EXHIBIT 11

TEST REPORT

This test report presents the measurement data required by the Commission for certifying the Alcatel-Lucent AWS base stations, subject of this application. The AWS base station is available in various versions for non-in-building application (macro, compact, indoor, outdoor, AC and DC) and in-building application (digital host). The RF path for the various versions of the AWS base station is identical except that the RF power amplifiers may be removed in the in-building application due to the low power application. Therefore, the testing data of one system configuration, representing the maximum configuration supported so far, were submitted in this exhibit. All testing results submitted in this report were performed on the +24VDC AWS Modular Cell 4.0B Indoor System during the period of July 11~September 7, 2007 for both CDMA2000 voice and 1xEVDO applications, except the frequency stability test which was performed on +24VDC AWS 4.0B Outdoor system.

The above AWS Modular Cell 4.0B base station, subject of this application, passed FCC Part 15 Class A radiated emissions requirements. The performance of other versions of the AWS base stations will be evaluated and authorized through FCC Class I permissive change procedure.

The measurement results have demonstrated that Alcatel-Lucent Modular Cell 4.0B AWS system is in full compliance with the Rules of the Commission.

Section 2.1033 (c)(14) REQUIRED MEASUREMENT DATA

The required measurement data is presented in the following exhibits as follows:

SUBEXHIBIT 11.2	Section 2.1046	Measurements Required: RF Power Output		
SUBEXHIBIT 11.3	Section 2.1047	Modulation Characteristics		
SUBEXHIBIT 11.4	Section 2.1049, 27.53(g)	Measurements Required: Occupied Bandwidth and Out-of-Band Emissions		
SUBEXHIBIT 11.5	Sections 2.1051, 27.53(g)	Measurements Required: Spurious Emissions at Antenna Terminals		
SUBEXHIBIT 11.6	Sections 2.1053, 27.53(g)	Measurements Required: Field Strength of Spurious Radiation		
SUBEXHIBIT 11.7	Sections 2.1055, 27.54	Measurements Required: Frequency Stability		
SUBEXHIBIT 11.8	Section 2.947	List of Test Equipment Used		

Section 2.1046 MEASUREMENT REQUIRED: RF POWER OUTPUT

This test is a measurement of the total RF power level transmitted at the antenna-transmitting terminal (J4), as shown in the accompanying test set-up diagram. The radio was first tuned to a channel, which is transmitting in the 2110-2155MHz frequency band. The power level of the base station was calibrated to allow the base station to operate at the manufacturer's maximum rated mean power level, i.e., +47.8dBm (60W) per carrier at the antenna-transmitting terminal. Then the carrier was tuned to other channels in the same frequency band without adjusting the power level and recalibrating, and the corresponding mean RF output power level was measured. All the carriers were configured with a combination of the Pilot, Sync, Paging and Traffic channels. The Pilot/Sync/Page channels were set up according to the recommended test model for base stations given in 3GPP2 C.S0010-C v 2.0 (Section 6), as shown in the following tables.

Туре	Number of	Fraction of	Fraction of	Comments
	Channels	Power (linear)	Power (dB)	
Pilot	1	0.2000	-7.0	Walsh 0
Sync	1	0.0471	-13.3	Walsh 32, always 1/8 rate
Paging	1	0.1882	-7.3	Walsh 1, full rate only
Traffic	6	0.09412 each	-10.3 each	Variable Walsh assignments,
				full rate only

Table 11.2.1. Base Station Test Model, Nominal

Table 11.2.2	. Base Station	Test Model for	Transmit	Diversity	Path, Nominal
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Туре	Number of	Fraction of	Fraction of	Comments
	Channels	Power (linear)	Power (dB)	
Transmit	1	0.2000	-7.0	Walsh 0
Diversity Pilot				
Traffic	6	0.09412 each	-10.3 each	Variable Walsh assignments,
				full rate only

Power measurements were made with a Giga-tronics 8542C Universal Power Meter with 80621A Power Sensor (0.01 - 18 GHz) in the average mode. The test set-up for conducting the RF power output measurement is shown in the following figure. Before the testing was started, the Base Station was given a sufficient "warm-up" period as required.

For a single carrier operation in the band 2110-2155 MHz, the maximum mean power at the antenna transmitting terminal measured is +47.8dBm (60W). The channels that were measured are tabulated in the Table 11.2.3.

The power derivation across the AWS frequency band of 2110-2155 MHz is less than ± 0.22 dB.

For multiple carrier operation, each transceiver can support up to 11 carriers and each 60W-IPAM can support up to 2 carriers of the maximum power at each carrier. For the AWS 4.0B system equipped, the maximum rated mean power measured is 60W per carrier at each antenna transmitting terminal, 120W per port and 240W per sector.

AWS Channel Number	AWS Frequency (MHz)	AWS Frequency Block
25	2111.25	A (Low)
175	2118.75	A (High)
225	2121.25	B (Low)
375	2128.75	B (High)
425	2131.25	C (Low)
475	2133.75	C (High)
525	2136.25	D (Low)
575	2138.75	D (High)
625	2141.25	E (Low)
675	2143.75	E (High)
725	2146.25	F (Low)
875	2153.75	F (High)

Table 11.2.3. Channels of RF Power Output Measurement

Results:

The maximum RF power outputs of the Alcatel-Lucent Modular Cell 4.0B AWS base stations at the antenna transmitting terminal across the AWS frequency band 2110 - 2155 MHz is 60W per carrier and are in full compliance with the Rules of the Commission.

FIGURE 11.2.1 TEST SET-UP FOR MEASUREMENT OF RADIO FREQUENCY POWER OUTPUT



CTU: Common Timing Unit; OM: Oscillator Module.

Section 2.1047 MEASUREMENT REQUIRED: MODULATION CHARACTERISTICS

The Modular Cell AWS system utilizes CDMA technology with digital Phase Shift Keying (PSK) and Quadrature Amplitude Modulation (QAM) scheme. The modulation accuracy measures the ability of the transmitter to generate the ideal signal that is defined by the waveform quality. The waveform quality is measured by determining the normalized correlated power between the actual waveform and the ideal waveform. For CDMA 2000 voice application, the normalized cross correlation coefficient, ρ , shall be greater than 0.912 (excess power < 0.4 dB), as specified in 3GPP2 C.S0010-C, Section 4.2.2.3. For 1xEV-DO application, the normalized cross correlation coefficient, $\rho_{overall-1}$, $\rho_{overall-2}$, ρ_{pilot} , shall be greater than 0.912 (excess power < 0.4 dB) and shall be greater than 0.97 (excess power < 0.13dB), as specified in 3GPP2 C.S.0032, Section 3.1.2.2.2. The definitions of $\rho_{overall-1}$ and $\rho_{overall-2}$ are given in 3GPP2 C.S.0032 Section 11.4.2,

For CDMA2000 voice application, the radio was configured to transmit the Forward Pilot Channel only. For 1xEVDO application, the modulation accuracy measurements were performed with a carrier configured with time-division multiplexed Pilot Channel, the MAC Channel, and the Forward Traffic Channels with full data rate. The measurements were made at the antenna transmitting terminal of the base station system at Ch 25(A), 225(B), 425(C), 525(D), 625(E) and 875(F). The carrier power level was adjusted to the rated maximum mean power +47.8 dBm at the output terminal.

The measurements were performed with an Agilent E4440 PSA Spectrum Analyzer which was calibrated in accordance with ISO 9001 process.

The test set-up diagram is given in the Figure 11.3.1, where the Agilent E4440A PSA used the external signals from the base station as its trigger source and time reference.

Results:

The wave quality factors measured at the above channels are all ≥ 0.99 . Figure 11.3.2 shows four representative screen plots of the modulation accuracy measurement at 2111.25MHz in both voice and 1xEVDO modes. The modulation accuracy of the Modular Cell AWS base station is in full compliance with the Rules of the Commission across the Frequency Band 2110 – 2155 MHz.

FIGURE 11.3.1 TEST SET-UP FOR MEASUREMENT OF MODULATION ACCURACY



FIGURE 11.3.2 SCREEN PLOT OF MODULATION ACCURACY MEASUREMENT AT CHANNEL 425 FOR CDMA2000 VOICE AND CHANNEL 25, 2111.25 MHz 1xEVDO

🔆 Agilent 15:29:31 Aug	7,2007 cdma2000	RT
		Ext Ref
BTS Ch Freq 2.131	25 GHz	
Mod Accuracy	SR1 Averag	ges: 9 PASS
Center Freq 2.1	31250000 GHz	
Rho: 0.99894	I/O Measured Po	lar Vector
FVM: 3.25 % rms		
9.23 % pk		
Pk CDE:		
-38.23 dB		
at W128(0)		
Magnitude Error:		
2.14 % rms Phase Enner:		
1.40 ° rms		
Freq Error: 0 71 Hz		
I/Q Origin Offset:		
-63.89 dB Active Channels:		
1		
Time Offset: 22.40 us		
No	04 0007	D T
🔆 🔆 Agilent 12:10:37 Jul	31,2007 1xEV-DO	K I
RIS Ch Fred 2 111	25 GHz Dur	ext Ker
Mod Accuracy	Subtype 2 Average	ies: 7 PASS
Center Freq. 21	11250000 GHz	
Reas Ch: Pilot	I/Q Measured Pol	ar Vector
Rho: 0.99870		
EVM: 3.61 % rms 7 45 % pk		
-41.55 dB		
at W32(16):Q		
Magnitude Error:		
Phase Error:		
1.49 ° rms Freg Frror:		
-0.68 Hz		
I/Q Origin Offset: -59.67 dB		
Active Channels:		
P:1 M:14 D:16		



Section 2.1049 MEASUREMENT REQUIRED: OCCUPIED BANDWIDTH AND OUT-OF-BAND EMISSIONS

In compliance with Section 2.1049, all the voice carriers were configured with a combination of the Pilot, Sync, Paging and Traffic channels. The Pilot/Sync/Page channels were set up according to the recommended test model for base stations given in 3GPP2 C.S0010-C v 2.0 (Section 6), as shown in Table 11.2.1. All 1xEVDO carriers were configured with time-division multiplexed Pilot Channel, the MAC Channel, and the Forward Traffic Channels at full data rate. The Pilot/MAC/Traffic/Control channels were setup according to the recommended test model for base stations given in 3GPP2 C.S.0032.

The two 45MHz bandwidth AWS spectrum is divided into 6 blocks (A, B, C, D, E and F) as shown in the following table.

AWS Blocks	Tx Frequency (MHz)	Rx Frequency (MHz)	Bandwidth (MHz)
Α	2110 - 2120	1710 - 1720	10
В	2120 - 2130	1720 - 1730	10
С	2130 - 2135	1730 - 1735	5
D	2135 - 2140	1735 - 1740	5
E	2140 - 2145	1740 - 1745	5
F	2145 - 2155	1745 - 1755	10

The AWS Base station supports one-carrier and multiple-carrier configurations. For one-carrier configuration, the occupied bandwidth and out-of-band emissions measurements were made at the antenna transmitting terminal (J4) on two channels which correspond to the lowest and highest available CDMA channels in each of the AWS frequency bands (A, B, C, D, E and F). At each of the carrier frequencies, the carrier power level at the antenna terminal was adjusted to the maximum rated mean power +47.8 dBm (60W). For the multiple-carrier configuration, currently there is a 5MHz bandwidth restriction for carrier placement. The carrier placements which potentially give the worst emissions were evaluated for each band. The maximum rated power at each transmitting antenna port is 120W. Both the CDMA2000 voice application and 1xEVDO application were evaluated.

Currently, there are two contracted manufacturers for 60W-IPAM, RF power amplifier. Both vendors' 60W-IPAMs have been evaluated.

For one-carrier configuration, only two emission plots were submitted. These two plots correspond to the lower and higher edge channels which have the least margin among all AWS bands evaluated for both CDMA2000 and 1xEVDO applications and for 60W-IPAMs from both vendors. Similarly, for the two-carrier, three-carrier and four-carrier configurations, only one emission plot was submitted for each configuration which has the least margin, for both CDMA2000 and 1xEVDO applications and for both vendors' amplifiers, among all AWS bands applicable for each configuration. The masks displayed in the plots are the combined requirement of FCC Part 27.53(g) and 3GPP2 C.S0010-C which is tougher than the FCC Part 27.53(g) out-of-band requirement.

The minimum emission requirements and the setting of measurement equipment for the occupied bandwidth measurement of a 1.23MHz AWS carrier were specified in FCC Part 27. The FCC's requirements are tabulated in the following table:

Frequency	Required Minimum Attenuation below the Mean Carrier Power <i>P</i>	Minimum Resolution Bandwidth of Spectrum Analyzer
1MHzBandsImmediatelyOutsidetheTransmittingFrequencyBand	(43 + P dBW) dBc	12.5kHz
Outside the Above Frequency Band	(43 + P dBW) dBc	1MHz

Table 11.4.1 FCC Part 27.53(g) Transmitter Unwanted Emission Limits

The requirements specified in 3GPP2 C.S0010-C Section 4.4 for Band Class 15 are tabulated in the following table:

Table 11.4.2(a) 3GPP2 C.S0010-C Transmitter Spurious Emission Limits for Single Carrier Configuration

Displacement from the Carrier	Required Minimum Attenuation	Resolution
Center Frequency f_c	below the Mean Carrier Power P	Bandwidth of
		Spectrum
		Analyzer
885 kHz $< f - f_c \le 1.25$ MHz	-45 dBc	30 kHz
$1.25 \text{ MHz} < f - f_c \le 1.98 \text{ MHz}$	Min{-45dBc, -9dBm}	30 kHz
$1.98 \text{ MHz} < f - f_c \le 2.25 \text{ MHz}$	-55dBc if $P \ge 33$ dBm;	30 kHz
	-22dBc if 28 dBm \leq P < 33 dBm;	
	-50 dBc if $P < 28$ dBm	
$2.25 \text{ MHz} < f - f_c \le 4.0 \text{ MHz}$	-13dBm	1MHz

Table 11.4.2(b) 3GPP2 C.S0010-C Transmitter Spurious Emission Limits for Multiple Carrier Configuration

Displacement from the Carrier	Required Minimum	Resolution
Center Frequency f_c	Attenuation*	Bandwidth of
	below the Mean Carrier	Spectrum Analyzer
	Power P	
$1.25 \text{ MHz} < f - f_c \le 2.25 \text{ MHz}$	-9dBm	30 kHz
$2.25 \text{ MHz} < f - f_c \le 4.0 \text{ MHz}$	-13dBm	1MHz

A combined requirement of FCC Part 27.53(g) and 3GPP2 C.S0010-C was used as the required emission limit mask in the measurement.

For the mean output power of +47.8 dBm (60 W) at J4, the required spurious emissions attenuation per (43 + P dBW) dBc, is 60.8dBc. FCC CFR 47, Sections 2.1051 and 2.1057(c) specify that the spurious emissions attenuated more than 20 dB below the permissible value need not be reported. So the reportable limit is -80.8 dBc.

The measurements were performed with an Agilent E4440A PSA Spectrum Analyzer, which was calibrated in accordance with ISO 9001 process. The test set-up diagram is given in the Figure 11.4.1.

The spectrum analyzer was set with a 30 kHz resolution bandwidth and 8 MHz span, as shown in the plots of the occupied bandwidth measurement attached in the following pages. The emissions outside the 8MHz-span were evaluated in Measurement Required: Out-of-block Spurious Conducted Emissions. The

maximum mean output power of the CDMA carrier, measured with a 3 MHz resolution bandwidth, aligns with the top of the spectrum analyzer display reticule, i.e., 0 dBm, by adjusting the REF LEVEL OFFSET of the spectrum analyzer. The top of the carrier measured with a 30 kHz resolution bandwidth, thus, was 16.1 dB below the carrier power measured with a resolution bandwidth greater than the carrier bandwidth 1.23 MHz. This 16.1dB offset was due to the fact that 10 log (1230kHz/30kHz) = 16.1 dB.

Results:

From the occupied bandwidth and out-of-band plots attached in the following, it can be seen that all the waveforms are under the required emission mask with margins. The measurement results demonstrate the full compliance with the Rules of the Commission at the lowest and highest settable channels of the AWS bands.

FIGURE 11.4.1 TEST SET-UP FOR MEASUREMENT OF OCCUPIED BANDWIDTH AND OUT-OF-BAND EMISSIONS



FIGURE 11.4.2 99% OCCUPIED BANDWIDTH MEASUREMENT FOR CHANNEL25 2111.25 MHz





Occupied Bandwidth and Out-of-Band Emissions Plots:

AWS C Band, Lower Edge Channel Ch 425, 2131.25 MHz, 60W/C Measured at the antenna transmitting terminal



AWS D Band, Higher Edge Channel Ch 575, 2138.75 MHz, 60W/C Measured at the antenna transmitting terminal



AWS C Band, 2C Ch 425, 475, 60W/C Measured at the antenna transmitting terminal



AWS B Band, 3C Ch 225 (V), 275(DO), 300(DO), 40W/C Measured at the antenna transmitting terminal



AWS F Band, 4C, Voice Ch 800, 825, 850, 875, 30W/C Measured at the antenna transmitting terminal

Section 2.1051 MEASUREMENT REQUIRED: SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS

The out-of-block spurious emissions at the antenna transmitting terminal were investigated from 10 MHz to the 10^{th} harmonic of the carrier or 21.55 GHz, per Section 2.1057(a)(1). All the voice carriers were configured with a combination of the Pilot, Sync, Paging and Traffic channels. The Pilot/Sync/Page channels were set up according to the recommended test model for base stations given in 3GPP2 C.S0010-C v 2.0 (Section 6), as shown in Table 11.2.1. All 1xEVDO carriers were configured with time-division multiplexed Pilot Channel, the MAC Channel, and the Forward Traffic Channels. The Pilot/MAC/Traffic/Control channels were setup according to the recommended test model for base stations given in 3GPP2 C.S.0032.

The AWS Base station supports one-carrier and multiple-carrier configurations. For one-carrier configuration, the out-of-block spurious emission measurements were made at the antenna transmitting terminal (J4) on two channels which correspond to the lowest and highest available CDMA channels in each of the AWS frequency bands (2110-2155 MHz). At each of the carrier frequencies, the carrier power level at the antenna terminal was adjusted to the maximum rated mean power +47.8 dBm (60W). For the multiple-carrier configuration, currently there is a 5MHz bandwidth restriction for carrier placement. The carrier placements which give the worst emissions were evaluated for each band. The maximum rated power at each transmitting antenna port is 120W. Both the CDMA2000 voice application and 1xEVDO application were evaluated.

The emission limitations and the setting of measurement equipment for the unwanted emissions measurement of a 1.23MHz CDMA AWS carrier were specified in 27.53(g) and shown in Subexhibit 11.4.

For the mean output power at +47.8 dBm per carrier, the required attenuation is 60.8dBc.

The measurements were performed with an Agilent E4440A PSA Spectrum Analyzer, which was calibrated in accordance with ISO 9001 process. The test set-up diagram is given in the following.

The carrier power level at the antenna transmitting terminal was calibrated before the conducted spurious emissions testing at each frequency. The limited line is 60.8 dB below the carrier power (60W/c) and the FCC reportable limit is -80.8 dBc.

The spectrum analyzer was set to a 1MHz resolution bandwidth. The maximum mean output power of the carrier, measured with a 3 MHz resolution bandwidth, aligns with the top of the spectrum analyzer display reticule, i.e., 0 dBm, by adjusting the REF LEVEL OFFSET of the spectrum analyzer. The sampling average was used.

Results:

The out-of-block spurious emissions of the Alcatel-Lucent AWS Base Station in the entire spectrum investigated (10MHz to 21.55GHz) are well under the required emission limit with adequate margins (\geq 20dB). Therefore, there is no reportable spurious emission to FCC. The measurement results demonstrate that the Alcatel-Lucent AWS base station is in full compliance with the Rules of the Commission.

FIGURE 11.5.1 TEST SET-UP FOR MEASUREMENT OF CONDUCTED SPURIOUS EMISSIONS



Section 2.1053 MEASUREMENT REQUIRED: FIELD STRENGTH OF SPURIOUS RADIATION

The field strength measurements of radiated spurious emissions were made in a FCC registered five meter semi-anechoic chamber which is maintained by Alcatel-Lucent in Columbus, Ohio.

The AWS Modular Cell 4.0B Base Station Indoor was investigated from 10 MHz to the 10th harmonic of the carrier or 21.55 GHz, per Section 2.1057(a)(1). The equipment under test (EUT) was configured as in the normal mode of the installation and operation. The recommendations of ANSI C63.4–2004 were followed for EUT testing setup and cabling. The base station was configured to transmit 5 carriers (2 1xEVDO carriers 3 voice carriers) 3 sectors with the maximum mean power of 40W ~ 60W per carrier, 120W per port and 240W per sector. All the voice carriers were configured with a combination of the Pilot, Sync, Paging and Traffic channels. The Pilot/Sync/Page channels were set up according to the recommended test model for base stations given in 3GPP2 C.S0010-C v 2.0 (Section 6), as shown in Table 11.2.1. All 1xEVDO carriers were configured with time-division multiplexed Pilot Channel, the MAC Channel, and the Forward Traffic Channels with full data rate. The Pilot/MAC/Traffic/Control channels were setup according to the recommended test model for base stations given in 3GPP2 C.S.0032. All carriers were transmitting to non-radiating 50 Ω resistive loads.

The emission limitations and the setting of measurement equipment for the conducted spurious emissions measurement of a 1.23MHz CDMA2000 AWS carrier were specified in 27.53(g) and shown in Sub-Exhibit 11.4.

By using the relation between the electric field strength of an ideal dipole and its excitation power given in Reference Data for Radio Engineers, page 676, 4th edition, ITT Corp., the emission limit calculated equals

Frequency of Emission	Separation Distance	Е	Detector/RBW
(MHz)	(m)	(dBµV/m)	
10-21,550	3	84.1	Average/1MHz

The field strength of radiated spurious emissions measured was determined by

 $E (dB\mu V/m) = V_{meas} (dB\mu V) + Cable Loss (dB) + Antenna Factor (dB1/m).$

Sections 2.1051 and 2.1057(c) specify that the spurious emissions attenuated more than 20 dB below the permissible value need not be reported. Therefore, the reportable limit at 3 meter is $64.1 \text{ dB}\mu\text{V/m}$.

All the measurement equipment used, including antennas, was calibrated in accordance with ISO 9001 process. The EUT configuration diagram is given in the following.

Results:

Over the frequency spectrum investigated (10MHz to 21.55GHz), no reportable radiated spurious emissions were detected. The measurement results of the Alcatel-Lucent Modular Cell 4.0B AWS indoor base station, subject of this application, demonstrate the full compliance with the Rules of the Commission.

FIGURE 11.6.1 EUT FOR MEASUREMENT OF RECEIVER CONDUCTED SPURIOUS EMISSIONS



Section 2.1055 MEASUREMENT REQUIRED: FREQUENCY STABILITY

The frequency determination and stabilization of the transmit signal of the AWS system is provided by the MCR. The frequency stabilization and accuracy of the MCR is a function of its agile synthesizer circuitry, which is phased locked to the highly stable 15 MHz reference frequency signal. The CTU provides the time and frequency reference used by the MCR via the GPS or a rubidium frequency reference. The 15 MHz output frequency of OM or OMQM (on-board OM) is disciplined by the CTU using a PLL and GPS reference.

The frequency stability testing of the Modular Cell AWS system was conducted in the Modular Cell 4.0B AWS Outdoor frame. The outdoor frame was designed for a wider temperature range than the indoor frame. The primary power supplier can be either 120VAC or +24VDC or -48VDC. For AC power supplier. the internal AC/DC rectifiers convert the 120VAC to +24VDC or -48VDC voltage which provides the power to all shelves equipped in the AWS base station. The stability of the output frequency of the Modular Cell AWS 4.0B was measured at its antenna transmitting terminal 1) from -30 °C to +50 °C in 10 °C steps at the rated supply voltage; and 2) at 85% and 115% of the nominal supply voltage, per Section 2.1055. For the worse case scenario, the output voltage of the AC/DC rectifier, +24 VDC, was varied from 85% to 115%. The 85% of +24 VDC is 20.4 V and 115% is 27.6 V. One MCR was set to transmit at ch 250 2122.5MHz with Pilot at 44dBm mean power. The carrier frequency was measured at the antenna terminal at each temperature and each supply voltage by an Agilent PSA Series Spectrum Analyzer. The output of the CTUII with OMQM was also monitored and measured with a high precision Frequency Counter. Seven data were collected at each temperature and each supply voltage.

The Modular Cell 4.0B AWS Outdoor frame was installed in an environmental chamber. At each temperature and each supply voltage, the EUT was given sufficient time for its thermal stabilization. The testing was performed during the period of September $5 \sim 7$, 2007.

FCC Section 27.54 specifies that the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation. The 3GPP2 C.S0032 and 3GPP2 C.S0010-C specify the minimum standard is ± 0.050 ppm.

The maximum frequency derivations (Δf) at the antenna terminal from the assigned carrier frequency and rated supply voltage at each temperature and at the rated supply voltage are summarized in the following table.

Stabilized	Δf	Δf	Δf
Temp.	85% V _{norm}	100% V _{norm}	115% V _{norm}
(°C)	(Hz)	(Hz)	(Hz)
-30	-0.7	1.5	-1.0
-20	1.1	-2.9	-1.9
-10	1.6	0.7	-1.2
0	-3.2	-1.7	-1.4
+10	-0.9	1.6	2.1
+20	1.0	1.0	1.3
+30	-1.0	1.0	1.2
+40	1.2	1.0	1.1
+50	1.5	2.0	2.0

The maximum frequency derivations (Δf) at +20°C and 85% and 115% of the supply voltage from the carrier frequency at +20°C and rated supply voltage are summarized in the following table.

Stabilized	Δf	Δf	Δf
Temp.	85% V _{norm}	100% V _{norm}	115% V _{norm}
(°C)	(Hz)	(Hz)	(Hz)
20	1.6	1.0	-2.3

All the measurement equipment was calibrated in accordance with ISO 9001 process. The EUT configuration diagram is given in the following.

Results:

The maximum frequency drift at the antenna terminal of the Modular Cell 4.0B AWS 0 system at the 2122.5MHz due to temperature and supply voltage is 1.51E-3 ppm which is below 3GPP2 ± 0.05 ppm requirement. The Alcatel-Lucent Modular Cell 4.0B AWS system demonstrated full compliance with the Rules of the Commission.

SET-UP FOR MEASUREMENT OF FREQUENCY STABILITY



Section 2.947 LISTING OF TEST EQUIPMENT USED

Equipment	Manufacturer	Model	Serial No.	Calibrated	Due Cal.
				Date	Date
Power Meter	Giga-tronics	8542C	1834280	10/07/06	10/31/07
Power Sensor	Giga-tronics	80621A	1950053	10/07/06	10/31/07
Power Meter	Agilent	E4419B	153436	9/21/06	9/21/08
Power Sensor	HP	E9300A	158013	2/23/07	2/23/08
Thermal Data Acquisition	Agilent	34970A	157700	8/18/07	8/18/08
Spectrum Analyzer	Agilent	E4440A	US42221614	4/17/07	7/31/07
Spectrum Analyzer	Agilent	E4440A	US42221740	10/31/06	10/31/07
Spectrum Analyzer	Agilent	E4440A	MY46185576	6/21/07	6/21/08
Spectrum Analyzer	Agilent	E445A	167610	2/5/07	2/5/08
Spectrum analyzer, RF Sec	Hewlett-Packard	8566B	3026A19151	4/17/07	4/17/08
Spectrum analyzer, Disp Sec	Hewlett-Packard	8566B	3014A06682	4/17/07	4/17/08
Quasi-Peak Adapter	Hewlett-Packard	85650A	2521A00987	4/17/07	4/17/08
Spectrum analyzer, RF Sec	Hewlett-Packard	8566B	2504A01322	4/17/07	4/17/08
Spectrum analyzer, Disp Sec	Hewlett-Packard	8566B	2403A07048	4/17/07	4/17/08
Spectrum Analyzer	Hewlett-Packard	E7405A	US39440174	10/71/06	10/7/07
Attenuator	Weinschel	6dB	AV9010	N/A	N/A
Attenuator	Weinschel	6dB	BB0790	N/A	N/A
Attenuator	Weinschel	6dB	BS6545	N/A	N/A
Attenuator	Weinschel	66-30-34	BT0226	N/A	N/A
Attenuator	Weinschel	10dB	BU3922	N/A	N/A
Attenuator	Weinschel	20dB	BJ6277	N/A	N/A
RF Limiter	Hewlett-Packard	11867A	03533	N/A	N/A
Loop Antenna	EMCO	6502	3442	4/26/07	4/26/08
Biconical Antenna	EMCO	3110B	9807-3128	2/2/06	2/2/08
Log-periodic Antenna	EMCO	3148	9707-1030	1/31/06	1/31/08
Double Ridged Horn Ant.	EMCO	3115	9812-5638	1/27/06	1/31/08
Horn Antenna	EMCO	RA42-K-F-4B-C	981982-002	N/A	N/A
Pre-amplifier	Hewlett-Packard	8449B	3008A01353	1/9/07	1/9/08
Pre-amplifier	SON-HP	310	185661	1/9/07	1/9/08
Multi-device Controller	EMCO	2090	9912-147-7	N/A	N/A
Bore Sight Antenna Mast	EMCO	2071-2	2239	N/A	N/A
Frequency Counter	Hewlett-Packard	53150A	154486	10/20/06	10/20/07
Switch Control Unit	Hewlett-Packard	3488A	14202	N/A	N/A
50Ω Resistive Load	WA	1434-3	NH925	N/A	N/A
50Ω Resistive Load	WA	1434-3	NH927	N/A	N/A
50Ω Resistive Load	WA	1434-3	NH928	N/A	N/A
50Ω Resistive Load	WA	1434-3	NJ558	N/A	N/A
50Ω Resistive Load	WA	1434-3	NH926	N/A	N/A
50Ω Resistive Load	WA	1434-3	NH924	N/A	N/A
Multi-meter	Fluke	23	49330331	1/9/07	1/9/08
AC/DC Current/Multimeter	FWB	C-600	94040227	1/9/07	1/9/08
Microwave Synthesizer	Gigatronics	12520A	0214004	10/10/06	10/31/07
RF Switch (4)	Advanced	S6810-20/561/J	2223A01767	N/A	N/A
	Technical		, , ,		
	Material				

Switch Control Unit	Agilent	34980A	260239	N/A	N/A
Tunable Bandreject Filter	K&L	3TNF-500/1000-	2	N/A	N/A
_		N/N			
Tunable Bandreject Filter	K&L	3TNF-	2	N/A	N/A
		1000/2000-N/N			
Low Pass Filter	TriliThic	10LC800-3-AA	200201001	N/A	N/A
Low Pass Filter	TriliThic	10LC790-3-AA	200201040	N/A	N/A
High Pass Filter	Trilithic	4HC1350/9000-	200646061	N/A	N/A
		1-kk			
High Pass Filter	Trilithic	5HC2850/18050-	200352136	N/A	N/A
		1.8-kk			
RF Limiter (0.1-12.4GHz,	Agilent	11693A	08159	N/A	N/A
5mW/1W)					
RF Attenuator (2)	Aeroflex/Weins	41-10-11	59734, 59735	N/A	N/A
	chel				
RF Attenuator	Aeroflex/Weins	41-30-12	61228	N/A	N/A
	chel				
RF Attenuator	Aeroflex/Weins	66-10-33	BT3922	N/A	N/A
	chel				
DC Power Supply	Hewlett-Packard	6623A	3351A03404	N/A	N/A