

RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency(RF) Radiation as specified in §1.1307(b)

FCC ID: 2ASCB-DDNT55SP

EUT Specification

EUT	DF055NLBD2
Frequency band (Operating)	☒ BT: 2.402GHz ~ 2.480GHz ☒ WLAN: 2.412GHz ~ 2.462GHz ☒ RLAN: 5.180GHz ~ 5.240GHz ☒ RLAN: 5.260GHz ~ 5.320GHz ☒ RLAN: 5.500GHz ~ 5.700GHz ☒ RLAN: 5.745GHz ~ 5.825GHz ☐ Others:
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation) ☐ Others
Exposure classification	☐ Occupational/Controlled exposure ☒ General Population/Uncontrolled exposure
Antenna diversity	☒ Single antenna ☐ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☐ Tx/Rx diversity
Max. output power	BLE: 7.90dBm 0.0062W WIFI 2.4G: 17.47dBm 0.0558W WIFI 5.2G: 18.20dBm 0.0661W WIFI 5.3G: 18.48dBm 0.0705W WIFI 5.6G: 21.52dBm 0.1419W WIFI 5.8G: 20.99dBm 0.1256W
Antenna gain (Max)	BLE: 4.92dBi Wi-Fi 2.4G: 4.92dBi Wi-Fi 5.2G: 5.06dBi Wi-Fi 5.3G: 5.17dBi Wi-Fi 5.6G: 5.21dBi Wi-Fi 5.8G: 5.28dBi
Evaluation applied	☒ MPE Evaluation ☐ SAR Evaluation



Limits for Maximum Permissible Exposure(MPE)

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm ²)	Average Time
(A) Limits for Occupational/Control Exposures				
300-1500	--	--	F/300	6
1500-100000	--	--	5	6
(B) Limits for General Population/Uncontrol Exposures				
300-1500	--	--	F/1500	30
1500-100000	--	--	1	30

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

P_d = Power density in mW/cm²

P_{out} =output power to antenna in Mw

G= gain of antenna in linear scale

Pi=3.1416

R= distance between observation point and center of the radiator in cm

P_d the limit of MPE. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

Measurement Result

Operating Mode	Measured Power	Tune up tolerance		Max. Tune up Power	Antenna Gain	Power density at 20cm	Power density Limits
	(dBm)	(dBm)		(dBm)	(dBi)	(mW/cm ²)	(mW/cm ²)
BLE	7.90	7.90	±1	8.90	4.92	0.0048	1
WIFI 2.4G	17.47	17.47	±1	18.47	4.92	0.0434	1
WIFI 5.2G	18.20	18.20	±1	19.20	5.06	0.0531	1
WIFI 5.3G	18.48	18.48	±1	19.48	5.17	0.0581	1
WIFI 5.6G	21.52	21.52	±1	22.52	5.21	0.1180	1
WIFI 5.8G	20.99	20.99	±1	21.99	5.28	0.1062	1

Note: BLE/ WLAN/ RLAN cannot support simultaneous transmission.

Result: No Standalone SAR test is required.

