



## **FCC TEST REPORT**

**Product** : GV WIRELESS LIGHT

Trade mark : N/A

**Model/Type reference**: GV-3/1F-RC-M433

Serial Number : N/A

Report Number : EED32K00106502

FCC ID : 2ACO2-GV-RC433

Date of Issue : Jun. 14, 2018

Test Standards : 47 CFR Part 15 Subpart C

Test result : PASS

Prepared for:

Golden Vessel Electronic & Lighting Inc Industrial District, ZhongHan Town ChaoHun City, AnHui China

Prepared by:

Centre Testing International Group Co., Ltd. Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China

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Report Seal

Tested by:

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Date:

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Jun. 14, 2018

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Check No.:3319510877





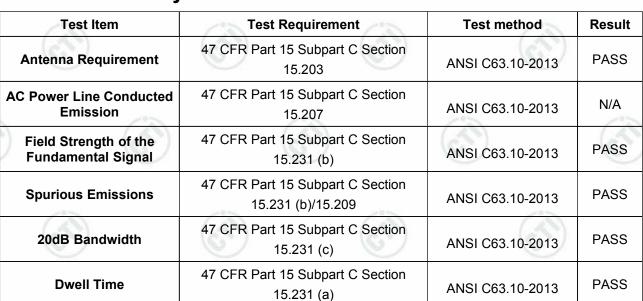


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| Version No. |    | Date        | 100 | <br>Description | 100 |     |
|-------------|----|-------------|-----|-----------------|-----|-----|
| 00          | Ju | n. 14, 2018 |     | Original        |     |     |
|             |    |             |     |                 |     | (ja |
|             |    |             |     |                 |     |     |
|             |    |             |     |                 |     |     |
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|             |    |             |     |                 |     |     |
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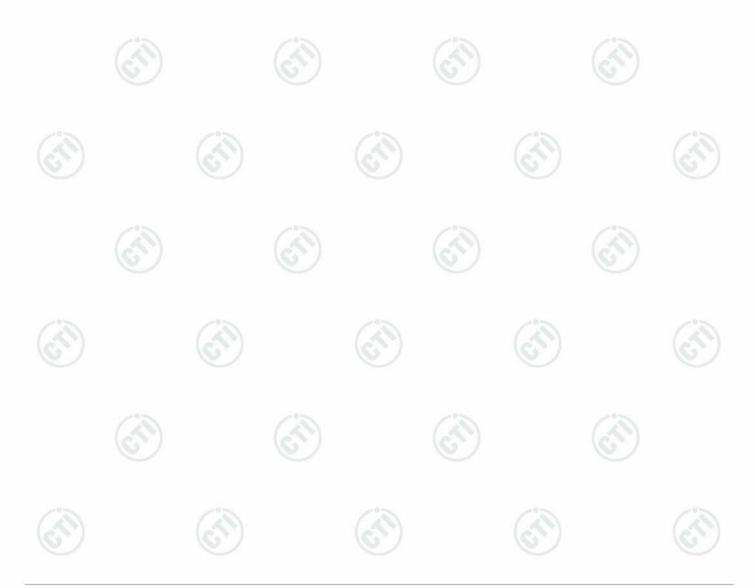
### **Test Summary**



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Remark:

The tested sample(s) and the sample information are provided by the client.







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### **5** General Information

### **5.1 Client Information**

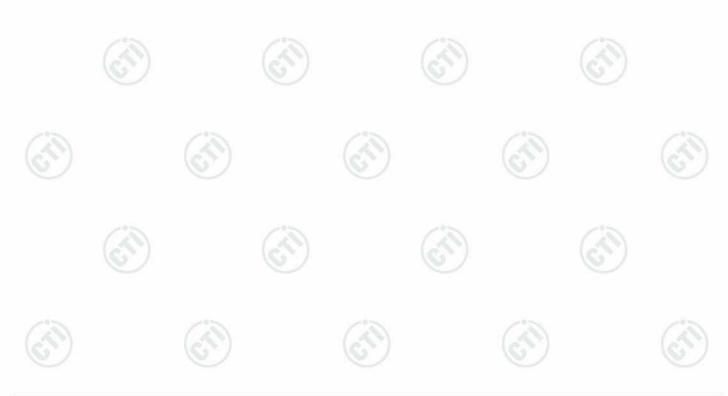
| Applicant:            | Golden Vessel Electronic & Lighting Inc                      |
|-----------------------|--|
| Address of Applicant: | Industrial District, ZhongHan Town ChaoHun City, AnHui China |

### 5.2 General Description of EUT

| B 1 (1)                          |                                    |     |
|----------------------------------|------------------------------------|-----|
| Product Name:                    | GV WIRELESS LIGHT                  | 1.4 |
| Model No.(EUT):                  | GV-3/1F-RC-M433                    | (6) |
| Trade Mark:                      | N/A                                |     |
| EUT Supports Radios application: | 433.92MHz                          |     |
| Power Supply:                    | LITHIUM BATTERY CR2025 3V          |     |
| Hardware Version:                | ZQRGBW1801 (manufacturer declare ) |     |
| Firmware Version:                | V2.0 (manufacturer declare )       |     |

### 5.3 Product Specification subjective to this standard

| Frequency Range:      | 433.92MHz                     | $(C_{J_{J_{i}}})$ | (6  |
|-----------------------|-------------------------------|-------------------|-----|
| Modulation Type:      | ASK                           |                   |     |
| Number of Channels:   | 1 (declared by the client)    |                   |     |
| Sample Type:          | Portable production           | 5 /5              |     |
| Antenna type:         | PCB antenna                   |                   | )   |
| Antenna gain:         | 1dBi                          |                   |     |
| Test voltage:         | LITHIUM BATTERY CR2025 3V     | /                 |     |
| Sample Received Date: | May 03, 2018                  |                   |     |
| Sample tested Date:   | May 03, 2018 to Jun. 12, 2018 |                   | - 6 |





#### 5.4 Test Environment and Mode

| Operating Environme  | ent:                               |                                      |
|----------------------|------------------------------------|--------------------------------------|
| Temperature:         | 24.3 °C                            |                                      |
| Humidity:            | 50.9 % RH                          |                                      |
| Atmospheric Pressure | : 1010mbar                         |                                      |
| Test mode:           |                                    |                                      |
| TX mode:             | The EUT transmitted the continuous | s signal at the specific channel(s). |

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### 5.5 Description of Support Units

The EUT has been tested independently.

#### 5.6 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd.

Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China 518101

Telephone: +86 (0) 755 3368 3668 Fax:+86 (0) 755 3368 3385

No tests were sub-contracted. FCC Designation No.: CN1164

#### 5.7 Deviation from Standards

None.

### 5.8 Abnormalities from Standard Conditions

None.

### 5.9 Other Information Requested by the Customer

None.

### 5.10 Measurement Uncertainty (95% confidence levels, k=2)

| No. | Item                            | Measurement Uncertainty |  |  |
|-----|---------------------------------|-------------------------|--|--|
| 1   | Radio Frequency                 | 7.9 x 10 <sup>-8</sup>  |  |  |
| 2   | DE newer conducted              | 0.31dB (30MHz-1GHz)     |  |  |
| 2   | RF power, conducted             | 0.57dB (1GHz-18GHz)     |  |  |
| 3   | Radiated Spurious emission test | 4.5dB (30MHz-1GHz)      |  |  |
| 3   | Nadiated Spurious emission test | 4.8dB (1GHz-12.75GHz)   |  |  |
| 4   | Conduction emission             | 3.6dB (9kHz to 150kHz)  |  |  |
| 4   | Conduction emission             | 3.2dB (150kHz to 30MHz) |  |  |
| 5   | Temperature test                | 0.64°C                  |  |  |
| 6   | Humidity test                   | 2.8%                    |  |  |
| 7   | DC power voltages               | 0.025%                  |  |  |



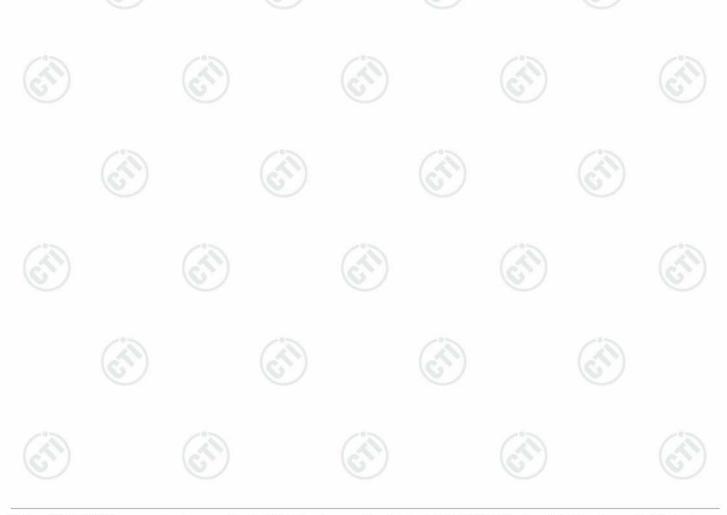


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## 6 Equipment List

| Conducted disturbance Test      |              |           |                  |                           |                               |  |
|---------------------------------|--------------|-----------|------------------|---------------------------|-------------------------------|--|
| Equipment                       | Manufacturer | Model No. | Serial<br>Number | Cal. date<br>(mm-dd-yyyy) | Cal. Due date<br>(mm-dd-yyyy) |  |
| Receiver                        | R&S          | ESCI      | 100435           | 05-26-2017<br>05-25-2018  | 05-25-2018<br>05-24-2019      |  |
| Temperature/ Humidity Indicator | TAYLOR       | 1451      | 1905             | 05-02-2018                | 05-01-2019                    |  |
| Communication test set          | R&S          | CMW500    | 152394           | 03-16-2018                | 03-15-2019                    |  |
| LISN                            | R&S          | ENV216    | 100098           | 05-12-2017<br>05-11-2018  | 05-11-2018<br>05-10-2019      |  |

|                                | RF Conducted test |           |                  |                               |                               |  |  |  |
|--------------------------------|-------------------|-----------|------------------|-------------------------------|-------------------------------|--|--|--|
| Equipment                      | Manufacturer      | Model No. | Serial<br>Number | Cal. date<br>(mm-dd-<br>yyyy) | Cal. Due date<br>(mm-dd-yyyy) |  |  |  |
| Spectrum Analyzer              | R&S               | FSP40     | 100416           | 05-12-2017<br>05-11-2018      | 05-11-2018<br>05-10-2019      |  |  |  |
| Temperature & Humidity Chamber | TAYLOR            | 1451      | 1905             | 05-02-2018                    | 05-01-2019                    |  |  |  |





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|                                  | 3N           | Semi/full-anechoid           | c Chamber        |                           |                               |
|----------------------------------|--------------|------------------------------|------------------|---------------------------|-------------------------------|
| Equipment                        | Manufacturer | Model No.                    | Serial<br>Number | Cal. date<br>(mm-dd-yyyy) | Cal. Due date<br>(mm-dd-yyyy) |
| 3M Chamber & Accessory Equipment | TDK          | SAC-3                        |                  | 06-04-2016                | 06-03-2019                    |
| TRILOG Broadband<br>Antenna      | SCHWARZBECK  | VULB9163                     | 9163-484         | 06-06-2017<br>06-05-2018  | 06-05-2018<br>06-04-2019      |
| Preamplifier                     | JS Tonscend  | EMC051845SE                  | 980380           | 01-19-2018                | 01-18-2019                    |
| Horn Antenna                     | ETS-LINDGREN | 3117                         | 00057407         | 07-20-2015                | 07-18-2018                    |
| Loop Antenna                     | ETS          | 6502                         | 00071730         | 06-22-2017                | 06-21-2019                    |
| Spectrum Analyzer                | R&S          | FSP40                        | 100416           | 05-12-2017<br>05-11-2018  | 05-11-2018<br>05-10-2019      |
| Receiver                         | R&S          | ESCI                         | 100435           | 05-26-2017<br>05-25-2018  | 05-25-2018<br>05-24-2019      |
| LISN                             | schwarzbeck  | NNBM8125                     | 81251547         | 05-12-2017<br>05-11-2018  | 05-11-2018<br>05-10-2019      |
| LISN                             | schwarzbeck  | NNBM8125                     | 81251548         | 05-12-2017<br>05-11-2018  | 05-11-2018<br>05-10-2019      |
| Signal Generator                 | Agilent      | E4438C                       | MY45095744       | 03-13-2018                | 03-12-2019                    |
| Signal Generator                 | Keysight     | E8257D                       | MY53401106       | 03-13-2018                | 03-12-2019                    |
| Temperature/ Humidity Indicator  | TAYLOR       | 1451                         | 1905             | 05-02-2018                | 05-01-2019                    |
| Communication test set           | Agilent      | E5515C                       | GB47050534       | 03-16-2018                | 03-15-2019                    |
| Cable line                       | Fulai(7M)    | SF106                        | 5219/6A          | 01-10-2018                | 01-09-2019                    |
| Cable line                       | Fulai(6M)    | SF106                        | 5220/6A          | 01-10-2018                | 01-09-2019                    |
| Cable line                       | Fulai(3M)    | SF106                        | 5216/6A          | 01-10-2018                | 01-09-2019                    |
| Cable line                       | Fulai(3M)    | SF106                        | 5217/6A          | 01-10-2018                | 01-09-2019                    |
| Communication test set           | R&S          | CMW500                       | 152394           | 03-16-2018                | 03-15-2019                    |
| High-pass filter                 | Sinoscite    | FL3CX03WG18NM1<br>2-0398-002 |                  | 01-10-2018                | 01-09-2019                    |
| band rejection filter            | Sinoscite    | FL5CX01CA09CL12<br>-0395-001 | (2)              | 01-10-2018                | 01-09-2019                    |
| band rejection filter            | Sinoscite    | FL5CX01CA08CL12<br>-0393-001 |                  | 01-10-2018                | 01-09-2019                    |
| band rejection filter            | Sinoscite    | FL5CX02CA04CL12<br>-0396-002 |                  | 01-10-2018                | 01-09-2019                    |
| band rejection filter            | Sinoscite    | FL5CX02CA03CL12<br>-0394-001 |                  | 01-10-2018                | 01-09-2019                    |





















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### 7 Test results and Measurement Data

### 7.1 Antenna Requirement

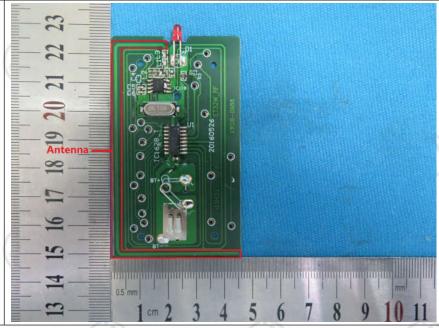
#### Standard requirement:

47 CFR Part 15C Section 15.203

15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

#### **EUT Antenna:**



The antenna is PCB antenna and no consideration of replacement. The best case gain of the antenna is 1dBi.







































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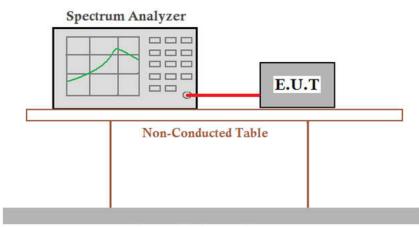
### 7.2 Spurious Emissions

### 7.2.1 Duty Cycle

Test Setup:

Test Requirement: 47 CFR Part 15C Section 15.35 (c)

Test Method: ANSI C63.10



Ground Reference Plane

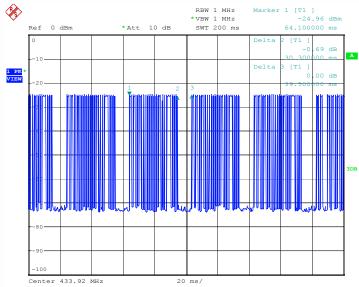
Limit: N/A

Test Mode: TX mode

Instruments Used: Refer to section 6 for details

Test Results: Pass

Test plot as follows:



Date: 11.JUN.2018 15:04:04











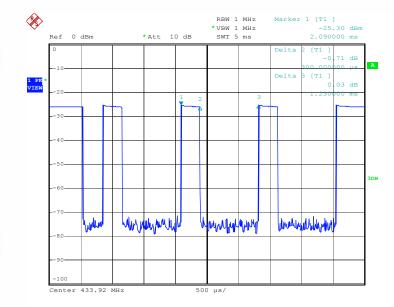




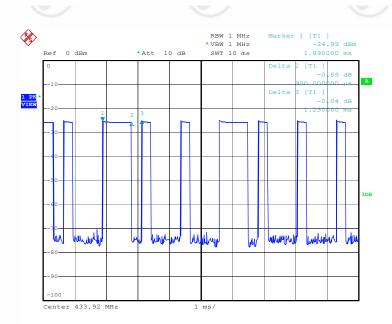


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#### Time slot:



Date: 11.JUN.2018 15:06:31



Date: 11.JUN.2018 15:07:32





















Report No.: EED32K00106502
7.2.2 Spurious Emissions

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Test Requirement: 47 CFR Part 15C Section 15.231(b) and 15.209

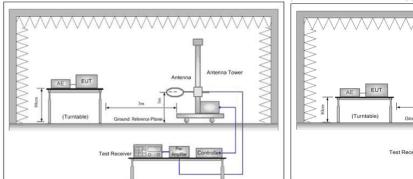
Test Method: ANSI C63.10

Test Site: Measurement Distance: 3m (Semi-Anechoic Chamber)

|   | Frequency         | Detector   | RBW    | VBW    | Remark     |
|---|-------------------|------------|--------|--------|------------|
| 1 | 0.009MHz-0.090MHz | Peak       | 10kHz  | 30kHz  | Peak       |
| ď | 0.009MHz-0.090MHz | Average    | 10kHz  | 30kHz  | Average    |
|   | 0.090MHz-0.110MHz | Quasi-peak | 10kHz  | 30kHz  | Quasi-peak |
|   | 0.110MHz-0.490MHz | Peak       | 10kHz  | 30kHz  | Peak       |
|   | 0.110MHz-0.490MHz | Average    | 10kHz  | 30kHz  | Average    |
|   | 0.490MHz -30MHz   | Quasi-peak | 10kHz  | 30kHz  | Quasi-peak |
|   | 30MHz-1GHz        | Quasi-peak | 120kHz | 300kHz | Quasi-peak |
|   | Above 1GHz        | Peak       | 1MHz   | 3MHz   | Peak       |
|   | Above IGHZ        | Peak       | 1MHz   | 10Hz   | Average    |

**Receiver Setup:** 

#### Test Setup:



Antenna Tower

Artenna Antenna Tower

Ground Reference Plane

Test Receiver Antenna Tower

Test Receiver Controlles

Figure 1. Below 30MHz

Figure 2. 30MHz to 1GHz

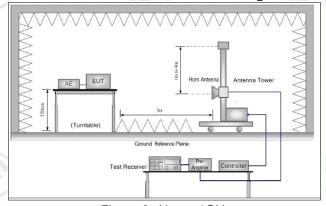


Figure 3. Above 1GHz







#### **Test Procedure:**

#### Below 1GHz test procedure as below:

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be retested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

#### Above 1GHz test procedure as below:

- g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 metre to 1.5 metre( Above 18GHz the distance is 1 meter and table is 1.5 metre).
- h. Test the EUT in the lowest channel ,middle channel, the Highest channel
- The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.
- Repeat above procedures until all frequencies measured was complete.

|   | Fraguenay         | Field strength    | Limit    | Remark     | Measurement  |
|---|-------------------|-------------------|----------|------------|--------------|
|   | Frequency         | (microvolt/meter) | (dBµV/m) | Remark     | distance (m) |
|   | 0.009MHz-0.490MHz | 2400/F(kHz)       | -        | -          | 300          |
| 1 | 0.490MHz-1.705MHz | 24000/F(kHz)      | - /3     | - 10       | 30           |
| - | 1.705MHz-30MHz    | 30                | - (6     | -          | 30           |
|   | 30MHz-88MHz       | 100               | 40.0     | Quasi-peak | 3            |
|   | 88MHz-216MHz      | 150               | 43.5     | Quasi-peak | 3            |
|   | 216MHz-960MHz     | 200               | 46.0     | Quasi-peak | 3            |
|   | 960MHz-1GHz       | 500               | 54.0     | Quasi-peak | 3            |
|   | Above 1GHz        | 500               | 54.0     | Average    | 3            |

**Note:** 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

| Frequency  | Limit (dBµV/m @3m) | Remark        |  |
|------------|--------------------|---------------|--|
| 433.92MHz  | 80.8               | Average Value |  |
| 433.92NITZ | 100.8              | Peak Value    |  |

Limit:

Limit: (Spurious Emissions)

(Field strength of the fundamental signal)

Test Mode: TX mode

Instruments Used: Refer to section 6 for details

Test Results: Pass













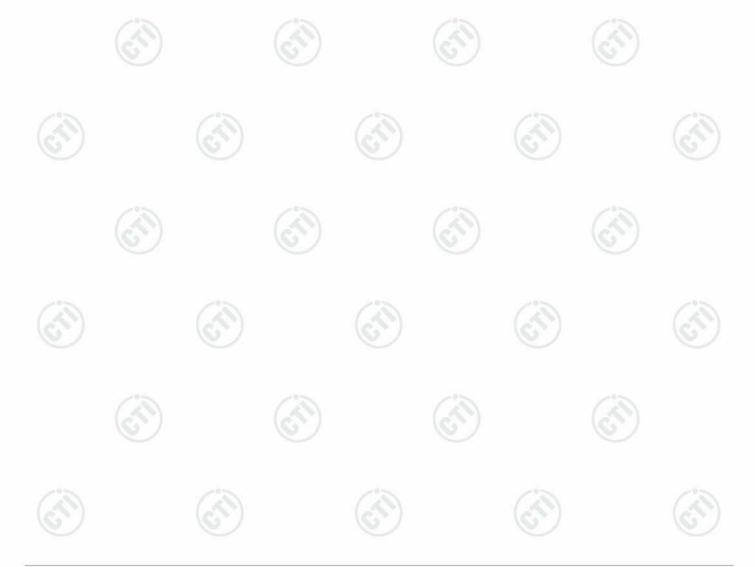
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#### Test data

### Field Strength of the Fundamental Signal

| Frequency<br>(MHz) | Correct Factor (dB) | Read<br>Level<br>(dBuV) | Peak<br>Value<br>(dBµV/m) | PDCF<br>(dB) | Average<br>value<br>(dBuV/m) | Average<br>Limit<br>(dBµV/m) | Over<br>Limit<br>(dB) | Polari<br>zation |
|--------------------|---------------------|-------------------------|---------------------------|--------------|------------------------------|------------------------------|-----------------------|------------------|
| 433.943            | 27.66               | -65.2                   | -37.54                    | -16.8        | -54.34                       | 80.8                         | -135.14               | Н                |
| 433.943            | 27.66               | -62.25                  | -34.59                    | -16.8        | -51.39                       | 80.8                         | -132.19               | V                |

| Average value:     |  |     |
|--------------------|--|-----|
|                    | Average value=Peak value + PDCF                    |     |
| Calculate Formula: | PDCF=20 log(Duty cycle)                            | -)  |
|                    | Duty cycle= T on time / T period                   | /   |
|                    | Ton time =(0.3×16+0.9×1)ms=5.7ms                   |     |
| Test data:         | T period =39.5ms                                   | 200 |
|                    | PDCF= 20 log(Duty cycle)=20 log(5.7/39.5)= -16.8dB | (3) |

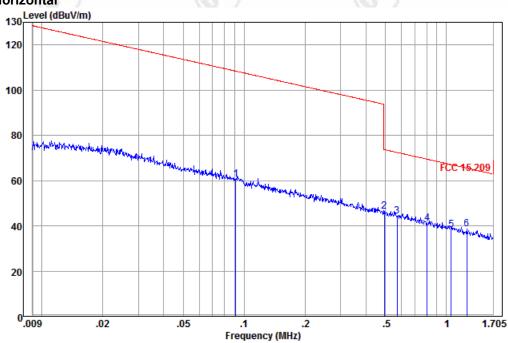




Test data

Spurious Emissions 9 kHz-1.705MHz

#### Horizontal



|      |       | Ant    | Cable | Read  |        | Limit  | 0ver   |            |        |
|------|-------|--------|-------|-------|--------|--------|--------|------------|--------|
|      | Freq  | Factor | Loss  | Level | Level  | Line   | Limit  | Pol/Phase  | Remark |
|      |       |        |       |       |        |        |        |            |        |
|      | MHz   | dB/m   | dB    | dBuV  | dBuV/m | dBuV/m | dB     |            |        |
|      |       |        |       |       |        |        |        |            |        |
| 1    | 0.091 | 11.43  | 0.10  | 48.95 | 60.48  | 108.42 | -47.94 | Horizontal | QP     |
| 2    | 0.495 | 11.30  | 0.12  | 34.88 | 46.30  | 73.72  | -27.42 | Horizontal | QP     |
| 3    | 0.573 | 11.30  | 0.12  | 32.78 | 44.20  | 72.44  | -28.24 | Horizontal | QP     |
| 4    | 0.805 | 11.32  | 0.12  | 29.48 | 40.92  | 69.46  | -28.54 | Horizontal | QP     |
| 5    | 1.058 | 11.40  | 0.14  | 26.80 | 38.34  | 67.07  | -28.73 | Horizontal | QP     |
| 6 рр | 1.264 | 11.40  | 0.15  | 26.92 | 38.47  | 65.51  | -27.04 | Horizontal | QP     |











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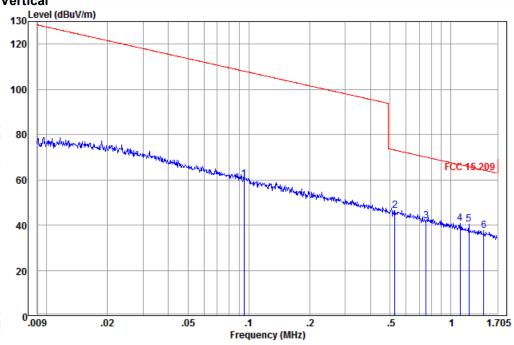








#### Vertical



|      | Freq   |       | Cable<br>Loss |       |        |        |        | Pol/Phase | Remark |   |
|------|--------|-------|---------------|-------|--------|--------|--------|-----------|--------|---|
| _    | MHz    | dB/m  | dB            | dBuV  | dBuV/m | dBuV/m | dB     |           |        | _ |
| 1    | 0.095  | 11.42 | 0.11          | 48.54 | 60.07  | 108.06 | -47.99 | Vertical  | QP     |   |
| 2    | 0.529  | 11.30 | 0.12          | 35.07 | 46.49  | 73.12  | -26.63 | Vertical  | QΡ     |   |
| 3    | 0.756  | 11.30 | 0.12          | 30.24 | 41.66  | 70.01  | -28.35 | Vertical  | QP     |   |
| 4    | 1.115  | 11.40 | 0.14          | 29.22 | 40.76  | 66.61  | -25.85 | Vertical  | QP     |   |
| 5 pp | 1.232  | 11.40 | 0.15          | 28.66 | 40.21  | 65.74  | -25.53 | Vertical  | QP     |   |
| 6    | 1 /157 | 11 /0 | 0 17          | 26 08 | 37 65  | 64 28  | -26 63 | Ventical  | OP     |   |





































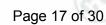


1.705MHz-30MHz

#### Horizontal







| 4   | .70 | 5 2    |       |          |   |          |         |                       | 5<br>Fr                 | reque  | ncv ( | MH7 |        | 0 | 20                | 30   |
|-----|-----|--------|-------|----------|---|----------|---------|-----------------------|-------------------------|--------|-------|-----|--------|---|-------------------|--|
| 20  |     |        |       |          |   | www.by.q | Maryagi | interested the second | **BITO TO SERVICE STATE | Marrie | 4     | *** | Age-ye | 5 | Parkwantener dago | 6<br><sub>************************************</sub> |
| 40  | Na  | No.    | 1     | Markette | 2 | lä.i.i.  |         | 3                     |                         |        |       |     |        |   |                   | FCC 15.209   |
| 60  |     |        |       |          |   |          |         |                       |                         |        |       |     |        |   |                   |  |
| 80  |     |        |       |          |   |          |         |                       |                         |        |       |     |        |   |                   |  |
| 100 |     |        |       |          |   |          |         |                       |                         |        |       |     |        |   |                   |  |
| 120 |     |        |       |          |   |          |         |                       |                         |        |       |     |        |   |                   |  |
| 130 | Lev | el (di | BuV/r | n)       |   |          |         |                       |                         |        |       |     |        |   |                   |  |

|      | Freq   |       | Cable<br>Loss |       |        | Limit<br>Line |        | Pol/Phase  | Remark |
|------|--------|-------|---------------|-------|--------|---------------|--------|------------|--------|
| -    | MHz    | dB/m  | dB            | dBuV  | dBuV/m | dBuV/m        | dB     |            |        |
| 1 pp | 2.072  | 11.41 | 0.20          | 22.21 | 33.82  | 69.50         | -35.68 | Horizontal | QP     |
| 2    | 2.890  | 11.49 | 0.16          | 18.91 | 30.56  | 69.50         | -38.94 | Horizontal | QP     |
| 3    | 4.100  | 11.29 | 0.19          | 16.77 | 28.25  | 69.50         | -41.25 | Horizontal | QP     |
| 4    | 7.531  | 11.02 | 0.44          | 12.86 | 24.32  | 69.50         | -45.18 | Horizontal | QP     |
| 5    | 14.357 | 10.72 | 0.69          | 8.87  | 20.28  | 69.50         | -49.22 | Horizontal | QP     |
| 6    | 24.125 | 9.60  | 1.00          | 9.22  | 19.82  | 69.50         | -49.68 | Horizontal | QP     |































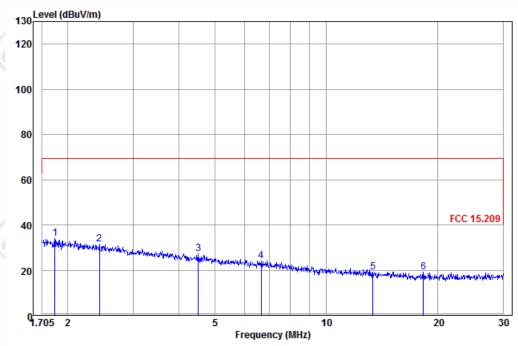






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#### Vertical



|      | Freq   |       |      |       |        | Limit<br>Line |        | Pol/Phase | Remark |
|------|--------|-------|------|-------|--------|---------------|--------|-----------|--------|
| _    | MHz    | dB/m  | dB   | dBuV  | dBuV/m | dBuV/m        | dB     |           |        |
| 1 pp | 1.842  | 11.40 | 0.19 | 22.33 | 33.92  | 69.50         | -35.58 | Vertical  | QP     |
| 2    | 2.433  | 11.45 | 0.18 | 19.77 | 31.40  | 69.50         | -38.10 | Vertical  | QP     |
| 3    | 4.507  | 11.25 | 0.17 | 15.72 | 27.14  | 69.50         | -42.36 | Vertical  | QP     |
| 4    | 6.657  | 11.08 | 0.35 | 12.73 | 24.16  | 69.50         | -45.34 | Vertical  | QP     |
| 5    | 13.363 | 10.76 | 0.68 | 7.84  | 19.28  | 69.50         | -50.22 | Vertical  | QP     |
| 6    | 18.267 | 10.29 | 0.75 | 8.24  | 19.28  | 69.50         | -50.22 | Vertical  | QP     |





































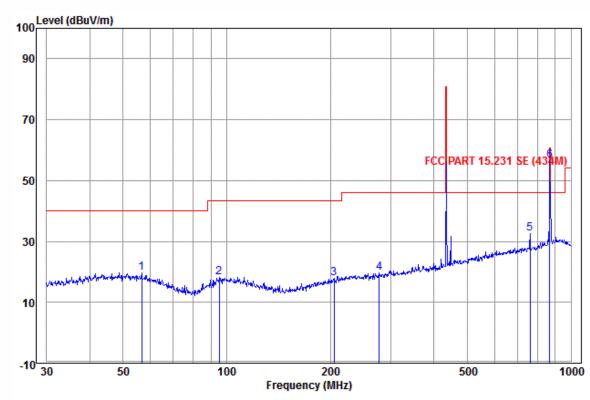


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#### 30MHz-1GHz

#### QP value:

#### Horizontal



|      | Freq    |       |      |       |        | Limit<br>Line |        | Pol/Phase  | Remark |
|------|---------|-------|------|-------|--------|---------------|--------|------------|--------|
| _    | MHz     | dB/m  | dB   | dBuV  | dBuV/m | dBuV/m        | dB     |            |        |
| 1    | 56.593  | 13.58 | 0.18 | 5.94  | 19.70  | 40.00         | -20.30 | Horizontal | QP     |
| 2    | 95.093  | 11.74 | 0.50 | 5.99  | 18.23  | 43.50         | -25.27 | Horizontal | QP     |
| 3    | 204.955 | 11.62 | 1.13 | 5.22  | 17.97  | 43.50         | -25.53 | Horizontal | QP     |
| 4    | 277.094 | 13.05 | 1.19 | 5.43  | 19.67  | 46.00         | -26.33 | Horizontal | QP     |
| 5    | 760.704 | 19.57 | 2.50 | 10.63 | 32.70  | 46.00         | -13.30 | Horizontal | QP     |
| 6 рр | 869.130 | 21.61 | 2.47 | 32.54 | 56.62  | 60.80         | -4.18  | Horizontal |        |



























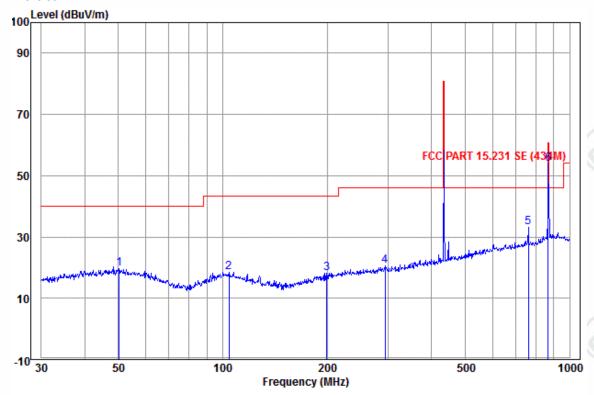




Vertical



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|      |         | Ant    | Cable | Read  |        | Limit  | 0ver   |           |        |
|------|---------|--------|-------|-------|--------|--------|--------|-----------|--------|
|      | Freq    | Factor | Loss  | Level | Level  | Line   | Limit  | Pol/Phase | Remark |
| -    | MHz     | dB/m   | dB    | dBuV  | dBuV/m | dBuV/m | dB     |           |        |
| 1    | 50.232  | 14.56  | 0.11  | 5.12  | 19.79  | 40.00  | -20.21 | Vertical  | QP     |
| 2    | 104.170 | 12.13  | 0.59  | 5.83  | 18.55  | 43.50  | -24.95 | Vertical  | QP     |
| 3    | 199.286 | 11.47  | 1.09  | 5.68  | 18.24  | 43.50  | -25.26 | Vertical  | QP     |
| 4    | 294.114 | 13.31  | 1.10  | 6.06  | 20.47  | 46.00  | -25.53 | Vertical  | QP     |
| 5    | 760.704 | 19.57  | 2.50  | 11.20 | 33.27  | 46.00  | -12.73 | Vertical  | QP     |
| 6 nn | 869,130 | 21.61  | 2.47  | 29.70 | 53.78  | 60.80  | -7.02  | Vertical  | _      |

































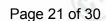






**Above 1GHz** Peak value:

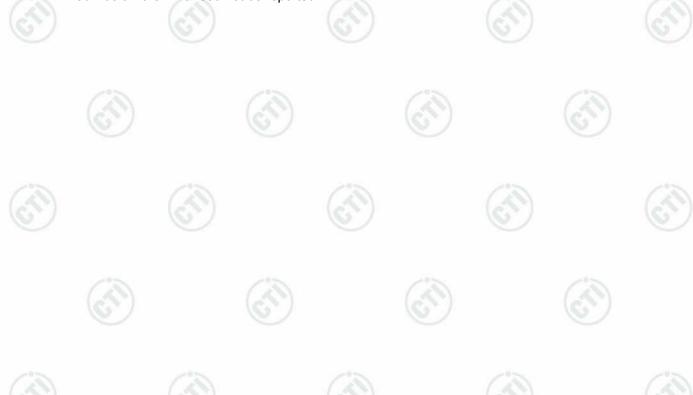




| Frequency<br>(MHz) | Height (cm) | Azimuth (deg) | Correct Factor (dB) | Level<br>(dBµV/m) | Limit<br>(dBµV/m) | Over<br>Limit<br>(dB) | Antenna<br>Polaxis |
|--------------------|-------------|---------------|---------------------|-------------------|-------------------|-----------------------|--------------------|
| 1301.332           | 150         | 201           | 55.66               | 55.66             | 80.80             | -25.14                | Н                  |
| 1733.375           | 149         | 189           | 51.63               | 51.63             | 80.80             | -29.17                | Н                  |
| 2168.51            | 151         | 145           | 54.48               | 54.48             | 80.80             | -26.32                | H                  |
| 3037.063           | 151         | 100           | 49.98               | 49.98             | 80.80             | -30.82                | H                  |
| 3909.967           | 149         | 54            | 51.71               | 51.71             | 80.80             | -29.09                | Н                  |
| 4338.163           | 150         | 48            | 51.36               | 51.36             | 80.80             | -29.44                | Н                  |
| 1301.332           | 149         | 100           | 56.19               | 56.19             | 80.80             | -24.61                | V                  |
| 1736.483           | 150         | 25            | 52.48               | 52.48             | 80.80             | -28.32                | V                  |
| 2168.510           | 149         | 321           | 50.57               | 50.57             | 80.80             | -30.23                | V                  |
| 3037.063           | 150         | 254           | 53.82               | 53.82             | 80.80             | -26.98                | V                  |
| 4338.163           | 151         | 156           | 52.18               | 52.18             | 80.80             | -28.62                | V                  |
| 4778.879           | 149         | 12            | 52.22               | 52.22             | 80.80             | -28.58                | V                  |

#### Remark:

- 1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
  - Final Test Level =Receiver Reading Correct Factor
  - Correct Factor = Preamplifier Factor Antenna Factor Cable Factor
- 2) Scan from 9kHz to 25GHz, the disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

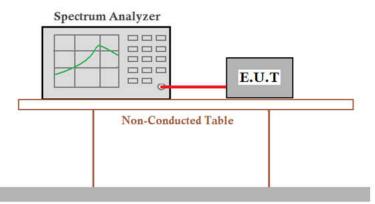




#### 7.3 20dB Bandwidth

Test Requirement: 47 CFR Part 15C Section 15.231 (c)

Test Method: ANSI C63.10



Ground Reference Plane

**Test Setup:** 

The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated

carrier.

Test Mode: TX mode

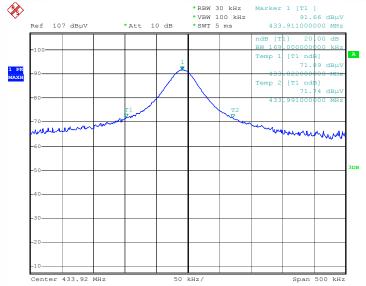
Instruments Used: Refer to section 6 for details

Test Results: Pass

#### Test data

| 181 | 20dB bandwidth (kHz) | Limit (kHz) | Results |  |
|-----|----------------------|-------------|---------|--|
| 4   | 169                  | 1084.78     | Pass    |  |

#### Test plot as follows:



Date: 11.JUN.2018 15:00:14









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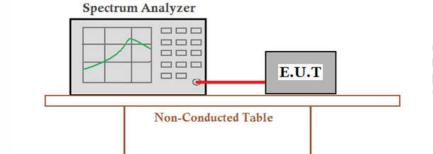
7.4 Dwell Time

**Test Setup:** 

Report No.: EED32K00106502

**Test Requirement:** 47 CFR Part 15C Section 15.231 (a) (1)

**Test Method:** ANSI C63.10



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Ground Reference Plane

Limit: Not more than 5 seconds

**Test Mode:** TX mode

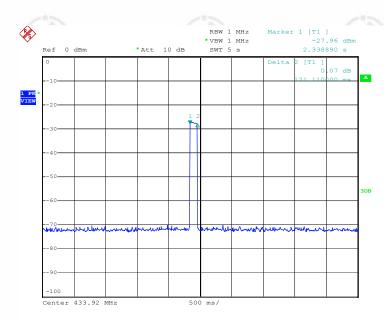
**Instruments Used:** Refer to section 6 for details

**Test Results: Pass** 

#### Test data:

| (    | Test item      | Test value | Limit (MHz) | Results |
|------|----------------|------------|-------------|---------|
| Trai | nsmitting time | 0.12111s   | ≤5s         | Pass    |

#### Test plot as follows:



Date: 11.JUN.2018 15:14:28











Report No. : EED32K00106502 Page 24 of 30

### **APPENDIX 1 PHOTOGRAPHS OF TEST SETUP**

Test Model No.: GV-3/1F-RC-M433



Radiated spurious emission Test Setup-1(9kHz~30MHz)



Radiated spurious emission Test Setup-2 (30MHz~1GHz)

















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Radiated spurious emission Test Setup-3(Above 1GHz)



















































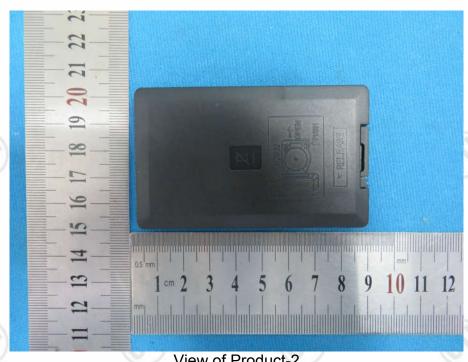
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### **APPENDIX 2 PHOTOGRAPHS OF EUT**

Test model No.: GV-3/1F-RC-M433



View of Product-1



View of Product-2









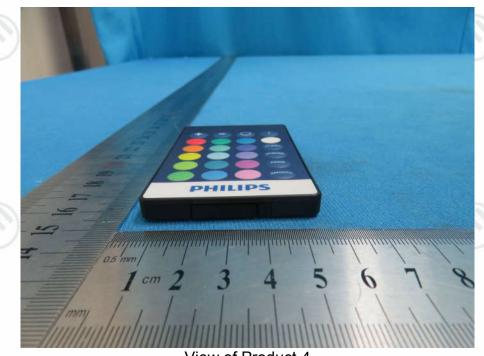








View of Product-3



View of Product-4



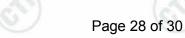














View of Product-5



View of Product-6







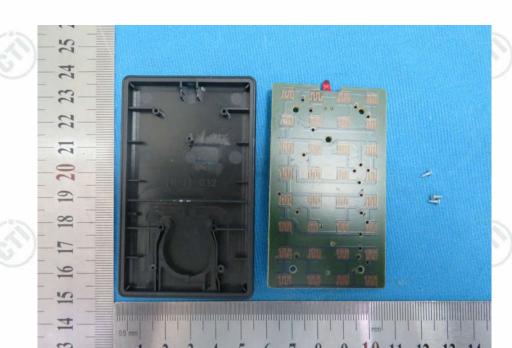








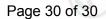


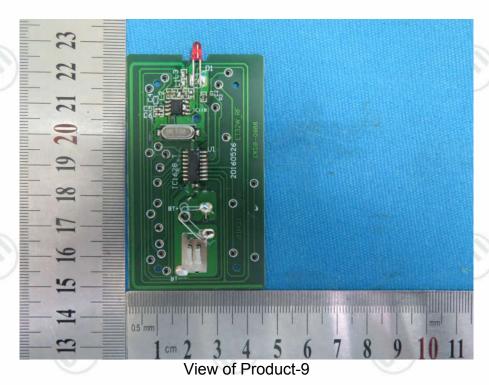


View of Product-8









# \*\*\* End of Report \*\*\*

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

