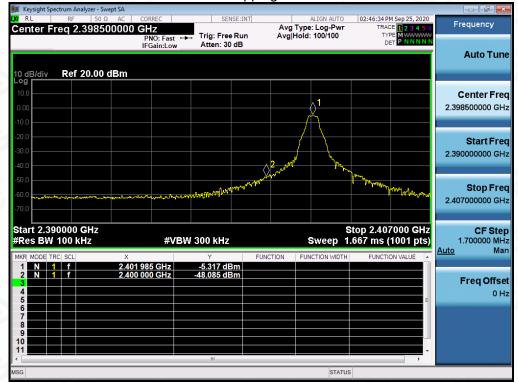


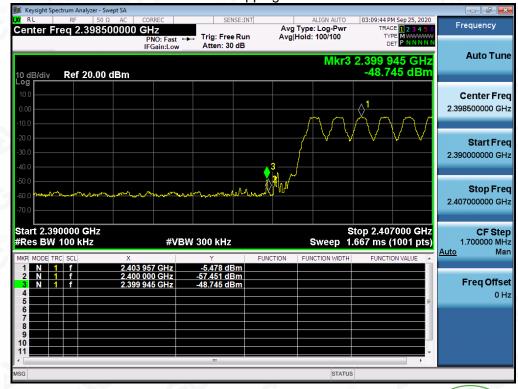
#### TEST RESULT FOR BAND EDGE

#### GFSK MODULATION IN LOW CHANNEL

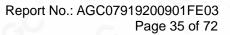
Hopping off



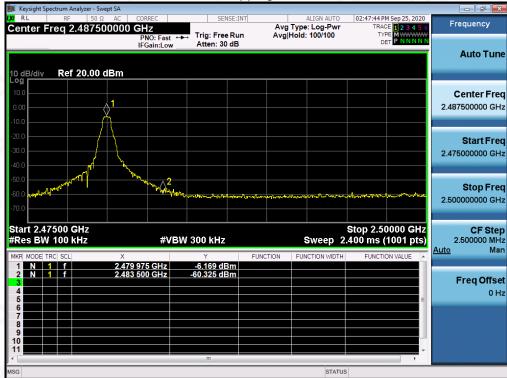
Hopping on



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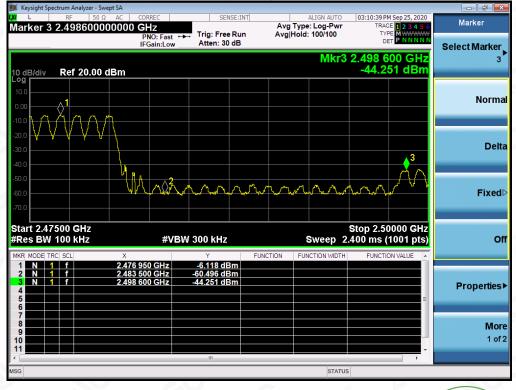




# GFSK MODULATION IN HIGH CHANNEL

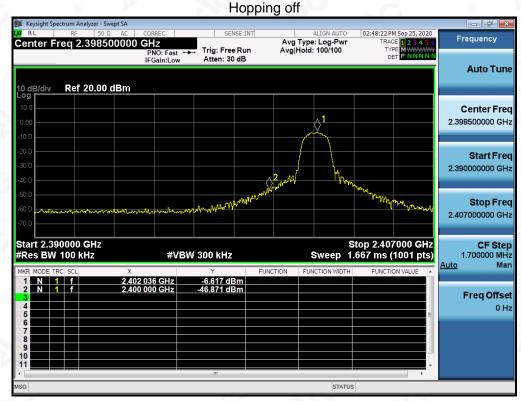
Hopping off

Hopping on



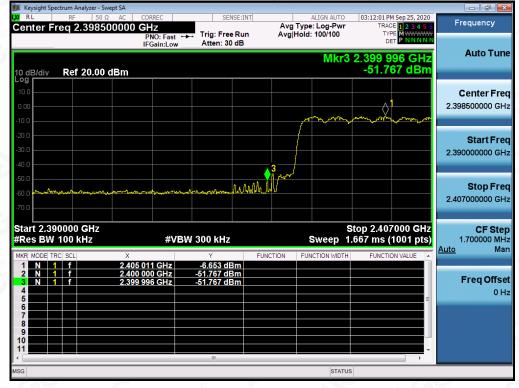
Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Presting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGE. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuence of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.





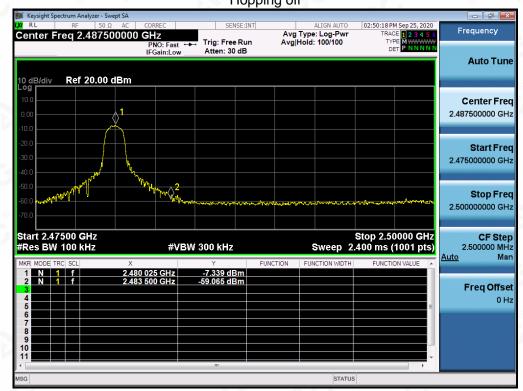
# $\pi$ /4-DQPSK MODULATION IN LOW CHANNEL

Hopping on



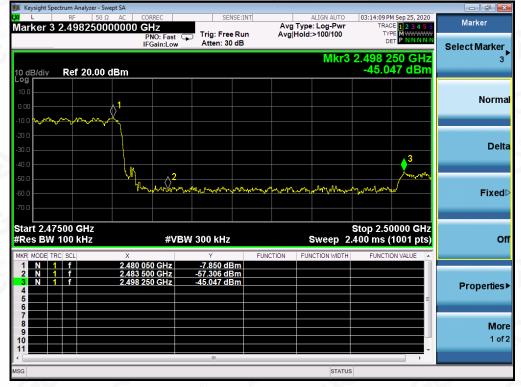
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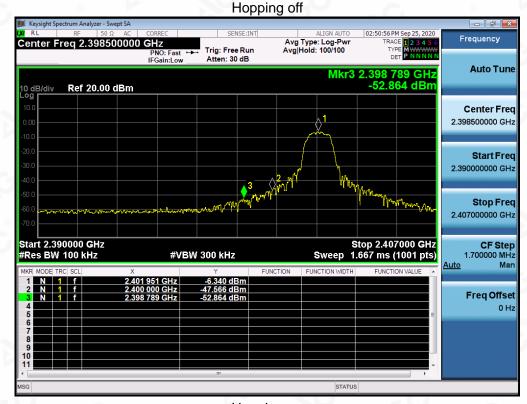
# $\pi$ /4-DQPSK MODULATION IN HIGH CHANNEL Hopping off

Hopping on



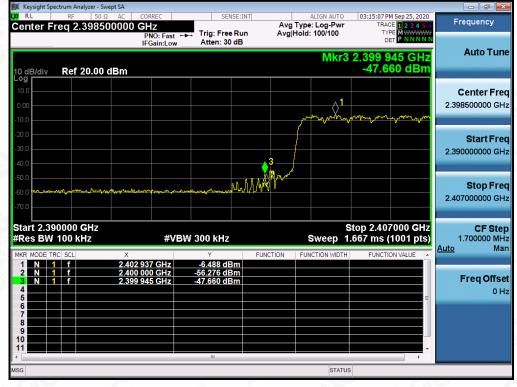
Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Pasting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGE. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuence of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.





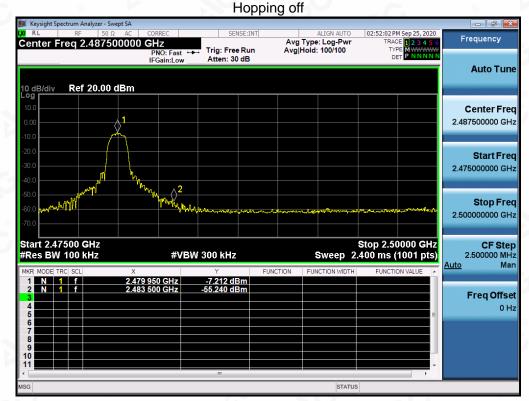
# 8-DPSK MODULATION IN LOW CHANNEL

Hopping on



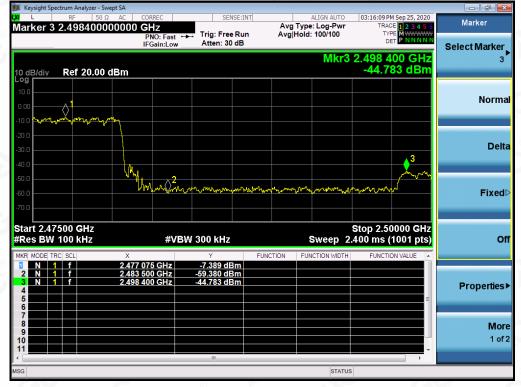
Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Pesting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written approver, be test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuence of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.





# 8-DPSK MODULATION IN HIGH CHANNEL

Hopping on



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# **10. RADIATED EMISSION**

### **10.1. 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.

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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

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 Attestation of Global Compliance(Shenzhen)Co., Ltd

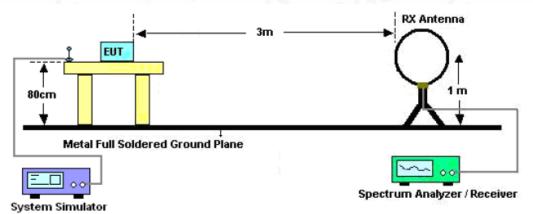
 Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd

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

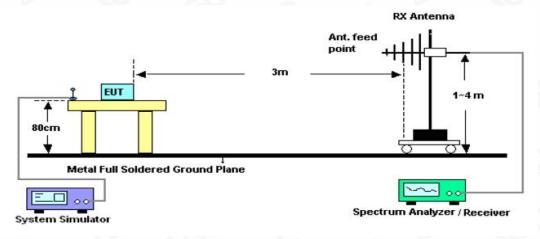


### 10.2. TEST SETUP

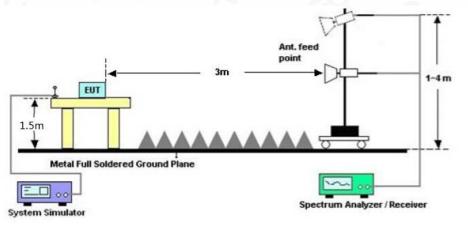
Radiated Emission Test-Setup Frequency Below 30MHz



## RADIATED EMISSION TEST SETUP 30MHz-1000MHz



## RADIATED EMISSION TEST SETUP ABOVE 1000MHz



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#### **10.3. LIMITS AND MEASUREMENT RESULT**

#### 15.209 Limit in the below table has to be followed

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

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

#### **10.4. TEST 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.

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# **RADIATED EMISSION BELOW 1GHz**

т	Speaker Martell		Model Name	8	350083	®
nperature	25°C	<sup>©</sup>	Relative Humidity		55.4%	
essure	960hPa	a C		1	Normal Volta	age
st Mode	Mode 7	0	Antenna	ŀ	Horizontal	
66.9 dBuV/m					Limit: —	1
G					Margin: —	
						1
2					6	
		num nan nan han han han han han han han han	5 k.	L. M. Marrien	mannum	
27	A. Must	and many publication	Warden Made and Marine	ery		
	1/ Malant Malanandaylan	NewWalker				
HE BURNER						ļ
GC What making	W					
CC Manage	W I I I I I I I I I I I I I I I I I I I					
SC Why way						
-13 30.000 127.00	w	418.00 515.00	612.00 709.00	806.00	1000.00	
-13 30.000 127.00	224.00 321.00 4 Readin	418.00 515.00	612.00 709.00 Measure-	806.00		
-13	224.00 321.00 4	418.00 515.00	612.00 709.00 Measure- ment Lim	806.00 it Over		
-13	224.00 321.00 4 Reading	418.00 515.00 Ig Correct M Factor	612.00 709.00 Measure-	806.00 it Over		
-13 30.000 127.00 No. Mk.	224.00 321.00 4 Reading Freq. Level	418.00 515.00 g Correct M Factor dB	612.00 709.00 Measure- ment Lim	806.00 it Over 1/m dB	1000.00	
-13 30.000 127.00 No. Mk.	224.00 321.00 4 Readin Freq. Level MHz dBuV	418.00 515.00 Ig Correct M Factor dB 16.56	612.00 709.00 feasure- ment Lim dBuV/m dBuV	806.00 it Over 1/m dB 0 -18.31	1000.00 Detector	
-13 30.000 127.00 No. Mk. 1 ( 2 * 9	224.00 321.00 4 Reading Freq. Level MHz dBuV 65.5667 5.13	418.00 515.00 Ig Correct M Factor dB 16.56 12.49	612.00 709.00 feasure- ment Lim dBuV/m dBuV 21.69 40.0	806.00 it Over 1/m dB 0 -18.31 0 -6.52	1000.00 Detector peak peak	
-13 30.000 127.00 No. Mk. 1 ( 2 * 9 3 22	224.00 321.00 4 224.00 321.00 4 Reading Reading Level MHz dBuV 65.5667 5.13 96.2833 24.49	418.00 515.00 Ig Correct M Factor dB 16.56 12.49 15.65	612.00 709.00 Measure- ment Lim dBuV/m dBuV 21.69 40.0 36.98 43.5	806.00 it Over 7/m dB 0 -18.31 0 -6.52 0 -13.46	1000.00 Detector peak peak peak	
-13 30.000 127.00 No. Mk. 1 ( 2 * 9 3 22 4 29	224.00 321.00 4 Reading Freq. Level MHz dBuV 65.5667 5.13 96.2833 24.49 22.3833 16.89	418.00 515.00 19 Correct M Factor dB 16.56 12.49 15.65 20.73	612.00 709.00 Measure- ment Lim dBuV/m dBuV 21.69 40.0 36.98 43.5 32.54 46.0	806.00 it Over 1/m dB 0 -18.31 0 -6.52 0 -13.46 0 -15.08	Detector peak peak peak peak	

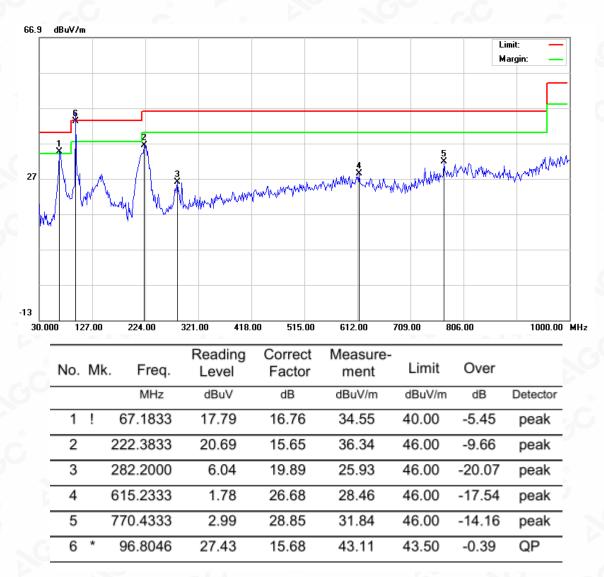
## **RESULT: PASS**

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#### Report No.: AGC07919200901FE03 Page 45 of 72

EUT	Speaker Martell	Model Name	850083
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 7	Antenna	Vertical



#### **RESULT: PASS**

**Note:** 1. Factor=Antenna Factor + Cable loss, Over= Measurement –Limit.

2. All test modes had been pre-tested. The mode 7 is the worst case and recorded in the report.

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**Test Mode** 

#### Report No.: AGC07919200901FE03 Page 46 of 72

Vertical

### **RADIATED EMISSION ABOVE 1GHz**

EUT	Speaker Martell	Model Name	850083
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 7	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
4804.000	46.15	0.08	46.23	74	-27.77	peak
4804.000	38.26	0.08	38.34	54	-15.66	AVG
7206.000	41.49	2.21	43.7	74	-30.3	peak
7206.000	33.58	2.21	35.79	54	-18.21	AVG
50				- C		
emark:		5	@®		Nº C	
actor = Anter	nna Factor + Cab	le Loss – Pre-	amplifier	Ø		

EUT **Speaker Martell Model Name** 850083 25°C Temperature **Relative Humidity** 55.4% Pressure Normal Voltage 960hPa **Test Voltage** 

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
4804.000	44.91	0.08	44.99	74	-29.01	peak
4804.000	36.64	0.08	36.72	54	-17.28	AVG
7206.000	40.47	2.21	42.68	74	-31.32	peak
7206.000	31.26	2.21	33.47	54	-20.53	AVG
emark:		0		5	G	

Antenna

Mode 7

Compliances Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the sedicated rest Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written endoirization of AGC presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com. /Inspection he test results Bf he test report.



## Report No.: AGC07919200901FE03 Page 47 of 72

Speaker Martell	Model Name	850083
25°C	Relative Humidity	55.4%
960hPa	Test Voltage	Normal Voltage
Mode 8	Antenna	Horizontal
2	-5°C 60hPa	60hPa Test Voltage

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
4882.000	45.58	0.14	45.72	74	-28.28	peak
4882.000	38.24	0.14	38.38	54	-15.62	AVG
7323.000	41.36	2.36	43.72	74	-30.28	peak
7323.000	34.51	2.36	36.87	54	-17.13	AVG
8		(		®		
	8					
emark:	G	8		100	- 6	C
actor = Anter	na Factor + Cable	Loss – Pre-	amplifier.			- C

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

EUT	Speaker Martell	Model Name	850083
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 8	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz) (dBµV)	(dBµV)	(dBµV) (dB) (dBµV/m)	(dBµV/m)	(dB)	value Type	
4882.000	45.65	0.14	45.79	74	-28.21	peak
4882.000	37.47	0.14	37.61	54	-16.39	AVG
7323.000	40.32	2.36	42.68	74	-31.32	peak
7323.000	31.81	2.36	34.17	54	-19.83	AVG
8						
					<u> </u>	0
emark:		8				<u> </u>
actor = Anter	nna Factor + Cable	e Loss – Pre-	amplifier.			

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#### Report No.: AGC07919200901FE03 Page 48 of 72

EUT	Speaker Martell	Model Name	850083
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 9	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
4960.000	46.87	0.22	47.09	74	-26.91	peak
4960.000	38.46	0.22	38.68	54	-15.32	AVG
7440.000	41.23	2.64	43.87	74	-30.13	peak
7440.000	32.84	2.64	35.48	54	-18.52	AVG
					®	
emark:	- 6	8			- 61	0
actor = Anter	nna Factor + Cable	Loss – Pre-	amplifier.			

EUT	Speaker Martell	Model Name	850083
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 9	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
4960.000	45.79	0.22	46.01	74	-27.99	peak
4960.000	38.63	0.22	38.85	54	-15.15	AVG
7440.000	41.45	2.64	44.09	74	-29.91	peak
7440.000	33.32	2.64	35.96	54	-18.04	AVG
		- C	®			
				®		

Factor = Antenna Factor + Cable Loss - Pre-amplifier.

## **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=Level-Limit.

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

All test modes had been tested. The 8DPSK modulation is the worst case and recorded in the report.

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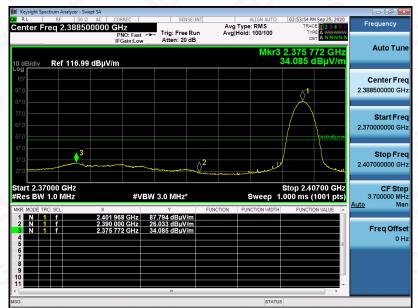
EUT	Speaker Martell	Model Name	850083
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 7	Antenna	Horizontal

#### TEST RESULT FOR RESTRICTED BANDS REQUIREMENTS

PK



AV



#### **RESULT: PASS**

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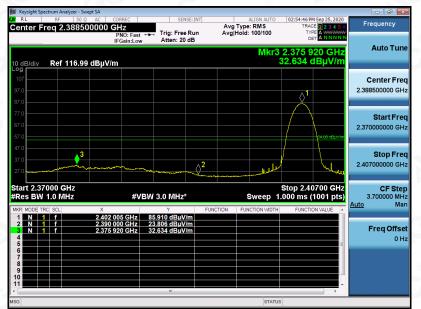
#### Report No.: AGC07919200901FE03 Page 50 of 72

EUT	Speaker Martell	Model Name	850083
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 7	Antenna	Vertical

PK



AV



**RESULT: PASS** 

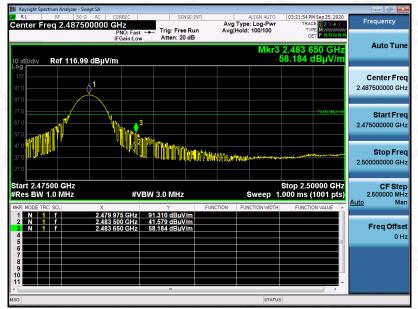
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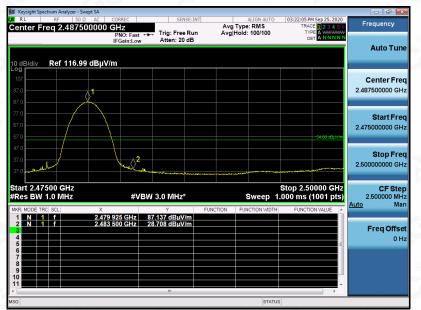
#### Report No.: AGC07919200901FE03 Page 51 of 72

EUT	Speaker Martell	Model Name	850083
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 9	Antenna	Horizontal

PK



AV



**RESULT: PASS** 

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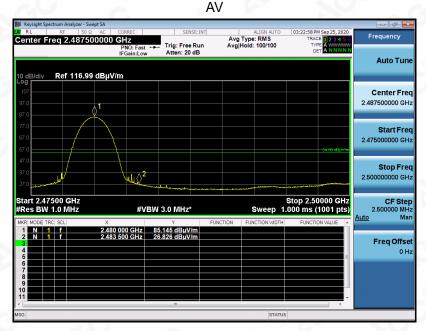


#### Report No.: AGC07919200901FE03 Page 52 of 72

EUT	Speaker Martell	Model Name	850083
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 9	Antenna	Vertical



PK



# **RESULT: PASS**

**Note**: The factor had been edited in the "Input Correction" of the Spectrum Analyzer. The 8DPSK modulation is the worst case and recorded in the report.

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# **11. NUMBER OF HOPPING FREQUENCY**

### **11.1. MEASUREMENT PROCEDURE**

The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:

1. Span: The frequency band of operation. Depending on the number of channels the device supports, it may be necessary to divide the frequency range of operation across multiple spans, to allow the individual channels to be clearly seen.

2. RBW: To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller.

3. VBW  $\geq$  RBW. Sweep: Auto. Detector function: Peak. Trace: Max hold.

4. Allow the trace to stabilize.

### **11.2. TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)**

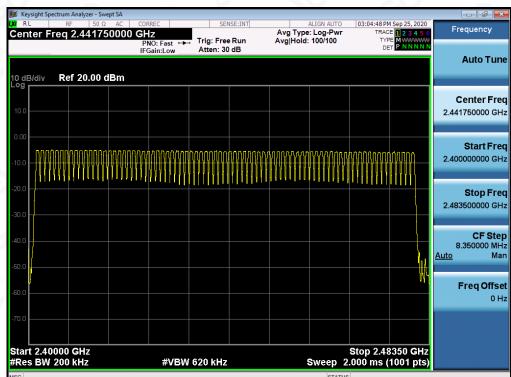
Same as described in section 8.2

### **11.3. MEASUREMENT EQUIPMENT USED**

The same as described in section 6

### **11.4. LIMITS AND MEASUREMENT RESULT**

TOTAL NO. OF	LIMIT (NO. OF CH)	MEASUREMENT (NO. OF CH)	RESULT
HOPPING CHANNEL	>=15	79	PASS



TEST PLOT FOR NO. OF TOTAL CHANNELS

Note: The 8DPSK modulation is the worst case and recorded in the report.

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# 12. TIME OF OCCUPANCY (DWELL TIME)

## **12.1. MEASUREMENT PROCEDURE**

The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:

1. Span: Zero span, centered on a hopping channel.

2. RBW shall be  $\leq$  channel spacing and where possible RBW should be set >> 1 / T, where T is the expected dwell time per channel.

3. Sweep: As necessary to capture the entire dwell time per hopping channel; where possible use a video trigger and trigger delay so that the transmitted signal starts a little to the right of the start of the plot. The trigger level might need slight adjustment to prevent triggering when the system hops on an adjacent channel; a second plot might be needed with a longer sweep time to show two successive hops on a channel.

4. Detector function: Peak. Trace: Max hold.

5. Use the marker-delta function to determine the transmit time per hop.

6. Repeat the measurement using a longer sweep time to determine the number of hops over the period specified in the requirements. The sweep time shall be equal to, or less than, the period specified in the requirements. Determine the number of hops over the sweep time and calculate the total number of hops in the period specified in the requirements, using the following equation:

(Number of hops in the period specified in the requirements) = (number of hops on spectrum analyzer)  $\times$  (period specified in the requirements / analyzer sweep time)

7. The average time of occupancy is calculated from the transmit time per hop multiplied by the number of hops in the period specified in the requirements.

# 12.2. TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)

Same as described in section 8.2

# 12.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6

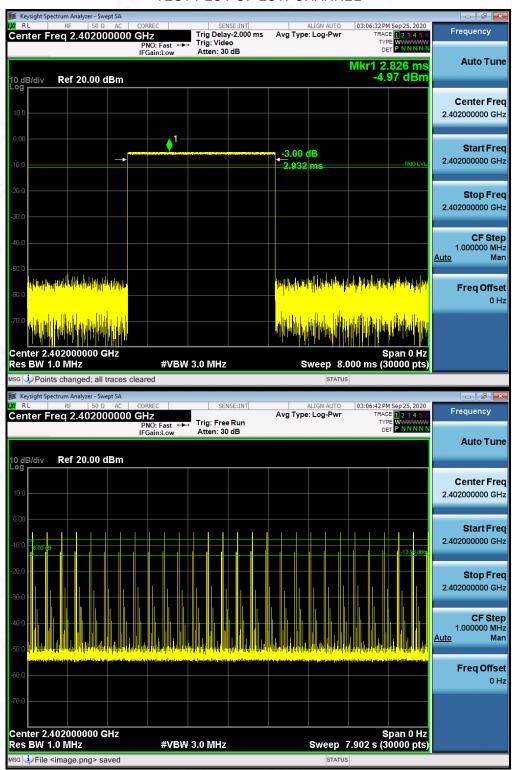
# **12.4. LIMITS AND MEASUREMENT RESULT**

Channel	Time of Pulse for DH5 (ms)	Number of hops in the period specified in the requirements	Sweep Time (ms)	Limit (ms)
Low	2.932	28*4	328.384	400
Middle	2.921	28*4	327.152	400
High	2.931	27*4	316.548	400

Note: The 8DPSK modulation is the worst case and recorded in the report.

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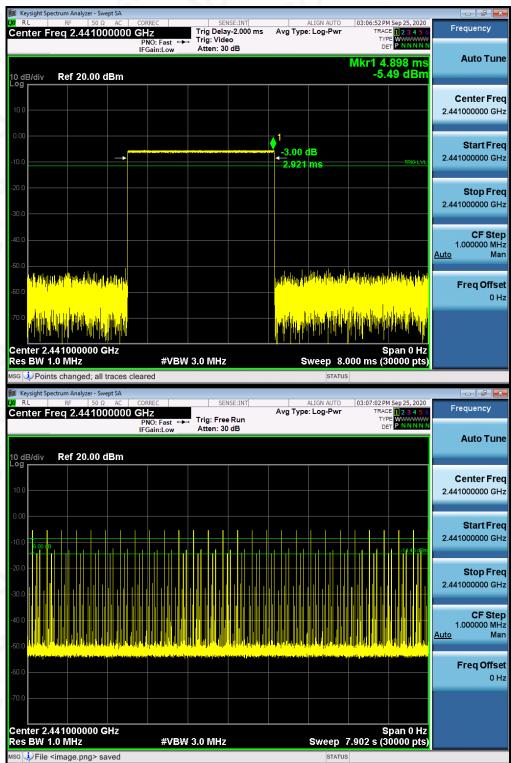




## TEST PLOT OF LOW CHANNEL

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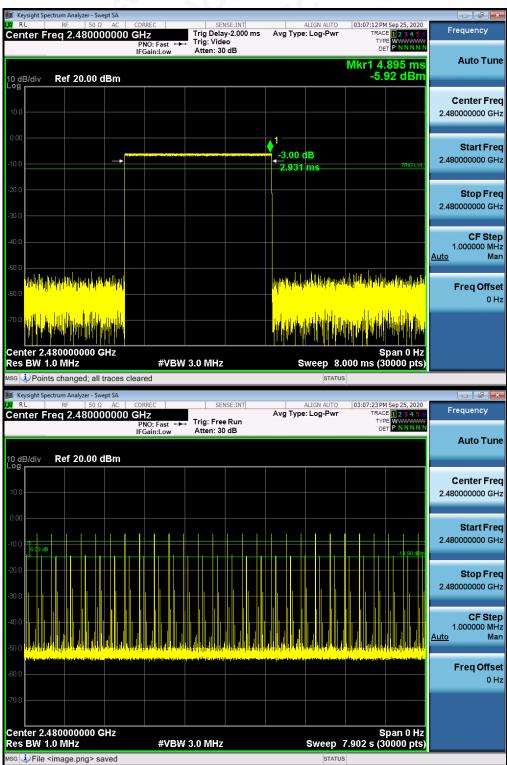




## TEST PLOT OF MIDDLE CHANNEL

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## TEST PLOT OF HIGH CHANNEL

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 Attestation of Global Compliance(Shenzhen)Co., Ltd

 Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd

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



# **13. FREQUENCY SEPARATION**

#### **13.1. MEASUREMENT PROCEDURE**

The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:

1. Span: Wide enough to capture the peaks of two adjacent channels.

2. RBW: Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel.

3. Video (or average) bandwidth (VBW)  $\geq$  RBW.

4. Sweep: Auto. e) Detector function: Peak. f) Trace: Max hold. g) Allow the trace to stabilize.

Use the marker-delta function to determine the separation between the peaks of the adjacent channels.

#### **13.2. TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)**

Same as described in section 6.2

#### 13.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6.3

#### **13.4. LIMITS AND MEASUREMENT RESULT**

CHANNEL	CHANNEL SEPARATION	LIMIT	RESULT
	MHz		Dava
CH38-CH39	1.001	2/3* 20 dB BW	Pass

#### Peak Search Avg Type: Log-Pwi Avg|Hold: 100/100 Marker 1 2.440033033033 GHz Trig: Free Run PNO: Wid IFGain:Lo Atten: 30 dB Next Peak Mkr1 2.440 033 GHz -8.440 dBm Ref 20.00 dBm 0 dB/div Next Pk Right Next Pk Left Marker Delta Center 2.441000 GHz #Res BW 30 kHz Span 4.000 MHz 4.262 ms (1000 pts) #VBW 100 kHz Mkr→CF Sweep 2.440 033 GHz 2.441 034 GHz 8.440 dBm 8.309 dBm Mkr→RefLv More 1 of 2

### TEST PLOT FOR FREQUENCY SEPARATION

Note: The GFSK modulation is the worst case and recorded in the report.

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# 14. FCC LINE CONDUCTED EMISSION TEST

## 14.1. LIMITS OF LINE CONDUCTED EMISSION TEST

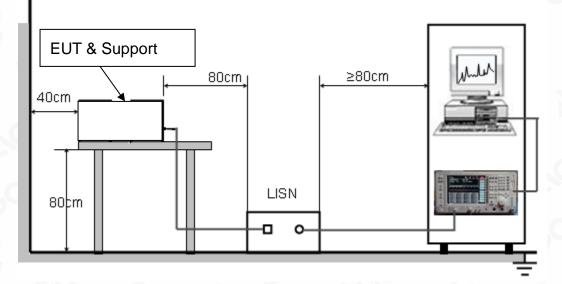
Francisco	Maximum RF Line Voltage		
Frequency	Q.P. (dBµV)	Average (dBµV)	
150kHz~500kHz	66-56	56-46	
500kHz~5MHz	56	46	
5MHz~30MHz	60	50	

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.

# 14.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



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## 14.3. 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 3.3V power from control board 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.

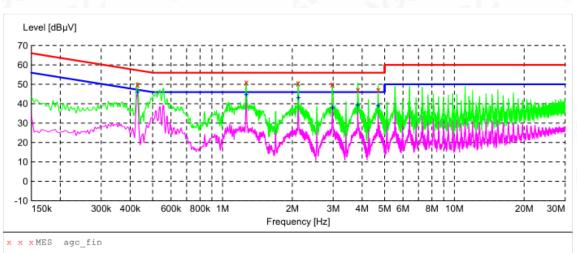
### 14.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

- 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.

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### 14.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST



Line Conducted Emission Test Line 1-L

# MEASUREMENT RESULT: "agc\_fin"

2020/9/23 16:46

20/9/25 10.4	:0						
Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
MHz	dBµV	dB	dBµV	dB			
0.430000	50.00	11.3	57	7.3	QP	L1	GND
1.266000	51.00	11.3	56	4.0	QP	L1	GND
2.118000	50.60	11.3	56	5.4	QP	L1	GND
2.974000	50.10	11.4	56	5.9	QP	L1	GND
3.830000	47.20	11.4	56	8.8	QP	L1	GND
4.686000	47.20	11.4	56	8.8	QP	L1	GND

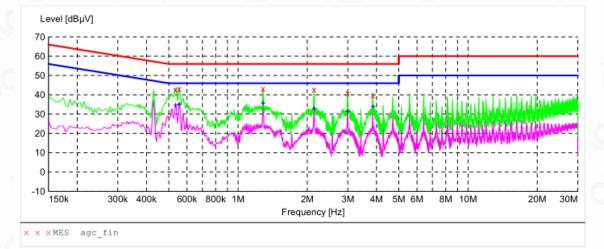
#### MEASUREMENT RESULT: "agc fin2"

2020/9/2	3 16:48	8						
Frequ	ency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dBµV	dB	dBµV	dB			
0.43	0000	46.00	11.3	47	1.3	AV	L1	GND
1.26	6000	44.60	11.3	46	1.4	AV	L1	GND
2.12	2000	43.10	11.3	46	2.9	AV	L1	GND
2.97	8000	37.80	11.4	46	8.2	AV	L1	GND
3.83	0000	39.30	11.4	46	6.7	AV	L1	GND
4.68	6000	39.00	11.4	46	7.0	AV	L1	GND

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#### MEASUREMENT RESULT: "agc\_fin"

2020/9/23 16:38

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.534000 0.554000 1.282000 2.138000 2.998000 3.854000	42.80 43.20 43.20 42.80 40.90 39.70	11.3 11.3 11.3 11.3 11.4 11.4	56 56 56 56 56	13.2 12.8 12.8 13.2 15.1 16.3	QP QP QP QP QP QP	N N N N N	GND GND GND GND GND GND

#### MEASUREMENT RESULT: "agc fin2"

2020/9/23 16:40									
Level	Transd	Limit	Margin	Detector	Line	PE			
dBµV	dB	dBµV	dB						
34.60	11.3	46	11.4	AV	N	GND			
35.00	11.3	46	11.0	AV	N	GND			
35.60	11.3	46	10.4	AV	N	GND			
32.80	11.3	46	13.2	AV	N	GND			
31.30	11.4	46	14.7	AV	N	GND			
33.80	11.4	46	12.2	AV	Ν	GND			
	Level dBµV 34.60 35.00 35.60 32.80 31.30	Level Transd dBµV dB 34.60 11.3 35.00 11.3 35.60 11.3 32.80 11.3 31.30 11.4	Level Transd Limit dBµV dB dBµV 34.60 11.3 46 35.00 11.3 46 35.60 11.3 46 32.80 11.3 46 31.30 11.4 46	Level Transd Limit Margin dBµV dB dBµV dB 34.60 11.3 46 11.4 35.00 11.3 46 11.0 35.60 11.3 46 10.4 32.80 11.3 46 13.2 31.30 11.4 46 14.7	Level         Transd         Limit         Margin         Detector           dBμV         dB         dBμV         dB         dB         dB           34.60         11.3         46         11.4         AV           35.00         11.3         46         11.0         AV           35.60         11.3         46         10.4         AV           32.80         11.3         46         13.2         AV           31.30         11.4         46         14.7         AV	Level Transd Limit Margin Detector Line dBµV dB dBµV dB 34.60 11.3 46 11.4 AV N 35.00 11.3 46 11.0 AV N 35.60 11.3 46 10.4 AV N 32.80 11.3 46 13.2 AV N 31.30 11.4 46 14.7 AV N			

#### **RESULT: PASS**

Note: All the test modes had been tested, the mode 7 was the worst case. Only the data of the worst case would be record in this test report.

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