EXHIBIT C - RF EXPOSURE EVALUATION

RF Exposure Evaluation

Applicable Standard

According to subpart §1.1310, 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 level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (minutes)**
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f²)	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculation formula

Prediction of power density at the distance of the applicable MPE limit
$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm^2);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

Calculated Data:

Radio	Operation Modes	Frequency (MHz)	Antenna Gain		Conducted output power including Tune-up Tolerance▲		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
			(dBi)	(numeric)	(dBm)	(mW)			
WiFi/BT Module	WiFi	2412-2462	2.33	1.71	15.9	38.90	20.00	0.0132	1.0
	BT	2402-2480	2.33	1.71	2.79	1.90	20.00	0.0006	1.0
	BLE	2402-2480	2.33	1.71	1.08	1.28	20.00	0.0004	1.0
WWAN Module	WCDMA Band II	1850-1910	2.00	1.58	25	316.23	20.00	0.0998	1.0
	WCDMA Band IV	1710-1755	2.00	1.58	25	316.23	20.00	0.0998	1.0
	WCDMA Band V	824-849	2.00	1.58	25	316.23	20.00	0.0998	0.55
	LTE Band 2	1850-1910	2.00	1.58	25	316.23	20.00	0.0998	1.0
	LTE Band 4	1710-1755	2.00	1.58	25	316.23	20.00	0.0998	1.0
	LTE Band 5	824-849	2.00	1.58	25	316.23	20.00	0.0998	0.55
	LTE Band 12	699-716	2.00	1.58	25	316.23	20.00	0.0998	0.47
	LTE Band 13	777-787	2.00	1.58	25	316.23	20.00	0.0998	0.52
	LTE Band 14	788-798	2.00	1.58	25	316.23	20.00	0.0998	0.53
	LTE Band 66	1710-1780	2.00	1.58	25	316.23	20.00	0.0998	1.0
	LTE Band 71	663-698	2.00	1.58	25	316.23	20.00	0.0998	0.45
NFC	NFC	13.56	/	/	-28.31	0.0015	20.00	<<0.001	0.98
Note: The device built in a certified BT/WiFi module, FCC ID: 2AC7Z-ESP32WROOM32U. The device built in a certified WWAN module, FCC ID: XMR202008EC25AFXD.									

Note:
1. The Conducted output power including Tune-up Tolerance provided by manufacturer
2. EIRP(dBm)=E(dBuV/m)-95.2 for 3 meters distance
   NFC E Field =66.89dBuV/m@3m
   ==> EIRP= -28.31dBm

Simultaneous transmission:

BT and 2.4G WiFi can`t transmit simultaneously, WiFi/BT, WWAN Module and NFC can transmit simultaneously:

$$\sum_i \frac{S_i}{S_{Limit,i}} \le 1$$

$S_{WiFi}/S_{limit\text{-}WiFi} + S_{WWAN}/S_{limit\text{-}WWAN} + S_{NFC}/S_{limit\text{-}NFC}$

=0.0132/1.0+0.0998/0.45

=0.23

< 1.0

Result: Compliant. The device compliant RF Exposure at 20cm distances.