

1 Safety Human Exposure

1.1 Radio Frequency Exposure Compliance

1.1.1 Electromagnetic Fields

RESULT:

Pass

Test Specification

Test item	: IDC7 Bluetooth Module
Identification / Type No.	: IDC737
FCC ID	: 2A3WYID7
IC	: 30237-IDC747
HVIN	: IDC737-A
Test standard	: CFR47 FCC Part 2: Section 2.1091 CFR47 FCC Part 1: Section 1.1310 FCC KDB Publication 447498 D01 v06 FCC KDB Publication 865664 D02 v01r02 RSS-102 Issue 5 February 2021

1.1.1.1 RF Exposure Compliance Requirement for FCC

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.

Max 0 dBi for Bluetooth.

➤ Radio Frequency Exposure Limit

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)
300-1,500	--	--	f/1500
1,500-100,000	--	--	1.0

➤ Radio Frequency Exposure Calculation Formula

$$S = \frac{PG}{4\pi R^2}$$

where: S = power density (in appropriate units, e.g. mW/cm²)

P = power input to the antenna (in appropriate units, e.g., 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 (appropriate units, e.g., cm)

or:

$$S = \frac{EIRP}{4\pi R^2}$$

where: EIRP = equivalent (or effective) isotropically radiated power

a) RF Exposure Evaluation standalone operations (worse case)

Mode	*Measured RF Output Power (dBm)	EIRP (dBm)	Distance (cm)	Power Density (mW/cm ²)	FCC Limit (mW/cm ²)
Bluetooth	6.81	6.81	20	0.001	1.0

Note:

1. *Bluetooth RF Output Power: Refer to TCT220104E013 and TCT220104E014.

1.1.1.2 RF Exposure Compliance Requirement for IC

The EUT shall comply with the requirement of RSS-102 section 2.5.2.

Exemption from Routine Evaluation Limits – RF Exposure Evaluation

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;

- RF exposure evaluation exempted power for 2.4GHz: 2.67 W

The nominal maximum conducted output power specified:

Max 0.00 dBi for Bluetooth.

The Max. e.i.r.p. for Bluetooth: 5.52 dBm = 0.0036W

Note:

1. *Bluetooth RF Output Power: Refer to TCT230313E022 and TCT230313E023.

The e.i.r.p. for Bluetooth is less than the RF exposure evaluation exempted power. So RF exposure evaluation is not required.

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