RADIO FREQUENCY EXPOSURE

LIMIT

According to §15.247(i), 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 § 1.1307(b)(1) of this chapter.

EUT Specification

EUT	HD Multimedia Home Server
Frequency band (Operating)	☒ WLAN: 2.412GHz ~ 2.462GHz ☐ WLAN: 5.18GHz ~ 5.32GHz / 5.50GHz ~ 5.70GHz ☐ WLAN: 5.745GHz ~ 5.825GHz ☐ Others
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation) ☐ Others
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm2) ☒ General Population/Uncontrolled exposure (S=1mW/cm2)
Antenna diversity	☒ Single antenna ☐ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☐ Tx/Rx diversity
Max. output power	IEEE 802.11b mode: 18.61 dBm IEEE 802.11g mode: 24.17 dBm draft 802.11n 20 MHz Channel mode: 24.49 dBm draft 802.11n 40 MHz Channel mode: 23.90 dBm
Antenna gain (Max)	0.32 dBi (Numeric gain: 1.08)
Evaluation applied	☒ MPE Evaluation ☐ SAR Evaluation ☐ N/A
Remark: *1. The maximum output power is 24.49dBm (281.19mW) at 2462MHz (with 1.08 numeric antenna gain.)* *2. DTS device is not subject to routine RF evaluation; MPE estimate is used to justify the compliance.* *3. For mobile or fixed location transmitters, no SAR consideration applied. The maximum power density is 1.0 mW/cm2 even if the calculation indicates that the power density would be larger.*	

TEST RESULTS

No non-compliance noted.

*(According to **RF Exposure Procedures and Equipment Authorization Policies**, SAR evaluation is not required for the PORTABLE device while its maximum average output power is lower than 60/f $_{(GHz)}$=60/2.441=24.58mW)*

Remark:

802.11b maximum average power is 13.63dBm = 23.07mW <(60/f); Individual SAR is not required.

802.11g maximum average power is 13.47dBm = 22.23mW <(60/f); Individual SAR is not required.

802.11n 20 MHz maximum average power is 13.49dBm = 22.34mW <(60/f); Individual SAR is not required.

802.11n 40 MHz maximum average power is 13.17dBm = 20.75mW <(60/f); Individual SAR is not required.

For Wify Module Antenna Gain is 0.32dBi or 1.08 (numeric)

For BT Module Antenna Gain is 1dBi or 1.26 (numeric)

Output power into Antenna & RF Exposure value at distance 20cm:

Wify Max out power: 0.0429(W) (0.0092mW/cm^2)

BT Max out power: 0.00056(W) (0.000139mW/cm^2)

Test mode: draft 802.11n 40 MHz Channel mode

CONCULSION:

Both of eh modules can transmit simultaneously, the formula of calculated the MIP is

CPD1/LPD1+CPD2/LPD2+ etc.<1

CPD= Caleulation Power density
LPD= limit of power density

Therefore, the worst-cast situationis 0.0092/1+0.000139/1= 0.009339, which is less than “1”. This confirmed that the device comply with FCC 1.1310 MPE limit.