



## Declaration of Electromagnetic Field Health Compliance for AP5010SN-GN

To whom it may concern,

As to the product **AP5010SN-GN** made by Huawei Technologies Co., Ltd., we declare that it complies with the Basic restrictions/Reference levels for electric, magnetic and electromagnetic fields as specified in **(1) 47CFR FCC Part 1 & OET Bulletin 65, and (2) RSS-102**, based on the following calculation model assessment

1. The power density according to far-field model is:

$$S = \frac{P \times G_{(\theta, \phi)}}{4 \times \pi \times R^2}$$

Where:

- $P$  = input power of the antenna.
- $G$  = antenna gain relative to an isotropic antenna.
- $\theta, \phi$  = elevation and azimuth angles.
- $R$  = distance from the antenna to the point of investigation.

2. For single or multiple RF sources, the calculated power density should comply with following:

$$\sum_i \frac{S_i}{S_{Limit, i}} \leq 1$$

Where:

- $S_i$  = the power density when the  $f$  is  $i$ .
- $S_{Limit, i}$  = the reference level requirement for power density when  $f$  is  $i$ .

3. The calculation of the power density or safe distance is:

- NOTE 1: The RF exposure evaluation is base on the far-field and the radiation exposure is over-estimated.
- NOTE 2: The maximum output power level is taken into account as a worst case for the purpose of the calculation of power density or safe distance.
- NOTE 3: The minimum antenna feed cable loss (assumed no cable loss) is taken into account as a worst case for the purpose of the calculation of power density or safe distance.
- NOTE 4: The maximum antenna radiation exposure orientation and maximum antenna gain is taken into account as a worst case for the purpose of the calculation of power density or safe distance.



Reliability Laboratory of Huawei Technologies Co., Ltd.  
 Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C  
 Tel: +86 755 28780808 Fax: +86 755 89652518

RF Source	Calculation
RF Source #1	$f = 2400 \text{ to } 2483.5 \text{ MHz}$
	$S_{Limit,i} = 10 \text{ W/m}^2$
	$P = 0.2317 \text{ W}$ (measured max is 23.65 dBm, duty cycle is 100%)
	$G_{(\theta,\phi)} = 2.82 (= 4.5 \text{ dBi})$
	$EIRP = P \times G_{(\theta,\phi)} = 0.653 \text{ W}$ (measured max.)
	$\theta, \phi =$ The worst condition is considered, i.e. the max $G$ is used.
	$R \geq 0.2 \text{ m}$
	$S_i \leq \frac{P \times G_{(\theta,\phi)}}{4 \times \pi \times R^2} = 1.3 \text{ W/m}^2$
$\frac{S_i}{S_{Limit,i}} \leq 0.13$	
RF Source(s) Combination	$\sum_i \frac{S_i}{S_{Limit,i}} \leq 0.13$ (Less than 1, so complied)

Person responsible for making this declaration:

Signature :

Print Name : Zhang Weimin

Position/Title : RF Engineer

Date : October 30, 2012