CE RF Exposure Report

Project No.	:	2501C386
Equipment	:	BE11000 2.5G Tri-Band Mesh Wi-Fi 7 Router
Brand Name	:	Cudy
Test Model	:	WR11000
Model Name	:	WR11000
Hardware Version	:	V1.0
Software Version	:	2.2.14
Applicant	:	Shenzhen Cudy Technology Co., Ltd.
Address	:	7/F, Lepu Tower (West), 66 Xingke Rd, Nanshan, Shenzhen, China
Manufacturer	:	Shenzhen Cudy Technology Co., Ltd.
Address	:	7/F, Lepu Tower (West), 66 Xingke Rd, Nanshan, Shenzhen, China
Factory	:	Shenzhen Cudy Technology Co., Ltd.
Address	:	7/F, Lepu Tower (West), 66 Xingke Rd, Nanshan, Shenzhen, China
Date of Receipt	:	Feb. 11, 2025
Date of Test	:	Feb. 13, 2025 ~ Aug. 20, 2025
Issued Date	:	Sep. 02, 2025
Test Sample	:	Engineering Sample No.: SSL2025021159
Standard(s)	:	EN 50385:2017 EN IEC 62311:2020 EN 62232:2017

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc. (Dongguan)

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REVISION HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-ETSP-6-2501C386	R00	Original Report.	Sep. 02, 2025	Valid

1. MAXIMUM PERMISSIBLE EXPOSURE

1.1 APPLICABLE STANDARD

According to its specifications, the EUT must comply with the requirements of the following standards:

EN 50385 - Product standard to demonstrate the compliance of base station equipment with radiofrequency electromagnetic field exposure limits (110 MHz - 100 GHz), when placed on the market

EN IEC 62311 - Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz to 300 GHz)

EN 62232 - Determination of RF field strength, power density and SAR in the vicinity of radio communication base stations for the purpose of evaluating human exposure

1 LIMIT

Council Recommendation 1999/519/EC Annex III
Reference levels for electric, magnetic and electromagnetic fields (0Hz to 300GHz)

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (μT)	Equivalent plane wave power density S_{eq} (W/m²)
0-1 Hz	—	$3,2 \times 10^4$	4×10^4	—
1-8 Hz	10 000	$3,2 \times 10^4/f^2$	$4 \times 10^4/f^2$	—
8-25 Hz	10 000	4 000/f	5 000/f	—
0,025-0,8 kHz	250/f	4/f	5/f	—
0,8-3 kHz	250/f	5	6,25	—
3-150 kHz	87	5	6,25	—
0,15-1 MHz	87	0,73/f	0,92/f	—
1-10 MHz	$87/f^{1/2}$	0,73/f	0,92/f	—
10-400 MHz	28	0,073	0,092	2
400-2 000 MHz	$1,375\ f^{1/2}$	$0,0037\ f^{1/2}$	$0,0046\ f^{1/2}$	f/200
2-300 GHz	61	0,16	0,20	10

2 MPE Calculation Method

If a reflecting ground plane is present (e.g. see Figure B.14), use Equation (B.18):

$$S = (1+|\Gamma|)^2 \frac{\overline{P}_{net} G_{\theta,\phi}}{4\pi r^2} \quad \text{(B.18)}$$

with reflection coefficient $|\Gamma| = 1$ for the theoretical highest field strength scenario of a perfectly conducting ground plane (e.g. flat metallic roof) or with reflection coefficient $|\Gamma| = 0{,}6$ for typical [15] ground reflection conditions. Use of the far-field spherical formulas in the near-field region will overestimate the field strength levels.

| Γ | = 0.6

$\overline{P}_{net}$ = Output Power (W)

$G_{\theta,\phi}$ = EUT Antenna gain (Linear ratio)

e.i.r.p. (W) = $\overline{P}_{net}$ * $G_{\theta,\phi}$

r=0.20m, as the calculated distance.

2. TABLE FOR FILED ANTENNA

For 2.4GHz:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1	South star	660100194	Dipole	N/A	0.93
2	South star	660100195	Dipole	N/A	0.99

Note:
1) The EUT incorporates a CDD function. Physically, the EUT provides two completed transmitters and receivers (2T2R).
2) Beamforming Gain: 3.0 dB.
3) The antenna gain and beamforming gain are provided by the manufacturer.

For 5GHz:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1	South star	660100196	Dipole	N/A	0.99
2	South star	660100197	Dipole	N/A	0.93

Note:
1) The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers (2T2R).
2) Beamforming Gain: 3.0 dB.
3) The antenna gain and beamforming gain are provided by the manufacturer.

For 6GHz:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1	South star	660100198	Dipole	N/A	0.98
2	South star	660100199	Dipole	N/A	0.82

Note:
1) The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers (2T2R).
2) Beamforming Gain: 3.0 dB.
3) The antenna gain and beamforming gain are provided by the manufacturer.

3. TEST RESULTS

For 2.4GHz:

Max. e.i.r.p. (dBm)	Max. e.i.r.p. (W)	Power density (W/m²)	Limit (W/m²)	Result
19.64	0.0920	0.4690	10	Pass

For 5GHz:

Max. e.i.r.p. (dBm)	Max. e.i.r.p. (W)	Power density (W/m²)	Limit (W/m²)	Result
27.96	0.6252	3.1856	10	Pass

For 6GHz:

Max. e.i.r.p. (dBm)	Max. e.i.r.p. (W)	Power density (W/m²)	Limit (W/m²)	Result
22.92	0.1959	0.9981	10	Pass

Conclusion:

Both of the 2.4GHz, 5GHz and 6GHz device can transmit simultaneously, the formula of calculated the exposure is:

(CPD 1 / LPD1) + (CPD2 / LPD2) + ……etc. < 1
CPD = Calculation Power Density
LPD = Limit of Power Density

Therefore, the calculation of this situation is (0.4690 / 10) + (3.1856 / 10) + (0.9981 / 10) =0.4653, which is less than the “1” limit.

RF exposure assessment has been performed above to prove that this unit will not generate the harmful EM emission above the reference level as specified in EC Council Recommendation (1999/519/EC).

End of Test Report