

FCC §15.247 (i) & §1.1307 (b) (3) & §2.1091- RF EXPOSURE EVALUATION

Applicable Standard

According to subpart 15.247 (i) and subpart 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

According to KDB 447498 D04 Interim General RF Exposure Guidance

MPE-Based Exemption:

General frequency and separation-distance dependent MPE-based effective radiated power(ERP) thresholds are in Table B.1 [Table 1 of § 1.1307(b)(1)(i)(C)] to support an exemption from further evaluation from 300 kHz through 100 GHz.

Table 1 to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	$1,920 R^2$.
1.34-30	$3,450 R^2/f^2$.
30-300	$3.83 R^2$.
300-1,500	$0.0128 R^2 f$.
1,500-100,000	$19.2 R^2$.

R is the minimum separation distance in meters

f = frequency in MHz

Result

For worst case:

For Module YL43455:

Mode	Frequency (MHz)	Tune up conducted power	Antenna Gain		ERP		Evaluation Distance (m)	ERP Limit (W)
		(dBm)	(dBi)	(dBd)	(dBm)	(W)		
BT	2402-2480	8.5	4.61	2.46	10.96	0.012	0.2	0.768
BLE	2402-2480	3.0	4.61	2.46	5.46	0.004	0.2	0.768
2.4G Wi-Fi	2412-2462	19.0	4.61	2.46	21.46	0.140	0.2	0.768
5G Wi-Fi	5180-5240	15.0	2.47	0.32	15.32	0.034	0.2	0.768
	5260-5320	14.5	2.47	0.32	14.82	0.030	0.2	0.768
	5500-5700	10.0	2.47	0.32	10.32	0.011	0.2	0.768
	5745-5825	14.0	2.47	0.32	14.32	0.027	0.2	0.768

Note: 1. The tune up conducted power and antenna gain was declared by the applicant.

2. The BT/2.4GHz Wi-Fi/5GHz Wi-Fi cannot Simultaneous transmitting

For Module D845:

Mode	Frequency (MHz)	Tune up conducted power	Antenna Gain		ERP		Evaluation Distance (m)	ERP Limit (W)
		(dBm)	(dBi)	(dBd)	(dBm)	(W)		
2.4G Wi-Fi	2412-2462	22.0	4.61	2.46	24.46	0.279	0.2	0.768
5G Wi-Fi	5180-5240	18.0	2.47	0.32	18.32	0.068	0.2	0.768
	5260-5320	18.0	2.47	0.32	18.32	0.068	0.2	0.768
	5500-5700	16.0	2.47	0.32	16.32	0.043	0.2	0.768
	5745-5825	18.0	2.47	0.32	18.32	0.068	0.2	0.768

Note: 1. The tune up conducted power and antenna gain was declared by the applicant.

2. The 2.4GHz Wi-Fi/5GHz Wi-Fi cannot Simultaneous transmitting

Note: the Module YL43455 and Module D845 cannot transmit at same time.

To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: Compliant.