

## RF Exposure Report

**Report No.:** FCC\_RF\_SL20010601-CHI-001\_MPE Rev\_1.0

**FCC ID:** 2ABA2SFM11R2D

**Test Model:** TS300s Koala

**Series Model:** N/A

**Received Date:** 11/04/2020

**Test Date:** 11/10/2020-11/19/2020

**Issued Date:** 11/30/2020

**Applicant:** SEONG JI INDUSTRIAL CO., LTD

**Address:** 54-33, Dongtanhana 1-gil, Gyeonggi-do Hwaseong-si, South Korea

**Manufacturer:** SEONG JI INDUSTRIAL CO., LTD

**Address:** 54-33, Dongtanhana 1-gil, Gyeonggi-do Hwaseong-si, South Korea

**Issued By:** Bureau Veritas Consumer Products Services, Inc.

**Lab Address:** 775 Montague Expressway, Milpitas, CA 95035

**Test Location (1):** 775 Montague Expressway, Milpitas, CA 95035

**FCC Registration /  
Designation Number:** 540430



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification. The report must not be used by the client to claim product certification, approval, or endorsement by A2LA or any government agencies.

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### Release Control Record

Issue No.	Description	Date Issued
FCC_RF_SL20010601-CHI-001_MPE	Original Release	11/30/2020
FCC_RF_SL20010601-CHI-001_MPE Rev_1.0	Update per review	12/17/2020

## 1 Certificate of Conformity

**Product:** TS300S Koala Fuse Monitoring System

**Brand:** Tecsys

**Test Model:** TS300s Koala

**Series Model:** N/A

**Sample Status:** Engineering sample

**Applicant:** SEONG JI INDUSTRIAL CO., LTD

**Test Date:** 11/10/2020-11/19/2020

**Standards:** FCC Part 2 (Section 2.1093)

KDB 447498 D01 General RF Exposure Guidance v06

IEEE C95.1-1992

The above equipment has been tested by **Bureau Veritas Consumer Products Services, Inc., Milpitas Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

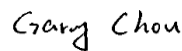
**Prepared by :** \_\_\_\_\_



**Date:** \_\_\_\_\_ 12/17/2020

Deon Dai / Test Engineer

**Approved by :** \_\_\_\_\_



**Date:** \_\_\_\_\_ 12/17/2020

Gary Chou / Engineer Reviewer

## 2 RF Exposure

### 2.1 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> )	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f <sup>2</sup> )*	30
30-300	27.5	0.073	0.2	30
300-1500	...	...	f/1500	30
1500-100,000	...	...	1.0	30

f = Frequency in MHz; \*Plane-wave equivalent power density

### 2.2 MPE Calculation Formula

$$Pd = (P_{out} * G) / (4 * \pi * r^2)$$

Where

Pd = power density in mW/cm<sup>2</sup>

P<sub>out</sub> = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

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

### 2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user.

So, this device is classified as Mobile Device.

### 2.4 Antenna Gain

The antenna type is PCB Trace antenna with 2 dBi peak gain.

## 2.5 Calculation Result of Maximum Conducted Power

Band	Frequency (MHz)	Max Power (dBm)	Max Power (mW)	Turn-Up Tolerance	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
Low	902.1375~904.6625	23.123	205.258	± 1dB	2	20	0.0815	0.601
High	920.1375~922.6625	22.734	187.672	± 1dB	2	20	0.0745	0.613

### Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

## 3 Conclusion

### Conclusion:

The formula of calculated the MPE is:

$$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

$$\text{Max power density} = 0.0815 < 0.601$$

**Therefore the maximum calculations of above situations are less than the "0.601" limit.**

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