

TEST REPORT

Report No.:	BCTC2204261191E	
Applicant:	KYE SYSTEMS CORP.	
Product Name:	MULTIMEDIA SPEAKER SYSTEMS	
Model/Type Reference:	USB SoundBar 200BT	
Tested Date:	2022-04-20 to 2022-05-06	
Issued Date:	2022-06-09	
She	nzhen BETE Testing Co., Ltd.	
No. : BCTC/RF-EMC-007	Page: 1 of 80	



FCC ID: FSU200BT

Product Name:	MULTIMEDIA SPEAKER SYSTEMS
Trademark:	Genius
Model/Type Reference:	USB SoundBar 200BT SP-XXXXXX, USB SP-HF380BT, USB SoundBar XXXXX, USB SoundBar XXXXX XX, USB SoundBar RGB BT, USB SoundBar XXX XX, USB SoundBar XXXX XX, XXX XXXXXXX XXXX, XXX XXXXXXX XXXXXX
Prepared For:	KYE SYSTEMS CORP.
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Manufacturer:	DONGGUAN IWIN ELECTRONICS CO., LTD.
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Prepared By:	Shenzhen BCTC Testing Co., Ltd.
Address:	1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Sample Received Date:	2022-04-16
Sample Tested Date:	2022-04-20 to 2022-05-06
Issue Date:	2022-06-09
Report No.:	BCTC2204261191E
Test Standards	FCC Part15.247 ANSI C63.10-2013
Test Results	PASS
Remark:	This is Bluetooth Classic radio test report.

Tested by:

Brave Zeng/ Project Handler

Approved by:

Zero Zhou/Reviewer

The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client.



Table of Content

Test	Report Declaration	Page
1.	Version	5
2.	Test Summary	
3.	Measurement Uncertainty	
4.	Product Information and Test Setup	
4.1	Product Information	
4.2	Test Setup Configuration	
4.3	Support Equipment	
4.4	Channel List	
4.5	Test Mode	
4.6	Table Of Parameters Of Text Software Setting	
5.	Test Facility And Test Instrument Used	
5.1	Test Facility	
5.2	Test Instrument Used	
6.	Conducted Emissions	
6.1	Block Diagram Of Test Setup	
6.2	Limit	
6.3	Test procedure	
6.4	EUT operating Conditions	
6.5	Test Result	
7.	Radiated emissions	
7.1	Block Diagram Of Test Setup	
7.2	Limit	
7.3	Test procedure	18
7.4	EUT operating Conditions	19
7.5	Test Result.	
8.	Radiated Band Emission Measurement and Restricted Bands of Operat	ion24
8.1	Block Diagram Of Test Setup	
8.2	Limit	24
8.3	Test procedure	25
8.4	EUT operating Conditions	
8.5	Test Result	26
9.	Spurious RF Conducted Emissions	27
9.1		· · · · · · - ·
9.2	Limit	27
9.3	Test procedure	27
9.4	Test Result	28
10.	20 dB Bandwidth	49
10.1	Block Diagram Of Test Setup	49
10.2	Limit	49
10.3		49
10.4	Test Result	50
11.	Maximum Peak Output Power	56
	Blook Blagram of Test Setaphinisting and the setaphinisting and the setaphinistic setaphinitatin set	
11.2		56
11.3		
BCTC/F	RF-EMC-007 Page: 3 of 80 Edition	: A.4
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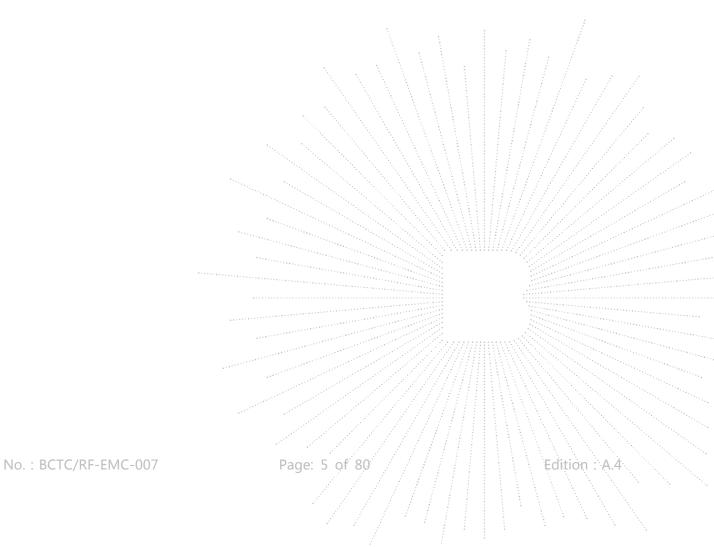


11.4 Test Result	56
12. Hopping Channel Separation	62
12.1 Block Diagram Of Test Setup	62
12.2 Limit	62
12.3 Test procedure	62
12.4 Test Result	62
13. Number of Hopping Frequency	
13.1 Block Diagram Of Test Setup	68
13.2 Limit	68
13.3 Test procedure	68
13.4 Test Result	
14. Dwell Time	71
14.1 Block Diagram Of Test Setup	71
14.2 Limit	71
14.3 Test procedure	71
14.4 Test Result	
15. Antenna Requirement	77
15.1 Limit	
15.2 Test Result	77
16. EUT Test Setup Photographs	78



1. Version

Report No.	Issue Date	Description	Approved
BCTC2204261191E	2022-06-09	Original	Valid





Test Summary 2.

The Product has been tested according to the following specifications:

No.	Test Parameter	Clause No.	Results
1	Conducted emission AC power port	§15.207	PASS
2	Conducted peak output power for FHSS	§15.247(b)(1)	PASS
3	20dB Occupied bandwidth	§15.247(a)(1)	PASS
4	Number of hopping frequencies	§15.247(a)(1)(iii)	PASS
5	Dwell Time	§15.247(a)(1)(iii)	PASS
6	Spurious RF conducted emissions	§15.247(d)	PASS
7	Band edge	§15.247(d)	PASS
8	Spurious radiated emissions for transmitter	§15.247(d) & §15.209 & §15.205	PASS
9	Antenna Requirement	15.203	PASS

NOTE1: N/A (Not Applicable) NOTE2: According to FCC OET KDB 558074, the report use radiated measurements in the restricted frequency bands. In addition, the radiated test is also performed to ensure the emissions emanating from the device cabinet also comply with the applicable limits.

No.: BCTC/RF-EMC-007

Edition :



3. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

No.	Item	Uncertainty
1	3m chamber Radiated spurious emission(30MHz-1GHz)	U=4.3dB
2	3m chamber Radiated spurious emission(9KHz-30MHz)	U=3.7dB
3	3m chamber Radiated spurious emission(1GHz-18GHz)	U=4.5dB
4	3m chamber Radiated spurious emission(18GHz-40GHz)	U=3.34dB
5	Conducted Emission (150kHz-30MHz)	U=3.20dB
6	Conducted Adjacent channel power	U=1.38dB
7	Conducted output power uncertainty Above 1G	U=1.576dB
8	Conducted output power uncertainty below 1G	U=1.28dB
9	humidity uncertainty	U=5.3%
10	Temperature uncertainty	U=0.59 °C



4. Product Information and Test Setup

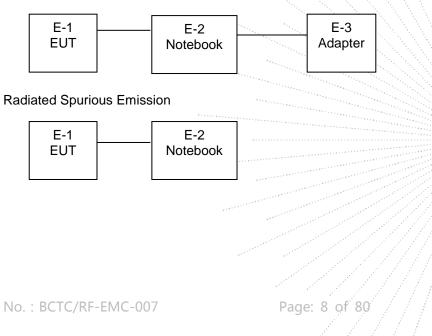
4.1 Product Information

USB SoundBar RGB BT, USB SoundBar XXX XX, USB SoundBar XXXX XX, XX XXXXXXXX XXXX, XXX XXXXXXXX	
Model differences: All the model are the same circuit and RF module, except model names and appearance.	
Bluetooth Version: BT 5.0	
Hardware Version: N/A	
Software Version: N/A	
Operation Frequency: Bluetooth: 2402-2480MHz	
Type of Modulation: Bluetooth: GFSK, π/ 4 DQPSK, 8DPSK	
Number Of Channel 79CH	
Antenna installation: Internal antenna	
Antenna Gain: -0.58dBi	
Ratings: DC 5V From USB	

4.2 Test Setup Configuration

See test photographs attached in eut test setup photographs for the actual connections between product and support equipment.

Conducted Emission:





4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
E-2	Notebook	Lenovo	ThinkPad E550C	SL10H52814	Auxiliary
E-3	Adapter	HUAWEI	BCTC-1	N/A	N/A

ltem	Shielded Type	Ferrite Core	Length	Note
C-1	N/A	N/A	N/A	N/A

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4 Channel List

СН	Frequency (MHz)	СН	Frequency (MHz)	СН	Frequency (MHz)	СН	Frequency (MHz)
0	2402	1	2403	2	2404	3	2405
4	2406	5	2407	6	2408	7	2409
8	2410	9	2411	10	2412	11	2413
12	2414	13	2415	14	2416	15	2417
16	2418	17	2419	18	2420	19	2421
20	2422	21	2423	22	2424	23	2425
24	2426	25	2427	26	2428	27	2429
28	2430	29	2431	30	2432	31	2433
32	2434	33	2435	34	2436	35	2437
36	2438	37	2439	38	2440	39	2441
40	2442	41	2443	42	2444	43	2445
44	2446	45	2447	46	2448	47	2449
48	2450	49	2451	50	2452	51	2453
52	2454	53	2455	54	2456	55	2457
56	2458	57	2459	58	2460	59	2461
60	2462	61	2463	62	2464	63	2465
64	2466	65	2467	66	2468	67	2469
68	2470	69	2471	70	2472	71	2473
72	2474	73	2475	74	2476	75	2477
76	2478	77	2479	78	2480	79	l f



4.5 Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Test Mode	Test mode	Low channel	Middle channel	High channel		
1	Transmitting(GFSK)	2402MHz	2441MHz	2480MHz		
2	Transmitting(π/ 4 DQPSK)	2402MHz	2441MHz	2480MHz		
3	Transmitting(8DPSK)	2402MHz	2441MHz	2480MHz		
4	Transmitting (Conducted emission & Radiated emission)					

Note:

(1) The measurements are performed at the highest, middle, lowest available channels.

4.6 Table Of Parameters Of Text Software Setting

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters

Test software Version	FCC_assist 1.0.1.1		
Frequency	2402 MHz	2441 MHz	2480 MHz
Parameters	DEF	DEF	DEF



5. Test Facility And Test Instrument Used

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards. FCC Test Firm Registration Number: 712850 IC Registered No.: 23583

5.2 Test Instrument Used

	Conducted Emissions Test						
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.		
Receiver	R&S	ESR3	102075	May 28, 2021	May 27, 2022		
LISN	R&S	ENV216	101375	May 28, 2021	May 27, 2022		
Software	Frad	EZ-EMC	EMC-CON 3A1	١	\		
Attenuator	\	10dB DC-6GHz	1650	May 28, 2021	May 27, 2022		

	RF Conducted Test				
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Power Metter	Keysight	E4419		May 28, 2021	May 27, 2022
Power Sensor (AV)	Keysight	E9300A		May 28, 2021	May 27, 2022
Signal Analyzer 20kHz-26.5G Hz	Keysight	N9020A	MY49100060	May 28, 2021	May 27, 2022
Spectrum Analyzer 9kHz-40GHz	R&S	FSP 40		May 28, 2021	May 27, 2022

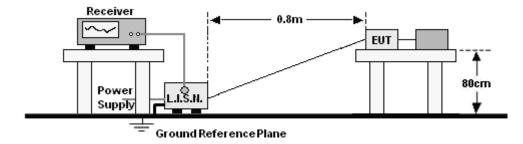


Radiated Emissions Test (966 Chamber)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	ChengYu	966 Room	966	Jun. 06. 2020	Jun. 05, 2023
Receiver	R&S	ESR3	102075	May 28, 2021	May 27, 2022
Receiver	R&S	ESRP	101154	May 28, 2021	May 27, 2022
Amplifier	SKET	LAPA_01G18 G-45dB	١	May 28, 2021	May 27, 2022
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 28, 2021	May 27, 2022
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	942	Jun. 01, 2021	May 31, 2022
Horn Antenna	Schwarzbeck	BBHA9120D	1541	Jun. 02, 2021	Jun. 01, 2022
Horn Antenn (18GHz-40GH z)	Schwarzbeck	BBHA9170	00822	Jun. 15, 2021	Jun. 14, 2022
Amplifier (18GHz-40GH z)	MITEQ	TTA1840-35- HG	2034381	May 28, 2021	May 27, 2022
Loop Antenna (9KHz-30MHz)	Schwarzbeck	FMZB1519B	00014	Jun. 02, 2021	Jun. 01, 2022
RF cables1 (9kHz-30MHz)	Huber+Suhnar	9kHz-30MHz	B1702988-000 8	May 28, 2021	May 27, 2022
RF cables2 (30MHz-1GHz)	Huber+Suhnar	30MHz-1GHz	1486150	May 28, 2021	May 27, 2022
RF cables3 (1GHz-40GHz)	Huber+Suhnar	1GHz-40GHz	1607106	May 28, 2021	May 27, 2022
Power Metter	Keysight	E4419	le de la companya de	May 28, 2021	May 27, 2022
Power Sensor (AV)	Keysight	E9300A	$\sum_{i=1}^{n} \sum_{j=1}^{n-1} \sum_{i=1}^{n-1} \sum_{j=1}^{n-1} \sum_{i=1}^{n-1} \sum_{j=1}^{n-1} \sum_{j=1}^{n-1} \sum_{i=1}^{n-1} \sum_{j=1}^{n-1} \sum_{i=1}^{n-1} \sum_{j=1}^{n-1} \sum_{j=1}^{n-1} \sum_{i=1}^{n-1} \sum_{j=1}^{n-1} \sum_{i=1}^{n-1} \sum_{j=1}^{n-1} \sum_{i=1}^{n-1} \sum_{j=1}^{n-1} \sum_{j=1}^{n-1} \sum_{i=1}^{n-1} \sum_{j=1}^{n-1} \sum_{i=1}^{n-1} \sum_{j=1}^{n-1} \sum_{j=1}^{n-1} \sum_{i=1}^{n-1} \sum_{j=1}^{n-1} \sum_{i=1}^{n-1} \sum_{j=1}^{n-1} \sum_{j=1}^{n-1} \sum_{j=1}^{n-1} \sum_{j=1}^{n-1} \sum_{i=1}^{n-1} \sum_{j=1}^{n-1} \sum_$	May 28, 2021	May 27, 2022
Signal Analyzer 20kHz-26.5G Hz	Keysight	N9020A	MY49100060	May 28, 2021	May 27, 2022
Spectrum Analyzer 9kHz-40GHz	R&S	FSP 40		May 28, 2021	May 27, 2022
Software	Frad	EZ-EMC	FA-03A2 RE	N	



6. Conducted Emissions

6.1 Block Diagram Of Test Setup



6.2 Limit

	Limit (dBuV)
Frequency (MHz)	Quas-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Notes:

1. *Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

6.3 Test procedure

Receiver Parameters		Setting	
Attenuation		10 dB	
Start Frequency		0.15 MHz	
Stop Frequency		30 MHz	
IF Bandwidth		9 kHz	

a. The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).

b. The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.

c. For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

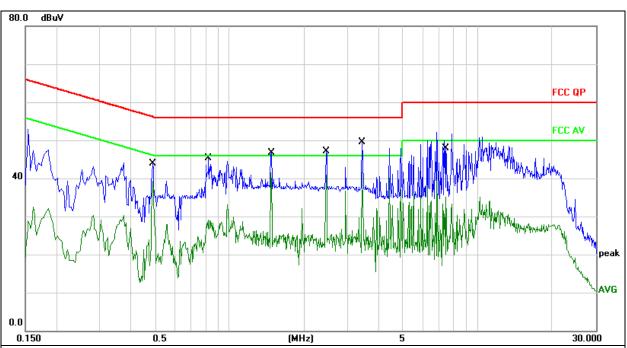
6.4 EUT operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.



6.5 Test Result

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Phase :	L
Test Mode:	Mode 4	Test Voltage :	AC 120V/60Hz



Remark:

1. All readings are Quasi-Peak and Average values.

2. Factor = Insertion Loss + Cable Loss.

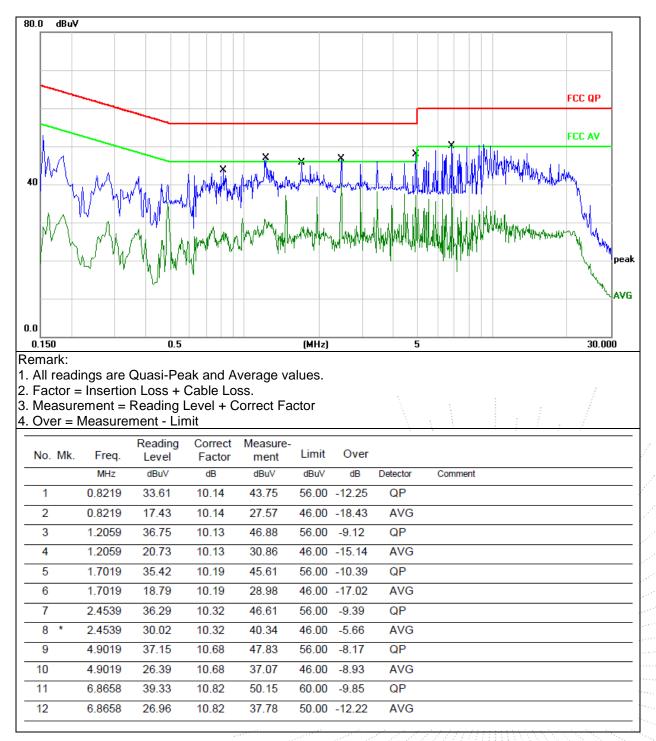
3. Measurement = Reading Level + Correct Factor

4. Over = Measurement - Limit

Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
0.4900	33.80	10.11	43.91	56.17	-12.26	QP	
0.4900	29.13	10.11	39.24	46.17	-6.93	AVG	
0.8220	35.11	10.14	45.25	56.00	-10.75	QP	
0.8220	22.90	10.14	33.04	46.00	-12.96	AVG	
1.4700	36.46	10.16	46.62	56.00	-9.38	QP	
1.4700	31.42	10.16	41.58	46.00	-4.42	AVG	
2.4539	36.79	10.32	47.11	56.00	-8.89	QP	
2.4539	30.52	10.32	40.84	46.00	-5.16	AVG	
3.4340	39.01	10.51	49.52	56.00	-6.48	QP	
3.4340	31.06	10.51	41.57	46.00	-4.43	AVG	
7.4699	40.87	10.85	51.72	60.00	-8.28	QP	
7,4699	24.33	10.85	35.18	50.00	-14 82	AVG	
	MHz 0.4900 0.8220 0.8220 1.4700 1.4700 2.4539 2.4539 3.4340 3.4340 7.4699	Freq. Level MHz dBuV 0.4900 33.80 0.4900 29.13 0.8220 35.11 0.8220 22.90 1.4700 36.46 1.4700 31.42 2.4539 36.79 2.4539 30.52 3.4340 39.01 3.4340 31.06 7.4699 40.87	Freq.LevelFactorMHzdBuVdB0.490033.8010.110.490029.1310.110.822035.1110.140.822022.9010.141.470036.4610.161.470031.4210.162.453936.7910.323.434039.0110.513.434031.0610.517.469940.8710.85	Freq.LevelFactormentMHzdBuVdBdBuV0.490033.8010.1143.910.490029.1310.1139.240.822035.1110.1445.250.822022.9010.1433.041.470036.4610.1646.621.470031.4210.1641.582.453936.7910.3247.112.453930.5210.3240.843.434039.0110.5149.523.434031.0610.5141.577.469940.8710.8551.72	Freq.LevelFactormentLimitMHzdBuVdBdBuVdBuV0.490033.8010.1143.9156.170.490029.1310.1139.2446.170.822035.1110.1445.2556.000.822022.9010.1433.0446.001.470036.4610.1646.6256.001.470031.4210.1641.5846.002.453936.7910.3247.1156.003.434039.0110.5149.5256.003.434031.0610.5141.5746.007.469940.8710.8551.7260.00	Freq.LevelFactormentLimitOverMHzdBuVdBdBuVdBdBuVdB0.490033.8010.1143.9156.17-12.260.490029.1310.1139.2446.17-6.930.822035.1110.1445.2556.00-10.750.822022.9010.1433.0446.00-12.961.470036.4610.1646.6256.00-9.381.470031.4210.1641.5846.00-4.422.453936.7910.3247.1156.00-8.892.453930.5210.3240.8446.00-5.163.434039.0110.5149.5256.00-6.483.434031.0610.5141.5746.00-4.437.469940.8710.8551.7260.00-8.28	Freq.LevelFactormentLimitOverMHzdBuVdBdBuVdBuVdBDetector0.490033.8010.1143.9156.17-12.26QP0.490029.1310.1139.2446.17-6.93AVG0.822035.1110.1445.2556.00-10.75QP0.822022.9010.1433.0446.00-12.96AVG1.470036.4610.1646.6256.00-9.38QP1.470031.4210.1641.5846.00-4.42AVG2.453930.5210.3247.1156.00-8.89QP2.453930.0110.5149.5256.00-6.48QP3.434031.0610.5141.5746.00-4.43AVG7.469940.8710.8551.7260.00-8.28QP



Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Phase :	Ν
Test Mode:	Mode 4	Test Voltage :	AC 120V/60Hz

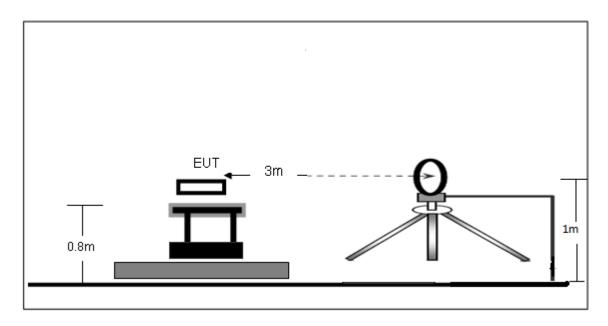




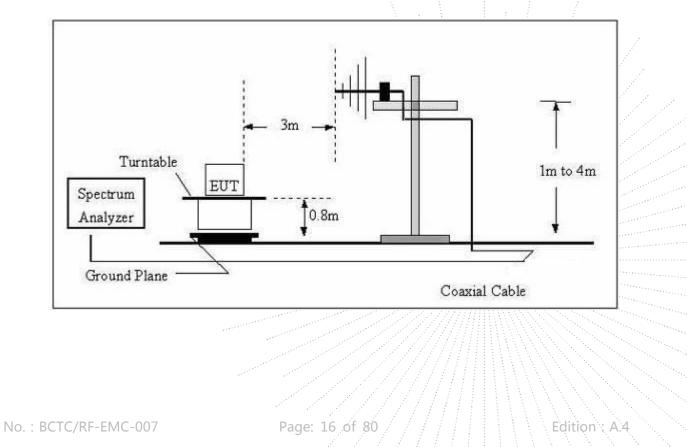
7. Radiated emissions

7.1 Block Diagram Of Test Setup

(A) Radiated Emission Test-Up Frequency Below 30MHz

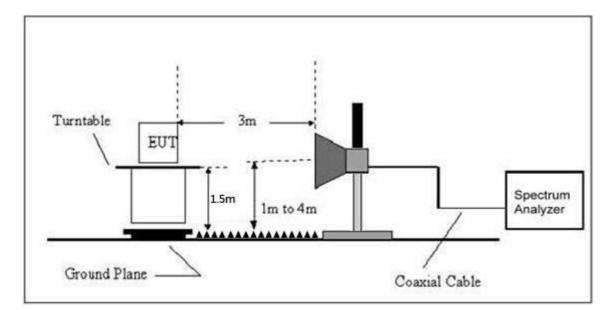


(B) Radiated Emission Test-Up Frequency 30MHz~1GHz





(C) Radiated Emission Test-Up Frequency Above 1GHz



7.2 Limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequency	Field Strength	Distance	ance Field Strength Limit at 3m Distance		
(MHz)	uV/m	(m)	uV/m	dBuV/m	
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	20log ^{(2400/F(kHz))} + 80	
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	20log ^{(24000/F(kHz))} + 40	
1.705 ~ 30	30	30	100 * 30	20log ⁽³⁰⁾ + 40	
30 ~ 88	100	3	100	20log ⁽¹⁰⁰⁾	
88 ~ 216	150	3	150	20log ⁽¹⁵⁰⁾	
216 ~ 960	200	3	200	20log ⁽²⁰⁰⁾	
Above 960	500	3	500	20log ⁽⁵⁰⁰⁾	

Limits Of Radiated Emission Measurement (Above 1000MHz)

	Limit (dBuV/m)	(at 3M)
Frequency (MHz)	Peak	Average
Above 1000	74	54

Notes:

(1)The limit for radiated test was performed according to FCC PART 15C.

(2)The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).



Frequency Range Of Radiated Measurement

(a) For an intentional radiator the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to at least the frequency shown in this paragraph:

(1) If the intentional radiator operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

(2) If the intentional radiator operates at or above 10 GHz and below 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.

(3) If the intentional radiator operates at or above 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 200 GHz, whichever is lower, unless specified otherwise elsewhere in the rules.

(4) If the intentional radiator operates at or above 95 GHz: To the third harmonic of the highest fundamental frequency or to 750 GHz, whichever is lower, unless specified otherwise elsewhere in the rules.

(5) If the intentional radiator contains a digital device, regardless of whether this digital device controls the functions of the intentional radiator or the digital device is used for additional control or function purposes other than to enable the operation of the intentional radiator, the frequency range shall be investigated up to the range specified in paragraphs (a) (1)through (4) of this section or the range applicable to the digital device, as shown in paragraph (b)(1) of this section, whichever is the higher frequency range of investigation.

7.3 Test procedure

Receiver Parameter	Setting		
Attenuation	Auto		
9kHz~150kHz	RBW 200Hz for QP		
150kHz~30MHz	RBW 9kHz for QP		
30MHz~1000MHz	RBW 120kHz for QP		

Spectrum Parameter	Setting
1-25GHz	RBW 1 MHz /VBW 1 MHz for Peak, RBW 1 MHz / VBW 10Hz for Average

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.



d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.

b.The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c.The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d.For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.

e.The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel, the middlest channel, the Highest channel.

Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

7.4 EUT operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.



7.5 Test Result

Below 30MHz

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	DC 5V
Test Mode:	Mode 4	Test vollage.	DC 5V

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
				PASS
				PASS

Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the

permissible value has no need to be reported.

Distance extrapolation factor =40 log (specific distance/test distance)(dB);

Limit line = specific limits(dBuv) + distance extrapolation factor.

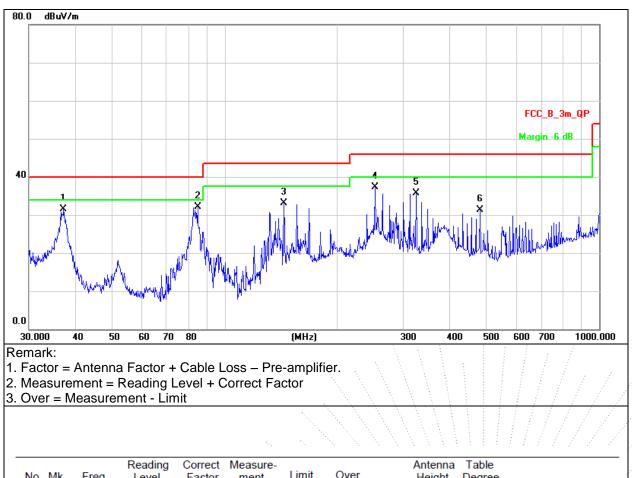
No.: BCTC/RF-EMC-007

Page: 20 of 80



Between 30MHz - 1GHz

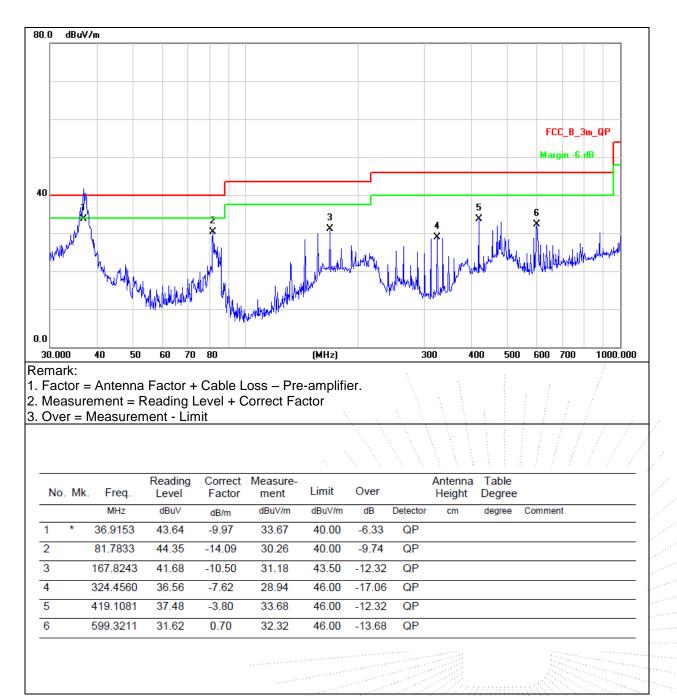
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Phase :	Horizontal
Test Mode:	Mode 4	Test Voltage:	DC 5V



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		37.1550	41.44	-10.01	31.43	40.00	-8.57	QP			
2	*	84.7019	46.14	-14.04	32.10	40.00	-7.90	QP			
3		143.8295	43.16	-10.08	33.08	43.50	-10.42	QP			
4		252.0627	46.26	-8.89	37.37	46.00	-8.63	QP			
5		324.4561	43.24	-7.62	35.62	46.00	-10.38	QP			
6		480.5276	33.64	-2.42	31.22	46.00	-14.78	QP			
									at at a s		and the second second



Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Phase :	Vertical
Test Mode:	Mode 4	Test Voltage:	DC 5V





Between 1GHz – 25GHz

Polar	Frequency	Reading Level	Correct Factor	Measure- ment	Limits	Over	Detector
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	Туре
			GFSK Low ch	annel			
V	4804.00	53.42	-0.43	52.99	74.00	-21.01	PK
V	4804.00	45.00	-0.43	44.57	54.00	-9.43	AV
V	7206.00	43.50	8.31	51.81	74.00	-22.19	PK
V	7206.00	33.92	8.31	42.23	54.00	-11.77	AV
Н	4804.00	49.61	-0.43	49.18	74.00	-24.82	PK
Н	4804.00	39.42	-0.43	38.99	54.00	-15.01	AV
Н	7206.00	40.50	8.31	48.81	74.00	-25.19	PK
Н	7206.00	33.13	8.31	41.44	54.00	-12.56	AV
	•	G	FSK Middle c	hannel		•	•
V	4882.00	50.44	-0.38	50.06	74.00	-23.94	PK
V	4882.00	41.49	-0.38	41.11	54.00	-12.89	AV
V	7323.00	43.28	8.83	52.11	74.00	-21.89	PK
V	7323.00	33.34	8.83	42.17	54.00	-11.83	AV
Н	4882.00	45.60	-0.38	45.22	74.00	-28.78	PK
Н	4882.00	36.06	-0.38	35.68	54.00	-18.32	AV
Н	7323.00	40.34	8.83	49.17	74.00	-24.83	PK
Н	7323.00	32.58	8.83	41.41	54.00	-12.59	AV
			GFSK High ch	annel			
V	4960.00	52.47	-0.32	52.15	74.00	-21.85	PK
V	4960.00	43.42	-0.32	43.10	54.00	-10.90	AV
V	7440.00	44.23	9.35	53.58	74.00	-20.42	/ PK
V	7440.00	34.74	9.35	44.09	54.00	-9.91	AV
Н	4960.00	50.31	-0.32	49.99	74.00	-24.01	PK
Н	4960.00	40.44	-0.32	40.12	54.00	-13.88	AV
Н	7440.00	41.39	9.35	50.74	74.00	-23.26	PK
Н	7440.00	33.74	9.35	43.09	54.00	-10.91	AV

Remark:

1.Emission Level = Meter Reading + Factor, Factor = Antenna Factor + Cable Loss – Pre-amplifier. Over= Emission Level - Limit

2.If peak below the average limit, the average emission was no test.

3. In restricted bands of operation, The spurious emissions below the permissible value more than 20dB

4. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

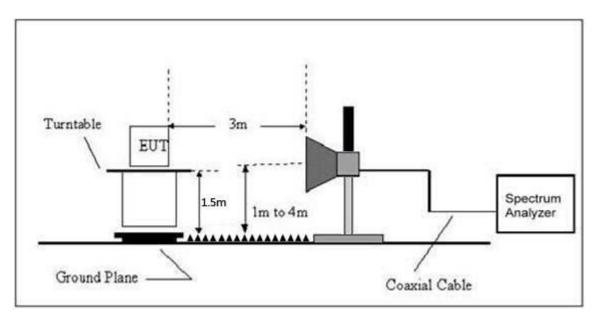
5.All the Modulation are test, the worst mode is GFSK, the data recording in the report.



8. Radiated Band Emission Measurement and Restricted Bands of Operation

8.1 Block Diagram Of Test Setup

Radiated Emission Test-Up Frequency Above 1GHz



8.2 Limit

FCC Part15 C Section 15.209 and 15.205

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
¹ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(²)
13.36-13.41			



Limits Of Radiated Emission Measurement (Above 1000MHz)

	Limit (d	BuV/m) (at 3M)
Frequency (MHz)	Peak	Average
Above 1000	74	54

Notes:

(1)The limit for radiated test was performed according to FCC PART 15C.

(2)The tighter limit applies at the band edges.

(3)Emission level (dBuV/m)=20log Emission level (uV/m).

8.3 Test procedure

Receiver Parameter	Setting
Attenuation	Auto
Start Frequency	2300MHz
Stop Frequency	2520
RB / VB (Emission In Restricted Band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

Above 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.

b.The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c.The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d.For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel, the middlest channel, the Highest channel.

Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

8.4 EUT operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.



8.5 Test Result

Test mode	Polar (H/V)	Frequency (MHz)	Reading Level	Correct Factor	Measure- ment (dBuV/m)	Limits (dBuV/m)		Result
	(1.4.4)	(11112)	(dBuV/m)	(dB)	РК	PK	AV	
			Low	Channel 2	402MHz			
	Н	2390.00	53.90	-6.70	47.20	74.00	54.00	PASS
	Н	2400.00	58.02	-6.71	51.31	74.00	54.00	PASS
	V	2390.00	53.65	-6.70	46.95	74.00	54.00	PASS
	V	2400.00	55.18	-6.71	48.47	74.00	54.00	PASS
GFSK			High	h Channel 2	480MHz		•	
	Н	2483.50	53.09	-6.79	46.30	74.00	54.00	PASS
	Н	2500.00	49.95	-6.81	43.14	74.00	54.00	PASS
	V	2483.50	52.85	-6.79	46.06	74.00	54.00	PASS
	V	2500.00	49.43	-6.81	42.62	74.00	54.00	PASS
			Low	Channel 2	402MHz		•	
	Н	2390.00	52.47	-6.70	45.77	74.00	54.00	PASS
	Н	2400.00	56.24	-6.71	49.53	74.00	54.00	PASS
	V	2390.00	51.70	-6.70	45.00	74.00	54.00	PASS
	V	2400.00	53.08	-6.71	46.37	74.00	54.00	PASS
π/4DQPSK			High	h Channel 2	480MHz		•	
	Н	2483.50	51.81	-6.79	45.02	74.00	54.00	PASS
	Н	2500.00	48.40	-6.81	41.59	74.00	54.00	PASS
	V	2483.50	52.19	-6.79	45.40	74.00	54.00	PASS
	V	2500.00	49.14	-6.81	42.33	74.00	54.00	PASS
			Low	Channel 2	402MHz			
	Н	2390.00	52.27	-6.70	45.57	:74.00	54.00	PASS
	Н	2400.00	56.96	-6.71	50.25	74.00	54.00	PASS
	V	2390.00	52.45	-6.70	45.75	74.00	54.00	PASS
00001/	V	2400.00	52.18	-6.71	45.47	74.00	54.00	PASS
8DPSK			High	h Channel 2	480MHz			
	Н	2483.50	52.23	-6.79	45.44	74.00	54.00	PASS
	Н	2500.00	47.56	-6.81	40.75	74.00	54.00	PASS
	V	2483.50	51.30	-6.79	44.51	74.00	54.00	PASS
	V	2500.00	48.15	-6.81	41.34	74.00	54.00	PASS

Remark:

1. Emission Level = Meter Reading + Factor, Factor = Antenna Factor + Cable Loss - Pre-amplifier. Over= Emission Level - Limit

2. If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.

3 In restricted bands of operation, The spurious emissions below the permissible value more than 20dB

4. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



9. Spurious RF Conducted Emissions

9.1 Block Diagram Of Test Setup



9.2 Limit

Regulation 15.247 (d),In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.205(c))

9.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;

2. Set the spectrum analyzer: Below 30MHz: RBW = 100kHz, VBW = 300kHz, Sweep = auto Detector function = peak, Trace = max hold Above 30MHz: RBW = 100KHz, VBW = 300KHz, Sweep = auto Detector function = peak, Trace = max hold



9.4 Test Result





Keysight Spectrum Analyzer - Swept	t SA			H5 2441MH		
RL RF 50 Ω enter Freg 2.441000		SENSE:PUL	_SE	Avg Type:	Log-Pwr	12:26:49 PM Apr 25, 20 TRACE 1 2 3 4
	Р		g: Free Run tten: 20 dB	Avg Hold:		TYPE MWWW DET P N N N
D-605-14200		Gam.eow			Mkr1	2.440 880 0 GH
Ref Offset 3.06 dB/div Ref 13.06 dE	3m					-2.545 dB
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enter 2.4410000 GHz Res BW 100 kHz		#VBW 30	0 kHz		Sweep	Span 1.500 Mł 1.000 ms (1001 pt
G				STATUS		
				NO STATUS		
	Tx. Spuric	us NVNT 1	-DH5 24		mission	
Keysight Spectrum Analyzer - Swept	t SA	ous NVNT 1			mission	
Keysight Spectrum Analyzer - Swept           R L         RF         50 Ω	t SA AC	SENSE:PUL	.SE	441MHz E Avg Type:	: Log-Pwr	12:27:20 PM Apr 25, 20 TRACE 2.3 4
Keysight Spectrum Analyzer - Swept           R L         RF         50 Ω	t SA AC 00000 GHz F	SENSE:PUL		441MHz E	: Log-Pwr	12:27:20 PM Apr 25, 20 TRACE 2.3 4
Keysight Spectrum Analyzer - Swep RL RF 50 Ω enter Freq 13.26500	t SA AC     00000 GHz IF	SENSE:PUL	.SE	441MHz E Avg Type:	: Log-Pwr 10/10	12:27:20 PM Apr25, 20 TRACE 1 2 3 4 TYPE MWWW DET P NNN 1kr1 2.441 4 GH
Keysight Spectrum Analyzer - Swepr RL RF 50 Ω enter Freq 13.26500 Ref Offset 3.06	t SA AC     DOOOO GHz IF GdB	SENSE:PUL	.SE	441MHz E Avg Type:	: Log-Pwr 10/10	12:27:20 PM Apr25, 20 TRACE 1 2 3 4 TYPE MWWW DET P NNN 1kr1 2.441 4 GH
Keysight Spectrum Analyzer - Swep RL RF 50 Ω enter Freq 13.26500 Ref Offset 3.06 0 dB/div Ref 13.06 dB	t SA AC     DOOOO GHz IF GdB	SENSE:PUL	.SE	441MHz E Avg Type:	: Log-Pwr 10/10	12:27:20 PM Apr25, 20 TRACE 1 2 3 4 TYPE MWWW DET P NNN 1kr1 2.441 4 GH
Keysight Spectrum Analyzer - Swep RL RF 50 Ω enter Freq 13.26500 Ref Offset 3.06 0 dB/div Ref 13.06 dB 9 06	t SA AC     DOOOO GHz IF GdB	SENSE:PUL	.SE	441MHz E Avg Type:	: Log-Pwr 10/10	12:27:20 PM Apr25, 20 TRACE 1 2 3 4 TYPE MWWW DET P NNN 1kr1 2.441 4 GH
Keysight Spectrum Analyzer - Swep           RL         RF         50 Q           enter Freq         13.26500           All         Ref Offset 3.06           D dB/div         Ref 13.06 dB           90         1           94         1           94         1	t SA AC     DOOOO GHz IF GdB	SENSE:PUL	.SE	441MHz E Avg Type:	: Log-Pwr 10/10	12:27:20 PM Apr 23, 20 TRACE 12:34 TYPE MWW DET PNNN 1kr1 2.441 4 GH -2.864 dB1
Keysight Spectrum Analyzer - Swep           RL         RF         50 Q           enter Freq         13.26500         0           Bef Offset         3.06         0           D dB/div         Ref         13.06 dB           94         1         1           93         1         1           94         1         1           93         1         1	t SA AC     DOOOO GHz IF GdB	SENSE:PUL	.SE	441MHz E Avg Type:	: Log-Pwr 10/10	12:27:20 PM Apr 23, 20 TRACE 12:34 TYPE MWW DET PNNN 1kr1 2.441 4 GH -2.864 dB1
Keysight Spectrum Analyzer - Swep           RL         RF         50 Q           enter Freq 13.26500         Genter Freq 13.26500         Genter Freq 13.26500           0 dB/div         Ref Offset 3.06 dB         Genter Freq 13.06 dB           9 dB/div         Ref 13.06 dB         Genter Freq 13.06 dB           9 dB/div         Ref 13.06 dB         Genter Freq 13.06 dB           9 dB/div         Ref 13.06 dB         Genter Freq 13.06 dB           9 dB/div         Ref 13.06 dB         Genter Freq 13.06 dB           9 dB/div         Ref 13.06 dB         Genter Freq 13.06 dB           9 dB/div         Ref 13.06 dB         Genter Freq 13.06 dB           9 dB/div         Ref 13.06 dB         Genter Freq 13.06 dB           9 dB/div         Ref 13.06 dB         Genter Freq 13.06 dB           9 dB/div         Ref 13.06 dB         Genter Freq 13.06 dB           9 dB/div         Ref 13.06 dB         Genter Freq 13.06 dB           9 dB/div         Ref 13.06 dB         Genter Freq 13.06 dB           9 dB/div         Ref 13.06 dB         Genter Freq 13.06 dB           9 dB/div         Ref 13.06 dB         Genter Freq 13.06 dB           9 dB/div         Ref 13.06 dB         Genter Freq 13.06 dB           9 dB/div         R	t SA AC     DOOOO GHz IF GdB	SENSE:PUL	.SE	441MHz E Avg Type:	: Log-Pwr 10/10	12:27:20 PM Apr 25, 20 TRACE 12 34 TYPE WWW DET PNNN 1kr1 2.441 4 GH -2.864 dB1
Keysight Spectrum Analyzer - Swep           RL         PF         50 @           enter Freq 13.265000           Ref Offset 3.06           D dB/div         Ref 0ffset 3.06         dB           0 dB/div         ¶         1         1	tSA AC D00000 GHz F B B B M	SENSE:PUL	.SE	441MHz E Avg Type:	: Log-Pwr 10/10	12:27:20 PM Apr 25, 20 TRACE 12 34 TYPE WWW DET PNNN 1kr1 2.441 4 GH -2.864 dB1
Keysight Spectrum Analyzer - Swep           RL         RE         50 Ω           enter Freq 13.265000         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         6	tSA AC D00000 GHz F B B B M	SENSE:PUL	.SE	441MHz E Avg Type:	: Log-Pwr 10/10	12:27:20 PM Apr 23, 20 TRACE 12:34 TYPE MWW DET PNNN 1kr1 2.441 4 GH -2.864 dB1
Keysight Spectrum Analyzer - Swep           RL         RE         50 Ω           enter Freq 13.26500         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60         60	tSA AC D00000 GHz F B B B M	SENSE:PUL	.SE	441MHz E Avg Type:	: Log-Pwr 10/10	12:27:20 PM Apr 23, 20 TRACE 12:34 TYPE MWW DET PNNN 1kr1 2.441 4 GH -2.864 dB1
Keysight Spectrum Analyzer - Swep           RL         RF         50 @           enter Freq 13.26500         Ref Offset 3.06         Ref Offset 3.06         Ref Offset 3.06           dB/div         Ref 0ffset 3.06         Ref 0.06         Ref 0.06 <td>tSA AC D00000 GHz F B B B M</td> <td>SENSE:PUL</td> <td>.SE</td> <td>441MHz E Avg Type:</td> <td>: Log-Pwr 10/10</td> <td>12:27:20 PM Apr25, 20 TRACE 1 2 3 4 TYPE M DET P NNN Akr1 2.441 4 GH -2.864 dBi DL1 -22:55 d</td>	tSA AC D00000 GHz F B B B M	SENSE:PUL	.SE	441MHz E Avg Type:	: Log-Pwr 10/10	12:27:20 PM Apr25, 20 TRACE 1 2 3 4 TYPE M DET P NNN Akr1 2.441 4 GH -2.864 dBi DL1 -22:55 d
Rej Offset 3.06           Ref Offset 3.06           Ref Offset 3.06           Offset 3.06           Offset 3.06           OdB/div         Ref 0ffset 3.06           OdB/div         Ref 13.06 dB           04         1           05         1           05         2           05         2           05         2           05         3           05         3           05         4           05         4           05         4           05         4           05         4           05         4           05         4           05         4           05         4           05         4           05         4           05         4           05         4           05         4           05         4           05         4           05         4           05         4           05         4           05         4	tSA AC D00000 GHz F B B B M	SENSE:PUL	se Free Run tten: 20 dB	441MHz E Avg Type:	: Log-Pwr 10/10	12:27:20 PM Apr25, 20 TRACE 1 2 3 4 TYPE M WWW DET P NNN Akr1 2.441 4 GH -2.864 dBJ DL1-22:56 dl DL1-22:56 dl Stop 26.50 GH
Keysight Spectrum Analyzer - Swep       RL     RF     50 Ω       enter Freq 13.265000     Ref Offset 3.06       0 dB/div     Ref 13.06 dB       0 dB/div     Ref 13.06 dB       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1       0 g     1	tSA AC D00000 GHz F F G dB Bm	SENSE:PUL PNO: Fast →→ Trit Gain:Low → #At	se Free Run tten: 20 dB	441MHz E Avg Type:	Log-Pwr 10/10	12:27:20 PM Apr 25, 20 TRACE 12 3 4 TYPE MYNN 1kr1 2.441 4 GH -2.864 dB1 DC1 -22:55 dF DC1 -22:55 dF 2.530 s (30001 pt ICTION VALUE
Keysight Spectrum Analyzer - Swep           RL         RF         50 @           enter Freq 13.26500         Second         Second           dB/div         Ref Offset 3.06         dB           00         Ref 13.06 dB         dB           00         1         1           9         2         5         5           6.9         2         5         5         5           6.9         2         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         6         7         6         7         7         7         7         7         7         7         7         7         7         7         7 <th7< th="">         7         7         7</th7<>	t SA AC D00000 GHz F F B dB Bm ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	SENSE:PUL PNO: Fast →→ Trit Gain:Low → #At	se   g: Free Run tten: 20 dB	41MHz E	Log-Pwr 10/10	12:27:20 PM Apr25, 20 TRACE 1 2 3 4 TYPE M WWW DET P NNN Akr1 2.441 4 GH -2.864 dB DL1-22:56 dl DL1-22:56 dl Stop 26:50 GH 2.530 s (30001 pt
Keysight Spectrum Analyzer - Swep RL           RL         RF         50 Q           enter Freq 13.265000         Ref Offset 3.06         Ref Offset 3.06           dB/div         Ref 13.06 dB         Ref 13.06 dB           00         1         1           94         1         1           93         2         1           94         1         1           95         2         1           93         2         1           94         1         1           95         2         1           94         1         1           95         1         1         1           94         1         1         1         1           94         1         1         1         1           94         1         1         1         1           95         1         1         1         1           94         1         1         1         1	ESA AC D00000 GHz F F B B B M A A A A A A A A A A A A A	SENSE:PUL PNO: Fast →→ Trit Gain:Low → #At #VBW 30	se   g: Free Run tten: 20 dB	41MHz E	Log-Pwr 10/10	12:27:20 PM Apr25, 20 TRACE 1 2 3 4 TYPE M WWW DET P NNN Akr1 2.441 4 GH -2.864 dB DL1-22:56 dl DL1-22:56 dl Stop 26:50 GH 2.530 s (30001 pt
Keysight Spectrum Analyzer - Swep           RL         RF         50 Q           enter Freq 13.265000         Ref Offset 3.06         Ref Offset 3.06           D dB/div         Ref 13.06 dB         Ref 13.06 dB           0 dB/div         Ref 13.06 dB         Ref 13.06 dB           94         1         1           94         1         1         1           94         1         1         1         1           94         1         1         1         1         1           94         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1<	t SA AC D00000 GHz F F F F F F F F F F F F F	SENSE:PUL PNO: Fast → Trit Gain:Low #At #4 # # # # # # # # # # # # #	se   g: Free Run tten: 20 dB	41MHz E	Log-Pwr 10/10	12:27:20 PM Apr25, 20 TRACE 1 2 3 4 TYPE M WWW DET P NNN Akr1 2.441 4 GH -2.864 dB DL1-22:56 dl DL1-22:56 dl Stop 26:50 GH 2.530 s (30001 pt
Keysight Spectrum Analyzer - Swep           RL         RF         50 Q           enter Freq 13.265000         Ref Offset 3.06         Ref Offset 3.06           D dB/div         Ref 13.06 dB         Ref 13.06 dB           0 dB/div         Ref 13.06 dB         Ref 13.06 dB           1 dV         Ref 13.06 dB         Ref 13.06 dB           1 dV         Ref 13.06 dB         Ref 13.06 dB           2 dV         1 dV         1 dV           2 dV         1 dF         1 dV           2 N         1 dF         1 dV           3 N         1 dF         1 dV           4 N         1 dF         1 dV           7 dV         1 dV         1 dV	ESA AC D00000 GHz F F B B B M A A A A A A A A A A A A A	SENSE:PUL PNO: Fast →→ Trit Gain:Low → #At #VBW 30	se   g: Free Run tten: 20 dB	41MHz E	Log-Pwr 10/10	12:27:20 PM Apr25, 20 TRACE 1 2 3 4 TYPE M WWW DET P NNN Akr1 2.441 4 GH -2.864 dB DL1-22:56 dl DL1-22:56 dl Stop 26:50 GH 2.530 s (30001 pt
Keycight Spectrum Analyzer - Swep           RL         PF         50 @           Ref Offset 3.06           Ref Offset 3.06           OdB/div         Ref 13.06 dB           04         1         1           94         1         1           94         1         1           94         1         1           94         1         1           95         2         1           95         2         1           96         2         1           9         1         1           9         1         1           9         1         1           9         1         1           9         1         1           9         1         1           9         1         1           9         1         1           9         1         1           9         1         1           9         2         1           9         1         1           9         1         1           9         1         1	ESA AC D00000 GHz F F B B B M A A A A A A A A A A A A A	SENSE:PUL PNO: Fast →→ Trit Gain:Low → #At #VBW 30	se   g: Free Run tten: 20 dB	41MHz E	Log-Pwr 10/10	12:27:20 PM Apr25, 20 TRACE 1 2 3 4 TYPE M WWW DET P NNN Akr1 2.441 4 GH -2.864 dB DL1-22:56 dl DL1-22:56 dl Stop 26:50 GH 2.530 s (30001 pt



RL RE 50.0 A0	A			
RL RF 50 Ω A0 enter Freq 2.4800000		SENSE:PULSE	Avg Type: Log-Pwr Avg Hold: 100/100	12:30:11 PM Apr25, 202 TRACE 1 2 3 4 TYPE MWWW
	IFGain:Lo			TYPE MWWW DET PNNN
Ref Offset 3.06 dl 0 dB/div Ref 13.06 dBn			N	lkr1 2.479 869 5 GH -3.478 dBr
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.94		and a second sec		
6.9	and and a second and		www.	han
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enter 2.4800000 GHz Res BW 100 kHz		#VBW 300 kHz	Sw	Span 1.500 MH eep   1.000 ms (1001 pts)
G			STATUS	
T	x Sourious I	NVNT 1-DH5 24	480MHz Emissio	n
Keysight Spectrum Analyzer - Swept SA	A			
RL RF 50 Ω A0 enter Freq 13.265000	000 GHz	SENSE:PULSE	Avg Type: Log-Pwr Avg Hold: 10/10	12:30:43 PM Apr 25, 202 TRACE 1 2 3 4 9 TYPE MWWWW
	PNO: Fas IFGain:Lo			TYPE MWWWW DET PNNN
Ref Offset 3.06 d dB/div Ref 13.06 dBr				Mkr1 2.480 2 GH -3.788 dBr
og 3.06				
5.94				
6.9				DL1 -23.48 dB
16.9 26.9 36.9 <b>√2</b>	3			DL1 -23.48 dB
6.9 76.9 72 16.9 72 16.9 7 7 7 7 7 7 7 7 7 7 7 7 7	3			DL1 -23.48 dB
6.9 6.9 2 .69 .69 .69 .69 .69 .69 .69 .69	3			DL1 -23.48 dB
6.9 6.9 7 6.9 7 6.9 7 7 7 7 7 7 7 7 7 7 7 7 7	3			
	3			
69 69 69 69 69 69 69 69 69 69		#VBW 300 kHz		Stop 26.50 GH veep 2.530 s (30001 pt
16 9 16 9 16 16 9 16 9 1	× 2.480 2 GHz	#VBW 300 kHz Y FUNCTION -3.768 dBm	FUNCTION W/DTH	Stop 26.50 GH
16     9       26     9       2     9       46     9       56     9       56     9       56     9       56     9       57     9       58     9       58     9       56     9       56     9       57     9       58     9       58     9       58     9       50     9       50     9       50     9       50     9       50     9       50     9       50     9       50     9       50     9       50     9       50     9       50     9       50     9       50     9       50     10       61     10       70     10       70     10	× 2.480 2 GHz 96.2 MHz 4.960 5 GHz	#VBW 300 kHz Y FUNCTION -3.788 dBm 44.241 dBm 45.520 dBm		Stop 26.50 GH veep 2.530 s (30001 pt
16     9       26     9       22     9       36     9       36     9       36     9       36     9       37     9       3     N       1     1       3     N       4     N       4     N       4     N       4     N       4     N	× 2.480 2 GHz 96.2 MHz - 7.439 8 GHz	#VBW 300 kHz Y FUNCTION 3.768 dBm 44.241 dBm		Stop 26.50 GH veep 2.530 s (30001 pt
16.9       16.9       16.9       16.9       16.9       16.9       16.9       16.9       16.9       16.9       16.9       16.9       16.9       16.9       16.9       16.9       16.9       17.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0 <td>× 2.480 2 GHz 96.2 MHz - 7.439 8 GHz</td> <td>#VBW 300 kHz           Y         FUNCTION           3.788 dBm           44.241 dBm           39.0 dBm</td> <td></td> <td>Stop 26.50 GH veep 2.530 s (30001 pt</td>	× 2.480 2 GHz 96.2 MHz - 7.439 8 GHz	#VBW 300 kHz           Y         FUNCTION           3.788 dBm           44.241 dBm           39.0 dBm		Stop 26.50 GH veep 2.530 s (30001 pt
6.9 6.9 7 6.9 7 6.9 7 6.9 7 6.9 7 7 7 7 7 7 7 7 7 7 7 7 7	× 2.480 2 GHz 96.2 MHz - 7.439 8 GHz	#VBW 300 kHz           Y         FUNCTION           3.788 dBm           44.241 dBm           39.0 dBm		Stop 26.50 GH veep 2.530 s (30001 pt
6.9 6.9 6.9 6.9 6.9 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	× 2.480 2 GHz 96.2 MHz - 7.439 8 GHz	#VBW 300 kHz           Y         FUNCTION           3.788 dBm           44.241 dBm           39.0 dBm		Stop 26.50 GH veep 2.530 s (30001 pt

Edition: A.4

No.: BCTC/RF-EMC-007



Keysight Spectrum Analyzer - Swe		Spurious NVN				
RL RF 50 Ω enter Freq 2.40200	0000 GHz			Avg Type: Log-Pwr Avg Hold: 100/100	12:34:46 PM Apr2 TRACE 1 2 TYPE M DET P	2345
	IF	Gain:Low #Atten:	: 20 dB		kr1 2.402 189 0	
Ref Offset 3.0 dB/div Ref 13.06 c	6 dB Bm				-2.064	
og						
3.06				1		
.94			wmmp	A. 19 000 0 0 0 0 000		
m	- My man M	man - m		- V WWWWAND-~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	mont	
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enter 2.4020000 GHz					Span 1.500	D MH
Res BW 100 kHz		#VBW 300 k			eep 1.000 ms (100	1 pt
G	T O I			STATUS		
Keysight Spectrum Analyzer - Swe		us NVNT 2-D	0H5 2402MI	Hz Emissio	n I	a I
RL RF 50 Ω enter Freq 13.2650	AC	SENSE:PULSE		Avg Type: Log-Pwr	12:35:18 PM Apr 2 TRACE	25, 202
01101 1104 10.2000	Р	NO:Fast ↔ Trig:Fi Gain:Low #Atten:		Avg Hold: 10/10	TYPE M DET P N	
Ref Offset 3.0	6 dB				Mkr1 2.401 7	
	IBm				-5.228 (	аВг
OdB/div Ref 13.06 0						
og 3.061						
• <b>9</b> 8.06 						
<b>99</b> 1.06 <b>1</b> 1.94 <b>1</b> 6.9 <b>1</b>					DL1-2	2.06 dE
<b>og</b> 1.00 1.94 6.9 6.9 <b>0</b>					0(1-2	2.06 dE
<b>og</b> 1.06 6.9 6.9 6.9 <b>2</b> 6.9 <b>2</b> 6.9					DL1-2	2.06 dB
og 1.06 6.9 6.9 6.9 6.9 6.9 6.9 6.9 6.9 6.9		5				2.06 dE
<b>99</b> 1006 6.9 6.9 6.9 <b>2</b> 6.9 <b>2</b> 6.9 <b>2</b> 6.9 <b>2</b> 6.9 <b>2</b> 6.9 <b>2</b> 6.9 <b>2</b> 6.9 6.9 <b>2</b> 6.9 6.9 6.9 6.9 6.9 6.9 6.9 6.9 6.9 6.9		5- 			0.1-2	2.06 dE
<b>og</b> 1.06 6.9 6.9 6.9 <b>2</b> 6.9 6.9 6.9 6.9						
og 1006 1006 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 1007 10		5	Hz		061-2 5top 26.50 reep 2.530 s (3000	) GH
og 00 00 00 00 00 00 00 00 00 0	×	Y	HILD FUNCTION FUNCTION		Stop 26.50	) GH
99     1       100     1       101     1       102     1       103     1       103     1	× 2.401 7 GHz 96.2 MHz 4.804 3 GHz	Y -5.228 dBm -44.056 dBm -50.553 dBm			Stop 26.50 /eep 2.530 s (3000	) GH
99     1       100     1       101     1       102     1       103     1       103     1       104     1       105     1       105     1       105     1       105     1       105     1       105     1       105     1       105     1       105     1       105     1       105     1       105     1       105     1       105     1       105     1	× 2.4017 GHz 96.2 MHz	Y -5.228 dBm -44.056 dBm			Stop 26.50 /eep 2.530 s (3000	) GH
99     1       100     1       101     1       102     1       103     1       104     1       105     1       105     1       105     1       105     1       105     1       105     1       105     1       105     1       105     1       105     1       105     1       105     1       105     1       105     1       105     1       105     1       105     1       105     1	× 2.401 7 GHz 96.2 MHz 4.804 3 GHz 7.378 1 GHz	Y -5.228 dBm -44.056 dBm -50.553 dBm -63.929 dBm			Stop 26.50 /eep 2.530 s (3000	) GH
99     1       94     1       6.9     2       6.9     2       6.9     2       6.9     2       6.9     2       6.9     2       6.9     2       6.9     2       7     1       7     1       7     1       8     9	× 2.401 7 GHz 96.2 MHz 4.804 3 GHz 7.378 1 GHz	Y -5.228 dBm -44.056 dBm -50.553 dBm -63.929 dBm			Stop 26.50 /eep 2.530 s (3000	) GH
99     1       100     1       101     1       102     1       103     1       104     1       105     1       105     1       106     1       107     1       108     1	× 2.401 7 GHz 96.2 MHz 4.804 3 GHz 7.378 1 GHz	Y -5.228 dBm -44.056 dBm -50.553 dBm -63.929 dBm			Stop 26.50 /eep 2.530 s (3000	



	trum Analyzer - Swept SA RF 50 Ω AC		SEN	SE:PULSE			12:42:38 PM Apr 25, 20
	eq 2.4410000	00 GHz	NO: Wide ↔	Trig: Free Run #Atten: 20 dB	Avg Type Avg Hold:	Log-Pwr 100/100	TRACE 2 3 4 TYPE MWWW DET P N N N
	Ref Offset 3.06 dE Ref 13.06 dBm					Mkr	1 2.441 193 5 GF -3.352 dB
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3.06					1		
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enter 2.44 Res BW 1	410000 GHz 00 kHz						Span 1.500 MI
	OO INITE		#VBV	/ 300 kHz		Swee	p 1.000 ms (1001 pt
G					STATUS		
	T:			√ 300 kHz T 2-DH5 24		Swee mission	p 1.000 ms (1001 pt
Keysight Spect		000 GHz		T 2-DH5 24	41MHz E	mission	p 1.000 ms (1001 pr 12:43:09 PM Apr25, 20 TRACE <b>1 2 3 4</b>
Keysight Spect	T: trum Analyzer - Swept SA RF 50 Ω AC	000 GHz	ous NVN	T 2-DH5 24	41MHz E	Mission Log-Pwr 10/10	p 1.000 ms (1001 pt 12:43:09 PM Apr 25, 20 TRACE 1 2:34 TYPE M DET P NNN
Keysight Spect	T: trum Analyzer - Swept SA RF 50 Ω AC	000 GHz IF	DUS NVN	T 2-DH5 24 SE:PULSE	41MHz E	Mission Log-Pwr 10/10	p 1.000 ms (1001 pr 12:43:09 PM Apr25, 20 TRACE <b>1 2 3 4</b>
RL enter Fre	T: rum Analyzer - Swept SA RF 50 Ω AC eq 13.2650000 Ref Offset 3.06 dl	000 GHz IF	DUS NVN	T 2-DH5 24 SE:PULSE	41MHz E	Mission Log-Pwr 10/10	p 1.000 ms (1001 pt 12:43:09 PM Apr 25, 20 TRACE 1 2 34 TYPE M DET P NNN Mkr1 2.440 5 GF
C dB/div	T: rum Analyzer - Swept SA RF 50 Ω AC eq 13.2650000 Ref Offset 3.06 dl	000 GHz IF	DUS NVN	T 2-DH5 24 SE:PULSE	41MHz E	Mission Log-Pwr 10/10	p 1.000 ms (1001 pt 12:43:09 PM Apr 25, 20 TRACE 12:34 TYPE MARY DET P NNNN Mkr1 2.440 5 GH -6.186 dBt
Code/div	T: rum Analyzer - Swept SA RF 50 Ω AC eq 13.2650000 Ref Offset 3.06 dl	000 GHz IF	DUS NVN	T 2-DH5 24 SE:PULSE	41MHz E	Mission Log-Pwr 10/10	p 1.000 ms (1001 pt 12:43:09 PM Apr 25, 20 TRACE 1 2 34 TYPE M DET P NNN Mkr1 2.440 5 GF
Contraction of the second seco	T: RF 50 Ω AC aq 13.2650000 Ref Offset 3.06 dl	B n	DUS NVN	T 2-DH5 24 SE:PULSE	41MHz E	Mission Log-Pwr 10/10	p 1.000 ms (1001 pt 12:43:09 PM Apr 25, 20 TRACE 12:34 TYPE MARY DET P NNNN Mkr1 2.440 5 GH -6.186 dBt
RL RL Center Fre	T: trum Analyzer - Swept 5A № 50 Ω AC eq 13.2650000 Ref 0ffset 3.06 dBn	B n	DUS NVN	T 2-DH5 24 SE:PULSE	41MHz E	Mission Log-Pwr 10/10	p 1.000 ms (1001 pt 12:43:09 PM Apr 25, 20 TRACE 12:34 TYPE MARY DET P NNNN Mkr1 2.440 5 GH -6.186 dBt
Keysight Spect           RL           enter Fre           0 dB/div	T: trum Analyzer - Swept 5A № 50 Ω AC eq 13.2650000 Ref 0ffset 3.06 dBn	B n	DUS NVN	T 2-DH5 24 SE:PULSE	41MHz E	Mission Log-Pwr 10/10	p 1.000 ms (1001 pt 12:43:09 PM Apr 25, 20 TRACE 12:34 TYPE MARY DET P NNNN Mkr1 2.440 5 GH -6.186 dBt
Keysight Spect           RL           OdB/div           0 dB/div           0 dB/div <td< td=""><td>T trum Analyzer - Swept 5A RF 50 Ω AC aq 13.2650000 Ref 0ffset 3.06 dBn</td><td>B n</td><td>DUS NVN</td><td>T 2-DH5 24 SE:PULSE</td><td>41MHz E</td><td>Mission Log-Pwr 10/10</td><td>DL1-23.35 d</td></td<>	T trum Analyzer - Swept 5A RF 50 Ω AC aq 13.2650000 Ref 0ffset 3.06 dBn	B n	DUS NVN	T 2-DH5 24 SE:PULSE	41MHz E	Mission Log-Pwr 10/10	DL1-23.35 d
Keysight Spect           RL           enter Fre           0 dB/dlv           0 3 06           5 9           2           65 9           2           65 9           2           65 9           2           65 9           2           65 9           2           65 9           2           65 9           2           65 9           2           65 9           2           65 9           2           65 9           2           65 9           9           9           9           9           9           9           9           9           9           9           9           9           9           9           9           9           9           9           9           9           9           9 </td <td>T : trum Analyzer - Swept SA RF 50 Ω AC acq 13.2650000 Ref 0ffset 3.06 dBn 1 1 1 1 1 1 1 1 1 1 1 1 1</td> <td></td> <td>PNO: Fast</td> <td>T 2-DH5 24</td> <td>41MHz E</td> <td>mission Log-Pwr 10/10</td> <td>DL1-23.36 d Stop 26.50 GH 2.530 s (30001 pt</td>	T : trum Analyzer - Swept SA RF 50 Ω AC acq 13.2650000 Ref 0ffset 3.06 dBn 1 1 1 1 1 1 1 1 1 1 1 1 1		PNO: Fast	T 2-DH5 24	41MHz E	mission Log-Pwr 10/10	DL1-23.36 d Stop 26.50 GH 2.530 s (30001 pt
Keysight Spect RL enter Fre 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	T: trum Analyzer - Swet SA eq 13.2650000 Ref Offset 3.06 dl Ref 13.06 dBn	B A A A A A A A A A A A A A	PNO: Fast	T 2-DH5 24	41MHz E	mission Log-Pwr 10/10	DL1-23 35 d
Keysight Spect           RL           enter Fre           0 dB/dlv           9           3.05           5.9           2           45.9           5.9           75.9           1           1           1           2           3           4           1           2           4           1           2           4           1           1           3           4	Trim Analyzer - Swept SA         RF       50 Ω       AC         eq       13.2650000         Ref Offset 3.06 dBn         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       <	000 GHz P F B n 2.440 5 GHz 96.2 MHz 4.852 0 GHz 7.214 0 GHz	DUS NVN SEN PNO: Fast Gain:Low 5 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	T 2-DH5 24	41MHz E	mission Log-Pwr 10/10	DL1-23.36 d Stop 26.50 GH 2.530 s (30001 pt
Keysight Spect           RL           enter Fre           0 dE/div           0 g           0 d5/div           0 g           1 g           1 kr           1 N           2 N           1 S           1 N           1 S           1 N           1 S           1 S           1 S           1 G           1 G	Trim Analyzer - Swept SA         RF       50 Ω       AC         eq       13.2650000         Ref Offset 3.06 dBn         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       <	000 GHz P F B 0 3 3 4 4 2.440 5 GHz 96.2 MHz 4.882 0 GHz	DUS NVN SEN PNO: Fast → Gain:Low 5 #VBW ¥VBW Y -6.186 d -43.558	T 2-DH5 24	41MHz E	mission Log-Pwr 10/10	DL1-23.36 d Stop 26.50 GH 2.530 s (30001 pt
Keysight Spect           RL           enter Fre           0         dB/div           93         0           0.94         0           9.94         0           9.94         0           9.94         0           9.94         0           9.94         0           9.94         0           9.95         2           9.96         2           9.97         0           16.9         0           16.9         0           16.9         0           16.9         0           16.9         0           16.9         0           16.9         0           16.9         0           16.9         0           16.9         0           16.9         0           16.9         0           16.9         0           16.9         0           10         1           1         1           1         1           1         1           1         1           1 <td>Trim Analyzer - Swept SA         RF       50 Ω       AC         eq       13.2650000         Ref Offset 3.06 dBn         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       &lt;</td> <td>000 GHz P F B n 2.440 5 GHz 96.2 MHz 4.852 0 GHz 7.214 0 GHz</td> <td>DUS NVN SEN PNO: Fast Gain:Low 5 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$</td> <td>T 2-DH5 24</td> <td>41MHz E</td> <td>mission Log-Pwr 10/10</td> <td>DL1-23.36 d Stop 26.50 GH 2.530 s (30001 pt</td>	Trim Analyzer - Swept SA         RF       50 Ω       AC         eq       13.2650000         Ref Offset 3.06 dBn         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       <	000 GHz P F B n 2.440 5 GHz 96.2 MHz 4.852 0 GHz 7.214 0 GHz	DUS NVN SEN PNO: Fast Gain:Low 5 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	T 2-DH5 24	41MHz E	mission Log-Pwr 10/10	DL1-23.36 d Stop 26.50 GH 2.530 s (30001 pt



Keysight Spectrum Analyzer - Sv	vept SA			5 2480MHz	e e
RL RF 50 9	Ω AC	SENSE:PULSE		Avg Type: Log-Pwr	12:46:16 PM Apr 25, 20 TRACE 12.3.4
enter Freq 2.4800	Р	NO:Wide ↔ Trig:Fr Gain:Low #Atten:		Avg Hold: 100/100	
Pat Offect 2		Same of the second			Mkr1 2.480 184 5 GH
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enter 2.4800000 GH	z				Span 1.500 Mł
Res BW 100 kHz		#VBW 300 k	Hz		weep 1.000 ms (1001 pt
3				STATUS	
		ous NVNT 2-D	H5 2480	MHz Emissi	-
Keysight Spectrum Analyzer - Sv           R L         RF         50 S	Ω AC	SENSE:PULSE		Aur Turns Law Dur	12:46:47 PM Apr 25, 20
enter Freq 13.265	P	NO: Fast ↔ Trig: Fr Gain:Low #Atten:		Avg Type: Log-Pwr Avg Hold: 10/10	TRACE 1 2 3 4 TYPE MWWW DET P N N N
		Gam.Low	20 48		
Dof Offect 2					Mkr1 2.480 2 GH
Ref Offset 3 dB/div Ref 13.06	.06 dB <b>dBm</b>				
dB/div Ref 13.06	.06 dB dBm				
0 dB/div Ref 13.06 Pg 1 .06 1 .94	.06 dB dBm				
9 dB/div Ref 13.06 9 9 94 1 94 6.9	.06 dB dBm				-4.234 dBi
0 dB/div Ref 13.06 0 dB/div 13.06 0 dB/div 13.06 1 0 dB/div 13.06	.06 dB dBm				Mkr1 2.480 2 GH -4.234 dBi
dB/div Ref 13.06	.06 dB dBm 				-4.234 dBi
d B/div Ref 13.06	dBm				-4.234 dBi
d B/div Ref 13.06 99 94 95 95 95 92 95 94 94 94 94 94 94 94 94 94 94 94 94 94	dBm	5 41			-4.234 dBi
dB/div         Ref 13.06           99         1           94         1           94         1           94         1           94         1           94         1           94         1           95         2           96         1           97         1           98         1           99         1           99         1           90         1           91         1           92         1           93         1           94         1           95         1           96         1           97         1           98         1           99         1           90         1           91         1           92         1           93         1           94         1           95         1           95         1           95         1           95         1           95         1           95         1	dBm				-4.234 dBi
dB/div         Ref 13.06           99         1           94         1           95         1           96         2           97         1           98         1           99         1           90         1           91         1           92         1           93         1           94         1           95         1           94         1           95         1           94         1           95         1           95         1           96         1           97         1           98         1           99         1           90         1           91         1           92         1           93         1           94         1           95         1           95         1           95         1           95         1           95         1           95         1           95         1	dBm	5 ₩VBW 300 k			-4.234 dBi
dB/div         Ref 13.06           09         1           0.05         1           0.4         1           0.5         2           0.5         2           0.5         2           0.5         2           0.6         4           0.7         4           0.8         2           0.9         4           0.9         4           0.9         4           0.9         4           0.9         4           0.9         4           0.9         4           0.9         4           0.9         4           0.9         4           0.9         4           0.9         4           0.9         4           0.9         4           0.9         4           0.9         4           0.9         4           0.9         4           0.9         4           0.9         4           0.9         4           0.9         4           0.9         4           0.9 <td>dBm</td> <td>47 BW 300 k</td> <td></td> <td>CTION WIDTH</td> <td>-4.234 dBi</td>	dBm	47 BW 300 k		CTION WIDTH	-4.234 dBi
dB/div         Ref 13.06           99         1           94         1           94         1           94         1           94         1           94         1           94         1           94         1           94         1           94         1           94         1           94         1           94         1           94         1           94         1           94         1           94         1           94         1           94         1           94         1           94         1	dBm	Y -4.234 dBm -44.034 dBm			-4.234 dBi
All         Ref 13.06           9         1           94         1           94         1           94         1           94         1           94         1           94         1           95         2           96         1           97         1           98         1           99         1           90         1           91         1           92         1           93         1           94         1           95         1           96         1           96         1           97         1           98         1           99         1           90         1           91         1           92         1           93         1           94         1           95         1           96         1           97         1           98         1           99         1           90         1 <t< td=""><td>dBm 3 4 4 4 4 5 6 2 4 5 6 1 7 3 6 2 4 4 5 6 1 7 7 3 6 8 6 2 6 1 7 1 6 1 6 1 1 1 1 1 1 1 1 1 1 1 1 1</td><td>4.234 dBm -44.034 dBm -49.437 dBm -64.854 dBm</td><td></td><td></td><td>-4.234 dBi</td></t<>	dBm 3 4 4 4 4 5 6 2 4 5 6 1 7 3 6 2 4 4 5 6 1 7 7 3 6 8 6 2 6 1 7 1 6 1 6 1 1 1 1 1 1 1 1 1 1 1 1 1	4.234 dBm -44.034 dBm -49.437 dBm -64.854 dBm			-4.234 dBi
All         Ref 13.06           9         1           94         1           94         1           94         1           94         1           94         1           94         1           94         1           94         1           95         2           96         2           97         1           98         1           99         1           90         1           91         1           92         1           93         1           94         1           95         1           96         1           97         1           98         1           99         1           90         1           91         1           92         1           93         1           94         1           95         1           96         1	dBm → 3 → 3 → 4 × 2.480 2 GHz 96.2 MHz 96.2 MHz	Y 4.234 dBm -44.034 dBm -49.437 dBm			-4.234 dBi
elder         Ref 13.06           29         1           34         1           34         1           59         2           69         2           69         2           69         2           69         2           69         2           69         2           69         2           69         2           69         2           69         2           60         1           61         1           7         1           8         1	dBm 3 4 4 4 4 5 6 2 4 5 6 1 7 3 6 2 4 4 5 6 1 7 7 3 6 4 4 5 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 1 1 1 1 1 1 1 1 1 1 1 1	4.234 dBm -44.034 dBm -49.437 dBm -64.854 dBm			-4.234 dBi
dB/div         Ref 13.06           99         1           94         1           95         9           96         9           97         9           98         9           99         1           90         1           91         1           92         1           93         1           94         1           95         1           96         1           97         1           98         1           99         1	dBm 3 4 4 4 4 5 6 2 4 5 6 1 7 3 6 2 4 4 5 6 1 7 7 3 6 4 4 5 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 1 1 1 1 1 1 1 1 1 1 1 1	4.234 dBm -44.034 dBm -49.437 dBm -64.854 dBm			-4.234 dBi
dB/div         Ref 13.06           99         1           94         1           94         1           94         1           94         1           95         2           96         1           97         1           98         1           99         1           91         1           92         1           93         1           94         1           95         1           96         1           97         1           98         1           99         1	dBm 3 4 4 4 4 5 6 2 4 5 6 1 7 3 6 2 4 4 5 6 1 7 7 3 6 4 4 5 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 1 1 1 1 1 1 1 1 1 1 1 1	4.234 dBm -44.034 dBm -49.437 dBm -64.854 dBm			-4.234 dBi



Keysight Spectrum Analyzer - Swep	t SA			DH5 2402M		
RL RF 50 Ω enter Freq 2.402000	0000 GHz	SEN	SE:PULSE Trig: Free Run		e: Log-Pwr I: 100/100	12:50:40 PM Apr 25, 202 TRACE 1 2 3 4 5 TYPE M
		FGain:Low	#Atten: 20 dB			
Ref Offset 3.06 dB/div Ref 13.06 dE	dB 3m				MKr1	2.401 872 5 GH -2.748 dBr
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enter 2.4020000 GHz Res BW 100 kHz		#VBV	V 300 kHz		Sweep	Span 1.500 MH 1.000 ms (1001 pt
G						
	Tx. Spuric	ous NVN	T 3-DH5 2		Emission	
Keysight Spectrum Analyzer - Swep RL RF 50 Ω			T 3-DH5 2	2402MHz I		ے 🕞 🕞 او
Keysight Spectrum Analyzer - Swep R L RF 50 Ω	AC 00000 GHz	SEN: PNO: Fast ↔	SE:PULSE	2402MHz I	e: Log-Pwr	12:51:12 PM Apr 25, 202
Keysight Spectrum Analyzer - Swep           RL         RF         50 Ω           enter Freq 13.26500	tsa Ac 00000 GHz II	SEN	SE:PULSE	2402MHz	e: Log-Pwr I: 10/10	12:51:12 PM Apr 25, 202 TRACE 1 2 3 4 5 TYPE MWWW DET P N N N N
Keysight Spectrum Analyzer - Swepr RL RF 50 Ω enter Freq 13.26500 Ref Offset 3.06	AC 0000 GHz	SEN: PNO: Fast ↔	SE:PULSE	2402MHz	e: Log-Pwr I: 10/10	12:51:12 PM Apr 25, 202
Keysight Spectrum Analyzer - Swep       RL     RF     50 Ω       enter Freq 13.26500       Ref Offset 3.06       0 dB/div     Ref 13.06 dB       9       100	AC 0000 GHz	SEN: PNO: Fast ↔	SE:PULSE	2402MHz	e: Log-Pwr I: 10/10	12:51:12 PM Apr 25, 202 TRACE 1 2 3 4 5 TYPE MWWW DET PNNNN
Resight Spectrum Analyzer - Swep           RL         RF         50 Ω           enter Freq 13.26500         Ref 0ffset 3.06           Ref 0ffset 3.06 dB         Ref 13.06 dB           0 dB/diy         Ref 13.06 dB	AC 0000 GHz	SEN: PNO: Fast ↔	SE:PULSE	2402MHz	e: Log-Pwr I: 10/10	12:51:12 PM Apr25, 202 TRACE 12:34 TYPE MUMUM DET P.NNNN Akr1 2.401 7 GH -7.154 dBr
Resign Spectrum Analyzer - Swep           RL         RF         50 Q           enter Freq 13.26500           O dB/div         Ref Offset 3.06           0         dB/div         Ref 13.06 dB         0           0         dB/div         Ref 13.06 dB         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0	AC 0000 GHz	SEN: PNO: Fast ↔	SE:PULSE	2402MHz	e: Log-Pwr I: 10/10	12:51:12 PM Apr 25, 202 TRACE 1 2 3 4 5 TYPE MWWW DET PNNNN
Revisight Spectrum Analyzer - Swep           RL         RF         50 @           enter Freq 13.265000         Ref Offset 3.06         Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2"           Colspan="2">Colspan="2">Colspan="2"         Colspan="2">Colspan="2">Colspan="2"           Colspan="2">Colspan="2"         Colspan="2">Colspan="2">Colspan="2"           Colspan="2">Colspan="2"         Colspan="2">Colspan="2"           Colspan="2">Colspan="2"         Colspan="2">Colspan="2"           Colspan="2">Colspan="2"         Colspan="2">Colspan="2"           Colspan="2">Colspan="2"         Colspan="2"	AC DOUDO GHZ	SEN: PNO: Fast ↔	SE:PULSE	2402MHz	e: Log-Pwr I: 10/10	12:51:12 PM Apr25, 202 TRACE 12:34 TYPE MUMUM DET P.NNNN Akr1 2.401 7 GH -7.154 dBr
Revision Spectrum Analyzer - Swep           RL         RF         50 Ω           enter Freq 13.265000         Ref Offset 3.06           0 dB/div         Ref 13.06 dB           0 dB         Ref	AC 0000 GHz	SEN: PNO: Fast ↔	SE:PULSE	2402MHz	e: Log-Pwr I: 10/10	12:51:12 PM Apr25, 202 TRACE 12:34 TYPE MUMUM DET P.NNNN Akr1 2.401 7 GH -7.154 dBr
Revision         Ref         50 Ω           RL         RF         50 Ω           enter         Freq         13.265000           0         dB/div         Ref Offset 3.06           0         dB/div         Ref 13.06 dB           0	AC DOUDO GHZ	SEN: PNO: Fast ↔	SE:PULSE	2402MHz	e: Log-Pwr I: 10/10	12:51:12 PM Apr25, 202 TRACE 12:34 TYPE MUMUM DET P.NNNN Akr1 2.401 7 GH -7.154 dBr
Revisight Spectrum Analyzer - Swep           RL         RF         50 @           enter Freq 13.265000         Ref Offset 3.06         Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2">Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2">Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2">Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colsp	AC DOUDO GHZ	SEN: PNO: Fast ↔	SE:PULSE	2402MHz	e: Log-Pwr I: 10/10	12:51:12 PM Apr25, 202 TRACE [] 2:3 + 3 TYPE M MMM Atkr1 2:401 7 GH -7.154 dBr 0L1-2275 dB
Revision         Ref         50 Ω           RL         RF         50 Ω           enter         Freq         13.265000           0 dB/div         Ref Offset 3.06           0 dB/div         Ref 13.06 dB           0 dB/div         Ref 13.0	AC DOUDO GHZ	SEN FGain:Low 5	SE:PULSE	2402MHz	e: Log-Pwr :: 10/10	12:51:12 PM Apr25, 202 TRACE 12:34 TYPE MUMUM DET P.NNNN Akr1 2.401 7 GH -7.154 dBr
Reside     Sector       RL     RF     50 Ω       enter     Freq     13.265000       Ref     Offset     3.06       93     0     1       93     0     1       94     0     1       95     0     2       96     0     2       97     0     0       98     0     0       99     0     0       99     0     0       99     0     0       90     0     0       91     0     0       92     0     0       93     0     0       94     0     0       95     0     0       96     0     0       97     0     0       98     0     0       99     0     0       90     0     0       91     0     0       92     0     0       93     0     0       94     0     0       95     0     0       96     0     0       97     0     0       98     0     0	tsA AC D00000 GHz i i i i i i i i i i i i i i i i i i i	SEN FGain:Low	SE:PULSE	2402MHz	e: Log-Pwr 1: 10/10	12:51:12 PM Apr25, 202 TRACE [] 2:34 TYPE [] 2:34 DET P NNNN Akr1 2:401 7 GH -7.154 dBr 0c1-2275 dB 0c1-2275 dB Stop 26.50 GH
Revision Spectrum Analyzer - Swep           RL         RF         50 @           enter Freq 13.265000         Ref Offset 3.06         Go           0 dB/div         Ref 13.06 dB         Go           0 dB/div         Ref 14.00 dB         Ref 13.06 dB           0 dB/div         Ref 14.00 dB         Ref 14.00 dB         Ref 14.00 dB           1 dB/div         Ref 14.00 dB         Ref 14.00 dB         Ref 14.00 dB           2 dB/div         Ref 13.00 dB         Ref 14.00 dB         Ref 14.00 dB           2 dB/div         Ref 14.00 dB         Ref 14.00 dB         Ref 14.00 dB           2 dB/di         Ref 14.00 dB         Ref 1	ESA AC D00000 GHz i dB Bm A A A A A A A A A A A A A	SEN FGain:Low FGain:Low	SE:PULSE	2402MHz	e: Log-Pwr 1: 10/10	12:51:12 PM Apr25, 202 TRACE [] 2:3 4 TYPE M MMM Alkr1 2.401 7 GH -7.154 dBr 0L1-2275 dB 0L1-2275 dB Stop 26.50 GH 2.530 s (30001 pt
Keysight Spectrum Analyzer - Swep           RL         RF         50 @           enter Freq 13.265000         Ref Offset 3.06         G           Ref Offset 3.06         G         G         G           Ref Offset 3.06         G         G         G         G           Ref Offset 3.06         G         G         G         G         G         G           S0 0         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G	ESA AC D00000 GHz B dB Bm A B A B A A A A A A A A A A A A A	SEN FGain:Low FGain:Low	SE:PULSE	2402MHz	e: Log-Pwr 1: 10/10	12:51:12 PM Apr25, 202 TRACE [] 2:3 4 TYPE M MMM Alkr1 2.401 7 GH -7.154 dBr 0L1-2275 dB 0L1-2275 dB Stop 26.50 GH 2.530 s (30001 pt
Revision Spectrum Analyzer - Swep           RL         RF         50 @           Ref Offset 3.06           0 dB/div         Ref 13.06 dB           0 dB/div         Ref 14.00 dB	ESA AC D00000 GHz i dB Bm 3 4 2.401 7 GHz 95.3 MGHz 4.804 3 GHz	SEN FGain:Low FGain:Low	SE:PULSE	2402MHz	e: Log-Pwr 1: 10/10	12:51:12 PM Apr25, 202 TRACE [] 2:3 4 TYPE M MMM Alkr1 2.401 7 GH -7.154 dBr 0L1-2275 dB 0L1-2275 dB Stop 26.50 GH 2.530 s (30001 pt
Keysight Spectrum Analyzer - Swep           RL         RF         50 @           enter Freq 13.265000         Ref Offset 3.06         Ref Offset 3.06           0 dB/div         Ref 13.06 dB         Ref 13.06 dB           30.6         1         1           30.9         1         1           30.9         1         1           30.9         1         1           30.9         1         1           30.9         1         1           46.9         1         1           56.9         2         1           56.9         1         1           56.9         1         1           56.9         1         1           76.9         1         1           8         1         1           7         1         1           7         1         1           7         1         1           7         1         1           8         9         9	ESA AC D00000 GHz B dB Bm A B A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C	SEN FGain:Low FGain:Low	SE:PULSE	2402MHz	e: Log-Pwr 1: 10/10	12:51:12 PM Apr25, 202 TRACE [] 2:3 4 TYPE M MMM Alkr1 2.401 7 GH -7.154 dBr 0L1-2275 dB 0L1-2275 dB Stop 26.50 GH 2.530 s (30001 pt
Keysight Spectrum Analyzer - Swep           RL         RF         50 Q           enter Freq 13.265000         Ref Offset 3.06         Ref Offset 3.06           O dB/div         Ref 13.06 dB         Ref 13.06 dB           0 3.06         1         1           0.39         2         1           0.59         2         1           0.69         2         1           0.69         2         1           0.69         2         1           16.9         2         1           16.9         2         1           16.9         2         1           16.9         2         1           16.9         2         1           16.9         2         1           16.9         2         1           16.9         1         1         1           17         1         1         1           1         1         1         1           2         1         1         1           3         1         1         1           5         1         1         1         1           6	ESA AC D00000 GHz B dB Bm A B A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C A C	SEN FGain:Low FGain:Low	SE:PULSE	2402MHz	e: Log-Pwr 1: 10/10	12:51:12 PM Apr25, 202 TRACE [] 2:3 4 TYPE M MMM Alkr1 2.401 7 GH -7.154 dBr 0L1-2275 dB 0L1-2275 dB Stop 26.50 GH 2.530 s (30001 pt



Keysight Spectrum Ar R L RF			SEN	ISE:PULSE			12:57:42 PM Apr 25, 202
enter Freq 2		00 GHz	NO: Wide ↔→	Trig: Free Run #Atten: 20 dB	Avg Type: I Avg Hold: 1	_og-Pwr 00/100	TRACE 1 2 3 4 TYPE M WWW DET P N N N
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dB/div Ref	13.06 dBm						-3.058 dB
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G				18 300 KHZ	STATUS	Sweep	
G	T	x. Spuric		T 3-DH5 24		nission	
G Keysight Spectrum Ar R L RF			ous NVN			•	
Keysight Spectrum Ar	nalyzer - Swept SA 50 Ω AC	000 GHz	NO: Fast ↔	T 3-DH5 24		nission	12:58:14 PM Apr25, 20: TRACE <b>2 3 4</b> TYPE <b>W</b> Apr
Keysight Spectrum Ai RL RF enter Freq 1	nalyzer - Swept SA 50 Ω AC <b>3.2650000</b>	000 GHz IF	DUS NVN	T 3-DH5 24	41MHz Er	nission _og-Pwr 0/10	12:58:14 PM Apr 25, 20 TRACE 2 2 3 4 TYPE MWWW DET P.NNN
Keysight Spectrum Ar RL RF enter Freq 1 Ref ( 0 dB/div Ref	nalyzer - Swept SA 50 Ω AC	000 GHz F	NO: Fast ↔	T 3-DH5 24	41MHz Er	nission _og-Pwr 0/10	12:58:14 PM Apr 25, 20 TRACE 0 2 3 4 TRACE 0 2 3 4 TPM MWM DET PNNN (T1 2.441 4 GH
RL RF enter Freq 1 RdB/div Ref 0 dB/div Ref	nalyzer - Swept SA 50 Ω AC <b>3.2650000</b> Offset 3.06 dB	000 GHz F	NO: Fast ↔	T 3-DH5 24	41MHz Er	nission _og-Pwr 0/10	12:58:14 PM Apr 25, 20 TRACE 12 3 4 TPR MWM DET PNNN DET PNNN
RL RF enter Freq 1 0 dB/div Ref 9 0.06	nalyzer - Swept SA 50 Ω AC <b>3.2650000</b> Offset 3.06 dB	000 GHz F	NO: Fast ↔	T 3-DH5 24	41MHz Er	nission _og-Pwr 0/10	12:58:14 PM Apr 25, 20 TRACE 0 2 3 4 TRACE 0 2 3 4 TPM MWM DET PNNN (T1 2.441 4 GH
RL RF enter Freq 1 0 dB/div Ref 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	nalyzer - Swept SA 50 Ω AC <b>3.2650000</b> Offset 3.06 dB	000 GHz F	NO: Fast ↔	T 3-DH5 24	41MHz Er	nission _og-Pwr 0/10	12:58:14 PM Apr 25, 20 TRACE 1 2 3 4 TRACE 2 3 4 TPM MWAW Det PNNN Cr1 2.441 4 GH -6.585 dBt
Ref of OdB/div Ref 0 dB/div Ref 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	nalyzer - Swept SA 50 Ω AC 3.2650000 Offset 3.06 dB 13.06 dBm	DOOD GHz	NO: Fast ↔	T 3-DH5 24	41MHz Er	nission _og-Pwr 0/10	12:58:14 PM Apr 25, 20 TRACE 1 2 3 4 TRACE 2 3 4 TPM MWAW Det PNNN Cr1 2.441 4 GH -6.585 dBt
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Reysight Spectrum An RL RF enter Freq 1 OdB/div Ref 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	nalyzer - Swept SA 50 Ω AC 3.2650000 Offset 3.06 dB 13.06 dBm	DOOD GHz	NO: Fast ↔	T 3-DH5 24	41MHz Er Avg Type: Avg Hold: 1	nission _og-Pwr 0/10	12:58:14 PM Apr 25, 20 TRACE [] 2 3 4 TYPE MWMW DET PNNN Cr1 2.441 4 GH -6.585 dB1
RL RF enter Freq 1 0 dB/div Ref 0 dB/div Ref	nalyzer - Swept SA 50 & AC 3.2650000 Offset 3.06 dB 13.06 dBm	DOOD GHz	NO: Fast	T 3-DH5 24	41MHz Er Avg Type: Avg Hold: 1	nission .og-Pwr 0/10	12:58:14 PM Apr 25, 20 TRACE 12:34 TYPE MWMM DET PNNN (T1 2.441 4 GH -6.585 dB1 DL1-23:06 dB DL1-23:06 dB DL1-23:06 dB
Reysight Spectrum Ar RL RF enter Freq 1 0 dB/div Ref 0 dB	nalyzer - Swept SA 50 Ω AC 3.26500000 Dffset 3.06 dB 13.06 dBm		NO: Fast	T 3-DH5 24	41MHz Er Avg Type: Avg Hold: 1	nission .og-Pwr 0/10 Mi	12:58:14 PM Apr 25, 20 TRACE 12:34 TYPE MWMM DET PNNN (T1 2.441 4 GH -6.585 dB1 DL1-23:06 dB DL1-23:06 dB DL1-23:06 dB
Keysight Spectrum Ar           RL         RF           enter Freq 1           Odd/div         Ref (1)           0 dB/div         Ref (2)	nalyzer - Swept SA 50 Ω AC 3.26500000 Dffset 3.06 dB 13.06 dBm		NO: Fast	T 3-DH5 24	41MHz Er	nission .og-Pwr 0/10 Mi	L12:58:14 PM Apr 25, 20. TRACE 1 2 3 4 TYPE WWWW Det P NNN CT1 2.441 4 GH -6.585 dB1 DL1 -23.06 dB DL1 -23.06 dB Stop 26.50 GH 2.530 s (30001 pt
Reysight Spectrum Ar           RL         RF           enter Freq 1           Ref (1)           0 dB/div         Ref (2)           0 dB/div         Ref (2)           0 g         -           0 g         -           0 g         -           0 g         -           0 g         -           0 g         -           0 g         -           0 g         -           0 g         -           0 g         -           0 g         -           0 g         -           0 g         -           0 g         -           0 g         -           0 g         -           0 g         -           0 g         -           0 g         -           0 g         -           0 g         -           0 g         -           0 g         -           0 g         -           0 g         -           0 g         -           0 g         -           0 g         - <tr< td=""><td>nalyzer - Swept SA 50 Ω AC 3.26500000 Dffset 3.06 dB 13.06 dBm</td><td>2000 GHz</td><td>PUS NVN</td><td>T 3-DH5 24</td><td>41MHz Er</td><td>nission .og-Pwr 0/10 Mi</td><td>12:58:14 РМ Арг 25, 20 ТRACE [] 2 3 4 ТУРЕ МЧИМИ ОСТ 2.441 4 GH -6.585 dB1 0с1-23.06 df 0с1-23.06 df Stop 26.50 GH 2.530 s (30001 pt</td></tr<>	nalyzer - Swept SA 50 Ω AC 3.26500000 Dffset 3.06 dB 13.06 dBm	2000 GHz	PUS NVN	T 3-DH5 24	41MHz Er	nission .og-Pwr 0/10 Mi	12:58:14 РМ Арг 25, 20 ТRACE [] 2 3 4 ТУРЕ МЧИМИ ОСТ 2.441 4 GH -6.585 dB1 0с1-23.06 df 0с1-23.06 df Stop 26.50 GH 2.530 s (30001 pt
Keysight Spectrum AR           RL         RF           enter Freq 1           Ref 0           O dB/div         Ref           9         0           9         0           99         0           99         0           99         0           99         0           99         0           99         0           99         0           99         0           90         0           90         0           91         0           92         0           93         0           94         0           95         0           96         0           96         0           165         0         1         1           9         0         0         0         0           180         0         0         0         0           180         0         1         1         1           1         1         1         1         1           1         1         1 <th1< td=""><td>nalyzer - Swept SA 50 Ω AC 3.26500000 Dffset 3.06 dB 13.06 dBm</td><td>2.441 4 GHz 96.2 MHz</td><td>NO: Fast Gain:Low</td><td>T 3-DH5 24</td><td>41MHz Er</td><td>nission .og-Pwr 0/10 Mi</td><td>12:58:14 РМ Арг 25, 20 ТRACE [] 2 3 4 ТУРЕ МЧИМИ ОСТ 2.441 4 GH -6.585 dB1 0с1-23.06 df 0с1-23.06 df Stop 26.50 GH 2.530 s (30001 pt</td></th1<>	nalyzer - Swept SA 50 Ω AC 3.26500000 Dffset 3.06 dB 13.06 dBm	2.441 4 GHz 96.2 MHz	NO: Fast Gain:Low	T 3-DH5 24	41MHz Er	nission .og-Pwr 0/10 Mi	12:58:14 РМ Арг 25, 20 ТRACE [] 2 3 4 ТУРЕ МЧИМИ ОСТ 2.441 4 GH -6.585 dB1 0с1-23.06 df 0с1-23.06 df Stop 26.50 GH 2.530 s (30001 pt
RL         RF           enter Freq 1           0 dB/div         Ref 0           306         9           306         9           306         9           306         9           306         9           308         9           309         2           309         2           309         2           309         2           309         2           309         2           309         2           309         2           400         1           1         1           2         1           1         1           2         1           3         1           5         1           7         1           8         9	nalyzer - Swept SA 50 Ω AC 3.26500000 Dffset 3.06 dB 13.06 dBm	2000 GHz	PUS NVN	T 3-DH5 24	41MHz Er	nission .og-Pwr 0/10 Mi	L12:58:14 PM Apr 25, 20. TRACE 1 2 3 4 TYPE WWWW Det P NNN CT1 2.441 4 GH -6.585 dB1 DL1 -23.06 dB DL1 -23.06 dB Stop 26.50 GH 2.530 s (30001 pt
Keysight Spectrum An           RL         RF           enter Freq 1           Ref 0           O dB/div         Ref           S g         Colspan="2">Colspan="2">Colspan="2">Ref 0           O dB/div         Ref           S g         Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2"Colspan="2">Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"C	nalyzer - Swept SA 50 Ω AC 3.26500000 Dffset 3.06 dB 13.06 dBm	2000 GHz	PUS NVN	T 3-DH5 24	41MHz Er	nission .og-Pwr 0/10 Mi	L12:58:14 PM Apr 25, 20. TRACE 1 2 3 4 TYPE WWWW Det P NNN CT1 2.441 4 GH -6.585 dB1 DL1 -23.06 dB DL1 -23.06 dB Stop 26.50 GH 2.530 s (30001 pt



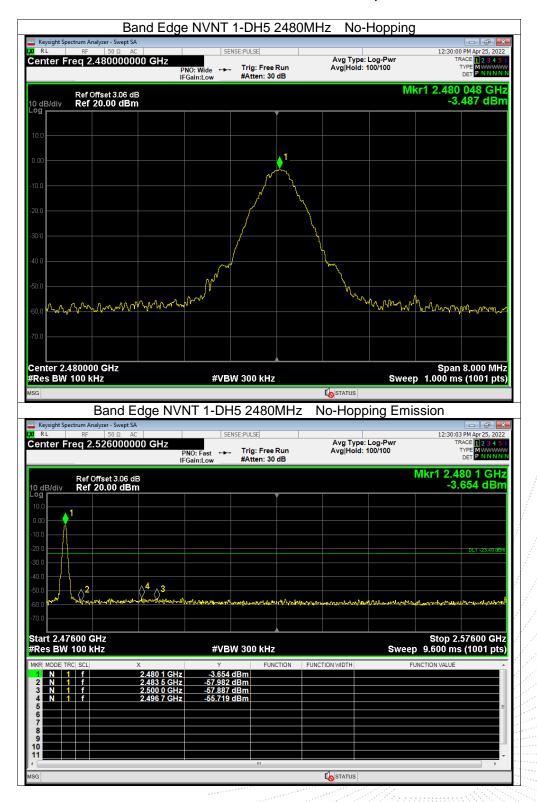
Keysight Spectru R L	um Analyzer - Swept SA RF 50 Ω AC		SENS	SE:PULSE			12:59:41 PM Apr 25,	202
	q 2.4800000	00 GHz	NO: Wide ↔ Gain:Low	Trig: Free Run #Atten: 20 dB		pe: Log-Pwr d: 100/100	TRACE 1 2 3 TYPE MWW DET P NN	4
n dB(div	Ref Offset 3.06 di Ref 13.06 dBm	3				Mkr	1 2.480 193 5 G -3.684 di	iH Br
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	um Analyzer - Swept SA			T 3-DH5 2		Emission	01:00:12 DM Apr 25	
RL		000 GHz		T 3-DH5 2 SE:PULSE Trig: Free Run #Atten: 20 dB	480MHz	pe: Log-Pwr	01:00:13 PM Apr 25, TRACE 1 2 3 TYPE M DET P 11	202 4 5
RL enter Free	um Analyzer - Swept SA RF 50 Ω AC	000 GHz IF	SENS	SE:PULSE	480MHz	pe: Log-Pwr d: 10/10	01:00:13 PM Apr 25, TRACE 1 2 3 TYPE MMAN	202 4 5 NN
enter Fred	um Analyzer - Swept SA RF 50 Ω AC <b>q 13.265000</b> Ref Offset 3.06 dl	000 GHz IF	SENS	SE:PULSE	480MHz	pe: Log-Pwr d: 10/10	01:00:13 PM Apr 25, TRACE 1 2 3 TYPE MWW DET P NN MKr1 2.480 2 G	202 4 5 MA
RL enter Fred 0 dB/div 9 g 5.06	um Analyzer - Swept SA RF 50 Ω AC <b>q 13.265000</b> Ref Offset 3.06 dl	000 GHz IF	SENS	SE:PULSE	480MHz	pe: Log-Pwr d: 10/10	01:00:13 PM Apr 25, TRACE 1 2 3 TYPE MWW DET P NN MKr1 2.480 2 G	202 4 5 NN
RL enter Fred 0 dB/div F 9 9 5.94 6.9	um Analyzer - Swept SA RF 50 Ω AC <b>q 13.265000</b> Ref Offset 3.06 dl	000 GHz IF	SENS	SE:PULSE	480MHz	pe: Log-Pwr d: 10/10	01:00:13 PM Apr 25, TRACE 1 2 3 TYPE MWW DET P NN MKr1 2.480 2 G	202 4 5 WN Bn
enter Fred 0 dB/div F 0 dB/div F	um Analyzer - Swept SA RF 50 Ω AC <b>q 13.265000</b> Ref Offset 3.06 dl	000 GHz IF	SENS	SE:PULSE	480MHz	pe: Log-Pwr d: 10/10	01:00:13 PM Apr25, TRACE [] 2 3 TYPE [] 2 DET P NN Mkr1 2.480 2 G -3.855 dl	202 4 5 WN Bn
RL enter Fred dB/div F 99 6.94 6.9 6.9 6.9 6.9 6.9 6.9 6.9 6.9	um Analyzer - Swept SA RF 50 Ω AC <b>q 13.265000</b> Ref Offset 3.06 dl	000 GHz IF	SENS	SE:PULSE	480MHz	pe: Log-Pwr d: 10/10	01:00:13 PM Apr25, TRACE [] 2 3 TYPE [] 2 DET P NN Mkr1 2.480 2 G -3.855 dl	202 4 5 NN
RL enter Fred 0 dB/div 9 9 6 9 6 9 6 9 7 6 9 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	um Analyzer - Swept SA RF 50 Ω AC <b>q 13.265000</b> Ref Offset 3.06 dl	000 GHz IF	SENS	SE:PULSE	480MHz	pe: Log-Pwr d: 10/10	01:00:13 PM Apr25, TRACE [] 2 3 TYPE [] 2 DET P NN Mkr1 2.480 2 G -3.855 dl	202 4 5 WN Bn
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RL           enter Fre           0 dB/div           9           306           306           306           306           306           306           9           26           9           26           9           26           9           26           9           26           9           27           9           28           9           24           9           24           9           24           9           24           9           24           9           24           9           24           9           24           9           24           9           9           9           9           9           9           9           9           9           9           9 </td <td>Im Analyzer - Swept SA RF 50 Ω AC q 13.2650000 Ref Offset 3.06 dB f 13.06 dB 1 2 2 20 00 kHz S^{CL}</td> <td>2 2 4 4 2 4 4 4 4 4 4 4 4 4 4 4 4 4</td> <td>SENS Gain:Low \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$</td> <td>Trig: Free Run #Atten: 20 dB</td> <td>480MHz</td> <td>pe: Log-Pwr d: 10/10</td> <td>01:00:13 PM Apr25, TRACE [] 2 3 TYPE MW DET P NN Mkr1 2.480 2 G -3.855 dl DL DL DL DL DL DL DL DL DL DL DL DL DL</td> <td></td>	Im Analyzer - Swept SA RF 50 Ω AC q 13.2650000 Ref Offset 3.06 dB f 13.06 dB 1 2 2 20 00 kHz S ^{CL}	2 2 4 4 2 4 4 4 4 4 4 4 4 4 4 4 4 4	SENS Gain:Low \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	Trig: Free Run #Atten: 20 dB	480MHz	pe: Log-Pwr d: 10/10	01:00:13 PM Apr25, TRACE [] 2 3 TYPE MW DET P NN Mkr1 2.480 2 G -3.855 dl DL DL DL DL DL DL DL DL DL DL DL DL DL	
RL           enter Free           o dB/div         F           3.06         -           3.06         -           3.06         -           3.06         -           3.06         -           3.06         -           3.06         -           3.06         -           3.06         -           3.06         -           3.06         -           3.06         -           3.06         -           3.06         -           3.06         -           3.06         -           3.06         -           3.07         -           3.08         -           3.09         -           3.00         -           3.00         -           3.00         -           3.00         -           3.00         -	Jum Analyzer - Swept SA           RF         50 Ω         AC           q         13.2650000           Ref Offset 3.06 dl         Ref           Ref Offset 3.06 dl         Ref           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1	000 GHz P F B n 3 3 2.480 2 GHz 96.2 MHz 4.960 5 GHz 7.439 0 GHz	SEN: Gain:Low \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	Trig: Free Run #Atten: 20 dB	480MHz	pe: Log-Pwr d: 10/10	01:00:13 PM Apr25, TRACE 11 2 3 DET P NN Mkr1 2.480 2 G -3.855 dl DC1-236 DC1-236 DC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-	
RL           enter Free           o dB/div         F           0 dB/div         F           3.05         -           3.05         -           3.05         -           3.05         -           3.05         -           3.05         -           3.05         -           3.05         -           3.05         -           4         N         1           5         N         1           6         -         -	Jum Analyzer - Swept SA           RF         50 Ω         AC           q         13.2650000           Ref Offset 3.06 dl         Ref           Ref Offset 3.06 dl         Ref           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1	000 GHz P F B n 3 3 2.480 2 GHz 966 2 GHz 4.950 5 GHz	SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN: SEN:	Trig: Free Run #Atten: 20 dB	480MHz	pe: Log-Pwr d: 10/10	01:00:13 PM Apr25, TRACE 11 2 3 DET P NN Mkr1 2.480 2 G -3.855 dl DC1-236 DC1-236 DC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-	
RL           enter Free           0 dB/div         F           0 dB/div         F           306         S           306         S           306         S           306         S           306         S           307         S           308         S           309         2           309         S           309         S           309         S           4         N           1         N           5         N           7         S           8         S	Jum Analyzer - Swept SA           RF         50 Ω         AC           q         13.2650000           Ref Offset 3.06 dl         Ref           Ref Offset 3.06 dl         Ref           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1	000 GHz P F B n 3 3 2.480 2 GHz 96.2 MHz 4.960 5 GHz 7.439 0 GHz	SEN: Gain:Low \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	Trig: Free Run #Atten: 20 dB	480MHz	pe: Log-Pwr d: 10/10	01:00:13 PM Apr25, TRACE 11 2 3 DET P NN Mkr1 2.480 2 G -3.855 dl DC1-236 DC1-236 DC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-	
RL         F           enter Free         F           0 dB/div         F           1 N         1           1 N         1           1 S         N           1 S         N           1 S         N           1 S         N	Jum Analyzer - Swept SA           RF         50 Ω         AC           q         13.2650000           Ref Offset 3.06 dl         Ref           Ref Offset 3.06 dl         Ref           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1	000 GHz P F B n 3 3 2.480 2 GHz 96.2 MHz 4.960 5 GHz 7.439 0 GHz	SEN: Gain:Low \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	Trig: Free Run #Atten: 20 dB	480MHz	pe: Log-Pwr d: 10/10	01:00:13 PM Apr25, TRACE 11 2 3 DET P NN Mkr1 2.480 2 G -3.855 dl DC1-236 DC1-236 DC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-236 CC1-	



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Keysight Spectrum Analyzer - Swe R L RF 50 Ω	AC	SENSE	PULSE			12:18:50 PM Apr 25, 2022		
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G		# V D V V	300 KHZ	<b>I</b> STATUS	Sweep	1.000 ms (1001 pts		
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Band Keysight Spectrum Analyzer - Swe RL RF 50 Ω	AC	NT 1-DH5		z No-Hop	ping Emis	sion		
Band Keysight Spectrum Analyzer - Swe RL RF 50 Ω	pt SA AC 00000 GHz P	NT 1-DH5	2402MHz	Z No-Hop		Sion 12:18:53 PM Apr 25, 202 TRACE 12, 34, 5		
Band Keysight Spectrum Analyzer - Swe RL RF 50 Q enter Freq 2.356000 Ref Offset 3.0	AC OUDO GHZ P IF1 6 dB	NT 1-DH5	2402MHz	Z No-Hop	ping Emis L e: Log-Pwr l: 100/100	Sion 12:18:53 PM Apr 25, 202 TRACE 10:23 45 TPACE 10:35 45		
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Band           Keysight Spectrum Analyzer - Swe           Ref Offset 3.0           Ref Offset 3.0           Ref Offset 3.0           O dB/div         Ref Offset 3.0           O dott colspan="2">O dott colspan="2"           O dott colspan="2"         O dott colspan="2"           O dott colspan="2"         O dott colspan="2"           O dott colspan="2" <td <="" colspan="2" td=""><td>AC         AC           AC         P           00000 GHz         P           IF         IF           I6 dB         IBM           Juleo         Investigation           Juleo         Investigation           Z.401 9 GHz         Z.400 0 GHz           Z.400 0 GHz         Cultor</td><td>NO: Fast →→ Gain:Low →→ #VBW (Δ) -22.031 dE -55.692 dE</td><td>300 kHz</td><td>z No-Hop Avg Typ Avg Hold</td><td>ping Emis e: Log-Pwr I: 100/100</td><td>Sion 12:18:53 PM Apr 25, 202 TRACE 11 23 4 S TYPE P NNNN 18:r1 2:401 9 GH: -2:031 dBn -2:031 dBn</td></td>	<td>AC         AC           AC         P           00000 GHz         P           IF         IF           I6 dB         IBM           Juleo         Investigation           Juleo         Investigation           Z.401 9 GHz         Z.400 0 GHz           Z.400 0 GHz         Cultor</td> <td>NO: Fast →→ Gain:Low →→ #VBW (Δ) -22.031 dE -55.692 dE</td> <td>300 kHz</td> <td>z No-Hop Avg Typ Avg Hold</td> <td>ping Emis e: Log-Pwr I: 100/100</td> <td>Sion 12:18:53 PM Apr 25, 202 TRACE 11 23 4 S TYPE P NNNN 18:r1 2:401 9 GH: -2:031 dBn -2:031 dBn</td>		AC         AC           AC         P           00000 GHz         P           IF         IF           I6 dB         IBM           Juleo         Investigation           Juleo         Investigation           Z.401 9 GHz         Z.400 0 GHz           Z.400 0 GHz         Cultor	NO: Fast →→ Gain:Low →→ #VBW (Δ) -22.031 dE -55.692 dE	300 kHz	z No-Hop Avg Typ Avg Hold	ping Emis e: Log-Pwr I: 100/100	Sion 12:18:53 PM Apr 25, 202 TRACE 11 23 4 S TYPE P NNNN 18:r1 2:401 9 GH: -2:031 dBn -2:031 dBn

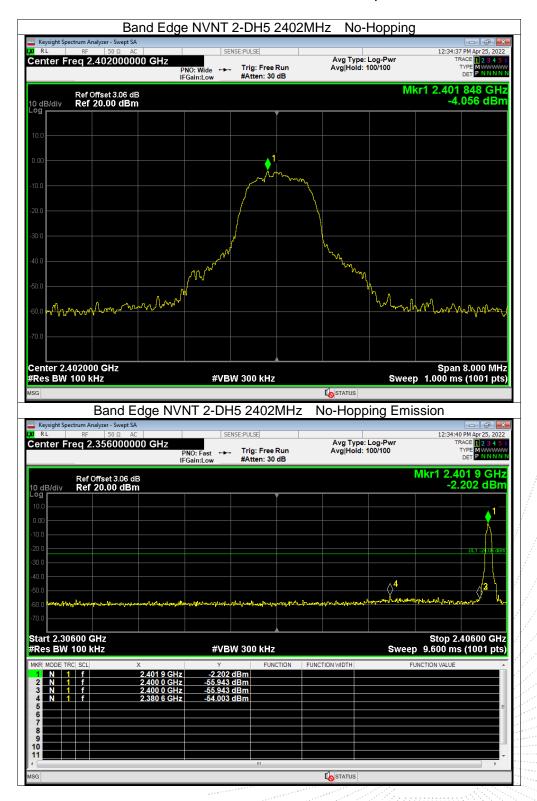
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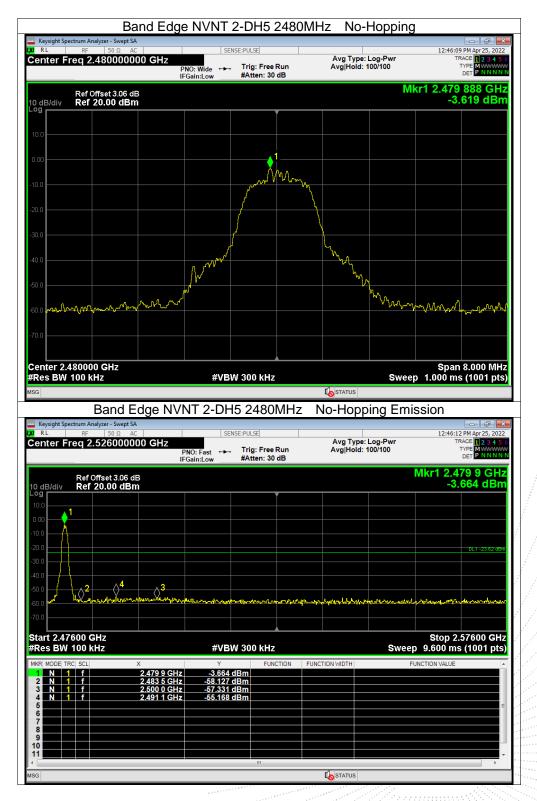
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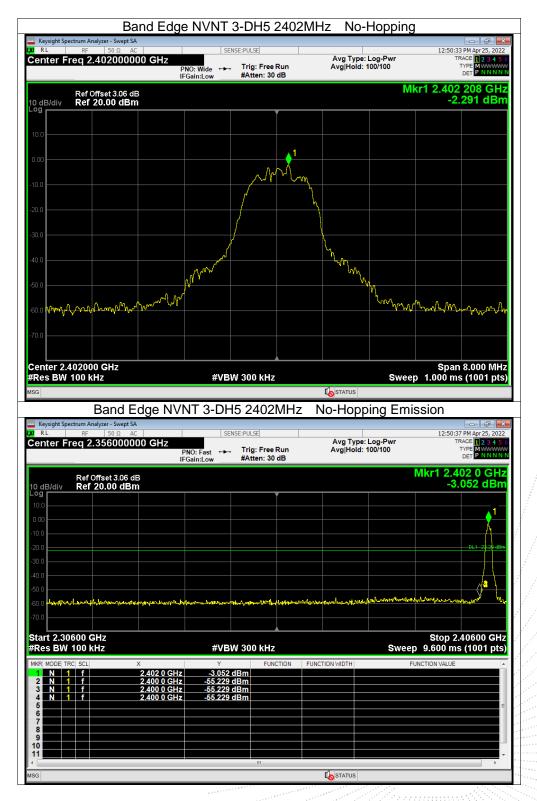


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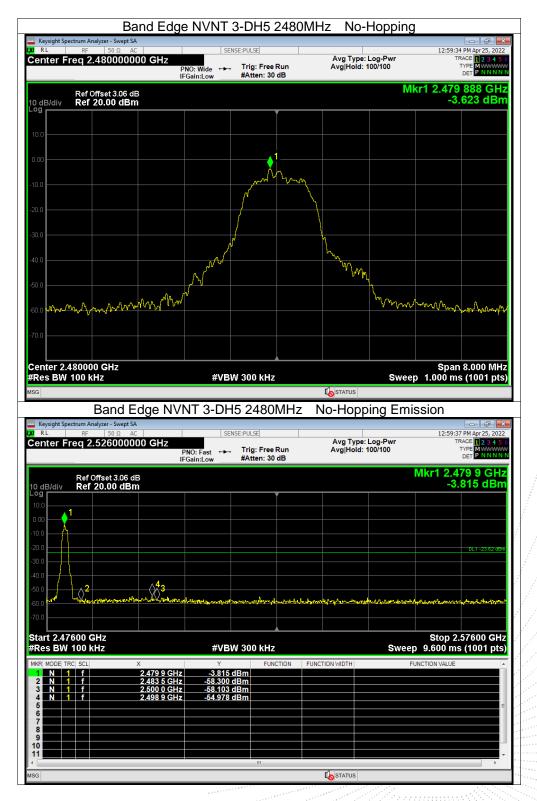












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Keysight Spectrum Analyzer - Swep R L RF 50 Ω	AC	SENSE:				12:22:20 PM Apr 25, 202
Keysight Spectrum Analyzer - Swep R L RF 50 Ω	AC 0000 GHz P	SENSE:		Avg Typ	e: Log-Pwr d: 2000/2000	12:22:20 PM Apr 25, 202
Keysight Spectrum Analyzer - Swe RL RF 50 Ω enter Freq 2.356000 Ref Offset 3.00	AC 0000 GHz IF 6 dB	SENSE: PNO: Fast ↔ T	PULSE	Avg Typ	e: Log-Pwr d: 2000/2000	12:22:20 PM Apr25, 20 TRACE 1 2 3 4 3 TYPE MWWW DET P NNN (r1 2.402 9 GH
Keysight Spectrum Analyzer - Swey RL RF 50 Ω enter Freq 2.356000 Ref Offset 3.00 dB/div Ref 20.00 d 9	AC 0000 GHz IF 6 dB	SENSE: PNO: Fast ↔ T	PULSE	Avg Typ	e: Log-Pwr d: 2000/2000	12:22:20 PM Apr25, 20 TRACE 1 2 3 4 3 TYPE MWWW DET P NNN (r1 2.402 9 GH
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Register         Ref         50 Ω           enter         Freq         2.356000           Ref         Offset         3.00           Ref         Offset         3.00           B/div         Ref         20.00         0           0         0         0         0           0         0         0         0	AC 0000 GHz IF 6 dB	SENSE: PNO: Fast ↔ T	PULSE	Avg Typ	e: Log-Pwr d: 2000/2000	12:22:20 PM Apr 25, 202 TRACE 1 2 3 4 5 TYPE MWWW DET P NNNN
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Keysight Spectrum Analyzer - Sweg RL RF 50 Ω enter Freq 2.356000 Briter Freq 2.356000 Ref Offset 3.00 Briter Ref 20.00 d Briter Ref 20.00 d	AC 0000 GHz IF 6 dB	SENSE: PNO: Fast →→ T Gain:Low #	PULSE	Avg Typ	e: Log-Pwr 4: 2000/2000	12:22:20 PM Apr 25, 20 TRACE 12, 34 TYPE P NNN per PNNN (r1 2.402 9 GH -2.132 dBr -2.132 dBr
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Register         Ref         50 Ω           Ref         50 Ω         00           B/div         Ref 2.356000         00           Ref         0ffset 3.00         00           Ref         0ffset 3.00         00           Ref         00         00	AC 0000 GHz P 6 dB Bm	SENSE: PNO: Fast $\rightarrow$ T Gain:Low 4 Control of the sense WEW 3	PULSE	Avg Typ Avg Hold	e: Log-Pwr 1: 2000/2000 Mk	12:22:20 PM Apr 25, 202 TRACE 12 23 3 TYPE P NNM cr1 2.402 9 GH -2.132 dBr -2.132 dBr
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Keysight Spectrum Analyzer - Sweg RL         Ref 0ffset 3.00           Ref Offset 3.00           Ref Offset 3.00           Block State           Ref Offset 3.00           Block State           Ref Offset 3.00           Block State           Block State           O           Colspan="2">State           Colspan="2">State           Colspan="2">State           Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspa	AC P 0000 GHz P F 6 dB Bm 2.002 9 GHz	SENSE: NO: Fast → T Gain:Low # # # SENSE: T T SENSE: T T SENSE: T T T SENSE: T T T SENSE: T T T T T T T T T T T T T	PULSE	Avg Typ Avg Hold	e: Log-Pwr 1: 2000/2000 Mk	12:22:20 PM Apr 25, 200 TRACE 12 23 4 TYPE P NNN Cr1 2.402 9 GH -2.132 dBr -2.132 dBr -2

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Edition : A.4













Page: 47 of 80







#### 10. 20 dB Bandwidth

#### 10.1 Block Diagram Of Test Setup



10.2 Limit

N/A

#### 10.3 Test procedure

- 1. Set RBW = 30kHz.
- 2. Set the video bandwidth (VBW)  $\ge$  3 x RBW.
- 3. Detector = Peak.
- 4. Trace mode = max hold.
- 5. Sweep = auto couple.

6. Allow the trace to stabilize.

7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

No.: BCTC/RF-EMC-007

Page: 49 of 80



### 10.4 Test Result

Condition	Mode	Frequency (MHz)	-20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	1.030	Pass
NVNT	1-DH5	2441	1.025	Pass
NVNT	1-DH5	2480	1.038	Pass
NVNT	2-DH5	2402	1.317	Pass
NVNT	2-DH5	2441	1.318	Pass
NVNT	2-DH5	2480	1.302	Pass
NVNT	3-DH5	2402	1.297	Pass
NVNT	3-DH5	2441	1.288	Pass
NVNT	3-DH5	2480	1.288	Pass

No.: BCTC/RF-EMC-007

Page: 50 of 80





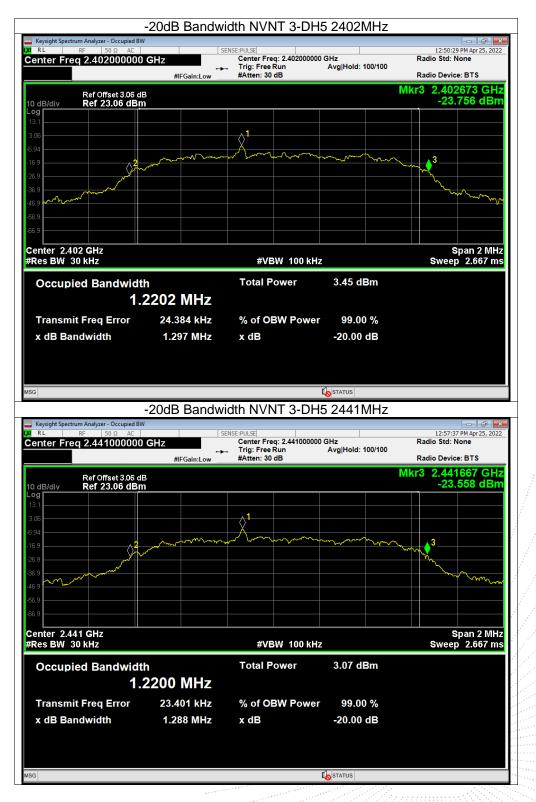




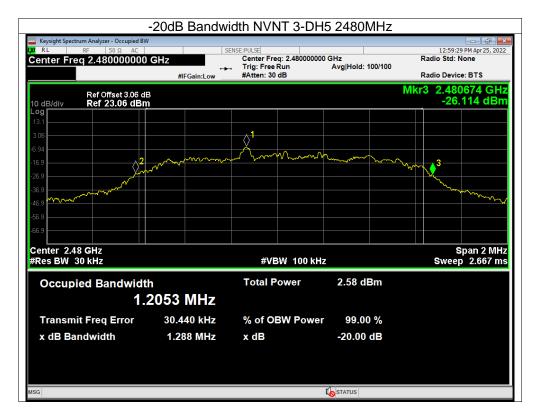












Page: 55 of 80



### 11. Maximum Peak Output Power

#### 11.1 Block Diagram Of Test Setup



#### 11.2 Limit

FCC Part15 (15.247) , Subpart C					
Section	Test Item	Limit	Frequency Range (MHz)	Result	
15.247(b)(1)	Peak Output Power	0.125 watt or 21dBm	2400-2483.5	PASS	

### 11.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

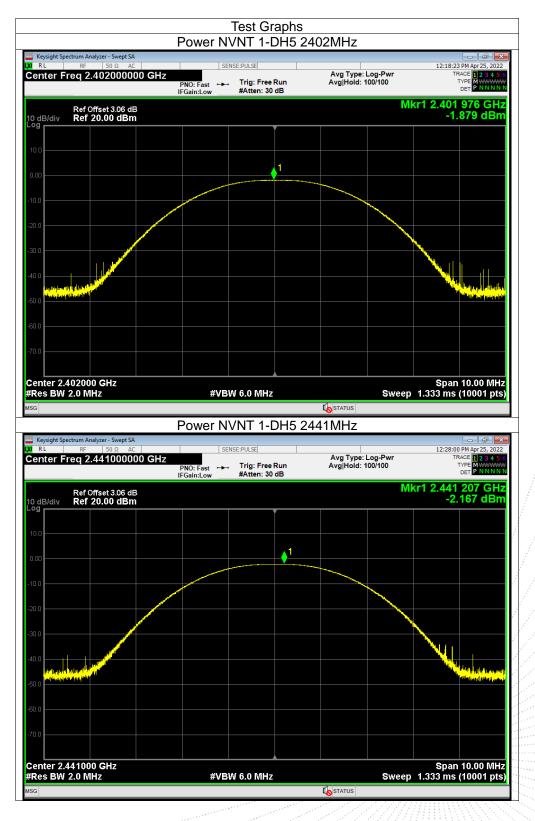
2. Set the spectrum analyzer: RBW = 3MHz. VBW = 3MHz. Sweep = auto; Detector Function = Peak.

3. Keep the EUT in transmitting at lowest, medium and highest channel individually. Record the max value.

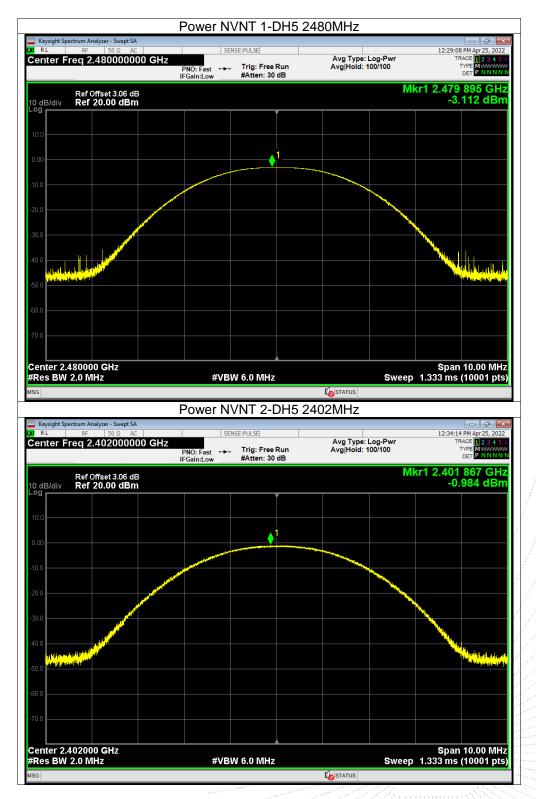
#### 11.4 Test Result

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	-1.88	21	Pass
NVNT	1-DH5	2441	-2.17	21	Pass
NVNT	1-DH5	2480	-3.11	21	Pass
NVNT	2-DH5	2402	-0.98	21	Pass
NVNT	2-DH5	2441	-1.38	21	Pass
NVNT	2-DH5	2480	-2.33	21	Pass
NVNT	3-DH5	2402	-0.67	21	Pass
NVNT	3-DH5	2441	-0.95	21	Pass
NVNT	3-DH5	2480	-1.9	21	Pass

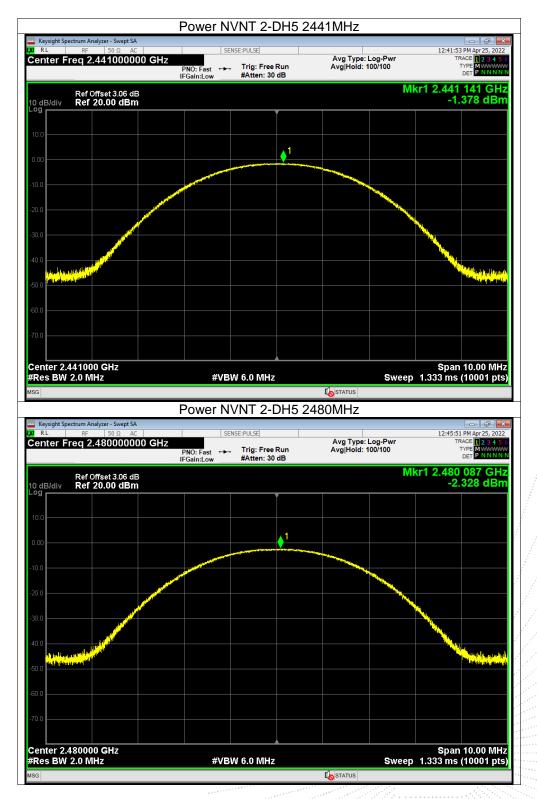








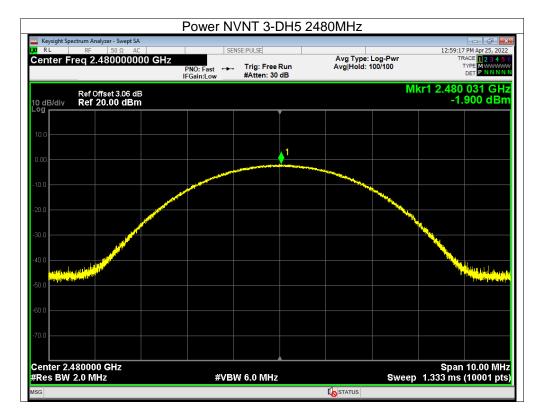












No.: BCTC/RF-EMC-007

Page: 61 of 80



#### 12. Hopping Channel Separation

#### 12.1 Block Diagram Of Test Setup



#### 12.2 Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 0.125W.

#### 12.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set the spectrum analyzer: RBW = 30kHz. VBW = 100kHz , Span = 2.0MHz. Sweep = auto; Detector Function = Peak. Trace = Max hold.

3. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section Submit this plot.

Condition	Mode	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	2402.058	2403.008	0.95	0.687	Pass
NVNT	1-DH5	2441.046	2442.02	0.974	0.683	Pass
NVNT	1-DH5	2479.02	2480.026	1.006	0.692	Pass
NVNT	2-DH5	2402.01	2403.194	1.184	0.878	Pass
NVNT	2-DH5	2441.188	2442.18	0.992	0.879	Pass
NVNT	2-DH5	2478.874	2479.996	1.122	0.868	Pass
NVNT	3-DH5	2402.128	2403.004	0.876	0.865	Pass
NVNT	3-DH5	2441.022	2442.03	1.008	0.859	Pass
NVNT	3-DH5	2478.996	2480.022	1.026	0.859	Pass

#### 12.4 Test Result



	Test Gra CFS NVNT 1-DH				
Keysight Spectrum Analyzer - Swept SA				- 8 -	
RL RF 50 Ω AC enter Freq 2.402500000 GH	Z PNO: Wide Trig: Free Ru IFGain:Low #Atten: 30 dE	Avg Type: In Avg Hold:> 3	Log-Pwr	2:20:09 PM Apr 25, 2022 TRACE 1 2 3 4 5 TYPE MWWWW DET PNNNN	
Ref Offset 3.06 dB dB/div Ref 20.00 dBm			Mkr1 2.	402 058 GHz -4.932 dBm	
•9 0.0 .00			<mark>2</mark>		
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			m m m m m m m m m m m m m m m m m m m	
0.0					
0.0					
enter 2.402500 GHz				pan 2.000 MHz	
	#VBW 100 kHz	ON FUNCTION WIDTH	Sweep 2.13	3 ms (1001 pts)	
2 N 1 f 2.403 008	8 GHz (Δ) -4.932 dBm 8 GHz -4.652 dBm				
9 0 1					
3		I ⊗STATUS			
	CFS NVNT 1-DH				
Keysight Spectrum Analyzer - Swept SA RL RF 50 Ω AC	CFS NVNT 1-DH	I5 2441MHz Avg Type: In Avg[Hold:>	Log-Pwr	2:23:43 PM Apr 25, 2022	
Keysight Spectrum Analyzer - Swept SA RL RF 50Ω AC enter Freq 2.441500000 GH		I5 2441MHz Avg Type: In Avg[Hold:>	Log-Pwr 100/100	2:23:43 PM Apr 25, 2022 TRACE 1 2 3 4 5 TYPE MWWWW DET P N N N N	
Ref Offset 3.06 dB Ref 20.00 dBm	CFS NVNT 1-DH	I5 2441MHz Avg Type: In Avg[Hold:>	Log-Pwr 100/100 Mkr1 2.	2:23:43 PM Apr 25, 2022 TRACE 1 2 3 4 5 TYPE M WWWWA DET P NNNN	
Keysight Spectrum Analyzer - Swept SA RL RF 50 @ AC enter Freq 2.441500000 GH enter Freq 2.441500000 GH Bef Offset 3.06 dB dB/div Ref 20.00 dBm 00 0 0 0	CFS NVNT 1-DH	I5 2441MHz Avg Type: In Avg[Hold:>	Log-Pwr 100/100	2:23:43 PM Apr 25, 2022 TRACE 1 2 3 4 5 TYPE M WWWWA DET P NNNN	
Keysight Spectrum Analyzer - Swept SA RL RF 50 @ AC enter Freq 2.441500000 GH Ref Offset 3.06 dB dB/div Ref 20.00 dBm 0	CFS NVNT 1-DH	I5 2441MHz Avg Type: In Avg[Hold:>	Log-Pwr 100/100 Mkr1 2.	2:23:43 PM Apr 25, 2022 TRACE 1 2 3 4 5 TYPE M WWWWA DET P NNNN	
Rejoint Spectrum Analyzer - Swept SA RL RF 50 @ AC enter Freq 2.441500000 GH enter Freq 2.441500000 GH <th cols<="" td=""><td>CFS NVNT 1-DH</td><td>I5 2441MHz Avg Type: In Avg[Hold:></td><td>Log-Pwr 100/100 Mkr1 2.</td><td>2:23:43 PM Apr 25, 2022 TRACE 1 2 3 4 5 TYPE M WWWWA DET P NNNN</td></th>	<td>CFS NVNT 1-DH</td> <td>I5 2441MHz Avg Type: In Avg[Hold:></td> <td>Log-Pwr 100/100 Mkr1 2.</td> <td>2:23:43 PM Apr 25, 2022 TRACE 1 2 3 4 5 TYPE M WWWWA DET P NNNN</td>	CFS NVNT 1-DH	I5 2441MHz Avg Type: In Avg[Hold:>	Log-Pwr 100/100 Mkr1 2.	2:23:43 PM Apr 25, 2022 TRACE 1 2 3 4 5 TYPE M WWWWA DET P NNNN
Rejoint Spectrum Analyzer - Swept SA RL RF 50 @ AC enter Freq 2.441500000 GH Belde Ref Offset 3.06 dB Ref 20.00 dBm 00 0 0 0 00 0 0 0 0 00 0 0 0 0 00 0 0 0 0 00 0 0 0 0 00 0 0 0 0 00 0 0 0 0 00 0 0 0 0 00 0 0 0 0 00 0 0 0 0 00 0 0 0 0 0 00 0 0 0 0 0 0 00 0 0 0 0 0 0 0 00 0 0 0 0 <td>CFS NVNT 1-DH</td> <td>I5 2441MHz Avg Type: In Avg[Hold:></td> <td>Log-Pwr 100/100 Mkr1 2.</td> <td>2:23:43 PM Apr 25, 2023 TRACE 1 2, 3, 4 5 TYPE P NNNN 441 046 GH2 -4.833 dBm</td>	CFS NVNT 1-DH	I5 2441MHz Avg Type: In Avg[Hold:>	Log-Pwr 100/100 Mkr1 2.	2:23:43 PM Apr 25, 2023 TRACE 1 2, 3, 4 5 TYPE P NNNN 441 046 GH2 -4.833 dBm	
Keysight Spectrum Analyzer - Swept SA RL RF 50 Q AC Penter Freq 2.441500000 GH Ref 20.00 dBm AC Ref Offset 3.06 dB Ref 20.00 dBm AC Comparison Comparison Comparison Comparison State Ref 20.00 dBm Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison Comparison </td <td>CFS NVNT 1-DH</td> <td>I5 2441MHz</td> <td>Log-Pwr 100/100 Mkr1 2.</td> <td>2:23:43 PM Apr25, 2022 TRACE 2:3 4:5 TYPE 2:3 4:5 TYPE </td>	CFS NVNT 1-DH	I5 2441MHz	Log-Pwr 100/100 Mkr1 2.	2:23:43 PM Apr25, 2022 TRACE 2:3 4:5 TYPE 2:3 4:5 TYPE	
Keysight Spectrum Analyzer - Swept SA RL RF 50 Q AC Enter Freq 2.441500000 GH Ref 0ffset 3.06 dB Ref 20.00 dBm BdB/div Ref 20.00 dBm Ref 20.00 dBm R MoDE TRC SCL X N I I Z.444 040 BdB/div I I I I I <th< td=""><td>CFS NVNT 1-DH</td><td>I5 2441MHz</td><td>Log-Pwr 100/100 Mkr1 2.</td><td>2:23:43 PM Apr25, 2022 TRACE 2:3 4:5 TYPE 2:3 4:5 TYPE </td></th<>	CFS NVNT 1-DH	I5 2441MHz	Log-Pwr 100/100 Mkr1 2.	2:23:43 PM Apr25, 2022 TRACE 2:3 4:5 TYPE 2:3 4:5 TYPE	
Reysight Spectrum Analyzer - Swept SA RL RF 50.0 AC enter Freq 2.4415000000 GH Ref Offset 3.06 dB dB/div Ref Offset 3.06 dB g g g g g g g g g g g g g g g g g g g g g g g g g g g g g g g g	CFS NVNT 1-DH	I5 2441MHz	Log-Pwr 100/100 Mkr1 2.	441 046 GHz -4.833 dBm	
Regight Spectrum Analyzer - Swept SA RL RF 50 @ AC enter Freq 2.441500000 GH Ref Offset 3.06 dB dB/div Ref 20.00 dBm g	CFS NVNT 1-DH	I5 2441MHz	Log-Pwr 100/100 Mkr1 2.	2:23:43 PM Apr25, 2022 TRACE 2:3 4:5 TYPE 2:3 4:5 TYPE	

No.: BCTC/RF-EMC-007



Keysight Spectrum Analyzer - Swept SA R L RF 50 Ω AC	SENSE:PULSE		12:31:28 PM Apr 25, 2022
enter Freq 2.479500000 GHz	PNO: Wide 😱 Trig: Free Run	Avg Type: Log-Pwr Avg Hold:>100/100	12:31:28 PM Apr 25, 2022 TRACE 1 2 3 4 5 TYPE MWWWW DET P N N N N
	IFGain:Low #Atten: 30 dB	Mkr	2.479 020 GHz
Ref Offset 3.06 dB dB/div Ref 20.00 dBm		WIKI	-6.214 dBm
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0.0			~~
		m	
0.0			
0.0			
0.0			
0.0			
enter 2.479500 GHz Res BW 30 kHz	#VBW 100 kHz	Sweep	Span 2.000 MH: 2.133 ms (1001 pts
KR MODE TRC SCL X	Y FUNCTION	-	TION VALUE
1 N 1 f 2.479 020 Gi 2 N 1 f 2.480 026 Gi	Hz -6.214 dBm Hz -6.490 dBm		
3			
5			=======================================
7			
9			
1			
G		STATUS	
	CFS NVNT 2-DH5		
Keysight Spectrum Analyzer - Swept SA			- ¢ <mark>-</mark>
RL RF 50 Ω AC enter Freg 2.402500000 GHz	SENSE:PULSE	Avg Type: Log-Pwr	12:36:35 PM Apr 25, 2022 TRACE 1 2 3 4 5
	PNO: Wide Trig: Free Run IFGain:Low #Atten: 30 dB	Avg Hold:>100/100	DET PNNN
Ref Offset 3.06 dB		Mkr	2.402 010 GH
dB/div Ref 20.00 dBm			-5.534 dBn
0.0			
			2
	m m m m	man man man	Amon
0.0			
0.0			
0.0			
0.0			
0.0			
enter 2.402500 GHz			Span 2.000 MH:
Res BW 30 kHz	#VBW 100 kHz	Sweep	2.133 ms (1001 pts
KR MODE TRC SCL X	Y FUNCTION	FUNCTION WIDTH FUNC	TION VALUE
1 N 1 f 2.402 010 Gi 2 N 1 f 2.403 194 Gi	Hz -5.534 dBm Hz -4.587 dBm		
3			
5 5 6 6 6			
7 8			
9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			



Keysight Spectrum Analyzer - Swept SA RL RF 50 Ω AC	CENCE-DUI CE		- @ ×
RL RF 50 Ω AC enter Freq 2.441500000 GHz	PNO: Wide Trig: Free Run IFGain:Low #Atten: 30 dB	Avg Type: Log-Pwr Avg Hold:>100/100	12:39:13 PM Apr 25, 2022 TRACE 1 2 3 4 5 TYPE MWWWW DET P NNNN
	IFGain:Low #Atten: 00 dB	N	lkr1 2.441 188 GHz
Ref Offset 3.06 dB 0 dB/div Ref 20.00 dBm			-4.814 dBm
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0.00			2 2
10.0	mann	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	my m
30.0			
40.0			
50.0			
60.0			
			0 0 000 MU
Center 2.441500 GHz Res BW 30 kHz	#VBW 100 kHz	Swee	Span 2.000 MHz p 2.133 ms (1001 pts)
MKR MODE TRC SCL X 1 N 1 f 2.441 188 GF	Y FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
2 N 1 f 2.442 180 GF 3	Iz -5.188 dBm		
4 5			=
6 7			
8			
SG		STATUS	,
	CFS NVNT 2-DH5	2480MHz	
Keysight Spectrum Analyzer - Swept SA R L RF 50 Ω AC	SENSE:PULSE		12:47:40 PM Apr 25, 2022
enter Freq 2.479500000 GHz	PNO: Wide Trig: Free Run	Avg Type: Log-Pwr Avg Hold:>100/100	TRACE 1 2 3 4 5 (TYPE M WWWW DET P NNNN
	IFGain:Low #Atten: 30 dB		
Ref Offset 3.06 dB 0 dB/div Ref 20.00 dBm		N.	lkr1 2.478 874 GHz -8.355 dBm
10.0			
0.00			
10.0 ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	mmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmm	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
30.0			
40.0			
50.0			
50.0			
enter 2.479500 GHz Res BW 30 kHz	#VBW 100 kHz	Swee	Span 2.000 MHz p 2.133 ms (1001 pts)
MKR MODE TRC SCL X 1 N 1 f 2.478 874 GF	Y FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
2 N 1 f 2.479 996 GF	Iz -9.428 dBm		
4 5			=
6 7			
8			
10 11			
			+



Keysight Spectrum Analyzer - Swept SA RL RF 50 Ω AC	SENSE:PU	CE I			12:54:48 PM Apr 25, 2022
enter Freq 2.402500000 GHz	PNO: Wide 🗔 Tri	g: Free Run tten: 30 dB	Avg Type: L Avg Hold:>1	og-Pwr 00/100	12:54:48 PM Apr 25, 2022 TRACE 1 2 3 4 5 TYPE MWWWW DET P N N N N
	IFGain:Low #A	tten. 30 dB		Mkr1	2.402 128 GHz
Ref Offset 3.06 dB 0 dB/div Ref 20.00 dBm og					-9.723 dBm
0.0					
.00	1			<mark>2</mark>	
0.0	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	\sim	www.www.ww	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	han here here here here here here here her
0.0					
0.0					
50.0					
0.0					
enter 2.402500 GHz Res BW 30 kHz	#VBW 10	0 kHz		Sweep 2.7	Span 2.000 MH: 133 ms (1001 pts
KR MODE TRC SCL X 1 N 1 f 2.402 128		FUNCTION	FUNCTION WIDTH	FUNCTIO	N VALUE
2 N 1 f 2.403 004	GHz -6.683 dBm				
4 5 6					
7					
9					
1		m			
G			STATUS		
	CFS NVNT	3-DH5 24	441MHz		
Keysight Spectrum Analyzer - Swept SA R L RF 50 Ω AC	SENSE:PU	LSE			12:56:01 PM Apr 25, 2022
enter Freq 2.441500000 GHz	PNO: Wide 😱 Tri	g: Free Run tten: 30 dB	Avg Type: L Avg Hold:>1		TRACE 1 2 3 4 5 TYPE M WWWW DET P N N N N
Ref Offset 3.06 dB) dB/div Ref 20.00 dBm				Mkr1 :	2.441 022 GH -4.886 dBm
9 9 0.0					
	1				
0.0 monor have	mon	\sim	m	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Lannon
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i0.0					
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enter 2.441500 GHz Res BW 30 kHz	#VBW 10	0 kHz		Sween 2.1	Span 2.000 MH: 133 ms (1001 pts
KR MODE TRC SCL X	Y		FUNCTION WIDTH	FUNCTIO	
1 N 1 f 2.441 022 2 N 1 f 2.442 030	GHz -4.886 dBm GHz -6.139 dBm				
3 4					
5 6 7					
9					
0					



	CFS NVNT 3-DH5 2	480MHz	
Keysight Spectrum Analyzer - Swept SA RL RF 50 Q AC Center Freq 2.479500000 GHz	PNO: Wide Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr Avg Hold:>100/100	01:01:08 PM Apr 25, 2022 TRACE 1 2 3 4 5 TYPE MWWWW DET P NNNN
Ref Offset 3.06 dB 10 dB/div Ref 20.00 dBm		M	(r1 2.478 996 GH; -9.266 dBm
Log 10.0 0.00 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	·····
-70.0 Center 2.479500 GHz #Res BW 30 kHz	#VBW 100 kHz	Sweet	Span 2.000 MH: 2.133 ms (1001 pts
MKR MODE TRC SCL X 1 N 1 f 2.478 996 GH 2 N 1 f 2.480 022 GH 3 - - - 4 - - - 5 - - - 6 - - - 7 - - - 8 - - - 9 - - -		FUNCTION WIDTH FI	JNCTION VALUE
10 11 11 11 11 11 11 11 11 11 11 11 11 1			

No. : BCTC/RF-EMC-007

Page: 67 of 80



13. Number of Hopping Frequency

13.1 Block Diagram Of Test Setup



13.2 Limit

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

13.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set the spectrum analyzer: RBW = 100kHz. VBW = 300kHz. Sweep = auto; Detector Function = Peak. Trace = Max hold.

3. Allow the trace to stabilize. It may prove necessary to break the span up to sections. in order to clearly show all of the hopping frequencies. The limit is specified in one of the subparagraphs of this Section.

4. Set the spectrum analyzer: Start Frequency = 2.4GHz, Stop Frequency = 2.4835GHz. Sweep=auto;

13.4 Test Result

Condition	Mode	Hopping Number	Limit	Verdict
NVNT	1-DH5	79	15	Pass
NVNT	2-DH5	79	15	Pass
NVNT	3-DH5	79	15	Pass



Keysight Spectrum Analyzer - Swept	t SA				2441MF			- P
RL RF 50 Ω nter Freq 2.441750	000 GHz	PNO: Fast	NSE:PULSE		Avg Type: Avg Hold:>	Log-Pwr 100/100	12:24	1:09 PM Apr 25, 202 TRACE 1 2 3 4 5 TYPE M
Dat 055-142.00		FGain:Low	#Atten: 30 dB	3		Mkr	1 2.401	920 5 GH
Ref Offset 3.06 dB/div Ref 20.00 dE			¥					2.025 dBr
								<mark>2</mark>
	ANN ANNA A		AVAAVAAVA	MMMM	NNN NN		WWWWWW	
								¥
art 2.40000 GHz								2.48350 GH
es BW 100 kHz	X	#VB\	W 300 kHz	ON FUNC	TION WIDTH		p 8.000 n	ns (1001 pt =
N 1 f 2	2.401 920 5 GHz 2.480 076 5 GHz	-2.025 -3.703	dBm					
			III		STATUS			•
	Hor							
		ping No.	. NVNT 2	2-DH5	2441MF	łz		
RL RF 50 Ω	AC		NVNT 2	2-DH5			12:40	0:36 PM Apr 25, 202
RL RF 50 Ω	AC IOOO GHz			ın	2441MH Avg Type: Avg Hold:>	Log-Pwr	12:40	0:36 PM Apr 25, 202
RL RF 50 Ω nter Freq 2.441750 Ref Offset 3.06	AC 10000 GHz I dB	PNO: Fast	NSE:PULSE	ın	Avg Type:	Log-Pwr 100/100	1 2.401	1:36 PM Apr 25, 20: TRACE 1 2 3 4 5 TYPE PNNN 0ET PNNN
nter Freq 2.441750	AC 10000 GHz I dB	PNO: Fast	NSE:PULSE	ın	Avg Type:	Log-Pwr 100/100	1 2.401	1:36 PM Apr 25, 20: TRACE 1 2 3 4 TYPE MWWW DET PNNN 670 0 GH
RL RF 50 Ω nter Freq 2.441750 Ref Offset 3.06 dB/div Ref 20.00 dB	AC IOOOO GHz IdB Bm	PNO: Fast FGain:Low	vse:PULse Trig: Free Ru #Atten: 30 df	un 3	Avg Type: Avg Hold:>	Log-Pwr 100/100 Mkr	-1 2.401 -(670 0 GH 6.527 dB
RL RF 50 Ω nter Freq 2.441750 Ref Offset 3.06 dB/div Ref 20.00 dE	AC IOOOO GHz IdB Bm	PNO: Fast FGain:Low	vse:PULse Trig: Free Ru #Atten: 30 df	un 3	Avg Type: Avg Hold:>	Log-Pwr 100/100 Mkr	-1 2.401 -(670 0 GH 6.527 dB
RL RF 50 Ω nter Freq 2.441750 Ref Offset 3.06 dB/div Ref 20.00 dE	AC IOOOO GHz IdB Bm	PNO: Fast FGain:Low	vse:PULse Trig: Free Ru #Atten: 30 df	un 3	Avg Type: Avg Hold:>	Log-Pwr 100/100 Mkr	-1 2.401 -(670 0 GH 6.527 dB
Ref Offset 3.06 dB/div Ref 20.00 dE	AC IOOOO GHz IdB Bm	PNO: Fast FGain:Low	vse:PULse Trig: Free Ru #Atten: 30 df	un 3	Avg Type: Avg Hold:>	Log-Pwr 100/100 Mkr	-1 2.401 -(670 0 GH 6.527 dB
Ref Offset 3.06 dB/div Ref 20.00 dE	AC IOOOO GHz IdB Bm	PNO: Fast FGain:Low	vse:PULse Trig: Free Ru #Atten: 30 df	un 3	Avg Type: Avg Hold:>	Log-Pwr 100/100 Mkr	-1 2.401 -(670 0 GH 6.527 dB
Ref Offset 3.06 B/div Ref 20.00 dE	AC IOOOO GHz IdB Bm	PNO: Fast FGain:Low	NSE:PULSE Trig: Free Ru #Atten: 30 df	un 3	Avg Type: Avg Hold:>	Log-Pwr 100/100 Mkr	1 2.401 _(0:36 PM Apr 25, 20, 20 TRACE [] 2, 3, 4] TYPE [] 2, 3, 4] DET [] 1, 2, 4] DET [] 1, 2, 4] DET [] 1, 2, 4] DET [] 1, 2, 4] DET [] 2, 4]
Ref Offset 3.06 Ref Offset 3.06 dB/div Ref 20.00 dB 1 1 1 1 1 1 1 1 1 1 1 1 1	25A AC 1000 GHz 1 dB 3m 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	PNO: Fast FGain:Low	Trig: Free Rt #Atten: 30 df	in 5	Avg Type: Avg Hold:>	Log-Pwr 100/100 Mkr	1 2.401 _(2.48350 GH ms (1001 pt
Rt SP 50 Ω nter Freq 2.441750 Ref Offset 3.06 Ref 20.00 dE dB/div Ref 20.00 dE Ref 20.00 dE 1 1 1 0 0 0 0 1 1 0 0 1 1 1 2 N 1 1 2	ISA AC IOOOO GHz I BB BM A A A A A A A A A A A A A A A A A	PNO: Fast FGain:Low #VB1	VSE:PULSE Trig: Free R #Atten: 30 dE #Atten: 30 dE #Atten: 40	in 5	Avg Type: Avg Hoid:>	Log-Pwr 100/100 Mkr	1 2.401 (2.48350 GH ns (1001 pt
Ref Offset 3.06 B/div Ref 20.00 dE Ref Offset 3.06 B/div Ref 20.00 dE Ref 20.00 dE	25A AC 10000 GHz 1 1 3 3 3 3 3 3 3 3 3 4 4 4 4 4 4 4 3 4 3	PNO: Fast FGain:Low #VB1	VSE:PULSE Trig: Free R #Atten: 30 dE #Atten: 30 dE #Atten: 40	in 5	Avg Type: Avg Hoid:>	Log-Pwr 100/100 Mkr	1 2.401 (2.48350 GH ms (1001 pt
Ref Offset 3.06 B/div Ref 20.00 dE 1 1 1 1 1 1 1 1 1 1 1 1 1	25A AC 10000 GHz 1 1 3 3 3 3 3 3 3 3 3 4 4 4 4 4 4 4 3 4 3	PNO: Fast FGain:Low #VB1	VSE:PULSE Trig: Free R #Atten: 30 dE #Atten: 30 dE #Atten: 40	in 5	Avg Type: Avg Hoid:>	Log-Pwr 100/100 Mkr	1 2.401 (2.48350 GH ms (1001 pt



Keysight Spectrum Analyzer - Swept SA				
CRL RF 50 Ω AC Center Freq 2.441750000 GH	PNO: Fast 🗔 Tri	g: Free Run tten: 30 dB	Avg Type: Log-Pw Avg Hold:>100/100	
Ref Offset 3.06 dB 0 dB/div Ref 20.00 dBm - 9g				Mkr1 2.401 586 5 GHz -7.715 dBm
10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0	north Anton Intel	mundaadaare	m have the open the o	ndhaborarsharadaggar 22
Start 2.40000 GHz #Res BW 100 kHz	#VBW 30	0 kHz	s	Stop 2.48350 GH: weep 8.000 ms (1001 pts
MKR MODE TRC SCL X	Y	FUNCTION FL	JNCTION WIDTH	FUNCTION VALUE
1 N 1 f 2.401586 2 N 1 f 2.4804108 3 - - - 4 - - - 5 - - - 6 - - - 7 - - - 8 - - - 9 - - - 10 - - -				

No. : BCTC/RF-EMC-007

Page: 70 of 80



14. Dwell Time

14.1 Block Diagram Of Test Setup

EUT	SPECTRUM
	ANALYZER

14.2 Limit

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

14.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set spectrum analyzer span = 0. Centred on a hopping channel;

3. Set RBW = 1MHz and VBW = 3MHz.Sweep = as necessary to capture the entire dwell time per hopping channel. Set the EUT for DH5, DH3 and DH1 packet transmitting.

4. Use the marker-delta function to determine the dwell time. If this value varies with different modes of operation (e.g., data rate, modulation format, etc.), repeat this test for each variation. The limit is specified in one of the subparagraphs of this Section. Submit this plot(s).

14.4 Test Result

DH5 Packet permit maximum 1600 / 79 / 6 hops per second in each channel (5 time slots RX, 1 time slot TX).

DH3 Packet permit maximum 1600 / 79 / 4 hops per second in each channel (3 time slots RX, 1 time slot TX).

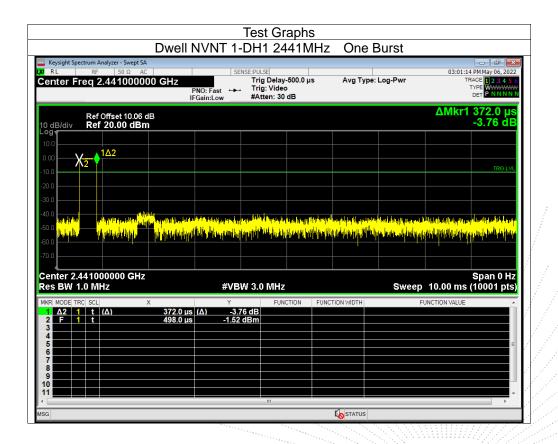
DH1 Packet permit maximum 1600 / 79 /2 hops per second in each channel (1 time slot RX, 1 time slot TX). So, the Dwell Time can be calculated as follows:

DH5:1600/79/6*0.4*79*(MkrDelta)/1000	
DH3:1600/79/4*0.4*79*(MkrDelta)/1000	
DH1:1600/79/2*0.4*79*(MkrDelta)/1000	
Remark: Mkr Delta is once pulse time.	
-	

Page: 71 of 80



Condition	Mode	Frequency (MHz)	Pulse Time (ms)	Total Dwell Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	0.372	119.04	400	Pass
NVNT	1-DH3	2441	1.628	260.48	400	Pass
NVNT	1-DH5	2441	2.876	306.77333	400	Pass
NVNT	2-DH1	2441	0.381	121.92	400	Pass
NVNT	2-DH3	2441	1.632	261.12	400	Pass
NVNT	2-DH5	2441	2.88	307.2	400	Pass
NVNT	3-DH1	2441	0.4	128	400	Pass
NVNT	3-DH3	2441	1.648	263.68	400	Pass
NVNT	3-DH5	2441	2.898	309.12	400	Pass



Edition: A.4

Page: 72 of 80



	Dweirr	VNT 1-DH	3 244 11	/IHz One	Burst	
Keysight Spectrum Analyzer - Swept RL RF So Ω Center Freq 2.441000	AC 000 GHz P	NO East Hand Tri	LSE g Delay-500.0 µ g: Video tten: 30 dB	us Avg Typ	be: Log-Pwr	03:02:17 PM May 06, 2 TRACE 1 2 3 4 TYPE WWWW DET P N N
Ref Offset 10.06 0 dB/div Ref 20.00 dB						ΔMkr1 1.628 r 4.59 c
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enter 2.441000000 GH es BW 1.0 MHz KR MODE TRC SCL 1 Δ2 1 t (Δ) 2 F 1 t 3 4		Y			Sweep	Span 0 10.00 ms (10001 p
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$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	x 1.628 ms	Υ (Δ) 4.59 dB			Sweep	Span 0 10.00 ms (10001 p

Dwell N	NVNT 1-DH5 2441MHz	One Burst	
	SENSE:PULSE Trig Delay-500.0 µs Trig: Video Gain:Low Atten: 20 dB	Avg Type: Log-Pwr	02:58:13 PM May 06, 202 TRACE 1 2 3 4 5 TYPE WWWWW DET P N N N
Ref Offset 10.06 dB 10 dB/div Ref 20.00 dBm			ΔMkr1 2.876 ms 0.40 dE
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4 5 6			
7 8			
9 10 11			
SG	III	K STATUS	•



	Dwell NV	/NT 2-DH	1 2441N	1Hz One	Burst		
Keysight Spectrum Analyzer - Swept SA RL RF 50 Ω AC enter Freq 2.44100000 AC AC AC	00 GHz PNO:	East 🛶 Trig	_SE g Delay-500.0 μ g: Video tten: 30 dB	is Avg Typ	e: Log-Pwr		y 06, 20
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KR MODE TRC SCL X		Y	FUNCTION	FUNCTION WIDTH	Fl	JNCTION VALUE	_
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5							
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	Dwell NV	NT 2-DH	l5 2441N	/IHz One	Burst	
Keysight Spectrum Analyzer - Swept SA RL RF 50 Ω AC Center Freq 2.441000000		Fast 🛶 Tri	ilse ig Delay-500.0 j ig: Video tten: 30 dB	us Avg Ty	pe: Log-Pwr	02:59:05 PM May 06, 20 TRACE 1234 TYPE WWWW DET PNN
Ref Offset 10.06 dB I0 dB/div Ref 20.00 dBm						ΔMkr1 2.880 m -4.68 d
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Book Book <td< td=""><td>1000000 GHz MHz scl × t (Δ)</td><td>400.0 µs</td><td>#####################################</td><td>BW 3.0 M</td><td>Hz</td><td>illi i sun i generati i</td><td>Sw</td><td>eep 10</td><td>Spa .00 ms (100</td><td>n 0 H</td></td<>	1000000 GHz MHz scl × t (Δ)	400.0 µs	#####################################	BW 3.0 M	Hz	illi i sun i generati i	Sw	eep 10	Spa .00 ms (100	n 0 H
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	Dwell NVNT 3-DH	3 2441MHz	One Burst	
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enter 2.441000000 GHz es BW 1.0 MHz	#VBW 3.	0 MHz	Sweep	Span 0 H 10.00 ms (10001 pt
KR MODE TRC SCL X	1.648 ms (Δ) 0.47 dB		FION WIDTH FI	JNCTION VALUE
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Dwell	NVNT 3-DH5 2	441MHz C	One Burst	
Keysight Spectrum Analyzer - Swept SA R RL RF 50 Ω AC Center Freq 2.441000000 GHz	SENSE:PULSE Trig Dela PNO: Fast Trig: Vid FGain:Low #Atten: 3	eo	rg Type: Log-Pwr	02:39:15 PM May 24, 202 TRACE 1 2 3 4 5 TYPE WWWWW DET P.N.N.N
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enter 2.441000000 GHz es BW 1.0 MHz	#VBW 3.0 MH	z	Sweep	Span 0 H 10.00 ms (10001 pt
I Δ2 1 t (Δ) 2.898 ms 2 F 1 t 476.0 μs	s (Δ) 2.92 dB	UNCTION FUNCTION W	DTH FU	NCTION VALUE
3 4 5 6 7				
				•
		L ost		



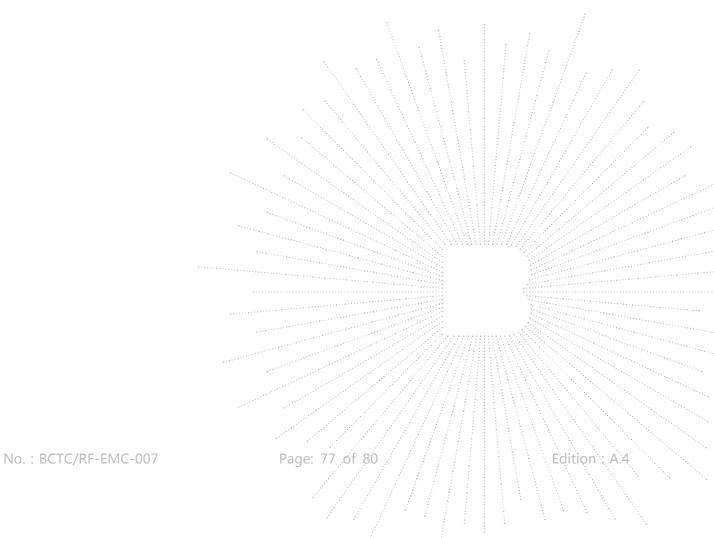
15. Antenna Requirement

15.1 Limit

15.203 requirement: For intentional device, according to 15.203: 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.

15.2 Test Result

The EUT antenna is Internal antenna, fulfill the requirement of this section.





16. EUT Test Setup Photographs

Conducted emissions

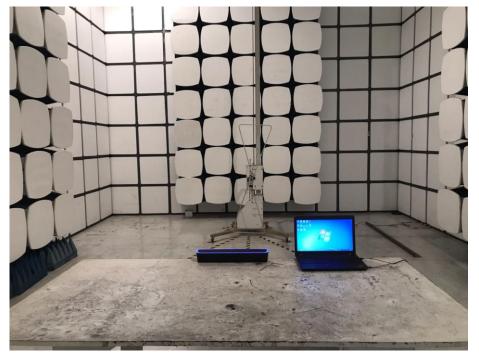


No. : BCTC/RF-EMC-007

Page: 78 of 80



Radiated Measurement Photos







STATEMENT

1. The equipment lists are traceable to the national reference standards.

2. The test report can not be partially copied unless prior written approval is issued from our lab.

3. The test report is invalid without stamp of laboratory.

4. The test report is invalid without signature of person(s) testing and authorizing.

5. The test process and test result is only related to the Unit Under Test.

6. The quality system of our laboratory is in accordance with ISO/IEC17025.

7.If there is any objection to report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

Address:

1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

TEL: 400-788-9558

P.C.: 518103

FAX: 0755-33229357

Website : http://www.chnbctc.com

E-Mail : bctc@bctc-lab.com.cn

***** END *****

No.: BCTC/RF-EMC-007

Page: 80 of 80