

Radio frequency radiation exposure evaluation: portable devices

RESULT :

Pass

Test Specification

Test item	: Bluetooth Low Energy, Bluetooth Classic BR/EDR, and 802.11bgn wireless radio module
Identification / Type No.	: RS916AC0, RS916AC1
FCC ID	: QOQRS916AC
IC	: 5123A-RS916AC
Test standard	: CFR47 FCC Part 2: Section 2.1093 FCC KDB Publication 447498 D04 RSS-102 Issue 5

Calculation Method according to KDB 447498 D04

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases} \quad (\text{B.2})$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and ERP20cm is per Formula (B.1). The example values shown in Table B.2 are for illustration only.

For RS916AC0 FCC Measurement Record:

Test Mode	Conducted Power (dBm)	ERP (dBm)	ERP (mW)	Minimum Separation Distances (mm)	Limit (mW)
BLE	14.43	15.08	32.21	20	38
BR+EDR	13.37	14.02	25.23	20	38
2.4GHz band Wi-Fi	16.17	16.82	48.08	25	59

For RS916AC1 FCC Measurement Record:

Test Mode	Conducted Power (dBm)	Conducted Power (mW)	Minimum Separation Distances (mm)	Limit (mW)
BLE	13.19	20.84	20	38
BR+EDR	11.59	14.42	15	22
2.4GHz band Wi-Fi	16.87	46.64	25	59

For RS916AC0 ISED Measurement Record:

Test Mode	Conducted Power (dBm)	E.I.R.P (dBm)	E.I.R.P (mW)	Minimum Separation Distances (mm)	Limit (mW)
BLE	14.43	17.23	52.84	30	83
BR+EDR	13.37	16.17	41.40	25	52
2.4GHz band Wi-Fi	16.17	18.97	78.89	30	83

For RS916AC1 ISED Measurement Record:

Test Mode	Conducted Power (dBm)	E.I.R.P (dBm)	E.I.R.P (mW)	Minimum Separation Distances (mm)	Limit (mW)
BLE	13.19	14.85	30.55	20	38
BR+EDR	11.59	13.25	21.13	15	22
2.4GHz band Wi-Fi	16.87	18.53	71.29	30	83

For ISED, output power level shall be the higher of the maximum conducted or effective isotropic radiated power (e.i.r.p.) source-based, time-averaged output power.

Hence the EUT is excluded from SAR evaluation if the distance between the antenna and the human body is equal or above one of the minimum distances depicted in the tables above, depending on the wireless protocol in use, in accordance with FCC KDB Publication 447498 D04 Interim General RF Exposure Guidance v01 and RSS-102 Issue 5.