

Operation Description

1. GSM Transceiver

The MT6235 is an integral component including RF CMOS transceiver IC. MT6235 is highly integrated and fulfill specific functions; functional requirements are partitioned between the ICs to yield complete and optimal multiband, multimode transceiver implementations. Overall transceiver performance depends upon the combined, complementary performance of all the ICs in the chipset. The MT6235 IC supports multiband, multimode phones with five receiver signal paths, four transmitter signal paths, and one dedicated calibration receive path.

Receiver paths:

- ☐ GSM 850
- ☐ GSM 900
- ☐ GSM 1800
- ☐ GSM 1900

Transmitter paths:

- ☐ Two low-band Tx paths for:
 - GSM 850
 - GSM 900
- ☐ Two high-band Tx paths for:
 - GSM 1800
 - GSM 1900

The MT6235 zero-IF architecture and highly integrated implementation minimizes handset PCB size and material cost.

2. Power Amplifier Module

The SKY77518 is a small, GSM PAM for handset applications. This module has been optimized for excellent amplify efficiency, ACPR and EVM in an open loop polar modulation environment operation while maintaining high GSM/GPRS efficiency. The SKY77518 was optimized for operation with the Qualcomm MT6235 regarding input power range and Rx band performance.

3. Antenna Switch and SAW Filter

The antenna switch and Low-loss SAW for mobile telephone system Covering GSM850/GSM900/GSM1800/GSM1900 bands. The TX Signals from the PAM are transmitted to the antenna via the TX path with integrated TX band pass filters, switches and diplexer. The RX Signals from the antenna are balanced output to transceiver through DC blocking capacitors at the antenna

4. GSM Baseband Processor

MT6235 based on a dual-processor architecture, MT6235 integrates both an ARM926EJ-S core and a digital signal processor core. ARM926EJ-S is the main processor responsible for running high-level GSM/GPRS protocol software as well as multi-media applications. The digital signal processor manages the low-level MODEM as well as advanced audio functions. Except for a few mixed-signal circuitries, the other building blocks in MT6235 are connected to either the microcontroller or the digital signal processor.

5. GSM Power Management IC

The MT6235 integrate PMU. It was optimized for operation with the Qualcomm SKY77518 regarding input power range and Rx band performance. Mode Control pins are provided for high efficiency improvement of the low output power range.

6. Audio CODEC

Audio codec is a highly integrated input/output device designed for mobile computing and communications. The chip is a Hi-Fi DAC with 0.8W stereo class D speaker drivers and headphone drivers , supporting Hi-Fi stereo Codec function via the AC97 interface. All device functions are accessed and controlled through a I2C interface. The chip can connect directly to mono or stereo microphones, stereo headphones and mono speakers, reducing total component count in the system.

7. Bluetooth and WIFI module

The chip is a single-chip, Bluetooth2.0-compliant, stand-alone baseband processor with an integrated 2.4-GHz transceiver. The baseband and radio subsystems are designed specifically for single chip requirements, for low power consumption.

The chip is the optimal solution for any voice and/or data application that requires the Bluetooth SIG standard HCI via either UART and PCM audio interfaces. Alternative HCI interfaces ,including SDIO and SPI, are also supplied.

The same module also is 802.11b/g standard module, by same TCXO 26MHz, baseband processor and integrated 2.4-GHz transceiver. The baseband and radio subsystems are designed specifically for 802.11b/g standard, for low power consumption. It is fully compatible with any of the standard 2.4G/5.8G frequencies device, such as Bluetooth device. They are Time Division and provides different encode mode. Its radio is compatibility to operate simultaneously with cellular radios.

The module supplies the SDIO interface for communication with Application processor.