



EMC TEST REPORT

Product : IP Phone
Trade mark : N/A
Model/Type reference : See Clause 4.1
Serial Number : N/A
Ratings : AC 100-240V, 50/60Hz
Report Number : EED32I000087
Date : Jan. 26, 2016
Regulations : See below

Test Standards	Results
<input checked="" type="checkbox"/> EN 55022: 2010	PASS
<input checked="" type="checkbox"/> EN 61000-3-2: 2014	PASS
<input checked="" type="checkbox"/> EN 61000-3-3: 2013	PASS
<input checked="" type="checkbox"/> EN 55024: 2010	PASS

Prepared for:

SAHAB TECHNOLOGY

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Jan. 26, 2016

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Check No.: 2212834098



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(Note: N/A means not applicable)

1. GENERAL INFORMATION

Applicant: SAHAB TECHNOLOGY
 Office 20, Qibia Tower, Fahad Al Salem St. Qibia, State of KUWAIT
Manufacturer: SAHAB TECHNOLOGY
 Office 20, Qibia Tower, Fahad Al Salem St. Qibia, State of KUWAIT
EMC Directive: 2004/108/EC
Product: IP Phone
Trade mark: N/A
Model/Type reference: XonTel S10P, XonTel S11P, XonTel S12P, XonTel S16P, XonTel S21P
Serial Number: N/A
Report Number: EED32H00105901
Sample Received Date: Aug. 05, 2015
Sample tested Date: Aug. 05, 2015 to Oct. 15, 2015

The tested sample(s) and the sample information are provided by the client.

All test data come from the report of No. EED32H00105901.

2. TEST SUMMARY

The Product has been tested according to the following specifications:

EMISSION		
Standard	Test Item	Test
EN 55022	Conducted disturbance	Yes
EN 55022	Radiated disturbance	Yes
EN 61000-3-2	Harmonic current emission	N/A ¹
EN 61000-3-3	Voltage fluctuations & flicker	Yes

IMMUNITY (EN 55024)		
Standard	Test Item	Test
IEC 61000-4-2	Electrostatic discharge (ESD)	Yes
IEC 61000-4-3	Radio-frequency electromagnetic field Immunity	Yes
IEC 61000-4-4	Electrical fast transients (EFT)	Yes
IEC 61000-4-5	Surges	Yes
IEC 61000-4-6	Radio-frequency continuous conducted Immunity	Yes
IEC 61000-4-8	Power-frequency magnetic fields Immunity	N/A ²
IEC 61000-4-11	Voltage dips and interruptions	Yes

Remark:

1. The Product belongs to Class A, and its power is less than 75W, so it deems to fulfil this standard without testing.
2. The Product doesn't contain any device susceptible to magnetic fields.

3. TEST UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

Test item	Value (dB)
Conducted disturbance	3.4
Radiated disturbance (30MHz to 1GHz)	5.3

4. PRODUCT INFORMATION AND TEST SETUP

4.1 PRODUCT INFORMATION

Ratings: AC 100-240V, 50/60Hz

The highest frequency of the internal sources of the EUT is less than 108MHz: ☒ less than 108 MHz, the measurement shall only be made up to 1 GHz.
☐ between 108 MHz and 500 MHz, the measurement shall only be made up to 2 GHz.
☐ between 500 MHz and 1 GHz, the measurement shall only be made up to 5 GHz.
☐ above 1 GHz, the measurement shall be made up to 5 times the highest frequency or 6 GHz, whichever is less.

Model difference: All models are identical except the appearance. The test model is ES620N and the test results are applicable to the others.

4.2 TEST SETUP CONFIGURATION

See test photographs attached in Appendix 1 for the actual connections between Product and support equipment.

4.3 SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	Series No.	Data Cable	Power Cord
1.	---	---	---	---	---	---

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

5. FACILITIES AND ACCREDITATIONS

5.1 TEST FACILITY

All test facilities used to collect the test data are located at Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4, CISPR 16-1-1 and other equivalent standards.

5.2 TEST EQUIPMENT LIST

Instrumentation: The following list contains equipments used at CTI for testing. The calibrations of the measuring instruments, including any accessories that may effect such calibration, are checked frequently to assure their accuracy. Adjustments are made and correction factors applied in accordance with instructions contained in the manual for the measuring instrument.

Equipment used during the tests:

Shielding Room No. 1 - Conducted disturbance Test				
Equipment	Manufacturer	Model	Serial No.	Due Date
Receiver	R&S	ESCI	100435	06/29/2016
LISN	R&S	ENV216	100098	06/29/2016
ISN	TESEQ GmbH	ISN T800	30297	01/27/2017

3M Semi-anechoic Chamber (1)- Radiated disturbance Test				
Equipment	Manufacturer	Model	Serial No.	Due Date
3M Chamber & Accessory Equipment	ETS-LINDGREN	FACT-3	3510	07/12/2016
Spectrum Analyzer	Agilent	E4443A	MY45300910	01/12/2016
Receiver	R&S	ESCI	100435	06/29/2016
TRILOG Broadband Antenna	schwarzbeck	VULB 9163	618	06/22/2016
Multi device Controller	ETS-LINGREN	2090	00057230	N/A

Shielding Room No. 2 - Flicker Test (EN 61000-3-3)				
Equipment	Manufacturer	Model	Serial No.	Due Date
5KVA AC POWER SOURCE	California instruments	5001iX-400-413	57344	01/28/2016
Flicker & Harmonic Tester	California instruments	PACS-1	72492	01/28/2016

Shielding Room No. 3 - ESD Test (IEC 61000-4-2)				
Equipment	Manufacturer	Model	Serial No.	Due Date
ESD Simulator	TESEQ	NSG437	478	11/02/2016

3M Full-anechoic Chamber - Radio-frequency electromagnetic field Immunity Test (IEC 61000-4-3)				
Equipment	Manufacturer	Model	Serial No.	Due Date
3M Chamber & Accessory Equipment	ETS-LINDGREN	FACT-3	3510	07/12/2016
ESG Vector signal generators	Agilent	E4433B	MY43350417	12/30/2016
Power Amplifier	AR	150W1000	0322288	10/19/2016
Stacked double Log.-Per. Antenna	schwarzbeck	STLP 9128 E special	9128ES-110	10/19/2016

Shielding Room No. 3 - EFT Test (IEC 61000-4-4)				
Equipment	Manufacturer	Model	Serial No.	Due Date
Compact Generator	EM-Test	UCS500M/6B	V0603101093	07/07/2016
Capacitive Clamp	EM-Test	C Clamp HFK	0306-43	07/19/2016

Shielding Room No. 3 - Surges Test (IEC 61000-4-5)				
Equipment	Manufacturer	Model	Serial No.	Due Date
Compact Generator	EM-Test	UCS500M/6B	V0603101093	07/07/2016

Shielding Room No. 2 - Radio-frequency continuous conducted Immunity Test (IEC 61000-4-6)				
Equipment	Manufacturer	Model	Serial No.	Due Date
Signal Generator	IFR	2023B	202307/439	01/12/2016
Power Amplifier	AR	75A 250A	320297	10/19/2016
Attenuator	EM-Test	ATT6/75	0320837	09/18/2016
CDN	EM-Test	CDN M2/M3	0204-01	06/29/2016
EM-Clamp	EM-Test	EM101	35770	06/29/2016

Shielding Room No. 2 -Voltage dips and interruptions Test (IEC 61000-4-11)				
Equipment	Manufacturer	Model	Serial No.	Due Date
5KVA AC POWER SOURCE	California instruments	5001iX-400-413	57344	01/28/2016
Electronic output switch	California instruments	EOS-1	72616	01/28/2016

5.3 LABORATORY ACCREDITATIONS AND LISTINGS

The measuring equipment utilized to perform the tests documented in this report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable under the ISO/IEC/EN 17025 to international or national standards. Equipment has been calibrated by accredited calibration laboratories.

6. CONDUCTED DISTURBANCE

6.1 LIMITS

Limits for Conducted Disturbance at the mains ports of Class B ITE

Frequency range (MHz)	Limits dB(μV)	
	Quasi-peak	Average
0,15 to 0,50	66 to 56	56 to 46
0,50 to 5	56	46
5 to 30	60	50

- NOTE:**
1. The lower limit shall apply at the transition frequencies.
 2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz.

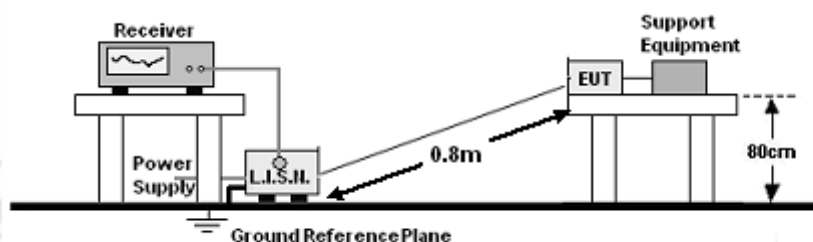
Limits for conducted disturbance at telecommunication ports of Class B ITE

Frequency range (MHz)	Voltage Limits dB(μV)		Current Limits dB(μA)	
	Quasi-peak	Average	Quasi-peak	Average
0,15 to 0,50	84-74	74-64	40-30	30-20
0,50 to 30	74	64	30	20

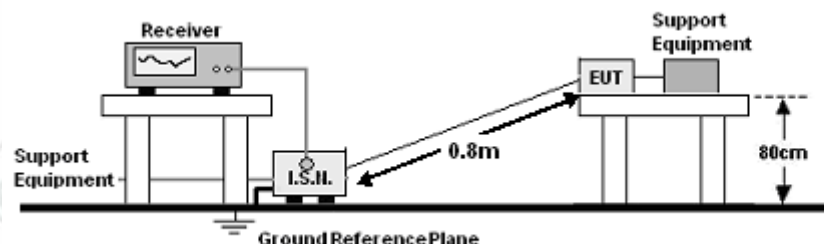
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz.

6.2 BLOCK DIAGRAM OF TEST SETUP

For mains port:



For telecommunication port:



6.3 TEST PROCEDURE

For mains port:

- a. The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
- b. The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.
- c. For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

For telecommunication port:

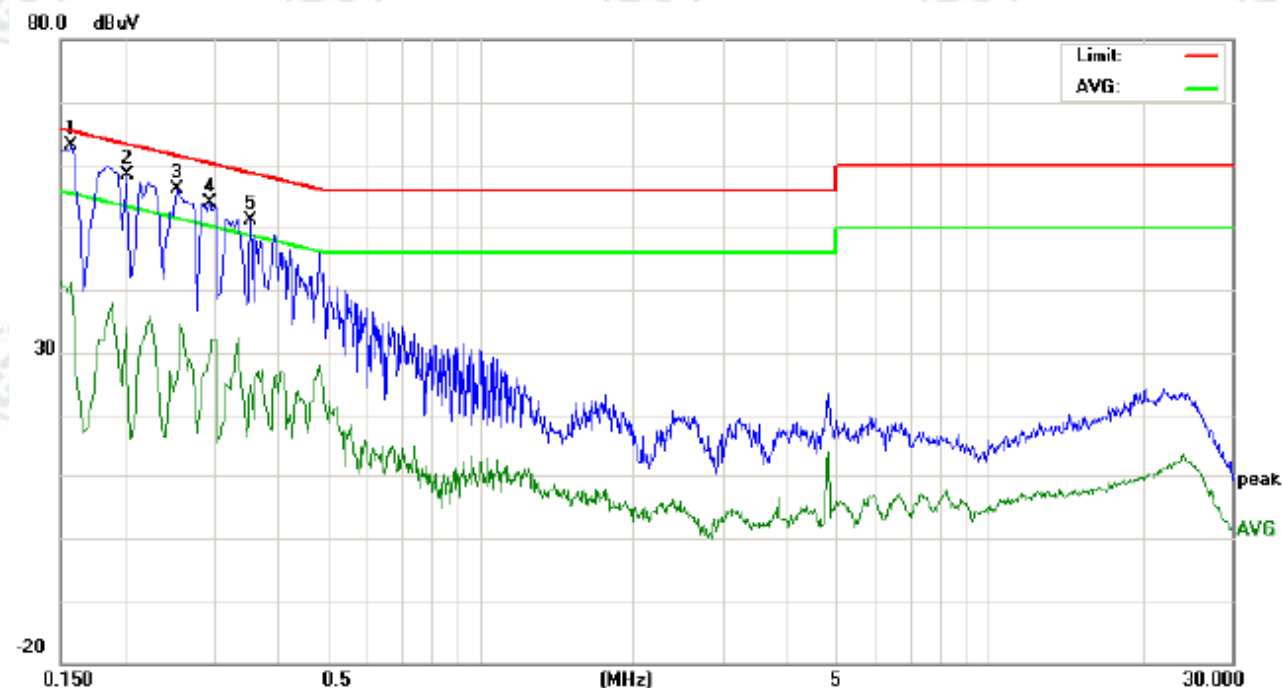
- a. The Product was placed on a non-conductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the telecommunication port through Impedance Stability Network (I.S.N).
- b. The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.
- c. For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

6.4 GRAPHS AND DATA

For mains port:

Product : IP Phone
Power : AC 230V/50Hz
Mode : Normal

Model/Type reference : XonTel S16P
Temperature/Humidity : 24°C/50%
Phase : L



No.	Freq. MHz	Reading_Level (dBuV)			Correct Factor dB	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1580	53.26	47.57	21.35	9.80	63.06	57.37	31.15	65.56	55.56	-8.19	-24.41	P	
2	0.2020	48.67	45.71	24.35	9.80	58.47	55.51	34.15	63.52	53.52	-8.01	-19.37	P	
3	0.2540	46.20	42.89	16.05	9.80	56.00	52.69	25.85	61.62	51.62	-8.93	-25.77	P	
4	0.2940	44.10	40.17	19.60	9.80	53.90	49.97	29.40	60.41	50.41	-10.44	-21.01	P	
5	0.3540	41.33	37.19	15.04	9.85	51.18	47.04	24.89	58.87	48.87	-11.83	-23.98	P	

Product : IP Phone
Power : AC 230V/50Hz
Mode : Normal

Model/Type reference : XonTel S16P
Temperature/Humidity : 24°C/50%
Phase : N

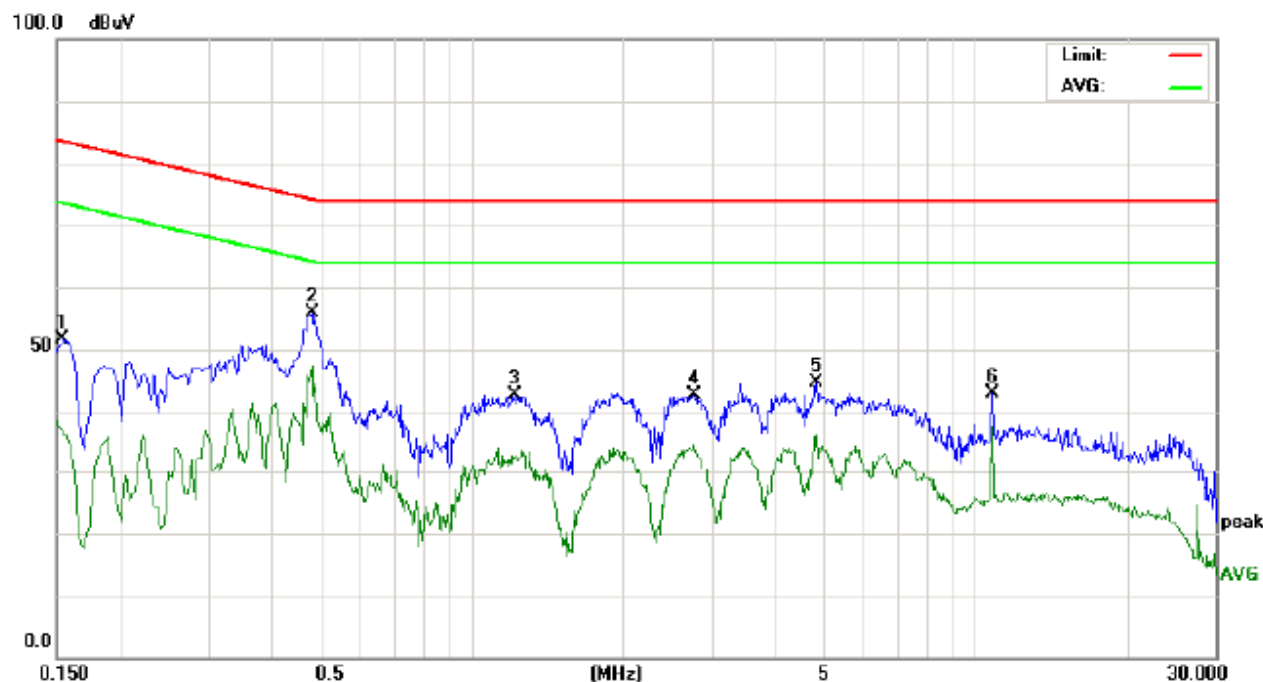


No.	Freq. MHz	Reading_Level (dBuV)			Correct Factor dB	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1620	53.51	47.37	17.92	9.80	63.31	57.17	27.72	65.36	55.36	-8.19	-27.64	P	
2	0.1940	50.87	45.97	25.87	9.80	60.67	55.77	35.67	63.86	53.86	-8.09	-18.19	P	
3	0.2380	47.78	43.18	19.28	9.80	57.58	52.98	29.08	62.16	52.16	-9.18	-23.08	P	
4	0.3580	40.95	37.59	17.31	9.86	50.81	47.45	27.17	58.77	48.77	-11.32	-21.60	P	
5	0.4580	36.52	32.81	14.93	9.90	46.42	42.71	24.83	56.73	46.73	-14.02	-21.90	P	

For telecommunication port:

Product : IP Phone
Power : AC 230V/50Hz
Mode : Normal

Model/Type reference : XonTel S16P
Temperature : 24℃
Humidity : 50%



No.	Freq. MHz	Reading_Level (dBuV)			Correct Factor dB	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1539	41.41		26.24	10.20	51.61		36.44	83.78	73.78	-32.17	-37.34	P	
2	0.4820	45.68		37.15	10.11	55.79		47.26	74.30	64.30	-18.51	-17.04	P	
3	1.2180	32.78		22.79	9.80	42.58		32.59	74.00	64.00	-31.42	-31.41	P	
4	2.7780	32.92		24.83	9.80	42.72		34.63	74.00	64.00	-31.28	-29.37	P	
5	4.8260	34.86		26.34	9.80	44.66		36.14	74.00	64.00	-29.34	-27.86	P	
6	10.7940	33.12		28.05	9.66	42.78		37.71	74.00	64.00	-31.22	-26.29	P	

7. RADIATED DISTURBANCE (RE)

7.1 LIMITS

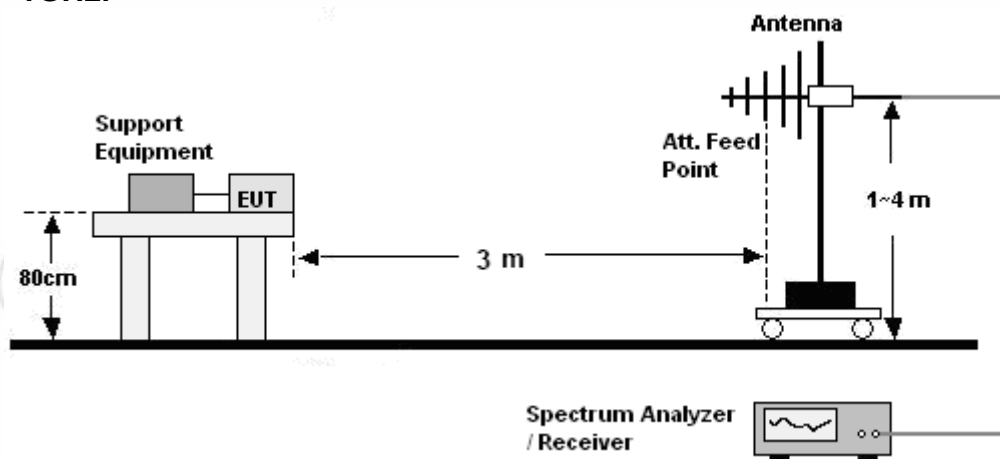
Limits for radiated disturbance of Class B ITE

Frequency (MHz)	Quasi-peak limits at 3m dB(μ V/m)
30-230	40
230-1000	47

NOTE: The lower limit shall apply at the transition frequencies.

7.2 BLOCK DIAGRAM OF TEST SETUP

30MHz ~ 1GHz:



7.3 TEST PROCEDURE

30MHz ~ 1GHz:

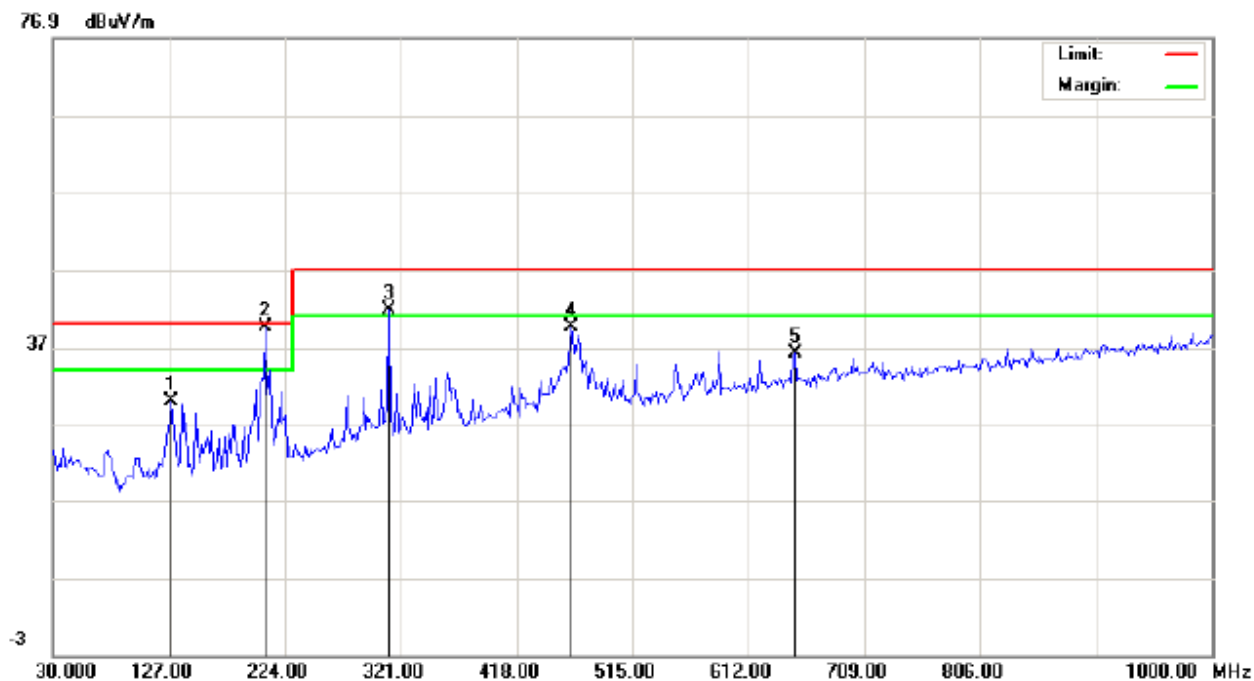
- The Product was placed on the non-conductive turntable 0.8 m above the ground at a chamber.
- Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 120 kHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied between 1~4 m in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.
- For each frequency whose maximum record was higher or close to limit, measure its QP value: vary the antenna's height and rotate the turntable from 0 to 360 degrees to find the height and degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to QP Detector and specified bandwidth with Maximum Hold Mode, and record the maximum value.

7.4 GRAPHS AND DATA

30MHz ~ 1GHz:

Product : IP Phone
Power : AC 230V/50Hz
Mode : Normal

Model/Type reference : XonTel S16P
Temperature/Humidity : 24°C/50%
Polarization : Horizontal

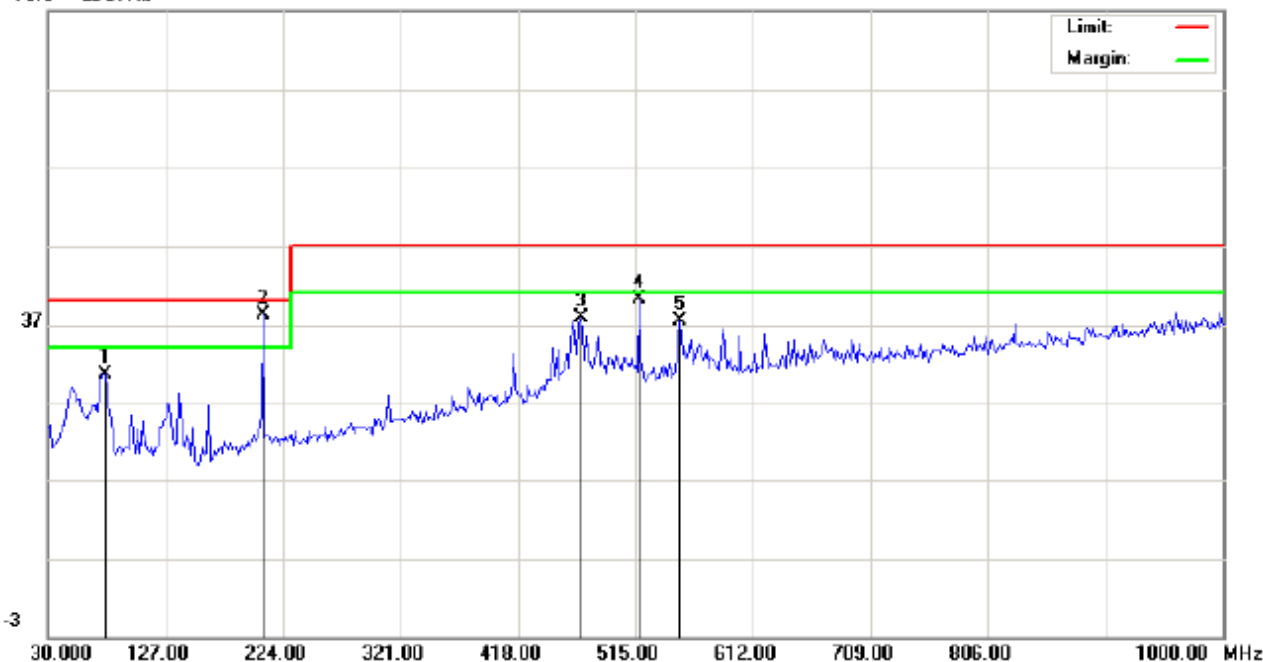


No.	Freq. MHz	Reading_Level (dBuV)			Correct Factor dB	Measurement (dBuV/m)			Limit (dBuV/m)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		peak	QP	AVG	QP	AVG	QP	AVG		
1	128.6167	18.73	14.35		11.20	29.93	25.55		40.00		-14.45		P	
2	207.8333	26.00	22.56		13.69	39.69	36.25		40.00		-3.75		P	
3	311.3000	25.08	22.74		16.69	41.77	39.43		47.00		-7.57		P	
4	463.2667	19.40	16.39		20.22	39.62	36.61		47.00		-10.39		P	
5	650.8000	12.77	8.79		23.42	36.19	32.21		47.00		-14.79		P	

Product : IP Phone
Power : AC 230V/50Hz
Mode : Normal

Model/Type reference : XonTel S16P
Temperature/Humidity : 24°C/50%
Polarization : Vertical

76.9 dBuV/m



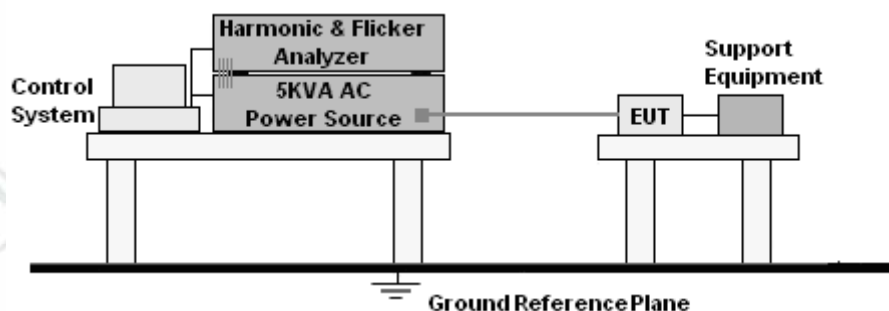
No.	Freq. MHz	Reading_Level (dBuV)			Correct Factor dB	Measurement (dBuV/m)			Limit (dBuV/m)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		peak	QP	AVG	QP	AVG	QP	AVG		
1	76.8833	21.47	18.74		9.12	30.59	27.86		40.00		-12.14		P	
2	207.8333	24.55	21.73		13.69	38.24	35.42		40.00		-4.58		P	
3	469.7333	17.50	15.69		20.37	37.87	36.06		47.00		-10.94		P	
4	518.2333	18.79	14.57		21.46	40.25	36.03		47.00		-10.97		P	
5	552.1833	15.27	12.06		22.15	37.42	34.21		47.00		-12.79		P	

8. VOLTAGE FLUCTUATIONS & FLICKER (FLICKER)

8.1 LIMITS

Please refer to EN 61000-3-3: 2013 Clause 5.

8.2 BLOCK DIAGRAM OF TEST SETUP



8.3 TEST PROCEDURE

- The Product was placed on the top of a non-conductive table above the ground and operated to produce the most unfavorable sequence of voltage changes under normal operating conditions.
- During the flick test, the measure time shall include that part of whole operation cycle in which the Product produce the most unfavorable sequence of voltage changes. The observation period for short-term flicker indicator is 10 minutes and the observation period for long-term flicker indicator is 2 hours.

8.4 TEST RESULTS

Product : IP Phone
Power : AC 230V, 50Hz
Mode : Normal

Model/Type reference : XonTel S16P
Temperature : 24°C
Humidity : 50%

Pass.

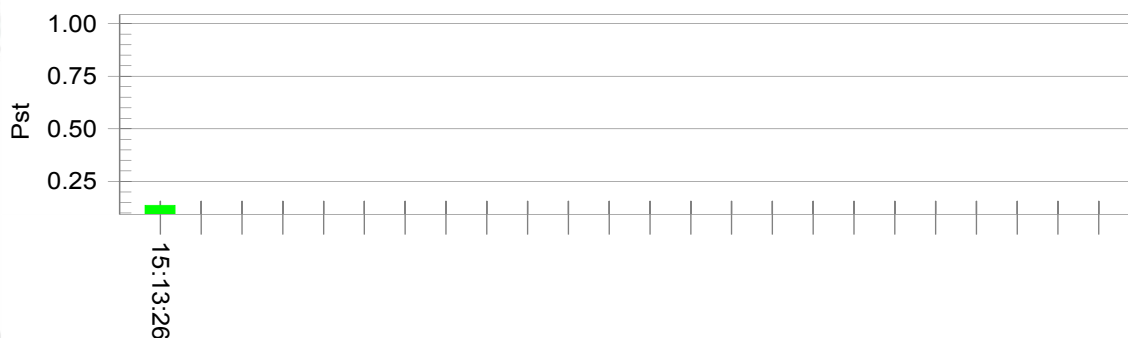
Flicker Test Summary per EN/IEC61000-3-3 (Run time)

Test Result: Pass

Status: Test Completed

Pst_i and limit line

European Limits



Parameter values recorded during the test:

Vrms at the end of test (Volt): 230.15

Highest dt (%): 0.00

T-max (mS): 0

Highest dc (%): 0.00

Highest dmax (%): 0.03

Highest Pst (10 min. period): 0.136

Test limit (%): 3.30 Pass

Test limit (mS): 500.0 Pass

Test limit (%): 3.30 Pass

Test limit (%): 4.00 Pass

Test limit: 1.000 Pass

9. IMMUNITY TEST

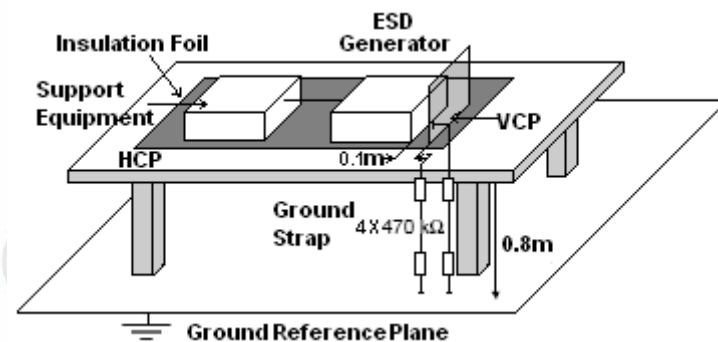
General Performance Criteria	
Product Standard	EN 55024:2010 clause 7
CRITERION A	The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.
CRITERION B	<p>After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance.</p> <p>During the test, degradation of performance is allowed. However, no change of operating state or stored data is allowed to persist after the test.</p> <p>If the minimum performance level (or the permissible performance loss) is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.</p>
CRITERION C	<p>Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions.</p> <p>Functions, and/or information stored in non-volatile memory, or protected by a battery backup, shall not be lost.</p>

9.1 ELECTROSTATIC DISCHARGE (ESD)

9.1.1 TEST SPECIFICATION

Basic Standard	: EN 55024 & IEC 61000-4-2
Test Port	: Enclosure port
Discharge Impedance	: 330 ohm / 150 pF
Discharge Mode	: Single Discharge
Discharge Period	: one second between each discharge

9.1.2 BLOCK DIAGRAM OF TEST SETUP



9.1.3 TEST PROCEDURE

ESD shall be applied only to those points and surfaces of the Product which are expected to be touched during usual operation, including user access, as specified in the user manual.

The discharges shall be applied in two ways:

a. Contact discharges to the conductive surfaces and to coupling planes (HCP & VCP):

The Product shall be exposed to at least 200 discharges, 100 each at negative and positive polarity, at a minimum of four test points (a minimum of 50 discharges at each point). One of the test points shall be subjected to at least 50 indirect discharges (contact) to the centre of the front edge of the horizontal coupling plane. The remaining three test points shall each receive at least 50 direct discharges. Tests shall be performed at a maximum repetition rate of one discharge per second.

b. Air discharge at slots and apertures, and insulating surfaces:

On those parts of the Product where it is not possible to perform contact discharge testing, the equipment should be investigated to identify user accessible points where breakdown may occur. Such points are tested using the air discharge method. A minimum of 10 single air discharges shall be applied to the selected test point for each such area.

9.1.4 RESULTS & PERFORMANCE

Product : IP Phone
Power : AC 230V, 50Hz
Mode : Normal

Model/Type reference : XonTel S16P
Temperature : 24°C
Humidity : 50%

Discharge Method	Discharge Position	Voltage (\pm kV)	Min. No. of Discharge per polarity (Each Point)	Required Level	Performance Criterion
Contact Discharge	Conductive Surfaces	2, 4	25	B	A
	Indirect Discharge HCP	2, 4	25	B	A
	Indirect Discharge VCP	2, 4	25	B	A
Air Discharge	Slots, Apertures, and Insulating Surfaces	2, 4, 8	10	B	A

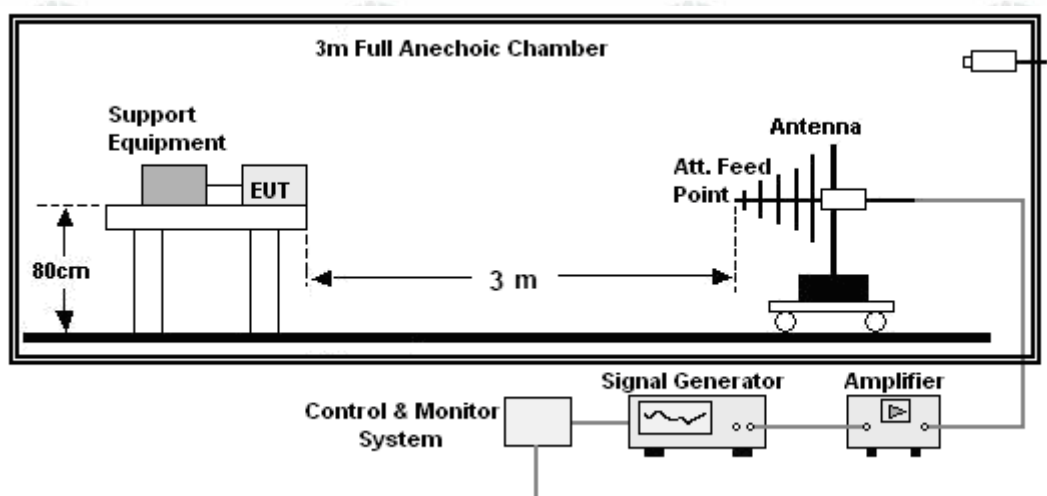
☒ There was no observable degradation in performance.

9.2 RADIO-FREQUENCY ELECTROMAGNETIC FIELD IMMUNITY

9.2.1 TEST SPECIFICATION

Basic Standard	: EN 55024 & IEC 61000-4-3
Test Port	: Enclosure port
Step Size	: 1%
Modulation	: 1kHz, 80% AM
Dwell Time	: 1 second
Polarization	: Horizontal & Vertical

9.2.2 BLOCK DIAGRAM OF TEST SETUP



9.2.3 TEST PROCEDURE

- The testing was performed in a fully-anechoic chamber. The transmit antenna was located at a distance of 3 meters from the Product.
- The frequency range is swept from 80MHz to 1000MHz, with the signal 80% amplitude modulated with a 1 kHz sine wave. The rate of sweep did not exceed 1.5×10^{-3} decade/s. Where the frequency range is swept incrementally, the step size was 1%.
- The test was performed with the Product exposed to both vertically and horizontally polarized fields on each of the four sides.

9.2.4 RESULTS & PERFORMANCE

Product	: IP Phone	Model/Type reference	: XonTel S16P
Power	: AC 230V, 50Hz	Temperature	: 24°C
Mode	: Normal	Humidity	: 50%

Frequency (MHz)	Position	Field Strength (V/m)	Required Level	Performance Criterion
80 - 1000	Front, Right, Back, Left	3	A	A

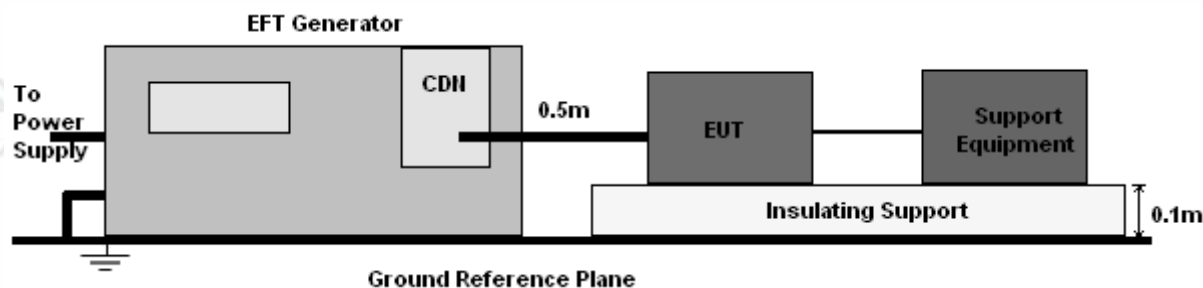
9.3 ELECTRICAL FAST TRANSIENTS (EFT)

9.3.1 TEST SPECIFICATION

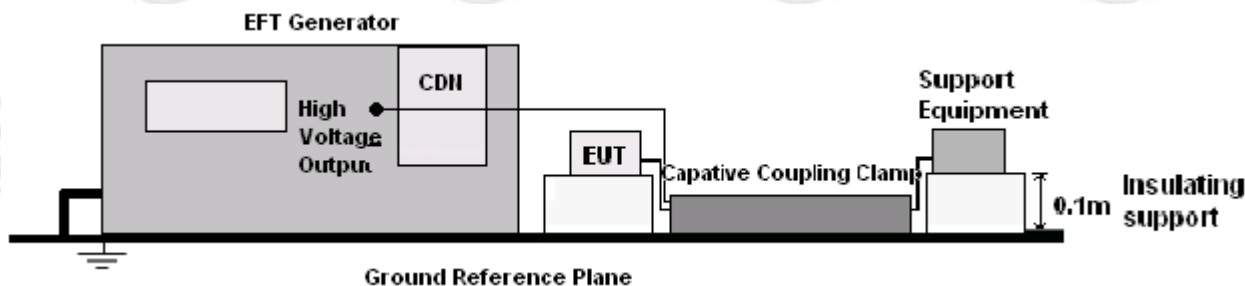
Basic Standard	: EN 55024 & IEC 61000-4-4
Test Port	: input a.c. power port signal ports and telecommunication port
Impulse Frequency	: 5 kHz
Impulse Wave-shape	: 5/50 ns
Burst Duration	: 15 ms
Burst Period	: 300 ms
Test Duration	: 1 minute per polarity

9.3.2 BLOCK DIAGRAM OF TEST SETUP

For input a.c. power port:



For signal ports and telecommunication port:



9.3.3 TEST PROCEDURE

- The Product and support units were located on a non-conductive table above ground reference plane.
- A 0.5m-long power cord was attached to Product during the test.

9.3.4 RESULTS & PERFORMANCE

Product	: IP Phone	Model/Type reference	: XonTel S16P
Power	: AC 230V, 50Hz	Temperature	: 24°C
Mode	: Normal	Humidity	: 50%

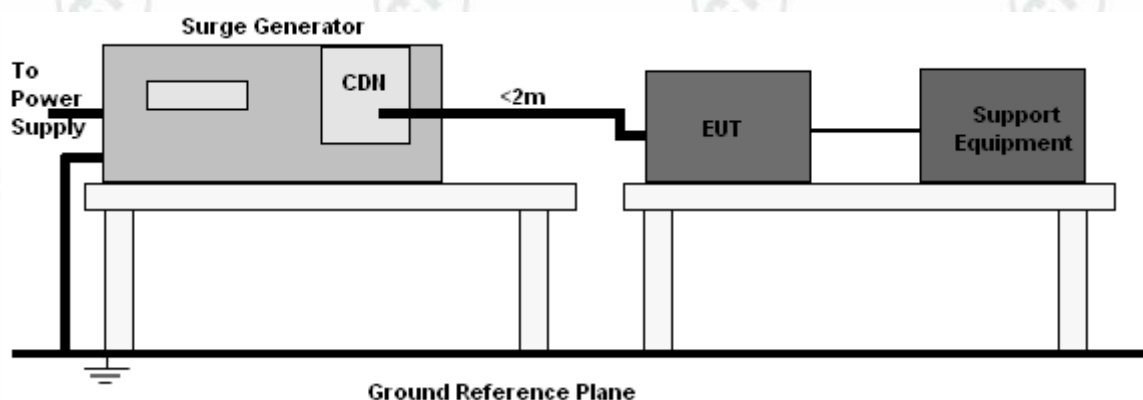
Coupling	Voltage (kV)	Polarity	Required Level	Performance Criterion
L + N	1	±	B	A
LAN port	0.5	±	B	A

9.4 SURGES

9.4.1 TEST SPECIFICATION

Basic Standard	: EN 55024 & IEC 61000-4-5
Test Port	: input a.c. power port
Wave-Shape	: Open Circuit Voltage - 1.2 / 50 us Short Circuit Current - 8 / 20 us
Phase Angle	: 0° / 90° / 180° / 270°
Pulse Repetition Rate	: 1 pulse / min.
Test Events	: 5 pulses (positive & negative) for each polarity

9.4.2 BLOCK DIAGRAM OF TEST SETUP



9.4.3 TEST PROCEDURE

- The surge is to be applied to the Product power supply terminals via the capacitive coupling network. Decoupling networks are required in order to avoid possible adverse effects on equipment not under test that may be powered by the same lines, and to provide sufficient decoupling impedance to the surge wave.
- The power cord between the Product and the coupling/decoupling networks shall be 2 meters in length (or shorter). Interconnection line between the Product and the coupling/decoupling networks shall be 2 meters in length (or shorter).

9.4.4 RESULTS & PERFORMANCE

Product	: IP Phone	Model/Type reference	: XonTel S16P
Power	: AC 230V, 50Hz	Temperature	: 24°C
Mode	: Normal	Humidity	: 50%

Coupling Line	Voltage (kV)	Polarity	Required Level	Performance Criterion
L - N	1	±	B	A

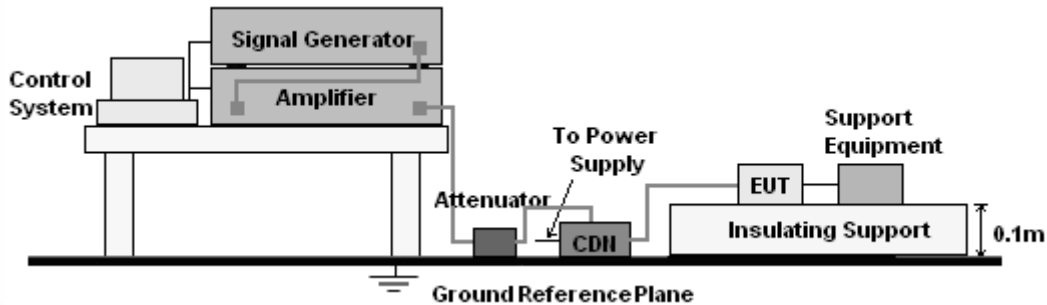
9.5 RADIO-FREQUENCY CONTINUOUS CONDUCTED IMMUNITY

9.5.1 TEST SPECIFICATION

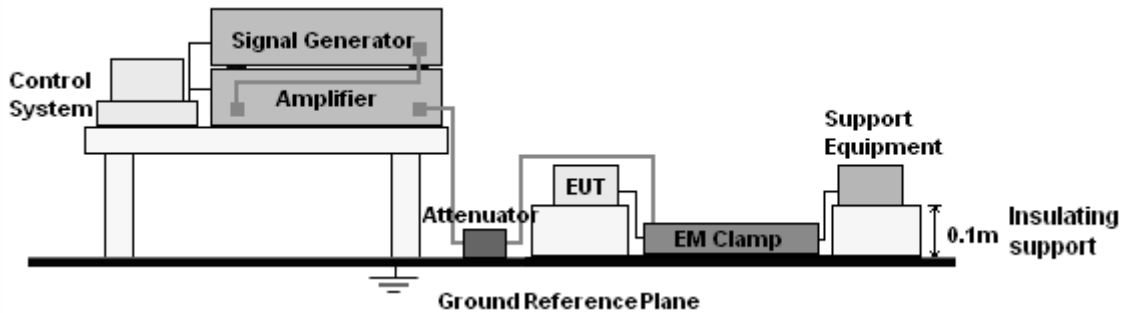
Basic Standard	: EN 55024 & IEC 61000-4-6
Test Port	: input a.c. power port signal ports and telecommunication port
Step Size	: 1%
Modulation	: 1kHz, 80% AM
Dwell Time	: 1 second

9.5.2 BLOCK DIAGRAM OF TEST SETUP

For input a.c. power port:



For signal ports and telecommunication port:



9.5.3 TEST PROCEDURE

For input a.c. power port:

- The Product and support units were located at a ground reference plane with the interposition of a 0.1 m thickness insulating support and the CDN was located on GRP directly.
- The frequency range is swept from 150 kHz to 80MHz, with the signal 80% amplitude modulated with a 1 kHz sine wave. The rate of sweep did not exceed 1.5×10^{-3} decade/s. Where the frequency range is swept incrementally, the step size was 1% of fundamental.
- The dwell time at each frequency shall be not less than the time necessary for the Product to be able to respond.

For signal ports and telecommunication port:

- The Product and support units were located at a ground reference plane with the interposition of a 0.1 m thickness insulating support, and the telecommunication port under test was connected to support units through the current clamp.
- The frequency range is swept from 150 kHz to 80MHz, with the signal 80% amplitude modulated with a 1 kHz sine wave. The rate of sweep did not exceed 1.5×10^{-3} decade/s. Where the frequency range is swept incrementally, the step size was 1% of fundamental.
- The dwell time at each frequency shall be not less than the time necessary for the Product to be able to respond.

9.5.4 RESULTS & PERFORMANCE

Product : IP Phone
Power : AC 230V, 50Hz
Mode : Normal

Model/Type reference : XonTel S16P
Temperature : 24℃
Humidity : 50%

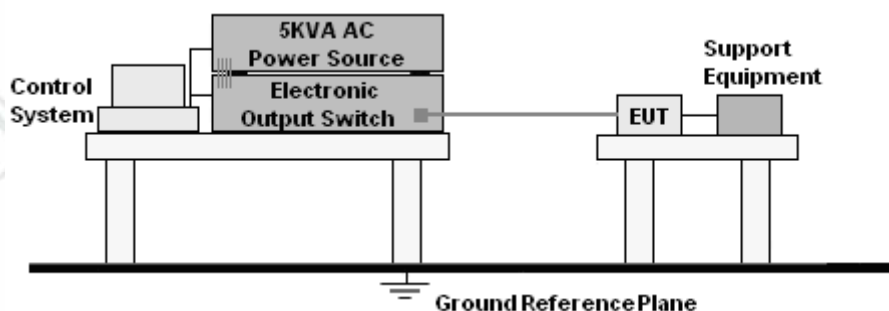
Inject Line	Frequency (MHz)	Voltage Level (V r.m.s.)	Required Level	Performance Criterion
a.c. port	0.15 - 80	3	A	A
LAN Port	0.15 - 80	3	A	A

9.6 VOLTAGE DIPS AND INTERRUPTIONS

9.6.1 TEST SPECIFICATION

Basic Standard : EN 55024 & IEC 61000-4-11
Test Ports : Input a.c. power ports
Phase Angle : 0°, 180°

9.6.2 BLOCK DIAGRAM OF TEST SETUP



9.6.3 TEST PROCEDURE

- The Product and support units were located on a non-conductive table above ground floor.
- Set the parameter of tests and then perform the test software of test simulator.
- Conditions changes to occur at 0 degree crossover point of the voltage waveform.

9.6.4 RESULTS & PERFORMANCE

Product : IP Phone **Model/Type reference** : XonTel S16P
Power : AC 100V, AC 240V, 50/60Hz **Temperature** : 24°C
Mode : Normal **Humidity** : 50%

Voltage Dips:

Test Level % UT	Reduction (%)	Duration (ms)	Required Level	Performance criteria
≤5	>95	10	B	A
70	30	500	C	A

Voltage Interruptions:

Test Level % UT	Reduction (%)	Duration (ms)	Required Level	Performance criteria
≤5	>95	5000	C	B*

Remark*: During test, The EUT appeared flicker, It can recover normally by itself after testing.

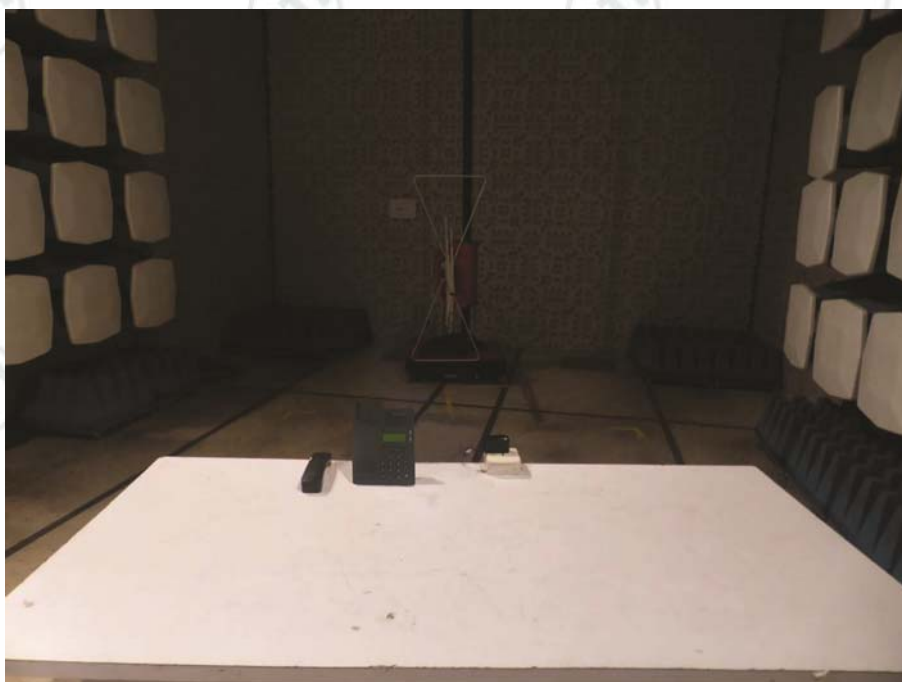
APPENDIX 1 PHOTOGRAPHS OF TEST SETUP



CONDUCTED DISTURBANCE TEST SETUP



CONDUCTED DISTURBANCE TEST SETUP (LAN PORT)



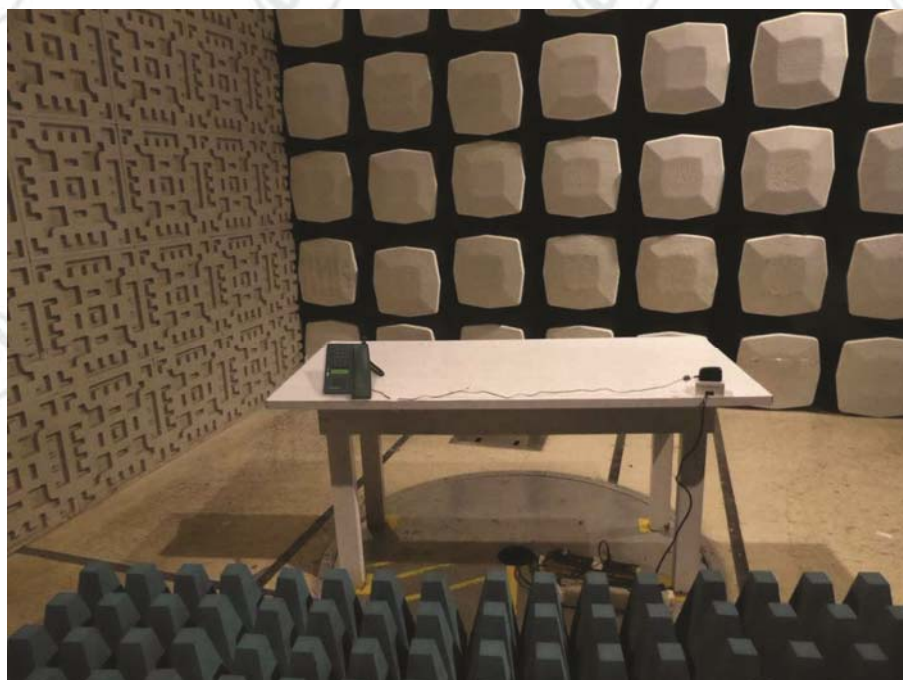
RADIATED DISTURBANCE TEST SETUP



FLICKER TEST SETUP



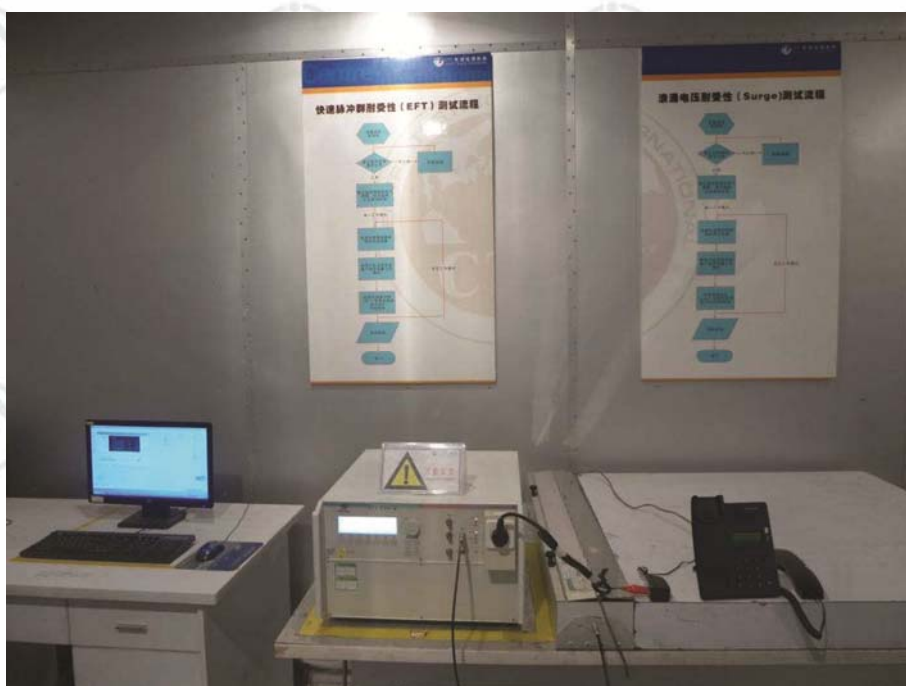
ESD TEST SETUP



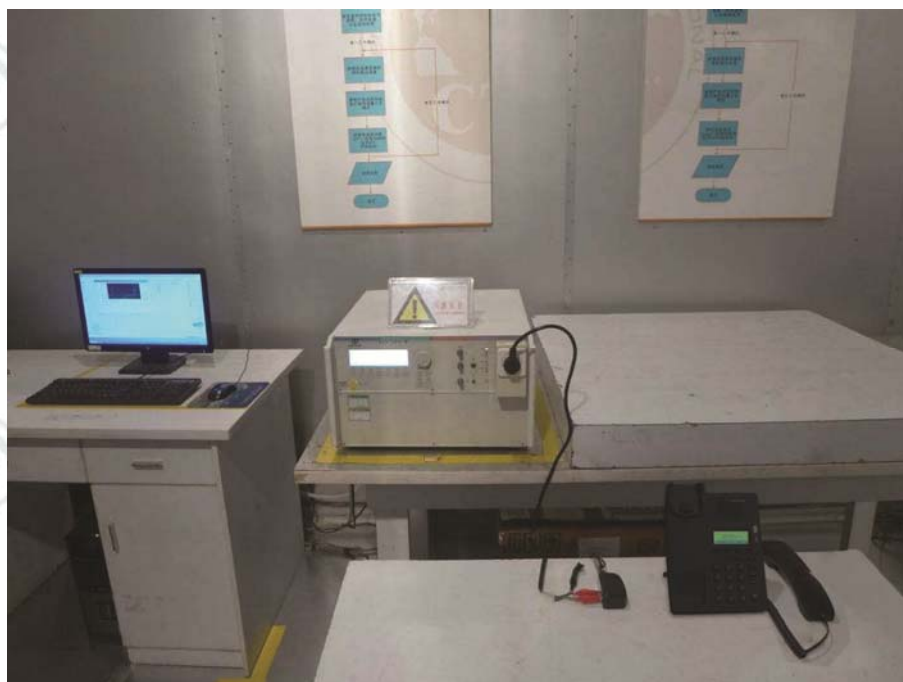
RADIO-FREQUENCY ELECTROMAGNETIC FIELD IMMUNITY TEST SETUP



EFT TEST SETUP



EFT TEST SETUP (LAN PORT)



SURGES TEST SETUP



RADIO-FREQUENCY CONTINUOUS CONDUCTED IMMUNITY TEST SETUP



**RADIO-FREQUENCY CONTINUOUS CONDUCTED
IMMUNITY TEST SETUP (LAN PORT)**



VOLTAGE DIPS AND INTERRUPTIONS TEST SETUP

APPENDIX 2 PHOTOGRAPHS OF PRODUCT



View of Product-1



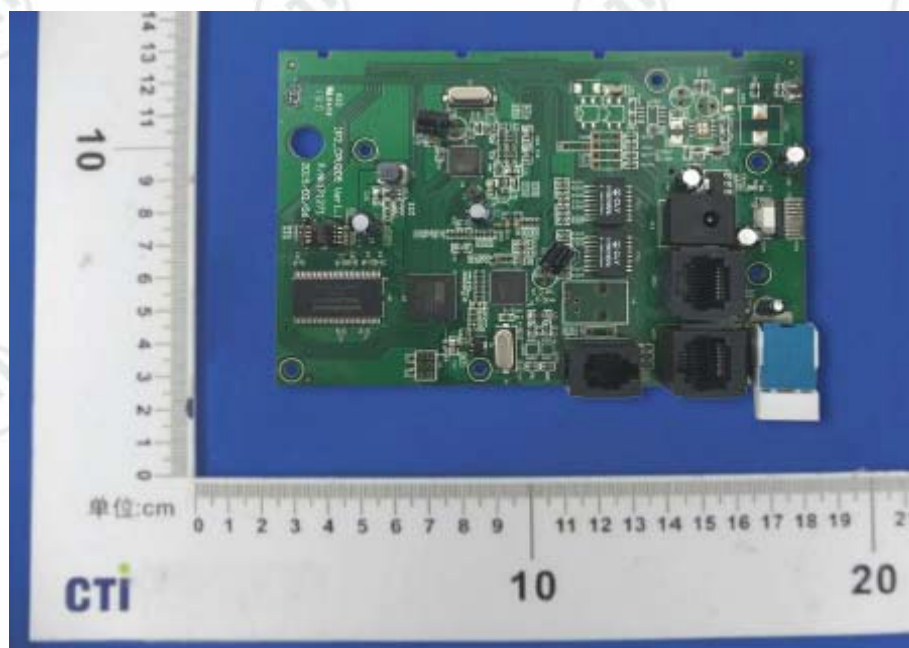
View of Product-2



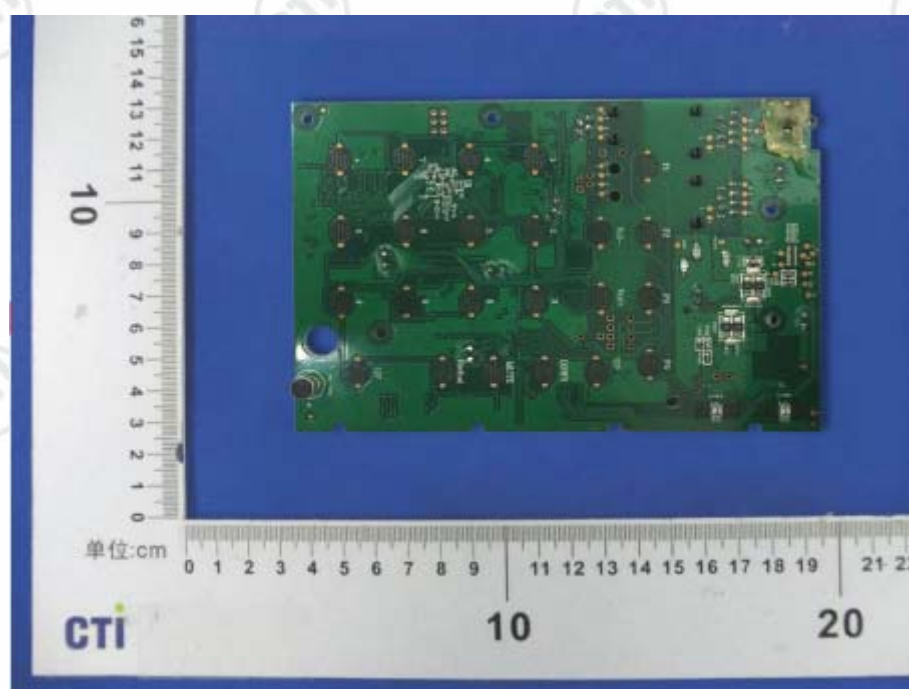
View of Product-3



View of Product-4



View of Product-5



View of Product-6



View of Product-7



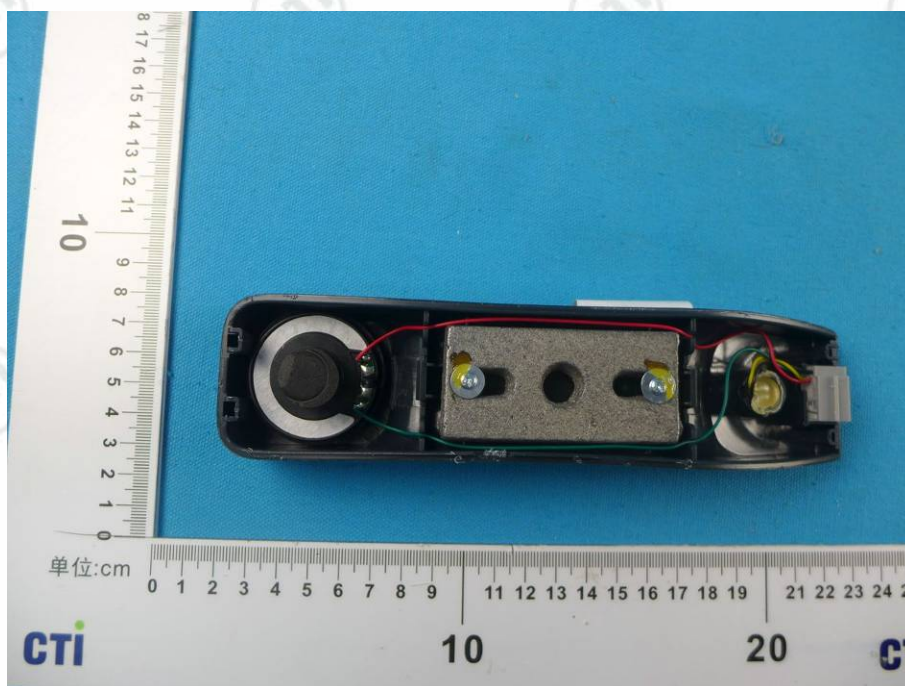
View of Product-8



View of Product-9



View of Product-10



View of Product-11

*** End of Report ***

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