



BST Testing (Shenzhen) Co.,Ltd.

Report No.: BSTXD220521816001ER

Shenzhen safety electronic technology Co.,Ltd

CE EMC REPORT

Prepared For :	Shenzhen safety electronic technology Co.,Ltd A building ,zhangge technology park,dafu industrial area,guanlan town,longhua new district, shenzhen, guangdong ,China .
Product Name:	GAS LEAKAGE DETECTOR
Model :	WIFI-818
Prepared By :	BST Testing (Shenzhen) Co.,Ltd. No.7,New Era Industrial Zone, Guantian,Bao'an District,Shenzhen,Guangdong,China
Test Date:	May.13~19,2022
Date of Report :	May.19,2022
Report No.:	BSTXD220521816001ER

Prepared by :

Libby Pang

Assistant

Tested by:

Jarre Ke

Test Engineer

Reviewer :



Approved & Authorized Signer :

Jesse Ke
Manager

Add: No.7, New Era Industrial Zone, Guantian, Bao'an District, Shenzhen, Guangdong, China

Certificate Search: <http://www.bst-lab.com>, Tel:400-882-9628, 8009990305, E-mail:christina@bst-lab.com



TABLE OF CONTENTS

1. GENERAL INFORMATION	4
1.2 TEST STANDARDS	5
1.3 TEST METHODOLOGY	5
1.4 TEST FACILITY	5
1.5 EUT SETUP AND OPERATION MODE	6
1.6 PERFORMANCE CRITERIA FOR EMS	7
1.7 TEST EQUIPMENT LIST AND DETAILS	9
2. SUMMARY OF TEST RESULTS	11
3. CONDUCTED EMISSIONS	12
3.1 MEASUREMENT UNCERTAINTY	12
3.2 TEST PROCEDURE	12
3.3 BASIC TEST SETUP BLOCK DIAGRAM	12
3.4 ENVIRONMENTAL CONDITIONS	13
3.5 SUMMARY OF TEST RESULTS/PILOTS	13
3.6 CONDUCTED EMISSIONS TEST DATA	13
4. RADIATED EMISSIONS	16
4.1 MEASUREMENT UNCERTAINTY	16
4.2 TEST PROCEDURE	16
4.3 CORRECTED AMPLITUDE & MARGIN CALCULATION	17
4.4 ENVIRONMENTAL CONDITIONS	17
4.5 SUMMARY OF TEST RESULTS/PILOTS	17
5. HARMONIC CURRENT EMISSIONS	20
5.1 TEST PROCEDURE	20
5.2 TEST STANDARDS	20
5.3 HARMONIC CURRENT EMISSIONS TEST DATA	20
6. VOLTAGE FLUCTUATION AND FLICKER	21
6.1 TEST PROCEDURE	21
6.2 TEST STANDARDS	21
6.3 VOLTAGE FLUCTUATION AND FLICKER TEST DATA	21
7. ELECTROSTATIC DISCHARGE (ESD).....	23
7.1 TEST PROCEDURE	23
7.2 TEST PERFORMANCE	23
7.3 ELECTROSTATIC DISCHARGE IMMUNITY TEST DATA	23
8. RADIO FREQUENCY ELECTROMAGNETIC FIELD (R/S).....	25
8.1 TEST PROCEDURE	25
8.2 TEST PERFORMANCE	25
8.3 CONTINUOUS RADIATED DISTURBANCES TEST DATA	25
9. FAST TRANSIENTS, COMMON MODE (EFT).....	26
9.1 TEST PROCEDURE	26
9.2 TEST PERFORMANCE	26
9.3 ELECTRICAL FAST TRANSIENTS TEST DATA	26
10. SURGES	27
10.1 TEST PROCEDURE	27
10.2 TEST PERFORMANCE	27
10.3 SURGE TEST DATA	27
11. RADIO FREQUENCY, COMMON MODE (C/S).....	28

Add: No.7, New Era Industrial Zone, Guantian, Bao'an District, Shenzhen, Guangdong, China

Certificate Search: <http://www.bst-lab.com>, Tel:400-882-9628, 8009990305, E-mail:christina@bst-lab.com



11.1 TEST PROCEDURE	28
11.2 TEST PERFORMANCE	28
11.3 CONTINUOUS CONDUCTED DISTURBANCES TEST DATA	28
12. VOLTAGE DIPS AND INTERRUPTIONS	29
12.1 TEST PROCEDURE	29
12.2 VOLTAGE DIPS AND INTERRUPTIONS TEST DATA	29



1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Shenzhen safety electronic technology Co.,Ltd
Address of applicant: A building ,zhangge technology park,dafu industrial area,guanlan town,longhua new district, shenzhen, guangdong ,China .

Manufacturer: Shenzhen safety electronic technology Co.,Ltd
Address of manufacturer: A building ,zhangge technology park,dafu industrial area,guanlan town,longhua new district, shenzhen, guangdong ,China .

General Description of EUT	
Product Name:	GAS LEAKAGE DETECTOR
Model No.:	WIFI-818
Rated Voltage:	110~230V AC 50Hz/60HZ
Software Version:	V1.0
Hardware Version:	V1.0
<i>Note: The test data is gathered from a production sample, provided by the manufacturer.</i>	

Technical Characteristics of EUT	
Support Standards:	802.11b, 802.11g, 802.11n20
Frequency Range:	2412-2472MHz for 802.11b/g/n(HT20) 2422-2462MHz for 802.11nHT40
Type of Modulation:	CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM
Type of Antenna:	PCB antenna
Antenna Gain:	0dBi



1.2 Test Standards

The following report is prepared on behalf of the Shenzhen safety electronic technology Co.,Ltd in accordance with ETSI EN 301 489-1:2019(2017-03), ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU and the essential requirements of article 6 of Directive 2014/30/EU, Final ETSI EN 301 489-9 V2.1.1 (2017-03), ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 9: Specific conditions for wireless microphones, similar Radio Frequency (RF) audio link equipment, cordless audio and in-ear monitoring devices; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU, ETSI EN 301 489-17:2020, ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for Broadband Data Transmission Systems; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU

The objective of the manufacturer is to demonstrate compliance with the standards EN 301489-1, EN301 489-9 and EN 301489-17.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product maybe which result in lowering the emission/immunity should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with the standard ETSI EN 301 489-1:2019(2017-03), ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU and the essential requirements of article 6 of Directive 2014/30/EU

1.4 Test Facility

CNAS Registration No.: L10611

BST Testing (Shenzhen) Co.,Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L10611. All measurement facilities used to collect the measurement data are located at
No.7,New Era Industrial Zone, Guantian, Bao'an District,Shenzhen,Guangdong, China



1.5 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission/immunity level. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Mode List		
Test Mode	Description	Remark
TM1	802.11b	2412MHz, 2442MHz, 2472MHz
TM2	802.11g	2412MHz, 2442MHz, 2472MHz
TM3	802.11n-HT20	2412MHz, 2442MHz, 2472MHz
TM4	802.11n-HT40	2422MHz, 2442MHz, 2462MHz
TM5	Receiving	/

Note: The product is a Load Based Equipment, The value of q is selected by the manufacturer is 32

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Special Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
Notebook	Lenovo	T410	/



1.6 Performance Criteria for EMS

According Clause 6.2 of EN 301 489-9, the performance criteria are:

In the table below:

For equipment which does not provide a continuous communication link:

- performance criteria A for category 1 equipment;;
- performance criteria C for categories 2 and 3 equipment.

NOTE: For immunity tests with transient phenomena, equipment not permitting the establishment of a continuous communications link and ancillary equipment intended to be tested on a stand alone basis shall meet the performance criteria B as given in table 1, except for immunity tests with voltage dips and interruptions (see ETSI EN 301 489-1 [1], clause 9.7), where it is explicitly stated that the communications link need not be maintained in which case performance criteria C from table 1 shall apply.

For ancillary equipment tested on a stand alone basis:

The provision of ETSI EN 301 489-1 [1], clause 6.4 shall apply.

Table 2: Continuous phenomena, minimum performance criteria

Equipment category	Minimum performance criterion	Intended use
Category 1	30 dB SINAD	Professional applications
Category 2	20 dB SINAD	Domestic entertainment
Category 3	6 dB SINAD	General consumer

Where the EUT is a transmitter only, and a stand-by mode of operation is provided, the tests shall be repeated with the EUT in stand-by mode of operation to ensure that unintentional transmission does not occur. Where the EUT is a transceiver, under no circumstances shall the transmitter operate unintentionally during the test.



According Clause 6.1 of EN 301 489-24,

The performance criteria are:

- performance criteria A for immunity tests with phenomena of a continuous nature;
- performance criteria B for immunity tests with phenomena of a transient nature;
- performance criteria C for immunity tests with power interruptions exceeding a certain time.

The equipment shall meet the minimum performance criteria as specified in the following clauses.

Table 1: Performance criteria

Criteria	During test	After test
A	Shall operate as intended. (see note 1). Shall be no loss of function. Shall be no unintentional transmissions.	Shall operate as intended. Shall be no degradation of performance (see note 3). Shall be no loss of function. Shall be no loss of stored data or user programmable functions.
B	May show loss of function (one or more). May show degradation of performance (see note 2). Shall be no unintentional transmissions.	Functions shall be self-recoverable. Shall operate as intended after recovering. Shall be no degradation of performance (see note 3). Shall be no loss of stored data or user programmable functions.
C	May be loss of function (one or more).	Functions shall be recoverable by the operator. Shall operate as intended after recovering. Shall be no degradation of performance (see note 3).

NOTE 1: Operate as intended during the test allows a level of degradation not below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance. If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.

NOTE 2: Degradation of performance during the test is understood as a degradation to a level not below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance. If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.

NOTE 3: No degradation of performance after the test is understood as no degradation below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance. After the test no change of actual operating data or user retrievable data is allowed. If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.



1.7 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal Date	Due Date
Spectrum Analyzer	Rohde & Schwarz	FSP	836079/035	2021-06-03	2022-06-02
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2021-06-03	2022-06-02
Amplifier	Agilent	8447F	3113A06717	2021-06-03	2022-06-02
Amplifier	C&D	PAP-1G18	2002	2021-06-03	2022-06-02
Broadband Antenna	Schwarz beck	VULB9163	9163-333	2021-06-03	2022-06-02
Horn Antenna	ETS	3117	00086197	2021-06-03	2022-06-02
Loop Antenna	Schwarz beck	Wifi-RXZB 1516	9773	2021-06-03	2022-06-02
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2021-06-03	2022-06-02
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2021-06-03	2022-06-02
AC LISN	Schwarz beck	NSLK8126	8126-224	2021-06-03	2022-06-02
DC LISN	Schwarz beck	NNBM8126D	279	2021-06-03	2022-06-02
8-WIRE LISN	Schwarz beck	8158	CAT3-8158-0059	2021-06-03	2022-06-02
8-WIRE LISN	Schwarz beck	8158	CAT5-8158-0117	2021-06-03	2022-06-02
Digital Power Analyzer	California Instrument	PACS-1	72831	2021-06-03	2022-06-02
Power Source	California Instrument	5001iX	25965	2021-06-03	2022-06-02
ESD Generator	TESQ AG	NSG 437	161	2021-06-03	2022-06-02
Signal Generator	Rohde & Schwarz	SMT03	100059	2021-06-03	2022-06-02
Voltage Probe	Rohde & Schwarz	URV5-Z2	100013	2021-06-03	2022-06-02
Power Amplifier	AR	150W1000	300999	2021-06-03	2022-06-02
Power Amplifier	AR	25S1G4AM1	305993	2021-06-03	2022-06-02
Transient 2000	EMC PARTNER	TRA2000	863	2021-06-03	2022-06-02
CW Simulator	EM Test	CWS 500C	0900-03	2021-06-03	2022-06-02
EMCPRO	KEYTEK	EMCPro	0509124	2021-06-03	2022-06-02
Coil	KEYTEK	F-1000-4-8	0533	2021-06-03	2022-06-02
Audio analyzer	Rohde & Schwarz	UPA	829743/001	2021-06-03	2022-06-02
GSM Tester	Rhode & Schwarz	CMU200	112012	2021-06-03	2022-06-02
Communication Tester	Rohde & Schwarz	CMW500	148650	2021-06-03	2022-06-02
Audio Power Amplifier	B&K	2716-C-001	/	2021-06-03	2022-06-02
Conditioning Amplifier	B&K	2690-OS2	/	2021-06-03	2022-06-02
Mouth Simulator	B&K	4227	/	2021-06-03	2022-06-02
Sound Calibrator	B&K	4231	/	2021-06-03	2022-06-02
1/2" Pressure-field Microphone	B&K	4192	/	2021-06-03	2022-06-02

Add: No.7, New Era Industrial Zone, Guantian, Bao'an District, Shenzhen, Guangdong, China

Certificate Search: <http://www.bst-lab.com>, Tel:400-882-9628, 8009990305, E-mail:christina@bst-lab.com



BST Testing (Shenzhen) Co.,Ltd.

Report No.: BSTXD220521816001ER

Ear Simulator for Telephonometry	B&K	4185	/	2021-06-03	2022-06-02
Telephone Test Head	B&K	4206 B	/	2021-06-03	2022-06-02
Anechoic chamber	Albatross Projects	MCDC	----	2021-06-03	2022-06-02

Add: No.7, New Era Industrial Zone, Guantian, Bao'an District, Shenzhen, Guangdong, China

Certificate Search: <http://www.bst-lab.com>, Tel:400-882-9628, 8009990305, E-mail:christina@bst-lab.com

Page 10 of 30



2. SUMMARY OF TEST RESULTS

Standards	Reference	Description of Test Item	Result
EN 301489-1 V2.2.0 (2017-03)	8.2	Radiated Emissions	Pass
	8.3	Conducted Emissions for DC Power Port	Pass
	8.4	Conducted Emissions for AC Power Port	Pass
	8.5	Harmonic Current Emissions	Pass
	8.6	Voltage Fluctuations and Flicker	Pass
	8.7	Telecommunication Ports	Pass
	9.2	Radio Frequency Electromagnetic Field	Pass
	9.3	Electrostatic Discharge	Pass
	9.4	Fast Transients, Common Mode	Pass
	9.5	Radio Frequency, Common Mode	Pass
	9.6	Transient and Surges in the Vehicular Environment	Pass
	9.7	Voltage Dips and Interruptions	Pass
	9.8	Surges	Pass

Pass: The EUT complies with the essential requirements in the standard

Fail: The EUT does not comply with the essential requirements in the standard

N/A: not applicable



3. Conducted Emissions

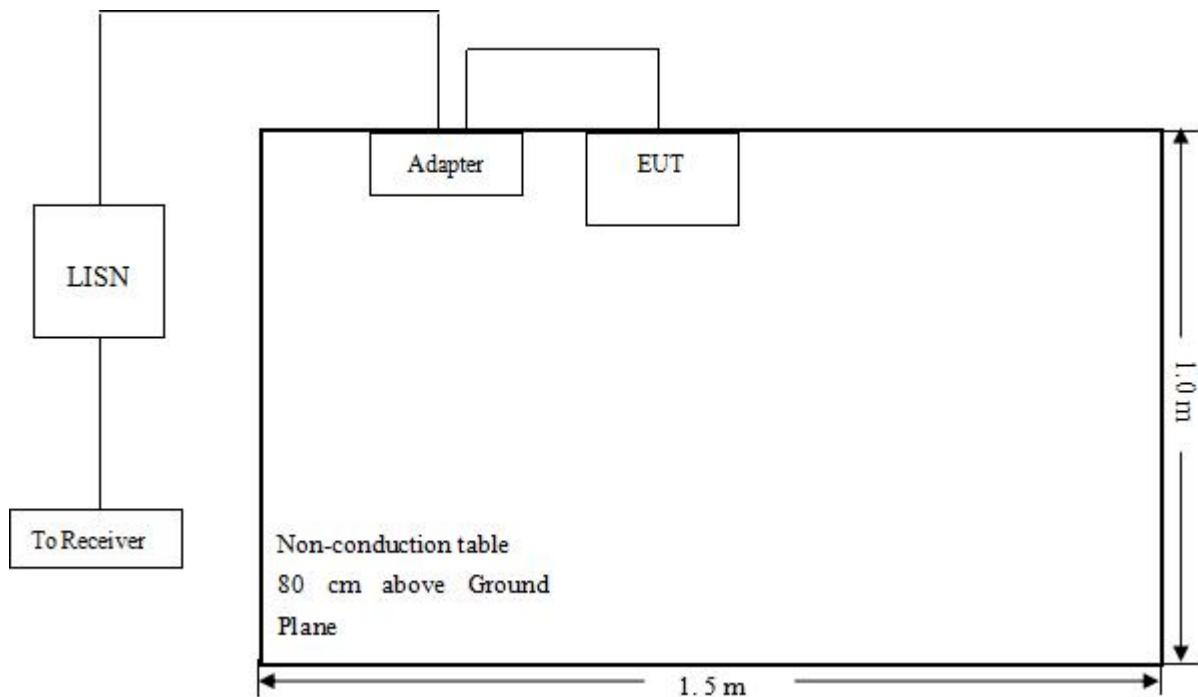
3.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ± 2.88 dB.

3.2 Test Procedure

Test is conducting under the description of EN55022 Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement.

3.3 Basic Test Setup Block Diagram





3.4 Environmental Conditions

Temperature:	22 °C
Relative Humidity:	55 %
ATM Pressure:	1015 mbar

3.5 Summary of Test Results/Plots

According to the data in section 3.7, the EUT complied with the EN 301489 Conducted margin for a Class B device, with the *worst* margin reading of:

3.6 Conducted Emissions Test Data

only show the worst data

**Plot of Conducted Emissions Test Data**

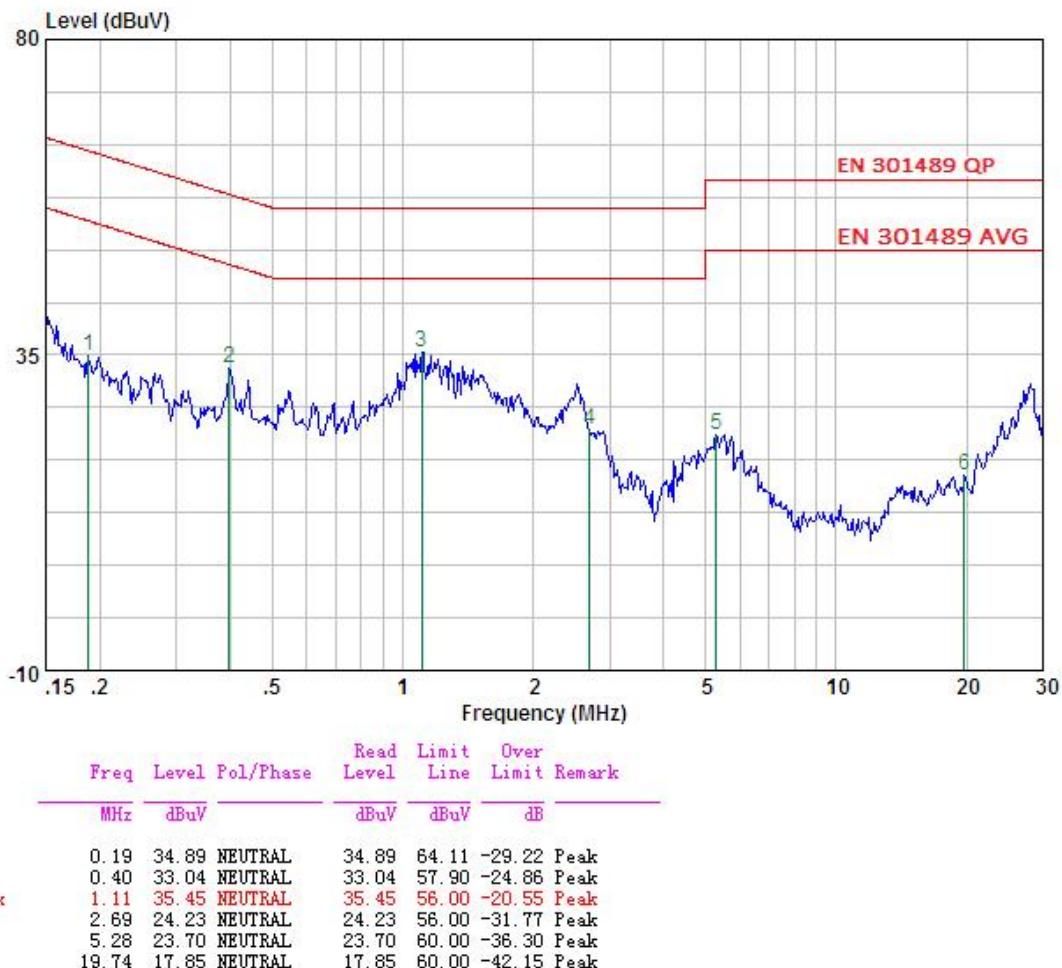
EUT: GAS LEAKAGE DETECTOR

Tested Model: WIFI-818

Operating Condition: Charging

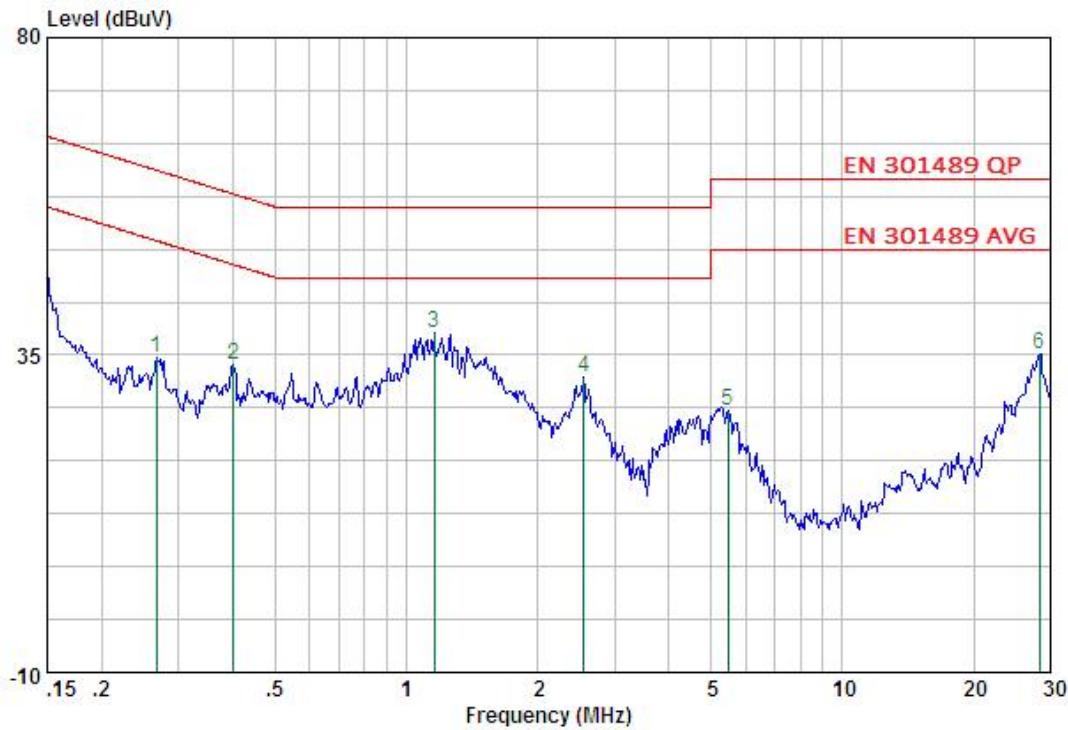
Comment: AC 230V 50Hz

Test Specification: Neutral





Test Specification: Line



Freq	Level	Pol/Phase	Read	Limit	Over	Remark
			Level	Line	Line Limit	
MHz	dBuV		dBuV	dBuV	dB	
1	0.27	34.62 LINE	34.62	61.20	-26.58	Peak
2	0.40	33.61 LINE	33.61	57.81	-24.20	Peak
3 max	1.16	38.04 LINE	38.04	56.00	-17.96	Peak
4	2.55	31.93 LINE	31.93	56.00	-24.07	Peak
5	5.48	27.15 LINE	27.15	60.00	-32.85	Peak
6	28.30	35.13 LINE	35.13	60.00	-24.87	Peak



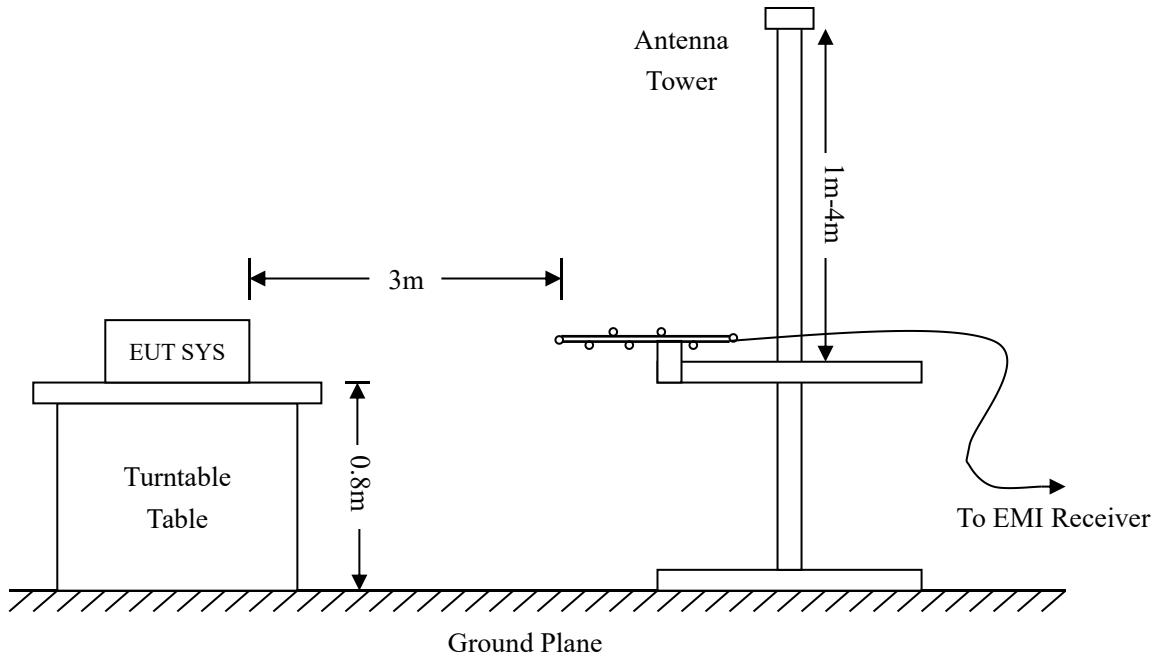
4. Radiated Emissions

4.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is ± 5.10 dB.

4.2 Test Procedure

Test is conducting under the description of EN55022 Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement.





4.3 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the 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 $-6\text{dB}\mu\text{V}$ means the emission is $6\text{dB}\mu\text{V}$ below the maximum limit for Class B device. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{EN 301489 Class B Limit}$$

4.4 Environmental Conditions

Temperature:	23° C
Relative Humidity:	53%
ATM Pressure:	1011 mbar

4.5 Summary of Test Results/Plots

only show the worst data

**Plot of Radiated Emissions Test Data (Below 1GHz)**

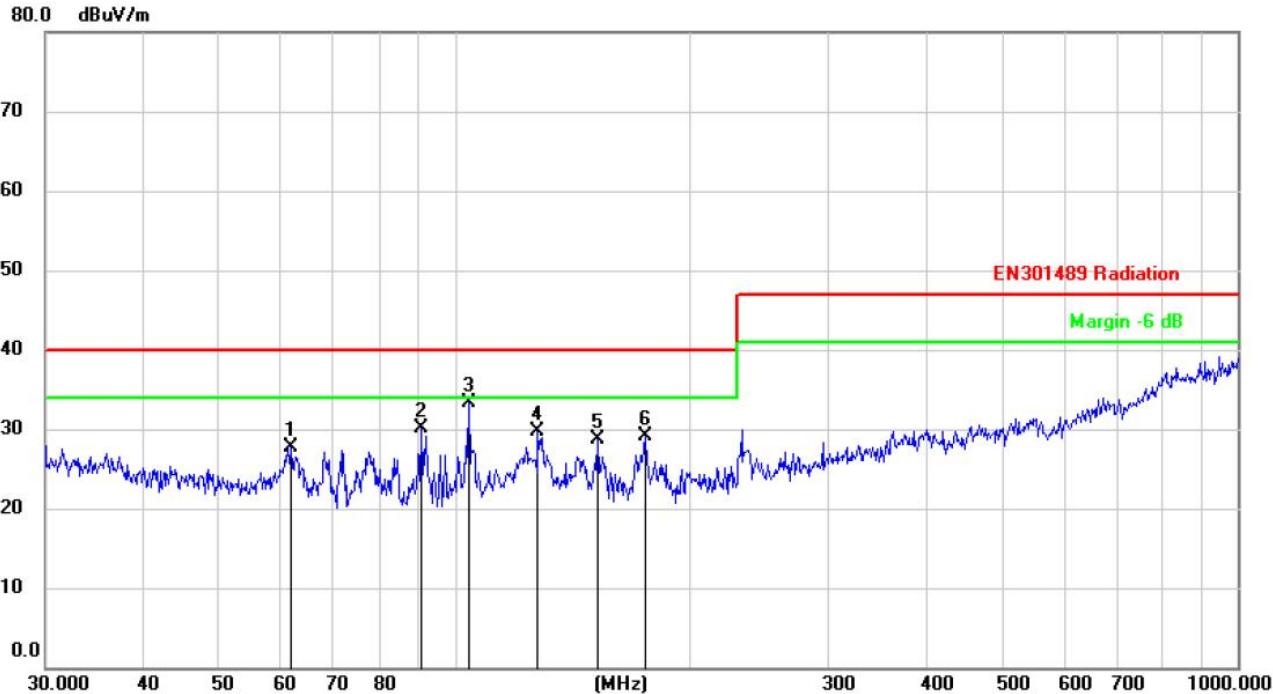
EUT: GAS LEAKAGE DETECTOR
Tested Model: WIFI-818
Operating Condition: 802.11b-Lowest channel
Comment: 110~230VAC 50Hz/60HZ
Test Specification: Horizontal



No.	Mk.	Freq. MHz	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level dB _{UV}	Factor	ment dB _{UV} /m				
1		72.3375	17.54	9.85	27.39	40.00	-12.61	QP	
2		90.5374	21.13	9.54	30.67	40.00	-9.33	QP	
3	*	104.1701	21.83	10.76	32.59	40.00	-7.41	QP	
4		116.1320	17.43	12.14	29.57	40.00	-10.43	QP	
5		163.1818	18.16	10.60	28.76	40.00	-11.24	QP	
6		204.9550	17.96	11.50	29.46	40.00	-10.54	QP	



Test Specification: Vertical



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dB _{UV}	dB _{UV} /m	dB _{UV} /m	dB			
1		61.7781	17.35	10.38	27.73	40.00	-12.27	QP	
2		90.5374	20.58	9.54	30.12	40.00	-9.88	QP	
3	*	104.1701	22.56	10.76	33.32	40.00	-6.68	QP	
4		127.6645	17.65	12.06	29.71	40.00	-10.29	QP	
5		152.1297	17.69	11.07	28.76	40.00	-11.24	QP	
6		175.0368	18.31	10.70	29.01	40.00	-10.99	QP	

Emissions 1 - 6 GHz

During measurements from 1 GHz to 6 GHz, only base noise was detected.



5. Harmonic Current Emissions

5.1 Test Procedure

Test is conducting under the description of EN61000-3-2.

5.2 Test Standards

EN61000-3-2, Clause 7.1 Limits for Class A equipment.

Environmental Conditions

Temperature:	22 °C
Relative Humidity:	48%
ATM Pressure:	1022 mbar

5.3 Harmonic Current Emissions Test Data

Result: PASS



6. Voltage Fluctuation and Flicker

6.1 Test Procedure

Test is conducting under the description of EN61000-3-3.

6.2 Test Standards

EN61000-3-3, Limit: Clause 5.

Environmental Conditions

Temperature:	22 °C
Relative Humidity:	48%
ATM Pressure:	1022 mbar

6.3 Voltage Fluctuation and Flicker Test Data



BST Testing (Shenzhen) Co.,Ltd.

Report No.: BSTXD220521816001ER

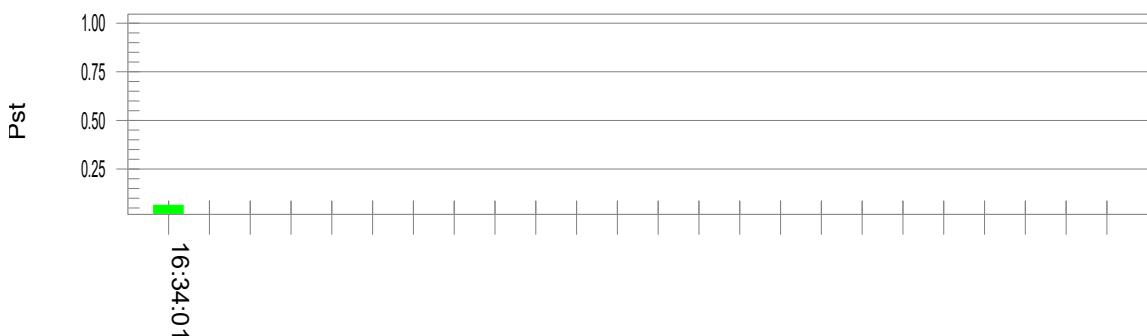
Flicker Test Summary per EN/IEC61000-3-3 (Run time)

Test Result: Pass

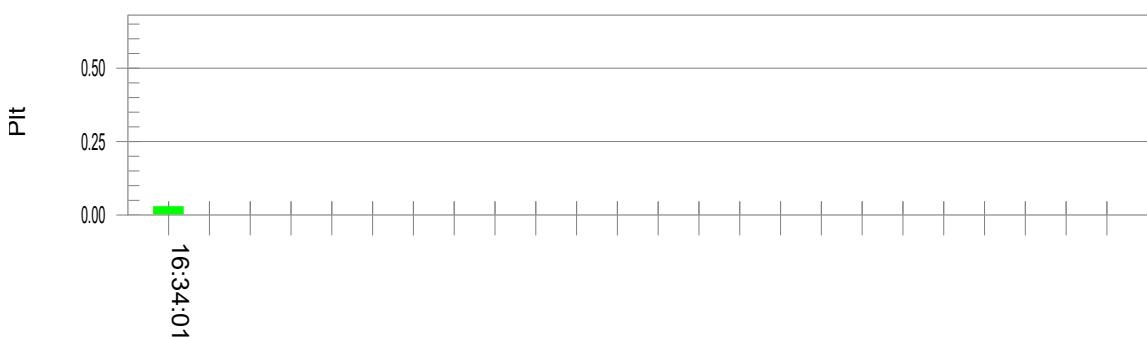
Status: Test Completed

Pst_i and limit line

European Limits



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt): 229.88

Highest dt (%):	0.00	Test limit (%):	3.30	Pass
Time(mS) > dt:	0.0	Test limit (mS):	500.0	Pass
Highest dc (%):	0.00	Test limit (%):	3.30	Pass
Highest dmax (%):	0.00	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.065	Test limit:	1.000	Pass
Highest Plt (2 hr. period):	0.023	Test limit:	0.650	Pass



7. Electrostatic Discharge (ESD)

7.1 Test Procedure

Test is conducting under the description of IEC61000-4-2.

7.2 Test Performance

Performance Criterion: A for Wifi-TX

Environmental Conditions

Temperature:	26 °C
Relative Humidity:	55%
ATM Pressure:	1011 mbar

7.3 Electrostatic Discharge Immunity Test Data



Test mode: WiFi-TX

EN 61000-4-2 Test Points	Test Levels (kV)							
	-2	+2	-4	+4	-6	+6	-8	+8
Air Discharge								
SD/USB Port	B	B	B	B	B	B	B	B
Button	B	B	B	B	B	B	B	B
camera	B	B	B	B	B	B	B	B
screen	B	B	B	B	B	B	B	B
Gaps	B	B	B	B	B	B	B	B
Direct Contact Discharge								
Screw	B	B	B	B				

EN 61000-4-2 Test Points	Test Levels (kV)							
	Indirect Contact Discharge (HCP)				Indirect Contact Discharge (VCP)			
	-2	+2	-4	+4	-2	+2	-4	+4
Front Side	A	A	A	A	A	A	A	A
Top Side	A	A	A	A	A	A	A	A
Back Side	A	A	A	A	A	A	A	A
Left Side	A	A	A	A	A	A	A	A
Right Side	A	A	A	A	A	A	A	A

Test Result: Pass



8. Radio Frequency Electromagnetic Field (R/S)

8.1 Test Procedure

Test is conducting under the description of IEC61000-4-3.

8.2 Test Performance

Performance Criterion: A for Wifi-TX

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52%
ATM Pressure:	1010 mbar

8.3 Continuous Radiated Disturbances Test Data

Frequency step: 1% of fundamental

Dwell time: 1 second

Modulation: wifi by 1kHz sine wave with 80% modulation depth

Test model: Wifi-TX

Frequency Range(MHz)	Field (V/m)	Front		Rear		Left Side		Right Side	
		VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
80-1000	3	A	A	A	A	A	A	A	A
1000-3000	3	A	A	A	A	A	A	A	A
3000-6000	3	A	A	A	A	A	A	A	A

Test Result: Pass



9. Fast Transients, Common Mode (EFT)

9.1 Test Procedure

Test is conducting under the description of IEC61000-4-4.

9.2 Test Performance

Performance Criterion: A for Wifi-TX

Environmental Conditions

Temperature:	22 °C
Relative Humidity:	53%
ATM Pressure:	1011 mbar

9.3 Electrical Fast Transients Test Data

Test mode: Wifi

EN 61000-4-4		Test Levels (kV)							
		+0.5	-0.5	+1.0	-1.0	+2.0	-2.0	+4.0	-4.0
Power Supply Power Port of EUT	L1	B	B	B	B	/	/	/	/
	L2	B	B	B	B	/	/	/	/
	PE	/	/	/	/	/	/	/	/
	L1+L2	B	B	B	B	/	/	/	/
	L1 + PE	/	/	/	/	/	/	/	/
	L2 + PE	/	/	/	/	/	/	/	/
	L1+L2+PE	/	/	/	/	/	/	/	/
Signal ports	/	/	/	/	/	/	/	/	/

Test Result: Pass



10. Surges

10.1 Test Procedure

Test is conducting under the description of IEC 61000-4-5.

10.2 Test Performance

Performance Criterion: A for Wifi-TX

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	53%
ATM Pressure:	1011 mbar

10.3 Surge Test Data

Test mode: WiFi

Level	Voltage	Poll	Path	Pass	Fail
1	0.5kV	±	L-N	B	/
2	1kV	±	L-N	B	/
3	2kV	±	L-N, L-PE, N-PE	B	/
4	4kV	±	L-N, L-PE, N-PE	/	/

Test Result: Pass



11. Radio Frequency, Common Mode (C/S)

11.1 Test Procedure

Test is conducting under the description of IEC 61000-4-6.

11.2 Test Performance

Performance Criterion: A for Wifi-TX

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	53%
ATM Pressure:	1011 mbar

11.3 Continuous Conducted Disturbances Test Data

Sweep frequency range: 150kHz~80MHz

Frequency step: 1% of fundamental

Dwell time: 1 second

Test mode: Wifi-TX

Level	Voltage (V) (rms, unmodulated)	Modulation:	Pass	Fail
1	1	AM 80%, 1kHz sinewave	/	/
2	3	AM 80%, 1kHz sinewave	A	/
3	10	AM 80%, 1kHz sinewave	/	/
X	Special	/	/	/

Test Result: Pass



12. Voltage Dips and Interruptions

12.1 Test Procedure

Test is conducting under the description of IEC 61000-4-11.

Test Performance

Performance Criterion: B/C

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	50%
ATM Pressure:	1011 mbar

12.2 Voltage Dips And Interruptions Test Data

U: Voltage dips in % U_T (U_T is rated voltage for the EUT)

T: Test duration

802.11b-Lowest channel(Worst)

Level	U	T	Phase Angle	N	Pass	Fail
1	100%	10ms	0/90/180/270	3	B	/
2	100%	20ms	0/90/180/270	3	B	/
3	30%	500ms	0/90/180/270	3	B	/
4	100%	5000ms	0/90/180/270	3	C	/

Test Result: Pass



ANNEX A:

Photo-documentation



S

***** END OF REPORT *****