DEKRA Testing and Certification (Shanghai) Ltd. Guangzhou Branch

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Vertical

.

Spectrum									
RefLevel 1 Att TDF		V 18 - SWT 5		W 1 MHz W 3 MHz	Mode Aut	o Sweej	2		
●1Pk Max●2/	Av Max								
100 dBuy ch	C RB 2310 eck		PA PA		M	3[2]		2.363	0.53 dBµV 94170 GHz
Line FCC 90 dBµV	CRB 2310	AV	PA	SS	M	1[1]	1		19144 dBµV 46830 GHz
80 dBµV									\square
FCC RB 2310 P	·Κ								
60 dBuV	N								
50 dBµV									+
40 dBµV	ter and hilling three is	والمعالمة المعالمة	te or the day of the second		M2	utoto lectrop	tentine tournationality	tere distance - sandle provider	
					ning in a financial for the				
20 dBµV									
10 dBµV——									
Start 2.31 G	Hz			30000	pts			Stop	2.41 GHz
Marker									
	Trc	X-value		Y-value	Func	tion	Func	tion Result	
M1 M2	1	2.401428		89.44 dBμ' 35.07 dBμ'					
M2 M3	2	2.363808		35.07 dBµ 30.53 dBµ'					

Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)

No other significant emissions were measured at the frequency range of interest employing the PK and AV detectors.



Model	BOND (NLS2A)
Operation Mode	Mode 2 @2480 MHz
Test voltage	

Results Horizontal

Spectrum	Ì							
Ref Level 106.0	ο dBμV	👄 RB	W 1 MHz					
Att	15 dB 🔵 SWT 5	i1 ms 👄 VB	W 3 MHz N	lode Aut	o Sweej	b		
TDF								
⊖1Pk Max⊕2Av M	ax							
Limit Check	M1	PA	SS	M	1[1]			97.53 dBµV
Limit Check	2500 AV	PA	SS					38750 GHz
Line FCC RB 90 dBμV	2500 PK	PA	SS	M	2[1]			35.44 dBµV
90 UDHV					ì	ĩ	2.4859	70420 GHz
80 двил 🖊								
70 dBµV— 📈 —	FC	C RB 2500 PI	<					
60 dBµV		N						
	FC	C RB <u>2500 AV</u>	/					
50 dBµ								
40 6 0 V		a state of the	M2 Martha charter	a an trafficaria		to be marches and the state of the state	al a faith a start	all a second second
weth su dB⊔V		The second s	Aller in the loss sector in the sector is the			n fan treide op fan een staat sjere fan de staat Gegender it is getre en een staat sjere de staat sjere een Staat staat sjere een staat sjere staat sjere staat		
-30 ubµv								
20 dBµV								
10 dBµV								
CF 2.4875 GHz			30000	ots	1		 Span	25.0 MHz
Marker								
Type Ref Tro	: X-value		Y-value	Func	tion	Fun	ction Result	1
	1 2.479438	75 GHz	97.53 dBµV					
	1 2.4859704		35.44 dBµV					
M3 :	2 2.486102	75 GHz	30.10 dBµV					

Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)

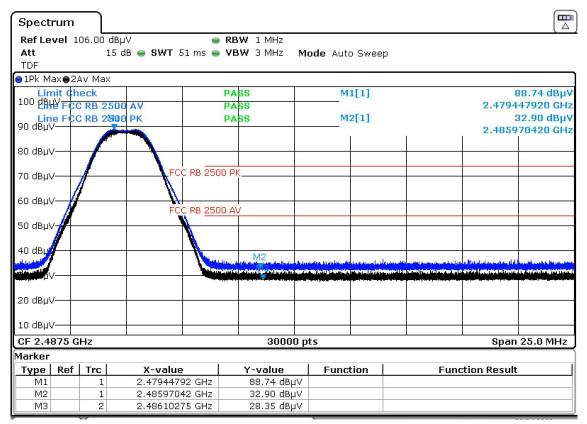
No other significant emissions were measured at the frequency range of interest employing the PK and AV detectors.

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Vertical



Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)

No other significant emissions were measured at the frequency range of interest employing the PK and AV detectors.



4.4 Band Edge

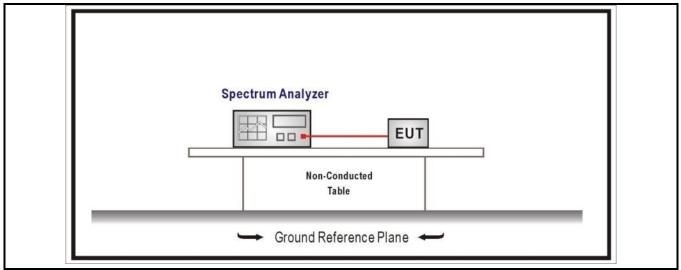
VERDICT: PASS

Standard	FCC Part 15 Subpart C Paragraph 15.247(d)					
RF Output power	(Detection methods)	Limit(dB)				
RF Output power	(Average detector)	30dBc(Note1)				
RF Output pov	ver(PK detector)	20dBc(Note2)				
Note 1: If maximum conducted (average) output power was used to demonstrate compliance as described in 9.2,						

then the peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at by LEast 30 dB relative to the maximum in-band peak PSD by LEvel in 100 kHz (i.e., 30 dBc).

Note 2: If the maximum peak conducted output power procedure was used, then the peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at by least 20 dB relative to the maximum in-band peak PSD by level in 100 kHz (i.e., 20 dBc).

Test Configuration

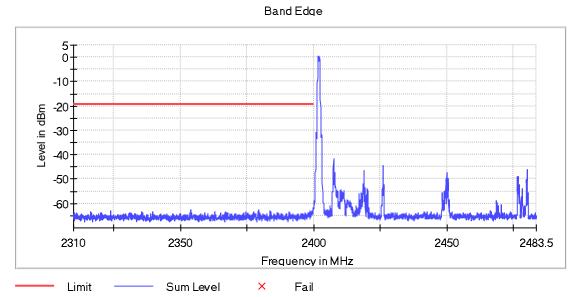


Performed measurements

Port under test	Antenna port				
Test method applied	\boxtimes	Conducted measurement			
	Radiated measurement				
Test setup	Refer to the Annex 3 for test setup photo(s).				
Operating mode(s) used	Mode 1, Mode 2				
Remark					



Results of mode 1 @2402 MHz



Inband Peak

Frequency	Level
(MHz)	(dBm)
2402.0000	0,5

Measurements

Frequency	Level	Margin	Limit	Result
(MHz)	(dBm)	(dB)	(dBm)	
2399.775000	-61.6	42.1	-19.5	PASS
2399.725000	-61.8	42.3	-19.5	PASS
2399.975000	-62.2	42.7	-19.5	PASS
2353.875000	-62.5	43.0	-19.5	PASS
2379.325000	-62.7	43.2	-19.5	PASS
2399.925000	-62.7	43.3	-19.5	PASS
2353.925000	-62.8	43.3	-19.5	PASS
2383.475000	-62.9	43.4	-19.5	PASS
2323.825000	-63.0	43.5	-19.5	PASS
2399.575000	-63.0	43.5	-19.5	PASS
2398.725000	-63.0	43.5	-19.5	PASS
2399.525000	-63.0	43.5	-19.5	PASS
2399.825000	-63.1	43.6	-19.5	PASS
2339.675000	-63.2	43.7	-19.5	PASS
2383.525000	-63.3	43.8	-19.5	PASS

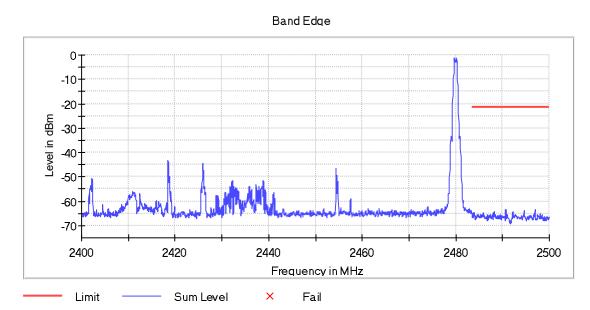


Additional test figure

Spectrum										
Ref Level	10.00 dBr	n	😑 RB	₩ 100 kHz						
🖷 Att	40 dI	3 SWT 250	Dms VB'	W 3 00 kHz	Mode Au	to Swee	р			
🔵 1Pk Max										
					М	1[1]			2.4	-5.58 dBm 01690 GHz
0 dBm Ml		-								
-10 dBm										
-20 dBm										
-30 dBm——										
-40 dBm		ماس م	en eder	والمراجع والمروحية	الم الم الله عن الت	ulu ⁱ latain	الم المالية الم	., dure heller	Martin at antife	المرواف المروي المراجع
. 5 ₽₩Bm obal	AL DER BURNER	And the Allower of the second	a biple and a bible to	the part of the second		لىرىل مىڭرى.	الح بالمترجمة ا	بأندر المحجي	يعاملون ومرجع الألغ	فيقاطره وحمادهم
րոն ^{րուց} Արտում որտ ^{անով} Արտում -60 dBm	and the part of the local data	and a factorial fraction	ter han yn tryff an hit.	ling a protocol and a solar pro-	and Brown at all					
-00 060										
-70 dBm										
-80 dBm						-				
individi - redonini autori										
Start 30.0	MHz			32001	L pts		<u> </u>		Stop	25.0 GHz
Marker										
Type Ref	Trc	X-value		Y-value	Func	tion		Func	tion Result	
M1	1	2.4016	59 GHz	-5.58 dB	m					



Results of mode 1 @2480 MHz



Inband Peak

Frequency	Level
(MHz)	(dBm)
2480.0000	-1,4

Measurements

Frequency	Level	Margin	Limit	Result
(MHz)	(dBm)	(dB)	(dBm)	
2496.975000	-63.5	42.1	-21.4	PASS
2490.675000	-63.6	42.2	-21.4	PASS
2490.725000	-63.6	42.2	-21.4	PASS
2494.625000	-63.8	42.4	-21.4	PASS
2496.925000	-63.9	42.5	-21.4	PASS
2494.675000	-64.2	42.8	-21.4	PASS
2488.275000	-64.3	42.9	-21.4	PASS
2494.575000	-64.4	43.0	-21.4	PASS
2492.225000	-64.4	43.0	-21.4	PASS
2492.175000	-64.5	43.1	-21.4	PASS
2488.025000	-64.6	43.2	-21.4	PASS
2488.075000	-64.6	43.2	-21.4	PASS
2483.675000	-64.6	43.2	-21.4	PASS
2488.125000	-64.7	43.3	-21.4	PASS
2483.925000	-64.8	43.4	-21.4	PASS



Additional test figure

Spectrum									
Ref Level	10.00 dB	m	e RB	₩ 100 kHz					
🖷 Att	40 (dB SWT 250) ms VB1	W 3 00 kHz	Mode Au	to Sweep)		
⊖1Pk Max									
					М	1[1]			-7.14 dBm 79710 GHz
0 dBm						L			
-10 dBm									
-20 dBm									
-30 dBm									
-40 dBm				1.		u . 🕅 diadata	المراجع والمراجع والمراجع والمراجع والمراجع	ulter a totau	م من رام من من مار مار م
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And Party Party in the Party in	alle and statements for		an Hoffelin, dr. an						
-60 dBm									
-70 dBm									
-80 dBm									
oo abiii									
Start 30.0	MHz			32001	. pts			Stop	25.0 GHz
Marker									
Type Ref		X-value		Y-value	Func	tion	Fund	tion Result	
M1	1	2.4797	71 GHz	-7.14 dBr	n				



Results of mode 2 @2402 MHz

Inband Peak

Frequency	Level
(MHz)	(dBm)
2402.0000	-0,4

Measurements

Frequency	Level	Margin	Limit	Result
(MHz)	(dBm)	(dB)	(dBm)	
2399.975000	-33.2	12.8	-20.4	PASS
2399.925000	-34.1	13.6	-20.4	PASS
2399.875000	-35.1	14.7	-20.4	PASS
2399.825000	-36.4	16.0	-20.4	PASS
2399.775000	-37.8	17.4	-20.4	PASS
2399.725000	-39.8	19.4	-20.4	PASS
2399.675000	-43.0	22.5	-20.4	PASS
2399.625000	-44.3	23.9	-20.4	PASS
2399.575000	-46.2	25.8	-20.4	PASS
2338.975000	-48.6	28.2	-20.4	PASS
2399.425000	-49.0	28.6	-20.4	PASS
2399.525000	-49.3	28.8	-20.4	PASS
2399.475000	-49.4	29.0	-20.4	PASS
2338.925000	-49.6	29.2	-20.4	PASS
2338.825000	-50.2	29.8	-20.4	PASS

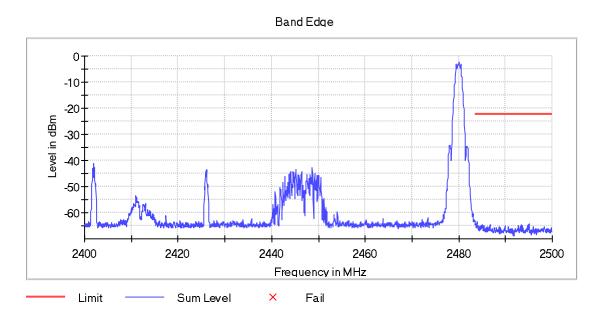


Additional test figure

Spectr	um												
Ref Le	evel 1	.0.00 dE	Зm		RBW 1	.00 kHz							
🖷 Att		40	dB SWT 25	0 ms	VBW 3	IOO kHz	Mo	ode Au	to Swe	ер			
🔵 1 Pk Ma	эх												
								M	1[1]				-6.69 dBm
												2.4	01690 GHz
0 dBm—	ML												
	T												
-10 dBm													
-20 dBm													
-30 dBm	-												· · · · ·
-40 dBm	_								CIECO -		11		20
		I.	and the loss of a still star.	CIA COLLA		Mar mar late	dia late	hulethe	he and a little	N. Allaha	Ally Man High Parts	Marine Barrier Barrier	the second and all the
TECHIBO	apel de	the state for the lite	nga aka kenderakin di kena Angerakin bertakin di kena	nos e na dia fusa	a sala ang sa sa sa	and an offer	and all	فريط بالإيسان	ىقى <mark>قوق</mark> ومە	la	فعياديه ويشرعين	And the state of the second	alan dan di panan
All all the second	a the galith	all the fill that	All a support of the second	AND ADDRESS	A. 11	and the second							
-60 dBm													
-70 dBm	_												
-80 dBm	_												
Start 30	0.0 MI	Hz				32001	L pts	5				Stop	25.0 GHz
Marker													
	Ref	Trc	X-value			value		Func	tion		Fun	ction Result	
M1		1	2.4010	59 GHz	1	-6.69 dBi	m						



Results of mode 1 @2480 MHz



Inband Peak

Frequency	Level
(MHz)	(dBm)
2480.0000	-2,4

Measurements

Frequency	Level	Margin	Limit	Result
(MHz)	(dBm)	(dB)	(dBm)	
2483.975000	-63.6	41.2	-22.4	PASS
2483.925000	-63.8	41.4	-22.4	PASS
2494.975000	-64.1	41.7	-22.4	PASS
2483.575000	-64.2	41.7	-22.4	PASS
2483.875000	-64.2	41.7	-22.4	PASS
2483.825000	-64.3	41.8	-22.4	PASS
2484.975000	-64.4	42.0	-22.4	PASS
2495.025000	-64.4	42.0	-22.4	PASS
2493.325000	-64.6	42.2	-22.4	PASS
2485.025000	-64.7	42.2	-22.4	PASS
2494.775000	-64.7	42.2	-22.4	PASS
2483.525000	-64.7	42.3	-22.4	PASS
2493.275000	-64.7	42.3	-22.4	PASS
2486.675000	-64.8	42.3	-22.4	PASS
2486.625000	-64.8	42.4	-22.4	PASS

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Additional test figure

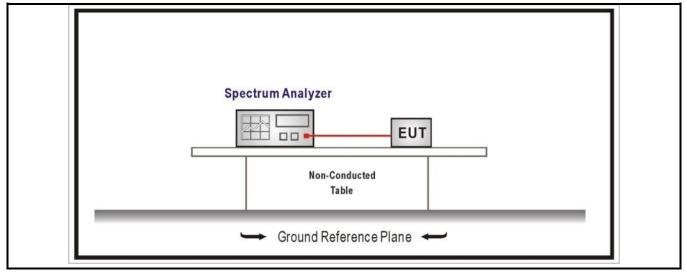
Spectrum												
Ref Level	10.00	dBm		e R	BW 100 kHz							
🖷 Att	4	0 dB	SWT 250) ms 🛛 🗸	BW 3 00 kHz	N	1ode Au	o Swe	ер			
😑 1Pk Max												,
							М	1[1]				11.18 dBm 79710 GHz
0 dBm												
-10 dBm - 10												
-20 dBm												
-30 dBm												
-40 dBm			in the second			<i>d</i> .		a different das	Mark Bro	N. J. M. M. M. M. M. M. M. M.	مانداد مارد ا	فريعون ورياده والالا
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-40 dBm փ ⁵⁰⁰¹⁴	and the state of the	no ka ji	alay da na na da	nang kanalang sang sang sang sang sang sang sang s		דיי		82 A 8				1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -
-00 ubm												
-70 dBm						\vdash						
-80 dBm						-						
Start 30.0	MHz				3200	1 p	ts				Stop	25.0 GHz
Marker												
Type Ref			X-value		Y-value		Func	ion		Func	tion Result	
M1	1		2.4797	'I GHZ	-11.18 dB	sm						



4.5 Duty cycle

VERDICT: PASS

Test Configuration

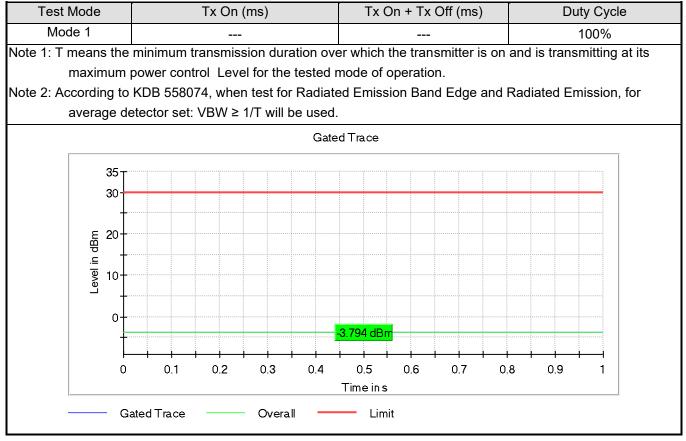


Performed measurements

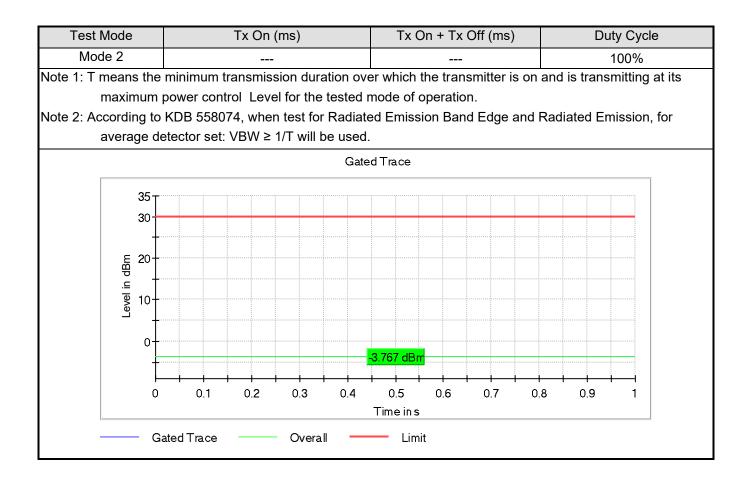
Port under test	Anter	Antenna port			
Test method applied	\square	Conducted measurement			
		Radiated measurement			
Test setup	Refer	Refer to the Annex 3 for test setup photo(s).			
Operating mode(s) used	Mode	Mode 1, Mode 2			
Remark					



Results





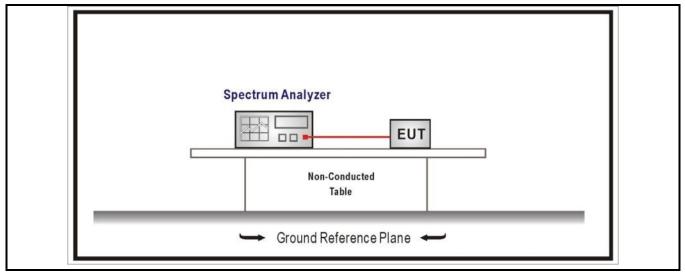




4.6 DTS Bandwidth VERDICT: PASS

Standard	FCC Part 15 Subpart C Paragraph 15.247 (a)(2)
Systems using digital modulat shall be at by least 500 kHz	ion techniques operate in the 2400-2483.5 MHz .The minimum 6 dB bandwidth

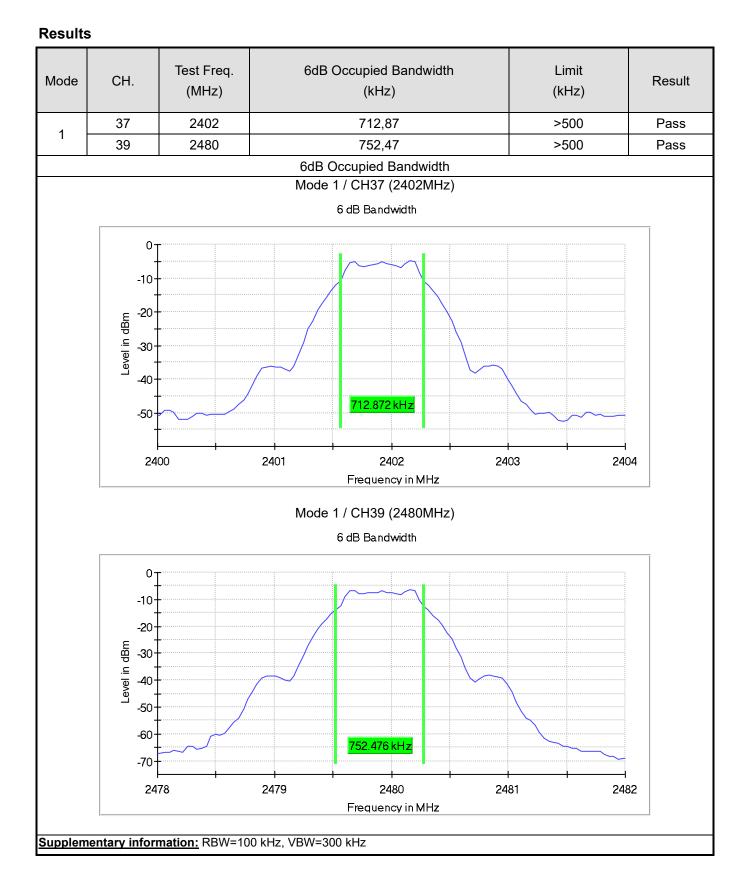
Test Configuration



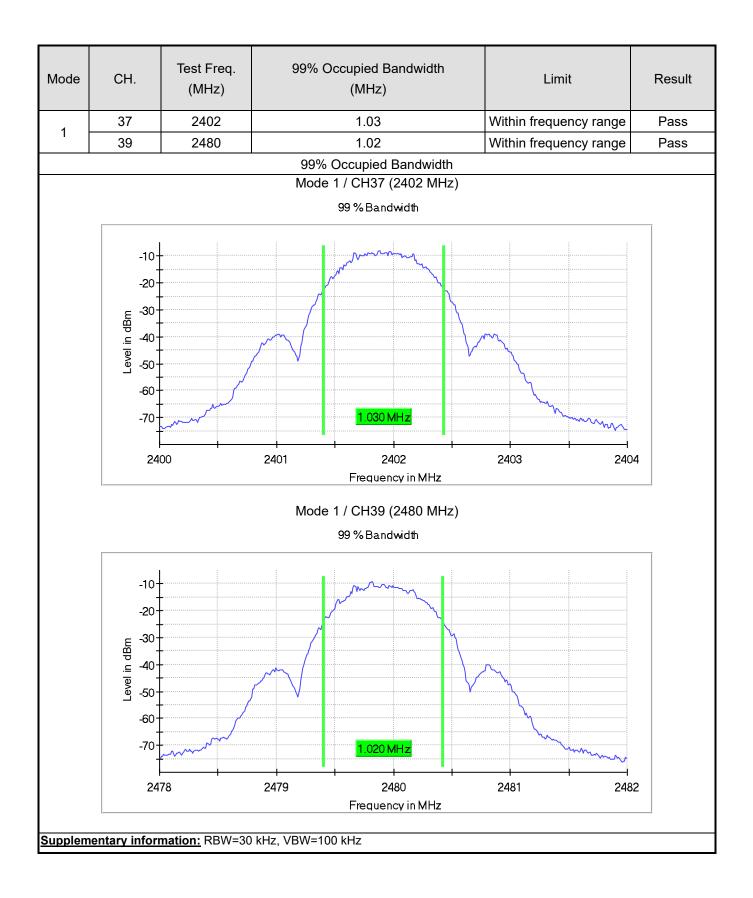
Performed measurements

Port under test	Antenna port			
Test method applied	Conducted measurement			
	Radiated measurement			
Test setup	Refer to the Annex 3 for test setup photo(s).			
Operating mode(s) used	Mode 1, Mode 2			
Remark				

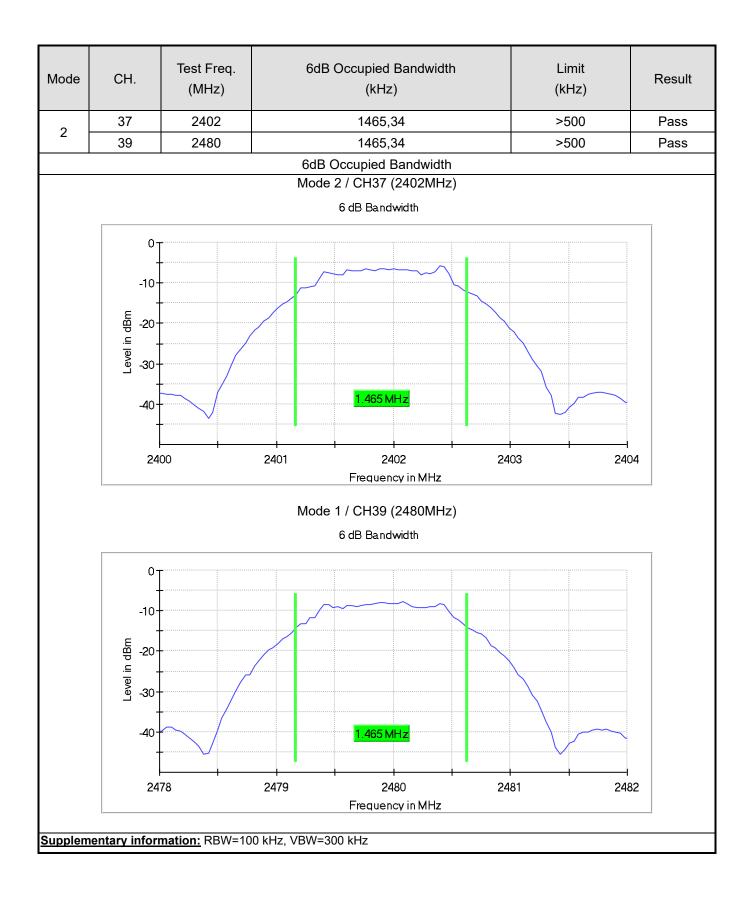




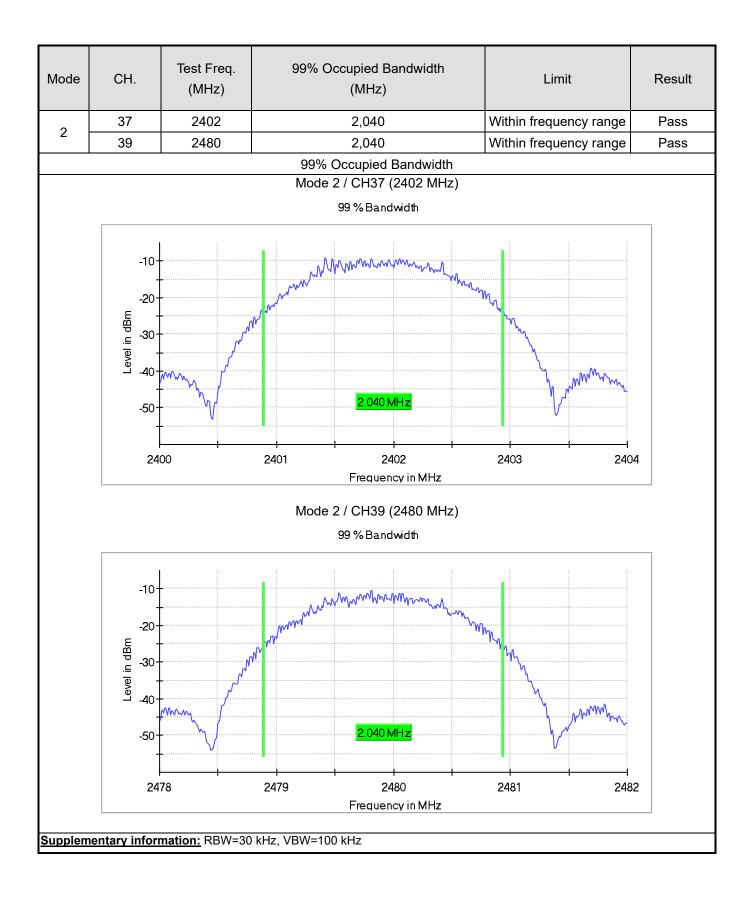










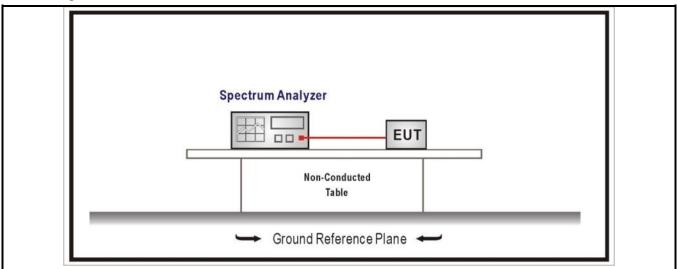




4.7 Fundamental emission output power VERDICT: PASS

Stan	Standard FCC Pa			rt 15 Subpart C Paragraph 15.247 (b)(3)					
\boxtimes	GTX ·	<6dBi	F	Pout≤30dBm					
	GTX	≥6dBi							
		Non-Fix point-point	F	Pout≤30-(GTX -6)					
		Fix point-point	F	Pout≤30-[(GTX-6)]/3					
		Point-to-multipoint		Pout≤30-(GTX-6)					
		Overlap Beams	F	Pout≤30-[(GTX-6)]/3					
		Aggregate power transmitted simultaneously on all beams		Pout≤30-[(GTX-6)]/3					
	singby LE directional beam			Pout≤30-[(GTX-6)]/3+8dB					
	Note 1 : GTX directional gain of transmitting antennas. Note 2 : Pout is maximum peak conducted output power .								

Test Configuration



Performed measurements

Port under test	Anter	Antenna port			
Test method applied		Conducted measurement			
		Radiated measurement			
Test setup	Refe	Refer to the Annex 3 for test setup photo(s).			
Operating mode(s) used	Mode	Mode 1, Mode 2			
Remark	RBW	RBW=2 MHz, VBW=10 MHz			

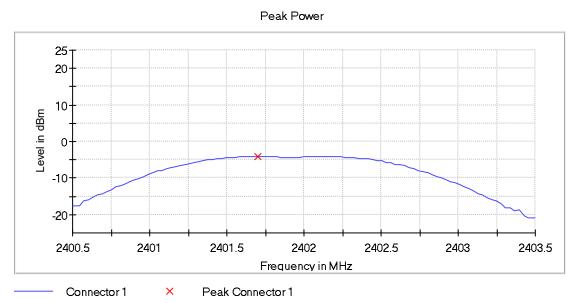


Results

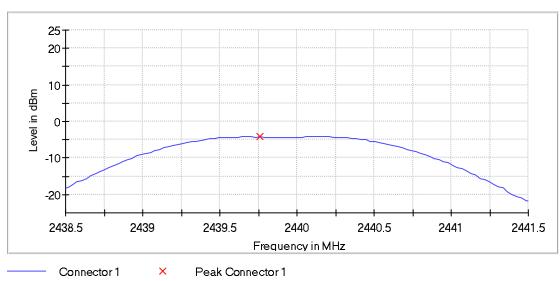
Mode	Channel	Test Frequency (MHz)	Conducted Power Output (dBm)	EIRP (dBm)	Limit (dBm)	Result
	37	2402	-4,1	0,9	≤30	Pass
Mode 1	17	2440	-4,2	0,8	≤30	Pass
	39	2480	-5,7	-0,7	≤30	Pass
	37	2402	-3,8	1,2	≤30	Pass
Mode 2	17	2440	-3,9	1,1	≤30	Pass
	39	2480	-5,4	-0,4	≤30	Pass

Test figure

Mode 1, Channel 37



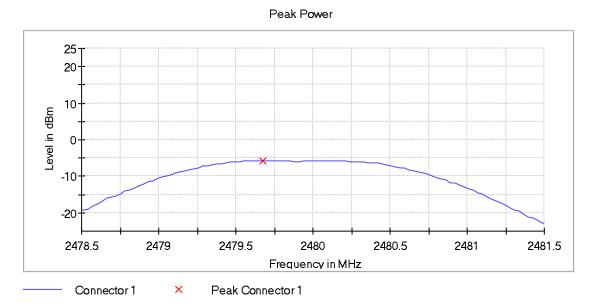
Mode 1, Channel 17



Peak Power



Mode 1, Channel 39



Mode 2, Channel 37

-20

2399

Connector 1

Peak Power

2402

Frequency in MHz

2403

2404

2405



2400

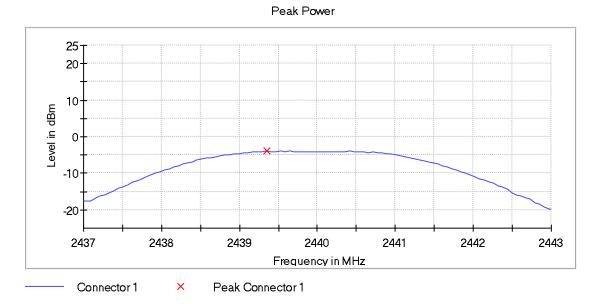
 \times

2401

Peak Connector 1

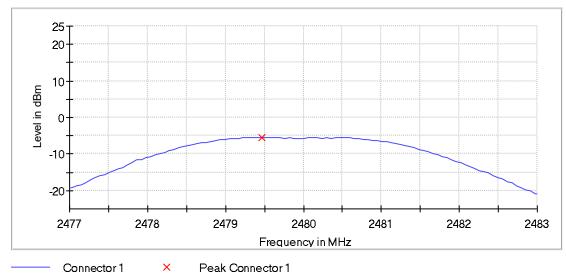


Mode 2, Channel 17



Mode 2, Channel 39

Peak Power

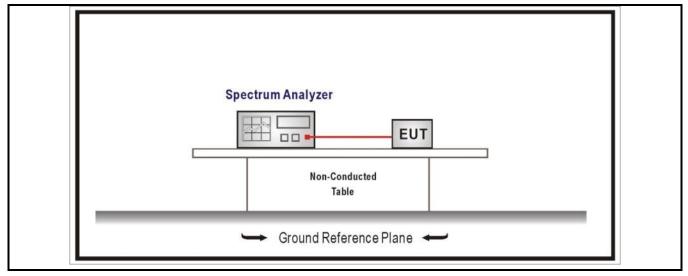




4.8 Power Density VERDICT: PASS

Standard	FCC Part 15 Subpart C Paragraph 15.247 (b)(3)		
Power Spectral Density≤8dBm/3kHz			

Test Configuration



Performed measurements

Port under test	Antenna port			
Test method applied	Conducted measurement			
		Radiated measurement		
Test setup	Refer to the Annex 3 for test setup photo(s).			
Operating mode(s) used	Mode 1, Mode 2			
Remark	RBW=10 kHz, VBW=30 kHz			

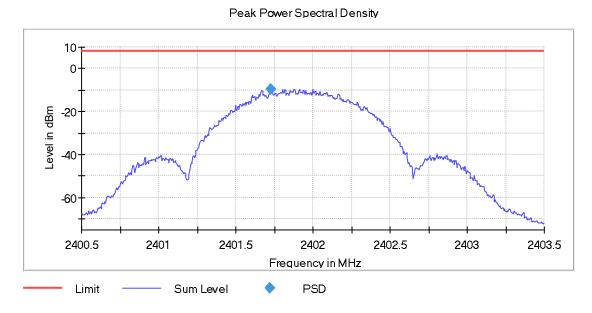
Results

Mode	Channel	Test Frequency (MHz)	Power Output (dBm)	Limit (dBm/3kHz)	Result
	37	2402	-9,637	≤8	Pass
Mode 1	17	2440	-8,934	≤8	Pass
	39	2480	-10,852	≤8	Pass
	37	2402	-10,278	≤8	Pass
Mode 2	17	2440	-10,465	≤8	Pass
	39	2480	-11,950	≤8	Pass

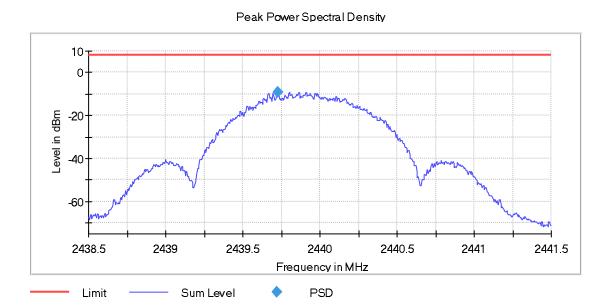


Test figure

Mode 1, Channel 37



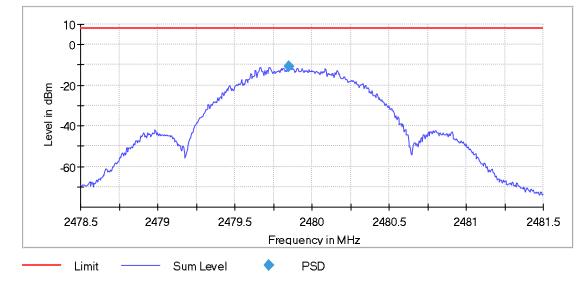
Mode 1, Channel 17





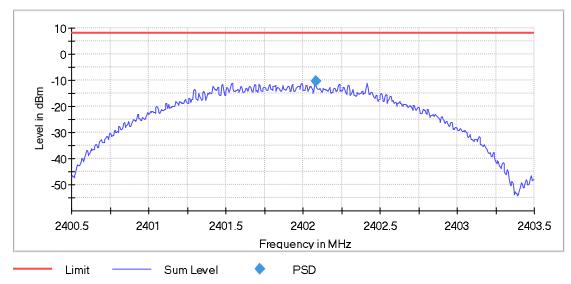
Mode 1, Channel 39





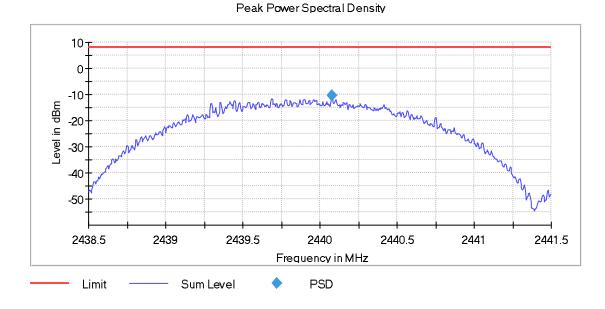
Mode 2, Channel 37

Peak Power Spectral Density



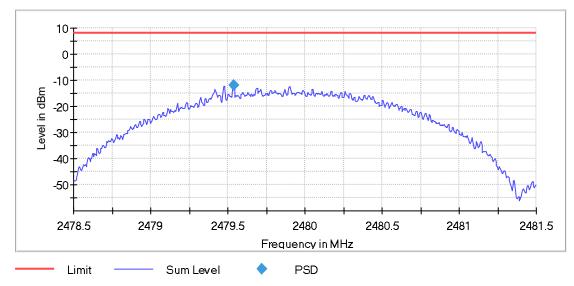


Mode 2, Channel 17



Mode 2, Channel 39

Peak Power Spectral Density





5 **IDENTIFICATION OF THE EQUIPMENT UNDER TEST**

The photographs show the tested device.

Refer to document 4902195_Internal photos and 4902195_External photos



ANNEX 1 – MEASUREMENT UNCERTAINTY

Test Item	Uncertainty		
Occupied Channel Bandwidth	±0,7%		
RF Output power, conducted	±0,6dB		
Power Spectral Density, Conducted	±0,6dB		
Unwanted Emissions, Conducted	±0.7dB		
Spurious (30-1000MHz)	±4,4dB		
Spurious (1-12,75GHz)	±4,4dB		



ANNEX 2 - USED EQUIPMENT

Emissions in non-restricted frequency bands/ Emissions in restricted frequency bands

Item	Instrumentation	Manufacturer	Model No.	Serial No.	DEKRA No.	Cal. Due date
1	EMI receiver	R&S	ESCI	101206	G/L858	2023/07/07
2	Antenna (30MHz-3GHz)	SCHWARZBECK	VULB9163	506	G/L864	2023/10/23
3	Chamber	ETS	/	/	G/L856	2024/06/10
4	Antenna (1GHz-18GHz)	R&S	HF907	102306	G/L1236	2024/02/21
5	Horn antenna preamplifier	Schwarzbeek	SCU-18	102234	G/L1236-1	2024/02/21
6	Spectrum analyzer	R&S	FSV	SN101012	G/L1235	2024/01/09
7	HF antenna (18 – 26.5 GHz)	ETS	3160-09	00164643	G/L1237	2024/01/15
8	High frequency antenna preamplifier (18 – 26.5 GHz)	Schwarzbeck	SCU-26	1879064	G/L1237-1	2024/01/09
9	Broadband horn antenna (15 – 40 GHz)	Schwarzbeck	BBHA9170	00908	GZ1901	2024/04/15
11	Annular magnetic field antenna	TESEQ	HLA6121	540045	GZ1905	2024/05/03

Duty cycle/Band Edge/Fundamental emission output power/DTS Bandwidth/Power Spectral Density

Item	Instrumentation	Manufacturer	Model	Serial no.	DEKRA No.	Cal Due date
1	Spectrum analyzer	R&S	FSV	SN101012	G/L1235	2024/01/09
2	Chamber	ETS	/	/	G/L856	2024/06/10
3	OSP	R&S	OSP 150	101907	GZ1894	2024/02/22
4	Test software	R&S	EMC32	Version 11.40.00		



ANNEX 3 - TEST PHOTOS

Refer to document 4902195_Test setup.

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