

MRT Technology (Taiwan) Co., Ltd Phone: +886-3-3288388 Fax: +886-3-3288918 Web: www.mrt-cert.com Report No.: 2308TW5401-U1 Report Version: 1.0 Issue Date: 2023-09-22

MEASUREMENT REPORT

FCC ID	: CHQ7255T
IC	: 2968A-7255T
APPLICANT	: RHINE ELECTRONIC CO., LTD.
Application Type	: Certification
Product	: Transmitter
Model No.	: UC7255T3
Series Model No.	: UC7255T6
Brand Name	: RHINE
FCC Classification	: FCC Part 15 Security/Remote Control Transmitter (DSC)
FCC Rule Part(s)	: Part 15.231(b)
ISED Standard	: RSS 210 Issue 10
Test Procedure(s)	: ANSI C63.10-2013
Received Date	: August 7, 2023
Test Date	: August 16, 2023 ~ September 20, 2023
Tested By	(Kaunaz Lee)
Reviewed By	(Paddy Chen)
Approved By	: Ang ker (Chenz Ker)

The test results only relate to the tested sample.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.10-2013. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Taiwan)



Revision History

Report No.	Version	Description	Issue Date	Note
2308TW5401-U1	1.0	Original Report	2023-09-22	



CONTENTS

1. INTRODUCTION 6 1.1. Scope 6 1.2. MRT Test Location 6 1.2. MRT Test Location 7 2.1. Equipment Description 7 2.1. Equipment Description 7 2.2. Test Standards 8 2.3. Test Methodology 8 2.4. EUT Setup and Test Mode 9 3. ANTENNA REQUIREMENTS 10 4. TEST EQUIPMENT CALIBRATION DATE 11 5. MEASUREMENT UNCERTAINTY 12 6. TEST RESULT 13 6.1. Summary 13 6.2. Radiated Emissions 14 6.2.1. Standard Applicable 14 6.2.2. Test Procedure 14 6.2.3. Test Setup 15 6.2.4. Test Result 16 6.3. 20dB Bandwidth / 99% Bandwidth 22 6.3.1. Standard Applicable 22 6.3.4. Test Result 23 6.4. Transmission Time	De	scriptio	n Page
1.2. MRT Test Location 6 2. PRODUCT INFORMATION 7 2.1. Equipment Description 7 2.2. Test Standards 8 2.3. Test Methodology 8 2.4. EUT Setup and Test Mode 9 3. ANTENNA REQUIREMENTS 10 4. TEST EQUIPMENT CALIBRATION DATE 11 5. MEASUREMENT UNCERTAINTY 12 6. TEST RESULT 13 6.1. Summary 13 6.2. Radiated Emissions 14 6.2.2. Test Result 14 6.2.3. Test Results 16 6.3. 20dB Bandwidth / 99% Bandwidth 22 6.3.1. Standard Applicable 22 6.3.2. Test Procedure. 22 6.3.3. Test Setup. 22 6.3.4. Test Result 23 6.4. Transmission Time. 24 6.4.1. Standard Applicable 24 6.4.2. Test Procedure. 24 6.4.3. Test R	1.	INTRO	ODUCTION
1.2. MRT Test Location 6 2. PRODUCT INFORMATION 7 2.1. Equipment Description 7 2.2. Test Standards 8 2.3. Test Methodology 8 2.4. EUT Setup and Test Mode 9 3. ANTENNA REQUIREMENTS 10 4. TEST EQUIPMENT CALIBRATION DATE 11 5. MEASUREMENT UNCERTAINTY 12 6. TEST RESULT 13 6.1. Summary 13 6.2. Radiated Emissions 14 6.2.2. Test Result 14 6.2.3. Test Results 16 6.3. 20dB Bandwidth / 99% Bandwidth 22 6.3.1. Standard Applicable 22 6.3.2. Test Procedure. 22 6.3.3. Test Setup. 22 6.3.4. Test Result 23 6.4. Transmission Time. 24 6.4.1. Standard Applicable 24 6.4.2. Test Procedure. 24 6.4.3. Test R		1.1.	Scope
2.1. Equipment Description		1.2.	•
2.1. Equipment Description	2.	PRO	DUCT INFORMATION
2.2. Test Standards 8 2.3. Test Methodology 8 2.4. EUT Setup and Test Mode 9 3. ANTENNA REQUIREMENTS. 10 4. TEST EQUIPMENT CALIBRATION DATE 11 5. MEASUREMENT UNCERTAINTY 12 6. TEST RESULT 13 6.1. Summary 13 6.2. Radiated Emissions 14 6.2.1. Standard Applicable 14 6.2.2. Test Procedure 14 6.2.3. Test Results 16 6.3. 20dB Bandwidth / 99% Bandwidth 22 6.3.1. Standard Applicable 22 6.3.2. Test Procedure 22 6.3.3. Test Result 23 6.4. Transmission Time 24 6.4.1. Standard Applicable 24 6.4.2. Test Result 23 6.4.3. Test Result 23 6.4.4. Test Result 24 6.4.3. Test Result 24 6.4.4. Test Result </th <th></th> <th>_</th> <th></th>		_	
2.3. Test Methodology 8 2.4. EUT Setup and Test Mode 9 3. ANTENNA REQUIREMENTS. 10 4. TEST EQUIPMENT CALIBRATION DATE 11 5. MEASUREMENT UNCERTAINTY. 12 6. TEST RESULT 13 6.1. Summary 13 6.2. Radiated Emissions 14 6.2.1. Standard Applicable 14 6.2.2. Test Procedure 14 6.2.3. Test Setup 15 6.2.4. Test Results 16 6.3. 20dB Bandwidth / 99% Bandwidth 22 6.3.1. Standard Applicable 22 6.3.1. Standard Applicable 22 6.3.2. Test Procedure 22 6.3.3. Test Result 23 6.4. Transmission Time 24 6.4.1. Standard Applicable 24 6.4.2. Test Procedure 24 6.4.3. Test Setup 24 6.4.4. Test Result 25 6.5. Duty			
2.4. EUT Setup and Test Mode 9 3. ANTENNA REQUIREMENTS. 10 4. TEST EQUIPMENT CALIBRATION DATE 11 5. MEASUREMENT UNCERTAINTY. 12 6. TEST RESULT 13 6.1. Summary 13 6.2. Radiated Emissions 14 6.2.1. Standard Applicable 14 6.2.2. Test Procedure 14 6.2.3. Test Setup 15 6.2.4. Test Results 16 6.3. 20dB Bandwidth / 99% Bandwidth 22 6.3.1. Standard Applicable 22 6.3.2. Test Procedure 22 6.3.3. Test Result 23 6.4. Transmission Time 24 6.4.1. Standard Applicable 24 6.4.2. Test Procedure 24 6.4.1. Standard Applicable 24 6.4.1. Standard Applicable 24 6.4.1. Standard Applicable 24 6.4.2. Test Result 25 6.5.			
3. ANTENNA REQUIREMENTS. 10 4. TEST EQUIPMENT CALIBRATION DATE 11 5. MEASUREMENT UNCERTAINTY. 12 6. TEST RESULT 13 6.1. Summary 13 6.2. Radiated Emissions 14 6.2.1. Standard Applicable 14 6.2.2. Test Procedure 14 6.2.3. Test Setup 15 6.2.4. Test Results 16 6.3. 20dB Bandwidth / 99% Bandwidth 22 6.3.1. Standard Applicable 22 6.3.2. Test Procedure 22 6.3.3. Test Setup 22 6.3.4. Test Result 23 6.4. Transmission Time 24 6.4.1. Standard Applicable 24 6.4.2. Test Procedure 24 6.4.3. Test Setup 24 6.4.4. Test Result 25 6.5. Duty Cycle 26 6.5.1. Standard Applicable 26 6.5.2. Test Procedure 26 6.5.3. Test Setup 26 6.5.1. Standard Applicable 26 6.5.2. Test Procedure 26 6.5.3. Test Setup 26 6.5			
4. TEST EQUIPMENT CALIBRATION DATE 11 5. MEASUREMENT UNCERTAINTY 12 6. TEST RESULT 13 6.1. Summary 13 6.2. Radiated Emissions 14 6.2.1. Standard Applicable 14 6.2.2. Test Procedure 14 6.2.3. Test Setup 15 6.2.4. Test Results 16 6.3. 20dB Bandwidth / 99% Bandwidth 22 6.3.1. Standard Applicable 22 6.3.2. Test Procedure. 22 6.3.3. Test Setup. 22 6.3.4. Test Result 23 6.4. Transmission Time. 24 6.4.1. Standard Applicable 24 6.4.2. Test Procedure. 24 6.4.3. Test Setup. 24 6.4.4.1. Standard Applicable 24 6.4.3. Test Setup. 24 6.4.4.1. Standard Applicable 24 6.5.1. Standard Applicable 26 6.5.1. Standard Applicable 26 6.5.2. Test Procedure. 26 6.5.3. Test Setup. 26 6.5.4. Test Result. 27	•		
5. MEASUREMENT UNCERTAINTY 12 6. TEST RESULT 13 6.1. Summary 13 6.2. Radiated Emissions 14 6.2.1. Standard Applicable 14 6.2.2. Test Procedure 14 6.2.3. Test Setup 15 6.2.4. Test Results 16 6.3. 20dB Bandwidth / 99% Bandwidth 22 6.3.1. Standard Applicable 22 6.3.2. Test Procedure 22 6.3.3. Test Setup 22 6.3.4. Test Results 23 6.4. Transmission Time 24 6.4.1. Standard Applicable 24 6.4.2. Test Procedure 24 6.4.3. Test Setup 24 6.4.4. Test Result 25 6.5. Duty Cycle 26 6.5.1. Standard Applicable 26 6.5.2. Test Procedure 26 6.5.3. Test Setup 26 6.5.1. Standard Applicable 26 6.5.2. Test Procedure 26 6.5.3. Test Setup 26 6.5.4. Test Result 27	-		
6. TEST RESULT 13 6.1. Summary 13 6.2. Radiated Emissions 14 6.2.1. Standard Applicable 14 6.2.2. Test Procedure 14 6.2.3. Test Setup 15 6.4. Test Results 16 6.3. 20dB Bandwidth / 99% Bandwidth 22 6.3.1. Standard Applicable 22 6.3.2. Test Procedure 22 6.3.3. Test Setup 22 6.3.4. Test Result 23 6.4. Transmission Time 24 6.4.1. Standard Applicable 24 6.4.2. Test Procedure 24 6.4.3. Test Setup 24 6.4.4. Test Result 25 6.5. Duty Cycle 26 6.5.1. Standard Applicable 26 6.5.2. Test Procedure 26 6.5.3. Test Setup 26 6.5.4. Test Result 25 6.5.3. Test Setup 26 6.5.4. Test Result 27	4.	TEST	EQUIPMENT CALIBRATION DATE11
6.1. Summary 13 6.2. Radiated Emissions 14 6.2.1. Standard Applicable 14 6.2.2. Test Procedure 14 6.2.3. Test Setup 15 6.2.4. Test Results 16 6.3. 20dB Bandwidth / 99% Bandwidth 22 6.3.1. Standard Applicable 22 6.3.2. Test Procedure 22 6.3.3. Test Setup 22 6.3.4. Test Result 23 6.4. Transmission Time 24 6.4.1. Standard Applicable 24 6.4.2. Test Procedure 24 6.4.3. Test Setup 24 6.4.4. Test Result 25 6.5. Duty Cycle 26 6.5.1. Standard Applicable 26 6.5.1. Standard Applicable 26 6.5.2. Test Procedure 26 6.5.3. Test Setup 26 6.5.4. Test Result 27	5.	MEAS	SUREMENT UNCERTAINTY
6.2. Radiated Emissions 14 6.2.1. Standard Applicable 14 6.2.2. Test Procedure 14 6.2.3. Test Setup 15 6.2.4. Test Results 16 6.3. 20dB Bandwidth / 99% Bandwidth 22 6.3.1. Standard Applicable 22 6.3.2. Test Procedure 22 6.3.3. Test Setup 22 6.3.4. Test Result 23 6.4. Transmission Time 24 6.4.1. Standard Applicable 24 6.4.2. Test Procedure 24 6.4.3. Test Setup 24 6.4.4. Test Result 25 6.5. Duty Cycle 26 6.5.1. Standard Applicable 26 6.5.2. Test Procedure 26 6.5.3. Test Setup 26 6.5.4. Test Result 27	6.	TEST	RESULT
6.2. Radiated Emissions 14 6.2.1. Standard Applicable 14 6.2.2. Test Procedure 14 6.2.3. Test Setup 15 6.2.4. Test Results 16 6.3. 20dB Bandwidth / 99% Bandwidth 22 6.3.1. Standard Applicable 22 6.3.2. Test Procedure 22 6.3.3. Test Setup 22 6.3.4. Test Result 23 6.4. Transmission Time 24 6.4.1. Standard Applicable 24 6.4.2. Test Procedure 24 6.4.3. Test Setup 24 6.4.4. Test Result 25 6.5. Duty Cycle 26 6.5.1. Standard Applicable 26 6.5.2. Test Procedure 26 6.5.3. Test Setup 26 6.5.4. Test Result 27		6.1.	Summary
6.2.2. Test Procedure. 14 6.2.3. Test Setup. 15 6.2.4. Test Results 16 6.3. 20dB Bandwidth / 99% Bandwidth 22 6.3.1. Standard Applicable 22 6.3.2. Test Procedure. 22 6.3.3. Test Setup. 22 6.3.4. Test Result 23 6.4. Transmission Time. 24 6.4.1. Standard Applicable 24 6.4.2. Test Procedure. 24 6.4.3. Test Procedure. 24 6.4.4. Test Procedure. 24 6.4.3. Test Setup. 24 6.4.4. Test Result 25 6.5. Duty Cycle 26 6.5.1. Standard Applicable 26 6.5.2. Test Procedure. 26 6.5.3. Test Setup. 26 6.5.4. Test Result 27		6.2.	-
6.2.3. Test Setup		6.2.1.	Standard Applicable
6.2.4. Test Results 16 6.3. 20dB Bandwidth / 99% Bandwidth 22 6.3.1. Standard Applicable 22 6.3.2. Test Procedure 22 6.3.3. Test Setup 22 6.3.4. Test Result 23 6.4. Transmission Time 24 6.4.1. Standard Applicable 24 6.4.2. Test Procedure 24 6.4.3. Test Procedure 24 6.4.4. Standard Applicable 24 6.4.3. Test Procedure 24 6.4.4. Test Result 25 6.5. Duty Cycle 26 6.5.1. Standard Applicable 26 6.5.2. Test Procedure 26 6.5.3. Test Setup 26 6.5.3. Test Setup 26 6.5.4. Test Result 27		6.2.2.	Test Procedure14
6.3. 20dB Bandwidth / 99% Bandwidth 22 6.3.1. Standard Applicable 22 6.3.2. Test Procedure 22 6.3.3. Test Setup 22 6.3.4. Test Result 23 6.4. Transmission Time 24 6.4.1. Standard Applicable 24 6.4.2. Test Procedure 24 6.4.3. Test Setup 24 6.4.4.1. Standard Applicable 24 6.4.2. Test Procedure 24 6.4.3. Test Setup 24 6.4.4. Test Setup 24 6.4.5. Duty Cycle 26 6.5.1. Standard Applicable 26 6.5.2. Test Procedure 26 6.5.3. Test Setup 26 6.5.3. Test Setup 26 6.5.4. Test Result 27		6.2.3.	Test Setup15
6.3.1. Standard Applicable 22 6.3.2. Test Procedure 22 6.3.3. Test Setup 22 6.3.4. Test Result 23 6.4. Transmission Time 24 6.4.1. Standard Applicable 24 6.4.2. Test Procedure 24 6.4.3. Test Setup 24 6.4.4. Test Setup 24 6.4.5. Duty Cycle 26 6.5.1. Standard Applicable 26 6.5.2. Test Procedure 26 6.5.3. Test Setup 26 6.5.4. Test Result 27		6.2.4.	Test Results 16
6.3.2. Test Procedure. 22 6.3.3. Test Setup. 22 6.3.4. Test Result. 23 6.4. Transmission Time. 24 6.4.1. Standard Applicable. 24 6.4.2. Test Procedure. 24 6.4.3. Test Setup. 24 6.4.4. Test Setup. 24 6.4.3. Test Setup. 24 6.4.4. Test Result. 25 6.5. Duty Cycle. 26 6.5.1. Standard Applicable. 26 6.5.2. Test Procedure. 26 6.5.3. Test Setup. 26 6.5.4. Test Result. 27		6.3.	20dB Bandwidth / 99% Bandwidth 22
6.3.3. Test Setup. 22 6.3.4. Test Result 23 6.4. Transmission Time. 24 6.4.1. Standard Applicable 24 6.4.2. Test Procedure. 24 6.4.3. Test Setup. 24 6.4.4. Test Setup. 24 6.4.5. Duty Cycle. 26 6.5.1. Standard Applicable 26 6.5.2. Test Procedure. 26 6.5.3. Test Setup. 26 6.5.4. Test Result. 27		6.3.1.	Standard Applicable
6.3.4. Test Result 23 6.4. Transmission Time. 24 6.4.1. Standard Applicable 24 6.4.2. Test Procedure. 24 6.4.3. Test Setup. 24 6.4.4. Test Result 25 6.5. Duty Cycle 26 6.5.1. Standard Applicable 26 6.5.2. Test Procedure. 26 6.5.3. Test Setup. 26 6.5.4. Test Result 27		6.3.2.	Test Procedure
6.4. Transmission Time. 24 6.4.1. Standard Applicable 24 6.4.2. Test Procedure. 24 6.4.3. Test Setup. 24 6.4.4. Test Result. 25 6.5. Duty Cycle 26 6.5.1. Standard Applicable 26 6.5.2. Test Procedure. 26 6.5.3. Test Setup. 26 6.5.4. Test Result. 26 6.5.4. Test Result. 27		6.3.3.	Test Setup22
6.4.1. Standard Applicable 24 6.4.2. Test Procedure. 24 6.4.3. Test Setup. 24 6.4.4. Test Result. 25 6.5. Duty Cycle 26 6.5.1. Standard Applicable 26 6.5.2. Test Procedure. 26 6.5.3. Test Setup. 26 6.5.4. Test Result. 26 6.5.4. Test Result. 27		6.3.4.	Test Result
6.4.2. Test Procedure		6.4.	Transmission Time
6.4.3. Test Setup		6.4.1.	Standard Applicable
6.4.4. Test Result		6.4.2.	
6.5. Duty Cycle 26 6.5.1. Standard Applicable 26 6.5.2. Test Procedure 26 6.5.3. Test Setup 26 6.5.4. Test Result 27		6.4.3.	
6.5.1. Standard Applicable 26 6.5.2. Test Procedure 26 6.5.3. Test Setup 26 6.5.4. Test Result 27		6.4.4.	
6.5.2. Test Procedure		6.5.	
6.5.3. Test Setup			
6.5.4. Test Result			
			·
6.6. AC Conducted Emissions Measurement			
Page Number: 3 of 32		6.6.	



	6.6.1.	Test Limit	29
	6.6.2.	Test Setup	29
	6.6.3.	Test Result	30
7.	CONCLU	JSION	31
Арр	endix A :	Test Photograph	32
Арр	endix B :	External Photograph	32
App	endix C :	Internal Photograph	32



§2.1033 General Information

Applicant	RHINE ELECTRONIC CO., LTD.	
Applicant Address	No. 29, Fong Li Road, Tan-Zi Dist, Taichung City 42754, Taiwan, R.O.C.	
Manufacturer	1. RHINE ELECTRONIC CO., LTD 2. FORKING ELECTRONIC CO., LTD	
Manufacturer Address	1. No.29, Fengli Rd., Tanzi Dist., Taichung City 427, Taiwan (R.O.C.) 2. THE YOUTH LNDUSTRIAL ADMINISTRATION PARK, CHENJIANG TOWN, HUICHENG DISTRICT, HUIZHOU CITY, GUANGDONG, CHINA	
Test Site	MRT Technology (Taiwan) Co., Ltd	
Test Site Address	No. 38, Fuxing Second Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C)	
MRT Registration No.	291082	
Test Device Serial No.	#1-1 Production Pre-Production Engineering	
FCC Classification	FCC Part 15 Security/Remote Control Transmitter(DSC)	

Test Facility / Accreditations

- 1. MRT facility is a FCC registered (Reg. No. 291082) test facility with the site description report on file and is designated by the FCC as an Accredited Test Firm.
- 2. MRT facility is an IC registered (MRT Reg. No. 21723) test laboratory with the site description on file at Industry Canada.
- MRT Lab is accredited to ISO 17025 by the Taiwan Accreditation Foundation (TAF Cert. No. 3261) in EMC, Telecommunications and Radio testing for FCC (Designation Number: TW3261), Industry Canada, EU and TELEC Rules.



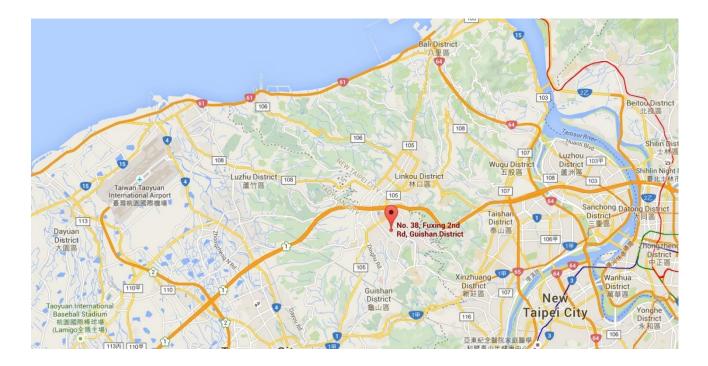
1. INTRODUCTION

1.1. Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Industry Canada Certification and Engineering Bureau.

1.2. MRT Test Location

The map below shows the location of the MRT LABORATORY, its proximity to the Taoyuan City. These measurement tests were conducted at the MRT Technology (Taiwan) Co., Ltd. Facility located at No.38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 33377, Taiwan (R.O.C).





2. PRODUCT INFORMATION

2.1. Equipment Description

Product Name	Transmitter
Model No.	UC7255T3
Series Model No.	UC7255T6
Frequency Range	303.875 MHz
Type of modulation	ASK
Antenna Type	Integral Antenna

Note:

1. Model Difference: The only difference between the models is the position and number of buttons;

the other hardware components are the same. (declared by the manufacturer)

2. The test was performed base on UC7255T3.



2.2. Test Standards

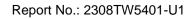
The following report is prepared on behalf of the **RHINE ELECTRONIC CO., LTD.** in accordance with FCC Part 15, Subpart C, and section 15.231, 15.203, 15.205 and 15.209 of the Federal Communication Commission rules/ IC RSS-Gen 8.8,8.9,8.10 and RSS-210 AnnexA

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which results in lowering the emission/immunity, should be checked to ensure compliance has been maintained.

2.3. Test Methodology

The measurement procedures described in the American National Standard for Testing Unlicensed Wireless Devices (ANSI C63.10-2013).

Deviation from measurement procedure.....None

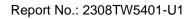




2.4. EUT Setup and Test Mode

The EUT was operated at continuous transmitting mode that was for the purpose of the measurements. All testing shall be performed under maximum output power condition, and to measure its highest possible emissions level, more detailed description as follows:

Test Mode	
Mode 1	Transmitting by 303.875MHz





3. ANTENNA REQUIREMENTS

Excerpt from §15.203 of the FCC Rules/Regulations:

"An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can 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 shall be considered sufficient to comply with the provisions of this section."

- The antenna of the **Transmitter** is permanently attached.
- There are no provisions for connection to an external antenna.

Conclusion:

The Transmitter unit complies with the requirement of §15.203.



4. TEST EQUIPMENT CALIBRATION DATE

Radiated Emissions – AC1

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Acitve Loop Antenna	SCHWARZBECK	FMZB 1519B	MRTTWA00002	1 year	2024/5/22
Broadband TRILOG Antenna	SCHWARZBECK	VULB 9162	MRTTWA00001	1 year	2023/12/21
Broadband Hornantenna	SCHWARZBECK	BBHA 9120D	MRTTWA00003	1 year	2024/3/24
Broadband Preamplifier	SCHWARZBECK	BBV 9718	MRTTWA00005	1 year	2024/3/24
Breitband Hornantenna	SCHWARZBECK	BBHA 9170	MRTTWA00004	1 year	2024/3/20
Broadband Amplifier	SCHWARZBECK	BBV 9721	MRTTWA00006	1 year	2024/3/27
EMI Test Receiver	R&S	ESR3	MRTTWA00009	1 year	2024/3/8
Signal Analyzer	R&S	FSV40	MRTTWA00007	1 year	2024/3/14
Antenna Cable	HUBERSUHNER	SF106	MRTTWE00010	1 year	2024/6/13
Cable	Rosnol	K1K50-UP0264-		1.000	2024/6/48
Cable	RUSHUI	K1K50-4M	MRTTWE00012	1 year	2024/6/18
Temperature/Humidity Meter	TFA	35.1078.10.IT	MRTTWA00032	1 year	2024/6/4

Test Software

Software	Version	Function
e3	9.160520a	EMI Test Software
EMI	V3	EMI Test Software



5. MEASUREMENT UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

AC Conducted E	AC Conducted Emission Measurement – SR2		
Measuring I	Uncertainty for a Level of Confidence of 95% (U=2Uc(y)):		
150kHz~30	MHz: ± 2.42dB		
Conducted Mea	surement– SR1		
Measuring I	Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): ± 1.3dB		
Radiated Emiss	ion Measurement – AC1		
Measuring I	Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)):		
Horizontal:	9K~30MHz: ± 4.14dB		
	30MHz~1GHz: ± 4.22dB		
	1GHz~40GHz: ± 4.05dB		
Vertical:	9K~30MHz: ± 4.14dB		
	30MHz~1GHz: ± 3.37dB		
	1GHz~40GHz: ± 4.08dB		



6. TEST RESULT

6.1. Summary

Company Name:

RHINE ELECTRONIC CO., LTD.

FCC/IC Part Section(s)	Test Description	Test Condition	Test Result
15.203	ANTENNA		Pass
13.203	REQUIREMENTS		
15.205,15.209,15.231(b)/	Radiated Spurious		Doop
RSS Gen 8.9,8.10 RSS-210 Annex A	Emissions		Pass
15.231(c)/	20dB Bandwidth /		Pass
RSS-210 Annex A.1.3	99% Bandwidth	Dedicted	
15.231(a)/	Transmission Time	Radiated	Pass
RSS-210 Annex A.1.1(a)			
15.231(a)/	Duty Quele		Dava
RSS-210 Annex A.1.1(a)	Duty Cycle		Pass
45.007 /	AC Conducted	Line	
15.207 /	Emissions	Line	N/A
RSS Gen 8.8	150kHz - 30MHz	Conducted	

- Determining compliance is based on the test results met the regulation limits or requirements declared by clients, and the test results don't take into account the value of measurement uncertainty.
- 2) All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.
- 3) The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
- 4) The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.
- 5) The EUT Power by Battery, so do not need to test Conducted Emissions.



6.2. Radiated Emissions

6.2.1. Standard Applicable

According to §15.231(b), the field strength of emissions from intentional radiators operated under this section shall not exceed the following:

Fundamental frequency (MHz)	Field strength of fundamental (microvolts/meter)	Field strength of spurious emissions (microvolts/meter)
40.66-40.70	2,250	225
70-130	1,250	125
130-174	11,250 to 3,750	1125 to 375
174-260	3,750	375
260-470	13,750 to 12,500	1375 to 1,250
Above 470	12,500	1,250

The limits on the field strength of the spurious emissions in the above table are based on the fundamental frequency of the intentional radiator. Spurious emissions shall be attenuated to the average (or, alternatively, CISPR quasi-peak) limits shown in this table or to the general limits shown in §15.209, whichever limit permits a higher field strength.

The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply. Spurious Radiated Emissions measurements start below or at the lowest crystal frequency.

Compliance with the provisions of §15.205 shall be demonstrated using the measurement instrumentation specified in that section.

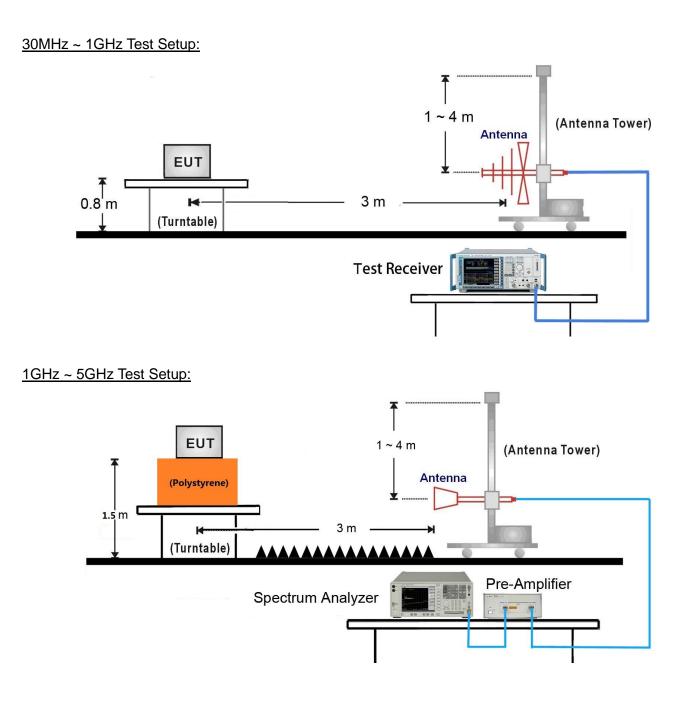
6.2.2. Test Procedure

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.231(b) and FCC Part 15.209 Limit / RSS-Gen 8.9 and RSS-210 Annex A.1.2.



6.2.3. Test Setup

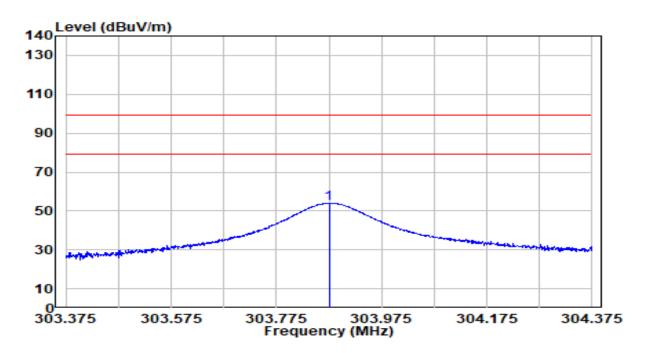
The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.231(b) and FCC Part 15.209 Limit/ RSS-Gen 8.9 and RSS-210 Annex A.1.2.





6.2.4. Test Results

EUT	Transmitter	Date of Test	2023-09-19		
Factor	VULB 9162	Temp. / Humidity	20°C /60%		
Polarity	Horizontal	Site / Test Engineer	AC2 / Stanley		
Test Mode	TX_303.875MHz	Test Voltage	By Battery		

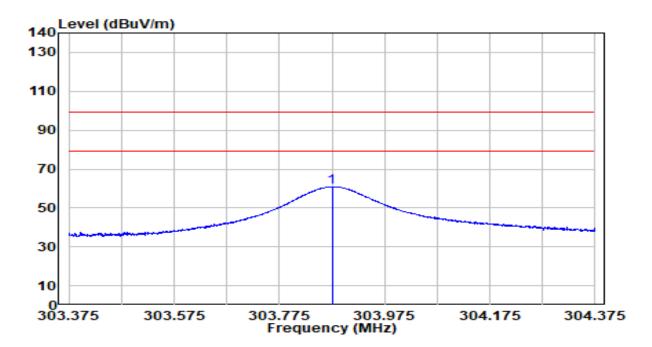


No		Frequency	Reading	C.F	Measurement	Margin	Limit	Height	Angle	Remark
INO		(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dB)	(dBuV/m)	(cm)	(deg)	(QP/PK/AV)
1	*	303.875	33.39	20.62	54.01	-45.23	99.24	100	360	Peak

- 1. " *", means this data is the worst emission level.
- 2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
- 3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- 4. The emission levels of other frequencies are very lower than the limit and not show in test report.



EUT	Transmitter	Date of Test	2023-09-19		
Factor	VULB 9162	Temp. / Humidity 20°C /60°			
Polarity	Vertical	Site / Test Engineer	AC2 / Stanley		
Test Mode	TX_303.875MHz	Test Voltage	By Battery		

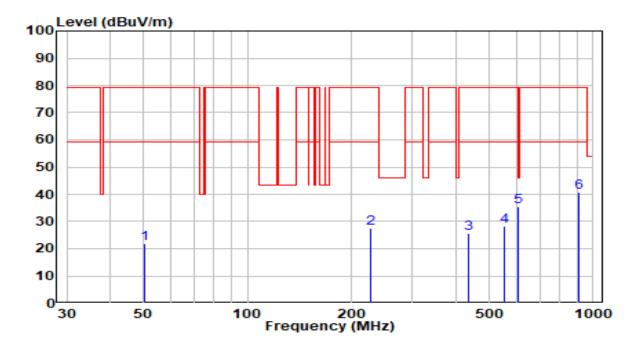


No		Frequency	Reading	C.F	Measurement	Margin	Limit	Height	Angle	Remark
No		(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dB)	(dBuV/m)	(cm)	(deg)	(QP/PK/AV)
1	*	303.875	40.28	20.62	60.90	-38.34	99.24	180	275	Peak

- 1. " *", means this data is the worst emission level.
- 2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
- 3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- 4. The emission levels of other frequencies are very lower than the limit and not show in test report.



EUT	Transmitter	Date of Test	2023-09-19		
Factor	VULB 9162	Temp. / Humidity	20°C /60%		
Polarity	Horizontal	Site / Test Engineer	AC2 / Stanley		
Test Mode	TX_303.875MHz	Test Voltage	By Battery		



No	Frequency	Reading	C.F	Measurement	Margin	Limit	Height	Angle	Remark
NO	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dB)	(dBuV/m)	(cm)	(deg)	(QP/PK/AV)
1	50.370	0.66	21.04	21.70	-57.54	79.24	200	360	Peak
2	227.880	8.34	19.15	27.48	-51.76	79.24	100	199	Peak
3	434.490	1.98	23.81	25.79	-53.45	79.24	100	110	Peak
4	553.800	2.30	26.02	28.32	-50.92	79.24	200	35	Peak
5 '	* 608.120	8.18	27.31	35.49	-10.51	46.00	100	358	QP
6	911.730	9.40	31.21	40.61	-38.63	79.24	150	179	Peak

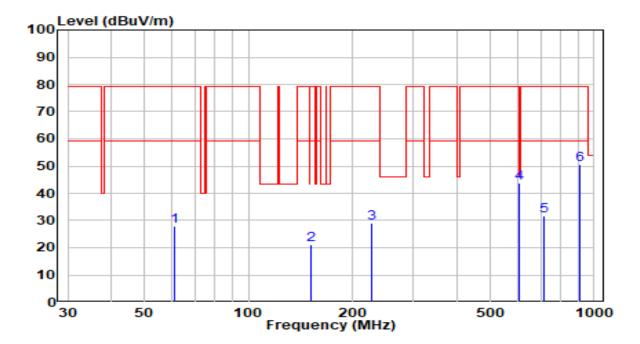
- 1. " *", means this data is the worst emission level.
- 2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).

3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).

4. The emission levels of other frequencies are very lower than the limit and not show in test report.



EUT	Transmitter	Date of Test	2023-09-19		
Factor	VULB 9162	Temp. / Humidity	20°C /60%		
Polarity	Vertical	Site / Test Engineer	AC2 / Stanley		
Test Mode	TX_303.875MHz	Test Voltage	By Battery		

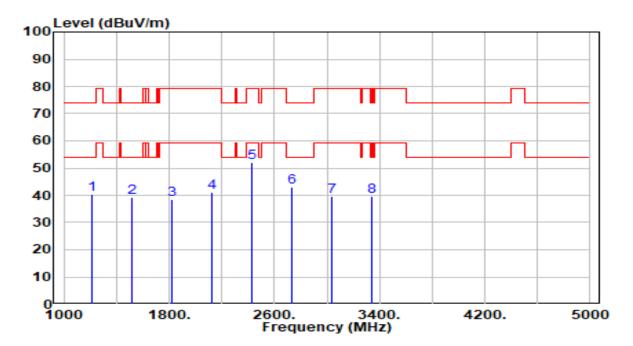


No	Frequency	Reading	C.F	Measurement	Margin	Limit	Height	Angle	Remark
INO	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dB)	(dBuV/m)	(cm)	(deg)	(QP/PK/AV)
1	61.040	8.72	19.18	27.90	-51.34	79.24	118	360	Peak
2	151.250	5.94	15.34	21.28	-57.96	79.24	100	85	Peak
3	227.880	9.78	19.15	28.92	-50.32	79.24	100	267	Peak
4	* 608.120	16.32	27.31	43.63	-2.37	46.00	100	240	QP
5	717.730	2.99	28.57	31.56	-47.68	79.24	150	248	Peak
6	911.730	19.17	31.21	50.38	-28.86	79.24	100	92	Peak

- 1. " *", means this data is the worst emission level.
- 2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
- 3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- 4. The emission levels of other frequencies are very lower than the limit and not show in test report.



EUT	Transmitter	Date of Test	2023-09-20		
Factor	DRH18-E	Temp. / Humidity	20°C /60%		
Polarity	Horizontal	Site / Test Engineer	AC2 / Stanley		
Test Mode	TX_303.875MHz	Test Voltage	By Battery		

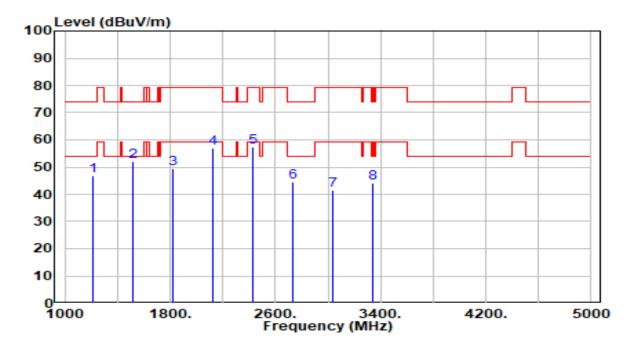


No	Frequency	Reading	C.F	Measurement	Margin	Limit	Height	Angle	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dB)	(dBuV/m)	(cm)	(deg)	(QP/PK/AV)
1	1215.500	48.66	-8.24	40.41	-33.59	74.00	300	12	Peak
2	1519.375	47.00	-7.72	39.28	-34.72	74.00	100	349	Peak
3	1823.250	45.58	-7.12	38.46	-40.78	79.24	100	339	Peak
4	2127.125	47.20	-5.93	41.27	-37.97	79.24	300	122	Peak
5 '	* 2431.000	57.52	-5.38	52.13	-27.11	79.24	100	152	Peak
6	2734.875	47.74	-4.60	43.13	-30.87	74.00	241	0	Peak
7	3038.750	43.55	-3.90	39.65	-39.59	79.24	100	185	Peak
8	3342.625	43.18	-3.56	39.62	-39.62	79.24	242	0	Peak

- 1. " *", means this data is the worst emission level.
- 2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) Preamplifier(dB).
- 3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- 4. The emission levels of other frequencies are very lower than the limit and not show in test report.



EUT	Transmitter	Date of Test	2023-09-20		
Factor	DRH18-E	Temp. / Humidity	20°C /60%		
Polarity	Vertical	Site / Test Engineer	AC2 / Stanley		
Test Mode	TX_303.875MHz	Test Voltage	By Battery		



No	Frequency	Reading	C.F	Measurement	Margin	Limit	Height	Angle	Remark
NO	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dB)	(dBuV/m)	(cm)	(deg)	(QP/PK/AV)
1	1215.500	54.93	-8.24	46.69	-27.31	74.00	200	268	Peak
2	1519.375	59.69	-7.72	51.97	-22.03	74.00	100	286	Peak
3	1823.250	56.71	-7.12	49.59	-29.65	79.24	100	283	Peak
4	2127.125	62.87	-5.93	56.94	-22.30	79.24	100	308	Peak
5 '	* 2431.000	62.63	-5.38	57.24	-22.00	79.24	300	252	Peak
6	2734.875	48.97	-4.60	44.37	-29.63	74.00	283	0	Peak
7	3038.750	45.36	-3.90	41.47	-37.77	79.24	200	262	Peak
8	3342.625	47.80	-3.56	44.24	-35.00	79.24	200	263	Peak

- 1. " *", means this data is the worst emission level.
- 2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) Preamplifier(dB).
- 3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- 4. The emission levels of other frequencies are very lower than the limit and not show in test report.



6.3. 20dB Bandwidth / 99% Bandwidth

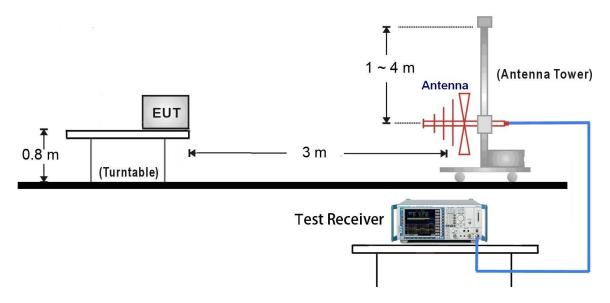
6.3.1. Standard Applicable

According to FCC Part 15.231(c), the bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70MHz and below 900MHz. Bandwidth is determined at the points 20 dB down from the modulated carrier.

6.3.2. Test Procedure

With the EUT's antenna attached, the EUT's 20dB Bandwidth power was received by the test antenna, which was connected to the spectrum analyzer with the START, and STOP frequencies set to the EUT's operation band.

6.3.3. Test Setup





6.3.4. Test Result

Test Frequency (MHz)	Modulation Type	20dB Bandwidth (KHz)	99% Bandwidth (KHz)	Limit (KHz)	Result
303.875	ASK	9.79	32.467	≤ 759.7	Pass

Limit = Fundamental Frequency * 0.25%, 303.875 MHz * 0.25% = 0.7597MHz

0.7597MHz * 1000= 759.7KHz





6.4. Transmission Time

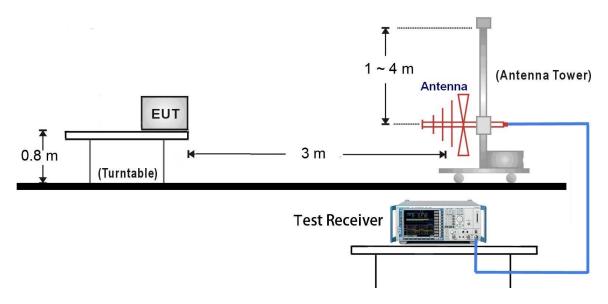
6.4.1. Standard Applicable

According to FCC 15.231(a)(1), A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

6.4.2. Test Procedure

With the EUT's antenna attached, the EUT's output signal was received by the test antenna, which was connected to the spectrum analyzer. Set the center frequency to 434MHz, then set the spectrum analyzer to Zero Span for the release time reading. During the testing, the switch was released then the EUT automatically deactivated.

6.4.3. Test Setup





6.4.4. Test Result

Test Item	Frequency	Frequency Measurement		Result	
reschem	(MHz)	(s)	(s)	Result	
Transmission Time (Ton)	303.875	0.30	< 5	Pass	

303.875MHz-Transmission Time (Ton)			
Receiver Spectru			THE STREET
SGL PS	 RBW 100 kHz SWT 20 s VBW 100 kHz 	Input 1 AC	
● 1Pk Clrw		D1[1]	-1.43 dB
90 dBµV		M1[1]	300.0 ms 61.17 dBµV 2.3400 s
80 dBµV			
70 dBµV			
60 dBµV			
50 dBµV			
40 dBµV			
o a welling for the stand of the stand	antone-administration of the administration of the	here with the second	rettitamettightanetaattantistattaattatingitat
20 dBµV			
10 dBµV			
0 dBµV			
CF 303.875 MHz	1001		2.0 s/
e a ser a		Ready	07.08.2023 12:35:45



6.5. Duty Cycle

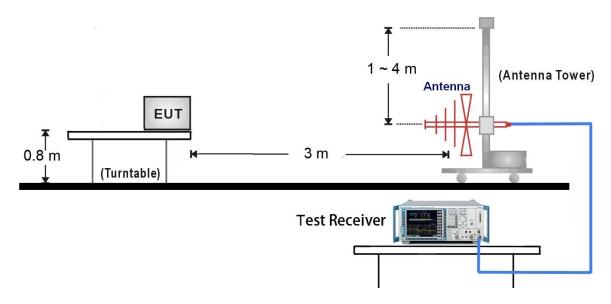
6.5.1. Standard Applicable

According to FCC Part 15.231(b) and 15.35(c), for pulse operation transmitter, the averaging pulsed emissions are calculated by peak value of measured emission plus duty cycle factor.

6.5.2. Test Procedure

With the EUT's antenna attached, the EUT's output signal was received by the test antenna, which was connected to the spectrum analyzer. Set the center frequency to 434MHz, then set the spectrum analyzer to Zero Span for the release time reading. During the testing, the switch was released then the EUT automatically deactivated.

6.5.3. Test Setup





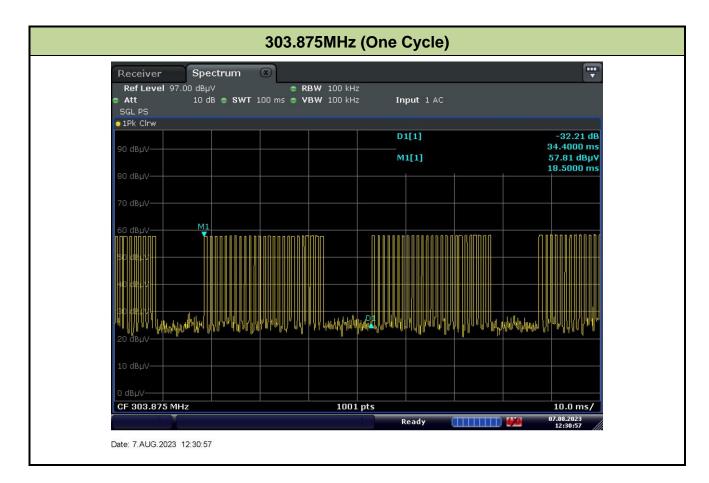
6.5.4. Test Result

Modulation Type	Total Time (T _{on})	The duration of one	Duty Cycle	Average Factor
	(ms)	cycle	(ms)	(dB)
		(ms)		
ASK	10.23	34.40	0.30	10.53

Note 1: Duty Cycle = Total Time $(T_{on}) / (T_{on} + T_{off})$.

(Long 660us*6)+(Short 330us*19) =10230us, 10230us / 1000 = 10.23ms

Note 2: Average Factor = 20*Log*(1/Duty Cycle).









6.6. AC Conducted Emissions Measurement

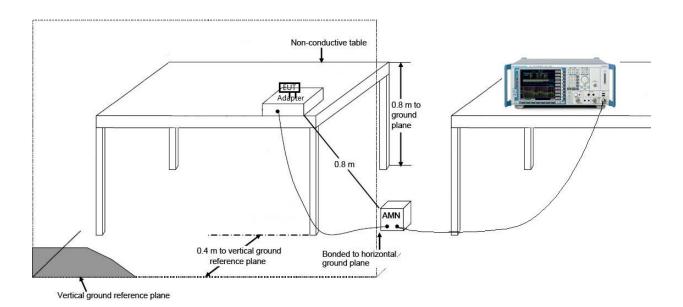
6.6.1. Test Limit

FCC Part 15 Subpart C Paragraph 15.207 / RSS-Gen Limits				
Frequency (MHz)	QP (dBµV)	Average (dBµV)		
0.15 - 0.50	66 - 56	56 - 46		
0.50 - 5.0	56	46		
5.0 - 30	60	50		

Note 1: The lower limit shall apply at the transition frequencies.

0.5MHz.

6.6.2. Test Setup



Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to



6.6.3. Test Result

Note: The EUT Power by Battery, so do not need to test Conducted Emissions.



7. CONCLUSION

The data collected relate only the item(s) tested and show that the **Transmitter** is in compliance with

FCC Rules/ IC RSS 210 Annex A1.1.



Appendix A : Test Photograph

Refer to "2308TW5401-UT" file.

Appendix B : External Photograph

Refer to "2308TW5401-UE" file.

Appendix C : Internal Photograph

Refer to "2308TW5401-UI" file.

——— The End