DEKRA

RF Exposure Evaluation Report

Product Name : Plug-In Expander

Model No.   : AL-IME2-PIE

FCC ID   : AD8-ALPIE

Applicant : Napco Security Technologies, Inc. (NSSC)

Address   : 333 Bayview Avenue, Amityville, NY 11701

Date of Receipt   : Mar. 19, 2018

Date of Declaration : Apr. 20, 2018

Report No.   :   1830266R-RFUSP23V00

|	
Product Name	Plug-In Expander
Applicant	Napco Security Technologies, Inc. (NSSC)
Address	333 Bayview Avenue, Amityville, NY 11701
Manufacturer	Napco DR SA
Model No.	AL-IME2-PIE
FCC ID.	AD8-ALPIE
EUT Rated Voltage	120VAC @ 60 Hz
EUT Test Voltage	AC 120V / 60Hz
Trade Name	NAPCO
Applicable Standard	FCC 47 CFR 1.1310
Test Result	Complied

Documented By　　:
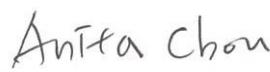
(Senior Engineering Adm. Specialist / Anita Chou)

Tested By　　:
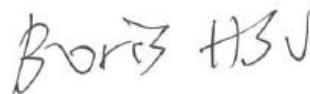
(Engineer / Boris Hsu)

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   :   Plug-In Expander
Test Item   :   RF Exposure Evaluation

RF Exposure:

Operation Frequency	902-928 MHz ISM Band
Maximum Conducted output power	11.29 dBm
Antenna gain	-0.14 dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
13.4586	0.002593

Power density is lower than the limit (0.6 mW/cm2).