



FCC PART 15B TEST REPORT

For

SHENZHEN YOUTHTON TECHNOLOGY CO.,LTD.

F4, Jinma Building, Jinma Industrial Park, Shihuan Road No.4, Shiyan Street,
Baoan District, Shenzhen ,China

Test Model: YSP96-3110

YGBaa-baaaabb-bb,YSPaa-baaaabb-bb,YX2aa-baaaabb-bb,YXEaa-baaaabb-bb,

Additional Model No.: YXPaa-baaaabb-bb,YQSaa-baaaabb-bb,YCPaa-baaaabb-bb,YSFaa-baaaabb-bb,
YCSaa-baaaabb-bb,YQ2aa-baaaabb-bb (a=0~9; b=A~Z)

Equipment Under Test	:	Optical Module
Date of receipt of test sample	:	Mar. 06, 2019
Test Date	:	Mar. 06, 2019 - Mar. 12, 2019
Issue Date	:	Mar. 12, 2019
Compiled By	:	Mary Wu
Supervised By	:	Caven He
Approved & Authorized By	:	Bill Lee
Prepared By	:	Shenzhen BCT Technology Co., Ltd. 6F, Yantian Business Building, Bao'an Road, Bao'an District, Shenzhen, P.R.China. Tel: 86-755-2947 5656 Fax: 86-755-2947 5655 http://www.bct-test.com



Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior written consent of Shenzhen BCT Technology Co., Ltd.

TABLE OF CONTENTS

1. GENERAL INFORMATION.....	3
1.1. Product Description for Equipment Under Test (EUT)	3
1.2. Test Standards	3
1.3. Description of Test Facility	4
1.4. Support equipment List	4
1.5. External I/O	4
1.6. Description Of Test Modes	4
1.7. List Of Measuring Equipment	5
2. SUMMARY OF TEST	7
3. SYSTEM TEST CONFIGURATION.....	8
3.1 Justification.....	8
3.2 EUT Exercise Software.....	8
3.3 Special Accessorie.....	8
3.4 Equipment Modifications	8
3.5 Configuration of Test System.....	8
3.6 Test Setup Diagram.....	8
4. RADIATED DISTURBANCES.....	9
4.1 Measurement Uncertainty.....	9
4.2 Limit of Radiated Disturbances (Class B)	9
4.3 EUT Setup	9
4.4 Test Receiver Setup	9
4.5 Test Procedure.....	10
4.6 Corrected Amplitude & Margin Calculation.....	10
4.7 Radiated Emissions Test Result.....	10
5.TEST SETUP PHOTOGRAPHS	12
1.Photo of Radiated Emission Test.....	12
2.Photo of Conducted Disturbance Test.....	12
APPENDIX A - PRODUCT LABELING.....	13
APPENDIX B - EUT EXTERIOR AND INTERIOR PHOTOGRAPHS.....	14


1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: SHENZHEN YOUTHTON TECHNOLOGY CO.,LTD.
Address of applicant: F4, Jinma Building, Jinma Industrial Park, Shihuan Road No.4, Shiyan Street, Baoan District, Shenzhen ,China
Manufacturer: SHENZHEN YOUTHTON TECHNOLOGY CO.,LTD.
Address of manufacturer: F4, Jinma Building, Jinma Industrial Park, Shihuan Road No.4, Shiyan Street, Baoan District, Shenzhen ,China

General Description of E.U.T

EUT Description: Optical Module
Trade Name: 
EUT Model No.: YSP96-3110
Supplementary Model: See page 1
Remark: supplementary models are only different in exterior with tested Model and with the same circuit construction.
Power Supply: Input: 3.3Vd.c.

This Report is based on report BCT171227R-001F.

1.2 Test Standards

The following Declaration of Conformity report of EUT is prepared in accordance with FCC Rules and Regulations Part 15 Subpart B Class B

The objective of the manufacturer is to demonstrate compliance with the described standards above.

1.3 Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

EMC Lab. : CNAS Registration Number. is L7472.
 FCC Registration Number. is 203110.
 Industry Canada Registration Number. is 12135A.
 UL Registration Number. is 557662.
 TUV RH Registration Number. is UA 5027993 0001

Name of Firm : SHENZHEN ALPHA PRODUCT TESTING CO.,LTD.
 Site Location : Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103,
 Shenzhen, Guangdong, China

1.4. Support equipment List

Manufacturer	Description	Model	Serial Number	Certificate
--	--	--	--	--

1.5. External I/O

I/O Port Description	Quantity	Cable
--	--	--

1.6. Description Of Test Modes

There was 2 test Modes.

TM1 : Operating Mode

TM2 : Idle mode

***Note: All test modes were tested, but we only recorded the worst case in this report.

1.7. List Of Measuring Equipment

Table 1: Test Equipment for Emission Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal	Calibration Period
Spectrum Analyzer	ANRITSU	MS2651B	6200238856	2018.05.06	1 year
EMI Test Receiver	ROHDE&SCHWARZ	ESCS30	100307	2018.05.06	1 year
LISN	ROHDE&SCHWARZ	ESH3-Z5	100305	2018.05.06	1 year
Pulse Limiter	ROHDE&SCHWARZ	ESH3-Z2	100305	2018.05.06	1 year
Bilog Antenna	SCHWARZBECK	VULB 9163	9163-194	2018.05.06	1 year
50 Ω Coaxial Switch	ANRITSU CORP	MP59B	6200283933	2018.05.06	1 year
Power Clamp	ROHDE&SCHWARZ	MDS21	100142	2018.05.06	1 year
Loop Antenna	Laplace Instrument Ltd	RF300	8006	2018.05.06	1 year
Cable	Resenberger	N/A	NO.1	N/A	N/A
Cable	SCHWARZBECK	N/A	NO.2	N/A	N/A
Cable	SCHWARZBECK	N/A	NO.3	N/A	N/A
DC Power Filter	DuoJi	DL2 \times 30B	N/A	N/A	N/A
Single Phase Power Line Filter	DuoJi	FNF 202B30	N/A	N/A	N/A
3 Phase Power Line Filter	DuoJi	FNF 402B30	N/A	N/A	N/A
AC Power Source	California Instruments	5001iX-400	55689	2018.05.06	1 year
Test analyzer	California Instruments	PACS-1	72254	2018.05.06	1 year

Table 2: Test Equipment for Immunity Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal	Calibration Period
ESD Tester	HAEFELY	PESD 1610	H4001552	2018.05.07	1 year
EMC PRO System	Thermo	PRO-BASE	0403271	2018.05.07	1 year
Capacitive Clamp	Thermo	PRO-CCL	0403272	2018.05.07	1 year
Coupler decoupler for telecom lines	Thermo	CM-TEL-CD	0403273	2018.05.07	1 year
Magnetic field Tester	HAEFELY	MAG 100	150577	2018.05.07	1 year
AC Transformer	CHOKUN	TDGC2J-5	N/A	2018.05.07	1 year
Signal Generator	IFR	2032	203002/100	2018.05.07	1 year
Amplifier	AR	150W1000	301584	2018.05.07	1 year
Dual Directional Coupler	AR	DC6080	301508	2018.05.07	1 year
Power Head	AR	PH2000	301193	2018.05.08	1 year
Power Meter	AR	PM2002	302799	2018.05.08	1 year
Transmitting Antenna	AR	AT1080	28570	2018.05.08	1 year
Simulator	EMTEST	CWS 500C	0900-12	2018.05.08	1 year
CDN	EMTEST	CDN-M2	510010010010	2018.05.08	1 year
CDN	EMTEST	CDN-M3	0900-11	2018.05.08	1 year
Injection Clamp	EMTEST	F-2031-23MM	368	2018.05.08	1 year
Attenuator	EMTEST	ATT 6	0010222A	2018.05.08	1 year

2. SUMMARY OF TEST

For the EUT described above. The standards used were FCC PART 15B for Emissions

Table 1: Tests Carried Out Under FCC PART 15B

Standard	Test Items	Status
FCC PART 15B	Disturbance Voltage at The Mains Terminals (150KHz To 30MHz)	X
	Radiated Disturbances (30MHz To 1000MHz)	√

- √ Indicates that the test is applicable
x Indicates that the test is not applicable

3. SYSTEM TEST CONFIGURATION

3.1 Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

3.2 EUT Exercise Software

The EUT exercising program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The software offered by manufacture, can let the EUT being normal operation.

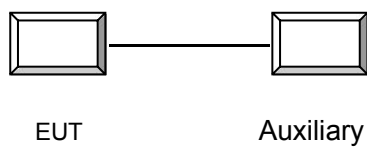
3.3 Special Accessories

As shown in section 3.5, interface cable used for compliance testing is shielded as normally supplied by Manufacturer, its respective support equipment manufacturers.

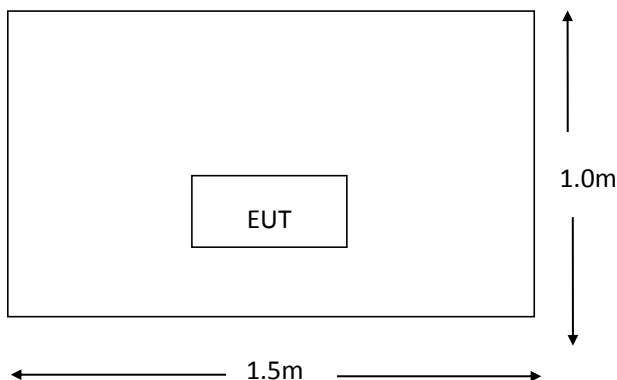
3.4 Equipment Modifications

The EUT tested was not modified by BCT.

3.5 Configuration of Test System



3.6 Test Setup Diagram



4. RADIATED DISTURBANCES

4.1 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement is ± 4.0 dB.

4.2 Limit of Radiated Disturbances (Class B)

Frequency (MHz)	Distance (Meters)	Field Strengths Limits (dB μ V/m)
30-88	3	40
88~216	3	43.5
216 ~ 960	3	46
960 ~ 1000	3	54

Note: (1) The tighter limit shall apply at the edge between two frequency bands.
(2) Distance refers to the distance in meters between the test instrument antenna and the closest point of any part of the E.U.T.

4.3 EUT Setup

The radiated emission tests were performed in the open area 3-meter test site, using the setup accordance with the CISPR 16-1, CISPR16-2. The specification used was FCC PART 15B Class B limits.

The EUT was placed on the center of the test table.

Maximum emission emitted from EUT was determined by manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation and the levels in the final result of the test were recorded with the EUT running in the operating mode that maximum emission was emitted.

4.4 Test Receiver Setup

According to FCC PART 15B rules, the frequency was investigated from 30 to 1000 MHz. During the radiated emission test, the test receiver was set with the following configurations:

Test Receiver Setting:

Detector.....Peak & Quasi-Peak
IF Band Width.....120 KHz
Frequency Range.....30MHz to 1000MHz
Turntable Rotated.....0 to 360 degrees

Antenna Position:

Height.....1m to 4m
Polarity.....Horizontal and Vertical

4.5 Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the peak detection mode. Quasi-peak readings performed only when an emission was found to be marginal (within -10 dB μ V of specification limits), and are distinguished with a "QP" in the data table.

4.6 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Antenna Factor} + \text{Cable Factor} - \text{Amplifier Gain}$$

The "Margin" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB μ V means the emission is 7dB μ V below the maximum limit for Class B. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Class B Limit} - \text{Corr. Ampl.}$$

4.7 Radiated Emissions Test Result

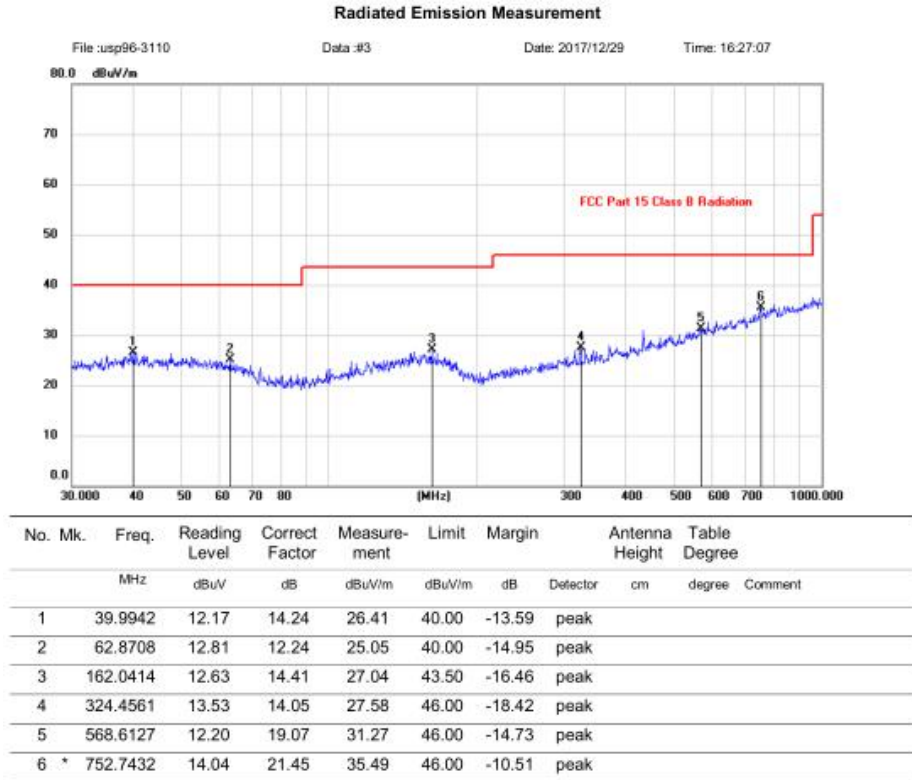
Test data see following pages

Remark: (1) When PK reading is less than relevant limit 20dB, the QP reading and AV reading will not be recorded.

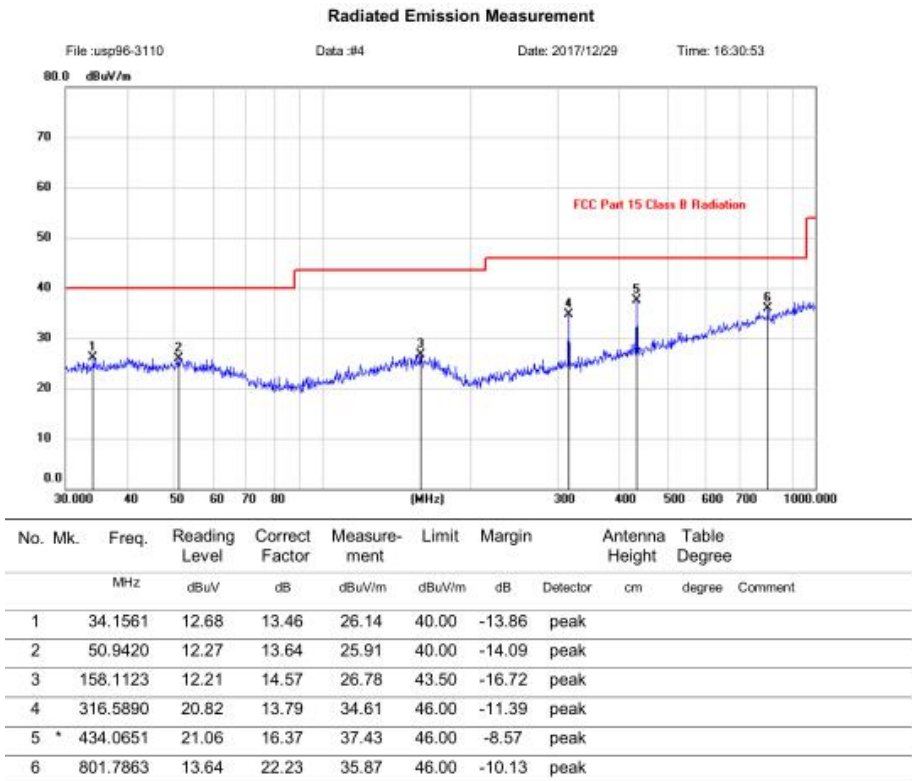
(2) Where QP reading is less than relevant AV limit, the AV reading will not be measured

Result: Pass

Vertical:

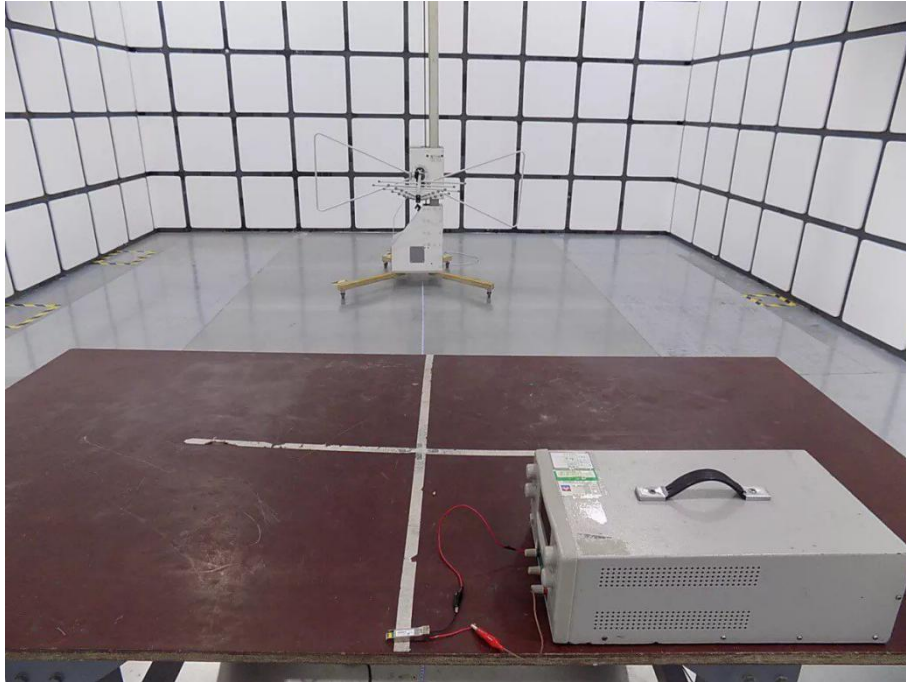


Horizontal:



5. TEST SETUP PHOTOGRAPHS

1. Photo of Radiated Emission Test



2. Photo of Conducted Disturbance Test

Not applicable

APPENDIX A - PRODUCT LABELING

FCC Mark Label Specification

Specification: Text is Black or white in color and is left justified. Labels are printed in indelible ink on permanent adhesive backing and shall be affixed at a conspicuous location on the EUT or silk-screened onto the EUT.

Label Statement:

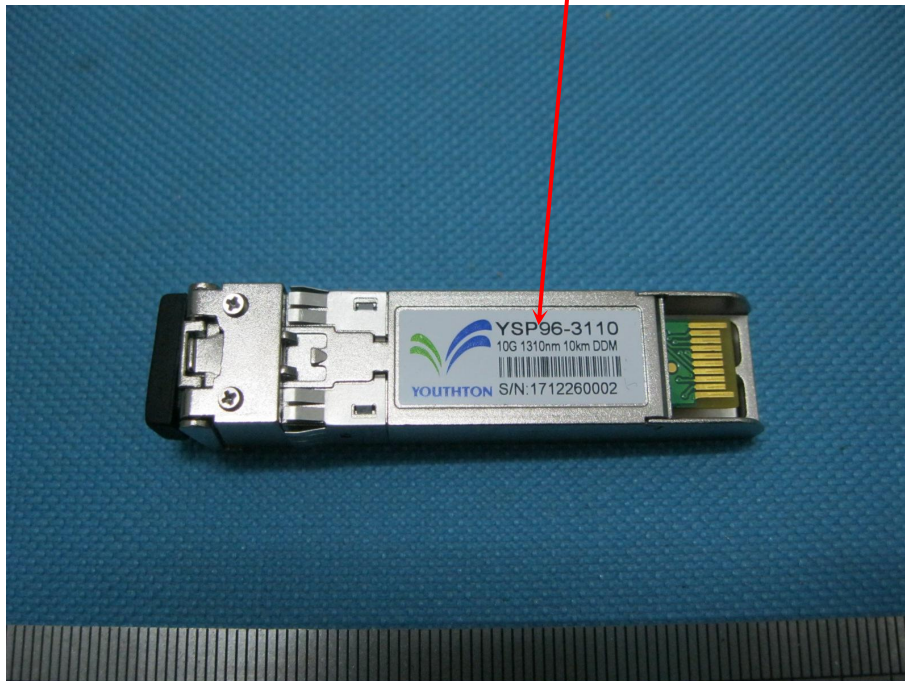
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

If the labelling area for the device is so small, and/ or it is not practical to place the compliance statement on the device, then the statement can be placed in the user manual or product packaging.

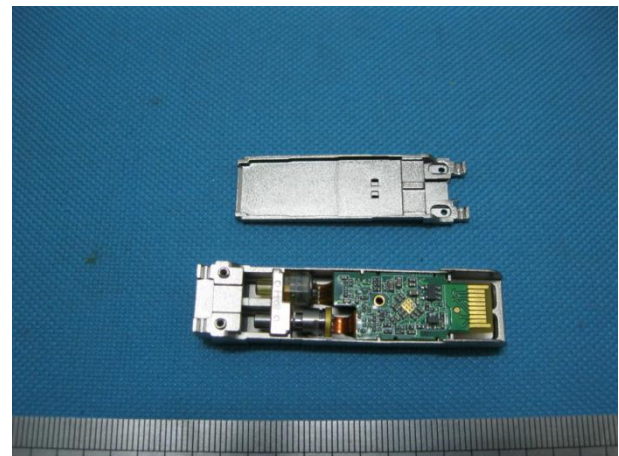
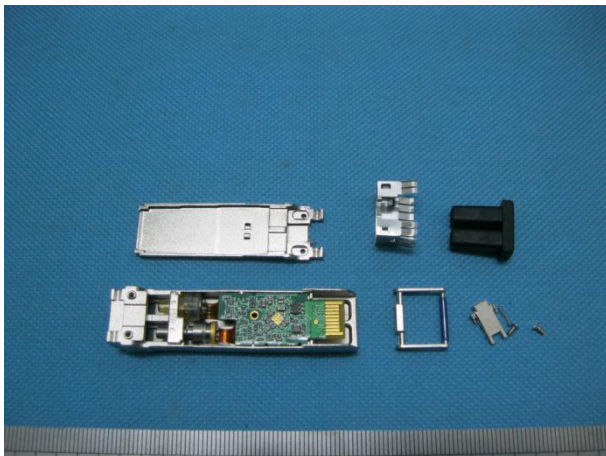


Proposed Label Location on EUT

Proposed FCC Mark Location



APPENDIX B - EUT EXTERIOR AND INTERIOR PHOTOGRAPHS



--End Of The Report --

APPENDIX**EXAMPLE OF SUPPLIER'S DECLARATION OF CONFORMITY****Supplier's Declaration of Conformity
47 CFR § 2.1077 Compliance Information**

Unique Identifier:(e.g., Trade Name, Model Number)

Responsible Party - U.S. Contact Information

XXX Corporation

Street Address

City, State

Zip Code

Telephone number or internet contact information

FCC Compliance Statement (e.g., Products subject to Part 15)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.