

TDA525x Series ASK/FSK Transceiver Family



Wireless Control – The TDA525x series is a family of low power single chip FSK/ASK transceivers for half duplex low data rate communication in the 315 MHz, 434 MHz, 868 MHz and 915 MHz bands. The IC offers a very high level of integration and needs only a few external components. It contains a highly efficient power amplifier, a low noise amplifier (LNA) with AGC, a double balanced mixer, a complex direct conversion stage, I/Q limiters with RSSI generation, an FSK demodulator, a fully integrated VCO and PLL synthesizer, a tuneable crystal oscillator, an onboard data filter, a data comparator (slicer), positive and negative peak detectors, a data rate detection circuit and a 2/3- wire bus interface. Additionally, there is a power down feature to save battery power.

Applications

- Low bitrate communication systems
- Remote Keyless Entry (RKE) systems
- Remote control systems
- Alarm systems
- Telemetry systems
- Home automation systems

Ordering Information

| Type | Ordering Code | Package |
|---------|---------------|-------------|
| TDA5250 | SP000012956 | PG-TSSOP-38 |
| TDA5251 | SP000014554 | PG-TSSOP-38 |
| TDA5252 | SP000057332 | PG-TSSOP-38 |
| TDA5255 | SP000014555 | PG-TSSOP-38 |

Evaluation Kits

| Type | Description | Package | |
|-----------------|-------------|---------|---------------|
| TDA5250-TDA5250 | ASK/FSK | 868 MHz | Q671000-H2058 |
| TDA5251-TDA5251 | ASK/FSK | 315 MHz | Q67244-H112 |
| TDA5252-TDA5252 | ASK/FSK | 915 MHz | SP000086721 |
| TDA5255-TDA5255 | ASK/FSK | 434 MHz | Q67244-H61 |

Features

- Frequency ranges 315 MHz, 434 MHz, 868 MHz and 915 MHz
- FSK and ASK operation
- Fully integrated VCO and PLL synthesizer and loop filter on-chip with on chip crystal oscillator tuning
- I²C μController Interface
- On-chip low pass channel select filter and data filter with tunable bandwidth
- Data slicer with self-adjusting threshold and 2 peak detectors
- FSK sensitivity < -109 dBm, ASK sensitivity < -109 dBm
- Transmit power up to +13 dBm
- Data rates up to 64 kbit/s Manchester Encoded
- Self-polling logic with ultra fast data rate detection
- Power down mode with very low supply current consumption
- Low supply current
- Supply voltage range 2.1 – 5.5 V
- Temperature range -40°C ... +85°C

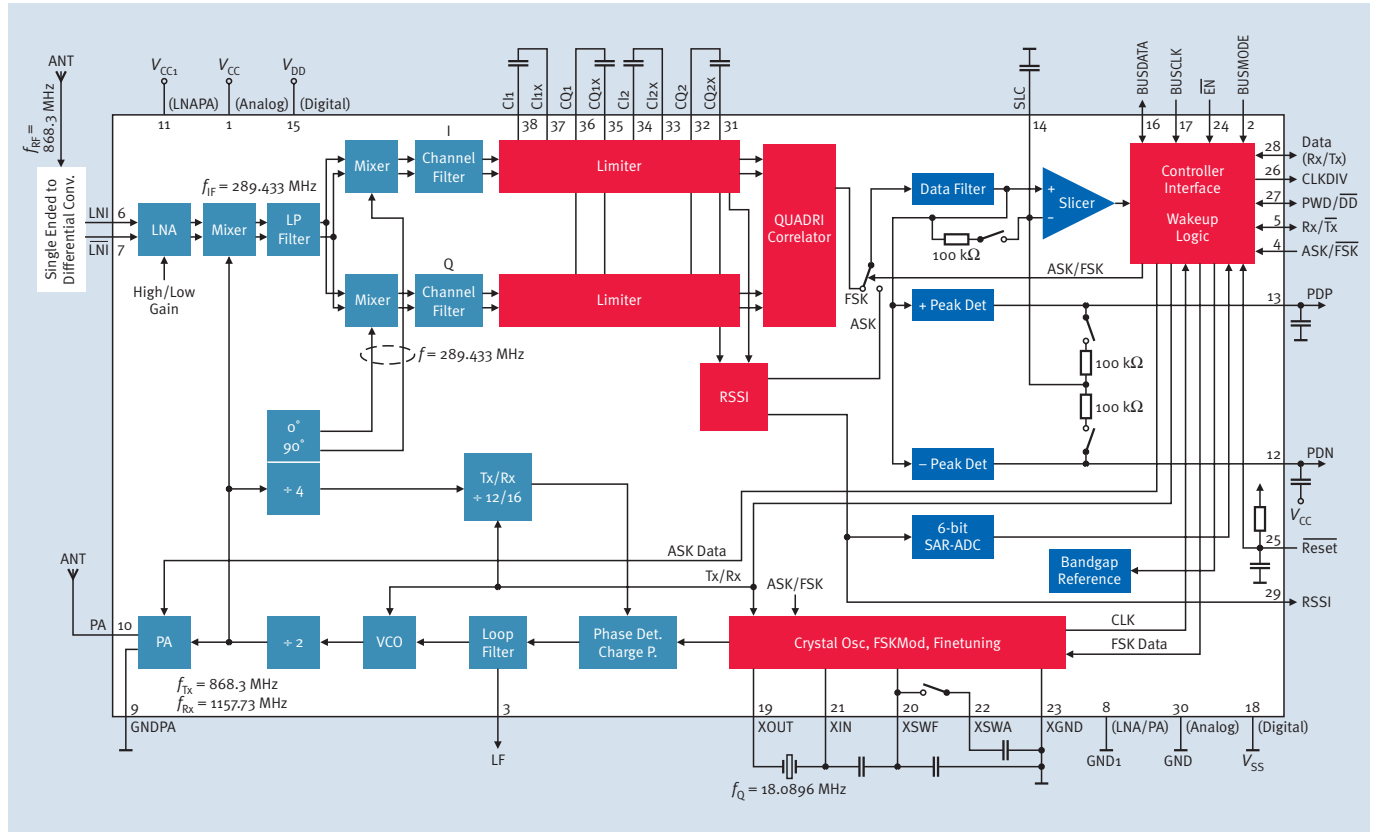
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Wireless Control



Never stop thinking

Block Diagram TDA5250



| Type | TDA5250 | TDA5251 | TDA5252 | TDA5255 |
|-----------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| Frequency Range | 868 – 870 MHz | 312 – 325 MHz | 910 – 920 MHz | 433 – 435 MHz |
| Supply Voltage | 2.1 – 5.5 V | 2.1 – 5.5 V | 2.1 – 5.5 V | 2.1 – 5.5 V |
| Rx | | | | |
| Supply Current typ. @ 3 V | 8.6 mA (ASK) 9.0 mA (FSK) | 8.8 mA (ASK) 9.3 mA (FSK) | 8.6 mA (ASK) 9.0 mA (FSK) | 8.6 mA (ASK) 9.0 mA (FSK) |
| Sensitivity @ 4 kbit/s Manchester | -109 dBm (ASK/FSK) | -109 dBm (ASK/FSK) | -109 dBm (ASK/FSK) | -109 dBm (ASK/FSK) |
| Tx | | | | |
| Supply Current typ. @ 3 V | 11.9 mA | 14.1 mA | 12.5 mA | 13.3 mA |
| RF Transmit Power typ. | 9 dBm | 9 dBm | 9 dBm | 9 dBm |
| Package | PG-TSSOP-38 | PG-TSSOP-38 | PG-TSSOP-38 | PG-TSSOP-38 |
| Temperature Range | -40°C ... +85°C | -40°C ... +85°C | -40°C ... +85°C | -40°C ... +85°C |

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Information

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