Product Brief

SAE 8055 - I²RF™

2.4 GHz Wireless Transceiver with 64KByte RAM

The SAE 8055 is a single-chip full duplex multichannel transceiver system for the 2.4 GHz ISM band. This device combines outstanding RF performance with the flexibility of digital circuits. A 64KBytes internal RAM code memory allows easy software development and fast code download from external memory devices.

A low standby current and an efficient power amplifier make the SAE 8055 ideal for battery-powered applications.

With just one chip and a 12 MHz crystal you can cover the 2.4 GHz ISM band, lowering your logistics and production costs. Benefit from design speed and flexibility by using the high-performance one-chip solution for your application. The internal 64KBytes code RAM space will offer an unlimited software flexibility.

Features

- 2.4 GHz ISM band full duplex transceiver supporting Frequency Hopping Spread Spectrum and Adaptive Frequency Hopping
- 8-bit microcontroller
- Code memory selectable (64KBytes) ROM or RAM
- Data RAM memory (8KBytes)
- Voice Codec supporting G.726 for decoder
- 2 x G.726 for encoder and 1 x G.726 for decoder
- USB2.0 full speed device interface
- 3-wire SPI Master Interface with 2 CS and up to 12 MHz speed
- 6 dedicated analog to digital converters (ADC)
- 6 configurable general purpose inputs (analog or digital)
- 14 dedicated general purpose digital input/outputs (GPIO)
- H-bridge circuitry with integrated drive capability for one bidirectional DC motor or two unidirectional DC motors
- I²C controller supporting 100kHz/400kHz data rate (master mode)
- 2 general purpose 16-bit timers and a watch dog timer
- 1 UART supporting 9600/19200/38400/115200 baud rates
- 1 ISO7816 compliant interface (asynchronous mode)
- Debug interface for firmware development (JTAG)
- Integrated power management including battery charging control
- Supply voltage range 2.0..3.6 V
- Operating temperature range -25..+85°C
- TQFP-100 green package

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Key Benefits & Applications

Key Benefits

- Single chip with integrated RF
- Adaptive Frequency Hopping (AFH) and Frequency Hopping Spread Spectrum (FHSS) for interference-robust communication
- Excellent RF parameters: up to 15 m range
- Only one crystal needed for the complete system
- Different RAM/ROM configurations cover all customer requirements like 64KB ROM or 32/32 RAM/ROM or 64KB RAM code execution
- User-friendly software, documentation and evaluation boards

Applications

- Easy cable replacement for many applications
- Industrial monitoring and control
- Wireless alarm and security systems
- Automatic meter reading
- Home automation
- Secure remote keyless entry
- Barcode reading
- Point-of-Sales systems
- Software development platform

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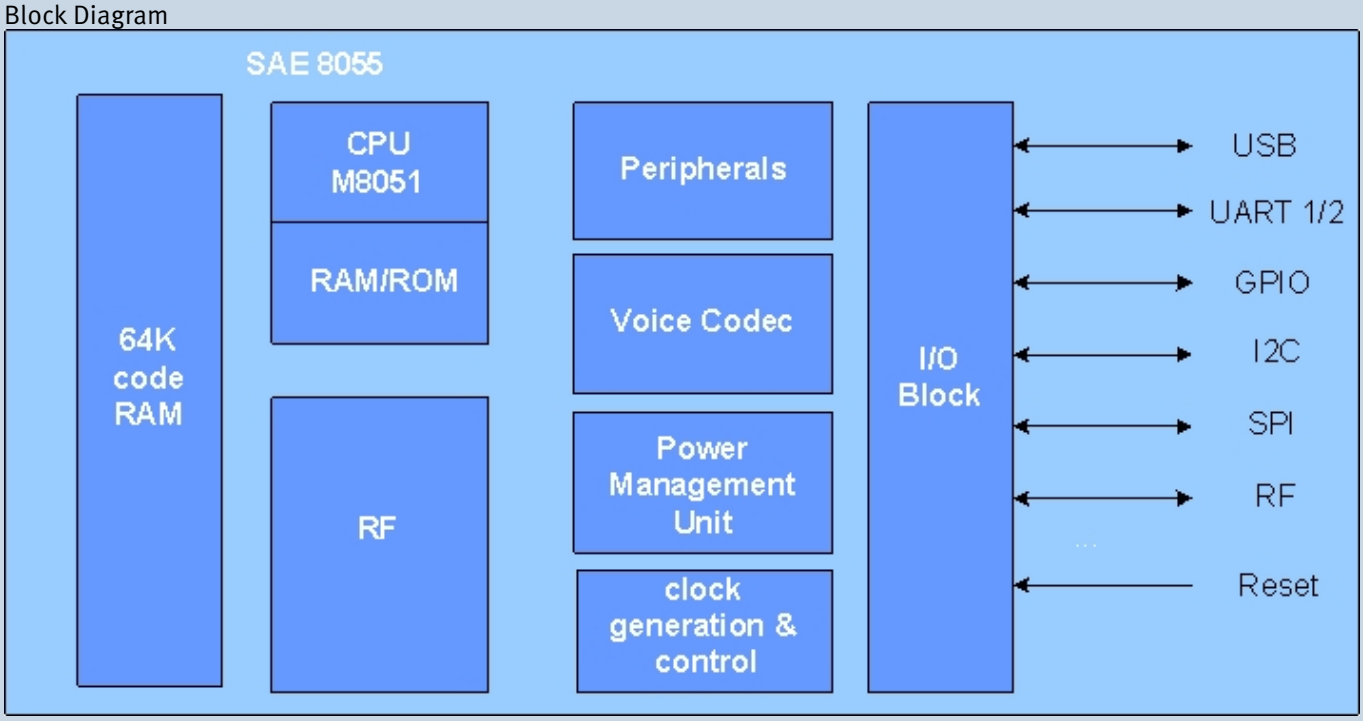
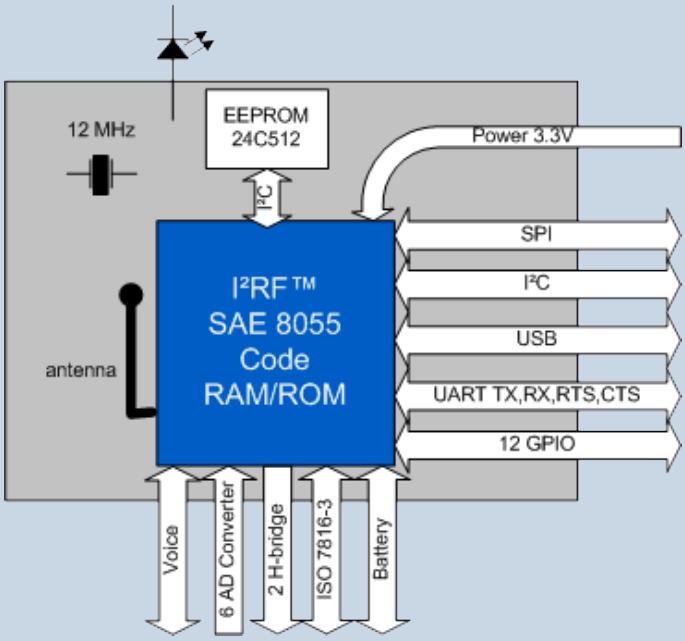
Block Diagram



Application Block Diagram



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