

# RF Exposure Evaluation

Test report  
On Behalf of  
Chervon (China) Trading Co.,Ltd  
For  
Radio with Bluetooth  
Model No.: OB20RDB, 241-0446

FCC ID: YWKOB20RDB

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## 1 General Description of EUT

Product Name:	Radio with Bluetooth
Model/Type reference:	OB20RDB
Serial Model:	241-0446
Model Difference	All models have the same functionality, software and electronics, only the color, front frame shape and model names may differ. Test sample model: OB20RDB
Trade Mark	N/A
FCC ID	YWKOB20RDB
Hardware Version:	V1.0
Software Version:	V1.5
Version:	Supported EDR
Modulation:	GFSK, $\pi/4$ DQPSK
Operation frequency:	2402MHz~2480MHz
Channel number:	79CH
Channel separation:	1MHz
Antenna type:	PCB Antenna
Antenna gain:	0 dBi
Power supply:	DC 20V from battery DC 3.0V from AA*2 battery

Note: 1. For more details, refer to the user's manual of the EUT.  
2. Priority use of DC 20V battery

## 2 RF Exposure Compliance Requirement

### 2.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

#### 4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

### 2.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by:

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

$f(\text{GHz})$  is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation<sup>17</sup>

The result is rounded to one decimal place for comparison

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 is applied to determine SAR test exclusion

### 3 EUT RF Exposure

GFSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	-2.229	$-2 \pm 1$	-1	0.794	0.246	3.0
Middle (2441MHz)	-3.925	$-3 \pm 1$	-2	0.631	0.197	
Highest (2480MHz)	-3.786	$-3 \pm 1$	-2	0.631	0.199	
Conclusion: the calculated value $\leq 3.0$ , SAR is exempted.						

$\pi$ /4DQPSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	-1.785	$-2 \pm 1$	-1	0.794	0.246	3.0
Middle (2441MHz)	-3.653	$-3 \pm 1$	-2	0.631	0.197	
Highest (2480MHz)	-3.338	$-3 \pm 1$	-2	0.631	0.199	
Conclusion: the calculated value $\leq 3.0$ , SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: HK1912063125-E