

# MPE Calculation

Model : CE-OSK201

Product Type : Smart Kit

Applicant : GD Midea Air-conditioning Equipment Co.,Ltd

Address : Lingang Road, Beijiao, Shunde, FOSHAN, Guangdong, China

Manufacturer : GD Midea Air-conditioning Equipment Co.,Ltd

Address : Lingang Road, Beijiao, Shunde, FOSHAN, Guangdong, China

FCC ID : 2ADQOMDNA18

According to subpart 15.247(i) and subpart §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

| (B) Limits for General Population/Uncontrolled Exposure |                               |                               |                                     |                          |
|---------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| Frequency Range (MHz)                                   | Electric Field Strength (V/m) | Magnetic Field Strength (A/m) | Power Density (mW/cm <sup>2</sup> ) | Averaging Time (minutes) |
| 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                       |
| 300–1,500                                               | /                             | /                             | f/1500                              | 30                       |
| 1,500–100,000                                           | /                             | /                             | 1.0                                 | 30                       |

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

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculated Formulary:

Predication of MPE limit at a given distance

$S = PG/(4\pi R^2)$  = power density (in appropriate units, e.g. mW/cm<sup>2</sup>);

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

Calculated Data:

|                                                                             |               |
|-----------------------------------------------------------------------------|---------------|
| Maximum peak output power at antenna input terminal (dBm):                  | 16.6          |
| Maximum peak output power at antenna input terminal (mW):                   | 45.7          |
| Prediction distance (cm):                                                   | 20            |
| Antenna Gain, typical (dBi):                                                | 1.8           |
| Maximum Antenna Gain (numeric):                                             | 1.51          |
| The worst case is power density at predication frequency at 20 cm (mW/cm2): | <b>0.0137</b> |
| MPE limit for general population exposure at prediction frequency (mW/cm2): | 1.0           |

**0.0137** (mW/cm2) < 1 (mW/cm2)

Result: Compliant

TUV SUD China, Guangzhou Branch

Reviewed by:



Tony Liu / Project Reviewer  
Date: 2020-05-19

Prepared By:



Kevin Ouyang / Project Handler  
Date: 2020-05-19