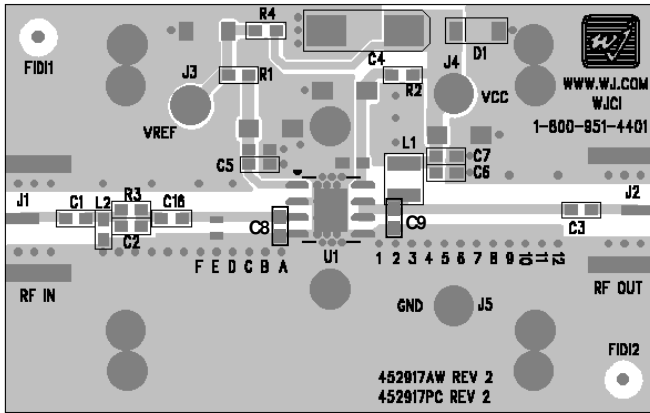




### Summary

The AH312 is a high linearity 2-Watt MMIC amplifier targeted for 2<sup>nd</sup> and 3<sup>rd</sup> generation wireless mobile infrastructure as well as other applications requiring high output power. At 1.96 GHz, the amplifier typically has 11 dB gain, +33 dBm P1dB, and +51 dBm OIP3. On the product's datasheet, the amplifier is shown as having an operational frequency range between 400 – 2300 MHz. The higher end of the frequency range is set at 2.3 GHz because of the limited amount of available gain from the device. **This application note examines the performance of the AH312 tuned for 1400 MHz, for applications such as personal digital cellular (PDC).** At this frequency, the amplifier has 14.0 dB gain, +34.5 dBm P1dB, and +48.25 dBm OIP3. More details of the circuit application are shown below. Measured results are shown on the following page.

Circuit Board Material: .014" Getek ML200DSS ( $\epsilon_r = 4.2$ ), 1 oz copper  
The main microstrip line has a line impedance of 50  $\Omega$ .



### Measured RF Performance

Frequency	1400 MHz
S21 – Gain	14.0 dB
S11 – Input Return Loss	-12 dB
S22 – Output Return Loss	-29 dB
Output P1dB	+34.5 dBm
Output IP3 (+17 dBm / tone, 1 MHz spacing)	+48.25 dBm
Device / Supply Voltage	+5 V
Device Current	800 mA

