



**BUREAU
VERITAS**

Test Report No.: W7L-P23100008RF01

3.4.5 DEVIATION FROM TEST STANDARD

No deviation.

3.4.6 TEST RESULTS

Please Refer to Appendix Of this test report

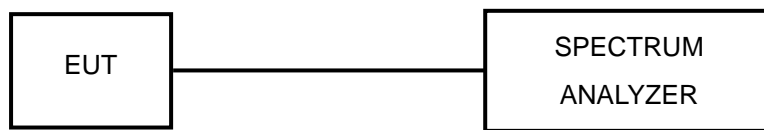


3.5 CHANNEL BANDWIDTH

3.5.1 LIMITS OF CHANNEL BANDWIDTH

For frequency hopping system operating in the 2400-2483.5MHz, If the 20dB bandwidth of hopping channel is greater than 25kHz, two-thirds 20dB bandwidth of hopping channel shall be a minimum limit for the hopping channel separation.

3.5.2 TEST SETUP



3.5.3 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.

3.5.4 TEST PROCEDURE

- a. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
- c. Measure the frequency difference of two frequencies that were attenuated 20dB from the reference level. Record the frequency difference as the emission bandwidth.
- d. Repeat above procedures until all frequencies measured were complete.

3.5.5 DEVIATION FROM TEST STANDARD

No deviation.



**BUREAU
VERITAS**

Test Report No.: W7L-P23100008RF01

3.5.6 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

3.5.7 TEST RESULTS

Please Refer to Appendix Of this test report.

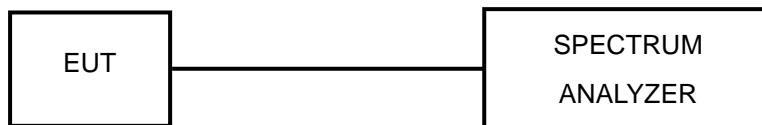


3.6 HOPPING CHANNEL SEPARATION

3.6.1 LIMIT OF HOPPING CHANNEL SEPARATION

At least 25kHz or two-third of 20dB hopping channel bandwidth (whichever is greater).

3.6.2 TEST SETUP



3.6.3 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.

3.6.4 TEST PROCEDURES

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range.
3. By using the MaxHold function record the separation of two adjacent channels.
4. Measure the frequency difference of these two adjacent channels by SA MARK function. And then plot the result on SA screen.
5. Repeat above procedures until all frequencies measured were complete.

3.6.5 DEVIATION FROM TEST STANDARD

No deviation.



3.6.6 TEST RESULTS

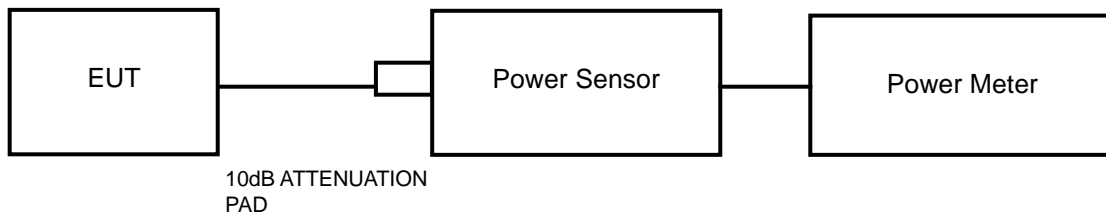
Please Refer to Appendix Of this test report.

3.7 MAXIMUM OUTPUT POWER

3.7.1 LIMITS OF MAXIMUM OUTPUT POWER MEASUREMENT

The Maximum Output Power Measurement is 125mW.

3.7.2 TEST SETUP



3.7.3 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.

3.7.4 TEST PROCEDURES

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.



3.7.5 DEVIATION FROM TEST STANDARD

No deviation.

3.7.6 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.



**BUREAU
VERITAS**

Test Report No.: W7L-P23100008RF01

3.7.7 TEST RESULTS

3.7.7.1 MAXIMUM PEAK OUTPUT POWER

Please Refer to Appendix Of this test report.



3.7.7.2 AVERAGE OUTPUT POWER (FOR REFERENCE)

The average power sensor was used on the output port of the EUT. A power meter was used to read the response of the power sensor. Record the power level.

Please Refer to Appendix Of this test report.



3.8 OUT OF BAND MEASUREMENT

3.8.1 LIMITS OF OUT OF BAND MEASUREMENT

Below -20dB of the highest emission level of operating band (in 100KHz RBW).

3.8.2 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.

3.8.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low loss cable. Spectrum Analyzer was set RBW to 100 kHz and VBW to 300 kHz with suitable frequency span including 100 MHz bandwidth from band edge. Detector = PEAK and Trace mode = Max Hold. The band edges was measured and recorded.

3.8.4 DEVIATION FROM TEST STANDARD

No deviation.

3.8.5 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

3.8.6 TEST RESULTS

The spectrum plots are attached on the following images. D1 line indicates the highest level. D2 line indicates the 20dB offset below D1. It shows compliance to the requirement.

Please Refer to Appendix Of this test report.



**BUREAU
VERITAS**

Test Report No.: W7L-P23100008RF01

4 PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).



5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.



6 Appendix :BT 20DB EMISSION BANDWIDTH TEST RESULT

TestMode	Antenna	Frequency[MHz]	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.858	2401.556	2402.414	---	---
		2441	0.909	2440.562	2441.471	---	---
		2480	0.843	2479.559	2480.402	---	---
2DH5	Ant1	2402	1.290	2401.361	2402.651	---	---
		2441	1.311	2440.340	2441.651	---	---
		2480	1.314	2479.337	2480.651	---	---
3DH5	Ant1	2402	1.308	2401.343	2402.651	---	---
		2441	1.311	2440.343	2441.654	---	---
		2480	1.305	2479.346	2480.651	---	---

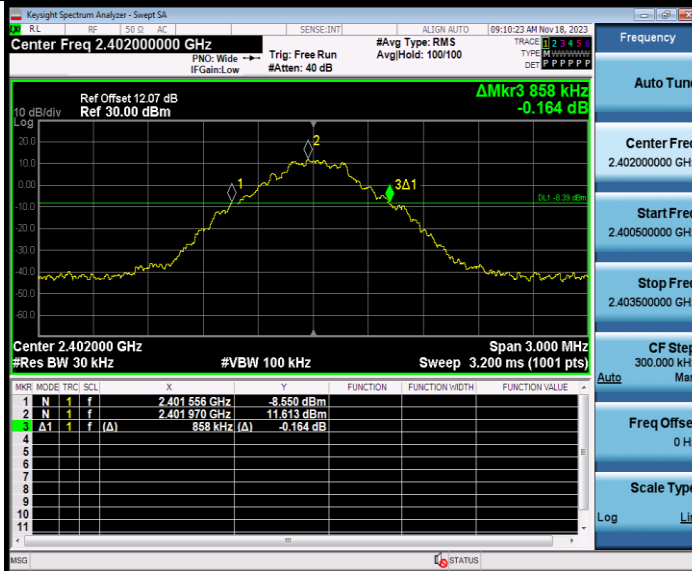


BUREAU VERITAS

Test Report No.: W7L-P23100008RF01

TEST GRAPHS

DH5_Ant1_2402



DH5_Ant1_2441



DH5_Ant1_2480

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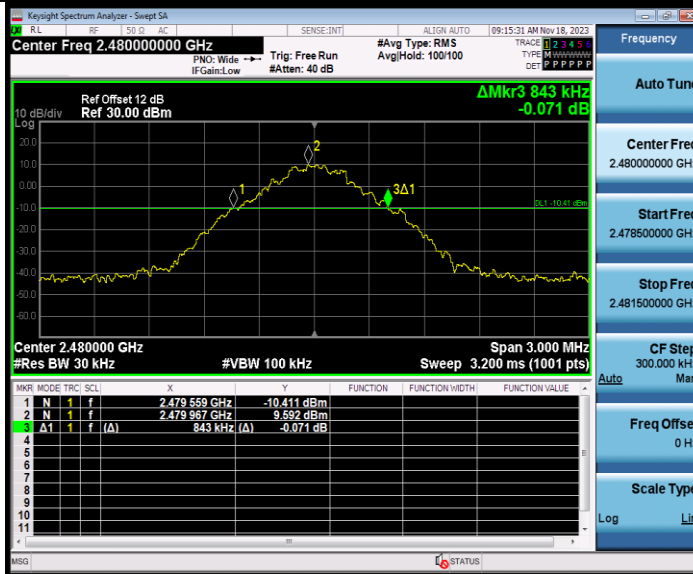
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2DH5_Ant1_2402



2DH5_Ant1_2441



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Test Report No.: W7L-P23100008RF01



2DH5_Ant1_2480



3DH5_Ant1_2402

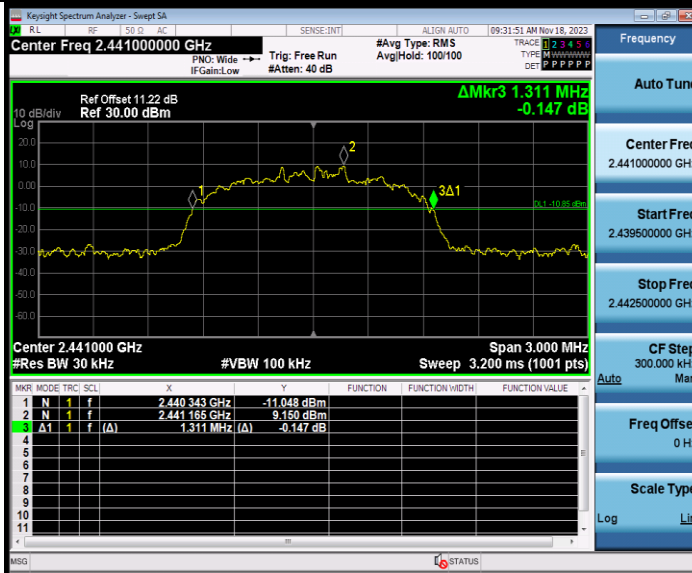


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Test Report No.: W7L-P23100008RF01



3DH5_Ant1_2441

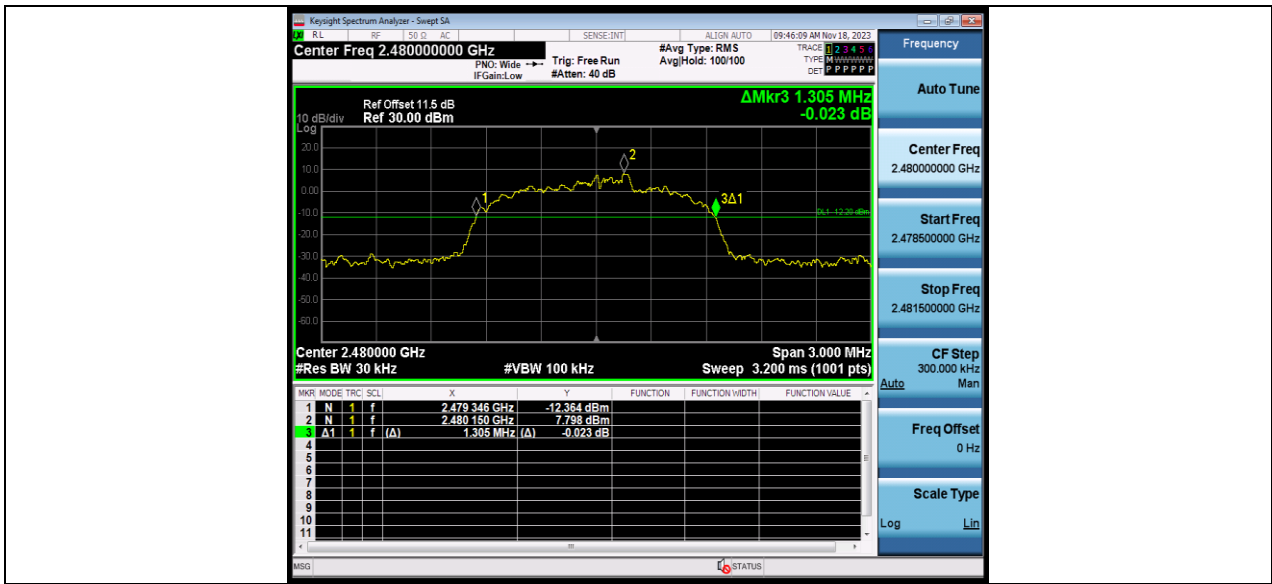


3DH5_Ant1_2480



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OCCUPIED CHANNEL BANDWIDTH TEST RESULT

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.76006	2401.6230	2402.3831	---	---
		2441	0.78628	2440.6059	2441.3922	---	---
		2480	0.76305	2479.6153	2480.3784	---	---
2DH5	Ant1	2402	1.1919	2401.4021	2402.5940	---	---
		2441	1.1752	2440.4091	2441.5843	---	---
		2480	1.1820	2479.4042	2480.5862	---	---
3DH5	Ant1	2402	1.1946	2401.4006	2402.5952	---	---
		2441	1.1727	2440.4145	2441.5872	---	---
		2480	1.2037	2479.3923	2480.5960	---	---

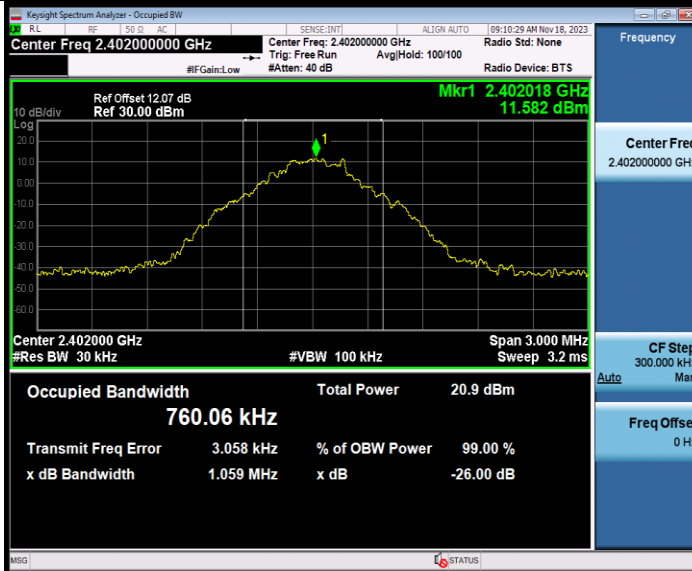


BUREAU VERITAS

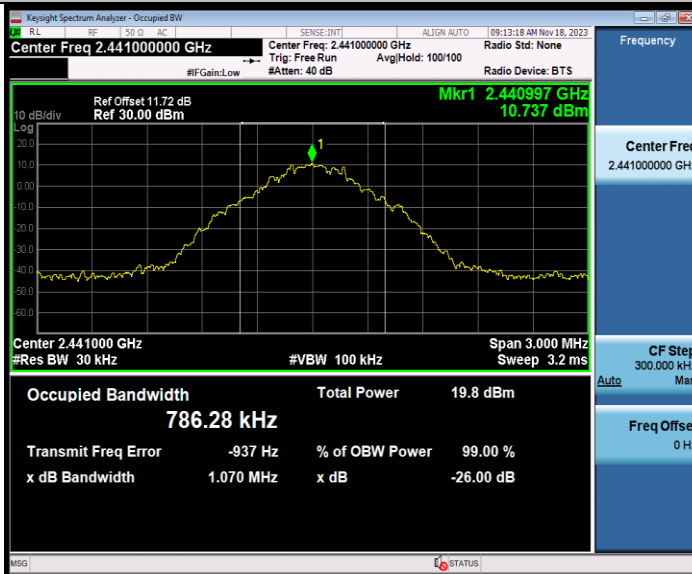
Test Report No.: W7L-P23100008RF01

TEST GRAPHS

DH5_Ant1_2402



DH5_Ant1_2441

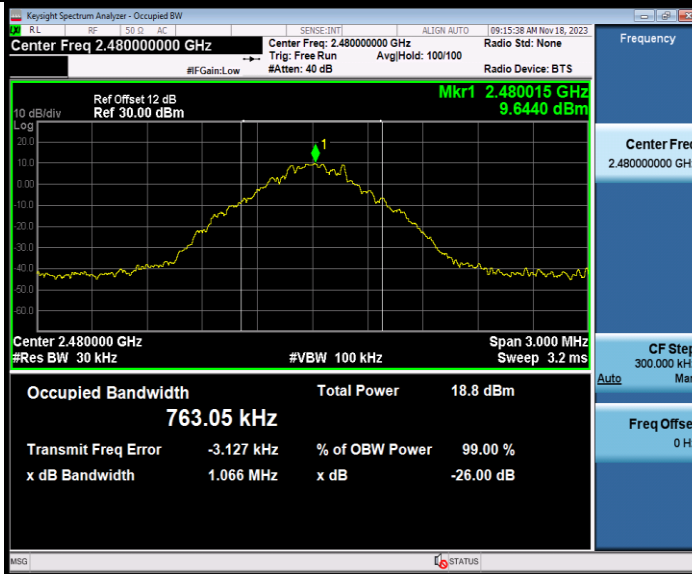


DH5_Ant1_2480



BUREAU VERITAS

Test Report No.: W7L-P23100008RF01



2DH5_Ant1_2402

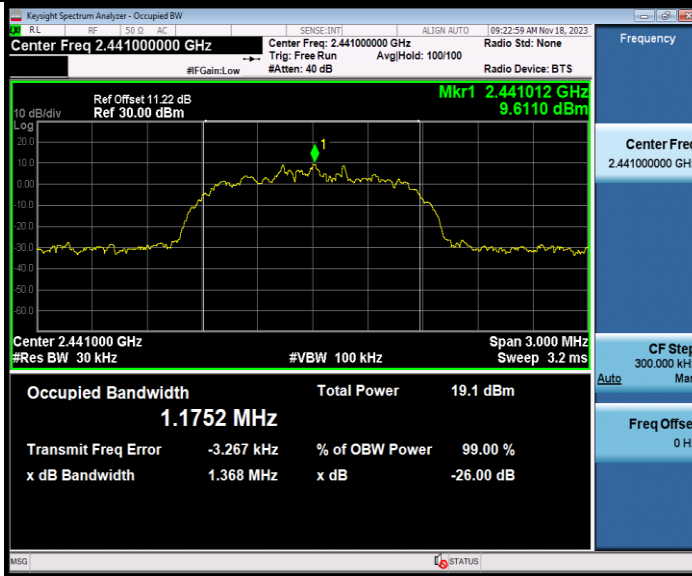


2DH5_Ant1_2441



BUREAU VERITAS

Test Report No.: W7L-P23100008RF01



2DH5_Ant1_2480



3DH5_Ant1_2402

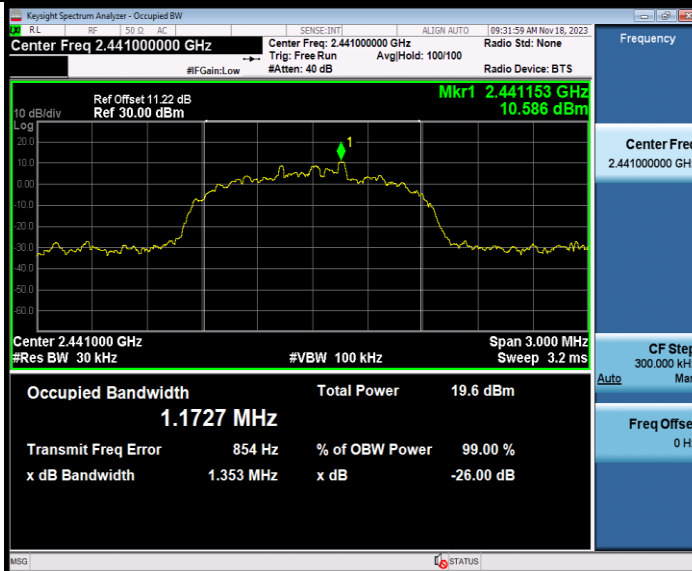


BUREAU VERITAS

Test Report No.: W7L-P23100008RF01



3DH5_Ant1_2441



3DH5_Ant1_2480



**BUREAU
VERITAS**

Test Report No.: W7L-P23100008RF01





MAXIMUM CONDUCTED OUTPUT POWER TEST RESULT

TestMode	Antenna	Frequency [MHz]	Average power [dBm]	Peak Power [dBm]	Peak power [mw]	Conducted Limit [dBm]	EIRP [dBm]	EIRP [mw]	EIRP Limit [dBm]	Verdict	Power Setting
DH5	Ant1	2402	11.73	11.98	15.78	≤20.97	12.11	16.26	≤36.00	PASS	Default
		2441	11.63	11.84	15.28	≤20.97	11.97	15.74	≤36.00	PASS	Default
		2480	10.68	11.18	13.12	≤20.97	11.31	13.52	≤36.00	PASS	Default
2DH5	Ant1	2402	8.74	11.29	13.46	≤20.97	11.42	13.87	≤36.00	PASS	Default
		2441	8.55	11.08	12.82	≤20.97	11.21	13.21	≤36.00	PASS	Default
		2480	8.54	10.95	12.45	≤20.97	11.08	12.82	≤36.00	PASS	Default
3DH5	Ant1	2402	8.82	11.28	13.43	≤20.97	11.41	13.84	≤36.00	PASS	Default
		2441	8.57	11.11	12.91	≤20.97	11.24	13.30	≤36.00	PASS	Default
		2480	8.55	10.96	12.47	≤20.97	11.09	12.85	≤36.00	PASS	Default

Note:EIRP=Peak Power+Gain



CARRIER FREQUENCY SEPARATION TEST RESULT

TestMode	Antenna	Frequency[MHz]	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	0.988	≥ 0.909	PASS
2DH5	Ant1	Hop	1.156	≥ 0.876	PASS
3DH5	Ant1	Hop	1.136	≥ 0.874	PASS



BUREAU VERITAS

Test Report No.: W7L-P23100008RF01

TEST GRAPHS

DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop



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TIME OF OCCUPANCY
TEST RESULT

TestMode	Antenna	Frequency[MHz]	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.377	320	0.121	≤0.4	PASS
DH3	Ant1	Hop	1.633	160	0.261	≤0.4	PASS
DH5	Ant1	Hop	2.880	106.67	0.307	≤0.4	PASS
2DH1	Ant1	Hop	0.384	320	0.123	≤0.4	PASS
2DH3	Ant1	Hop	1.635	160	0.262	≤0.4	PASS
2DH5	Ant1	Hop	2.883	106.67	0.308	≤0.4	PASS
3DH1	Ant1	Hop	0.385	320	0.123	≤0.4	PASS
3DH3	Ant1	Hop	1.635	160	0.262	≤0.4	PASS
3DH5	Ant1	Hop	2.887	106.67	0.308	≤0.4	PASS

NOTE: TotalHops =[1600/(Send and receive Number*79)]*0.4*79;

Send and receive Number : DH1/2DH1/3DH1=2; DH3/2DH3/3DH3=4; DH5/2DH5/3DH5=6

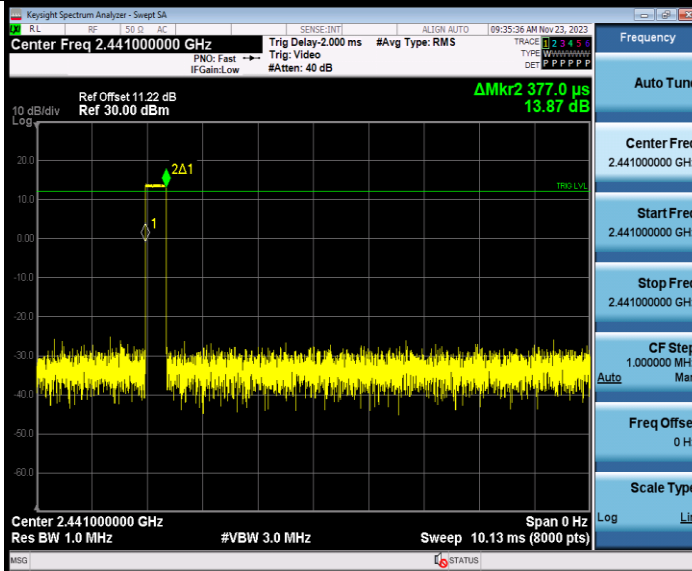


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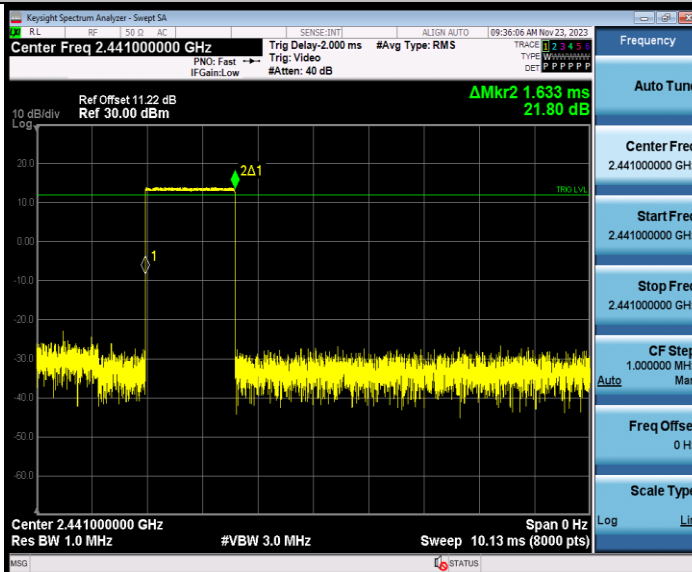
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TEST GRAPHS

DH1_Ant1_Hop



DH3_Ant1_Hop



DH5_Ant1_Hop

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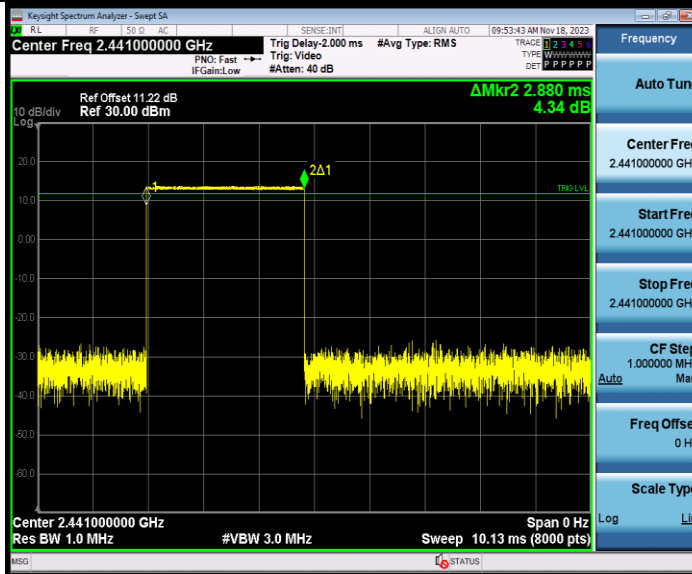
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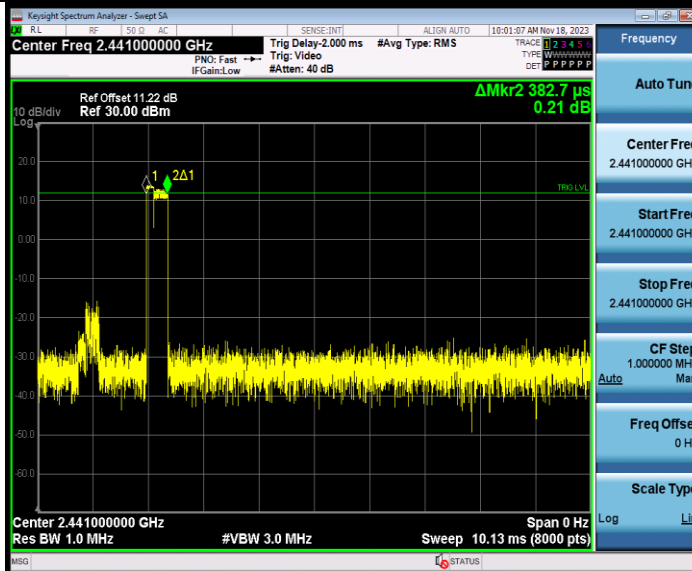


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2DH1_Ant1_Hop



2DH3_Ant1_Hop

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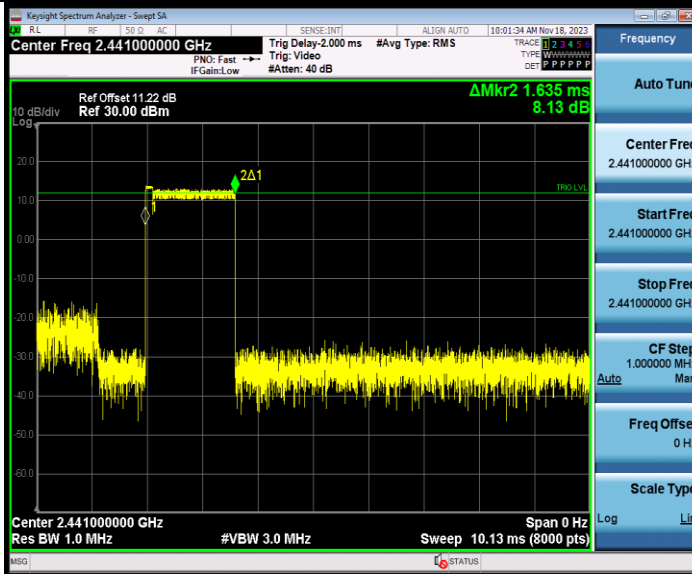
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Tel: +86(0557) 368 1008

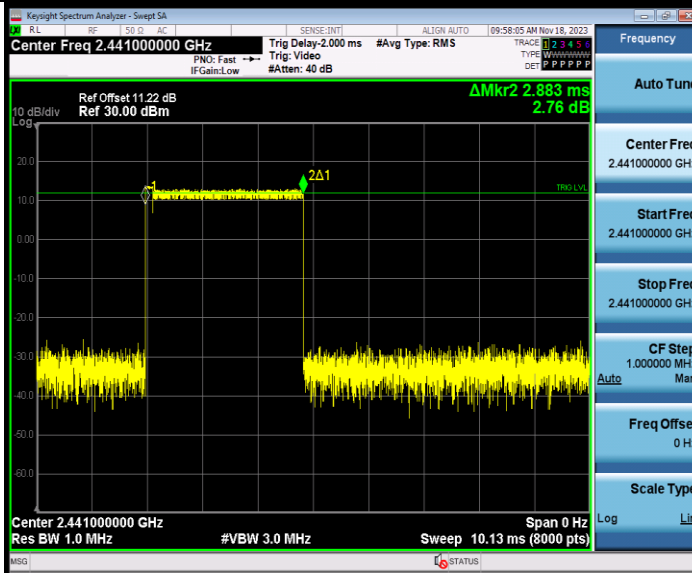


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2DH5_Ant1_Hop



3DH1_Ant1_Hop

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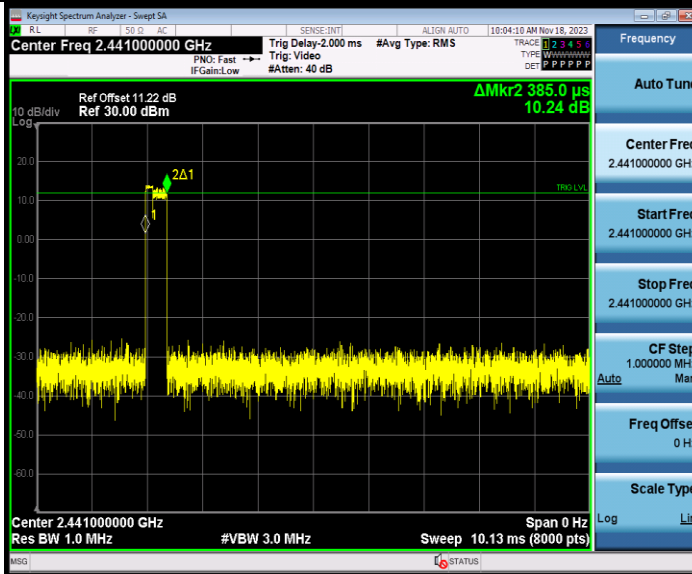
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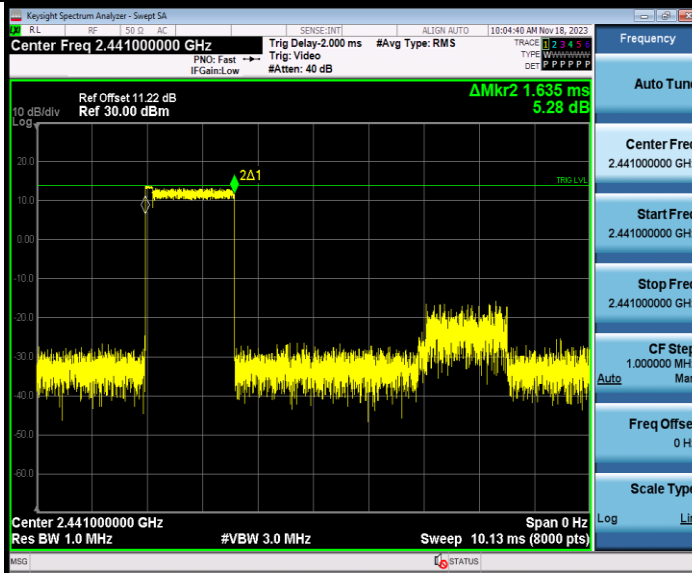


BUREAU VERITAS

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3DH3_Ant1_Hop



3DH5_Ant1_Hop

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