



Test Report No.: FM2212WDG0106-1



# RF EXPOSURE REPORT

Applicant	Tonly Technology Co., Ltd.
Address	Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, P.R. China

Manufacturer or Supplier	Sony Corporation
Address	1-7-1 Konan Minato-ku Tokyo, 108-0075 Japan
Product	ACTIVE FRONT SPEAKER
Brand Name	SONY
Model	YY2078C1
Additional Model & Model Difference	N/A
Date of tests	Jan. 05, 2023 ~ Feb. 01, 2023

- FCC Part 2 (Section 2.1091)
- KDB 447498 D01
- IEEE C95.1

**CONCLUSION: The submitted sample was found to COMPLY with the test requirement**

Tested by Lucas Chen  
Project Engineer / EMC Department

Approved by Glyn He  
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Date: Mar. 03, 2023

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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FM2212WDG0106-1	Original release	Mar. 03, 2023

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## 1. CERTIFICATION

<b>FCC ID:</b>	ZVAYY2078C1
<b>PRODUCT:</b>	ACTIVE FRONT SPEAKER
<b>BRAND NAME:</b>	SONY
<b>MODEL NO.:</b>	YY2078C1
<b>ADDITIONAL NO.:</b>	N/A
<b>APPLICANT:</b>	Tonly Technology Co., Ltd.
<b>STANDARDS:</b>	FCC Part 2 (Section 2.1091)
	KDB 447498 D01
	IEEE C95.1



## 2. RF EXPOSURE LIMIT

### LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

FREQUENCY RANGE (MHz)	ELECTRIC FIELD STRENGTH (V/m)	MAGNETIC FIELD STRENGTH (A/m)	POWER DENSITY (mW/cm <sup>2</sup> )	AVERAGE TIME (minutes)
<b>LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE</b>				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

## 3. MPE CALCULATION FORMULA

$$Pd = (Pout * G) / (4 * pi * r^2)$$

where

Pd = power density in mW/cm<sup>2</sup>

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

## 4. CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.



## 5. ANTENNA GAIN

The EUT has two modules, the “BM82A” and the “BM65T”

The antennas provided to the EUT, please refer to the following table:

Module	Transmitter Circuit	Peak Gain (dBi)	Antenna Type
BM82A	Chain 0	4.11	External PCB Antenna
BM65T	Chain 0	3.4	PCB Antenna

## 6. CALCULATION RESULT OF MAXIMUM CONDUCTED AV POWER

### For Module “BM82A”

The tuned conducted Average Power (declared by client)

Mode	Frequency (MHz)	Target Power (dBm)	Tolerance (dBm)	Lower Tolerance (dBm)	Upper Tolerance (dBm)
GFSK	2402-2480	8	+2	6	10
8DPSK	2402-2480	6	+2	4	8
BT-LE GFSK (1 Mbps)	2402-2480	4	+2	2	6
BT-LE GFSK (2 Mbps)	2402-2480	4	+2	2	6

The measured conducted Average Power

Mode	Frequency (MHz)	Averaged Power (dBm)
GFSK	2441	8.65
8DPSK	2441	6.72
BT-LE GFSK (1 Mbps)	2440	5.24
BT-LE GFSK (2 Mbps)	2480	5.21



**For Module “BM65T”**

The tuned conducted Average Power (declared by client)

Mode	Frequency (MHz)	Target Power (dBm)	Tolerance (dBm)	Lower Tolerance (dBm)	Upper Tolerance (dBm)
GFSK	2402-2480	3	+2	1	5
8DPSK	2402-2480	1	+2	-1	3
BT-LE GFSK	2402-2480	3	+2	1	5

The measured conducted Average Power

Mode	Frequency (MHz)	Averaged Power (dBm)
GFSK	2480	3.09
8DPSK	2480	2.43
BT-LE GFSK	2480	3.08

MODULE	FREQUENCY BAND (MHz)	MAX AVERAGE POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
BM82A	2402-2480	10	4.11	20	0.005125	1.0
BM65T	2402-2480	5	3.4	20	0.001376	1.0

**CONCLUSION:**

The modules “BM82A” and “BM65T” can transmit simultaneously, the formula of calculated the MPE is:

**CPD1 / LPD1 + CPD2 / LPD2 + .....etc. < 1**

**CPD = Calculation power density**

**LPD = Limit of power density**

**(0.005125 / 1)+( 0.001376 / 1)= 0.006501<1, which is less than the “1” limit.**

--- END ---