

2. Specification

2-1. GSM & WCDMA General Specification

	GSM900 Phase 1	EGSM 900 Phase 2	DCS1800 Phase 1	PCS1900	WCDMA2100
Freq. Band[MHz] Uplink/Downlink	890~915 935~960	880~915 925~960	1710~1785 1805~1880	1850~1910 1930~1990	1920~1980 2110~2170
ARFCN range	1~124	0~124 & 975~1023	512~885	512~810	9612~9888 10562~10838
Tx/Rx spacing	45 MHz	45 MHz	95 MHz	80 MHz	190MHz
Mod. Bit rate/ Bit Period	270.833 kbps 3.692 us	270.833 kbps 3.692 us	270.833 kbps 3.692 us	270.833 kbps 3.692 us	3.84 Mcps
Time Slot Period/Frame Period	576.9 us 4.615 ms	576.9 us 4.615 ms	576.9 us 4.615 ms	576.9 us 4.615 ms	-
Modulation	0.3 GMSK	0.3 GMSK	0.3 GMSK	0.3 GMSK	QPSK
MS Power	33 dBm~13 dBm	33 dBm~5 dBm	30 dBm~0 dBm	30 dBm~0 dBm	24 dBm ~
Power Class	5 pcl ~ 15 pcl	5 pcl ~ 19 pcl	0 pcl ~ 15 pcl	0 pcl ~ 15 pcl	3 Class
Sensitivity	-102 dBm	-102 dBm	-100 dBm	-100 dBm	-106.7 dBm
TDMA Mux	8	8	8	8	-
Cell Radius	35 Km	35 Km	2 Km	-	-

2-2. GSM TX power class

TX Power control level	GSM900	TX Power control level	DCS1800	TX Power control level	PCS1900	WCDMA2100 Power Class 3		
						Power	dBm	Tol
5	33±2 dBm	0	30±3 dBm	0	30±3 dBm	Power	dBm	Tol
6	31±2 dBm	1	28±3 dBm	1	28±3 dBm	Max	+24	+1/-3
7	29±2 dBm	2	26±3 dBm	2	26±3 dBm	Min	-50	under
8	27±2 dBm	3	24±3 dBm	3	24±3 dBm			
9	25±2 dBm	4	22±3 dBm	4	22±3 dBm			
10	23±2 dBm	5	20±3 dBm	5	20±3 dBm			
11	21±2 dBm	6	18±3 dBm	6	18±3 dBm			
12	19±2 dBm	7	16±3 dBm	7	16±3 dBm			
13	17±2 dBm	8	14±3 dBm	8	14±3 dBm			
14	15±2 dBm	9	12±4 dBm	9	12±4 dBm			
15	13±2 dBm	10	10±4 dBm	10	10±4 dBm			
16	11±3 dBm	11	8±4 dBm	11	8±4 dBm			
17	9± 3dBm	12	6±4 dBm	12	6±4 dBm			
18	7±3 dBm	13	4±4 dBm	13	4±4 dBm			
19	5±3 dBm	14	2±5 dBm	14	2±5 dBm			
		15	0±5 dBm	15	0±5 dBm			

3. Product Function

Main Function

- Symbian
- Music Player
- Bluetooth
- Email
- SMS/MMS
- Internet Explorer
- Camera and Camcorder
- Video Telephony

10. Reference data

Reference Abbreviation

- **AAC**: Advanced Audio Coding.
- **AVC** : Advanced Video Coding.
- **BER** : Bit Error Rate
- **BPSK**: Binary Phase Shift Keying
- **CA** : Conditional Access
- **CDM** : Code Division Multiplexing
- **C/I** : Carrier to Interference
- **DMB** : Digital Multimedia Broadcasting
- **EN** : European Standard
- **ES** : Elementary Stream
- **ETSI**: European Telecommunications Standards Institute
- **MPEG**: Moving Picture Experts Group
- **PN** : Pseudo-random Noise
- **PS** : Pilot Symbol
- **QPSK**: Quadrature Phase Shift Keying
- **RS** : Reed-Solomon
- **SI** : Service Information
- **TDM** : Time Division Multiplexing
- **TS** : Transport Stream

1. Safety Precautions

1-1. Repair Precaution

- Repair in Shield Box, during detailed tuning.
Take specially care of tuning or test, because specificity of cellular phone is sensitive for surrounding interference(RF noise).
- Be careful to use a kind of magnetic object or tool, because performance of parts is damaged by the influence of magnetic force.
- Surely use a standard screwdriver when you disassemble this product, otherwise screw will be worn away.
- Use a thicken twisted wire when you measure level.
A thicken twisted wire has low resistance, therefore error of measurement is few.
- Repair after separate Test Pack and Set because for short danger (for example an overcurrent and furious flames of parts etc) when you repair board in condition of connecting Test Pack and tuning on.
- Take specially care of soldering, because Land of PCB is small and weak in heat.
- Surely tune on/off while using AC power plug, because a repair of battery charger is dangerous when tuning ON/OFF PBA and Connector after disassembling charger.
- Don't use as you pleases after change other material than replacement registered on SEC System.
Otherwise engineer in charge isn't charged with problem that you don't keep this rules.

1-2. ESD(Electrostatically Sensitive Devices) Precaution

Several semiconductor may be damaged easily by static electricity. Such parts are called by ESD(Electrostatically Sensitive Devices), for example IC,BGA chip etc. Read Precaution below. You can prevent from ESD damage by static electricity.

- Remove static electricity remained your body before you touch semiconductor or parts with semiconductor. There are ways that you touch an earthed place or wear static electricity prevention string on wrist.
- Use earthed soldering steel when you connect or disconnect ESD.
- Use soldering removing tool to break static electricity. , otherwise ESD will be damaged by static electricity.
- Don't unpack until you set up ESD on product. Because most of ESD are packed by box and aluminum plate to have conductive power,they are prevented from static electricity.
- You must maintain electric contact between ESD and place due to be set up until ESD is connected completely to the proper place or a circuit board.