

RF EXPOSURE EVALUATION

1. PRODUCT INFORMATION

Product Description	VR All-in-One HMD
Model Name	UX598C, CVR-255, UX598
FCC ID	TZIUX598

2. EVALUATION METHOD

According to KDB 447498 D01 cl. 4.3.1:

a) For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$

b) For 100 MHz to 6 GHz and test separation distances > 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

1) $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot (f(\text{MHz})/150)]\}$ mW, for 100 MHz to 1500 MHz

2) $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot 10]\}$ mW, for > 1500 MHz and ≤ 6 GHz

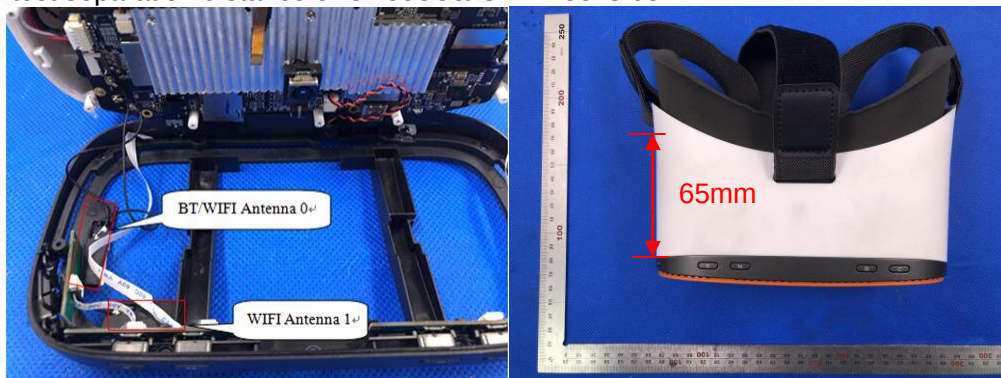
3. CALCULATION

Take 2.4G WIFI as an example

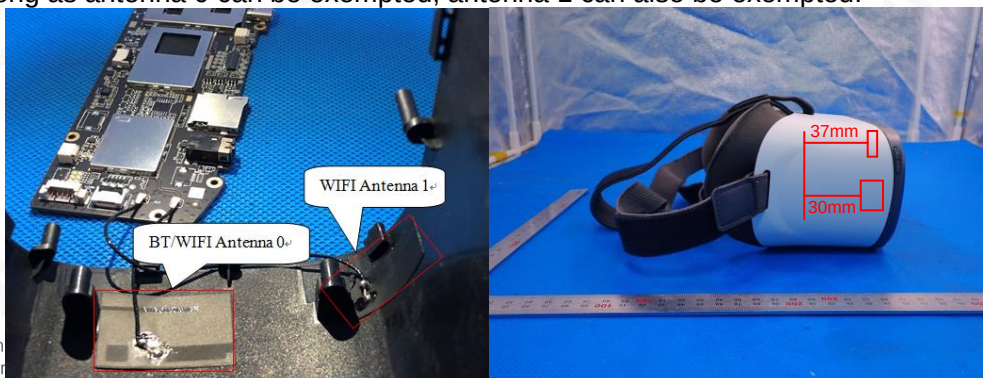
$P_t = 14.14 \text{ dBm} = 25.94 \text{ mW}$

The value of the Maximum output power P_t is referred to the test report of the AGC03195200602FE05.

The test separation distance of UX598C& CVR-255 is 65mm.



The test separation distance of antenna0 is 30mm and antenna1 is 37mm for UX598. As long as antenna 0 can be exempted, antenna 1 can also be exempted.



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Attestation of Global Compliance(Shenzhen)Co., Ltd

Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Web: http://cn.agc-cert.com/



For UX598C and CVR-255, 2.4GHz WLAN SAR test exclusion threshold

$$=(3.0 \times 50\text{mm})/[\sqrt{2.412(\text{GHz})}] + [(65\text{mm}-50\text{mm}) \cdot 10] = 246.58\text{mW} > 25.94\text{mW},$$

 SAR evaluation for 2.4G WIFI are not required.

For UX598C and CVR-255, 2.4GHz WLAN-MIMO SAR test exclusion threshold

$$=(3.0 \times 50\text{mm})/[\sqrt{2.412(\text{GHz})}] + [(65\text{mm}-50\text{mm}) \cdot 10] = 246.58\text{mW} > 28.71\text{mW}.$$

 SAR evaluation for 2.4G WIFI-MIMO are not required.

Similarly, the SAR exemption thresholds for the following frequency bands can be obtained.

SAR test exclusion thresholds for UX598C and CVR-255					
Mode	Frequency(GHz)	Maximum source-based time averaged conducted output power including tune-up tolerance (mW)	SAR test exclusion thresholds (mW) for 1-g SAR	Minimum separation distance (mm)	Verdict
BT	2.402-2.480	5.46	246.01	65	Exempt from SAR
WLAN	2.412-2.462	25.94	246.58	65	Exempt from SAR
U-NII-1	5.15-5.25	19.19	215.91	65	Exempt from SAR
U-NII-2A	5.25-5.35	14.09	215.40	65	Exempt from SAR
U-NII-2C	5.47-5.725	12.97	212.83	65	Exempt from SAR
U-NII-3	5.725-5850	14.22	212.15	65	Exempt from SAR

SAR test exclusion thresholds for UX598C and CVR-255					
Mode	Frequency(GHz)	Maximum source-based time averaged conducted output power including tune-up tolerance (mW)	SAR test exclusion thresholds (mW) for 1-g SAR	Minimum separation distance (mm)	Verdict
WLAN-MIMO	2.412-2.462	28.71	246.58	65	Exempt from SAR
U-NII-1-MIMO	5.15-5.25	20.00	215.91	65	Exempt from SAR
U-NII-2A-MIMO	5.25-5.35	13.74	215.40	65	Exempt from SAR
U-NII-2C-MIMO	5.47-5.725	12.30	212.83	65	Exempt from SAR
U-NII-3-MIMO	5.725-5850	13.52	212.15	65	Exempt from SAR

For UX598, 2.4GHz WLAN SAR test exclusion threshold

$$=(3.0 \times 30\text{mm})/[\sqrt{2.412(\text{GHz})}] = 57.95\text{mW} > 25.94\text{mW},$$

 SAR evaluation for 2.4G WIFI are not required.

For UX598, 2.4GHz WLAN-MIMO SAR test exclusion threshold

$$=(3.0 \times 30\text{mm})/[\sqrt{2.412(\text{GHz})}] = 57.95\text{mW} > 28.71\text{mW},$$

 SAR evaluation for 2.4G WIFI-MIMO are not required.

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Similarly, the SAR exemption thresholds for the following frequency bands can be obtained.

SAR test exclusion thresholds for UX598					
Mode	Frequency(GHz)	Maximum source-based time averaged conducted output power including tune-up tolerance(mW)	SAR test exclusion thresholds(mW) for 1-g SAR	Minimum separation distance (mm)	Verdict
BT	2.402-2.480	5.46	57.60	30	Exempt from SAR
WLAN	2.412-2.462	25.94	57.95	30	Exempt from SAR
U-NII-1	5.15-5.25	19.19	39.54	30	Exempt from SAR
U-NII-2A	5.25-5.35	14.09	39.24	30	Exempt from SAR
U-NII-2C	5.47-5.725	12.97	37.70	30	Exempt from SAR
U-NII-3	5.725-5850	14.22	37.29	30	Exempt from SAR

SAR test exclusion thresholds for UX598					
Mode	Frequency(GHz)	Maximum source-based time averaged conducted output power including tune-up tolerance(mW)	SAR test exclusion thresholds(mW) for 1-g SAR	Minimum separation distance (mm)	Verdict
WLAN-MIMO	2.412-2.462	28.71	57.95	30	Exempt from SAR
U-NII-1-MIMO	5.15-5.25	20.00	39.54	30	Exempt from SAR
U-NII-2A-MIMO	5.25-5.35	13.74	39.24	30	Exempt from SAR
U-NII-2C-MIMO	5.47-5.725	12.30	37.70	30	Exempt from SAR
U-NII-3-MIMO	5.725-5850	13.52	37.29	30	Exempt from SAR

4. CONCLUSION

The SAR evaluation is not required.

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