

AS/ACIF S004:2006 AUSTRALIA STANDARD
MEASUREMENT AND TEST REPORT

For

XIAMEN YEALINK NETWORK TECHNOLOGY CO., LTD.

7/F Hua Lian Electronic Building No. 580 JiaHe Road, Xiamen, China

Model: USB-P1K

July 10, 2006

This Report Concerns: <input checked="" type="checkbox"/> Original Report	Equipment Type: USB Phone
Test Engineer: _____	
Report No.: R0606072-19	
Test Date: 7-July-2006	
Reviewed By: _____	
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1 - GENERAL INFORMATION

Compliance Test Report

Test Specification: AS/ACIF S004:2006
Description: Public Switched Telephone Network (PSTN); Attachment Requirements for a terminal equipment incorporating an analogue handset function capable of supporting the justified case service when connected to the analogue interface of the PSTN in Europe.

Report/Job Number	
Job Reference	R0606072
Customer	Xiamen Yealink Network Technology Co., Ltd.
Product	USB Phone

Report Prepared By	Dan
Signature	
Position	Test Engineer
Date Prepared	7/July/2006

Report Authorized By	
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Date Authorized	Daniel Deng

1.1 Laboratory details

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Additionally, Bay Area Compliance Laboratory Corporation is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (NVLAP).

1.2 Customer Details

Customer Name:	Xiamen Yealink Network Technology Co., Ltd.
Customer Address:	7/F HuaLian Electronic Building, No. 580 JiaHe Road, Xiamen, China
Customer Telephone:	+86 592 5702000
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Manufacturer Name:	Xiamen Yealink Network Technology Co., Ltd.
Manufacturer Address:	7/F HuaLian Electronic Building, No. 580 JiaHe Road, Xiamen, China

Notes:	
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1.3 Product Description for Equipment Under Test (EUT)

The *Xiamen Yealink Network Technology Co.Ltd* 's product, model name: *USB-PIK* or the "EUT" as referred to in this report is a *USB Phone* with the following features:

- With LCD, keypad and ringer, easy to use like mobile phone
- Phone rings for all incoming calls, ring style selectable
- Caller ID function of SKYPE calls
- Dial SKYPE contact and SKYPEOUT number by phone keypads
- Echo cancellation, noise reduction, duplex communication
- Driver and sound card built-in, no external power required

1.4 Objective

This Australia S004:2006 report is prepared on behalf of *Xiamen Yealink Network Technology Co.Ltd.* in accordance with AS/ACIF S004:2006 voice frequency performance requirements for customer equipment Regulations.

The objective of the manufacturer is to demonstrate compliance with Australia S004 limits for voice frequency performance requirements for Information Technology Equipment.

1.5 Related Submittal(s)/Grant(s)

No Related Submittals.

1.6 Test Methodology

All measurements contained in this report were conducted with AS/ACIF S004:2006 standard, Australia Communications Industry Forum Standard for Methods of Measurement of voice frequency performance requirements for customer equipment measurement was performed at Bay Area Compliance Laboratory Corporation.

AS/ACIF S004 relates to Customer Equipment (CE). It defines the voice frequency performance requirements for customer equipment for inter-working and non-interference for CE connected to the Public Switch Telephone Network (PSTN) through an analogue interface.

1.7 Test Equipment List and Details

No.	Manufacturer	Description	Model	Serial Number	Calibration Date
1	Hewlett-Packard	Spectrum Analyzer	4396B	JP1KE00615	08-31-06
2	Hewlett-Packard	Spectrum Analyzer Display	85662A	2542A12015	08-31-06
3	Hewlett-Packard	1 MΩ Input Adapter (5Hz-100MHz)	41802A	3103J01115	02-02-07
4	Hewlett-Packard	Power Supply	11899A	3110A02427	N/A
5	Leader	AC Millivoltmeter	LMA-181A	6041126	07-28-06
6	Protek	Sweep Function Generator	B-801	920509600	09-17-06
7	BACL	Return Loss Test Box	RL-668	990818	N/A
8	Com-Power	Surge Generator	SG-168	23000	08-01-06
9	Com-Power	Impedance Test Set	IS-268	25024	08-01-06
10	Com-Power	Loop Simulator	LS-468	25022	08-01-06
11	Com-Power	Longitudinal Signal Power and Balance Set	LB-168	25143	08-01-06
12	Com-Power	Ringer Set	RS-368	25021	08-01-06
13	Krohn-Hite	Dual Channel Band Filter	KH3940	003212	03-15-07
14	Tektronix	Multiple-Voltmeter	DMN912	138578	03-15-07
15	Consultronics	Wirnline Simulator	XPS/26-M24	XPX1869	03-02-07
16	Teltone Corp.	Telephone Line Simulator	TLS-3	80071	06-12-07
17	Listen Inc.	Sound Check HAC & Volume	N/A	SC168	03-12-07
18	Hewlett-Packard	Analogue Oscilloscopes	54600B	US38070219	04-20-07
19	CCLab	Hearing Aid Compatibility Probe-Axial	HAC A-100	0095	10-15-06
20	Associated Research	AC/DC Voltage Tester	3670	9330400	12-13-06

***Statement of Traceability: Bay Area Compliance Laboratory Corp.** Certifies that all calibration has been performed using suitable standards traceable to the NATIONAL INSTITUTE of STANDARDS and TECHNOLOGY.

The test equipment utilised is maintained and calibrated to ensure that measurement uncertainties fall within the limits specified in ADLNB document GN/WG2/1 "Guidance Notes On Measurement Uncertainty" dated 19 March 1998

1.8 Local Support Equipment

System Type: PSTN21, Product Code: PRD010, Revision Number: 1.0, Serial Number: 0016

1.9 TEST REPORT SUMMARY

Testing was completed against all relevant requirements of the test standard. The results obtained indicate that the product under test complies in full with the requirements tested.

A summary of the test status of the product under test with respect to each test requirement of the standard is provided in Clause 2.0 on page 6 of this report.

Detailed test results are presented in section 2.1 following page 6 of this report.

2.0 Conditions Table

The EUT has been declared to support the following features		
Reference	Condition	Supported By EUT
C.1.	Does the EUT require an external power source?	No
C.2.	Is the EUT provided with a user controlled receiving volume control?	Yes
C.3.	Does the EUT support a hands free or loud speaking function which is not powered from a separate power supply?	No

2.1 Test Record

Clause	Clause Title	Test Status
5.1	Hearing Aid Compatibility (HAC)	Not Required
5.2	Maximum signal level to line	Not Required
5.3.2.1	Normal operating level	Not Required
5.3.2.2	Transmission composite speech and music limitations	Not Required
5.3.3	Relative frequency response	Not Required
5.4.2	Customer Equipment without a handset or headset	Not Required
5.4.2.1	Normal operating level	Not Required
5.4.2.2	Send frequency response	Not Required
5.4.3.1	Send frequency response	Not required
5.4.3.2	Receive frequency response	Not required
5.4.3.3	Receive loudness ratings	Pass
5.4.3.4	Sidetone	Not required
5.4.3.5	Weighted terminal coupling loss(TCLw)	Not required
5.4.3.6	Howling	Not required
5.4.3.7	Acoustic shock	Not required
5.4.3.8	Maximum sound pressure level	Pass
5.4.3.9	Audible incoming call signal	Not required
5.4.3.10	Distortion	Pass
5.4.3.11	Retention of dangerous objects	Pass
5.5	Acoustic coupling	Pass

Clause	Clause Title	Test Status
5.5.1	Maximum sound pressure level	Pass
5.5.2	Maximum emitted signal	Pass
5.5.3	DTMF	Pass

2 - GENERAL REQUIREMENTS (Section 5.0)

5.1 Hearing Aid Compatibility (HAC)

a) Axial Field Intensity

The axial component of the magnetic field directed along the measurement axis and located at the measurement plane, shall be greater than -30 dB and should be less than -17dB relative to 1 A/m, for an input of -10dBv at 1000Hz.

	Result	Upper limit (dB)	Lower limit (dB)
AXIAL component	N/A	≤-17	-30

Results: N/A

b) Radial Field Intensity

The radial component of the magnetic field as measured at four points 90° apart, and at a distance ≥ 16 mm from the measurement axis, shall be greater than -27 dB relative to 1 A/m, for an input of -10 dBv at 1000Hz.

Position	Vout (dBV)	Net (dB)	Limit
0°	N/A	N/A	>-27
90°	N/A	N/A	>-27
180°	N/A	N/A	>-27
270°	N/A	N/A	>-27

Note: Probe Coil Correction Factor (CF)= 60 dB (Loop Current: 23mA)

Results: N/A

c) Induced Voltage Frequency Response

The frequency response of the voltage induced in the probe coil by the axial component of the magnetic field as measured shall fall within the acceptable region over the frequency range 300-to-3300 Hz.

See attachment photo in details.

Results: N/A

5.2 Maximum signal level to line

The level of any signals with speech or music characteristics transmitted to line shall not exceed 5.0V peak to peak into a 600 Ω resistive line termination.

Condition	Termination (Ω)	Result (V)	Limit Peak-to-peak (V)
DC48V $R_v = 400$	600 Ω	3.18	≤ 5
LV48V $R_v = 2300$	600 Ω	3.12	≤ 5

Results: Pass

5.3 Non-electro-acoustic transmission

5.3.2.1 Normal operating level

The levels of speech or music, desired from recorded media, line transmission, synthesized, synthesized music or other non acoustic inputs should not be greater than -12 VU and should not be less than -36 VU.

Items	Result	Upper limit (VU)	Lower limit (VU)
Operation level	/	≤ -12	-36

Results: N/A

5.3.2.2 Transmission composite speech and music limitations

where CE is capable of transmitting composite speech and music signals , the level of the music component should be at least 10dB lower than the level of the speech component .

Items	Result	Upper limit (dB)	Lower limit (dB)
Composite level	/	≤ -11	-13

Results: N/A

5.3.3 Relative frequency response

The send frequency response of speech or music, derived from pre-recorded media, line transmission, synthesized speech, synthesized music or other non-acoustic inputs should be within the limits of Figure 1 when used in accordance with the CE supplier's instructions.

Results: N/A

5.4 Electro-acoustic transmission and reception

5.4.2 Customer Equipment without a handset or headset

5.4.2.1 Normal operating level

For STS CE which operates for voice communication exclusively in a hands-free mode, the output level of transmitted signals shall be within -6VU to -18VU when used in accordance with the CE supplier's instructions.

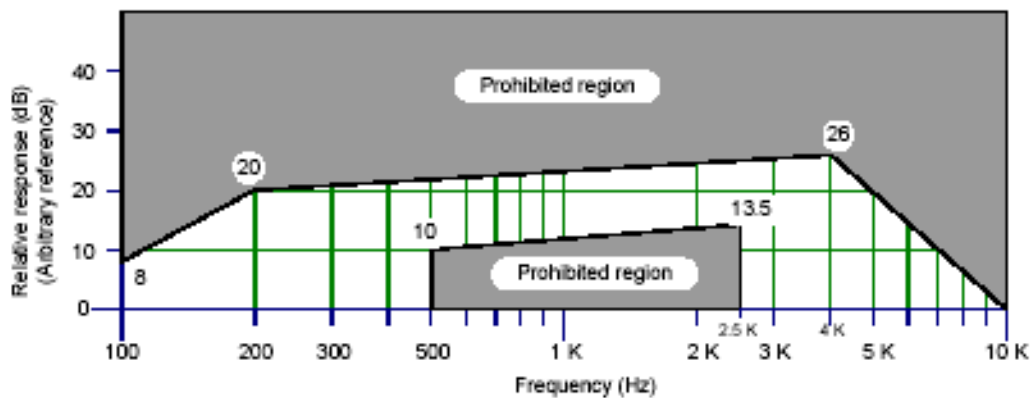
Items	Result	Upper limit (VU)	Lower limit (VU)
Operation level	/	≤ -6	-18

Results: N/A

5.4.2.2 Send frequency response

For STS CE which operates for voice communication exclusively in a hands-free mode, the send frequency response to acoustic input shall be within the limits of the below photo curve when used in accordance with the CE supplier's instructions.

Results: N/A



5.4.3 Customer Equipment incorporating a handset and/or headset

5.4.3.1 Sending frequency response

5.4.3.1.1 CE with Analogue interfaces

CE with analogue interfaces which incorporate a—

(a) Handset shall comply with the send frequency response limits as shown in the below photo curve; or

(b) Headset or cordless handset shall comply with the send frequency response limits as shown in the below photo curve.

See attachment photo in details.

Results: N/A

5.4.3.1.2 CE with digital interfaces

CE with digital interfaces which incorporate a—

(a) Handset shall comply with the send frequency response limits as shown in Figure 4 in AS/ACIF S004:2006 or

(b) Headset or cordless handset shall comply with the send frequency response limits as shown in Figure 5 in AS/ACIF S004:2006

Results: N/A

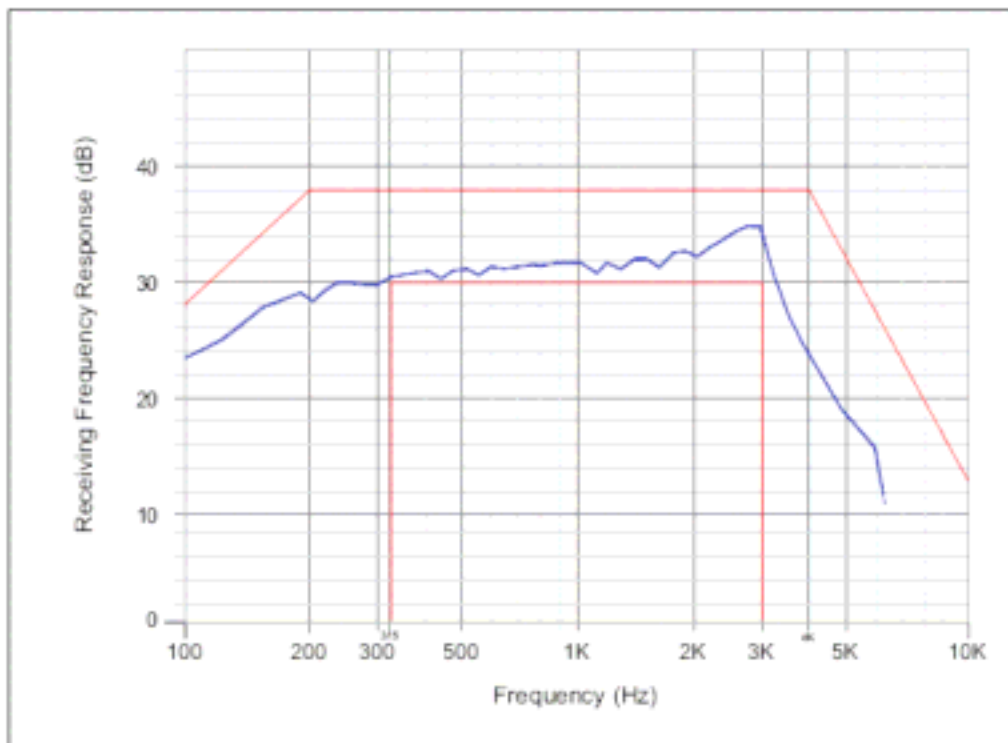
5.4.3.2 Receive frequency response

CE which incorporates a—

(a) Handset shall comply with the receive frequency response limits as shown in below Figure.

See attachment in details.

Results: Pass



5.4.3.3 Send and receive loudness ratings

5.4.3.3.1 CE other than CAE with analogue interfaces

CE other than CAE, with analogue network interfaces shall comply with the Send Loudness Rating (SLR) and Receive Loudness Rating (RLR) requirements specified in Table 1 in AS/ACIF S004:2006.

See attachment in details

Cable (mm)	Send Loudness Rating, SLR (dB)				
	Line length				
	Short		Average		Limit
	Limit	Result	Limit	Result	
0.40	8 ± 4	N/A	8 ± 4	N/A	12 ± 4
0.64	8 ± 4	N/A	8 ± 4	N/A	12 ± 4

Note: CE not applicable to this clause (SLR)

Cable (mm)	Receive Loudness Rating, RLR (dB)				
	Line length				
	Short		Average		Limit
	Limit	Result	Limit	Result	
0.40	-4 ± 4	-3.58	-4 ± 4	-3.34	0 ± 4
0.64	-4 ± 4	-3.83	-4 ± 4	-3.46	0 ± 4

Verdict: Pass

Note: The artificial line circuit representation of limit, average and short line lengths are refer to AS/ACIF S004:2006.

Results: Pass

5.4.3.3.2 CE with digital interfaces

CE with digital network interfaces shall comply with the short term limits for Send Loudness Rating ($11 \text{ dB} > \text{SLR} > 5 \text{ dB}$) and Receive Loudness Rating ($5 \text{ dB} > \text{RLR} > -1 \text{ dB}$) as specified in ITU-T Rec. P.310 [13].

Short term	Result (dB)	Limit (dB)
SLR	/	$11 < \text{SLR} < 5$
RLR	/	$5 < \text{RLR} < -1$

Results: N/A

5.4.3.3.3 CAE with analogue interfaces

CAE with analogue network interfaces together with their Industry Based Proprietary Terminals shall comply with the loudness rating requirements applicable to lines of short length.

Cable (mm)	Send Loudness Rating, SLR (dB)				
	Line length				
	Short		Average		Limit
	Limit	Result	Limit	Result	
0.40	8 ± 4	N/A	8 ± 4	N/A	12 ± 4
0.64	8 ± 4	N/A	8 ± 4	N/A	12 ± 4

Note: CE not applicable to this clause (SLR)

Cable (mm)	Receive Loudness Rating, RLR (dB)				
	Line length				
	Short		Average		Limit
	Limit	Result	Limit	Result	
0.40	-4 ± 4	N/A	-4 ± 4	N/A	0 ± 4
0.64	-4 ± 4	N/A	-4 ± 4	N/A	0 ± 4

Verdict: N/A

Note: The artificial line circuit representation of limit, average and short line lengths are refer to AS/ACIF S004:2006.

Results: N/A

5.4.3.4 Sidetone

5.4.3.4.1 CE with analogue interfaces

CE which have analogue network interfaces shall comply with the STMR requirements specified as follow. The talker sidetone performance is expressed in terms of STMR .

Cable (mm)	Condition	Result (dB)	Limit (dB)
0.40	0.5 km 600R	N/A	> 7
	0.5 km Complex	N/A	> 7
	1.6 km 600R	N/A	> 7
	1.6 km Complex	N/A	> 7
	4.2 km 600R	N/A	> 7
	4.2 km Complex	N/A	> 7
0.64	7.0 km 600R	N/A	> 3
	7.0 km Complex	N/A	> 3

Results: N/A

5.4.3.4.2 CE with digital interfaces

CE with digital network interfaces shall comply with the minimum short term limit for Sidetone Masking Rating (STMR > 10 dB) recommended in ITU-T Rec. P.310 [13].

Cable (mm)	Condition	Result (dB)	Limit (dB)
0.40	0.5 km 600R	N/A	> 7
	0.5 km Complex	N/A	> 7
	1.6 km 600R	N/A	> 7
	1.6 km Complex	N/A	> 7
	4.2 km 600R	N/A	> 7
	4.2 km Complex	N/A	> 7
0.64	7.0 km 600R	N/A	> 3
	7.0 km Complex	N/A	> 3

Results: N/A

5.4.3.4.3 CAE interfaces

CAE together with its Industry Based Proprietary Terminals shall comply with the STMR for lines of average length.

Cable (mm)	Condition	Result (dB)	Limit (dB)
0.40	0.5 km 600R	N/A	> 7
	0.5 km Complex	N/A	> 7
	1.6 km 600R	N/A	> 7
	1.6 km Complex	N/A	> 7
	4.2 km 600R	N/A	> 7
	4.2 km Complex	N/A	> 7
0.64	7.0 km 600R	N/A	> 3
	7.0 km Complex	N/A	> 3

Results: N/A

5.4.3.5 Weighted Terminal Coupling Loss (TCLw)

5.4.3.5.1 VoIP CE weighted terminal coupling loss

(a) The Weighted Terminal Coupling Loss (TCLw) should exceed the 55 dB limit of ITU-T Rec. P.1010 [15]; and

(b) Echo cancellers should be provided.

Results: N/A

5.4.3.6 Howling

5.4.3.6.1 Analogue interface

The CE shall be stable (i.e. not howling) in the on-line condition when the volume control is at the normal volume setting and with its handset:

(a) Lying on and with the transducers facing a flat glass surface.

(b) Being returned to its cradle.

	Length (km)	Impedance ()	Verdict	Limit
Cable 0.4 mm	0 km	600	N/A	N/A
	1.6 km		N/A	
	4.2 km		N/A	
	0 km	Complex	N/A	
	1.6 km		N/A	
	4.2 km		N/A	

Results: N/A

5.4.3.6.2 Cordless Phone at Normal Volume

For a cordless CE, the handset shall be stable (i.e. not howling) at any distance from its base station in the on-line condition when the volume control is at the normal volume setting.

Results: N/A

5.4.3.6.3 Cordless Phone at Maximum Volume

For a cordless CE, the handset should be stable (i.e. not howling) at any distance from its base station in the on-line condition when the volume control is at the maximum volume setting.

Results: N/A

5.4.3.6.4 Cordless Phone with Loud Speaking

If a cordless CE has a loud speaking function on the base unit that can be active at the same time that the cordless handset is in use, the user instructions should include a warning notice against bringing the handset close to the base when this feature is in use.

Results: N/A

5.4.3.7 Acoustic Shock

Acoustic shock is a multi-faceted phenomenon that has a number of contributing factors. A sudden loud sound may cause a person to be startled and can result in significant physical and emotional discomfort. The degree and duration of the effects can depend on factors including, but not limited to—

- (a) The health, stress and emotional state of the person;
- (b) The frequency of the sound; and
- (c) The loudness of the sound.

Results: N/A

5.4.3.8 Maximum Sound Pressure Level

The maximum RMS and instantaneous output sound pressure levels shall be less than the value specified as below table when any user- adjustable receiver volume control is set to maximum when measured—

- (a) using 'RMS', 'Fast' settings of sound level meters as defined in IEC 60651 [7] or equivalent for short term RMS SPL; or
- (b) using 'Peak', 'Max Hold' settings of sound level meters as defined in IEC 60651 [7] or equivalent for instantaneous SPL.

5.4.3.8.2 CE with an analogue PSTN interface

5.4.3.8.2.1 RMS output levels

The maximum output sound pressure level for continuous input voltage shall be determined by subjecting the CE to a source voltage varied between 3 V r.m.s. and 30 V r.m.s., while varying the frequency between 200 Hz and 4 kHz with line currents of 20 mA and 80 mA (or maximum attainable line current).

Equipment	Line current	Condition	Result (dBA SPL)	Limit
Handset	20 mA	200 HZ	65.2	< 120 dBA SPL
		2000HZ	106.3	< 120 dBA SPL
		4000HZ	104.5	< 120 dBA SPL
	80mA	200 HZ	66.8	< 120 dBA SPL
		2000HZ	102.4	< 120 dBA SPL
		4000HZ	100.6	< 120 dBA SPL
Headset	20 mA	200 HZ	N/A	< 118 dBA SPL
		2000HZ	N/A	< 118 dBA SPL
		4000HZ	N/A	< 118 dBA SPL
	80mA	200 HZ	N/A	< 118 dBA SPL
		2000HZ	N/A	< 118 dBA SPL
		4000HZ	N/A	< 118 dBA SPL

Results: Pass

5.4.3.8.2 Instantaneous output level

The maximum instantaneous output sound shall be determined by subjecting the CE to a single pulse of energy using the circuit illustrated in Figure 18 with line currents of 20 mA and 80 mA (or maximum attainable line current).

Equipment	Line current	Condition	Result (dBA SPL)	Limit
Handset	20 mA	200 HZ	76.2	< 123 dB SPL
		2000HZ	96.6	< 123 dB SPL
		4000HZ	118.3	< 123 dB SPL
	80mA	200 HZ	86.2	< 123 dB SPL
		2000HZ	112.1	< 123 dB SPL
		4000HZ	110.8	< 123 dB SPL
Headset	20 mA	200 HZ	N/A	< 123 dB SPL
		2000HZ	N/A	< 123 dB SPL
		4000HZ	N/A	< 123 dB SPL
	80mA	200 HZ	N/A	< 123 dB SPL
		2000HZ	N/A	< 123 dB SPL
		4000HZ	N/A	< 123 dB SPL

Results: Pass

5.4.3.8.3 CE with a digital interface - RMS output levels

The maximum output sound pressure level shall be determined by varying a digitally encoded signal from a level of -9 dBm0 to +3.14 dBm0, while varying the frequency between 200 Hz and 4 kHz.

Note 1: The level +3.14 dBm0 represents the maximum possible signal at the digital interface

Note 2: The instantaneous output level does not require testing.

Equipment	Input level (dBm)	Condition	Result (dBA SPL)	Limit
Handset	-9	200 HZ	N/A	< 120 dBA SPL
		2000HZ	N/A	< 120 dBA SPL
		4000HZ	N/A	< 120 dBA SPL
	+3.14	200 HZ	N/A	< 120 dBA SPL
		2000HZ	N/A	< 120 dBA SPL
		4000HZ	N/A	< 120 dBA SPL
Headset	-9	200 HZ	N/A	< 118 dBA SPL
		2000HZ	N/A	< 118 dBA SPL
		4000HZ	N/A	< 118 dBA SPL
	+3.14	200 HZ	N/A	< 118 dBA SPL
		2000HZ	N/A	< 118 dBA SPL
		4000HZ	N/A	< 118 dBA SPL

Results: N/A

5.4.3.8.4 Handsets and/or Headsets supplied independently for use with one or more host CE

Handsets and/or headsets supplied with detachable amplifiers shall be tested with and without the amplifier. The compliance levels, both with and without the amplifier, shall be recorded in the report.

Handsets or headsets supplied with dedicated or non-detachable amplifiers shall be tested as complete units.

5.4.3.8.4.2 RMS output Levels

The maximum output sound pressure level for continuous input voltage shall be determined when the source voltage to the CE is varied between 100mV and 10 V r.m.s from a 220 source impedance while varying the frequency between 200 Hz and 4 kHz.

Equipment	Input level	Condition	Result (dBA SPL)	Limit
Handset	100 mV	200 HZ	N/A	< 120 dBA SPL
		2000HZ	N/A	< 120 dBA SPL
		4000HZ	N/A	< 120 dBA SPL
	10 V r.m.s	200 HZ	N/A	< 120 dBA SPL
		2000HZ	N/A	< 120 dBA SPL
		4000HZ	N/A	< 120 dBA SPL
Headset	100 mV	200 HZ	N/A	< 118 dBA SPL
		2000HZ	N/A	< 118 dBA SPL
		4000HZ	N/A	< 118 dBA SPL
	10 V r.m.s	200 HZ	N/A	< 118 dBA SPL
		2000HZ	N/A	< 118 dBA SPL
		4000HZ	N/A	< 118 dBA SPL

Results: N/A

5.4.3.8.4.3 Instantaneous output level

The maximum instantaneous sound pressure level shall be determined when the CE is subjected to a single pulse of energy .

Equipment	Input level	Condition	Result (dBA SPL)	Limit
Handset	100 mV	200 HZ	N/A	< 123 dB SPL
		2000HZ	N/A	< 123 dB SPL
		4000HZ	N/A	< 123 dB SPL
	10 V r.m.s	200 HZ	N/A	< 123 dB SPL
		2000HZ	N/A	< 123 dB SPL
		4000HZ	N/A	< 123 dB SPL
Headset	100 mV	200 HZ	N/A	< 123 dB SPL
		2000HZ	N/A	< 123 dB SPL
		4000HZ	N/A	< 123 dB SPL
	10 V r.m.s	200 HZ	N/A	< 123 dB SPL
		2000HZ	N/A	< 123 dB SPL
		4000HZ	N/A	< 123 dB SPL

Results: N/A

5.4.3.9 Audible incoming call signal

5.4.3.9.1 Cordless phone

If ring alerting signal is provided anywhere on the cordless portable telephone or cordless portable part of a cordless telephone system, the maximum sound pressure level shall not exceed 120 dBA SPL at ERP or equivalent at DRP irrespective of the transducer producing the sound. The ring alerting signal shall not be directed to a connector for a headset or earphone.

Note: Non-voice signals sent to the headset or earphone (such as confidence tones) should be of a similar acoustic level as the voice signals.

Item	Result (dBA SPL)	Limit (dBA SPL)
Sound pressure level	N/A	< 120

Results: N/A

5.4.3.9.2 Ring trip on a corded telephone

Where ring trip on a corded telephone is achieved by manual operation of a switch or press button, the ring alerting signal shall not be emitted via the receiver (earpiece) of the telephone.

Results: N/A

5.4.3.10 Distortion

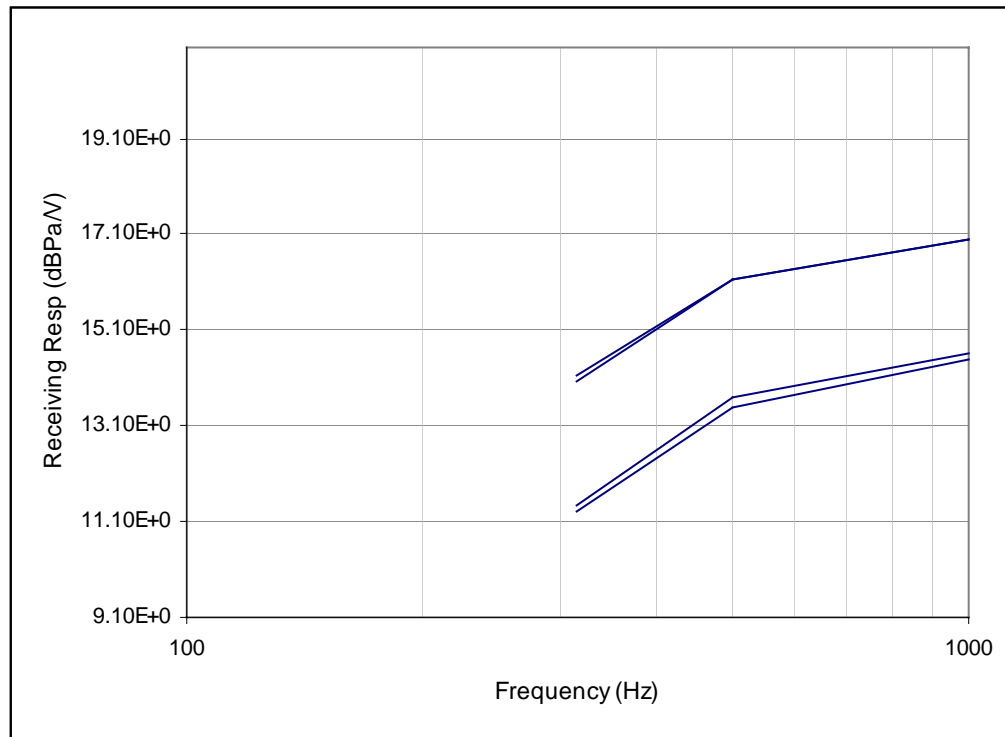
5.4.3.10.1 Sending distortion

For STS CE, the total harmonic distortion (summed up to the 5th harmonic) shall not be greater than 7 % when measured with an input of -4.7 dBPa, at a loop current of 20 mA.

Results: N/A

5.4.3.10.2 Receiving distortion

For STS CE, the total harmonic distortion (summed up to the 5th harmonic) shall not be greater than 7 %, when measured with an input signal level of 251 mV r.m.s. at a loop current of 20 mA.



Test Condition 1, Receiving Distortion - -12dBV test signal, 2300 Ohms feed resistance, normal polarity

DC Feed Voltage: 50 Vdc, Normal Polarity, DC Feed Resistance: 2.3k Ohms
 EUT was Off Hook
 Terminating Impedance: 600R
 Artificial Line Used: None

Receiving Response Test

Signal Generator Level: -12 dBV

Receiving Frequency Response Results

<u>Freq (Hz)</u>	<u>S_{ie} (dBPa/V)</u>
315	12.14
500	14.16
1k	15

Note: On Graph Frequency Response Is Offset By: 2 dB

Distortion Results

Distortion Measured Upto And Including 5th Order Harmonic

Measured Receiving Distortion Must Be <= 7 %

<u>Freq (Hz)</u>	<u>Distortion (%)</u>	<u>V1 (rms)</u>	<u>V2 (rms)</u>	<u>V3 (rms)</u>	<u>V4 (rms)</u>	<u>V5 (rms)</u>	<u>Status</u>
315	1.468	23.98m	0.2649m	0.1452m	96.83u	0.1528m	Pass
500	2.143	30.26m	0.1328m	0.5696m	84.26u	0.2672m	Pass
1k	4.357	33.35m	98.43u	1.451m	15.59u	7.438u	Pass

Distortion Status: Pass**Test Condition Status: Pass****Test Condition 2, Receiving Distortion - -12dBV test signal, 2300 Ohms feed resistance, reverse polarity**

DC Feed Voltage: 50 Vdc, Reverse Polarity, DC Feed Resistance: 2.3k Ohms

EUT was Off Hook

Terminating Impedance: 600R

Artificial Line Used: None

Receiving Response Test

Signal Generator Level: -12 dBV

Receiving Frequency Response Results

<u>Freq (Hz)</u>	<u>S_{je} (dBPa/V)</u>
315	12.04
500	14.18
1k	15.01

Note: On Graph Frequency Response Is Offset By: 2 dB

Distortion Results

Distortion Measured Upto And Including 5th Order Harmonic

Measured Receiving Distortion Must Be <= 7 %

<u>Freq (Hz)</u>	<u>Distortion (%)</u>	<u>V1 (rms)</u>	<u>V2 (rms)</u>	<u>V3 (rms)</u>	<u>V4 (rms)</u>	<u>V5 (rms)</u>	<u>Status</u>
315	1.085	23.71m	0.1665m	0.1349m	0.104m	97.2u	Pass
500	2.379	30.33m	75.71u	0.6892m	63.69u	0.19m	Pass
1k	4.624	33.38m	0.1863m	1.534m	21.64u	10.57u	Pass

Distortion Status: Pass**Test Condition Status: Pass****Test Condition 3, Receiving Distortion - -12dBV test signal, 500 Ohms feed resistance, normal polarity**

DC Feed Voltage: 50 Vdc, Normal Polarity, DC Feed Resistance: 500 Ohms

EUT was Off Hook

Terminating Impedance: 600R

Artificial Line Used: None

Receiving Response Test

Signal Generator Level: -12 dBV

Receiving Frequency Response Results

<u>Freq (Hz)</u>	<u>Sie (dBPa/V)</u>
315	9.328
500	11.49
1k	12.49

Note: On Graph Frequency Response Is Offset By: 2 dB

Distortion Results

Distortion Measured Upto And Including 5th Order Harmonic

Measured Receiving Distortion Must Be <= 7 %

<u>Freq (Hz)</u>	<u>Distortion (%)</u>	<u>V1 (rms)</u>	<u>V2 (rms)</u>	<u>V3 (rms)</u>	<u>V4 (rms)</u>	<u>V5 (rms)</u>	<u>Status</u>
315	1.458	17.35m	0.1936m	22.43u	97.56u	0.1285m	Pass
500	1.811	22.27m	0.1987m	0.2612m	35.64u	0.2317m	Pass
1k	2.953	24.98m	0.2194m	0.7047m	5.782u	2.171u	Pass

Distortion Status: Pass

Test Condition Status: Pass**Test Condition 4, Receiving Distortion - -12dBV test signal, 500 Ohms feed resistance, reverse polarity**

DC Feed Voltage: 50 Vdc, Reverse Polarity, DC Feed Resistance: 500 Ohms

EUT was Off Hook

Terminating Impedance: 600R

Artificial Line Used: None

Receiving Response Test

Signal Generator Level: -12 dBV

Receiving Frequency Response Results

<u>Freq (Hz)</u>	<u>Sie (dBPa/V)</u>
315	9.452
500	11.7
1k	12.61

Note: On Graph Frequency Response Is Offset By: 2 dB

Distortion Results

Distortion Measured Upto And Including 5th Order Harmonic

Measured Receiving Distortion Must Be <= 7 %

<u>Freq (Hz)</u>	<u>Distortion (%)</u>	<u>V1 (rms)</u>	<u>V2 (rms)</u>	<u>V3 (rms)</u>	<u>V4 (rms)</u>	<u>V5 (rms)</u>	<u>Status</u>
315	1.379	17.6m	86.59u	84.45u	0.1748m	0.1174m	Pass
500	2.737	22.81m	0.57m	0.1694m	0.1161m	0.1515m	Pass
1k	2.555	25.33m	0.148m	0.6302m	5.336u	11.29u	Pass

Distortion Status: Pass

Test Condition Status: Pass**Test Condition 5, Receiving Distortion - 0dBV test signal, 2300 Ohms feed resistance, normal polarity**

DC Feed Voltage: 50 Vdc, Normal Polarity, DC Feed Resistance: 2.3k Ohms
 EUT was Off Hook
 Terminating Impedance: 600R
 Artificial Line Used: None

Receiving Response Test

Signal Generator Level: 0 dBV

Receiving Frequency Response Results

<u>Freq (Hz)</u>	<u>Sje (dBPa/V)</u>
1k	14.68

Note: On Graph Frequency Response Is Offset By: 2 dB

Distortion Results

Distortion Measured Upto And Including 5th Order Harmonic

Measured Receiving Distortion Must Be <= 10 %

<u>Freq (Hz)</u>	<u>Distortion (%)</u>	<u>V1 (rms)</u>	<u>V2 (rms)</u>	<u>V3 (rms)</u>	<u>V4 (rms)</u>	<u>V5 (rms)</u>	<u>Status</u>
1k	8.604	0.1279	1.458m	10.67m	0.5833m	2.382m	Pass

Distortion Status: Pass

Test Condition Status: Pass

Test Condition 6, Receiving Distortion - 0dBV test signal, 2300 Ohms feed resistance, reverse polarity

DC Feed Voltage: 50 Vdc, Reverse Polarity, DC Feed Resistance: 2.3k Ohms
 EUT was Off Hook
 Terminating Impedance: 600R
 Artificial Line Used: None

Receiving Response Test

Signal Generator Level: 0 dBV

Receiving Frequency Response Results

<u>Freq (Hz)</u>	<u>Sje (dBPa/V)</u>
1k	14.65

Note: On Graph Frequency Response Is Offset By: 2 dB

Distortion Results

Distortion Measured Upto And Including 5th Order Harmonic

Measured Receiving Distortion Must Be <= 10 %

<u>Freq (Hz)</u>	<u>Distortion (%)</u>	<u>V1 (rms)</u>	<u>V2 (rms)</u>	<u>V3 (rms)</u>	<u>V4 (rms)</u>	<u>V5 (rms)</u>	<u>Status</u>
1k	8.655	0.1275	1.93m	10.71m	0.357m	2.004m	Pass

Distortion Status: Pass

Test Condition Status: Pass

Test Condition 7, Receiving Distortion - 0dBV test signal,500 Ohms feed resistance, normal polarity

DC Feed Voltage: 50 Vdc, Normal Polarity, DC Feed Resistance: 500 Ohms
 EUT was Off Hook
 Terminating Impedance: 600R
 Artificial Line Used: None

Receiving Response Test

Signal Generator Level: 0 dBV

Receiving Frequency Response Results

<u>Freq (Hz)</u>	<u>Sje (dBPa/V)</u>
1k	12.69

Note: On Graph Frequency Response Is Offset By: 2 dB

Distortion Results

Distortion Measured Upto And Including 5th Order Harmonic

Measured Receiving Distortion Must Be <= 10 %

<u>Freq (Hz)</u>	<u>Distortion (%)</u>	<u>V1 (rms)</u>	<u>V2 (rms)</u>	<u>V3 (rms)</u>	<u>V4 (rms)</u>	<u>V5 (rms)</u>	<u>Status</u>
1k	8.263	0.1017	1.807m	8.232m	0.2206m	0.1445m	Pass

Distortion Status: **Pass**

Test Condition Status: Pass

Test Condition 8, Receiving Distortion - 0dBV test signal, 500 Ohms feed resistance, reverse polarity

DC Feed Voltage: 50 Vdc, Reverse Polarity, DC Feed Resistance: 500 Ohms
 EUT was Off Hook
 Terminating Impedance: 600R
 Artificial Line Used: None

Receiving Response Test

Signal Generator Level: 0 dBV

Receiving Frequency Response Results

<u>Freq (Hz)</u>	<u>Sje (dBPa/V)</u>
1k	12.82

Note: On Graph Frequency Response Is Offset By: 2 dB

Distortion Results

Distortion Measured Upto And Including 5th Order Harmonic

Measured Receiving Distortion Must Be <= 10 %

<u>Freq (Hz)</u>	<u>Distortion (%)</u>	<u>V1 (rms)</u>	<u>V2 (rms)</u>	<u>V3 (rms)</u>	<u>V4 (rms)</u>	<u>V5 (rms)</u>	<u>Status</u>
1k	8.316	0.1033	1.913m	8.402m	0.2201m	0.1441m	Pass

Distortion Status: **Pass**

Test Condition Status: Pass

5.4.3.11 Retention of dangerous objects

The CE shall not hold any dangerous objects in the mouthcap or earcap regions unless the CE is provided with a suitable warning notice.

Note : Any warning notice should be legible and placed in a readily visible position, e.g. placed on the CE, on the CE packaging or in the User Instructions.

Results: Pass

5.5 Acoustic coupling

5.5.1 Maximum sound pressure level

Acoustic coupling devices shall not emit sound pressure levels exceeding 100 dBA.

Item	Result (dBA)	Limit (dBA SPL)
Sound pressure level	85.5	< 100

Results: Pass

5.5.2 Maximum emitted signal

All acoustic signals emitted by the equipment should be in the range 300 Hz to 3.4 kHz with at least a 12 dB/octave rolloff below 300 Hz and above 3.4 kHz, relative to 100 dB SPL at 3.4 kHz.

Results: Pass

5.5.3

Where the equipment generates DTMF signalling frequencies—

- (a) the frequency allocation and tolerance should be in accordance with AS/ACIF S002 [2]; and
- (b) the sound pressure level difference between low and high group frequency tones should be less than 4 dB, with the sound pressure levels of the lower group frequencies being the lesser.

See attachment in details refer to AS/ACIF S002:2005

Results: Pass

3 - EUT PHOTOGRAPHS

EUT-Front View



EUT - Back View



EUT – Right Side View



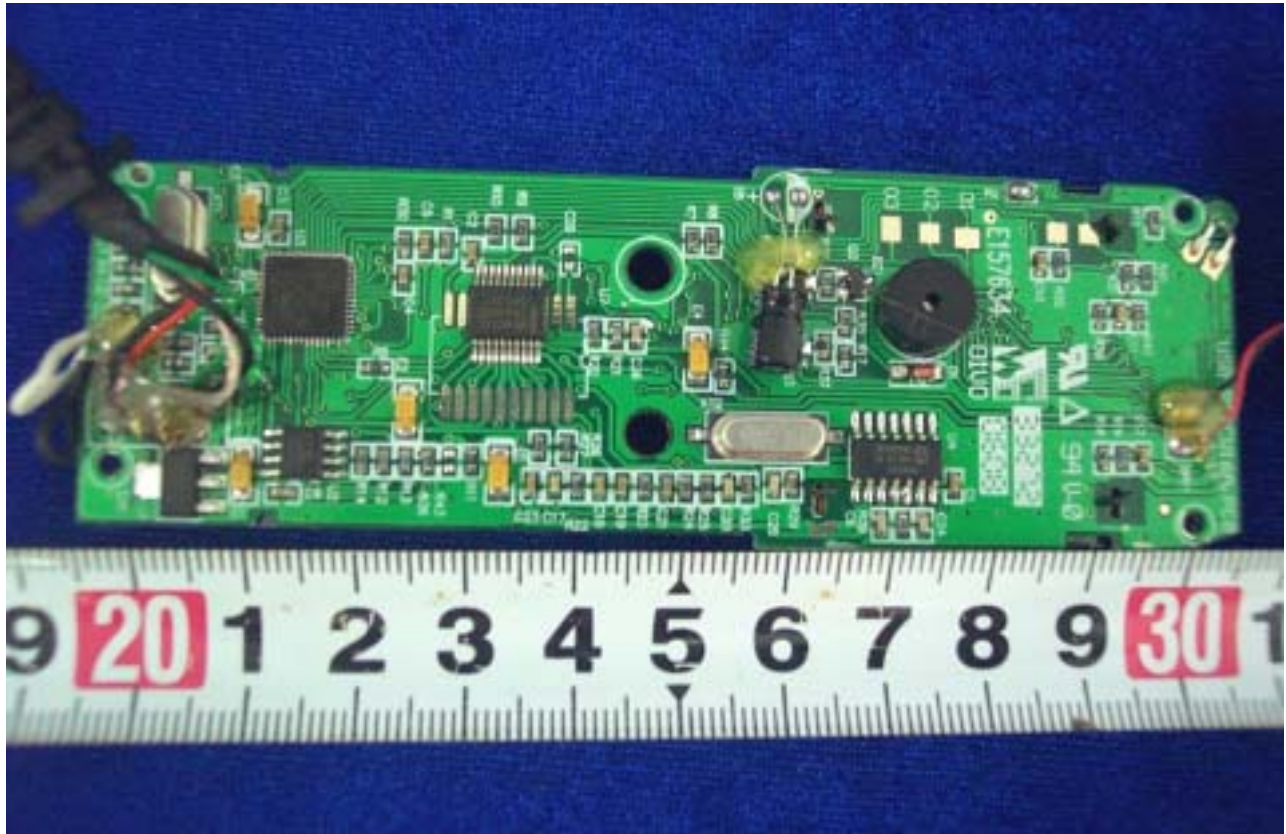
EUT – Top Side View



EUT – Chassis Off View



EUT – Main PCBA Component & Solder View



EUT – Main PCBA Keypad View



APPENDIX B - EUT BLOCK DIAGRAM/SCHEMATICS/PARTS LIST

APPENDIX C - USERS MANUAL
