

## Declaration of Electromagnetic Field Health Compliance

To whom it may concern,

As to the product **RRU3953 1900M(GUL 1900)** 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) & OET Bulletin 65
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.
- $\theta, \phi$  = 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  $i$ .
- $f$  = operating frequency.

- 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	$f$	= 1930 to 1990 MHz

	$S_{Limit,i}$	=	= <u>10</u> W/m <sup>2</sup>
	$P$ , $G_{(\theta,\phi)}$	=	<input checked="" type="checkbox"/> $P \times G_{(\theta,\phi)}$ : $P^{(*)}$ = <u>89.125</u> W (per port) <u>178.25</u> W (calculated, two ports) $G_{(\theta,\phi)}$ = <u>10</u> (=10 dBi)  (*): The value is from: <input type="checkbox"/> measured max (See relevant RF report), <input checked="" type="checkbox"/> rated + declared tolerance, <input type="checkbox"/> max allowed by RF standard. And, the transmission duty cycle is: <input checked="" type="checkbox"/> ignored, <input type="checkbox"/> used, that is: _____ % (for mode: _____).
	$\theta, \phi$	=	The worst condition is considered, i.e. the max $G$ is used.
	$S_i$	=	$\frac{P \times G_{(\theta,\phi)}}{4 \times \pi} / R^2 = \underline{141.85} / R^2$ W/m <sup>2</sup>
	$\frac{S_i}{S_{Limit,i}}$	=	$\underline{14.19} / R^2$
RF Sources	Calculation for Simultaneous Transmission Sources		
(Not applicable)	(Not applicable)		
Whole Product	Calculation for Whole Product		
Whole Product	$\frac{S}{S_{Limit}}$	=	$\underline{14.19} / R^2 \leq 1$
	$R$	$\geq$	<u>3.77</u> m (the minimum Safe Distance)
	NOTE: The result is the worst case of each individual source and simultaneous transmission sources (if applicable).		

Person responsible for making this declaration:

*Li Guo*

Li Guo  
RF Engineer, EMC Lab  
Reliability Laboratory of Huawei Technologies Co., Ltd.  
February 6, 2015