

MRT Technology (Suzhou) Co., Ltd Phone: +86-512-66308358 Fax: +86-512-66308368 Web: www.mrt-cert.com Report No.: 1609ESU01301Report Version:V01Issue Date:10-10-2016

MEASUREMENT REPORT FCC Part 15B

FCC ID: T2C-T48S

APPLICANT: YEALINK(XIAMEN) NETWORK TECHNOLOGY CO.,LTD

Application Type: Certification

Product: Ultra-elegant Gigabit IP Phone

Model No.: SIP-T48S

Brand Name: YEALINK

- FCC Classification: FCC Class B Digital Device (JBP)
- FCC Rule Part(s): FCC Part 15 Subpart B: 2016
- Test Procedure(s): ANSI C63.4: 2014

Test Date: September 01 ~ 18, 2016

Reviewed By

Approved By

: Robin Wu (Robin Wu) Marlinchen (Marlin Chen)



The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4-2014. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
1609ESU01301	Rev. 01	Initial report	10-10-2016	Valid



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§2.1033 General Information

Applicant:	YEALINK(XIAMEN) NETWORK TECHNOLOGY CO., LTD		
Applicant Address:	309, 3th Floor, No.16, Yun Ding North Road, Huli District, Xiamen		
	City, Fujian, P.R. China		
Manufacturer:	YEALINK(XIAMEN) NETWORK TECHNOLOGY CO.,LTD		
Manufacturer Address:	309, 3th Floor, No.16, Yun Ding North Road, Huli District, Xiamen		
	City, Fujian, P.R. China		
Test Site:	MRT Technology (Suzhou) Co., Ltd		
Test Site Address:	D8 Building, Youxin Industrial Park, No.2 Tian'edang Rd., Wuzhong		
	Economic Development Zone, Suzhou, China		
MRT FCC Registration No.:	809388		
Model No.:	SIP-T48S		
FCC ID:	T2C-T48S		
Test Device Serial No.:	N/A Droduction Pre-Production Dengineering		
FCC Classification:	FCC Class B Digital Device (JBP)		

Test Facility / Accreditations

Measurements were performed at MRT Laboratory located in Tian'edang Rd., Suzhou, China.

- MRT facility is a FCC registered (MRT Reg. No. 809388) test facility with the site description report on file and has met all the requirements specified in Section 2.948 of the FCC Rules.
- MRT facility is an IC registered (MRT Reg. No. 11384A-1) test laboratory with the site description on file at Industry Canada.
- MRT facility is a VCCI registered (R-4179, G-814, C-4664, T-2206) test laboratory with the site description on file at VCCI Council.
- MRT Lab is accredited to ISO 17025 by the American Association for Laboratory Accreditation (A2LA) under the American Association for Laboratory Accreditation Program (A2LA Cert. No. 3628.01) in EMC, Telecommunications and Radio testing for FCC, Industry Canada, EU and TELEC Rules.

American Association for Laboratory A	ccreditation
Accredited Laboratory	
A2EA has accredited	
MRT TECHNOLOGY (SUZHOU) CO.	LTD.
Suzhou, China for technical competence in the field of	
Electrical Testing	
This laboratory is accredited in accordance with the recognized International Standard ISO IEC 17025-2005 Get the competence of testing and calibration laboratories. This scoreditation demonstrates technical competence for operator of a laboratory quality strangement system (cycler is joint BOA/LCAUC comsumption) data(JA).	seral requirements for a defined scope and the January 2009)
Presented this 17 th day of June 2014.	
Peter Margu- President A.C.D. President A.C.D. President A.C.D. Vieller Continues Nonley M.C.D. Vieller Vieller A. August 31, 2016	
For the tent in which this accreditation applies, please refer to the laboratory's Electrical Scope of Accredit	lutrices.





1. INTRODUCTION

1.1. Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Industry Canada Certification and Engineering Bureau.

1.2. MRT Test Location

The map below shows the location of the MRT LABORATORY, its proximity to the Taihu Lake. These measurement tests were conducted at the MRT Technology (Suzhou) Co., Ltd. Facility located at D8 Building, Youxin Industrial Park, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China. The detailed description of the measurement facility was found to be in compliance with the requirements of § 2.948 according to ANSI C63.4-2009 on September 30, 2013.





2. PRODUCT INFORMATION

2.1. Equipment Description

Product Name	Jltra-elegant Gigabit IP Phone	
Model No.	P-T48S	
Adapter	M/N: YLPS052000B-US	
	INPUT: 100-240V ~ 50/60Hz,350mA	
	OUTPUT: 5Vdc, 2A	

2.2. Test Configuration

The **Ultra-elegant Gigabit IP Phone FCC ID: T2C-T48S** was tested per the guidance FCC Part 15 Subpart B: 2016 and ANSI C63.4: 2014 was used to reference the appropriate EUT setup for radiated spurious emissions testing and AC line conducted testing.









2.3. Test System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Prod	luct	Manufacturer	Model No.	Serial No.	Power Cord
1	Headset	Yealink	N/A	N/A	N/A
2	USB Flash disk	HP	X750W	N/A	N/A
3	Expansion LCD	Yealink	EXP40	8400716060000189	N/A
	Module				
4	8-port 10/100	D-Link	DES-1008P	S0091F7000489	Non-Shielded, 2m
	Unmanaged				
	Switch with 4				
	PoE ports				
5	IP Phone	Yealink	SIP-T48S	MAC 001565B16B02	Non-shielding, 1.8m
6	Notebook	Lenovo	E430c	MP-4CFX213/10	Non-Shielded, 1.8m

2.4. Test Software

Not applicable.

2.5. EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and/or no modifications were made during testing.

2.6. Labeling Requirements

Per 2.1074 & 15.19; Docket 95-19

The label shall be permanently affixed at a conspicuous location on the device; instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase. However, when the device is so small wherein placement of the label with specified statement is not practical, only the FCC ID must be displayed on the device per Section 15.19(a)(5). Please see attachment for FCC ID label and label location.



3. DESCRIPTION OF TEST

3.1. Evaluation Procedure

The measurement procedures described in the American National Standard for Methods of Measurement of Radio-Noise Emission from Low-Voltage Electrical Equipment in the Range of 9kHz to 18GHz (ANSI C63.4-2014) was used in the measurement of the **Ultra-elegant Gigabit IP Phone FCC ID: T2C-T48S.**

Deviation from measurement procedure.....None

3.2. AC Line Conducted Emissions

The line-conducted facility is located inside an 8'x4'x4' shielded enclosure. A 1m x 2m wooden table 80cm high is placed 40cm away from the vertical wall and 80cm away from the sidewall of the shielded room. Two 10kHz-30MHz, $50\Omega/50$ uH Line-Impedance Stabilization Networks (LISNs) are bonded to the shielded room floor. Power to the LISNs is filtered by external high-current high-insertion loss power line filters. These filters attenuate ambient signal noise from entering the measurement lines. These filters are also bonded to the shielded enclosure.

The EUT is powered from one LISN and the support equipment is powered from the second LISN. If the EUT is a DC-powered device, power will be derived from the source power supply it normally will be powered from and this supply line(s) will be connected to the second LISN. All interconnecting cables more than 1 meter were shortened to a 1 meter length by non-inductive bundling (serpentine fashion) and draped over the back edge of the test table. All cables were at least 40cm above the horizontal reference ground-plane. Power cables for support equipment were routed down to the second LISN while ensuring that that cables were not draped over the second LISN. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the receiver and exploratory measurements were made to determine the frequencies producing the maximum emission from the EUT. The receiver was scanned from 150 kHz to 30 MHz. The detector function was set to peak mode for exploratory measurements while the bandwidth of the analyzer was set to 9 kHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Each emission was also maximized by varying: power lines, the mode of operation or resolution, clock or data exchange speed, scrolling H pattern to the EUT and/or support equipment whichever determined the worst-case emission. Once the worst case emissions have been identified, the one EUT cable configuration/arrangement and mode of operation that produced these emissions are used for final measurements on the same test site. Line conducted emissions test results are shown in Section 6.2.



3.3. Radiated Emissions

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. For measurements above 1GHz absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1GHz, the absorbers are removed. An MF Model 210SS turntable is used for radiated measurement. It is a continuously rotatable, remote controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. An 80cm high PVC support structure is placed on top of the turntable. For all measurements, the spectrum was scanned through all EUT azimuths and from 1 to 4 meter receive antenna height using a broadband antenna from 30 MHz up to the upper frequency shown in 15.33(b)(1) depending on the highest frequency generated or used in the device or on which the device operates or tunes. For frequencies above 1GHz, linearly polarized double ridge horn antennas were used. For frequencies below 30 MHz, a calibrated loop antenna was used. When exploratory measurements were necessary, they were performed at 1 meter test distance inside the semi-anechoic chamber using broadband antennas, broadband amplifiers, and spectrum analyzers to determine the frequencies and modes producing the maximum emissions. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The test set-up was placed on top of the 0.8 meter high, 1 x 1.5 meter table. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Appropriate precaution was taken to ensure that all emissions from the EUT were maximized and investigated. The system configuration, mode of operation, if applicable, turntable azimuth, and receive antenna height was noted for each frequency found. Final measurements were made in the semi-anechoic chamber using calibrated, linearly polarized broadband and horn antennas. The test setup was configured to the setup that produced the worst case emissions. The spectrum analyzer was set to investigate all frequencies required for testing to compare the highest radiated disturbances with respect to the specified limits. The turntable containing the EUT was rotated through 360 degrees and the height of the receive antenna was varied 1 to 4 meters and stopped at the azimuth and height producing the maximum emission. Each emission was maximized by changing the orientation of the EUT through three orthogonal planes and changing the polarity of the receive antenna, whichever produced the worst-case emissions. According to 3dB beam-width of horn antenna, the horn antenna should be always directed to the

EUT when rising height.



4. TEST EQUIPMENT CALIBRATION DATE

Conducted Emissions - SR2

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR7	MRTSUE06001	1 year	2016/11/03
Two-Line V-Network	R&S	ENV216	MRTSUE06002	1 year	2016/11/03
Two-Line V-Network	R&S	ENV216	MRTSUE06003	1 year	2016/11/03
Temperature/Humidity Meter	Yuhuaze	HTC-2	MRTSUE06182	1 year	2016/12/20
Shielding Anechoic Chamber	Mikebang	Chamber-SR2	MRTSUE06215	1 year	2017/05/10

Radiated Emissions - AC2

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
MXE EMI Receiver	Agilent	N9038A	MRTSUE06125	1 year	2017/08/03
Microwave System Amplifier	Agilent	83017A	MRTSUE06076	1 year	2017/03/29
TRILOG Antenna	Schwarzbeck	VULB9162	MRTSUE06022	1 year	2016/11/07
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	MRTSUE06023	1 year	2016/11/07
Digitial Thermometer &	MingGao	ETH529	MRTSUE06170	1 year	2016/11/30
Hygromete					
Anechoic Chamber	RIKEN	Chamber-AC2	MRTSUE06213	1 year	2017/05/10

Software	Version	Function
e3	V8.3.5	EMI Test Software



5. MEASUREMENT UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT 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.

AC Conducted Emission Measurement – SR2		
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)):		
150kHz~30MHz: 3.5dB		
Radiated Emission Measurement – AC2		
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)):		
Horizontal: 30MHz~1GHz: 4.07dB		
1GHz~18GHz: 4.16 dB		
Vertical: 30MHz~1GHz: 4.18 dB		
1GHz~18GHz: 4.76 dB		



6. TEST RESULT

6.1. Summary	
Product Name:	Ultra-elegant Gigabit IP Phone
FCC ID:	T2C-T48S
FCC Classification:	FCC Class B Digital Device (JBP)
Test Mode:	Mode 1: Power by adapter and Communicate with another IP
	<u>Phone</u>
	Mode 2: Power by PoE and Communicate with another IP Phone

FCC Part Section(s)	Test Description	Test Result	
15.107	Conducted Emissions	Pass	
15.109	Radiated Emissions	Pass	



6.2. Conducted Emission Measurement

6.2.1. Test Limit

FCC Part 15.107 Limits									
Frequency (MHz)	QP (dBµV)	AV (dBµV)							
0.15 - 0.50	66 - 56	56 - 46							
0.50 - 5.0	56	46							
5.0 - 30	60	50							
Note 1: The lower limit shall apply at the transition frequencies.									

Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

6.2.2. Test Setup



Vertical ground reference plane



6.2.3. Test Result of Conducted Emissions

Site	Site: SR2					Time: 2016/09/06 - 11:35						
Limi		Dart15		nee B		=ngineer: Dan	dy Li					
Prof	n. 1 00	/216 1	01683 Filtor	0n		Polarity: Line						
				hana	r							
EUI	: Ultra-	elegani	Gigabit IP P	none	ľ	Power: AC 120	JV/60HZ					
Test	iviode	1										
Level(dBuV)	80 70 60 A ₁ A ₂ 50 ** 40 * 30 * 20 10 0 -10 -20 0.15	A A A A	VENTANTE IN	1	12 Freque			10	30			
No	Flag	Mark	Frequency	Measure	Reading	Over Limit	Limit	Factor				
			(MHz)	Level	Level	(dB)	(dBuV)	(dB)				
				(dBuV)	(dBuV)							
1		*	0.158	53.430	43.119	-12.138	65.568	10.311	QP			
2			0.158	37.251	26.940	-18.317	55.568	10.311	AV			
3			0.170	50.571	40.493	-14.390	64.960	10.078	QP			
4			0.170	26.791	16.713	-28.170	54.960	10.078	AV			
5			0.198	49.571	39.567	-14.123	63.694	10.005	QP			
6			0.198	33.923	23.918	-19.771	53.694	10.005	AV			
7			0.298	45.170	35.168	-15.128	60.298	10.002	QP			
8			0.298	32.963	22.961	-17.335	50.298	10.002	AV			
9			0.414	42.160	32.063	-15.408	57.568	10.097	QP			
10			0.414	31.730	21.633	-15.838	47.568	10.097	AV			
11			1.206	40.061	30.160	-15.939	56.000	9.901	QP			

Note: Measure Level (dB μ V) = Reading Level (dB μ V) + Factor (dB)

30.412

20.511

-15.588

Factor (dB) = Cable Loss (dB) + LISN Factor (dB).

1.206

12

AV

9.901

46.000



Time: 2016/09/06 - 11:40
Engineer: Dandy Li
Polarity: Neutral
Power: AC 120V/60Hz

Test Mode 1



No	Flag	Mark	Frequency	Measure	Reading	Over Limit	Limit	Factor	Туре
			(MHz)	Level	Level	(dB)	(dBuV)	(dB)	
				(dBuV)	(dBuV)				
1		*	0.150	54.962	43.820	-11.038	66.000	11.142	QP
2			0.150	42.041	30.899	-13.959	56.000	11.142	AV
3			0.170	50.732	40.668	-14.229	64.960	10.064	QP
4			0.170	27.554	17.490	-27.406	54.960	10.064	AV
5			0.198	49.946	39.931	-13.748	63.694	10.015	QP
6			0.198	34.968	24.954	-18.726	53.694	10.015	AV
7			0.238	46.033	36.041	-16.132	62.166	9.992	QP
8			0.238	30.410	20.418	-21.756	52.166	9.992	AV
9			0.274	45.133	35.115	-15.862	60.996	10.019	QP
10			0.274	25.734	15.716	-25.261	50.996	10.019	AV
11			0.634	43.443	33.330	-12.557	56.000	10.112	QP
12			0.634	33.528	23.416	-12.472	46.000	10.112	AV

Note: Measure Level (dB μ V) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + LISN Factor (dB).



6.3. Radiated Emission Measurement

6.3.1. Test Limit

	FCC Part 15.109 Limits	
Frequency (MHz)	Distance (m)	Level (dBµV/m)
30 - 88	3	40
88 - 216	3	43.5
216 - 960	3	46
Above 960	3	54
Note 1: The lower limit shall app	ly at the transition frequency.	
Note 2: Distance refers to the di	stance in meters between the mea	asuring instrument antenna and
the closed point of any part of th	e device or system.	

Note 3: E field strength $(dB\mu V/m) = 20 \log E$ field strength (uV/m)

6.3.2. Test Setup

<u>30MHz ~ 1GHz Test Setup:</u>





1GHz ~18GHz Test Setup:





6.3.3. Test Result

Site	AC2					Time: 2016/09/17 - 18:36						
Limi	t: FCC	_Part15	5.109_RE(3m)_Class B		Engineer: Lewis Huang						
Prot	be: VUI	_B9162	_0.03-8GHz			Polarity: Horizontal						
EUT	: Ultra-	elegant	Gigabit IP Pl	none		Power: A	Power: AC 120V/60Hz					
Test	Mode	1										
	80								1			
	70								_			
	60								_			
	50										f	
Ē 40							4 -	5 }				
dBuV	30		1	2		*	*		6			
Level(20		*	*					1		_	
	10											
	0											
	-10											
	-20											
	30			100	Free	quency(MHz)					1000	
No	Flag	Mark	Frequency	Measure	Reading	Over	Limit	Factor	Ant	Table	Туре	
			(MHz)	Level	Level	Limit	(dBuV/m)	(dB)	Pos	Pos		
				(dBuV/m)	(dBuV)	(dB)			(cm)	(deg)		
1			51.340	23.853	8.950	-16.147	40.000	14.903	100	336	QP	
2			83.350	22.377	12.520	-17.623	40.000	9.857	100	58	QP	
3			205.570	30.955	18.580	-12.545	43.500	12.375	100	178	QP	
4			288.990	32.924	18.570	-13.076	46.000	14.353	100	24	QP	
5		*	333.125	38.172	22.690	-7.828	46.000	15.482	100	109	QP	
6			499.965	27.011	8.680	-18.989	46.000	18.331	100	228	QP	

Note: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



Site	Site: AC2						Time: 2016/09/17 - 18:37						
Limi	t: FCC	_Part15	5.109_RE(3m)_Class B		Engineer: Lewis Huang							
Prot	be: VUI	LB9162	_0.03-8GHz			Polarity: Vertical							
EUT	: Ultra-	elegant	t Gigabit IP P	hone		Power: A	AC 120V/60	Hz					
Test	Test Mode 1												
	80		1			2							
	70			<u>.</u>									
	60						-						
	50						d d						
(E)						5		6					
(dBuV	30 *			*		*		*	_				
Level	20										_		
	10												
	0												
	-10												
	-20												
	30			100) Fre	quency(MHz)					1000		
No	Flag	Mark	Frequency	Measure	Reading	Over	Limit	Factor	Ant	Table	Туре		
	Ū		(MHz)	Level	Level	Limit	(dBuV/m)	(dB)	Pos	Pos			
				(dBuV/m)	(dBuV)	(dB)			(cm)	(deg)			
1			30.485	32.410	20.260	-7.590	40.000	12.150	100	321	QP		
2			45.019	37.543	22.700	-2.457	40.000	14.843	100	115	QP		
3		*	51.340	37.683	22.780	-2.317	40.000	14.903	100	79	QP		
4			68.958	35.437	24.200	-4.563	40.000	11.237	100	185	QP		
5			179.865	34.245	23.320	-9.255	43.500	10.926	100	247	QP		
6			333.125	32.962	17.480	-13.038	46.000	15.482	100	12	QP		

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



Site	AC2					Time: 2016/09/17 - 18:38						
Limi	t: FCC	_Part15	5.109_RE(3m)_Class B		Engineer: Lewis Huang						
Prot	be: VUI	LB9162	_0.03-8GHz			Polarity: Horizontal						
EUT	: Ultra-	elegant	t Gigabit IP Pl	hone		Power: By POE						
Test	Test Mode 2											
	80					01						
	70										_	
	60											
	50						2					
(E)	ξ 40					4 5	6 *					
dBuV	30		1	2		*	* *					
Level	20		*								_	
	10											
	0						s					
	-10											
	-20											
	30			100	Fre	quency(MHz)					1000	
No	Flag	Mark	Frequency	Measure	Reading	Over	Limit	Factor	Ant	Table	Туре	
			(MHz)	Level	Level	Limit	(dBuV/m)	(dB)	Pos	Pos		
				(dBuV/m)	(dBuV)	(dB)			(cm)	(deg)		
1			44.550	23.246	8.490	-16.754	40.000	14.756	100	226	QP	
2			77.045	27.948	18.690	-12.052	40.000	9.258	100	110	QP	
3			205.570	31.055	18.680	-12.445	43.500	12.375	100	31	QP	
4			224.970	31.814	18.950	-14.186	46.000	12.865	100	308	QP	
5			288.990	32.944	18.590	-13.056	46.000	14.353	100	257	QP	
6		*	333.125	37.002	21.520	-8.998	46.000	15.482	100	78	QP	

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



Site	AC2					Time: 2016/09/17 - 18:39						
Limi	t: FCC	_Part15	5.109_RE(3m)_Class B		Engineer: Lewis Huang						
Prob	be: VUI	_B9162	_0.03-8GHz			Polarity: Vertical						
EUT	: Ultra-	elegant	t Gigabit IP P	hone		Power: I	By POE					
Test	Test Mode 2											
	80					1						
	70											
	60								_			
	50						2				f	
(E	40		1 2	8-4	5			6				
dBuV	30			* *	*			*	_			
Level(20								_			
	10											
	0											
	-10											
	-20											
	30			100	Fre	quency <mark>(M</mark> Hz)					1000	
No	Flag	Mark	Frequency	Measure	Reading	Over	Limit	Factor	Ant	Table	Туре	
			(MHz)	Level	Level	Limit	(dBuV/m)	(dB)	Pos	Pos		
				(dBuV/m)	(dBuV)	(dB)			(cm)	(deg)		
1			44.550	37.776	23.020	-2.224	40.000	14.756	100	77	QP	
2		*	51.412	37.901	23.000	-2.099	40.000	14.901	100	247	QP	
3			68.800	34.908	23.620	-5.092	40.000	11.288	100	311	QP	
4			74.135	35.347	25.410	-4.653	40.000	9.937	100	196	QP	
5			106.630	31.547	18.490	-11.953	43.500	13.057	100	220	QP	

14.450 -14.535 46.000

Note: Measure Level ($dB\mu V/m$) = Reading Level ($dB\mu V$) + Factor (dB)

31.465

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).

418.000

6

17.015 100

51

QP



Site	AC2					Time: 2016/09/17 - 18:40						
Limi	t: FCC	_Part15	5.109_RE(3m)_Class B		Engineer: Lewis Huang						
Prob	be: BBI	HA9120	D_1-18GHz			Polarity: Horizontal						
EUT	: Ultra-	elegant	t Gigabit IP Pl	none		Power: A	Power: AC 120V/60Hz					
Test	Mode	1										
	90										_	
	80											
	70											
	60								-			
Ē	50						5					
dBuV	40		1	3 *			Ì		-			
Level(30		2	4		1	-*				_	
	20		*	*							_	
	10								_			
	0											
	-10											
	1000				Free	quency(MHz)		1	10000		18000	
No	Flag	Mark	Frequency	Measure	Reading	Over	Limit	Factor	Ant	Table	Туре	
			(MHz)	Level	Level	Limit	(dBuV/m)	(dB)	Pos	Pos		
				(dBuV/m)	(dBuV)	(dB)			(cm)	(deg)		
1			1671.500	38.014	44.215	-35.986	74.000	-6.200	100	274	PK	
2			1671.500	24.939	31.140	-29.061	54.000	-6.200	100	114	AV	
3			2003.000	39.557	44.042	-34.443	74.000	-4.485	100	53	PK	
4			2003.000	26.755	31.240	-27.245	54.000	-4.485	100	79	AV	
5			7137.000	44.380	33.931	-29.620	74.000	10.448	100	330	PK	
6		*	7137.000	33.099	22.650	-20.901	54.000	10.448	100	185	AV	



Site	Site: AC2						Time: 2016/09/17 - 18:40					
Limi	t: FCC	_Part15	5.109_RE(3m))_Class B		Engineer: Lewis Huang						
Prot	be: BBI	HA9120	D_1-18GHz			Polarity: Vertical						
EUT	: Ultra-	elegant	t Gigabit IP PI	none		Power: A	Power: AC 120V/60Hz					
Test	Mode	1										
	90											
	80								_			
	70					-						
	60			-		_			-			
(E	50							5				
dBuV	40		1		3			Ť.	_			
Level	30		2		4			*	_		_	
	20		*		*							
	10		4									
	0											
	-10											
	1000				Fre	quency(MHz)		1	10000		18000	
No	Flag	Mark	Frequency	Measure	Reading	Over	Limit	Factor	Ant	Table	Туре	
			(MHz)	Level	Level	Limit	(dBuV/m)	(dB)	Pos	Pos		
				(dBuV/m)	(dBuV)	(dB)			(cm)	(deg)		
1			1663.000	37.344	43.589	-36.656	74.000	-6.245	100	38	PK	
2			1663.000	23.905	30.150	-30.095	54.000	-6.245	100	247	AV	
3			3006.000	38.660	41.623	-35.340	74.000	-2.963	100	185	PK	
4			3006.000	25.997	28.960	-28.003	54.000	-2.963	100	331	AV	
5			7995.500	45.598	34.810	-28.402	74.000	10.788	100	81	PK	
6		*	7995.500	34.138	23.350	-19.862	54.000	10.788	100	17	AV	



Site	AC2					Time: 2016/09/17 - 18:40						
Limi	t: FCC	_Part15	5.109_RE(3m))_Class B		Engineer: Lewis Huang						
Prob	be: BBI	HA9120	D_1-18GHz			Polarity: Horizontal						
EUT	: Ultra-	elegant	t Gigabit IP Pl	hone		Power: I	Power: By POE					
Test	Mode	2										
	90											
	80											
	70											
	60								_			
Ē	50							5			_	
dBuV	40		1	3 *-				*	_			
Level(30		2	4				*	_			
	20		* 1	*							_	
	10					_						
	0										_	
	-10											
	1000				Free	quency(MHz)		1	.0000		18000	
No	Flag	Mark	Frequency	Measure	Reading	Over	Limit	Factor	Ant	Table	Туре	
	0		(MHz)	Level	Level	Limit	(dBuV/m)	(dB)	Pos	Pos		
				(dBuV/m)	(dBuV)	(dB)			(cm)	(deg)		
1			1663.000	37.978	44.223	-36.022	74.000	-6.245	100	74	PK	
2			1663.000	25.205	31.450	-28.795	54.000	-6.245	100	258	AV	
3			2003.000	38.655	43.140	-35.345	74.000	-4.485	100	334	PK	
4			2003.000	26.575	31.060	-27.425	54.000	-4.485	100	158	AV	
5			7468.500	44.311	33.353	-29.689	74.000	10.958	100	20	PK	
6		*	7468.500	33.578	22.620	-20.422	54.000	10.958	100	37	AV	



Site: AC2						Time: 2016/09/17 - 18:40					
Limit: FCC_Part15.109_RE(3m)_Class B						Engineer: Lewis Huang					
Probe: BBHA9120D_1-18GHz						Polarity: Vertical					
EUT: Ultra-elegant Gigabit IP Phone						Power: By POE					
Test Mode 2											
	90			ľ.							
Level(dBuV/m)	80										
	70					-					
	60					_			-		
	50							5			
	40			1 3 * +				5	-		
	30			2 4		_	-	•			
	20			* *							
	10					_					
	0										
	-10										
1000 10000 1800 Frequency(MHz)											
No	Flag	Mark	Frequency	Measure	Reading	Over	Limit	Factor	Ant	Table	Туре
			(MHz)	Level	Level	Limit	(dBuV/m)	(dB)	Pos	Pos	
				(dBuV/m)	(dBuV)	(dB)			(cm)	(deg)	
1			2003.000	39.753	44.238	-34.247	74.000	-4.485	100	47	PK
2			2003.000	26.775	31.260	-27.225	54.000	-4.485	100	248	AV
3			2334.500	38.467	40.787	-35.533	74.000	-2.319	100	153	PK
4			2334.500	26.370	28.690	-27.630	54.000	-2.319	100	332	AV
5			7145.500	44.547	34.087	-29.453	74.000	10.460	100	349	PK
6		*	7145.500	33.080	22.620	-20.920	54.000	10.460	100	19	AV



7. CONCLUSION

The data collected relate only the item(s) tested and show that the Ultra-elegant Gigabit IP Phone

FCC ID: T2C-T48S has been tested to comply with the requirements specified in §15.107 and

§15.109 of the FCC Rules.