APPLICANT: Lucent Technologies FCC ID: AS5CMP-33

EXHIBIT 15

Section 2.1047 Measurements Required: Modulation Characteristics

The TDMA modulation utilized by the Cellular TDMA Dual Radio Module (PDRM) 44WR54, subject of a separate application for certification under AS5CMP-32, is the standard $\pi/4$ differentially encoded quadrature phase shift keying ($\pi/4$ DQPSK). The modulation accuracy measurements were performed with all 3 TDMA time slots modulated with a pseudo-random bit stream. Measurements were made at the transmit antenna terminal with the single carrier power level set to +30.8 dBm (1.2 Watts), using the B-Band simplex transmit bandpass filter. The CDRM was tuned to 1) Cellular B-Band channel Ch 400, 882.00 MHz, and then to 2) the highest settable Cellular B-Band channel Ch 799, 893.97 MHz. The required modulation accuracy is specified in TIA/EIA/IS-138-A, July 1996, Section 3.3.2 Digital. The "minimum standard", or limitation, is stated that the RMS error vector magnitude shall be less than 12.5%.

Measurements were made with a Rohde & Schwarz Spectrum Analyzer 20 Hz to 26.5 GHz FSEM, Model 1079.8500.30, calibrated as required for ISO-9001 compliance. The measurement results and test set-up block diagram are included.

RESULTS:

The Cellular TDMA Multi Carrier Linear Amplifier, 44WA29, does not contain nor incorporate modulation circuitry. This test procedure demonstrates that it also does not degrade the modulation accuracy of the Cellular TDMA Dual Radio Module (CDRM) transceiver, 44WR54. The measurement data below demonstrates full compliance with the modulation accuracy requirements specified in TIA/EIA/IS-138-A. The error vector magnitude is less than 12.5% at the Cellular Frequencies measured.

RefLvl -10 dBm	CMCL.	A400		DF SR		2 MHz 3 kHz	Symbol∕Errors Standard NADC F	
			Symbol	Table				
0	10101001	00011101	11100100	10100111	1011100	1		Α
40	01110011	00011011	00001001	11101000	1110110	00		
80		01001100						
120		01111011						
160		11100011						
200		11001000						
240		11101111						
280 320	10101111 0110	00101000	10100111	11100101	UUU 1U1L	JU		
			Error Su	ummary				
	Vector Mag		% rms	3.98		at syn		
	ude Error		% rms			at syn		
Phase				-2.27		at syn	151	
Freq E		270.25		270.25		,	0000	
IQ Off	ude Droop set	0.24	dB∕sym %	Rho Fai IQ Imbi).9996).86 %	

Modulation Accuracy: Cellular TDMA carrier at the transmit antenna terminal

Cellular B-Band Channel 400, 882.00 MHz

Error Vector Magnitude = 1.73% rms

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Ref Lvl -10 dBm	CMC	LA79	9	CF SR			Symbol/Errors Standard NADC f	=
			Symbol	Table				1
0	10101001	00011101	11100100	10101101	10111000			Α
40	10001010	01010100	11001010	00111110	10101101			
80	10110011	01011100	01101111	00011111	01000010			
120	11110110	00001001	10110000	10110101	10101100			
160	10100111	10100011	11110001	01011000	00100000			
200	01000010							
240	01110101							
280	10110000	01110111	11110110	11111110	00010100			
320	0110							
			Error Su	ummary				1
Error V	ector Mag	2.08	% rms	6.23	% Pkat	sym	141	1
Magnitu	de Error	0.83	% rms	-2.51	% Pkat	sym	156	
Phase E	rror	1.09	deg rms	-3.55	deg Pk at	sym	141	
Freq Er	ror	273.86	Hz	273.86	Hz Pk			
Amplitu	ide Droop	0.24	dB∕sym	Rho Fa	ctor	0	.9996	
IQ Offs	e t	0.17	%	IO Imba	alance	0	.82 %	

Modulation Accuracy: Cellular TDMA carrier at the transmit antenna terminal Cellular B-Band Channel 799, 893.97 MHz Error Vector Magnitude = 2.08% rms

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EXHIBIT 15

Test set-up for measuring the modulation accuracy of the Cellular TDMA Dual Radio Module transceiver.

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