

# ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR LOW-POWER, NON-LICENSED TRANSMITTER

**Test Report No.** : W17NR-D088  
**AGR No.** : A17OA-257  
**Applicant** : Spacosa Corporation  
**Address** : 11-41, Simin-daero 327beon-gil, Dongan-gu, Anyang-si, Gyeonggi-do, South Korea  
**Manufacturer** : Spacosa Corporation  
**Address** : 11-41, Simin-daero 327beon-gil, Dongan-gu, Anyang-si, Gyeonggi-do, South Korea  
**Type of Equipment** : Gper  
**FCC ID.** : 2AODFGPER-L200  
**Model Name** : Gper-L200  
**Multiple Model Name** : N/A  
**Serial number** : N/A  
**Total page of Report** : 6 pages (including this page)  
**Date of Incoming** : October 26, 2017  
**Date of issue** : November 30, 2017

## SUMMARY

The equipment complies with the regulation; ***FCC PART 15 SUBPART C Section 15.247***

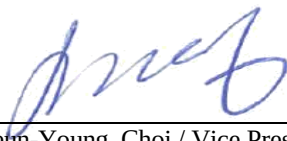
This test report only contains the result of a single test of the sample supplied for the examination.

It is not a generally valid assessment of the features of the respective products of the mass-production.

Reviewed by:

  
 Jae-Ho Lee / Chief Engineer  
 ONETECH Corp.

Approved by:

  
 Keun-Young, Choi / Vice President  
 ONETECH Corp.

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### Revision History

| Issued Report No. | Issued Date       | Revisions     | Effect Section |
|-------------------|-------------------|---------------|----------------|
| W17NR-D088        | November 30, 2017 | Initial Issue | All            |
|                   |                   |               |                |
|                   |                   |               |                |

## 1. VERIFICATION OF COMPLIANCE

Applicant : Spacosa Corporation  
Address : 11-41, Simin-daero 327beon-gil, Dongan-gu, Anyang-si, Gyeonggi-do, South Korea  
Contact Person : Byungjoo Jo  
Telephone No. : +82-70-7016-2380  
FCC ID : 2AODFGPER-L200  
Model Name : Gper-L200  
Brand Name : -  
Serial Number : N/A  
Date : November 30, 2017

|                                                         |                                      |
|---------------------------------------------------------|--------------------------------------|
| EQUIPMENT CLASS                                         | DTS – DIGITAL TRNSMISSION SYSTEM     |
| E.U.T. DESCRIPTION                                      | Gper                                 |
| THIS REPORT CONCERNS                                    | Original Grant                       |
| MEASUREMENT PROCEDURES                                  | ANSI C63.10: 2013                    |
| TYPE OF EQUIPMENT TESTED                                | Pre-Production                       |
| KIND OF EQUIPMENT<br>AUTHORIZATION REQUESTED            | Certification                        |
| EQUIPMENT WILL BE OPERATED<br>UNDER FCC RULES PART(S)   | FCC PART 15 SUBPART C Section 15.247 |
| Modifications on the Equipment to Achieve<br>Compliance | None                                 |
| Final Test was Conducted On                             | 3 m, Semi Anechoic Chamber           |

-. The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

## 2. GENERAL INFORMATION

### 2.1 Product Description

The Spacosa Corporation, Model Gper-L200 (referred to as the EUT in this report) is a Gper. The product specification described herein was obtained from product data sheet or user's manual.

|                                                       |                                                                        |
|-------------------------------------------------------|------------------------------------------------------------------------|
| Device Type                                           | Gper                                                                   |
| Operating Frequency                                   | LE: 2 402 MHz ~ 2 480 MHz<br>LoRa: 903.0 ~ 914.2 MHz (500 kHz)         |
| RF Output Power                                       | LE: -2.31 dBm<br>LoRa: 11.29 dBm                                       |
| Number of Channel                                     | LE: 40 Channels<br>LoRa: 8 Channels                                    |
| Modulation Type                                       | LE: GFSK<br>LoRa: CSS                                                  |
| Antenna Type                                          | LE: Chip Antenna<br>LoRa: Quarter wave-length Monopole Helical Antenna |
| Antenna Gain                                          | LE: 2.51 dBi<br>LoRa: 1.37 dBi                                         |
| List of each Osc. or crystal<br>Freq.(Freq. >= 1 MHz) | 16 MHz                                                                 |
| Rated Supply Voltage                                  | DC 3.7 V                                                               |

### 2.2 Alternative type(s)/model(s); also covered by this test report.

-. None

## 3. EUT MODIFICATIONS

-. None

## 4. MAXIMUM PERMISSIBLE EXPOSURE

### 4.1 RF Exposure Calculation

According to the FCC rule §1.1310, the limit for General Population/Uncontrolled exposure is 1 mW/cm<sup>2</sup> for the device operating 1 500 ~ 100 000 MHz.

### 4.2 EUT Description

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Kind of EUT                 | Gper                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Operating Frequency Band    | <input type="checkbox"/> Wireless Microphone: 494.000 MHz ~ 501.000 MHz<br>and 498.200 MHz ~ 505.200 MHz<br><input type="checkbox"/> WLAN: 2 412 MHz ~ 2 462 MHz<br><input type="checkbox"/> WLAN: 5 180 MHz ~ 5 240 MHz<br><input type="checkbox"/> WLAN: 5 745 MHz ~ 5 825 MHz<br><input type="checkbox"/> Bluetooth: 2 402 MHz ~ 2 480 MHz<br><input checked="" type="checkbox"/> Bluetooth BLE: 2 402 MHz ~ 2 480 MHz |
| MAX. RF OUTPUT POWER        | -2.31 dBm                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Antenna Gain                | 2.51 dBi                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Exposure Evaluation Applied | <input type="checkbox"/> MPE<br><input type="checkbox"/> SAR<br><input checked="" type="checkbox"/> N/A                                                                                                                                                                                                                                                                                                                   |

### 4.3 Test Result

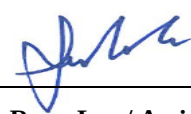
According to the procedure, KDB 447498 D01, the standalone SAR test exclusion threshold is

$$[(\text{Max. Power of channel, including tune-up tolerance, mW})/(\text{Mim. test separation distance, mm})] \times [\sqrt{f(\text{GHz})}] < 3$$

$$= (0.59/5) \times \sqrt{2.440} = 0.18$$

Conclusion: The SAR test exclusion threshold is less than 3, so the device meets the RF Exposure Requirement and excluded SAR Test.

|               | Frequency<br>(MHz) | Target Power<br>W/tolerance<br>(dBm) | Max tune up<br>power<br>(dBm) | Max tune up<br>power<br>(mW) | Separation<br>distance<br>(mm) | RF exposure |
|---------------|--------------------|--------------------------------------|-------------------------------|------------------------------|--------------------------------|-------------|
| BLE<br>(GFSK) | 2 440              | -2.81 ± 0.5                          | -2.31                         | 0.59                         | 5                              | 0.18        |

  
Tested by: Ha-Ram, Lee / Assistant Manager