



# **TEST REPORT**

Applicant Name: Shenzhen ChangTaiWei Electronic CO.,LTD

Address: 5/F.,6 Block, XinGu Industrial zone, GuShu Village, XiXiang Town,

BaoAn District, Shenzhen City China

Report Number: SZNS1220427-16988E-RF

FCC ID: 2ACVFM-9

**Test Standard** (s) FCC PART 95

**Sample Description** 

Product Type: Walkie Talkie

Model No.: M-9

Trade Mark: WisHouse

 Date Received:
 2022-04-27

 Date of Test:
 2022-04-28

 Report Date:
 2022-05-12

Test Result:	Pass*

<sup>\*</sup> In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

Candy . Li

Black Ding

Candy Li

Black Ding Candy Li
EMC Engineer EMC Engineer

Note: This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "★".

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#### Shenzhen Accurate Technology Co., Ltd.

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#### **GENERAL INFORMATION**

### **Product Description for Equipment Under Test (EUT)**

Product	Walkie Talkie
Tested Model	M-9
Frequency Range	462.5500~462.7250MHz 467.5625~467.7125MHz
Transmit Power (ERP)	462.5500~462.7250MHz: 30.39dBm 467.5625~467.7125MHz: 24.48 dBm
Channel Spacing	12.5kHz
Modulation Technique	FM
Antenna Specification*	0dBi(It is provided by the applicant)
Voltage Range	DC 4.5V from battery or DC 5V from adapter
Sample serial number	SZNS1220427-16988E-RF-S1 (Assigned by ATC)
Sample/EUT Status	Good condition
Adapter Information	Model: SJL608; Input: 100-220v~50/60Hz 0.3A; Output: 5V 2.1A;

#### **Objective**

This test report is in accordance with Part 2 and Part 95, Subpart A & Subpart B of the Federal Communication Commissions rules.

#### **Test Methodology**

All tests and measurements indicated in this document were performed in accordance with Part 95 Subpart A, Subpart B of the Federal Communication Commissions rules with TIA-603-E, Land Mobile FM or PM-Communications Equipment-Measurement and Performance Standards.

All emissions measurement was performed at Shenzhen Accurate Technology Co., Ltd. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

### **Measurement Uncertainty**

Parameter		Uncertainty	
Occupied Cha	nnel Bandwidth	5%	
RF Fre	equency	0.082*10 <sup>-7</sup>	
RF output po	wer, conducted	0.73dB	
Unwanted Emi	ssion, conducted	1.6dB	
Audio Frequency Response		0.1dB	
Low Pass Fi	lter Response	1.2dB	
Modulatio	on Limiting	1%	
Emissions,	30MHz - 1GHz	4.28dB	
Radiated	1GHz - 18GHz	4.98dB	
Temperature		1℃	
Humidity		6%	
Supply	voltages	0.4%	

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

#### **Test Facility**

The test site used by Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 708358, the FCC Designation No.: CN1189. Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 4297.01.

Listed by Innovation, Science and Economic Development Canada (ISEDC), the Registration Number is 5077A.

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# **SYSTEM TEST CONFIGURATION**

# **Description of Test Configuration**

The system was configured for testing in a typical fashion (as normally used by a typical user).

FRS Channel List

Channel No.	Channel Frequency (MHz)	Channel No.	Channel Frequency (MHz)
1	462.5625	12	467.6625
2	462.5875	13	467.6875
3	462.6125	14	467.7125
4	462.6375	15	462.5500
5	462.6625	16	462.5750
6	462.6875	17	462.6000
7	462.7125	18	462.6250
8	467.5625	19	462.6500
9	467.5875	20	462.6750
10	467.6125	21	462.7000
11	467.6375	22	462.7250

# **Equipment Modifications**

No modification was made to the EUT tested.

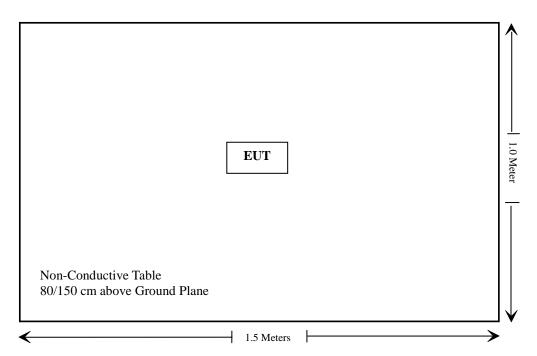
# **Support Equipment List and Details**

Manufacturer	<b>Description</b> Model		Serial Number	
/	/	/	/	

#### **External I/O Cable**

Cable Description	Length (m)	From Port	То
/	/	/	/

# **Block Diagram of Test Setup**



# SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results		
§2.1093	RF Exposure	Compliant		
§95.587(b)(1)(2)(3)	Antenna Requirement Compliant			
§2.1046, §95.567	RF Output Power	Compliant		
§2.1047, §95.575	Modulation Characteristic Compl			
\$2.1049, \$95.573, \$95.579	Authorized Bandwidth & Emission Mask	Compliant		
§2.1053, §95.579	Radiated Spurious Emission	Compliant		
§2.1055(d), §95.565	Frequency Stability	Compliant		

# TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
		Radiated Emissions	s Test		
Rohde & Schwarz	Test Receiver	ESR	102725	2021/12/13	2022/12/12
Rohde & Schwarz	Spectrum Analyzer	FSV40	101949	2021/12/13	2022/12/12
A.H. Systems, inc.	Preamplifier	PAM-0118P	135	2021/11/09	2022/11/08
SONOMA INSTRUMENT	Amplifier	310 N	186131	2021/12/13	2022/12/12
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2021/07/06	2024/07/05
Schwarzbeck	Bilog Antenna	VULB9163	9163-194	2020/01/05	2023/01/04
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-655	2020/01/05	2023/01/04
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-1067	2020/01/05	2023/01/04
Mini-Circuits	High Pass Filter	NHP-600+	15542	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.10	N050	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.11	N1000	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.12	N040	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.13	N300	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.14	N800	2021/12/14	2022/12/13
Radiated Emission Test Software: e3 19821b(V9)					
		RF Conducted T	est		
Rohde & Schwarz	Spectrum Analyzer	FSV-40	101495	2021/12/13	2022/12/12
Aeroflex/Weinschel	30dB Attenuator (Input 250W/Output 50W)	58-30-33	PS467	2021/12/14	2022/12/13
Gongwen	Temp. & Humid. Chamber	HSD-500	109	2021/10/14	2022/10/13
AGILENT	Vector Signal Generator	N5182A	MY50143401	2021/12/13	2022/12/12
HP Agilent	RF Communication test set	8920B	3325U00859	2021/12/13	2022/12/12
Unknown	RF Coaxial Cable	No.33	RF-03	Each	time

<sup>\*</sup> Statement of Traceability: Shenzhen Accurate Technology Co., Ltd. attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

# $\S 2.1093$ - RF EXPOSURE INFORMATION

# **Applicable Standard**

§2.1093.

### **Test Result**

Compliance, please refer to the SAR report: CR22050006-20.

# **FCC §95.587(b)(1)(2)(3) – ANTENNA REQUIREMENT**

### **Applicable Standard**

According to FCC § 95.587, (b) Antenna. The antenna of each FRS transmitter type must meet the following requirements.

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- (1) The antenna must be a non-removable integral part of the FRS transmitter type.
- (2) The gain of the antenna must not exceed that of a half-wave dipole antenna.
- (3) The antenna must be designed such that the electric field of the emitted waves is vertically polarized when the unit is operated in the normal orientation.

### **Antenna Description**

The EUT has an integral vertically polarized antenna arrangement and the antenna gain is 0dBi, fulfill the requirement of this section. Please refer to the EUT photos.

Result: Compliant.

### FCC §2.1046 & §95.567 - RF OUTPUT POWER

#### **Applicable Standard**

Per FCC §2.1046, and §95.567, Each FRS transmitter type must be designed such that the effective radiated power (ERP) on channels 8 through 14 does not exceed 0.5 Watts and the ERP on channels 1 through 7 and 15 through 22 does not exceed 2.0 Watts.

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#### **Test Procedure**

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load, which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the emissions were measured by the substitution.

#### **Test Data**

#### **Environmental Conditions**

Temperature:	23°C
Relative Humidity:	58%
ATM Pressure:	101.4kPa

The testing was performed by Nick Fang on 2022-04-28.

Test Mode: Transmitting

Frequency	Rece			Substituted	Absolute	Limit	Margin		
(MHz)	Reading (dBm)	PK/AV	Angle Degree	Height (m)	Polar (H/V)	Factor (dB)	Level (dBm)	(dBm)	(dB)
462.6375MHz									
462.6375	-21.09	PK	169	1.6	Н	40.12	19.03	33	-13.97
462.6375	-5.63	PK	308	1.7	V	36.02	30.39	33	-2.61
467.6375MHz									
467.6375	-24.51	PK	358	1.5	Н	39.26	14.75	27	-12.25
467.6375	-11.93	PK	284	2.0	V	36.41	24.48	27	-2.52

#### Note:

Absolute Level = Reading Level + Substituted Factor

Substituted Factor contains: SG Level - Cable loss+ Antenna Gain

Margin = Absolute Level - Limit

Test Result: Compliant.

# FCC §2.1047 & §95.575 - MODULATION CHARACTERISTIC

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### **Applicable Standard**

Per FCC §2.1047 and §95.575: Each FRS transmitter type must be designed such that the peak frequency deviation does not exceed 2.5 kHz, and the highest audio frequency contributing substantially to modulation must not exceed 3.125 kHz.

#### **Test Procedure**

Test Method: TIA/EIA-603-E

#### **Test Data**

#### **Environmental Conditions**

Temperature:	24 °C
Relative Humidity:	56 %
ATM Pressure:	101.2 kPa

The testing was performed by Key.Pei on 2022-04-28.

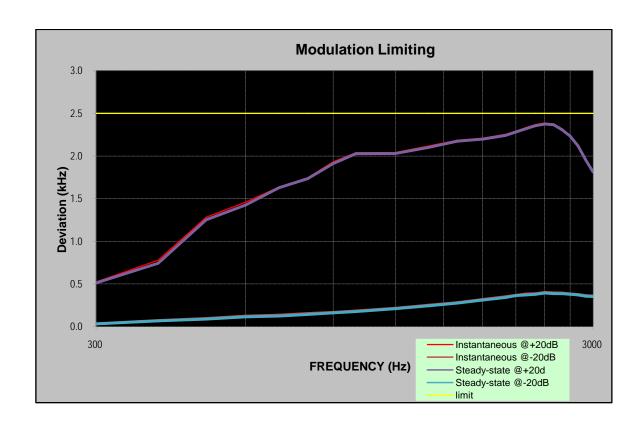
Please refer to the following tables and plots.

*Test Mode: Transmitting* 

# MODULATION LIMITING

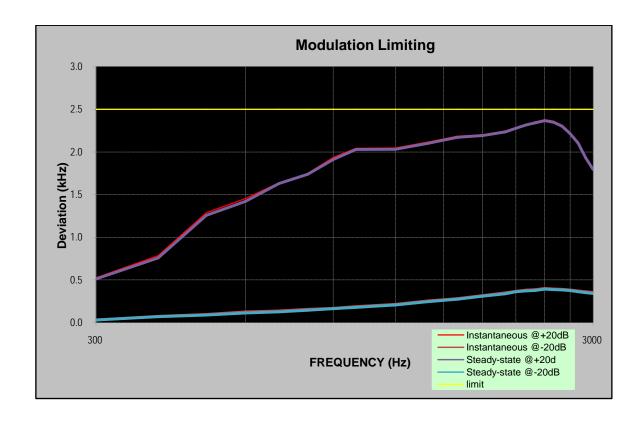
Carrier Frequency: 462.6375MHz

	Instant	aneous	Steady	y-state	
Audio Frequency (Hz)	DEVIATION (@+20dB) [kHz]	DEVIATION (@-20dB) [kHz]	DEVIATION (@+20dB) [kHz]	DEVIATION (@-20dB) [kHz]	Limit [kHz]
300	0.523	0.034	0.511	0.031	2.500
400	0.779	0.071	0.743	0.067	2.500
500	1.283	0.095	1.252	0.087	2.500
600	1.459	0.123	1.425	0.114	2.500
700	1.636	0.135	1.628	0.124	2.500
800	1.745	0.153	1.736	0.142	2.500
900	1.932	0.166	1.911	0.161	2.500
1000	2.039	0.184	2.028	0.176	2.500
1200	2.041	0.215	2.029	0.209	2.500
1400	2.117	0.252	2.101	0.244	2.500
1600	2.186	0.281	2.175	0.275	2.500
1800	2.209	0.318	2.198	0.312	2.500
2000	2.254	0.350	2.241	0.341	2.500
2100	2.293	0.368	2.282	0.364	2.500
2200	2.334	0.382	2.321	0.372	2.500
2300	2.369	0.387	2.357	0.378	2.500
2400	2.388	0.402	2.375	0.394	2.500
2500	2.374	0.395	2.368	0.387	2.500
2600	2.321	0.393	2.307	0.386	2.500
2700	2.236	0.384	2.235	0.378	2.500
2800	2.129	0.377	2.118	0.371	2.500
2900	1.965	0.364	1.957	0.357	2.500
3000	1.827	0.359	1.814	0.352	2.500



# Carrier Frequency: 467.6375MHz

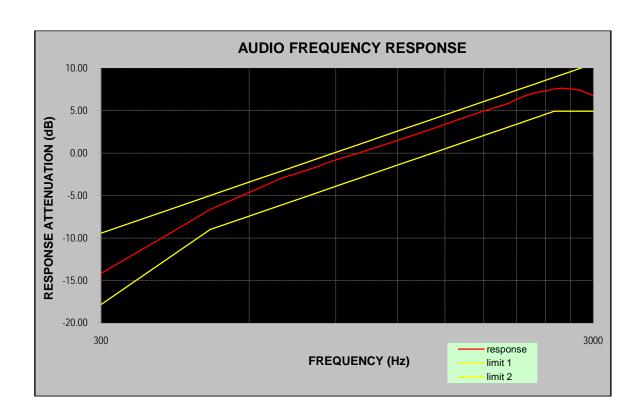
	Instantaneous		Steady	y-state	
Audio Frequency (Hz)	DEVIATION (@+20dB) [kHz]	DEVIATION (@-20dB) [kHz]	DEVIATION (@+20dB) [kHz]	DEVIATION (@-20dB) [kHz]	Limit [kHz]
300	0.525	0.032	0.512	0.030	2.500
400	0.783	0.072	0.757	0.069	2.500
500	1.286	0.096	1.257	0.088	2.500
600	1.456	0.126	1.422	0.113	2.500
700	1.638	0.137	1.630	0.125	2.500
800	1.749	0.156	1.738	0.144	2.500
900	1.936	0.167	1.912	0.163	2.500
1000	2.042	0.187	2.029	0.178	2.500
1200	2.047	0.214	2.032	0.207	2.500
1400	2.117	0.255	2.103	0.246	2.500
1600	2.185	0.282	2.173	0.274	2.500
1800	2.202	0.316	2.193	0.309	2.500
2000	2.247	0.348	2.236	0.338	2.500
2100	2.287	0.367	2.279	0.361	2.500
2200	2.325	0.380	2.317	0.371	2.500
2300	2.354	0.386	2.343	0.377	2.500
2400	2.379	0.401	2.367	0.392	2.500
2500	2.362	0.393	2.349	0.386	2.500
2600	2.314	0.390	2.302	0.382	2.500
2700	2.228	0.382	2.215	0.375	2.500
2800	2.117	0.371	2.105	0.361	2.500
2900	1.947	0.362	1.933	0.351	2.500
3000	1.809	0.354	1.797	0.342	2.500



# **Audio Frequency Response**

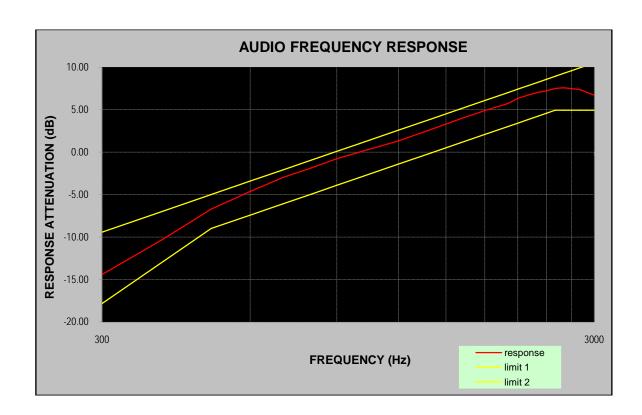
Carrier Frequency: 462.6375MHz

Audio Frequency (Hz)	Response Attenuation (dB)
300	-14.15
400	-9.95
500	-6.63
600	-4.64
700	-2.93
800	-1.87
900	-0.80
1000	0.00
1200	1.50
1400	2.77
1600	3.98
1800	4.97
2000	5.76
2100	6.38
2200	6.83
2300	7.15
2400	7.34
2500	7.57
2600	7.65
2700	7.56
2800	7.47
2900	7.13
3000	6.79



# Carrier Frequency: 467.6375MHz

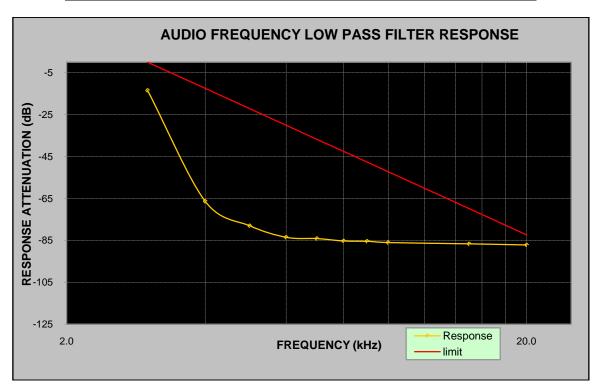
Audio Frequency (Hz)	Response Attenuation (dB)
300	-14.42
400	-10.23
500	-6.71
600	-4.64
700	-2.97
800	-1.85
900	-0.78
1000	0.00
1200	1.32
1400	2.68
1600	3.91
1800	4.91
2000	5.71
2100	6.34
2200	6.71
2300	7.04
2400	7.23
2500	7.51
2600	7.59
2700	7.49
2800	7.40
2900	7.03
3000	6.72



# Audio frequency lows pass filter response

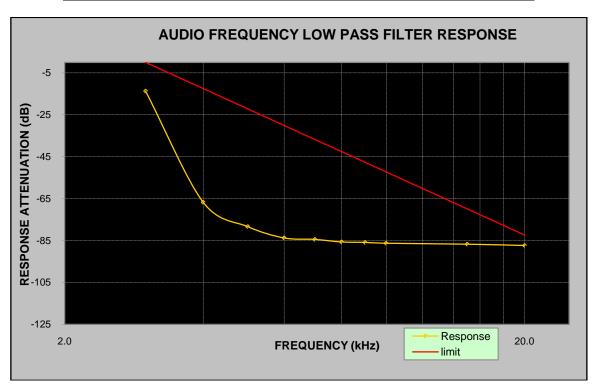
Carrier Frequency: 462.6375MHz

Audio Frequency (kHz)	Response Attenuation (dB)	Limit (dB)
1.0	0.0	/
3.0	-13.5	0.0
4.0	-66.4	-12.5
5.0	-78.1	-22.2
6.0	-83.6	-30.1
7.0	-84.2	-36.8
8.0	-85.3	-42.6
9.0	-85.5	-47.7
10.0	-86.1	-52.3
15.0	-86.7	-69.9
20.0	-87.2	-82.4



Carrier Frequency: 467.6375MHz

Audio Frequency (kHz)	Response Attenuation (dB)	Limit (dB)
1.0	0.0	/
3.0	-13.7	0.0
4.0	-66.8	-12.5
5.0	-78.4	-22.2
6.0	-83.8	-30.1
7.0	-84.5	-36.8
8.0	-85.7	-42.6
9.0	-85.9	-47.7
10.0	-86.3	-52.3
15.0	-86.8	-69.9
20.0	-87.4	-82.4



# FCC §2.1049 & §95.573 & §95.579 - AUTHOURIZED BANDWIDTH AND

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#### **Applicable Standard**

**EMISSION MASK** 

According to §95.573. Each FRS transmitter type must be designed such that the occupied bandwidth does not exceed 12.5 kHz.

Each FRS transmitter type must be designed to satisfy the applicable unwanted emissions limits in this paragraph.

- (a) Attenuation requirements. The power of unwanted emissions must be attenuated below the carrier power output in Watts (P) by at least:
- (1) 25 dB (decibels) in the frequency band 6.25 kHz to 12.5 kHz removed from the channel center frequency.
- (2) 35 dB in the frequency band 12.5 kHz to 31.25 kHz removed from the channel center frequency.
- (3) 43 + 10 log (P) dB in any frequency band removed from the channel center frequency by more than 31.25 kHz.
- (b) Measurement bandwidths. The power of unwanted emissions in the frequency bands specified in paragraphs (a)(1) and (2) of this section is measured with a reference bandwidth of 300 Hz. The power of unwanted emissions in the frequency range specified in paragraph (a)(3) is measured with a reference bandwidth of at least 30 kHz.

#### **Test Procedure**

TIA-603-E, section 2.2.11

#### **Test Data**

#### **Environmental Conditions**

Temperature:	24 °C	
Relative Humidity:	56 %	
ATM Pressure:	101.2 kPa	

The testing was performed by Key Pei on 2022-04-28.

Test Mode: Transmitting

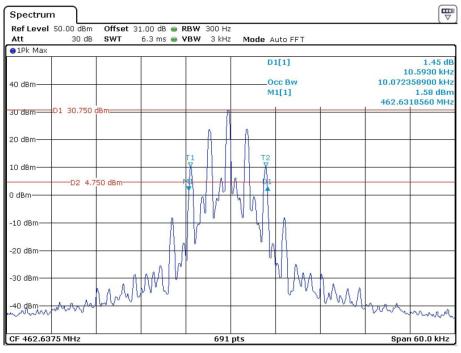
Modulation	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26dB Emissions Bandwidth (kHz)
Analog	462.6375	10.072	10.593
Analog	467.6375	10.159	10.507

Emission Designator Per CFR 47 2.201 & 2.202, Bn = 2M + 2D:

Emission Designator 11K0F3E In this case, the maximum modulating frequency is 3.0 kHz with a 2.5 kHz

deviation. BW =  $2(M+D) = 2*(3.0 \text{ kHz} + 2.5 \text{ kHz}) = 11 \text{ kHz} \rightarrow 11\text{K0}$ F3E portion of the designator represents an FM voice transmission Therefore, the entire designator for 12.5 kHz channel spacing FM mode is 11K0F3E.

#### **OBW**, 462.6375 MHz

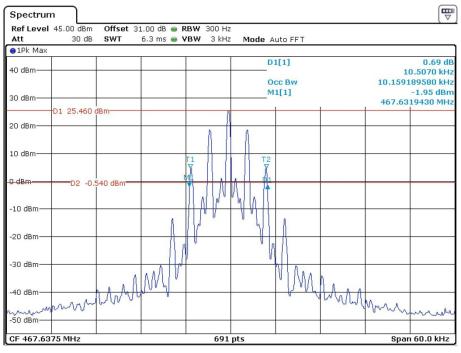


Date: 28.APR.2022 10:50:09

### Emission Mask, 462.6375 MHz Spectrum Ref Level 50.00 dBm Offset 31.00 dB • RBW 300 Hz Att 35 dB SWT 6.3 ms 🍅 **VBW** 3 kHz Mode Auto FFT ●1Pk Max Limit Check Line FRS 40 dBm-30 dBm 20 dBm 10 dBm RS dBm--30 dBm-Total phonon hours and population of the contraction of the contractio CF 462.6375 MHz 691 pts Span 120.0 kHz

Date: 28.APR.2022 10:51:03

#### **OBW**, 467.6375 MHz



Date: 28.APR.2022 10:35:39

#### Emission Mask, 467.6375 MHz Spectrum Ref Level 45.00 dBm Offset 31.00 dB • RBW 300 Hz Att 35 dB SWT 6.3 ms 🍅 **VBW** 3 kHz Mode Auto FFT ●1Pk Max Limit Check PASS 40 dBMe FI 30 dBm-20 dBm-10 dBm 0 dBm RS dBm--30 dBm--40 dBm-~50 dBrhanleywarnerward CF 467.6375 MHz 691 pts Span 120.0 kHz

Date: 28.APR.2022 10:46:44

### FCC §2.1053 & §95.579 - RADIATED SPURIOUS EMISSION

#### **Applicable Standard**

FCC §2.1053 and §95.579. Each FRS transmitter type must be designed to satisfy the applicable unwanted emissions limits in this paragraph.

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- (a) Attenuation requirements. The power of unwanted emissions must be attenuated below the carrier power output in Watts (P) by at least:
- (1) 25 dB (decibels) in the frequency band 6.25 kHz to 12.5 kHz removed from the channel center frequency.
- (2) 35 dB in the frequency band 12.5 kHz to 31.25 kHz removed from the channel center frequency. (3) 43 + 10 log (P) dB in any frequency band removed from the channel center frequency by more than 31.25 kHz.
- (b) *Measurement bandwidths*. The power of unwanted emissions in the frequency bands specified in paragraphs (a)(1) and (2) of this section is measured with a reference bandwidth of 300 Hz. The power of unwanted emissions in the frequency range specified in paragraph (a)(3) is measured with a reference bandwidth of at least 30 kHz.
- (c) *Measurement conditions*. The requirements in this section apply to each FRS transmitter type both with and without the connection of permitted attachments, such as an external speaker, microphone and/or power cord.

#### **Test Procedure**

The transmitter was placed on a wooden turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB =10 1g (TXpwr in Watts/0.001)-the absolute level Spurious attenuation limit in dB =  $43+10 \text{ Log}_{10}$  (power out in Watts)

#### **Test Data**

#### **Environmental Conditions**

Temperature:	23°C	
Relative Humidity:	58 %	
ATM Pressure:	101.4 kPa	

The testing was performed by Nick Fang on 2022-04-28.

Test Mode: Transmitting

(Scan with X axis, Y axis, Z axis, the worst case is Y axis)

#### 30MHz - 5GHz:

	Receiver		Rx Antenna Substituted		Substituted	Absolute		
Frequency (MHz)	Reading (dBm)	Turntable Degree	Height (m)	Polar (H/V)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)
			462.6	375MHz				
925.275	-38.8	28	1.5	Н	9.27	-29.53	-13	-16.53
925.275	-28.89	144	1.4	V	11.55	-17.34	-13	-4.34
1387.9125	-30.25	28	1.8	Н	6.02	-24.23	-13	-11.23
1387.9125	-23.04	204	1.4	V	5.83	-17.21	-13	-4.21
1850.55	-30.77	357	2.2	Н	4.4	-26.37	-13	-13.37
1850.55	-23.08	133	1.9	V	3.6	-19.48	-13	-6.48
3701.1	-33.29	314	1.5	Н	8.12	-25.17	-13	-12.17
3701.1	-26.12	134	1.9	V	7.61	-18.51	-13	-5.51
			467.6	375MHz				
935.275	-43.95	20	1.8	Н	9.22	-34.73	-13	-21.73
935.275	-35.16	152	2.1	V	11.65	-23.51	-13	-10.51
1402.9125	-35.2	20	1.0	Н	5.85	-29.35	-13	-16.35
1402.9125	-28.38	288	2.1	V	5.8	-22.58	-13	-9.58
1870.55	-36.02	166	1.9	Н	4.15	-31.87	-13	-18.87
1870.55	-27.91	263	1.7	V	3.35	-24.56	-13	-11.56
3741.1	-39.25	191	1.5	Н	8.76	-30.49	-13	-17.49
3741.1	-31.69	167	1.6	V	7.93	-23.76	-13	-10.76

#### Note:

Absolute Level = Reading Level + Substituted Factor Substituted Factor contains: SG Level - Cable loss+ Antenna Gain Margin = Absolute Level - Limit

## FCC§2.1055 (d) & §95.565 - FREQUENCY STABILITY

#### **Applicable Standard**

According to FCC §2.1055(a) (1), the frequency stability shall be measured with variation of ambient temperature from –30 °C to +50 °C, and according to FCC 2.1055(d) (2), the frequency stability shall be measured with reducing primary supply voltage to the battery operating end point which is specified by the manufacturer.

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According to FCC §95.565, Each FRS transmitter type must be designed such that the carrier frequencies remain within ±2.5 parts-per-million of the channel center frequencies specified in §95.563 during normal operating conditions.

#### **Test Procedure**

Frequency Stability vs. Temperature: The equipment under test was connected to an external DC power supply and the RF output was connected to a Frequency Counter via feed-through attenuators. The EUT was placed inside the temperature chamber. The DC leads and RF output cable exited the chamber through an opening made for the purpose.

After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the Frequency Counter.

Frequency Stability vs. Voltage (item 1or item 2 will be chosen according to different condition):

- □1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.
- ⊠2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery operating end point which shall be specified by the manufacturer.

The output frequency was recorded for each voltage.

#### **Test Data**

#### **Environmental Conditions**

Temperature:	23 °C	
Relative Humidity:	58 %	
ATM Pressure:	101.4 kPa	

The testing was performed by Key Pei on 2022-04-28.

Test Mode: Transmitting

I	Reference Frequency:462.6375MHz, Limit:2.5 ppm						
Environment Temperature (°C)	Power Supplied (V <sub>DC</sub> ) Measurement Frequency (MHz)		Frequency Error (ppm)				
	Frequency Stability v	ersus Input Temperature					
50	4.5	462.637559	0.128				
40	4.5	462.637556	0.121				
30	4.5	462.637553	0.115				
20	4.5	462.637554	0.117				
10	4.5	462.637549	0.106				
0	4.5	462.637550	0.108				
-10	4.5	462.637552	0.112				
-20	4.5	462.637555	0.119				
-30	4.5	462.637553	0.115				
	Frequency Stability versus Input Voltage						
20	3.83	462.637554	0.117				
20	5.18	462.637558	0.125				

Reference Frequency:467.6375MHz, Limit:2.5 ppm			
Environment Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Measurement Frequency (MHz)	Frequency Error (ppm)
Frequency Stability versus Input Temperature			
50	4.5	467.637563	0.135
40	4.5	467.637557	0.122
30	4.5	467.637566	0.141
20	4.5	467.637573	0.156
10	4.5	467.637569	0.148
0	4.5	467.637574	0.158
-10	4.5	467.637571	0.152
-20	4.5	467.637558	0.124
-30	4.5	467.637560	0.128
Frequency Stability versus Input Voltage			
20	3.83	467.637572	0.154
20	5.18	467.637573	0.156

Note: The extreme condition was provided by the applicant.

# \*\*\*\*\* END OF REPORT \*\*\*\*\*