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# RF Exposure Evaluation Report

**Report No. :** CQASZ20190800684E-02  
**Applicant:** SHANGHAI UNISPLENDOR LELIAN INTERNET OF THINGS TECHNOLOGY CO.,LTD.  
**Address of Applicant:** Building C, 888 huanhu west 2nd road, nanhui new town, pudong new area, Shanghai  
**Equipment Under Test (EUT):**  
**Product:** Villa video door phone  
**Model No.:** U3061806  
**Brand Name:** N/A  
**FCC ID:** 2ATY4-U3061806  
**Standards:** 47 CFR Part 1.1307  
47 CFR Part 1.1310  
KDB447498D01 General RF Exposure Guidance v06  
**Date of Receipt:** 2019-08-09  
**Date of Test:** 2019-08-09 to 2019-08-15  
**Date of Issue:** 2019-08-15  
**Test Result :** **PASS\***

**\*In the configuration tested, the EUT complied with the standards specified above**

**Tested By:**

( Tom chen )

**Reviewed By:**

( Sheek Luo )

**Approved By:**

( Jack Ai )



## 1 Version

### Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20190800684E-02	Rev.01	Initial report	2019-08-15

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### 3 General Information

#### 3.1 Client Information

Applicant:	SHANGHAI UNISPLENDOR LELIAN INTERNET OF THINGS TECHNOLOGY CO.,LTD.
Address of Applicant:	Building C, 888 huanhu west 2nd road, nanhui new town, pudong new area, Shanghai
Manufacturer:	SHANGHAI UNISPLENDOR LELIAN INTERNET OF THINGS TECHNOLOGY CO.,LTD.
Address of Manufacturer:	Building C, 888 huanhu west 2nd road, nanhui new town, pudong new area, Shanghai

#### 3.2 General Description of EUT

Name:	Villa video door phone
Model No.:	U3061806
Trade Mark :	N/A
Hardware Version:	280SD-R2-05
Software Version:	1.5.4
Operation Frequency:	13.56MHz
Modulation Type:	ASK
Product Type:	<input type="checkbox"/> Mobile <input type="checkbox"/> Portable <input checked="" type="checkbox"/> Fix Location
Antenna Type:	Integral Antenna
Antenna Gain:	0dBi
Power Supply:	DC12V

## 4 RF Exposure Evaluation

### 4.1 RF Exposure Compliance Requirement

#### 4.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

##### 4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

#### 4.1.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by:

$$\left[ \frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] \cdot \sqrt{f(\text{GHz})} \leq 3.0$$
 for 1-g SAR and  $\leq 7.5$  for 10-g extremity SAR, where

$f(\text{GHz})$  is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation<sup>17</sup>

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is  $\leq 50$  mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is  $< 5$  mm, a distance of 5 mm is applied to determine SAR test exclusion

## 4.2 EUT RF Exposure Evaluation

### For NFC

$$e_{irp} = p_t \times g_t = (E \times d)^2 / 30$$

where:

$p_t$  = transmitter output power in watts,

$g_t$  = numeric gain of the transmitting antenna (unitless),

$E$  = electric field strength in V/m,  $10^{((dB\mu V/m)/20)/10^6}$ ,

$d$  = measurement distance in meters (m)---3m,

$$\text{So } p_t = (E \times d)^2 / 30 / g_t$$

The worst case (refer to report CQASZ20190800684E-01) is below:

Frequency (MHz)	Level (dBuV/m)	Polarization
13.56	70.76	Peak

For 13.56MHz wireless:

Field strength = 70.76dB $\mu$ V/m @3m

Ant. gain 0dBi; so Ant numeric gain=1.0

$$\text{So } p_t = \{ [10^{(70.76/20)/10^6} \times 3]^2 / 30 / 1.0 \} \times 1000 \text{mW} = 0.004 \text{mW}$$

$$\text{So } (0.004 \text{mW} / 5 \text{mm}) \times \sqrt{0.01356 \text{GHz}} = 0.000083,$$

$$0.000083 < 3.0 \text{ for 1-g SAR}$$

So the SAR report is not required.