SPP-ID970/1,975/6
SPP-A973/4
Electrical Specification

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Revision History

Revision No	Description	Page	Effective Date
1.0	First Release	All	Jan 25,'99

2.0	• Changed Model numbers to reflect the Official Product Numbers from SONY
	• Changed DC Electrical Characteristics
	  • Base Standby Time Max TBD to Min 7
	  • Base Continuous Talk Time Max TBD to Min 7
	• Changed Audio Specification
	  • Receive Volume to provide typical rating of 12 instead of Minimum rating of 12
	• Changed RF Parameters
	  • Image Rejection from 60 to 55
	  • Receiver Muting –107 to –106
	• Added RF parameters
	  • Channel Spacing
	  • Radiated Field Strength
	  • Receive Frequency
	  • Transmit Frequency Stability
	  • Sensitivity
	  • 3rd Order Intercept Point
	  • Adjacent Channel Rejection
	  • Aggregate Data Rate
		Title Page and Headers
		
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			Feb 19,'99

1.1 Operating Conditions

	Parameter	Min	Typ	Max	Units
	Operating Temperature Range	0	25[1]	40[2]	°C
	Base Unit Operating Voltage (AC Voltage, 60Hz)	96	120[1]	144	Vrms
	Base Unit Operating Voltage (AC Adapter Output)		9[1]		Vdc
	Handset Operating Voltage[2]	3.2	3.6[1,3]	4.2	Vdc

Notes:
1. Typical value represents the nominal testing value
2. NiCd Battery should not be operated above 40 °C.
3. Handset operates from a 3-cell NiCd Battery.

1.2 DC Electrical Characteristics

Specifications marked with * are guaranteed at the nominal testing temperature and voltage on all units with the use of automated production test equipment (ATE)

	Parameter	Min	Typ	Max	Units
*	Low Battery Detection Threshold (HS)		3.5		Vdc
	Handset Standby Time	7			Days
	Handset Continuous Talk Time	7			Hours
	Base Unit Standby Time – POTS Mode			TBD	Hours
	Base Unit Continuous Talk Time – POTS Mode			TBD	Hours
	Fast Charge – Handset Battery		120		mA
	Slow Charge – Handset Battery		60		mA
	Spare Battery Charge		30		mA

1.3 Audio Specification

Specifications marked with * are guaranteed at the nominal testing temperature and voltage on all units with the use of automated production test equipment (ATE).

	Parameter	Min	Typ	Max	Units
*	Transmit Objective Loudness Rating (TOLR)[1]	-40	-46	-53	dB
*	Receive Objective Loudness Rating (ROLR)[1,2]	51	+46	41	dB
*	Sidetone Objective Loudness Rating (SOLR)[3]	+3	+8	+19	dB
*	Receive volume adjustment range	12	TBD	TBD	dB
*	Transmit Direction Acoustic Overload (into microphone)[4]	105			dBspl
*	Receive Direction Acoustic Overload (from receiver)[4]	105			dBspl
	Transmit Direction Noise[5]			20	dBrnC
	Receive Direction Noise[2,5]			40	dB(A)
	Peak Acoustic Pressure[6]			130	dBspl

Notes:
1. Tested using 0kft of simulated telephone line
2. Tested at normal (low) volume level
3. Base unit connected to 0kft of simulated telephone line terminated with 900Ω
4. Acoustic level that results in 5% THD, measured at 1kHz through a 5kHz lowpass filter

5. Handset isolated from sound input and mechanical disturbances
6. Tested at high volume level

1.4 Telephone Line Interface Specification

Specifications marked with * are guaranteed at the nominal testing temperature and voltage on all units with the use of automated production test equipment (ATE).

	Parameter	Min	Typ	Max	Units
*	DTMF Frequency Tolerance	-1.5		+1.5	%
*	DTMF Low Group Tone Level[1]	-7.5	-5.0	-4.0	dBm
*	DTMF High Group Tone Level[1]	-5.5	-3.0	-2.0	dBm
	DTMF Combined Tone Level[1]			+2.0	dBm
	DTMF High Group Pre-emphasis (Twist)		2.0	4.0	dB
	Pulse Dialing Break Duration		60		ms
	Pulse Dialing Make Duration		40		ms
	Pulse Dialing Rate		10		pps
	Ring Detection Frequency[2,3]	15		68	Hz
	Ring Response Voltage[3]	40			Vrms
	Ring No-Response Voltage[4]			25	Vrms

Notes:
The above specification are derived from the TIA/EIA-470-B publication
1. Measured across a 900Ω terminating impedance
2. The ringer must ring with signals within this range
3. Measured with a frequency of 20Hz
4. The ringer must not ring with signals within this range

1.5 Calling Line Identification Specification

Parameter		Min	Typ	Max	Units
Receive Space Frequency		2178	2200	2222	Hz
Receive Mark Frequency		1188	1200	1212	Hz
Receive Baud Rate		1188	1200	1212	Baud
Mark FSK Detector Sensitivity		-32		-12	dBm
Space FSK Detector Sensitivity		-36		-32	dBm
FSK Detector Twist		-10		+10	dB
CAS Detection Sensitivity		-32			dBm
Channel Seizure Delays				300	Bits
Immunity to Stuffed Mark Bits				360	Bits
CAS					
Frequency limits	Lower Tone	2023.5	2130	2236.5	Hz
	Upper Tone	2612.5	2130	2887.5	Hz
Dynamic Range (per tone)		-32		-14	dBm
Twist				< 6	dB
Tone Duration		75		85	mS
ACK					
Signal Duration		55		65	mS

Notes: The above specification have been derived from the following Bellcore standards

- Bellcore TR-NWT-000030 Issue 2
  "Voiceband Data Transmission Interface Generic Requirements"
- Bellcore TR-NWT-000031 Issue 4
  "CLASS Feature: Calling Number Delivery"
- Bellcore TR-NWT-001188 Issue 1
  "CLASS Feature: Calling Name Delivery Generic Requirements"

1.6 Radio Specification

Number of RF Channels	30
Handset Transmission Frequency Range	923.1 – 927.75 MHz
Base Transmission Frequency Range	902.3 –906.65 MHz
Channel Spacing	300 KHz
Image Rejection (RF)	> 55 dB
Receiver Muting Level	Between -109 dBm and -106 dBm
RF Radiated Field Strength	< 94 dBuV/m @ 3 meters
Receive Frequency	10.7 MHz
Transmit Frequency Stability	+/-10 KHz, 0 to 50c
Sensitivity for 1/1000 bit errors	Less than or equal to -105 dBm @ antenna
3rd Order Intercept Point	> 55 dB
Adjacent Channel Rejection	> 50 dB
Aggregate Data Rate	48 Kbps

Note: *For spurious rejection measurements, RF level of the desired signal is set to provide 25dB SINAD (CCITT). The rejection is the relative level of the interference signal above the desired to reduce the SINAD to 20dB (CCITT)*

1.7 Regulatory Specifications

- The circuit must meet the radio frequency emission requirements defined in FCC regulations Part 15 and IC RSS-210.
- The circuit must meet telephone interface requirements defined in FCC part 68 and IC CS-03 standards.