

## DUAL BAND WIRELESS LAN RF TRANSCEIVER

DATA BRIEF

### 1 FEATURES

- Tri Mode 802.11a, 802.11b and 802.11g compliant RF Transceiver.
- Dual Band 2.4GHz, 4.9-5.35GHz.
- Direct conversion in the Tx and Rx paths for 802.11a and 802.11g/b requiring no bulky or expensive intermediate frequency filters.
- Dual LNA - Separate Low Noise Amplifiers for 2.4GHz and 5GHz bands delivers excellent receiver sensitivity.
- On-chip synthesizer covering all available channels in 802.11a and 802.11g/b modes.
- Supports AgileRF delivering coordinated rapid channel identification and operation over the 2.4GHz and 5GHz bands without data loss.
- On-chip anti-alias filters to support the STLC8201 ADCs.
- On-chip AGC circuit to improve overall sensitivity and full scale range of the STLC8201 ADCs.
- DC offset correction in the receive paths.
- On-chip re-construction filter to support the STLC8201 DACs.
- Serial data and control interface for synthesizer.
- Low profile cost effective TQFP48 package

### 2 APPLICATIONS

- Wireless LAN Client adapters.
- Wireless LAN Access Points,
- Wireless repeaters and bridges.

### 3 DESCRIPTION

The STMicroelectronics STLC8100 wireless LAN RF device is an integrated Direct Conversion Tx/Rx, with on-chip synthesizer for channel selection

Figure 1. Package

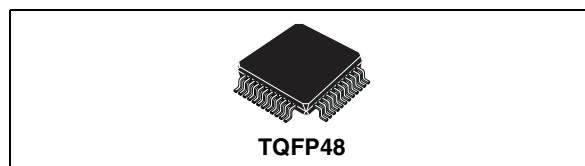


Table 1. Order Codes

Part Number	Package	Operating Temp.
STLC8100	TQFP48	0 to 70°C

across worldwide 2.4 and 5GHz bands.

It is designed to interface directly with STMicroelectronics STLC8201 series Baseband/MAC processors to provide a complete wireless LAN solution compliant with the IEEE802.11a, IEEE802.11g and IEEE802.11b standards.

The STLC8100 is a fully integrated single chip RF front end supporting the standards at both 2.4GHz and 5GHz. A direct conversion architecture is used on both Transmit and Receive paths requiring no bulky or expensive intermediate frequency filters. Separate Low Noise Amplifiers for 2.4GHz and 5GHz bands delivers excellent receiver sensitivity improving link budget and maximizing range and data rate. Independent RF transmitter outputs are provided for the 2.4GHz and 5GHz bands to ensure maximum flexibility. A fully integrated synthesizer supplies the local oscillator inputs for both RX and TX paths in both bands. Designed in CMOS for cost optimization, the single chip STLC8100 supports frequency ranges in both 2.4GHz and 5GHz bands for 802.11 a, b and g global market compliance.

The STLC8100 supports the band-interleaving feature enabling low cost access points through support of simultaneous clients in both bands using a single radio card.

Figure 2. Block Diagram

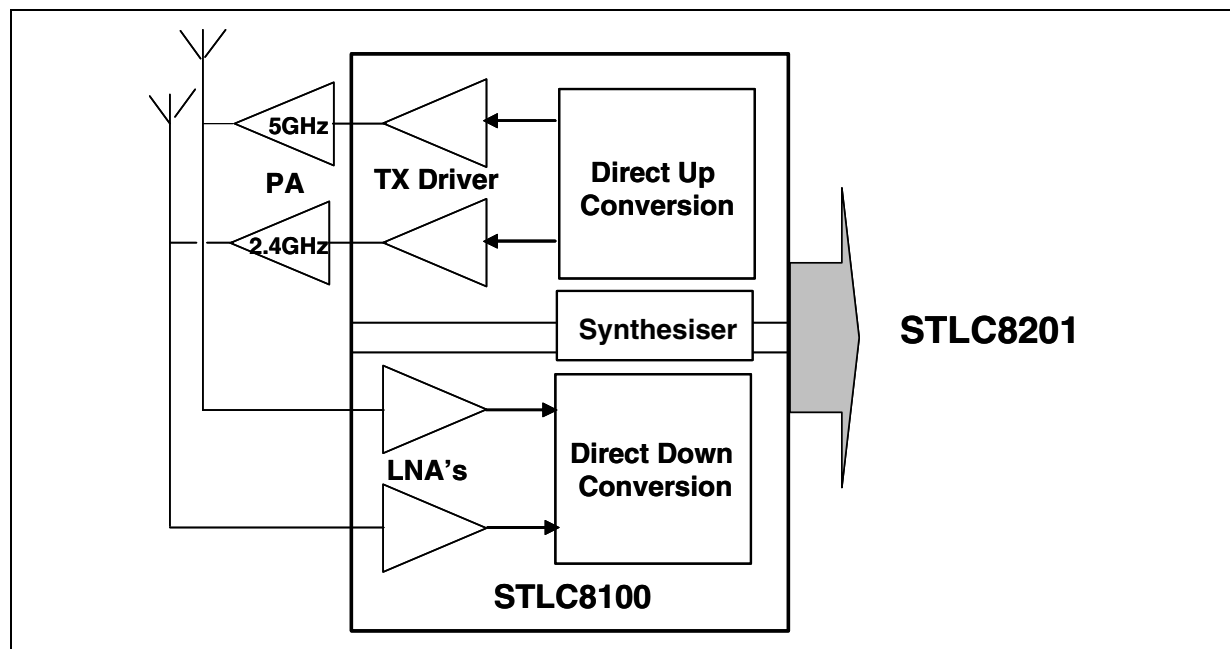
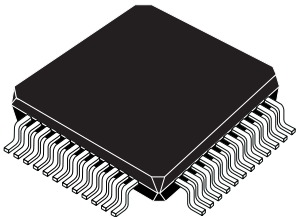


Figure 3. TQFP48 Mechanical Data & Package Dimensions

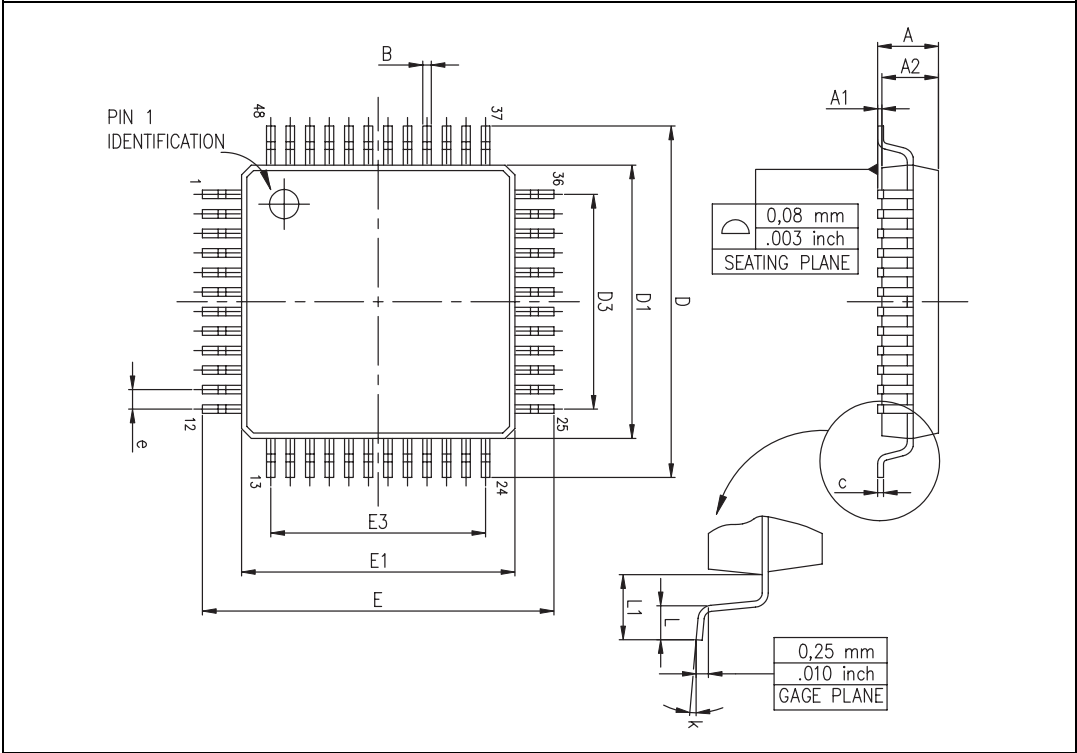
DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			1.60			0.063
A1	0.05		0.15	0.002		0.006
A2	1.35	1.40	1.45	0.053	0.055	0.057
B	0.17	0.22	0.27	0.006	0.008	0.010
C	0.09		0.20	0.004		0.008
D		9.00			0.354	
D1		7.00			0.276	
D3		5.50			0.217	
e		0.50			0.020	
E		9.00			0.354	
E1		7.00			0.276	
E3		5.50			0.217	
L	0.45	0.60	0.75	0.018	0.024	0.030
L1		1.00			0.039	
K	0°(min.), 3.5°(typ.), 7°(max.)					

OUTLINE AND  
MECHANICAL DATA



Body: 7 x 7 x 1.40mm

TQFP48



**Table 2. Revision History**

<b>Date</b>	<b>Revision</b>	<b>Description of Changes</b>
May 2004	1	First Issue
October 2004	2	Change from Product Preview to Maturity.
October 2004	3	Add Operating temperature range in the table 1. Updated figure 2 Block diagram.

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