

RF EXPOSURE EVALUATION

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)

FCC ID : **2ACWITC55CX400**

EUT Specification

| | |
|-----------------------------------|--|
| EUT | LCD TV |
| Frequency band (Operating) | <input checked="" type="checkbox"/> WLAN: 2.412GHz ~ 2.462GHz <input type="checkbox"/> WLAN: 5.18GHz ~ 5.32GHz / 5.50GHz ~ 5.70GHz <input type="checkbox"/> WLAN: 5.745GHz ~ 5825GHz <input type="checkbox"/> Others |
| Device category | <input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation) <input type="checkbox"/> Others ____ |
| Exposure classification | <input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm ²) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm ²) |
| Antenna diversity | <input type="checkbox"/> Single antenna <input checked="" type="checkbox"/> Multiple antennas <input type="checkbox"/> Tx diversity <input type="checkbox"/> Rx diversity <input type="checkbox"/> Tx/Rx diversity |
| Max. output power | 13.51dBm for 802.11b; 13.02dBm for 802.11g; 13.01Bm for 802.11n(HT20); 13.00dBm for 802.11n(HT40); |
| Antenna gain (Max) | 2.0dBi (for per antenna port Max) 5.01dBi for MIMO(Ant1+Ant2 Directional Gain) |
| Evaluation applied | <input checked="" type="checkbox"/> MPE Evaluation <input type="checkbox"/> SAR Evaluation |

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 |
|--|------------------------------|------------------------------|------------------------------------|--------------|
| (A) Limits for Occupational/Control Exposures | | | | |
| 300-1500 | -- | -- | F/300 | 6 |
| 1500-100000 | -- | -- | 5 | 6 |
| (B) Limits for General Population/Uncontrol Exposures | | | | |
| 300-1500 | -- | -- | F/1500 | 6 |
| 1500-100000 | -- | -- | 1 | 30 |

Friis transmission formula: $P_d = \frac{P_{out} \cdot G}{4 \cdot \pi \cdot R^2}$

Where

P_d = Power density in mW/cm^2 , P_{out} = 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

P_d the limit of MPE, $1mW/cm^2$. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

Measurement Result

| Operation Mode | Channel Number | Channel Frequency (MHz) | Measurement Level (dBm) | | | Limit (dBm) | Verdict |
|----------------|----------------|-------------------------|-------------------------|-------|-------|-------------|---------|
| | | | Ant1 | Ant2 | Sum | | |
| 802.11b | 1 | 2412 | 12.62 | 11.72 | -- | 30 | PASS |
| | 6 | 2437 | 12.98 | 11.97 | -- | 30 | PASS |
| | 11 | 2462 | 13.51 | 12.58 | -- | 30 | PASS |
| 802.11g | 1 | 2412 | 11.78 | 10.83 | -- | 30 | PASS |
| | 6 | 2437 | 12.01 | 10.98 | -- | 30 | PASS |
| | 11 | 2462 | 13.02 | 11.62 | -- | 30 | PASS |
| 802.11n (HT20) | 1 | 2412 | 9.62 | 9.72 | 12.68 | 30 | PASS |
| | 6 | 2437 | 9.98 | 9.97 | 12.99 | 30 | PASS |
| | 11 | 2462 | 10.51 | 9.42 | 13.01 | 30 | PASS |
| 802.11n (HT40) | 3 | 2422 | 9.82 | 9.56 | 12.70 | 30 | PASS |
| | 6 | 2437 | 10.03 | 9.51 | 12.79 | 30 | PASS |
| | 9 | 2452 | 10.51 | 9.39 | 13.00 | 30 | PASS |

Antenna 1

| Operating Mode | Test Channel | Tune up tolerance (dBm) | Max tune up conducted power(dBm) | Output Peak power (mW) | Ant. Gain (dBi) | Ant. Gain (numeric) | Power density at 20cm (mW/cm ²) | Power density Limits (mW/cm ²) |
|----------------|--------------|-------------------------|----------------------------------|------------------------|-----------------|---------------------|---|--|
| 802.11b | 1 | 13 ± 1 | 14 | 25.119 | 2 | 1.585 | 0.007920 | 1 |
| | 6 | 13 ± 1 | 14 | 25.119 | 2 | 1.585 | 0.007920 | 1 |
| | 11 | 14 ± 1 | 15 | 31.623 | 2 | 1.585 | 0.009971 | 1 |
| 802.11g | 1 | 12 ± 1 | 13 | 19.950 | 2 | 1.585 | 0.006291 | 1 |
| | 6 | 12 ± 1 | 13 | 19.950 | 2 | 1.585 | 0.006291 | 1 |
| | 11 | 13 ± 1 | 14 | 25.120 | 2 | 1.585 | 0.007920 | 1 |
| 802.11n (H20) | 1 | 10 ± 1 | 11 | 12.590 | 2 | 1.585 | 0.003969 | 1 |
| | 6 | 10 ± 1 | 11 | 12.590 | 2 | 1.585 | 0.003969 | 1 |
| | 11 | 11 ± 1 | 12 | 15.850 | 2 | 1.585 | 0.004997 | 1 |
| 802.11n (H40) | 3 | 10 ± 1 | 11 | 12.590 | 2 | 1.585 | 0.003969 | 1 |
| | 6 | 10 ± 1 | 11 | 12.590 | 2 | 1.585 | 0.003969 | 1 |
| | 9 | 11 ± 1 | 12 | 15.850 | 2 | 1.585 | 0.004997 | 1 |

Antenna 2:

| Operating Mode | Test Channel | Tune up tolerance (dBm) | Max tune up conducted power(dBm) | Output Peak power (mW) | Ant. Gain (dBi) | Ant. Gain (numeric) | Power density at 20cm (mW/cm ²) | Power density Limits (mW/cm ²) |
|----------------|--------------|-------------------------|----------------------------------|------------------------|-----------------|---------------------|---|--|
| 802.11b | 1 | 12 ± 1 | 13 | 19.953 | 2 | 1.585 | 0.006291 | 1 |
| | 6 | 12 ± 1 | 13 | 19.953 | 2 | 1.585 | 0.006291 | 1 |
| | 11 | 13 ± 1 | 14 | 25.119 | 2 | 1.585 | 0.007920 | 1 |
| 802.11g | 1 | 11 ± 1 | 12 | 15.850 | 2 | 1.585 | 0.004997 | 1 |
| | 6 | 11 ± 1 | 12 | 15.850 | 2 | 1.585 | 0.004997 | 1 |
| | 11 | 12 ± 1 | 13 | 19.950 | 2 | 1.585 | 0.006291 | 1 |
| 802.11n (HT20) | 1 | 10 ± 1 | 11 | 12.590 | 2 | 1.585 | 0.003969 | 1 |
| | 6 | 10 ± 1 | 11 | 12.590 | 2 | 1.585 | 0.003969 | 1 |
| | 11 | 10 ± 1 | 11 | 12.590 | 2 | 1.585 | 0.003969 | 1 |
| 802.11n (HT40) | 3 | 10 ± 1 | 11 | 12.590 | 2 | 1.585 | 0.003969 | 1 |
| | 6 | 10 ± 1 | 11 | 12.590 | 2 | 1.585 | 0.003969 | 1 |
| | 9 | 10 ± 1 | 11 | 12.590 | 2 | 1.585 | 0.003969 | 1 |

MPE Result:

| Operation Mode | Channel Number | Channel Frequency (MHz) | Power density at 20cm (mW/ cm ²) | | | Power density Limits (mW/cm ²) | Verdict |
|----------------|----------------|-------------------------|--|----------|----------|--|---------|
| | | | Ant1 | Ant2 | Sum | | |
| 802.11b | 1 | 2412 | 0.007920 | 0.006291 | -- | 1 | PASS |
| | 6 | 2437 | 0.007920 | 0.006291 | -- | 1 | PASS |
| | 11 | 2462 | 0.009971 | 0.007920 | -- | 1 | PASS |
| 802.11g | 1 | 2412 | 0.006291 | 0.004997 | -- | 1 | PASS |
| | 6 | 2437 | 0.006291 | 0.004997 | -- | 1 | PASS |
| | 11 | 2462 | 0.007920 | 0.006291 | -- | 1 | PASS |
| 802.11n (HT20) | 1 | 2412 | 0.003969 | 0.003969 | | 1 | PASS |
| | 6 | 2437 | 0.003969 | 0.003969 | 0.007938 | 1 | PASS |
| | 11 | 2462 | 0.004997 | 0.003969 | 0.007938 | 1 | PASS |
| 802.11n (HT40) | 3 | 2422 | 0.003969 | 0.003969 | 0.008966 | 1 | PASS |
| | 6 | 2437 | 0.003969 | 0.003969 | 0.007938 | 1 | PASS |
| | 9 | 2452 | 0.004997 | 0.003969 | 0.007938 | 1 | PASS |

Signature:



Print: Sam Lv

Title: Manager

Date: 2015-10-27