



Maximum Permissible Exposure

FCC ID: INGSiem-121T
APPLICANT: JTS PROFESSIONAL CO., LTD.
Application Type: Certification
Product: In-Ear Monitoring System
Model No.: SIEM-121T
Brand Name: JTS
FCC Rule Part(s): Part 2.1091 (Mobile)
Received Date: August 30, 2024

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Testing Laboratory
3261

The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report. Test results reported herein relate only to the item(s) tested.

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Revision History

Report No.	Version	Description	Issue Date
2408TWU101-U4	1.0	Original Report	2024-11-20

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name	In-Ear Monitoring System
Model No.	SIEM-121T
Brand Name	JTS
Operating Frequency	SRD 2.4GHz: 2412.05 ~ 2424.05MHz UHF: 470MHz ~ 608MHz
Modulation	SRD 2.4GHz: FSK UHF: FM

1.2. Antenna Description

SRD 2.4GHz	
Antenna Type	Chip Antenna
Antenna M/N	AT3216-B2R7HAA
Antenna Gain	0.5dBi
UHF	
Antenna Type	Dipole Antenna
Antenna M/N	AN0500-13M01BBN, AN0570-13M01BBN
Antenna Gain	0.8dBi, 1.50dBi

2. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

2.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
0.3-1.4	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

Note : (1) f= Frequency in MHz , (2) * = Plane-wave equivalent power density

Calculation Formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

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

Under normal use condition, is at least 20cm away from the body of the user .

So, this device is classified as **Mobile Device**.

2.2. Test Result

Mode	Frequency (MHz)	EIRP (dBm)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
SRD 2.4G	2412.05~2424.05	-6.48	20	0.000045	1
UHF	470~608	6.94	20	0.000983	0.3133

Note: dBm = dBuV/m@3m – 95.23.

Conclusion :

$$CPD1/LPD1 + CPD2/LPD2 + \dots + CPDN/LPDN \leq 1$$

CPD : Calculation Power Density

LPD : Limit of Power Density

Mode	Power Density	Limit	Conclusion	Result (≤ 1)
SRD 2.4G	0.000045	1	0.003183	Pass
UHF	0.000983	0.3133		

So, device can comply with FCC radiation exposure requirement specified in the FCC Rule 2.1091.

_____ The End _____