

EXHIBIT 9: TEST REPORT**EXHIBIT 9: TEST REPORT****SYNOPSIS**

The test report attached to this exhibit demonstrates that the Lucent Technologies' Cellular Frequency UMTS-CDMA Transceiver System (850), which is designed to operate in the Lucent UMTS Flexent® OneBTSTM Macrocell Wireless Base Station, which can be either Single Band or Dual Band, is in full compliance with all requirements of the Rules of the Commission as specified in the Code of Federal Regulations (CFR), Title 47 – Telecommunication; Part 22, Subpart H – Cellular Radiotelephone Service; Section 22.917 - Emission Limitations for Cellular Equipment; effective October 1, 2008. All testing was performed in accordance with CFR 47, Part 2, Subpart J – Equipment Authorization Procedures; effective October 1, 2008. It also demonstrates compliance with the spurious emissions limitations specified in ETSI TS 125 141 V7.4.0 (2006-06): Universal Mobile Telecommunications System (UMTS); Base Station Conformance Testing (FDD), (3GPP TS 25.141, Version 7.4.0, Release 7), which is the standard used as a guideline in the design of the MCR850 transceiver.

The initial FCC Grant of Equipment Authorization, under FCC ID: AS5ONEBTS-11, was issued June 22, 2005. This Grant authorized a single 850 MHz carrier at 40 Watts (+46.0 dBm). This current Class II Permissive Change requests authorization for 2 carriers at 40 Watts/Carrier and a total power of 80 Watts (+49.0 dBm), over the Cellular Frequency Spectrum 869-894 MHz.

The UMTS850 UMTS-CDMA Transceiver System, subject of this Class II Permissive Change request consists of the principle RF components: (1) Crystal Reference Oscillator Module (OMA) at 15 MHz, (2) UMTS-CDMA Multi-Carrier CDMA Radio (MCR850), Model BNJ65, which was previously authorized by the Federal Communications Commission under FCC ID: AS5ONEBTS-08, (3) two parallel C2PAM power amplifiers per RF path, (4) 1:2 power splitters, (5) 2:1 power combiners, and (6) 25 MHz wide Dual Duplex (DDpx), low loss, transmit filters covering the cellular frequency spectrum: 869-894 MHz. These components are considered as a system due to (1) the DDpx filters providing RF feedback to the transceiver in the form of Closed Loop Gain Control (CLGC) to provide constant power over temperature, and (2) Alcatel-Lucent's proprietary Enhanced Digital Pre-Distortion (EDPD-UL) technology which enables software to communicate between the transceiver, power amplifier and the transmit filter to achieve this goal.

As a Transceiver System, all conducted RF characteristics and emissions measurements were performed at the transmit antenna terminal, using a production equipment frame. All testing was performed in the Lucent Technologies, Whippany, NJ, Compliance Laboratory by F. E. Chetwynd and M. P. Farina during the period November 3 to December 1, 2009; in adherence to a test plan generated by M. P. Farina, in accordance with Alcatel-Lucent's ISO/TL9000 Registration. All measurement instrumentation utilized were also calibrated in compliance with the ISO/TL9000 Registration. The Whippany 3 & 10 Meter Open Area Test Site (OATS) is authorized by the Federal Communications Commission (FCC) under Registration Number: 90770, in compliance with the requirements of Section 2.948 of the Rules of the Commission.

Since the Reference Frequency Oscillator and the frequency determining and stabilization circuitry incorporated in the MCR850 transceiver are unchanged from the initial Grant, frequency stability measurements were not repeated.

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**Subject: Application for Class II Permissive Change
Authorization under FCC ID: AS5ONEBTS-11,
Covering the UMTS Dual Band, Indoor, Macrocell
Operating with Two (2) 850 MHz Carriers.**

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November 30, 2009

EXHIBIT 9: TEST REPORT**INTRODUCTION:**

The exhibits presented in this test report demonstrate that the Alcatel-Lucent Cellular Frequency UMTS-CDMA Transceiver System (850), which is designed to operate in the Lucent UMTS Flexent® OneBTS™ Macrocell, which can be either Single Band or Dual Band, Wireless Base Station, is in full compliance with all requirements of the Rules of the Commission as specified in the Code of Federal Regulations (CFR), Title 47 – Telecommunication; Part 22, Subpart H – Cellular Radiotelephone Service; Section 22.917 - Emission Limitations for Cellular Equipment; effective October 1, 2008. All testing was performed in accordance with CFR 47, Part 2, Subpart J – Equipment Authorization Procedures; effective October 1, 2008. It also demonstrates compliance with the spurious emissions limitations specified in ETSI TS 125 141 V7.4.0 (2006-06): Universal Mobile Telecommunications System (UMTS); Base Station Conformance Testing (FDD), (3GPP TS 25.141, Version 7.4.0, Release 7). This standard was the guideline used in the design of the MCR850 transceiver.

The initial FCC Grant of Equipment Authorization, under FCC ID: AS5ONEBTS-11, was issued June 22, 2005. This Grant authorized a single 850 MHz carrier at 40 Watts (+46.0 dBm). The objective of this current Class II Permissive Change request is to obtain authorization for 2 carriers at 40 Watts/Carrier and a total power of 80 Watts (+49.0 dBm), over the Cellular Frequency Spectrum 869-894 MHz.

The UMTS850 UMTS-CDMA Transceiver System, subject of this Class II Permissive Change request consists of the principle RF components: (1) Crystal Reference Oscillator Module (OMA) at 15 MHz, (2) UMTS-CDMA Multi-Carrier CDMA Radio (MCR850), Model BNJ65, which was previously authorized by the Federal Communications Commission under FCC ID: AS5ONEBTS-08, (3) two parallel C2PAM power amplifiers per RF path, (4) 1:2 power splitters, (5) 2:1 power combiners, and (6) 25 MHz wide Dual Duplex (DDpx), low loss, transmit filters covering the cellular frequency spectrum: 869-894 MHz. These components are considered as a system due to (1) the DDpx filters providing RF feedback to the transceiver in the form of Closed Loop Gain Control (CLGC) to provide constant power over temperature, and (2) Alcatel-Lucent's proprietary Enhanced Digital Pre-Distortion (EDPD-UL) technology which enables software to communicate between the transceiver, power amplifier and the transmit filter to achieve this goal.

As a Transceiver System, all conducted RF characteristics and emissions measurements were performed at the transmit antenna terminal, using a production equipment frame. All testing was performed in the Lucent Technologies, Whippany, NJ, Compliance Laboratory by F. E. Chetwynd and M. P. Farina during the period November 3 to December 1, 2009; in adherence to a test plan generated by M. P. Farina, in accordance with Alcatel-Lucent's ISO/TL9000 Registration. All measurement instrumentation utilized were also calibrated in compliance with the ISO/TL9000 Registration. The Whippany 3 & 10 Meter Open Area Test Site (OATS) is

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authorized by the Federal Communications Commission (FCC) under Registration Number: 90770, in compliance with the requirements of Section 2.948 of the Rules of the Commission.

Since the Reference Frequency Oscillator and the frequency determining and stabilization circuitry incorporated in the MCR850 transceiver are unchanged from the initial Grant, frequency stability measurements were not repeated.

As a Class II Permissive Change, only the characteristics that could be affected by the Change need be evaluated. This report fully documents all required tests and the test results, sufficient to show full compliance with the Rules of the Commission.

APPLICABLE FCC RULES AND INDUSTRY STANDARDS:

The exhibits presented in this test report demonstrate that the Alcatel-Lucent Cellular Frequency UMTS-CDMA Transceiver System (850), which is designed to operate in the Alcatel-Lucent UMTS Macrocell, which can be either Single Band or Dual Band (1900 MHz & 850 MHz), Wireless Base Station, is in full compliance with all requirements of the Rules of the Commission as specified in the Code of Federal Regulations (CFR), Title 47 – Telecommunication; Part 22, Subpart H – Cellular Radiotelephone Service; Section 22.917 - Emission Limitations for Cellular Equipment; effective October 1, 2008. All testing was performed in accordance with CFR 47, Part 2, Subpart J – Equipment Authorization Procedures; effective October 1, 2008. It also demonstrates compliance with the spurious emissions limitations specified in ETSI TS 125 141 V7.4.0 (2006-06): Universal Mobile Telecommunications System (UMTS); Base Station Conformance Testing (FDD), (3GPP TS 25.141, Version 7.4.0, Release 7). The specific test procedures that are both required for and are applicable to the UMTS850 Transceiver System (MCR850) are:

Part 2.1046	RF Power Output	Pages 4 – 5
Part 2.1047	Modulation Characteristics	Pages 6-9
Part 2.1049	Occupied Bandwidth	Pages 10-22
Part 2.1051	Spurious Emissions at the Antenna Terminals.	Pages 23-33
Part 2.1053	Field Strength of Spurious Radiation	Pages 34
Part 2.1055	Frequency Stability	Not Repeated
Part 2.1057	Frequency Spectrum to be Investigated	
Part 22	Public Mobile Services; Subpart H – Cellular Radiotelephone Service	
Part 22.917	Emission Limitations for Cellular Equipment	
ETSI	TS 125 141 V7.4.0 (2006-06): Universal Mobile Telecommunications System (UMTS); Base Station (BS) Conformance Testing (FDD), (3GPP TS 25.141, Version 7.4.0, Release 7).	
ETSI	TS 125 104 V7.4.0 (2006-06): Universal Mobile Telecommunications System (UMTS); Base Station (BS) Radio Transmission and Reception (FDD), (3GPP TS 25.104, Version 7.4.0, Release 7).	
ANSI C63.4-2003	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic in the Range of 9 kHz to 40 GHz; January 30, 2004	

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PART 2.1046 MEASUREMENTS REQUIRED: RF POWER OUTPUT

The Cellular Frequency UMTS-CDMA Transceiver System (850), subject of this application for Class II Permissive Change authorization, is designed to provide a maximum RF power level, per single 5 MHz emission bandwidth carrier, of 40 Watts (+46 dBm) at the Equipment Antenna Terminal (EAC). The subject of this Change Request is to add 2 Carriers for a total power of 80 Watts (+49.0 dBm). This System is designed to operate in the cellular frequency spectrum: 869-894 MHz. A 25 MHz Wideband, Low Loss, Dual Duplex (DDpx) transmit filter is incorporated into this System for each of the 3 sectors. All conducted emission measurements are performed at the EAC.

The carrier channels used in this evaluation represent the lowest settable, mid band and the highest settable frequencies for both single carrier (40W) and for two adjacent carrier (80W) operation. The measured power levels for each configuration are tabulated below.

Each time the carrier is set to each of the channels, the power level is adjusted, by software control, to +46 dBm (40 Watts at 3-second average) for a single carrier and to +49 dBm (80 Watts at 3-second average) for two carriers before performing each emission measurement. Two ETSI Test Modulations were evaluated: TM1-64 with 68 active channels and TM5-44 for Voice + 8 HSDPA (High Speed Downlink Packet Access) channels.

Cellular Frequency Band	UMTS850 Carrier	Number of Carriers	UARFCN Channel Number	UMTS Carrier Center Frequency	Measured Power Level
A	Lowest Settable for A-Band and to 869 MHz Band Edge	1	1007	871.5 MHz	+46 dBm
B	Mid Band for B-Band	1	1062	882.5 MHz	+46 dBm
B'	Highest Settable to 894 MHz Band Edge	1	1107	891.5 MHz	+46 dBm
A	Lowest Settable for A-Band and to 869 MHz Band Edge	2	1007 + 1032	871.5 + 876.5 MHz	+49 dBm
B	Mid Band for B-Band	2	1037 + 1062	877.5 + 882.5 MHz	+49 dBm
B'	Highest Settable to 894 MHz Band Edge	2	1082 + 1107	886.5 + 891.5 MHz	+49 dBm

Note: UARFCN = UTRA Absolute Radio Frequency Channel Number

These frequencies are used for all of the conducted emission tests that follow.

Results: The 5 MHz UMTS 850 Transceiver System is compliant with the manufacturer's rated power level at the transmit antenna terminal for the above listed carrier frequencies.

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Block Diagram Of The Power Measurement Test Set-Up And Test Equipment Configuration for the Alcatel-Lucent UMTS Flexent® OneBTS™ 850 MHz Wireless Base Station (Macrocell).

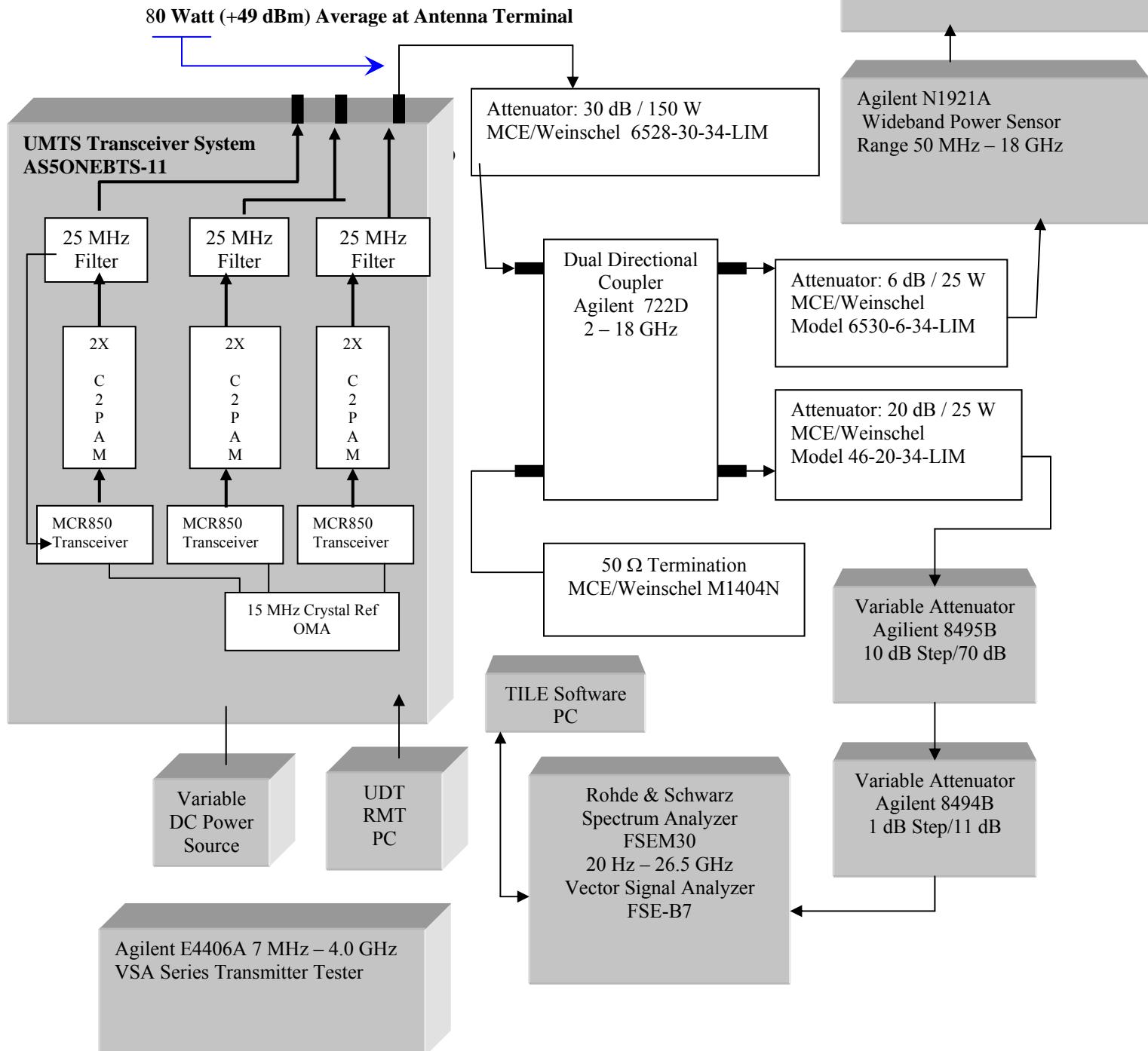


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PART 2.1047 MEASUREMENTS REQUIRED: MODULATION CHARACTERISTICS

The modulation accuracy was measured at the Equipment Antenna Terminal (EAC) for the lowest frequency carrier in each of the previously cited 2-Carrier Configurations. In accordance with ETSI TS 25.141, the Error Vector Magnitude (EVM) was measured for a single modulation scheme:

Test Model 5-44 modulation with 44 active channels that include 8 HSDPA channels. TM5-44 with 44 active channels (16QAM) and the power level set to Pmax (+46.0 dBm). The Error Vector Magnitude limit is EVM < 12.5% for 16QAM.

The test equipment used was an Agilent E4406A VSA Series Transmitter Tester. Modulation accuracy measurement mode was Composite EVM, using the Peak/Average Metrics.

RMS Error Vector Magnitude (EVM) Measurement Summary at the Antenna Terminal:

Cellular Frequency Band	UMTS850 Carrier	UARFCN Channel Number	UMTS Carrier Center Frequency	Modulation Accuracy Average	Modulation Accuracy Peak Hold
A	Lowest Settable for A-Band and to 869 MHz Band Edge	1007	871.5 MHz	8.00 % rms	9.16 % rms
A	Mid-Band for A-Band	1037	877.5 MHz	6.87 % rms	8.03 % rms
B	Highest Settable for B-Band	1082	886.5 MHz	6.89 % rms	8.15 % rms

Minimum Standard Requirement: The minimum standard requirement is that the RMS Error Vector Magnitude (EVM) shall be less than 12.5%.

Test Set-up and Configuration: Same as previously used for Part 2.1046 RF Power Measurement, with exception that the FSEM30 Spectrum Analyzer is replaced by:

- 1) Agilent E4406A VSA Series Transmitter Tester, 7 MHz – 4.0 GHz

RESULTS: The UMTS850 UMTS-CDMA Transceiver System (850) demonstrated full compliance with the modulation accuracy requirements specified in ETSI TS 25.141. All 3 channels were less than the 12.5% rms limitation. The plots for each channel are included in this exhibit as shown below.

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Modulation Characteristics: UARFCN Channel Number 1007 @ 871.50 MHz
Tx Antenna Terminal at +46 dBm per single 5 MHz carrier

Agilent 11/24/77 16:52:49		W-CDMA w/ HSDPA				R	L	T	S	Meas Control
BTS Ch Freq 871.500 MHz		Completed Src:Input								Restart
Mod Accuracy		Averages: 10				PASS				
Peak/Average Metrics										
Rho:		Average		Peak Hold						
RMS EVM:		8.00 %		9.16 %						
Peak EVM:		78.02 %		108.55 %						
Pk CDE:		-42.65 dB		-41.01 dB at C8(8)						
Pk Active CDE:		-33.33 dB		-32.13 dB at C4(12)						
RMS Mag Error:		7.00 %		8.20 %						
RMS Phase Error:		5.92 °		8.36 °						
Freq Error:		-2.41 Hz		-7.36 Hz						
I/Q Origin Offset:		-59.84 dB		-51.72 dB						
Time Offset:		5201.18 chip		15005.90 chip						
CPICH Power :		-10.07 dB		-9.93 dB						
Total Power:		46.41 dBm		46.51 dBm						

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Modulation Characteristics: UARFCN Channel Number 1037 @ 877.50 MHz
 Tx Antenna Terminal at +46 dBm per single 5 MHz carrier

Agilent 11/24/77 17:27:30		W-CDMA w/ HSDPA		R	L	T	S	Measure																																																																																																												
BTS	Ch Freq 877.500 MHz	Completed	Src:Input					Code Domain																																																																																																												
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<table border="0"> <tbody> <tr> <td>Rho:</td><td>0.99529</td> <td>Peak Hold</td><td>0.99359</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>RMS EVM:</td><td>6.87 %</td> <td></td><td>8.03 %</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Peak EVM:</td><td>76.72 %</td> <td></td><td>110.52 %</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Pk CDE:</td><td>-43.92 dB</td> <td></td><td>-41.49 dB</td> <td>at C8(17)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Pk Active CDE:</td><td>-34.61 dB</td> <td></td><td>-33.01 dB</td> <td>at C4(6)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>RMS Mag Error:</td><td>6.34 %</td> <td></td><td>7.36 %</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>RMS Phase Error:</td><td>3.64 °</td> <td></td><td>5.98 °</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Freq Error:</td><td>-2.69 Hz</td> <td></td><td>-7.55 Hz</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>I/Q Origin Offset:</td><td>-61.92 dB</td> <td></td><td>-50.98 dB</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Time Offset:</td><td>-1478.82 chip</td> <td></td><td>16033.68 chip</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CPICH Power :</td><td>-10.07 dB</td> <td></td><td>-9.92 dB</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Total Power:</td><td>46.55 dBm</td> <td></td><td>46.62 dBm</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>									Rho:	0.99529	Peak Hold	0.99359						RMS EVM:	6.87 %		8.03 %						Peak EVM:	76.72 %		110.52 %						Pk CDE:	-43.92 dB		-41.49 dB	at C8(17)					Pk Active CDE:	-34.61 dB		-33.01 dB	at C4(6)					RMS Mag Error:	6.34 %		7.36 %						RMS Phase Error:	3.64 °		5.98 °						Freq Error:	-2.69 Hz		-7.55 Hz						I/Q Origin Offset:	-61.92 dB		-50.98 dB						Time Offset:	-1478.82 chip		16033.68 chip						CPICH Power :	-10.07 dB		-9.92 dB						Total Power:	46.55 dBm		46.62 dBm					
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Modulation Characteristics: UARFCN Channel Number 1082 @ 886.50 MHz
 Tx Antenna Terminal at +46 dBm per single 5 MHz carrier

Agilent 11/24/77 17:14:30		W-CDMA w/ HSDPA		R	L	T	S	Measure
BTS Ch Freq 886.500 MHz		Completed		Src:Input				
Mod Accuracy		Averages: 10		PASS				
Peak/Average Metrics								
Rho:	Average		Peak Hold					
RMS EVM:	0.99526		0.99341					
Peak EVM:	6.89 %		8.15 %					
Pk CDE:	76.50 %		110.60 %					
Pk Active CDE:	-43.90 dB		-41.98 dB	at C8(83)				
RMS Mag Error:	-34.63 dB		-33.00 dB	at C4(6)				
RMS Phase Error:	6.37 %		7.45 %					
Freq Error:	3.67 °		5.97 °					
I/Q Origin Offset:	-2.64 Hz		-9.48 Hz					
Time Offset:	-61.52 dB		-52.25 dB					
CPICH Power:	-489.83 chip		18862.23 chip					
Total Power:	-10.06 dB		-9.92 dB					
	46.57 dBm		46.64 dBm					

PART 2.1049 MEASUREMENTS REQUIRED: OCCUPIED BANDWIDTH

The occupied bandwidth was measured at the Equipment Antenna Terminal (EAC) for the previously cited Single Carrier and 2-Carrier frequencies. The power level was set to 40 Watts (+46 dBm) per carrier and the modulation set to ETSI TM1-64 and TM5-44, as previously described.

The occupied bandwidth was measured by two methods:

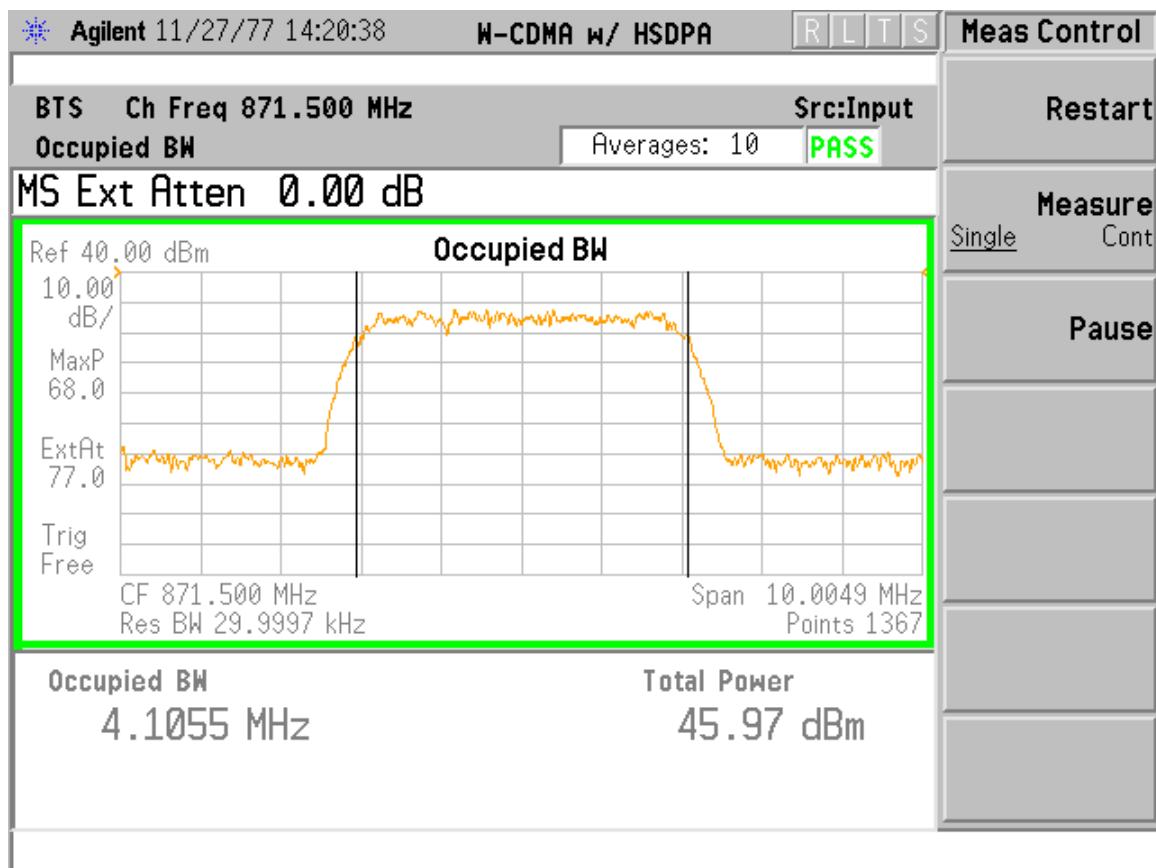
1. The carrier 99% power bandwidth, which is also the necessary bandwidth, using an Agilent E4406A VSA Series Transmitter Tester (SN US41513199). This measurement was for a single carrier only.
2. Emission mask limitation using a Rohde & Schwarz Spectrum Analyzer FSEM30, to demonstrate compliance with the ETSI TS 25.141 emission mask requirements and with Part 24.238. This measurement was performed for both a single carrier and for 2-carrier operation.

Method 1: The carrier 99% power bandwidth was measured at the Equipment Antenna Terminal (EAC) with the single 5 MHz carrier set to +46 dBm and modulated with the full 68 active channels (TM1-64). The measurement results show that the carrier is within the manufacturer's rated 5 MHz bandwidth for all carriers measured, as tabulated below. The actual data plots are attached to this exhibit.

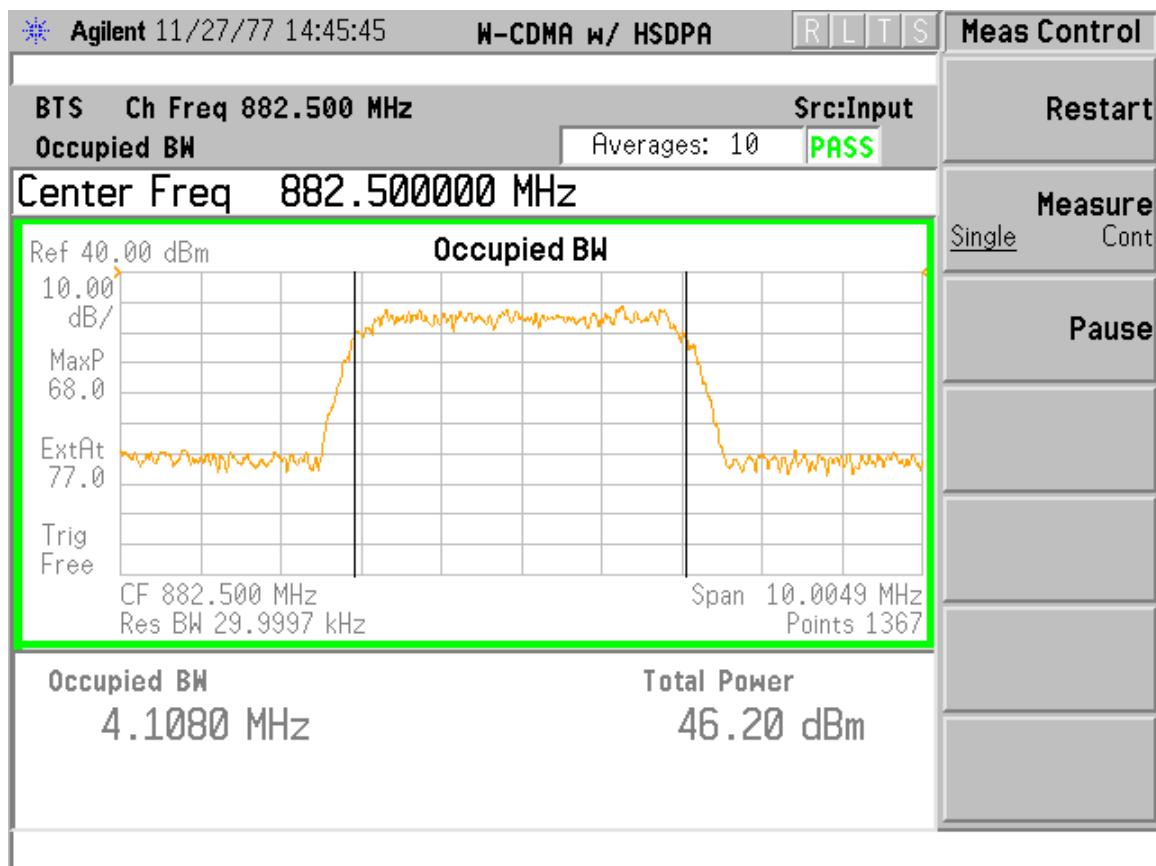
Cellular Frequency Band	UMTS850 Carrier At TM1-64	Single Carrier Bandwidth	UARFCN Channel Number	UMTS Carrier Center Frequency	Measured Carrier 99% Power Bandwidth
A	Lowest Settable for A-Band and to 869 MHz Band Edge	5 MHz	1007	871.5 MHz	4.1055 MHz
B	Mid-Band for B-Band	5 MHz	1062	882.5 MHz	4.1080 MHz
B'	Highest Settable to 894 MHz Band Edge	5 MHz	1107	891.5 MHz	4.1019 MHz

Results: The 99% occupied bandwidth measurement confirms that the carrier's emission designator remains at 4M10F9W.

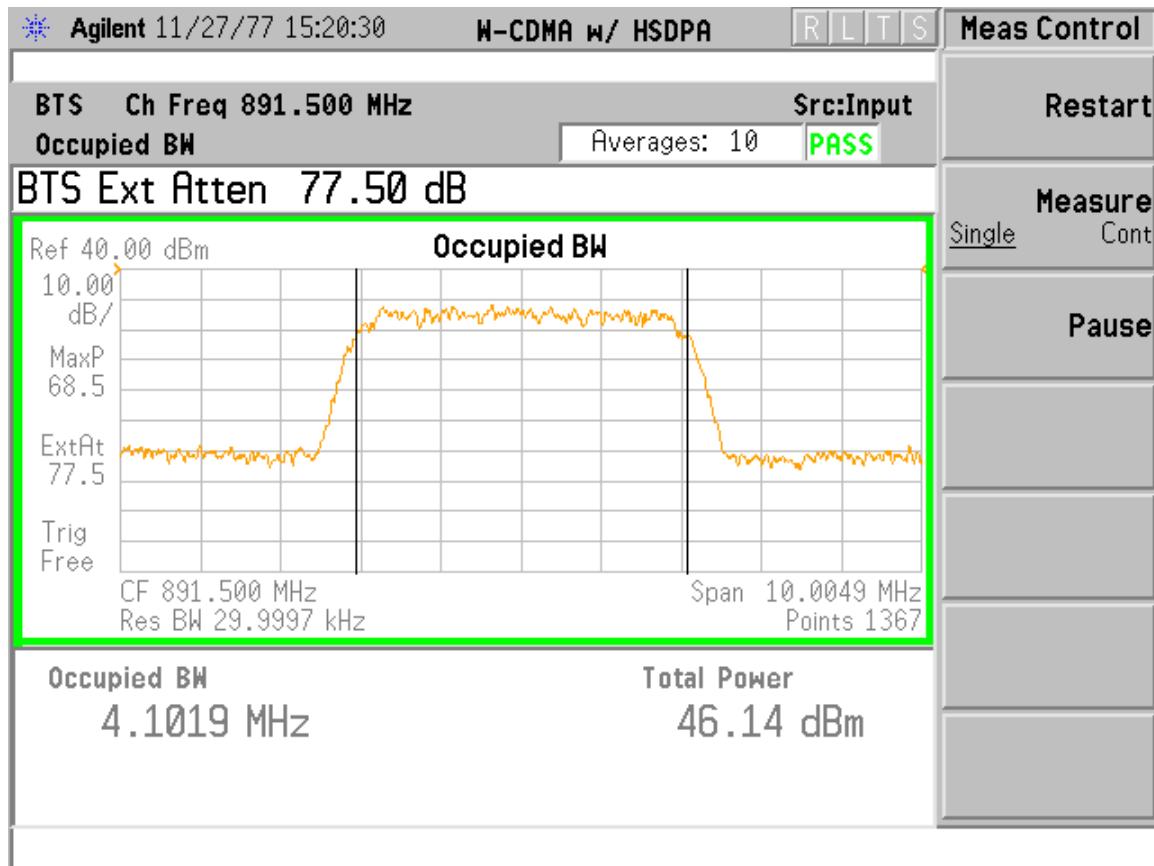
Carrier Bandwidth Characteristics: UARFCN Channel Number 1007 @ 871.50 MHz
Tx Antenna Terminal at +46 dBm per single 5 MHz carrier



Carrier Bandwidth Characteristics: UARFCN Channel Number 1062 @ 882.50 MHz
Tx Antenna Terminal at +46 dBm per single 5 MHz carrier



Carrier Bandwidth Characteristics: UARFCN Channel Number 1107 @ 891.50 MHz
Tx Antenna Terminal at +46 dBm per single 5 MHz carrier



Method 2. Emission mask limitation using a Rohde & Schwarz: Spectrum Analyzer FSEM30 with Total Integrated Laboratory Environment (TILE) test software.

Measurement of the occupied bandwidth emission characteristics was performed at the Equipment Antenna Terminal (EAT) for the following configurations:

1. Single Carrier at 40W (+46 dBm) and TM1-64 Test Modulation
2. Two Carriers at 80W (+49 dBm) and TM1-64 Test Modulation
3. Two Carriers at 80W (+49 dBm) and TM5-44 Test Modulation

The same UARFCN channels as previously cited will be repeated. The emission mask used to demonstrate compliance was as specified in ETSI TS 25.141 for $P \geq +43$ dBm. The mask attenuation values were based on a 30 kHz resolution bandwidth, which made the modulated 5 MHz carrier to be offset from +46 dBm by -22.2 dB, in accordance with the equation:

$$\text{Carrier Offset} = 10 \log (30 \text{ kHz}/5 \text{ MHz}) = -22.2 \text{ dB}$$

This series of measurements were performed using the EMC software:

Total Integrated Laboratory Environment (TILE) by ETS-Lindgren

The data/measurement plots for the five channels are attached below.

Test Set-up and Configuration: Same as previously used for Part 2.1046 RF Power Measurement.

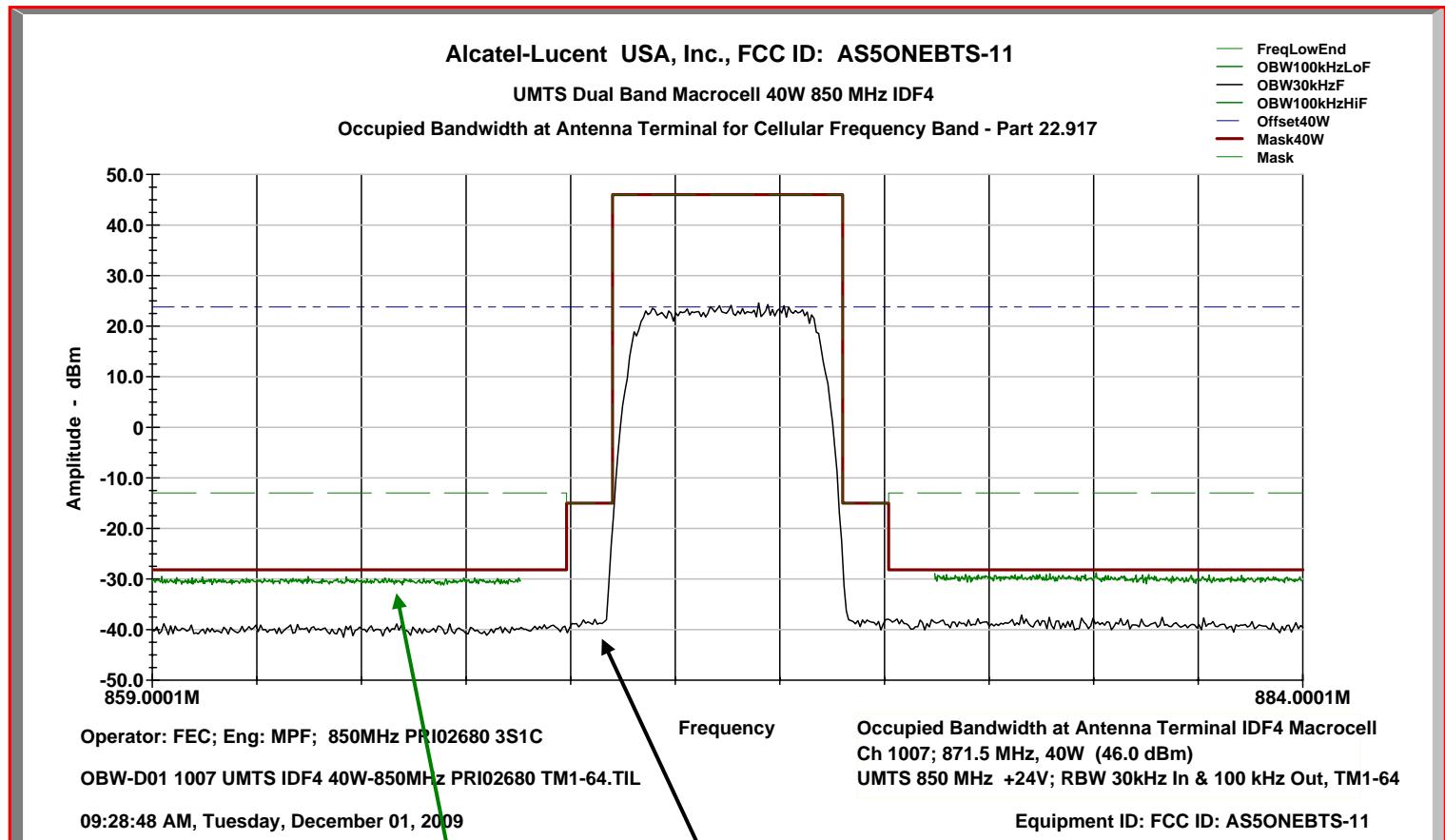
RESULTS: All UARFCN channels demonstrate compliance with the emission mask specified by ETSI TS 25.141; the carriers do not exceed the mask limitation.

The data plots are attached below.

Single Carrier at 40 Watts

Occupied Bandwidth Characteristics: UARFCN Channel Number 1007 @ 871.50 MHz

Single Carrier Power at 40W (+46 dBm) and TM1-64 Test Modulation.



Single Carrier at 40 Watts

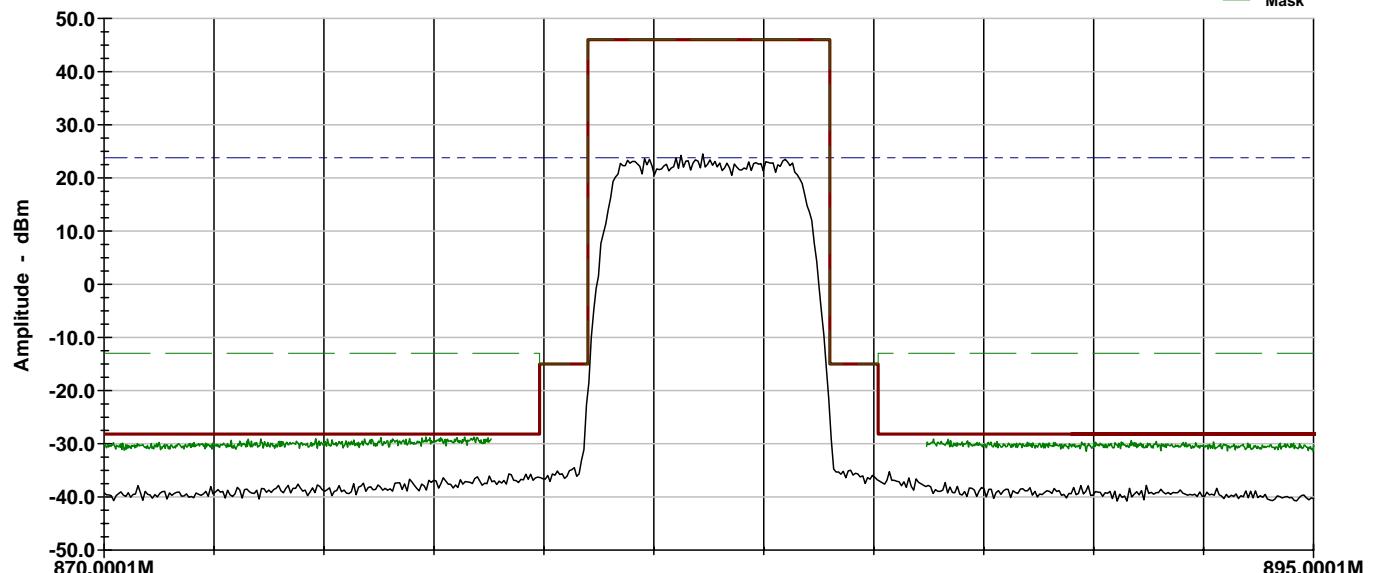
Occupied Bandwidth Characteristics: UARFCN Channel Number 1062 @ 882.5 MHz

Single Carrier Power at 40W (+46 dBm) and TM1-64 Test Modulation

Alcatel-Lucent USA, Inc., FCC ID: AS5ONEBTS-11

UMTS Dual Band Macrocell 40W 850 MHz IDF4

Occupied Bandwidth at Antenna Terminal for Cellular Frequency Band - Part 22.917



Operator: FEC; Eng: MPF; 850MHz PRI02680 3S1C

Frequency

Occupied Bandwidth at Antenna Terminal IDF4 Macrocell

Ch 1062; 882.5 MHz, 40W (46.0 dBm)

UMTS 850 MHz +24V; RBW 30kHz In & 100 kHz Out, TM1-64

OBW-D03 1062 UMTS IDF4 40W-850MHz PRI02680 TM1-64.TIL

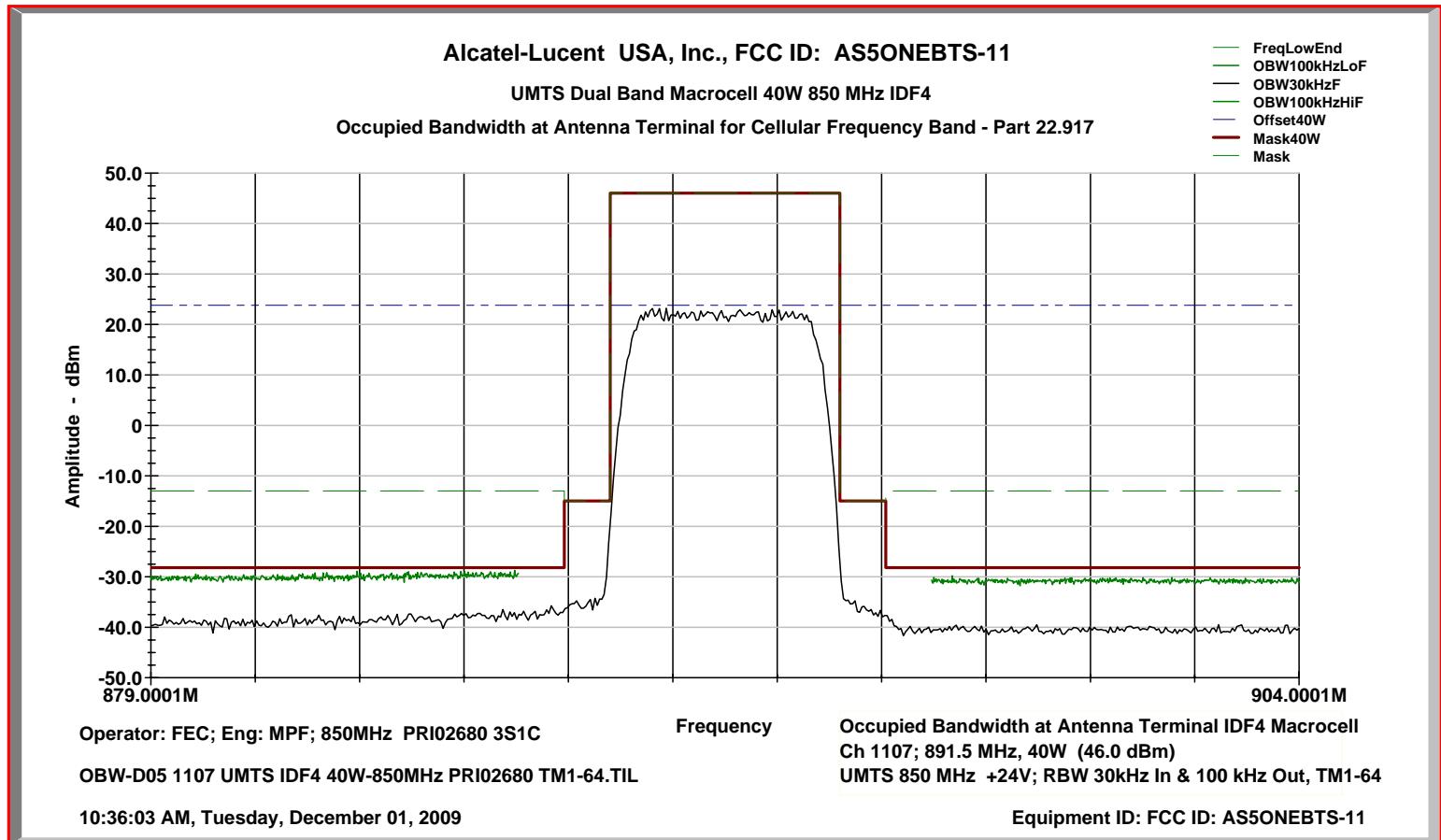
10:02:11 AM, Tuesday, December 01, 2009

Equipment ID: FCC ID: AS5ONEBTS-11

Single Carrier at 40 Watts

Occupied Bandwidth Characteristics: UARFCN Channel Number 1107 @ 891.5 MHz

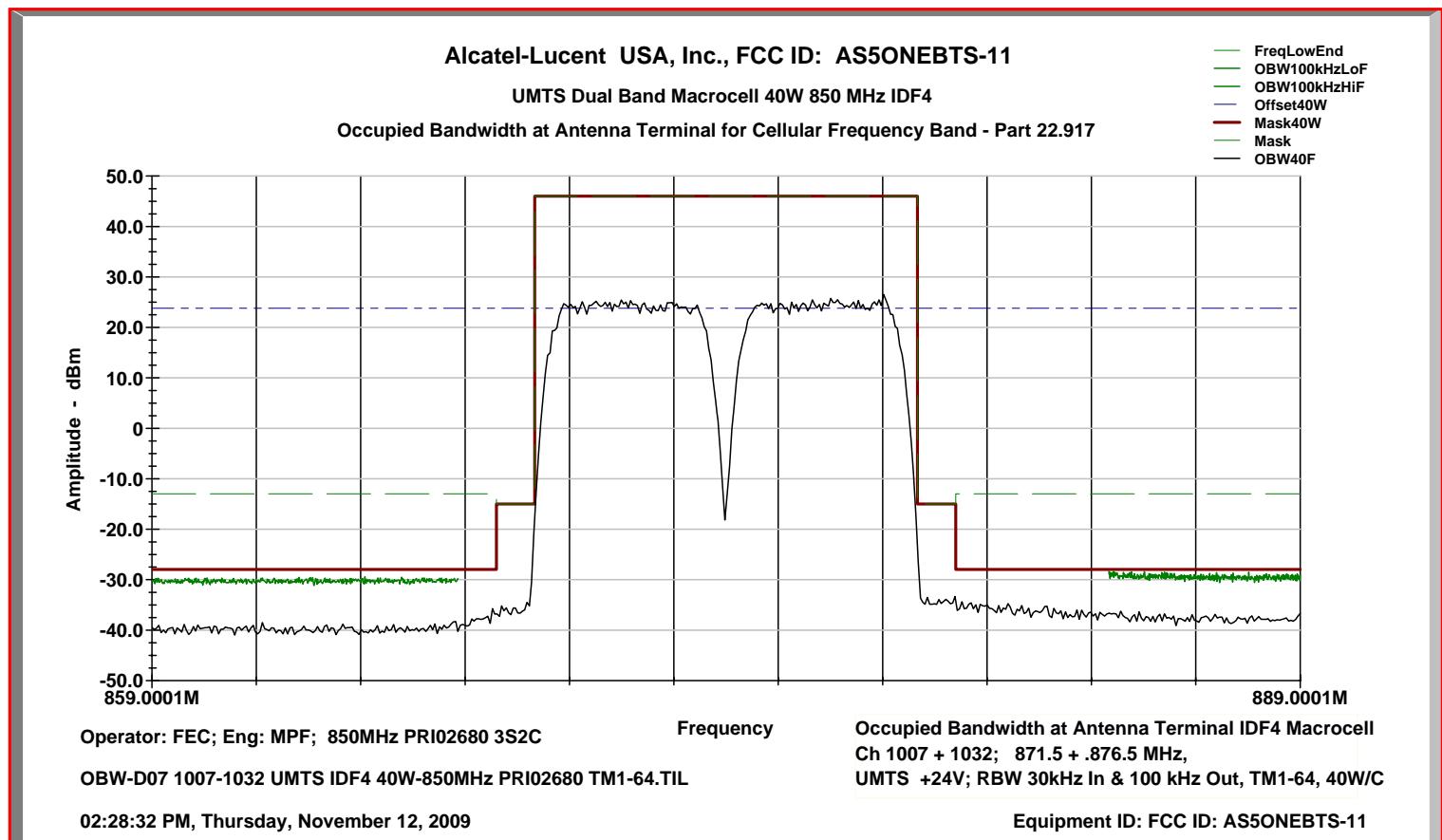
Single Carrier Power Level at 40W (+46 dBm) and TM1-64 Test Modulation.



Two Carriers at 80 Watts

Occupied Bandwidth Characteristics: UARFCN CN 1007 + 1032 @ 871.5 MHz + 876.5 MHz

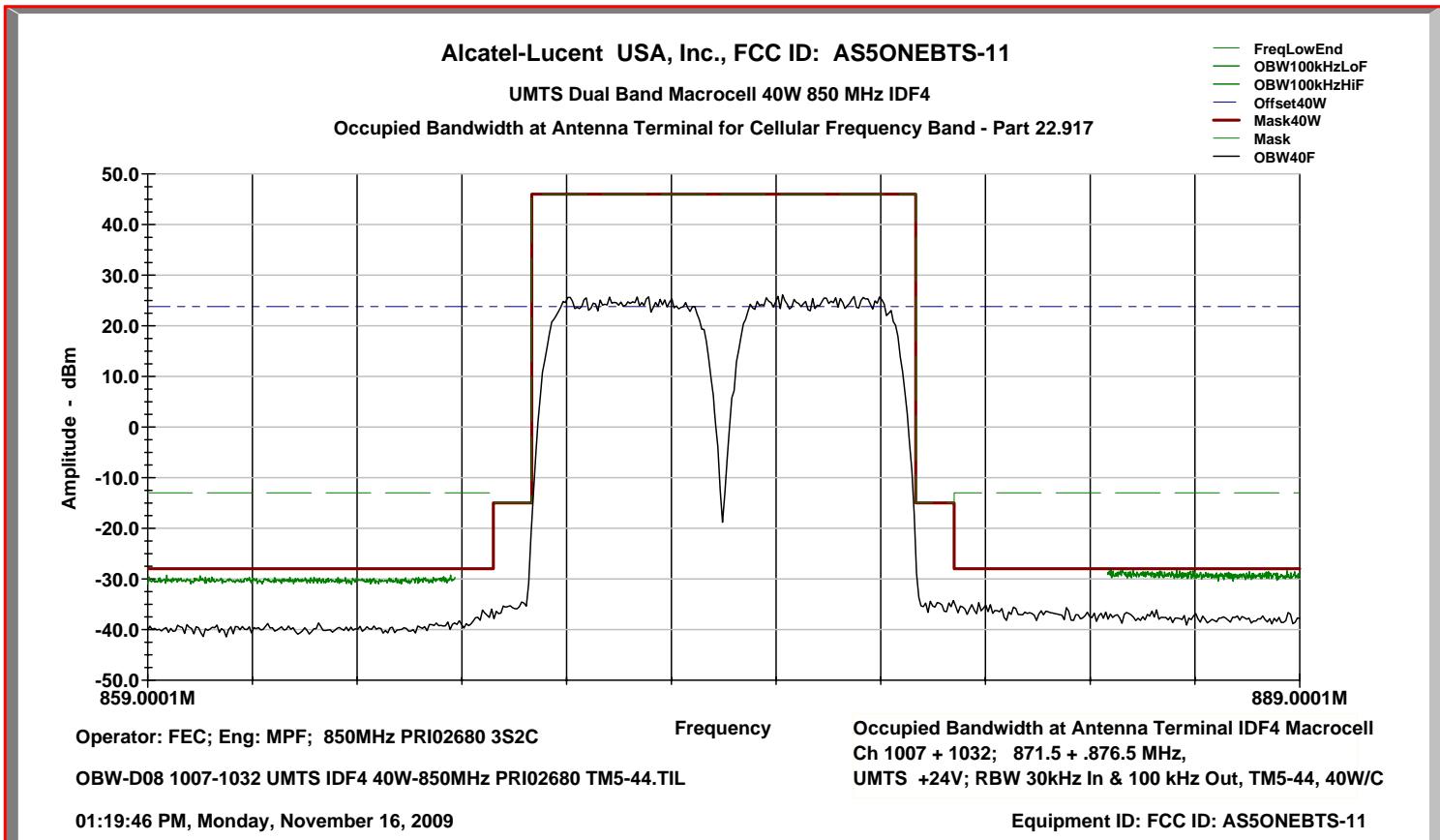
Carrier Power Level at 40W (+46 dBm) per Carrier and TM1-64 Test Modulation.



Two Carriers at 80 Watts

Occupied Bandwidth Characteristics: UARFCN CN 1007 + 1032 @ 871.5 MHz + 876.5 MHz

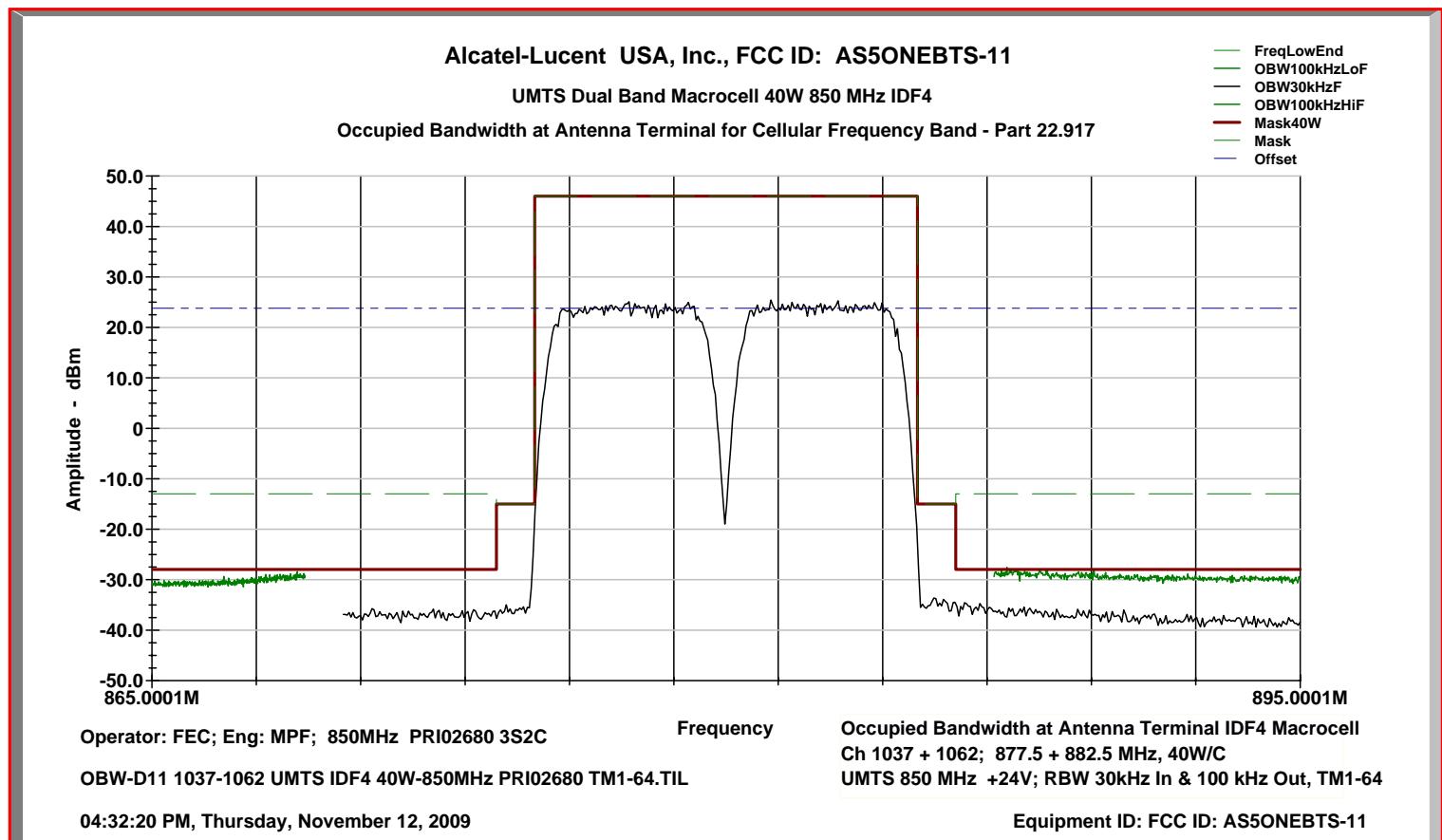
Carrier Power Level at 40W (+46 dBm) per Carrier and TM5-44 Test Modulation.



Two Carriers at 80 Watts

Occupied Bandwidth Characteristics: UARFCN CN 1037 + 1062 @ 877.5 MHz + 882.5 MHz

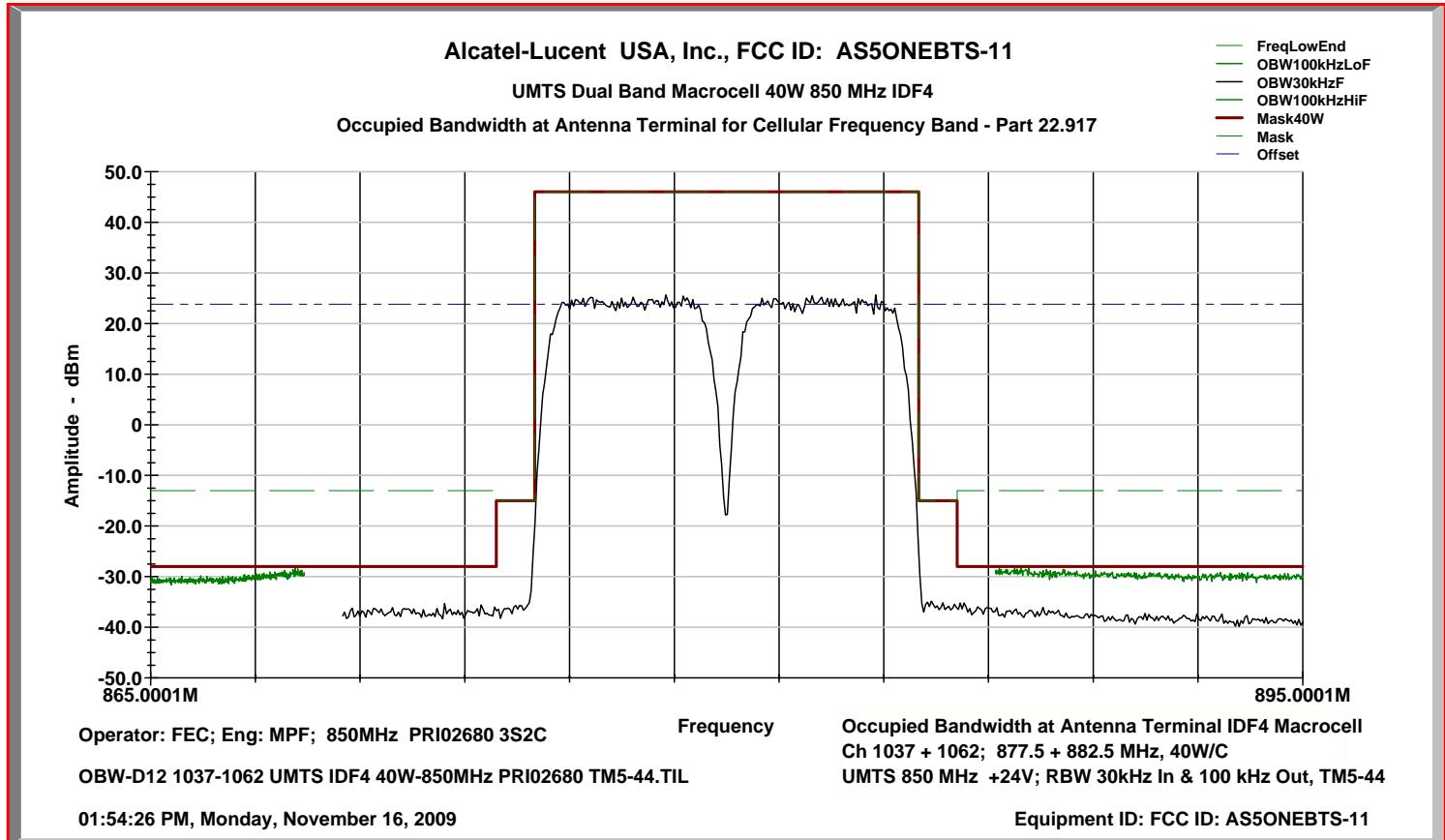
Carrier Power Level at 40W (+46 dBm) per Carrier and TM1-64 Test Modulation.



Two Carriers at 80 Watts

Occupied Bandwidth Characteristics: UARFCN CN 1037 + 1062 @ 877.5 MHz + 882.5 MHz

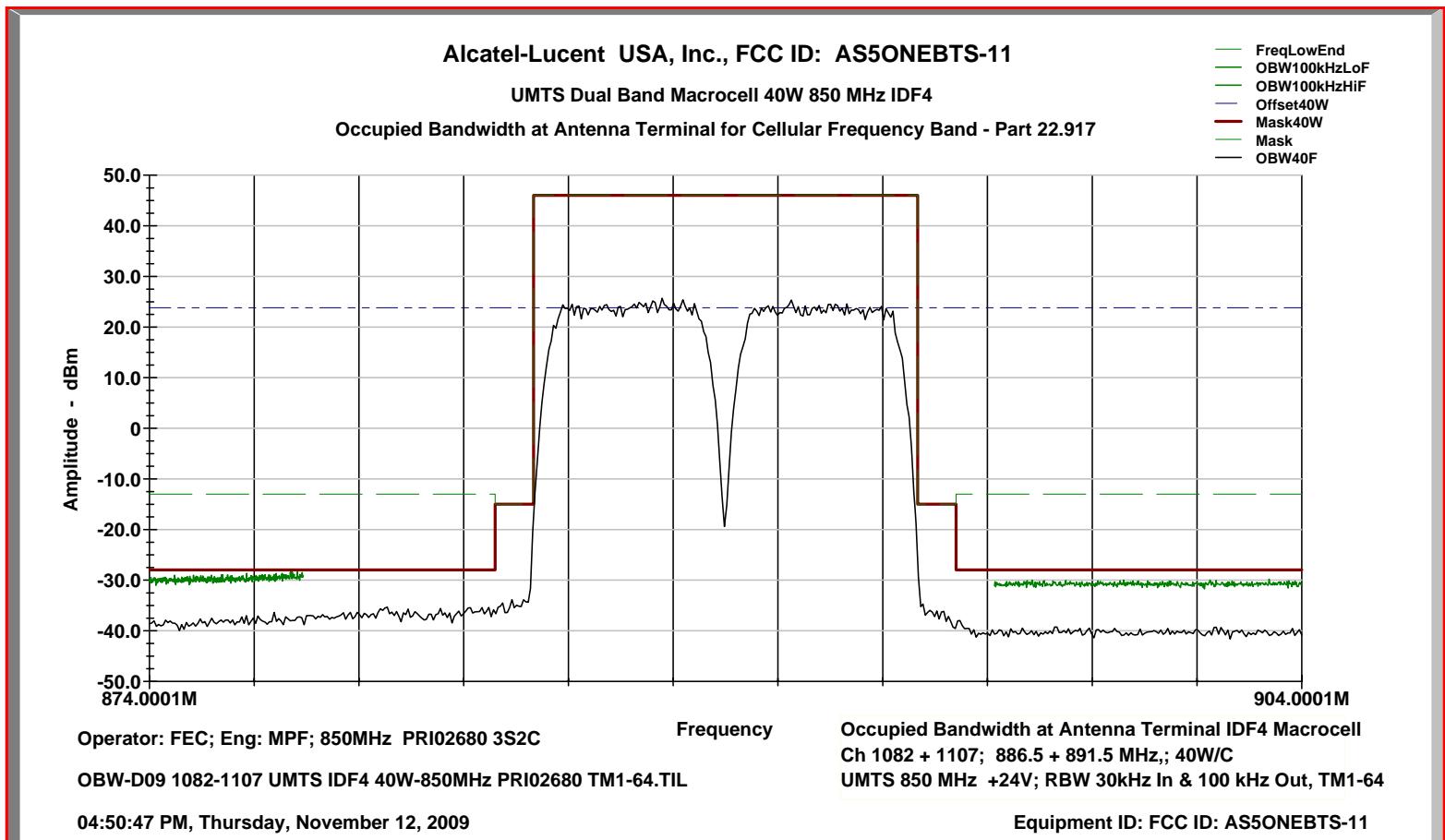
Carrier Power Level at 40W (+46 dBm) per Carrier and TM5-44 Test Modulation.



Two Carriers at 80 Watts

Occupied Bandwidth Characteristics: UARFCN CN 1082 + 1107 @ 886.5 MHz + 891.5 MHz

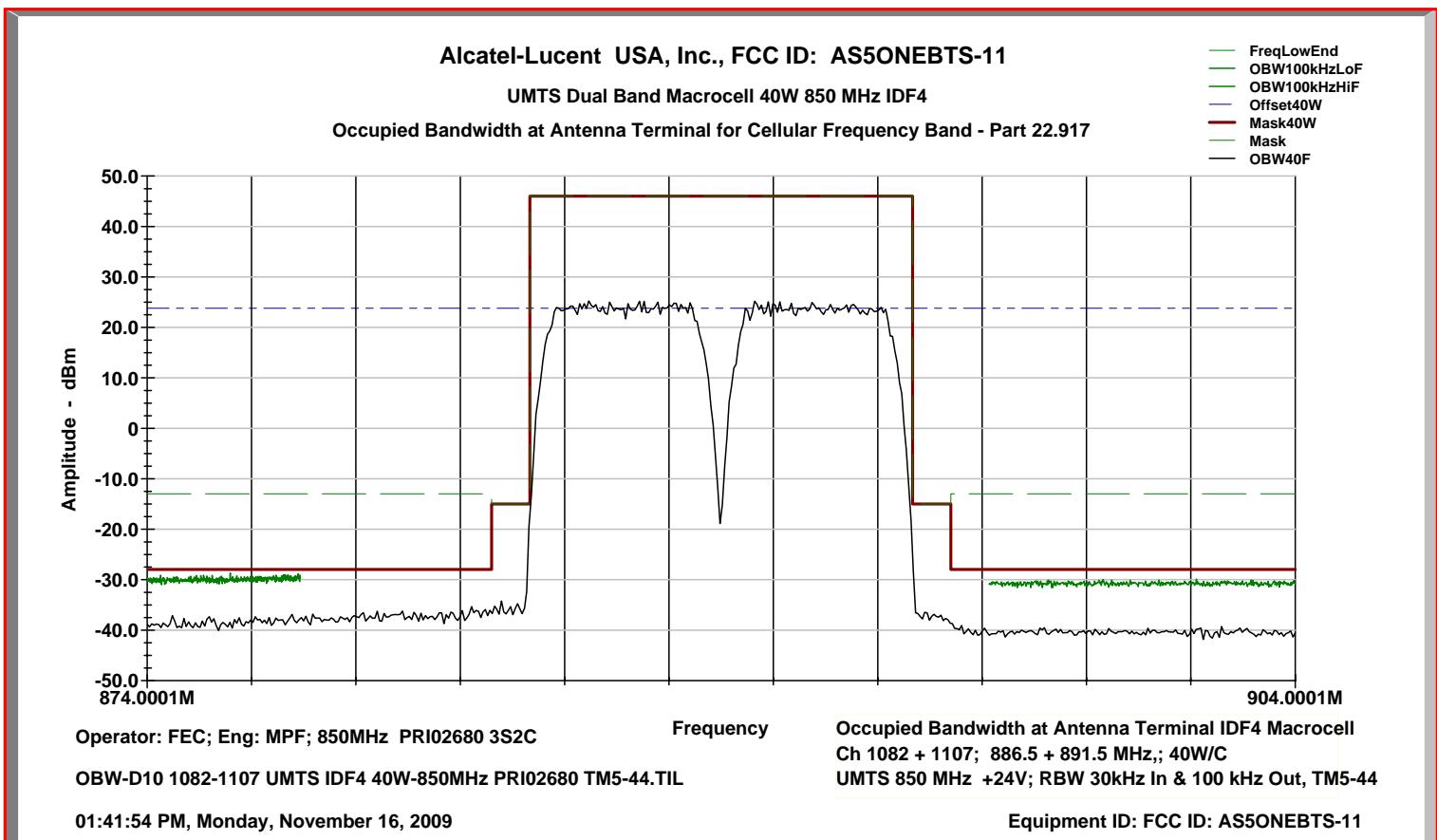
Carrier Power Level at 40W (+46 dBm) per Carrier and TM1-64 Test Modulation.



Two Carriers at 80 Watts

Occupied Bandwidth Characteristics: UARFCN CN 1082 + 1107 @ 886.5 MHz + 891.5 MHz

Carrier Power Level at 40W (+46 dBm) per Carrier and TM5-44 Test Modulation.



PART 2.1051 MEASUREMENTS REQUIRED: SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS.

This test procedure is an extension of the occupied bandwidth measurement at the Equipment Antenna Connector (EAC) terminal, using the same carrier frequencies, power level setting procedure and modulated carrier offset procedure. In accordance with Part 2.1057(a), the required frequency spectrum to be investigated extends from the lowest RF signal generated to the 10th harmonic of the carrier at the EAC terminal. The emission limits at the antenna terminal are specified in Part 22.917 (a) ... the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log (P)$ dBc. The power P is the average carrier power measured at the EAC (antenna) terminal in Watts. Setting the power level at EAC to 40 Watts average, produces an emission attenuation below the carrier of 59.0 dBc. Part 22.917 (b) specifies the required Resolution Bandwidth (RBW) to be 100 kHz or greater. In accordance with Part 2.1051, "the magnitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be specified"; i.e., these are not reportable. Hence, the measurement equipment must be adjusted and configured to provide an instrumentation noise floor that is at least 20 dB or more below the $43 + 10 \log (P)$ dBc limit, which equates to 79.0 dBc. The pertinent test parameters are:

1. Frequency Spectrum:	10 MHz to 10 GHz
2. Resolution Bandwidth:	100 kHz or greater (Part 22.917)
3. Emission Limitation:	$43 + 10 \log (P)$ dBc = $43 + 10 \log (40 \text{ Watts})$ = 59.0 dBc
4. Instrumentation Noise Floor:	at least 20 dB greater than " $43 + 10 \log (P)$ dBc" = 79.0 dBc

Minimum Standard Requirement:

The emission limits at the antenna terminal are specified in Part 22.917 (a) ... the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log (P)$ dBc (i.e., attenuation below the unmodulated carrier). The power P is the average carrier power measured at the J4 antenna terminal in Watts. The measurement equipment must be adjusted and configured to provide an instrumentation noise floor that is 20 dB or more below the $43 + 10 \log (P)$ dBc limit. In summary:

1. Carrier Power Level = 46.0 dBm
2. Emission Limitation = $46.0 \text{ dBm} - 59.0 \text{ dBc} = -13.0 \text{ dBm}$
3. Reportable Emission Limit = $-13.0 \text{ dBm} - 20 \text{ dBc} = -33.0 \text{ dBm}$
4. Emission power levels less than -33.0 dBm are not reportable; i.e., at $\geq 79.0 \text{ dBc}$

Test Set-up and Configuration: Same as previously used for Part 2.1046 RF Power Measurement.

Method of Measurement:

In order to suppress the instrumentation noise floor sufficient to detect and measure spurious signals that have power levels as low as 20 dB below the required limit, or as low as -33.0 dBm (i.e., 79 dBc), an EMC software package was employed to drive the spectrum analyzer, collect and compile the acquired data, perform mathematical corrections to the data by incorporating (i.e., programming) pre-measured path losses into the software, and then generate a graphical display as shown in this exhibit. The software package is: *TILE/IC* (*Total Integrated Laboratory Environment/Instrument Control System*); purchased and licensed from ETS-Lindgren. The instrumentation noise floor is suppressed by the software's ability to split the spectrum being measured into many small segments, perform the mathematical corrections to each segment, and then sequentially compile all the segments into a continuous graphical display.

Part 22.917 requires that emissions over the required spectrum 10 MHz to 10 GHz be measured using an instrumentation resolution bandwidth of 100 kHz or greater. The TILE/IC software was able to sufficiently suppress the normally high noise floor by measuring the spectrum in a sequential series of short segments using a peak detector, in combination with an appropriate low-pass filter and then with an appropriate high-pass filter, installed at the input terminal of the spectrum analyzer, to prevent the carrier from over driving the spectrum analyzer. The spectrum portion 894 MHz – 1.3 GHz, in close proximity to the carrier, was measured without filters.

The specific EMC test filters used were manufactured by TRILITHIC, Inc., Indianapolis, IN:

1. Low Pass Filter: Model 10LC800-3-AA; Product No. 23042
2. High Pass Filter: Model 4HC1400/8000-1-KK; Product No. 23042

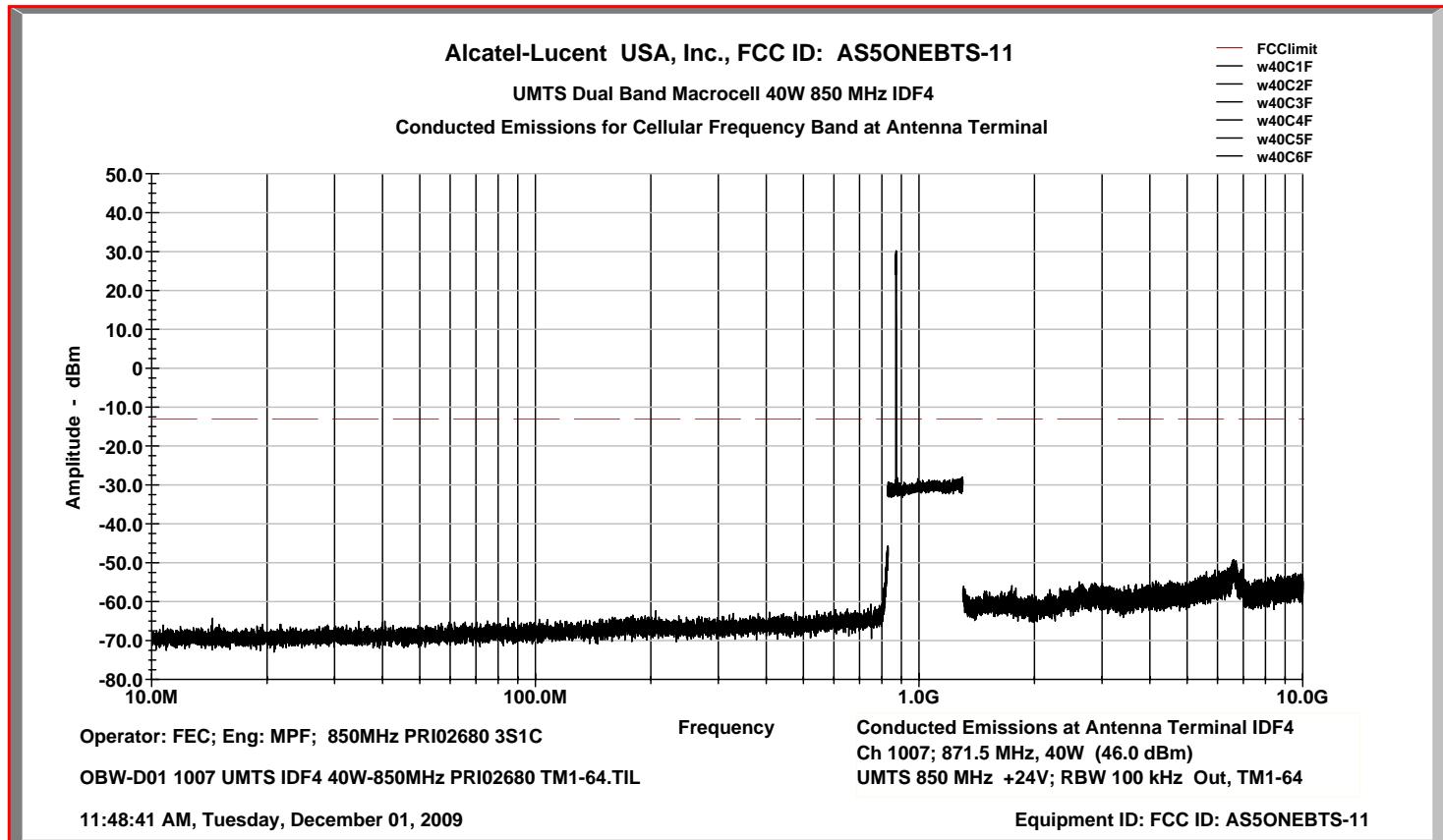
The UARFCN channels and Test Modulations utilized are the same as used in the preceding Occupied Bandwidth tests, and all demonstrate compliance with the conducted emission limitation requirements specified by Part 22.917.

Results: For each UMTS carrier, there were no reportable emissions. Data plots for each carrier are attached to this exhibit.

Single Carrier at 40W

Conducted Emissions Characteristics: UARFCN Channel Number 1007 @ 871.50 MHz

Single Carrier Power at 40W (+46 dBm) and TM1-64



Single Carrier at 40W

Conducted Emissions Characteristics: UARFCN Channel Number 1062 @ 882.5 MHz

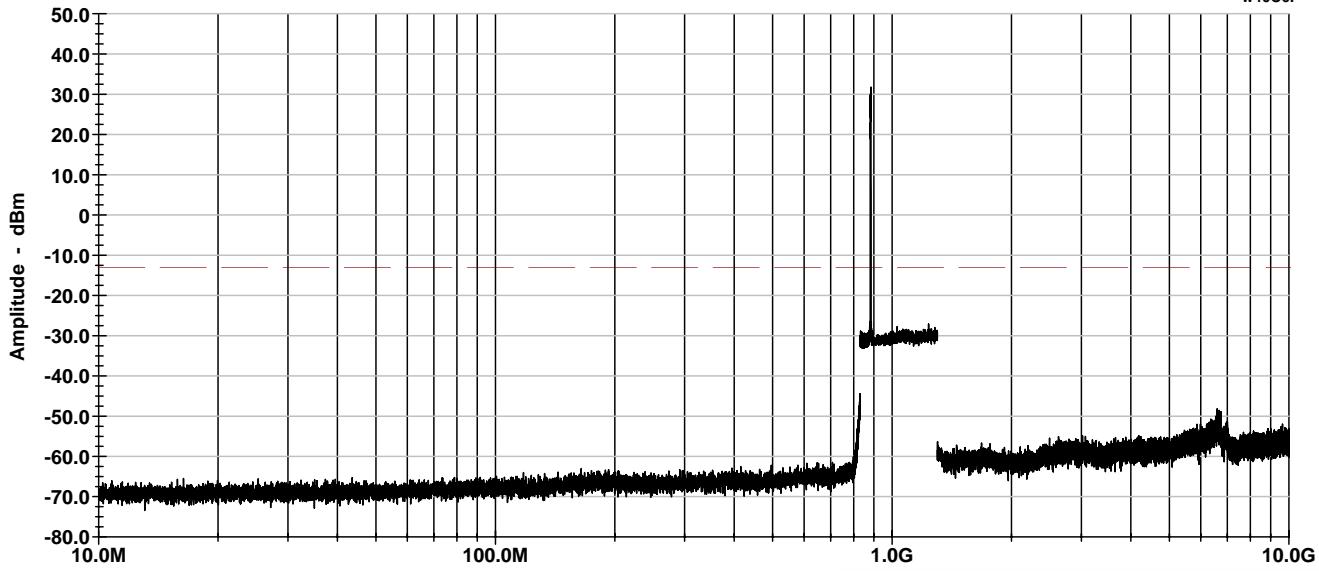
Single Carrier at 40W (+46 dBm) with TM1-64 Test Modulation

Alcatel-Lucent USA, Inc., FCC ID: AS5ONEBTS-11

UMTS Dual Band Macrocell 40W 850 MHz IDF4

Conducted Emissions for Cellular Frequency Band at Antenna Terminal

FCClimit
w40C1F
w40C2F
w40C3F
w40C4F
w40C5F
w40C6F



Operator: FEC; Eng: MPF; 850MHz PRI02680 3S1C

OBW-D03 1062 UMTS IDF4 40W-850MHz PRI02680 TM1-64.TIL

11:38:33 AM, Tuesday, December 01, 2009

Equipment ID: FCC ID: AS5ONEBTS-11

Single Carrier at 40 W

Conducted Emissions Characteristics: UARFCN Channel Number 1107 @ 891.50 MHz

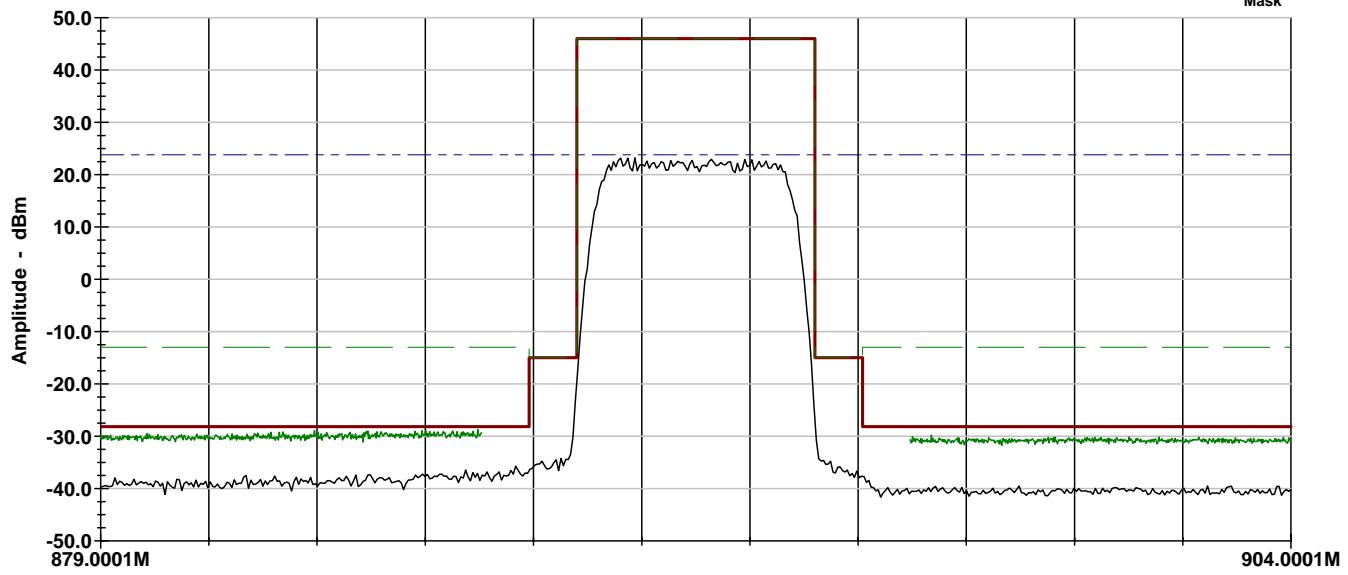
Single Carrier at 40W (+46 dBm) and TM1-64 Test Modulation

Alcatel-Lucent USA, Inc., FCC ID: AS5ONEBTS-11

UMTS Dual Band Macrocell 40W 850 MHz IDF4

Occupied Bandwidth at Antenna Terminal for Cellular Frequency Band - Part 22.917

**FreqLowEnd
OBW100kHzLoF
OBW30kHzF
OBW100kHzHiF
Offset40W
Mask40W
Mask**



Operator: FEC; Eng: MPF; 850MHz PRI02680 3S1C

OBW-D05 1107 UMTS IDF4 40W-850MHz PRI02680 TM1-64.TIL

10:36:03 AM, Tuesday, December 01, 2009

Frequency

Occupied Bandwidth at Antenna Terminal IDF4 Macrocell

Ch 1107; 891.5 MHz, 40W (46.0 dBm)

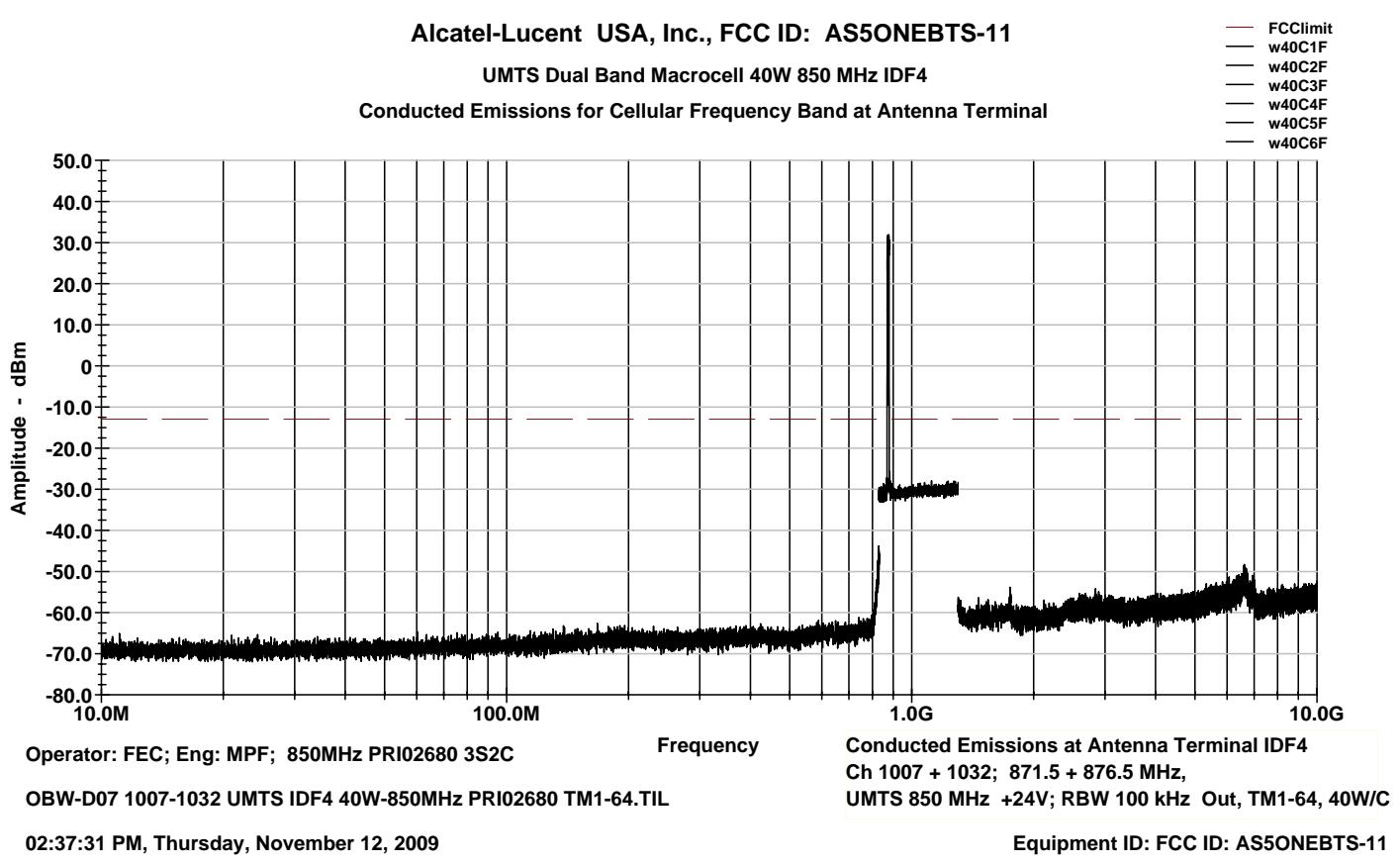
UMTS 850 MHz +24V; RBW 30kHz In & 100 kHz Out, TM1-64

Equipment ID: FCC ID: AS5ONEBTS-11

Two Carriers at 80W

Conducted Emissions Characteristics: UARFCN CN 1007 + 1032 @ 871.5 MHz + 876.5 MHz

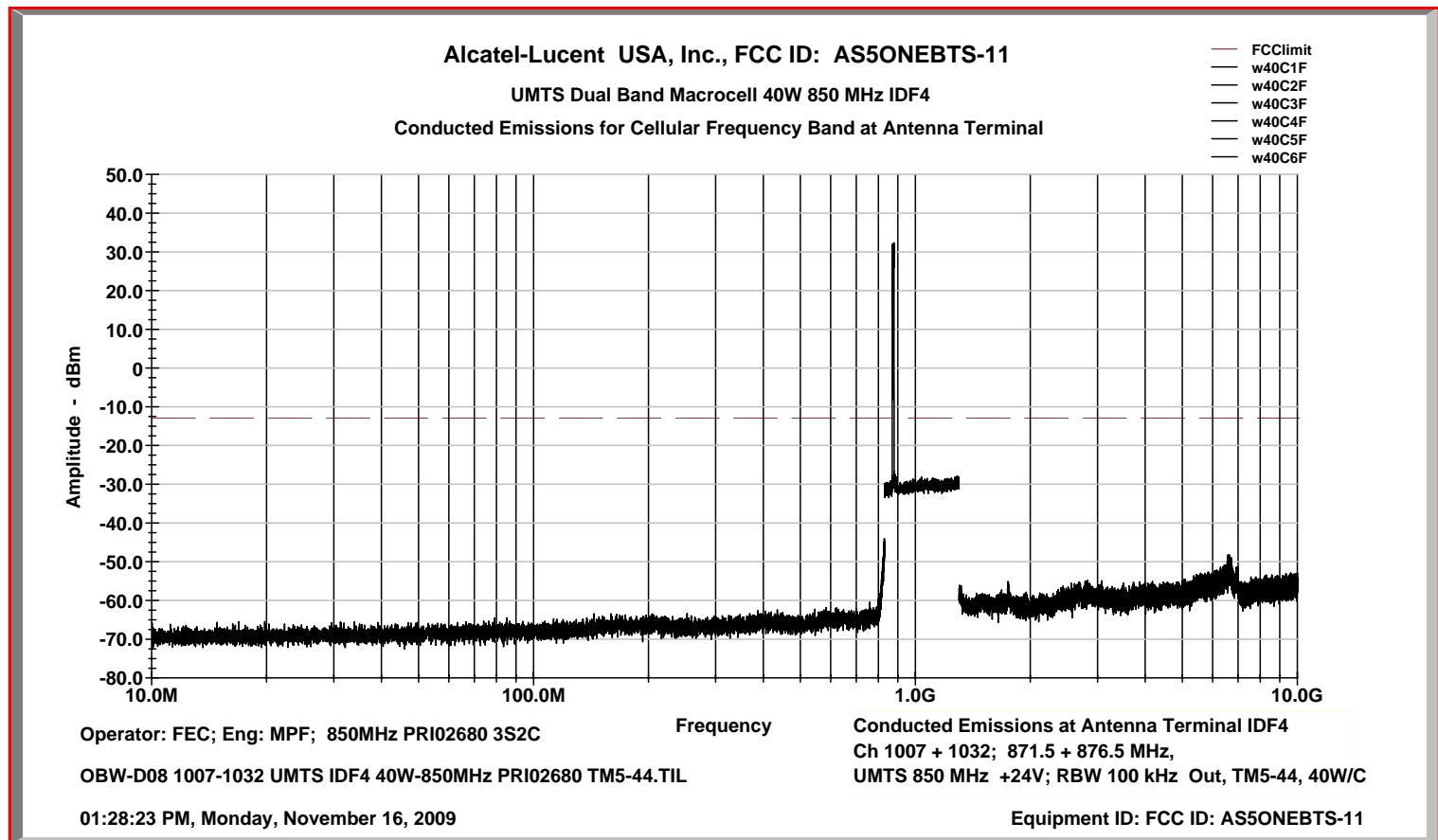
Carrier Power at 40W (+46 dBm) per carrier and TM1-64 Test Modulation



Two Carriers at 80W

Conducted Emissions Characteristics: UARFCN CN 1007 + 1032 @ 871.5 MHz + 876.5 MHz

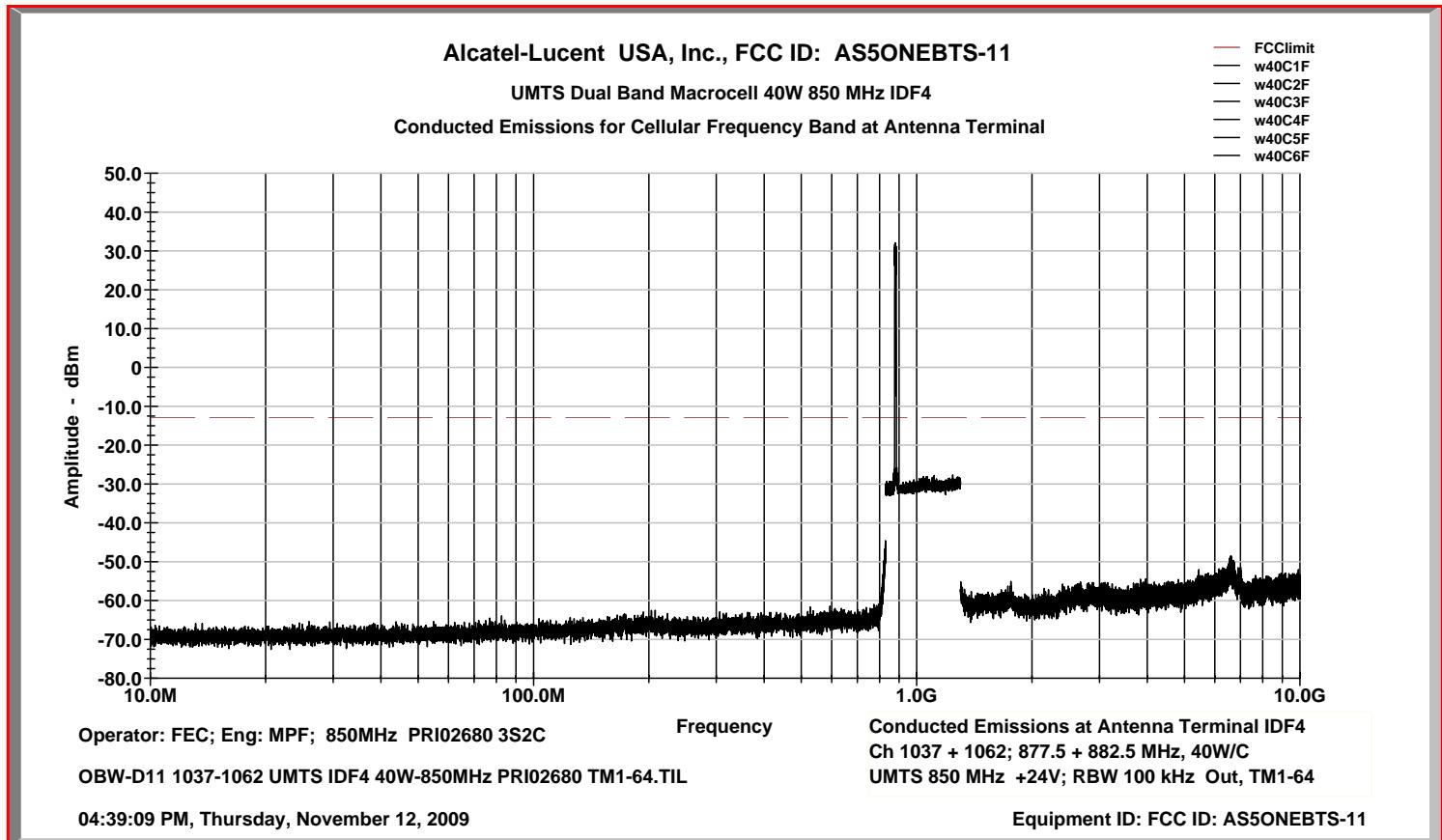
Carrier Power at 40W (+46 dBm) per carrier and TM5-44 Test Modulation



Two Carriers at 80W

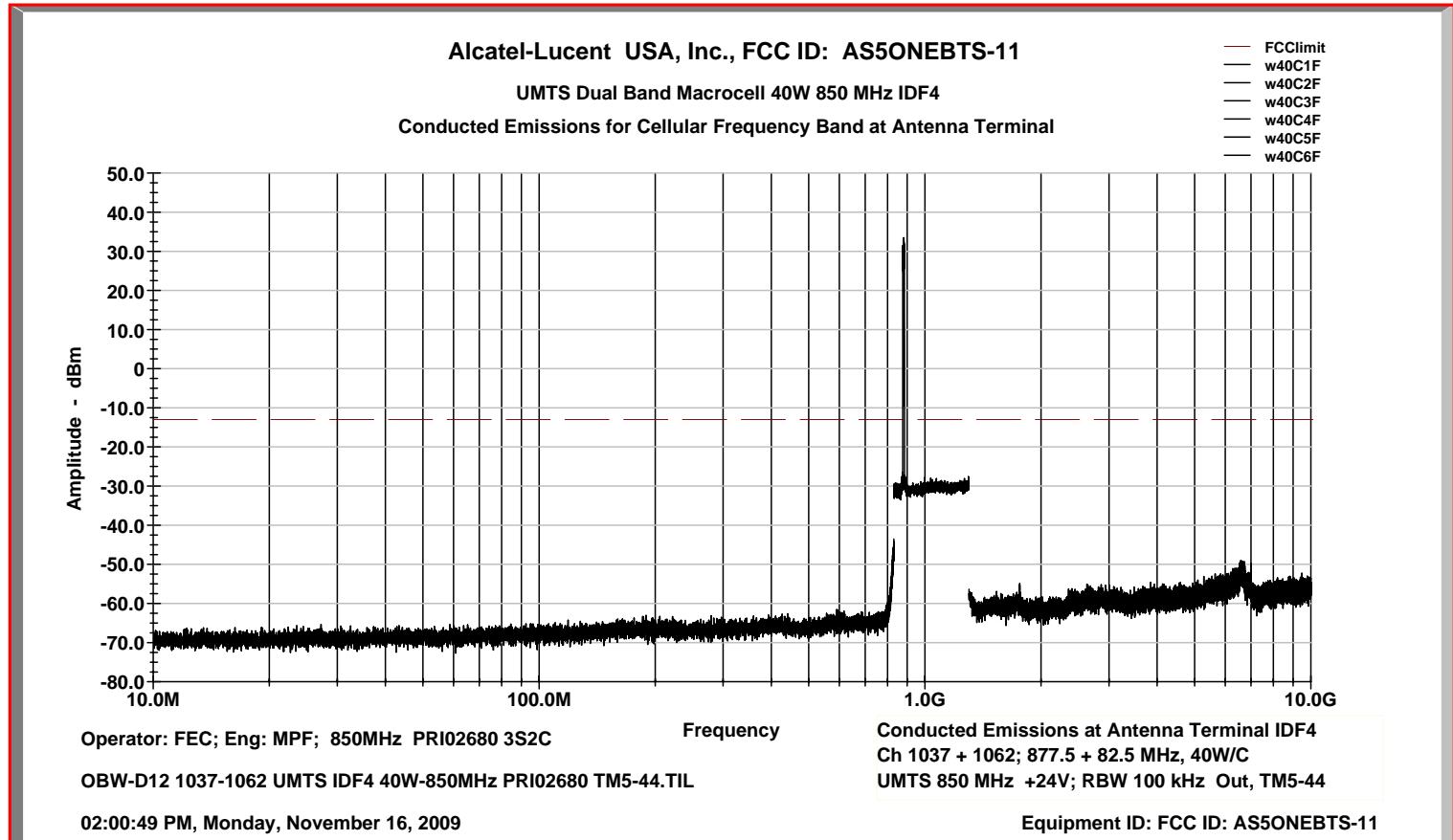
Conducted Emissions Characteristics: UARFCN CN 1037 + 1062 @ 877.5 MHz + 882.5 MHz

Carrier Power at 40W (+46 dBm) per carrier and TM1-64 Test Modulation



Two Carriers at 80W

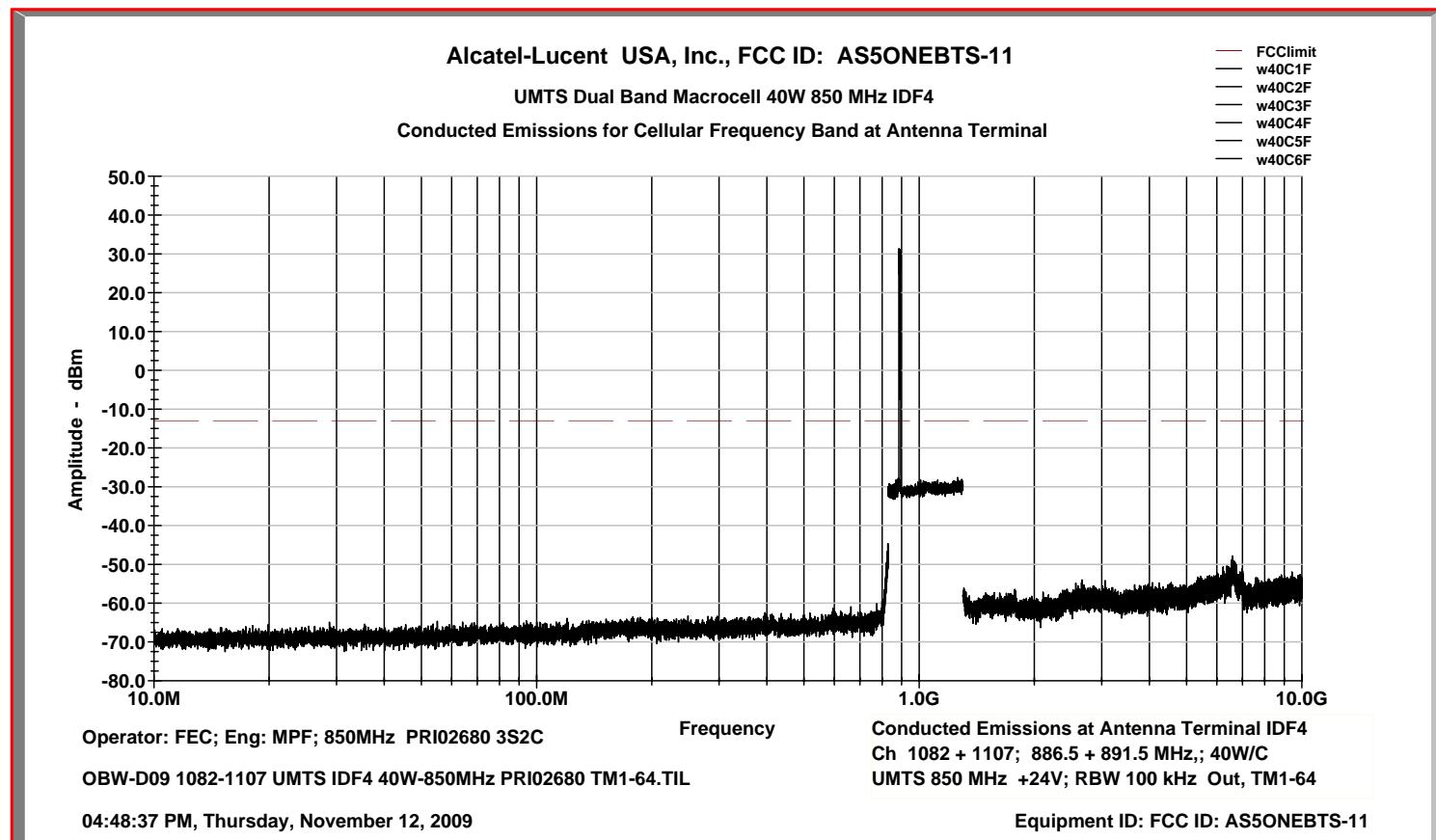
Conducted Emissions Characteristics: UARFCN CN 1037 + 1062 @ 877.5 MHz + 882.5 MHz
Carrier Power at 40W (+46 dBm) per carrier and TM5-44 Test Modulation



Two Carriers at 80W

Conducted Emissions Characteristics: UARFCN CN 1082 + 1107 @ 886.5 MHz + 891.5 MHz

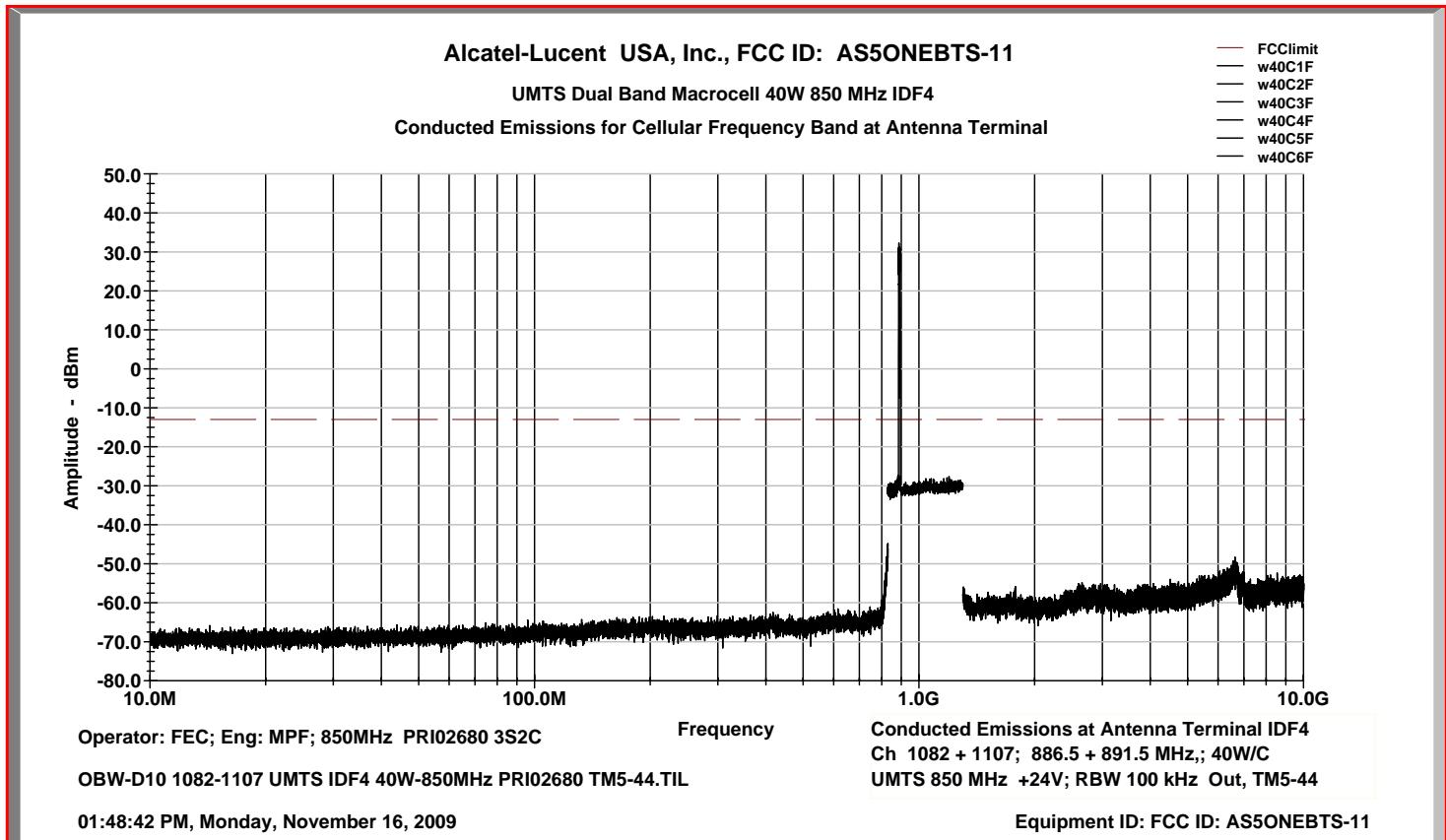
Carrier Power at 40W (+46 dBm) per carrier and TM1-64 Test Modulation



Two Carriers at 80W

Conducted Emissions Characteristics: UARFCN CN 1082 + 1107 @ 886.5 MHz + 891.5 MHz

Carrier Power at 40W (+46 dBm) per carrier and TM5-44 Test Modulation



PART 2.1053 MEASUREMENTS REQUIRED: FIELD STRENGTH OF SPURIOUS RADIATION

This test was performed 1) with a single carrier at 40W, and 2) with 2 carriers at 80W total, per sector, transmitting into a non-radiating dummy load. The equipment frame was configured for 3 sectors 1) at 1 carrier per sector (3S1C), and 2) at 2 carriers per sector (3S2C). As required, the frequency range investigated was from 10 MHz to 10 GHz (10th harmonic of the carrier) as in the previous conducted spurious emissions test procedure. The carrier frequencies utilized were the same as in the previous Occupied Bandwidth tests.

In compliance with the guidelines of ANSI C63.4-2003, the equipment under test (EUT) was configured as recommended for *floor standing equipment*. The EUT was installed and operated as in the *normal mode of operation* with external alarm and T1 cables connected to the EUT and routed as prescribed in ANSI C63.4-2003. Field strength measurements of radiated spurious emissions were evaluated in a 3m semi-anechoic pre-compliance chamber and verified as required at the ten meter Open Area Test Site (OATS) maintained by Alcatel-Lucent's FCC Compliance Laboratory in Whippny, New Jersey. A complete description and full measurement data for the site have been placed on file with the Commission.

The spectrum from 10 MHz to the tenth harmonic of the carrier was searched for spurious radiation. Measurements were made using both horizontally and vertically polarized broadband antennas. Per FCC regulations, the comparison of out of band spurious emissions directly to the limit is appropriately made using the substitution method. However, when the emissions are more than 20 dB below the specification limit, the use of field strength measurements for compliance determination is acceptable and those emissions are considered not reportable (Section 2.1053 and the FCC Interpretive database for 2.1053). For this case the evaluation of acceptable radiated field strength is as follows.

The calculated emission levels were found by:

$$\text{Pmeas (dBm)} + \text{Cable Loss(dB)} + \text{Antenna Factor(dB)} + 107 \text{ (dB}\mu\text{V/dBm)} - \text{Amplifier Gain (dB)} = \text{Field Strength (dB}\mu\text{V/m)}$$

Section 24.238 and 2.1053 contains the requirements for the levels of spurious radiation as a function of the EIRP of the unmodulated carrier. The reference level for the unmodulated carrier is calculated as the field produced by an isotropic radiator excited by the transmitter output power according to the following relation taken from Reference Data for Radio Engineers, page 27-7, 6th edition, IT&T Corp.

$$E = (120\pi P)^{1/2} = [(30*P)^{1/2}] / R$$

$$20 \log (E \cdot 10^6) - (43 + 10 \log P) = 71.77 \text{ dB } \mu\text{V/meter}$$

Where: E = Field Intensity in Volts/ meter R = Distance in meters = 10 m
 P = Transmitted Power in watts = 40 W/ Carrier

Results:

For this particular test, the field strength of any spurious radiation is required to be less than 71.8 dB μ V/meter. Emissions equal to or less than 51.8 dB μ V/meter are not reportable and may be verified using field strength measurements. Over the out of band spectrum investigated from 30 MHz to tenth harmonic of the carrier, no reportable spurious emissions were detected. This demonstrates that the UMTS-CDMA Transceiver System (850), the subject of this application for a Class II permissive Change, complies with Sections 2.1053, 22.917 and 2.1057 of the Rules.