AFEM-9601

802.11a/b/g/n (2.4 & 4.9-5.9 GHz) Front End Module

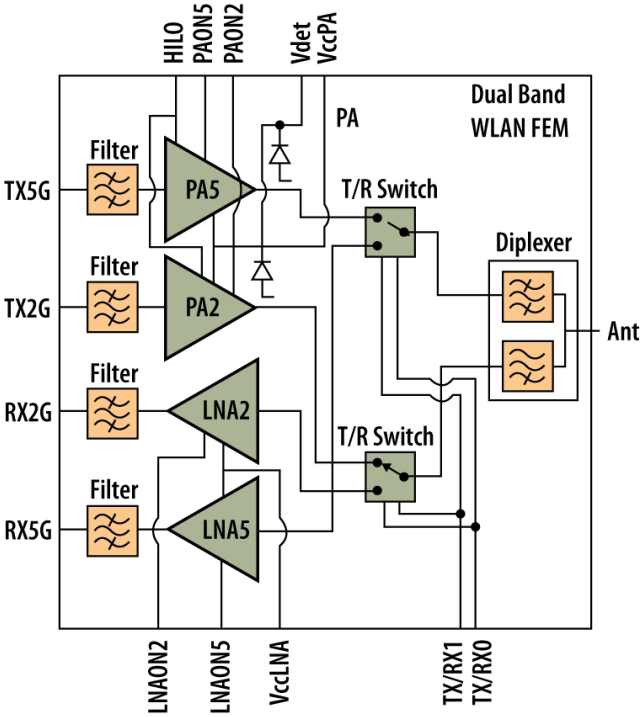
Product Brief

Description

Avago Technologies AFEM-9601 dual band Front End Module is designed for WLAN applications in both the 2.4GHz and 4.9-5.9 GHz frequency ranges. The FEM is optimized for IEEE 802.11a/b/g/n WLAN applications with dual linear power amplifiers, dual low noise amplifiers, dual Tx/Rx switches, diplexer, Tx and Rx filtering, and direct CMOS compatible control and detect functions. The FEM exhibits flat gain and good match while providing linear power efficiency and low noise figure for excellent dynamic range. It utilizes Avago Technologies proprietary GaAs Enhancement-mode pHEMT technology for superior performance across many voltage or temperature levels.

The AFEM-9601 is provided in an LTCC based substrate for minimum size. It's 4 x 6 mm size and 0.75mm pad pitch is ideal for small radios.

Functional Block Diagram



Features

- Advanced GaAs E-pHEMT
- 50 Ω all RF ports
- Stable under all loads or conditions
- -10°C to +85°C operation
- Over 17dBm Pout meeting all 802.11 masks.
- Under 4.0dB NF including switches and filters
- Integrated high directivity detector for load insensitive, temp compensated power detection
- Integrated CMOS compatible power down and Tx/Rx mode select, 115ns switching time
- Integrated bias chokes and DC blocking
- +3.3V supply
- 10 uA or less leakage current all amplifiers
- ESD protection all ports above 1200V HBM
- Small size: 4 x 6 x 1.2 mm

Specifications (2.4-2.5 GHz)

Rx Specifications

- 9.5 dB Small Signal Gain
- 3.7dB total Noise Figure

Tx Specifications

- 29 dB Small Signal Gain, 110mA quiescent cur.
- -30 dB EVM @ 14dBm Po and 135mA

Specifications (4.9-6.0 GHz)

Rx Specifications

- 12 dB Small Signal Gain
- 3.8 dB total Noise Figure

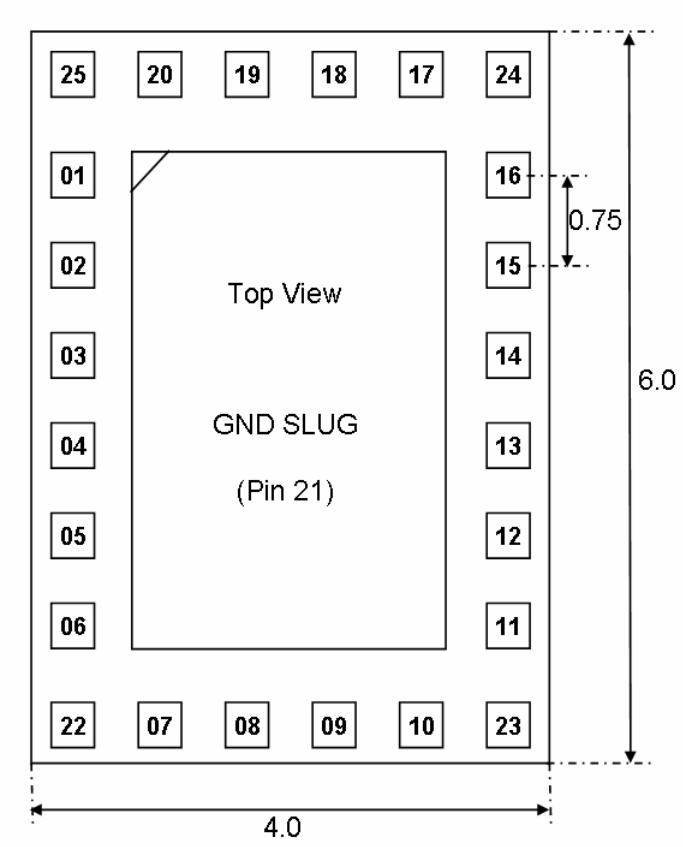
Tx Specifications

- 27 dB Small Signal Gain, 128mA quiescent cur.
- -30 dB EVM @ 14dBm Po and 150mA

Absolute Maximums (Exceeding of any of these conditions may result in damage)

Parameter	Normal	Minimum	Maximum	Unit
RF Input Power	-		10	dBm
DC Supply Voltage	3.3		5.0	V
Power Down Voltage	2.6	0	3.0	V
Mode Select Voltage	2.6	0	3.0	V
Storage Temperature	27			dB
Operation Temperature	-	-55	+125	°C

Pin-out and Dimensions



Pin #	Name	Description
1	TX/RX0	Switch mode bit 0
2	VCCLNA	DC Supply Voltage
3	LNAON5	Pwr Dwn LNA 5-6G
4	GND	
5	GND	
6	LNAON2	Pwr Dwn LNA 2.4G
7	TX2	Tx 2.4GHz input
8	RX2	Rx 2.4GHz output
9	RX5	Rx 5-6GHz output
10	TX5	Tx 5-6 GHz input
11	PAON2	Pwr Down PA 2.4G
12	PAON5	Pwr Down PA 5-6G
13	VCCPA	DC Supply Voltage
14	TX/RX1	Switch mode bit 1
15	IDON	ID Voltage On
16	HI/LOLIN	Mode select
17	VPD	Tx detector output
18	GND	
19	ANT	Antenna
20	GND	
21	GND	
22	GND	
23	GND	
24	GND	

For product information and a complete list of distributors, please go to our web site: **www.avagotech.com**

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