

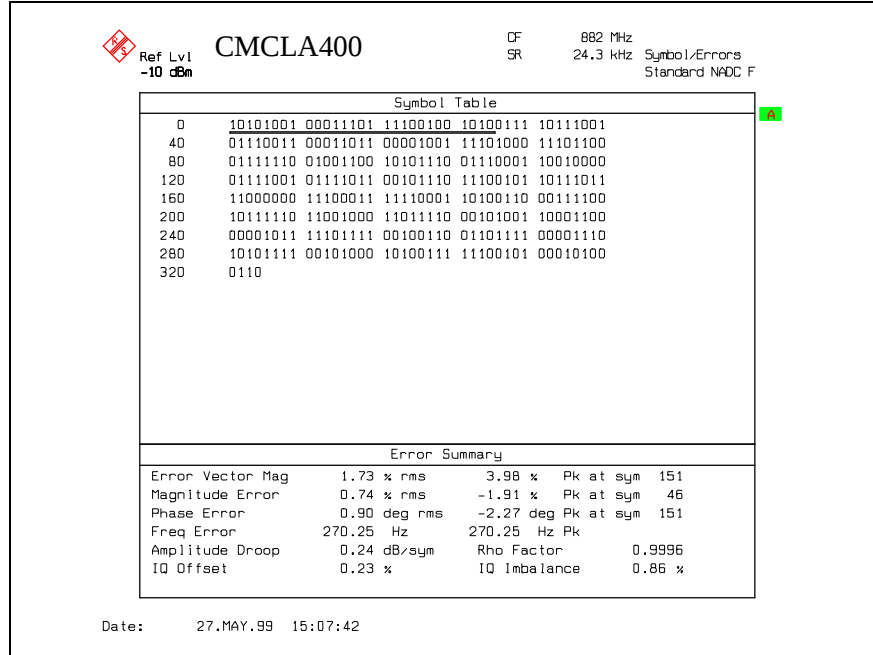
**EXHIBIT 15****Section 2.1047 Measurements Required: Modulation Characteristics**

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.



Modulation Accuracy: Cellular TDMA carrier at the transmit antenna terminal  
 Cellular B-Band Channel 400, 882.00 MHz  
 Error Vector Magnitude = 1.73% rms

APPLICANT: Lucent Technologies

FCC ID: AS5CMP-33

## EXHIBIT 15

Ref Lvl  
-10 dBm

CMCLA799

CF

893.97 MHz

SR

24.3 kHz

Symbol/Errors  
Standard NADC F

Symbol Table

|     |          |          |          |          |          |
|-----|----------|----------|----------|----------|----------|
| 0   | 10101001 | 00011101 | 11100100 | 10101101 | 10111000 |
| 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 | 11001101 | 11100110 | 00000000 | 11100010 |
| 240 | 01110101 | 10000000 | 10110100 | 01000010 | 11011001 |
| 280 | 10110000 | 01110111 | 11110110 | 11111110 | 00010100 |
| 320 | 0110     |          |          |          |          |

Error Summary

|                  |              |              |           |     |
|------------------|--------------|--------------|-----------|-----|
| Error Vector Mag | 2.08 % rms   | 6.23 %       | Pk at sym | 141 |
| Magnitude Error  | 0.83 % rms   | -2.51 %      | Pk at sym | 156 |
| Phase Error      | 1.09 deg rms | -3.55 deg    | Pk at sym | 141 |
| Freq Error       | 273.86 Hz    | 273.86 Hz    | Pk        |     |
| Amplitude Droop  | 0.24 dB/sym  | Rho Factor   | 0.9996    |     |
| IQ Offset        | 0.17 %       | IQ Imbalance | 0.82 %    |     |

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

APPLICANT: Lucent Technologies

FCC ID: AS5CMP-33

## EXHIBIT 15

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

## FLEXENT™ Cellular TDMA Microcell J41698B-1

