

RF EXPOSURE EVALUATION

EUT Specification

EUT	2.4G WIFI FPV DRONE
Model Name	Details refer model list.
Frequency band (Operating)	<input type="checkbox"/> WLAN: 2.412GHz ~ 2.462GHz <input type="checkbox"/> WLAN: 5.18GHz ~ 5.32GHz / 5.50GHz ~ 5.70GHz <input type="checkbox"/> WLAN: 5.745GHz ~ 5.825GHz <input checked="" type="checkbox"/> Others(2447~2473Hz)
Device category	<input checked="" type="checkbox"/> Portable (<20cm separation) <input type="checkbox"/> Mobile (>20cm separation) <input type="checkbox"/> Others ____
Antenna diversity	<input checked="" type="checkbox"/> Single antenna <input type="checkbox"/> Multiple antennas <input type="checkbox"/> Tx diversity <input type="checkbox"/> Rx diversity <input type="checkbox"/> Tx/Rx diversity
Max. output power	102.11 dBuV/m (6.85dBm)(4.84mW)
Antenna gain	1.8dBi
Evaluation applied	<input type="checkbox"/> MPE Evaluation <input checked="" type="checkbox"/> SAR Evaluation

Model list:

UA21, U31, U31C, U31W, U31R, U31B, U31D, U31E, U31G, U31Plus, U31Plus-C, U31Plus-W, U31Plus-F, U31Plus-R, U31Plus-B, U31Plus-D, U31Plus-E, U31Plus-G, U31Plus-WCH, U31Plus-WGR, U31Plus-FCH, U31Plus-FGR
U29, U29C, U29M, U29W U29-S, U29R, U29F, U29B, U29D, U29E, U29G, U29S, U29S-C, U29S-W, U29S-F, U29S-R, U29S-B, U29S-D, U29S-E, U29S-G, U29Plus, U29PlusC, U29Plus-W, U29Plus-F, U29Plus-R, U29PlusCO, U29Plus-WO, U29Plus-FO, U29Plus-RO, U29Plus-B, U29Plus-D, U29Plus-E, U29Plus-G
U34 U34C, U34W, U34F, U34R, U34B, U34D, U34E, U34G, U34Plus, U34Plus-C, U34Plus-W, U34Plus-F, U34Plus-B, U34Plus-D, U34Plus-E, U34Plus-G
U43 U43C, U43W, U43F, U43R U43B, U43D, U43E U43G, U43Plus, U43Plus-C, U43Plus-W, U43Plus-F, U43Plus-B, U43Plus-D, U43Plus-E, U43Plus-G
U818A Plus, U818A Plus-C, U818A Plus-W, U818A Plus-F, U818A Plus-WCH, U818A Plus-WGR, U818A Plus-FCH, U818A Plus-FGR, U818A Plus-B, U818A Plus-D, U818A Plus-E, U818A Plus-G

U88, U88Plus, U88Plus-C, U88Plus-W, U88Plus-WCH, U88Plus-WGR, U88Plus-F, U88Plus-FCH, U88Plus-FGR, U88Plus-B, U88Plus-D, U88Plus-E, U88Plus-G, U88Plus-O, U88Plus-CO, U88Plus-WO, U88Plus-WCHO, U88Plus-WGRO, U88Plus-FCHO, U88Plus-FGRO

U48 U48C, U48W, U48F, U48R, U48B, U48D, U48E U48G, U48Plus, U48Plus-C, U48Plus-W, U48Plus-F, U48Plus-B, U48Plus-D, U48Plus-E, U48Plus-G

U47 U47C, U47W, U47F, U47R, U47CO, U47WO, U47FO, U47B, U47D, U47E, U47G, U47Plus, U47Plus-C, U47Plus-W, U47Plus-F, U47Plus-WCH, U47Plus-WGR, U47Plus-FGR, U47Plus-FGR, U47Plus-CO, U47Plus-WO, U47Plus-FO, U47Plus-WCHO, U47Plus-WGRO, U47Plus-FGRO, U47Plus-FGRO, U47Plus-B, U47Plus-D, U47Plus-E, U47Plus-G

U37Pro, U37Pro-C, U37Pro-W, U37Pro-N, U37Pro-F, U37Pro-NF, U37Pro-WCH, U37Pro-WGR, U37Pro-FCH, U37Pro-FGR, U37Pro-NFCH, U37Pro-NFGR, U37Pro-B, U37Pro-D, U37Pro-E, U37Pro-G

U40, U40C, U40W, U40F, U40R, U40CO, U40WO, U40FO, U40RO, U40W-CH, U40W-GR, U40F-CH, U40F-GR, U40W-CHO, U40W-GRO, U40F-CHO, U40F-GRO, U40W-CHOA, U40W-GROA, U40F-CHOA, U40F-GROA

U49, U49C, U49W, U49F, U49B, U49E, U49G

U50, U50C, U50W, U50F, U50R, U50CO, U50WO, U50FO, U50B, U50D, U50E, U50G, U50Plus, U50Plus-C, U50Plus-W, U50Plus-F, U50Plus-WCH, U50Plus-WGR, U50Plus-FGR, U50Plus-FGR, U50Plus-CO, U50Plus-WO, U50Plus-FO, U50Plus-WCHO, U50Plus-WGRO, U50Plus-FGRO, U50Plus-FGRO, U50Plus-B, U50Plus-D, U50Plus-E, U50Plus-G

U51, U51C, U51W, U51F, U51R, U51CO, U51WO, U51FO U51B, U51D, U51E, U51G, 51Plus, U51Plus-C, U51Plus-W, U51Plus-F, U51Plus-WCH, U51Plus-WGR, U51Plus-FGR, U51Plus-FGR, U51Plus-CO, U51Plus-WO, U51Plus-FO, U51Plus-WCHO, U51Plus-WGRO, U51Plus-FGRO, U51Plus-FGRO, U51Plus-B, U51Plus-D, U51Plus-E, U51Plus-G

U52, U52C, U52W, U52F, U52R, U52CO, U52WO, U52FO, U52B, U52D, U52E, U52G, U52Plus, U52Plus-C, U52Plus-W, U52Plus-F, U52Plus-WCH, U52Plus-WGR, U52Plus-FGR, U52Plus-FGR, U52Plus-CO, U52Plus-WO, U52Plus-FO, U52Plus-WCHO, U52Plus-WGRO, U52Plus-FGRO, U52Plus-FGRO, U52Plus-B, U52Plus-D, U52Plus-E, U52Plus-G

U53 U53C, U53W, U53F, U53R, U53CO, U53WO, U53FO, U53B, U53D, U53E, U53G, U53Plus, U53Plus-C, U53Plus-W, U53Plus-F, U53Plus-WCH, U53Plus-WGR, U53Plus-FGR, U53Plus-FGR, U53Plus-CO, U53Plus-WO, U53Plus-FO, U53Plus-WCHO U53Plus-WGRO, U53Plus-FGRO, U53Plus-FGRO, U53Plus-B, U53Plus-D, U53Plus-E, U53Plus-G

U56, U56C U56W, U56F, U56R, U56CO, U56WO, U56FO, U56B, U56D, U56E, U563G, U56Plus, U56Plus-C, U56Plus-W, U56Plus-F, U56Plus-WCH, U56Plus-WGR, U56Plus-FGR, U56Plus-FGR, U56Plus-CO, U56Plus-WO, U56Plus-FO, U56Plus-WCHO, U56Plus-WGRO, U56Plus-FGRO, U56Plus-FGRO, U56Plus-B, U56Plus-D, U56Plus-E, U563Plus-G

U57, U57C, U57W, U57F, U57R, U57CO, U57WO, U57FO, U57B, U57D, U57E, U57G, U57Plus, U57Plus-C, U57Plus-W, U57Plus-F, U57Plus-WCH, U57Plus-WGR, U57Plus-FGR, U57Plus-FGR, U573Plus-CO, U57Plus-WO, U57Plus-FO, U57Plus-WCHO, U57Plus-WGRO, U57Plus-FGRO, U57Plus-FGRO, U57Plus-B, U57Plus-D, U57Plus-E, U57Plus-G

U58, U58C, U58W, U58F, U58R, U58CO, U58WO, U58FO, U58B, U58D, U58E, U58G, U58Plus, U58Plus-C, U58Plus-W, U58Plus-F, U58Plus-WCH, U58Plus-WGR, U58Plus-FGR, U58Plus-FGR, U58Plus-CO, U58Plus-WO, U58Plus-FO, U58Plus-WCHO, U58Plus-WGRO, U58Plus-FGRO, U58Plus-FGRO, U58Plus-B, U58Plus-D, U58Plus-E, U58Plus-G

U59Pro, U59Pro-C, U59Pro-W, U59Pro-N, U59Pro-F, U59Pro-NF, U59Pro-WCH, U59Pro-WGR, U59Pro-FCH, U59Pro-FGR, U59Pro-NFCH, U59Pro-NFGR, U59Pro-B, U59Pro-D, U59Pro-E, U59Pro-G

U60Pro, U60Pro-C, U60Pro-W, U60Pro-N, U60Pro-F, U60Pro-NF, U630Pro-WCH, U60Pro-WGR, U60Pro-FCH, U60Pro-FGR, U60Pro-NFCH, U60Pro-NFGR, U60Pro-B, U60Pro-D, U60Pro-E, U60Pro-G

Standard Requirement

Portable Device

According to §15.247(i) and §1.1307b(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission’s guidelines. See KDB 447498 D01 General RF Exposure Guidance v05, section 4.3.1.

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR,¹⁶ where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation¹⁷
- The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

Measurement Result

Channel Frequency (MHz)	Max Output power (dBm)	Max Output power (mW)	Calculation Value ^(Note 1)	Threshold Value
2447	5.73	3.74	1.17	3.0
2461	6.64	4.61	1.45	3.0
2473	6.85	4.84	1.52	3.0

$$E = \text{EIRP} - 20\log D + 104.8$$

where:

E = electric field strength in dB μ V/m,

EIRP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

$$\text{EIRP} = E - 104.8 + 20\log D = 102.11 - 104.8 + 20\log 3 = 6.85 \text{ dBm}$$

Note 1: Calculation Value = $[(\text{max. power of channel, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$.

For example: $4.84/5 \cdot \sqrt{2.473} = 1.52 \leq 3.0$

According to KDB447498 D01 V05, threshold at which no SAR required is ≤ 3.0 for 1-g SAR, separation distance is 5mm, and no simultaneous SAR measurement is required.

The SAR measurement is not necessary.