



**BUREAU
VERITAS**

TEST REPORT No: (5217)107-0023

TEST REPORT

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|-------------|---|----------|---|
| To: | NEW BRIGHT INDUSTRIAL CO., LTD | To: | - |
| Attn: | Erick Kwok | Attn: | - |
| Address: | 9/F., NEW BRIGHT BUILDING, 11 SHEUNG YUET ROAD, KOWLOON BAY, KOWLOON, HONG KONG. | Address: | - |
| Fax: | 852 27953665 | Fax: | - |
| E-mail: | ypeng01@newbright.com / chkwok01@newbright.com | E-mail: | - |
| Folder No.: | NBT-17AP104MTHS-B-A | | |

| | |
|---------------|--|
| Factory name: | NEW BRIGHT INDUSTRIAL CO., LTD |
| Location: | 9/F., NEW BRIGHT BUILDING, 11 SHEUNG YUET ROAD, KOWLOON BAY, KOWLOON, HONG KONG. |
| Product: | TOY Receiver Model No.: GF614A |



| | |
|------------------|--------------------|
| Sample No: | HK170413/009 |
| Date of Receipt: | April 13, 2017 |
| Test date: | May 04, 2017 |
| Test Requested: | FCC Part 15 - 2015 |
| Test Method: | ANSI C63.10 - 2013 |
| FCC ID: | G6DGF614A |

The results given in this report are related to the tested specimen of the described electrical apparatus.

CONCLUSION: The submitted sample was found to COMPLY with requirement of FCC Part 15 Subpart C.

Authorized Signature:

Reviewed by: Kinko Wong
Date: May 26, 2017

Approved by: Law Man kit
Date: May 26, 2017

**BUREAU VERITAS HONG KONG LIMITED –
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This report is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. Our report is limited to the test samples identified herein. The results set forth in this report are not necessarily indicative or representative of the statistical quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof. You shall have thirty days from receipt of this report to request additional testing of the samples or to notify us of any errors or omissions relating to our report, provided, however, such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.



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Test Result Summary

| EMISSION TEST | | | |
|---|-------------|-------------------------------------|--------------------------|
| Test requirement: FCC Part 15 - 2015 | | | |
| Test Condition | Test Method | Test Result | |
| | | Pass | Failed |
| Radiated Emission Test, 9kHz to 24GHz | ANSI C63.10 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Frequency range of Fundamental Emission | ANSI C63.10 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 26dB Bandwidth of Fundamental Emission | ANSI C63.10 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Duty Cycle Correction During 100msec | ANSI C63.10 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Report Revision & Sample Re-submit History:

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Location of the test laboratory

Radiated and Conducted emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.10 – 2014. An Open Area Test Site and Full Anechoic Chamber are set up for investigation and located at :

BUREAU VERITAS HONG KONG LIMITED, EMC CENTRE

No. 2106-2107, 21/F., Westin Centre,
26 Hung To Road,
Kwun Tong, Kowloon,
Hong Kong

List of measuring equipment

Radiated Emission

| EQUIPMENT | MANUFACTURER | MODEL NO. | SERIAL NO. | CAL. DATE | CAL. DUE DATE |
|---|----------------|-----------------------|--------------|--------------|---------------|
| EMI TEST RECEIVER | R&S | ESCI | 100379 | 22-FEB-2017 | 21-FEB-2018 |
| SIGNAL ANALYZER 40GHZ | R&S | FSV 40 | 100977 | 16-AUG-2016 | 15-AUG-2017 |
| BILOG ANTENNA | SCHAFFNER | CBL6112D | 25229 | 27-FEB-2016 | 26-FEB-2018 |
| OPEN AREA TEST SITE | BVCPS | N/A | N/A | 18-JUN-2016 | 17-JUN-2017 |
| ANECHOIC CHAMBER | ALBATROSS | M-CDC | 80374004499B | 11-MAY-2016 | 10-MAY-2017 |
| BICONICAL ANTENNA | R&S | HK116 | 100179 | 14-APR-2016 | 13-APR-2018 |
| LOG-PERIODIC DIPOLE ARRAY ANTENNA | R&S | HL223 | 832369/001 | 07-APR-2016 | 06-APR-2018 |
| LOOP ANTENNA | ETS-LINDGREN | 6502 | 00102266 | 06-NOV-2015 | 05-NOV-2017 |
| HORN ANTENNA (1-18GHZ) | SCHWARZBECK | BBHA9120D | 9120D-692 | 05-NOV-2016 | 04-NOV-2018 |
| HORN ANTENNA (7.5 – 18GHZ) | SCHWARZBECK | HWRD 750 | 00015 | 17-JUNE-2016 | 16-JUNE-2018 |
| WIDEBAND HORN ANTENNA | STEATITE | QWH-SL-18-40- K-SG | 12688 | 03-SEP-2015 | 02-SEP-2017 |
| COAXIAL CABLE | SUHNER | N/A | N/A | 06-JAN-2017 | 05-JAN-2018 |
| COAXIAL CABLE | HUBER + SUHNER | RG214 | N/A | 04-OCT-2016 | 03-OCT-2017 |

Measurement Uncertainty

| MEASUREMENT | FREQUENCY | UNCERTAINTY |
|--------------------|-----------------|-------------|
| Radiated emissions | 9kHz to 30MHz | 4.2dB |
| | 30MHz to 200MHz | 4.5dB |
| | 200MHZ to 1GHz | 5.6dB |
| | 1GHz to 18GHz | 4.7dB |
| | 18GHz to 40GHz | 5.2dB |

Remarks:-

N/A : Not Applicable or Not Available

The measurement instrumentation uncertainty would be taking into consideration on each of the test result



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Equipment Under Test [EUT]

Description of Sample:

| | |
|-------------------------------|---------------------------------------|
| Model Name: | TOY Receiver |
| Model Number: | GF614A |
| Additional Model Name: | -- |
| Additional Model Number: | -- |
| Additional Model information: | -- |
| Rating: | 9.6Vd.c. ("Rechargeable battery" x 1) |

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Description of EUT Operation:

The Equipment Under Test (EUT) is a **NEW BRIGHT INDUSTRIAL CO., LTD.** of Remote Control Transceiver. It is a 1 switch transceiver and operating at 2407MHz to 2477MHz. The lowest, middle and highest frequencies were tested and the results are shown in the report. The EUT transmit while corresponding remote controller sticks are being pushed or pulled, Modulation by IC, and type is GFSK.

There are total 16 channels and below is the frequency list :

| | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|
| 2407 | 2408 | 2409 | 2410 | 2411 | 2435 | 2445 | 2468 | 2470 | 2471 |
| 2472 | 2473 | 2474 | 2475 | 2476 | 2477 | | | | |

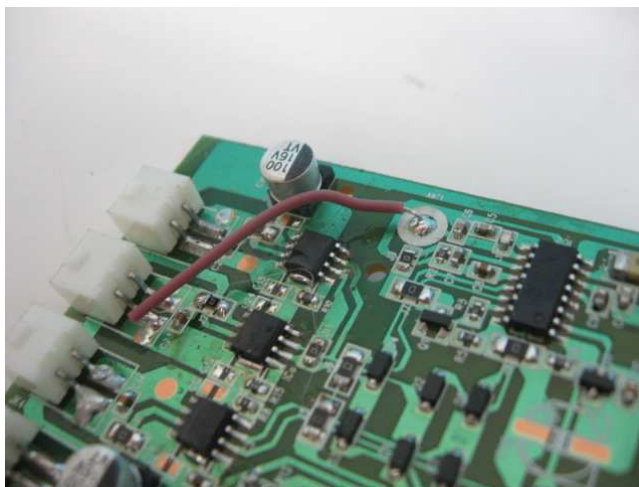
The transmitter has different control:

1. Switch – control on / off

Antenna Requirement (Section 15.203)

The EUT is use of a permanently antenna. It is soldered on the PCB. The antenna consists of 3.5cm long wire The antenna is not replaceable or user serviceable. The requirements of S15.203 are met. There are no deviations or exceptions to the specifications.

Photo of Antenna



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Test Results

Radiated Emissions (Fundamental)

Test Requirement: FCC Part 15 Section 15.249
 Test Method: ANSI C63.10
 Test Date(s): 2017-05-04
 Temperature: 24.0 °C
 Humidity: 66.0 %
 Atmospheric Pressure: 100.2 kPa
 Mode of Operation: Transmission mode
 Tested Voltage: 9.6Vd.c. ("Rechargeable battery" x 1)

Test Procedure:

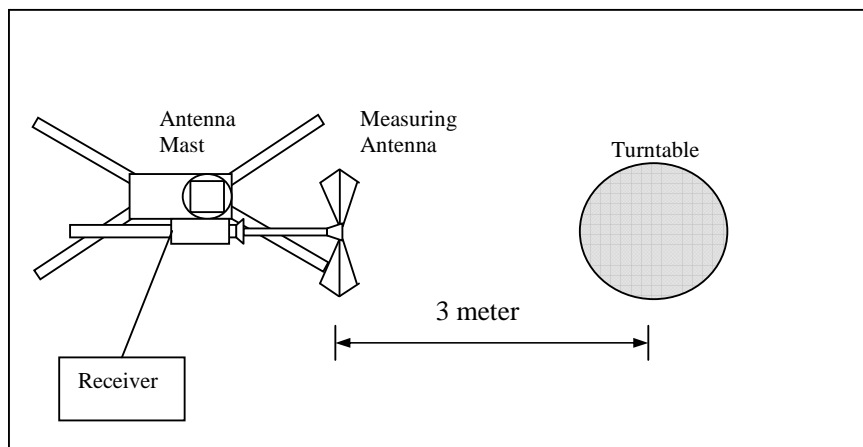
Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.10 – 2014.

The equipment under test (EUT) was placed on a non-conductive turntable with dimensions of 1.5m x 1m and 0.8m high above the ground for measurement frequency below 1GHz and 1.5m high above the ground for measurement frequency above 1GHz. 3m from the EUT, a broadband antenna mounting on the mast received the signal strength. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be perform using new battery. The turntable was rotated to maximize the emission level. The antenna was then moving along the mast from 1m up to 4m until no more higher value was found. Both horizontal and vertical polarization of the antenna were placed and investigated.

For below 30MHz, a loop antenna with its vertical plane is place 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1m above the ground.

Location: The Roof, Westin Centre, 26 Hung To Road, Kwun Tong, Kowloon, Hong Kong

Test Setup: Open Area Test Site





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Limits for Field Strength of Fundamental Emissions [FCC 47CFR 15.249]:

| Frequency Range of Fundamental [MHz] | Field Strength of Fundamental Emission (Average) [mV/m] | Field Strength of Harmonics Emission (Average) [µV/m] |
|---|--|--|
| 2400-2483.5 | 50 | 500 |

Measurement Data

Test Result of (Transmission mode, Lowest frequency): PASS

| Frequency (MHz) | Polarity (H/V) | Antenna Factor & Cable Loss (dB/m) | Duty-cycle correction (dB) | Field Strength at 3m – Peak (dBµV/m) | Limit at 3m – Peak (dBµV/m) | Margin - Peak (dB) | Field Strength at 3m – Average (dBµV/m) | Limit at 3m – Average (dBµV/m) | Margin - Average (dB) |
|-----------------|----------------|------------------------------------|----------------------------|--------------------------------------|-----------------------------|--------------------|---|--------------------------------|-----------------------|
| 2407.00 | H | -4.8 | -16.8 | 93.5 | 114.0 | -20.5 | **76.7 | 94.0 | -17.3 |
| 2407.00 | V | -4.8 | -16.8 | 93.1 | 114.0 | -20.9 | **76.3 | 94.0 | -17.7 |

Test Result of (Transmission mode, Middle frequency): PASS

| Frequency (MHz) | Polarity (H/V) | Antenna Factor & Cable Loss (dB/m) | Duty-cycle correction (dB) | Field Strength at 3m – Peak (dBµV/m) | Limit at 3m – Peak (dBµV/m) | Margin - Peak (dB) | Field Strength at 3m – Average (dBµV/m) | Limit at 3m – Average (dBµV/m) | Margin - Average (dB) |
|-----------------|----------------|------------------------------------|----------------------------|--------------------------------------|-----------------------------|--------------------|---|--------------------------------|-----------------------|
| 2445.00 | H | -4.8 | -16.8 | 93.1 | 114.0 | -20.9 | **76.3 | 94.0 | -17.7 |
| 2445.00 | V | -4.8 | -16.8 | 92.8 | 114.0 | -21.2 | **76.0 | 94.0 | -18.0 |

Test Result of (Transmission mode, Highest frequency): PASS

| Frequency (MHz) | Polarity (H/V) | Antenna Factor & Cable Loss (dB/m) | Duty-cycle correction (dB) | Field Strength at 3m – Peak (dBµV/m) | Limit at 3m – Peak (dBµV/m) | Margin - Peak (dB) | Field Strength at 3m – Average (dBµV/m) | Limit at 3m – Average (dBµV/m) | Margin - Average (dB) |
|-----------------|----------------|------------------------------------|----------------------------|--------------------------------------|-----------------------------|--------------------|---|--------------------------------|-----------------------|
| 2477.00 | H | -4.8 | -16.8 | 91.4 | 114.0 | -22.6 | **74.6 | 94.0 | -19.4 |
| 2477.00 | V | -4.8 | -16.8 | 92.2 | 114.0 | -21.8 | **75.4 | 94.0 | -18.6 |

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.

**Duty Cycle Correction = 20Log(0.144) = -16.8.

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz

VBW = 1MHz



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Radiated Emissions (Spurious Emission)

Test Requirement: FCC Part 15 Section 15.249
 Test Method: ANSI C63.10
 Test Date(s): 2017-05-04
 Temperature: 24.0 °C
 Humidity: 66.0 %
 Atmospheric Pressure: 100.2 kPa
 Mode of Operation: Transmission mode
 Tested Voltage: 9.6Vd.c. ("Rechargeable battery" x 1)

Measurement Data

Test Result of (Transmission mode, Lowest frequency): PASS

| Frequency (MHz) | Polarity (H/V) | Antenna Factor & Cable Loss (dB/m) | Duty-cycle correction (dB) | Field Strength at 3m – Peak (dBμV/m) | Limit at 3m – Peak (dBμV/m) | Margin - Peak (dB) | Field Strength at 3m – Average (dBμV/m) | Limit at 3m – Average (dBμV/m) | Margin - Average (dB) |
|-----------------|----------------|------------------------------------|----------------------------|--------------------------------------|-----------------------------|--------------------|---|--------------------------------|-----------------------|
| 2400.00 | H | -4.8 | -16.8 | 63.1 | 74.0 | -10.9 | **46.3 | 54.0 | -7.7 |
| 4814.00 | H | 4.8 | -16.8 | 63.0 | 74.0 | -11.0 | **46.2 | 54.0 | -7.8 |
| 7221.00 | H | 12.4 | -16.8 | 52.7 | 74.0 | -21.3 | **35.9 | 54.0 | -18.1 |
| 9628.00 | H | 13.5 | -16.8 | 46.8 | 74.0 | -27.2 | **30.0 | 54.0 | -24.0 |
| 12035.00 | H | 19.6 | -16.8 | 53.3 | 74.0 | -20.7 | **36.5 | 54.0 | -17.5 |
| 14442.00 | H | 25.8 | -16.8 | 56.6 | 74.0 | -17.4 | **39.8 | 54.0 | -14.2 |
| 16849.00 | H | 21.2 | -16.8 | 56.5 | 74.0 | -17.5 | **39.7 | 54.0 | -14.3 |
| 19256.00 | H | 46.7 | -16.8 | 57.5 | 74.0 | -16.5 | **40.7 | 54.0 | -13.3 |
| 21663.00 | H | 46.9 | -16.8 | 57.7 | 74.0 | -16.3 | **40.9 | 54.0 | -13.1 |
| 24070.00 | H | 48.0 | -16.8 | 56.3 | 74.0 | -17.7 | **39.5 | 54.0 | -14.5 |
| 26477.00 | H | 48.5 | -16.8 | 58.0 | 74.0 | -16.0 | **41.2 | 54.0 | -12.8 |

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.

**Duty Cycle Correction = $20\log(0.144) = -16.8$.

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz

VBW = 1MHz



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Measurement Data

Test Result of (Transmission mode, Lowest frequency): PASS

| Frequency (MHz) | Polarity (H/V) | Antenna Factor & Cable Loss (dB/m) | Duty-cycle correction (dB) | Field Strength at 3m – Peak (dBμV/m) | Limit at 3m – Peak (dBμV/m) | Margin - Peak (dB) | Field Strength at 3m – Average (dBμV/m) | Limit at 3m – Average (dBμV/m) | Margin - Average (dB) |
|-----------------|----------------|------------------------------------|----------------------------|--------------------------------------|-----------------------------|--------------------|---|--------------------------------|-----------------------|
| 2400.00 | V | -4.8 | -16.8 | 65.9 | 74.0 | -8.1 | **49.1 | 54.0 | -4.9 |
| 4814.00 | V | 4.8 | -16.8 | 63.6 | 74.0 | -10.4 | **46.8 | 54.0 | -7.2 |
| 7221.00 | V | 12.4 | -16.8 | 53.3 | 74.0 | -20.7 | **36.5 | 54.0 | -17.5 |
| 9628.00 | V | 13.5 | -16.8 | 46.7 | 74.0 | -27.3 | **29.9 | 54.0 | -24.1 |
| 12035.00 | V | 19.6 | -16.8 | 52.5 | 74.0 | -21.5 | **35.7 | 54.0 | -18.3 |
| 14442.00 | V | 25.8 | -16.8 | 56.1 | 74.0 | -17.9 | **39.3 | 54.0 | -14.7 |
| 16849.00 | V | 21.2 | -16.8 | 55.9 | 74.0 | -18.1 | **39.1 | 54.0 | -14.9 |
| 19256.00 | V | 46.7 | -16.8 | 56.2 | 74.0 | -17.8 | **39.4 | 54.0 | -14.6 |
| 21663.00 | V | 46.9 | -16.8 | 55.6 | 74.0 | -18.4 | **38.8 | 54.0 | -15.2 |
| 24070.00 | V | 48.0 | -16.8 | 56.4 | 74.0 | -17.6 | **39.6 | 54.0 | -14.4 |
| 26477.00 | V | 48.5 | -16.8 | 57.2 | 74.0 | -16.8 | **40.4 | 54.0 | -13.6 |

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.

**Duty Cycle Correction = $20\log(0.144) = -16.8$.

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz
VBW = 1MHz



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Measurement Data

Test Result of (Transmission mode, Middle frequency): PASS

| Frequency (MHz) | Polarity (H/V) | Antenna Factor & Cable Loss (dB/m) | Duty-cycle correction (dB) | Field Strength at 3m – Peak (dBμV/m) | Limit at 3m – Peak (dBμV/m) | Margin - Peak (dB) | Field Strength at 3m – Average (dBμV/m) | Limit at 3m – Average (dBμV/m) | Margin - Average (dB) |
|-----------------|----------------|------------------------------------|----------------------------|--------------------------------------|-----------------------------|--------------------|---|--------------------------------|-----------------------|
| 4890.00 | H | 4.8 | -16.8 | 60.0 | 74.0 | -14.0 | **43.2 | 54.0 | -10.8 |
| 7335.00 | H | 12.4 | -16.8 | 50.5 | 74.0 | -23.5 | **33.7 | 54.0 | -20.3 |
| 9780.00 | H | 13.8 | -16.8 | 46.7 | 74.0 | -27.3 | **29.9 | 54.0 | -24.1 |
| 12225.00 | H | 19.5 | -16.8 | 54.0 | 74.0 | -20.0 | **37.2 | 54.0 | -16.8 |
| 14670.00 | H | 26.5 | -16.8 | 56.5 | 74.0 | -17.5 | **39.7 | 54.0 | -14.3 |
| 17115.00 | H | 23.1 | -16.8 | 57.3 | 74.0 | -16.7 | **40.5 | 54.0 | -13.5 |
| 19560.00 | H | 46.7 | -16.8 | 58.3 | 74.0 | -15.7 | **41.5 | 54.0 | -12.5 |
| 22005.00 | H | 47.3 | -16.8 | 56.2 | 74.0 | -17.8 | **39.4 | 54.0 | -14.6 |
| 24450.00 | H | 48.2 | -16.8 | 56.6 | 74.0 | -17.4 | **39.8 | 54.0 | -14.2 |
| 26895.00 | H | 48.5 | -16.8 | 57.7 | 74.0 | -16.3 | **40.9 | 54.0 | -13.1 |

| Frequency (MHz) | Polarity (H/V) | Antenna Factor & Cable Loss (dB/m) | Duty-cycle correction (dB) | Field Strength at 3m – Peak (dBμV/m) | Limit at 3m – Peak (dBμV/m) | Margin - Peak (dB) | Field Strength at 3m – Average (dBμV/m) | Limit at 3m – Average (dBμV/m) | Margin - Average (dB) |
|-----------------|----------------|------------------------------------|----------------------------|--------------------------------------|-----------------------------|--------------------|---|--------------------------------|-----------------------|
| 4890.00 | V | 4.8 | -16.8 | 60.9 | 74.0 | -13.1 | **44.1 | 54.0 | -9.9 |
| 7335.00 | V | 12.4 | -16.8 | 51.9 | 74.0 | -22.1 | **35.1 | 54.0 | -18.9 |
| 9780.00 | V | 13.8 | -16.8 | 47.8 | 74.0 | -26.2 | **31.0 | 54.0 | -23.0 |
| 12225.00 | V | 19.5 | -16.8 | 51.6 | 74.0 | -22.4 | **34.8 | 54.0 | -19.2 |
| 14670.00 | V | 26.5 | -16.8 | 56.1 | 74.0 | -17.9 | **39.3 | 54.0 | -14.7 |
| 17115.00 | V | 23.1 | -16.8 | 57.6 | 74.0 | -16.4 | **40.8 | 54.0 | -13.2 |
| 19560.00 | V | 46.7 | -16.8 | 56.7 | 74.0 | -17.3 | **39.9 | 54.0 | -14.1 |
| 22005.00 | V | 47.3 | -16.8 | 54.6 | 74.0 | -19.4 | **37.8 | 54.0 | -16.2 |
| 24450.00 | V | 48.2 | -16.8 | 56.4 | 74.0 | -17.6 | **39.6 | 54.0 | -14.4 |
| 26895.00 | V | 48.5 | -16.8 | 57.2 | 74.0 | -16.8 | **40.4 | 54.0 | -13.6 |

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.

**Duty Cycle Correction = 20Log(0.144) = -16.8.

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz

VBW = 1MHz



TEST REPORT No: (5217)107-0023

Measurement Data

Test Result of (Transmission mode, Highest frequency): PASS

| Frequency (MHz) | Polarity (H/V) | Antenna Factor & Cable Loss (dB/m) | Duty-cycle correction (dB) | Field Strength at 3m – Peak (dBμV/m) | Limit at 3m – Peak (dBμV/m) | Margin - Peak (dB) | Field Strength at 3m – Average (dBμV/m) | Limit at 3m – Average (dBμV/m) | Margin - Average (dB) |
|-----------------|----------------|------------------------------------|----------------------------|--------------------------------------|-----------------------------|--------------------|---|--------------------------------|-----------------------|
| 2483.50 | H | -4.8 | -16.8 | 63.2 | 74.0 | -10.8 | **46.4 | 54.0 | -7.6 |
| 4954.00 | H | 4.9 | -16.8 | 58.5 | 74.0 | -15.5 | **41.7 | 54.0 | -12.3 |
| 7431.00 | H | 12.6 | -16.8 | 50.7 | 74.0 | -23.3 | **33.9 | 54.0 | -20.1 |
| 9908.00 | H | 13.9 | -16.8 | 47.3 | 74.0 | -26.7 | **30.5 | 54.0 | -23.5 |
| 12385.00 | H | 19.2 | -16.8 | 52.2 | 74.0 | -21.8 | **35.4 | 54.0 | -18.6 |
| 14862.00 | H | 25.9 | -16.8 | 56.5 | 74.0 | -17.5 | **39.7 | 54.0 | -14.3 |
| 17339.00 | H | 24.5 | -16.8 | 56.8 | 74.0 | -17.2 | **40.0 | 54.0 | -14.0 |
| 19816.00 | H | 46.8 | -16.8 | 57.4 | 74.0 | -16.6 | **40.6 | 54.0 | -13.4 |
| 22293.00 | H | 47.3 | -16.8 | 54.8 | 74.0 | -19.2 | **38.0 | 54.0 | -16.0 |
| 24770.00 | H | 48.2 | -16.8 | 56.8 | 74.0 | -17.2 | **40.0 | 54.0 | -14.0 |
| 27247.00 | H | 48.7 | -16.8 | 58.0 | 74.0 | -16.0 | **41.2 | 54.0 | -12.8 |

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.

**Duty Cycle Correction = $20\text{Log}(0.144) = -16.8$.

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz
VBW = 1MHz



TEST REPORT No: (5217)107-0023

Measurement Data

Test Result of (Transmission mode, Highest frequency): PASS

| Frequency (MHz) | Polarity (H/V) | Antenna Factor & Cable Loss (dB/m) | Duty-cycle correction (dB) | Field Strength at 3m – Peak (dBμV/m) | Limit at 3m – Peak (dBμV/m) | Margin - Peak (dB) | Field Strength at 3m – Average (dBμV/m) | Limit at 3m – Average (dBμV/m) | Margin - Average (dB) |
|-----------------|----------------|------------------------------------|----------------------------|--------------------------------------|-----------------------------|--------------------|---|--------------------------------|-----------------------|
| 2483.50 | V | -4.8 | -16.8 | 66.6 | 74.0 | -7.4 | **49.8 | 54.0 | -4.2 |
| 4954.00 | V | 4.9 | -16.8 | 60.1 | 74.0 | -13.9 | **43.3 | 54.0 | -10.7 |
| 7431.00 | V | 12.6 | -16.8 | 51.8 | 74.0 | -22.2 | **35.0 | 54.0 | -19.0 |
| 9908.00 | V | 13.9 | -16.8 | 47.1 | 74.0 | -26.9 | **30.3 | 54.0 | -23.7 |
| 12385.00 | V | 19.2 | -16.8 | 51.4 | 74.0 | -22.6 | **34.6 | 54.0 | -19.4 |
| 14862.00 | V | 25.9 | -16.8 | 56.8 | 74.0 | -17.2 | **40.0 | 54.0 | -14.0 |
| 17339.00 | V | 24.5 | -16.8 | 56.5 | 74.0 | -17.5 | **39.7 | 54.0 | -14.3 |
| 19816.00 | V | 46.8 | -16.8 | 57.9 | 74.0 | -16.1 | **41.1 | 54.0 | -12.9 |
| 22293.00 | V | 47.3 | -16.8 | 55.3 | 74.0 | -18.7 | **38.5 | 54.0 | -15.5 |
| 24770.00 | V | 48.2 | -16.8 | 56.2 | 74.0 | -17.8 | **39.4 | 54.0 | -14.6 |
| 27247.00 | V | 48.7 | -16.8 | 56.6 | 74.0 | -17.4 | **39.8 | 54.0 | -14.2 |

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.

**Duty Cycle Correction = $20\text{Log}(0.144) = -16.8$.

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz
VBW = 1MHz



TEST REPORT No: (5217)107-0023

Radiated Emissions (30MHz – 2.4GHz)

Test Requirement: FCC Part 15 Section 15.209
 Test Method: ANSI C63.10
 Test Date(s): 2017-05-04
 Temperature: 24.0 °C
 Humidity: 66.0 %
 Atmospheric Pressure: 100.2 kPa
 Mode of Operation: On mode
 Tested Voltage: 9.6Vd.c. ("Rechargeable battery" x 1)

Limits for Radiated Emissions [FCC 47 CFR 15.209]:

| Frequency Range [MHz] | Quasi-Peak Limits [μ V/m] | Measurement Distance m |
|-----------------------|--------------------------------|------------------------|
| 0.009-0.490 | 2400/F(kHz) | 300 |
| 0.490-1.705 | 24000/F(kHz) | 30 |
| 1.705-30 | 30 | 30 |
| 30-88 | 100 | 3 |
| 88-216 | 150 | 3 |
| 216-960 | 200 | 3 |
| Above960 | 500 | 3 |

Measurement Data

Test Result of (On mode): PASS

Detection mode: Quasi-Peak

| Frequency | Polarity (H/V) | Field Strength | Limit | Margin (dB) |
|---|----------------|----------------|-------|-------------|
| Emissions detected are more than 20 dB below the limit line(s) in 9kHz to 30MHz | | | | |

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 200Hz
 VBW = 200Hz



TEST REPORT No: (5217)107-0023

Measurement Data

Test Result of (On mode): PASS

Detection mode: Quasi-Peak

| Frequency (MHz) | Polarity (H/V) | Field Strength at 3m (dB μ V/m) | Limit at 3m (dB μ V/m) | Margin (dB) |
|-----------------|----------------|-------------------------------------|----------------------------|-------------|
| 47.28 | H | 25.3 | 40.0 | -14.7 |
| 68.22 | H | 20.1 | 40.0 | -19.9 |
| 120.12 | H | 24.1 | 43.5 | -19.4 |
| 177.58 | H | 22.6 | 43.5 | -20.9 |
| 226.30 | H | 24.3 | 46.0 | -21.7 |
| 277.80 | H | 24.9 | 46.0 | -21.1 |

| Frequency (MHz) | Polarity (H/V) | Field Strength at 3m (dB μ V/m) | Limit at 3m (dB μ V/m) | Margin (dB) |
|-----------------|----------------|-------------------------------------|----------------------------|-------------|
| 47.28 | V | 25.8 | 40.0 | -14.2 |
| 68.22 | V | 20.2 | 40.0 | -19.8 |
| 120.12 | V | 24.0 | 43.5 | -19.5 |
| 177.58 | V | 22.8 | 43.5 | -20.7 |
| 226.30 | V | 27.8 | 46.0 | -18.2 |
| 277.80 | V | 25.4 | 46.0 | -20.6 |

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 120KHz
 VBW = 120KHz



TEST REPORT No: (5217)107-0023

Frequency range of Fundamental Emission

Test Requirement: FCC 47 CFR 15.249
Test Method: ANSI C63.10 Clause 6.10
Test Date(s): 2017-05-04
Temperature: 24.0 °C
Humidity: 66.0 %
Atmospheric Pressure: 100.2 kPa
Mode of Operation: Transmission mode
Tested Voltage: 9.6Vd.c. ("Rechargeable battery" x 1)

Test Method:

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

Limits for Frequency range of Fundamental Emission:

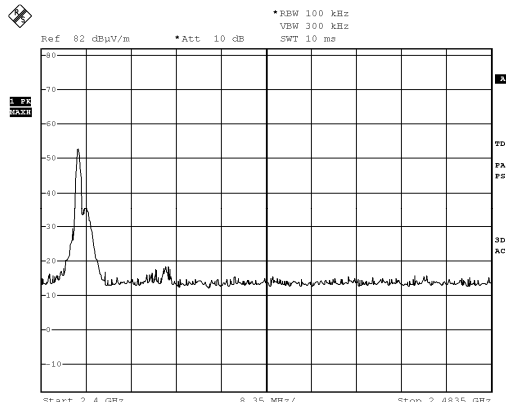
| Frequency [MHz] | FCC Limits [MHz] |
|--------------------|---------------------|
| 2405.72 – 2481.24 | 2400 – 2483.5 |

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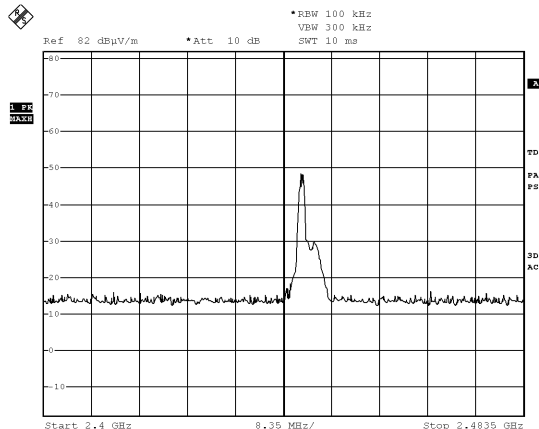
Measurement Data :

Test Result of Frequency Range of Fundamental Emission: PASS

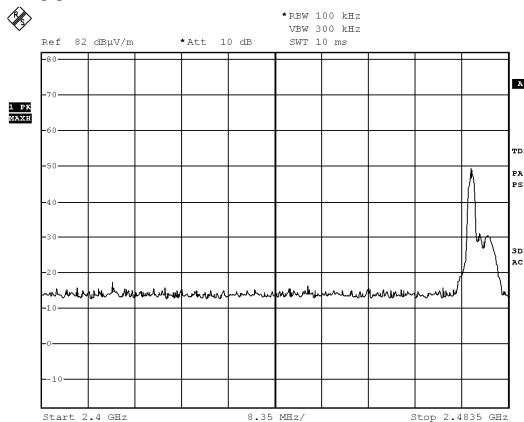
Lowest Frequency – 2407.00MHz



Middle Frequency – 2445.00MHz



Highest Frequency – 2477.00MHz





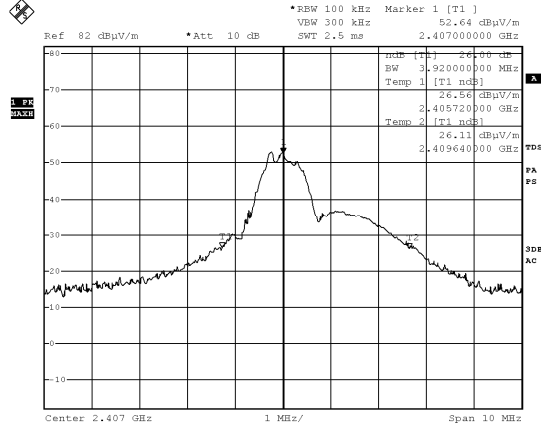
BUREAU VERITAS

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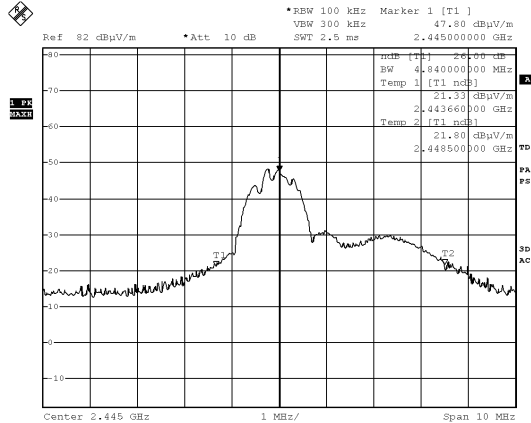
Measurement Data:

Test Result of 26dB Bandwidth of Fundamental Emission: **PASS**

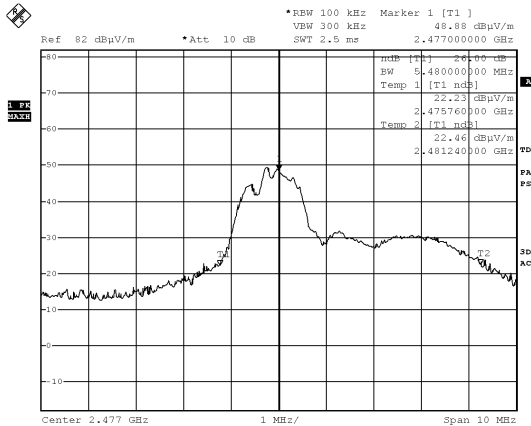
Lowest Frequency – 2407.00MHz



Middle Frequency – 2445.00MHz



Highest Frequency – 2477.00MHz



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Duty Cycle Correction During 100msec:

Each function key sends a different series of characters, but each packet period (100msec) never exceeds a series of 72 (0.2msec) pulses. Assuming any combination of short or long pulses may be obtained due to encoding the worst case transmit duty cycle would be considered $72 \times (0.2\text{msec})$ per 100msec = 14.4% duty cycle.

Remarks:

Duty Cycle Correction = $20\text{Log}(0.144)$ = -16.8dB

The following figures [Figure A] show the characteristics of the pulse train for one of these functions.

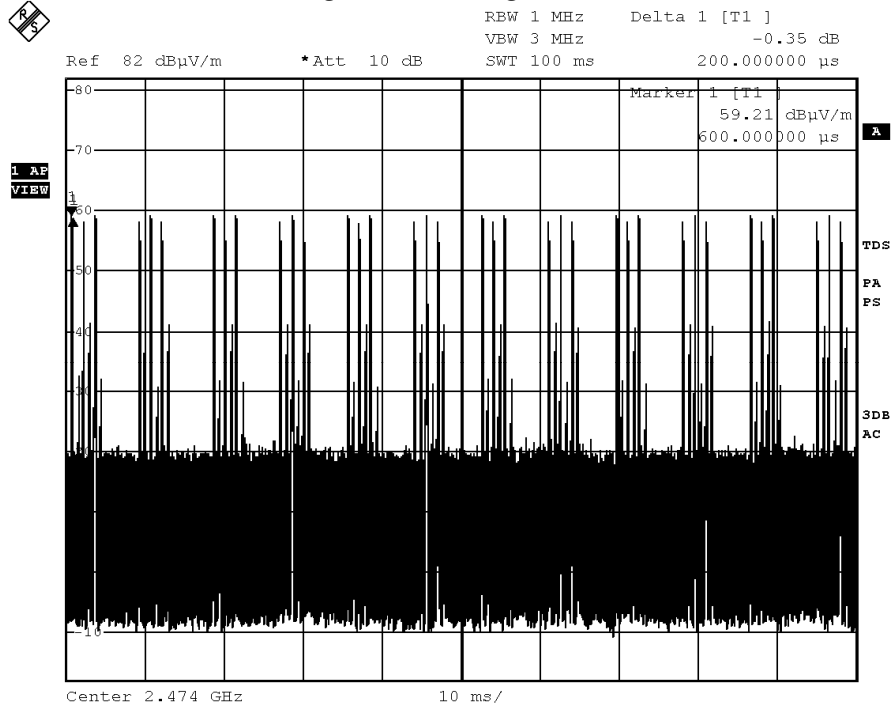


BUREAU VERITAS

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Measurement Data :

Figure A [Long Pulse]





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Photographs of EUT

Front View of the product



Rear View of the product



Top View of the product



Bottom View of the product



Side View of the product



Side View of the product



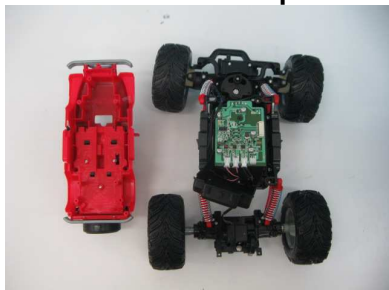
Battery compartment



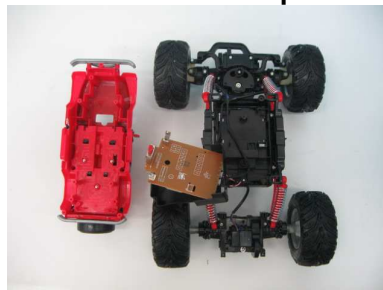
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Photographs of EUT

Internal View of the product



Internal View of the product



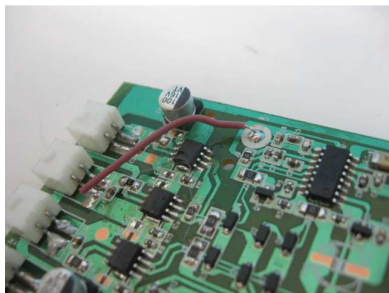
Inner Circuit Top View



Inner Circuit Bottom View



Antenna



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Measurement of Radiated Emission Test Set Up



******* End of Report *******