

## RF exposure information

## **Product description**

Applicant YAESU MUSEN CO., LTD.

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Shinagawa-ku, Tokyo 140-0002 Japan

FCC ID K6620725X20

Model FT3DR

Test item 144/430MHz DIGITAL/ANALOG TRANSCEIVER (Bluetooth)

Operating frequency range 2402 - 2480 MHz

Measured conducted output power: -0.1 dBm@2402 MHz, -0.2 dBm@2440 MHz, -1.6 dBm@ 2480 MHz

(result is referred from test report WE190325BC1-14 issued by SGS Japan Inc.)

Maximum antenna gain +2.14 dBi

Specification of

+2 dBm maximum output power

Specification of

output power tolerance (tolerance is included in specification of maximum output power)

No declaration by the applicant ( $\leq 5 \text{ mm}$ ) Separation distance :

## Analysis for portable use

Standalone SAR test exclusion considerations are defined in the KDB 447498 v06 chapter 4.3.1.

a) For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] ·  $[\sqrt{f_{(GHz)}}] \le 3.0$  for 1-g SAR, and  $\le 7.5$  for 10-g extremity SAR, 30 where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation<sup>31</sup>
- The result is rounded to one decimal place for comparison
- The values 3.0 and 7.5 are referred to as numeric thresholds in step b) below

The test exclusions are applicable only when the minimum test separation distance is  $\leq 50$  mm, and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 4.1 f) is applied to determine SAR test exclusion.

The measured maximum conducted output power is -0.1 dBm (0.98 mW).

The specification of maximum output power +2.0 dBm (1.58 mW), this value is highest so we use this value to calculation.

Appling above formula for this device,  $(1.58 \text{ mW} / 5 \text{ mm}) * \sqrt{2.480 \text{ GHz}} = 0.498$ , rounded to one decimal = 0.5

Result is less than 3.0, so YAESU MUSEN CO., LTD. 144/430MHz DIGITAL/ANALOG TRANSCEIVER (Bluetooth) (FT3DR) meets the SAR exclusion.

For reference, other frequency results are shown below.

General RF exposure =  $(1.58 \text{ mW} / 5 \text{ mm}) * \sqrt{2.402 \text{ GHz}} = 0.490$ , rounded to one decimal = 0.5 General RF exposure =  $(1.58 \text{ mW} / 5 \text{ mm}) * \sqrt{2.444} \text{ GHz} = 0.494$ , rounded to one decimal = 0.5

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