Model No.: C5

OPERATIONAL DESCRIPTION

GSM Function Description (850/900/1800/1900)

The GSM receiving path includes LNA, an RF band pass filter. The receiver IC down-converts the received signal from RF to baseband using ZIF techniques. The analog baseband signal is processed by baseband processor (SC7731E).

The GSM transmitting path consists of a transmitter, two power amplifiers, front end module (FEM), diplexer, duplexer and switch. Beginning with analog baseband signal out from baseband processor (SC7731E), the transmitter up-converts the baseband signal directly to RF signal by modulating with an internal LO which is generated by Phase Locked Loop (PLL) circuit.

The PLL circuit which is in SC3533G consists of a VCO, a frequency synthesizer, a loop filter, and a reference frequency oscillator. The TX up mixer is incorporated in the transmitter. After modulation in transmitter, the RF enters into the power amplifier circuit.

GSM

Items	GSM850	DCS 1900
Frequency allocation	TX（Uplink） :824M-849MHZ RX（Downlink） :869M-894MHZ	TX（Uplink）: 1850M-1910MHZ RX（Downlink）: 1930M-1990MHZ
Channel band width	200KHz	200KHz
Channel	128-251	512-810
Modulation	GMSK,8PSK	GMSK, 8PSK
TX/RX channel space	45MHz	80MHz
(Fn)Freq. calculating formula	Fn=824.2+(N-128) ×0.2 N: Channel No. Unit: MHz	Fn=1850.2+(N-512)×0.2 N: Channel No. Unit: MHz
GPRS/ EDGE（GSMK/GSMK,8PSK)	---GPRS Class 12 CS-1~ CS-4 ---EDGE (only support down link)	
DTM Support	NO	NO
VOIP Support	NO	

Model No.: C5

WCDMA Function Description (Band II/IV/V)

The UMTS receiving path includes LNA, an RF band pass filter. The receiver IC down-converts the received signal from RF to baseband using ZIF techniques. The analog baseband signal is processed by baseband processor (SC7731E).

The UMTS transmitting path consists of a transmitter, two power amplifiers (PA with HSPA capability), front end module (FEM), diplexer, duplexer and switch. Beginning with analog baseband signal out from baseband processor (SC7731E), the transmitter up-converts the baseband signal directly to RF signal by modulating with an internal LO which is generated by Phase Locked Loop (PLL) circuit.

The PLL circuit which is in SC7731E consists of a VCO, a frequency synthesizer, a loop filter, and a reference frequency oscillator. The TX up mixer is incorporated in the transmitter . After modulation in transmitter, the RF enters into the power amplifier circuit.

Items	B2	B5	B4
Frequency allocation	TX (Uplink) :1850-1910MHZ RX (Downlink) :1930-1990MHZ	TX(Uplink) : 824-849 MHZ RX(Downlink) :869-894 MHZ	TX(Uplink) : 1710 ~ 1755 MHZ RX(Downlink) : 2110 ~ 2155 MHZ
Channel band width	5MHz	5MHz	5MHz
Channel	9262-9538	4132-4233	1312-1513
Modulation	Uplink：QPSK, Downlink：QPSK, 16QAM	Uplink：QPSK, Downlink：QPSK, 16QAM	Uplink：QPSK, Downlink：QPSK, 16QAM
TX/RX channel space	80MHz	45MHz	400MHz
(Fn)Freq. calculating formula	Fn = 1852.4 + (N-9262)* 0.2 N: Channel No. Unit: MHz	Fn = 826.4 + (N-4132) *0.2 N: Channel No. Unit: MHz	Fn = 1712.4 + (N-1312) *0.2 N: Channel No. Unit: MHz
Category	HSUPA: category 7 (5.76Mbps) HSDPA: category21 (21Mbps)		
VOIP Support	NO		

Model No.: C5

WLAN Function Description

This WLAN device (BT and WLAN combo module) is adapted to 11b/g/n-HT20. Operation of each part is based and explained in a module RF Block diagram. The transceiver includes PLL, VCO, LNA, PA, modulator and demodulator.
By using the reference signal (26MHz) currently used by the external clock input, stable RF signal and the table baseband clock are generated.

The operating band is 2412-2462MHz for FCC / 2412-2472MHz for CE (2.4GHz), which 2.4GHz signals are separated by Diplexer.

A transmitting part is constituted in the WLAN block of SC7731E. The data signal is modulated by CCK / OFDM Modulator inside SC7731E and the digital modulation signal is changed into the analog modulation signal by digital / analog converter (DAC).

Frequency Band	2402 MHz – 2483.5 MHz		
Frequency range	2412 MHz – 2462 MHz		
IEEE	802.11b,802.11g, 802.11n HT20		
RF power 802.11b	≤11dBm		
RF power 802.11g	≤8dBm		
RF power 802.11n (HT20)	≤2 dBm		
RF power 802.11n (HT40)	No		
Modulation	DSSS/OFDM/16QAM/64QAM		
Number of channels	11 channel for 20MHz bandwidth		
Channel spacing	5MHz		
Support	hotspot	Peer-to-Peer	DFS detection
	Y	Y	N/A

Model No.: C5

Bluetooth Function Description

The Bluetooth transceiver includes PLL, VCO, LNA, PA, modulator and demodulator. The Bluetooth baseband signal processor incorporates hardware engines performs frequency hopping, error correcting, whitening, encrypting, data packet assembling and de-assembling. Bluetooth function is fully compliant with Bluetooth specification 2.1. Bluetooth basic rate use GFSK modulation, where an instantaneous data rate of 1 Mbit/s is possible. Bluetooth Enhanced Data Rate (EDR) adopts π/4-DPSK and 8DPSK schemes, each with 2 and 3 Mbits/s respectively.

Items	Values
Frequency Band	2400 MHz – 2483.5 MHz
Frequency Range	2402 MHz – 2480 MHz
RF Power Output	BR&EDR < 6dBm LE < 0 dBm
Modulation	GFSK/8-DPSK/π/4-DQPSK(BR&EDR) GFSK(BLE)
Number or channels	79(EDR&BR) 40(BLE)
Channel spacing	1MHz(EDR&BR) 2MHz(BLE)
Version	V4.2