

# Specification

2023-04-25

## **Operating Frequency Band (RF):**

GSM850: 824.0-849.0MHz(TX), 869.0-894.0MHz(RX)

EGSM900:880.0–915.0MHz(TX), 925.0–960.0MHz(RX)

DCS 1800: 1710.0–1785.0MHz (TX), 1805.0–1880.0 MHz (RX)

PCS 1900:1850.0-1910.0MHz(TX), 1930.0-1990.0MHz(RX)

WCDMA Band1: 1920.0-1980.0MHz (TX), 2110.0-2170.0MHz (RX)

WCDMA Band2: 1850.0-1910.0MHz (TX), 1930-1990MHz (RX)

WCDMA Band5:824 -849.0MHz(TX), 869-894.0MHz(RX)

WCDMA Band8: 880.0-915.0MHz (TX), 925.0-960.0MHz (RX)

LTE BAND1: 1920.0-1980.0MHz (TX), 2110.0-2170.0MHz (RX)

LTE BAND2: 1850.0-1910.0MHz (TX),1930.0-1990.0MHz (RX)

LTE BAND3: 1710.0-1785.0MHz (TX), 1805.0–1880.0 MHz (RX)

LTE BAND4: 1710.0-1755.0MHz (TX), 2110.0–2155.0 MHz (RX)

LTE BAND5: 824.0-849.0MHz(TX), 869.0-894.0MHz(RX)

LTE BAND7:2500.0-2570.0MHz(TX), 2620.0-2690.0MHz(RX)

LTE BAND8:880.0-915.0MHz(TX), 925.0-960.0MHz(RX),

LTE BAND20:832.0-862.0MHz(TX), 791.0-821.0MHz(RX)

LTE BAND28:703.0-748.0MHz(TX), 758.0-803.0MHz(RX)

LTE BAND38:2570.0-2620.0MHz(TX/RX)

LTE BAND40:2300.0-2400MHz(TX/RX)

LTE BAND41(120M):2535.0-2655.0MHz(TX/RX)

Bluetooth: 2402-2480MHz (TX/RX)

WIFI: 2412-2472MHz (TX/RX)

FM: 87.5MHz-108.5MHz

GPS:1575.42MHz

WIFI:5150MHz-5850MHz

## **Modulation mode:**

GMSK (GSM850/GSM900/DCS/PCS) 8PSK (EDGE)

WCDMA Uplink: BPSK/QPSK/16QAM; WCDMA Downlink: BPSK/QPSK /16QAM/64QAM

LTE Uplink: BPSK/QPSK/16QAM; LTE Downlink: BPSK/QPSK /16QAM/64QAM

GFSK/ $\pi/4$ -DQPSK/ 8-DPSK (Bluetooth)

**Power Class**

GSM 850/900: Class4

DCS1800/PCS1900: Class1

WCDMA B1/B5/ B8: Class3

LTE B1/B2/B3/ B5/B7/B8/B20/B28/B38/B40/B41: Class3

WIFI: 802.11b: Class 15

802.11g: Class 15

802.11n(20): Class 14

802.11n(40): Class 14

BT: Class1

**Max. Of Transmit power:**

GSM850/GSM900: PCL = 5, PWR =  $32.5 \pm 1$  dBm

DCS/PCS: PCL = 0, PWR =  $29.5 \pm 1$  dBm

WCDMA B1/B2/B5/B8: PWR =  $24 \pm 1$  dBm

LTE B1/B2/B3/B4/B7/B38/B40/B41: PWR =  $22.5 \pm 1$  dBm

LTE B5 /B8/B20/B28:PWR =  $23 \pm 1$  dBm

Bluetooth: 8dBm+/-1dBm

WIFI:

802.11b: max 17dBm

802.11g: max 15dBm

802.11n(20): max 15dBm

802.11n(40): max 14dBm

The crystal the tranceiver use is 26MHz;

**Antenna Type:** (Internal Antenna)

GSM/WCDMA/LTE Antenna: Loop

BT/WIFI/GPS Antenna: PIFA

DRX Antenna:PIFA

**Feature:**

BT 5.0

FM receiver;

**Maximum of Antenna Gain:**

GSM850: 0.2dBi

GSM900: -0.02dBi

DCS 1800: 0.12dBi

PCS1900: 0.12dBi

WCDMA BAND1: 0.06dBi

WCDMA BAND2: 0.12dBi

WCDMA BAND5: 0.2dBi

WCDMA BAND8: -0.02dBi

LTE BAND1: 0.06dBi

LTE BAND2: 0.12dBi

LTE BAND3: 0.12dBi

LTE BAND4: -0.39dBi

LTE BAND5: 0.2dBi

LTE BAND7: 1.5dBi

LTE BAND8: -0.02dBi

LTE BAND20: 0.2dBi

LTE BAND28: -0.85dBi

LTE BAND38: 1.53dBi

LTE BAND40: 0.78dBi

LTE BAND41: 1.53dBi

DRX antenna:

WCDMA BAND1: -2.03dBi

WCDMA BAND2: -1.51dBi

WCDMA BAND5: -4.25dBi

WCDMA BAND8: -5.03dBi

LTE BAND1: -2.03dBi

LTE BAND2: -1.51dBi

LTE BAND3: -0.38dBi

LTE BAND4: -2.03dBi

LTE BAND5: -4.25dBi

LTE BAND7: -2.57dBi

LTE BAND8: -5.03dBi

LTE BAND20: -4.3dBi

LTE BAND28: -3.98dBi

LTE BAND38: -1.49dBi

LTE BAND40: -2.96dBi

LTE BAND41: -0.86dBi

Bluetooth/WIFI2.4Ghz: 1.15dBi

GPS: 1.26dBi

WIFI5G: 0.61dBi

GPRS:

Class :12 upload support 4 channels , download support 4 channels

maximum output power reduction in a multislot configuration :

Number of timeslots in uplink assignment	Permissible nominal reduction of maximum output power, (dB)
1	0
2	-1
3	-3
4	-4

**Feature:**

Channel number:

GSM850: 128-251

EGSM900: 0-124&975-1023

DCS: 512-885

PCS: 512-810

WCDMA1900:9262-9538(TX), 9662-9938(RX)  
WCDMA 2100:9612-9888(TX), 10562-10838(RX);  
WCDMA 900:2712-2863(TX), 2937-3088(RX);  
WCDMA 850: 4132-4233(TX), 4357-4458 (RX);  
LTE B1: 18000-18599(TX), 0-599 (RX);  
LTE B2: 18600-19199(TX),600-1199 (RX);  
LTE B3: 19200-19949(TX), 1200-1949 (RX);  
LTE B4: 19950-20399(TX), 1950-2399 (RX);  
LTE B5: 2712-2863(TX), 2937-3088(RX);  
LTE B7: 20750-21449(TX), 2750-3449 (RX);  
LTE B8: 21450–21799(TX), 3450 – 3799(RX);  
LTE B20: 24150-24449(TX), 6150-6449 (RX);  
LTE B28: 27210-27659(TX), 9210-9659 (RX);  
LTE B38: 37750-38249(TX/RX)  
LTE B40: 38650-39649(TX/RX)  
LTEB41(120M): 40040-41239(TX/RX)

**Channel spacing:**

GSM/WCDMA :0.2MHz ;

LTE :0.1MHz

BT :1MHz

WIFI:20MHz

**Channel numbers:**

GSM850 :124

GSM900 :173

DCS1800 :374

PCS1900 :299

WCDMA 2100:277;

WCDMA 850:102

WCDMA 900:152

LTE B1 :600

LTE B3 :750

LTE B5 :152

LTE B7 :700

LTE B8 :350

LTE B20 :300

LTE B28 :450

LTE B38 :500

LTE B40 :1000

LTE B41 :1200

Operating temperature: -10~55°C

Charging temperature: Charging 0~55°C; Discharging -10~55°C

Battery technical: Li-poly

Low Voltage: 3.6V

Nominal Voltage:3.8V

High Voltage: 4.35V

Charge Restriction Voltage: 5V

Rated Capacity: 2400mAh

Battery low voltage: 3.6V

Operating Relativity Humidity Range:  $\cong$ 75%