MPE CALCULATION

FCC ID: I28MD-ZCLFHF
FCC ID: I28-ZBRZQ3BT
FCC ID: I28MD-FXLAN11AC

RF Exposure Requirements:	47 CFR §1.1307(b)
RF Radiation Exposure Limits:	47 CFR §1.1310
RF Radiation Exposure Guidelines:	FCC OST/OET Bulletin Number 65
EUT Frequency Band: 2.4GHz	2412-2462 MHz, 2402-2480 MHz, 13.56MHz, 0.125MHz
EUT Frequency Band: 5 GHz	5180- 5320MHz, 5500-5720MHz, 5745-5825MHz 5210-5290MHz, 5530-5610MHz, 5690-5775MHz
Limits for General Population/Uncontrolled Exposure in the band of:	1500 - 100,000 MHz
Power Density Limit:	1 mW / cm^2

Equation: $S = PG / 4\pi R^2$ or $R = \sqrt{PG / 4\pi S}$

Where, S = Power Density

P = Power Input to Antenna

G = Antenna Gain

R = distance to the center of radiated antenna

EUT: Printer Access Point, Model No.: ZC100, ZC150, ZC300, ZC350

(2.4GHz Band): Power = 16.77 dBm, Array Gain + Antenna Gain = 3.66 dBi, Power density = 0.022 mW/ cm^2
(5 GHz Band): Power = 13.94 dBm, Array Gain + Antenna Gain = 5 dBi, Power density = 0.015 mW/ cm^2
(BLE AC radio): Power = 4.69 dBm, Array Gain + Antenna Gain = 1 dBi, Power density = 0.0007 mW/ cm^2
(BT-EDR): Power = 4.40 dBm, Array Gain + Antenna Gain = 1 dBi, Power density = 0.0007 mW/ cm^2
(BLE): Power = 4.72 dBm, Array Gain + Antenna Gain = 1.69 dBi, Power density = 0.0008 mW/ cm^2
(BT-EDR): Power = 7.40 dBm, Array Gain + Antenna Gain = 1.69 dBi, Power density = 0.0016 mW/ cm^2
(RFID): Power = -12.81 dBm, Array Gain + Antenna Gain = -51 dBi, Power density = 8.27848E-11 mW/ cm^2

Type	CH Freq (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	Directional Gain (dBi)	Tune-Up Tolerance	Tolerance Max Power (dBm)	Measurement Distance (cm)	Calculated MPE (mW/cm^2)	MPE Limit (mW/cm^2)	Pass/Fail
2.4 GHz WLAN	2462	16.77	3.66	3.66	±1dB	17.77	20	0.022	1	Pass
5 GHz WLAN	5500	13.94	5	5	±1dB	14.94	20	0.015	1	Pass
BLE AC radio	2402	4.69	1	1	±1dB	5.69	20	0.0007	1	Pass
BT-EDR AC radio	2402	4.40	1	1	±1dB	5.40	20	0.0007	1	Pass
BLE	2402	4.72	1.69	1.69	±1dB	5.72	20	0.0008	1	Pass
BT-EDR	2402	7.40	1.69	1.69	±1dB	8.40	20	0.0016	1	Pass
RFID	13.56	-12.81	-51	-51	±1dB	-11.81	20	8.27848E-11	0.979	Pass

2.4GHz and 5GHz WLAN does not transmit simultaneously

If 2.4GHz and AC Bluetooth and RFID transmit simultaneously.

Total MPE=0.022 + 0.007 + 8.27848E-11 = 0.029 mW/cm^2

If Bluetooth and RFID transmit simultaneously.

Total MPE=0.016 + 8.27848E-11 = 0.016 mW/cm^2

The Above Result had shown that the Device complied with MPE requirement.

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