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 1.1310
FCC KDB Publication 447498 v06, section 7

- **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 to KDB 447498 v06

Power Density: $S_{(mW/cm^2)}$= PG/4πR² or EIRP/4πR²

Where:

S = power density (mW/cm²)

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 (Max. -11.67dBi for 850MHz band and -0.46dBi for 1900MHz band), the RF power density can be calculated as below:

$S_{(mW/cm^2)}$= PG/4πR²

EUT RF Exposure Evaluation operations, Worst Case mode

Test Mode	Conducted average Power (dBm)	Antenna Gain (dBi)	Measured e.i.r.p (dBm)	$S_{(mW/cm^2)}$= PG/4πR²	Limit $_{(mW/cm^2)}$
GSM 850	32.6	-11.67	20.93	0.0247	0.549
WCDMA 850	24.14	-11.67	12.47	0.0035	0.549
PCS1900	29.8	-0.46	29.34	0.1710	1.000
WCDMA 1900	23.59	-0.46	23.13	0.0409	1.000
Verdict: compliance.					

Note: The power data comes from the pre-certificated module “FCC ID: XPY1CGM5NNN”

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