



# RF TEST REPORT

Product Name: T-BOX

Model Name: ZDCB01

FCC ID: 2AEQT-DSTBX001

Issued For : Huizhou Desay SV Automotive Co., Ltd.

No. 103, Hechang 5th Road West, Zhongkai National Hi-tech  
Industrial Development Zone, Huizhou City, Guangdong Province,  
P.R. China

Issued By : Shenzhen LGT Test Service Co., Ltd.

Room 205, Building 13, Zone B, Zhenxiong Industrial Park,  
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District, Shenzhen, Guangdong, China

Report Number: LGT24D090HA01

Sample Received Date: Apr. 16, 2024

Date of Test: Apr. 16, 2024 – Apr. 25, 2024

Date of Issue: Apr. 25, 2024

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## TEST REPORT CERTIFICATION

**Applicant:** Huizhou Desay SV Automotive Co., Ltd.  
**Address:** No. 103, Hechang 5th Road West, Zhongkai National Hi-tech Industrial Development Zone, Huizhou City, Guangdong Province, P.R. China

**Manufacture:** Huizhou Desay SV Automotive Co., Ltd.  
**Address:** No. 103, Hechang 5th Road West, Zhongkai National Hi-tech Industrial Development Zone, Huizhou City, Guangdong Province, P.R. China

**Product Name:** T-BOX

**Trademark:** DESAY SV

**Model Name:** ZDCB01

**Sample Status:** Normal

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC 47 CFR §2.1091 KDB 447498 D01 General RF Exposure Guidance v06	PASS

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### Revision History

Rev.	Issue Date	Revisions
00	Apr. 25, 2024	Initial Issue



## 1. GENERAL INFORMATION

### 1.1 GENERAL DESCRIPTION OF THE EUT

Product Name:	T-BOX	
Trademark:	DESAY SV	
Model Name:	ZDCB01	
Series Model:	N/A	
Model Difference:	N/A	
Frequency Bands:	WCDMA	Band V: 824 MHz ~ 849 MHz
	LTE	FDD LTE Band 5: 824~849MHz FDD LTE Band 7: 2500-2570 MHz FDD LTE Band 38: 2570-2620 MHz
Rating:	Input: DC 9~16V 0.5A	
Hardware Version:	0.0.3	
Software Version:	DSW01.45	

### 1.2 TEST LABORATORY

Company Name:	Shenzhen LGT Test Service Co., Ltd.
Address:	Room 205, Building 13, Zone B, Zhenxiong Industrial Park, No.177, Renmin West Road, Jinsha, Kengzi Street, Pingshan District, Shenzhen, Guangdong, China
Accreditation Certificate	A2LA Certificate No.: 6727.01
	FCC Registration No.: 746540
	CAB ID: CN0136



## 2. FCC 47CFR §2.1091 REQUIREMENT

### 2.1 TEST STANDARDS

The limit for Maximum Permissible Exposure (MPE) specified in FCC 1.1310 is followed. The gain of the antennas used in the product is extracted from the Antenna data sheets provided and also the maximum total power input to the antenna is measured. Through the Friis transmission formula and the maximum gain of the antenna, we can calculate the distance, away from the product, where the limit of MPE is reached.

Although the Friis Transmission formula is far field assumption, the calculated result of that is an over-prediction for near field power density. It is taken as worst case to specify the safety range.

### 2.2 LIMIT

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environmental impact of the human exposure to radio-frequency (RF) radiation as specified in 1.1307 (b)

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )
Limits for Occupational / controlled Exposures			
300 - 1500	--	--	F/300
1500 – 100000	--	--	5.0
Limits for General population / Uncontrolled Exposure			
300 - 1500	--	--	F/1500
1500 – 100000	--	--	1.0

F= Frequency in MHz

Friss Formula

Friss Transmission Formula:  $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

G = gain of antenna in linear scale

$\pi$  = 3.1416

R = Distance between observation point and the center of radiator in cm

If we know the maximum gain of the antenna and the total output power to the antenna, through calculation, we will know MPE value at distance 20cm.

### 2.3 EUT OPERATION CONDITION

EUT was enabled to transmit and receive at lowest, middle and highest channels.

### 2.4 CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. Warning statement to the user for keeping at least 20cm or more separation distance from the antenna should be included in the User manual. So, this device is classified as Mobile device.



## 2.5 TEST RESULT

### Turn up Result

Mode	Turn up Power
WCDMA B5	23±1dBm
LTE B5	23.5±1dBm
LTE B7	23.5±1dBm
LTE B38	22.5±1dBm



**The MPE result of worst mode:**

RF Function	Frequency (MHz)	Max Turn up Power (dBm)	Duty cycle factor	Max Power (dBm)	Max Power (mW)	ANT Gain (dBi)	ANT Gain (gain of antenna in linear scale)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Ratio	Result
WCDMA	826.4	24	0	24	251.19	1.2	1.32	0.066	0.55	0.120	Pass
LTE	836.5	24.5	0	24.5	281.84	1.2	1.32	0.074	0.56	0.133	Pass

**Note:**

1. The Maximum Power Density is less than the limit, complies with the exemption requirements.

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