

RF Exposure Evaluation declaration

Product Name : SoundWare XS Digital Cinema
Model No. : SoundWare XS Digital Cinema
FCC ID : R48-SWXSDCRX

Applicant : Meiloon Industrial Co., Ltd.

Address : NO. 77, LANE 1775, CHUEN-RYH ROAD, TAOYUAN
CITY, TAIWAN

Date of Receipt : Nov. 01, 2011

Date of Declaration : Dec. 01, 2011

Report No. : 11B074R-RFUSP42V01

The declaration results relate only to the samples calculated.

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1. RF Exposure Evaluation

1.1. 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				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	F/1500	6
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * r^2)$

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

P_d is the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

1.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 18°C and 78% RH.

1.3. Test Result of RF Exposure Evaluation

Product : SoundWare XS Digital Cinema
 Test Item : RF Exposure Evaluation
 Test Site : No.3 OATS

1Mbps (GFSK) Output Power Into Antenna & RF Exposure Evaluation Distance (-3.52dBi):

Channel	Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)
00	2402.00	4.6132	0.000408
39	2441.00	4.5186	0.000400
78	2480.00	4.0926	0.000362

The RF exposure at 20 cm is below limit.

3Mbps (8DPSK) Output Power Into Antenna & RF Exposure Evaluation Distance (-3.52dBi):

Channel	Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)
00	2402.00	4.0365	0.000357
39	2441.00	3.6983	0.000327
78	2480.00	3.1189	0.000276

The RF exposure at 20 cm is below limit.