

TEST REPORT

Report No.:	BCTC2404064823-1E				
Applicant:	Shenzhen Zhilian Shengya Electronic Technology Co., Ltd				
Product Name:	Smart watch				
Test Model:	ZL02CPRO				
Tested Date:	2024-04-15 to 2024-04-23				
Issued Date:	2024-04-23				
She	enzhen BCTC Testing Co., Ltd.				
No. : BCTC/RF-EMC-005	Page: 1 of 85	Edition : B.2			



FCC ID: 2A5HP-ZL02CPRO

Product Name:	Smart watch
Trademark:	N/A
Model/Type Reference:	ZL02CPRO Z123, Z138, ZL73J, Z136, Z121CJ, ZL02JPRO, Z113
Prepared For:	Shenzhen Zhilian Shengya Electronic Technology Co., Ltd
Address:	5th floor, Building B, Huawan Industrial Park, Xixiang Street, Bao'an District, Shenzhen China
Manufacturer:	Shenzhen Zhilian Shengya Electronic Technology Co., Ltd
Address:	5th floor, Building B, Huawan Industrial Park, Xixiang Street, Bao'an District, Shenzhen China
Prepared By:	Shenzhen BCTC Testing Co., Ltd.
Address:	1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Sample Received Date:	2024-04-15
Sample Tested Date:	2024-04-15 to 2024-04-23
Issue Date:	2024-04-23
Report No.:	BCTC2404064823-1E
Test Standards:	FCC Part15.247 ANSI C63.10-2013
Test Results:	PASS
Remark:	This is Bluetooth Classic radio test report.

Tested by: Min zhi Cheng

Min Zhi Cheng/ 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.

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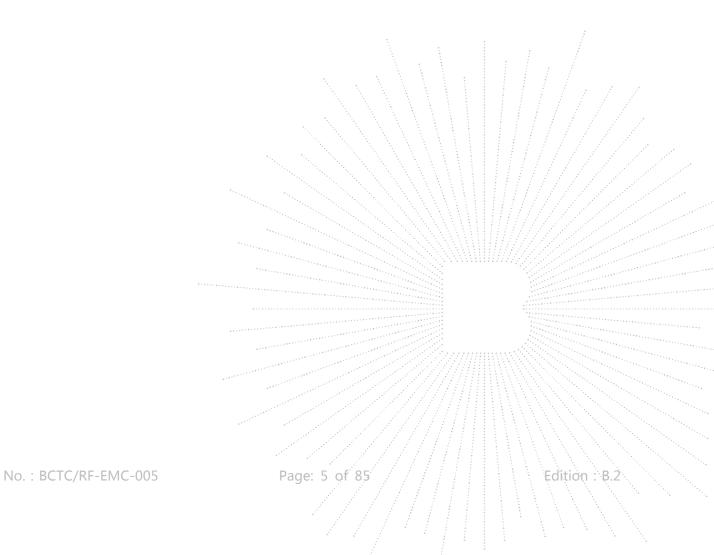
(Note: N/A Means Not Applicable)

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1. Version

Report No.	Issue Date	Description	Approved
BCTC2404064823-1E	2024-04-23	Original	Valid





2. Test Summary

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	Hopping channel separation	§15.247(a)(1)	PASS
5	Number of hopping frequencies	§15.247(a)(1)(iii)	PASS
6	Dwell Time	§15.247(a)(1)(iii)	PASS
7	Spurious RF conducted emissions	§15.247(d)	PASS
8	Band edge	§15.247(d)	PASS
9	Spurious radiated emissions for transmitter	§15.247(d) & §15.209 & §15.205	PASS
10	Antenna Requirement	15.203	PASS

No.: BCTC/RF-EMC-005



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

Model/Type Reference:	ZL02CPRO Z123, Z138, ZL73J, Z136, Z121CJ, ZL02JPRO, Z113
Model Differences:	All the model are the same circuit and RF module, except model names and appearance of the color.
Bluetooth Version:	5.4
Hardware Version:	N/A
Software Version:	N/A
Operation Frequency:	2402-2480MHz
Type of Modulation:	GFSK, π/ 4 DQPSK, 8DPSK
Number Of Channel:	79CH
Antenna installation:	Internal antenna
Antenna Gain:	0.17 dBi
Ratings:	DC 5V From Adapter DC 3.8V From Battery
Remark:	The antenna gain of the product is provided by the customer, and the test data is affected by the customer information



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 and Radiated Spurious Emission:



4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
E-1	Smart watch	N/A	ZL02CPRO	Ref. the Section 4.1	EUT
E-2	Adapter	UGREEN	CD122	N/A	Auxiliary

Item	Shielded Type	Ferrite Core	Length	Note
C-1	N/A	N/A	1M	DC cable unshielded

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	/

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.

(2) Fully-charged battery is used during the test

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	SecureCRT
Frequency	2402 MHz 2441 MHz 2480 MHz
Parameters	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, Zhancheng, 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

A2LA certificate registration number is: CN1212 ISED Registered No.: 23583

ISED CAB identifier: CN0017

	5.2	Test Instrument Used
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Conducted Emissions Test											
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.						
Receiver	R&S	ESR3	102075	May 15, 2023	May 14, 2024						
LISN	R&S	ENV216	101375	May 15, 2023	May 14, 2024						
Software Frad		EZ-EMC	EMC-CON 3A1	/	\						
Pulse limiter	Schwarzbeck	VTSD9561-F	01323	Sept. 22, 2023	Sept. 21, 2024						

RF Conducted Test											
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.						
Power Metter	Keysight	E4419		May 15, 2023	May 14, 2024						
Power Sensor (AV)	Keysight	E9300A		May 15, 2023	May 14, 2024						
Signal Analyzer20kH z-26.5GHz	Keysight	N9020A	MY49100060	May 15, 2023	May 14, 2024						
Spectrum Analyzer9kHz- 40GHz	R&S	FSP40	100363	May 15, 2023	May 14, 2024						
Radio frequency control box	MAIWEI	MW100-RFC B		\ \							
Software	MAIWEI	MTS 8310									

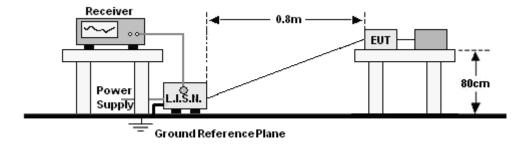


Radiated Emissions Test (966 Chamber01)										
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.					
966 chamber	ChengYu	966 Room	966	May 15, 2023	May 14, 2026					
Receiver	R&S	ESR3	102075	May 15, 2023	May 14, 2024					
Receiver	R&S	ESRP	101154	May 15, 2023	May 14, 2024					
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 15, 2023	May 14, 2024					
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	942	May 29, 2023	May 28, 2024					
Loop Antenna(9KHz -30MHz)	Schwarzbeck	FMZB1519B	00014	May 31, 2023	May 30, 2024					
Amplifier	SKET	LAPA_01G18 G-45dB	١	May 15, 2023	May 14, 2024					
Horn Antenna	Schwarzbeck	BBHA9120D	1541	May 31, 2023	May 30, 2024					
Amplifier(18G Hz-40GHz)	MITEQ	TTA1840-35- HG	2034381	May 15, 2023	May 14, 2024					
Horn Antenn(18GH z-40GHz)	Schwarzbeck	BBHA9170	00822	May 31, 2023	May 30, 2024					
Spectrum Analyzer9kHz- 40GHz	R&S	FSP40	100363	May 15, 2023	May 14, 2024					
Software	Frad	EZ-EMC	FA-03A2 RE	\	Λ_{f}					



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
Notoo:	·	-

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.



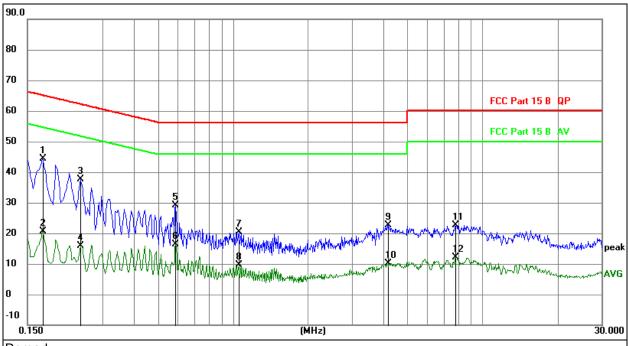
6.5 Test Result

Tem	perature:		26 ℃			Rela	elative Humidity: 54				54%								
Pres	ssure:		101KPa			Tes	t Volta	ge:	-		A	AC 120V/60Hz							
Tes	t Mode:		Mod	e 4				Pola	arizatio	n:			L						
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-10																			
	150							(MHz)										3	0.000
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2. F	actor = Inse	rtion Lo	oss + (Cabl	e Lo	SS.									;				
	leasuremen ver = Meas				I + C	Corre	ct Facto	or						-					2
				Re	adi	-		rect	Mea				mit			/er			
	o. Mk.	Free	·	L	eve	91		ctor		nen	t							Deter	
	1 *	MHz			4.0			B	dBu				Bu∨			B		Detect	
	1	0.17			4.8		19.		44.0			64				0.23		QF	
	2	0.17			0.68		19.		20.4			54				1.38		AV	
	3	0.26			4.8		19.		34.			61				5.49		QF	
	4	0.26			2.29		19.		17.			51				3.67		AV	
	5	0.58			3.91		19.		28.			56				7.25		QF	-
	6	0.58			3.92		19.		15.9			46				0.08		AV	
	7	0.90		З	8.81		19.		23.			56				2.27		QF	
	8	0.90	060	-{	8.20	0	19.	92	11.	72		46	.00)	-34	1.28		AV	G
	9	4.13	369	З	3.30)	20.	63	23.9	93		56	.00)	-32	2.07		QF) .,
1	0	4.13	369	-8	8.5	3	20.	63	12.1	10		46	.00)	-33	3.90		AV	G
1	1	8.76	530	5	5.02	2	19.	91	24.9	93		60	.00)	-35	5.07		QF)
1	2	8.76	630	-{	5.8	3	19.	91	14.(38		50	.00)	-35	5.92		AV	G ,

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



Remark:

All readings are Quasi-Peak and Average values.
 Factor = Insertion Loss + Cable Loss.
 Measurement = Reading Level + Correct Factor

4.	Over =	Measurement -	Limit
			2

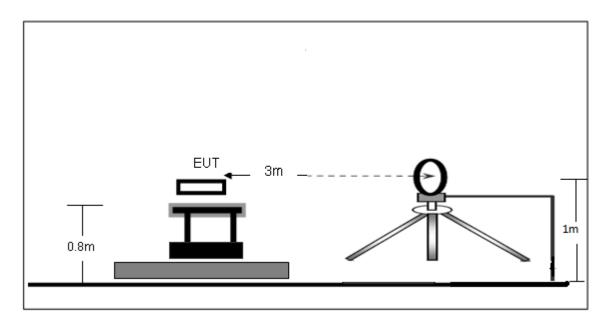
No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
	MHz		dB	dBuV	dBuV	dB	Detector
1 *	0.1722	24.57	19.77	44.34	64.85	-20.51	QP
2	0.1722	0.78	19.77	20.55	54.85	-34.30	AVG
3	0.2442	17.84	19.83	37.67	61.95	-24.28	QP
4	0.2442	-3.89	19.83	15.94	51.95	-36.01	AVG
5	0.5885	9.17	19.84	29.01	56.00	-26.99	QP
6	0.5885	-3.48	19.84	16.36	46.00	-29.64	AVG
7	1.0541	0.32	19.95	20.27	56.00	-35.73	QP
8	1.0541	-10.43	19.95	9.52	46.00	-36.48	AVG
9	4.1796	2.13	20.62	22.75	56.00	-33.25	QP
10	4.1796	-10.43	20.62	10.19	46.00	-35.81	AVG
11	7.7689	2.78	19.94	22.72	60.00	-37.28	QP
12	7.7689	-7.88	19.94	12.06	50.00	-37.94	AVG



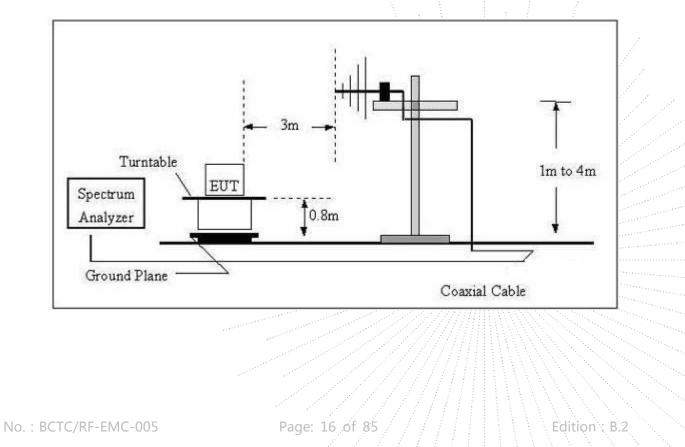
7. Radiated emissions

7.1 Block Diagram Of Test Setup

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

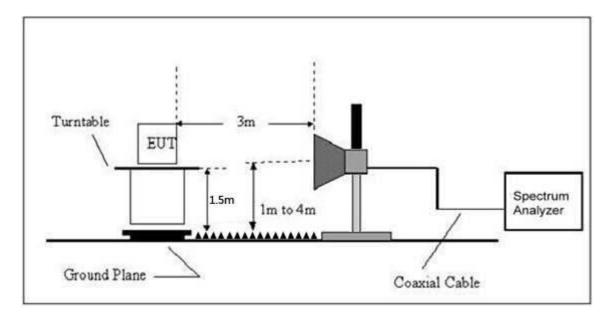


(B) Radiated Emission Test-Up Frequency 30MHz~1GHz





(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	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:	AC 120V/60Hz
Test Mode:	Mode 4	Test voltage.	

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.



80.0 dBuV/m

Report No.: BCTC2404064823-1E

Temperature: 26 °C Relative Humidity: 54%						
Pressure:	101KPa	Test Voltage:	AC 120V/60Hz			
Test Mode:	Mode 4	Polarization:	Horizontal			



				FC	CC_PART15_B_03	
1		2	3 ×	on server of the history	5 X Multimeter	www.www
0 40 50 60		(MHz)	300	400 !	500 600 700	1000.000
surement = Read	ling Level + Co		ier.			
	Deedir	0				e e e e e e e e e e e e e e e e e e e
Mk. Freq	Readir Level	•		- Limit	Over	i
Mk. Freq		Factor			Over dB	Detector
•	l. Level dBuV	Factor dB	ment	Limit		Detector
MHz	I. Level dBuV 9 25.12	Factor dB 2 -13.99	dBuV/m	Limit dB/m	dB	
MHz 48.8429	I. Level dBu∨ 9 25.12 7 25.94	Factor dB -13.99 -16.51	dBuV/m 11.13	Limit dB/m 40.00	dB -28.87	QP
) (0 40 50 60 k: or = Antenna Fac surement = Read	k: or = Antenna Factor + Cable Lo surement = Reading Level + Co r = Measurement - Limit	A Company and the second secon	A Contractor + Cable Loss – Pre-amplifier. Surement = Reading Level + Correct Factor	$\frac{1}{40}$ $\frac{1}{40}$ $\frac{1}{50}$	$\frac{1}{40}$

625.0780

989.5355

26.86

24.78

5

6

*

-6.59

-2.48

20.27

22.30

46.00

54.00

-25.73

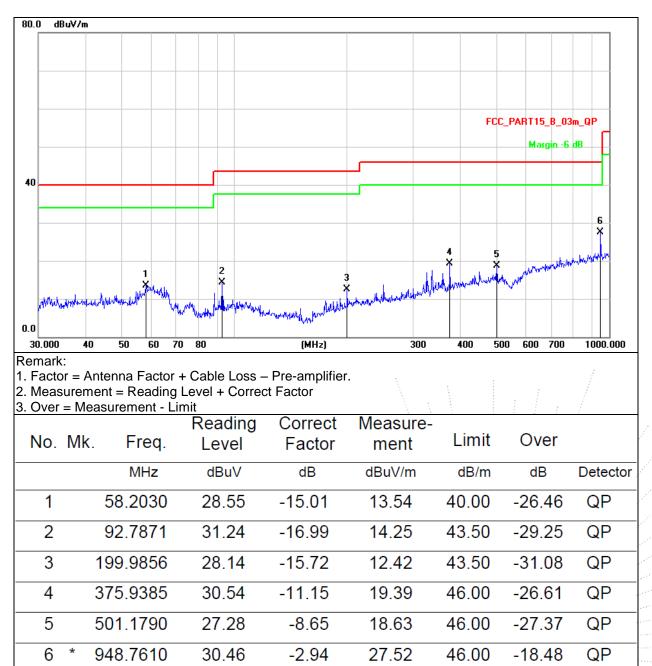
-31.70

QP

QP



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



No. : BCTC/RF-EMC-005



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	70.81	-19.99	50.82	74.00	-23.18	PK
V	4804.00	60.70	-19.99	40.71	54.00	-13.29	AV
V	7206.00	62.74	-14.22	48.52	74.00	-25.48	PK
V	7206.00	52.17	-14.22	37.95	54.00	-16.05	AV
Н	4804.00	69.08	-19.99	49.09	74.00	-24.91	PK
Н	4804.00	58.57	-19.99	38.58	54.00	-15.42	AV
Н	7206.00	61.40	-14.22	47.18	74.00	-26.82	PK
Н	7206.00	53.07	-14.22	38.85	54.00	-15.15	AV
		G	FSK Middle c	hannel			
V	4882.00	68.32	-19.84	48.48	74.00	-25.52	PK
V	4882.00	60.27	-19.84	40.43	54.00	-13.57	AV
V	7323.00	57.82	-13.90	43.92	74.00	-30.08	PK
V	7323.00	48.19	-13.90	34.29	54.00	-19.71	AV
Н	4882.00	65.13	-19.84	45.29	74.00	-28.71	PK
Н	4882.00	55.96	-19.84	36.12	54.00	-17.88	AV
Н	7323.00	55.89	-13.90	41.99	74.00	-32.01	PK
Н	7323.00	47.44	-13.90	33.54	54.00	-20.46	AV
			GFSK High ch	annel			
V	4960.00	69.92	-19.68	50.24	74.00	-23.76	PK
V	4960.00	60.94	-19.68	41.26	54.00	-12.74	AV
V	7440.00	61.67	-13.57	48.10	74.00	-25.90	PK
V	7440.00	52.56	-13.57	38.99	54.00	-15.01	AV
Н	4960.00	68.12	-19.68	48.44	74.00	-25.56	PK
Н	4960.00	58.52	-19.68	38.84	54.00	-15.16	AV
Н	7440.00	59.60	-13.57	46.03	74.00	-27.97	PK
Н	7440.00	51.71	-13.57	38.14	54.00	-15.86	AV

Remark:

1. Measurement = Reading Level + Correct Factor, Correct Factor = Antenna Factor + Cable Loss – Pre-amplifier. Over= Measurement - 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.



Polar	Frequency	Reading Level	Correct Factor	Measure- ment	Limits	Over	Detector	
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	Туре	
	π/4 DQPSK Low channel							
V	4804.00	72.09	-19.99	52.10	74.00	-21.90	PK	
V	4804.00	63.89	-19.99	43.90	54.00	-10.10	AV	
V	7206.00	64.29	-14.22	50.07	74.00	-23.93	PK	
V	7206.00	55.17	-14.22	40.95	54.00	-13.05	AV	
Н	4804.00	68.61	-19.99	48.62	74.00	-25.38	PK	
Н	4804.00	57.97	-19.99	37.98	54.00	-16.02	AV	
Н	7206.00	62.33	-14.22	48.11	74.00	-25.89	PK	
Н	7206.00	54.71	-14.22	40.49	54.00	-13.51	AV	
		π/4	DQPSK Middl	e channel				
V	4882.00	68.69	-19.84	48.85	74.00	-25.15	PK	
V	4882.00	60.89	-19.84	41.05	54.00	-12.95	AV	
V	7323.00	60.73	-13.90	46.83	74.00	-27.17	PK	
V	7323.00	52.60	-13.90	38.70	54.00	-15.30	AV	
H	4882.00	64.76	-19.84	44.92	74.00	-29.08	PK	
Н	4882.00	55.23	-19.84	35.39	54.00	-18.61	AV	
Н	7323.00	58.72	-13.90	44.82	74.00	-29.18	PK	
Н	7323.00	51.66	-13.90	37.76	54.00	-16.24	AV	
		π/4	DQPSK High	channel				
V	4960.00	70.15	-19.68	50.47	74.00	-23.53	PK	
V	4960.00	59.86	-19.68	40,18	54.00	-13.82	AV	
V	7440.00	62.81	-13.57	49.24	74.00	-24.76	PK	
V	7440.00	53.13	-13.57	39.56	54.00	-14.44	AV	
Н	4960.00	68.53	-19.68	48.85	74.00	-25.15	PK	
Н	4960.00	58.65	-19.68	38.97	54.00	-15.03	AV	
Н	7440.00	59.81	-13.57	46.24	74.00	-27.76	PK	
Н	7440.00	51.68	-13.57	38.11	54.00	-15.89	AV	

Remark:

1. Measurement = Reading Level + Correct Factor, Correct Factor = Antenna Factor + Cable Loss – Pre-amplifier. Over= Measurement - 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 20dB4. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible

value has no need to be reported.



Polar	Frequency	Reading Level	Correct Factor	Measure- ment	Limits	Over	Detector
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	Туре
		8	DPSK Low cl	nannel			
V	4804.00	70.93	-19.99	50.94	74.00	-23.06	PK
V	4804.00	61.61	-19.99	41.62	54.00	-12.38	AV
V	7206.00	62.88	-14.22	48.66	74.00	-25.34	PK
V	7206.00	52.18	-14.22	37.96	54.00	-16.04	AV
Н	4804.00	67.56	-19.99	47.57	74.00	-26.43	PK
Н	4804.00	58.44	-19.99	38.45	54.00	-15.55	AV
Н	7206.00	60.08	-14.22	45.86	74.00	-28.14	PK
Н	7206.00	52.11	-14.22	37.89	54.00	-16.11	AV
		80	PSK Middle	channel			
V	4882.00	67.81	-19.84	47.97	74.00	-26.03	PK
V	4882.00	59.26	-19.84	39.42	54.00	-14.58	AV
V	7323.00	58.17	-13.90	44.27	74.00	-29.73	PK
V	7323.00	48.38	-13.90	34.48	54.00	-19.52	AV
Н	4882.00	62.99	-19.84	43.15	74.00	-30.85	PK
Н	4882.00	52.23	-19.84	32.39	54.00	-21.61	AV
Н	7323.00	55.45	-13.90	41.55	74.00	-32.45	PK
Н	7323.00	47.80	-13.90	33.90	54.00	-20.10	AV
		8	DPSK High c	hannel			
V	4960.00	69.34	-19.68	49.66	74.00	-24.34	PK
V	4960.00	61.00	-19.68	41.32	54.00	-12.68	AV
V	7440.00	62.25	-13.57	48.68	74.00	-25.32	PK
V	7440.00	52.26	-13.57	38.69	54.00	-15.31	AV
Н	4960.00	67.37	-19.68	47.69	74.00	-26.31	PK
Н	4960.00	57.24	-19.68	37.56	54.00	-16.44	AV
Н	7440.00	59.84	-13.57	46.27	74.00	-27.73	PK
Н	7440.00	51.83	-13.57	38.26	54.00	-15.74	AV

Remark:

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

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

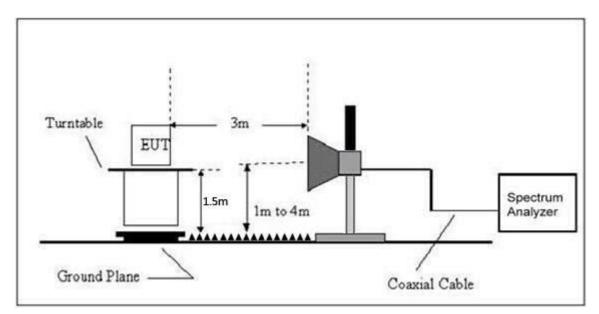
3. In restricted bands of operation, The spurious emissions below the permissible value more than 20dB 4. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



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 (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).

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 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 (dBuV/m)	Correct Factor (dB)	Measure- ment (dBuV/m)	•	V/m)	Over	Result
			(abav/iii)	. ,	PK	PK	AV	PK	
					nel 2402MHz				
	Н	2390.00	73.57	-25.43	48.14	74.00	54.00	-25.86	PASS
	Н	2400.00	74.81	-25.40	49.41	74.00	54.00	-24.59	PASS
	V	2390.00	74.07	-25.43	48.64	74.00	54.00	-25.36	PASS
GFSK	V	2400.00	73.98	-25.40	48.58	74.00	54.00	-25.42	PASS
Gron					nel 2480MHz				
	Н	2483.50	73.57	-25.15	48.42	74.00	54.00	-25.58	PASS
	Н	2500.00	68.73	-25.10	43.63	74.00	54.00	-30.37	PASS
	V	2483.50	73.36	-25.15	48.21	74.00	54.00	-25.79	PASS
	V	2500.00	68.60	-25.10	43.50	74.00	54.00	-30.50	PASS
				Low Chan	nel 2402MHz				
	Н	2390.00	73.67	-25.43	48.24	74.00	54.00	-25.76	PASS
	Н	2400.00	76.41	-25.40	51.01	74.00	54.00	-22.99	PASS
	V	2390.00	74.15	-25.43	48.72	74.00	54.00	-25.28	PASS
	V	2400.00	74.86	-25.40	49.46	74.00	54.00	-24.54	PASS
π/4DQPSK				High Chan	nel 2480MHz				
	Н	2483.50	71.81	-25.15	46.66	74.00	54.00	-27.34	PASS
	Н	2500.00	68.67	-25.10	43.57	74.00	54.00	-30.43	PASS
	V	2483.50	72.60	-25.15	47.45	74.00	54.00	-26.55	PASS
	V	2500.00	68.08	-25.10	42.98	74.00	54.00	-31.02	PASS
				Low Chan	nel 2402MHz				
	Н	2390.00	72.22	-25.43	46.79	74.00	54.00	-27.21	PASS
	Н	2400.00	75.02	-25.40	49.62	74.00	54.00	-24.38	PASS
	V	2390.00	72.12	-25.43	46.69	74.00	54.00	-27.31	PASS
8DPSK	V	2400.00	72.55	-25.40	47.15	74.00	54.00	-26.85	PASS
ODADK				High Chan	nel 2480MHz				1 1
	Н	2483.50	70.91	-25.15	45.76	74.00	54.00	-28.24	PASS
	Н	2500.00	68.40	-25.10	43.30	74.00	54.00	-30.70	PASS
	V	2483.50	71.15	-25.15	46.00	74.00	54.00	-28.00	PASS
	V	2500.00	68.10	-25.10	43.00	74.00	54.00	-31.00	PASS

Remark:

1. Measurement = Reading Level + Correct Factor, Correct Factor = Antenna Factor + Cable Loss - Pre-amplifier.

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

EUT	SPECTRUM
	ANALYZER

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;

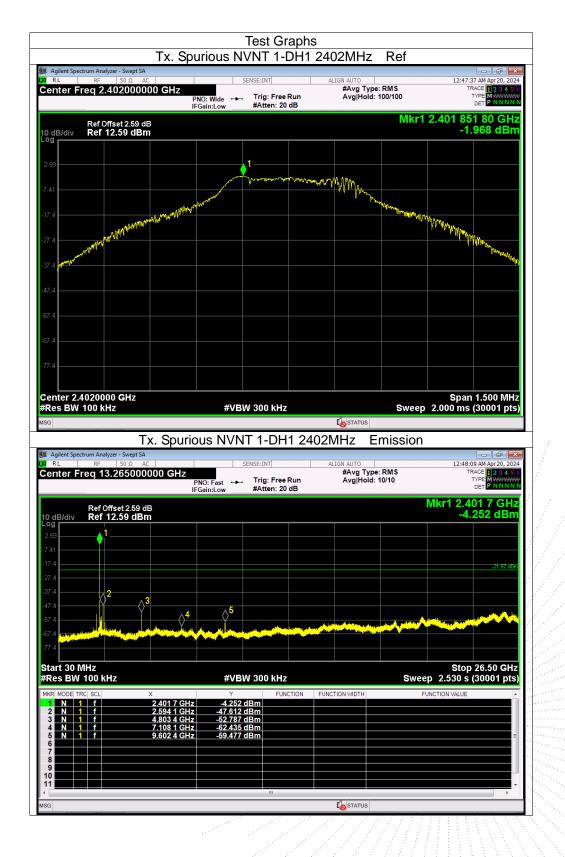
2. Set the spectrum analyzer:

RBW = 100kHz, VBW = 300kHz, Sweep = auto

Detector function = peak, Trace = max hold

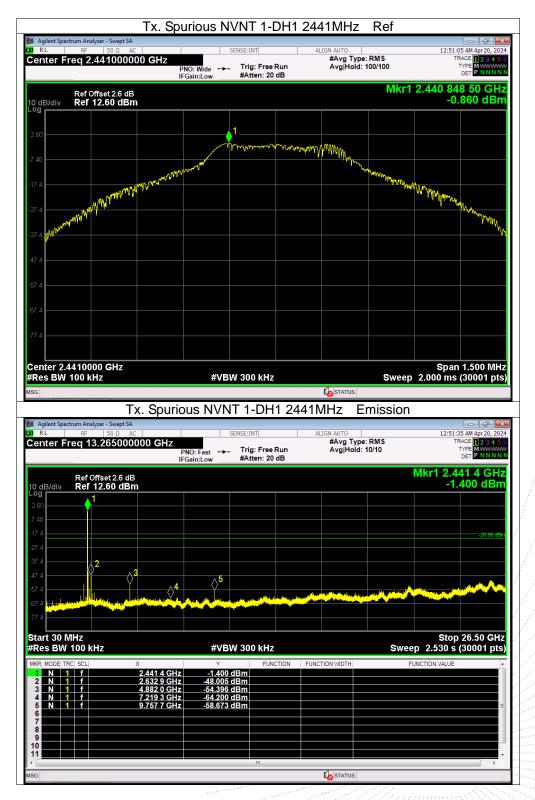


9.4 Test Result



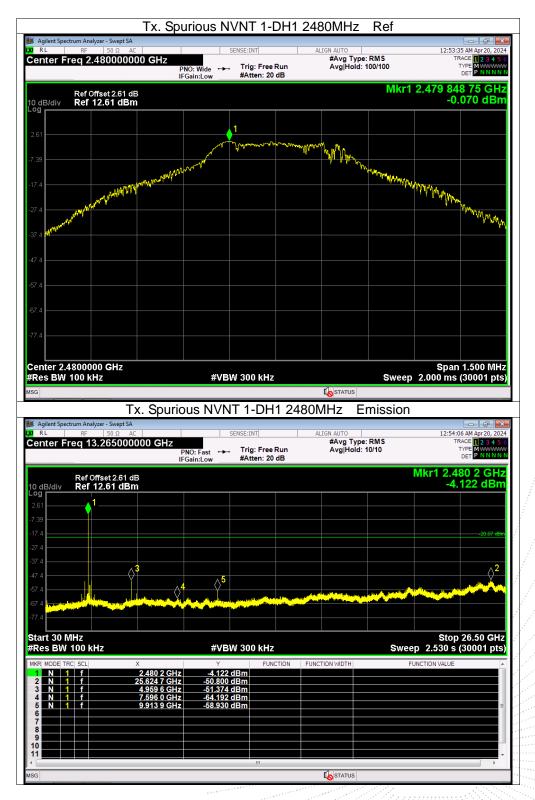
No.: BCTC/RF-EMC-005





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Agilent Spectrum Analyzer - Swept SA		us NVNT 2-D		Ref	- P
RL RF 50 Ω AC enter Freq 2.40200000	0 GHz	SENSE:INT	ALIGN AUTO #Avg Type:		12:55:45 AM Apr 20, 20 TRACE 1 2 3 4
	PNO: Wie IFGain:Le		un Avg Hold:1 B	100/100	
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Res BW 100 kHz		#VBW 300 kHz) ms (30001 pt
G			K STATUS		
	. Spurious	NVNT 2-DH1	2402MHz E	mission	
Agilent Spectrum Analyzer - Swept SA R L RF 50 Ω AC		SENSE:INT	ALIGN AUTO #Avg Type:	DMS	12:56:15 AM Apr 20, 20
enter Freq 13.2650000	PNO: Fa IFGain:Lo		un Avg Hold: 1		TYPE MWWW DET P NNN
Ref Offset 2.59 dB				Mkr1	2.401 7 GH
Rei Oliset 2.03 dB					-2.137 dB
dB/div Ref 12.59 dBm					
.59					
.59 1 .41 7.4					-21.98 d
159 41 7.4 7.4 7.4 7.4 7.4 7.4 7.4					-21,98 d
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259 41 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4	<u></u>	¢ ⁵			-21.98 d
159 41 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4					
259 41 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4					Stop 26.50 GF
2.59 4.1 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4		Y FUNCT			Stop 26.50 GH 30 s (30001 pt
259 41 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4		Y FUNCT -2.137 dBm 45.782 dBm		Sweep 2.5	Stop 26.50 GH 30 s (30001 pt
2:59 1 7.4 2 7.4 2 7.4 3 7.4 3 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 5 7.4 5 7.4 5 7.4 5 7.4 7 1.1 1.0 1.1 1.0 1.1 1.0 1.1 1.0 1.1 1.0 1.1 1.0 1.1 1.0 1.1 1.0 1.1 1.0	2.594 1 GHz - 4.804 3 GHz - 7.111 6 GHz -	Y FUNCT -2.137 dBm 45.782 dBm 54.633 dBm 63.287 dBm		Sweep 2.5	Stop 26.50 GH 30 s (30001 pt
2:59 1 7.4 2 7.4 2 7.4 3 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 100 KHz Res BW 100 KHz 1 8 1 7 4 1 1 7 4	2.594 1 GHz - 4.804 3 GHz - 7.111 6 GHz -	Y FUNCT -2.137 dBm 45.782 dBm 54.633 dBm		Sweep 2.5	-21 39 d -21 39 d Stop 26.50 GH 30 s (30001 pt /ALUE
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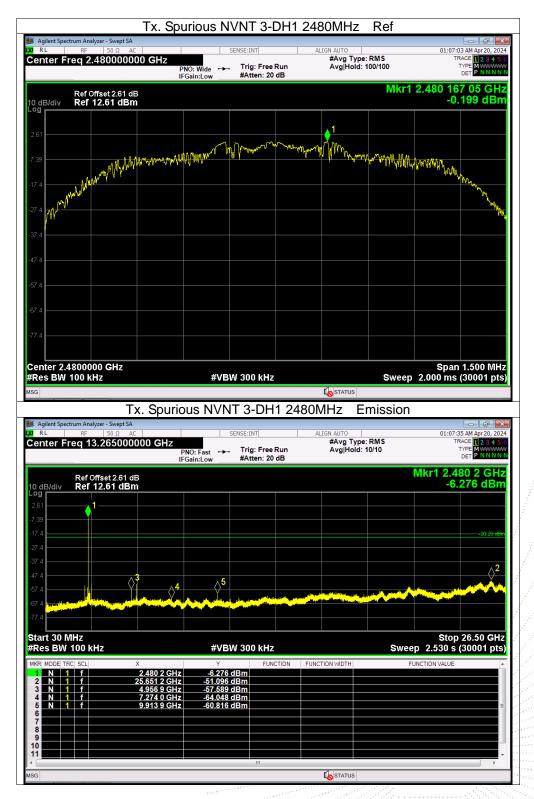
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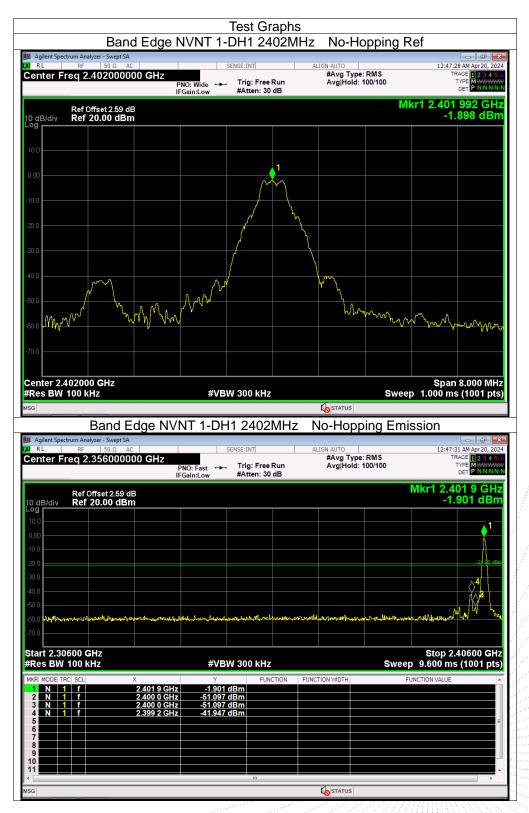
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RL RF 50 Ω /	A AC 0000 GHz P			ALIGN AUTO	: RMS 10/10	01:05:13 AM Apr 20, 20 TRACE 1 2 3 4 9 TYPE M WWWW DET P NNN			
RL RF 50 Ω / enter Freq 13.265000 	A AC OOOO GHz F IF	NO: Fast ↔	ISE:INT	ALIGN AUTO	: RMS 10/10	01:05:13 AM Apr 20, 20 TRACE 1 2 3 4 5 TYPE MWWW DET P NNNN			
RL RF 50 Ω / enter Freq 13.265000 Ref Offset 2.6 dl Ref Offset 2.6 dl Ref 12.60 dB 0 dB/div Ref 12.60 dB Ref 12.60 dB Ref 12.60 dB Ref 12.60 dB	A AC OOOO GHz F IF	NO: Fast ↔	ISE:INT	ALIGN AUTO	: RMS 10/10	01:05:13 AM Apr 20, 20 TRACE 2 3 4			
RL RF 50 Ω / enter Freq 13.265000 Ref Offset 2.6 dB 0 dB/div Ref 12.60 dB	A AC OOOO GHz F IF	NO: Fast ↔	ISE:INT	ALIGN AUTO	: RMS 10/10	01:05:13 AM Apr 20, 20 TRACE 1 2 3 4 5 TYPE MWWW DET P NNNN			
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RL RF 50.0 enter Freq 13.265000	AC GHZ	NO: Fast ↔	ISE:INT	ALIGN AUTO	: RMS 10/10	01:05:13 AM Apr 20, 20 TRACE 1 2 3 4 5 TYPE MWWW DET P NNNN			
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RL PF 50.0 /// enter Freq 13.265000 Ref Offset 2.6 dl // <th <="" th=""> <th <="" th=""> <th <="" th=""></th></th></th>	<th <="" th=""> <th <="" th=""></th></th>	<th <="" th=""></th>		AC GHZ	NO: Fast ↔	ISE:INT	ALIGN AUTO	: RMS 10/10	01:05:13 AM Apr 20, 20 TRACE 1 2 3 4 TYPE M WWW DET P NNNN NKr1 2.441 4 GH -3.256 dBr -20 80 18
RL RF 50.0 enter Freq 13.265000 Ref Offset 2.6 dl 0 dB/div Ref 12.60 dB 0 dB/div Ref 12.60 dB 7.4 1 7.4 2 7.4 2 7.4 2 7.4 2 7.4 2 7.4 2 7.4 2 7.4 2 7.4 2 7.4 2 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.4 4 7.5 5 7.6 5 7.7 4	AC GHZ	NO: Fast →→ Gain:Low	ISE:INT	ALIGN AUTO	RMS 10/10	01:05:13 AM Apr 20, 20 TRACE 1 2 3 4 5 TYPE MWWW DET P NNNN			
enter Freq 13.265000 Ref Offset 2.6 db 9 9 1 1 1 1 1 1 1 1 1 1 1 1 1	A AC DODOO GHZ P F F B m 3 3 4 4 4	NO: Fast Gain:Low → Gain:Low ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	ISE:INT Trig: Free Run #Atten: 20 dB	ALIGN AUTO	RMS 10/10	01:05:13 AM AP20, 20 TRACE 12 3 4 TYPE MWW DET P NNNN Mkr1 2.441 4 GH -3.256 dBr -2020 02 Stop 26.50 GH			
RL PF 50.2 enter Freq 13.265000 0 dB/div Ref Offset 2.6 dl 0 dB/div Ref 12.60 dB 200 1 7.4 2 7.7 4 7.7 4 7.7 <	AC COUDO GHZ P F M AC COUDO GHZ P F COUDO GHZ A COUDO GHZ COUDO GHZ A COUDO GHZ A COUDO GHZ A CO	NO: Fast →→ Gain:Low →→ Sain:Low ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	SE:INT Trig: Free Run #Atten: 20 dB daganese Prove allowed 3000 kHz FUNCTION Sm	ALIGN AUTO	RMS 10/10	01:05:13 AM Apr20, 20 TRACE 12 23 4 TYPE M WINT Mkr1 2.441 4 GH -3.256 dBr -0.000 -0.000 Stop 26.50 GH 0 2.530 s (30001 pt			
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RL PF 50.2 enter Freq 13.265000 Ref Offset 2.6 dl 0 dB/div Ref 12.60 dB 2 d2 1 7.4 2 7.4 2 7.4 2 7.4 2 7.4 2 7.4 2 7.4 2 7.4 2 7.4 2 7.4 2 7.4 2 7.4 2 7.4 1 7.4 2 7.4 2 7.4 2 7.4 1 8 100 KHz 8 1 1 1 3 1 3 1 4 1 5 1 6 6	AC COUDO GHZ F F B m COUDO GHZ F F F COUDO GHZ COUDO GH	×NO: Fast +→- Gain:Low +→-	SE:INT Trig: Free Run #Atten: 20 dB U 4 4 4 4 4 4 4 4 4 4 4 4 4	ALIGN AUTO	RMS 10/10	01:05:13 AM AP70, 20 TRACE TYPE A STATE DET P NNNN MKr1 2.441 4 GH -3.256 dBr -20 86 12 -20 86 12 -30 86 1			
RL PF 50.0 ////////////////////////////////////	AC COUDO GHZ F F B m COUDO GHZ F F F COUDO GHZ COUDO GH	×NO: Fast +→- Gain:Low +→-	SE:INT Trig: Free Run #Atten: 20 dB U 4 4 4 4 4 4 4 4 4 4 4 4 4	ALIGN AUTO	RMS 10/10	01:05:13 AM AP70, 20 TRACE TYPE A STATE DET P NNNN MKr1 2.441 4 GH -3.256 dBr -20 86 12 -20 86 12 -30 86 1			
RL RF 50.0 enter Freq 13.265000 Ref Offset 2.6 dl 0 dB/div Ref 12.60 dB 1 1 40 1 7.4 2 7.4 2 7.4 2 7.4 2 7.4 2 7.4 2 7.4 2 1 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 2 1 <	AC COUDO GHZ F F B m COUDO GHZ F F F COUDO GHZ COUDO GH	×NO: Fast +→- Gain:Low +→-	SE:INT Trig: Free Run #Atten: 20 dB U 4 4 4 4 4 4 4 4 4 4 4 4 4	ALIGN AUTO	RMS 10/10	01:05:13 AM AP70, 20 TRACE TYPE A STATE DET P NNNN MKr1 2.441 4 GH -3.256 dBr -20 86 12 -20 86 12 -30 86 1			





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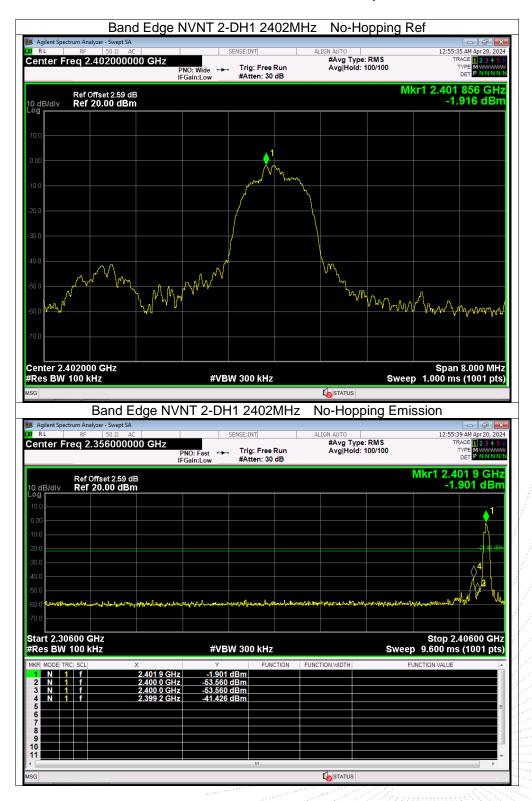


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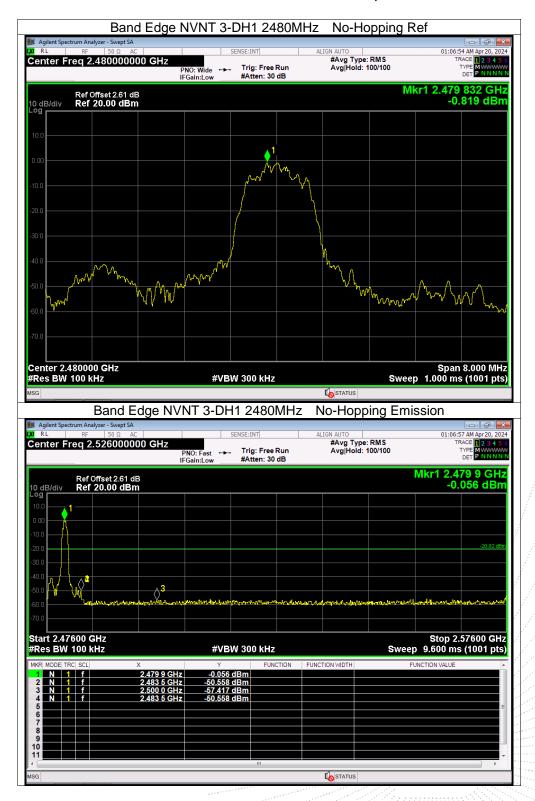












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Band Edg	ge(Hopping) NVN	T 1-DH1 2480MHz	Hopping Ref
Mailent Spectrum Analyzer - Swept SA M RF 50 Ω AC Center Freq 2.480000000	PNO: Wide +++ Tri	INT ALIGN AUTO #Avg Type g: Free Run Avg Hold: tten: 30 dB	
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Center 2.480000 GHz #Res BW 100 kHz	#VBW 30		Span 8.000 MHz Sweep 1.000 ms (1001 pts)
MSG	Hopping) NVNT 1		opping Emission
Band Edde()			
Agilent Spectrum Analyzer - Swept SA R L RF 50 Ω AC	SENSE:	INT ALIGN AUTO	01:13:20 AM Apr 20, 2024
Agilent Spectrum Analyzer - Swept SA	GHZ PNO: Fast →→ Tri		01:13:20 AM Apr 20, 2024 RMS TRACE 12:34 5 6
Agilent Spectrum Analyzer - Swept SA RL RF 50 Ω AC Center Freq 2.526000000 Ref Offset 2.61 dB 10 dB/div Ref 20.00 dBm	GHz PNO: Fast →→ Tri	INT ALIGN AUTO #Avg Type g: Free Run Avg Hold:	01:13:20 AM Apr 20, 2024 : RMS TRACE 12.34 5 6
Magilent Spectrum Analyzer - Swept SA RL RF 50Ω AC Center Freq 2.526000000 Ref Offset 2.61 dB	GHz PNO: Fast →→ Tri	INT ALIGN AUTO #Avg Type g: Free Run Avg Hold:	01:13:20 AM Apr 20, 2024 RMS TRACE 2 34 5 0 2000/2000 TYPE NNNNN DET NNNNN MKr1 2.478 0 GHz
Mailent Spectrum Analyzer - Swept SA Mailent Spectrum Analyzer - Swept SA Mailent Spectrum Analyzer - Swept SA Center Freq 2.526000000 Ref Offset 2.51 dB 10 dB/div Ref 20.00 dBm 10.0	GHz PNO: Fast →→ Tri	INT ALIGN AUTO #Avg Type g: Free Run Avg Hold:	01:13:20 AM Apr 20, 2024 RMS TRACE 2345 0 2000/2000 TYPE NNNNN DET NNNNN Mkr1 2.478 0 GHz
Regilent Spectrum Analyzer - Swept SA RL RF 50.0 AC Center Freq 2.526000000 Ref Offset 2.61 dB 10 dB/div Ref 20.00 dBm 0.00 1 1 0.00 1 1	GHz PNO: Fast →→ Tri	INT ALIGN AUTO #Avg Type g: Free Run Avg Hold:	01:13:20 AM Apr 20, 2024
Agilent Spectrum Analyzer - Swept SA RL	GHz PNO: Fast → Tri IFGain:Low → #A	INT ALIGN AUTO #Avg Type g: Free Run Avg Hold: tten: 30 dB	01:13:20 AM Apr 20, 2024
Agilent Spectrum Analyzer - Swept SA KI RF 50 Ω AC Center Freq 2.5260000000 Ref Offset 2.61 dB Ref 20.00 dBm Log 1 1 1 1 10 dB/div Ref 20.00 dBm 1 1 1 10 dB/div Ref 20.00 dBm 1 <th1< th=""> 1 1 1</th1<>	GHz PNO: Fast → Tri IFGain:Low → #A	INT ALIGN AUTO #Avg Type g: Free Run Avg Hold: tten: 30 dB	01:13:20 M Apr20, 2024
Agilent Spectrum Analyzer - Swept SA KR RF 50 Ω AC Center Freq 2.5260000000 Ref Offset 2.61 dB Ref Offset 2.61 dB 10 dB/div Ref 20.00 dBm Ref 20.00 dBm	GHz PNO: Fast → Tri IFGain:Low → #A	INT ALIGN AUTO #Avg Type g: Free Run Avg Hold: tten: 30 dB	01:13:20 MA Apr20, 2024
Agilent Spectrum Analyzer - Swept SA KR RF 50 Ω AC Center Freq 2.5260000000 Ref Offset 2.61 dB Ref 20.00 dBm Log 1 1 1 10 dB/div Ref 20.00 dBm 2 1 0.00 1 1 1 1 0.00 1 1 1 1 1 0.00 1 2 2 1 <th1< th=""> 1 <th1< th=""> <th1< td=""><td>GHz PNO: Fast Tri IFGain:Low #A</td><td>INT ALIGN AUTO #Avg Type g: Free Run Avg Hold: tten: 30 dB</td><td>01:13:20 M Apr20, 2024</td></th1<></th1<></th1<>	GHz PNO: Fast Tri IFGain:Low #A	INT ALIGN AUTO #Avg Type g: Free Run Avg Hold: tten: 30 dB	01:13:20 M Apr20, 2024
Majlent Spectrum Analyzer - Swept SA KR RF 50 Ω AC Center Freq 2.5260000000 Ref Offset 2.61 dB Ref 20.00 dBm Log Image: Colspan="2">Image: Colspan="2">Center Freq 2.5260000000 Ref Offset 2.61 dB Image: Colspan="2">Colspan="2">Center Freq 2.5260000000 Ref Offset 2.61 dB Image: Colspan="2">Colspan="2">Center Freq 2.5260000000 Image: Colspan="2">Ref Offset 2.61 dB Image: 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=	GHz PNO: Fast Tri IFGain:Low Tri #A	INT ALIGN AUTO #Avg Type g: Free Run Avg Hold: tten: 30 dB	01:13:20 MA Apr20, 2024
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Agilent Spectrum Analyzer - Swept SA KR RF 50 Ω AC Center Freq 2.526000000 Ref Offset 2.61 dB In dB/div Ref Offset 2.61 dB 10 dB/div Ref 20.00 dBm In dB/div Ref 20.00 dBm 10 dB/div Ref 20.00 dBm In dB/div Ref 20.00 dBm 10 dB/div Ref 20.00 dBm In dB/div Ref 20.00 dBm 10 dB/div Ref 20.00 dBm In dBm In dBm 20 0 In dB/div Ref 20.00 dBm In dBm 20 0 In dBm In dBm In dBm In dBm 20 0 In dBm In dBm In dBm In dBm In dBm 20 0 In dBm In dBm In dBm In dBm In dBm In dBm 20 0 In dBm In dBm In dBm In dBm In dBm In dBm 20 0 In dBm In dBm In dBm In dBm In dBm In dBm 20 0 In dBm In dBm In dBm In dBm In dBm In dBm <t< td=""><td>GHz PNO: Fast → Tri IFGain:Low #A</td><td>INT ALIGN AUTO #Avg Type g: Free Run Avg Hold: tten: 30 dB</td><td>01:13:20 MA Apr20, 2024</td></t<>	GHz PNO: Fast → Tri IFGain:Low #A	INT ALIGN AUTO #Avg Type g: Free Run Avg Hold: tten: 30 dB	01:13:20 MA Apr20, 2024



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enter 2.402000 GHz Res BW 100 kHz		#VBW	300 kHz			Swee	Span p 1.000 ms	8.000 MI		
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Band Ec Agilent Spectrum Analyzer - Swep	dge(Hoppin	g) NVNT	2-DH1	2402M	Hz Ho	opping E	missior			
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RL RF 50 Ω enter Freg 2.35600		02			#Avg Type:		TF	RACE 1 2 3 4		
	0000 GHz	NO: Fast ↔ Gain:Low	Trig: Free Ru #Atten: 30 dl			2000/2000	TF	22 AM Apr 20, 20 RACE 1 2 3 4 TYPE M		
enter Freq 2.35600 Ref Offset 2.5	00000 GHz PH IFC	NO: Fast ↔			#Avg Type:	2000/2000	Mkr1 2.4	RACE 1 2 3 4 TYPE MWWW DET PNNN		
enter Freq 2.35600 Ref Offset 2.5	00000 GHz PH IFC	NO: Fast ↔			#Avg Type:	2000/2000	Mkr1 2.4	RACE 1 2 3 4 TYPE MWWW DET PNNN		
Ref Offset 2.5 0 dB/div Ref 20.00 c	00000 GHz PH IFC	NO: Fast ↔			#Avg Type:	2000/2000	Mkr1 2.4	RACE 1 2 3 4 TYPE MWWW DET PNNN		
Ref Offset 2.5 Ref Offset 2.5 Ref 20.00 c	00000 GHz PH IFC	NO: Fast ↔			#Avg Type:	2000/2000	Mkr1 2.4	RACE 1 2 3 4 1 TYPE MWWW DET PNNN		
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Ref Offset 2.5 d B/div Ref 20.00 c 0 d B/di	00000 GHz PH IFC	NO: Fast ↔			#Avg Type:	2000/2000	Mkr1 2.4	RACE 1 2 3 4 TYPE MWWW DET PNNN		
Ref Offset 2.5 0 dE/div Ref 20.00 0 0 de/di 0 0 de/di 0 0 de/div Ref 20.00 0 0 de/div Ref 20.00 0 0 de/d	00000 GHz PH IFC	VO: Fast →→			#Avg Type:		TF Mkr1 2.4 -2.	400E0 CF		
Ref Offset 2.5 Ref Offset 2.5 Ref 20.00 c R	2.406 0 GHz	40: Fast →→ ain:Low → #VBW #VBW Y -2.046 df	#Atten: 30 dl	3	#Avg Type:	2000/2000	TF Mkr1 2.4 -2.	400E 01 2 3 4. TYPE MYWRW DET P NNNN 06 0 GH 046 dB1 22 01 d 046 dB1 22 01 d 046 dB1 046 dB1		
Ref Offset 2.5 Ref 20.00 c Ref	X 2.406 0 GHz 2.400 0 GHz 2.400 0 GHz 2.400 0 GHz	40: Fast →→ jain:Low #VBW ¥VBW Y -2.046 dt -40.845 dt	#Atten: 30 di	3	#Avg Type: Avg Hold: 2	2000/2000	TF Mkr1 2.4 -2.	400E0 CF		
Ref Offset 2.5 Ref 20.00 c Ref 20.00 c 0 0 0 0 0 0 0.0	2.406 0 GHz	40: Fast →→ ain:Low #VBW Y -2.046 dt -40.845 dt	#Atten: 30 di	3	#Avg Type: Avg Hold: 2	2000/2000	TF Mkr1 2.4 -2.	400E0 CF		
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Agilent Spectrum Analyzer - Swept SA	<u>'NT 2-DH1 2</u>	480MHz	Hopping	Rei
IXI RL RF 50Ω AC SE	NSE:INT	ALIGN AUTO		01:18:41 AM Apr 20, 2024
Center Freq 2.480000000 GHz	Trig: Free Run #Atten: 30 dB	#Avg Type: Avg Hold: 2		TRACE 1 2 3 4 5 6 TYPE MWWWW DET PNNNN
Ref Offset 2.61 dB			Mk	r1 2.476 840 GHz -0.177 dBm
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-60.0			N. C. M.	hom hom
-70.0				
Center 2.480000 GHz				Span 8.000 MHz
#Res BW 100 kHz #VBW	/ 300 kHz		Sweep	1.000 ms (1001 pts)
Band Edge(Hopping) NVNT			opping Ei	mission
Dana Euge(hopping) NVN	2 0111 240			
📕 Agilent Spectrum Analyzer - Swept SA			spping Li	- ē 🔀
📕 Agilent Spectrum Analyzer - Swept SA	NSE:INT Trig: Free Run #Atten: 30 dB	ALIGN AUTO #Avg Type: Avg Hold: 2	RMS	01:19:13 AM Apr 20, 2024
Agilent Spectrum Analyzer - Swept SA Agilent Spectrum Analyzer - Swept SA RL RF 50.Q. AC SE Center Freq 2.526000000 GHz PNO: Fast IFGain:Low Ref Offset 2.61 dB	NSE:INT	ALIGN AUTO #Avg Type:	RMS 2000/2000	01:19:13 AM Apr 20, 2024
M Agilent Spectrum Analyzer - Swept SA SE Center Freq 2.526000000 GHz SE PNO: Fast Freq 2.526000000 GHz	NSE:INT	ALIGN AUTO #Avg Type:	RMS 2000/2000	01:19:13 AM Apr 20, 2024 TRACE 2 3 4 5 G TYPE M DET P NNNNN Kr1 2.478 0 GHz
M Agilent Spectrum Analyzer - Swept SA SE M RL RF 50 Ω AC SE Center Freq 2.526000000 GHz PNO: Fast IFGain:Low Ref Offset 2.61 dB 10 dB/div Ref 20,00 dBm 00 1 0.00	NSE:INT	ALIGN AUTO #Avg Type:	RMS 2000/2000	01:19:13 AM Apr 20, 2024 TRACE 2 3 4 5 G TYPE M DET P NNNNN Kr1 2.478 0 GHz
Mail Agilent Spectrum Analyzer - Swept SA SE Center Freq 2.526000000 GHz SE PN0: Fast Figain:Low In dB/div Ref 20.00 dBm 10 dB/div Ref 20.00 dBm	NSE:INT	ALIGN AUTO #Avg Type:	RMS 2000/2000	01:19:13 AM Apr 20, 2024 TRACE 1 2 3 4 5 6 TYPE M DET PNNNN Kr1 2.478 0 GHz
Mail Agilent Spectrum Analyzer - Swept SA SE Agilent Spectrum Analyzer - Swept SA SE Center Freq 2.526000000 GHz PNO: Fast PNO: Fast PNO: Fast IFGain:Low Figain:Low Ref Offset 2.61 dB 0 10 dB/div Ref 20.00 dBm 0.00 1 .00 1 .00 1 .00 1 .00 1 .00 1 .00 1 .00 1 .00 1 .00 1	NSE:INT	ALIGN AUTO #Avg Type:	RMS 2000/2000	01:19:13 AM Apr 20, 2024 TRACE 12:2:3:45 TYPE WWWWW Det WWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW
M Agilent Spectrum Analyzer - Swept SA SE M RL RF 50 Ω AC SE Center Freq 2.526000000 GHz PNO: Fast → IFGain:Low Ref Offset 2.61 dB O dB/div Ref 20.00 dBm 100 1 - -100 1 - - -200 - - - -300 - - - -	NSE:INT Trig: Free Run #Atten: 30 dB	ALIGN AUTO #Avg Type: Avg Hold: 2	RMS 1000/2000	01:19:13 AM Apr20, 202 TRACE 12:23 45 6 TYPE MANNAN Ikr1 2:478 0 GHz -0.226 dBm
M Agilent Spectrum Analyzer - Swept SA SE M RL RF 50 Ω AC SE Center Freq 2.526000000 GHz PNO: Fast → IFGain:Low Ref Offset 2.61 dB 10 dB/div Ref 20.00 dBm 000 1 0 .200 .200 .42	NSE:INT Trig: Free Run #Atten: 30 dB	ALIGN AUTO #Avg Type: Avg Hold: 2	RMS 1000/2000	01:19:13 AM Apr 20, 20 3 TRACE 12 2 3 2 3 TYPE MANNAN DET NNNNN Ikr1 2.478 0 GHz -0.226 dBm
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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.

10.4 Test Result

Condition	Mode	Frequency (MHz)	-20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1 •	2402	0.870	Pass
NVNT	1-DH1	2441	0.873	Pass
NVNT	1-DH1	2480	0.864	Pass
NVNT	2-DH1	2402	1.284	Pass
NVNT	2-DH1	2441	1.251	Pass
NVNT	2-DH1	2480	1.223	Pass
NVNT	3-DH1 ···	2402	1,244	Pass
NVNT	3-DH1	2441	1.216	Pass
NVNT	3-DH1-	2480	1.215	Pass





















No.: BCTC/RF-EMC-005

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11. Maximum Peak Output Power

11.1 Block Diagram Of Test Setup



11.2 Limit

		FCC Part15 (15.247) , S	ubpart 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.

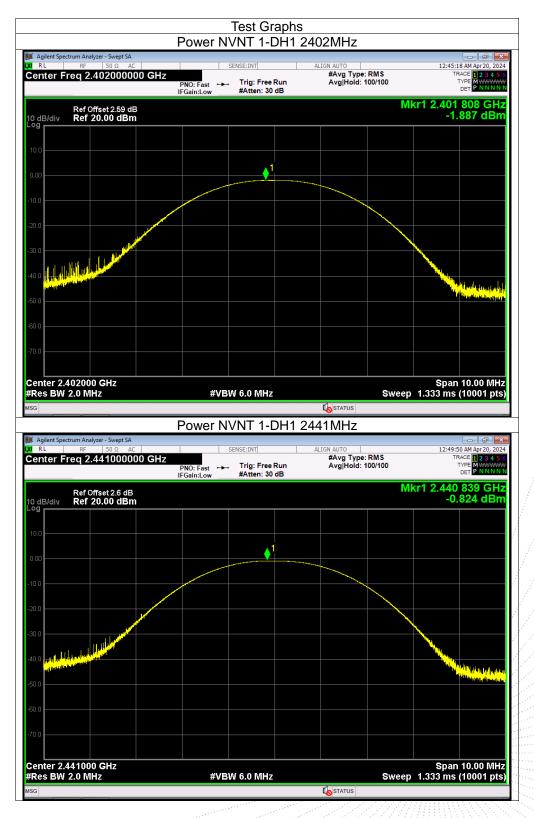
2. Set the spectrum analyzer: RBW = 2MHz. VBW = 6MHz. Sweep = auto; Detector Function = Peak.

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

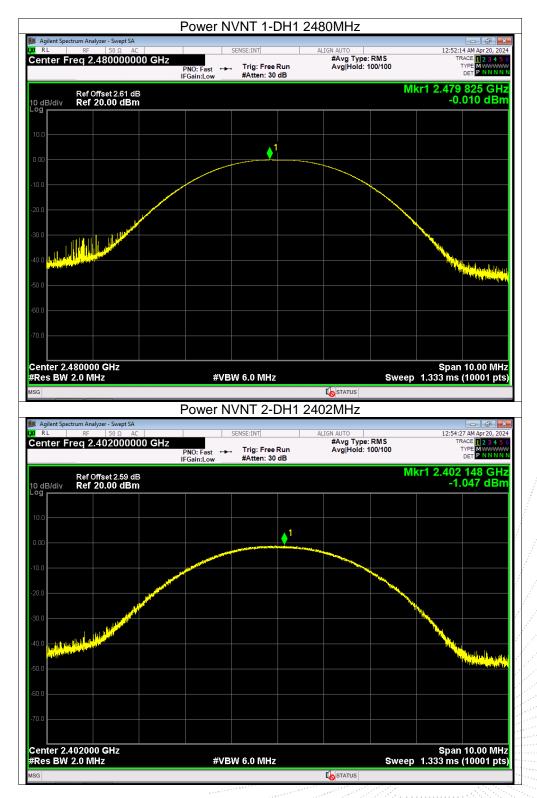
11.4 Test Result

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	-1.89	21	Pass
NVNT	1-DH1	2441	-0.82	21	Pass
NVNT	1-DH1	2480	-0.01	21	Pass
NVNT	2-DH1	2402	-1.05	21	Pass
NVNT	2-DH1	2441	0.01	21	Pass
NVNT	2-DH1	2480	0.82	21	Pass
NVNT	3-DH1	2402	-0.44	21	Pass
NVNT	3-DH1	2441	0.59	21	Pass
NVNT	3-DH1	2480	1.38	21	Pass

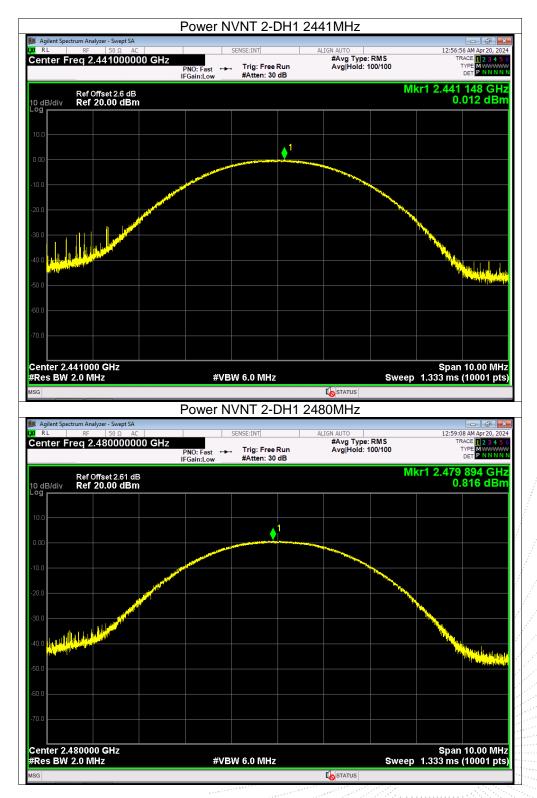




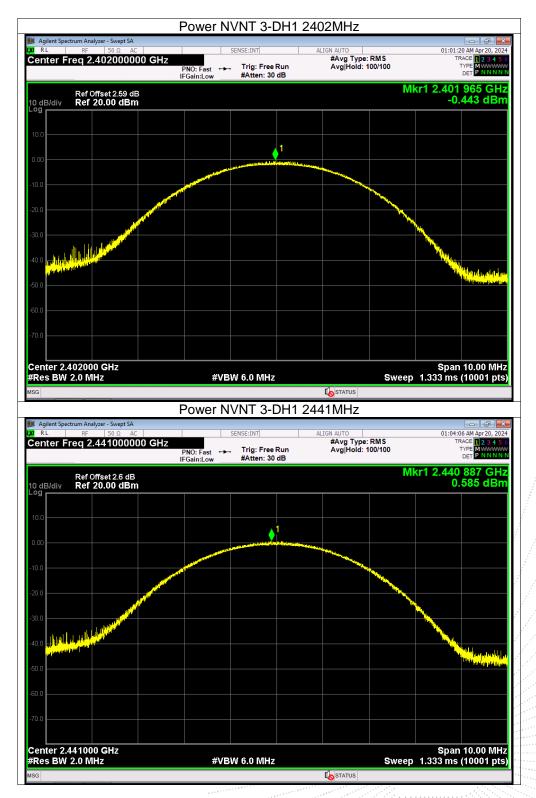




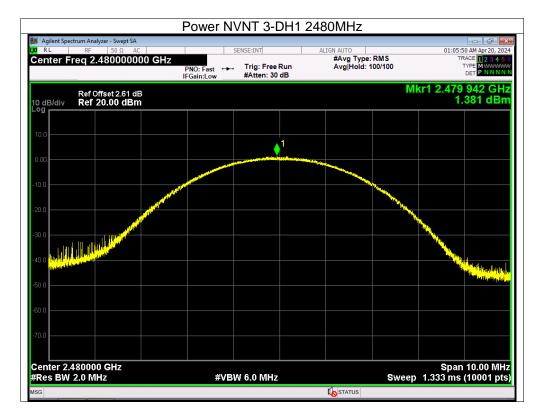














12. Hopping Channel Separation

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.

odulation	Test Channel	Separation (MHz)	Limit(MHz)	Result
GFSK	Low Manager	1.000	0.580	PASS
GFSK	Middle	1.000	0.582	PASS
GFSK	High	0.998	0.576	PASS
π/4 DQPSK	Low	1.000	0.856	PASS
π/4 DQPSK	Middle	1.000	0.834	PASS
π/4 DQPSK	High	1.000	0.815	PASS
8DPSK	Low	1.002	0.829	PASS
8DPSK	Middle	1.000	0.811	PASS
8DPSK	High	0.998	0.810	PASS

12.4 Test Result



Agilent Spectrum Analyzer - Swept	: SA		0H1 2402MHz		- 6 -
RL RF 50 Ω enter Freq 2.402500	AC	SENSE:INT	ALIGN AUTO #Avg Type		12:47:23 AM Apr 20, 202 TRACE 1 2 3 4 5
	PNO	D: Wide Trig: Free ain:Low #Atten: 30		>100/100	DET P N N N N
Ref Offset 2.59	9 dB			Mkr1 2	.401 848 GH
dB/div Ref 20.00 d					-3.438 dBn
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enter 2.402500 GHz Res BW 30 kHz		#VBW 100 kHz	2		Span 2.000 MH 33 ms (1001 pts
R MODE TRC SCL	X		NCTION FUNCTION WIDTH	FUNCTION	
N 1 f 2 N 1 f	2.401 848 GHz 2.402 848 GHz	-3.438 dBm -3.417 dBm			
3					
		m			•
3					•
3			STATUS DH1 2441MHz		
Agilent Spectrum Analyzer - Swept R.L RF 50 Ω	AC		DH1 2441MHz	- DMC	12:50:59 AM Apr 20, 202
Agilent Spectrum Analyzer - Swept R.L RF 50 Ω	AC		ALIGN AUTO #Avg Type Run Avg Hold:	e: RMS >100/100	12:50:59 AM Apr 20, 202 TRACE 1 2 3 4 5
Agilent Spectrum Analyzer - Swept RL RF 50 Ω Sinter Freq 2.44150	AC A	CFS NVNT 1-D	ALIGN AUTO #Avg Type Run Avg Hold:	>100/100	12:50:59 AM Apr 20, 20 TRACE 1 2 3 4 5 TYPE M DET P N N N N
Agilent Spectrum Analyzer - Swept RL RF 50Ω enter Freq 2.441500 Ref Offset 2.6 dB/div Ref 20.00 d	AC DOOD GHZ PRO		ALIGN AUTO #Avg Type Run Avg Hold:	>100/100	12:50:59 AM Apr 20, 20 TRACE 1 2 3 4 5 TYPE MWWW DET P N N N N .440 848 GH
Agilent Spectrum Analyzer - Swept RL RF 50 Q enter Freq 2.441500 Ref Offset 2.6 dB/div Ref 20.00 d	AC DOOD GHZ PRO		ALIGN AUTO ALIGN AUTO RRun Avg Hold: 0 dB	>100/100 Mkr1 2	12:50:59 AM Apr 20, 20 TRACE 1 2 3 4 5 TYPE MWWW DET P N N N N .440 848 GH
Agilent Spectrum Analyzer - Swept RL RF 50 Q enter Freq 2.441500 Ref Offset 2.6 dB/div Ref 20.00 d	AC DOOD GHZ PRO		ALIGN AUTO #Avg Type Run Avg Hold:	>100/100 Mkr1 2	12:50:59 AM Apr 20, 202 TRACE 1 2 3 4 5 TYPE MWWW DET P N N N N
Agilent Spectrum Analyzer - Swept RL RF 50Ω enter Freq 2.441500 Ref Offset 2.6 dB/div Ref 20.00 d	AC DOOD GHZ PRO		ALIGN AUTO ALIGN AUTO RRun Avg Hold: 0 dB	>100/100 Mkr1 2	12:50:59 AM Apr 20, 202 TRACE 1 2 3 4 5 TYPE MWWW DET P N N N N
Agilent Spectrum Analyzer - Swept RL RF 50Ω enter Freq 2.441500 Ref Offset 2.6 dB/div Ref 20.00 d	AC DOOD GHZ PRO		ALIGN AUTO ALIGN AUTO RRun Avg Hold: 0 dB	>100/100 Mkr1 2	12:50:59 AM Apr 20, 202 TRACE 1 2 3 4 5 TYPE MWWW DET P N N N N
Agilent Spectrum Analyzer - Swept RL RF 50Ω enter Freq 2.441500 Ref Offset 2.6 dB/div Ref 20.00 d	AC DOOD GHZ PRO		ALIGN AUTO ALIGN AUTO RRun Avg Hold: 0 dB	>100/100 Mkr1 2	12:50:59 AM Apr 20, 202 TRACE 1 2 3 4 5 TYPE MWWW DET P N N N N
Agilent Spectrum Analyzer - Swept RL RF 50 Ω enter Freq 2.441500 Ref Offset 2.6 dB/div Ref 20.00 d	AC DOOD GHZ PRO		ALIGN AUTO ALIGN AUTO RRun Avg Hold: 0 dB	>100/100 Mkr1 2	12:50:59 AM Apr 20, 202 TRACE 1 2 3 4 5 TYPE MWWW DET P N N N N
Agilent Spectrum Analyzer - Swept RL RF 50Ω enter Freq 2.441500 Ref Offset 2.6	AC DOOD GHZ PRO		ALIGN AUTO ALIGN AUTO RRun Avg Hold: 0 dB	>100/100 Mkr1 2	12:50:59 AM Apr 20, 202 TRACE 12:34 5 TRACE
Agilent Spectrum Analyzer - Swept RL RF 50Ω enter Freq 2.441500 Benter Freq 2.441500 Ref Offset 2.6 dB/div Ref 20.00 d	AC DOOD GHZ PRO		ALIGN AUTO ALIGN AUTO RRun Avg Hold: 0 dB	>100/100 Mkr1 2	12:50:59 AM Apr 20, 202 TRACE 1 2 3 4 5 TYPE MWWW DET P N N N N
Agilent Spectrum Analyzer - Swept RL RF 50Ω enter Freq 2.441500 GB/div Ref 20.00 d 00 00 00 00 00 00 00 00 00 0	AC DOOD GHZ PRO	CFS NVNT 1-C	DH1 2441MHz	>100/100 Mkr1 2	12:50:59 AM Apr 20, 202 TRACE 12:24 4 3 TYPE DET D NNNN .440 848 GH: -2.369 dBn
Agilent Spectrum Analyzer - Swept RL RF 50 Ω enter Freq 2.441500 dB/div Ref 20.00 d 9 00 00 00 00 00 00 00 00 00	AC AC PNC IFG dB Bm	CFS NVNT 1-D SENSE:INT D: Wide Trig: Free ain:Low #Atten: 30	Z	Sweep 2.1:	12:50:59 AM Apr 20, 202 TRACE 11 23 4 3 TYPE DIANA CONTRACE 12 3 4 3 TYPE DIANA CONTRACE 13 4 3 TYPE DI
Agilent Spectrum Analyzer - Swept RL RF 50 Ω enter Freq 2.441500 GB/div Ref 20.00 d g g g g g g g g g g g g g	AC AC PNC IFG dB Bm	CFS NVNT 1-D	DH1 2441MHz	>100/100 Mkr1 2	12:50:59 AM Apr 20, 202 TRACE 11 23 4 3 TYPE DIANA CONTRACE 12 3 4 3 TYPE DIANA CONTRACE 13 4 3 TYPE DI
Agilent Spectrum Analyzer - Swept RL RF 50Ω enter Freq 2.441500 GB/div Ref 20.00 d GB/div Ref 20.00 d	AC AC PNC IFG Bm	CFS NVNT 1-D	Z	Sweep 2.1:	12:50:59 AM Apr 20, 202 TRACE 11 23 4 3 TYPE DIANA CONTRACE 12 3 4 3 TYPE DIANA CONTRACE 13 4 3 TYPE DI
Agilent Spectrum Analyzer - Swept RL RF 50 Ω enter Freq 2.441500 Benter Freq 2.441500 Comparison of the second of the s	AC AC PNC IFG dB Bm	CFS NVNT 1-D	Z	Sweep 2.1:	12:50:59 AM Apr 20, 202 TRACE 11 23 4 3 TYPE DIANA CONTRACE 12 3 4 3 TYPE DIANA CONTRACE 13 4 3 TYPE DI
Agilent Spectrum Analyzer - Swept RL RF 50Ω enter Freq 2.441500 GB/div Ref 20.00 d GB/div Ref 20.00 d	AC AC PNC IFG dB Bm	CFS NVNT 1-D	Z	Sweep 2.1:	12:50:59 AM Apr 20, 200 TRACE [12:34:35 TYPE DET P NUNN 4400 848 GH; -2.369 dBn -2.369 d
Agilent Spectrum Analyzer - Swept RL RF 50 Ω enter Freq 2.441500 GB/div Ref 20.00 d 9 9 9 9 9 9 9 9 9 9 9 9 9	AC AC PNC IFG dB Bm	CFS NVNT 1-D	Z	Sweep 2.1:	12:50:59 AM Apr 20, 202 TRACE 11 23 4 3 TYPE DIANA CONTRACE 12 3 4 3 TYPE DIANA CONTRACE 13 4 3 TYPE DI