Risk Assessment according 2014/53 RED

1. General	
Company Name	Seongji Industrial Co., Ltd.
Person, responsible	Lee sangyoung / Manager
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2. Identification of Equipment	
Product Name	LoRa Sigfox Module
Model Name	LSM100A
Hardware Version	v0.3
Software Version	v0.0

3. Technical Description	
Radio Technologies	LoRa: 863.1 - 869.9 MHz(125 kHz), 863.2 - 869.8 MHz(250 kHz) / Sigfox: 868.034 - 868.226 MHz

4. Essential requirements acc. Article 3.1a electrical safety, Extract from CENELEC GUIDE 32Guidelines for Safety Related Risk Assessment and Risk Reduction for Low Voltage Equipment Edition 1, 2014-07

Requirement	Specification/conditions	Compliance verified by
a) Normal operating conditions temperatures measurement b) Input Test c) Simulated single fault conditions d) Test for the permanence of markings	*- Corresponding Classification: ES1* *- OVC II* *- PD2* *- Supply Voltage: 3.3 Vdc / 0.1 A* *- Tma 85 ℃*	*EN IEC 62368-1::2020+A11:2020*

5. Essential requirements acc. Article 3.1a Health's, Extract from Guidelines for Safety Related Risk Assessment and Risk Reduction for Low Voltage Equipment Edition 1, 2014-07

Requirement	Specification/conditions	Compliance verified by
a) Minimum distance required, MPE	*Min. distance > 20 cm*	*EN IEC 62311:2020*

6. Essential requirements acc. Article 3.1b electromagnetic compatibility as set out in Directive 2014/30/EU

Requirements	Specification/conditions	Compliance verified by
Conducted Emission		*EN 55032*
Electrostatic Discharge		*EN 61000-4-2*
Radio Frequency Electromagnetic Field		*EN 61000-4-3*

7. Essential requirements acc. Article 3.2 Radio equipment shall be so constructed that it both effectively uses and supports the efficient use of radio spectrum in order to avoid harmful interference

Requirement	Specification/conditions	Compliance verified by
LoRa a) Effective Radiated Power b) Occupied Bandwidth c) Frequency error d) Tx Out Of Band Emissions e) Unwanted emissions in the spurious domain f) Transient power		*ETSI EN 300 220-1 V3.1.1* *ETSI EN 300 220-2 V3.2.1*
Sigfox a) Effective Radiated Power b) Occupied Bandwidth c) Frequency error d) Tx Out Of Band Emissions e) Unwanted emissions in the spurious domain f) Transient power		*ETSI EN 300 220-1 V3.1.1* *ETSI EN 300 220-2 V3.2.1*

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