



OVERVIEW DATA SHEET: BT2577

2.4GHz RF TRANSCEIVER

Features

- 2.4GHz ISM Band RF Transceiver
- ETS 300 328
- Air Interface complies with FCC Part 15 Rules
- Power Management for Minimizing Supply Current
- Power Supply $3.0V \pm 10\%$
- Power Control for TX transmission
- Operating Temperature: $-40^{\circ}C$ to $+85^{\circ}C$

Functions

- **Receiver:**
 - Low Noise Amplifier (LNA) w/ Gain Control
 - Image Reject RF Mixer
 - RSSI
 - GFSK Demodulator
 - FM (analog)/FSK (digital) output
- **Transmitter:**
 - FM/FSK Modulator
 - Upconversion Mixer
 - Power Amplifier with Power Control (9 dBm/16dBm)
- **RF VCO**

Applications

- 2.4GHz ISM Band Applications
- Wireless local loop subscriber unit
- Bluetooth™ wireless application products
- HomeRF™ wireless application products

General Description

The BT2577 is a high-performance transceiver for worldwide 2.4GHz ISM band applications. It includes on-chip features such as the LNA, Modulator / Demodulator, RF VCO, image-rejection mixer and upconversion mixer.

The receiver section of the BT2577 contains a Low Noise Amplifier (LNA), a downconverter (image rejection mixer), IF AMP, Limiter, FM demodulator, data slicer, RSSI, and RF Voltage Control Oscillator (VCO). The receiver is designed to require a minimal number of external components and pin count for cost effectiveness.

The transmitter section will share the same RF VCO with the receiver, but also includes FSK modulator, upconverter, and power amplifier. The transmitter also requires minimal external components for reducing mass production cost.

Since there is no IF or RF PLL included on the BT2577, the design engineer can choose the most appropriate RF-IF PLL to use based upon their unique system power consumption, cost and performance requirements. Keeping the PLL Synthesizer separate from the rest of the RFIC Transceiver also makes it possible to accomplish lower noise, and higher performance designs, due to the improved isolation between the high and low frequency synthesizer sections and the RX and TX signal conversion chains.

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RFICs for 850 - 2400MHZ

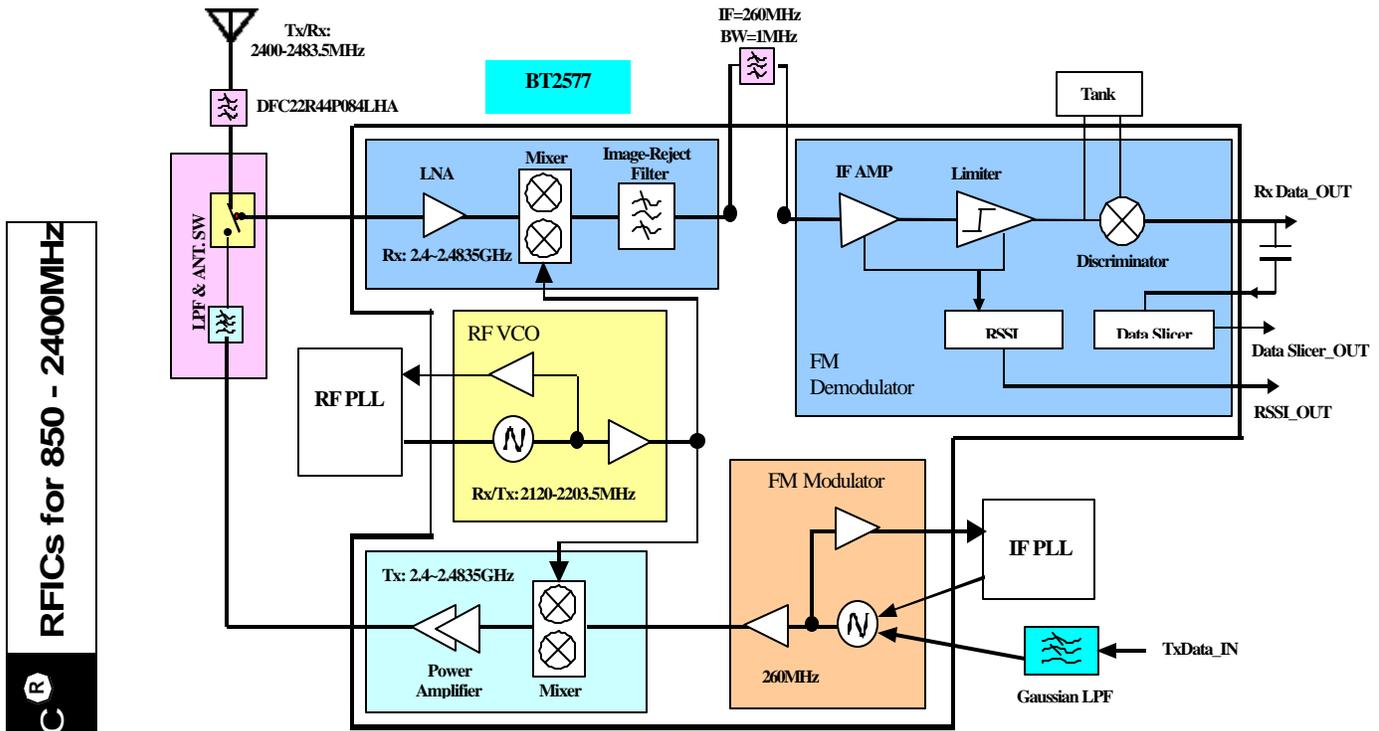
Ordering Information

BT2577 2.4GHz RF Transceiver

BTI, 13825 Cerritos Corporate Dr., Cerritos CA. 90703, U.S.A.

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Block Diagram



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PRELIMINARY

Absolute Maximum Ratings

Parameters	Value	Unit
Supply voltage	3.0 ± 10%	V
Storage temperature	-40 to 85	°C

Electrical Characteristics

Parameter	Min	Typ	Max	Unit	Remarks	Note
Power supply voltage (Vcc)	2.7	3.0	3.3	V		
Power supply current (Rx):		18.7		mA		
Power supply current (Tx):						
- High power (16dBm) mode:		31.6		mA		
- Low power (9dBm) mode:		19.8		mA		
Power supply current (RFVCO):		17.4		mA		

Design Specifications

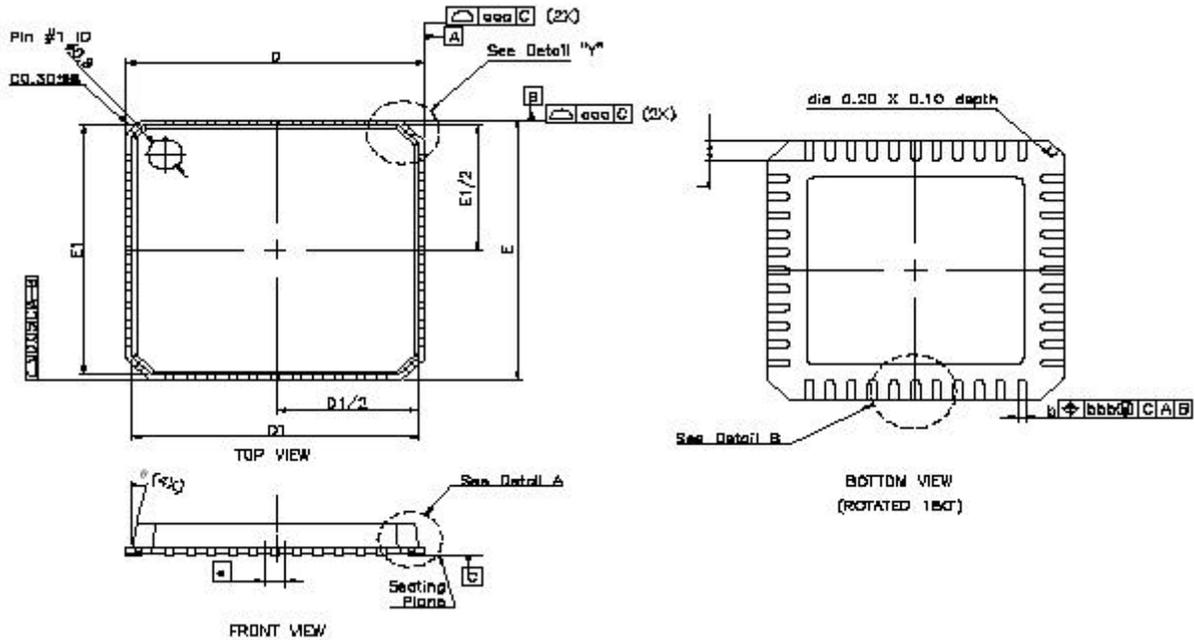
TX SPECIFICATIONS

Parameter	Min	Typ	Max	Unit	Remarks	Note
General						
RF Frequency	2400	2442	2484	MHz		
RF Output Power						
High Power Mode		16		dBm		
Low Power Mode		9		dBm		
DC Current						
High Power Mode		31.6		mA		
Low Power Mode		19.8		mA		

RX SPECIFICATIONS

Parameter	Min	Typ	Max	Unit	Remarks	Note
General						
RF Frequency	2400	2442	2484	MHz		
IF Frequency		260		MHz		
Current Consumption	11.4	18.7	23.4	mA		
Input 1dB Compression Point		-23.8		dBm		
IIP3		-19.7		dBm		
RF Sensitivity		-91		dBm		
RSSI Sensitivity		-91		dBm		

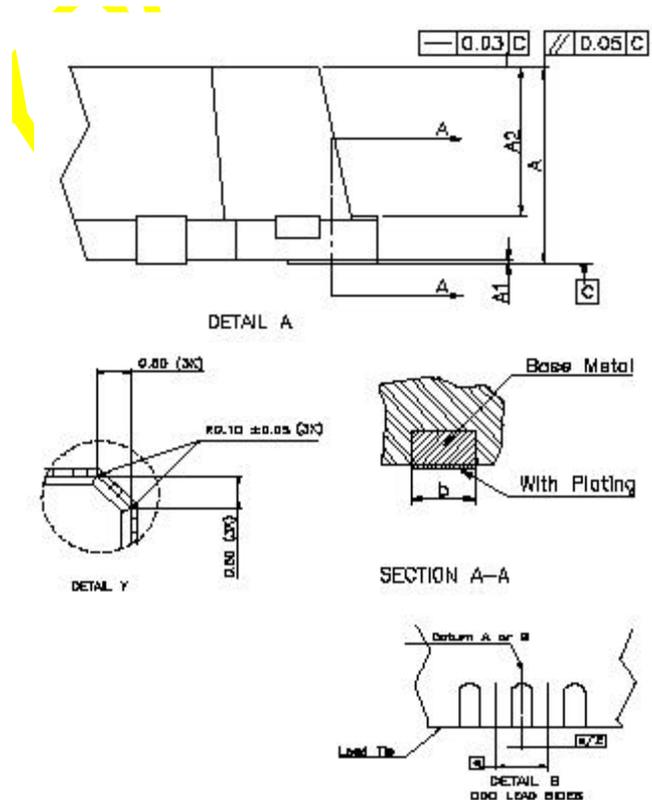
PACKAGE INFORMATION



DIMENSION TABLE
(44L QLP 7X7 BODY)

SYMBOL	SPECIFICATION	DESCRIPTION
A	1.0 MAX.	Package Seated Height
A1	5µm - 20µm	Stand-off
A2	0.70 ± 0.08	Mold Cap Thickness
D	7.00 ± 0.10	Terminal dimension "D"
D1	6.75 ± 0.10	Package length
E	7.00 ± 0.10	Terminal Dimension "E"
E1	6.75 ± 0.10	Package width
b	0.23 ± 0.04	Lead width (after plate)
b1	0.20 BSC	Lead width (before plate)
e	0.50 BSC	Lead pitch
N	44	Lead count
L	0.55 ± 0.10	Lead foot length
θ	11° ± 1	Package draft angle
aaa	0.05	Package body side alignment
bbb	0.05	Ld foot length alignment

- Controlling dimension are in millimeter (mm).
- Top package body corner radius to be 0.15 ± 0.05
- Microgap visible by 45X shall not be allowed.
- Lead tip burr shall be 0.03 maximum. (Horizontal burr)
- Vertical burr shall be not allowed
- Interlead (window) flash remain after trim shall be at 0.125 maximum. Intrusion on package body is not allowed.
- Gate residue shall not exceed 0.125 from the package body.
- Pin #1 count orientation shall be at counterclockwise direction as viewed in live-bug position.
- Package surface roughness at 0.9µm ± 0.30
- Gate burr remain after singulation shall be at 0.20 maximum.



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