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Maximum Permissible Exposure Evaluation

FCC ID: 2AYD5-I22T01

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)

EUT Specification

Product Name:	POS Device
Trade Mark:	/
Model/Type reference:	I22T01
Listed Model(s):	/
Frequency band (Operating)	BT: 2402MHz ~ 2480MHz WLAN: 2412MHz ~ 2462MHz RLAN: 5150MHz ~ 5350MHz RLAN: 5470MHz ~ 5725MHz RLAN: 5725MHz ~ 5850MHz GPRS/EGPRS 850: UL: 824MHz~849MHz, DL: 869MHz~894MHz GPRS/EGPRS 1900: UL: 1850MHz~1910, DL: 1930MHz~1990MHz WCDMA Band II: UL: 1852.4MHz~1907.6MHz, DL: 1932.6MHz~1987.4MHz WCDMA Band V: UL: 826.4MHz~846.6MHz, DL: 871.6MHz~1891.4MHz LTE FDD Band 2: UL: 1850.7MHz~1909.3MHz, DL: 1930.7MHz~1989.3MHz LTE FDD Band 4: UL: 1710.7MHz~1754.3MHz, DL: 2110.7MHz~2154.3MHz LTE FDD Band 7: UL: 2502.5MHz~2567.5MHz, DL: 2622.5MHz~2687.5MHz LTE FDD Band 17: UL: 706.5MHz~713.5MHz, DL: 736.5MHz~743.5MHz LTE TDD Band 41: UL: 2557.5MHz~2652.5MHz, DL: 2557.5MHz~2652.5MHz
Device category	☐Portable (<5mm separation) ☐Mobile (>20cm separation) ☒Fixed (>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
Antenna gain (Max)	BT/ WLAN: 1.94dBi RLAN: 2.32dBi GSM 850: -0.4dBi PCS 1900: 1.2dBi WCDMA II: 1.1dBi WCDMA V: 0.4dBi FDD Band 2: 1.1dBi FDD Band 4: 0.7dBi FDD Band 7: 0.3dBi FDD Band 17: -0.4dBi

	TDD Band 41: -0.5dBi
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	6
1500-100000	--	--	1	30

Friis transmission formula: Pd=(Pout*G)\(4*pi*R^2)
Where
Pd= Power density in mW/cm^2
Pout= 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
Pd the limit of MPE $1mW/cm^2$. 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

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Average Power (dBm)	Tune up tolerance (dBm)	Max. Tune up Power (dBm)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)
BT/ EDR	2441	1.94	8.71	/	8±1	9	0.00247	1.000
BLE	2440	1.94	6.61	/	6±1	7	0.00156	1.000
WLAN 802.11b	2412	1.94	/	17.36	17±1	18	0.01962	1.000
WLAN 802.11g	2437	1.94	/	16.24	16±1	17	0.01559	1.000
WLAN 802.11n(HT20)	2412	1.94	/	15.95	16±1	17	0.01559	1.000
WLAN 802.11n(HT40)	2422	1.94	/	15.10	15±1	16	0.01238	1.000
RLAN U-NII-1 802.11ac(VHT20)	5180	2.32	/	14.37	14±1	15	0.01073	1.000
RLAN U-NII-2A 802.11n(HT20)	5320	2.32	/	14.18	14±1	15	0.01073	1.000
RLAN U-NII-2C 802.11n(HT20)	5500	2.32	/	14.85	15±1	16	0.01351	1.000
RLAN U-NII-3 802.11n(HT20)	5745	2.32	/	14.42	14±1	15	0.01073	1.000
GPRS 850 (1 Tx slot)	836.6	-0.4	33.21	27.56	27±1	28	0.11448	0.558
EGPRS 850 (1 Tx slot)	824.2	-0.4	27.77	22.41	22±1	23	0.03620	0.549
GPRS 1900 (1 Tx slot)	1909.8	1.2	29.75	25.61	25±1	26	0.10441	1.000
EGPRS 1900 (1 Tx slot)	1880.0	1.2	26.81	21.45	21±1	22	0.04157	1.000
WCDMA Band II	1907.6	1.1	21.90	/	22±1	23	0.05114	1.000
WCDMA Band V	826.4	0.4	23.27	/	23±1	24	0.05480	0.551
LTE Band 2	1880.0	1.1	27.01	/	27±1	28	0.16171	1.000
LTE Band 4	1732.5	0.7	21.92	/	22±1	23	0.04664	1.000

LTE Band 7	2560.0	0.3	21.79	/	22±1	23	0.04253	1.000
LTE Band 17	710.0	-0.4	24.26	/	24±1	25	0.05738	0.473
LTE Band 41	2647.5	-0.5	21.95	/	22±1	23	0.03538	1.000

The GPRS 850, WLAN and BT can transmit simultaneously

GPRS 850 Power density at 20cm (mW/cm^2)	WLAN Power density at 20cm (mW/cm^2)	BT Power density at 20cm (mW/cm^2)	Total Power density at 20cm	Power density Limits
0.11448	0.01962	0.00247	0.22725	1

Note:
For a more detailed features description, Please refer to the RF Test Report.

**********THE END**********