



## Test Report

Product Name : HE863-NAD  
Model No : HE863-NAD  
FCC ID : RI7HE863NA

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

Date of Receipt : 2010/11/17  
Issued Date : 2011/01/28  
Report No. : 10B334R-HPUSP07V01-A  
Report Version : V 2.0

The test results relate only to the samples tested.  
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This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

# Test Report Certification

Issued Date : 2011/01/28

Report No.: 10B334R-HPUSP07V01-A

**Accredited by NIST (NVLAP)**

NVLAP Lab Code: 200533-0

Product Name : HE863-NAD  
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-NAD  
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 : TIA/EIA 603-C  
Reference :  
Test Result : Complied

Test results relate only to the samples tested.

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Approved By : Vincent Lin  
( Manager / Vincent Lin )

## TABLE OF CONTENTS

Description	Page
1. GENERAL INFORMATION .....	4
1.1. EUT Description .....	4
1.2. Operational Description.....	5
1.3. Configuration of tested System .....	6
1.4. EUT Setup Procedures .....	6
1.5. Test Facility .....	7
1.6. Type of Emission.....	8
1.7. DC voltages and DC currents .....	8
2. Peak Power Output .....	9
2.1. Test Equipment.....	9
2.2. Test Setup .....	9
2.3. Limits .....	10
2.4. Test Procedure .....	10
2.5. Test Specification .....	10
2.6. Test Result of Peak Power Output .....	11
3. Occupied Bandwidth .....	27
3.1. Test Equipment.....	27
3.2. Test Setup .....	27
3.3. Test Procedure .....	27
3.4. Test Specification .....	28
3.5. Test Result of Occupied Bandwidth .....	29
4. Spurious Emission At Antenna Terminals (+/-1MHz) .....	51
4.1. Test Equipment.....	51
4.2. Setup .....	51
4.3. Limits .....	52
4.4. Test Procedure .....	52
4.5. Test Specification .....	52
4.6. Test Result of Spurious Emission At Antenna Terminals (+/-1MHz).....	53
5. Spurious Emission .....	63
5.1. Test Equipment.....	63
5.2. Test Setup .....	64
5.3. Limits .....	64
5.4. Test Procedure .....	65
5.5. Test Specification .....	65
5.6. Test Result of Spurious Emission .....	66
6. Frequency Stability Under Temperature & Voltage Variations .....	106
6.1. Test Equipment.....	106
6.2. Test Setup .....	106
6.3. Limits.....	106
6.4. Test Procedure .....	107
6.5. Test Specification .....	107
6.6. Test Result of Frequency Stability Under Temperature Variations.....	108
7. EMI Reduction Method During Compliance Testing.....	118
Attachment 1: EUT Test Photographs	
Attachment 2: EUT Detailed Photographs	

## 1. GENERAL INFORMATION

### 1.1. EUT Description

Product Name	HE863-NAD
Model No.	HE863-NAD
Trade Name	Telit
IMEI No.	355323-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	824MHz~849MHz(GSM 850/WCDMA Band V) 1850MHz ~ 1910MHz(PCS 1900/WCDMA Band II)
Function	GPRS/EGPRS/WCDMA/HSDPA/HSUPA
HW Version	1.00
SW version	11.00.000-A024

## 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.

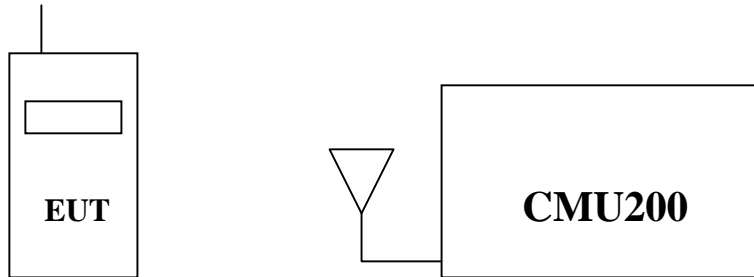
The EUT provide all functions described as above. The EUT is tested with maximum rated TX power via the Base Station simulator.

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:

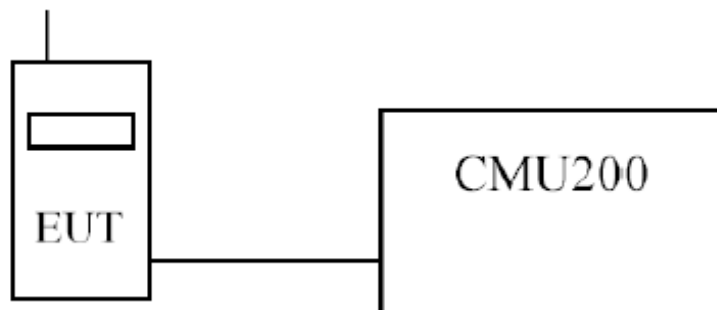
Test Mode:	GSM 850 GPRS
	GSM 850 EGPRS
	PCS 1900 GPRS
	PCS 1900 EGPRS
	WCDMA BAND V
	WCDMA BAND V HSDPA
	WCDMA BAND V HSUPA
	WCDMA BAND II
	WCDMA BAND II HSDPA
	WCDMA BAND II HSUPA

### 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: Quietek Corporation

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 E-Mail : [service@quietek.com](mailto:service@quietek.com)

FCC Accreditation Number: TW1014



## 1.6. Type of Emission

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

## 1.7. DC voltages and DC currents

<b>GSM 850 GPRS</b>	
EUT Transmitting (in maximum power) :	DC voltage : 3.8V , DC current : 0.22A
EUT Standby :	DC voltage : 3.8V , DC current : 0.03A
<b>GSM 850 EGPRS</b>	
EUT Transmitting (in maximum power) :	DC voltage : 3.8V , DC current : 0.18A
EUT Standby :	DC voltage : 3.8V , DC current : 0.03A
<b>PCS 1900 GPRS</b>	
EUT Transmitting (in maximum power) :	DC voltage : 3.8V , DC current : 0.18A
EUT Standby :	DC voltage : 3.8V , DC current : 0.03A
<b>PCS 1900 EGPRS</b>	
EUT Transmitting (in maximum power) :	DC voltage : 3.8V , DC current : 0.15A
EUT Standby :	DC voltage : 3.8V , DC current : 0.03A
<b>WCDMA Band II RMC</b>	
EUT Transmitting (in maximum power) :	DC voltage : 3.8V , DC current : 0.14A
EUT Standby :	DC voltage : 3.8V , DC current : 0.08A
<b>WCDMA Band II HSDPA</b>	
EUT Transmitting (in maximum power) :	DC voltage : 3.8V , DC current : 0.17A
EUT Standby :	DC voltage : 3.8V , DC current : 0.08A
<b>WCDMA Band II HSUPA</b>	
EUT Transmitting (in maximum power) :	DC voltage : 3.8V , DC current : 0.18A
EUT Standby :	DC voltage : 3.8V , DC current : 0.08A
<b>WCDMA Band V RMC</b>	
EUT Transmitting (in maximum power) :	DC voltage : 3.8V , DC current : 0.14A
EUT Standby :	DC voltage : 3.8V , DC current : 0.08A
<b>WCDMA Band V HSDPA</b>	
EUT Transmitting (in maximum power) :	DC voltage : 3.8V , DC current : 0.17A
EUT Standby :	DC voltage : 3.8V , DC current : 0.08A
<b>WCDMA Band V HSUPA</b>	
EUT Transmitting (in maximum power) :	DC voltage : 3.8V , DC current : 0.18A
EUT Standby :	DC voltage : 3.8V , DC current : 0.08A



## 2. Peak Power Output

### 2.1. Test Equipment

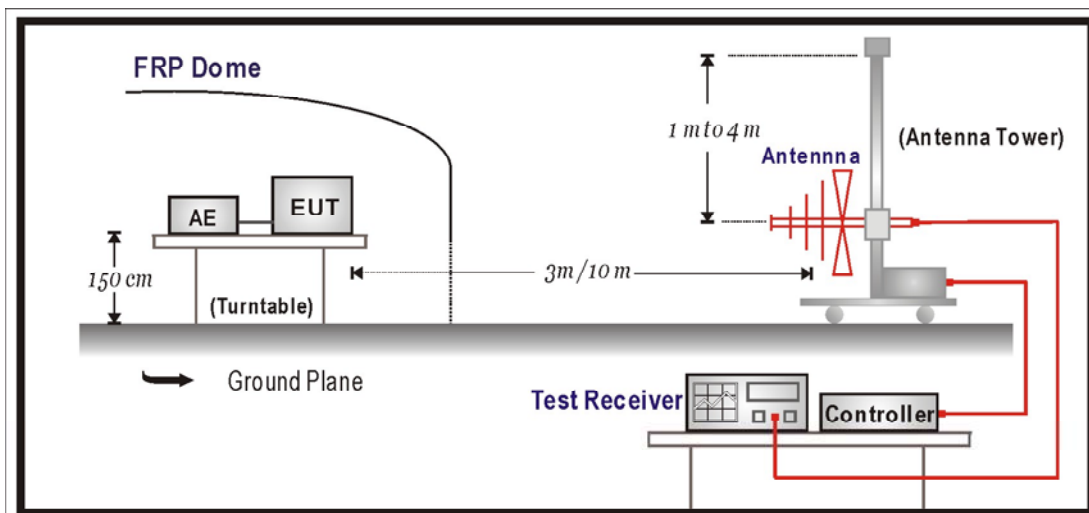
The following test equipments are used during the radiated emission test:

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

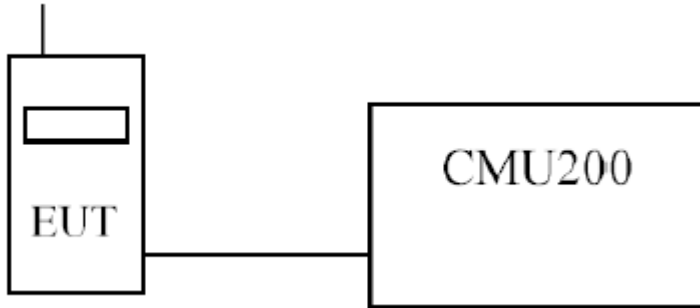
Note: 1. All equipments that need to be calibrated are with calibration period of 1 year.

### 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-NAD		
Test Mode	RF Output Power (Conducted)		
Date of Test	2010/11/24	Test Site	CTR

GPRS 850 (↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	32.34	0.2	32.54	1.79
836.4	32.34	0.2	32.54	1.79
848.8	32.40	0.2	32.60	<b>1.82</b>
GPRS 1900 (↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	28.69	0.4	29.09	0.81
1880	28.73	0.4	29.13	<b>0.82</b>
1909.8	28.68	0.4	29.08	0.81

EGPRS 850 (↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	27.17	0.2	27.37	0.55
836.4	27.13	0.2	27.33	0.54
848.8	27.22	0.2	27.42	<b>0.55</b>
EGPRS 1900 (↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	25.49	0.4	25.89	0.39
1880	25.51	0.4	25.91	0.39
1909.8	25.53	0.4	25.93	<b>0.39</b>

GPRS 850 (↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	32.07	0.2	32.27	1.69
836.4	32.11	0.2	32.31	<b>1.70</b>
848.8	32.07	0.2	32.27	1.69
GPRS 1900 (↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	28.59	0.4	28.99	<b>0.79</b>
1880	28.57	0.4	28.97	0.79
1909.8	28.52	0.4	28.92	0.78

EGPRS 850 (↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	26.76	0.2	26.96	0.50
836.4	26.86	0.2	27.06	<b>0.51</b>
848.8	26.83	0.2	27.03	0.50
EGPRS 1900 (↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	25.38	0.4	25.78	0.38
1880	25.39	0.4	25.79	0.38
1909.8	25.41	0.4	25.81	<b>0.38</b>

GPRS 850 (↑ ↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	31.80	0.2	32.00	1.58
836.4	31.84	0.2	32.04	<b>1.60</b>
848.8	31.84	0.2	32.04	1.60
GPRS 1900 (↑ ↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	28.40	0.4	28.80	<b>0.76</b>
1880	28.37	0.4	28.77	0.75
1909.8	28.33	0.4	28.73	0.75

EGPRS 850 (↑ ↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	25.86	0.2	26.06	0.40
836.4	25.97	0.2	26.17	<b>0.41</b>
848.8	25.93	0.2	26.13	0.41
EGPRS 1900 (↑ ↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	25.24	0.4	25.64	<b>0.37</b>
1880	25.11	0.4	25.51	0.36
1909.8	25.13	0.4	25.53	0.36

GPRS 850 (↑ ↑ ↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	30.69	0.2	30.89	1.23
836.4	30.76	0.2	30.96	<b>1.25</b>
848.8	30.75	0.2	30.95	1.24
GPRS 1900 (↑ ↑ ↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	28.05	0.4	28.45	<b>0.70</b>
1880	27.94	0.4	28.34	0.68
1909.8	28.04	0.4	28.44	0.70

EGPRS 850 (↑ ↑ ↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
824.2	24.86	0.2	25.06	<b>0.32</b>
836.4	24.83	0.2	25.03	0.32
848.8	24.85	0.2	25.05	0.32
EGPRS 1900 (↑ ↑ ↑ ↑)				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1850.2	24.28	0.4	24.68	<b>0.29</b>
1880	24.25	0.4	24.65	0.29
1909.8	24.22	0.4	24.62	0.29

WCDMA V RMC				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
826.4	22.62	0.2	22.82	0.19
836.6	22.73	0.2	22.93	0.20
846.6	22.78	0.2	22.98	<b>0.20</b>

WCDMA V HSDPA								
Frequency (MHz)	Set 1		Set 2		Set 3		Set 4	
	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)
826.4	<b>23.02</b>	0.20	22.59	0.18	22.33	0.17	22.10	0.16
836.6	22.96	0.20	22.69	0.19	22.32	0.17	22.06	0.16
846.6	22.90	0.19	22.77	0.19	22.52	0.18	22.26	0.17
$\beta_c$	2		12		15		15	
$\beta_d$	15		15		8		4	
$\Delta_{ACK}, \Delta_{NACK}, \Delta_{CQI}$	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										
Frequency (MHz)	Set 1		Set 2		Set 3		Set 4		Set 5	
	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)
826.4	22.15	0.16	20.76	0.12	21.51	0.14	21.11	0.13	22.68	0.19
836.6	21.83	0.15	20.79	0.12	21.39	0.14	21.13	0.13	22.59	0.18
846.6	21.91	0.16	20.77	0.12	21.48	0.14	21.09	0.13	<b>22.74</b>	0.19
$\beta_c$	11		6		15		2		15	
$\beta_d$	15		15		9		15		15	
$\Delta_{ACK}, \Delta_{NACK}, \Delta_{CQI}$	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 RMC				
Frequency (MHz)	Output Power (dBm)	Path Loss (dB)	Result (dBm)	Result (W)
1852.4	22.56	0.4	22.96	0.20
1880	22.64	0.4	<b>23.04</b>	0.20
1907.6	22.58	0.4	22.98	0.20

WCDMA II HSDPA								
Frequency (MHz)	Set 1		Set 2		Set 3		Set 4	
	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)
1852.4	<b>22.98</b>	0.20	22.30	0.17	22.05	0.16	21.77	0.15
1880	22.93	0.20	22.40	0.17	22.10	0.16	21.88	0.15
1907.6	22.94	0.20	22.31	0.17	22.00	0.16	21.82	0.15
$\beta_c$	2		12		15		15	
$\beta_d$	15		15		8		4	
$\Delta_{ACK}, \Delta_{NACK} \Delta_{CQI}$	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										
Frequency (MHz)	Set 1		Set 2		Set 3		Set 4		Set 5	
	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)	Power (dBm)	Power (Watts)
1852.4	21.40	0.14	20.58	0.11	21.07	0.13	20.62	0.12	22.15	0.16
1880	21.96	0.16	20.52	0.11	21.11	0.13	20.64	0.12	<b>22.19</b>	0.17
1907.6	21.55	0.14	20.50	0.11	21.16	0.13	20.68	0.12	21.46	0.14
$\beta_c$	11		6		15		2		15	
$\beta_d$	15		15		9		15		15	
$\Delta_{ACK}, \Delta_{NACK} \Delta_{CQI}$	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-NAD		
Test Mode	RF Output Power (Radiated)		
Date of Test	2010/11/23	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	16.58	25.16	1.85	0.6	26.41	<b>0.44</b>
836.4	16.24	24.83	1.85	0.6	26.08	0.41
848.8	15.78	24.40	1.85	0.6	25.65	0.37

## 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-NAD		
Test Mode	RF Output Power (Radiated)		
Date of Test	2010/11/23	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	14.32	23.04	1.85	0.6	24.29	<b>0.27</b>
836.4	14.21	22.94	1.85	0.6	24.19	0.26
848.8	13.7	22.47	1.85	0.6	23.72	0.24

## 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-NAD		
Test Mode	RF Output Power (Radiated)		
Date of Test	2010/11/23	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	-10.270	21.917	10.4	1.02	31.297	<b>1.35</b>
1880.0	-12.100	20.302	10.4	1.02	29.682	0.93
1909.8	-12.980	19.461	10.4	1.02	28.841	0.77

## 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-NAD		
Test Mode	RF Output Power (Radiated)		
Date of Test	2010/11/23	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	-10.670	21.517	10.4	1.02	30.897	<b>1.23</b>
1880.0	-12.430	19.972	10.4	1.02	29.352	0.86
1909.8	-13.100	19.341	10.4	1.02	28.721	0.74

## 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-NAD		
Test Mode	RF Output Power (Radiated)		
Date of Test	2010/12/20	Test Site	OATS 1
Test Condition	WCDMA BAND V RMC		

**Maximum Power- WCDMA BAND V RMC**

Frequency (MHz)	Reading Level (dBm)	Substitution Level (dBm)	Substitution Antenna Gain (dBd)	Cable Loss (dB)	Result ERP (dBm)	Result ERP (W)
826.4	12.413	21.27	1.85	0.6	22.52	0.18
836.6	11.725	20.63	1.85	0.6	21.88	0.15
846.6	12.463	21.32	1.85	0.6	22.57	<b>0.18</b>

## 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-NAD		
Test Mode	RF Output Power (Radiated)		
Date of Test	2010/12/20	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	12.584	21.43	1.85	0.6	22.68	0.19
836.6	10.463	19.45	1.85	0.6	20.7	0.12
846.6	12.888	21.71	1.85	0.6	22.96	<b>0.20</b>

## 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-NAD		
Test Mode	RF Output Power (Radiated)		
Date of Test	2010/12/20	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	12.520	21.37	1.85	0.6	22.62	0.18
836.6	11.801	20.70	1.85	0.6	21.95	0.16
846.6	12.693	21.53	1.85	0.6	22.78	<b>0.19</b>

## 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-NAD		
Test Mode	RF Output Power (Radiated)		
Date of Test	2010/12/20	Test Site	OATS 1
Test Condition	WCDMA BAND II RMC		

**Maximum Power- WCDMA BAND II RMC**

Frequency (MHz)	Reading Level (dBm)	Substitution Level (dBm)	Substitution Antenna Gain (dBi)	Cable Loss (dB)	Result EIRP (dBm)	Result EIRP (W)
1852.4	-12.170	20.034	10.4	1.02	29.414	0.87
1880	-11.957	20.445	10.4	1.02	29.825	0.96
1907.6	-11.779	20.661	10.4	1.02	30.041	<b>1.01</b>

## 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-NAD		
Test Mode	RF Output Power (Radiated)		
Date of Test	2010/12/20	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	-12.218	19.986	10.4	1.02	29.366	0.86
1880	-11.243	21.159	10.4	1.02	30.539	<b>1.13</b>
1907.6	-12.010	20.430	10.4	1.02	29.810	0.96

## 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-NAD		
Test Mode	RF Output Power (Radiated)		
Date of Test	2010/12/20	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	-11.906	20.298	10.4	1.02	29.678	0.93
1880	-11.569	20.833	10.4	1.02	30.213	1.05
1907.6	-11.550	20.890	10.4	1.02	30.270	<b>1.06</b>

## 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

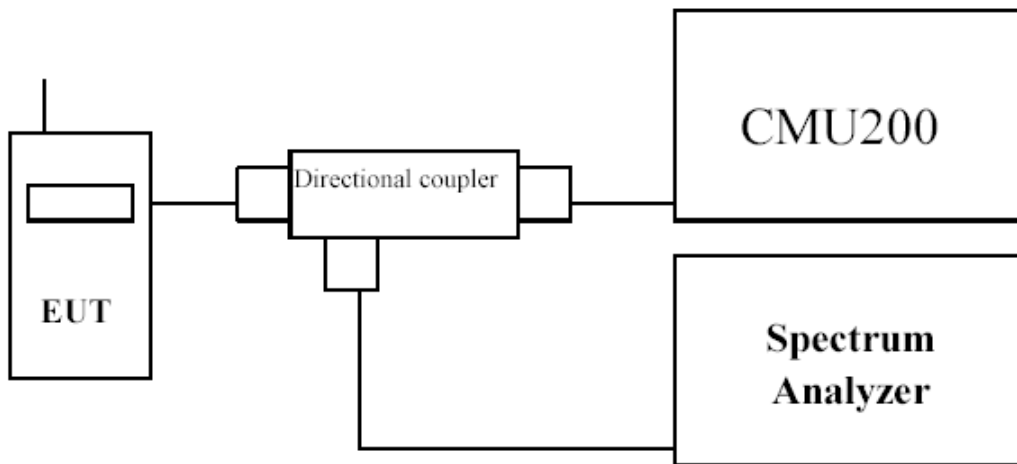
#### 3.1. Test Equipment

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

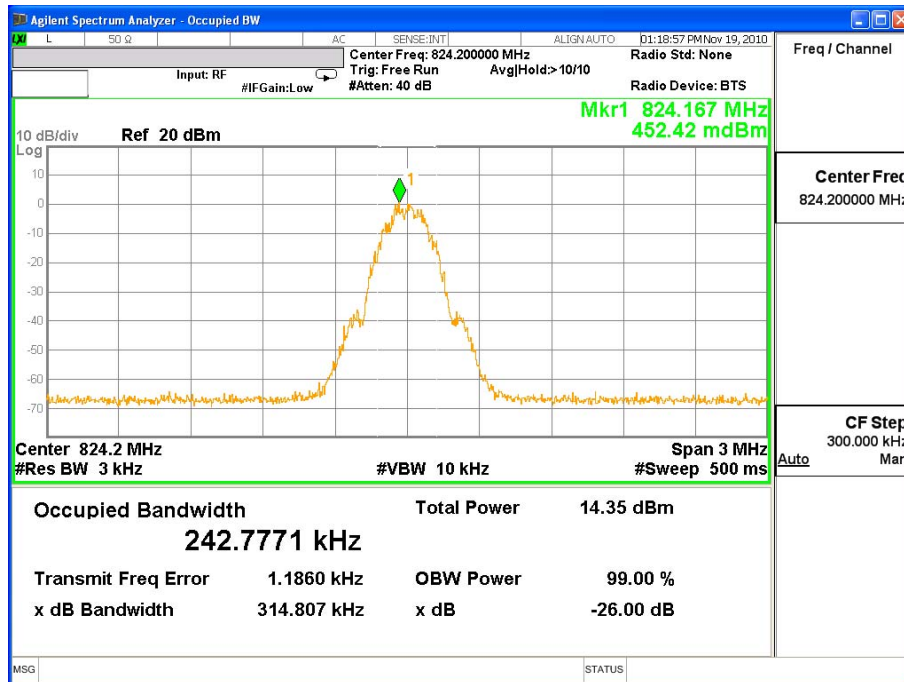
Product	HE863-NAD
Test Mode	Occupied Bandwidth
Test Site	CTR

Test Mode	Channel & TX Frequency (MHz)	99% Occupied Bandwidth (KHz)	26 dB bandwidth (KHz)	Required Limit (MHz)	Result
GSM 850 GPRS	128(824.2)	242.777	314.807	N/A	Pass
	189(836.4)	245.856	313.589	N/A	Pass
	251(848.8)	242.216	311.297	N/A	Pass
GSM 850 EGPRS	128(824.2)	248.283	312.127	N/A	Pass
	189(836.4)	251.164	313.682	N/A	Pass
	251(848.8)	251.156	313.739	N/A	Pass
PCS 1900 GPRS	512(1850.2)	241.666	314.681	N/A	Pass
	661(1880)	243.410	313.358	N/A	Pass
	810(1909.8)	245.316	314.085	N/A	Pass
PCS 1900 EGPRS	512(1850.2)	242.707	303.301	N/A	Pass
	661(1880)	243.805	306.144	N/A	Pass
	810(1909.8)	243.090	313.927	N/A	Pass
Test Mode	Channel & TX Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB bandwidth (MHz)	Required Limit (MHz)	Result
WCDMA V RMC	4132(826.4)	4.0562	4.605	N/A	Pass
	4183(836.6)	4.0472	4.605	N/A	Pass
	4233(846.6)	4.0433	4.603	N/A	Pass
WCDMA V HSDPA	4132(826.4)	4.0506	4.599	N/A	Pass
	4183(836.6)	4.0493	4.609	N/A	Pass
	4233(846.6)	4.0468	4.616	N/A	Pass
WCDMA V HSUPA	4132(826.4)	4.0596	4.594	N/A	Pass
	4183(836.6)	4.0739	4.606	N/A	Pass
	4233(846.6)	4.0579	4.599	N/A	Pass

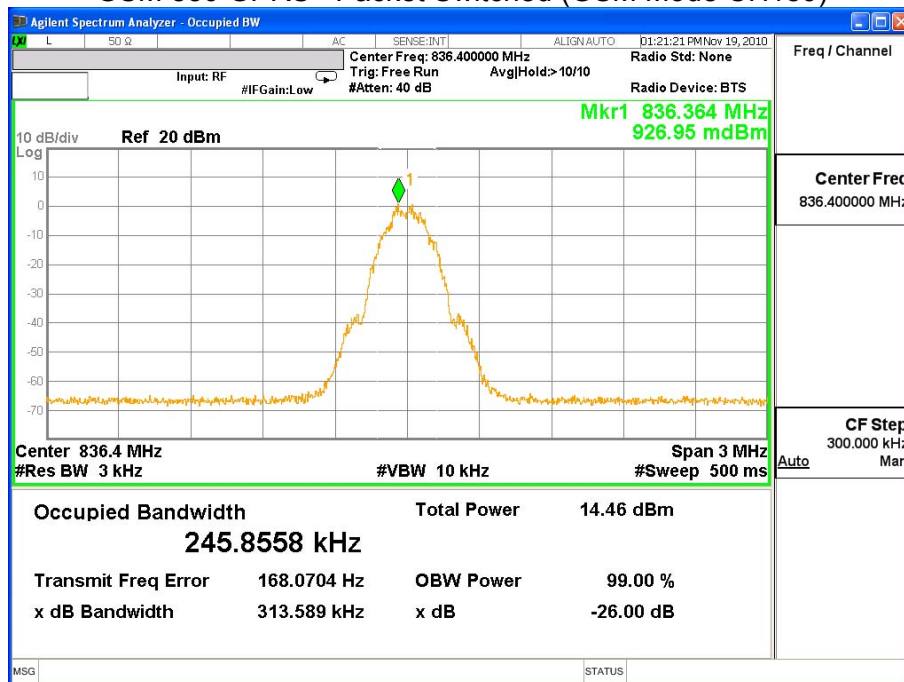
WCDMA II RMC	9262(1852.4)	4.0588	4.620	N/A	Pass
	9400(1880)	4.0468	4.598	N/A	Pass
	9538(1907.6)	4.0489	4.596	N/A	Pass
WCDMA II HSDPA	9262(1852.4)	4.0624	4.598	N/A	Pass
	9400(1880)	4.0563	4.608	N/A	Pass
	9538(1907.6)	4.0498	4.592	N/A	Pass
WCDMA II HSUPA	9262(1852.4)	4.0695	4.609	N/A	Pass
	9400(1880)	4.0643	4.592	N/A	Pass
	9538(1907.6)	4.0633	4.600	N/A	Pass

Product	HE863-NAD		
Test Mode	Occupied Bandwidth		
Date of Test	2010/11/19	Test Site	CTR
Test Condition	GSM 850 GPRS		

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

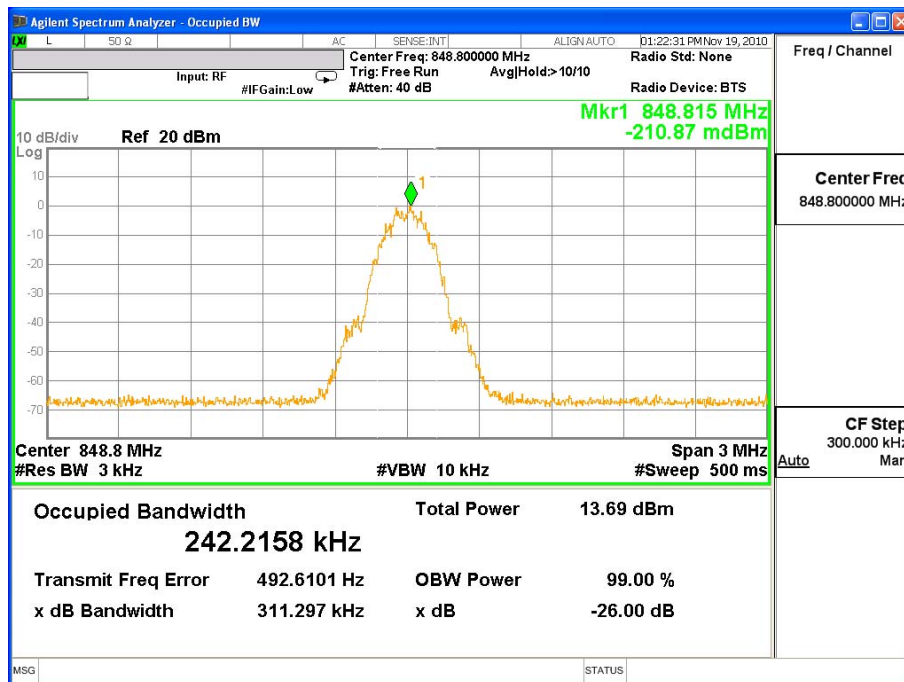


GSM 850 GPRS - Packet Switched (GSM Mode CH189)



Product	HE863-NAD		
Test Mode	Occupied Bandwidth		
Date of Test	2010/11/19	Test Site	CTR
Test Condition	GSM 850 GPRS		

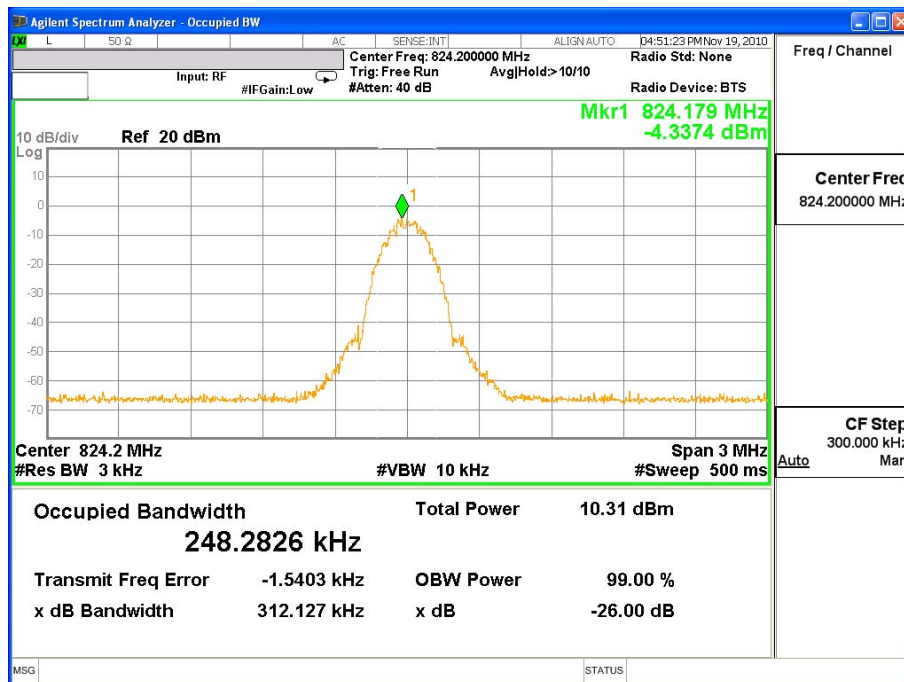
GSM 850 GPRS - Packet Switched (GSM Mode CH 251)



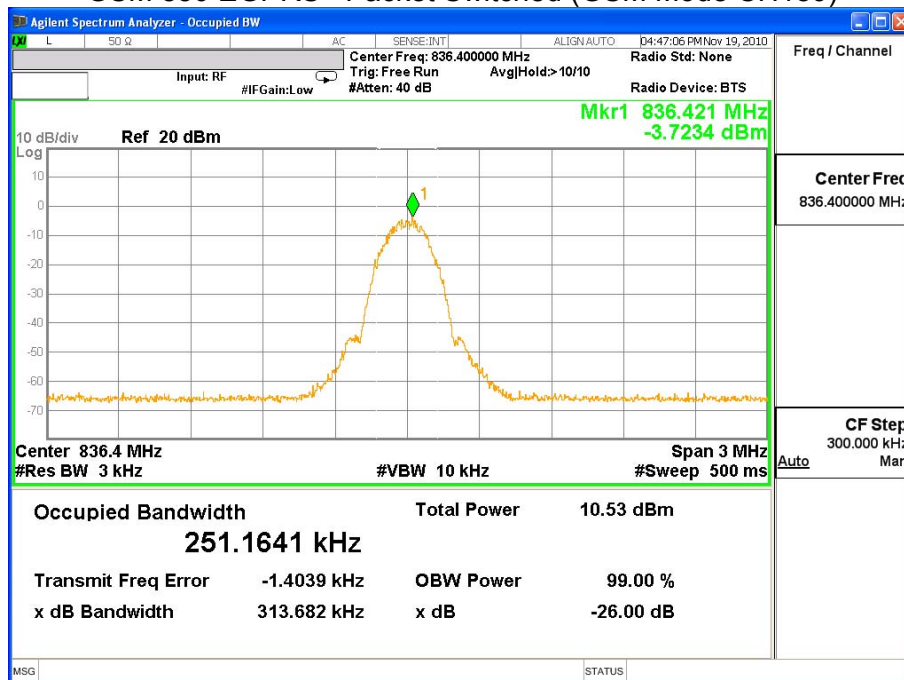


Product	HE863-NAD		
Test Mode	Occupied Bandwidth		
Date of Test	2010/11/19	Test Site	CTR
Test Condition	GSM 850 EGPRS		

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

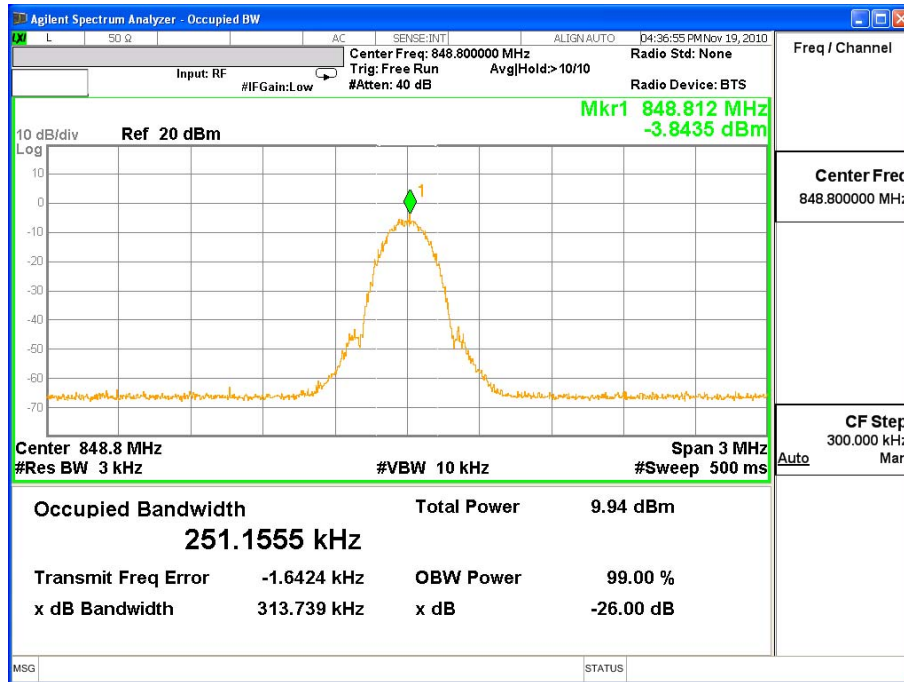


GSM 850 EGPRS - Packet Switched (GSM Mode CH189)



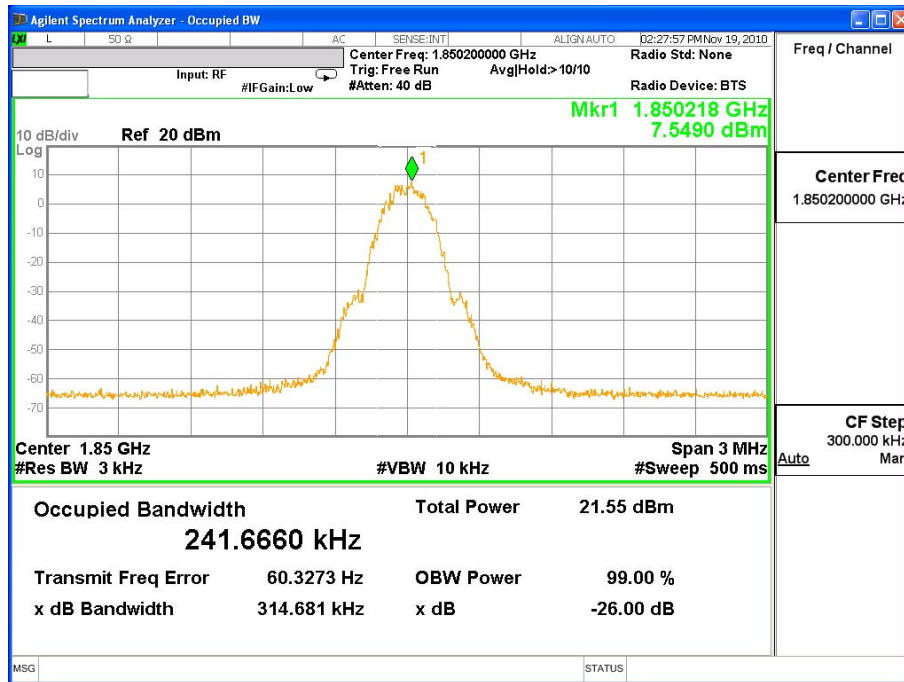
Product	HE863-NAD		
Test Mode	Occupied Bandwidth		
Date of Test	2010/11/19	Test Site	CTR
Test Condition	GSM 850 EGPRS		

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

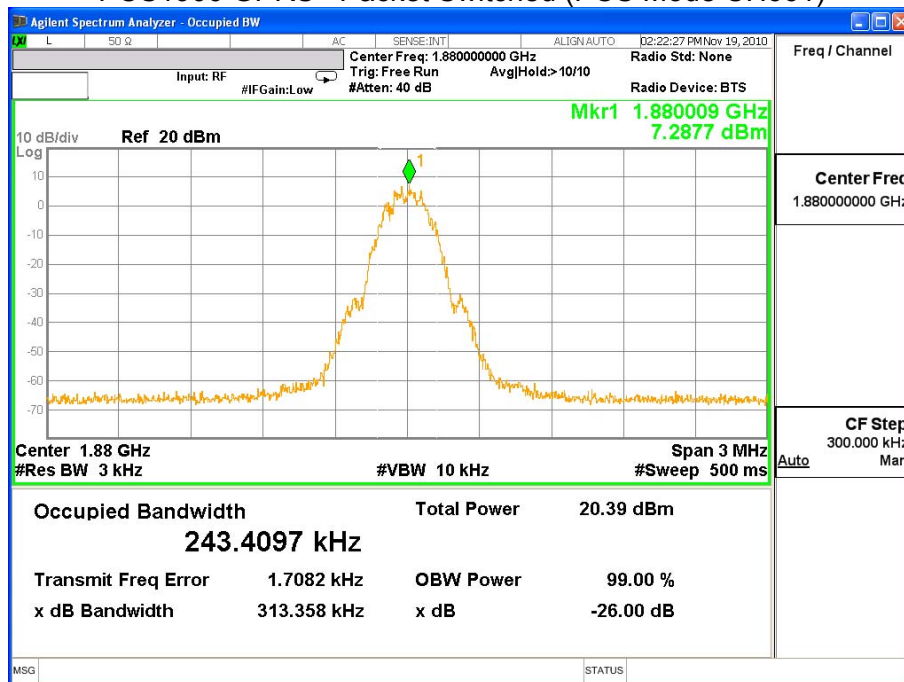


Product	HE863-NAD		
Test Mode	Occupied Bandwidth		
Date of Test	2010/11/19	Test Site	CTR
Test Condition	PCS1900 GPRS		

PCS1900 GPRS - Packet Switched (PCS Mode CH 512)

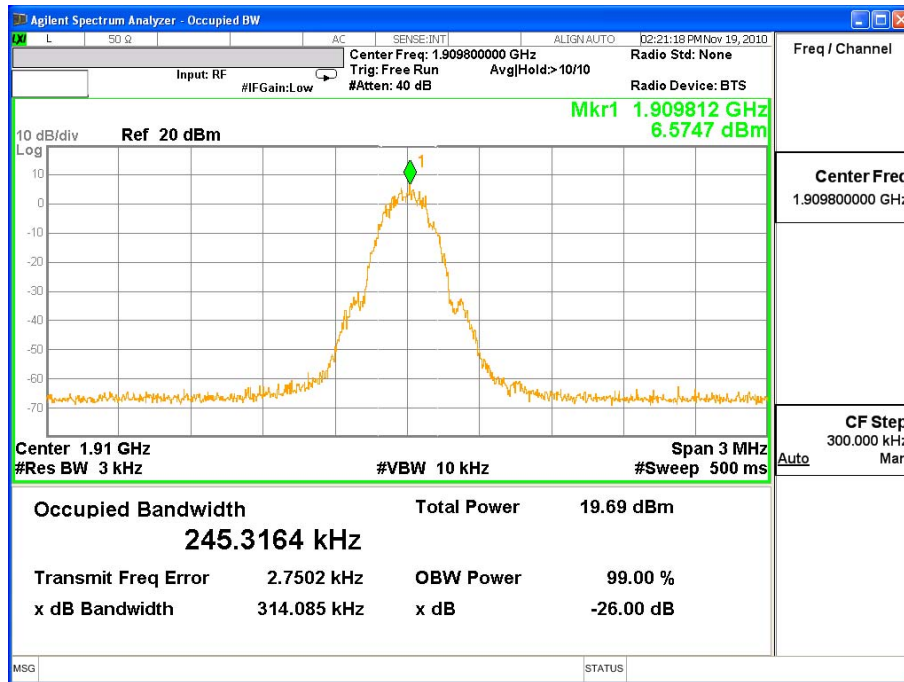


PCS1900 GPRS - Packet Switched (PCS Mode CH661)



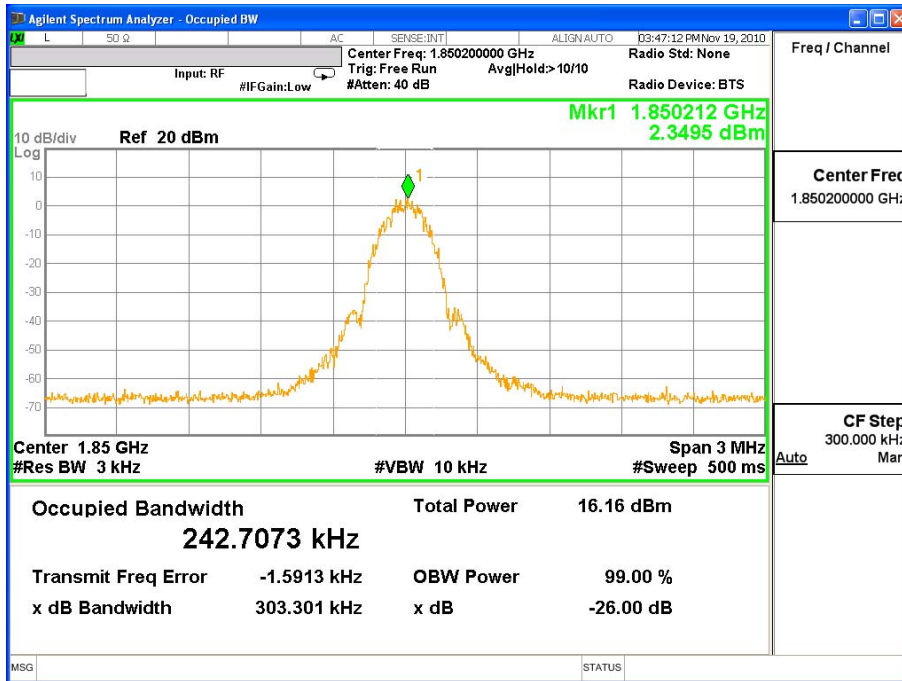
Product	HE863-NAD		
Test Mode	Occupied Bandwidth		
Date of Test	2010/11/19	Test Site	CTR
Test Condition	PCS1900 GPRS		

PCS1900 GPRS - Packet Switched (PCS Mode CH 810)

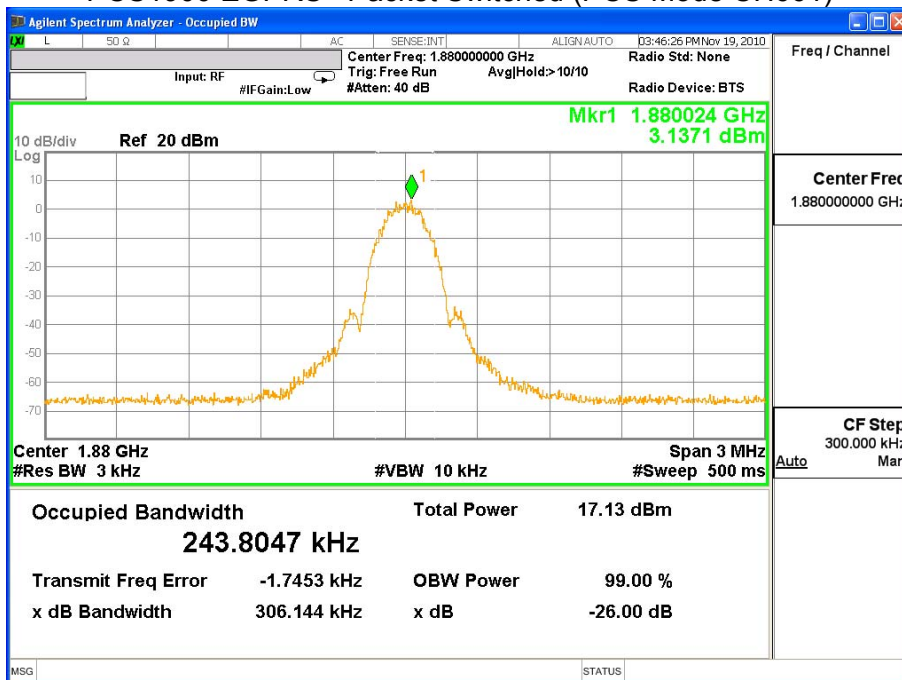


Product	HE863-NAD		
Test Mode	Occupied Bandwidth		
Date of Test	2010/11/19	Test Site	CTR
Test Condition	PCS1900 EGPRS		

PCS1900 EGPRS - Packet Switched (PCS Mode CH 512)

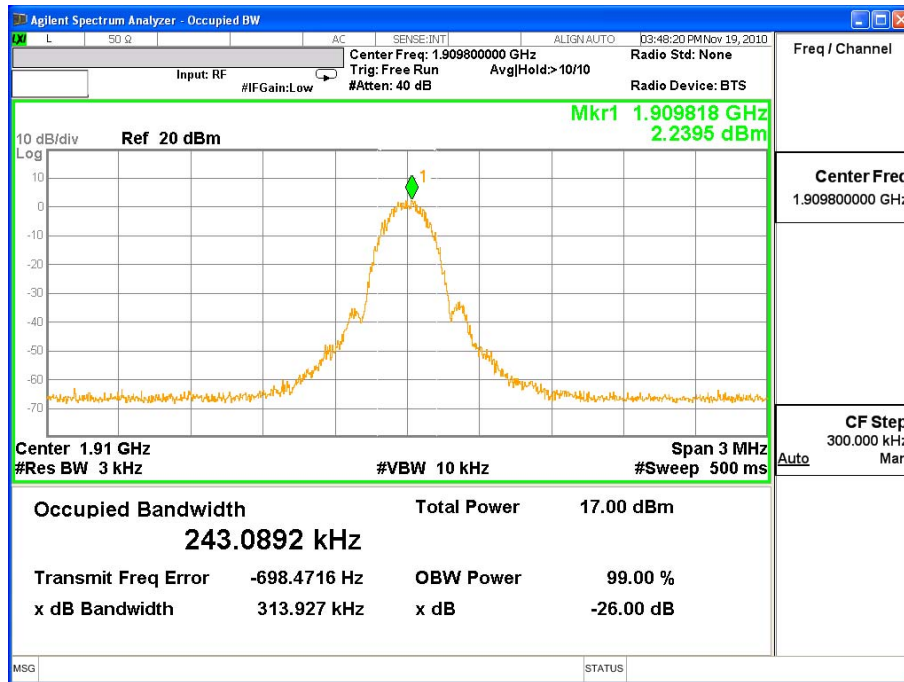


PCS1900 EGPRS - Packet Switched (PCS Mode CH661)



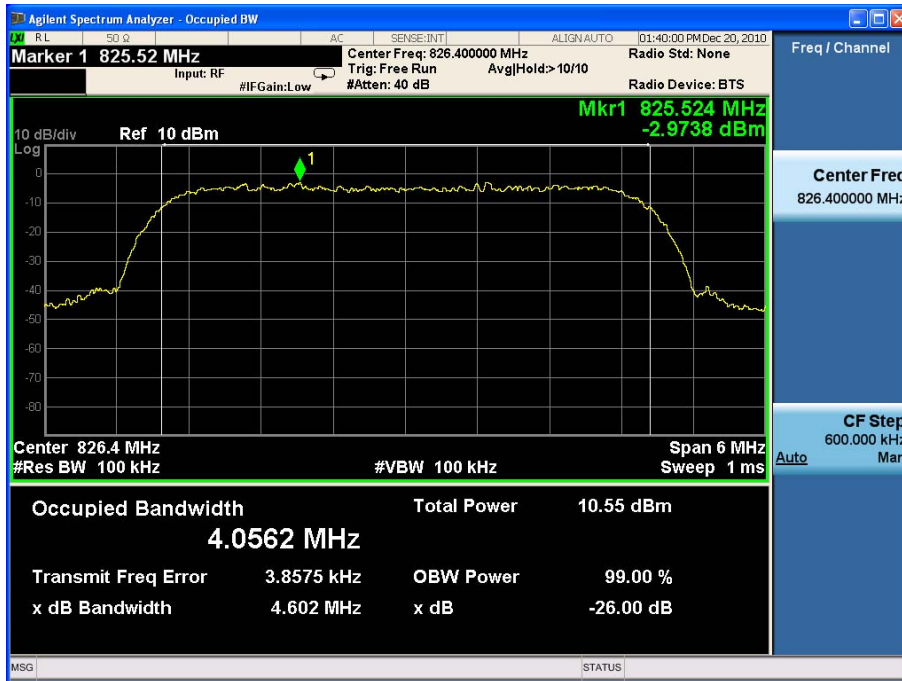
Product	HE863-NAD		
Test Mode	Occupied Bandwidth		
Date of Test	2010/11/19	Test Site	CTR
Test Condition	PCS1900 EGPRS		

PCS1900 EGPRS - Packet Switched (PCS Mode CH 810)

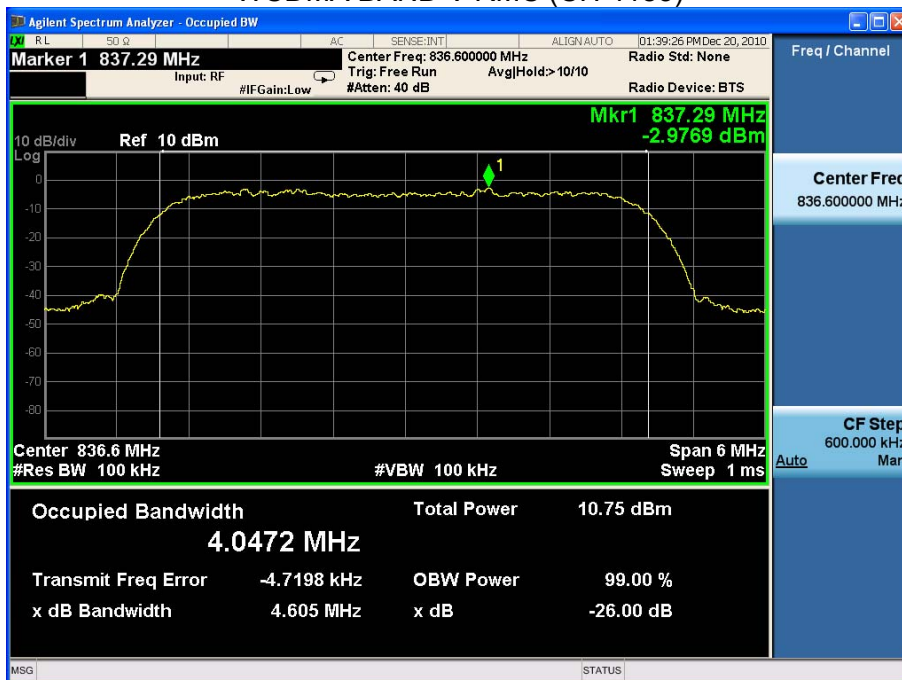


Product	HE863-NAD		
Test Mode	Occupied Bandwidth		
Date of Test	2010/12/20	Test Site	CTR
Test Condition	WCDMA BAND V RMC		

WCDMA BAND V RMC (CH 4132)

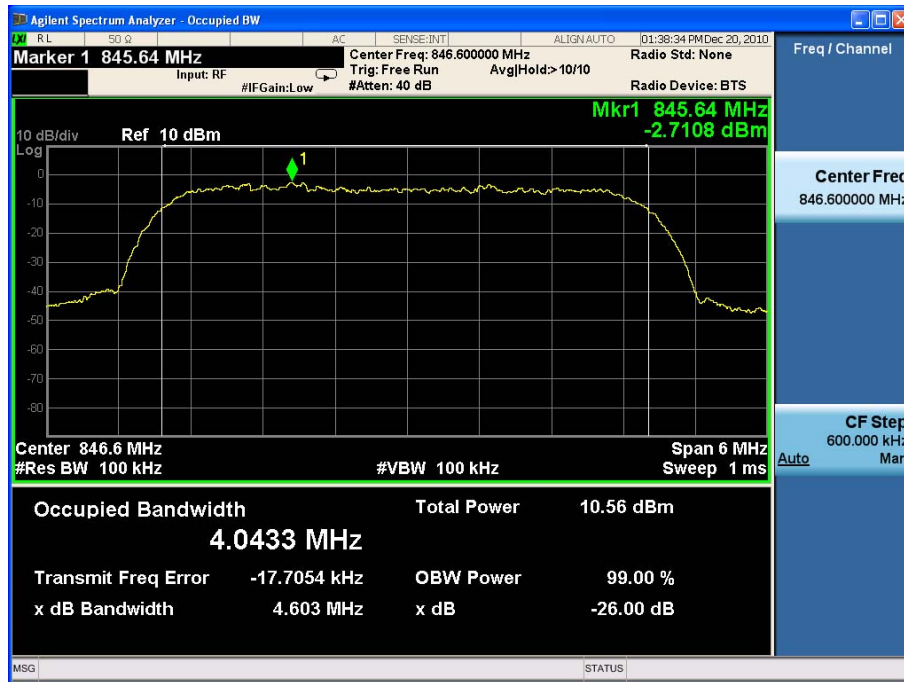


WCDMA BAND V RMC (CH 4183)



Product	HE863-NAD		
Test Mode	Occupied Bandwidth		
Date of Test	2010/12/20	Test Site	CTR
Test Condition	WCDMA BAND V RMC		

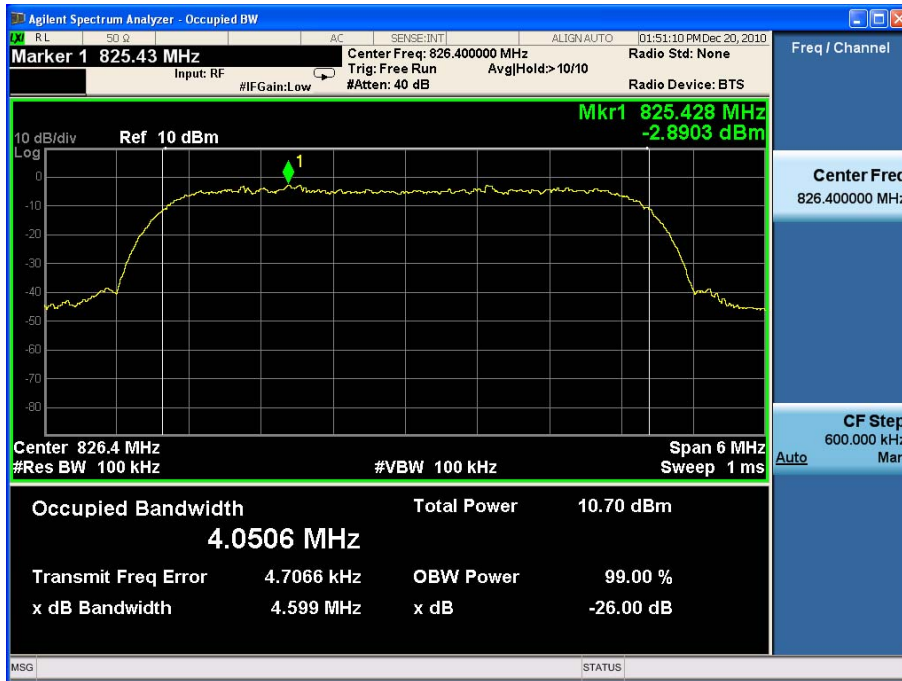
WCDMA BAND V RMC (CH 4233)



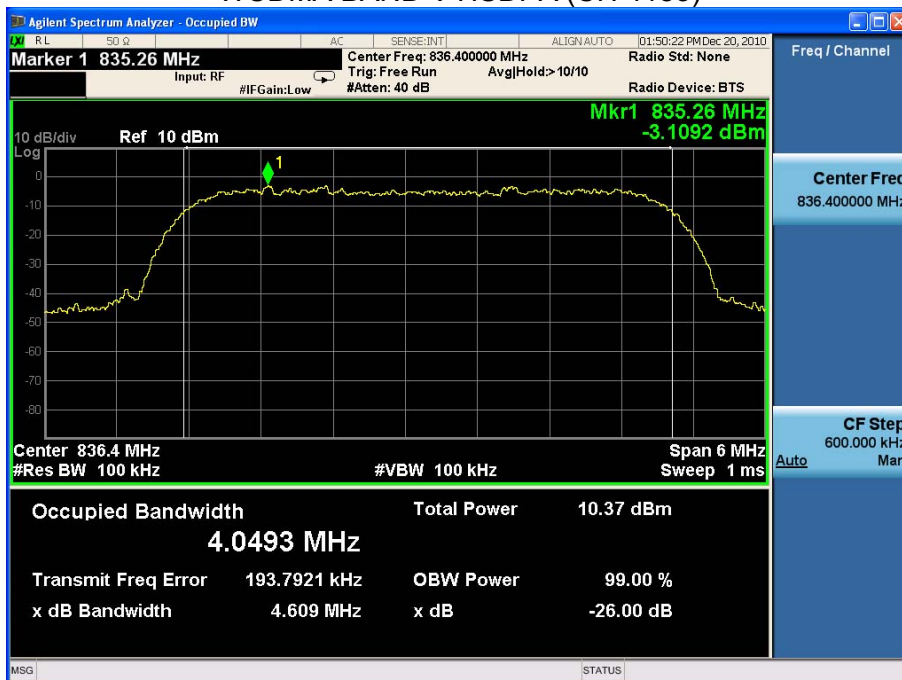


Product	HE863-NAD		
Test Mode	Occupied Bandwidth		
Date of Test	2010/12/20	Test Site	CTR
Test Condition	WCDMA BAND V HSDPA		

WCDMA BAND V HSDPA (CH 4132)

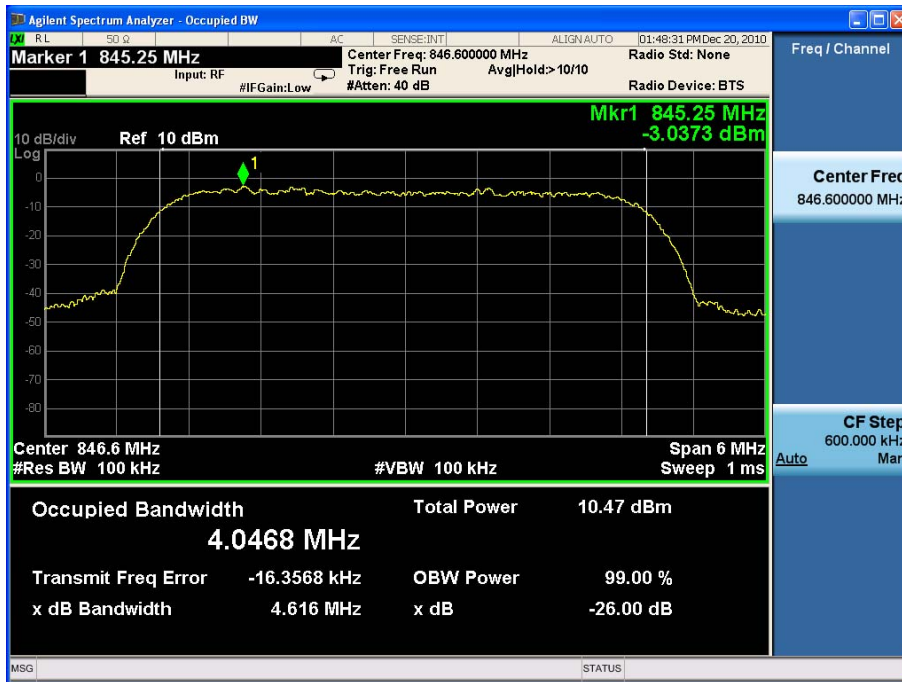


WCDMA BAND V HSDPA (CH 4183)



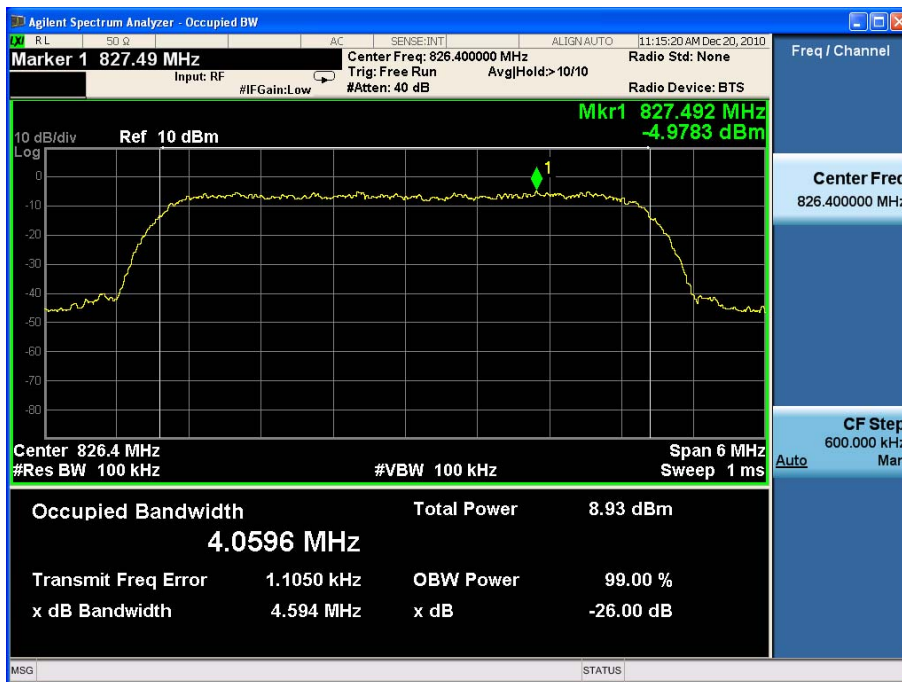
Product	HE863-NAD		
Test Mode	Occupied Bandwidth		
Date of Test	2010/12/20	Test Site	CTR
Test Condition	WCDMA BAND V HSDPA		

WCDMA BAND V HSDPA (CH 4233)

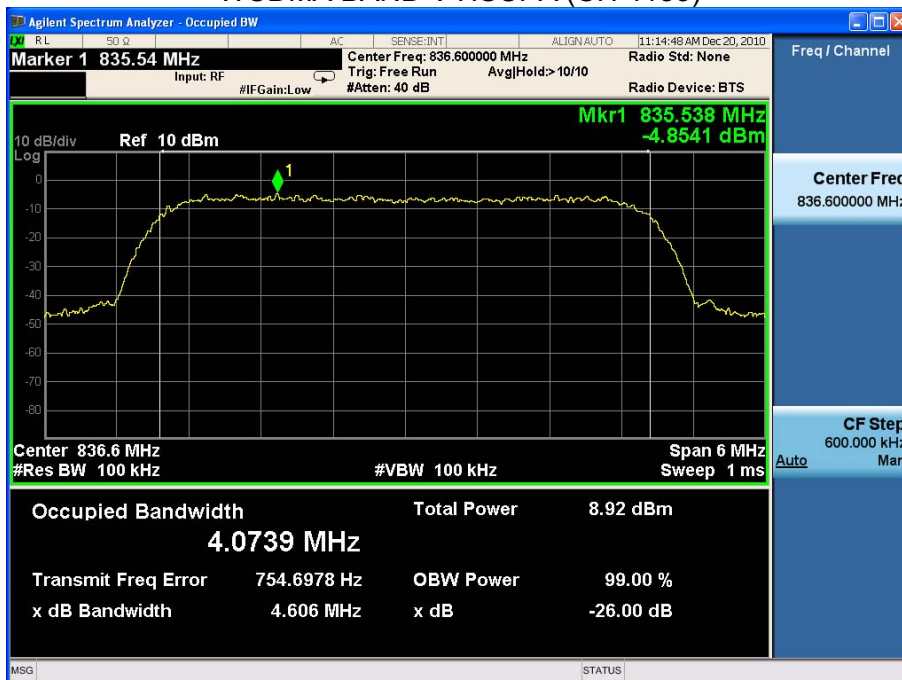


Product	HE863-NAD		
Test Mode	Occupied Bandwidth		
Date of Test	2010/12/20	Test Site	CTR
Test Condition	WCDMA BAND V HSUPA		

WCDMA BAND V HSUPA (CH 4132)

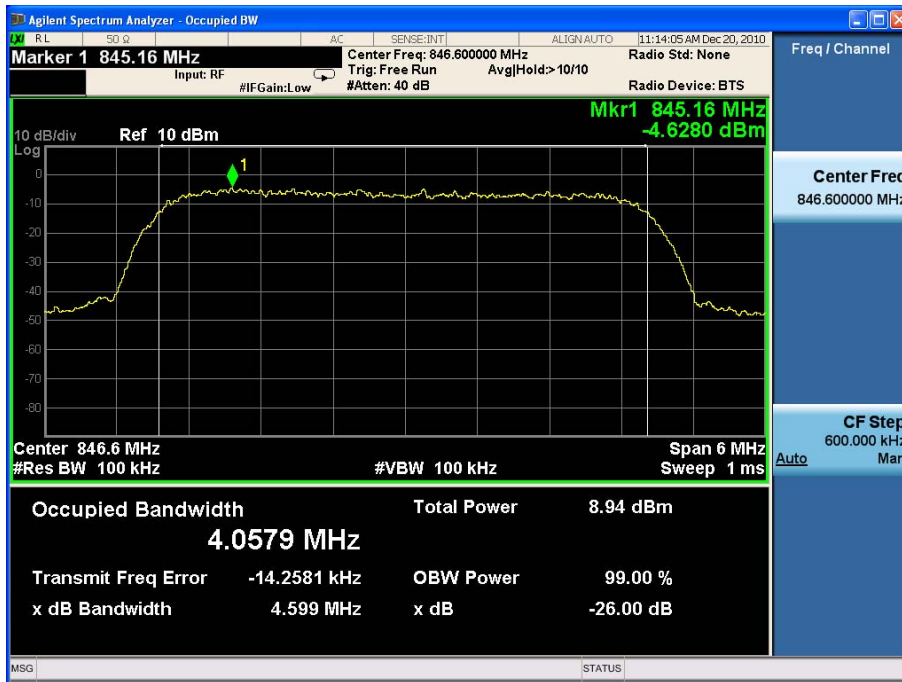


WCDMA BAND V HSUPA (CH 4183)



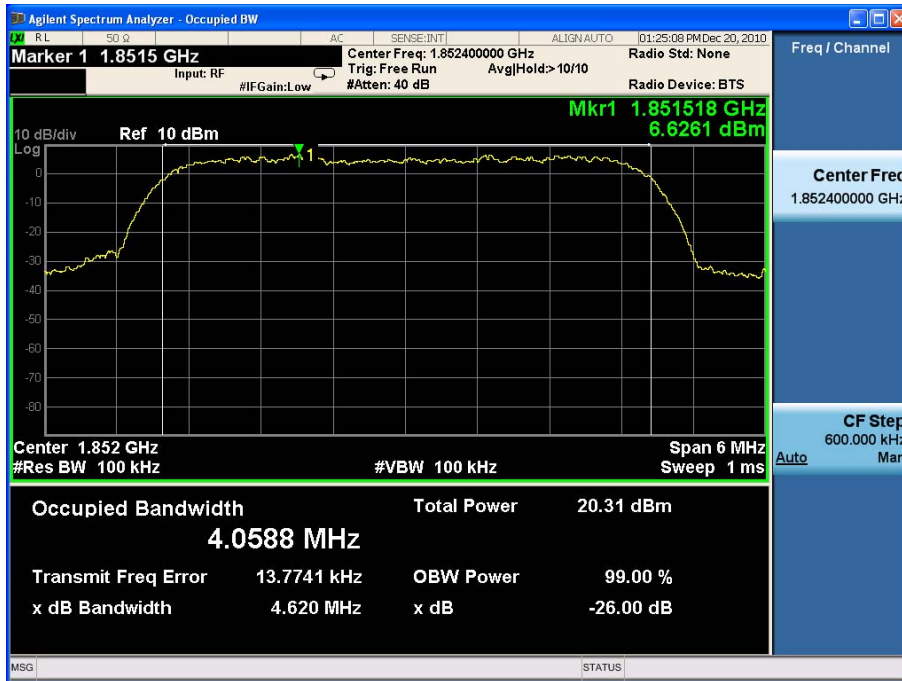
Product	HE863-NAD		
Test Mode	Occupied Bandwidth		
Date of Test	2010/12/20	Test Site	CTR
Test Condition	WCDMA BAND V HSUPA		

WCDMA BAND V HSUPA (CH 4233)

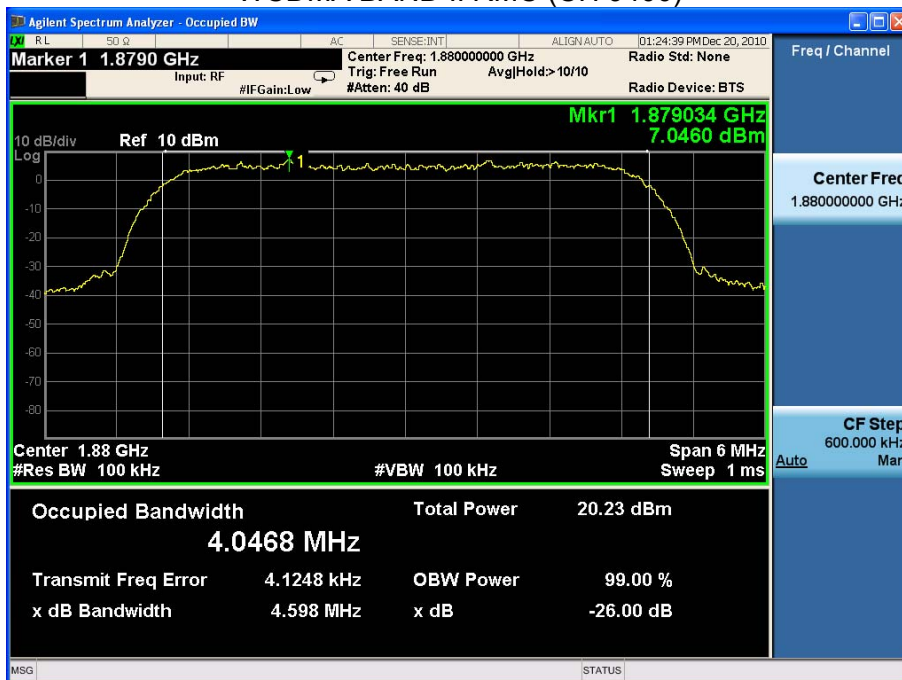


Product	HE863-NAD		
Test Mode	Occupied Bandwidth		
Date of Test	2010/12/20	Test Site	CTR
Test Condition	WCDMA BAND II RMC		

WCDMA BAND II RMC (CH 9262)

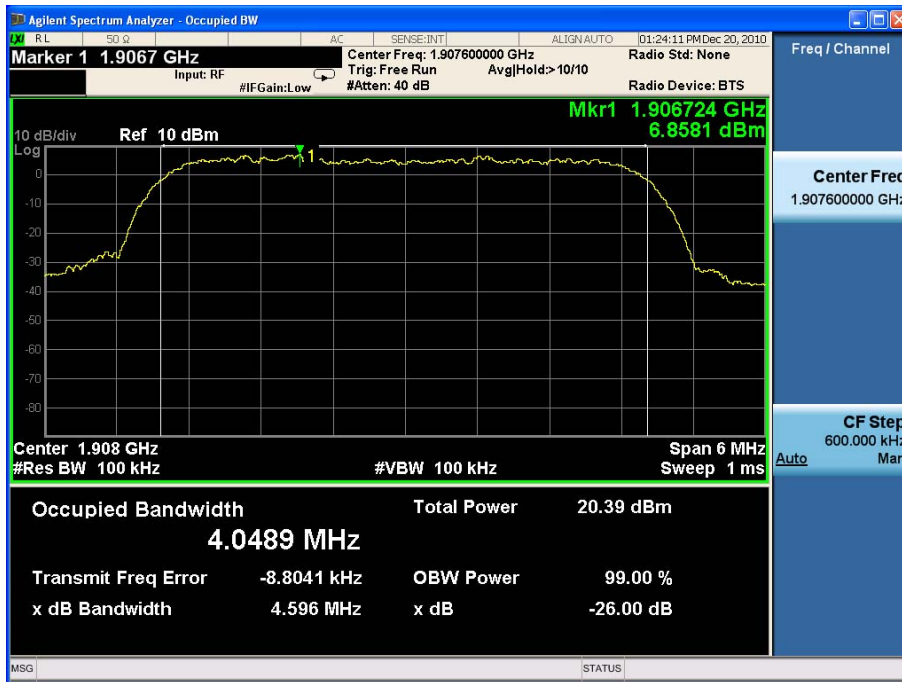


WCDMA BAND II RMC (CH 9400)



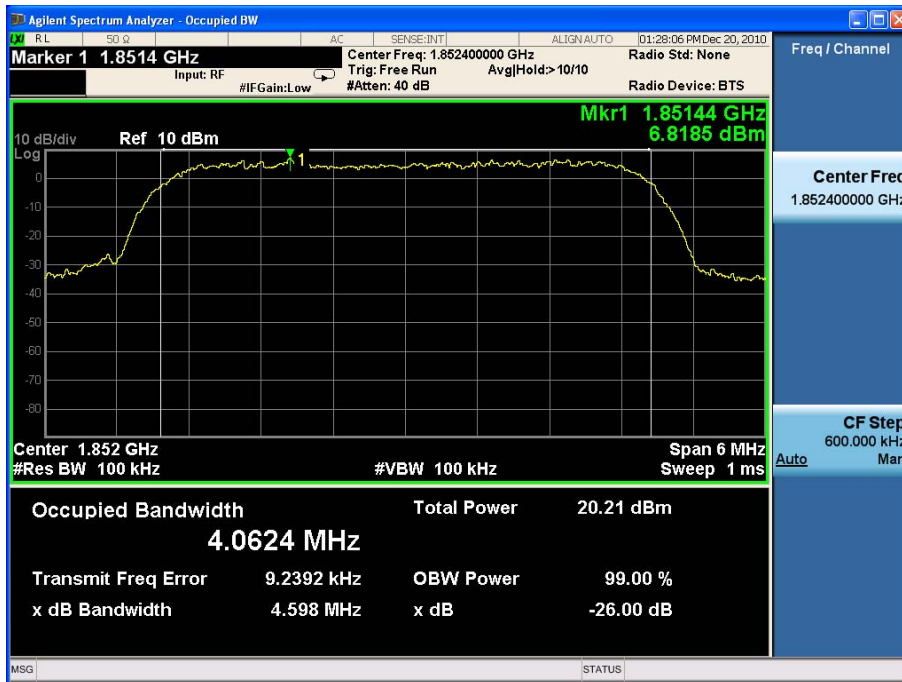
Product	HE863-NAD		
Test Mode	Occupied Bandwidth		
Date of Test	2010/12/20	Test Site	CTR
Test Condition	WCDMA BAND II RMC		

WCDMA BAND II RMC (CH 9538)

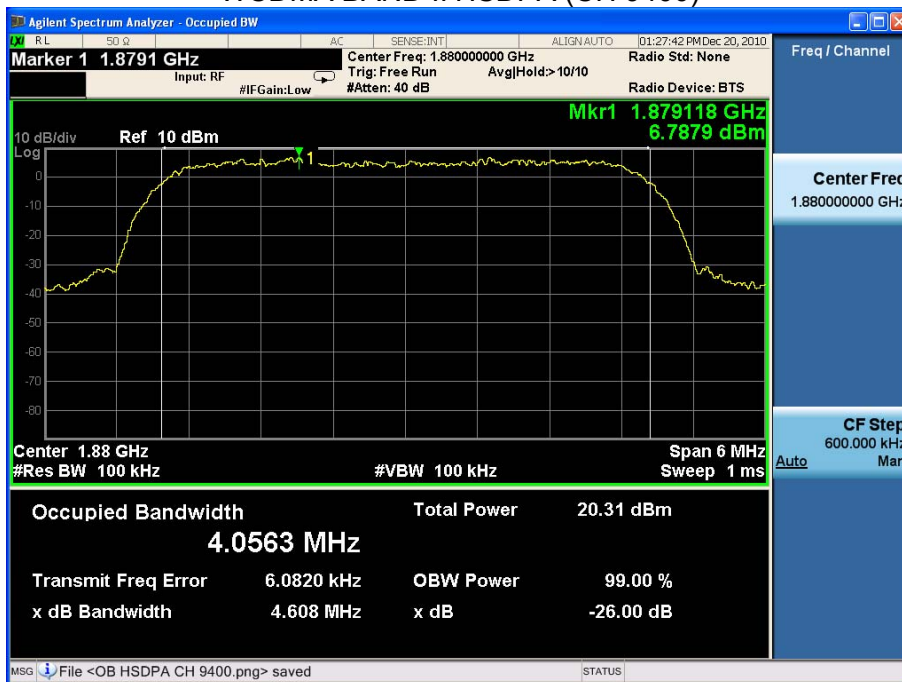


Product	HE863-NAD		
Test Mode	Occupied Bandwidth		
Date of Test	2010/12/20	Test Site	CTR
Test Condition	WCDMA BAND II HSDPA		

WCDMA BAND II HSDPA (CH 9262)

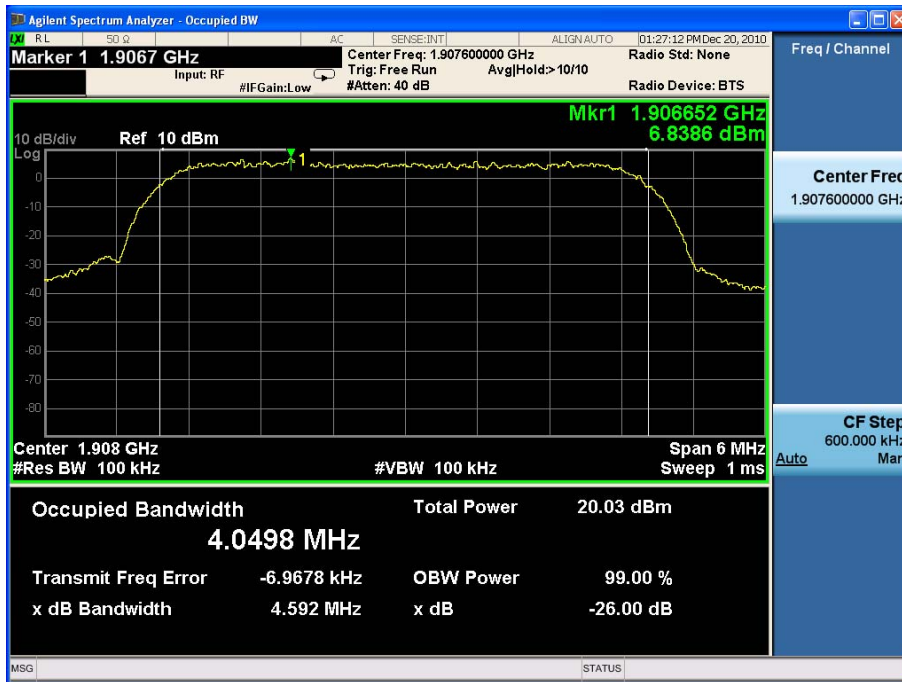


WCDMA BAND II HSDPA (CH 9400)



Product	HE863-NAD		
Test Mode	Occupied Bandwidth		
Date of Test	2010/12/20	Test Site	CTR
Test Condition	WCDMA BAND II HSDPA		

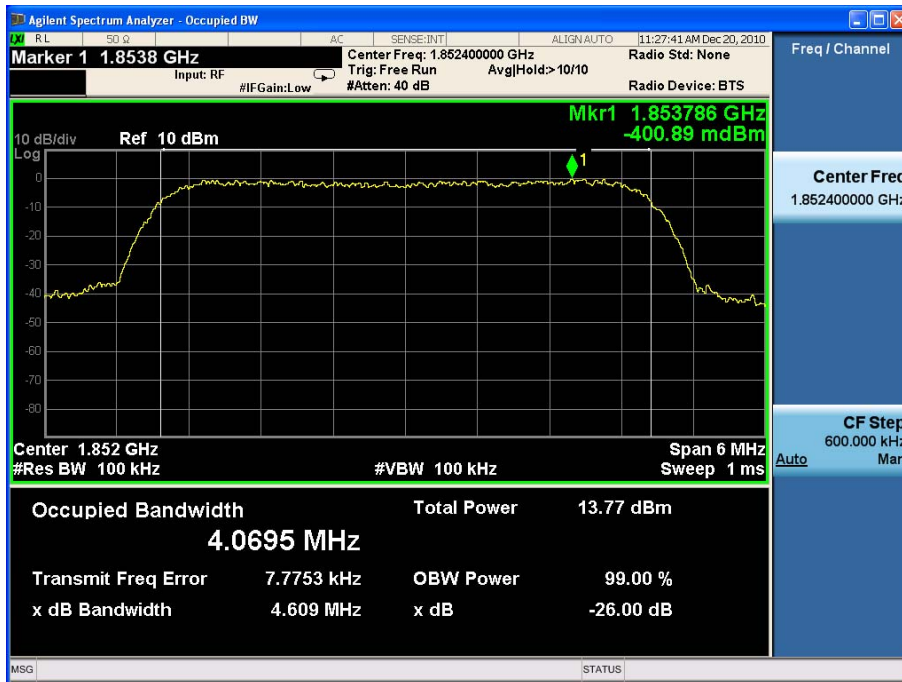
WCDMA BAND II HSDPA (CH 9538)



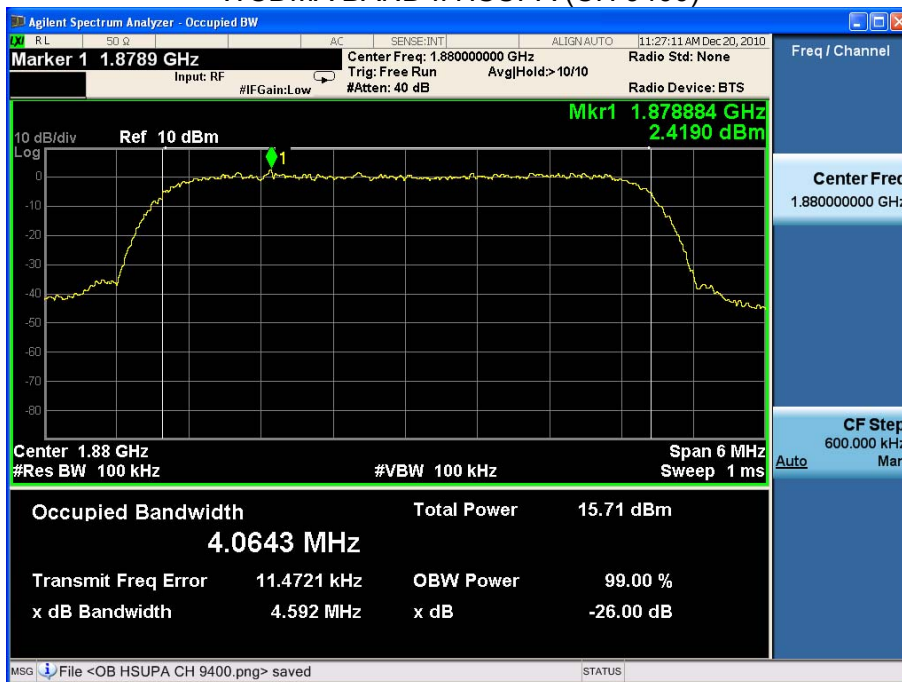


Product	HE863-NAD		
Test Mode	Occupied Bandwidth		
Date of Test	2010/12/20	Test Site	CTR
Test Condition	WCDMA BAND II HSUPA		

WCDMA BAND II HSUPA (CH 9262)



WCDMA BAND II HSUPA (CH 9400)



Product	HE863-NAD		
Test Mode	Occupied Bandwidth		
Date of Test	2010/12/20	Test Site	CTR
Test Condition	WCDMA BAND II HSUPA		

WCDMA BAND II HSUPA (CH 9538)

