



中国认可
国际互认
检测
TESTING
CNAS L0310



Declaration of Compliance for RF Exposure Evaluation

Product Name: Remote Radio Unit

Product Model: RRU3971

Applicant: Huawei Technologies Co., Ltd.

Administration Building, Headquarters of Huawei
Technologies Co., Ltd., Bantian, Longgang District,
Shenzhen, 518129, P.R.C

Document Number: SYBH(R)02495614EB-2

FCC ID: QISRRU3971AWS

Persons responsible for making this declaration:

Li Guo

Li Guo
July 21, 2016
(Prepared by)

Ren Huasheng

Ren Huasheng
July 21, 2016
(Approved by Senior Engineer)

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

To whom it may concern,

As to the product(s) involved in this document, we declare that they comply with the following standards(s):

- 47CFR FCC Part 1 & OET Bulletin 65

The compliance is demonstrated 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.
- θ, ϕ = 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 .
- f = operating frequency.

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.

RF Source	Calculation for Individual Source	
RF Source #1	f	= <u>2110 to 2180 MHz</u>
	$S_{Limit,i}$	= <u>10</u> W/m ²
	$P, G_{(\theta, \phi)}$	☒ $P \times G_{(\theta, \phi)}$: $P^{(*)}$ = <u>50.12</u> W (=46+1=47.0 dBm, per port) <u>200.48</u> W (calculated, four ports)

		$G_{(\theta,\phi)} = 63.096 (=18 \text{ dBi})$ (*)): The value is from: ☐ measured max (See relevant RF report), ☒ rated + declared tolerance, ☐ max allowed by RF standard. And, the transmission duty cycle is: ☒ ignored, ☐ used, that is: _____ % (for mode: _____).
	θ, ϕ	= The worst condition is considered, i.e. the max G is used.
	S_i	= $\frac{P \times G_{(\theta,\phi)}}{4 \times \pi} / R^2 = 1006.61 / R^2 \text{ W/m}^2$
	$\frac{S_i}{S_{Limit,i}}$	= $100.66 / R^2$
Whole Product	Calculation for Whole Product	
Whole Product	$\frac{S}{S_{Limit}}$	= $100.66 / R^2 \leq 1$
	R	$\geq 10.03 \text{ m (the minimum Safe Distance)}$
	NOTE: The result is the worst case of each individual source and simultaneous transmission sources (if applicable).	

END