Application Note

AH31 61 MHz Reference Design

The Communications Edge ™

Product Information

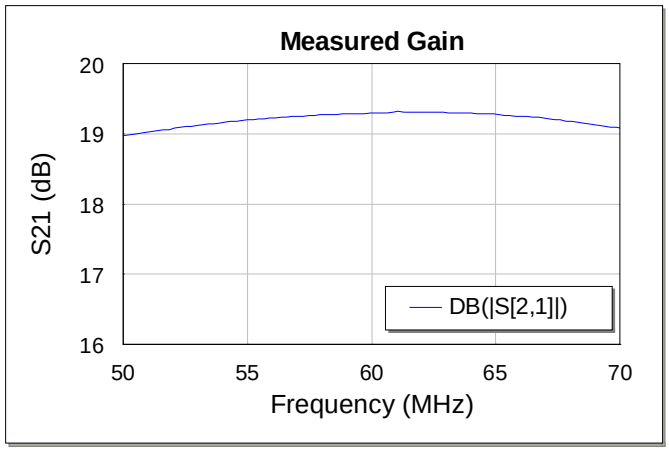
Summary:

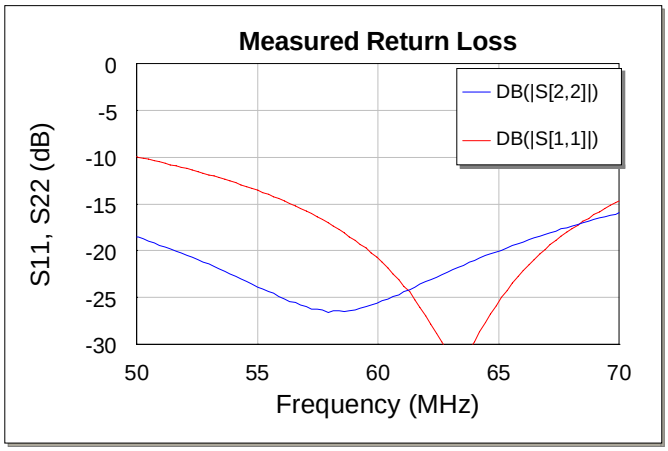
The AH31 is a high linearity, 22 dBm amplifier targeted at mobile infrastructure. **This application note details the operation and schematic of the AH31 targeted at the IF frequency of 61 MHz.** The tuned AH31 61 MHz application circuit produced 19 dB gain, +22 dBm P1dB, and +42 dBm OIP3 with an input / output return loss of better than 20 dB. This circuit is ideal for use as a driver amplifier for applications requiring high linearity and gain with relatively low noise figure.

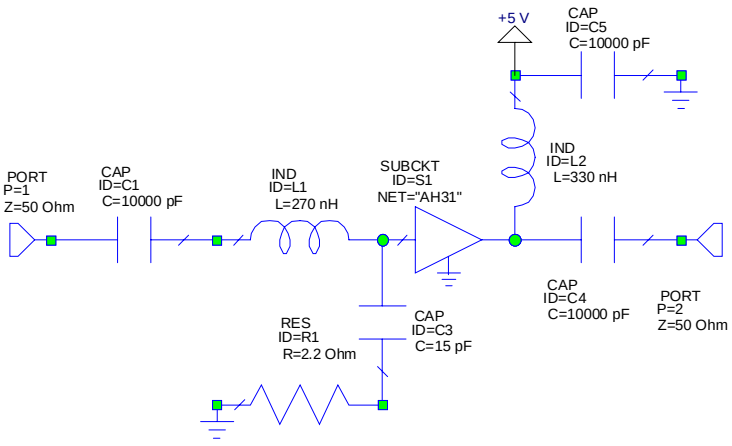
Measured RF Performance

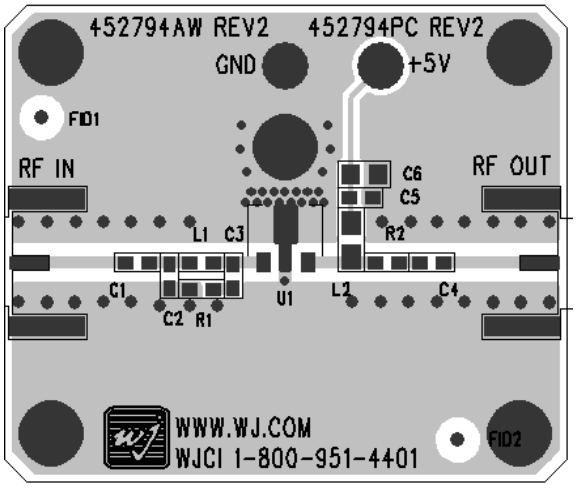
Frequency	61 MHz
S21 – Gain	19.3 dB
S11 – Input Return Loss	-24 dB
S22 – Output Return Loss	-25 dB
Output IP3 (+10 dBm / tone, 1 MHz spacing)	+42 dBm
Output P1dB	+22 dBm
Noise Figure	2.4 dB
Supply Voltage	+5 V
Supply Current	150 mA

Measured parameters were taken at 25 °C.









Notes:

1. The amplifier should be connected directly to a +5 V regulator; no dropping resistor is required.
2. If no DC signal is present at the input (pin 1), C1 can be removed. The gate is internally grounded in the amplifier.
3. R2 is used as a placeholder for a different application circuit. It can be removed from the circuit.
4. C2 (from the silkscreen) is not utilized in this application circuit.