

Measurement Results

No.1-0450/20-01-07_log1_conducted

Test logging

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EUT Information

EUT DEFINITION	
Manufacturer	Panasonic Industrial Devices
Type	PAN9520
Serial Number	113
Setup Number	1.0
Version SW	NI
Version FW	NI
Version HW	NI
Comment 1	
Comment 2	
Temperature [°C] Min	-40
Temperature [°C] Nom	20
Temperature [°C] Max	85
Voltage [V] Min	3
Voltage [V] Nom	3.3
Voltage [V] Max	3.6

Message with SA Scan ~

Test References

TC Start	04.05.2021 09:43:20
Ambit Temp [°C] Humidity [rel%]	24.5 24
System Version	3.0.1.0
Test Specification	None
Test Method	
TC Version	0.0.1
My Description	Message with SA Scan b-mode
Add. Information	

Test Parameter

Switched Path	EUT - SignalingUnit - SpectrumAnalyzer
Message start	04.05.2021 09:43:21
Message	set WLAN2G4 to b mode, Frequency [MHz] 2412 ,

Test Equipment

SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI

General verdict

INFO

Common2G4 Peak OP 3MHz/3MHz ~ WLAN2G4 b-mode

Test References	
TC Start	04.05.2021 09:43:46
Ambit Temp [°C] Humidity [rel%]	24.5 25
System Version	3.0.1.0
Test Specification	None
Test Method	
TC Version	0.0.1
My Description	Peak Output Power conducted 3MHz/3MHz WLAN 2G4 b-mode
Add. Information	

EUT Common Settings WLAN2G4	
Number of Antenna Ports	1
User Interaction	No

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment	
SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60	
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI	

Test at TX 2412 MHz

RESULT: Reference Power cond.

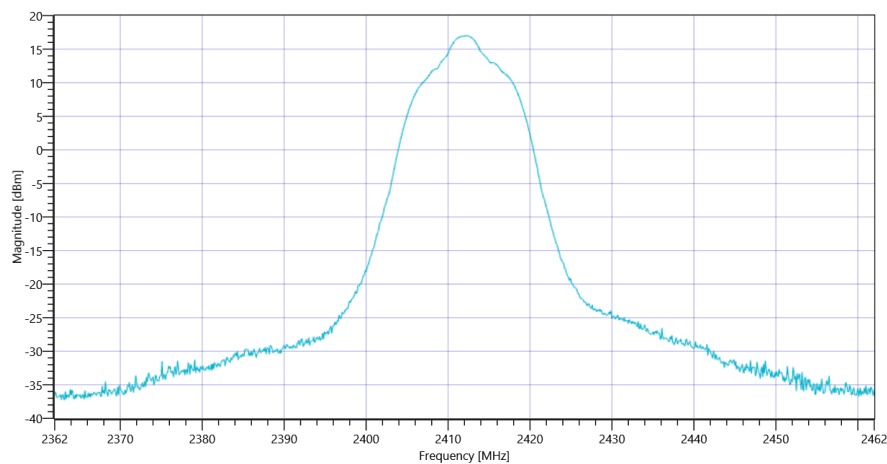
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	11.67	dBm	INFO
Ref. Frequency	---	---	2413.300	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	21.67 17.75 20
Start [MHz] Stop [MHz]	2362.000 2462.000
RBW [MHz] VBW [MHz]	3.000000 3.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 10 1001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	---	16.99	dBm	Info
Peak Power	---	---	50.003453	mW	Info
Frequency at Peak	---	---	2412.1	MHz	Info



Common2G4 Peak OP 3MHz-3MHz ~ WLAN2G4 b-mode

General verdict

PASS

FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 b-mode

Test References

TC Start	04.05.2021 09:44:21
Ambit Temp [°C] Humidity [rel%]	24.5 25
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	99
TC Version	0.0.1
My Description	FCC 15.247 Bandwidth 6dB DTS - WLAN 2G4 b-mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	1
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI

Test at TX 2412 MHz

RESULT: Reference Power cond.

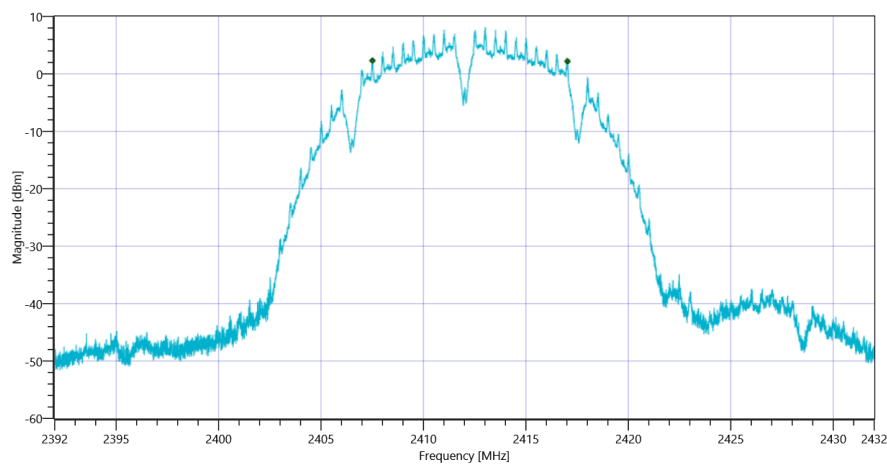
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	11.61	dBm	INFO
Ref. Frequency	---	---	2413.300	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	16.61 17.75 15
Start [MHz] Stop [MHz]	2392.000 2432.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	9520	kHz	PASS



FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 b-mode

General verdict

PASS

FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 b-mode

Test References

TC Start	04.05.2021 09:45:01
Ambit Temp [°C] Humidity [rel%]	24.5 25
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.4 DTS maximum power spectral density level in the fundamental emission
TC Version	0.0.1
My Description	FCC 15.247 Peak Power Spectral Density DTS - WLAN 2G4 b-mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	1
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI

Test at TX 2412 MHz

RESULT: Reference Power cond.

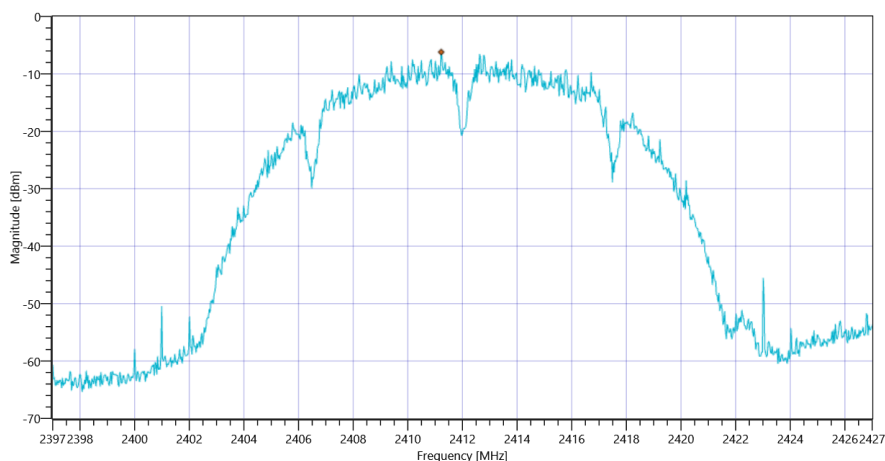
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	11.55	dBm	INFO
Ref. Frequency	---	---	2413.200	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	16.55 17.75 15
Start [MHz] Stop [MHz]	2397.000 2427.000
RBW [MHz] VBW [MHz]	0.003000 0.010000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 20 1001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Max Peak power Density	---	8	-6.19	dBm/3KHz	PASS



FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 b-mode

General verdict

PASS

FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode

Test References

TC Start	04.05.2021 09:45:48
Ambit Temp [°C] Humidity [rel%]	24.5 25
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	
TC Version	0.0.2
My Description	FCC 15.247 Bandwidth 99PCT-20dB DTS - WLAN 2G4 b-mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	1
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI

Test at TX 2412 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	11.56	dBm	INFO
Ref. Frequency	---	---	2413.300	MHz	INFO

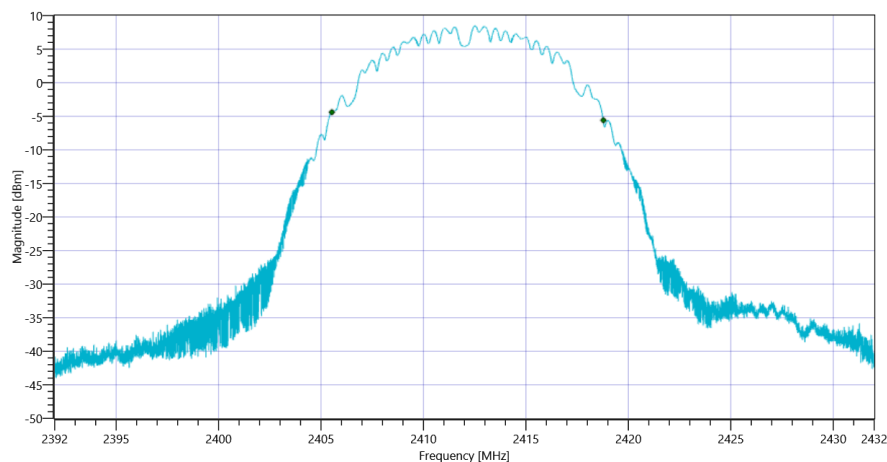
READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	16.56 17.75 15
Start [MHz] Stop [MHz]	2392.000 2432.000
RBW [MHz] VBW [MHz]	0.500000 2.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT

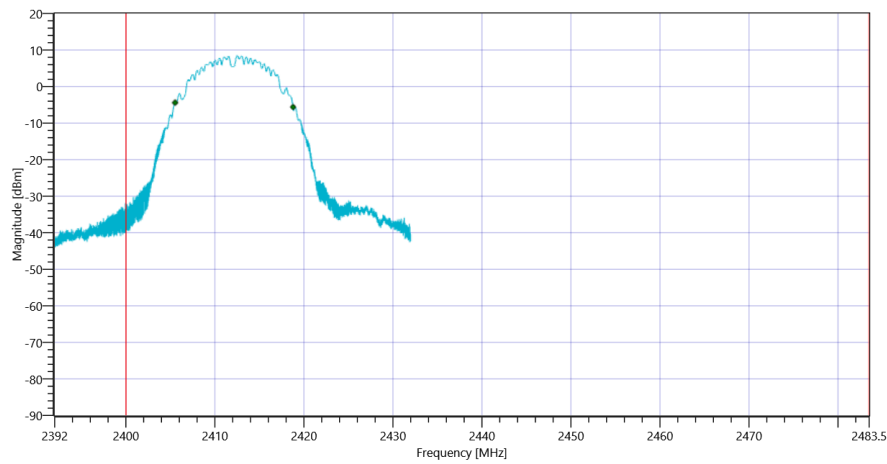
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	13250.675	kHz	INFO
T1 99%	2400.000000	---	2405.5286	MHz	PASS
T2 99%	---	2483.500000	2418.7793	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode 99PCT

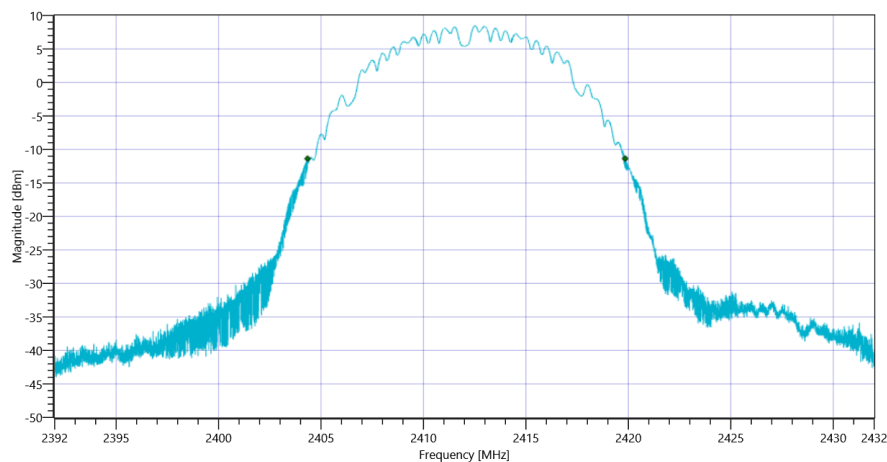
Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode

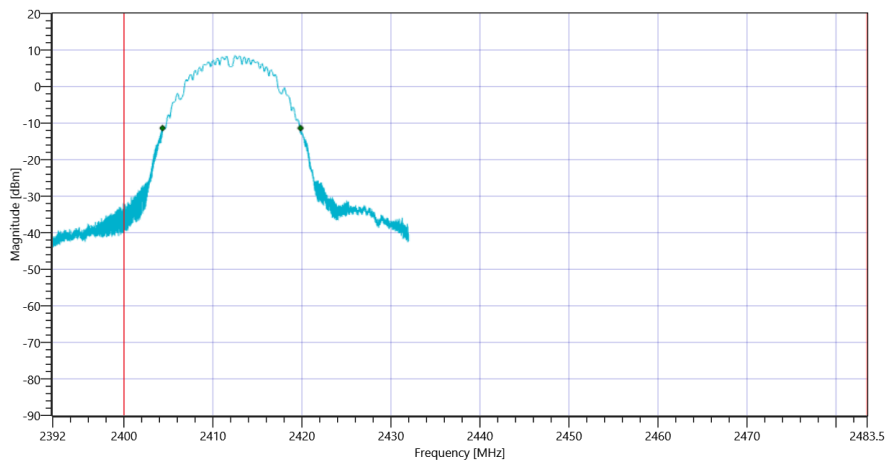
RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	15504	kHz	INFO
T1 20dB	2400.000000	---	2404.3400	MHz	PASS
T2 20dB	---	2483.500000	2419.8440	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode 20dB

Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode

General verdict

PASS

FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 b-mode

Test References	
TC Start	04.05.2021 09:46:47
Ambit Temp [°C] Humidity [rel%]	24.5 25
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	IF DTS then 8.5 DTS emissions in non-restricted frequency bands: Subclause 11.11 of ANSI C63.10 is applicable.
TC Version	0.0.1
My Description	FCC 15.247 TX Emissions Conducted DTS - WLAN 2G4 b-mode
Add. Information	

EUT Common Settings WLAN2G4	
Number of Antenna Ports	1
User Interaction	No

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment	
SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60	
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI	

Test at TX 2412 MHz

RESULT: Reference Power cond.

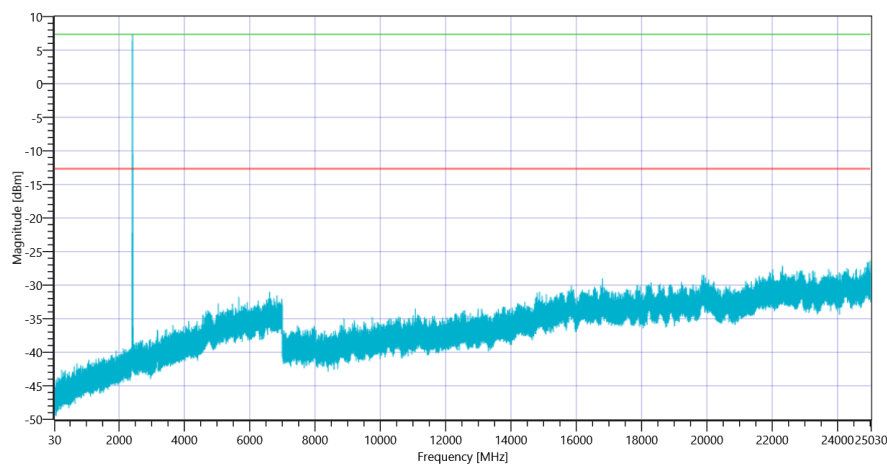
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	11.63	dBm	INFO
Ref. Frequency	---	---	2413.300	MHz	INFO

READ SA SETTINGS:

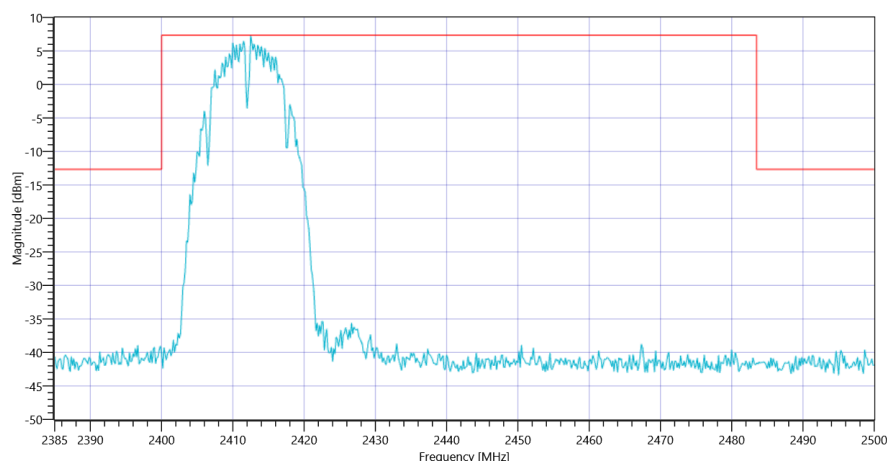
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	11.63 0 30
Start [MHz] Stop [MHz]	24530.000 25030.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	500 8 3001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2412.50 MHz	---	---	7.34	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 30 MHz	0	---	-154.64	dB	INFO



FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 b-mode 2412



FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 b-mode 2412

General verdict

PASS

FCC Part 15.247 Maximum Peak Conducted Output Power Powermeter DTS ~ WLAN2G4 b-mode

Test References

TC Start	04.05.2021 09:53:51
Ambit Temp [°C] Humidity [rel%]	24.5 25
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.3.1.3 PKPM1 Peak-reading Power Meter Method
TC Version	0.0.1
My Description	FCC 15.247 Maximum Peak Output Power Powermeter Conducted DTS - WLAN 2G4 b-mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	1
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - PowerMeter

Test Equipment

SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI
PM: Keysight Technologies,U2021XA,MY59190010,A.04.06

Test at TX 2412 MHz

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Found Peak cond.	---	---	19.39	dBm	PASS

General verdict

PASS

Message with SA Scan ~

Test References

TC Start	04.05.2021 09:54:03
Ambit Temp [°C] Humidity [rel%]	24.5 25
System Version	3.0.1.0
Test Specification	None
Test Method	
TC Version	0.0.1
My Description	Message with SA Scan b-mode
Add. Information	

Test Parameter

Switched Path	EUT - SignalingUnit - SpectrumAnalyzer
Message start	04.05.2021 09:54:04
Message	set WLAN2G4 to b mode, Frequency [MHz] 2437 ,

Test Equipment

SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI

General verdict

INFO

Common2G4 Peak OP 3MHz/3MHz ~ WLAN2G4 b-mode

Test References	
TC Start	04.05.2021 09:57:01
Ambit Temp [°C] Humidity [rel%]	24.5 25
System Version	3.0.1.0
Test Specification	None
Test Method	
TC Version	0.0.1
My Description	Peak Output Power conducted 3MHz/3MHz WLAN 2G4 b-mode
Add. Information	

EUT Common Settings WLAN2G4	
Number of Antenna Ports	1
User Interaction	No

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment	
SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60	
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI	

Test at TX 2437 MHz

RESULT: Reference Power cond.

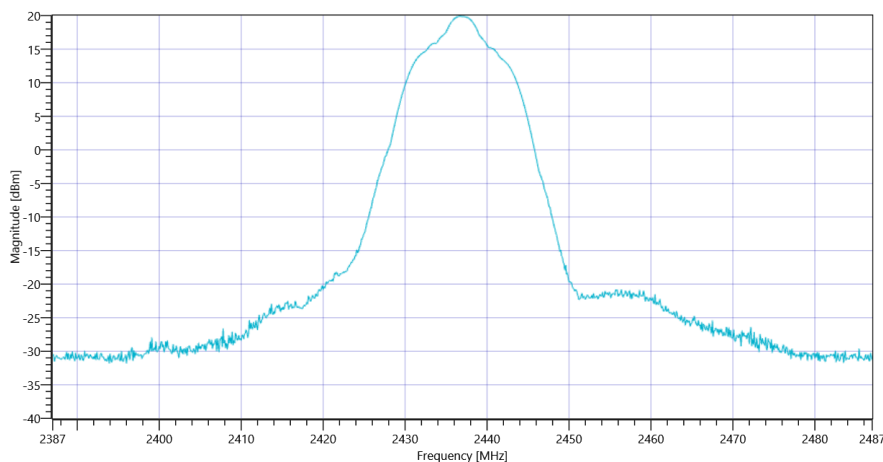
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	14.42	dBm	INFO
Ref. Frequency	---	---	2435.700	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	24.42 17.62 25
Start [MHz] Stop [MHz]	2387.000 2487.000
RBW [MHz] VBW [MHz]	3.000000 3.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 10 1001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	---	19.89	dBm	Info
Peak Power	---	---	97.498964	mW	Info
Frequency at Peak	---	---	2436.8	MHz	Info



Common2G4 Peak OP 3MHz-3MHz ~ WLAN2G4 b-mode

General verdict

PASS

FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 b-mode

Test References

TC Start	04.05.2021 09:57:36
Ambit Temp [°C] Humidity [rel%]	24.5 25
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	99
TC Version	0.0.1
My Description	FCC 15.247 Bandwidth 6dB DTS - WLAN 2G4 b-mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	1
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI

Test at TX 2437 MHz

RESULT: Reference Power cond.

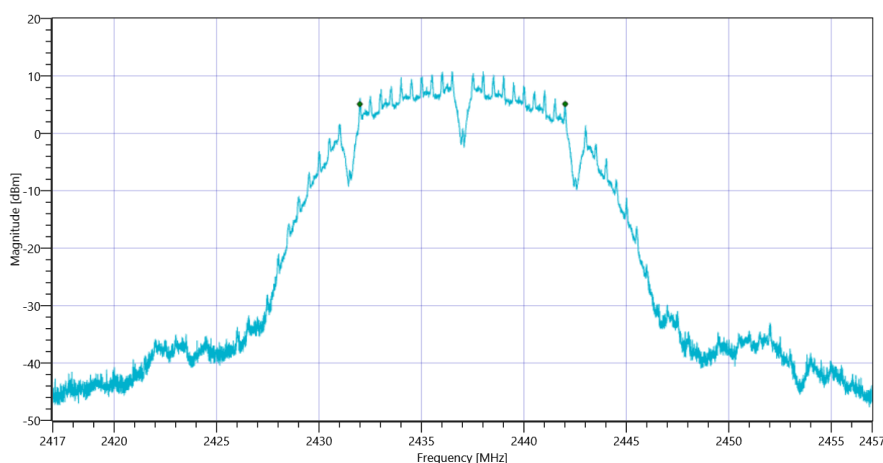
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	14.41	dBm	INFO
Ref. Frequency	---	---	2435.800	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	19.41 17.62 20
Start [MHz] Stop [MHz]	2417.000 2457.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	10024	kHz	PASS



FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 b-mode

General verdict

PASS

FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 b-mode

Test References	
TC Start	04.05.2021 09:58:15
Ambit Temp [°C] Humidity [rel%]	24.5 25
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.4 DTS maximum power spectral density level in the fundamental emission
TC Version	0.0.1
My Description	FCC 15.247 Peak Power Spectral Density DTS - WLAN 2G4 b-mode
Add. Information	

EUT Common Settings WLAN2G4	
Number of Antenna Ports	1
User Interaction	No

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment	
SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60	
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI	

Test at TX 2437 MHz

RESULT: Reference Power cond.

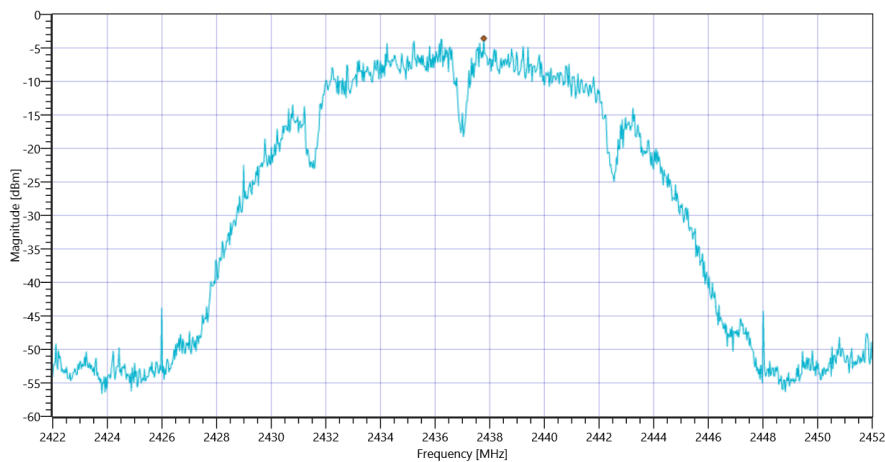
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	14.34	dBm	INFO
Ref. Frequency	---	---	2435.700	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	19.34 17.62 20
Start [MHz] Stop [MHz]	2422.000 2452.000
RBW [MHz] VBW [MHz]	0.003000 0.010000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 20 1001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Max Peak power Density	---	8	-3.57	dBm/3KHz	PASS



FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 b-mode

General verdict

PASS

FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode

Test References

TC Start	04.05.2021 09:59:01
Ambit Temp [°C] Humidity [rel%]	24.5 25
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	
TC Version	0.0.2
My Description	FCC 15.247 Bandwidth 99PCT-20dB DTS - WLAN 2G4 b-mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	1
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI

Test at TX 2437 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	14.31	dBm	INFO
Ref. Frequency	---	---	2435.700	MHz	INFO

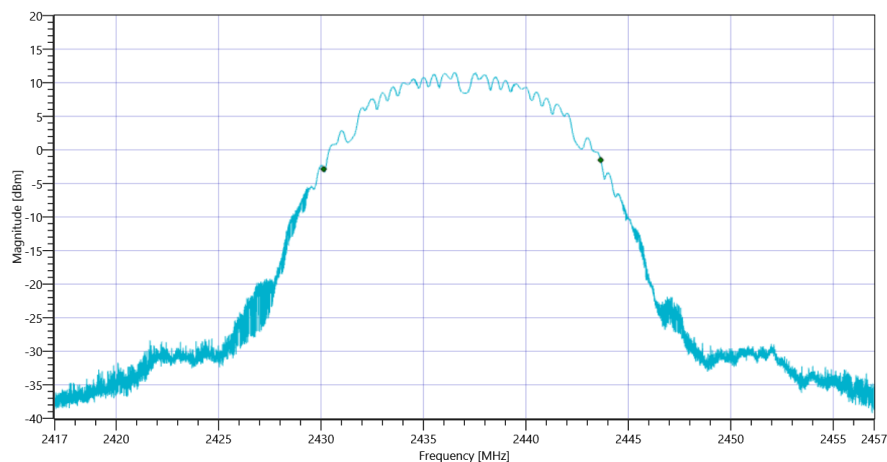
READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	19.31 17.62 20
Start [MHz] Stop [MHz]	2417.000 2457.000
RBW [MHz] VBW [MHz]	0.500000 2.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT

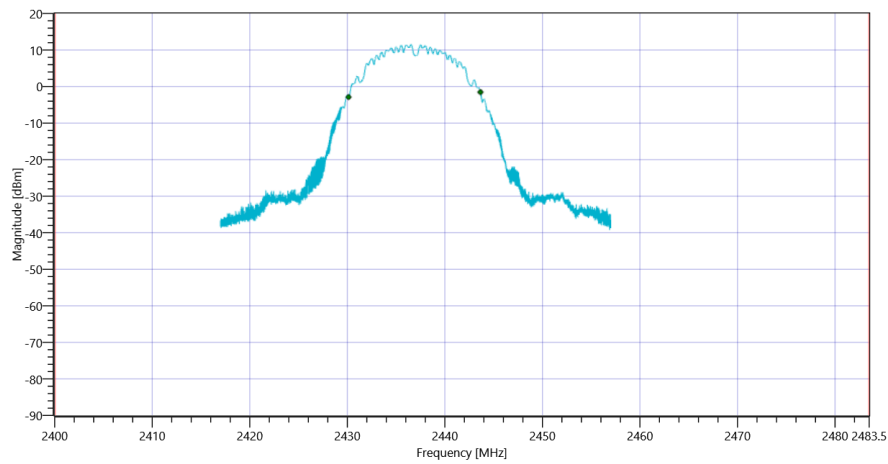
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	13518.648	kHz	INFO
T1 99%	2400.000000	---	2430.1287	MHz	PASS
T2 99%	---	2483.500000	2443.6473	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode 99PCT

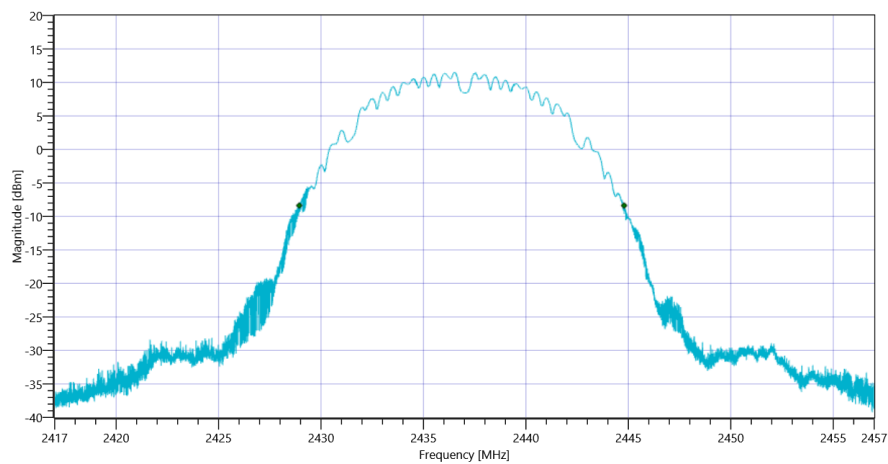
Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode

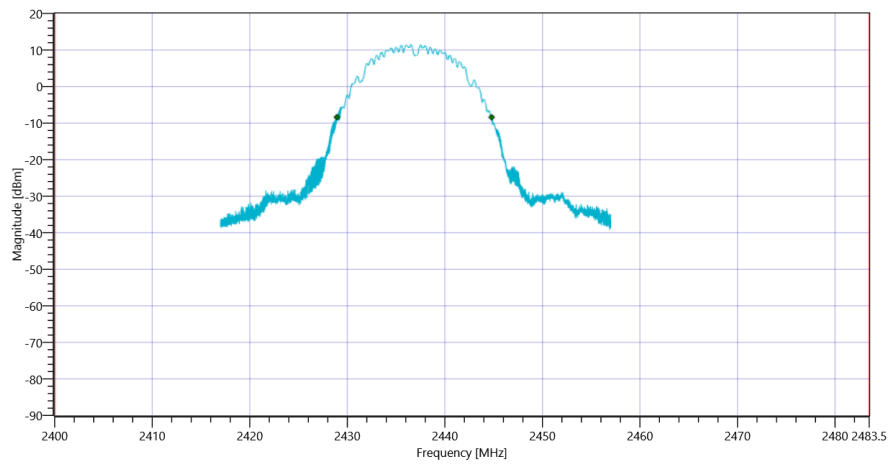
RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	15856	kHz	INFO
T1 20dB	2400.000000	---	2428.9360	MHz	PASS
T2 20dB	---	2483.500000	2444.7920	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode 20dB

Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode

General verdict

PASS

FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 b-mode

Test References	
TC Start	04.05.2021 10:00:01
Ambit Temp [°C] Humidity [rel%]	24.5 25
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	IF DTS then 8.5 DTS emissions in non-restricted frequency bands: Subclause 11.11 of ANSI C63.10 is applicable.
TC Version	0.0.1
My Description	FCC 15.247 TX Emissions Conducted DTS - WLAN 2G4 b-mode
Add. Information	

EUT Common Settings WLAN2G4	
Number of Antenna Ports	1
User Interaction	No

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment	
SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60	
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI	

Test at TX 2437 MHz

RESULT: Reference Power cond.

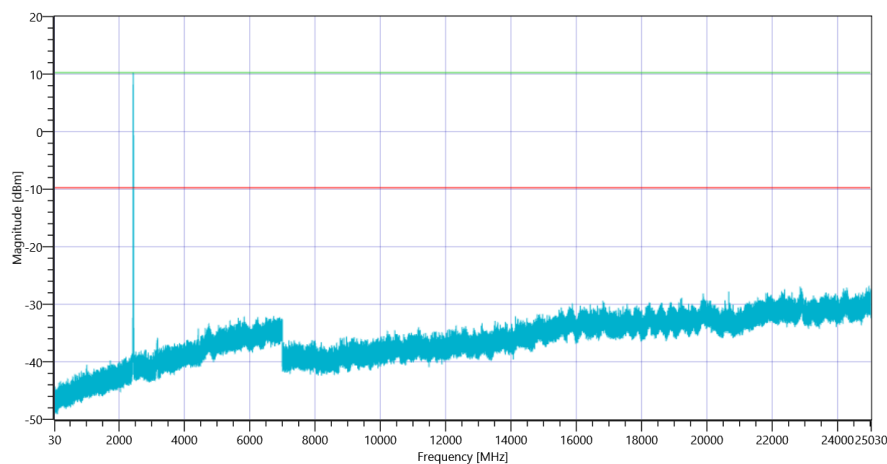
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	14.40	dBm	INFO
Ref. Frequency	---	---	2435.700	MHz	INFO

READ SA SETTINGS:

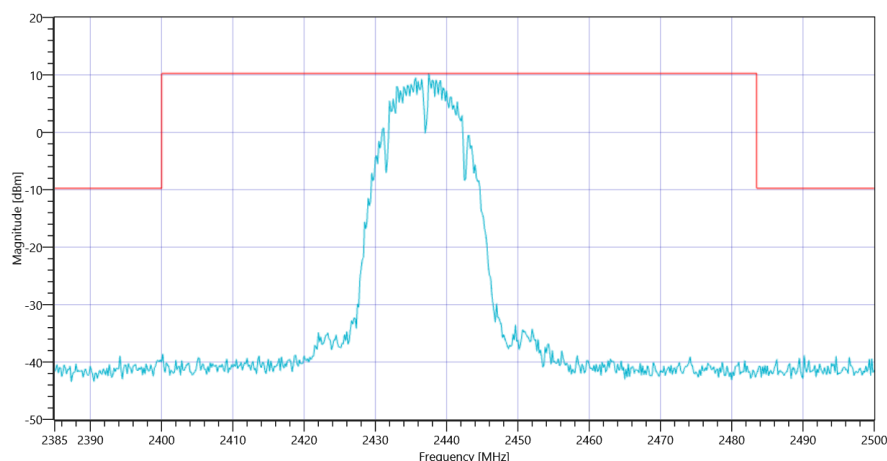
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	14.40 0 30
Start [MHz] Stop [MHz]	24530.000 25030.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	500 8 3001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2437.50 MHz	---	---	10.26	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 24960.5 MHz	0	---	17.07	dB	INFO



FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 b-mode 2437



FCC Part 15.247 TX Spurious Conduced ~ WLAN2G4 b-mode 2437

General verdict

PASS

FCC Part 15.247 Maximum Peak Conducted Output Power Powermeter DTS ~ WLAN2G4 b-mode

Test References

TC Start	04.05.2021 10:07:04
Ambit Temp [°C] Humidity [rel%]	24.5 25
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.3.1.3 PKPM1 Peak-reading Power Meter Method
TC Version	0.0.1
My Description	FCC 15.247 Maximum Peak Output Power Powermeter Conducted DTS - WLAN 2G4 b-mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	1
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - PowerMeter

Test Equipment

SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI
PM: Keysight Technologies,U2021XA,MY59190010,A.04.06

Test at TX 2437 MHz

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Found Peak cond.	---	---	22.27	dBm	PASS

General verdict

PASS

Message with SA Scan ~

Test References

TC Start	04.05.2021 10:07:16
Ambit Temp [°C] Humidity [rel%]	24.5 25
System Version	3.0.1.0
Test Specification	None
Test Method	
TC Version	0.0.1
My Description	Message with SA Scan b-mode
Add. Information	

Test Parameter

Switched Path	EUT - SignalingUnit - SpectrumAnalyzer
Message start	04.05.2021 10:07:17
Message	set WLAN2G4 to b mode, Frequency [MHz] 2462

Test Equipment

SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI

General verdict

INFO

Common2G4 Peak OP 3MHz/3MHz ~ WLAN2G4 b-mode

Test References	
TC Start	04.05.2021 10:17:36
Ambit Temp [°C] Humidity [rel%]	24.6 25
System Version	3.0.1.0
Test Specification	None
Test Method	
TC Version	0.0.1
My Description	Peak Output Power conducted 3MHz/3MHz WLAN 2G4 b-mode
Add. Information	

EUT Common Settings WLAN2G4	
Number of Antenna Ports	1
User Interaction	No

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment	
SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60	
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI	

Test at TX 2462 MHz

RESULT: Reference Power cond.

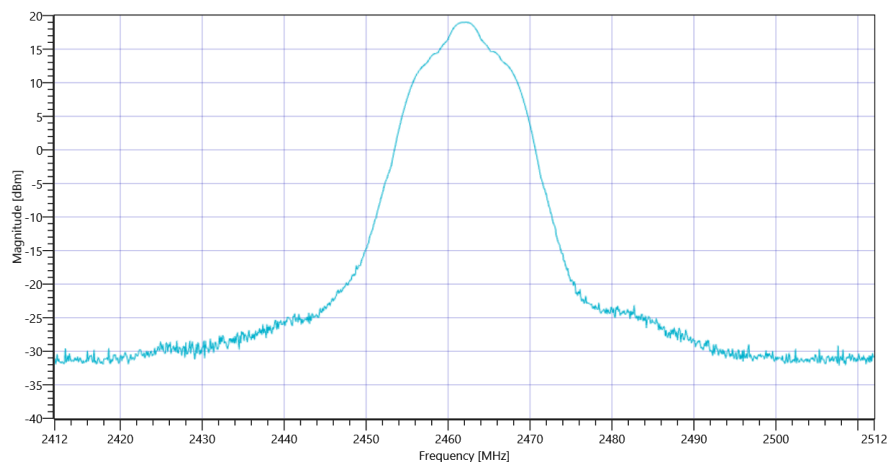
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	13.52	dBm	INFO
Ref. Frequency	---	---	2463.200	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	23.52 17.52 25
Start [MHz] Stop [MHz]	2412.000 2512.000
RBW [MHz] VBW [MHz]	3.000000 3.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 10 1001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	---	19.01	dBm	Info
Peak Power	---	---	79.615935	mW	Info
Frequency at Peak	---	---	2462.2	MHz	Info



Common2G4 Peak OP 3MHz-3MHz ~ WLAN2G4 b-mode

General verdict

PASS

FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 b-mode

Test References

TC Start	04.05.2021 10:18:11
Ambit Temp [°C] Humidity [rel%]	24.6 25
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	99
TC Version	0.0.1
My Description	FCC 15.247 Bandwidth 6dB DTS - WLAN 2G4 b-mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	1
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI

Test at TX 2462 MHz

RESULT: Reference Power cond.

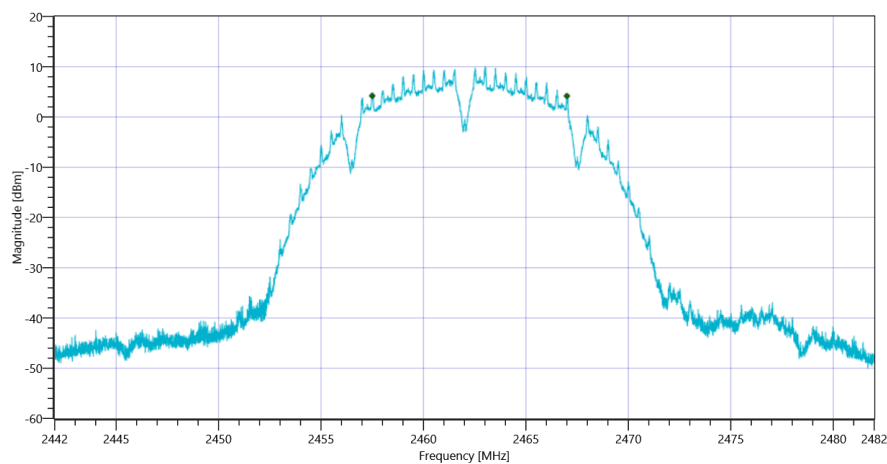
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	13.59	dBm	INFO
Ref. Frequency	---	---	2463.200	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	18.59 17.52 20
Start [MHz] Stop [MHz]	2442.000 2482.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	9504	kHz	PASS



FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 b-mode

General verdict

PASS

FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 b-mode

Test References

TC Start	04.05.2021 10:18:50
Ambit Temp [°C] Humidity [rel%]	24.5 25
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.4 DTS maximum power spectral density level in the fundamental emission
TC Version	0.0.1
My Description	FCC 15.247 Peak Power Spectral Density DTS - WLAN 2G4 b-mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	1
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI

Test at TX 2462 MHz

RESULT: Reference Power cond.

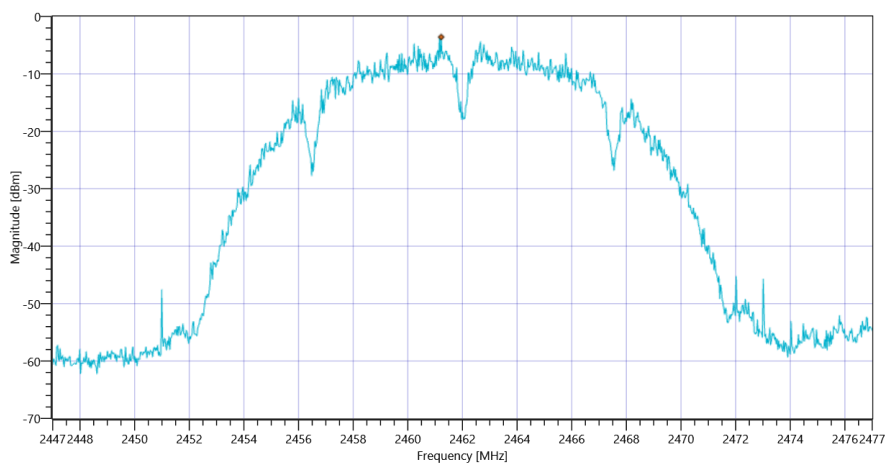
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	13.55	dBm	INFO
Ref. Frequency	---	---	2463.300	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	18.55 17.52 20
Start [MHz] Stop [MHz]	2447.000 2477.000
RBW [MHz] VBW [MHz]	0.003000 0.010000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 20 1001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Max Peak power Density	---	8	-3.57	dBm/3KHz	PASS



FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 b-mode

General verdict

PASS

FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode

Test References

TC Start	04.05.2021 10:19:36
Ambit Temp [°C] Humidity [rel%]	24.6 25
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	
TC Version	0.0.2
My Description	FCC 15.247 Bandwidth 99PCT-20dB DTS - WLAN 2G4 b-mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	1
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI

Test at TX 2462 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	13.60	dBm	INFO
Ref. Frequency	---	---	2463.200	MHz	INFO

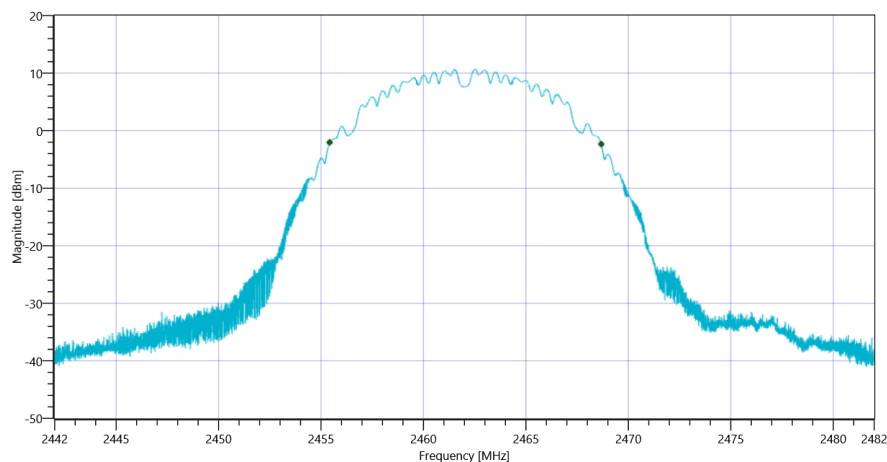
READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	18.60 17.52 20
Start [MHz] Stop [MHz]	2442.000 2482.000
RBW [MHz] VBW [MHz]	0.500000 2.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT

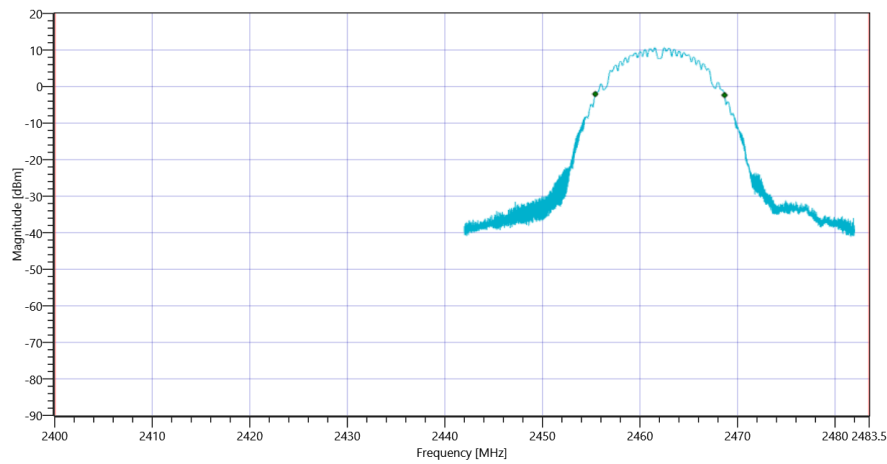
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	13254.675	kHz	INFO
T1 99%	2400.000000	---	2455.4207	MHz	PASS
T2 99%	---	2483.500000	2468.6753	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode 99PCT

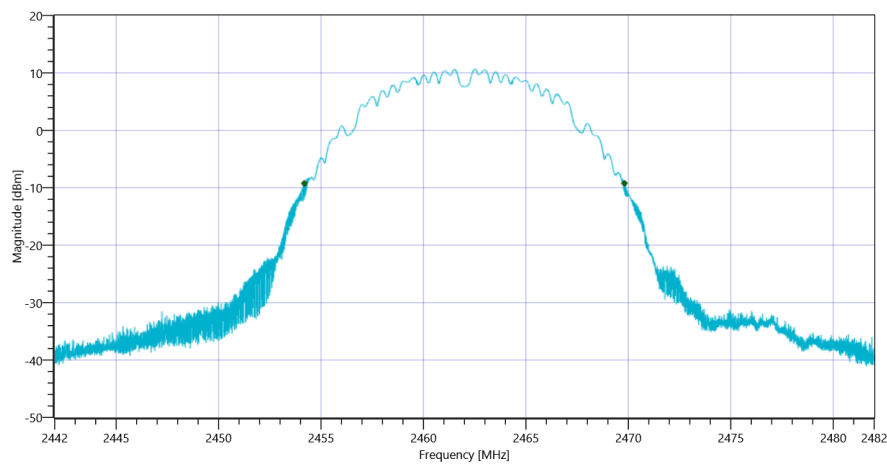
Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode

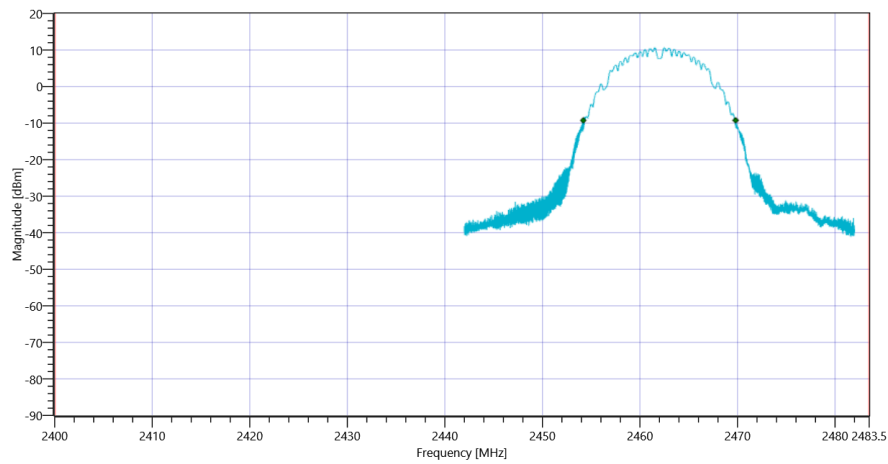
RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	15620	kHz	INFO
T1 20dB	2400.000000	---	2454.1880	MHz	PASS
T2 20dB	---	2483.500000	2469.8080	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode 20dB

Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 b-mode

General verdict

PASS

FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 b-mode

Test References	
TC Start	04.05.2021 10:20:35
Ambit Temp [°C] Humidity [rel%]	24.6 25
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	IF DTS then 8.5 DTS emissions in non-restricted frequency bands: Subclause 11.11 of ANSI C63.10 is applicable.
TC Version	0.0.1
My Description	FCC 15.247 TX Emissions Conducted DTS - WLAN 2G4 b-mode
Add. Information	

EUT Common Settings WLAN2G4	
Number of Antenna Ports	1
User Interaction	No

Test Parameter	
Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment	
SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60	
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI	

Test at TX 2462 MHz

RESULT: Reference Power cond.

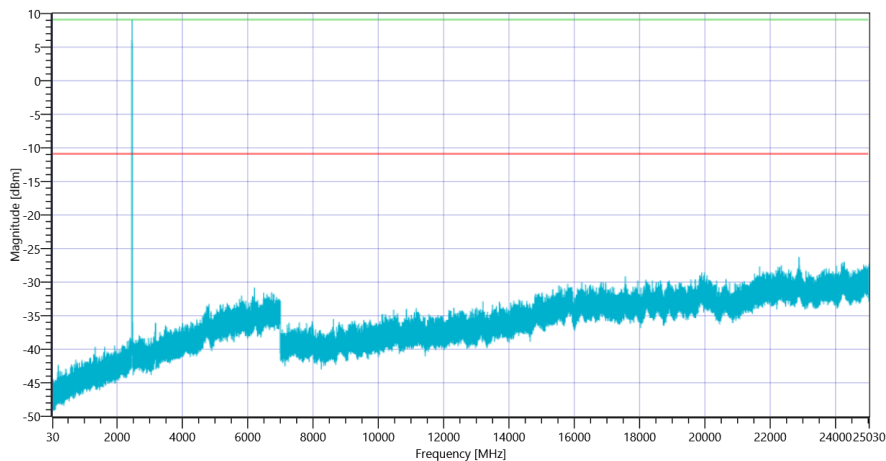
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	13.68	dBm	INFO
Ref. Frequency	---	---	2463.200	MHz	INFO

READ SA SETTINGS:

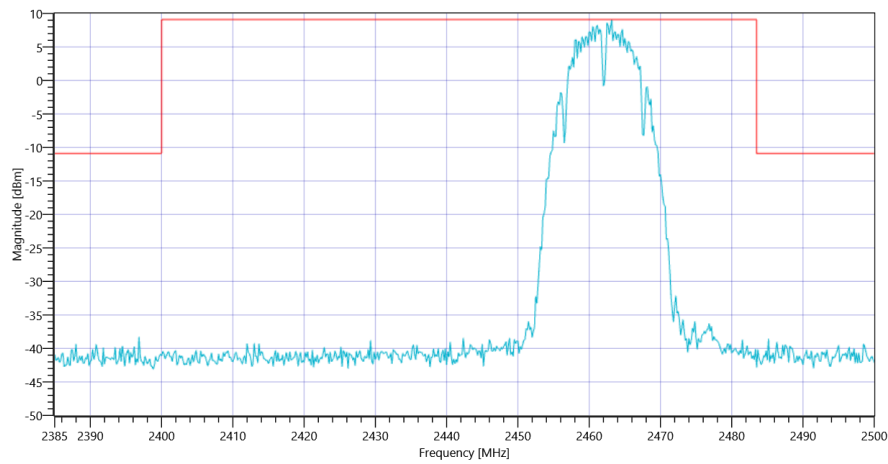
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	13.68 0 30
Start [MHz] Stop [MHz]	24530.000 25030.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	500 8 3001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2463.17 MHz	---	---	9.11	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 22880.833 MHz	0	---	15.37	dB	INFO



FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 b-mode 2462



FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 b-mode 2462

General verdict

PASS

FCC Part 15.247 Maximum Peak Conducted Output Power Powermeter DTS ~ WLAN2G4 b-mode

Test References

TC Start	04.05.2021 10:27:39
Ambit Temp [°C] Humidity [rel%]	24.6 26
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.3.1.3 PKPM1 Peak-reading Power Meter Method
TC Version	0.0.1
My Description	FCC 15.247 Maximum Peak Output Power Powermeter Conducted DTS - WLAN 2G4 b-mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	1
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 b-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - PowerMeter

Test Equipment

SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI
PM: Keysight Technologies,U2021XA,MY59190010,A.04.06

Test at TX 2462 MHz

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Found Peak cond.	---	---	21.56	dBm	PASS
General verdict			PASS		

Message with SA Scan ~

Test References

TC Start	03.05.2021 14:58:27
Ambit Temp [°C] Humidity [rel%]	23.6 21
System Version	3.0.1.0
Test Specification	None
Test Method	
TC Version	0.0.1
My Description	Message with SA Scan g-mode
Add. Information	

Test Parameter

Switched Path	EUT - SignalingUnit - SpectrumAnalyzer
Message start	03.05.2021 14:58:28
Message	set WLAN2G4 to g-mode, Frequency [MHz] 2412 ,

Test Equipment

SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI

General verdict

INFO

Common2G4 Peak OP 3MHz/3MHz ~ WLAN2G4 g-mode

Test References

TC Start	03.05.2021 14:58:43
Ambit Temp [°C] Humidity [rel%]	23.6 21
System Version	3.0.1.0
Test Specification	None
Test Method	
TC Version	0.0.1
My Description	Peak Output Power conducted 3MHz/3MHz WLAN 2G4 g-mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	1
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI

Test at TX 2412 MHz

RESULT: Reference Power cond.

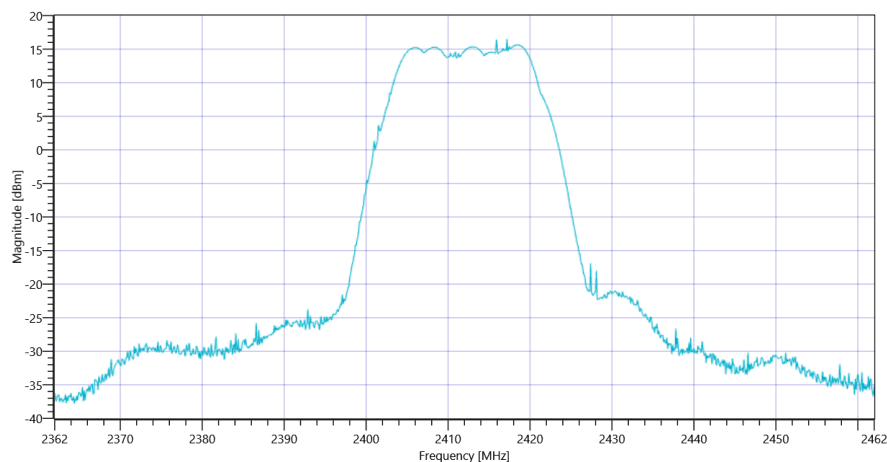
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	9.55	dBm	INFO
Ref. Frequency	---	---	2418.890	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	19.55 17.75 20
Start [MHz] Stop [MHz]	2362.000 2462.000
RBW [MHz] VBW [MHz]	3.000000 3.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 10 1001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	---	16.5	dBm	Info
Peak Power	---	---	44.668359	mW	Info
Frequency at Peak	---	---	2417.19	MHz	Info



Common2G4 Peak OP 3MHz-3MHz ~ WLAN2G4 g-mode

General verdict

PASS

FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 g-mode

Test References	
TC Start	03.05.2021 14:59:20
Ambit Temp [°C] Humidity [rel%]	23.6 21
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	99
TC Version	0.0.1
My Description	FCC 15.247 Bandwidth 6dB DTS - WLAN 2G4 g-mode
Add. Information	

EUT Common Settings WLAN2G4	
Number of Antenna Ports	1
User Interaction	No

Test Parameter	
Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment	
SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60	
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI	

Test at TX 2412 MHz

RESULT: Reference Power cond.

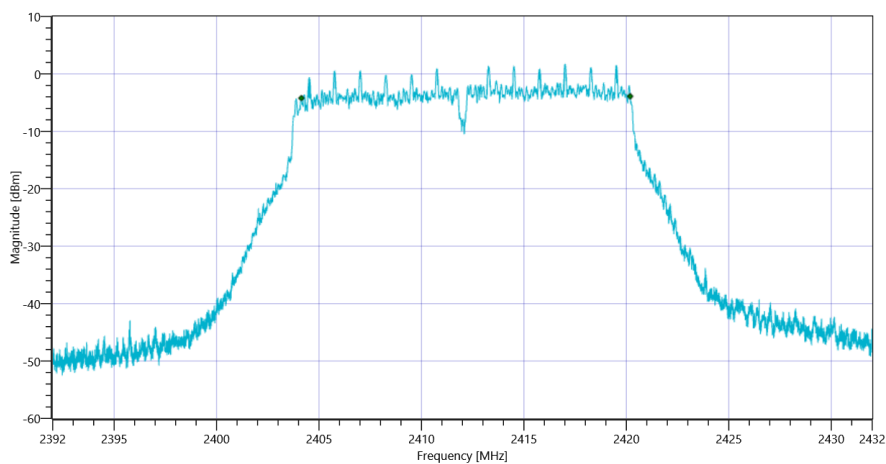
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	9.74	dBm	INFO
Ref. Frequency	---	---	2418.090	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	14.74 17.75 15
Start [MHz] Stop [MHz]	2392.000 2432.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	16052	kHz	PASS



FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 g-mode

General verdict

PASS

FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 g-mode

Test References	
TC Start	03.05.2021 15:00:01
Ambit Temp [°C] Humidity [rel%]	23.6 21
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.4 DTS maximum power spectral density level in the fundamental emission
TC Version	0.0.1
My Description	FCC 15.247 Peak Power Spectral Density DTS - WLAN 2G4 g-mode
Add. Information	

EUT Common Settings WLAN2G4	
Number of Antenna Ports	1
User Interaction	No

Test Parameter	
Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment	
SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60	
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI	

Test at TX 2412 MHz

RESULT: Reference Power cond.

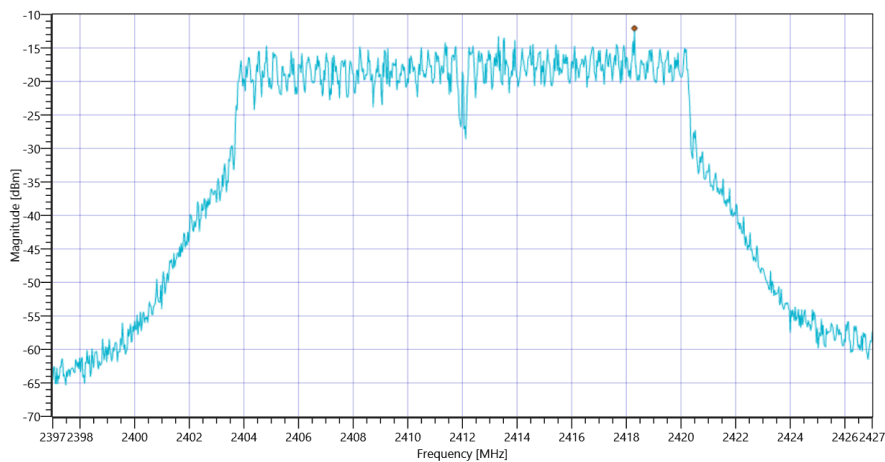
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	9.43	dBm	INFO
Ref. Frequency	---	---	2413.900	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	14.43 17.75 15
Start [MHz] Stop [MHz]	2397.000 2427.000
RBW [MHz] VBW [MHz]	0.003000 0.010000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 20 1001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Max Peak power Density	---	8	-12.06	dBm/3KHz	PASS



FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 g-mode

General verdict

PASS

FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode

Test References	
TC Start	03.05.2021 15:00:48
Ambit Temp [°C] Humidity [rel%]	23.6 21
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	
TC Version	0.0.2
My Description	FCC 15.247 Bandwidth 99PCT-20dB DTS - WLAN 2G4 g-mode
Add. Information	

EUT Common Settings WLAN2G4	
Number of Antenna Ports	1
User Interaction	No

Test Parameter	
Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment	
SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60	
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI	

Test at TX 2412 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	9.48	dBm	INFO
Ref. Frequency	---	---	2413.600	MHz	INFO

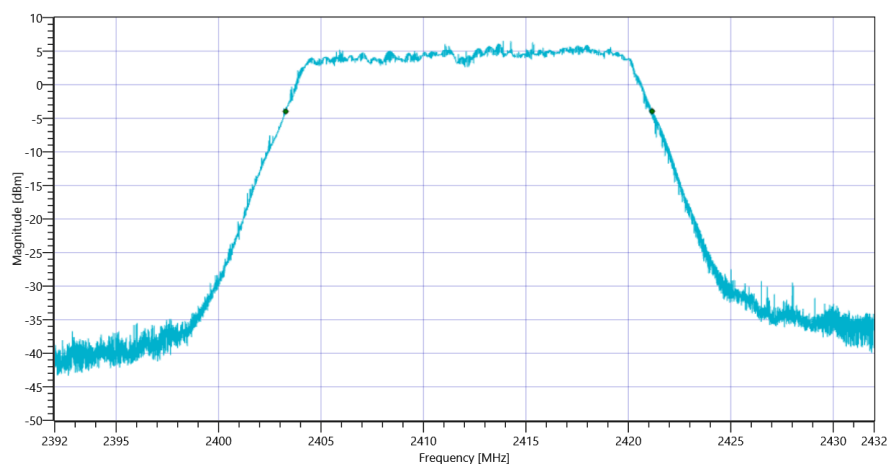
READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	14.48 17.75 15
Start [MHz] Stop [MHz]	2392.000 2432.000
RBW [MHz] VBW [MHz]	0.500000 2.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT

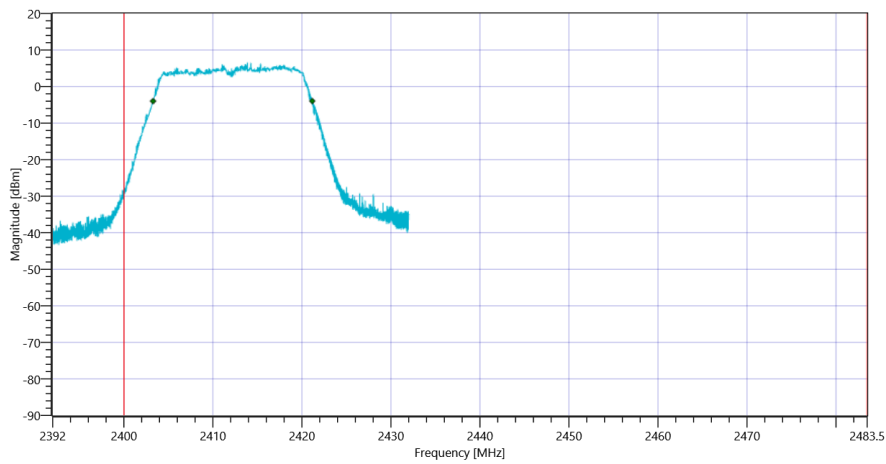
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	17882.212	kHz	INFO
T1 99%	2400.000000	---	2403.2769	MHz	PASS
T2 99%	---	2483.500000	2421.1591	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode 99PCT

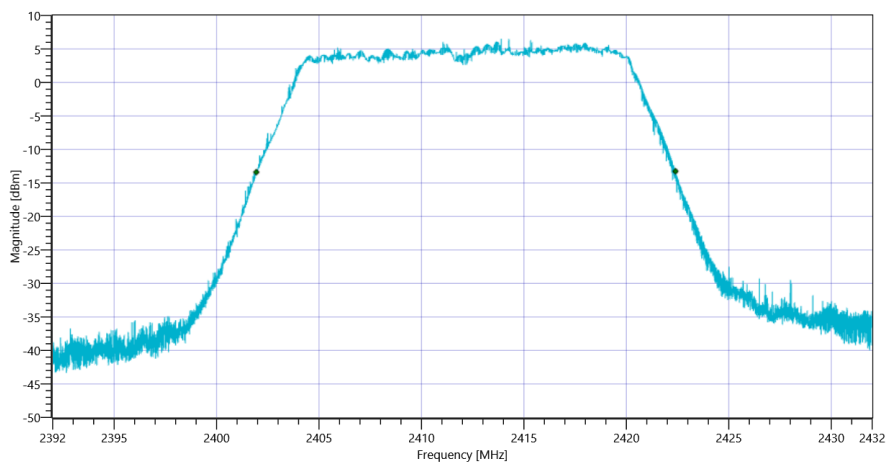
Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode

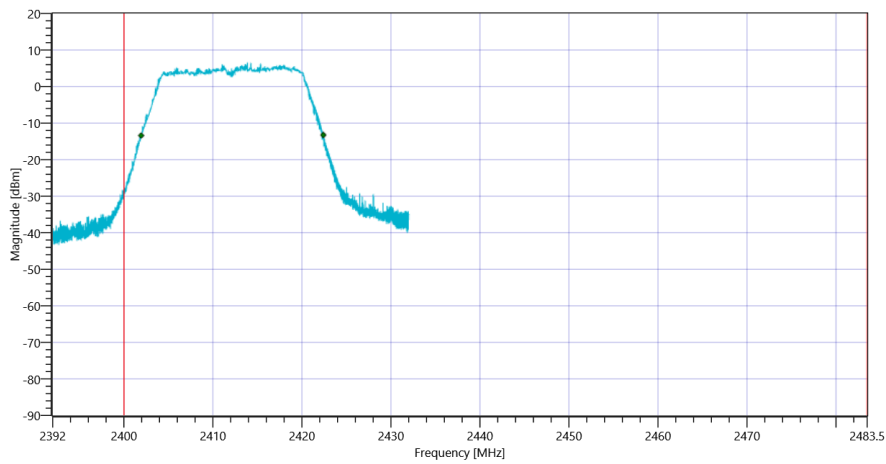
RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	20464	kHz	INFO
T1 20dB	2400.000000	---	2401.9360	MHz	PASS
T2 20dB	---	2483.500000	2422.4000	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode 20dB

Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode

General verdict

PASS

FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 g-mode

Test References	
TC Start	03.05.2021 15:01:47
Ambit Temp [°C] Humidity [rel%]	23.6 21
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	IF DTS then 8.5 DTS emissions in non-restricted frequency bands: Subclause 11.11 of ANSI C63.10 is applicable.
TC Version	0.0.1
My Description	FCC 15.247 TX Emissions Conducted DTS - WLAN 2G4 g-mode
Add. Information	

EUT Common Settings WLAN2G4	
Number of Antenna Ports	1
User Interaction	No

Test Parameter	
Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment	
SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60	
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI	

Test at TX 2412 MHz

RESULT: Reference Power cond.

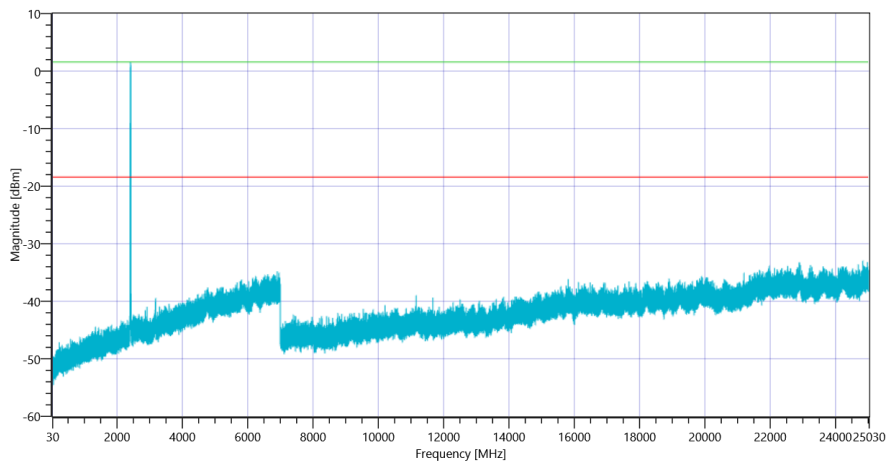
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	9.29	dBm	INFO
Ref. Frequency	---	---	2416.800	MHz	INFO

READ SA SETTINGS:

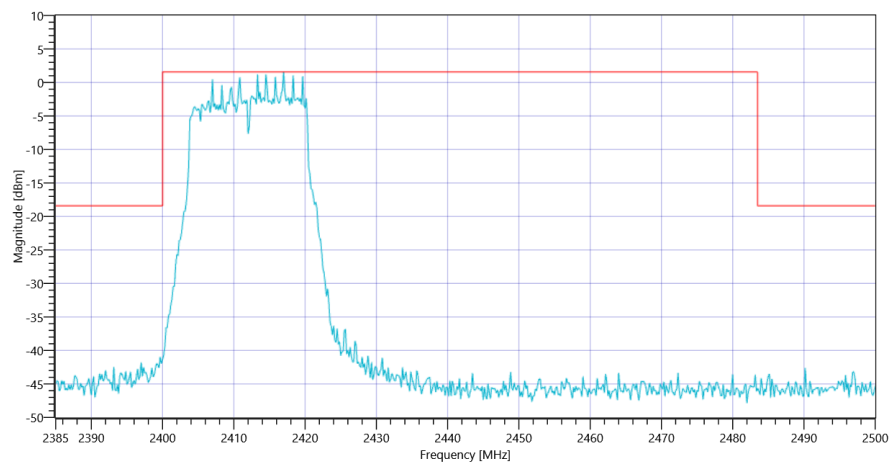
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	9.29 0 25
Start [MHz] Stop [MHz]	24530.000 25030.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	500 8 3001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2417.00 MHz	---	---	1.57	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 24836.167 MHz	0	---	14.49	dB	INFO



FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 g-mode 2412



FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 g-mode 2412

General verdict

PASS

FCC Part 15.247 Maximum Peak Conducted Output Power Powermeter DTS ~ WLAN2G4 g-mode

Test References

TC Start	03.05.2021 15:08:51
Ambit Temp [°C] Humidity [rel%]	23.5 22
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.3.1.3 PKPM1 Peak-reading Power Meter Method
TC Version	0.0.1
My Description	FCC 15.247 Maximum Peak Output Power Powermeter Conducted DTS - WLAN 2G4 g-mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	1
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - PowerMeter

Test Equipment

SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI
PM: Keysight Technologies,U2021XA,MY59190010,A.04.06

Test at TX 2412 MHz

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Found Peak cond.	---	---	21.01	dBm	PASS
General verdict			PASS		

Message with SA Scan ~

Test References	
TC Start	04.05.2021 10:30:51
Ambit Temp [°C] Humidity [rel%]	24.6 26
System Version	3.0.1.0
Test Specification	None
Test Method	
TC Version	0.0.1
My Description	Message with SA Scan g-mode
Add. Information	

Test Parameter	
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer
Message start	04.05.2021 10:30:52
Message	set WLAN2G4 to g-mode, Frequency [MHz] 2437 ,

Test Equipment	
SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60	
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI	

General verdict

INFO

Common2G4 Peak OP 3MHz/3MHz ~ WLAN2G4 g-mode

Test References	
TC Start	04.05.2021 10:31:03
Ambit Temp [°C] Humidity [rel%]	24.6 26
System Version	3.0.1.0
Test Specification	None
Test Method	
TC Version	0.0.1
My Description	Peak Output Power conducted 3MHz/3MHz WLAN 2G4 g-mode
Add. Information	

EUT Common Settings WLAN2G4	
Number of Antenna Ports	1
User Interaction	No

Test Parameter	
Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment	
SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60	
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI	

Test at TX 2437 MHz

RESULT: Reference Power cond.

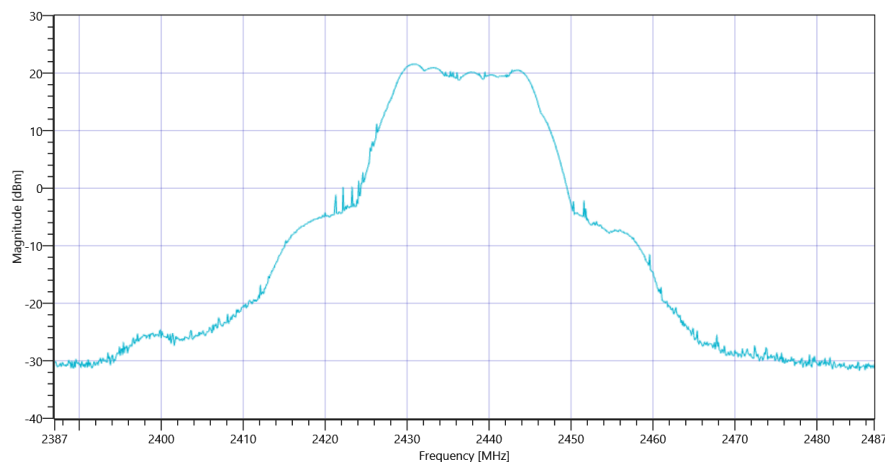
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	15.52	dBm	INFO
Ref. Frequency	---	---	2431.110	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	25.52 17.62 25
Start [MHz] Stop [MHz]	2387.000 2487.000
RBW [MHz] VBW [MHz]	3.000000 3.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 10 1001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	---	21.55	dBm	Info
Peak Power	---	---	142.889396	mW	Info
Frequency at Peak	---	---	2430.81	MHz	Info



Common2G4 Peak OP 3MHz-3MHz ~ WLAN2G4 g-mode

General verdict

PASS

FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 g-mode

Test References

TC Start	04.05.2021 10:31:39
Ambit Temp [°C] Humidity [rel%]	24.6 26
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	99
TC Version	0.0.1
My Description	FCC 15.247 Bandwidth 6dB DTS - WLAN 2G4 g-mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	1
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI

Test at TX 2437 MHz

RESULT: Reference Power cond.

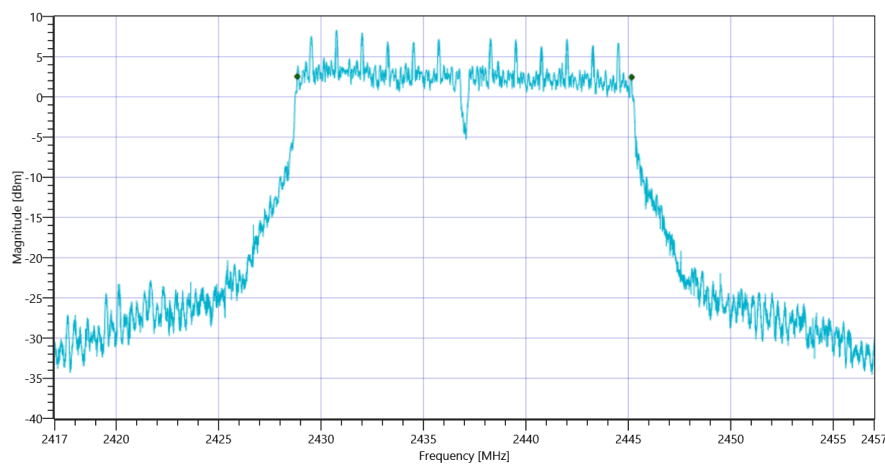
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	15.47	dBm	INFO
Ref. Frequency	---	---	2432.600	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	20.47 17.62 20
Start [MHz] Stop [MHz]	2417.000 2457.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	16324	kHz	PASS



FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 g-mode

General verdict

PASS

FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 g-mode

Test References	
TC Start	04.05.2021 10:32:17
Ambit Temp [°C] Humidity [rel%]	24.6 26
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.4 DTS maximum power spectral density level in the fundamental emission
TC Version	0.0.1
My Description	FCC 15.247 Peak Power Spectral Density DTS - WLAN 2G4 g-mode
Add. Information	

EUT Common Settings WLAN2G4	
Number of Antenna Ports	1
User Interaction	No

Test Parameter	
Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment	
SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60	
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI	

Test at TX 2437 MHz

RESULT: Reference Power cond.

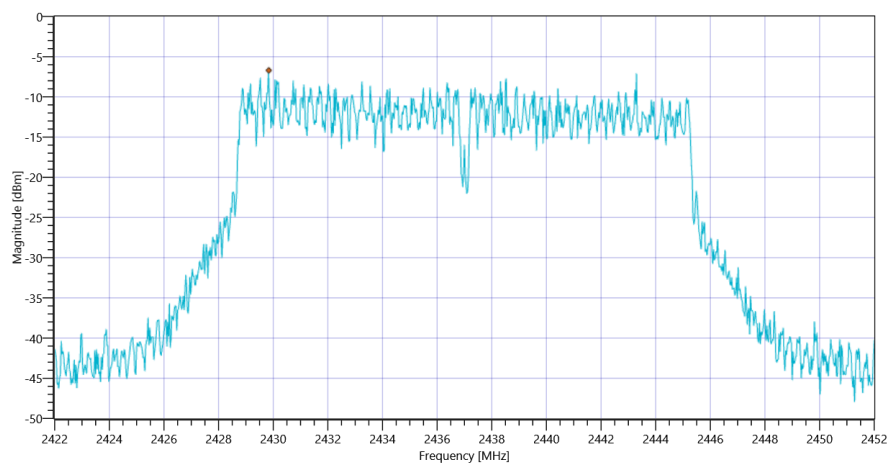
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	15.27	dBm	INFO
Ref. Frequency	---	---	2432.600	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	20.27 17.62 20
Start [MHz] Stop [MHz]	2422.000 2452.000
RBW [MHz] VBW [MHz]	0.003000 0.010000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 20 1001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Max Peak power Density	---	8	-6.7	dBm/3KHz	PASS



FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 g-mode

General verdict

PASS

FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode

Test References

TC Start	04.05.2021 10:33:04
Ambit Temp [°C] Humidity [rel%]	24.6 26
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	
TC Version	0.0.2
My Description	FCC 15.247 Bandwidth 99PCT-20dB DTS - WLAN 2G4 g-mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	1
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI

Test at TX 2437 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	15.31	dBm	INFO
Ref. Frequency	---	---	2433.500	MHz	INFO

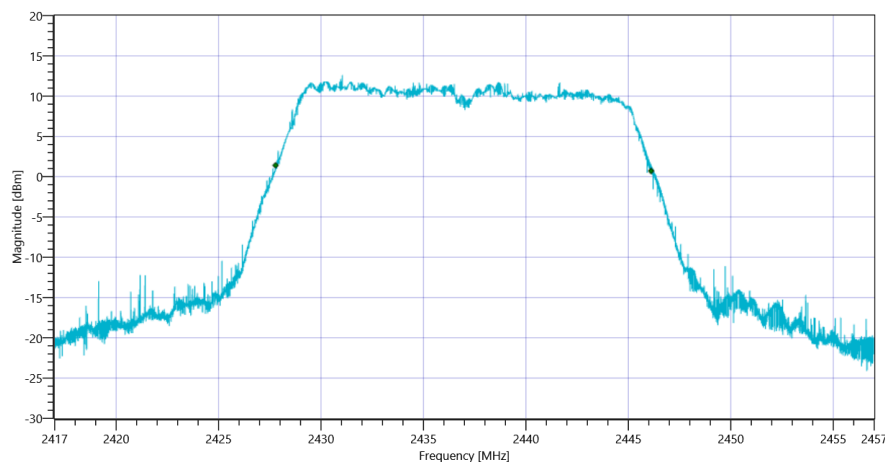
READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	20.31 17.62 20
Start [MHz] Stop [MHz]	2417.000 2457.000
RBW [MHz] VBW [MHz]	0.500000 2.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT

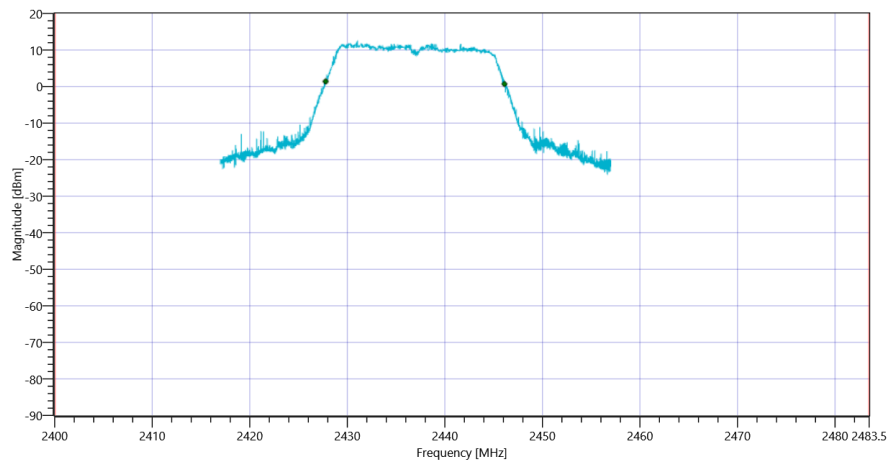
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	18326.167	kHz	INFO
T1 99%	2400.000000	---	2427.7809	MHz	PASS
T2 99%	---	2483.500000	2446.1071	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode 99PCT

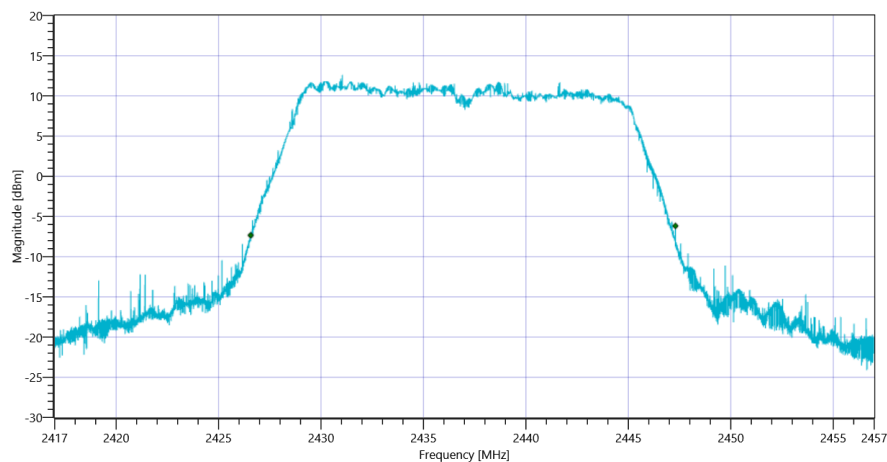
Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode

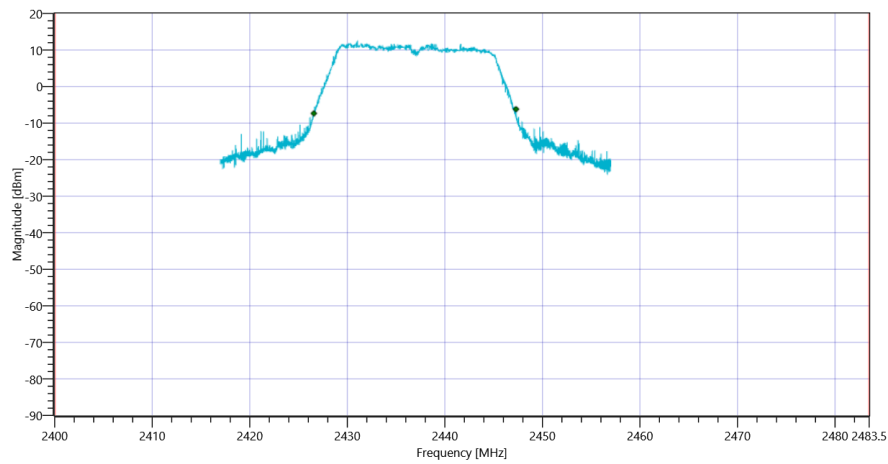
RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	20728	kHz	INFO
T1 20dB	2400.000000	---	2426.5680	MHz	PASS
T2 20dB	---	2483.500000	2447.2960	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode 20dB

Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode

General verdict

PASS

FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 g-mode

Test References	
TC Start	04.05.2021 10:34:03
Ambit Temp [°C] Humidity [rel%]	24.6 26
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	IF DTS then 8.5 DTS emissions in non-restricted frequency bands: Subclause 11.11 of ANSI C63.10 is applicable.
TC Version	0.0.1
My Description	FCC 15.247 TX Emissions Conducted DTS - WLAN 2G4 g-mode
Add. Information	

EUT Common Settings WLAN2G4	
Number of Antenna Ports	1
User Interaction	No

Test Parameter	
Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment	
SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60	
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI	

Test at TX 2437 MHz

RESULT: Reference Power cond.

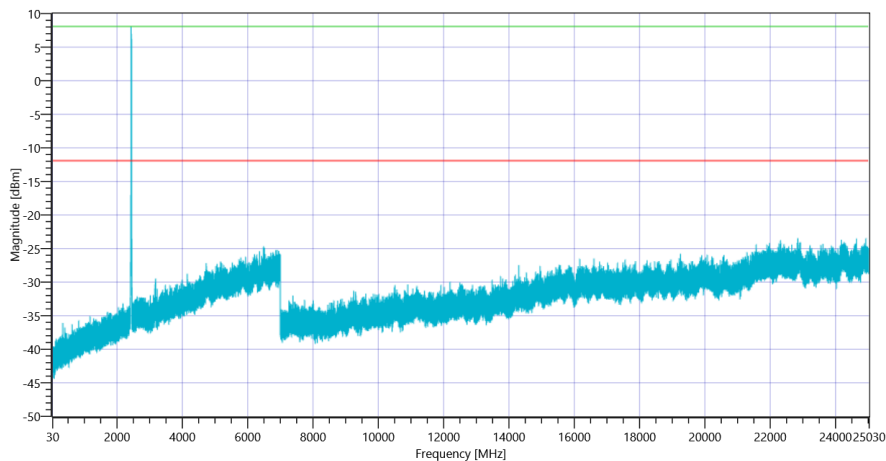
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	15.22	dBm	INFO
Ref. Frequency	---	---	2429.710	MHz	INFO

READ SA SETTINGS:

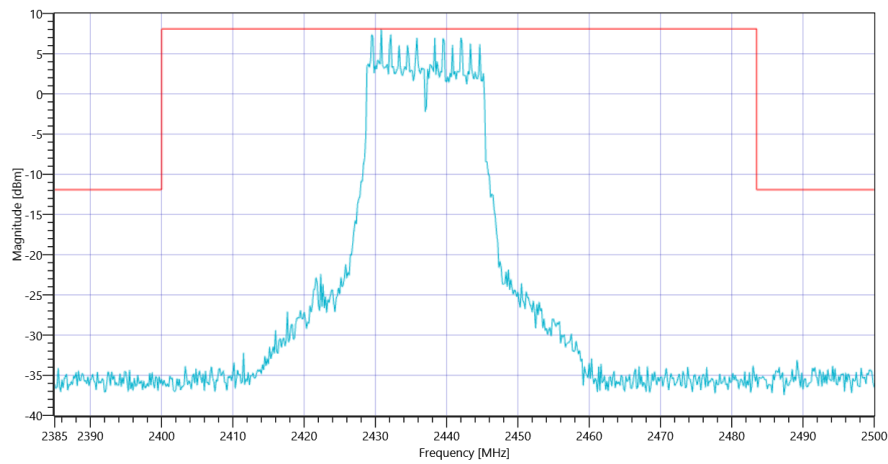
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	15.22 0 35
Start [MHz] Stop [MHz]	24530.000 25030.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	500 8 3001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2430.83 MHz	---	---	8.07	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 22846.667 MHz	0	---	11.53	dB	INFO



FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 g-mode 2437



FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 g-mode 2437

General verdict

PASS

FCC Part 15.247 Maximum Peak Conducted Output Power Powermeter DTS ~ WLAN2G4 g-mode

Test References

TC Start	04.05.2021 10:41:06
Ambit Temp [°C] Humidity [rel%]	24.7 26
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.3.1.3 PKPM1 Peak-reading Power Meter Method
TC Version	0.0.1
My Description	FCC 15.247 Maximum Peak Output Power Powermeter Conducted DTS - WLAN 2G4 g-mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	1
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	True Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - PowerMeter

Test Equipment

SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI
PM: Keysight Technologies,U2021XA,MY59190010,A.04.06

Test at TX 2437 MHz

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Found Peak cond.	---	---	25.36	dBm	PASS

General verdict

PASS

Message with SA Scan ~

Test References

TC Start	03.05.2021 15:28:11
Ambit Temp [°C] Humidity [rel%]	23.5 22
System Version	3.0.1.0
Test Specification	None
Test Method	
TC Version	0.0.1
My Description	Message with SA Scan g-mode
Add. Information	

Test Parameter

Switched Path	EUT - SignalingUnit - SpectrumAnalyzer
Message start	03.05.2021 15:28:12
Message	set WLAN2G4 to g-mode, Frequency [MHz] 2462

Test Equipment

SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI

General verdict

INFO

Common2G4 Peak OP 3MHz/3MHz ~ WLAN2G4 g-mode

Test References

TC Start	03.05.2021 15:28:32
Ambit Temp [°C] Humidity [rel%]	23.5 22
System Version	3.0.1.0
Test Specification	None
Test Method	
TC Version	0.0.1
My Description	Peak Output Power conducted 3MHz/3MHz WLAN 2G4 g-mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	1
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI

Test at TX 2462 MHz

RESULT: Reference Power cond.

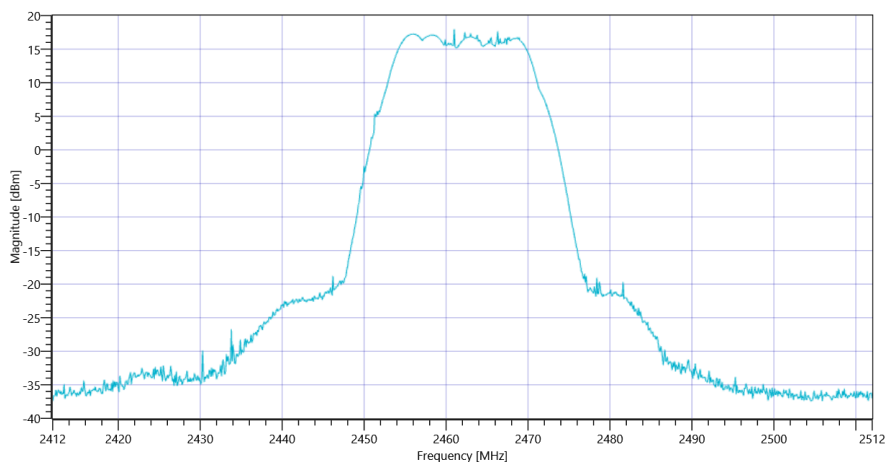
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	10.82	dBm	INFO
Ref. Frequency	---	---	2468.090	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	20.82 17.52 20
Start [MHz] Stop [MHz]	2412.000 2512.000
RBW [MHz] VBW [MHz]	3.000000 3.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 10 1001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	---	17.97	dBm	Info
Peak Power	---	---	62.661386	mW	Info
Frequency at Peak	---	---	2461	MHz	Info



Common2G4 Peak OP 3MHz-3MHz ~ WLAN2G4 g-mode

General verdict

PASS

FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 g-mode

Test References

TC Start	03.05.2021 15:29:08
Ambit Temp [°C] Humidity [rel%]	23.5 21
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	99
TC Version	0.0.1
My Description	FCC 15.247 Bandwidth 6dB DTS - WLAN 2G4 g-mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	1
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI

Test at TX 2462 MHz

RESULT: Reference Power cond.

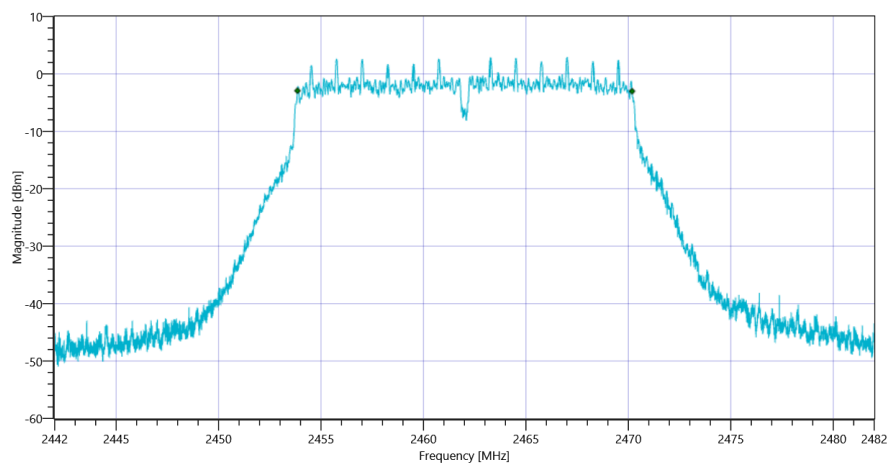
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	10.60	dBm	INFO
Ref. Frequency	---	---	2463.100	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	15.60 17.52 15
Start [MHz] Stop [MHz]	2442.000 2482.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	16336	kHz	PASS



General verdict

PASS

FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 g-mode

Test References

TC Start	03.05.2021 15:29:48
Ambit Temp [°C] Humidity [rel%]	23.5 21
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.4 DTS maximum power spectral density level in the fundamental emission
TC Version	0.0.1
My Description	FCC 15.247 Peak Power Spectral Density DTS - WLAN 2G4 g-mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	1
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI

Test at TX 2462 MHz

RESULT: Reference Power cond.

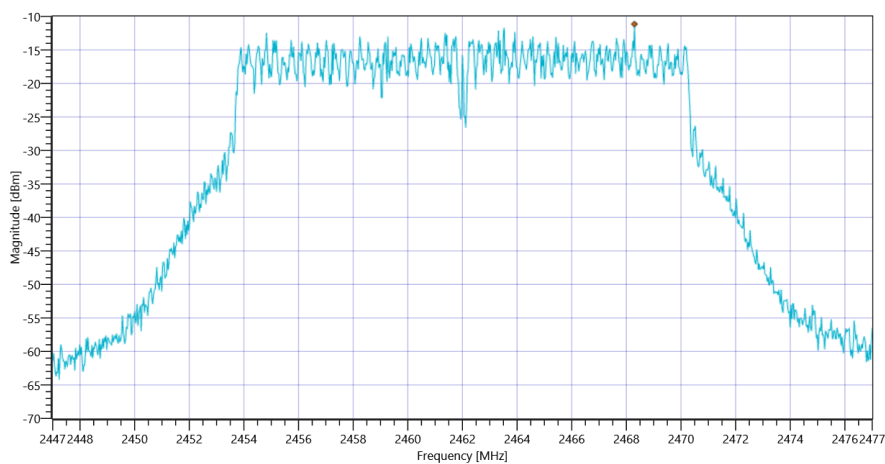
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	10.85	dBm	INFO
Ref. Frequency	---	---	2468.090	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	15.85 17.52 15
Start [MHz] Stop [MHz]	2447.000 2477.000
RBW [MHz] VBW [MHz]	0.003000 0.010000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 20 1001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Max Peak power Density	---	8	-11.13	dBm/3KHz	PASS



FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 g-mode

General verdict

PASS

FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode

Test References

TC Start	03.05.2021 15:30:35
Ambit Temp [°C] Humidity [rel%]	23.4 21
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	
TC Version	0.0.2
My Description	FCC 15.247 Bandwidth 99PCT-20dB DTS - WLAN 2G4 g-mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	1
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI

Test at TX 2462 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	10.83	dBm	INFO
Ref. Frequency	---	---	2463.800	MHz	INFO

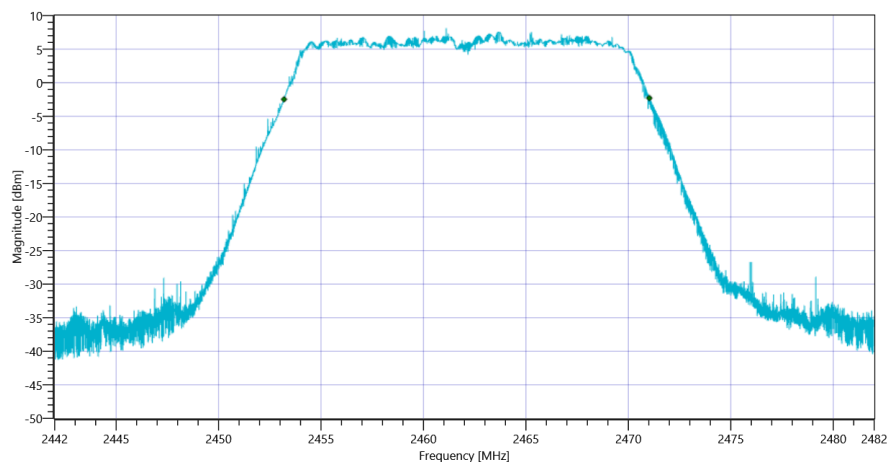
READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	15.83 17.52 15
Start [MHz] Stop [MHz]	2442.000 2482.000
RBW [MHz] VBW [MHz]	0.500000 2.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT

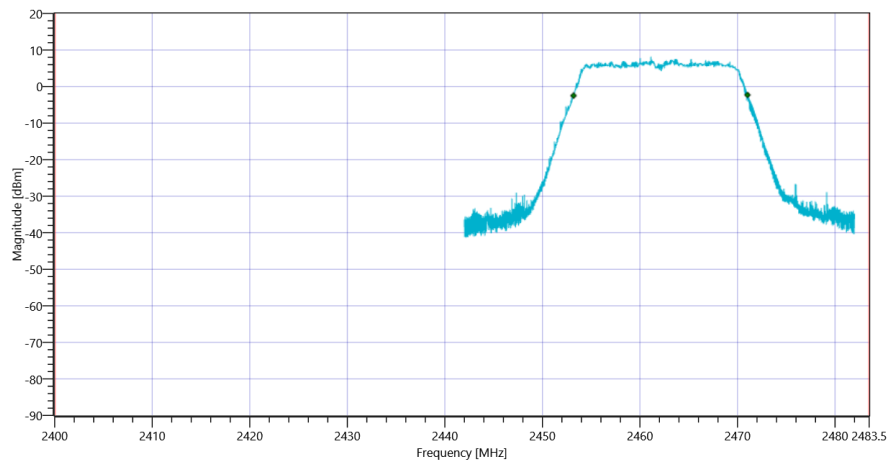
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	17830.217	kHz	INFO
T1 99%	2400.000000	---	2453.1929	MHz	PASS
T2 99%	---	2483.500000	2471.0231	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode 99PCT

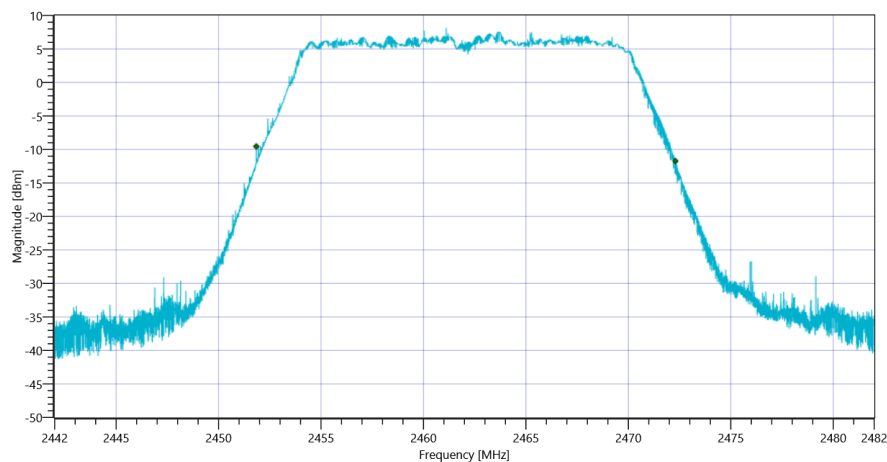
Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode

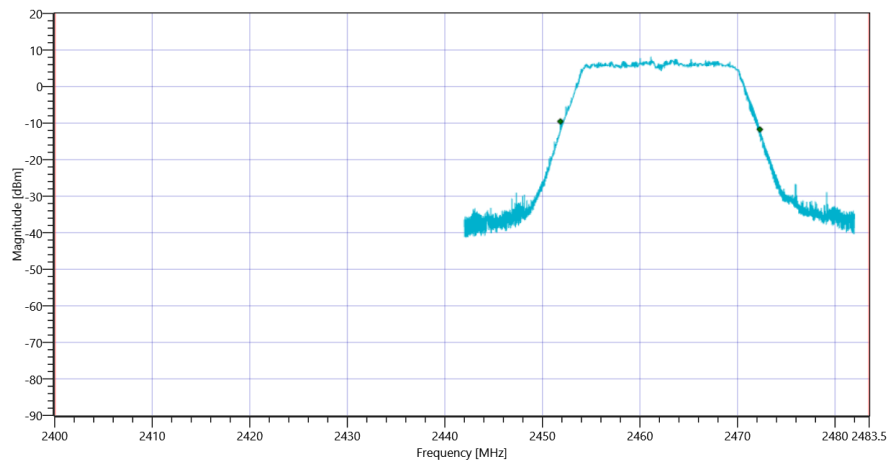
RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	20452	kHz	INFO
T1 20dB	2400.000000	---	2451.8400	MHz	PASS
T2 20dB	---	2483.500000	2472.2920	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode 20dB

Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 g-mode

General verdict

PASS

FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 g-mode

Test References

TC Start	03.05.2021 15:31:34
Ambit Temp [°C] Humidity [rel%]	23.5 21
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	IF DTS then 8.5 DTS emissions in non-restricted frequency bands: Subclause 11.11 of ANSI C63.10 is applicable.
TC Version	0.0.1
My Description	FCC 15.247 TX Emissions Conducted DTS - WLAN 2G4 g-mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	1
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI

Test at TX 2462 MHz

RESULT: Reference Power cond.

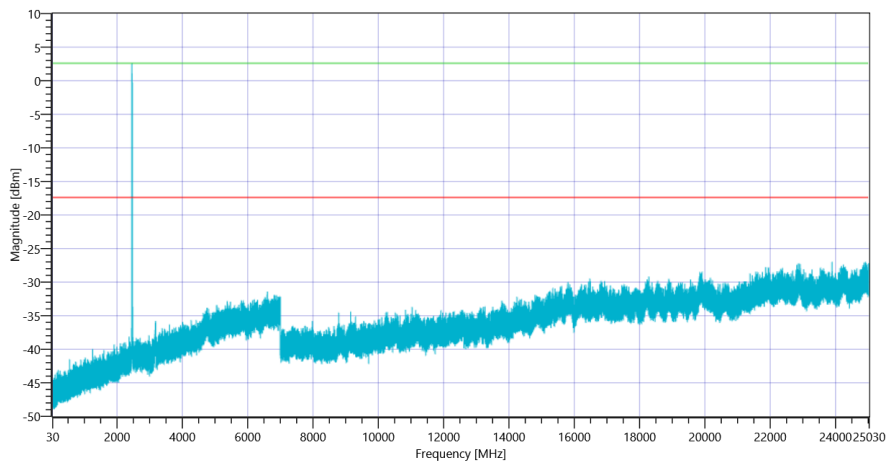
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	10.59	dBm	INFO
Ref. Frequency	---	---	2466.900	MHz	INFO

READ SA SETTINGS:

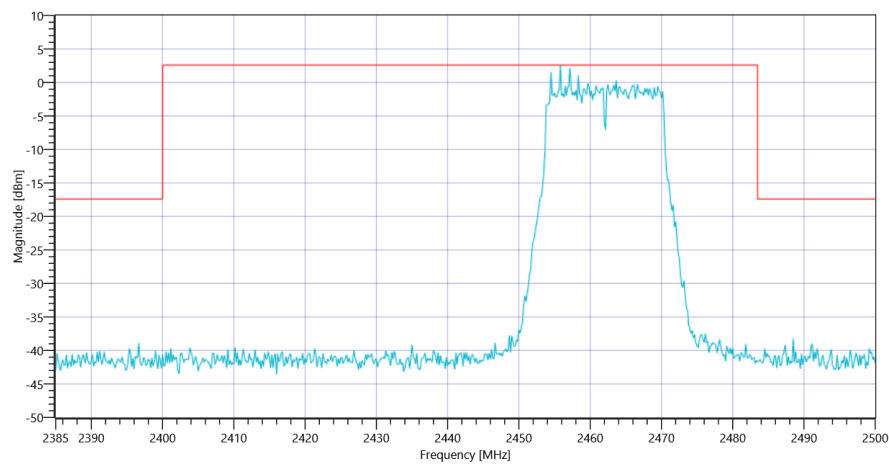
RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	10.59 0 30
Start [MHz] Stop [MHz]	24530.000 25030.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	500 8 3001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2455.83 MHz	---	---	2.59	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 23892.333 MHz	0	---	9.57	dB	INFO



FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 g-mode 2462



FCC Part 15.247 TX Spurious Conducted ~ WLAN2G4 g-mode 2462

General verdict

PASS

FCC Part 15.247 Maximum Peak Conducted Output Power Powermeter DTS ~ WLAN2G4 g-mode

Test References

TC Start	03.05.2021 15:38:37
Ambit Temp [°C] Humidity [rel%]	23.5 21
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.3.1.3 PKPM1 Peak-reading Power Meter Method
TC Version	0.0.1
My Description	FCC 15.247 Maximum Peak Output Power Powermeter Conducted DTS - WLAN 2G4 g-mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	1
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 g-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	True Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - PowerMeter

Test Equipment

SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI
PM: Keysight Technologies,U2021XA,MY59190010,A.04.06

Test at TX 2462 MHz

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Found Peak cond.	---	---	23.39	dBm	PASS
General verdict			PASS		

Message with SA Scan ~

Test References

TC Start	04.05.2021 08:11:10
Ambit Temp [°C] Humidity [rel%]	24.2 23
System Version	3.0.1.0
Test Specification	None
Test Method	
TC Version	0.0.1
My Description	Message with SA Scan nHT20-mode
Add. Information	

Test Parameter

Switched Path	EUT - SignalingUnit - SpectrumAnalyzer
Message start	04.05.2021 08:11:11
Message	set WLAN2G4 to nHT20-mode, Frequency [MHz] 2412 ,

Test Equipment

SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI

General verdict

INFO

Common2G4 Peak OP 3MHz/3MHz ~ WLAN2G4 nHT20-mode

Test References	
TC Start	04.05.2021 08:11:36
Ambit Temp [°C] Humidity [rel%]	24.2 23
System Version	3.0.1.0
Test Specification	None
Test Method	
TC Version	0.0.1
My Description	Peak Output Power conducted 3MHz/3MHz WLAN 2G4 nHT20-mode
Add. Information	

EUT Common Settings WLAN2G4	
Number of Antenna Ports	1
User Interaction	No

Test Parameter	
Technology to test	WLAN2G4 nHT20-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment	
SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60	
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI	

Test at TX 2412 MHz

RESULT: Reference Power cond.

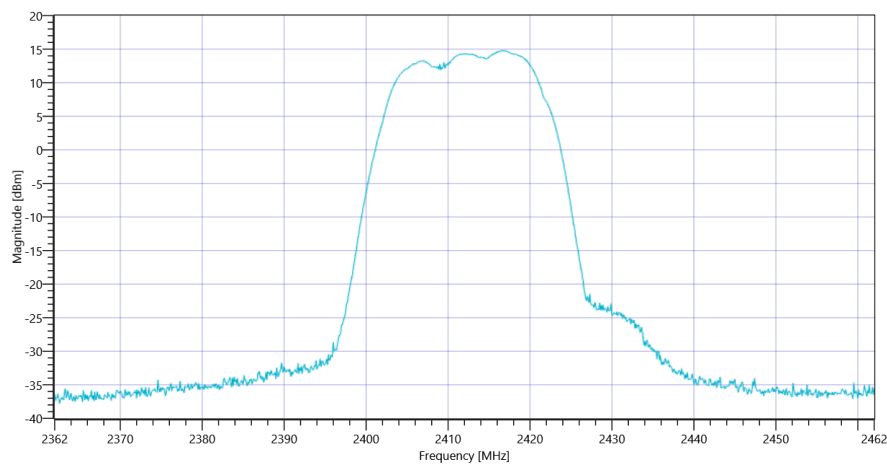
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	7.90	dBm	INFO
Ref. Frequency	---	---	2414.700	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	17.90 17.75 20
Start [MHz] Stop [MHz]	2362.000 2462.000
RBW [MHz] VBW [MHz]	3.000000 3.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 10 1001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Peak Power	---	---	14.77	dBm	Info
Peak Power	---	---	29.991625	mW	Info
Frequency at Peak	---	---	2416.7	MHz	Info



Common2G4 Peak OP 3MHz-3MHz ~ WLAN2G4 nHT20-mode

General verdict

PASS

FCC Part 15.247 Bandwidth 6dB DTS ~ WLAN2G4 nHT20-mode

Test References

TC Start	04.05.2021 08:12:15
Ambit Temp [°C] Humidity [rel%]	24.2 23
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	99
TC Version	0.0.1
My Description	FCC 15.247 Bandwidth 6dB DTS - WLAN 2G4 nHT20_mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	1
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 nHT20-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI

Test at TX 2412 MHz

RESULT: Reference Power cond.

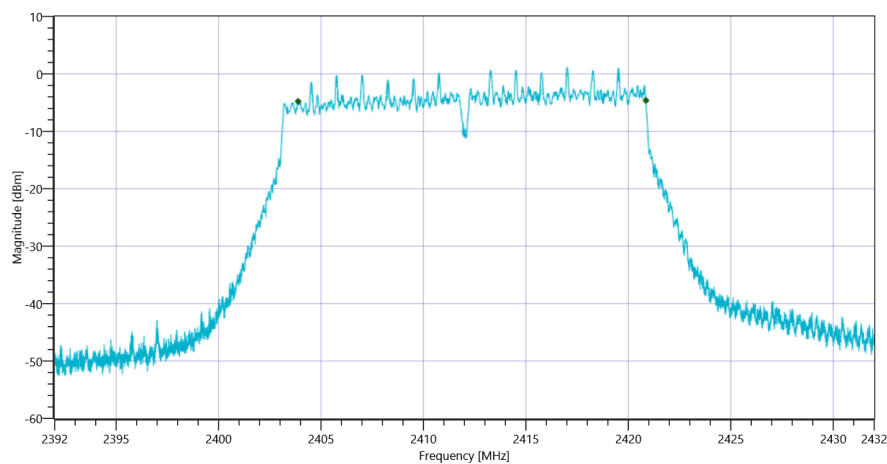
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	8.42	dBm	INFO
Ref. Frequency	---	---	2417.190	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	13.42 17.75 15
Start [MHz] Stop [MHz]	2392.000 2432.000
RBW [MHz] VBW [MHz]	0.100000 0.300000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
DTS Bandwidth (6dB)	500	---	16980	kHz	PASS



General verdict

PASS

FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 nHT20-mode

Test References

TC Start	04.05.2021 08:12:56
Ambit Temp [°C] Humidity [rel%]	24.2 23
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	DTS: KDB 558074 D01 V05 - Chapter 8.4 DTS maximum power spectral density level in the fundamental emission
TC Version	0.0.1
My Description	FCC 15.247 Peak Power Spectral Density DTS - WLAN 2G4 nHT20_mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	1
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 nHT20-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI

Test at TX 2412 MHz

RESULT: Reference Power cond.

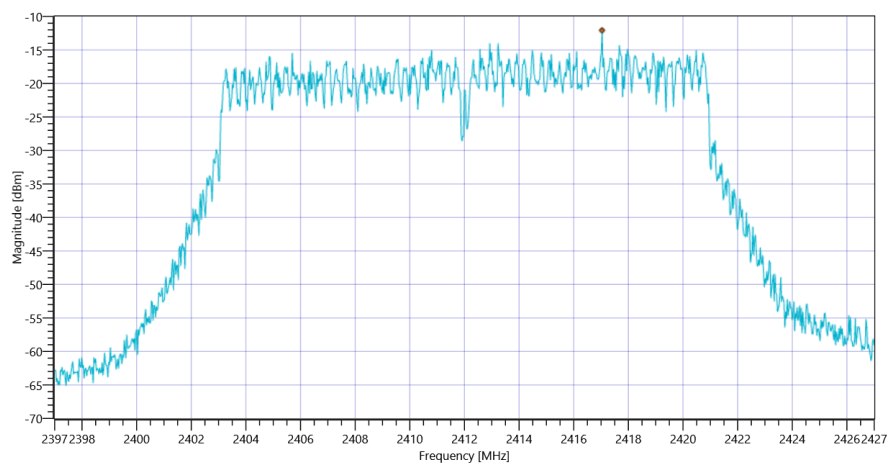
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	8.83	dBm	INFO
Ref. Frequency	---	---	2416.600	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	13.83 17.75 15
Start [MHz] Stop [MHz]	2397.000 2427.000
RBW [MHz] VBW [MHz]	0.003000 0.010000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	1000 20 1001 SWE

RESULT

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Max Peak power Density	---	8	-12.07	dBm/3KHz	PASS



FCC Part 15.247 Peak Power Spectral Density DTS ~ WLAN2G4 nHT20-mode

General verdict

PASS

FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 nHT20-mode

Test References	
TC Start	04.05.2021 08:13:45
Ambit Temp [°C] Humidity [rel%]	24.2 23
System Version	3.0.1.0
Test Specification	FCC Part 15.247
Test Method	
TC Version	0.0.2
My Description	FCC 15.247 Bandwidth 99PCT-20dB DTS - WLAN 2G4 nHT20_mode
Add. Information	

EUT Common Settings WLAN2G4	
Number of Antenna Ports	1
User Interaction	No

Test Parameter	
Technology to test	WLAN2G4 nHT20-mode
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True Freq [MHz] 2412
Frequency mid to test	False Freq [MHz] 2437
Frequency high to test	False Freq [MHz] 2462
Auto Control enabled Power Supply Climatic Box	No No
Additional Path Loss [dB]	2.1
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment	
SA: Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.60	
SwitchMatrix: CTCadvanced,SPM-4 NI DAQ,28016133,NI	

Test at TX 2412 MHz

RESULT: Reference Power cond.

Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	8.43	dBm	INFO
Ref. Frequency	---	---	2416.500	MHz	INFO

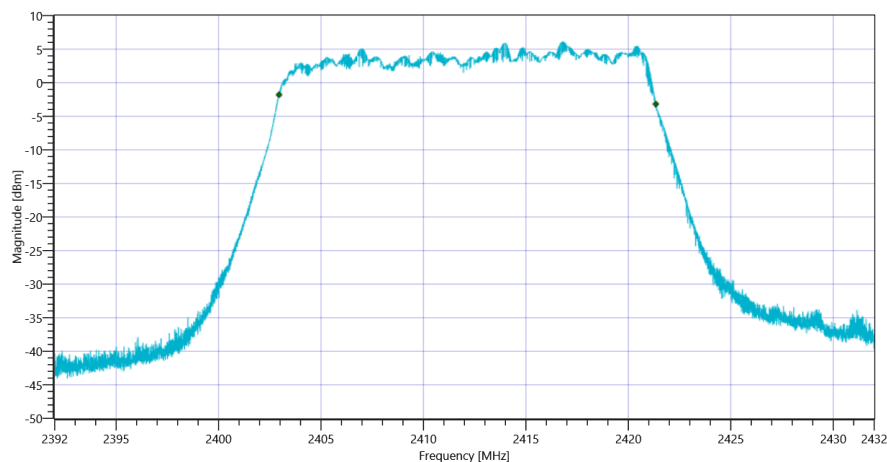
READ SA SETTINGS:

RefLevel [dBm] RefLevelOffset [dB] InpAtt [dB]	13.43 17.75 15
Start [MHz] Stop [MHz]	2392.000 2432.000
RBW [MHz] VBW [MHz]	0.500000 2.000000
Detector TraceMode	POS MAXH
Sweep: Time [ms] Count Points per Section Type	50 200 10001 SWE

RESULT

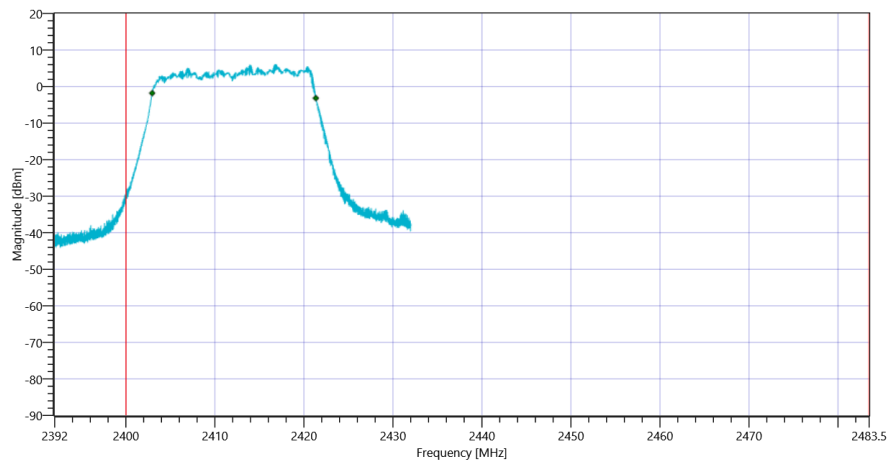
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	18386.161	kHz	INFO
T1 99%	2400.000000	---	2402.9529	MHz	PASS
T2 99%	---	2483.500000	2421.3391	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 nHT20-mode 99PCT

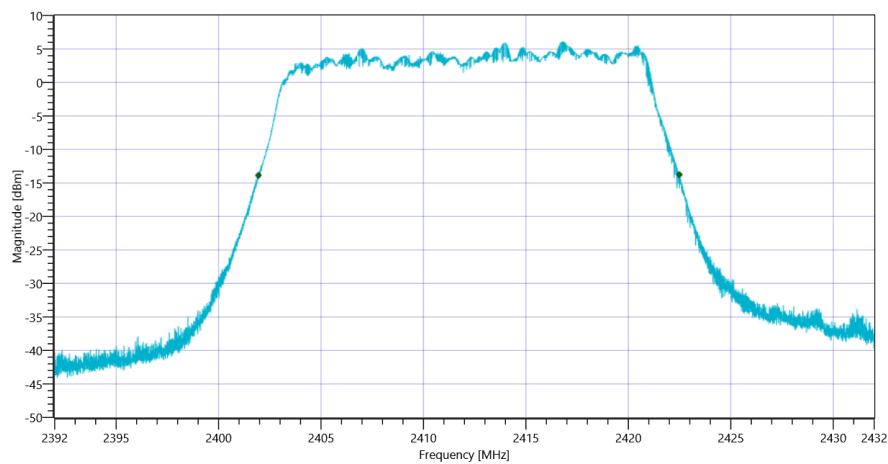
Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 nHT20-mode

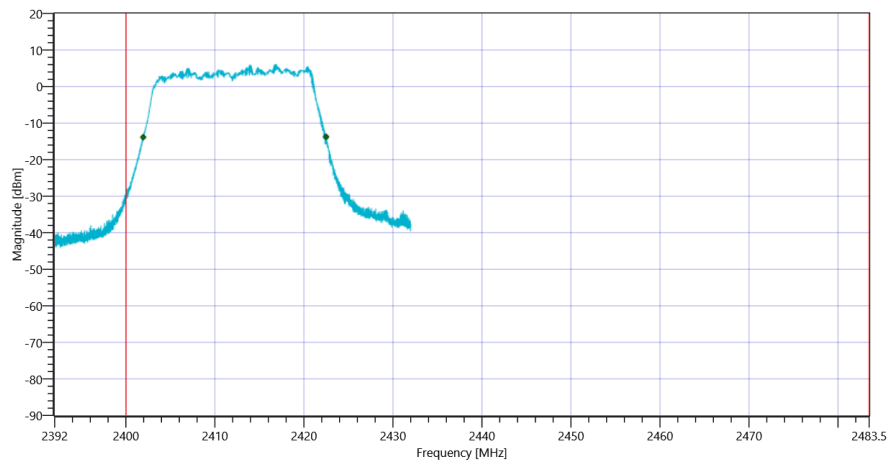
RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	20548	kHz	INFO
T1 20dB	2400.000000	---	2401.9400	MHz	PASS
T2 20dB	---	2483.500000	2422.4880	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 nHT20-mode 20dB

Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ WLAN2G4 nHT20-mode

General verdict

PASS