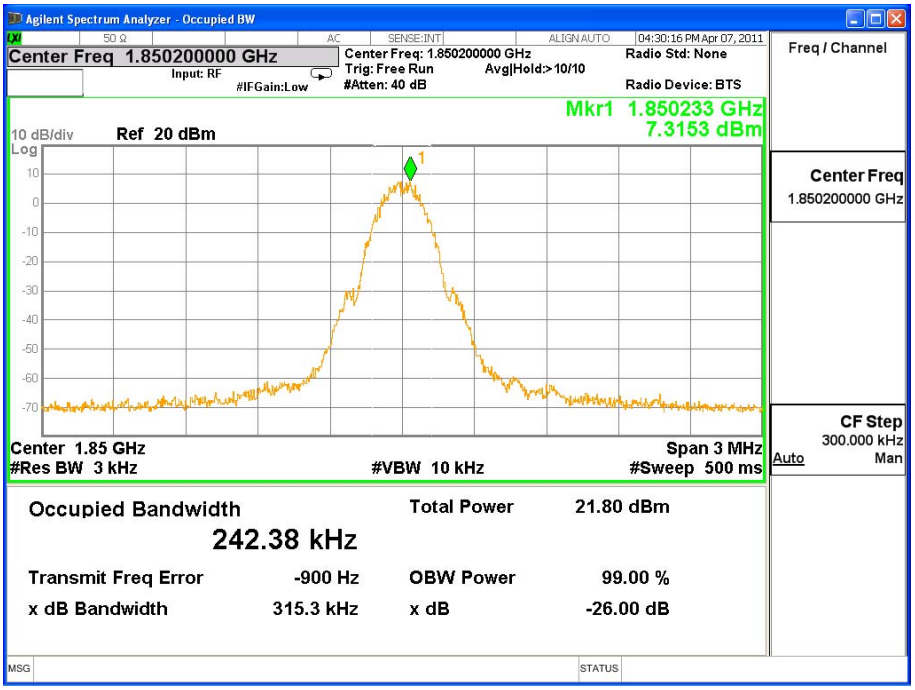
Product	HE863-NAG		
Test Mode	Occupied Bandwidth		
Date of Test	2011/04/07	Test Site	CTR
Test Condition	PCS1900 VOICE		

PCS1900 VOICE - Circuit Switched (PCS Mode CH 810)

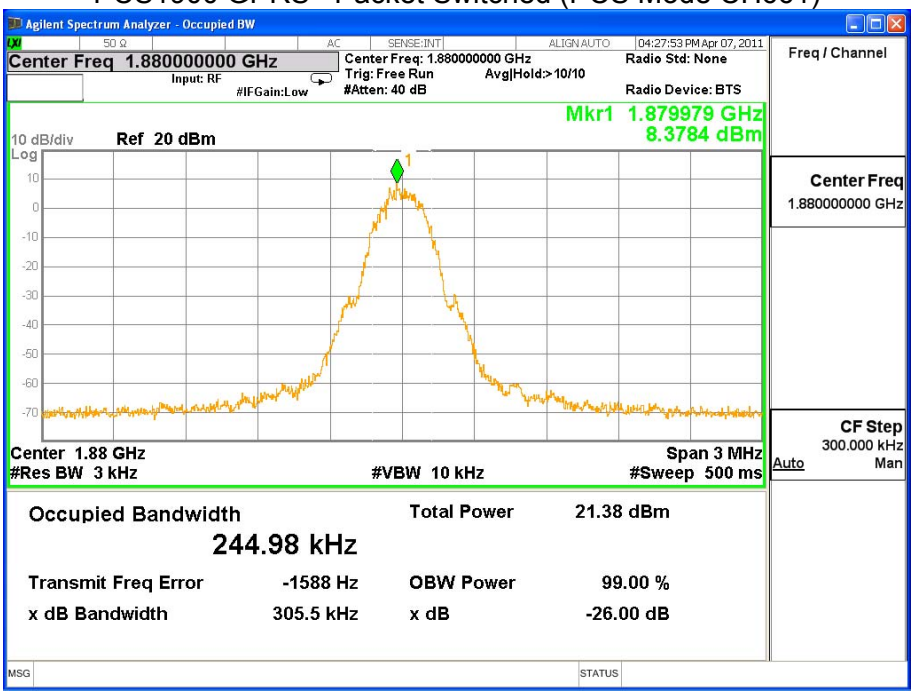


Product	HE863-NAG		
Test Mode	Occupied Bandwidth		
Date of Test	2011/04/07	Test Site	CTR
Test Condition	PCS1900 GPRS		

PCS1900 GPRS - Packet Switched (PCS Mode CH 512)

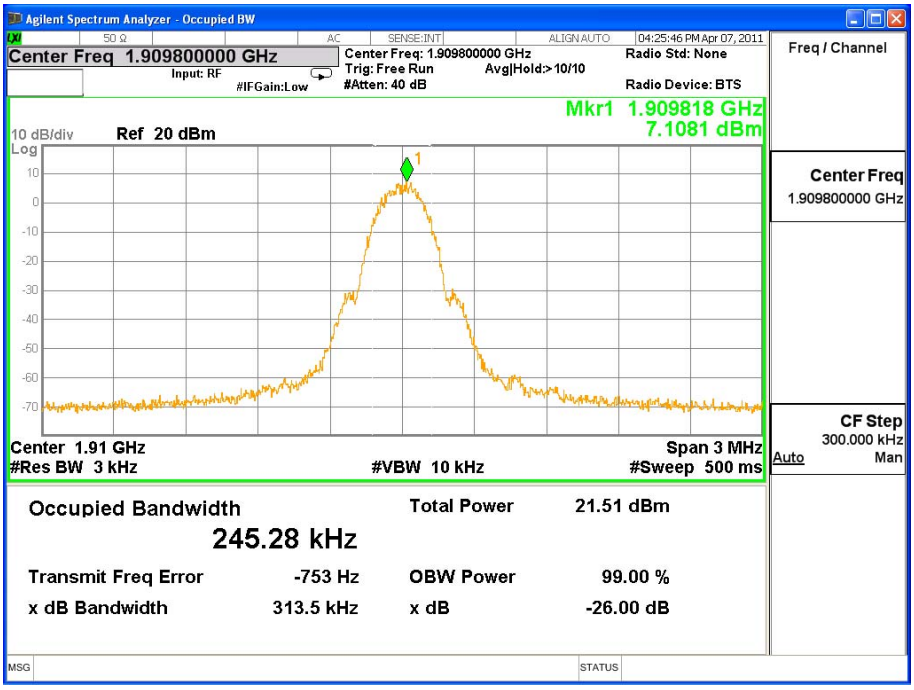


PCS1900 GPRS - Packet Switched (PCS Mode CH661)



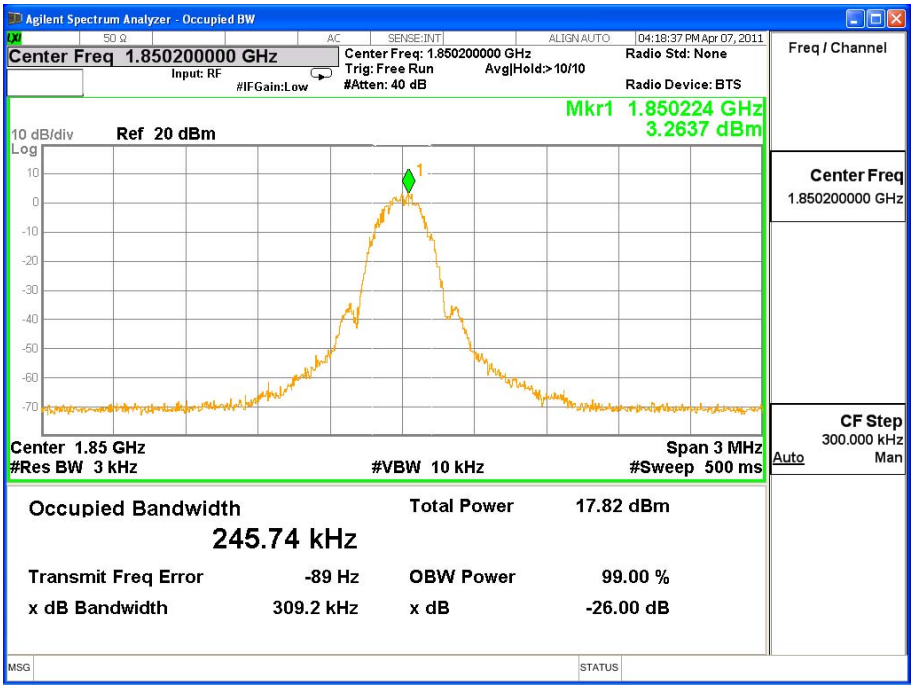
Product	HE863-NAG		
Test Mode	Occupied Bandwidth		
Date of Test	2011/04/07	Test Site	CTR
Test Condition	PCS1900 GPRS		

PCS1900 GPRS - Packet Switched (PCS Mode CH 810)

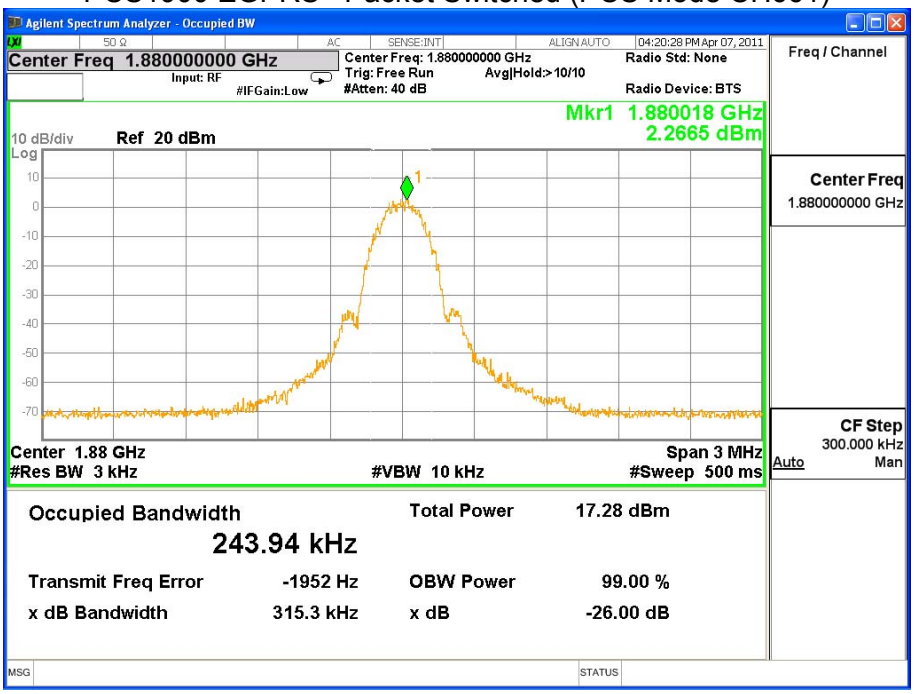


Product	HE863-NAG		
Test Mode	Occupied Bandwidth		
Date of Test	2011/04/07	Test Site	CTR
Test Condition	PCS1900 EGPRS		

PCS1900 EGPRS - Packet Switched (PCS Mode CH 512)

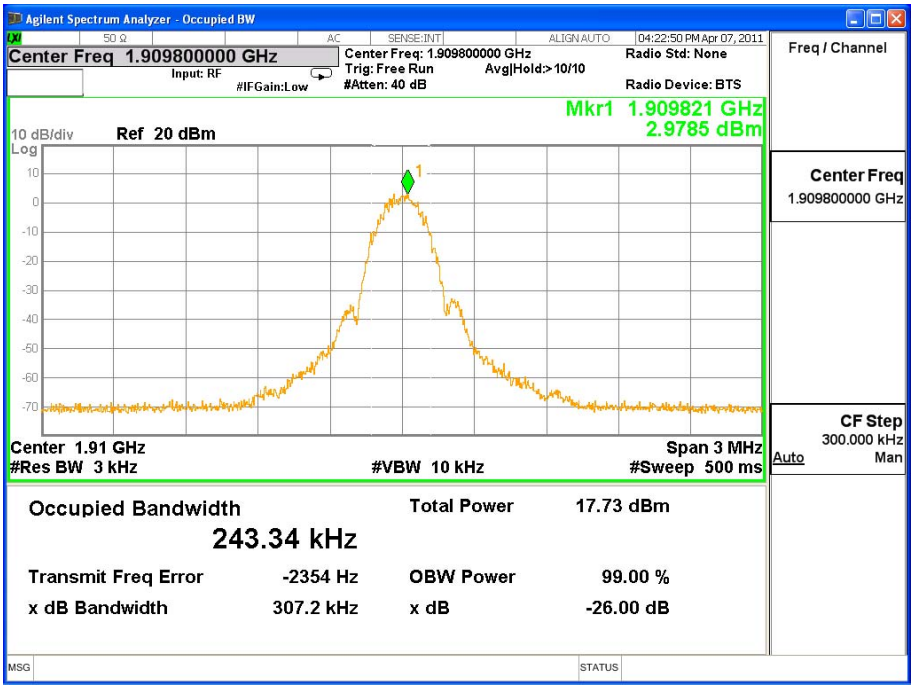


PCS1900 EGPRS - Packet Switched (PCS Mode CH661)



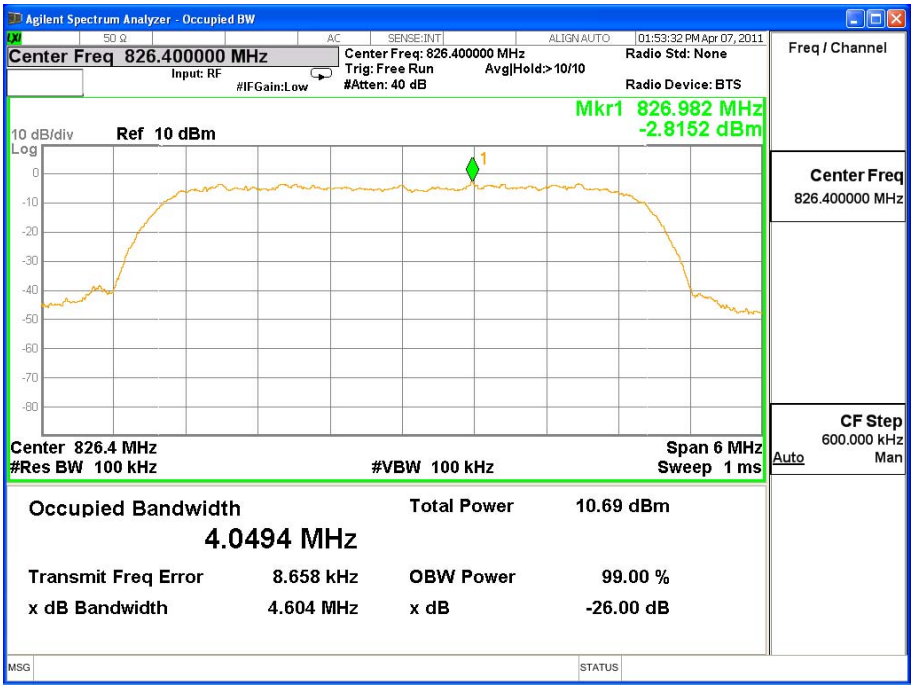
Product	HE863-NAG		
Test Mode	Occupied Bandwidth		
Date of Test	2011/04/07	Test Site	CTR
Test Condition	PCS1900 EGPRS		

PCS1900 EGPRS - Packet Switched (PCS Mode CH 810)

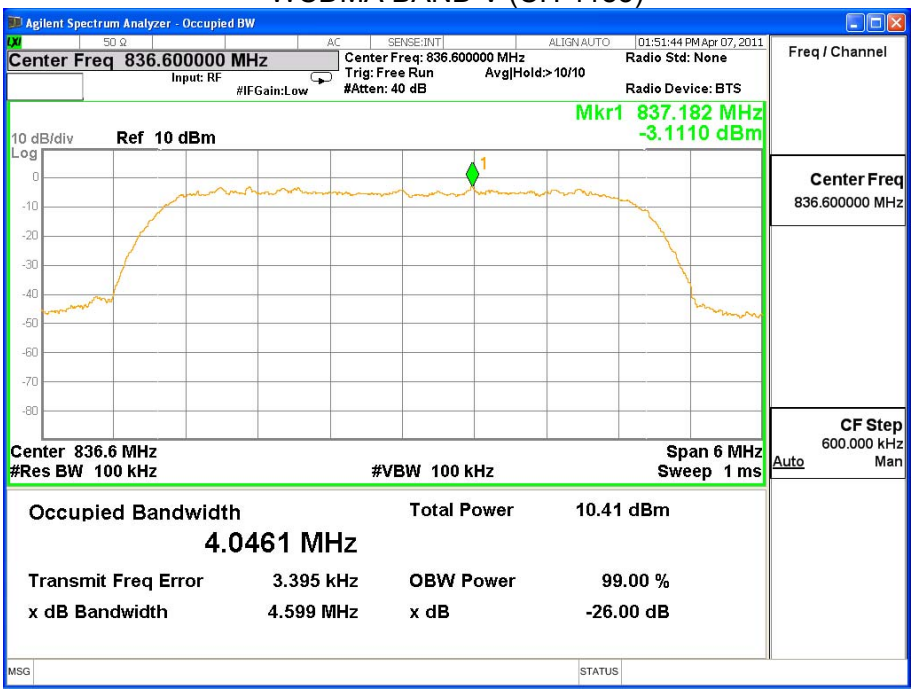


Product	HE863-NAG		
Test Mode	Occupied Bandwidth		
Date of Test	2011/04/07	Test Site	CTR
Test Condition	WCDMA BAND V		

WCDMA BAND V (CH 4132)

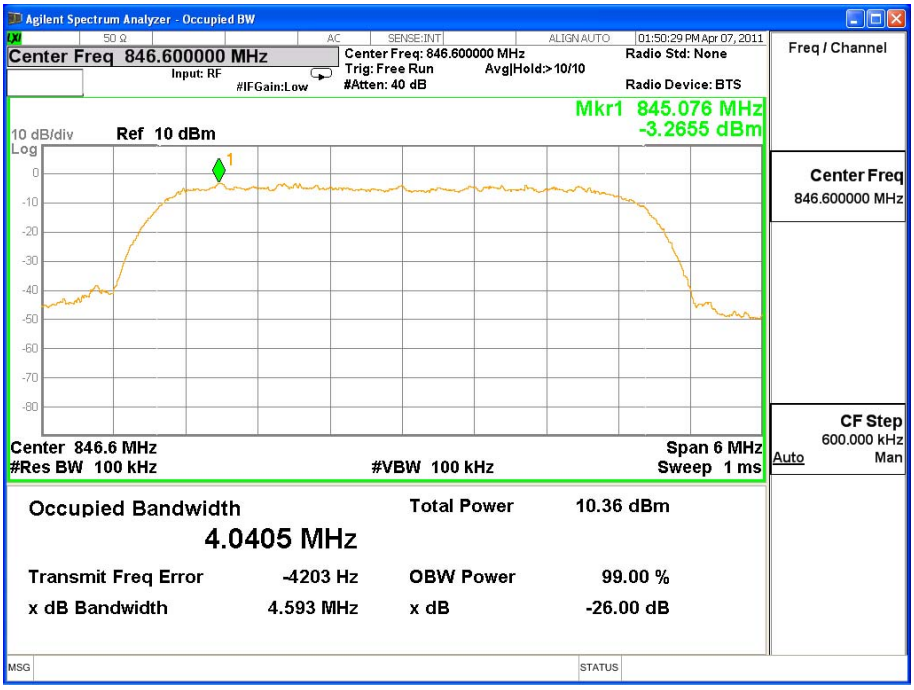


WCDMA BAND V (CH 4183)



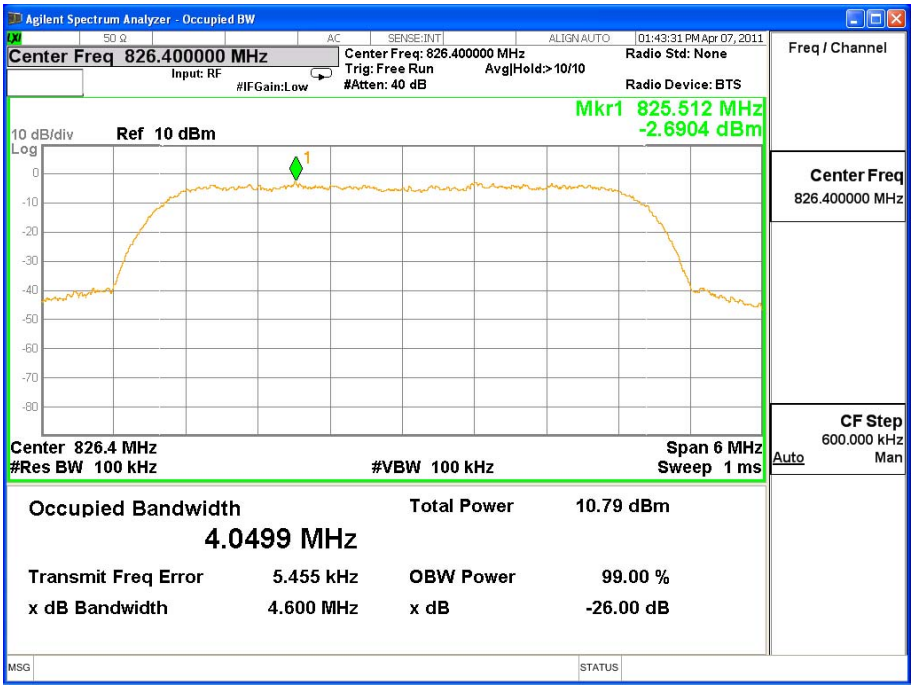
Product	HE863-NAG		
Test Mode	Occupied Bandwidth		
Date of Test	2011/04/07	Test Site	CTR
Test Condition	WCDMA BAND V VOICE		

WCDMA BAND V (CH 4233)

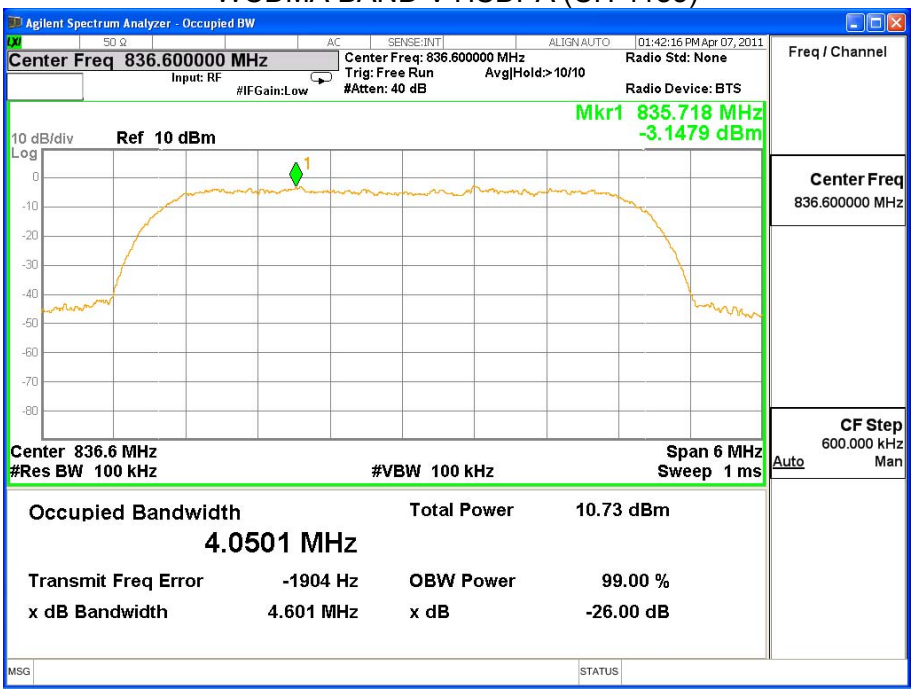


Product	HE863-NAG		
Test Mode	Occupied Bandwidth		
Date of Test	2011/04/07	Test Site	CTR
Test Condition	WCDMA BAND V HSDPA		

WCDMA BAND V HSDPA (CH 4132)

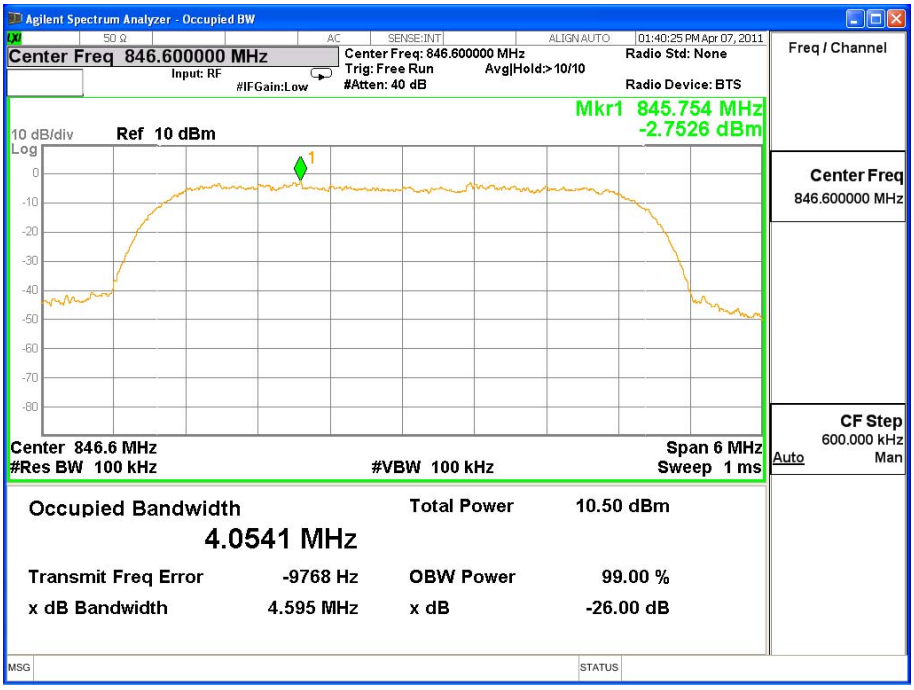


WCDMA BAND V HSDPA (CH 4183)



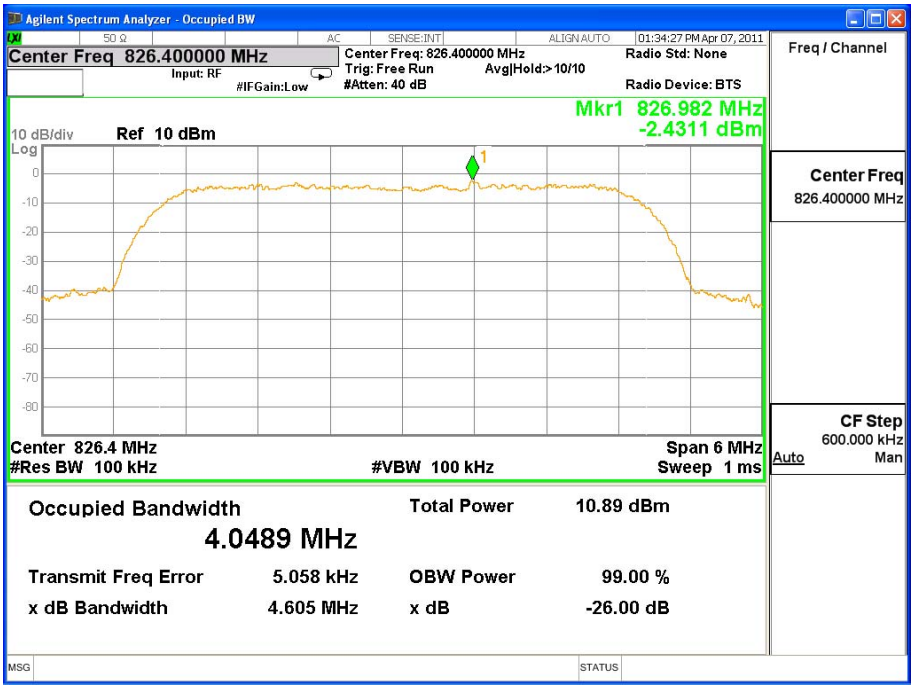
Product	HE863-NAG		
Test Mode	Occupied Bandwidth		
Date of Test	2011/04/07	Test Site	CTR
Test Condition	WCDMA BAND V HSDPA		

WCDMA BAND V HSDPA (CH 4233)

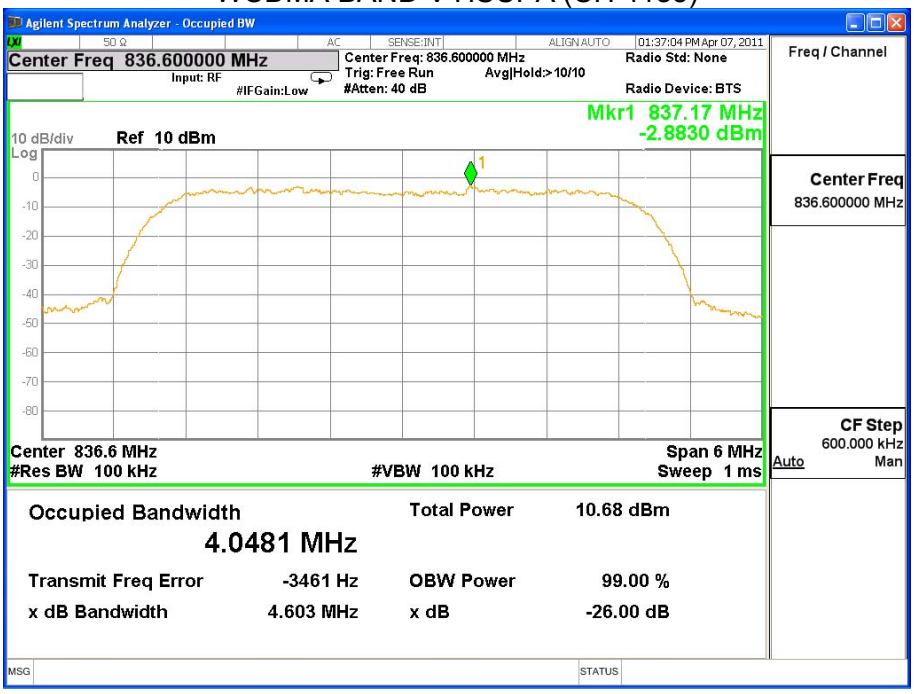


Product	HE863-NAG		
Test Mode	Occupied Bandwidth		
Date of Test	2011/04/07	Test Site	CTR
Test Condition	WCDMA BAND V HSUPA		

WCDMA BAND V HSUPA (CH 4132)

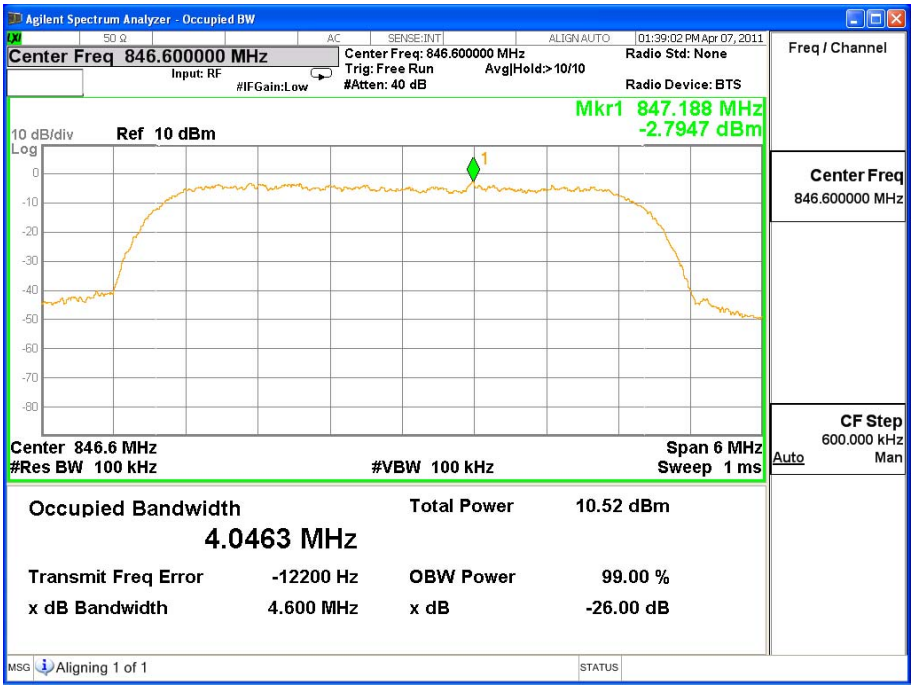


WCDMA BAND V HSUPA (CH 4183)



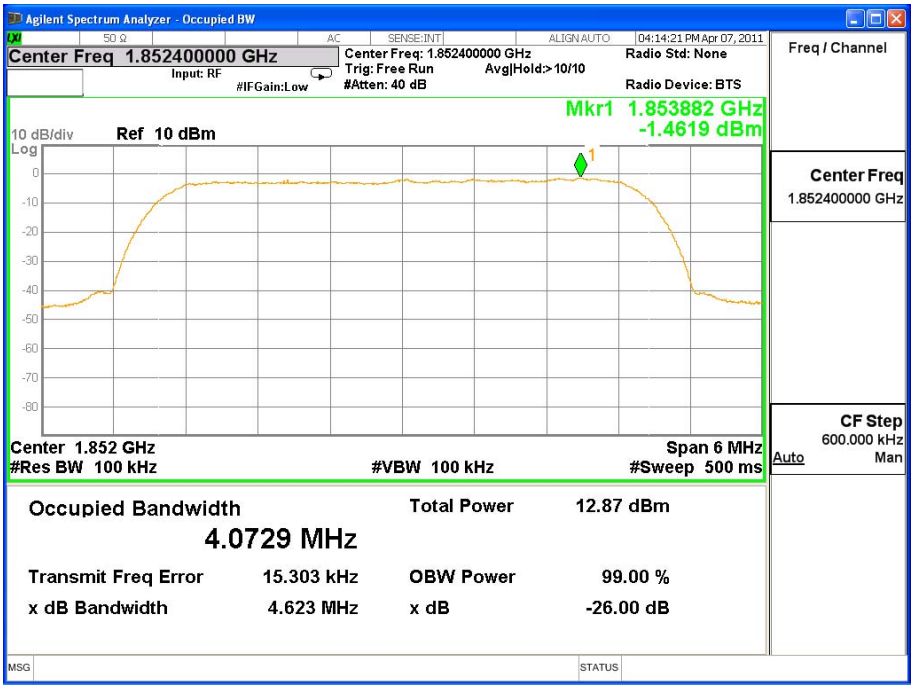
Product	HE863-NAG		
Test Mode	Occupied Bandwidth		
Date of Test	2011/04/07	Test Site	CTR
Test Condition	WCDMA BAND V HSUPA		

WCDMA BAND V HSUPA (CH 4233)

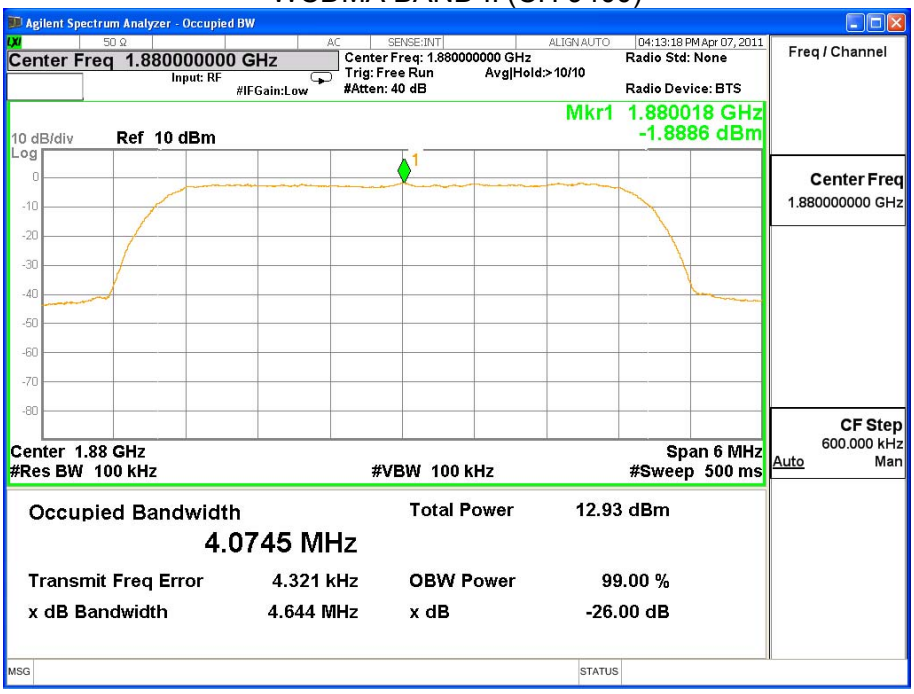


Product	HE863-NAG		
Test Mode	Occupied Bandwidth		
Date of Test	2011/04/07	Test Site	CTR
Test Condition	WCDMA BAND II		

WCDMA BAND II (CH 9262)

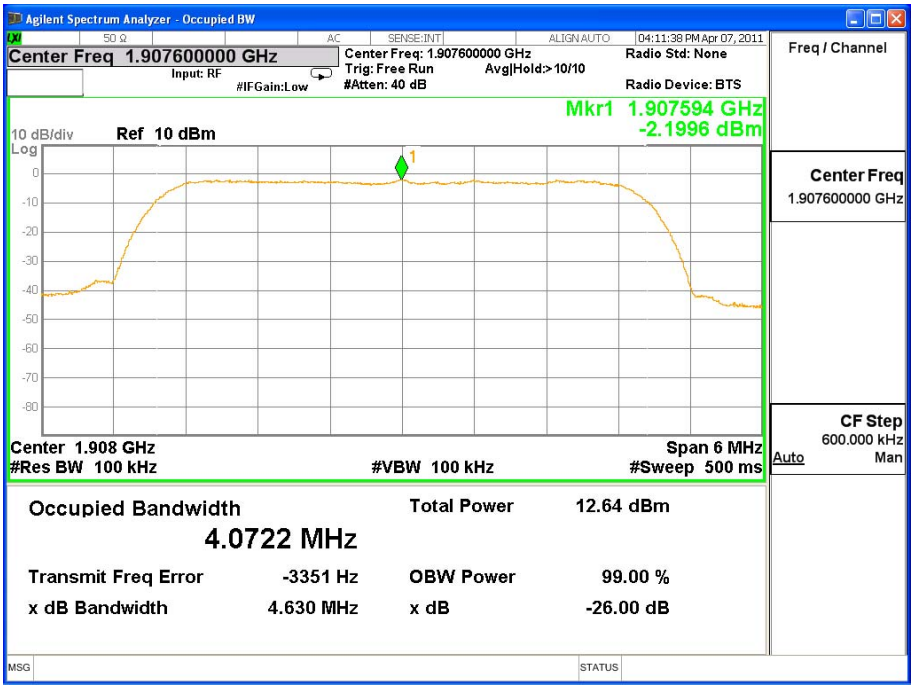


WCDMA BAND II (CH 9400)



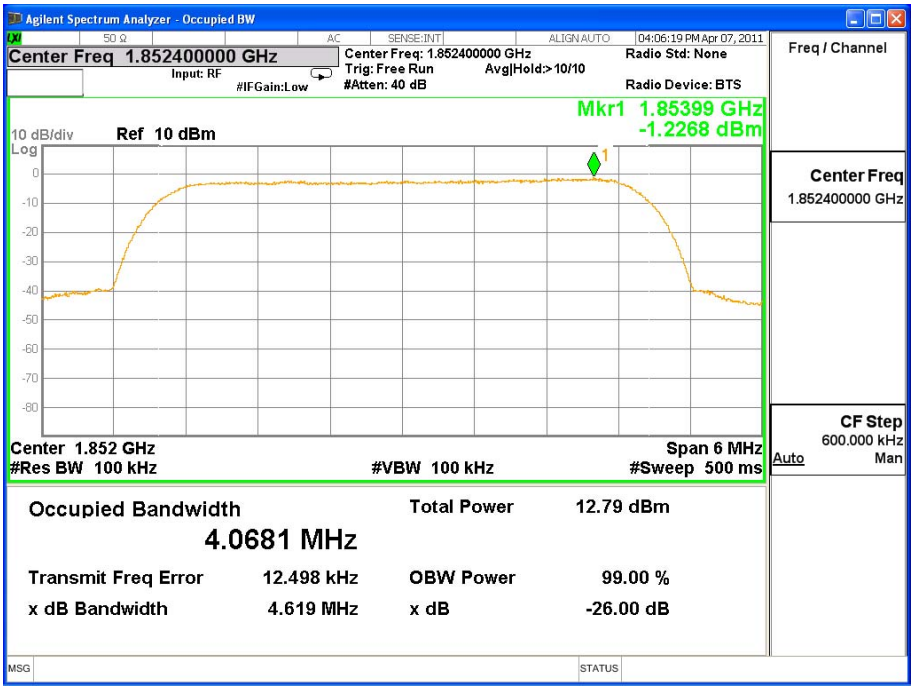
Product	HE863-NAG		
Test Mode	Occupied Bandwidth		
Date of Test	2011/04/07	Test Site	CTR
Test Condition	WCDMA BAND II		

WCDMA BAND II (CH 9538)

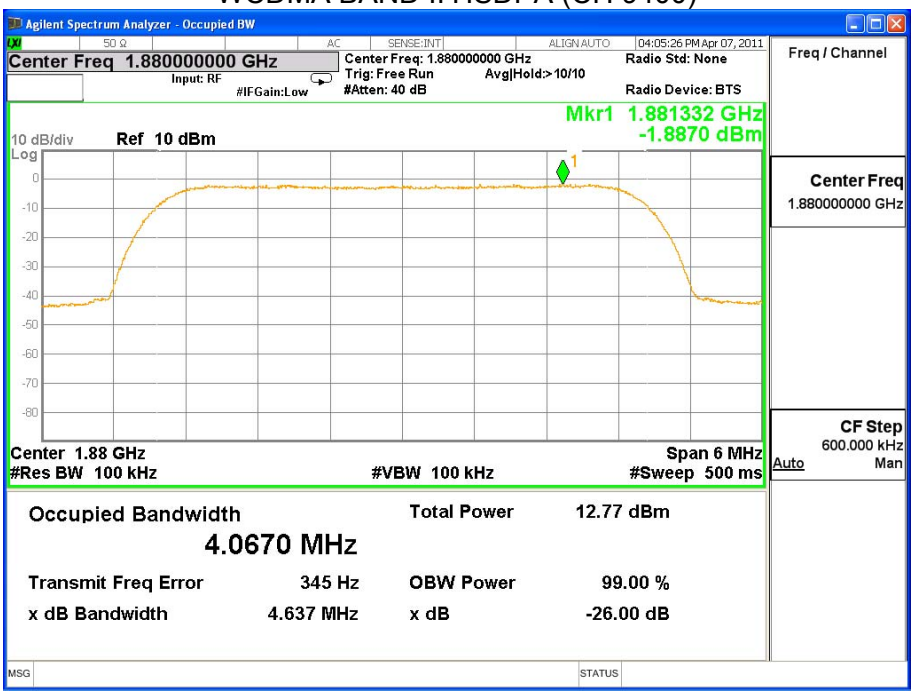


Product	HE863-NAG		
Test Mode	Occupied Bandwidth		
Date of Test	2011/04/07	Test Site	CTR
Test Condition	WCDMA BAND II HSDPA		

WCDMA BAND II HSDPA (CH 9262)

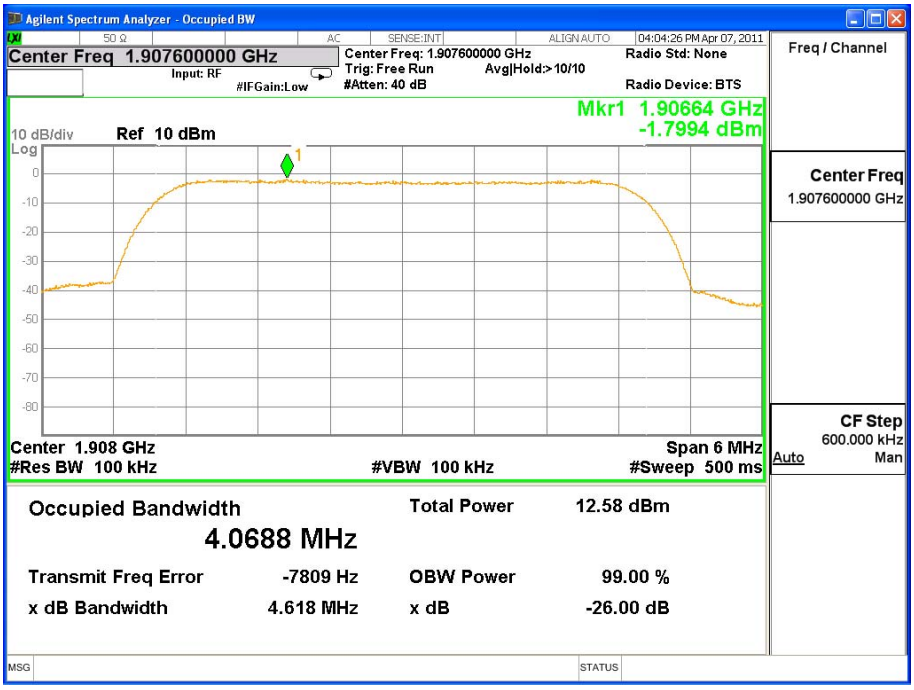


WCDMA BAND II HSDPA (CH 9400)



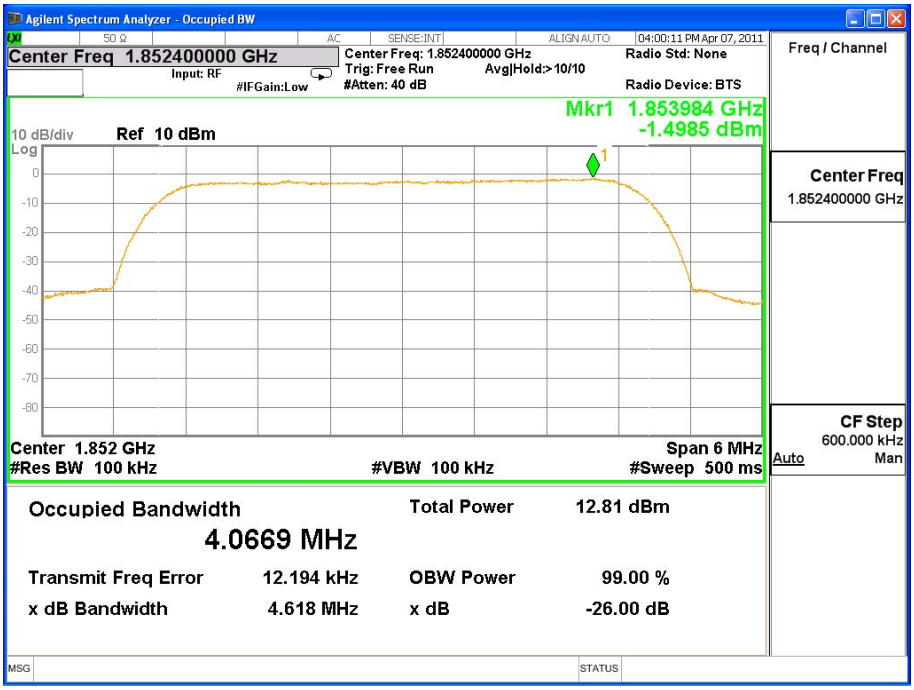
Product	HE863-NAG		
Test Mode	Occupied Bandwidth		
Date of Test	2011/04/07	Test Site	CTR
Test Condition	WCDMA BAND II HSDPA		

WCDMA BAND II HSDPA (CH 9538)

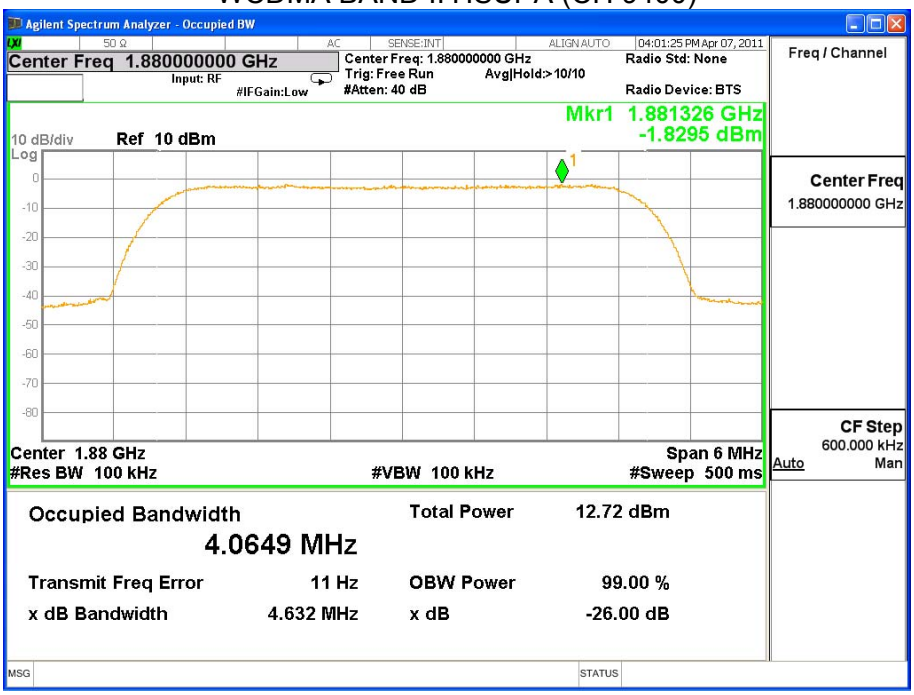


Product	HE863-NAG		
Test Mode	Occupied Bandwidth		
Date of Test	2011/04/07	Test Site	CTR
Test Condition	WCDMA BAND II HSUPA		

WCDMA BAND II HSUPA (CH 9262)



WCDMA BAND II HSUPA (CH 9400)



Product	HE863-NAG		
Test Mode	Occupied Bandwidth		
Date of Test	2011/04/07	Test Site	CTR
Test Condition	WCDMA BAND II HSUPA		

WCDMA BAND II HSUPA (CH 9538)