RF Exposure Evaluation Report

Product Name : Wireless Intersection Module

Model No. : FCU-RC01

FCC ID : 2ANXXFCU-RC01

Applicant : Yazaki Kako Corporation

Address : 2-24-1 Oshika Suruga-ku , Shizuoka 422-8519, Japan

Date of Receipt : Nov 14, 2017

Date of Declaration : Apr. 16, 2018

Report No. : 17B0209R-RFUSP24V00

Issued Date: Apr. 16, 2018
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Product Name	Wireless Intersection Module
Applicant	Yazaki Kako Corporation
Address	2-24-1 Oshika Suruga-ku , Shizuoka 422-8519, Japan
Manufacturer	Yazaki Kako Corporation
Model No.	FCU-RC01
FCC ID.	2ANXXFCU-RC01
EUT Rated Voltage	DC 24V
EUT Test Voltage	DC 24V
Trade Name	Yazaki
Applicable Standard	FCC 47 CFR 1.1310
Test Result	Complied

Documented By : Anita Chou

(Senior Engineering Adm. Specialist / Anita Chou)

Tested By : Yun Che Chen

(Engineer / Yunche Chen)

Approved By :

(Director / Vincent Lin)

1. RF Exposure Evaluation

1.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of 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^2)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	F/1500	6
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula
Friis transmission formula: $Pd = (Pout*G)/(4*pi*r^2)$

Where
Pd = power density in mW/cm^2
Pout = output power to antenna in mW
G = gain of antenna in linear scale
Pi = 3.1416
R = distance between observation point and center of the radiator in cm

Pd id the limit of MPE, 1 mW/cm^2. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

1.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.
The temperature and related humidity: 18℃and 78％ RH.

1.3. Test Result of RF Exposure Evaluation

Product : Wireless Intersection Module
Test Item : RF Exposure Evaluation

RF Exposure 2.4G:

Operation Frequency	2405~2475MHz
Maximum Conducted output power	9.68 dBm
Antenna gain	2.14 dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
9.2897	0.003025

Power density is lower than the limit (1 mW/cm2).