

# 1. RF Exposure Requirements

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## 1.1 General Information

### Client Information

Applicant: CE LINK LIMITED  
Address of applicant: 22 Dongkang Road, Dalingshan Town, Dongguan City, Guangdong Province, China.  
  
Manufacturer: DONGGUAN CE LINK LIMITED  
Address of manufacturer: 22 Dongkang Road, Dalingshan Town, Dongguan City, Guangdong Province, China.

### General Description of EUT:

Product Name: Solar Wall Light Camera  
Trade Name: CE-LINK  
Model No.: L3660  
Adding Model(s): /  
  
External power supply: 5V  
Solar power supply: 5.4V  
Rated Voltage: Contain battery LR1865SK-5 (1INR19/66-2):3.6V  
Powered by rechargeable lithium-ion battery LR1865SK-5 (1INR19/66-2): 3.65V  
  
External power supply: 1.0A  
Solar power supply: 0.28A  
Rated Current: Contain battery LR1865SK-5 (1INR19/66-2): 5200mAh  
  
Powered by rechargeable lithium-ion battery LR1865SK-5 (1INR19/66-2): 5200mAh  
Rated Power: MODEL: ADS-6RA-06 -05050EPCU  
  
Input:100-240V~50/60Hz  
Output:5.0V 1.0A 5W  
Power Adapter Model:  
  
ATBM6441-BURN--TUYA-FW-IPC-13LS-YT2J-V1.0.3-20240719  
Software Version: T23ZN-BURN-TUYA2-IPC-13LS-YT2-V1.0.3-20240719  
IPC-13LS\_MAIN RIV0 20240524  
IPC-14LS\_IRED R1V0\_20240131  
IPC-14LS\_PIR R1V0 20240308  
  
IPC-14LS\_USB\_SD\_KEY R1V0\_20240219  
Hardware Version: IPC-13LS\_WED RIV0 20240429  
IPC-14LS-SD\_FPC R1V0\_20231109  
IPC-BAT R1V0 20240429  
  
FCC ID: A4X-L3660  
Equipment Type: Mobile device

## Technical Characteristics of EUT:

### Wi-Fi(2.4GHz)

|                       |                                     |
|-----------------------|-------------------------------------|
| Support Standards:    | 802.11b, 802.11g, 802.11n           |
| Frequency Range:      | 2412-2462MHz for 802.11b/g/n(HT20)  |
| RF Output Power:      | 15.43dBm (Conducted)                |
| Type of Modulation:   | CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM |
| Quantity of Channels: | 11 for 802.11b/g/n(HT20)            |
| Channel Separation:   | 5MHz                                |
| Type of Antenna:      | FPC Antenna                         |
| Antenna Gain:         | 2.86dBi                             |

## 1.2 RF Exposure Exemption

According to §1.1307(b)(3) and KDB 447498 D04 Interim General RF Exposure Guidance v01, system operating under the provisions of this section shall be operating in a manner that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure.

**Option A:** FCC Rule Part 1.1307 (b)(3)(i)(A):The available maximum time-averaged power is no more than 1mW, regardless of separation distance.

**Option B:** FCC Rule Part 1.1307 (b)(3)(i)(B): The available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold  $P_{th}$  (mW) described in the following formula.  $P_{th}$  is given by:

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

Where

$$x = -\log_{10} \left( \frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right) \text{ and } f \text{ is in GHz;}$$

and

$$ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$$

$d$  = the separation distance (cm);

**Option C:** FCC Rule Part 1.1307 (b)(3)(i)(C): The minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. R must be at least  $\lambda/2\pi$ , where  $\lambda$  is the free-space operating wavelength in meters.

| Single RF Sources Subject to Routine Environmental Evaluation |                                      |
|---------------------------------------------------------------|--------------------------------------|
| RF Source frequency (MHz)                                     | Threshold ERP (watts)                |
| 0.3-1.34                                                      | 1,920 R <sup>2</sup>                 |
| 1.34-30                                                       | 3,450 R <sup>2</sup> /f <sup>2</sup> |
| 30-300                                                        | 3.83 R <sup>2</sup>                  |
| 300-1,500                                                     | 0.0128 R <sup>2</sup> f              |
| 1,500-100,000                                                 | 19.2R <sup>2</sup>                   |

**For Multiple RF sources:** FCC Rule Part 1.1307(b)(3)(ii):

- (A) The available maximum time-averaged power of each source is no more than 1 mW and there is a separation distance of two centimeters between any portion of a radiating structure operating and the nearest portion of any other radiating structure in the same device, except if the sum of multiple sources is less than 1 mW during the time-averaging period, in which case they may be treated as a single source (separation is not required).
- (B) In the case of fixed RF sources operating in the same time-averaging period, or of multiple mobile or portable RF sources within a device operating in the same time averaging period, if the sum of the fractional contributions to the applicable thresholds is less than or equal to 1 as indicated in the following equation.

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure Limit_k} \leq 1$$

### 1.3 Calculated Result

| Radio Access Technology | Prediction Frequency (MHz) | Output Power (dBm) | Antenna Gain (dBi) | Duty Cycle (%) | Tune-Up Time-Averaged Power (dBm) | ERP (dBm) |
|-------------------------|----------------------------|--------------------|--------------------|----------------|-----------------------------------|-----------|
| Wi-Fi(2.4GHz)           | 2412                       | 15.43              | 2.86               | 100            | 16.00                             | 16.71     |

| Frequency (MHz) | Option | Min. Distance (cm) | Max. Power (dBm) (mW) |       | Exposure Limit (mW) | Ratio | Result Pass/Fail |
|-----------------|--------|--------------------|-----------------------|-------|---------------------|-------|------------------|
| 2412            | C      | 20.00              | 16.71                 | 46.88 | 768.00              | 0.06  | Pass             |

Note: 1. Time-Averaged Power=Output Power \* Duty Cycle; ERP= Time-Averaged Power+ Antenna gain-2.15dB

2. Option A, B and C refers as clause 1.2.

3. For option B, Max (time-averaged power, effective radiated power (ERP)) converts to Max. Power. For option C, ERP converts to Max. Power;

4. For option B, P<sub>th</sub> (mW) converts to Exposure Limit (mW); For option C, ERP (W) converts to Exposure Limit (mW).

5. Ratio= Tune-Up ERP (mW)/ Exposure Limit (mW)

**Mode for Simultaneous Multi-band Transmission:**

| Radio Access Technology | Ratio 1 | Ratio 2 | Simultaneous Ratio | Limit | Result    |
|-------------------------|---------|---------|--------------------|-------|-----------|
|                         |         |         |                    |       | Pass/Fail |
| --                      | --      | --      | --                 | --    | --        |

Result: Pass