

THE TEST REPORT

For

LED TV

Model No.: SNppDxx13/yyzz, AXppDxx13/yyzz, WNppDxx13/yyzz,
TV-ppS60xxyyMzz, ZYSppxHDyz, PAR pp00,
bbppDxx13/yyzz

Trade Mark: SUNNY, AXEN, WOON, VIVAX, ZENYTH, SMART

Report No.: ED180927034W6

Issue Date: November 01, 2018

Prepared for

Atmaca Elektronik San. Ve Tic. A.Ş.

Zafer Mahallesi 177.Sokak No:2/1 Esenyurt, Istanbul, Turkey

Prepared by

EMTEK(DONGGUAN) CO., LTD.

-1&2/F.,Buiding 2,Zone A,Zhongda Marine Biotechnology Research and
Development Base,N.9,Xincheng Avenue,Songshanhu High-technology
Industrial Development Zone, Dongguan, Guangdong, China

TEL: 86-769-22807078

FAX: 86-769-22807079

This report shall not be reproduced, except in full, without the written approval
of EMTEK(DONGGUAN) CO., LTD

TABLE OF CONTENT

Description	Page
1. GENERAL INFORMATION	5
1.1 Description of Device (EUT).....	5
1.2 Test Facility.....	7
2. GENERAL PRODUCT INFORMATION	8
2.1 Basic Restriction	8
2.2 Table for Filed Antenna.....	8
3. TEST RESULT.....	9
3.1. EMF Exposure Measurement.....	9
3.2 Detailed results	12

TEST REPORT DESCRIPTION

Applicant : Atmaca Elektronik San. Ve Tic. A.Ş.
Zafer Mahallesi 177.Sokak No:2/1 Esenyurt, Istanbul, Turkey.
Manufacturer : Atmaca Elektronik San. Ve Tic. A.Ş.
Zafer Mahallesi 177.Sokak No:2/1 Esenyurt, Istanbul, Turkey.
EUT : LED TV
Model No. : SNppDxx13/yyzz, AXppDxx13/yyzz, WNppDxx13/yyzz,
TV-ppS60xxyyMzz, ZYSppxHDyz, PAR pp00, bbbpDxx13/yyzz
Trademark : SUNNY, AXEN, WOON, VIVAX, ZENYTH, SMART

Test Procedure Used:

EN 62311: 2008

The device described above is tested by EMTEK(DONGGUAN) CO., LTD. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. This report shows the EUT to be technically compliant with the EN62311: 2008 requirements. The test results are contained in this report and EMTEK(DONGGUAN) CO., LTD. is assumed full responsibility for the accuracy and completeness of these tests.

This report applies to above tested sample only and shall not be reproduced in part without written approval of EMTEK(DONGGUAN) CO., LTD.

Date of Test :

September 27, 2018 to October 31, 2018

Molly Lee

Prepared by :

Molly Lee/Editor

Tomas Yang

Reviewer :

Tomas Yang/Supervisor

Approve & Authorized Signer :

[Signature]
EMTEK(DONGGUAN) CO., LTD.
TESTING
/Manager

Modified Information

Version	Summary	Revision Date	Report No.
Ver.1.0	Original Version	/	ED180927034W6

1. GENERAL INFORMATION

1.1 Description of Device (EUT)

EUT	: LED TV
Model Number	: SNppDxx13/yyzz, AXppDxx13/yyzz, WNppDxx13/yyzz, TV-ppS60xxyyMzz, ZYSppxHDyz, PAR pp00, bbbpDxx13/yyzz (Note: All Models are the same as the Model: bbbpDxx13/yyzz in hardware aspect. The differences between them are model number and brand name serves as marketing strategy. So the Model: SN43DIL13yyzz is chose for full test.)
Trademark	: SUNNY, AXEN, WOON, VIVAX, ZENYTH, SMART
Max. Power	: 17.10dBm
Power supply:	: AC180V-240V; 50/60Hz; 62, 82,85W
Applicant	: Atmaca Elektronik San. Ve Tic. A.Ş.
Address	: Zafer Mahallesi 177.Sokak No:2/1 Esenyurt, Istanbul, Turkey
Manufacturer	: Atmaca Elektronik San. Ve Tic. A.Ş.
Address	: Zafer Mahallesi 177.Sokak No:2/1 Esenyurt, Istanbul, Turkey
Date of received	: September 27, 2018
Date of Test	: September 27, 2018 to October 31, 2018

Model difference table is as follows:

Trademark	Model No1	Model No2	Model No3	Model No3
SUNNY	SNppDxx13/yyzz	-	-	-
AXEN	AXppDxx13/yyzz	-	-	-
WOON	WNppDxx13/yyzz	-	-	-
VIVAX	-	TV-ppS60xxyyMzz	-	-
ZENYTH	-	-	ZYSppxHDyz	-
smart	-	-	-	PAR pp00
	bbppDxx13/yyzz	-	-	-

Model explanation table:

Code*	Meaning
bb	Brand: SN, AX, WN, etc
pp	Panel Size (32, 40, 43, etc)
xx yy zz	Client Description: Cabin model, Receiver option, Color, etc

Note*: Codes can be 0-9 or A-Z or blank or symbol

1.2 Test Facility

Site Description

EMC Lab. : Accredited by CNAS, 2018.07.06
The certificate is valid until 2024.07.05
The Laboratory has been assessed and proved to be in compliance with CNAS/CL01:2006
The Certificate Registration Number is L3150

Registered on Industry Canada, January 13, 2017
The Certificate Number is 9444A.

Name of Firm : EMTEK(DONGGUAN) CO., LTD.
Site Location : -1&2/F., Buiding 2, Zone A, Zhongda Marine Biotechnology Research and Development Base, N.9, Xincheng Avenue, Songshanhu High-technology Industrial Development Zone, Dongguan, Guangdong, China.

2. GENERAL PRODUCT INFORMATION

2.1 Basic Restriction

The essential requirements of Directive 2014/53/EU in the article 3.1(a) and the limits must be taken from Council Recommendation 99/519/EC for General Population or from the ICNIRP Guidelines for Occupational Exposure. EN 62479:2010 Generic standard to demonstrate the compliance of low power electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields. The average power of EUT is less than 20mW, then comply with basic restriction (1999/519/EC) without test.

2.2 Table for Filed Antenna

Antenna Type	Gain (dBi)
Internal antenna	0dBi

3. TEST RESULT

3.1. EMF Exposure Measurement

3.1.1 Limit

Basic Restrictions

Council Recommendation 99/519/EC Annex II

Basic restrictions for electric, magnetic and electromagnetic fields (0 Hz to 300 GHz)

Frequency range	Magnetic flux density (mT)	Current density (mA/m ²) (rms)	Whole body average SAR (W/kg)	Localized SAR (head and trunk) (W/kg)	Localized SAR (limbs) (W/kg)	Power density, S (W/m ²)
0Hz	40	-	-	-	-	-
>0-1Hz	-	8	-	-	-	-
1-4Hz	-	8/f	-	-	-	-
4Hz-1000Hz	-	2	-	-	-	-
1000Hz-100kHz	-	f/500	-	-	-	-
100kHz-10MHz	-	f/500	0.08	2	4	-
10MHz-10GHz	-	-	0.08	2	4	-
10GHz-300GHz	-	-	-	-	-	10

Note:

- f is the frequency in Hz.
- The basic restriction on the current density is intended to protect against acute exposure effects on central nervous system tissues in the head and trunk of the body and includes a safety factor. The basic restrictions for ELF fields are based on established adverse effects on the central nervous system. Such acute effects are essentially instantaneous and there is no scientific justification to modify the basic restrictions for exposure of short duration. However, since the basic restriction refers to adverse effects on the central nervous system, this basic restriction may permit higher current densities in body tissues other than the central nervous system under the same exposure conditions.
- Because of electrical inhomogeneity of the body, current densities should be averaged over a cross section of 1 cm² perpendicular to the current direction.
- For frequencies up to 100kHz, AV current density values can be obtained by multiplying the rms value by $\sqrt{2}$ (=1.414). For pulses of duration t_p the equivalent frequency to apply in the basic restrictions should be calculated as $1/(2t_p)$.
- For frequencies up to 100kHz and for pulsed magnetic fields, the maximum current density associated with the pulses can be calculated from the rise/fall times and the maximum rate of change of magnetic flux density. The induced current density can then be compared with the appropriate basic restriction.
- All SAR values are to be averaged over any six-minute period.
- Localised SAR averaging Mass is any 10g of contiguous tissue; the maximum SAR so obtained should be the value used for the estimation of exposure. These 10g of tissue are intended to be a mass of contiguous tissue with nearly homogeneous electrical properties. In specifying a contiguous mass of tissue, it is recognized that this concept can be used in computational dissymmetry but may present

difficulties for direct physical measurements. A simple geometry such as cubic tissue mass can be used provided that the calculated dissymmetric quantities have conservative values relative to the exposure guidelines.

8. For pulses of duration t_p the equivalent frequency to apply in the basic restrictions should be calculated as $f_{eq} = 1/(2t_p)$. Additionally, for pulsed exposures, in the frequency range 0.3 to 10GHz and for localized exposure of the head, in order to limit and avoid auditory effects caused by thermoplastic expansion, an additional basic restriction is recommended. This is that the SA should not exceed 2mJ kg^{-1} averaged over 10g of tissue.

Reference Levels

Council Recommendation 99/519/EC Annex III

Reference levels for electric, magnetic and electromagnetic fields (0 Hz to 300GHz)

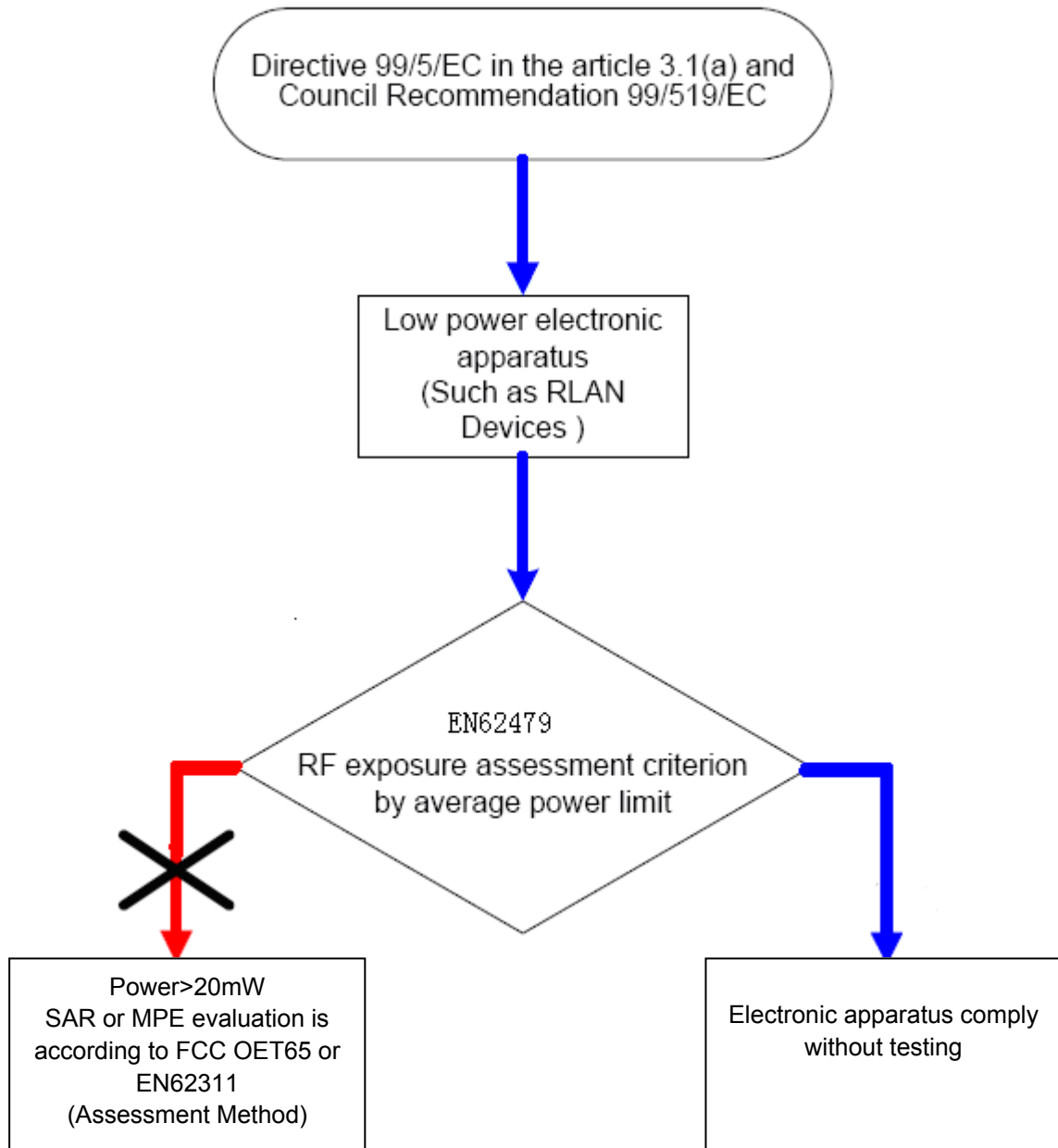
Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (μT)	Equivalent plane wave power density Seq (W/m ²)
0-1 Hz	-	3.2×10^4	4×10^4	-
1-8 Hz	10000	$3.2 \times 10^4 / f^2$	$4 \times 10^4 / f^2$	-
8-25 Hz	10000	$4000 / f$	$5000 / f$	-
0.025-0.8 kHz	$250 / f$	$4 / f$	$5 / f$	-
0.8-3 kHz	$250 / f$	5	6.25	-
3-150 kHz	87	5	6.25	-
0.15-1 MHz	87	$0.73 / f$	$0.92 / f$	-
1-10 MHz	$87 / f^{1/2}$	$0.73 / f$	$0.92 / f$	-
10-400 MHz	28	0.073	0.095	2
400-2000 MHz	$1.375 f^{1/2}$	$0.0037 f^{1/2}$	$0.0046 f^{1/2}$	$f / 200$
2-300 GHz	61	0.16	0.2	10

Notes:

1. As indicated in the frequency range column.
2. For frequencies between 100kHz and 10 GHz, Seq, E2, H2 and B2 are to averaged over any six-minute period.
3. For frequencies exceeding 10 GHz, Seq, E2, H2, and B2 are averaged over any 68/1.05-minute period(in GHz).
4. No E-field value is provided for frequencies <1 Hz, which are effectively static electric fields. For most people the annoying perception of surface electric charges will not occur at field strengths less than 25 kV/m. Spark discharges causing stress or annoyance should be avoided.

3.1.2. Evaluation Routine

Low Power Electronic Apparatus for RF exposure evaluation routine



3.1.3. EMF Exposure Levels Calculated

3.2 Detailed results

3.2.1 Summary of Results

Modulation Type	Limit (W/ m ²)	Result (W/ m ²)	Verdict
802.11b	10	0.102017	passed
802.11g	10	0.028163	
802.11n(H20)	10	0.026465	
802.11n(H40)	10	0.021022	

3.2.2 Measurement of RF conducted Power

Modulation Type	Power (dBm)
802.11b	17.10
802.11g	11.51
802.11n(H20)	11.24
802.11n(H40)	10.24

3.2.3 MPE Evaluation

$$S = PG * \text{Duty factor} / 4\pi R^2$$

P = AV Power Input to antenna (Watts)

G =Antenna Gain (numeric)

R = distance to the center of radiation of antenna (in meter) = 0.20 m

Note:

1) $P \text{ (Watts)} = (10^{(\text{dBm} / 10)}) / 1000$

2) $G \text{ (Antenna gain in numeric)} = 10^{(\text{Antenna gain in dBi} / 10)}$

3) $\pi = 3.142$

1) The maximum power density at a distance of 0.2 m for WIFI is shown as below:

Antenna Gain(dBi)	Antenna Gain (numeric)	Output Power (dBm)	AV Output Power (mW)	Duty factor	Calculated RF Exposure (W/ m ²)	Limit (W/ m ²)
0	1	17.10	51.2861	1	0.102017	10
0	1	11.51	14.1579	1	0.028163	10
0	1	11.24	13.3045	1	0.026465	10
0	1	10.24	10.5682	1	0.021022	10

3.2.4 Measurement Uncertainty

Extended Uncertainty (k=2) 95% 0.5dB

END OF REPORT