
2. Specification

2-1 General

Item	US PCS	CDMA	AMPS	GPS
Tx Freq. range	1850~1909.95MHz	824.04~848.97MHz	824.04~848.97MHz	-
Rx Freq. range	1930~1989.95MHz	869.04~893.97MHz	869.04~893.97MHz	1575.42MHz
Channel Bandwidth	1.23MHz	30KHz	30KHz	2MHz
Channel Spacing	50KHz	30KHz	30KHz	Not Used
Number of Channel	1200	832	832	1
Duplex Separation	80MHz	45MHz	45MHz	-
Type of Emission	1M25F9W	1M25F9W	40K0F8W, 40K0F1D	-
In/Output Impdance	50Ω	50Ω	50Ω	50Ω
Tx Intermediate Frequency	263.6MHz	228.6MHz	228.6MHz	-
Rx Intermediate Frequency	183.6MHz	183.6MHz	183.6MHz	183.6MHz
Tx Local Frequency	1st(F _{TX} +263.6MHz) 2nd(527.2MHz)	1st(F _{TX} +228.6MHz) 2nd(457.2MHz)	1st(F _{TX} +228.6MHz) 2nd(457.2MHz)	-
Rx Local Frequency	1st(F _{RX} +183.6MHz) 2nd(367.2MHz)	1st(F _{RX} +183.6MHz) 2nd(367.2MHz)	1st(F _{RX} +183.6MHz) 2nd(367.2MHz)	1st(F _{RX} -183.6MHz) 2nd(367.2MHz)
TCXO Frequency	19.2MHz	19.2MHz	19.2MHz	19.2MHz
Freq. Stability	(F _{RX} - 80 MHz) ± 150 Hz	(F _{RX} - 45 MHz) ± 300Hz	± 2.5ppm	-
Operating Temperature	-30 °C ~ +60 °C	-30 °C ~ +60 °C	-30 °C ~ +60 °C	-30 °C ~ +60 °C
Supply Voltage	3.3 ~ 4.2 V			
Size and Weight	STD : 66.57 * 40.80 * 7.21mm, 27.24g, 900mAh EXT : 66.41 * 40.85 * 11.57mm, 43.64g, 1550mA			

2-2 PCS CDMA(1900MHz)

TRANSMITTER

Waveform Quality	: 0.944 or more
Open Loop Power Control Range	
. -25dBm	: -60.5dBm ~ -41.5dBm
. -65dBm	: -20.5dBm ~ +1.5dBm
. -104dBm	: +15.0dBm ~ +30dBm
Minimum Tx Power Control	: below -50dBm
Closed Loop Power Control Range	: ± 24 dB
Maximum RF Output Power	: 24dBm
Occupied Bandwidth	: 1.23MHz
Conducted Spurious Emission @1.25 MHz	: -42dBc/30kHz

RECEIVER

Rx Sensitivity and Dynamic Range	: -104dBm, FER=0.5% or less -25dBm, FER=0.5% or less
Conducted Spurious Emission	
. 1930 ~ 1990MHz	: < -81dBm
. 1850 ~ 1910MHz	: < -61dBm
. All Other Frequencies	: < -47dBm
Single Tone Desensitization	: lower than 1 %
Rx Power = -101dBm	
Tone Power = -30dBm	
Tone Offset from Carrier = ± 1.25 MHz	
Intermodulation Spurious Response Attenuation	: lower than 1 %
Rx Power = -101dBm	
Tone Power 1 = -43dBm	
Tone Power 2 = -43dBm	
Tone 1 Offset from Carrier = ± 1.25 MHz	
Tone 2 Offset from Carrier = ± 2.05 MHz	

2-3 CDMA(800MHz)

TRANSMITTER

Waveform Quality : 0.944 or more

Open Loop Power Control Range

. -25dBm	: -57.5dBm ~ -38.5dBm
. -65dBm	: -17.5dBm ~ +1.5dBm
. -104dBm	: +18.0dBm ~ +30dBm

Minimum Tx Power Control : below -50dBm

Closed Loop Power Control Range : ± 24 dB

Maximum RF Output Power : 25.5dBm

Occupied Bandwidth : 1.23MHz

Conducted Spurious Emission @ 0.9 MHz	: -42dBc/30kHz
@ 1.25 MHz	: -54dBc/30kHz

RECEIVER

Rx Sensitivity and Dynamic Range	: -104dBm, FER=0.5% or less
	-25dBm, FER=0.5% or less

Conducted Spurious Emission

. 1930 ~ 1990MHz	: < -81dBm
. 1850 ~ 1910MHz	: < -61dBm
. All Other Frequencies	: < -47dBm

Single Tone Desensitization	: lower than 1 %
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Rx Power = -101dBm

Tone Power = -30dBm

Tone Offset from Carrier = ± 0.9 MHz

Intermodulation Spurious Response Attenuation	: lower than 1 %
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Rx Power = -101dBm

Tone Power 1 = -43dBm

Tone Power 2 = -43dBm

Tone 1 Offset from Carrier = ± 0.9 MHz

Tone 2 Offset from Carrier = ± 1.7 MHz

2-4 AMPS

TRANSMITTER

RF Output Power	: 26dBm
Carrier ON/OFF Conditions	
"ON" Condition	: within ± 3 dB of specification output(in 2 ms)
"OFF" Condition	: below -60dBm(in 2ms)
Compressor	
Compression Rate	: 2 : 1
Attack Time	: 3 ms
Recovery Time	: 13.5 ms
Reference Input	: input power level for producing a nominal ± 2.9 kHz
	: peak frequency deviation of transmitted carrier
Preamphasis	: 6dB/OCT within 0.3 ~ 3 kHz
Maximum Frequency Deviation	
Modulation Deviation Limiting	: ± 12 kHz
Supervisory Audio Tone	: ± 2 kHz($\pm 10\%$)
Signaling Tone	: ± 8 kHz($\pm 10\%$)
Wideband Data	: ± 8 kHz($\pm 10\%$)
Post Deviation Limiter Filter	
3.0 ~ 5.9 kHz	: above 40 LOG(F / 3000)dB
5.9 ~ 6.1 kHz	: above 35dB
6.1 ~ 15 kHz	: above 40 LOG(F / 3000)dB
Over 15 kHz	: above 28 dB
Spectrum Noise Suppression	
For all modulation	
fo +20 kHz ~ fo + 45 kHz	: above 26dB
For modulation by voice and SAT	
fo + 45 kHz	: above 63dB+10LOG(PY)dB
For modulation by WBD(without SAT) and ST(with SAT)	
fo +45 kHz ~ fo + 60 kHz	: above 45 dB
fo +60 kHz ~ fo + 90 kHz	: above 65 dB
fo +90 kHz ~ 2 fo	: above 63 dB + 10 LOG(PY) dB
	(where fo = carrier frequency PY=mean output power in watts)
Harmonic and conducted Spurious Emissions	: below 43 + 10 LOG(PY) dB

RECEIVER

De-emphasis	: -6dB/OCT within 0.3 °± 3 kHz
Expander	
Expander Rate	: 1 : 2
Attack time	: within 3 ms
Recovery Time	: within 13.5 ms
Reference input	: output power level to a 1000Hz tone from a carrier within °±2.9 kHz peak frequency deviation
Sensitivity	: 12 dB SINAD / -116dBm
Intermodulation Spurious Response Attenuation	: above 65dB
RSSI Range	: above 60dB
Protection Against Spurious Response Interference	: above 60dB
In Band Conducted Spurious Emission	
Transmit Band	: below -60 dBm
Receive Band	: below -80 dBm
Out of Band Conducted Spurious Emissions	: below -47dBm
Radiated Spurious Emissions	

Frequency Range	Maximum Allowable EIRP
25 ~ 70 MHz	-45 dBm
70 ~ 130 MHz	-41 dBm
130 ~ 174 MHz	-41 ~ -32 dBm
174 ~ 260 MHz	-32 dBm
260 ~ 470 MHz	-32 ~ -26 dBm
470 ~ 1 GHz	-21 dBm

2-5 GPS Mode

Location Accuracy

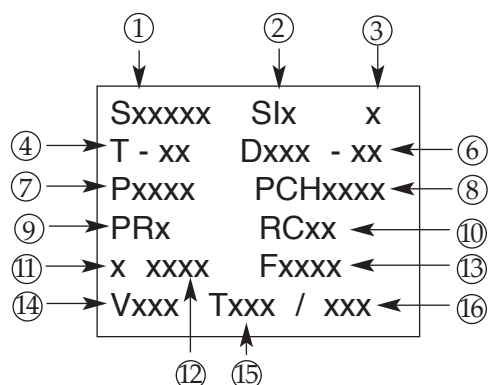
For 67% of calls
For 95% of calls

: less than 50 meter
: less than 150 meter

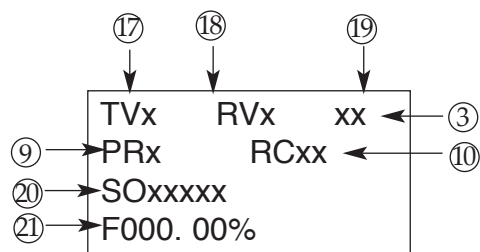
2-6 PCS Debug Display Information

To select debug display mode : Press [MENU] + [0] + [1] + [0], and press [0] + [4] + [0] + [7] + [9] + [3], and press [1].

IN IDLE MODE



IN CONVERSATION MODE



- ① Sxxxxx : SID (System Identification) toggle
Nxxxxx : NID (Network Identification) toggle
- ② Slx : Slot cycle index (lowest between the system and the phone will be used)
1. SI0 : Slot Index 0
2. SI1 : Slot Index 1

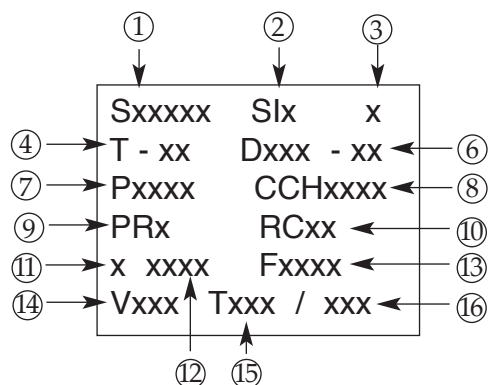
- ③ Handset Status : 0 - NO SVC
1 - Synchronization
2 - Paging (Idle)
3 - Reg. Access state
4 - Traffic Initialization
5 - Waiting for order
6 - Waiting for answer
7 - Conversation state
8 - Exit

- ④ T-xx : Tx adjust, Value ranges from -63~+63dB
- ⑤ Dxxx : Sector power in dBm
- ⑥ -xx : e_c/I_o
- ⑦ Pxxxx : PN offset
- ⑧ PCHxxxx : Channel number
- ⑨ PRx : Protocol revision
- ⑩ RCxx : Radio configuration
- ⑪ x : Prefer mode
- ⑫ xxxs : Scan list mode, Scan mode
- ⑬ Fxxxx : Scan list index, Scan list count
- ⑭ Vxxxx : VBAT Level
- ⑮ Txxxx : Thermistor Level 1
- ⑯ xxx : Thermistor Level 2
- ⑰ TV : Tx vocoder rate (8 is full rate, 1 is 1/8th rate)
- ⑱ RV : Rx vocoder rate (8 is full rate, 1 is 1/8th rate)
- ⑲ xx : Walsh code used in traffic channel
- ⑳ SOxxxxx : Service option
- ㉑ F000. 00% : FER

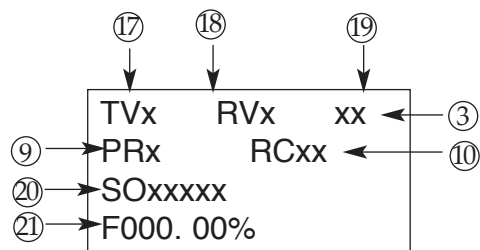
2-7 CDMA Debug Display Information

To select debug display mode : Press [MENU] + [0] + [1] + [0], and press [0] + [4] + [0] + [7] + [9] + [3], and press [1].

IN IDLE MODE



IN CONVERSATION MODE



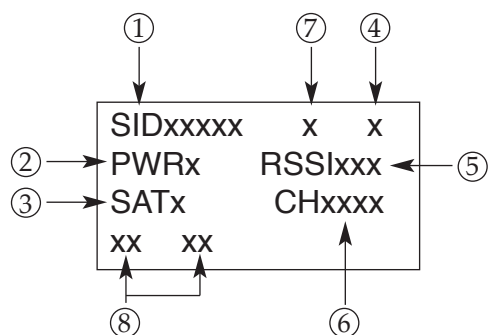
- ① Sxxxxx : SID (System Identification) toggle
Nxxxxx : NID (Network Identification) toggle
- ② Slx : Slot cycle index (lowest between the system and the phone will be used)
 - 1. SI0 : Slot Index 0
 - 2. SI1 : Slot Index 1

- ③ Handset Status : 0 - NO SVC
 - 1 - Synchronization
 - 2 - Paging (Idle)
 - 3 - Reg. Access state
 - 4 - Traffic Initialization
 - 5 - Waiting for order
 - 6 - Waiting for answer
 - 7 - Conversation state
 - 8 - Exit

- ④ T-xx : Tx adjust, Value ranges from -63~+63dB
- ⑤ Dxxx : Sector power in dBm
- ⑥ -xx : e_c/I_o
- ⑦ Pxxxx : PN offset
- ⑧ CCHxxxx : Channel number
- ⑨ PRx : Protocol revision
- ⑩ RCxx : Radio configuration
- ⑪ x : Prefer mode
- ⑫ xxxs : Scan list mode, Scan mode
- ⑬ Fxxxx : Scan list index, Scan list count
- ⑭ Vxxxx : VBAT Level
- ⑮ Txxxx : Thermistor Level 1
- ⑯ xxx : Thermistor Level 2
- ⑰ TV : Tx vocoder rate (8 is full rate, 1 is 1/8th rate)
- ⑱ RV : Rx vocoder rate (8 is full rate, 1 is 1/8th rate)
- ⑲ xx : Walsh code used in traffic channel
- ⑳ SOxxxxx : Service option
- ㉑ F000. 00% : FER

2-8 AMPS Debug Display Information

To select debug display mode : Press [MENU] + [0] + [1] + [0], and press [0] + [4] + [0] + [7] + [9] + [3], and press [1].



- ① SIDxxxxx : AMPS Home System ID
- ② PWRx : Power Level 0 ~ 7
- ③ SATx : Supervisory Audio Tone code (0 ~ 2)
- ④ x (Using Frequency Band) : A Band or B Band
- ⑤ RSSIxxx : RSSI value
- ⑥ CHxxx : Channel number
- ⑦ Handset Status : 1 - Initialization state
2 - Idle state
3 - System Access state
4 - Voice channel state
- ⑧ System acquisition state