



## SS1101C

### SPREAD SPECTRUM BASEBAND MODEM CHIP

#### Introduction

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Siliconians SS1101C is a low-cost, low-power, multi-purpose spread spectrum communications chip that supports digital voice or data communications for devices that are compliant with FCC Part 15 and operate on ISM bands.

The SS1101C is a flexible chip suitable for voice applications such as digital cordless phones (DCP) or wireless PBXs (W-PBX). In data mode, the chip is usable in acquisition and control applications (SCADA) as well as high-speed wireless LAN applications. It is implemented as a CMOS device and comes with a low-pin count (44-pin) surface-mounted plastic package.

#### Voice Mode

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For operation in voice mode, the SS1101C interfaces directly with a 64 Kbps PCM CODEC for land line quality voice in a low-cost digital cordless phone. It can also interface with a 32 Kbps ADPCM CODEC for high-quality compressed voice. Low-cost spread spectrum technology makes monitoring of phone calls impossible and greatly extends the communication range compared with other analog and digital phones operating in the ISM bands.

#### Data Mode

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For operation in data mode, the SS1101C includes all of the required modem baseband functions and can operate in full-duplex or half-duplex mode. The on-the-air transmission is synchronous and the chip includes flexible dual FIFOs that are accessible by any standard microcontroller through a parallel bus and an interrupt mechanism. It provides high speed data capability with a maximum burst rate of 400 Kbps.

#### General Information

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The SS1101C provides constant monitoring of the link quality with an indication of the relative signal/noise at the baseband level. In full-duplex and in voice modes, it provides a low-speed signaling channel independent of the main data/voice channel. The SS1101C is a 3V CMOS device; its power-saving features for battery operation, include very low battery drain in standby.



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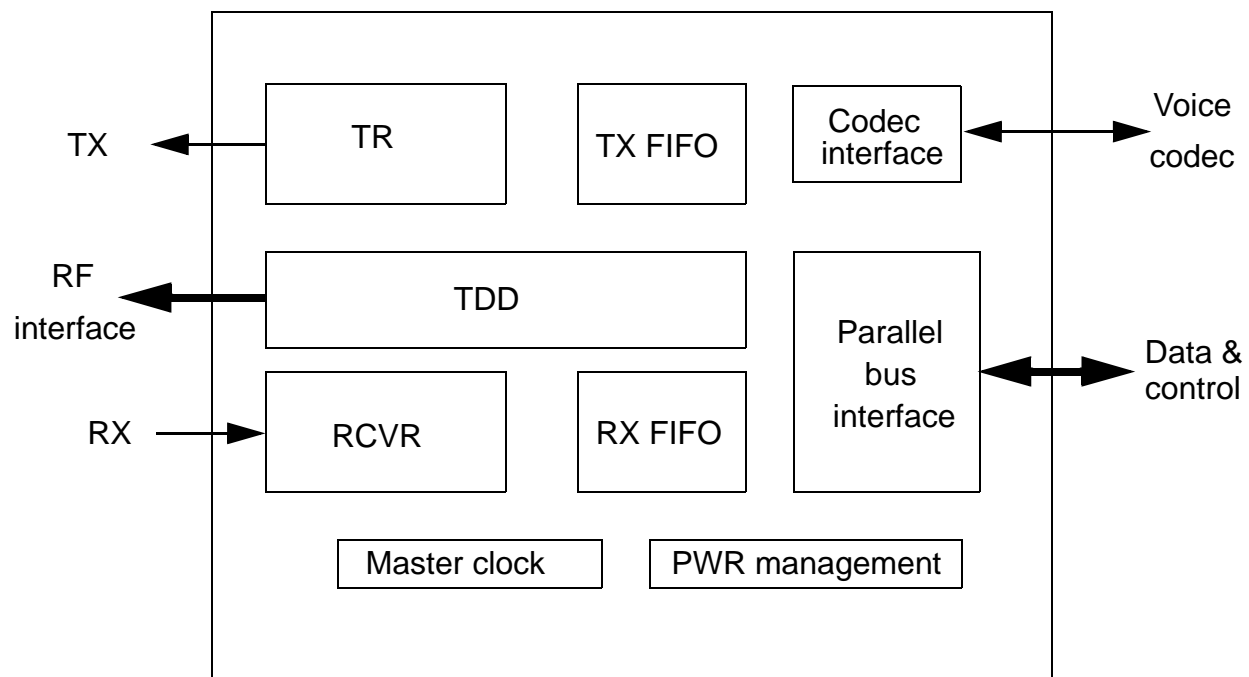
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## Main features

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- Integrated direct sequence spread spectrum baseband modem
- Quaternary baseband modulation
- Processing gain: 12 dB
- Data scrambler for spectral whitening and added security
- Voice interface: 64 Kbps PCM or 32 Kbps ADPCM (Mu-law, A-law) CODEC
- Data interface: 8-bit parallel bus with 30-byte deep dual-FIFO and interrupt signals
- Modes: full-duplex half-duplex
- Embedded time-division-duplex (TDD) controller
- MSK on-the-air modulation
- Four programmable 32-bit PN sequences
- Programmable station ID code
- Independent low-speed signaling channel
- Signal quality indicator (S/N value)
- Power saving features
- Implementation: CMOS, 3V, 3.3V, 5V, 44-pin PQFP
- Availability: available now
- Evaluation Kit: available now (designated as SS1101EB)



SS1101C BLOCK DIAGRAM