

DESCRIPTION

The PT4317 is a low power single chip OOK/ASK superheterodyne receiver for the 315MHz and 434MHz frequency bands that offers a high level of integration and requires few external components. The PT4317 consists of a low-noise amplifier (LNA), down-conversion mixer, SAW-based local oscillator, on-chip gm-C band-pass filter, intermediate frequency (IF) limiting amplifier stage with received-signal-strength indicator (RSSI), and analog baseband data recovery circuitry (data filter, peak detector, and data slicer). The PT4317 is available in a 16-pin SSOP package.

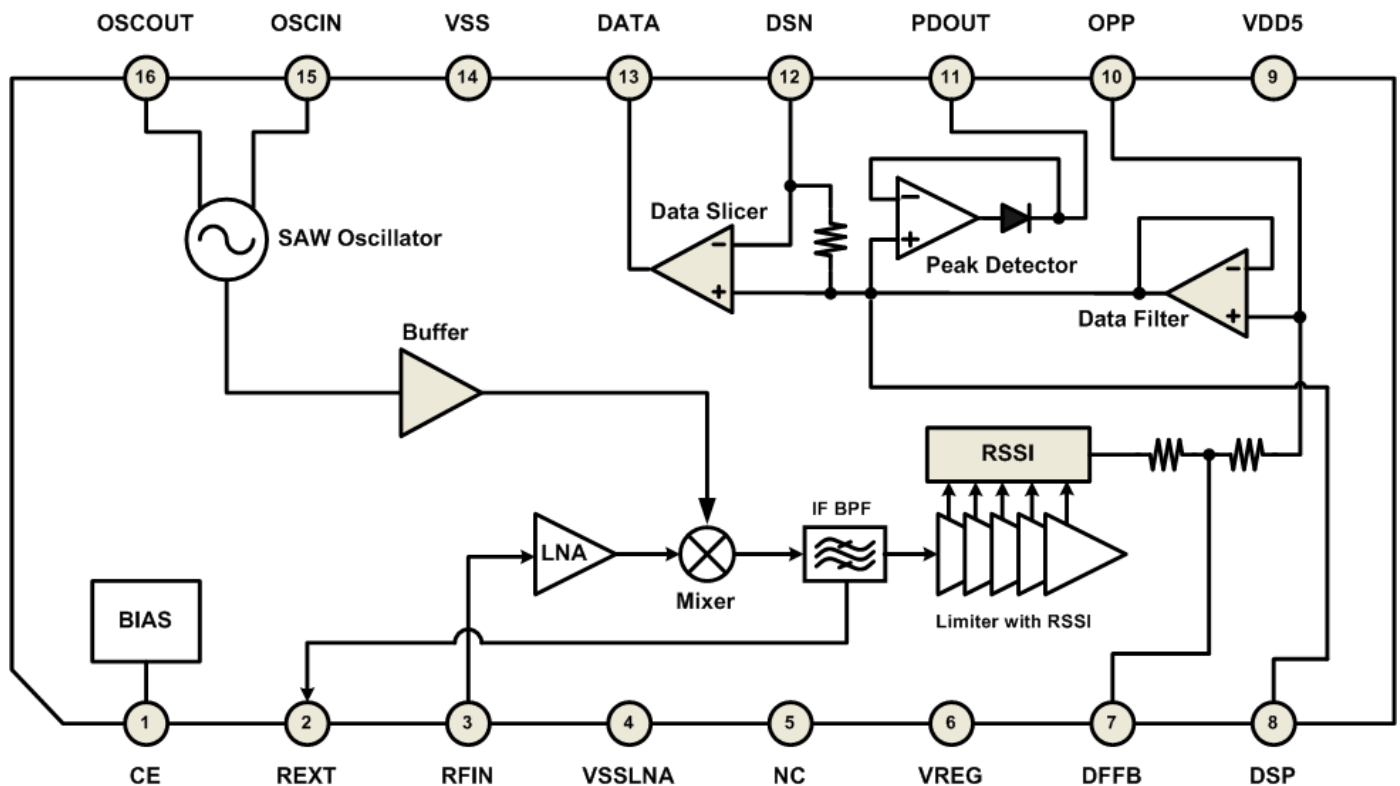
FEATURES

- Low current consumption (4.7mA at VDD=5.0V)
- 2.4V to 5.5V supply voltage operation range
- Optimized for 315MHz or 434MHz ISM Band
- Saw-based oscillator with low frequency drift
- On-chip IF filter with better adjacent channel rejection capability
- Power down mode with very low supply current (<1A)
- Low external parts count
- 16-pin SSOP package

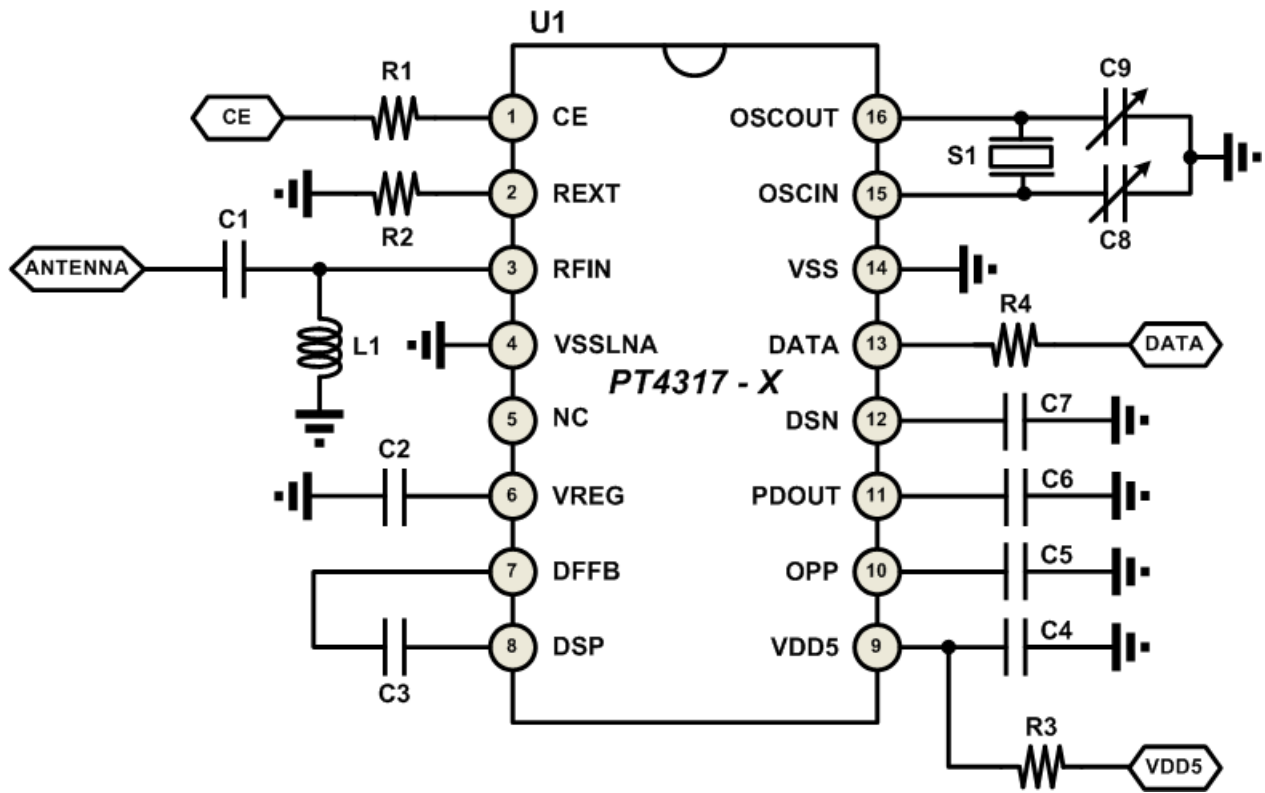
APPLICATIONS

- Remote Keyless Entry (RKE) systems
- Remote control systems
- Garage door openers
- Alarm systems
- Security systems
- Wireless sensors

BLOCK DIAGRAM



APPLICATION CIRCUIT



BILL OF MATERIALS

Part	Value		Unit	Description
	315MHz	433.92MHz		
L1	47n	27n	H	Antenna input matching, coil inductor.
C1	1.8p	1.8p	F	Antenna input matching.
C2/C4	100n	100n	F	Power supply de-coupling capacitor.
C3 ^{Note1}	470p	470p	F	Data filter capacitor.
C5 ^{Note1}	150p	150p	F	Data filter capacitor.
C6	100n	100n	F	Peak detector bypass capacitor(average mode)
C7 ^{Note1}	22n	22n	F	Data slicer threshold charge capacitor.
C8/C9 ^{Note2}	—	—	F	SAW oscillator frequency trimming capacitors.
R1/R4	10K	10K	Ω	MCU interface resistor (option).
R2	220K	220K	Ω	IF filter tuning resistor
R3	10	10	Ω	Power supply de-coupling resistor (option).
S1 ^{Note3}	316.8	435.72	MHz	SAW oscillator.
U1	PT4317 IC	PT4317 IC	U1	Receiver chip.

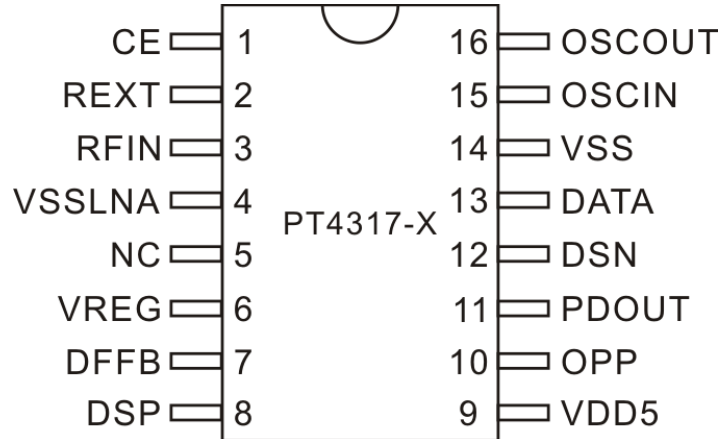
Notes:

1. The data filter and slicer are optimized for 2Kb/s data rate in this application circuit.
2. The C8 and C9 are trimming capacitors for fine tuning the oscillation frequency of SAW oscillator.
3. S1 is the SAW resonator, and the frequency drift tolerance of ±75KHz is acceptable.

ORDER INFORMATION

Valid Part Number	Package Type	Top Code
PT4317-X	16-Pin, SSOP, 150mil	PT4317-X

PIN CONFIGURATION



PIN DESCRIPTION

Pin Name	I/O	Description	Pin No.
CE	I	Chip enable	1
REXT	O	IF filter tuning resistor	2
RFIN	I	RF input	3
VSSLNA	G	Ground for LNA	4
NC	—	No connection	5
VREG	I/O	Voltage regulator output	6
DFFB	I	Data filter feedback point	7
DSP	I	Positive input of data slicer (data filter output)	8
VDD5	P	5V power supply voltage	9
OPP	I	Non-inverting op-amp input	10
PDOUT	O	Peak detector output	11
DSN	I	Negative input of data slicer	12
DATA	O	Data output	13
VSS	G	Ground	14
OSCIN	I	SAW oscillator input	15
OSCOU	O	SAW oscillator output	16

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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