1 Safety Human Exposure

1.1 Radio Frequency Exposure Compliance

1.1.1 Electromagnetic Fields

RESULT: **Pass**

Test Specification

Test standard : CFR47 FCC Part 2: Section 2.1091
CFR47 FCC Part 1: Section 1.1307(b), 1.1310
FCC KDB Publication 447498 D04 Interim General RF Exposure Guidance v01 Appendix B.3

➢ **FCC requirements**

FCC requirement: 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 limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 20cm normally can be maintained between the user and the device.

MPE Calculation Method according

Power Density: $S_{(mW/cm^2)}= PG/4\pi R^2$ or $EIRP/4\pi R^2$

Where:

S = power density (mW/cm^2)

P = power input to the antenna (mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna (cm)

From the peak RF output power, the minimum mobile separation distance, d=20 cm, as well as the antenna gain, the RF power density can be calculated as below:

$S_{(mW/cm^2)}= PG/4\pi R^2$

a) EUT RF Exposure Evaluation standalone operations

Test Mode	Maximum Power (Pi)		Limit (mW)
	(dBm)	(mW)	
RF ID*	-35.2	0.0003	1.0
*: The maximum E-field is near 60 dBμV/m@3m, i.e.-35.2dBm after converted to power.			

Test Mode (The worst-case)	Maximum e.i.r.p		$S_{(mW/cm^2)}= PG/4\pi R^2$	Limit $_{(mW/cm^2)}$
	(dBm)	(mW)		
2.4GHz Wi-Fi**	22.16	164.43	0.0327	1.0
**: The power data cited from the pre-certificated single module FCC ID 2ANDL-TYWE3SE.				

b) EUT RF Exposure Evaluation simultaneous transmission operations

Simultaneous transmission mode	The sum of the ratios	Result
2.4GHz Wi-Fi + RFID	0.0327/1.0+0.0003/1.0<<1.0	Pass

"RF Radiation Exposure Statement Caution: This Transmitter must be installed to provide a separation distance of at least 20 cm from all persons."