

DESCRIPTION

The PT4307 is a compact, fully integrated OOK/ASK receiver with ± 4 KV ESD (HBM) and ± 1 KV ESD (CDM) protections for 433.92 MHz frequency band, and just requires few external components. The PT4307 consists of a low-noise amplifier (LNA), image-rejection mixer (IRM), built-in channel-select filter (CSF), OOK/ASK demodulator, data filter, and data slicing comparator. The local oscillator (LO) sub-system incorporates a monolithic VCO, ± 32 feedback divider, loop filter and fast start-up reference oscillator to form a complete phase-locked loop-based frequency synthesizer for single channel applications. The PT4307 is available in an 8-pin SOP package and is specified over the temperature range from -40 to $+85$ °C.

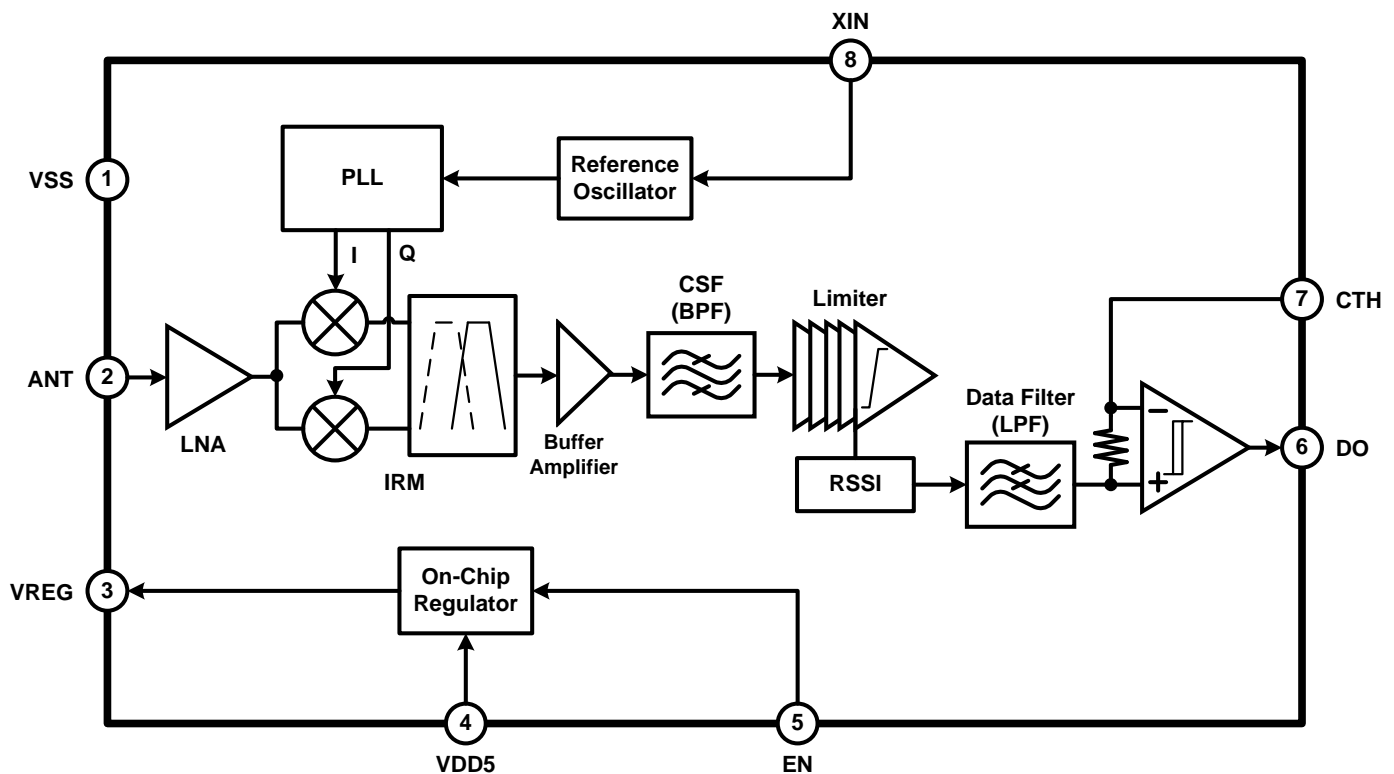
FEATURES

- Normal operating of 4.3 mA at 315 MHz
- Requires few external components
- Achieves sensitivity of -114 dBm (peak ASK signal level)
- Supply voltage range: 2.4 to 5.5 V
- Supports data rates up to 7.2 Kb/s
- Wide input dynamic range with automatic gain control handling
- Image-rejection ratio of 25 dB
- ESD protection levels up to ± 4 KV HBM, ± 400 V MM and ± 1 KV CDM

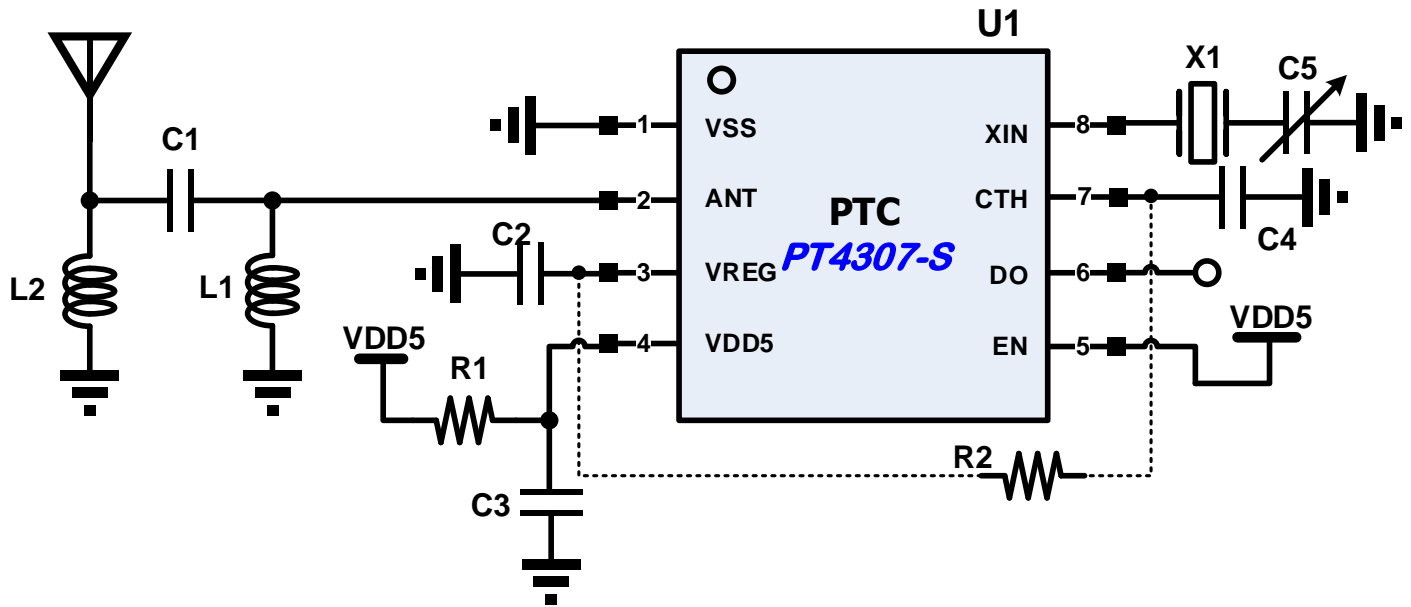
APPLICATIONS

- Automotive Remote Keyless Entry (RKE)
- Remote control
- Garage door and gate openers
- Suitable for applications that must adhere to either the European ETSI-300-220 or the North American FCC (Part 15) regulatory standard.

BLOCK DIAGRAM



EVALUATION BOARD SCHEMATIC



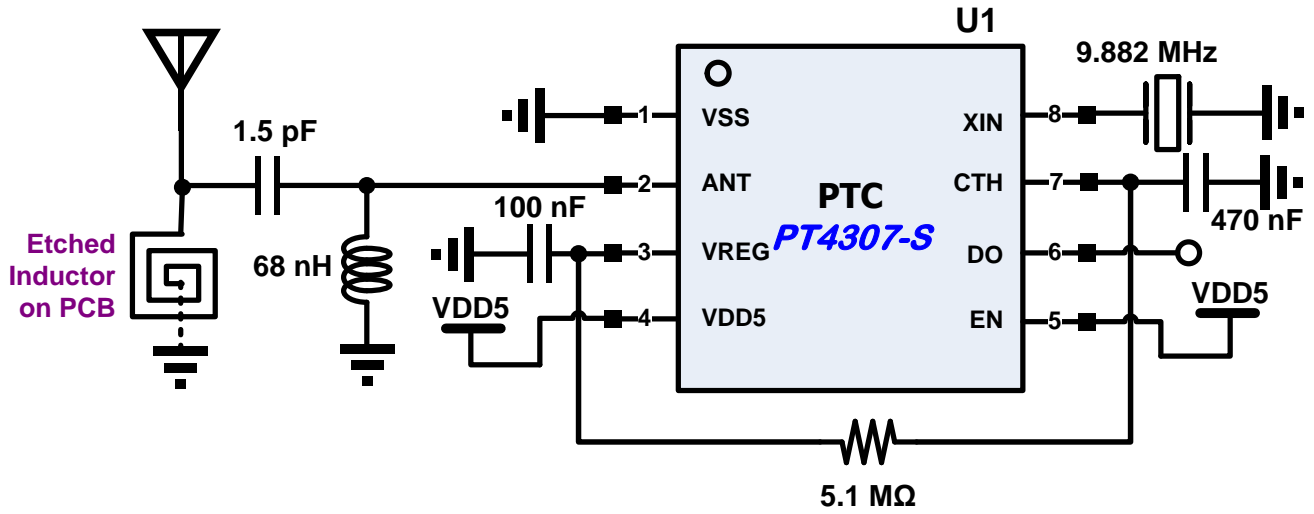
BILL OF MATERIALS

Part	Value	Unit	Description
L1	68 n	H	Antenna input matching, coil inductor
L2	82 n	H	Antenna ESD protection, coil inductor (optional)
C1	1.5 p	F	Antenna input matching
C2/C3	100 n	F	Power supply de-coupling capacitor
C4	470 n	F	C _{TH} , affects coding type and start-up time
C5	220 p	F	Dependent upon crystal oscillator vendor; for frequency fine-tuning (optional)
R1	10	Ω	Power supply de-coupling resistor (optional)
R2	5.1 M	Ω	For reducing data output noise (optional)
X1	9.882	MHz	Crystal with C _{Load} = 220 pF, for reference oscillator
U1	PT4307 IC	U1	Receiver chip

Notes:

- L1 and C1 are the components for input matching network. They may need to be adjusted for different PCB layout and antenna requirements.
- The value of C4 depends upon the data rate and coding pattern.**
- The *optional* components may be used depending upon specific application requirements, e.g. C5 can be removed if the crystal oscillator operates at the accurate frequency.

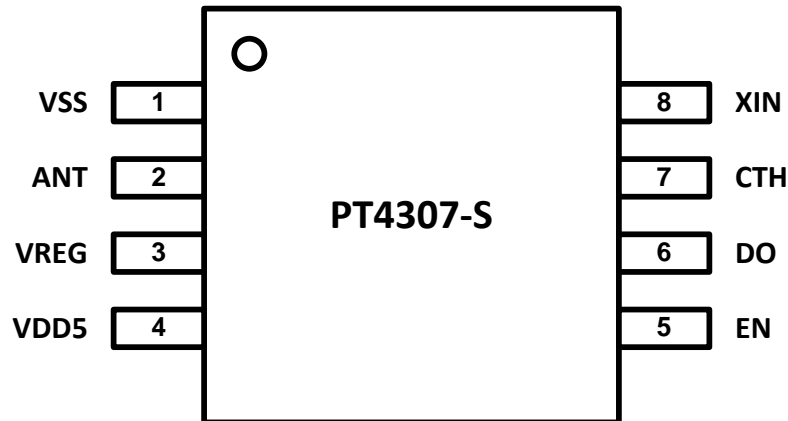
315 MHz APPLICATION EXAMPLE



ORDER INFORMATION

Valid Part Number	Package Type	Top Code
PT4307-S	8 Pins, SOP, 150 mil	PT4307-S

PIN CONFIGURATION



PIN DESCRIPTION

Pin No.	Pin Name	I/O	Description
SOP8			
1	VSS	G	Ground
2	ANT	I	RF input connected to antenna via a matching network
3	VREG	P	Regulated core voltage
4	VDD5	P	5 V regulator input
5	EN	I	Chip enable (tie HIGH to enable the chip)
6	DO	O	Data output
7	CTH	I/O	Connection for data slicing threshold capacitor
8	XIN	I	Reference oscillator input

IMPORTANT NOTICE

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PTC cannot assume responsibility for use of any circuitry other than circuitry entirely embodied in a PTC product. No circuit patent licenses are implied.

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