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IC CS-03

TEST REPORT

APPLICANT	Visonic Ltd.
ADDRESS	24 Habarzel Street
	Tel Aviv 61920 ISRAEL
MODEL NUMBER	AMBER GS LA
REGISTRATION #	1467C-AMBERGSLA
PRODUCT DESCRIPTION	AMER BASE STATION
DATE SAMPLE RECEIVED	4/18/2011
DATE TESTED	5/5/2011
TESTED BY	John Day
APPROVED BY	Sid Sanders
TIMCO REPORT NO.	277TIC11TestReport.doc
TEST RESULTS	☒ PASS ☐ FAIL

THE ATTACHED REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE WRITTEN APPROVAL OF TIMCO ENGINEERING, INC.

ACCREDITED
Certificate # 0955-01

EQUIPMENT DESCRIPTION

EQUIPMENT TYPE:	**AMER BASE STATION**
MODEL NO:	**AMBER GS LA**
TRADE NAME:	
POWER SORCE:	
CONNECTOR TYPE:	

INTRODUCTION

This report contains the results of the tests performed on the equipment described on page 2. The test methods and requirements given in the current issues of Industry Canada Certification Standard and Telecommunications Regulation Circular TRC-52 are considered to be an integral part of this report. The following summary describes the test result.

REQUIREMENTS	LS	GS	RB	TTA	TTB	OPS
2.0 MECHANICAL AND ELECTRICAL STRESSES	*					
2.1 MECHANICAL SHOCK	*					
2.2 LONGITUDINAL STEADY STATE VOLTAGE STRESS	*					
2.3 HAZARDOUS VOLTAGE LIMITATIONS	*					
2.3.1 General Requirements	*					
2.3.2 Type I E&M Leads						
2.3.3 Type II E&M Leads						
2.3.4 Off Premises Station & DID voltage						
2.3.5 Local Area Data Channel Interfaces.						
2.3.6 Ring Down Voice-band Private Line and Voice-band Metallic Channel Interface.	*					
2.3.7 Connection of Non-Registered Equipment to Registered TE or registered Protective Circuitry	*					
2.3.8 Non-hazardous Voltage Source	*					
2.3.9 Ringing Source Limitations						
2.3.10 Hazards Due to Intentional Paths to Ground	*					
2.4 SURGE VOLTAGE						
2.4.1 Telephone Line Surge – Type A	*					
2.4.2 Telephone Line Surge – Type B	*					
2.5 POWER LINE SURGE						
2.5.1 Requirements	*					

PART 1
TABLE A

TECHNICAL REQUIREMENTS FOR TERMINAL EQUIPMENT AND PROTECTIVE CIRCUITRY TO BE CONNECTED TO ANALOGUE INTERFACES

REQUIREMENTS	LS	GS	RB	TTA	TTB	OPS
3.0 NETWROK PROTECTION REQUIREMENTS						
3.1 GENERAL	*					
3.2 RESERVED FOR FUTURE USE						
3.3 EXTRANEOUS AC ENERGY						
3.3.1 Metallic AC Energy	*					
3.3.2 Longitudinal AC Signals	*					
3.4 TRANSMITTED SIGNAL POWER						
3.4.1 In-band Transmitted Signal Power-Metallic	*					
3.4.2 Limitations on Internal Signal Sources Primarily Intended for Network Control Signaling contained in Voice and Data Equipment	*					
3.4.3 Requirements for Data Circuit TE	*					
3.4.4 Through Transmission	*					
3.4.5 DC Conditions to Off Premises Stations (OPS) Lines						
3.4.6 Out-of-Band Transmitted Signal Power-Metallic	*					
3.4.7						
3.4.8 Audio Signal Limiting	*					
3.4.9 Method Used to Generate Audio						

REQUIREMENTS	LS	GS	RB	TTA	TTB	OPS
3.5 BILLING PROTECTION						
3.5.1 Call Duration						
3.5.2 Voice and Data Equipment	*					
3.5.3 Signaling Interference	*					
3.5.4 Answer supervision						
3.6 TRANSVERSE BALANCE	*					

3.7 ON-HOOK TERMINAL IMPEDANCE						
3.7.1 Metallic & Longitudinal DC Resistance (Loop Start Interface)	*					
3.7.2 DC Current During Ringing	*					
3.7.2 Metallic and Longitudinal Impedance During Ringing (Loop-start and Ground-start Interfaces)	0					
3.7.3 OPS Interface for PBX with DID-ring Tip Requirements						
3.8 IDLE STATE TERMINAL IMPEDANCE RETURN LOSS (Tie Trunk Interface)						
3.9 AUTOMATIC DIALLING AND AUTOMATIC REDIALLING	*					
3.10 Stuttered Dial Tone Detection	*					
3.11 Manual Programming of Memory Dialing Numbers						

NOTE: **LS- Loop Start** **GS- Ground Start**
RB – Reverse Battery **TTA- Tie Trunk Type A**
TTB- Tie Trunk Type B **OPS- Off Premises Station**

CS-03 PART V Issue 9, FCC Part 68, Clause 68.316 and 68.317

REQUIREMENTS AND TEST METHODS FOR MAGNETIC OUTPUT FROM HANDSET TELEPHONES FOR HEARING AID COUPLING

REQUIREMENTS	LS	GS	RB	TTA	TTB	OPS
4.0 HEARING AID COMPATIBILITY	*					
6.0 VOLUME CONTROL	*					

TEST: **OPERATIONAL PERFORMANCE**

REFERENCE: CS-03, Issue 9, Part I, Clause 1.7; Part II, Clause 2.2, TIA-968-A

CONDITIONS: ON AND OFF HOOK

FEATURES TESTED

BEFORE STRESS		AFTER STRESS	BEFORE STRESS		AFTER STRESS
	MUTE			MUSIC-ON HOLD	
	HOLD			SPEAKERPHONE	
X	TRANSMISSION	X		CONFERENCE	
X	RINGER DETECTION	X		ON-HOOK DIALING	
X	REDIAL	X	X	AUTO-DIALING	X
X	ANSWERING MACHINE	X		MODEL BAUD RATE **BPS**	
	CALLER ID				

TEST: **MECHANICAL SHOCK**

REFERENCE: CS-03, Issue 9, Clause 2.1; TIA-968-A, Clause 4.2.1

CRITERIA: **The unit shall not cause harm to the Network after the Drop Shock Stresses**

EQUIPMENT WEIGHT:

Unpackaged (lb) _1.02kg (Base & Handset #1 & Handset #2)
0.6kg (Base & Handset #1)
.42kg (Handset #2)

EQUIPMENT	TEST	DAMAGE
UNPACKAGED Handheld	(All drops onto concrete covered with 3 mm asphalt tile.) 18 random 1.5 m drops.	
Desk Top (0-5kg)	One 750 mm drop on each normal or designated rest face.	NONE
	One 750 mm drop on other faces and corners.	
	One 750 mm drop on each corner.	
	One 750 mm edgewise and corner-wise drop on each edge and corner adjacent to rest face.	

RESULTS: EUT still functions normally, meets requirements.

TEST: **LONGITUDINAL STEADY STATE VOLTAGE (DIELECTRIC STRENGTH)/LEAKAGE CURRENT**

REFERENCE: CS-03, Issue 9, Clause 2.2; TIA-968-A, Clause 4.3

CRITERIA: **Leakage Current shall not exceed 10mA Peak**

Points Tested	
X	a) Tip, Ring and other Telephone Connections
X	b) Commercial Power Connections
X	c) Exposed Conductive Surfaces or Exposed Circuitry
	d) Terminals to Certified (approved) protective circuitry or Non-certified (non-approved) Equipment
X	e) All Auxiliary lead Terminals
	f) All E & M Lead Terminals
	g) All Pr, PC, CY1, and CY2 Leads

	TEST COMBINATION	TEST VOLTAGE Vrms, 60Hz	CRITERIA	**MEASURED VALUE (mA Peak)**	
				BEFORE STRESS	AFTER STRESS
	(a) and (b)	1500	10mA	<0.1	<0.1
	(a) and (c)	1000	10mA		
	(a) and (d)	1000	10mA		
	(a) and (e)	1000	10mA		
	(a) and (f)	1000	10mA		
	(a) and (g)	1000	10mA		
	(b) and (c)	1500	10mA		
	(b) and (d)	1500	10mA		
	(b) and (e)	1500	10mA		
	(b) and (f)	1500	10mA		
	(b) and (g)	1500	10mA		
	(c) and (e)	1000	10mA		
	(c) and (f)	1000	10mA		
	(d) and (e)	1000	10mA		
	(d) and (f)	1000	10mA		
	(e) and (f)	1000	10mA		

TEST: **HAZARDOUS VOLTAGES**

REFERENCE: CS-03, Issue 9, Clause 2.3.1, TIA-968-A, Clause 4.4.1

CRITERIA: **Voltage shall not exceed 70 V Pk after 1 second.**

VOLTAGE MEASURED AT:	MEASURED VALUE PEAK VOLTAGE (V)	
MEASURED LEADS	B.S.	A.S.
TIP TO RING	0	0
TIP TO GROUND		
RING TO GROUND		
TIP & RING TO GROUND		

RESULTS: Pass

TEST **METALLIC VOLTAGE SURGE (TYPE A & B)**
LONGITUDINAL VOLTAGE SURGE (TYPE A & B)

REFERENCE: CS-03, Issue 9, Clause 2.4; TIA-968-A, Clause 4.2.2.1, 4.2.2.2, 4.2.3.1, 4.2.3.2

CRITERIA: **The unit shall not cause harm to the Network after the Metallic Voltage Surges.**

TEST	TYPE OF SURGE	CONDITION	APPLIED TO	RESULT *
+800V (10 x 560 µS)	A	ON-HOOK	T-R	OK
-800V (10 x 560 µS)	A	ON-HOOK	T-R	OK
+800V (10 x 560 µS)	A	OFF-HOOK	T-R	OK
-800V (10 x 560µ s)	A	OFF-HOOK	T-R	OK
1500V (10X160µ s	Longitudinal A		T-R/Grd	OK
1500V (10X160µ s)	Longitudinal A		T-R/Charging contacts	OK
1000V (9X720µ s)	B Metallic	ON-HOOK	T-R	OK

TEST	TYPE OF SURGE	CONDITION	APPLIED TO	RESULT *
1000V (9X720μ s)	B	ON-HOOK	T-R	OK
1000V (9X720μ s)	B	OFF-HOOK	T-R	OK
1000V (9X720μ s)	B	OFF-HOOK	T-R	OK

			T-R	T-GRD	R-GRD
+1500 (9X720uS)	Longitudinal B	ON-HOOK	Ok	Ok	Ok
-1500	Longitudinal B	ON-HOOK	Ok	Ok	Ok
+1500	Longitudinal B	OFF-HOOK	Ok	Ok	Ok
-1500	Longitudinal B	OFF-HOOK	Ok	Ok	Ok

- **Unit operational after surge.**

RESULTS: **Meets Requirements**

TEST: **POWER LINE SURGE**

REFERENCE: CS-03, Issue 9, Clause 2.5; TIA-968-A, Clause 4.2.4

CRITERIA: **The unit shall not cause harm to the Network after the Longitudinal Voltage/Power Line Surges.**

TEST	CONDITION	APPLIED TO	RESULT
+2500V (2 x 10)	ON-HOOK	PHASE TO NEUTRAL	**Ok**
+2500V (2 x 10)	ON-HOOK	PHASE TO NEUTRAL	**Ok**
+2500V (2 x 10)	ON-HOOK	PHASE TO NEUTRAL	**Ok**
-2500V (2 x 10)	ON-HOOK	PHASE TO NEUTRAL	**Ok**
-2500V (2 x 10)	ON-HOOK	PHASE TO NEUTRAL	**Ok**
-2500V (2 x 10)	ON-HOOK	PHASE TO NEUTRAL	**Ok**

RESULTS: Meets Requirements

TEST: **METALLIC AC ENERGY/ON-HOOK SIGNAL LEVEL**

REFERENCE: CS-03, Issue 9, Part I, Clause 3.3.1/3.3.2; Part II, Clause 3.6.2; Part VII, Clause 3.2.6 TIA-968-A, Clause 4.8.2

CONDI-TION	FREQUENCY BAND	SPECIFICATION	MEASURED VALUES	
			BEFORE STRESS	AFTER STRESS
T-R	200-3995 Hz	-55 dBm (CO Lines & Trunks)	<70**dBm**	**<70dBm**
T-R	200-3995 Hz	-55 dBm (Channels & Reverse Battery	**<70dBm**	**<70dBm**

RESULTS: Meets Requirements

TEST: **LONGITUDINAL AC SIGNAL**

REFERENCE: CS-03, Issue 9, Clause 3.3.3 (1) (2) TIA-968-a, clause 4.5.4

A. LONGITUDINAL VOLTAGE in 100Hz to 4 kHz (100-4KHz, 500U)

MAX SPECIFICATION	MEASURED VALUES (dBV)	
	BEFORE STRESS	AFTER STRESS
ON-HOOK, -30dBV	**-72**	**-72**
OFF-HOOK, 20.0mA –30dBV	**-72**	**-72**
OFF-HOOK, 70 mA –30dBV	**-71**	**-71**

RESULTS: Meets Requirements

B. LONGITUDINAL VOLTAGE (4khZ TO 6MHz

TIA-968-A, Clause 4.5.5.2 & CS-03 Clause 3.3.3.2 & 3.3.3.3

FREQ. RANGE (KHz)	SPEC (dBV)	MEASURED VALUES (dBV)					
		ON HOOK		OFF HOOK 20mA		OFF HOOK 70 mA	
		Before Surge	After Surge	Before Surge	After Surge	Before Surge	After Surge
4-12	-36	**-70**	**-70**	**-70**	**-70**	**-70**	**-70**
12-42	-60	**-82**	**-82**	**-82**	**-82**	**-82**	**-82**
42-270	-62	**-85**	**-85**	**-85**	**-85**	**-85**	**-85**
270-6000	-30	**-65**	**-65**	**-65**	**-65**	**-65**	**-65**

RESULTS: Meets Requirements

TEST **OUT OF BAND TRANSMITTED SIGNAL POWER**

REFERENCE: CS-03, Issue 9, Cl. 3.4.6 (1), (2), and (3); 3.4.8
TIA-968-A, Clause 4.5.3.1

A. The Signal Power in the frequency band from 3995-4005 Hz shall be 18 dB below the maximum permitted power of –9dBm for the Voice Band Signal.

FREQ. RANGE (Hz)	SPEC	MEASURED VALUES (dBm)							
		Telephone		Application Voice		Pre-Recorded Outgoing Messages		Signal on Hold	
		B.S.	A.S.	B.S.	A.S.	B.S.	A.S.	B.S.	A.S.
3995-4005	-27dBm Data/Voice	-80	-80						

B. METALLIC VOLTAGE
TIA-968-A, Clause 4.5.5.1 & CS-03 Clause 3.4.6

CENTRE FREQ. OF 8KHz BAND (KHz)	SPEC (dBV)	MEASURED VALUES (dBV)					
		ON HOOK		OFF-HOOK 20 mA		OFF-HOOK 70 mA	
		B.S.	A.S.	B.S.	A.S.	B.S.	A.S.
4-12	-18	-72	-72	-70	-70	-70	-70
12-90	-40	-90	-90	-90	-90	-90	-90
90-270	-55	-90	-90	-90	-90	-90	-90
270-30 MHz	-15	-85	-85	-88	-88	-88	-88

RESULTS: Meets the Requirements

TEST **TRANSMITTED SIGNAL POWER**

REFERENCE: CS-03, Issue 9, Cl. 3.4. (1), (2) & TIA-968-A 4.5.2.1

In-Band Transmitted Signal Power 200-3995Hz	SPEC (dBm)	**MEASURED VALUES (dBm)**			
		OFF-HOOK 20 mA		OFF-HOOK 70 mA	
		B.S.	A.S.	B.S.	A.S.
(1)	-9.0	-7	-7	-7	-7
(2)	-15.0	-90	-90	-90	-90
(3)	-9.0				

RESULTS: Meets the Requirements

TEST: **NETWORK CONTROL SIGNALING**

REFERENCE: CS-03, Issue 9, Clause 3.4.3; TIA-968-A, Clause 4.5.2.2

CRITERIA: **Limitation on Signal Sources Primarily Intended for Network Signaling in Voice and Data Equipment.**

SPECIFICATION				**SIGNAL LEVEL IN dBm MEASURED WITH VARIOUS LOOP CURRENTS**					
				BEFORE STRESS (dBm)			AFTER STRESS (dBm)		
BUTTON DESIGNA-TION	DTMF	TIE TRUNK	OTHER	20 mA	40 mA	70 mA	20 mA	40 mA	70 mA
"0"	0	-4	-9	-12	-12	-12	-12	-12	-12
"1"	0	-4	-9	-12	-12	-12	-12	-12	-12
"2"	0	-4	-9	-12	-12	-12	-12	-12	-12
"3"	0	-4	-9	-12	-12	-12	-12	-12	-12
"4"	0	-4	-9	-12	-12	-12	-12	-12	-12
"5"	0	-4	-9	-12	-12	-12	-12	-12	-12
"6"	0	-4	-9	-12	-12	-12	-12	-12	-12
"7"	0	-4	-9	-12	-12	-12	-12	-12	-12
"8"	0	-4	-9	-12	-12	-12	-12	-12	-12
"9"	0	-4	-9	-12	-12	-12	-12	-12	-12
"*"	0	-4	-9	-12	-12	-12	-12	-12	-12
"#"	0	-4	-9	-12	-12	-12	-12	-12	-12

RESULTS: Meets Requirements

TEST: **THROUGH TRANSMISSION**

REFERENCE: CS-03, Issue 9, Clause 3.4.4; TIA-968-A, Clause 4.5.2.3 and 4.7.3.1

Results: NA

TEST: **DC Conditions to Off Premises Stations (OPS) Lines**

REFERENCE: CS-03, Issue 9, Clause 3.4.5; TIA-968-A, Clause 4.5.2.3 and 4.7.3.1

Results: NA

TEST: **Audio Signal**

REFERENCE: CS-03, Issue 9, Clause 3.4.8; TIA-968-A, Clause 4.5.2.3

Results: NA

TEST: **Method used to Generate Audio Signals**

REFERENCE: CS-03, Issue 9, Clause 3.4.9; TIA-968-A, Clause 4.5.2.3

Results: NA

TEST: **BILLING PROTECTION- VOICE & DATA EQUIPMENT**

REFERENCE: CS-03, Issue 9, Clause 3.5.1; TIA-968-A, Clause 4.8.3

SPECIFICATIONS			OFF-HOOK MEASURED VALUE (Ma)					
LOOP	I (200 ohms) (mA)	I unit -25% (mA)	INIT'L CURRENT		HOLD CURRENT		IN 5 SECONDS	
			BEFORE STRESS	AFTER STRESS	BEFORE STRESS	AFTER STRESS	BEFORE STRESS	AFTER STRESS
+42.5V 1740ohms	+22	15.9	21.0	21.0	NA	NA	21	21
-42.5V 1740ohms	-22	-15.9	-21	-21	NA	NA	-21	-21
+52.5V 1200ohms	+37.5	28.4	38	38	NA	NA	38	38
-52.5V 1200ohms	-37.5	-28.4	-38	-38	NA	NA	-38	-38
+52.5V 400 ohms	+87.5	71.0	88	88	NA	NA	88	88
-52.5V 400 ohms	-87.5	-71.0	-88	-88	NA	NA	-88	-88

RESULTS: Meets Requirements

TEST: **SINGLE FREQUENCY RESTRICTION**

REFERENCE: CS-03, Issue 9, Part I, Cl. 3.5.3, Part II, Cl. 3.6.4; Part VI, Cl.3.5.4 and Part VII, CL.3.2.5; TIA-968-A, Clause 4.8.4

CONDITION: OFF-HOOK

CRITERIA: **The energy in the 2450-2750 Hz band shall not exceed the energy in the 800-2450 Hz band.**

SINGLE FREQUENCY RESTRICTION(Cont.)

MODE	SPECIFICATION (RATIO X/Y)	**MEASURED VALUE** (RATIO X/Y)	
		BEFORE STRESS	AFTER STRESS
Telephone	<1.0	**<0.1**	**<0.1**
	<1.0		
	<1.0		
	<1.0		
	<1.0		
	<1.0		
X= Energy in 2450-2750 Hz Band Y= Energy in 800-2450 Hz Band			

RESULTS: Meets Requirement

TEST: **TRANSVERSE BALANCE**

REFERENCE: CS-03, Issue 9, Clause 3.6; TIA-968-A, Clause 4.6

CRITERIA: **Transverse Balance Shall not be less than minimum values specified below.**

SPECIFICATION		**dB BALANCE**							
		ON-HOOK		OFF-HOOK					
		BEFORE STRESS dB	AFTER STRESS dB	BEFORE STRESS			AFTER STRESS		
FREQ. (Hz)	MINIMUM BALANCE REQUIREMENT dB	90	90	**LOOP CURRENT (mA)**			**LOOP CURRENT (mA)**		
				20	40	70	20	40	70
200	60 On Hook (40 Off Hook and Data)	90	90	90	90	90	90	90	90
400	60 On Hook (40 Off Hook and Data)	90	90	90	90	90	90	90	90
600	60 On Hook (40 Off Hook and Data)	90	90	90	90	90	90	90	90
800	60 On Hook (40 Off Hook and Data)	90	90	90	90	90	90	90	90
1000	60 On Hook (40 Off Hook and Data)	90	90	90	90	90	90	90	90
2000	40	90	90	90	90	90	90	90	90
3000	40	90	90	88	88	88	88	88	88
4000	40	90	90	86	86	86	86	86	86

RESULTS: Meets Requirements

TEST **ON-HOOK DC RESISTANCE**

REFERENCE: CS-03, Issue 9, Clause 3.7.1; TIA-968-A, Clause 4.7.2.1 and 4.7.2.2

CRITERIA: **The DC Resistance Tip to Ring, Tip to Ground, Ring to Ground shall be greater than 5MΩ from 1-100 Volts and greater than 30KU from 100-200 Volts.**

SPECIFICATION		DC RESISTANCE V/I **(M ohms)**	
MINIMUM RESISTANCE	DC VOLTAGE APPLIED	BEFORE STRESS	AFTER STRESS

TIP TO RING

5M ohms	+1 V	>5M	>5M
5M ohms	-1 V	>5M	>5M
5M ohms	+5 V	>5M	>5M
5M ohms	-5 V	>5M	>5M
5M ohms	+10 V	>5M	>5M
5M ohms	-10 V	>5M	>5M
5M ohms	+20 V	>5M	>5M
5M ohms	-20 V	>5M	>5M
5M ohms	+30 V	>5M	>5M
5M ohms	-30 V	>5M	>5M
5M ohms	+40 V	>5M	>5M
5M ohms	-40 V	>5M	>5M
5M ohms	+50 V	>5M	>5M
5M ohms	-50 V	>5M	>5M
5M ohms	+60 V	>5M	>5M
5M ohms	-60 V	>5M	>5M
5M ohms	+70 V	>5M	>5M
5M ohms	-70 V	>5M	>5M
5M ohms	+80 V	>5M	>5M
5M ohms	-80 V	>5M	>5M
5M ohms	+90 V	>5M	>5M
5M ohms	-90 V	>5M	>5M
30k ohms	+100 V	>5M	>5M
30k ohms	-100 V	>5M	>5M
30k ohms	+150 V	>5M	>5M
30k ohms	-150 V	>5M	>5M
30k ohms	+200 V	>5M	>5M
30k ohms	-200 V	>5M	>5M

TEST: **DC CURRENT DURING RINGING**

REFERENCE: CS-03, Issue 9, Clause 3.7.2; TIA-968-A, Clause 4.7.2.3 and 4.7.3.1

TIP TO RING DC MEASUREMENT:

	SPECIFICATIONS			**MEASURED VALUE (Ma)**	
RINGER TYPE	AC V RMS	DC VOLTS	I max. (mA)	BEFORE STRESS	AFTER STRESS
B	40-130V, 15 Hz	+56.5	3	0.0	0.0
B	40-130V, 15Hz	-56.5	3	0.0	0.0
A,B & IC	40-130V, 20Hz	+56.5	3	0.0	0.0
A,B & IC	40-130V, 30Hz	-56.5	3	0.0	0.0
A,B & IC	40-130V, 40Hz	+56.5	3	0.0	0.0
A,B & IC	40-130V, 50Hz	-56.5	3	0.0	0.0
A,B & IC	40-130V, 68Hz	-56.5	3	0.0	0.0

RESULTS: Meets Requirement

TEST: **RINGING FREQUENCY IMPEDANCE**

REFERENCE: CS-03, Issue 9, Clause 3.7.3. TIA-968-A, Clause 4.7.2.5

CRITERIA: **The AC Impedance from tip to ground during simulated ringing shall be greater than 100K ohms**

During Ringing Voltage application AC Impedance shall exceed 1400 ohms @ 20Hz or 1000 ohms @ 30Hz (1600 ohms from 15Hz-68Hz depending on Ringer Type-FCC only).

SPECIFICATION			IMPEDANCE (K ohms)	
CRITERIA (K ohms)	VOLTAGE/ FREQ (Hz)	RINGER TYPE	BEFORE STRESS	AFTER STRESS

TIP TO RING AC MEASUREMENT:

	Voltage/Freq.			
>100	130/15	B	125	125
>100	130/20	A&B	NA	NA
>100	130/30	A&B	NA	NA
>100	130/35	B		
>100	130/40	B		
>100	130/45	B		
>100	150/50	B		
>100	150/55	B		
>100	150/60	B		
>100	150/64	B		
>100	150/68	B	NA	NA

RESULTS: Not Applicable No Ringer

TEST: **RINGER EQUIVALENCE NUMBER**

REFERENCE: CS-03, Issue 9, Clause 3.7.3.2, TIA-968-A, Clause 4.7.4

TEST NO.	TEST DESCRIPTION IC CS-03-3.7.3.2	REFERENCE CS-03 ISSUE 9
	On Hook Metallic Impedance	
	RINGER EQUIVALENCE NUMBER: Type B Ringer 5 * 1600 = 8000 Ohms At 16Hz: $150/36*10^{-6} = 4.6 * 10^{6}$ - At 68 Hz $150/15*10^{-6} = 10 * 10^{6}$ REN = 0.0 B	

RESULTS: Meets Requirements

TEST: **HEARING AID COMPATIBILITY TEST**

REFERENCE: CS-03, Issue 9, Part V Clause 4 FCC, Part 68, Clause 68.316

RESULTS: Not Applicable