Maximum Permissible Exposure

1. Introduction

In this document, we try to prove the safety of radiation harmfulness to the human body for our product. The limit for Maximum Permissible Exposure (MPE) specified in FCC 1.1310 is followed. The Gain of the antenna used in this product is measured in a Fully Anechoic Chamber (FAC) calibrated for antenna measurement in ADT, and also the maximum total power input to the antenna is measured. Through the Friis transmission formula and the maximum gain of the antenna, we can calculate the distance, away from the product, where the limit of MPE is reached.
Although the Friis transmission formula is a far field assumption, the calculated result of that is an over-prediction for near field power density. We will take that as the worst case to specify the safety range.

2. Description of EUT

EUT : GPS Bluetooth Receiver

Applicant : KWEN SHENG MACHINERY ELECTRIC CORP.
NO33-3, CHU KU 3RD LANE CHU HOU VILL JEN WU HSIANG, KAOHSIUNG HSIEN TAIWAN.

Manufacturer : KWEN SHENG MACHINERY ELECTRIC CORP.
NO33-3, CHU KU 3RD LANE CHU HOU VILL JEN WU HSIANG, KAOHSIUNG HSIEN TAIWAN.

Model No : KG508 / KG608

FCC ID : UC9KG508

3. Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. Warning statement to the user for keeping at least 20cm or more separation distance with the antenna should be included in users manual. So, this device is classified as Mobile Device.

4. Friis Formula

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

Where
Pd = power density in mW/cm^2
Pout = output pwer 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

5. Test Result:

Max RF Power (dBm)	TX Antenna Gain (dBi)	Testing Result (mW/cm^2)	MPE Limit (mW/cm^2)
1.565	0.0	0.00062	1