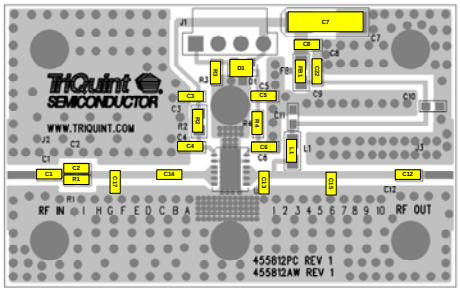
Application Note

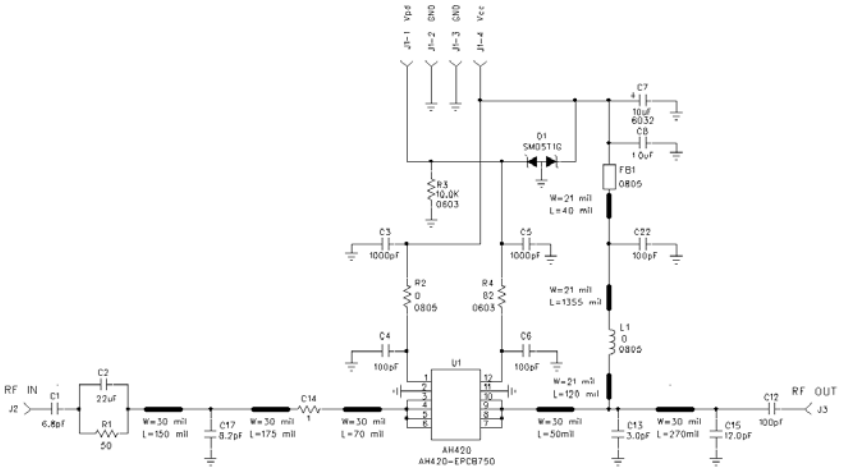
AH420 700-800 MHz Reference Design

Typical O-FDMA Performance at 25°C

Frequency (MHz)	700	750	800	Units
Gain	16.7	17.4	17.1	dB
Input Return Loss	12	12	6.3	dB
Output Return Loss	4.2	5.7	11	dB
EVM Pout=+26 dBm	2.3	1.7	2.2	%
Output P1dB	+33.5	+34.5	+34.2	dBm
Output IP3 Pout=+26 dBm/tone, 1MHz spacing	+46.6	46.3	44.5	dBm
Quiescent Current, Icq	800			mA
Vcc	+5			V



Circuit Board Material: 0.014" GETEK, single layer, 1 oz copper, ε_r = 4.2, Microstrip line details: width = .030", spacing = .030"

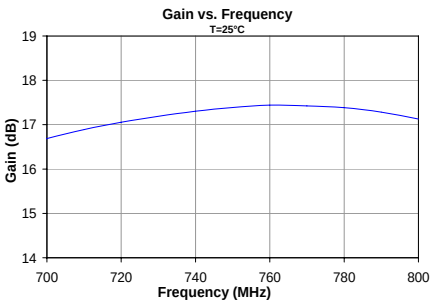


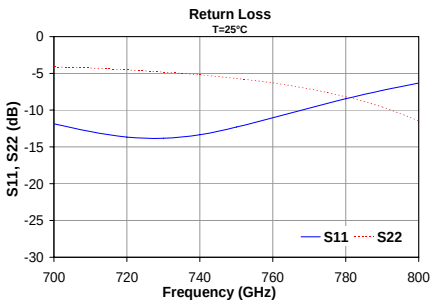
Notes:

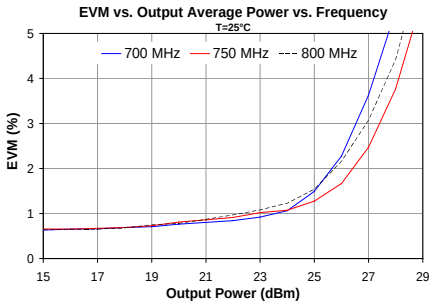
1. The primary RF microstrip line is 50 Ω.
2. Do not exceed 5.5V on Vpd or Vcc or damage will occur to D1.
3. Components shown on the silkscreen but not on the schematic are not used.
4. 0 Ω jumpers can be replaced with copper trace in target application.
5. The edge of C14 is placed 70 mil from the AH420 RFin pin. (2.9° @ 750 MHz)
6. The edge of C17 is placed 175 mil from the edge of C14. (7.2° @ 750 MHz)
7. The edge of C13 is placed 50 mil from the AH420 RFout pin. (2.0° @ 750 MHz)
8. The edge of C15 is placed 270 mil from the edge of C13. (11° @ 750 MHz)

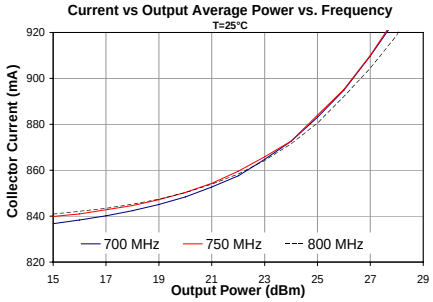
700-800 MHz Application Circuit Performance Plots

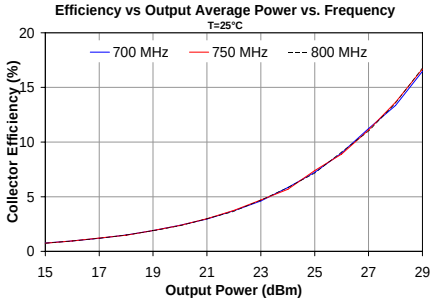
802.16-2004 O-FDMA, 64QAM-1/2, 1024-FFT, 20 symbols and 30 subchannels, 5 MHz Carrier BW

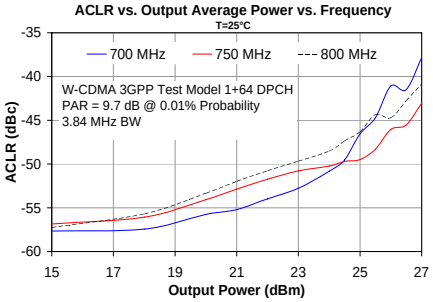


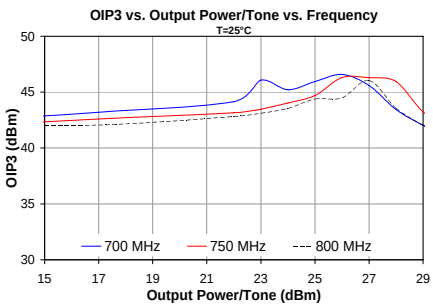












Specifications and information are subject to change without notice