

FCC Test Report

Report No.: AGC03518221201FE10

FCC ID	:	2AW4D-YGH5298
PRODUCT DESIGNATION	:	WEATHER STATION
BRAND NAME	:	N/A
MODEL NAME	:	YGH5298, ASOD012, YGH6208, YGH6209
APPLICANT	:	Shenzhen YuanGuangHao Electronics Co., Ltd.
DATE OF ISSUE	:	Jun. 12, 2023
STANDARD(S)	:	FCC Part 15 Subpart C § 15.231
REPORT VERSION	:	V1.1







REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Jan. 03, 2023	Invalid	Initial Release
V1.1	1 st	Jun. 12, 2023	Valid	Revise the date of test and the date of issue



TABLE OF CONTENTS

1. GENERAL INFORMATION	
2. PRODUCT INFORMATION	6
2.1 PRODUCT TECHNICAL DESCRIPTION	6
2.2 TEST FREQUENCY LIST	6
2.3 RELATED SUBMITTAL(S) / GRANT (S)	7
2.4 TEST METHODOLOGY	7
2.5 SPECIAL ACCESSORIES	7
2.6 EQUIPMENT MODIFICATIONS	7
2.7 ANTENNA REQUIREMENT	7
3. TEST ENVIRONMENT	
3.1 ADDRESS OF THE TEST LABORATORY	
3.2 TEST FACILITY	
3.3 ENVIRONMENTAL CONDITIONS	
3.4 MEASUREMENT UNCERTAINTY	
3.5 LIST OF EQUIPMENTS USED	
4.SYSTEM TEST CONFIGURATION	11
4.1 EUT CONFIGURATION	11
4.2 EUT EXERCISE	11
4.3 CONFIGURATION OF TESTED SYSTEM	11
4.4 EQUIPMENT USED IN TESTED SYSTEM	11
4.5 SUMMARY OF TEST RESULTS	
5. DESCRIPTION OF TEST MODES	
6. PROVISION FOR MOMENTARY OPERATION	
6.1 PROVISIONS APPLICABLE	
6.2 MEASUREMENT PROCEDURE	
6.3 MEASUREMENT SETUP (BLOCK DIAGRAM OF CONFIGURATION)	
6.4 MEASUREMENT RESULTS	
7. DUTY CYCLE CORRECTION FACTOR	
7.1 PROVISIONS APPLICABLE	
7.2 MEASUREMENT PROCEDURE	
7.3 MEASUREMENT SETUP (BLOCK DIAGRAM OF CONFIGURATION)	
7.4 MEASUREMENT RESULTS	
8. 20 dB BANDWIDTH	19
8.1 PROVISIONS APPLICABLE	



APPENDIX II: PHOTOGRAPHS OF TEST EUT	31
APPENDIX I: PHOTOGRAPHS OF TEST SETUP	31
10.5 MEASUREMENT RESULTS	30
10.4 FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST	30
10.3 PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST	30
10.2 MEASUREMENT SETUP (BLOCK DIAGRAM OF CONFIGURATION)	29
10.1 LIMITS OF LINE CONDUCTED EMISSION TEST	29
10. AC LINE CONDUCTED EMISSION TEST	29
9.4 MEASUREMENT RESULT	25
9.3 MEASUREMENT SETUP (BLOCK DIAGRAM OF CONFIGURATION)	24
9.2 MEASUREMENT PROCEDURE	22
9.1 LIMITS OF RADIATED EMISSION TEST	21
9. RADIATED EMISSION	21
8.4 MEASUREMENT RESULTS	20
8.3 MEASUREMENT SETUP (BLOCK DIAGRAM OF CONFIGURATION)	19



1. GENERAL INFORMATION

Applicant	Shenzhen YuanGuangHao Electronics Co., Ltd.
Address	No.7, LianYi Street, TangKeng Road, HengGang Town, ShenZhen, P.R. China
Manufacturer	Shenzhen YuanGuangHao Electronics Co., Ltd.
Address	No.7, LianYi Street, TangKeng Road, HengGang Town, ShenZhen, P.R. China
Factory	Shenzhen YuanGuangHao Electronics Co., Ltd.
Address	No.7, LianYi Street, TangKeng Road, HengGang Town, ShenZhen, P.R. China
Product Designation	WEATHER STATION
Brand Name	N/A
Test Model	YGH5298
Series Model	ASOD012, YGH6208, YGH6209
Difference Description	All the same except for the model name
Date of receipt of test item	Dec. 16, 2022
Date of Test	Dec. 16, 2022 to Dec. 23, 2022
Deviation from Standard	No any deviation from the test method
Test Result	Pass
Test Report Form No	AGCTR-ER-FCC-SRDV1.0

Bibo shay

Bibo Zhang

Jun. 12, 2023

Reviewed By

Prepared By

in

(Project Engineer)

Calvin Liu (Reviewer)

Jun. 12, 2023

Approved By

Ina

Max Zhang (Authorized Officer)

Jun. 12, 2023



2. PRODUCT INFORMATION

2.1 PRODUCT TECHNICAL DESCRIPTION

Hardware Version	V3.2
Software Version	V5
Operation Frequency	433.92MHz
Modulation Type	ASK
Number of channels	1
Field Strength of Fundamental	86.87dBuV/m(PK)@3m 74.40dBuV/m(AV)@3m
Antenna Designation	Wire Antenna
Antenna Gain	0dBi
Power Supply	DC 3.0V by battery

2.2 TEST FREQUENCY LIST

Frequency Band	Channel Number	Frequency
	01	433.92 MHz

Note : According to manufacturer's requirements, periodic operation in the band 40.66-40.70 MHz and above 70 MHz.



2.3 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2AW4D-YGH5298** filing to comply with Part 2, Part 15 of the Federal Communication Commission rules.

2.4 TEST METHODOLOGY

The tests were performed according to following standards:

No.	Identity	Document Title
1	FCC 47 CFR Part 2	Frequency allocations and radio treaty matters; general rules and regulations
2	FCC 47 CFR Part 15	Radio Frequency Devices
3	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices

2.5 SPECIAL ACCESSORIES

Not available for this EUT intended for grant.

2.6 EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

2.7 ANTENNA REQUIREMENT

Standard Requirement

15.203 requirement:

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

EUT Antenna:

The non-detachable antenna inside the device cannot be replaced by the user at will. The gain of the antenna is 0dBi.



3. TEST ENVIRONMENT

3.1 ADDRESS OF THE TEST LABORATORY

Laboratory: Attestation of Global Compliance (Shenzhen) Co., Ltd.

Address: 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

3.2 TEST FACILITY

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L5488

Attestation of Global Compliance (Shenzhen) Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No.: 5054.02

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 975832

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files with Registration 975832.

IC-Registration No.: 24842 (CAB identifier: CN0063)

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the Certification and Engineering Bureau of Industry Canada. The acceptance letter from the IC is maintained in our files with Registration 24842.



3.3 ENVIRONMENTAL CONDITIONS

	NORMAL CONDITIONS	EXTREME CONDITIONS		
Temperature range (°C)	15 - 35	-20 - 50		
Relative humidty range	20 % - 75 %	20 % - 75 %		
Pressure range (kPa)	86 - 106	86 - 106		
Power supply				
Note: The Extreme Temperature and Extreme Voltages declared by the manufacturer.				

3.4 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement y ±U, where expended uncertainty U is based on a standard

uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

Item	Measurement Uncertainty
Uncertainty of Conducted Emission for AC Port	$U_c = \pm 2.9 \text{ dB}$
Uncertainty of Radiated Emission below 1GHz	$U_c = \pm 3.8 \text{ dB}$
Uncertainty of Radiated Emission above 1GHz	$U_c = \pm 4.9 \text{ dB}$
Uncertainty of total RF power, conducted	$U_c = \pm 0.8 \text{ dB}$
Uncertainty of RF power density, conducted	$U_c = \pm 2.6 \text{ dB}$
Uncertainty of spurious emissions, conducted	$U_{c} = \pm 2.7 \%$
Uncertainty of Occupied Channel Bandwidth	$U_c = \pm 2 \%$



3.5 LIST OF EQUIPMENTS USED

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
Test Receiver	R&S	ESPI	101206	Mar. 28, 2022	Mar. 27, 2023
Artificial power network	R&S	ESH2-Z5	100086	Jun. 08, 2022	Jun. 07, 2023
Test Software	FARA	EZ-EMC	Ver. AGC-CON03A1	N/A	N/A
Test Receiver	R&S	ESCI	10096	Mar. 28, 2022	Mar. 27, 2023
EXA Signal Analyzer	Agilent	N9010A	MY53470504	Aug. 04, 2022	Aug. 03, 2023
Signal Analyzer	Aglient	N9020A	MY52090123	Aug. 04, 2022	Aug. 03, 2023
2.4GHz Filter	EM Electronics	N/A	N/A	Mar. 18, 2022	Mar. 19, 2024
Attenuator	ZHINAN	E-002	N/A	Aug. 04, 2022	Aug. 03, 2024
Horn Antenna	SCHWARZBEC	BBHA9170	768	Oct. 31, 2021	Oct. 30, 2023
Active Loop Antenna (9K-30Mhz)	ZHINAN	ZN30900C	18051	Mar. 12, 2022	Mar. 11, 2024
Double-Ridged Waveguide Horn	ETS	3117	00034609	Apr. 23, 2021	Apr. 22, 2023
Double-Ridged Waveguide Horn	ETS	3117	00154520	Sep. 06, 2021	Sep. 05, 2023
Preamplifier Assembly	ETS	3117PA	00225134	Sep. 01, 2022	Sep. 02, 2024
Wideband Antenna	SCHWARZBECK	VULB9168	VULB9168-494	Jan. 08, 2021	Jan. 07, 2023
Test Software	FARA	EZ-EMC	Ver.RA-03A	N/A	N/A



4.SYSTEM TEST CONFIGURATION

4.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

4.2 EUT EXERCISE

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

4.3 CONFIGURATION OF TESTED SYSTEM

Radiated Emission Configure:



4.4 EQUIPMENT USED IN TESTED SYSTEM

The Following Peripheral Devices And Interface Cables Were Connected During The Measurement:

Test Accessories Come From The Laboratory

Test Accessories Come From The Manufacturer

ltem	Equipment	Model No.	Identifier	Note
1	Weather station	YGH5298	2AW4D-YGH5298	EUT



4.5 SUMMARY OF TEST RESULTS

ltem	FCC Rules	Description Of Test	Result
1	§15.203	Antenna Equipment	Pass
2	§15.231(a)	Transmission Time (Activated automatically)	Pass
3	§15.231	Field Strength of Fundamental	Pass
4	§15.209	Radiated Emission	Pass
5	§15.205(a)	Restricted Bands of Operation	Pass
6	§15.231(c)	20dB Bandwidth	Pass
7	§15.207	AC Power Line Conducted Emission	N/A

Note: 1.N/A means not applicable

Note: 2. The device under test is battery-powered and does not require evaluation of AC Power Line Conducted Emission.



5. DESCRIPTION OF TEST MODES

Summary table of Test Cases						
Toot Itom	Data Rate / Modulation					
Test Item	Short-range equipment / ASK					
Radiated&Conducted Test Cases	Mode 1: Tx _433.92 MHz					
AC Conducted Emission						
Note:						

Only the result of the worst case was recorded in the report, if no other cases. Ί.

2. 3. The battery is full-charged during the test.

For Radiated Emission, 3axis were chosen for testing for each applicable mode.

4. For Conducted Test method, a temporary antenna connector is provided by the manufacture.



6. PROVISION FOR MOMENTARY OPERATION

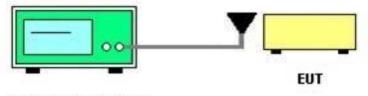
6.1 PROVISIONS APPLICABLE

- (1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.
- (2) A transmitter activated automatically shall cease transmission within 5 seconds after activation.
- (3) Periodic transmissions at regular predetermined intervals are not permitted.
 - However, polling or supervision transmissions, including data, to determine system integrity of transmitters used in security or safety applications are allowed if the total duration of transmissions does not exceed more than two seconds per hour for each transmitter. There is no limit on the number of individual transmissions, provided the total transmission time does not exceed two seconds per hour.
- (4) Intentional radiators which are employed for radio control purposes during emergencies involving fire, security, and safety of life, when activated to signal an alarm, may operate during the pendency of the alarm condition.
- (5) Transmission of set-up information for security systems may exceed the transmission duration limits in (1) and (2) above, provided such transmission are under the control of a professional installer and do not exceed ten seconds after a manually operated switch is released or a transmitter is activated automatically. Such set-up information may include data.

6.2 MEASUREMENT PROCEDURE

- 1. Set the parameters of SPA as below:
- 2. Centre frequency = Operation Frequency
- 3. RBW=1MHz, VBW=1MHz Span: 0Hz Sweep time: 20S
- 4. Set the EUT to transmit by manually operated. Use the "View" function of SPA to find the transmission time of being released.
- 5. Record the data and Reported.

6.3 MEASUREMENT SETUP (BLOCK DIAGRAM OF CONFIGURATION)



Spectrum Analyzer



6.4 MEASUREMENT RESULTS

Test Mode	Test Channel (MHz)	The time of stopping transmission after automatically activation by alarm sensor (s)	Limits	Pass or Fail
ASK	433.92	0.76	5s	Pass

Test Graphs Of Launch Operation Time

Agilent Spectrum Analyzer - Swept SA						
Center Freq 433.920000 Ν	ЛНz	SENSE:PU	Avg	ALIGN OFF	08:33:00 AM Dec 22, 2022 TRACE 1 2 3 4 5 6	Frequency
	PNO: Fast ↔ IFGain:Low	. Trig: Free Ru Atten: 30 dB	in		DET P N.N.N.N.N	Auto Tune
10 dB/div Ref 20.00 dBm				Δ	Mkr1 760.0 ms 2.20 dB	Auto Tune
10.0 0.00 -10.0						Center Freq 433.920000 MHz
-20.0 -30.0 -40.0						Start Freq 433.920000 MHz
-50.0 X 2 week released on the release of the rel	mak yalansılırıntı.	ayradi dhirana ay an	1949 Carl Par Land Carl		n (jan Arigan d'Aria) - Yaya ya kata ya	Stop Freq 433.920000 MHz
Center 433.920000 MHz Res BW 1.0 MHz	#VBW	1.0 MHz		-	Span 0 Hz 20.00 s (1001 pts)	CF Step 1.000000 MHz Auto Man
MKR MODE TRC SCL X	760.0 ms (Δ)	Y 2.20 dB	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	
2 F 1 t 3 4 5	420.0 ms	-53.86 dBm				Freq Offset 0 Hz
6 7 8 9 10						
11					<u> </u>	
MSG				STATUS		



7. DUTY CYCLE CORRECTION FACTOR

7.1 PROVISIONS APPLICABLE

According to FCC Part 15.231 (b)(2) and 15.35 (c), For pulse operation transmitter, the averaging pulsed emissions are calculated by peak value of measured emission plus duty cycle factor.

7.2 MEASUREMENT PROCEDURE

After the antenna of the EUT is connected, the output signal of the EUT is received by the connected test antenna

To the spectrum analyzer. Set the center frequency to the actual working frequency of the EUT, and then set the spectrum analyzer to Zero Span for

Release time reading. During the test, the switch is released and the EUT is automatically closed

1. Set the parameters of SPA as below:

Centre frequency = Operation Frequency RBW=1MHz, VBW=1MHz Span: 0Hz

Sweep time: more than two pulse trains or more than each type of pulse occupancy time

- 2. Set the EUT to transmit by manually operated. Use the "Delta mark" function of SPA to find the period time between two pulse trains and each type of pulse occupancy time.
- 3. Record the plots and Reported.

7.3 MEASUREMENT SETUP (BLOCK DIAGRAM OF CONFIGURATION)



Spectrum Analyzer

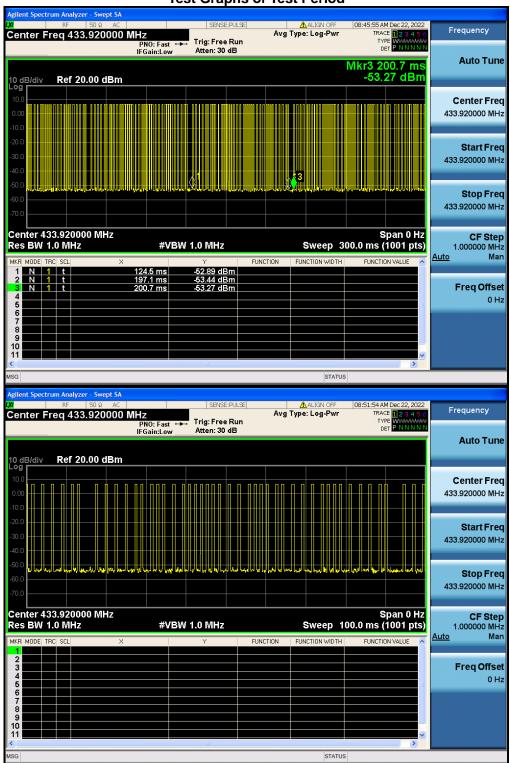
7.4 MEASUREMENT RESULTS

Type of Pules	Width of Pules	Quantity of Pules	Transmission Time	Total Time (Ton)
	(ms)	(pcs)	(ms)	(ms)
Pules 1	0.490	37	18.13	18.13

Test Period (Tp)	Total Time (Ton)	Duty Cycle	Duty Cycle Correction Factor	
(ms)	(ms)	(%)	(dB)	
76.2	18.13	23.79	-12.47	

NOTE 1: Duty Cycle Factor=20 log (Duty Cycle)= -12.47





Test Graphs of Test Period



Agilen	it Spe	etrum	Ana	lyzer - Sw	ept SA							-						
LXI			RF	50 Ω					SENSE	E:PULSE			<u>/</u>	ALIGN OFF	08:52:44 Al	1 Dec 22, 202	2	_
Cen	ter	Fred	a 4	33.920	0000	MHz						Avg	Туре	: Log-Pwr	TRAC	^{CE} 12345	6	Frequency
						PN	IO: Fas	st ↔	Trig: Free Atten: 30						TY		₩ N	
						IFG	ain:Lo	w	Atten: 30	aв								Auto Tune
														1	۵Mkr1 4	90.0 µs		Auto Tune
10 dl	B/div	R	lef	20.00	dBm											1.13 ḋE		
Log																		
10.0	—																	Center Fred
0.00																		433.920000 MHz
																		400.020000 11112
-10.0																		
-20.0	—						-											Start Fred
-30.0																		
																		433.920000 MHz
-40.0																		
-50.0	—		+								1Δ							
-60.0	VIW	han	WĄ	h er ha d the second	44.0	d Mala	X-				μh.		L.	1 Hull and	wang pilang pilang			Stop Freq
							, 1 2										1	433.920000 MHz
-70.0																		
Con	tor	122.0	121	0000 M	U-7											pan 0 Hz		
		1.0			Π2		#	VBM	1.0 MHz					Sween 2	د .000 ms (µан и п/ 1001 nte		CF Step
RC3	DW	1.0	WII	12				V 1. V V	1.0 191112				<u> </u>	Sweep Z	, eni 000.	loo i pis		1.000000 MHz Auto Man
MKR		TRC S			Х				Y		FUNC	TION	FUN	ICTION WIDTH	FUNCTIO	IN VALUE		Auto Mai
1	<u>Δ2</u> F	1	t	(Δ)			0.0 µs 0.0 µs		1.13 -57.82 dE									
2	F		τ			53	<u>J.U µs</u>		-57.82 dt	sm								Freq Offset
4																		0 Hz
5																		0112
6			\rightarrow															
8																		
9																		
10			\rightarrow															
<																>		
MSG			-								-			STATUS	1			
														STATU			_	

Test Graphs of Pules 1



8. 20 dB BANDWIDTH

8.1 PROVISIONS 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 70 MHz and below 900 MHz. Bandwidth is determined at the points 20 dB down from the modulated carrier

8.2 MEASUREMENT PROCEDURE

- 1. Set the parameters of SPA as below: Centre frequency = Operation Frequency RBW=10KHz VBW=30KHz Span: 2MHz Sweep time: Auto
- 2. Set the EUT to continue transmitting mode. Allow the trace to stabilize. Use the "N dB down" function of SPA to define the bandwidth.
- 3. Record the plots and Reported.

8.3 MEASUREMENT SETUP (BLOCK DIAGRAM OF CONFIGURATION)



Spectrum Analyzer



8.4 MEASUREMENT RESULTS

Test Data of Occupied Bandwidth and -20dB Bandwidth								
Test Mode Test Channel (MHz)		99% Occupied Bandwidth (MHz)	-20dB Bandwidth (MHz)	Limits (kHz)	Pass or Fail			
ASK	433.92	0.76702	0.05490	1084.8	Pass			

Test Graphs of Occupied Bandwidth

Agilent Spectrum Analyzer - Occupied	BW				
RF 50 Ω AC Center Freq 433.920000	MHz Center	Freq: 433.920000 MHz ree Run Avg Hol	Radio Sto		Frequency
10 dB/div Ref 20.00 dB	m				
0.00		Λ			Center Freq 433.920000 MHz
-10.0 -20.0 -30.0	an and when the and a start and		Marcal Marcal March Marca		
-40.0				Manyayat Mayin	
-60.0					
Center 433.9 MHz #Res BW 10 kHz	#\	/BW 30 kHz		an 2 MHz 24.73 ms	CF Step 200.000 kHz
Occupied Bandwid		Total Power	7.91 dBm		<u>Auto</u> Man
	767.02 kHz				Freq Offset
Transmit Freq Error	-15.449 kHz	OBW Power	99.00 %		0 Hz
x dB Bandwidth	54.90 kHz	x dB	-20.00 dB		
MSG			STATUS		



9. RADIATED EMISSION

9.1 LIMITS OF RADIATED EMISSION TEST

15.209 Limit in the below table has to be followed:

Frequency	Distance	Field Streng	gths Limit			
(MHz)	Meters	μ V/m	dB(µV)/m			
0.009 ~ 0.490	300	2400/F(kHz)				
0.490 ~ 1.705	30	24000/F(kHz)				
1.705 ~ 30	30	30				
30 ~ 88	3	100	40.0			
88 ~ 216	3	150	43.5			
216 ~ 960	3	200	46.0			
960 ~ 1000	3	500	54.0			
AL		74.0 dB(µV)/m (Peak)				
Above 1000	3	54.0 dB(μV)/m (Average)				
Remark: (1) Emission	Remark: (1) Emission level dB μ V = 20 log Emission level μ V/m					
(2) The small	(2) The smaller limit shall apply at the cross point between two frequency bands.					
(3) Distance is the distance in meters between the measuring instrument, antenna and the						

closest point of any part of the device or system.

Note: All modes were tested for restricted band radiated emission, the test records reported below are the worst result compared to other modes.

15.231(b) Limit in the below table has to be followed:

Fundamental Frequency	Field Strength of Fundamental (microvolts/meter)	Field Strength of Harmonics (microvolts/meter)
40.66-40.70MHz	2250	225
70-130MHz	1250	125
130-174MHz	1250 to 3750	125 to 375
174-260MHz	3750	375
260-470MHz	3750 to 12500	375 to 1250
Above 470MHz	12500	1250



Fundamental Frequency	Field Strength of Fundamental (microvolts/meter)	Field Strength of Harmonics (microvolts/meter)
40.66-40.70MHz	1000	225
70-130MHz	1250	125
130-174MHz	1250 to 3750	125 to 375
174-260MHz	3750	375
260-470MHz	3750 to 12500	375 to 1250
Above 470MHz	12500	1250

15.231(e) Limit in the below table has to be followed:

9.2 MEASUREMENT PROCEDURE

- 1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
- 3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
- 4. For each suspected emission, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
- 5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
- 6. For emissions above 1GHz, use 1MHz RBW and 3MHz VBW for peak reading. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- 7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
- 8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.



- 9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
- 10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High Low scan is not required in this case.

The following table is the setting of spectrum analyzer and receiver.

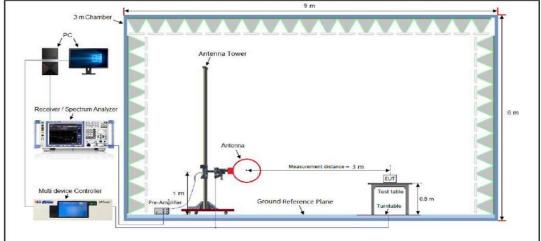
Spectrum Parameter	Setting		
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP		
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP		
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP		
Start ~Stop Frequency	1GHz~26.5GHz		
	1MHz/3MHz for Peak, 1MHz/3MHz for Average		

Receiver Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP

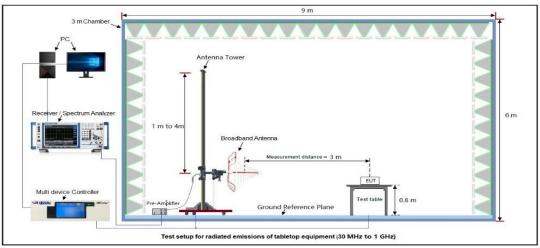


9.3 MEASUREMENT SETUP (BLOCK DIAGRAM OF CONFIGURATION)

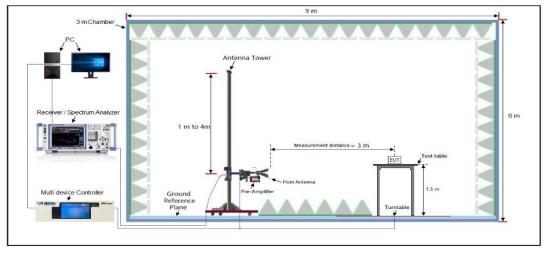
RADIATED EMISSION TEST SETUP 9KHz-30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



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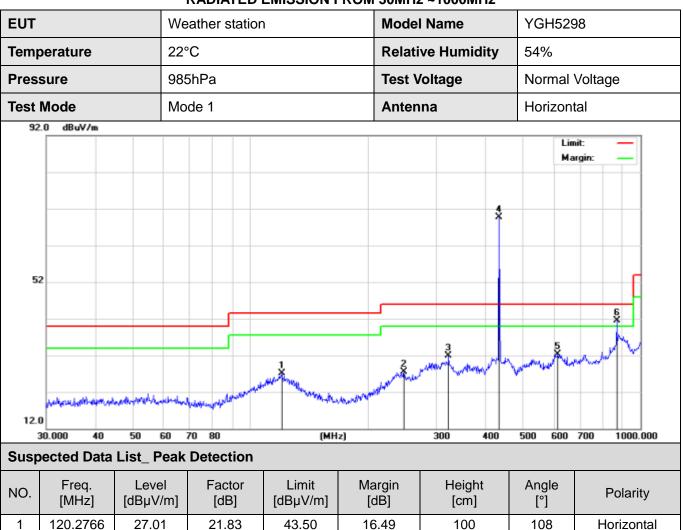
 Tel: +86-755 2523 4088
 E-mail: agc@agccert.com



9.4 MEASUREMENT RESULT

RADIATED EMISSION BELOW 30MHz

The amplitude of spurious emissions from 9kHz to 30MHz which are attenuated more than 20 dB below the permissible value need not be reported.



RADIATED EMISSION FROM 30MHz ~1000MHz

NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	120.2766	27.01	21.83	43.50	16.49	100	108	Horizontal
2	247.6819	27.42	21.79	46.00	18.58	100	67	Horizontal
3	322.1886	31.91	26.13	46.00	14.09	100	51	Horizontal
4	433.9200	69.69	26.31	100.82	31.13	100	88	Horizontal
5	614.2142	32.28	26.88	46.00	13.72	100	172	Horizontal
6	869.1302	41.53	30.56	46.00	4.47	100	146	Horizontal
Final	Final data result_ Average Detection							
NO.	Freq. [MHz]	PK Level [dBµV/m]	Duty cycle factor(dB)		AV Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity
1	433.9200	69.69	-12	.47	57.22	80.82	-23.60	Horizontal
2	869.1302	41.53	-12	.47	29.06	60.82	-31.76	Horizontal

RESULT: PASS Any report naving not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results such as the standard of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.



EUT		We	Weather station			Model Name		YGH5298	
Temp	perature	22	22°C Relative Humidity			54%			
Pres	sure	98	5hPa		Test V	/oltage	Normal Voltage Vertical		
Test	Mode	Mc	ode 1		Anten	na			
92	.0 dBuV/m						Lin	ait —	
						×		rgin: —	
52	2								
								5	
						/\		Fridayalk	
		1		Ş		Jun word	and a delay of the		
	galiondon character	Annalytrustering	man when the strander	and a superior and the second	when the plant with a con				
12.0	0 30.000 40	50 60	70 80	(MH)		300 400	500 600	700 1000.000	
	bected Data			(MIL)	.)	300 400	500 600	700 1000.000	
				Limit	Margin	Height	Angle		
NO.	Freq.	Level	Factor		iviargin	neioni			
	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dB]	[cm]	[°]	Polarity	
1	[MHZ] 50.9420	[dBµV/m] 23.48	[dB] 17.01	[dBµV/m] 40.00		-		Polarity Vertical	
1 2					[dB]	[cm]	[°]		
	50.9420 152.1297 294.1137	23.48 23.46 26.21	17.01 16.20 20.16	40.00 43.50 46.00	[dB] 16.52 20.04 19.79	[cm] 100 100 100	[°] 359 38 42	Vertical Vertical Vertical	
2 3 4	50.9420 152.1297 294.1137 433.9200	23.48 23.46 26.21 86.87	17.01 16.20 20.16 23.74	40.00 43.50 46.00 100.82	[dB] 16.52 20.04 19.79 13.95	[cm] 100 100 100 100	[°] 359 38 42 42 42	Vertical Vertical Vertical Vertical	
2 3	50.9420 152.1297 294.1137 433.9200 699.3046	23.48 23.46 26.21 86.87 35.16	17.01 16.20 20.16 23.74 30.02	40.00 43.50 46.00 100.82 46.00	[dB] 16.52 20.04 19.79 13.95 10.84	[cm] 100 100 100 100 100	[°] 359 38 42 42 42 48	Vertical Vertical Vertical Vertical Vertical	
2 3 4 5 6	50.9420 152.1297 294.1137 433.9200 699.3046 869.1302	23.48 23.46 26.21 86.87 35.16 45.10	17.01 16.20 20.16 23.74 30.02 27.73	40.00 43.50 46.00 100.82	[dB] 16.52 20.04 19.79 13.95	[cm] 100 100 100 100	[°] 359 38 42 42 42	Vertical Vertical Vertical Vertical	
2 3 4 5 6	50.9420 152.1297 294.1137 433.9200 699.3046	23.48 23.46 26.21 86.87 35.16 45.10	17.01 16.20 20.16 23.74 30.02 27.73	40.00 43.50 46.00 100.82 46.00	[dB] 16.52 20.04 19.79 13.95 10.84	[cm] 100 100 100 100 100	[°] 359 38 42 42 42 48	Vertical Vertical Vertical Vertical Vertical	
2 3 4 5 6	50.9420 152.1297 294.1137 433.9200 699.3046 869.1302	23.48 23.46 26.21 86.87 35.16 45.10	17.01 16.20 20.16 23.74 30.02 27.73 Detection	40.00 43.50 46.00 100.82 46.00	[dB] 16.52 20.04 19.79 13.95 10.84	[cm] 100 100 100 100 100	[°] 359 38 42 42 42 48	Vertical Vertical Vertical Vertical Vertical	
2 3 4 5 6 Final	50.9420 152.1297 294.1137 433.9200 699.3046 869.1302 data result Freq.	23.48 23.46 26.21 86.87 35.16 45.10 Average I PK Level	17.01 16.20 20.16 23.74 30.02 27.73 Detection Duty cycle	40.00 43.50 46.00 100.82 46.00 46.00	[dB] 16.52 20.04 19.79 13.95 10.84 0.90 AV Level	[cm] 100 100 100 100 100 100 Limit	[°] 359 38 42 42 42 48 114 Margin	Vertical Vertical Vertical Vertical Vertical Vertical	

RESULT: PASS

Note: 1. Factor=Antenna Factor + Cable loss, Margin=Limit-Level.



		RA		MISSION FRO		IGHZ				
Т		Weather	station		Model Name		YGH5298			
mpera	ature	22°C		Relative Humidity 54%						
essur	е	985hPa			Test Voltage		Normal Voltage		Normal Voltage	
st Mo	de	Mode 1			Antenna	Antenna Horizontal				
	130			FCC Part 150						
	120									
	110									
	90									
	80									
[m//	70									
Level[dBµV/m]	60									
Leve	50 40		2	and the statement of the state of the statement of the st	3	And the second designed to the second designed of the second designe	مربع مربع المربعين الم			
	30 maperial-providence	* managener and all martin and we	hand a start of the start of th							
	20									
	10									
	-10									
	1G	2G	3G		6G	8G		18G		
	PK Limit		Horizontal PK	Frequency[Hz]					
	# AV Deter	ctor								
NO.	Freq.	Level	Factor	Limit	Margin	Height	Angle	Delarity		
NO.	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dB]	[cm]	[°]	Polarity		
			-19.90	74.00	41.28	150	120	Horizontal		
1	1333.2333	32.72	-19.90							
1	1333.2333 2666.1666	32.72 41.76	-19.90	74.00	32.24	150	180	Horizontal		
<u> </u>					32.24 26.79	150 150	180 130	Horizontal Horizontal		
2	2666.1666	41.76	-12.49	74.00						
2	2666.1666 4774.3774	41.76 47.21	-12.49 -6.85	74.00 74.00	26.79	150	130	Horizontal		

RADIATED EMISSION FROM ABOVE 1GHZ

RESULT: PASS



		RA		AISSION FRO	DW ABOVE	1GHZ			
EUT		Weather	Weather station			Model Name		98	
Temper	ature	22°C	22°C			Relative Humidity		54%	
Pressur	е	985hPa			Test Voltage Normal Voltage Antenna Vertical			Voltage	
Test Mo	de	Mode 1							
	130			FCC Part 150					
Leve[(dBµV/m]	120 110 100 90 80 70 60 50 40 30 40 30 40 50 40 50 40 50 40 50 40 50 40 50 50 40 50 50 40 50 50 50 50 50 50 50 50 50 5		200 Vertical PK		6G	86	u geteendele _{to} to geteendele _{to} to geteendele _{to} to geteendele _{to} to geteendele	پهروند کې ۱8G	
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	
1	1261.8262	33.36	-19.89	74.00	40.64	150	340	Vertical	
2	3455.0455	44.58	-9.84	74.00	29.42	150	140	Vertical	
3	6301.1301	46.83	-4.48	74.00	27.17	150	310	Vertical	
4	9077.5078	47.10	0.39	74.00	26.90	150	160	Vertical	
5	13645.864	45.31	1.82	74.00	28.69	150	60	Vertical	
6	17488.248	48.16	5.17	74.00	25.84	150	10	Vertical	

RADIATED EMISSION FROM ABOVE 1GHZ

RESULT: PASS

Note:

The amplitude of other spurious emissions from 1G to 25 GHz which are attenuated more than 20 dB below the permissible value need not be reported.

Factor = Antenna Factor + Cable loss - Amplifier gain, Margin=Limit-Level.

The "Factor" value can be calculated automatically by software of measurement system.

10. AC LINE CONDUCTED EMISSION TEST

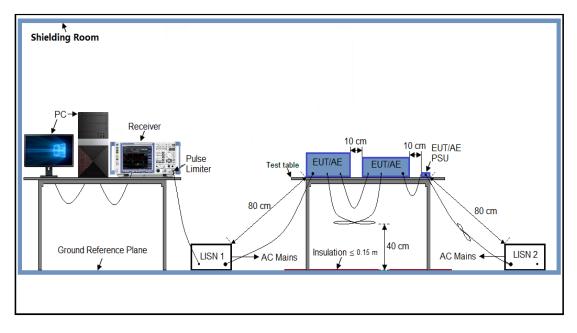
10.1 LIMITS OF LINE CONDUCTED EMISSION TEST

F ramman	Maximum RF Line Voltage				
Frequency	Q.P. (dBµV)	Average (dBµV)			
150kHz~500kHz	66-56	56-46			
500kHz~5MHz	56	46			
5MHz~30MHz	60	50			

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

2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

10.2 MEASUREMENT SETUP (BLOCK DIAGRAM OF CONFIGURATION)





10.3 PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

- The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- 2. Support equipment, if needed, was placed as per ANSI C63.10.
- 3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
- 4. All support equipment received AC120V/60Hz power from a LISN, if any.
- 5. The EUT received DC 5V power from adapter which received AC120V/60Hz power from a LISN.
- 6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
- 8. During the above scans, the emissions were maximized by cable manipulation.
- 9. The test mode(s) were scanned during the preliminary test.

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

10.4 FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

- 1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
- A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
- 3. The test data of the worst case condition(s) was reported on the Summary Data page.

10.5 MEASUREMENT RESULTS

Not Applicable Note: This device is battery powered, there is no AC power supply.



Report No.: AGC03518221201FE10 Page 31 of 31

APPENDIX I: PHOTOGRAPHS OF TEST SETUP

Refer to the Report No.: AGC03518221201AP02

APPENDIX II: PHOTOGRAPHS OF TEST EUT

Refer to the Report No.: AGC03518221201AP03

-----END OF REPORT-----



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3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.

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