

Declaration of Electromagnetic Field Health Compliance

To whom it may concern,

As to the product **pRRU3901** 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 following standards(s):

Nr.	Standard
1	47CFR FCC Part 1 (10-1-13 Edition)
2	RSS-102 (Issue4, March 2010)

The compliance is demonstrated based on the following calculation model assessment:

- 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.

θ, ϕ = elevation and azimuth angles.

R = distance from the antenna to the point of investigation.

- 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 .

- 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.

AWS Band:

RF Source	Calculation
RF Source #1	f = 2110 to 2155 MHz
	$S_{Limit,i}$ = 10 W/m ²
	P = 0.316 W (=25 dBm) (rated power: 23dBm, tolerance: +/-2dB)
	$G_{(\theta,\phi)}$ = 2.51 (= 4 dBi) (Integrated antenna)
	$EIRP = P \times G_{(\theta,\phi)}$ = 0.79316 W
	θ, ϕ = The worst condition is considered, i.e. the max G is used.
	R ≥ 0.25 m
	S_i ≤ $\frac{P \times G_{(\theta,\phi)}}{4 \times \pi \times R^2} = 1.01$ W/m ²
	$\frac{S_i}{S_{Limit,i}}$ ≤ 0.101

RF Source	Calculation
RF Source #1	f = 2110 to 2155 MHz
	$S_{Limit,i}$ = 10 W/m ²
	P = 0.316 W (=25 dBm) (rated power: 23dBm, tolerance: +/-2dB)
	$G_{(\theta,\phi)}$ = 11.22 (= 10.5 dBi) (External antenna)
	$EIRP = P \times G_{(\theta,\phi)}$ = 3.54552 W
	θ, ϕ = The worst condition is considered, i.e. the max G is used.
	R ≥ 0.25 m
	S_i ≤ $\frac{P \times G_{(\theta,\phi)}}{4 \times \pi \times R^2} = 4.51$ W/m ²
	$\frac{S_i}{S_{Limit,i}}$ ≤ 0.451

PCS Band:

RF Source	Calculation
RF Source #1	f = 1930 to 1990 MHz
	$S_{Limit,i}$ = 10 W/m ²
	P = 0.316 W (=25 dBm) (rated power: 23dBm, tolerance: +/-2dB)
	$G_{(\theta,\phi)}$ = 2.51 (= 4 dBi) (Integrated antenna)

RF Source	Calculation
	$EIRP = P \times G_{(\theta,\phi)} = 0.79316 \text{ W}$ $\theta, \phi =$ The worst condition is considered, i.e. the max G is used. $R \geq 0.25 \text{ m}$ $S_i \leq \frac{P \times G_{(\theta,\phi)}}{4 \times \pi \times R^2} = 1.01 \text{ W/m}^2$ $\frac{S_i}{S_{Limit,i}} \leq 0.101$

RF Source	Calculation
	$f = 1930 \text{ to } 1990 \text{ MHz}$ $S_{Limit,i} = 10 \text{ W/m}^2$ $P = 0.316 \text{ W (=25 dBm) (rated power: 23dBm, tolerance: +/-2dB)}$ $G_{(\theta,\phi)} = 11.22 (= 10.5 \text{ dBi) (External antenna)}$ RF Source #1 $EIRP = P \times G_{(\theta,\phi)} = 3.54552 \text{ W}$ $\theta, \phi =$ The worst condition is considered, i.e. the max G is used. $R \geq 0.25 \text{ m}$ $S_i \leq \frac{P \times G_{(\theta,\phi)}}{4 \times \pi \times R^2} = 4.51 \text{ W/m}^2$ $\frac{S_i}{S_{Limit,i}} \leq 0.451$

The product has different kinds of combinations, and the calculated results of these combinations are as below:

Integrated antenna:

AWS Band	$\sum_i \frac{S_i}{S_{Limit,i}} \leq 0.101 \text{ (Less than 1, so complied)}$
PCS Band	$\sum_i \frac{S_i}{S_{Limit,i}} \leq 0.101 \text{ (Less than 1, so complied)}$
AWS Band & PCS Band	$\sum_i \frac{S_i}{S_{Limit,i}} \leq 0.202 \text{ (Less than 1, so complied)}$
AWS Band & AWS Band	$\sum_i \frac{S_i}{S_{Limit,i}} \leq 0.202 \text{ (Less than 1, so complied)}$



PCS Band & PCS Band	$\sum_i \frac{S_i}{S_{Limit,i}} \leq 0.202 \text{ (Less than 1, so complied)}$
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External antenna:

AWS Band	$\sum_i \frac{S_i}{S_{Limit,i}} \leq 0.451 \text{ (Less than 1, so complied)}$
PCS Band	$\sum_i \frac{S_i}{S_{Limit,i}} \leq 0.451 \text{ (Less than 1, so complied)}$
AWS Band & PCS Band	$\sum_i \frac{S_i}{S_{Limit,i}} \leq 0.902 \text{ (Less than 1, so complied)}$
AWS Band & AWS Band	$\sum_i \frac{S_i}{S_{Limit,i}} \leq 0.902 \text{ (Less than 1, so complied)}$
PCS Band & PCS Band	$\sum_i \frac{S_i}{S_{Limit,i}} \leq 0.902 \text{ (Less than 1, so complied)}$

Calculated safe distance: 0.25 m

Person responsible for making this declaration:

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