

Note: All mode rates are tested and evaluated, 8DPSK modulated 3DH5 mode is the worst case and documented in the report.



Report No.: AGC01110240643FR01 Page 67 of 77

11. Time of Occupancy (Dwell Time) Measurement

11.1 Provisions Applicable

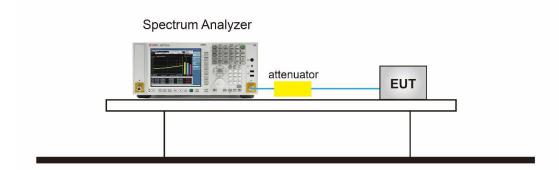
The maximum permissible time of occupancy is 400ms within a period of 400ms multiplied by the number of hopping channels employed.

11.2 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 ≤ channel spacing and where possible RBW should be set >> 1 / T, where T is the expected dwell time per channel.
- 3. VBW ≥ RBW
- 4. Sweep time = As necessary to capture the entire dwell time per hopping channel
- 5. Detector = Peak
- 6. Trace mode = Free Run
- 7. Use the marker-delta function to determine the transmit time per hop. If this value varies with different modes of operation (data rate, modulation format, number of hopping channels, etc.), then repeat this test for each variation in transmit time. An oscilloscope may be used instead of a spectrum analyzer. The EUT shall show compliance with the appropriate regulatory limit for the number of hopping channels. A plot of the data shall be included in the test report.

11.3 Measurement Setup (Block Diagram of Configuration)

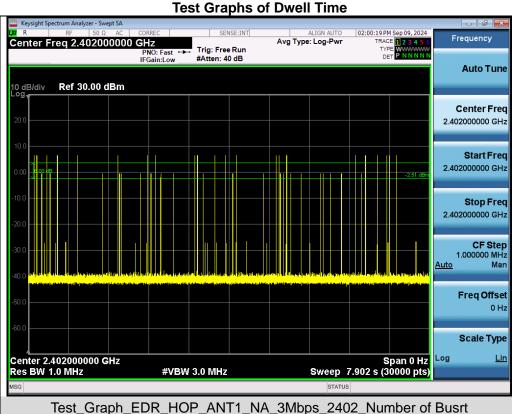


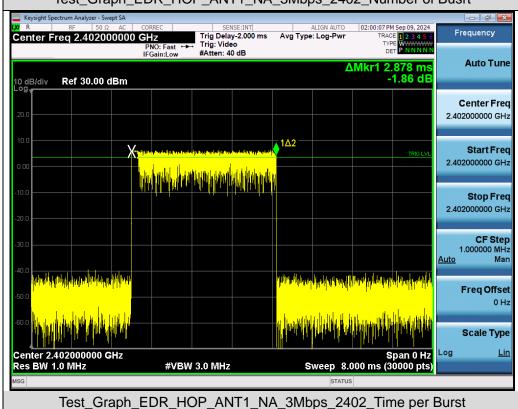
11.4 Measurement Result

		Test Data of D	well Time		
Channel	Time of Pulse for 3DH5 (ms)	Number of hops in the period specified in the requirements	Dwell Time (ms)	Limit (ms)	Pass or Fail
2402	2.878	22.0*4	253.264	400	Pass
2441	2.878	18.0*4	207.216	400	Pass
2480	2.878	23.0*4	264.776	400	Pass



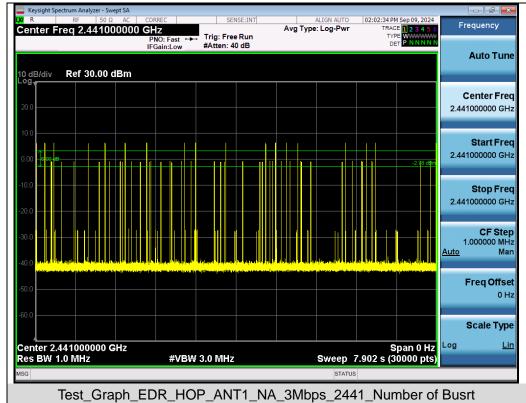


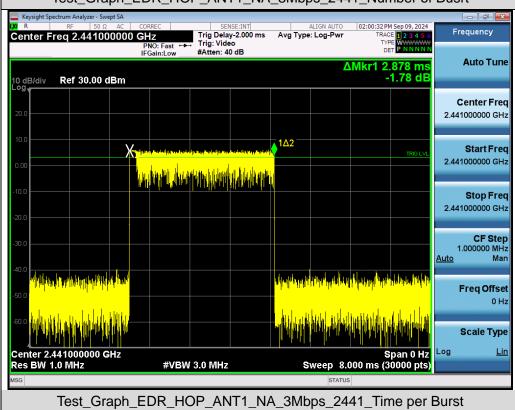






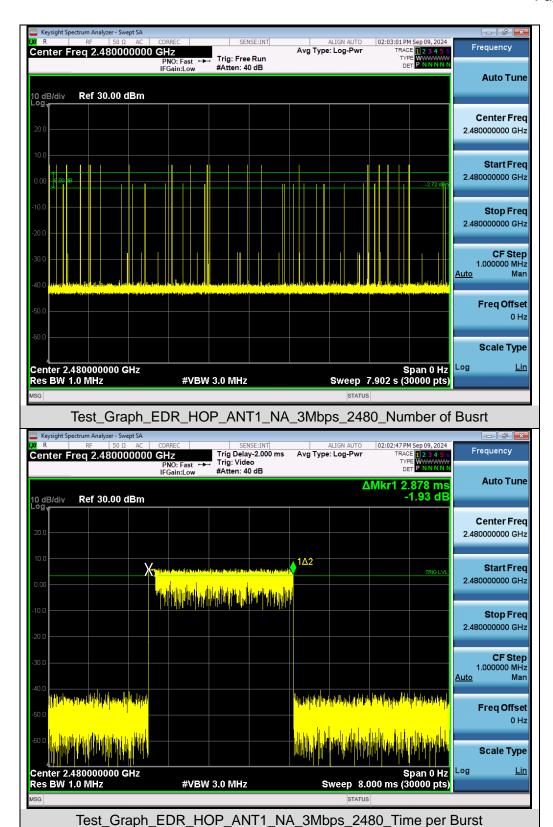












Note: All mode rates are tested and evaluated, 8DPSK modulated 3DH5 mode is the worst case and documented in the report.



Report No.: AGC01110240643FR01 Page 71 of 77

12. Frequency Separation Measurement

12.1 Provisions Applicable

When the power is less than 0.125W: The minimum permissible channel separation for this system is 2/3 the value of the 20dB BW.

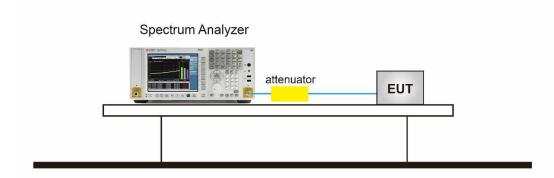
When the power is less than 1W: The minimum permissible channel separation for this system is 20dB BW.

12.2 Measurement Procedure

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

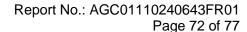
- 1. Span: Wide enough to capture the peaks of two adjacent channels.
- 2. RBW: Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel.
- 3. Video (or average) bandwidth (VBW) ≥ RBW.
- 4. Sweep: Auto.
- 5. Detector function: Peak.
- 6. Trace: Max hold. g) Allow the trace to stabilize.
- 7. Use the marker-delta function to determine the separation between the peaks of the adjacent channels.

12.3 Measurement Setup (Block Diagram of Configuration)

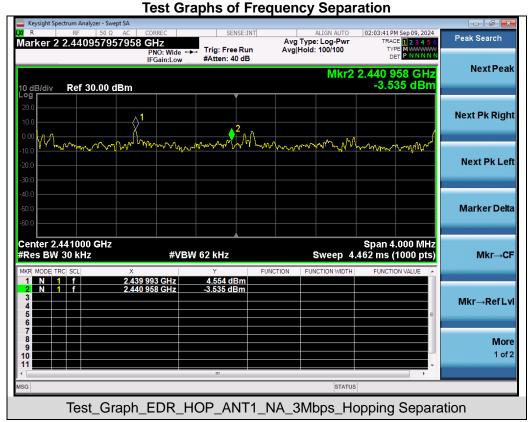


12.4 Measurement Result

	Test Data of Frequency Separa	tion	
Test Mode	Channel Separation (MHz)	Limits (MHz)	Pass or Fail
8DPSK Hopping	0.965	≥0.897	Pass







Note: All mode rates are tested and evaluated, 8DPSK modulated 3DH5 mode is the worst case and documented in the report.



Report No.: AGC01110240643FR01

Page 73 of 77

13. AC Power Line Conducted Emission Test

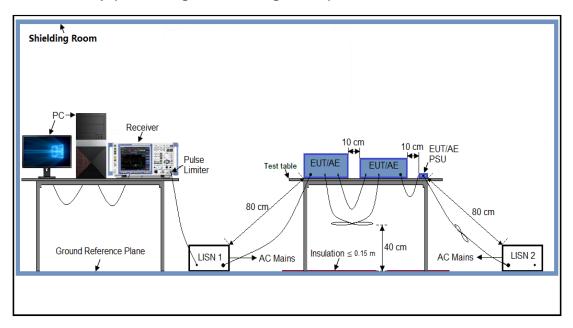
13.1 Measurement Limit

Fraguenay	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.

13.2 Measurement Setup (Block Diagram of Configuration)





Report No.: AGC01110240643FR01 Page 74 of 77

13.3 Preliminary Procedure of Line Conducted Emission Test

- 1. 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.

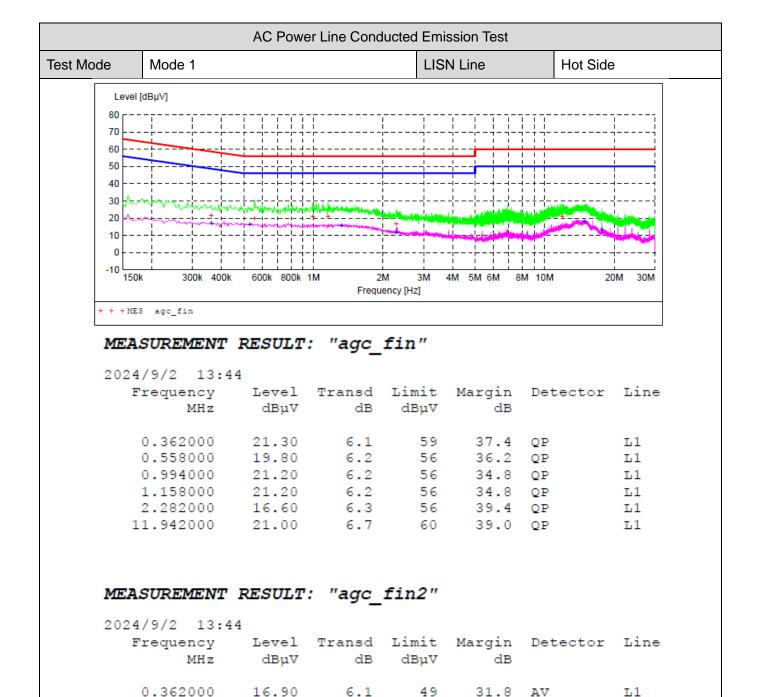
Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

13.4 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.
- 2. 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.

13.5 Measurement Results





RESULT: Pass

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6.2

6.2

6.3

6.8

7.0

46

46

46

50

50

30.0

30.1

34.5

32.0

36.6

ΑV

ΑV

ΑV

AV

ΑV

ь1

ь1

L1

ь1

ь1

16.00

15.90

11.50

18.00

13.40

0.530000

1.322000

2.282000

14.914000

17.662000



80	Mode 1 [dBµV] k 300k 400k S agc_fin	600k 800k	Freque	M 3M 4		Neutral S	
80	k 300k 400k		Freque	ency [Hz]		† - 	M 30M
70 60 50 40 30	S agc_fin		Freque	ency [Hz]		† - 	м зом
60 50 40 30 Av 20 A 10 -10 150 + + + ME	S agc_fin		Freque	ency [Hz]		† - 	М 30М
50 40 30 20 10 150 + + + ME	S agc_fin		Freque	ency [Hz]		† - 	М 30М
40 30 Av 20 A 10 -10 150 + + + ME	S agc_fin		Freque	ency [Hz]		† - 	м зом
30 Av 20 A 10 -10 150 + + + ME	S agc_fin		Freque	ency [Hz]		† - 	м зом
20 A 10 0 -10 150 + + + ME	S agc_fin		Freque	ency [Hz]		† - 	М 30М
10 010 150 + + + ME	S agc_fin		Freque	ency [Hz]		† - 	М 30М
0 -10 150 + + + ME	S agc_fin		Freque	ency [Hz]		† - 	м зом
-10 150 + + + ME	S agc_fin		Freque	ency [Hz]		† - 	М 30М
+ + + ME MEA	S agc_fin		Freque	ency [Hz]	4M 5M 6M 8M	10M 20	M 30M
+ + + ME MEA	S agc_fin		Freque	ency [Hz]	THE SHE SHE SHE	10W 20	JUNI
MEA		RESIII.T					
MEA		RESIII.T					
	SUREMENT	RESIII.T					
	BOREFIENT		· "acc	fin"			
			. agc_				
2024	1/9/2 13:4	1					
	requency		Transd	Limit	Margin	Detector	Line
	MHz	dΒμV	dB	dBµV	dB		
	0.334000	22.30	6.1	59	37.1	QP	N
	0.798000	24.50	6.2	56		QP	N
	0.910000	21.40	6.2	56		QP	N
	1.042000	21.20	6.2	56		QP	N
	2.330000	18.20	6.3	56		QP	N
	3.950000	17.20	6.3	56		QP	N
MEA	SUREMENT	RESULT	: "agc	fin2"			
2024	1/9/2 13:4	1	_				
I	requency	Level	Transd	Limit	Margin	Detector	Line
	MHz	dΒμV	dB	dΒμV	dB		
		-					
	0.358000	17.30	6.1	49	31.5	AV	N
	0.790000	17.80	6.2	46	28.2		N
	1.330000	16.30					N
	2.306000	14.60					N
-	12.386000						N
	13.770000		6.8				N

RESULT: Pass



Report No.: AGC01110240643FR01

Page 77 of 77

Appendix I: Photographs of Test Setup

Refer to the Report No.: AGC01110240643AP02

Appendix II: Photographs of Test EUT

Refer to the Report No.: AGC01110240643AP03

----End of Report----



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