

FCC & IC TEST REPORT  
for  
GODOX Photo Equipment Co.,Ltd.

Pioneering TTL Li-ion Camera Flash  
Model No. : V350S, V350F, V350O, V350N, V350C, V350P

Prepared for : GODOX Photo Equipment Co.,Ltd.  
Address : 19th Floor, Room 1902, Building Jinshan, 5033 Shennan  
East Road, Luohu District, Shenzhen 518001, China

Prepared by : Shenzhen Accurate Technology Co., Ltd.  
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Report No. : ATE20180386  
Date of Test : March 13-March 16, 2018  
Date of Report : March 20, 2018

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Applicant : GODOX Photo Equipment Co.,Ltd.

Manufacturer : GODOX Photo Equipment Co.,Ltd.

Product : Pioneering TTL Li-ion Camera Flash

Model No. : V350S, V350F, V350O, V350N, V350C, V350P

Trade name : Godox

**FCC Rules and Regulations Part 15 Subpart B Class B  
ICES-003 Issue 6  
ANSI C63.4: 2014**

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Shenzhen Accurate Technology Co., Ltd.

Approved & Authorized Signer :   
(Sean Liu, Manager)

## 1. TEST RESULTS SUMMARY

| Test Items                    | Test Standard                     | Test Results |
|-------------------------------|-----------------------------------|--------------|
| Power Line Conducted Emission | FCC Part 15 Subpart B<br>ICES-003 | Pass         |
| Radiated Emission             | FCC Part 15 Subpart B<br>ICES-003 | Pass         |

## 2. GENERAL INFORMATION

### 2.1. Description of Device (EUT)

Product : Pioneering TTL Li-ion Camera Flash

Model No. : V350S, V350F, V350O, V350N, V350C, V350P

Rating : DC 7.2V (Powered by Lithium battery)

Trade Name : Godox

Remark(s) : The EUT highest operating frequency provided by Manufacturer is 2.438GHz, the radiated emission measurement shall be made up to 12.75 GHz.

Applicant : GODOX Photo Equipment Co.,Ltd.  
Address : 19th Floor, Room 1902, Building Jinshan, 5033 Shennan East Road, Luohu District, Shenzhen 518001, China

Manufacturer : GODOX Photo Equipment Co.,Ltd.  
Address : 19th Floor, Room 1902, Building Jinshan, 5033 Shennan East Road, Luohu District, Shenzhen 518001, China

Date of sample receiver : March 10, 2018

Date of Test : March 13-March 16, 2018

### 2.2. Test mode description

Test mode : A1. Connect PC, flash work.  
A2. Connect flash, flash work.  
A3. Transfer data

### 2.3. Accessory and Auxiliary Equipment

Notebook PC: Manufacturer: Lenovo  
M/N: ThinkPad X240  
S/N:n.a

Digital Camera: Manufacturer: Sony  
M/N: SAL-A58  
S/N:3703258

## 2.4. Description of Test Facility

EMC Lab : Recognition of accreditation by Federal Communications Commission (FCC)  
The Designation Number is CN1189  
The Registration Number is 708358

Listed by Innovation, Science and Economic Development Canada (ISED)  
The Registration Number is 5077A-2

Accredited by China National Accreditation Service for Conformity Assessment (CNAS)  
The Registration Number is CNAS L3193

Accredited by American Association for Laboratory Accreditation (A2LA)  
The Certificate Number is 4297.01

Name of Firm : Shenzhen Accurate Technology Co., Ltd.  
Site Location : 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China

## 2.5. Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.23dB, k=2

Power Disturbance Expanded Uncertainty = 2.92 dB, k=2

Radiated emission expanded uncertainty (9kHz-30MHz) = 3.08dB, k=2

Radiated emission expanded uncertainty (30MHz-1000MHz) = 4.42dB, k=2

Radiated emission expanded uncertainty (Above 1GHz) = 4.06dB, k=2

### 3. MEASURING DEVICE AND TEST EQUIPMENT

#### 3.1. The Equipment Used to Conducted Disturbance Measurement

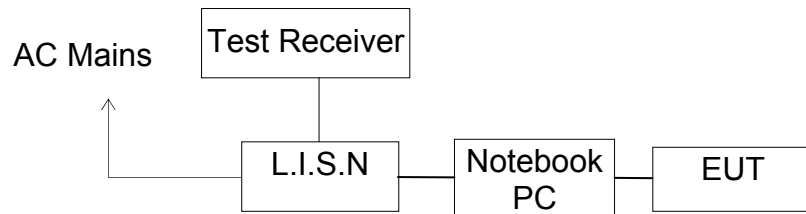
| Item | Equipment                              | Manufacturer    | Model No. | Serial No. | Last Cal.    | Cal. Interval |
|------|----------------------------------------|-----------------|-----------|------------|--------------|---------------|
| 1.   | Test Receiver                          | Rohde & Schwarz | ESCS30    | 100307     | Jan.06, 2018 | 1 Year        |
| 2.   | Test Receiver                          | Rohde & Schwarz | ESPI3     | 100396/003 | Jan.06, 2018 | 1 Year        |
| 3.   | Test Receiver                          | Rohde & Schwarz | ESPI3     | 101526/003 | Jan.06, 2018 | 1 Year        |
| 4.   | L.I.S.N.                               | Schwarzbeck     | NLSK8126  | 8126431    | Jan.06, 2018 | 1 Year        |
| 5.   | L.I.S.N.                               | Rohde & Schwarz | ESH3-Z5   | 100305     | Jan.06, 2018 | 1 Year        |
| 6.   | L.I.S.N.                               | Rohde & Schwarz | ESH3-Z5   | 100310     | Jan.06, 2018 | 1 Year        |
| 7.   | L.I.S.N.                               | Rohde & Schwarz | ESH3-Z6   | 100132     | Jan.06, 2018 | 1 Year        |
| 8.   | Pulse Limiter                          | Rohde & Schwarz | ESH3-Z2   | 100305     | Jan.06, 2018 | 1 Year        |
| 9.   | Pulse Limiter                          | Rohde & Schwarz | ESH3-Z2   | 100312     | Jan.06, 2018 | 1 Year        |
| 10.  | Pulse Limiter                          | Rohde & Schwarz | ESH3-Z2   | 100815     | Jan.06, 2018 | 1 Year        |
| 11.  | 50Ω Coaxial Switch                     | Anritsu Corp    | MP59B     | 6200283936 | Jan.06, 2018 | 1 Year        |
| 12.  | 50Ω Coaxial Switch                     | Anritsu Corp    | MP59B     | 6200283933 | Jan.06, 2018 | 1 Year        |
| 13.  | 50Ω Coaxial Switch                     | Anritsu Corp    | MP59B     | 6200506474 | Jan.06, 2018 | 1 Year        |
| 14.  | VOLTAGE PROBE                          | Schwarzbeck     | TK9416    | N/A        | Jan.06, 2018 | 1 Year        |
| 15.  | RF CURRENT PROBE                       | Rohde & Schwarz | EZ-17     | 100048     | Jan.06, 2018 | 1 Year        |
| 16.  | 8-Wire Impedance Stabilisation Network | Schwarzbeck     | CAT5 8158 | 8158-0035  | Jan.06, 2018 | 1 Year        |
| 17.  | RF Coaxial Cable                       | SUHNER          | N-2m      | No.2       | Jan.06, 2018 | 1 Year        |
| 18.  | RF Coaxial Cable                       | SUHNER          | N-2m      | No.3       | Jan.06, 2018 | 1 Year        |
| 19.  | RF Coaxial Cable                       | SUHNER          | N-2m      | No.14      | Jan.06, 2018 | 1 Year        |

### 3.2.The Equipment Used to Radiated Emission Measurement

| Item | Equipment                        | Manufacturer         | Model No.                | Serial No. | Last Cal.    | Cal. Interval |
|------|----------------------------------|----------------------|--------------------------|------------|--------------|---------------|
| 1.   | Spectrum Analyzer                | Agilent              | E7405A                   | MY45115511 | Jan.06, 2018 | 1 Year        |
| 2.   | Spectrum Analyzer                | Rohde&Schwarz        | FSV40                    | 101495     | Jan.06, 2018 | 1 Year        |
| 3.   | Test Receiver                    | Rohde&Schwarz        | ESCS30                   | 100307     | Jan.06, 2018 | 1 Year        |
| 4.   | Test Receiver                    | Rohde& Schwarz       | ESPI                     | 100396/003 | Jan.06, 2018 | 1 Year        |
| 5.   | Test Receiver                    | Rohde& Schwarz       | ESPI                     | 101526/003 | Jan.06, 2018 | 1 Year        |
| 6.   | Test Receiver                    | Rohde& Schwarz       | ESR                      | 101817     | Jan.06, 2018 | 1 Year        |
| 7.   | Bilog Antenna                    | Schwarzbeck          | VULB9163                 | 9163-194   | Jan.06, 2018 | 1 Year        |
| 8.   | Bilog Antenna                    | Schwarzbeck          | VULB9163                 | 9163-323   | Jan.06, 2018 | 1 Year        |
| 9.   | Log.-Per.Antenna                 | Schwarzbeck          | VUSLP<br>9111B           | 9111B-074  | Jan.06, 2018 | 1 Year        |
| 10.  | Biconical Broad Band Antenna     | Schwarzbeck          | VHBB<br>9124+BBA<br>9106 | 9124-617   | Jan.06, 2018 | 1 Year        |
| 11.  | Loop Antenna                     | Schwarzbeck          | FMZB1516                 | 1516131    | Jan.06, 2018 | 1 Year        |
| 12.  | Horn Antenna                     | Schwarzbeck          | BBHA9120D                | 9120D-655  | Jan.06, 2018 | 1 Year        |
| 13.  | Horn Antenna                     | Schwarzbeck          | BBHA9120D                | 9120D-1067 | Jan.06, 2018 | 1 Year        |
| 14.  | Vertical Active Monopole Antenna | Schwarzbeck          | VAMP 9243                | 9243-370   | Jan.06, 2018 | 1 Year        |
| 15.  | RF Switching Unit+PreAMP         | Compliance Direction | RSU-M2                   | 38322      | Jan.06, 2018 | 1 Year        |
| 16.  | Pre-Amplifier                    | Agilent              | 8447D                    | 294A10619  | Jan.06, 2018 | 1 Year        |
| 17.  | Pre-Amplifier                    | Rohde&Schwarz        | CBLU11835<br>40-01       | 3791       | Jan.06, 2018 | 1 Year        |
| 18.  | 50 Coaxial Switch                | Anritsu Corp         | MP59B                    | 6200237248 | Jan.06, 2018 | 1 Year        |
| 19.  | 50 Coaxial Switch                | Anritsu Corp         | MP59B                    | 6200506474 | Jan.06, 2018 | 1 Year        |
| 20.  | RF Coaxial Cable                 | Schwarzbeck          | N-5m                     | No.1       | Jan.06, 2018 | 1 Year        |
| 21.  | RF Coaxial Cable                 | Schwarzbeck          | N-1m                     | No.6       | Jan.06, 2018 | 1 Year        |
| 22.  | RF Coaxial Cable                 | Schwarzbeck          | N-1m                     | No.7       | Jan.06, 2018 | 1 Year        |
| 23.  | RF Coaxial Cable                 | SUHNER               | N-3m                     | No.8       | Jan.06, 2018 | 1 Year        |
| 24.  | RF Coaxial Cable                 | RESENBERGER          | N-3.5m                   | No.9       | Jan.06, 2018 | 1 Year        |
| 25.  | RF Coaxial Cable                 | SUHNER               | N-6m                     | No.10      | Jan.06, 2018 | 1 Year        |
| 26.  | RF Coaxial Cable                 | RESENBERGER          | N-12m                    | No.11      | Jan.06, 2018 | 1 Year        |
| 27.  | RF Coaxial Cable                 | RESENBERGER          | N-0.5m                   | No.12      | Jan.06, 2018 | 1 Year        |
| 28.  | RF Coaxial Cable                 | SUHNER               | N-2m                     | No.13      | Jan.06, 2018 | 1 Year        |
| 29.  | RF Coaxial Cable                 | SUHNER               | N-0.5m                   | No.15      | Jan.06, 2018 | 1 Year        |
| 30.  | RF Coaxial Cable                 | SUHNER               | N-2m                     | No.16      | Jan.06, 2018 | 1 Year        |
| 31.  | RF Coaxial Cable                 | RESENBERGER          | N-6m                     | No.17      | Jan.06, 2018 | 1 Year        |

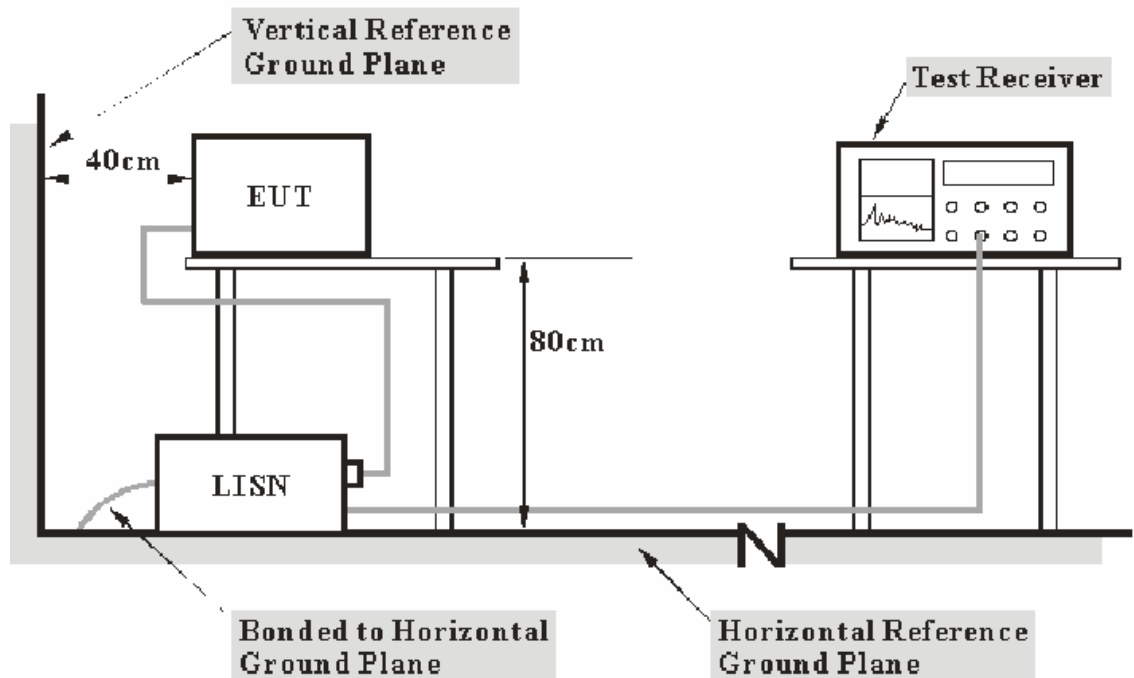
## 4. POWER LINE CONDUCTED MEASUREMENT

### 4.1. Block Diagram of Test Setup



(EUT: Pioneering TTL Li-ion Camera Flash)

### 4.2. Test System Setup



- Note: 1. Support units were connected to second LISN.  
 2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

#### 4.3. Power Line Conducted Emission Measurement Limits

| Frequency<br>(MHz)                                                                                       | Limit dB(μV)     |               |
|----------------------------------------------------------------------------------------------------------|------------------|---------------|
|                                                                                                          | Quasi-peak Level | Average Level |
| 0.15 - 0.50                                                                                              | 66.0 – 56.0 *    | 56.0 – 46.0 * |
| 0.50 - 5.00                                                                                              | 56.0             | 46.0          |
| 5.00 - 30.00                                                                                             | 60.0             | 50.0          |
| NOTE1: The lower limit shall apply at the transition frequencies.                                        |                  |               |
| NOTE2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz. |                  |               |

#### 4.4. Configuration of EUT on Measurement

The equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

#### 4.5. Operating Condition of EUT

4.5.1. Setup the EUT and simulator as shown as Section 4.1.

4.5.2. Turn on the power of all equipment.

4.5.3. Let the EUT work in test mode and measure it.

#### 4.6. Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at ATC is +2.23dB.

#### 4.7. Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4: 2014 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

#### 4.8.Data Sample

| Frequency (MHz) | Quasi Peak Level (dB $\mu$ V) | Average Level (dB $\mu$ V) | Transducer value (dB) | QuasiPeak Result (dB $\mu$ V) | Average Result (dB $\mu$ V) | Quasi Peak Limit (dB $\mu$ V) | Average Limit (dB $\mu$ V) | QuasiPeak Margin (dB) | Average Margin (dB) | Remark (Pass/Fail) |
|-----------------|-------------------------------|----------------------------|-----------------------|-------------------------------|-----------------------------|-------------------------------|----------------------------|-----------------------|---------------------|--------------------|
| X.XX            | 29.4                          | 18.3                       | 11.1                  | 40.5                          | 29.4                        | 56.0                          | 56.0                       | 15.5                  | 16.6                | Pass               |

Transducer value = Insertion loss of LISN + Cable Loss

Result = Quasi-peak Level/Average Level + Transducer value

Limit = Limit stated in standard

Calculation Formula:

Margin = Limit – Reading level value – Transducer value

#### 4.9.Power Line Conducted Emission Measurement Results

**PASS.**

The frequency range from 150kHz to 30MHz is checked.

|                                               |               |              |               |              |          |      |     |  |
|-----------------------------------------------|---------------|--------------|---------------|--------------|----------|------|-----|--|
| Test mode: Transfer data                      |               |              |               |              |          |      |     |  |
| Test Voltage: 120V/60Hz                       |               |              |               |              |          |      |     |  |
| <b>MEASUREMENT RESULT: "TUV-0316-03_fin"</b>  |               |              |               |              |          |      |     |  |
| 3/16/2018                                     |               |              |               |              |          |      |     |  |
| Frequency<br>MHz                              | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |  |
| 0.150000                                      | 54.20         | 10.5         | 66            | 11.8         | QP       | N    | GND |  |
| 2.760000                                      | 29.80         | 11.0         | 56            | 26.2         | QP       | N    | GND |  |
| 19.780000                                     | 24.70         | 11.4         | 60            | 35.3         | QP       | N    | GND |  |
| <b>MEASUREMENT RESULT: "TUV-0316-03_fin2"</b> |               |              |               |              |          |      |     |  |
| 3/16/2018                                     |               |              |               |              |          |      |     |  |
| Frequency<br>MHz                              | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |  |
| 0.155000                                      | 38.60         | 10.5         | 56            | 17.1         | AV       | N    | GND |  |
| 0.485000                                      | 35.80         | 10.7         | 46            | 10.5         | AV       | N    | GND |  |
| 2.210000                                      | 25.90         | 11.0         | 46            | 20.1         | AV       | N    | GND |  |
| <b>MEASUREMENT RESULT: "TUV-0316-04_fin"</b>  |               |              |               |              |          |      |     |  |
| 3/16/2018                                     |               |              |               |              |          |      |     |  |
| Frequency<br>MHz                              | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |  |
| 0.155000                                      | 53.00         | 10.5         | 66            | 12.7         | QP       | L1   | GND |  |
| 1.590000                                      | 29.50         | 10.9         | 56            | 26.5         | QP       | L1   | GND |  |
| 16.510000                                     | 25.30         | 11.4         | 60            | 34.7         | QP       | L1   | GND |  |
| <b>MEASUREMENT RESULT: "TUV-0316-04_fin2"</b> |               |              |               |              |          |      |     |  |
| 3/16/2018                                     |               |              |               |              |          |      |     |  |
| Frequency<br>MHz                              | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |  |
| 0.160000                                      | 38.00         | 10.5         | 56            | 17.5         | AV       | L1   | GND |  |
| 0.490000                                      | 36.00         | 10.7         | 46            | 10.2         | AV       | L1   | GND |  |
| 23.995000                                     | 24.30         | 11.5         | 50            | 25.7         | AV       | L1   | GND |  |

Emissions attenuated more than 20 dB below the permissible value are not reported.

The spectral diagrams are attached as below.

## ACCURATE TECHNOLOGY CO., LTD

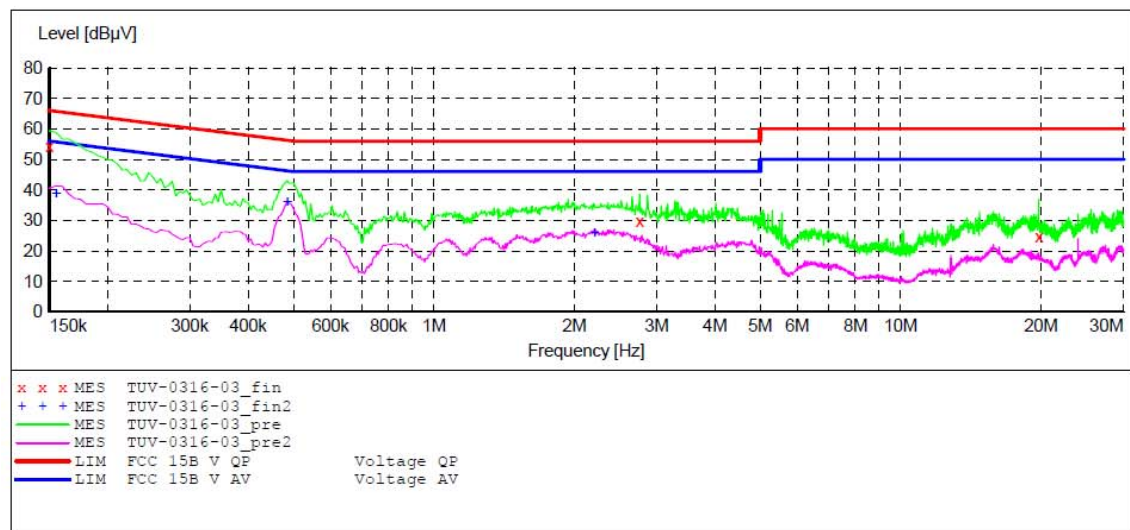
### CONDUCTED EMISSION STANDARD FCC PART 15 B

EUT: Pioneering TTL Li-ion Camera Flash M/N:V350S  
 Manufacturer: GODOX Photo Equipment Co., Ltd.  
 Operating Condition: Transfer data  
 Test Site: 1#Shielding Room  
 Operator: WADE  
 Test Specification: N 120V/60Hz  
 Comment: Mains Port  
 Start of Test: 3/16/2018 /

### SCAN TABLE: "V 9K-30MHz fin"

Short Description: \_SUB\_STD\_VTERM2 1.70  

| Start     | Stop      | Step     | Detector  | Meas. Time | IF Bandw. | Transducer    |
|-----------|-----------|----------|-----------|------------|-----------|---------------|
| 9.0 kHz   | 150.0 kHz | 100.0 Hz | QuasiPeak | 1.0 s      | 200 Hz    | NSLK8126 2008 |
| Average   |           |          |           |            |           |               |
| 150.0 kHz | 30.0 MHz  | 5.0 kHz  | QuasiPeak | 1.0 s      | 9 kHz     | NSLK8126 2008 |
| Average   |           |          |           |            |           |               |



### MEASUREMENT RESULT: "TUV-0316-03\_fin"

3/16/2018

| Frequency MHz | Level dBμV | Transd dB | Limit dBμV | Margin dB | Detector | Line | PE  |
|---------------|------------|-----------|------------|-----------|----------|------|-----|
| 0.150000      | 54.20      | 10.5      | 66         | 11.8      | QP       | N    | GND |
| 2.760000      | 29.80      | 11.0      | 56         | 26.2      | QP       | N    | GND |
| 19.780000     | 24.70      | 11.4      | 60         | 35.3      | QP       | N    | GND |

### MEASUREMENT RESULT: "TUV-0316-03\_fin2"

3/16/2018

| Frequency MHz | Level dBμV | Transd dB | Limit dBμV | Margin dB | Detector | Line | PE  |
|---------------|------------|-----------|------------|-----------|----------|------|-----|
| 0.155000      | 38.60      | 10.5      | 56         | 17.1      | AV       | N    | GND |
| 0.485000      | 35.80      | 10.7      | 46         | 10.5      | AV       | N    | GND |
| 2.210000      | 25.90      | 11.0      | 46         | 20.1      | AV       | N    | GND |

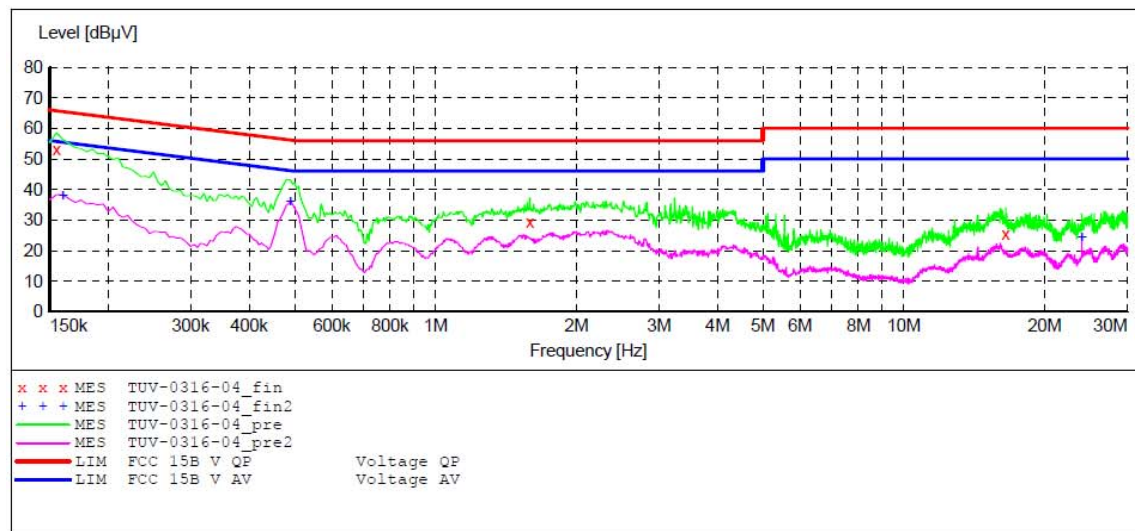
## ACCURATE TECHNOLOGY CO., LTD

### CONDUCTED EMISSION STANDARD FCC PART 15 B

EUT: Pioneering TTL Li-ion Camera Flash M/N:V350S  
 Manufacturer: GODOX Photo Equipment Co., Ltd.  
 Operating Condition: Transfer data  
 Test Site: 1#Shielding Room  
 Operator: WADE  
 Test Specification: L 120V/60Hz  
 Comment: Mains Port  
 Start of Test: 3/16/2018 /

### SCAN TABLE: "V 9K-30MHz fin"

Short Description: \_SUB\_STD\_VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 9.0 kHz 150.0 kHz 100.0 Hz QuasiPeak 1.0 s 200 Hz NSLK8126 2008  
 Average  
 150.0 kHz 30.0 MHz 5.0 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average



### MEASUREMENT RESULT: "TUV-0316-04\_fin"

3/16/2018

| Frequency MHz | Level dBμV | Transd dB | Limit dBμV | Margin dB | Detector | Line | PE  |
|---------------|------------|-----------|------------|-----------|----------|------|-----|
| 0.155000      | 53.00      | 10.5      | 66         | 12.7      | QP       | L1   | GND |
| 1.590000      | 29.50      | 10.9      | 56         | 26.5      | QP       | L1   | GND |
| 16.510000     | 25.30      | 11.4      | 60         | 34.7      | QP       | L1   | GND |

### MEASUREMENT RESULT: "TUV-0316-04\_fin2"

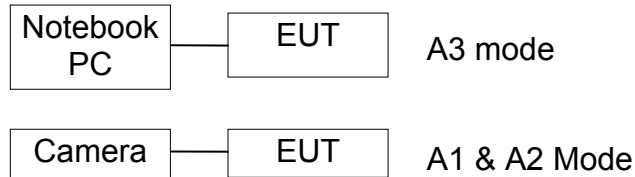
3/16/2018

| Frequency MHz | Level dBμV | Transd dB | Limit dBμV | Margin dB | Detector | Line | PE  |
|---------------|------------|-----------|------------|-----------|----------|------|-----|
| 0.160000      | 38.00      | 10.5      | 56         | 17.5      | AV       | L1   | GND |
| 0.490000      | 36.00      | 10.7      | 46         | 10.2      | AV       | L1   | GND |
| 23.995000     | 24.30      | 11.5      | 50         | 25.7      | AV       | L1   | GND |

## 5. RADIATED EMISSION MEASUREMENT

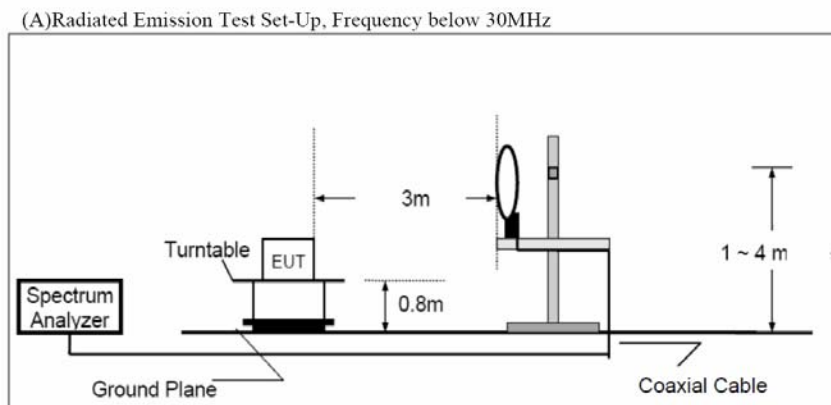
### 5.1. Block Diagram of Test

#### 5.1.1. Block diagram of connection between the EUT and simulators

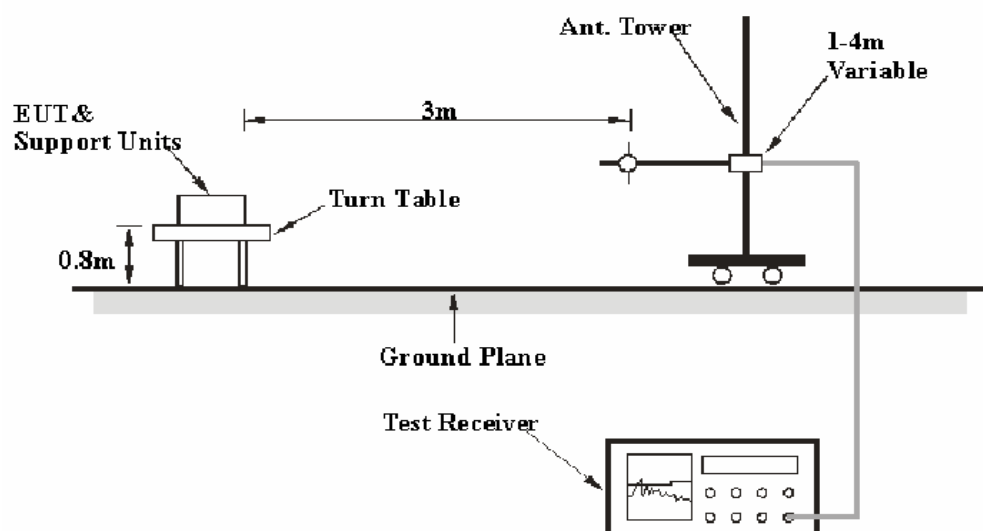


(EUT: Pioneering TTL Li-ion Camera Flash)

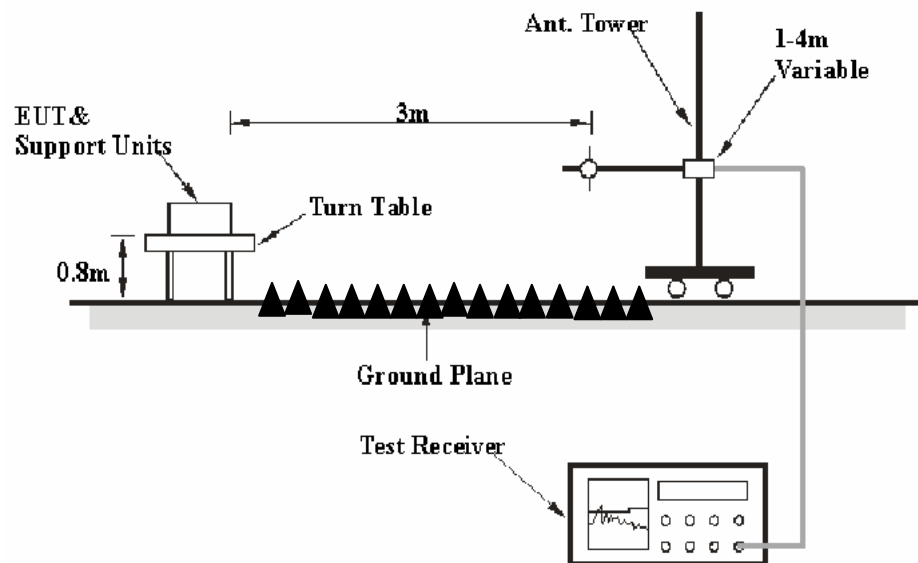
#### 5.1.2. Block diagram of test setup (In chamber)



Below 1GHz:



Above 1GHz:



## 5.2. Radiated Emission Limit (Class B)

All emanations from a class B device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

| Frequency<br>MHz | Distance<br>Meters | Field Strengths Limit |                            |
|------------------|--------------------|-----------------------|----------------------------|
|                  |                    | $\mu\text{V/m}$       | $\text{dB}(\mu\text{V/m})$ |
| 30-88            | 3                  | 100                   | 40.0                       |
| 88-216           | 3                  | 150                   | 43.5                       |
| 216-960          | 3                  | 200                   | 46.0                       |
| Above 960        | 3                  | 500                   | 54.0                       |

Remark:

(1) Emission level  $\text{dB}(\mu\text{V}) = 20 \log \text{Emission level } \mu\text{V/m}$ .

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) Distance is the distance in meters between the measuring instrument antenna and the closest point of any part of the device or system.

## 5.3. Manufacturer

The following equipments are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

### 5.3.1. Pioneering TTL Li-ion Camera Flash (EUT)

Model Number: V350S

Manufacturer: GODOX Photo Equipment Co., Ltd.

## 5.4.Operating Condition of EUT

5.4.1.Setup the EUT and simulator as shown as Section 5.1.

5.4.2.Turn on the power of all equipment.

5.4.3.Let the EUT work in test mode and measure it.

## 5.5.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2014 on radiated emission measurement.

The bandwidth of the EMI test receiver (R&S ESCS30) is set at 120kHz.

The frequency range from 9kHz to 12750MHz is checked.

Note: The EUT highest operating frequency provided by Manufacturer is 2438MHz, the radiated emission measurement shall be made up to 12.75GHz.

| Highest frequency generated or used in the device or on which the device operates or tunes (MHz) | Upper frequency of measurement range (MHz)                           |
|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Below 1.705 .....                                                                                | 30.                                                                  |
| 1.705–108 .....                                                                                  | 1000.                                                                |
| 108–500 .....                                                                                    | 2000.                                                                |
| 500–1000 .....                                                                                   | 5000.                                                                |
| Above 1000 .....                                                                                 | 5th harmonic of the highest frequency or 40 GHz, whichever is lower. |

### 5.6.Data Sample

| Frequency (MHz) | Reading (dB $\mu$ v) | Factor (dB/m) | Result (dB $\mu$ v/m) | Limit (dB $\mu$ v/m) | Margin (dB) | Remark |
|-----------------|----------------------|---------------|-----------------------|----------------------|-------------|--------|
| X.XX            | 49.83                | -22.03        | 27.80                 | 43.50                | -15.70      | QP     |

Frequency(MHz) = Emission frequency in MHz

Reading(dB $\mu$ v) = Uncorrected Analyzer/Receiver reading

Factor (dB/m)= Antenna factor + Cable Loss – Amplifier gain

Result(dB $\mu$ v/m) = Reading + Factor

Limit (dB $\mu$ v/m)= Limit stated in standard

Margin (dB) = Result(dB $\mu$ v/m) - Limit (dB $\mu$ v/m)

Calculation Formula:

Margin(dB) = Result (dB $\mu$ v/m)–Limit(dB $\mu$ v/m)

Result(dB $\mu$ v/m)= Reading(dB $\mu$ v)+ Factor(dB/m)

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the limit.

### 5.7.Radiated Emission Noise Measurement Result

**PASS.**

The frequency range from 9kHz to 12750MHz is investigated.

The radiation emissions from 9kHz-30MHz is not reported, because the test values lower than the limits of 20dB.

The spectral diagrams are attached as below.

Test mode: A1 (Below 1GHz)



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Job No.: LGW2018 #619

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Pioneering TTL Li-ion Camera Flash

Mode: A.1

Model: V350S

Manufacturer: GODOX Photo Equipment Co., Ltd.

Polarization: Horizontal

Power Source: DC 7.2V

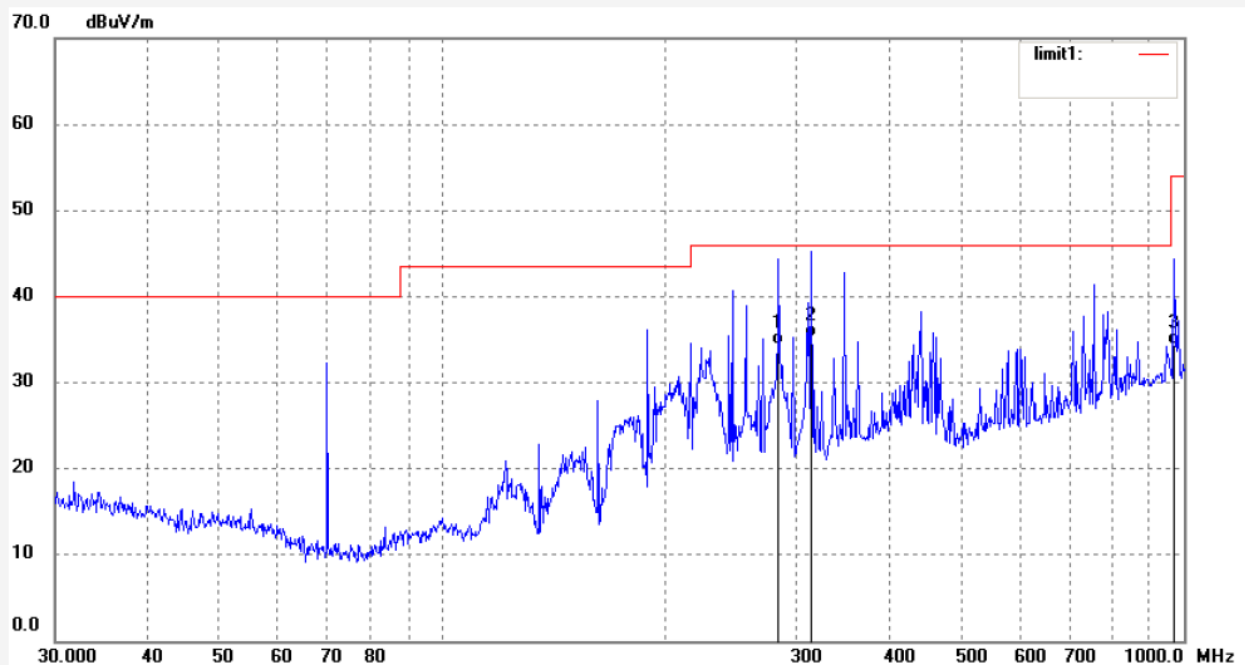
Date: 18/03/15/

Time:

Engineer Signature: WADE

Distance: 3m

Note:

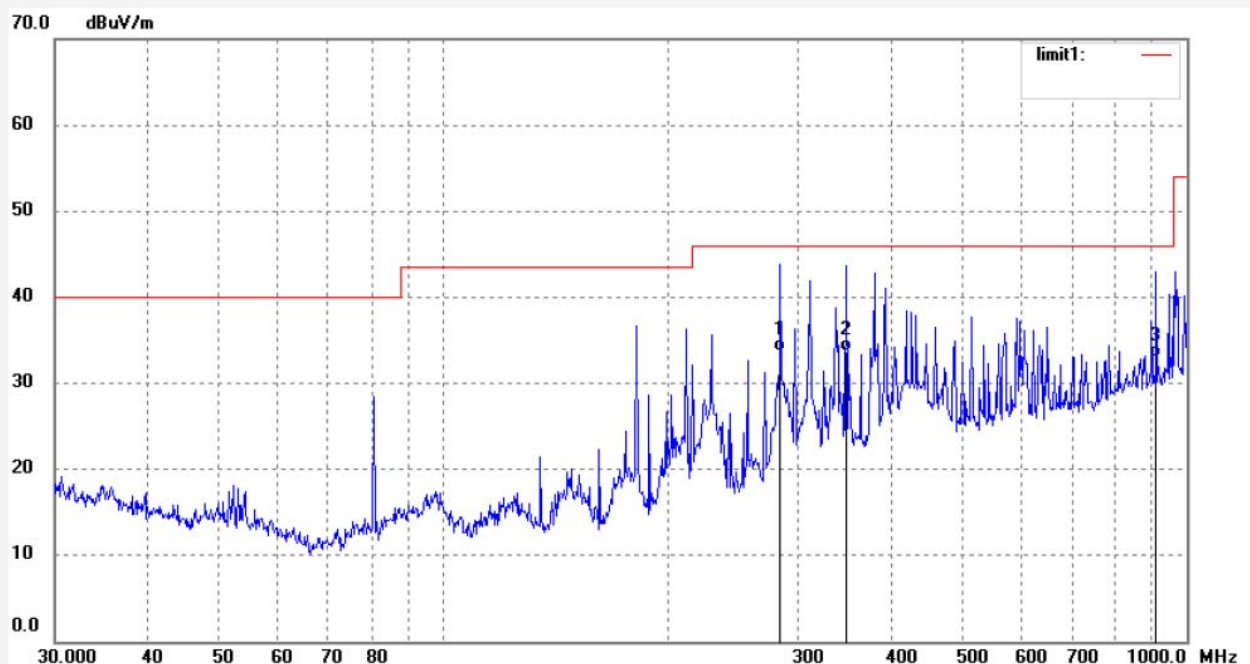


| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 283.9791    | 43.89            | -9.45       | 34.44           | 46.00          | -11.56      | QP       |             |               |        |
| 2   | 314.3765    | 43.82            | -8.60       | 35.22           | 46.00          | -10.78      | QP       |             |               |        |
| 3   | 968.9338    | 31.01            | 3.40        | 34.41           | 54.00          | -19.59      | QP       |             |               |        |

Job No.: LGW2018 #620  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 23 C / 48 %  
EUT: Pioneering TTL Li-ion Camera Flash  
Mode: A.1  
Model: V350S  
Manufacturer: GODOX Photo Equipment Co., Ltd.

Polarization: Vertical  
Power Source: DC 7.2V  
Date: 18/03/15/  
Time:  
Engineer Signature: WADE  
Distance: 3m

Note:



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 283.9791    | 43.22            | -9.45       | 33.77           | 46.00          | -12.23      | QP       |             |               |        |
| 2   | 348.0274    | 41.15            | -7.47       | 33.68           | 46.00          | -12.32      | QP       |             |               |        |
| 3   | 909.6666    | 30.78            | 2.25        | 33.03           | 46.00          | -12.97      | QP       |             |               |        |

Test mode: A2 (Below 1GHz)



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Job No.: LGW2018 #622

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Pioneering TTL Li-ion Camera Flash

Mode: A.2

Model: V350S

Manufacturer: GODOX Photo Equipment Co., Ltd.

Polarization: Horizontal

Power Source: DC 7.2V

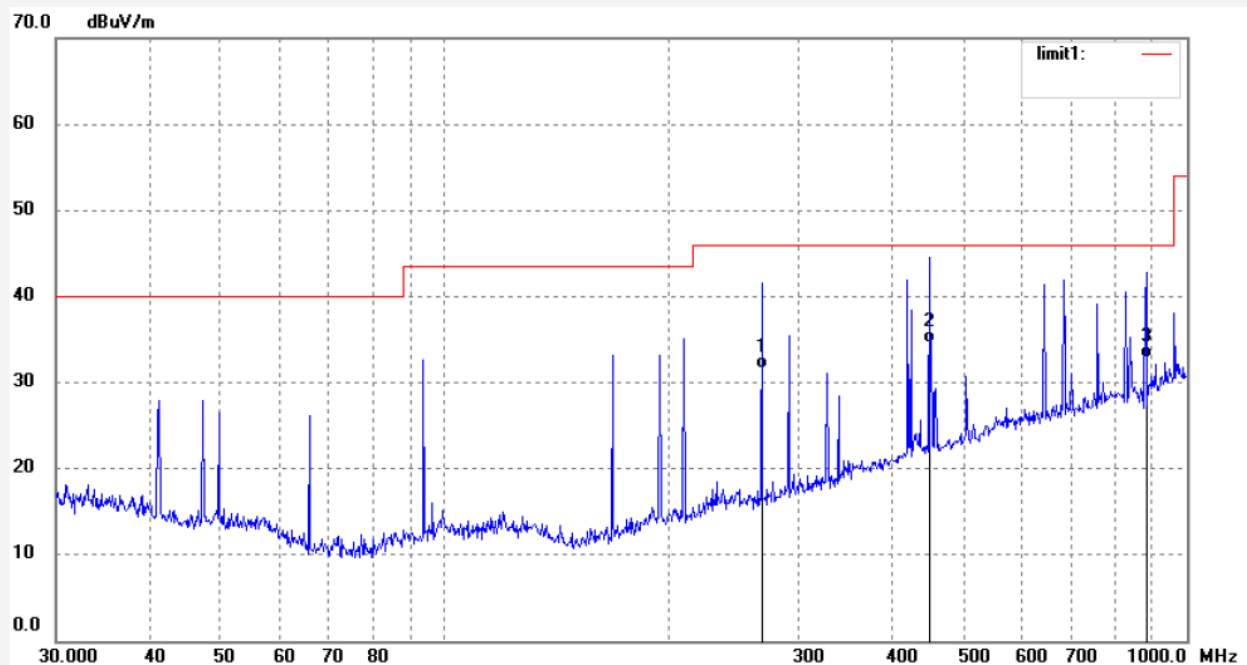
Date: 18/03/15/

Time:

Engineer Signature: WADE

Distance: 3m

Note:

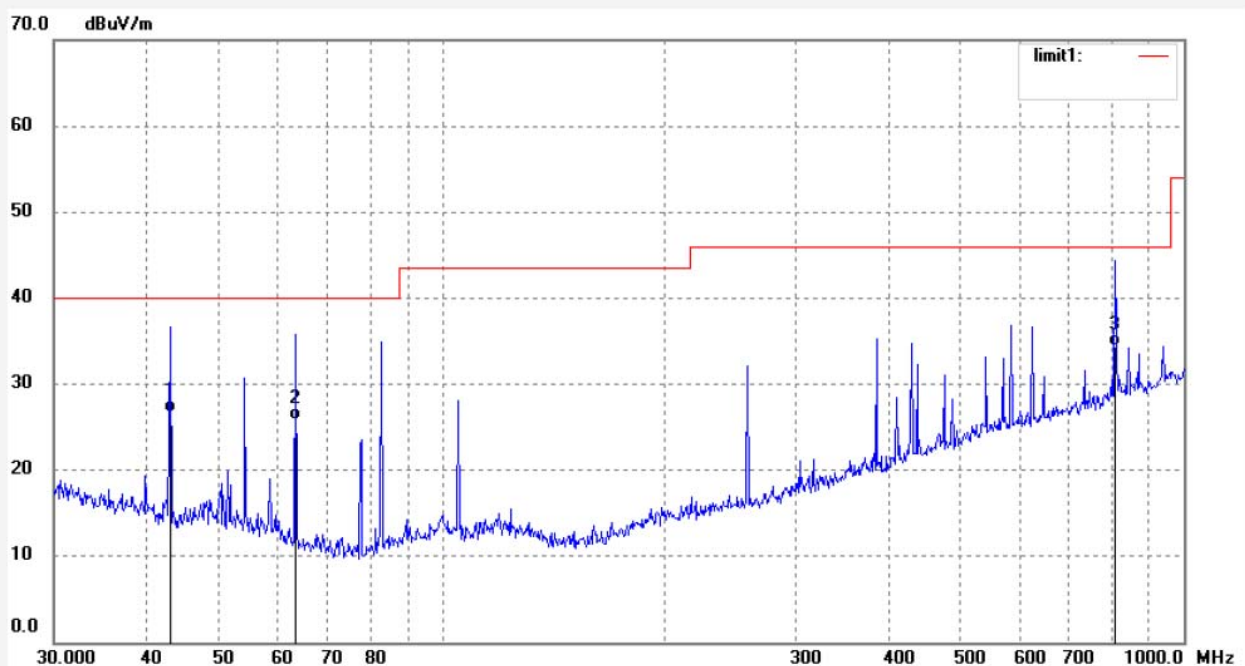


| No. | Freq.<br>(MHz) | Reading<br>(dBuV/m) | Factor<br>(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Detector | Height<br>(cm) | Degree<br>(deg.) | Remark |
|-----|----------------|---------------------|----------------|--------------------|-------------------|----------------|----------|----------------|------------------|--------|
| 1   | 267.5455       | 41.66               | -10.06         | 31.60              | 46.00             | -14.40         | QP       |                |                  |        |
| 2   | 449.5557       | 39.84               | -5.35          | 34.49              | 46.00             | -11.51         | QP       |                |                  |        |
| 3   | 881.4067       | 30.75               | 2.04           | 32.79              | 46.00             | -13.21         | QP       |                |                  |        |

Job No.: LGW2018 #621  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 23 C / 48 %  
EUT: Pioneering TTL Li-ion Camera Flash  
Mode: A.2  
Model: V350S  
Manufacturer: GODOX Photo Equipment Co., Ltd.

Polarization: Vertical  
Power Source: DC 7.2V  
Date: 18/03/15/  
Time:  
Engineer Signature: WADE  
Distance: 3m

Note:



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 43.0504     | 38.94            | -12.20      | 26.74           | 40.00          | -13.26      | QP       |             |               |        |
| 2   | 63.5356     | 41.03            | -15.18      | 25.85           | 40.00          | -14.15      | QP       |             |               |        |
| 3   | 807.4290    | 33.39            | 0.95        | 34.34           | 46.00          | -11.66      | QP       |             |               |        |

Test mode: A3 (Below 1GHz)



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Job No.: LGW2018 #623

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Pioneering TTL Li-ion Camera Flash

Mode: A.3

Model: V350S

Manufacturer: GODOX Photo Equipment Co., Ltd.

Polarization: Horizontal

Power Source: DC 5V

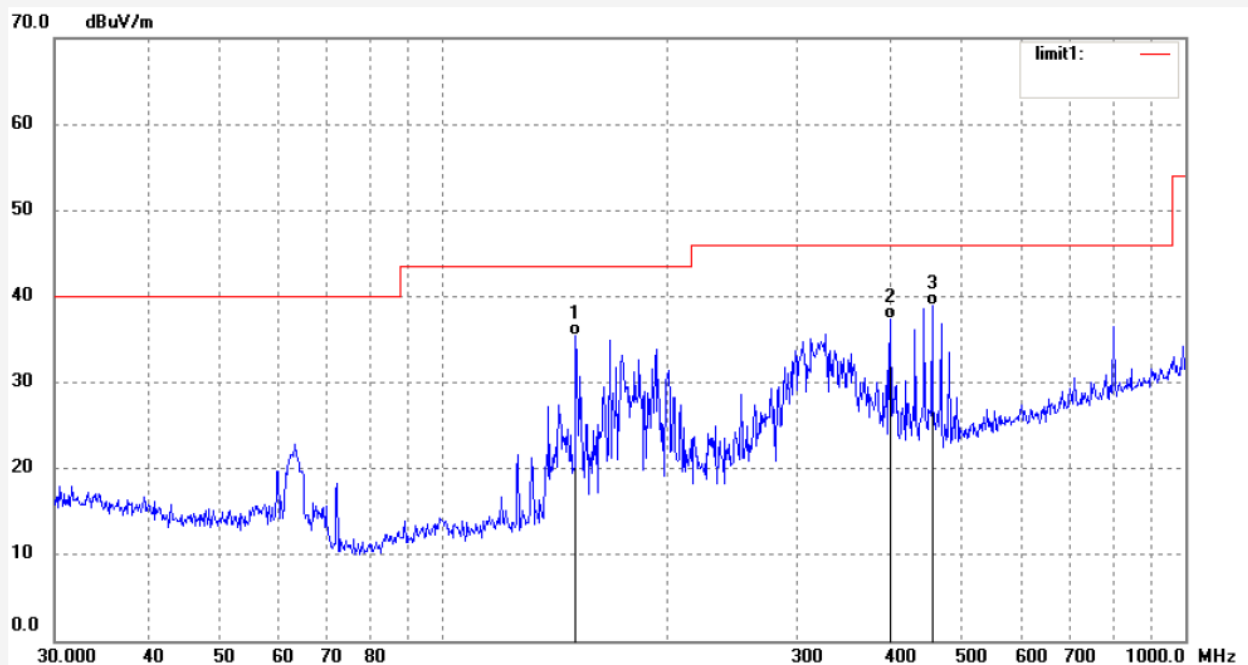
Date: 18/03/15/

Time:

Engineer Signature: WADE

Distance: 3m

Note:

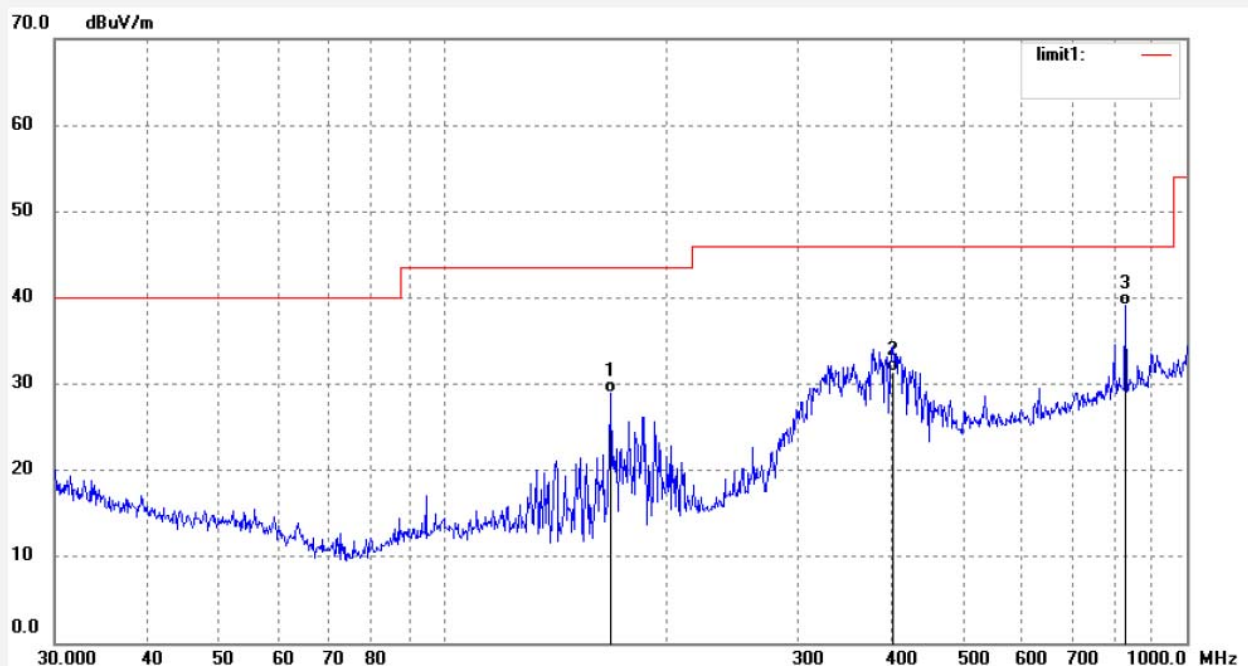


| No. | Freq.<br>(MHz) | Reading<br>(dBuV/m) | Factor<br>(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Detector | Height<br>(cm) | Degree<br>(deg.) | Remark |
|-----|----------------|---------------------|----------------|--------------------|-------------------|----------------|----------|----------------|------------------|--------|
| 1   | 151.0664       | 50.52               | -15.02         | 35.50              | 43.50             | -8.00          | QP       |                |                  |        |
| 2   | 400.4318       | 43.83               | -6.43          | 37.40              | 46.00             | -8.60          | QP       |                |                  |        |
| 3   | 455.9057       | 44.21               | -5.25          | 38.96              | 46.00             | -7.04          | QP       |                |                  |        |

Job No.: LGW2018 #624  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 23 C / 48 %  
EUT: Pioneering TTL Li-ion Camera Flash  
Mode: A.3  
Model: V350S  
Manufacturer: GODOX Photo Equipment Co., Ltd.

Polarization: Vertical  
Power Source: DC 5V  
Date: 18/03/15/  
Time:  
Engineer Signature: WADE  
Distance: 3m

Note:



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 167.8242    | 42.81            | -13.88      | 28.93           | 43.50          | -14.57      | QP       |             |               |        |
| 2   | 403.2500    | 37.79            | -6.38       | 31.41           | 46.00          | -14.59      | QP       |             |               |        |
| 3   | 827.4933    | 37.86            | 1.30        | 39.16           | 46.00          | -6.84       | QP       |             |               |        |



## Test mode: A1 (Above 1GHz)

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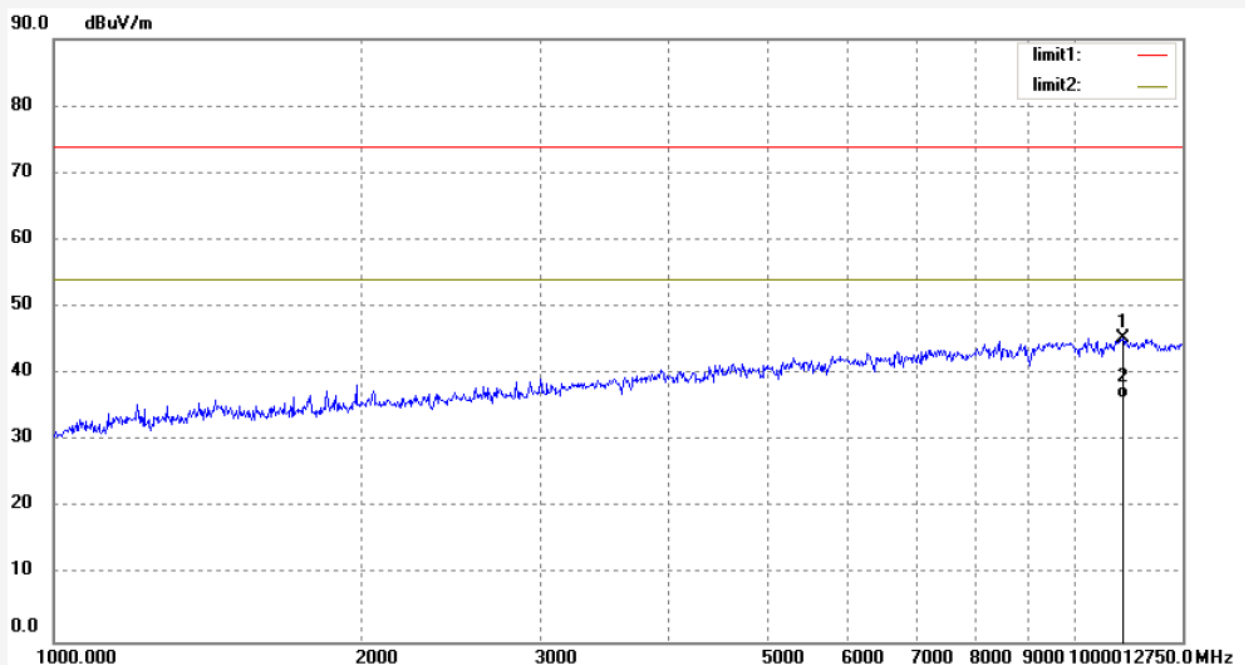
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Job No.: LGW2018 #631  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 23 C / 48 %  
EUT: Pioneering TTL Li-ion Camera Flash  
Mode: A.1  
Model: V350S  
Manufacturer: GODOX Photo Equipment Co., Ltd.

Polarization: Horizontal  
Power Source: DC 7.2V  
Date: 18/03/15/  
Time:  
Engineer Signature: WADE  
Distance: 3m

Note:

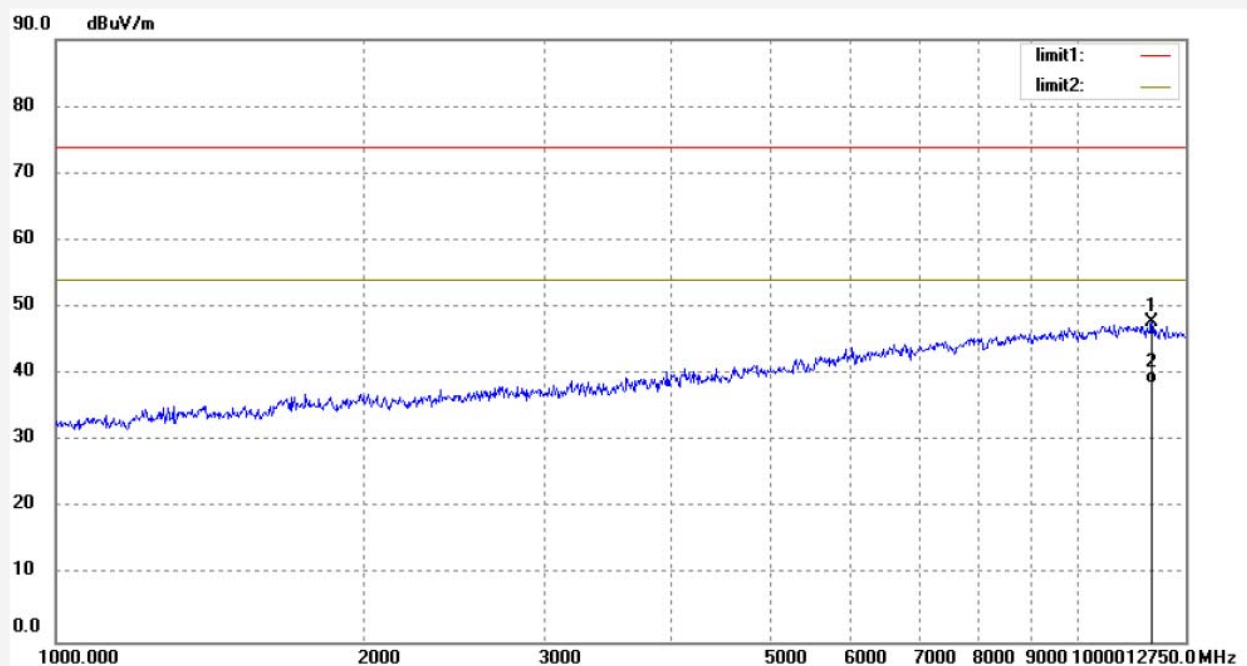


| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 11140.845   | 27.53            | 17.80       | 45.33           | 74.00          | -28.67      | peak     |             |               |        |
| 2   | 11140.845   | 18.47            | 17.80       | 36.27           | 54.00          | -17.73      | AVG      |             |               |        |

Job No.: LGW2018 #632  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 23 C / 48 %  
EUT: Pioneering TTL Li-ion Camera Flash  
Mode: A.1  
Model: V350S  
Manufacturer: GODOX Photo Equipment Co., Ltd.

Polarization: Vertical  
Power Source: DC 7.2V  
Date: 18/03/15/  
Time:  
Engineer Signature: WADE  
Distance: 3m

Note:



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 11812.583   | 25.59            | 22.17       | 47.76           | 74.00          | -26.24      | peak     |             |               |        |
| 2   | 11812.583   | 16.51            | 22.17       | 38.68           | 54.00          | -15.32      | AVG      |             |               |        |

Test mode: A2 (Above 1GHz)



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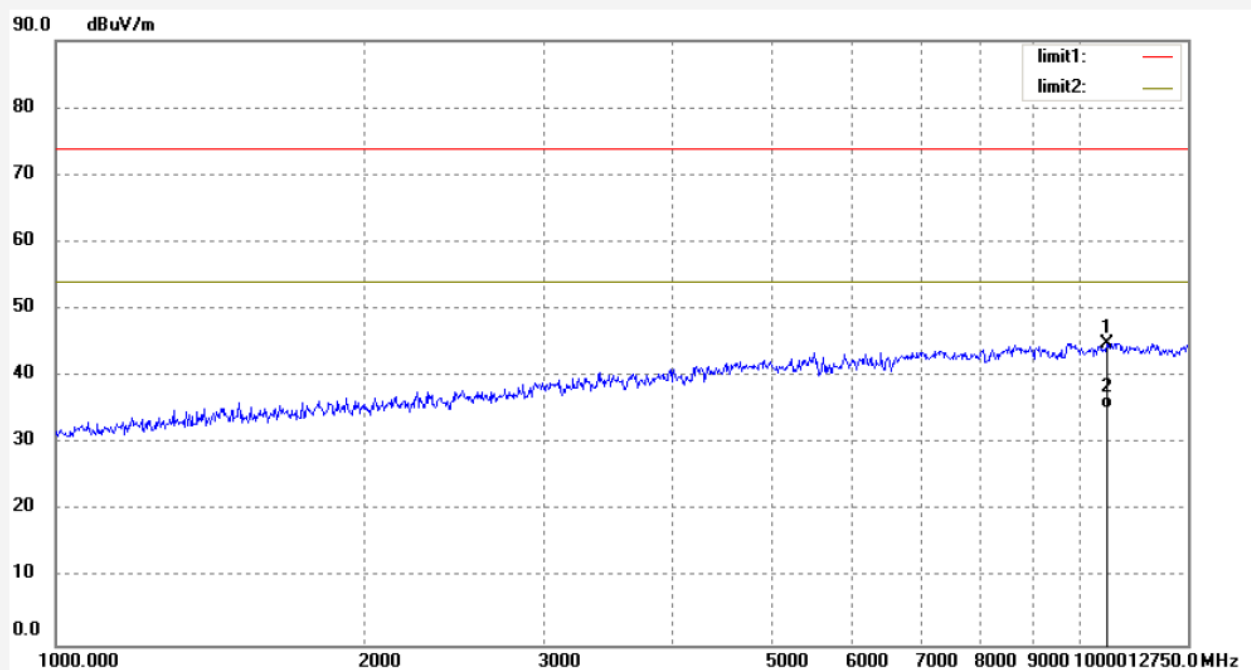
Tel:+86-0755-26503290

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Job No.: LGW2018 #634  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 23 C / 48 %  
EUT: Pioneering TTL Li-ion Camera Flash  
Mode: A.2  
Model: V350S  
Manufacturer: GODOX Photo Equipment Co., Ltd.

Polarization: Horizontal  
Power Source: DC 7.2V  
Date: 18/03/15/  
Time:  
Engineer Signature: WADE  
Distance: 3m

Note:

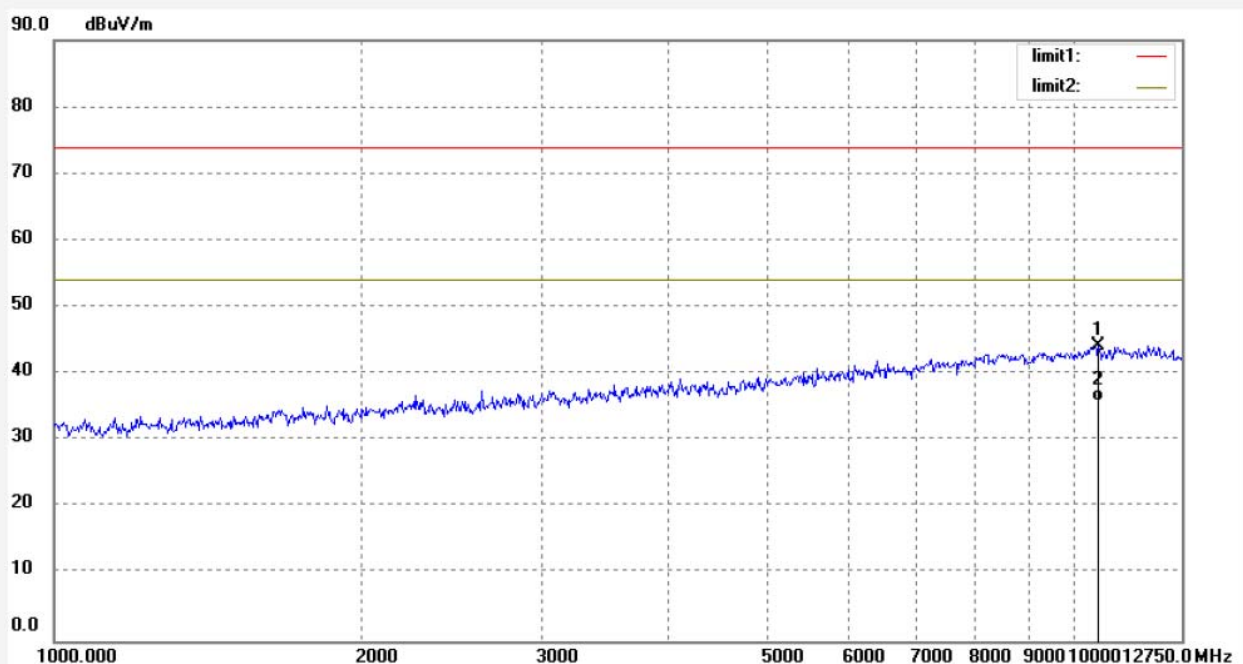


| No. | Freq.<br>(MHz) | Reading<br>(dBuV/m) | Factor<br>(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Detector | Height<br>(cm) | Degree<br>(deg.) | Remark |
|-----|----------------|---------------------|----------------|--------------------|-------------------|----------------|----------|----------------|------------------|--------|
| 1   | 10641.895      | 28.59               | 16.34          | 44.93              | 74.00             | -29.07         | peak     |                |                  |        |
| 2   | 10641.895      | 18.90               | 16.34          | 35.24              | 54.00             | -18.76         | AVG      |                |                  |        |

Job No.: LGW2018 #633  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 23 C / 48 %  
EUT: Pioneering TTL Li-ion Camera Flash  
Mode: A.2  
Model: V350S  
Manufacturer: GODOX Photo Equipment Co., Ltd.

Polarization: Vertical  
Power Source: DC 7.2V  
Date: 18/03/15/  
Time:  
Engineer Signature: WADE  
Distance: 3m

Note:



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 10560.936   | 27.81            | 16.30       | 44.11           | 74.00          | -29.89      | peak     |             |               |        |
| 2   | 10560.936   | 19.54            | 16.30       | 35.84           | 54.00          | -18.16      | AVG      |             |               |        |

Test mode: A3 (Above 1GHz)


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Job No.: LGW2018 #635

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Pioneering TTL Li-ion Camera Flash

Mode: A.3

Model: V350S

Manufacturer: GODOX Photo Equipment Co., Ltd.

Polarization: Horizontal

Power Source: DC 5V

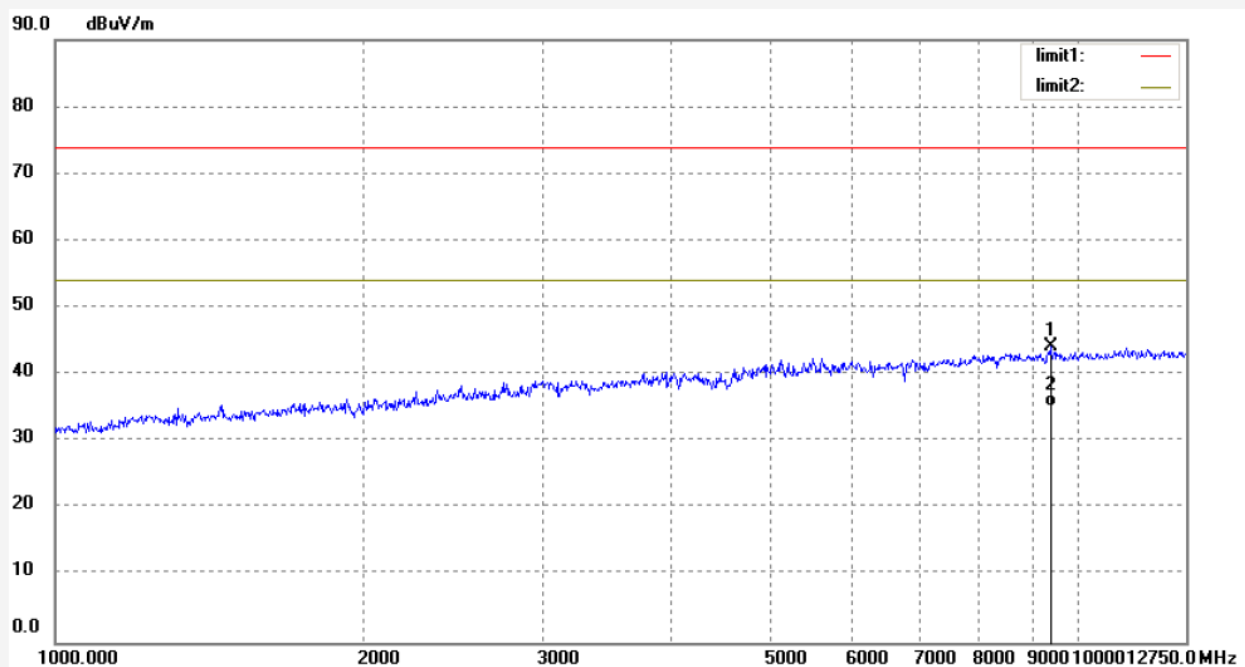
Date: 18/03/15/

Time:

Engineer Signature: WADE

Distance: 3m

Note:

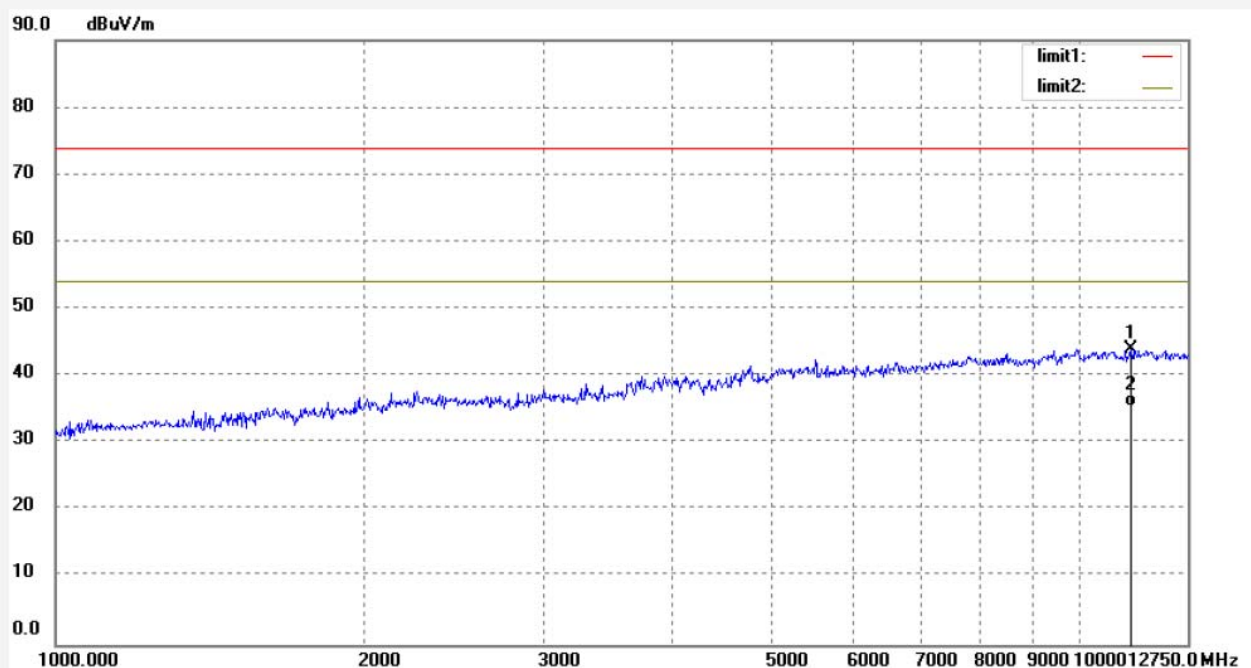


| No. | Freq.<br>(MHz) | Reading<br>(dBuV/m) | Factor<br>(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Detector | Height<br>(cm) | Degree<br>(deg.) | Remark |
|-----|----------------|---------------------|----------------|--------------------|-------------------|----------------|----------|----------------|------------------|--------|
| 1   | 9393.966       | 27.18               | 16.94          | 44.12              | 74.00             | -29.88         | peak     |                |                  |        |
| 2   | 9393.966       | 18.31               | 16.94          | 35.25              | 54.00             | -18.75         | AVG      |                |                  |        |

Job No.: LGW2018 #636  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 23 C / 48 %  
EUT: Pioneering TTL Li-ion Camera Flash  
Mode: A.3  
Model: V350S  
Manufacturer: GODOX Photo Equipment Co., Ltd.

Polarization: Vertical  
Power Source: DC 5V  
Date: 18/03/15/  
Time:  
Engineer Signature: WADE  
Distance: 3m

Note:



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 11226.249   | 25.60            | 18.32       | 43.92           | 74.00          | -30.08      | peak     |             |               |        |
| 2   | 11226.249   | 17.02            | 18.32       | 35.34           | 54.00          | -18.66      | AVG      |             |               |        |

\*\*\*\*\* End of Test Report \*\*\*\*\*