RASTAR GROUP

TEST REPORT

SCOPE OF WORK
FCC TESTING– MODEL: 80445B308D8(92900),92900

REPORT NUMBER
GZHH00536228-002

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DOCUMENT CONTROL NUMBER
FCC ID 249_C

RASTAR GROUP

Application for Certification

FCC ID: 2AENTXH929001RX

Model R/C Car

Model: 80445B308D8(92900),92900
Additional Model: See Page 5

2.4GHz Transceiver

Report No.: GZHH00536228-002

We hereby certify that the sample of the above item is considered to comply with the requirements of FCC Part 15, Subpart C for Intentional Radiator, mention 47 CFR [10-1-23]

Prepared and Checked by:	Approved by:
Sign on file	Ryan
Maura Wang *Engineer*	*Ryan Chen* *Senior Project Engineer* *Date: June 19, 2024*

MEASUREMENT/TECHNICAL REPORT

This report concerns (check one:) Original Grant _X_ Class II Change _____

Equipment Type: DXX - Part 15 Low Power Communication Device Transmitter

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Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? Yes _____ No _X_

If yes, defer until: _____
date

Company Name agrees to notify the Commission by: _____
date
of the intended date of announcement of the product so that the grant can be issued on that date.

Transition Rules Request per 15.37? Yes _____ No _X_

If no, assumed Part 15, Subpart C for intentional radiator – the new 47 CFR [10-1-23 Edition] provision.

Report prepared by:

Maura Wang
Intertek Testing Services Shenzhen Ltd. Longhua Branch
101, 201, Building B, No. 308 Wuhe Avenue, Zhangkengjing Community GuanHu Subdistrict, LongHua District, Shenzhen, People's Republic of China
Tel / Fax: 86-755-8601 6288/86-755-8601 6751

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1.0 Summary of Test Result

Applicant: RASTAR GROUP
Applicant Address: Xinghui Industrial Park, Xiadao Road,Shanghua,Chenghai,Shantou,GuangDong,China.

Manufacturer: RASTAR GROUP
Manufacturer Address: Xinghui Industrial Park, Xiadao Road,Shanghua,Chenghai,Shantou,GuangDong,China.

MODEL: 80445B308D8(92900),92900

FCC ID: 2AENTXH929001RX

Test Specification	Reference	Results
Transmitter Radiated Emission Bandedge	15.249 &15.209 &15.205	Pass
20dB Bandwidth	15.215(c)	Pass

Notes: The EUT uses an Integral Antenna which in accordance to Section 15.203 is considered sufficient to comply with the provisions of this section.

2.0 General Description

2.1 Product Description

The equipment under test (EUT) is an Model R/C Car operating at 2.4G Band. The EUT can be powered by DC 4.5V (3 x 1.5V AA batteries). For more detail information pls. refer to the user manual.

Antenna Type: Integral antenna
Modulation Type: GFSK
Antenna Gain: 0dBi

For electronic filing, the brief circuit description is saved with filename: descri.pdf.

The additional Models are the same as the Model:80445B308D8(92900),92900 in hardware and electrical aspect. The difference in appearance, model number and names serve as marketing strategy.

Additional name:	Additional model:
BMW 3.0CSL	80445B308D8（92900）,92900
BMW I8	48400-4
Volkswagen Beetle	76200-4
JEEP Wrangler Rubicon	79500-4
Mercedes-Benz G63	95800-4
Lamborghini Huracan STO	98800
Bugatti Divo	98900
Lamborghini Sián FKP 37	97800
Ferrari SF90 Stradale	97600
McLaren Senna	96700
Ferrari FXX K EVO	79300
JEEP Wrangler Rubicon	79500
Mercedes-Benz G63	95800
Lamborghini Aventador SVJ	96100
Lamborghini Aventador SVJ Performance	96110
BMW Z4 Roadster	96200
MINI COOPER S	15000
Lamborghini Superleggera	26300
Audi Q7	27300
Range Rover Sport	30300
BMW X6	31700
Pagani Zonda R	38010
Audi Q5	38600
Lamborghini Murcielago LP670-4	39000
Lamborghini Murcielago LP670-4	39001
Porsche GT3 RS	39900
Mercedes-Benz SLS AMG	40100
Porsche Cayenne Turbo	46100
Lamborghini Aventador LP700	46300
Ferrari 458 Italia	46600
AUDI R8	46800
Range Rover Evoque	46900
Bugatti Grand Sport Vitesse	47000
Lamborghini Sesto	48200
BMW M3	48300
BMW I8	48400
Range Rover Sport 2013 Version	48500
Bentley Confinental GT speed	48600
Ferrari LaFerrari	48900
Porsche 918 Spyder	71400
Lamborghini HURACÁN LP610-4	71500
MINI Countryman	71700

Porsche Macan Turbo	71800
Ferrari 458 Speciale A	71900
AUDI R8 2015 Version	72300
Mercedes-Benz Actros with 1/24 scale Car	74920
Mercedes-Benz Actros with 1/24 scale Car	74940
McLaren P1	75200
Ferrari 488 GTB	76000
Bugatti Veyron Chiron	76100
Volkswagen Beetle	76200
Ford GT	78200
Land Rover Defender	78500
Ferrari F40	78800
Mercedes-Benz Antos Fire Engine & Rescue car	78620
Mercedes-Benz Antos Fire Engine & Rescue car	78640
Hummer EV	93100
Porsche 911 GT2 RS Clubsport 25	99700
Remote control car in 24 scale	RC124
Remote control car in 26 scale	RC126
Porsche 911 Dakar	10140
Lamborghini SC63 LMDH	10160
BMW i5 M60	80445B5D139（10180）
BMW i5 M60	10180
Mercedes AMG GT2	10230
BMW XM	10240
BMW XM	80445B308D9（10240）
Range Rover SV	10270
Red Bull F1 RB19	92600
BMW M8 GTE	80445A627A0（97200）
Ferrari FXXK	96900
Land Rover	96800
Ferrari F1	97000
Lamborghini Sian	97400
BMW M8 GTE	97200
Porsche 911 GT2 RS Clubsport 25	99600
Lamborghini Veneno	98100
Mercedes-AMG F1 W11 EQ Performance	98500
McLaren F1 MCL36	93300
Ferrari F1 75	93400
Ferrari F1	53800
Red Bull F1 RB18	94800
BMW M4 CSL	94500
Ferrari 296 GTS	94600
Porsche 911 Sport Classic	94900
Lamborghini COUNTACH LPI 800-4	92000
RS Robot - Spaceman	76900
RS Intelligent dinosaur	79700
Lamborghini Set (53700/58900/71500)	96400
Mercedes-Benz GT3 Transformable car	74820
Land Rover Defender Transformable Car	76420
Maserati MC20	93500
Hummer EV	93600
Hummer EV	93600-W
Alfa Romeo F1 C42	94400
Pagani Huayra BC	97900-G
Redbull F1 RB19	92400
AUDI RS Q e-tron	92700

2.2 Related Submittal(s) Grants

This is an application for certification of car unit for the Model R/C Car, and the other Digital Function is Subject to FCC Part 15B SDOC, and the corresponding controller unit which associated with this EUT is subjected to FCC certification with FCC ID: 2AENTXH915002TX.

2.3 Test Methodology

Radiated emission measurements were performed according to the procedures in ANSI C63.10 (2013). Radiated emission measurement was performed in Semi-anechoic chamber. For radiated emission measurement, preliminary scans were performed in the semi-anechoic chamber only to determine the worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section**" of this Application. All other measurements were made in accordance with the procedures in part 2 of CFR 47.

2.4 Test Facility

The Semi-anechoic chamber used to collect the radiated data is **Intertek Testing Services Shenzhen Ltd. Longhua Branch** and located at 101, 201, Building B, No. 308 Wuhe Avenue, Zhangkengjing Community GuanHu Subdistrict, LongHua District, Shenzhen, People's Republic of China. This test facility and site measurement data have been fully placed on file with the FCC (Registration Number: CN1188).

3.0 System Test Configuration

3.1 Justification

The system was configured for testing in a typical fashion (as a customer would normally use it), and in the confines as outlined in ANSI C63.10 (2013).

The EUT was powered by DC 4.5V (3 x 1.5V AA batteries) during the test, only the worst data was reported in this report.

For maximizing emissions below 30 MHz, the EUT was rotated through 360°, the bottom of the loop antenna was placed 1 meter above the ground, and the antenna polarization was changed. For maximizing emissions, the EUT was rotated through 360°, the antenna height was varied from 1 meter to 4 meters above the ground plane, and the antenna polarization was changed. This step by step procedure for maximizing emissions led to the data reported in Section 4.

The EUT was operated standalone and placed in the central of the turntable.

The equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). The EUT was placed on a turn table, which enabled the engineer to maximize emissions through its placement in the three orthogonal axes.

3.2 EUT Exercising Software

There was no special software to exercise the device.

3.3 Special Accessories

No special accessories used.

3.4 Equipment Modification

Any modifications installed previous to testing by RASTAR GROUP will be incorporated in each production model sold / leased in the United States.

No modifications were installed by Intertek Testing Services Shenzhen Ltd Longhua Branch.

3.5 Measurement Uncertainty

When determining the test conclusion, the Measurement Uncertainty of test has been considered.

3.6 Support Equipment List and Description

Description	Manufacturer	Model No.
N/A	N/A	N/A

4.0 Emission Results

Data is included worst-case configuration (the configuration which resulted in the highest emission levels).

4.1 Radiated Test Results

A sample calculation, configuration photographs and data tables of the emissions are included.

4.1.1 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

FS = RA + AF + CF - AG + PD + AV

Where FS = Field Strength in dBµV/m
RA = Receiver Amplitude (including preamplifier) in dBµV
CF = Cable Attenuation Factor in dB
AF = Antenna Factor in dB
AG = Amplifier Gain in dB
PD = Pulse Desensitization in dB
AV = Average Factor in -dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

FS = RA + AF + CF - AG + PD + AV

Assume a receiver reading of 62.0 dBµV is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0 dB, and the resultant average factor was -10 dB. The net field strength for comparison to the appropriate emission limit is 32 dBµV/m. This value in dBµV/m was converted to its corresponding level in µV/m.

RA = 62.0 dBµV
AF = 7.4 dB
CF = 1.6 dB
AG = 29.0 dB
PD = 0 dB
AV = -10 dB
FS = 62 + 7.4 + 1.6 - 29 + 0 = 42 dBµV/m

Level in µV/m = Common Antilogarithm [(42 dBµV/m)/20] = 125.9 µV/m

4.1.2 Radiated Emission Configuration Photograph

For electronic filing, the worst case radiated emission configuration photograph is saved with filename: radiated photos. pdf.

4.1.3 Radiated Emissions

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

Worst Case Radiated Emission
at
699.057500 MHz

Judgement: Passed by 21.1 dB

TEST PERSONNEL:

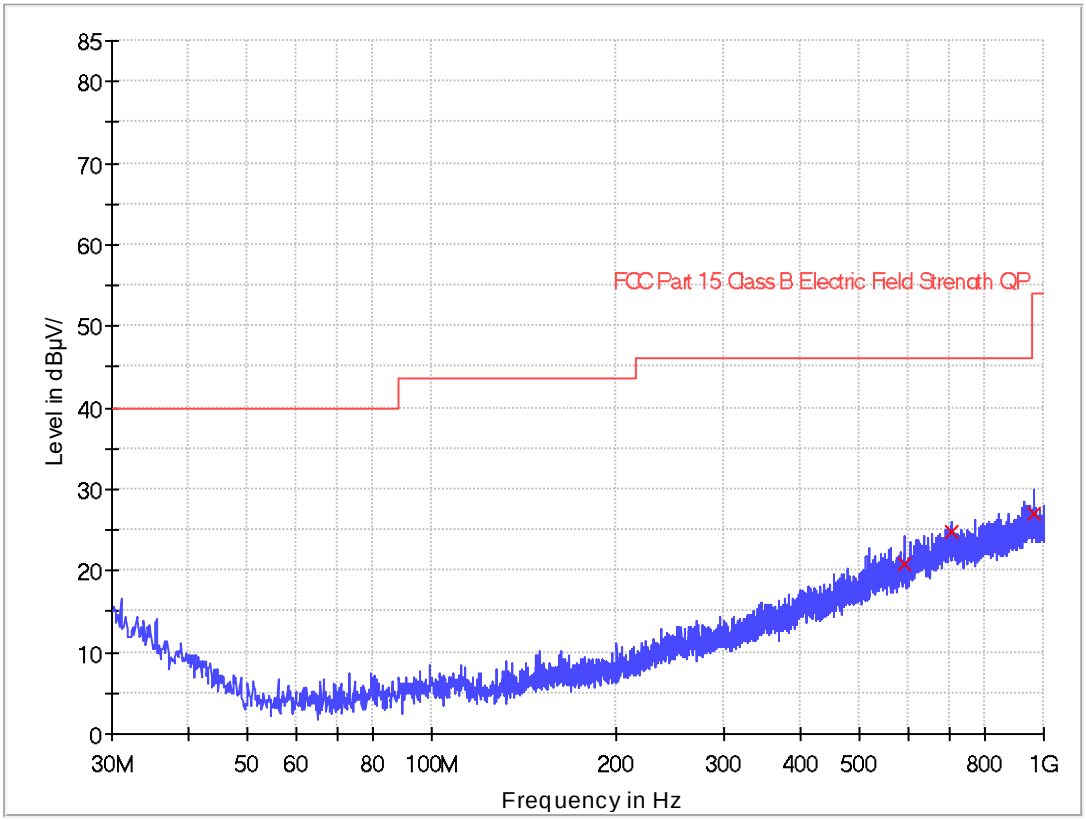
Sign on file

Maura Wang, Engineer
Typed/Printed Name

April 26, 2024
Date

Applicant: RASTAR GROUP
Date of Test: April 26, 2024
Model: 80445B308D8(92900),92900
Worst Case Operating Mode: Transmitting(2429.000MHz)

ANT Polarity: Horizontal

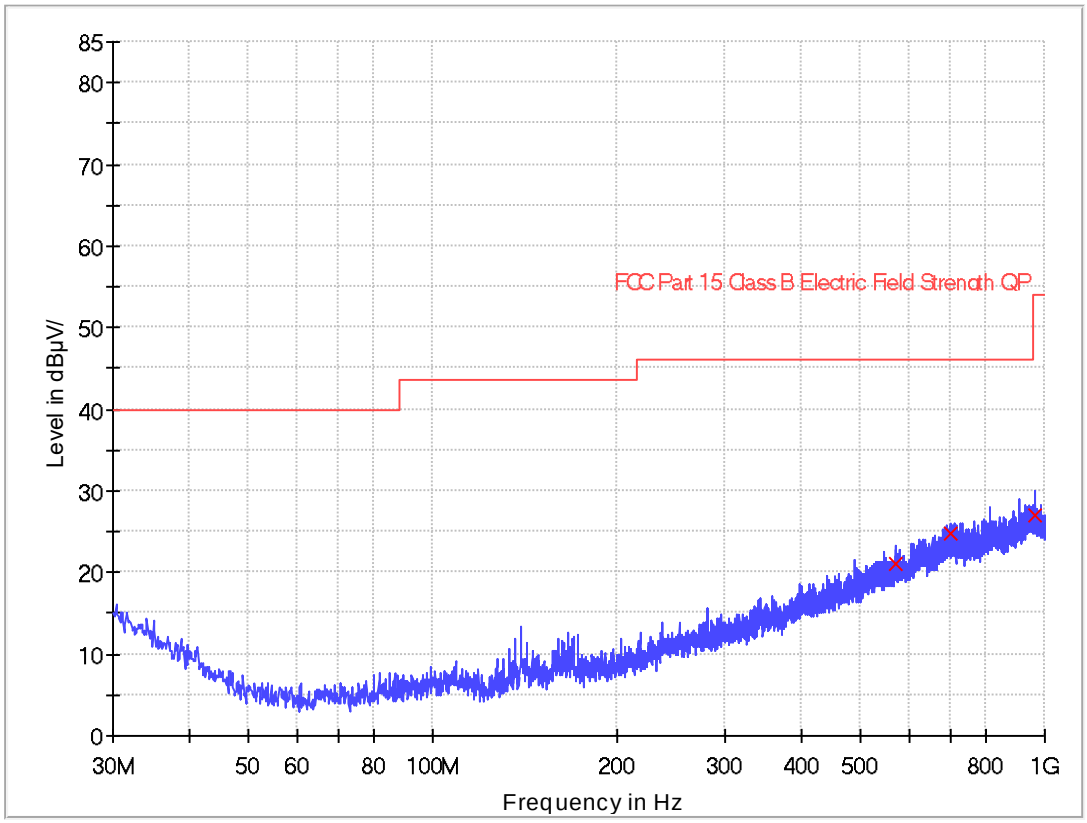


Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
590.660000	20.7	1000.0	120.000	H	22.4	25.3	46.0
708.393750	24.8	1000.0	120.000	H	25.5	21.2	46.0
963.746250	27.0	1000.0	120.000	H	27.9	27.0	54.0

Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. QuasiPeak (dBµV/m)= Corr. (dB/m)+ Read Level (dBµV)
3. Margin (dB) = Limit Line(dBµV/m) – Level (dBµV/m)

Applicant: RASTAR GROUP
Date of Test: April 26, 2024
Model: 80445B308D8(92900),92900
Worst Case Operating Mode: Transmitting(2429.000MHz)

ANT Polarity: Vertical



Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
571.017500	21.1	1000.0	120.000	V	21.9	24.9	46.0
699.057500	24.9	1000.0	120.000	V	25.7	21.1	46.0
964.110000	27.1	1000.0	120.000	V	27.9	26.9	54.0

Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. QuasiPeak (dBµV/m)= Corr. (dB/m)+ Read Level (dBµV)
3. Margin (dB) = Limit Line(dBµV/m) – Level (dBµV/m)

4.1.4 Transmitter Spurious Emissions (Radiated)

Worst Case Radiated Emission
at
2483.500 MHz

For electronic filing, the worst case radiated emission configuration photograph is saved with filename: radiated photos. pdf.

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

Judgement: Passed by 4.6 dB

TEST PERSONNEL:

Sign on file

Maura Wang, Engineer
Typed/Printed Name

April 26, 2024
Date

Applicant: RASTAR GROUP
Date of Test: April 26, 2024
Model: 80445B308D8(92900),92900
Worst Case Operating Mode: Transmitting

Table 1

Radiated Emissions
(2429 MHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	2429.000	108.0	36.7	28.1	99.4	114.0	-14.6
Horizontal	4858.000	43.6	36.7	35.5	42.4	74.0	-31.6

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (-dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	2429.000	108.0	36.7	28.1	32.7	66.7	94.0	-27.3
Horizontal	4858.000	43.6	36.7	35.5	32.7	9.7	54.0	-44.3

Notes:
1. Peak Detector Data unless otherwise stated.
2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna is used for the emission over 1000MHz.

Applicant: RASTAR GROUP
Date of Test: April 26, 2024
Model: 80445B308D8(92900),92900
Worst Case Operating Mode: Transmitting

Table 2

Radiated Emissions
(2445 MHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	2445.000	108.3	36.7	28.3	99.9	114.0	-14.1
Horizontal	4890.000	43.0	36.7	35.7	42.0	74.0	-32.0

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (-dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	2445.000	108.3	36.7	28.3	32.7	67.2	94.0	-26.8
Horizontal	4890.000	43.0	36.7	35.7	32.7	9.3	54.0	-44.7

Notes:
1. Peak Detector Data unless otherwise stated.

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna is used for the emission over 1000MHz.

Applicant: RASTAR GROUP
Date of Test: April 26, 2024
Model: 80445B308D8(92900),92900
Worst Case Operating Mode: Transmitting

Table 3

Radiated Emissions
(2460 MHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	2460.000	107.3	36.7	28.5	99.1	114.0	-14.9
Horizontal	4920.000	43.8	36.7	35.9	43.0	74.0	-31.0

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Average Factor (-dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	2460.000	107.3	36.7	28.5	32.7	66.4	94.0	-27.6
Horizontal	4920.000	43.8	36.7	35.9	32.7	10.3	54.0	-43.7

Notes:
1. Peak Detector Data unless otherwise stated.

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna is used for the emission over 1000MHz.

5.0 Equipment Photographs

For electronic filing, the photographs of the tested EUT are saved with filename: external photos.pdf & internal photos.pdf.

6.0 Product Labelling

For electronic filing, the FCC ID label artwork and the label location are saved with filename: label.pdf.

7.0 Technical Specifications

For electronic filing, the block diagram and schematics of the tested EUT are saved with filename: block.pdf and circuit.pdf respectively.

8.0 Instruction Manual

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf.

This manual will be provided to the end-user with each unit sold/leased in the United States.

9.0 Miscellaneous Information

This miscellaneous information includes details of the measured bandedge, 20dB Bandwidth, the test procedure and calculation of factor such as pulse desensitization.

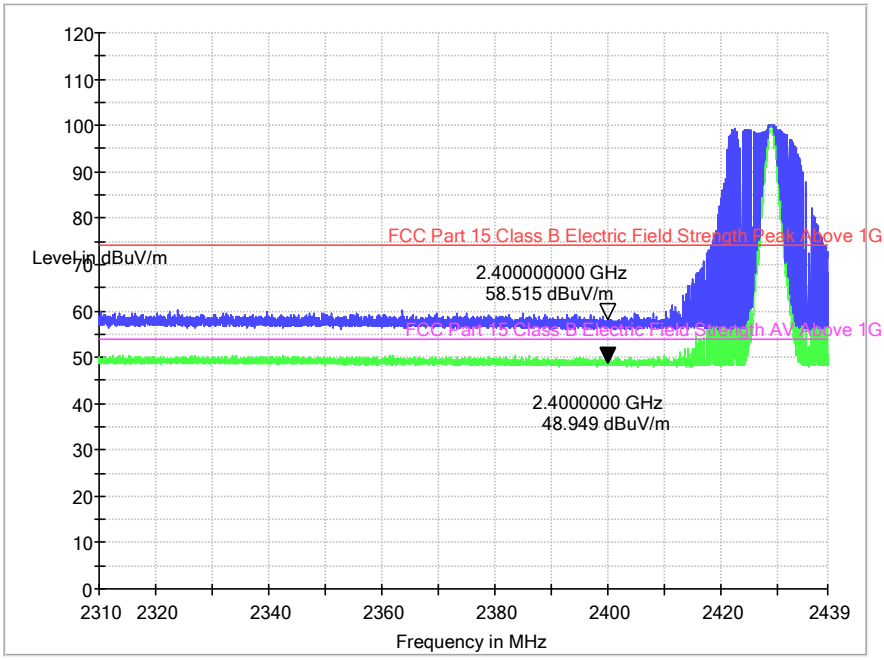
9.1 Bandedge Plot

The test plots are attached as below. From the plot, the field strength of any emissions outside of the specified frequency band are attenuated to the general radiated emission limits in section 15.209. It fulfils the requirement of 15.249(d).

Peak Measurement

Restricted-band band-edge tests shall be performed as radiated measurements, i.e (Band-edge Plot).

(i) Lower channel 2429.000 MHz:

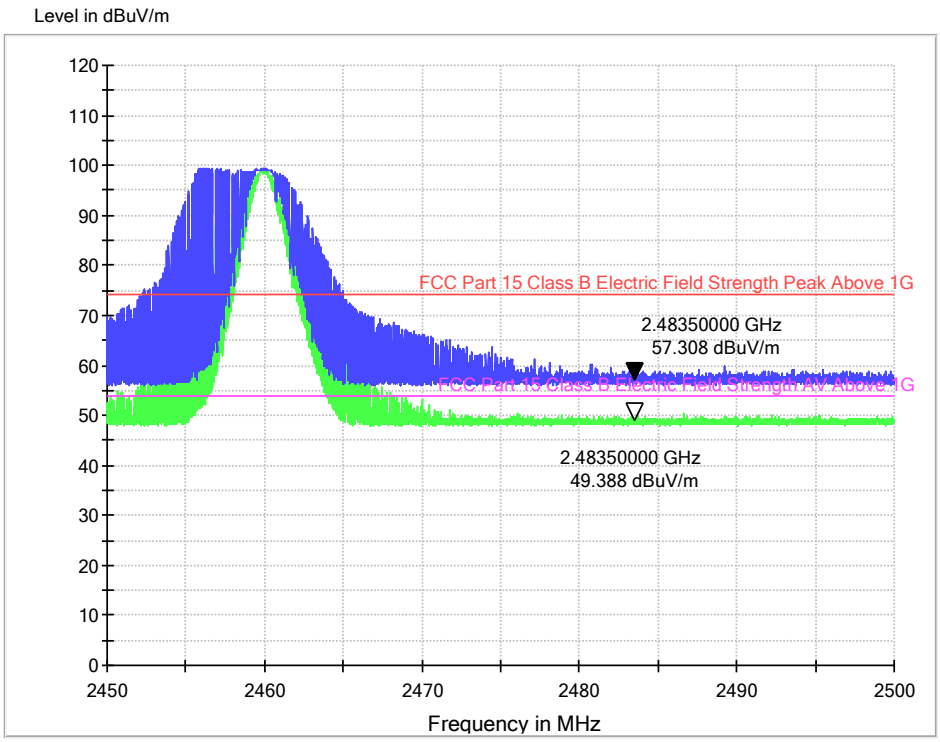


Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	2400.000	67.1	36.7	28.1	58.5	74.0	-15.5

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m	Margin (dB)
Horizontal	2400.000	57.5	36.7	28.1	48.9	54.0	-5.1

The resultant field strength meets the general radiated emission limit in section 15.209, which does not exceed 74dBµv/m (Peak Limit) and 54dBµv/m (Average Limit).

(ii) Upper channel 2460.000 MHz:



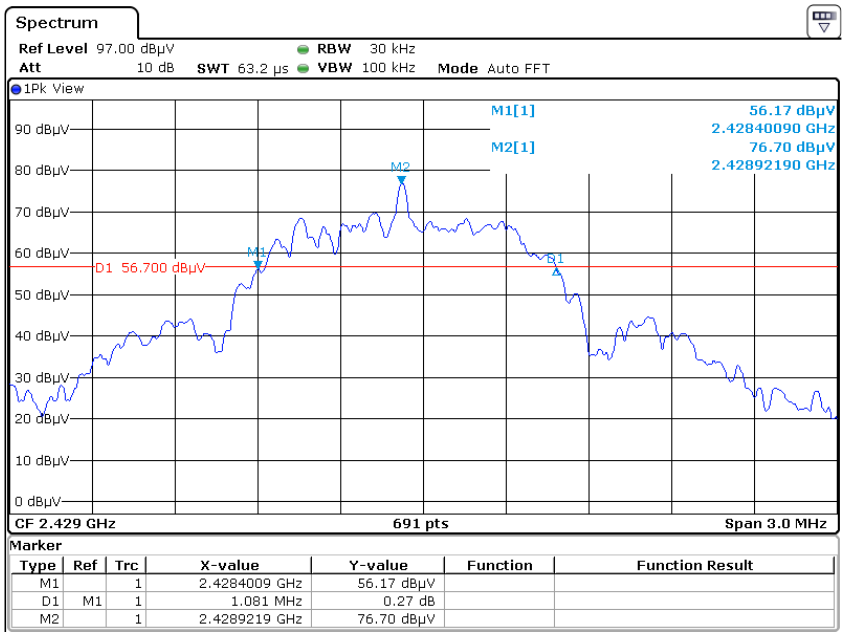
Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	2483.500	65.0	36.8	29.1	57.3	74.0	-16.7

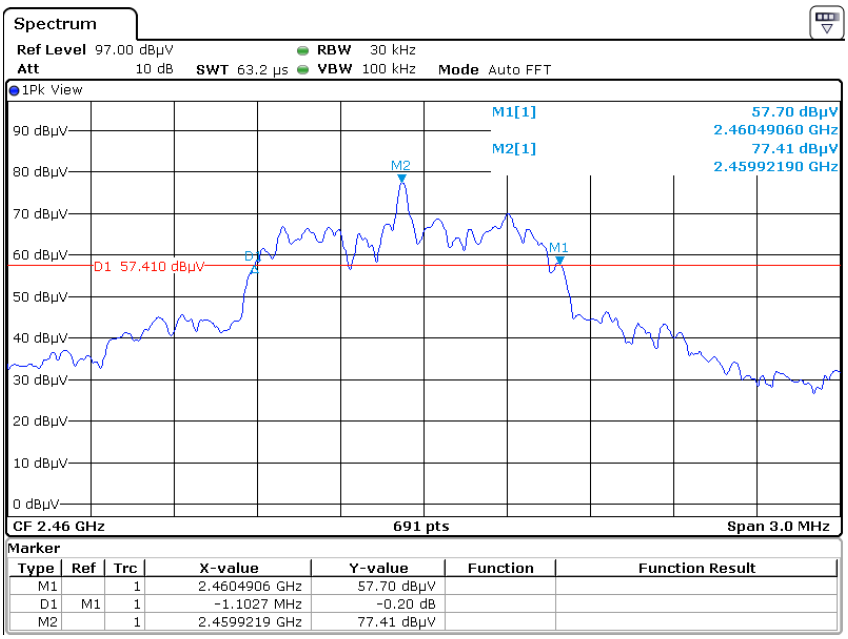
Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m	Margin (dB)
Horizontal	2483.500	57.1	36.8	29.1	49.4	54.0	-4.6

The resultant field strength meets the general radiated emission limit in section 15.209, which does not exceed 74dBµv/m (Peak Limit) and 54dBµv/m (Average Limit).

9.2 20dB Bandwidth

Pursuant to FCC part 15 Section 15.215(c), the 20dB bandwidth of the emission was contained within the frequency band designated (mentioned as above) which the EUT operated. The effects, if any, from frequency sweeping, frequency hopping, other modulation techniques and frequency stability over excepted variations in temperature and supply voltage were considered. The test plots are reported as below.





9.3 Discussion of Pulse Desensitization

Pulse desensitivity is not applicable for this device. The effective period (T_{eff}) is approximately 463.8µs for a digital "1" bit, as shown in the plots of Section 9.4 With a resolution bandwidth (3 dB) of 100 kHz, the pulse desensitivity factor was 0 dB

9.4 Calculation of Average Factor

Averaging factor in dB = 20 log (duty cycle)

The specification for output field strengths in accordance with the FCC rules specify measurements with an average detector. During testing, a spectrum analyzer incorporating a peak detector was used. Therefore, a reduction factor can be applied to the resultant peak signal level and compared to the limit for measurement instrumentation incorporating an average detector.

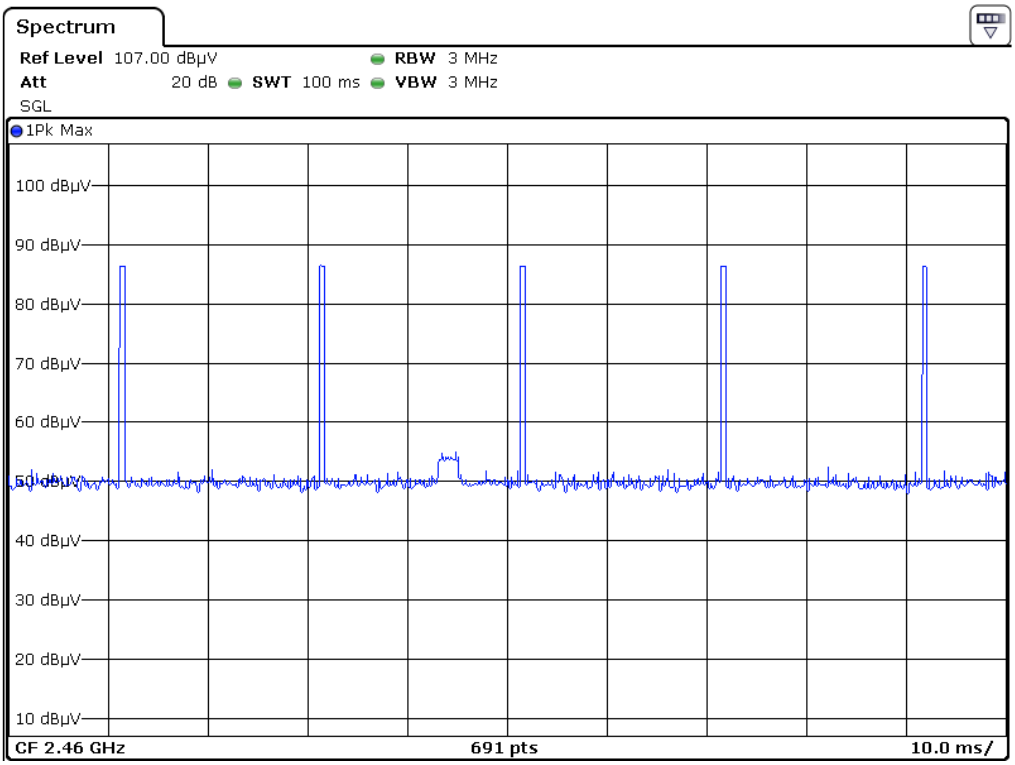
The time period over which the duty cycle is measured is 100 milliseconds, or the repetition cycle, whichever is a shorter time frame. The worst case (highest percentage on) duty cycle is used for the calculation. The duty cycle is measured by placing the spectrum analyzer in zero scan (receiver mode) and linear mode at maximum bandwidth (3 MHz at 3 dB down) and viewing the resulting time domain signal output from the analyzer on a Tektronix oscilloscope. The oscilloscope is used because of its superior time base and triggering facilities.

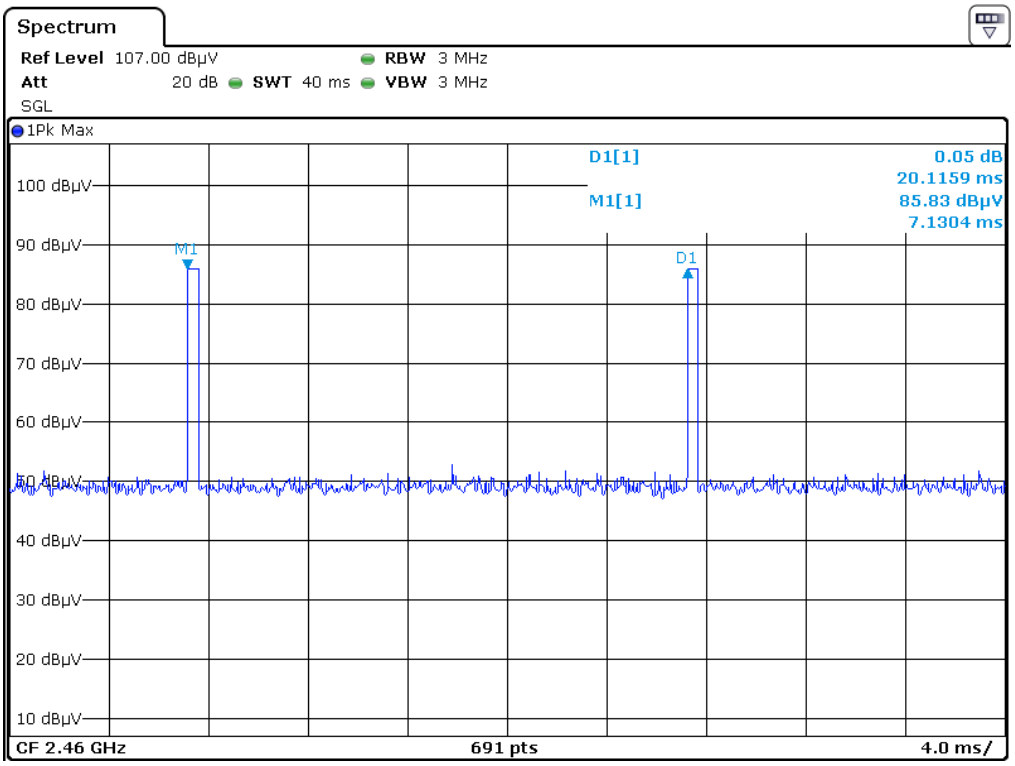
The duty cycle is simply the on-time divided by the period:

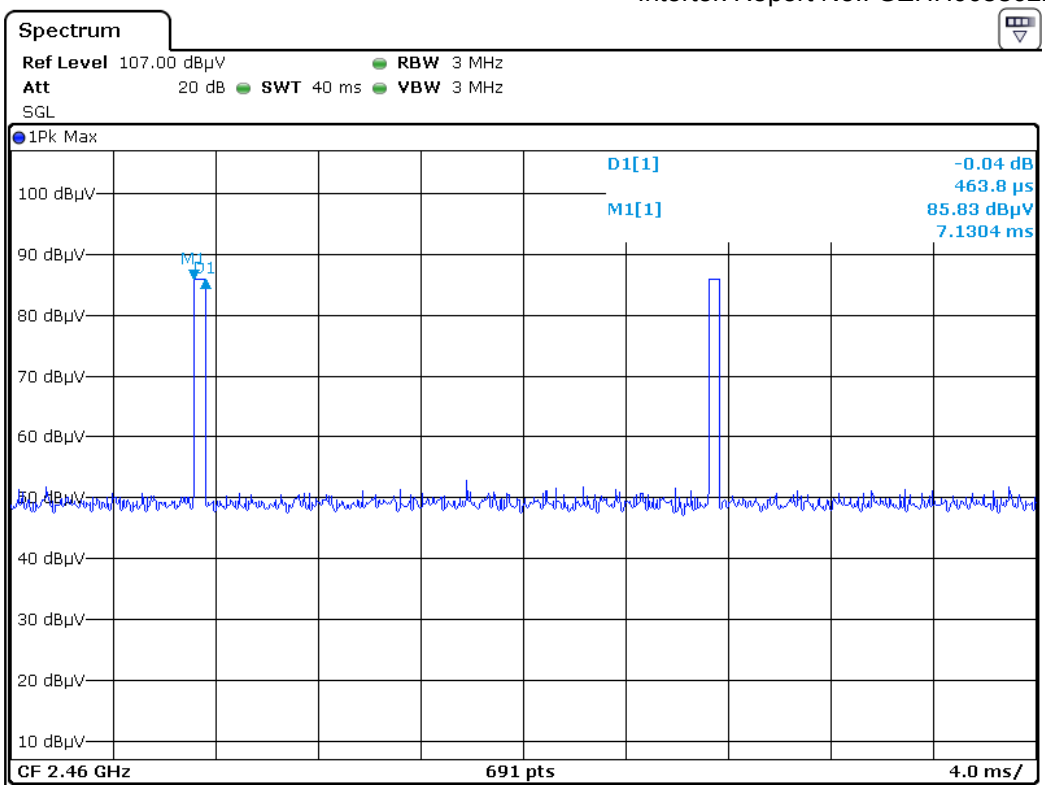
The duration of one cycle = 20.1159ms
Effective period of the cycle = 463.8µs x1 = 0.4638ms
DC =0.4638ms / 20.1159ms =0.0231 or 2.31%

Therefore, the averaging factor is found by $20 \log_{10} (0.0231) = -32.7$dB

The test plots are attached as below.






Spectrum
Ref Level 107.00 dBµV
RBW 3 MHz
Att 20 dB SWT 40 ms VBW 3 MHz
SGL
1Pk Max
D1[1]
-0.04 dB
463.8 µs
M1[1]
85.83 dBµV
7.1304 ms
100 dBµV
90 dBµV
80 dBµV
70 dBµV
60 dBµV
50 dBµV
40 dBµV
30 dBµV
20 dBµV
10 dBµV
CF 2.46 GHz
691 pts
4.0 ms/

9.5 Emissions Test Procedures

The following is a description of the test procedure used by Intertek Testing Services in the measurements of transmitters operating under Part 15, Subpart C rules.

The test set-up and procedures described below are designed to meet the requirements of ANSI C63.10 - 2013.

The transmitting equipment under test (EUT) is placed on a styrene turntable which is four feet in diameter and approximately 0.8 meter up to 1GHz and 1.5 meter above 1GHz in height above the ground plane. During the radiated emissions test, the turntable is rotated and any cables leaving the EUT are manipulated to find the configuration resulting in maximum emissions. The EUT is adjusted through all three orthogonal axes to obtain maximum emission levels. The antenna height and polarization are varied during the testing to search for maximum signal levels.

Detector function for radiated emissions is in peak mode. Average readings, when required, are taken by measuring the duty cycle of the equipment under test and subtracting the corresponding amount in dB from the measured peak readings. A detailed description for the calculation of the average factor can be found in Section 9.4.

The frequency range scanned is from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or 40 GHz, whichever is lower.

9.5 Emissions Test Procedures (cont'd)

The EUT is warmed up for 15 minutes prior to the test.

AC power to the unit is varied from 85% to 115% nominal and variation in the fundamental emission field strength is recorded. If battery powered, a new, fully charged battery is used.

The IF bandwidth used for measurement of radiated signal strength was 10 kHz for emission below 30 MHz and 120 kHz for emission from 30 MHz to 1000 MHz. Where pulsed transmissions of short enough pulse duration warrant, a greater bandwidth is selected according to the recommendations of Hewlett Packard Application Note 150-2. A discussion of whether pulse desensitivity is applicable to this unit is included in this report (See Section 9.2). Above 1000 MHz, a resolution bandwidth of 1 MHz is used, RBW 5MHz used for fundamental emission.

Transmitter measurements are normally conducted at a measurement distance of three meters. However, to assure low enough noise floor in the restricted bands and above 1 GHz, signals are acquired at a distance of one meter or less. All measurements are extrapolated to three meters using inverse scaling, but those measurements taken at a closer distance are so marked.

10.0 Test Equipment List

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ061-13	BiConiLog Antenna	ETS	3142E	00217919	13-Jul-2022	13-Jul-2025
SZ185-04	EMI Receiver	R&S	ESR7	102466	10-Nov-2023	10-Nov-2024
SZ061-09	Horn Antenna	ETS	3115	00092346	14-Oct-2022	14-Oct-2025
SZ061-06	Active Loop Antenna	Electro-Metrics	EM-6876	217	18-May-2021	18-May-2024
SZ061-15	Double-Ridged Waveguide Horn Antenna	ETS	3116C-PA	00224718	06-Jul-2021	06-Jul-2024
SZ056-06	Spectrum Analyzer	R&S	FSV40	101101	13-Dec-2023	13-Dec-2024
SZ181-04	Preamplifier	Agilent	8449B	3008A02474	27-Apr-2023	27-Apr-2024
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	12-Dec-2021	12-Dec-2024
SZ062-02	RF Cable	RADIALL	RG 213U	--	1-Nov-2023	1-May-2024
SZ062-05	RF Cable	RADIALL	0.04-26.5GHz	--	1-Nov-2023	1-May-2024
SZ062-12	RF Cable	RADIALL	0.04-26.5GHz	--	1-Nov-2023	1-May-2024
SZ067-04	Notch Filter	Micro-Tronics	BRM50702-02	--	27-Apr-2023	27-Apr-2024