Technical Overview

CM-ZS300 is a single band portable PCS phone which supports Code Division Multiple Access (CDMA) mode. The PCS phone is designed to meet the requirements of J-STD-008 Personal Station-Base Station Compatibility Requirement for 1.8 to 2.0GHz CDMA PCS , J-STD-018 Recommended Minimum Performance Requirements for 1.8 to 2.0GHz CDMA Personal Stations.

The cellular phone operates under Cellular Radiotelephone Service specified in FCC CFR 47, Part 22.

Transmitter Frequency Range:	1850 – 1910 MHz
Receiver Frequency Range:	1930 – 1990 MHz
Maximum Transmitter Output Power:	470mW EIRP (CDMA mode)
Battery Voltage:	3.6 V

The input audio signal is sampled and processed digitally for necessary filtering, amplitude limiting, and compression and expansion. The device fully supports CDMA standards. All necessary signaling tones are digitally generated.

The transmit power level is constantly monitored by a detector circuit and a microprocessor. A method of look-up table, frequency offset correction table, and temperature compensation is used to tightly control the transmit power levels. All spurious and harmonic signals from the transmitter and receiver circuits are suppressed by filters and mechanical shields, and the device fully complies with the standards.

For CDMA operation, chip rate of 1.2288 Mcps is used. The occupied bandwidth is 1.25 MHz, and the channel spacing is normally set at 1.25 MHz. The baseband filter satisfies the requirements specified in J-STD-008.

Devices and Circuitry Provided for Determining and Stabilizing Frequency

A voltage-controlled temperature-compensated crystal oscillator (VCTCXO) is employed as a frequency reference for all of the transmitter and receiver local oscillators. The frequency tolerance of the VCTCXO is specified to remain within ± 2.5 ppm over operating temperature range and operating voltage range. The VCTCXO frequency is locked to the base station transmit frequency during the operation in CDMA modes. The lock indicator signals of all frequency synthesizers are monitored and an out-of-lock condition will inhibit transmission.

Function of Active Devices (See attached list)

Reference number in the schematic shows the block.

100 ~ 199: RX front-end

200 ~ 299: TX front-end

300 ~ 399: TX mixer

400 ~ 499: RX mixer

500 ~ 599: PLL module

600 ~ 699: AFE (Audio Front End)

700 ~ 799: RX & TX IF

800 ~ 899: Power

1000 ~ 1099: Genie (Base band, CPU, DSP….)

1100 ~ 1199: RX & TX Audio

1200 ~ 1299: FPC connector

1300 ~ 1399: Headset