

RF Exposure Evaluation declaration

Product Name : 1900 MHz Dual-Band Selective Repeater

Model No. : TS-OR16RD2-30

FCC ID U5TTS-OR16RD2

Applicant : Beijing Telestone Technology Co., Ltd.

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Report No. : 077078R-HP-US-RFEXP

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	30
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

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: 23°C and 58% RH.

1.3. Test Result of RF Exposure Evaluation

Product : 1900 MHz Dual-Band Selective Repeater
Test Item : RF Exposure Evaluation
Test Site : N/A

註解 [u1]: Refer "Product"

Antenna Gain

The peak gain of the antenna measured in fully anechoic chamber is 8dBi.

Output Power Into Antenna & RF Exposure Evaluation Distance (8dBi):

PCS 1900

Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 30 cm (mW/cm ²)	Limit (mW/cm ²)	Result
1880	259.4179	0.1447	1	PASS
1960	860.9938	0.4803	1	PASS

PCS 1900 GPRS

Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 30 cm (mW/cm ²)	Limit (mW/cm ²)	Result
1880	214.7830	0.1198	1	PASS
1960	933.2543	0.5207	1	PASS

WCDMA (Channel 1960MHz, 12.2Kbps RMC)

Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 30 cm (mW/cm ²)	Limit (mW/cm ²)	Result
1880	273.5269	0.1526	1	PASS
1960	891.2509	0.4972	1	PASS

CDMA2000 (RC1, Traffic Channel @9600 bps)

Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 30 cm (mW/cm ²)	Limit (mW/cm ²)	Result
1880	238.2319	0.1329	1	PASS
1960	1235.9474	0.6895	1	PASS

CDMA2000 1x EVDO (FTAP/RTAP and subtype 0 PHY configurations)

Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 30 cm (mW/cm ²)	Limit (mW/cm ²)	Result
1880	257.6321	0.1437	1	PASS
1960	926.8298	0.5171	1	PASS