



东莞奇魁电子科技有限公司
QI QUICK TECHNOLOGY CO, LTD

Model No.: 9906

Rev.: 0.1

Car Charger Transmitter Module Specification

Model Name: 3 Coil Module Qi Transmitter
Model No.: 9906
Date of Release: 24 MAR,2018
Version: 0.1





1. Introduction

This product is a fast wireless charger designed for the automotive aftermarket. It can support Samsung mobile phone 10W and Apple mobile phone 7.5 W wireless charging, can be compatible and mainstream receivers on the market, and supports WPC Qi 1.2.4 version certification. This product was launched in the third quarter of 2018.

2. Product Features

- Can realize fast wireless charging
- Expanded free positioning using three coil transmit array
- WPC A28-Type transmitter coil, 70 mm × 25 mm free positioning area
- Designed for 9-Vdc systems
- Optional input power SEPIC converter to produce 9 Vdc from 6 .5V to 30 V
- Conforms to wireless power consortium (WPC)A28 transmitter type specification
- Support FOD function detection and comply with WPC1.2.4 standard
- Digital demodulation reduces components
- Over-current protection
- LED indication of charging state and fault status

3. Applications

- WPC 1.2 Wireless Chargers:
 - In Cars and Other Vehicle Accessories
 - Qi-Certified Smart Phones and Other Handhelds
 - Industrial and Medical Applications

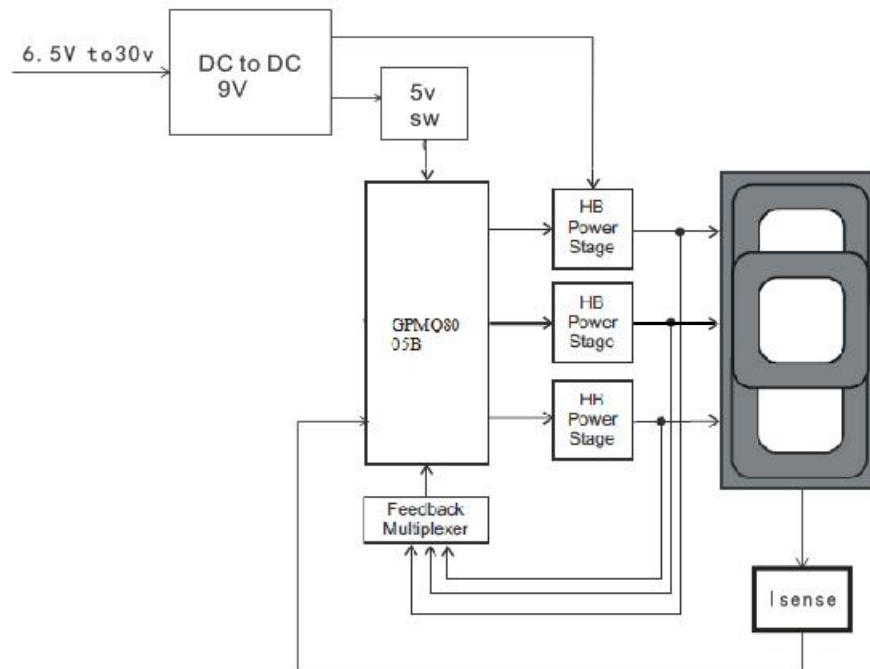


4. Electrical Specification

	Parameters	Test Condition	Min	Tpy	Max	Unit
Input Characteristics-Transmitter 9906						
V-in	Input Voltage		8	12	30	V
I-in	Input Current	(Max. Load test with 5W/10W Qi quick Rx)	0.25	0.58	1	A
	Input on-Load Current	Vin=12V,Receiver I=0A		20	50	mA
	Input stand-by current	Vin=12v		18.75		mA
Output Characteristics –5W Receiver Qi Quick						
V-out	Output Load	Vin=Nom, I=Nom	4.75	5	5.25	V
	Output ripple	Vin=12V,Receiver I=1A			200	mV _{PP}
I-out	I out=Min to Max	I out=Min to Max	0		1	A
	Output over current	I out=Min to Max	1		1.1	A
	System Efficiency	V in=12V, P out Rx= 2.5W		70	72	%
	System Frequency		110		205	Khz
Output Characteristics –10W Receiver Qi Quick						
V-out	Output Load	Vin=Nom, I=Nom	8.55	9	9.45	V
	Output ripple	Vin=12V,Receiver I=1.1A			200	mV _{PP}
I-out	I out=Min to Max	I out=Min to Max	0		1.1	A
	Output over current	I out=Min to Max			1.3	A
	System Efficiency	V in=12V, P out Rx= 10W			78	%
	System Frequency		110		205	Khz

- Operating Temperature: 0 to +40°C
- Storage Temperature: -20 to +70°C

5. Simplified Design Diagram



6. System Efficiency

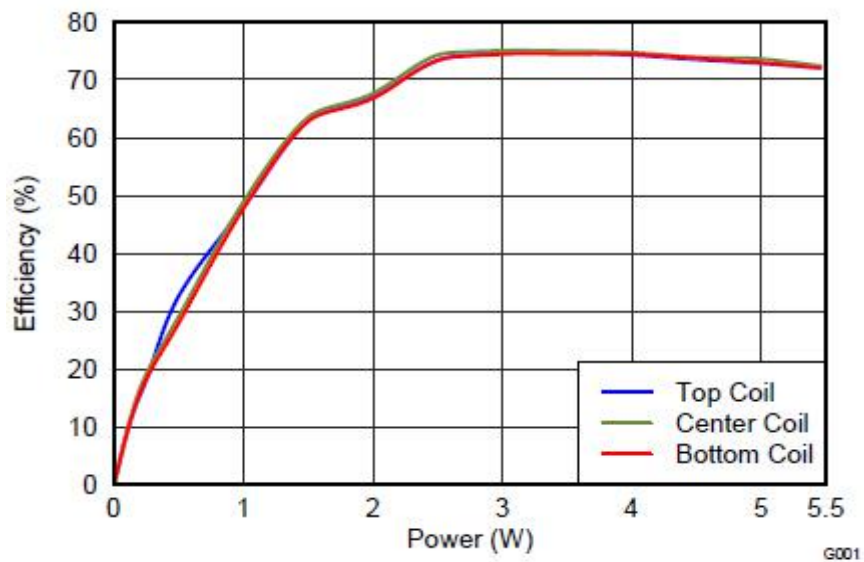


Fig 1 QT1283 System Efficiency (test with 5W Quick Rx)



7. Functional Operation:

7.1 LED Status indication: (TBC Updated)

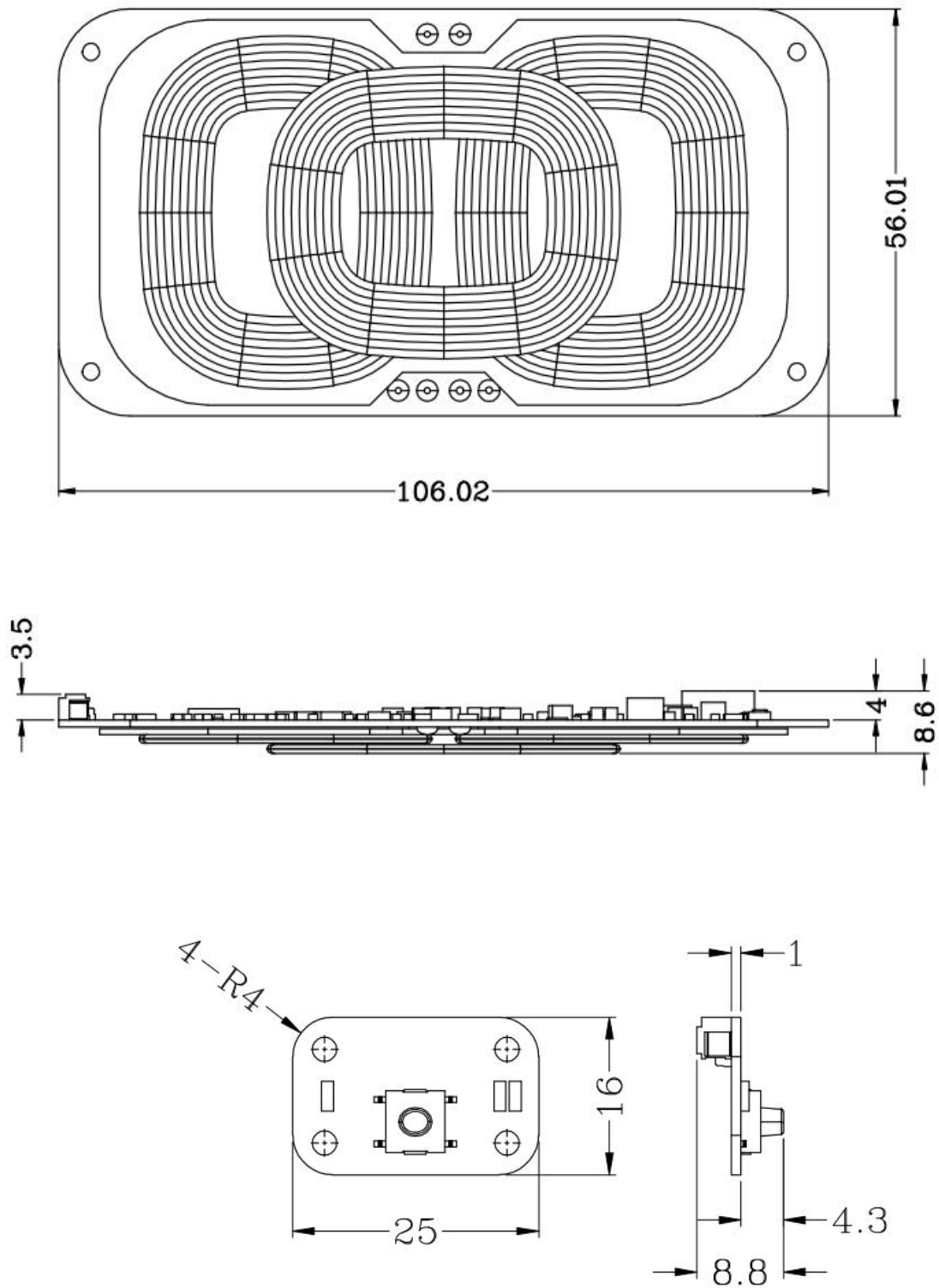
模式 / Mode		待机 / Standby	充电 / Charging	充满 / Charging Full	错误 / Error
Mode 1. While the PCBA is in standby the LED light will be on . The LED color and function will be according to this diagram.	红色 / Red	On	Off	Off	Blink Slow
	绿色 / Green	Off	Off	On	Off
	蓝色 / Blue	Off	On	Off	Off

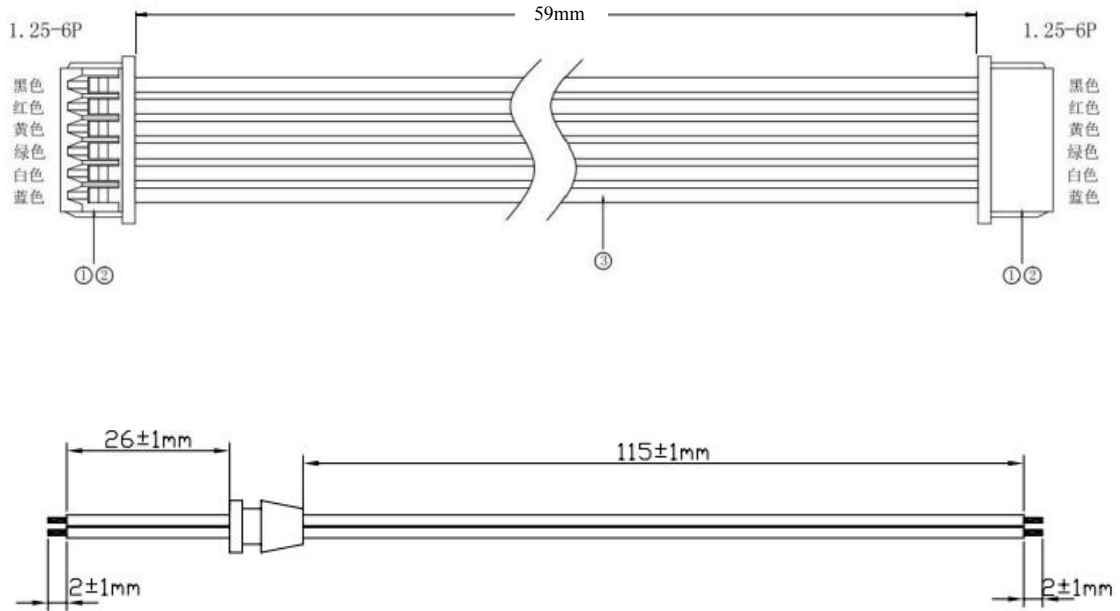
Mode 2. While the PCBA is in standby the LED light will be off . The LED will turn on when the phone begins charging (color according to this diagram)	红色 / Red	Off	Off	Off	Blink Slow
	绿色 / Green	Off	Off	On	Off
	蓝色 / Blue	Off	On	Off	Off

SW1	MODE1	MODE2	POWER(ON/OFF)
	短按 1 秒	短按 1 秒	长按 2 秒

Notes 1: There should only be two modes. The unit should default to mode 1 when powered on. To switch between mode 1 and 2 the user should press the button. If the user continues pressing the button it will cycle between mode 1 and mode 2.

8. Mechanical Drawing





9. Packing Information

- Size (L x W x H): 106 x 56 x 8.6mm
- Net weight:
- Glossy weight:

11. Environmental Specification

- RoHS
- WEEE
- FCC, CE

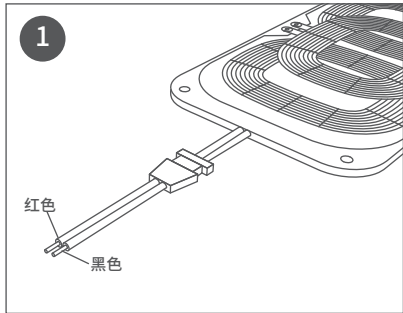
If the label of the module is not visible on the final device, the final device should contain the following text: "Contains FCC ID:2AQPB-9906"

Product Name: Wireless charger modules

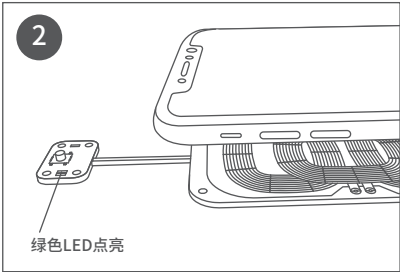
Model No.: 9906

FCC ID: 2AQPB-9906

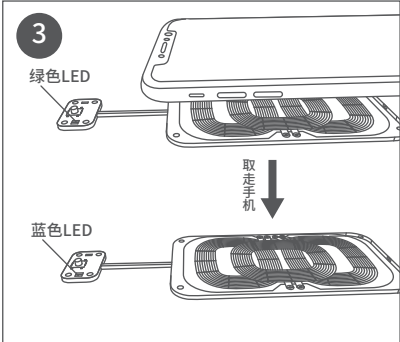
9906 车载无线充电模块 充电使用说明书



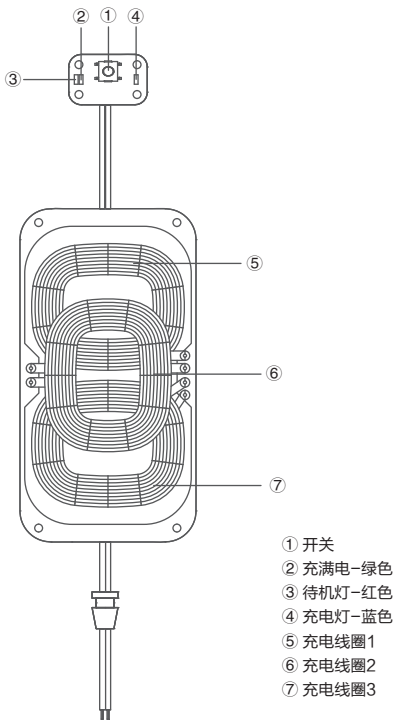
红色线连接汽车电源DC12V+,黑色线连接汽车电源DC12-,蓝色LED点亮,进入待机模式。



将具有无线电源接收功能的手机放置产品线圈中间位置,绿色LED点亮,即可以实现无线充电功能。



充电完成,取走手机。绿色LED熄灭。蓝色LED点亮。



- ① 开关
- ② 充满电-绿色
- ③ 待机灯-红色
- ④ 充电灯-蓝色
- ⑤ 充电线圈1
- ⑥ 充电线圈2
- ⑦ 充电线圈3

LED模式功能说明

模式1	支持	充电	充满	错误
当pcba处于待机状态时, led灯将会亮着。led的颜色和功能将根据右边这个功能图。	红色LED	开	关	闪烁
	绿色LED	关	关	开
	蓝色LED	关	开	关

模式2	支持	充电	充满	错误
当pcba处于待机状态时, led灯将会亮着。led的颜色和功能将根据这个图。	红色LED	关	关	闪烁
	绿色LED	关	关	关
	蓝色LED	关	开	关

开关功能说明:
A:关机功能:待机红色LED灯状态下长按三秒,红色LED闪烁后关机。
B:开机功能:关机状态下长按三秒红色LED灯闪烁后开机。
C:模式切换:短按一下由模式1与模式2循环切换。

注意

- 当充电器上的接收装置放置的位置不对, 或放置非Qi标准指定发射装置时充电器不进行充电。
- 当手机放上去的时候出现错误, 需拿起来重放, 而不是继续放著左右对位。

兼容性

- 本无线充电产品可以对市场上符合WPC标准的接收器兼容使用。

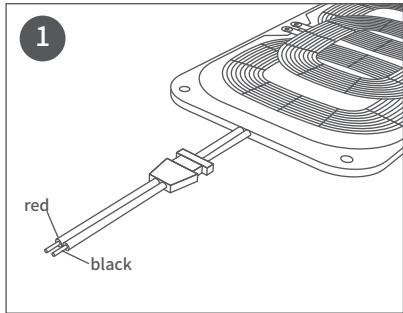
FCC声明:

该设备符合FCC规则的第15部分。操作受以下条款限制两个条件:
(1) 本设备不会造成有害干扰, 并且
(2) 本设备必须接受任何收到的干扰, 包括可能产生的干扰导致不希望的操作。
警告: 未经责任方明确批准的变更或修改合规性可能会使用户操作设备的权限失效。
注意: 本设备已经过测试, 符合B类限制数字设备, 依照FCC规则的第15部分。这些限制旨在提供合理保护, 防止住宅内的有害干扰。

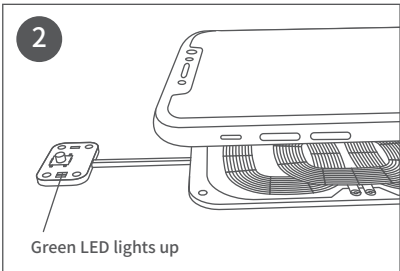
这个设备会产生使用并可能辐射无线电频率能量, 如果没有安装并按照说明使用, 可能会对收音机造成有害干扰通信。但是, 不能保证干扰不会发生在a
特别安装。如果此设备确实会对无线电或电台造成有害干扰电视接收, 可以通过关闭和打开设备来确定鼓励用户尝试通过以下一项或多项措施来纠正干扰措施:
重新调整或摆放接收天线。
增加设备和接收器之间的距离。
将设备连接到不同于该设备的电路上的插座
接收器已连接。
咨询经销商或有经验的无线电/电视技术人员寻求帮助。

FCC辐射暴露声明:
本设备符合FCC规定的辐射暴露限值
不受控制的环境。这个设备应该安装和操作
散热器和身体之间的距离至少为20厘米

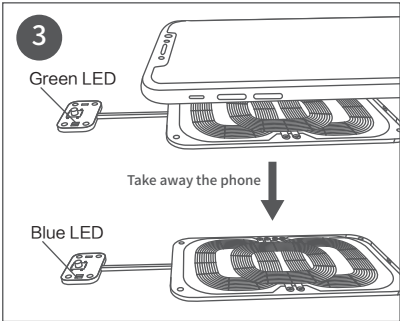
9906 Wireless Charging Module for Vehicle Using Guide



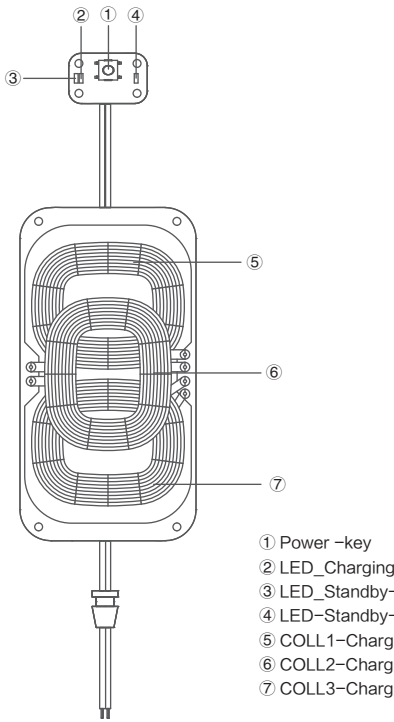
Connect red line to car power DC12V+, Connect black line to car power DC12V-. When red light on the device is in standby mode.



Put mobile phone with wireless charging receiver into the area of 3 coils. The blue light will be on which means wireless charging is working.



Green light on means charging full. When take mobile phone away, the green light will be off and red light will be on.



- ① Power -key
- ② LED_Charging-green
- ③ LED_Standby-red
- ④ LED-Standby-blue
- ⑤ COLL1-Charging
- ⑥ COLL2-Charging
- ⑦ COLL3-Charging

LED Mode Function Guide

Mode1		Standby	Charging	Charging Full	Error
Mode 1. While the PCBA is in standby the LED light will be on. The LED color and function will be according to this diagram.	Red	On	Off	Off	Blink Slow
	Green	Off	Off	On	Off
	Blue	Off	On	Off	Off

Mode2		Standby	Charging	Charging Full	Error
Mode 2. While the PCBA is in standby the LED light will be on. The LED color and function will be according to this diagram.	Red	Off	Off	Off	Blink Slow
	Green	Off	Off	On	Off
	Blue	Off	On	Off	Off

Switch On/ Off:
A: Switch Off:When under standby mode, red light is on, push switch last for 3 seconds. Red light flashes then power off.
B: Switch on:When under power off, push switch last for 3 seconds. Red light flashes then power on.
C: Mode Switch:Push switch one time will switch mode1 to mode 2 circularly.

Notice:

- Please use qualified Qi receiving device for charging. If the position of receiver is not right, It may show no connection or cannot charge. Please adjust the position.

Compatibility:

- This production is compatible with all wireless charging receiver with WPC standard.

FCC STATEMENT :
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.
Warning: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
Reorient or relocate the receiving antenna.
Increase the separation between the equipment and receiver.
Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body