

## Operation Description

The transmitter and receiver utilize the same antenna.

RF circuit including antenna, the transmitter, the receiver / transmitter Duplexer, transmit shaping filter BPF, the transmit power amplifier circuit and the Balun BPF filter.

RF subsystem consists of transmitter, receiver, frequency synthesizer, and so on. RF systems support wireless communication, transceiver are zero-IF architecture eliminates the traditional superheterodyne structure of external RF interference suppression filter and IF SAW filter.

RF transceiver subsystem, the gain of each state variable gain amplifier is controlled by the baseband signal part. Direct up / down converters required local oscillator signal LO are crystal by the external 19.2M Hz signal through the chip phase-locked loop circuit to be.

RF chip transmit signals directly from the baseband signal is upconverted to the transmit band, and after a variable gain amplifier output to drive external RF band-pass filter and amplifier, the final output to the antenna radiation through the Duplexer out. When the transmission power in mobile phone range near the maximum power limit, the power control module with an external Power Detector circuit input signal and the phone memory power calibration table control the transmission power value.

RF receive signals from the antenna feed, the diplexer output to RF variable-gain low-noise amplifier, and then the off-chip band-pass filter and then input into a differential form of the variable gain amplifier chip and direct down-converter, down-conversion by the RF signal directly to baseband signal, after baseband filtering, amplification, AD conversion circuit output to the baseband demodulation processing.

## Transmitter Specification

### GSM850&GSM900

Transmitter output power:  $33\pm 2$ dBm

Phase Error(RMS):  $\leq 5^\circ$  degree

Phase Error(Peak):  $-20^\circ$  to  $+20^\circ$  degree

Frequency Error:  $< 0.1$ ppm Hz

Reference Sensitivity Level (ClassII RBER $\leq 2\%$ ):  $\leq -104$  dBm

### DCS1800&PCS1900

Transmitter output power:  $30\pm 2$ dBm

Phase Error(RMS):  $\leq 5^\circ$  degree

Phase Error(Peak):  $-20^\circ$  to  $+20^\circ$  degree

Frequency Error:  $< 0.1$ ppm Hz

Reference Sensitivity Level (ClassII RBER $\leq 2\%$ ):  $\leq -102$ dBm

### WCDMA Band V

Maximum output power: 21 ~ 25 dBm

Minimum output power:  $\leq -50$  dBm

Frequency Error:  $< \pm 0.1$

Occupied Bandwidth:  $< 5$  MHz

EVM:  $\leq 17.5\%$

Reference sensitivity level : -106.7,  $< 0.1\%$

### Modulation Mode

WCDMA: QPSK

GSM: GMSK/8PSK

BT: GFSK,

WIFI: CCK/OFDM

### Frequency Range:

BT: 2402 ~ 2480 MHz

WIFI: 2412 ~ 2462 MHz

### Transmitting Power:

WIFI:  $\leq 16$  dBm

BT:  $\leq 3$  dBm