

**APPLICANT: Lucent Technologies**

**FCC ID: AS5CMP-33**

**EXHIBIT 20**

**Special Test: Measurements Required: Two-Tone Intermodulation Product Suppression**

The two-tone intermodulation product test is typically a test of the linearity of an amplifier circuit. The intermod limitation is determined from  $43 + 10 \log$  (Power in Watts) attenuation below the carrier (dBc). Measurement was made at the transmit antenna terminal, with 2 signal generators providing the input signals to the Cellular TDMA Multi Carrier Linear Amplifier (CMCLA), 44WA29. The first test was performed with each signal set to 1.2 Watts (+30.8 dBm) and a tone separation of 60 kHz and then of 600 kHz, representing the rated per channel power level. The required intermodulation product attenuation is 43.8 dBc at 1.2 Watts/tone. The second test represented the maximum rated power level at 6 Watts (+37.8 dBm) per signal, for a total rated composite power level of 12 Watts, with signal separations of 60 kHz and of 600 kHz. The required intermodulation product attenuation is 50.8 dBc for 6 Watts/tone.

**RESULTS:**

The data plots attached below are summarized in the following table. All measured intermodulation products exceeded the 20 dB reportable criteria as specified in Part 2.1057(c): *The amplitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be reported.*

The Cellular Multi Carrier Linear Amplifier (CMCLA), 44WA29, demonstrated full compliance with the requirements for intermodulation product suppression.

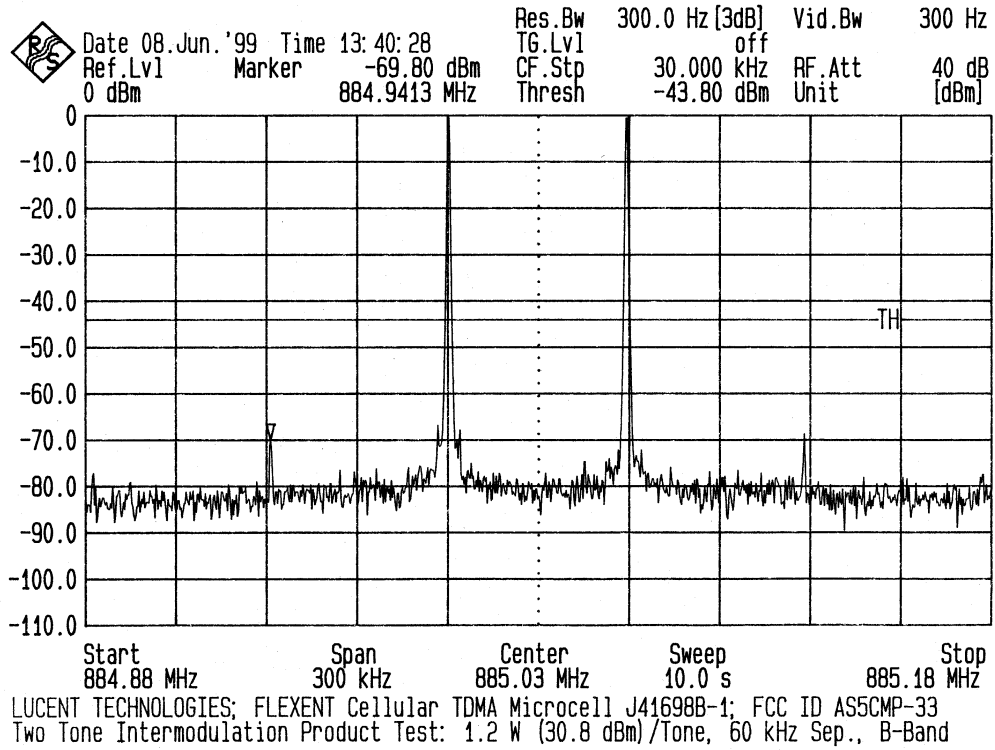
Power Level Per Signal	Signal Separation	Required Attenuation Limit	Measured Intermod Attenuation	Passing Margin
1.2 Watts	60 kHz	43.8 dBc	69.80 dBc	26.0 dB
1.2 Watts	600 kHz	43.8 dBc	68.15 dBc	24.4 dB
6 Watts	60 kHz	50.8 dBc	76.64 dBc	25.8 dB
6 Watts	600 kHz	50.8 dBc	76.08 dBc	25.3 dB

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## EXHIBIT 20

**Two-Tone Intermodulation Product Suppression  
1.2 Watts per Signal at 60 kHz Separation**



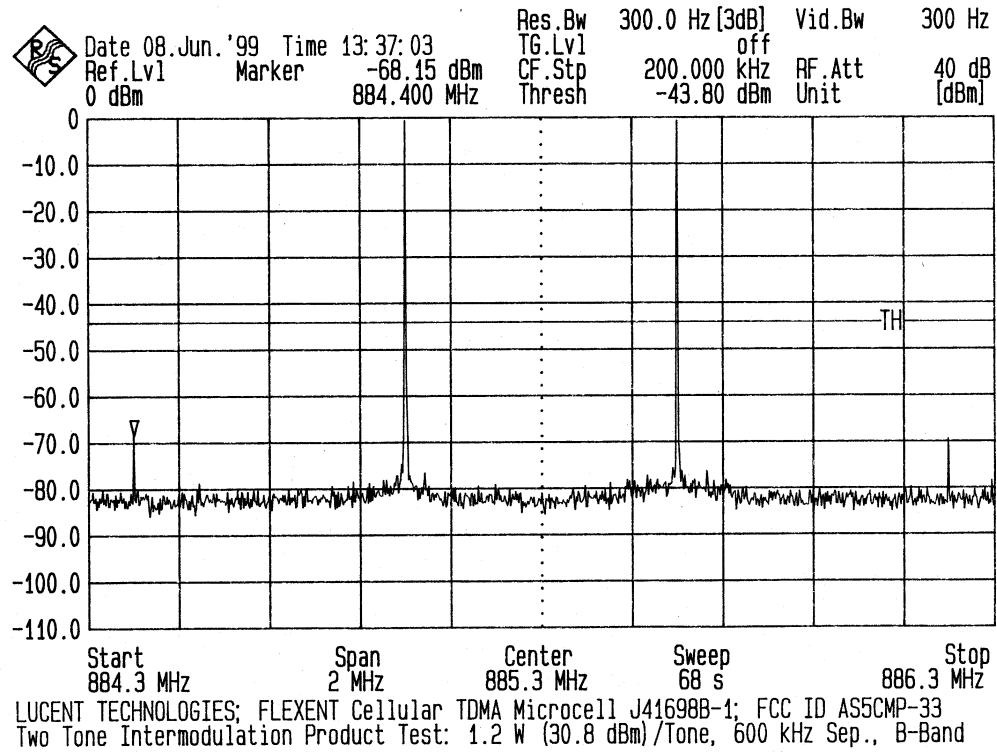
Two tones with 60 kHz separation and equal power levels set to 1.2 Watts (+30.8 dBm)/signal at the transmit antenna terminal. The required limitation is 43.8 dBc.

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## EXHIBIT 20

**Two-Tone Intermodulation Product Suppression  
1.2 Watts per Signal at 600 kHz Separation**



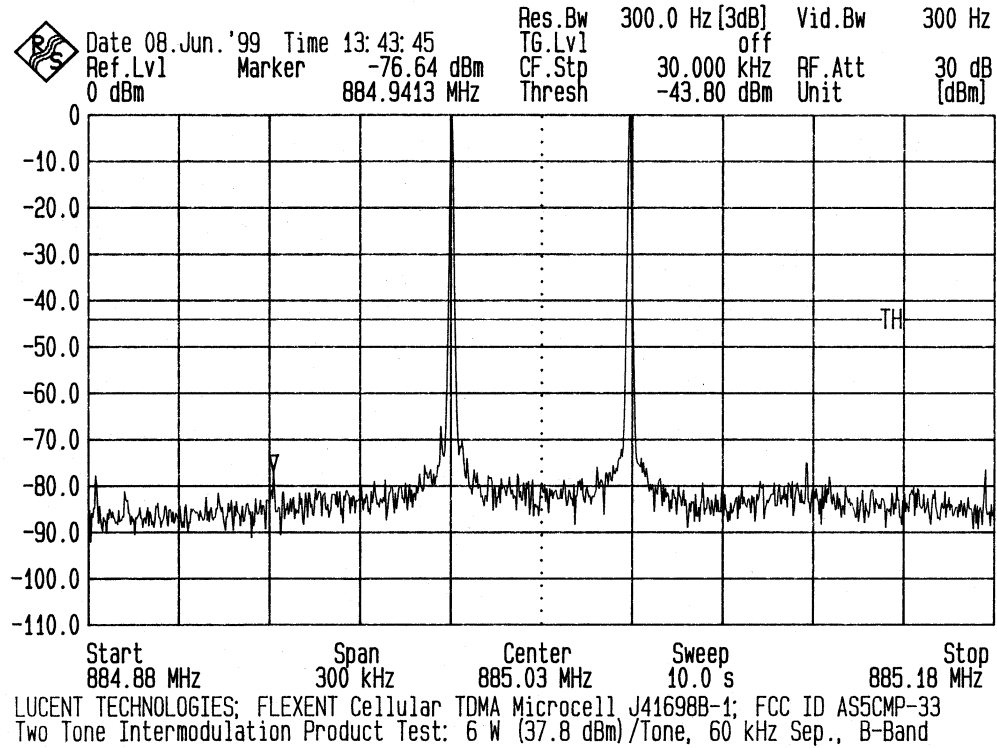
Two tones with 600 kHz separation and equal power levels set to 1.2 Watts (+30.8 dBm)/signal at the transmit antenna terminal. The required limitation is 43.8 dBc.

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## EXHIBIT 20

**Two-Tone Intermodulation Product Suppression  
6 Watts per Signal at 60 kHz Separation**



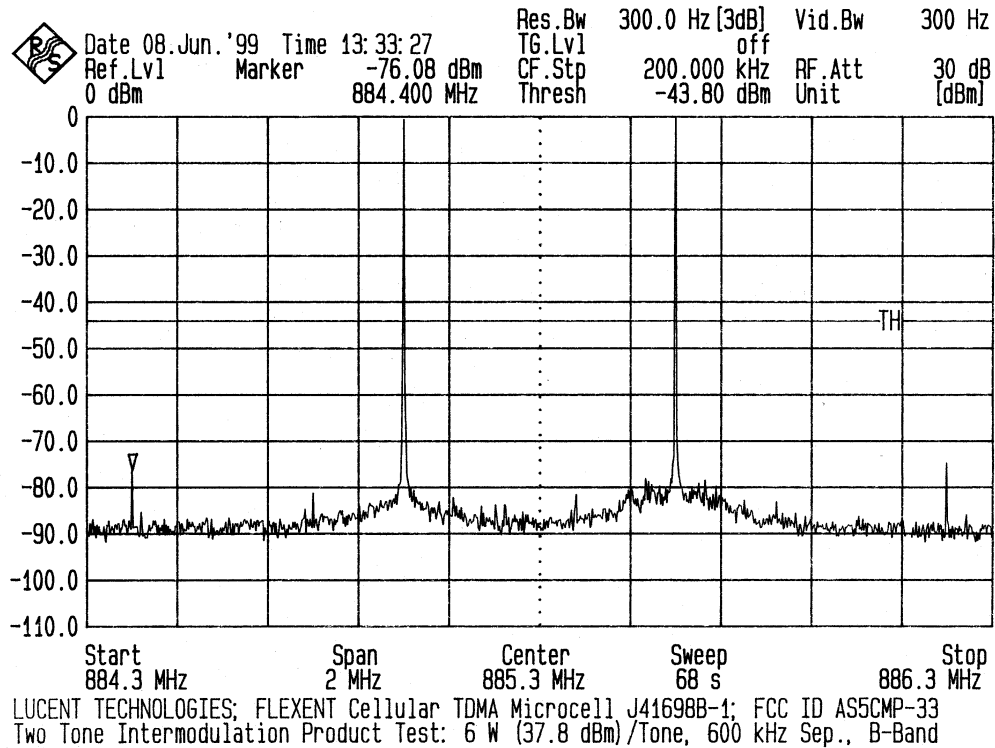
Two tones with 60 kHz separation and equal power levels set to 6 Watts (+37.8 dBm)/signal at the transmit antenna terminal. The required limitation is 50.8 dBc.

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## EXHIBIT 20

**Two-Tone Intermodulation Product Suppression  
6 Watts per Signal at 600 kHz Separation**



Two tones with 600 kHz separation and equal power levels set to 6 Watts (+37.8 dBm)/signal at the transmit antenna terminal. The required limitation is 50.8 dBc.

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## EXHIBIT 20

Special Test: Measurements Required: Two-Tone Intermodulation Product Suppression

## Test Set-UP Configuration

