

RF Exposure Evaluation

FCC ID: 2ARZ3-BT-X50

1. Client Information

Applicant : Technaxx Deutschland GmbH & Co. KG
Address : Kruppstrasse 105 60388 Frankfurt am Main Germany
Manufacturer : Technaxx Deutschland GmbH & Co. KG
Address : Kruppstrasse 105 60388 Frankfurt am Main Germany

2. General Description of EUT

EUT Name	:	SPEAKER	
Models No.	:	BT-X50,FY-43,FY-25,FY-35,FY-34,FY-40,FY-42,FY-38,FY-39AB,FY-41,FY-45,FY-46,FY-47,FY-49,FY-50	
Model Difference	:	All these models are in the same PCB, layout and electrical circuit, the only difference is model name.	
Product Description	:	Operation Frequency:	Bluetooth V5.0(BT): 2402~2480 MHz
	:	Antenna Gain:	0dBi PCB Antenna
Power Rating	:	Input: DC 5V DC 3.7V 500mAh by Li-ion battery	
Software Version	:	AC6925C_2.6.1	
Hardware Version	:	V1.1	
Connecting I/O Port(S)	:	Please refer to the User's Manual	
Remark	:	The antenna gain provided by the applicant, the verified for the RF conduction test provided by TOBY test lab.	

Note: More test information about the EUT please refer the RF Test Report.

SAR Test Exclusion Calculations

1. FCC: According to KDB 447498 D01 Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies v06.

(1) Clause 4.3: General SAR test reduction and exclusion guidance

Sub clause 4.31: Standalone SAR test exclusion considerations

1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6GHz at test separation distance ≤ 5 mm are determined by:

$$\frac{[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{(\text{GHz})}}]}{\leq 3.0 \text{ for 1-g SAR}}$$

$$\frac{[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{(\text{GHz})}}]}{\leq 7.5.0 \text{ for 10-g SAR}}$$

2. Calculation:

Test separation: 5mm						
Bluetooth Mode (GFSK)						
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dbm)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.402	-6.596	-6±1	-5	0.316227766	0.0980204	3.0
2.441	-7.277	-7±1	-6	0.251188643	0.0784899	3.0
2.480	-8.195	-8±1	-7	0.199526231	0.0628428	3.0
Bluetooth Mode (π/4-QPSK)						
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dbm)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.402	-5.932	-6±1	-5	0.316227766	0.0980204	3.0
2.441	-6.725	-7±1	-6	0.251188643	0.0784899	3.0
2.480	-7.614	-8±1	-7	0.199526231	0.0628428	3.0

Test separation: 5mm		
The worst RF Exposure Evaluation		
Worst Calculation Value	Total Calculation Value	Threshold Value
Bluetooth Mode		
0.0980204	0.0980204	3.0

So the worst RF Exposure Evaluation is calculated as **0.0980204 < limit 3.0**.
 The measurement results comply with the FCC Limit per 47 CFR 2.1093 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 v06.

-----END OF REPORT-----