

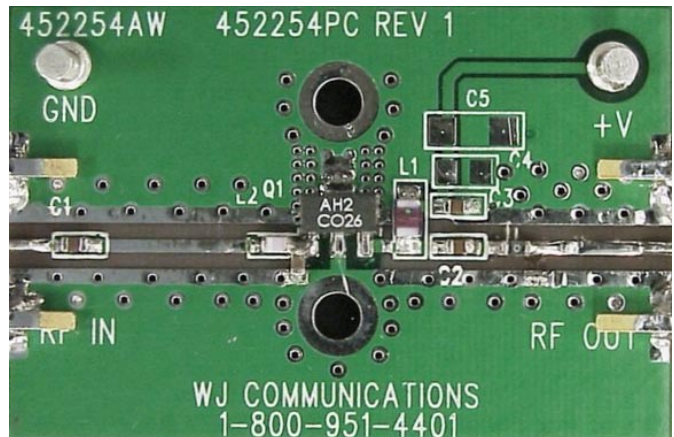
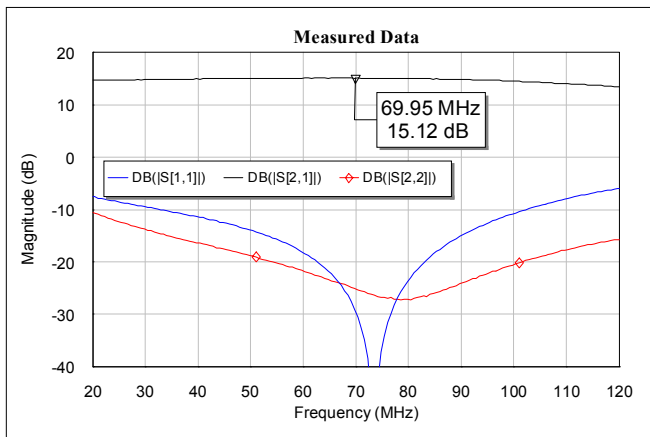
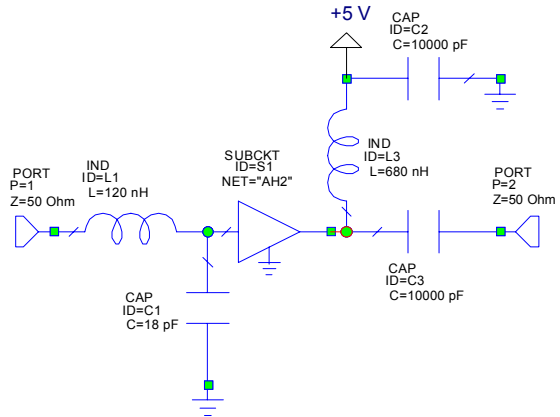


### Summary

The WJ AH2 amplifier is normally targeted for 75 Ω single-ended CATV applications. Because of its capabilities over a broad frequency range, it is also suitable for standard 50 Ω IF applications. In this application note, details of the circuit and layout as well as measured data are shown for an AH2 tuned for a 70 MHz IF application. Because this application is centered at 70 MHz – a relatively low frequency – there is very little sensitivity to the performance of the circuit with variation in the spacing of the passive matching and biasing components. Performance information for the AH2 is shown in the 2<sup>nd</sup> column of the following table (under “Standard Application”).

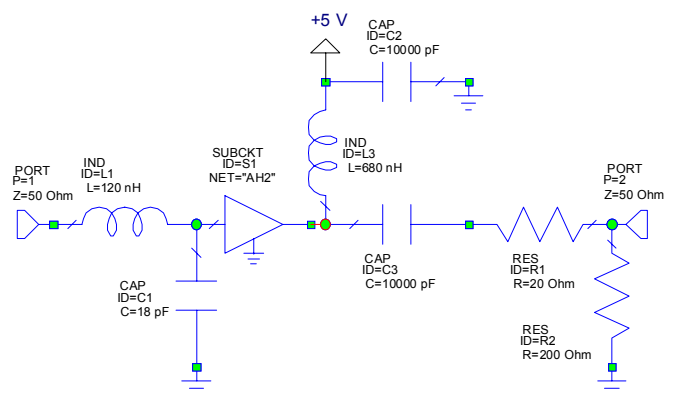
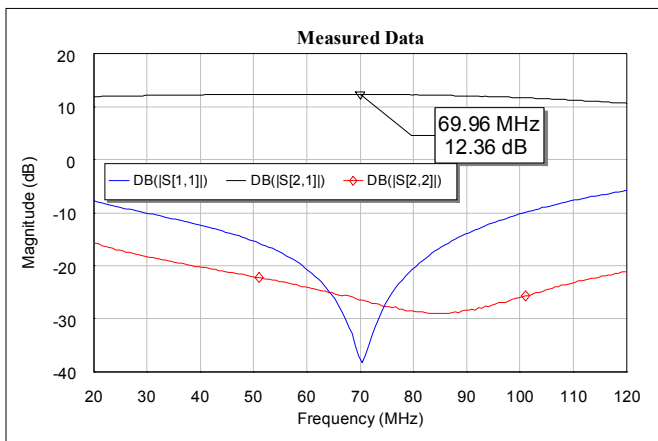
### Measured RF Performance

Application	Standard	Lower Gain
Frequency	70 MHz	70 MHz
S21 – Gain	15.1 dB	12.4 dB
S11 – Input Return Loss	-30 dB	-37 dB
S22 – Output Return Loss	-25 dB	-27 dB
Output P1dB	+22 dBm	+19 dBm
Output IP3 (+5 dBm / tone, 1 MHz spacing)	+40 dBm	+37.3 dBm
Noise Figure	4.3 dB	4.3 dB
Drain Voltage	+5 V	+5 V
Drain Current	150 mA	150 mA



### Lower Gain Applications

For IF applications where the gain is required to be between lower than 13 dB and performance isn't as critical, a simple two-element resistive pad can be added after the output blocking capacitor, as detailed in the schematic diagram below. Details of the measured performance are shown in the third column in the table shown above (under “Lower Gain Application”). As expected, this lowers the gain, P1dB, and OIP3 performance slightly.



Specifications and information are subject to change without notice