

DESCRIPTION

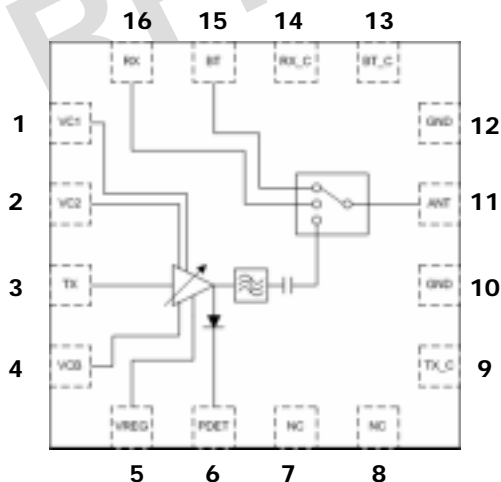
The AP1286 is a linear, low current consumption RF frond-end IC (FEIC) which consists of power amplifier and SP3T switch for ISM band wireless application. It offers highly integrated Input / Output matching on chip to reduce the bill of material. This RF FEIC is developed for portable product of ISM band, and compact device or embedded module application of 802.11b/g/n WLAN system with stable and outstanding performance.

AP1286 is housed in a 3 x 3 (mm), 16-pin, QFN leadless package, a high performance frond-end IC.

Major Applications

- IEEE 802.11 b/g/n WLAN NIC
- IEEE 802.11 b/g/n embedded module
- 2.4 GHz ISM Band portable device
- 2.4 GHz wireless headphone

Pin Assignment



QFN-16pin, 3x3 (mm)

KEY FEATURES

High Gain

29 dB

Linear Power

EVM = 3% @ 19dBm

High Efficiency

PAE 30% @ 26dBm, Vcc 3.3 V

PAE 17% @ 19dBm, Vcc 3.3 V

Pin Details

Pin Number	Name	Description
1	VC1	Supply voltage input for the 1 st . stage's collector of PA
2	VC2	Supply voltage input for the 2 nd . stage's collector of PA
3	TX	Tx RF power input of PA
4	VCB	Supply voltage input of PA's biasing circuit
5	VREG	PA enable voltage input
6	PDET	PA Detector output
7	NC	Floating
8	NC	Floating
9	TX_C	Tx path On/Off control voltage input of switch
10	GND	Ground
11	ANT	Antenna connection pin
12	GND	Ground
13	BT_C	BT path On/Off control voltage input of switch
14	RX_C	Rx path On/Off control voltage input of switch
15	BT	BT Signal RF Path
16	RX	Rx RF power output

Tx Chain Electrical Characteristics

VC1 = VC2 = VCB = 3.3V; VREG=2.85V; TX_C = H; BT_C =RX_C=L;
RF Modulation = IEEE 802.11g, 54Mbps data rate, 64QAM signal; TA = 25°C; unless otherwise noted.

Parameter	Specification			Units	Notes
	Min	Typ.	Max		
Freq	2.4		2.5	GHz	
Input return loss		15		dB	
Output return loss		10		dB	
P1dB		26		dBm	
Power Gain		29		dB	
Linear Power		19 23		dBm	EVM = 3% with 54Mbps, 64QAM modulation 1 Mbps DSSS, meet spectrum mask spec.
Harmonics		-40 -40		dBc	2fo@26dBm, CW mode 3fo@26dBm, CW mode
Iref		2.5		mA	@ Idle current
Idle current		85		mA	
Current Consumption		145 TBD		mA mA	@19dBm with 54Mbps, 64QAM modulation @23dBm with 1 Mbps DSSS modulation
PAE		17 TBD		% %	@19dBm with 54Mbps, 64QAM modulation @23dBm with 1 Mbps DSSS modulation
Detector output		TBD		V	@19dBm

Tx Chain Absolute Maximum Ratings

Parameter	Rating	Unit
DC Power Supply For Collector	5	V
DC Supply Current For Collector	500	mA
RF Input Power	+0	dBm
Operating Ambient Temperature	-40~+85	°C
Storage Temperature	-40 to +125	°C

Important Note:

The information provided in this datasheet is deemed to be accurate and reliable only at present time. RFIC Technology Corp. reserves the right to make any changes to the specifications in this datasheet without prior notice.



Caution: ESD Sensitive
Appropriate precaution in handling, packaging
And testing devices must be observed.

Rx Chain Characteristics

RX_C =H; TX_C = BT_C = L; TA = 25°C; unless otherwise noted.

Parameter	Specification			Units	Notes
	Min	Typ.	Max		
Freq	2.4		2.5	GHz	
Insertion Loss 1		0.5		dB	RX_C=H; TX_C=BT_C=L
Insertion Loss 2		4.5		dB	RX_C=BT_C=H; TX_C=L
Input Return Loss		15		dB	
Output Return Loss		15		dB	

BT Chain Characteristics

BT_C =H; TX_C = RX_C = L; TA = 25°C; unless otherwise noted.

Parameter	Specification			Units	Notes
	Min	Typ.	Max		
Freq	2.4		2.5	GHz	
Insertion Loss 1		0.5		dB	BT_C=H; TX_C=RX_C=L
Insertion Loss 2		4.5		dB	RX_C=BT_C=H; TX_C=L
Input Return Loss		15		dB	
Output Return Loss		15		dB	

Rx Chain Absolute Maximum Ratings

Parameter	Rating	Unit
DC Power Supply For Collector	6	V
RF Input Power	+36 @ 3V	dBm
Operating Ambient Temperature	-40~+85	°C
Storage Temperature	-40 to +125	°C
ESD Machine Mode	Class M1	NA

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