Measurement Results

No.1-5761/23-01-04_Annex_MR4

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2023.04.12 09:28:10 +02'00'

David Lang
Lab Manager
Radio Communications

FCC 15.247 # Maximum peak conducted output power PM DTS ~ WLAN2G4 ac-HT20 mode

Test References

TC Start	08.02.2023 11:35:50
Ambit Temp [°C] | Humidity [rel%]	23.5 | 22
System Version	3.3.4.3
Test Specification	FCC 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 Max Peak Output Power Powermeter Conducted DTS - WLAN2G4 n-HT20 mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	2
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 n-HT20 mode
Antenna Port used	2
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]	0.7
Switched Path	EUT - SignalingUnit - PowerMeter

Test Equipment

Switch matrix,CTCadvanced,SPM-4 NI DAQ,28016133,NI
Power sensor,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.	---	---	25.46	dBm	PASS

Verdict
PASS

FCC 15.247 # TX spurious conducted 20dBc ~ WLAN2G4 ac-HT20 mode

Test References

TC Start	08.02.2023 11:29:11
Ambit Temp [°C] | Humidity [rel%]	23.5 | 22
System Version	3.3.4.3
Test Specification	FCC 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 DTS - WLAN2G4 nHT20_mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	2
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 n-HT20 mode
Antenna Port used	2
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]	0.7
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

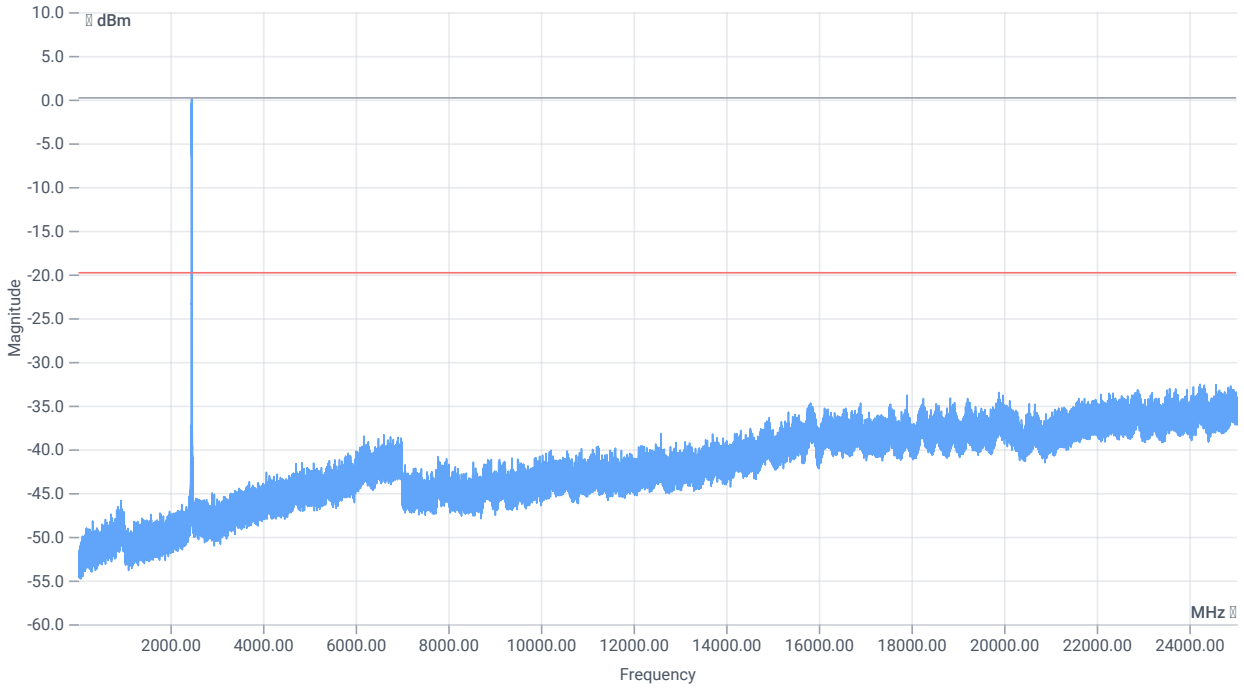
Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.70
Switch matrix,CTCadvanced,SPM-4 NI DAQ,28016133,NI

Test at TX 2462 MHz

RESULT: Reference Power cond.

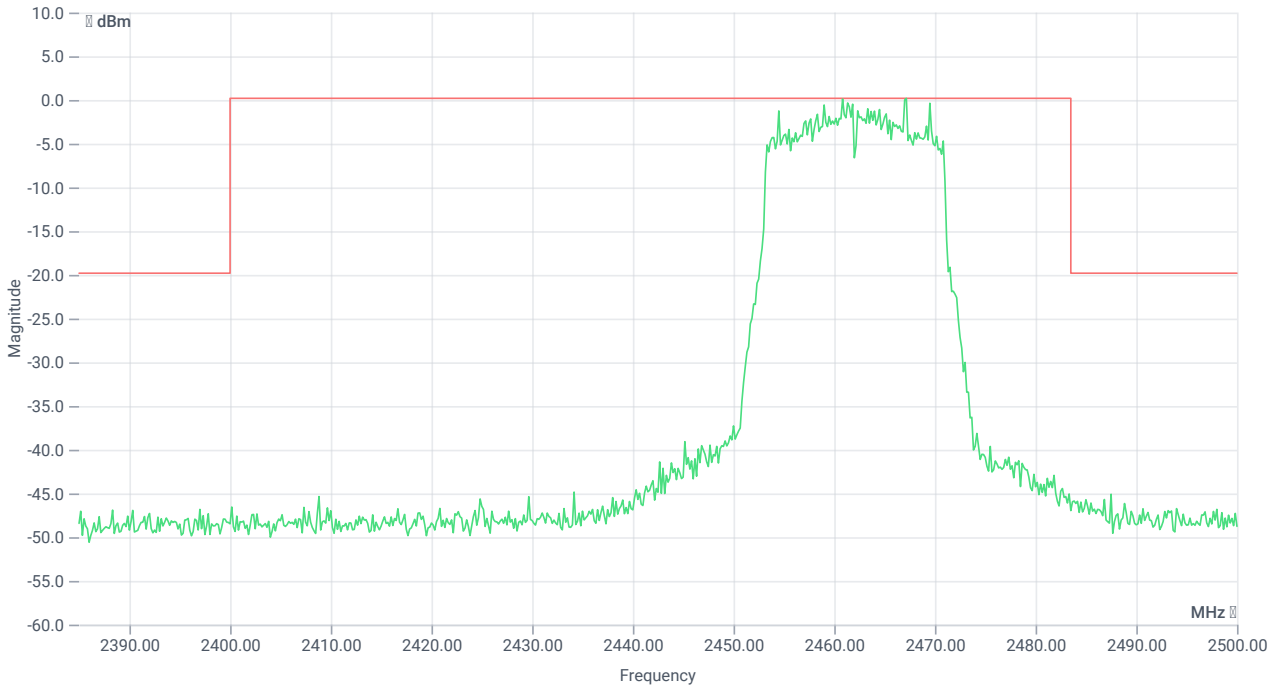
Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Ref. Power 1MHz/1MHz cond.	---	---	10.31	dBm	INFO
Ref. Frequency	---	---	2464.000	MHz	INFO



TX emissions

READ SA SETTINGS:

RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	10.31 | 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	200 | 25 | 3001 | SWE



TX emissions band zoomed

RESULT

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Reference @ 2467.17 MHz	---	---	0.19	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 24236.333 MHz	0	---	12.76	dB	INFO

Verdict
PASS

FCC 15.247, ISED RSS247 # Bandwidth 99PCT and 20dB ~ WLAN2G4 ac-HT20 mode

Test References

TC Start	08.02.2023 11:28:34
Ambit Temp [°C] | Humidity [rel%]	23.5 | 22
System Version	3.3.4.3
Test Specification	FCC 15.247, ISED RSS247 -
Test Method	
TC Version	0.0.2
My Description	FCC 15.247 Bandwidth 99PCT-20dB DTS - WLAN2G4 n-HT20 mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	2
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 n-HT20 mode
Antenna Port used	2
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]	0.7
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.70
Switch matrix,CTCadvanced,SPM-4 NI DAQ,28016133,NI

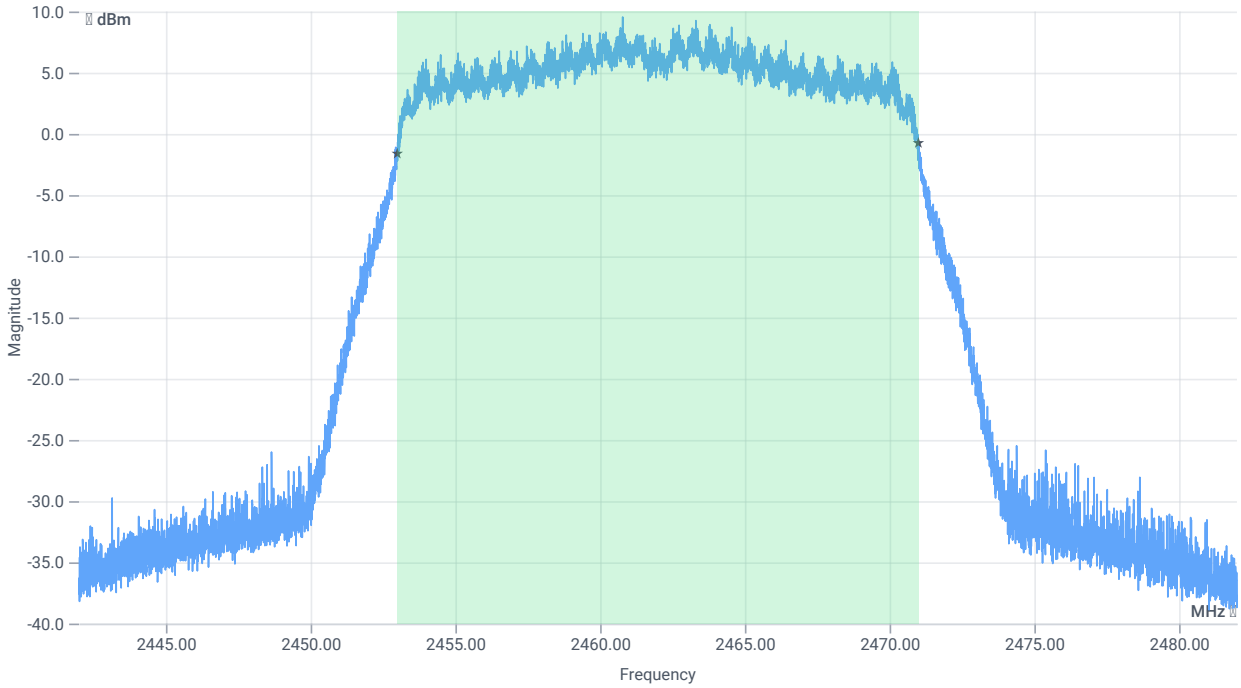
Test at TX 2462 MHz

RESULT: Reference Power cond.

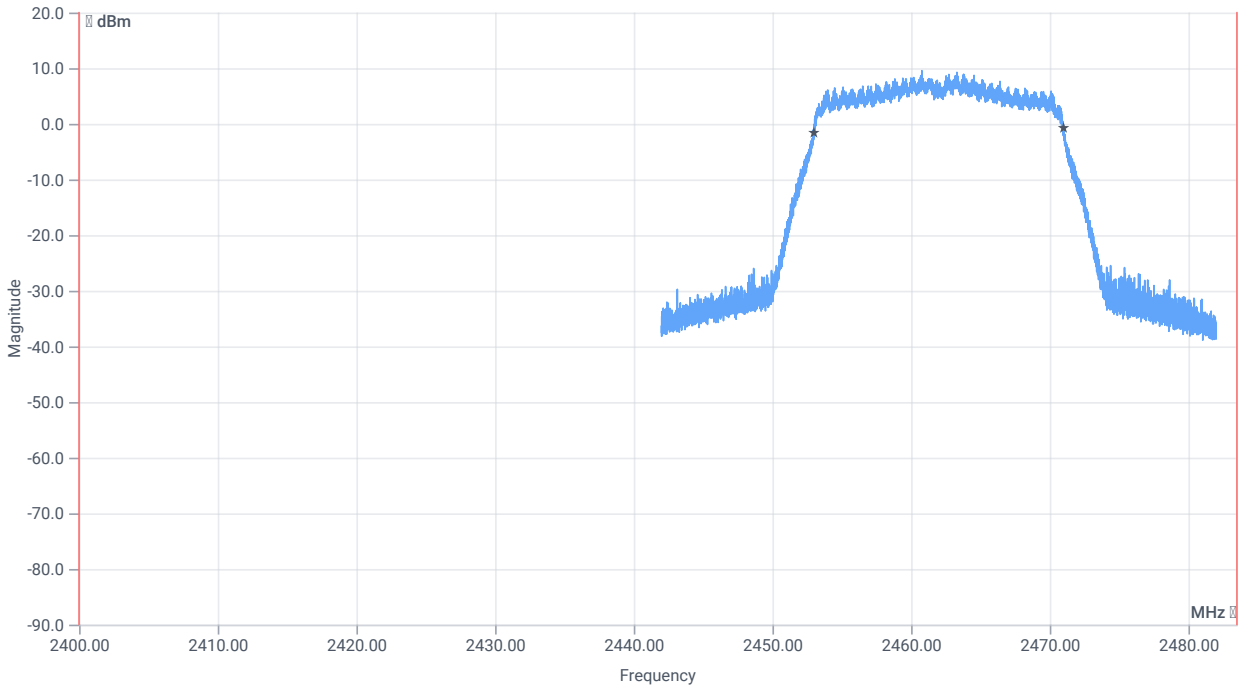
Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Ref. Power 1MHz/1MHz cond.	---	---	10.28	dBm	INFO
Ref. Frequency	---	---	2462.700	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	15.28 | 14.04 | 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



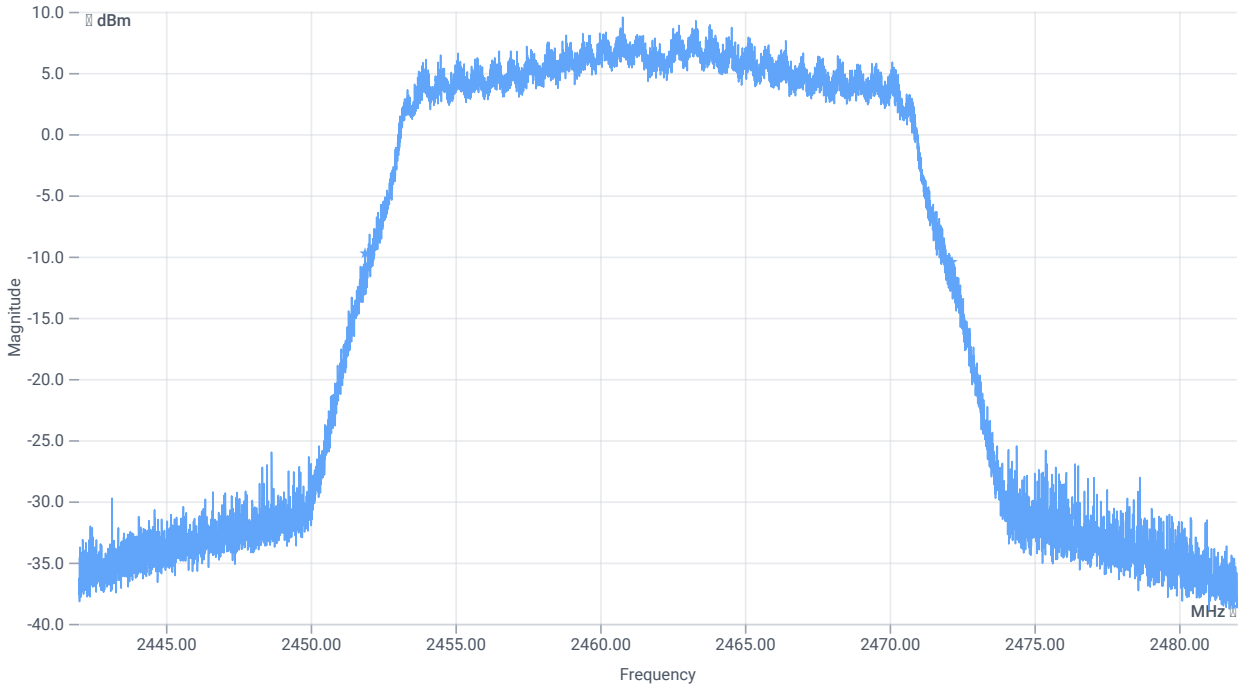
BW 99PCT



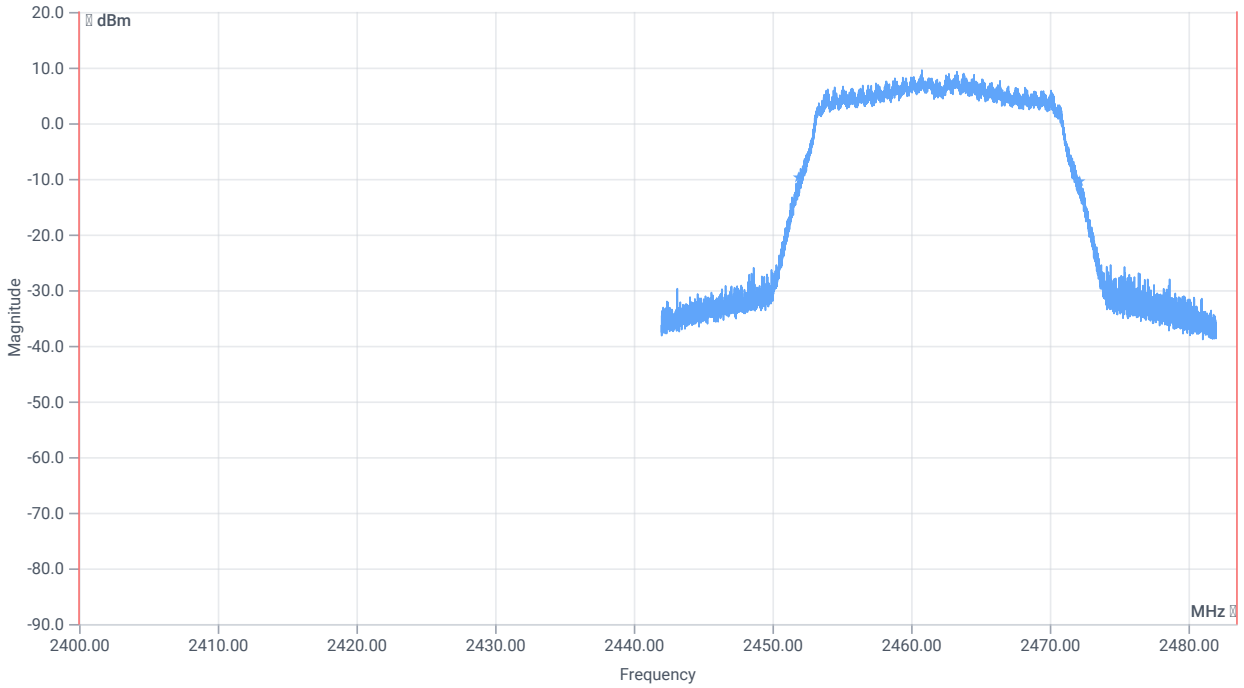
BW within Band 99PCT

RESULT

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Bandwidth 99%	---	---	18002.000	kHz	INFO
T1 99%	2400.000000	---	2452.9929	MHz	PASS
T2 99%	---	2483.500000	2470.9951	MHz	PASS



BW 20dB



BW within Band 20dB

RESULT

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Bandwidth 20dB	---	---	20280	kHz	INFO
T1 20DB	2400.000000	---	2451.8800	MHz	PASS
T2 20dB	---	2483.500000	2472.1600	MHz	PASS

Verdict
PASS

FCC 15.247 # Peak power spectral density DTS ~ WLAN2G4 ac-HT20 mode

Test References

TC Start	08.02.2023 11:27:53
Ambit Temp [°C] | Humidity [rel%]	23.5 | 22
System Version	3.3.4.3
Test Specification	FCC 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 - WLAN2G4 nHT20_mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	2
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 n-HT20 mode
Antenna Port used	2
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]	0.7
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.70
Switch matrix,CTCadvanced,SPM-4 NI DAQ,28016133,NI

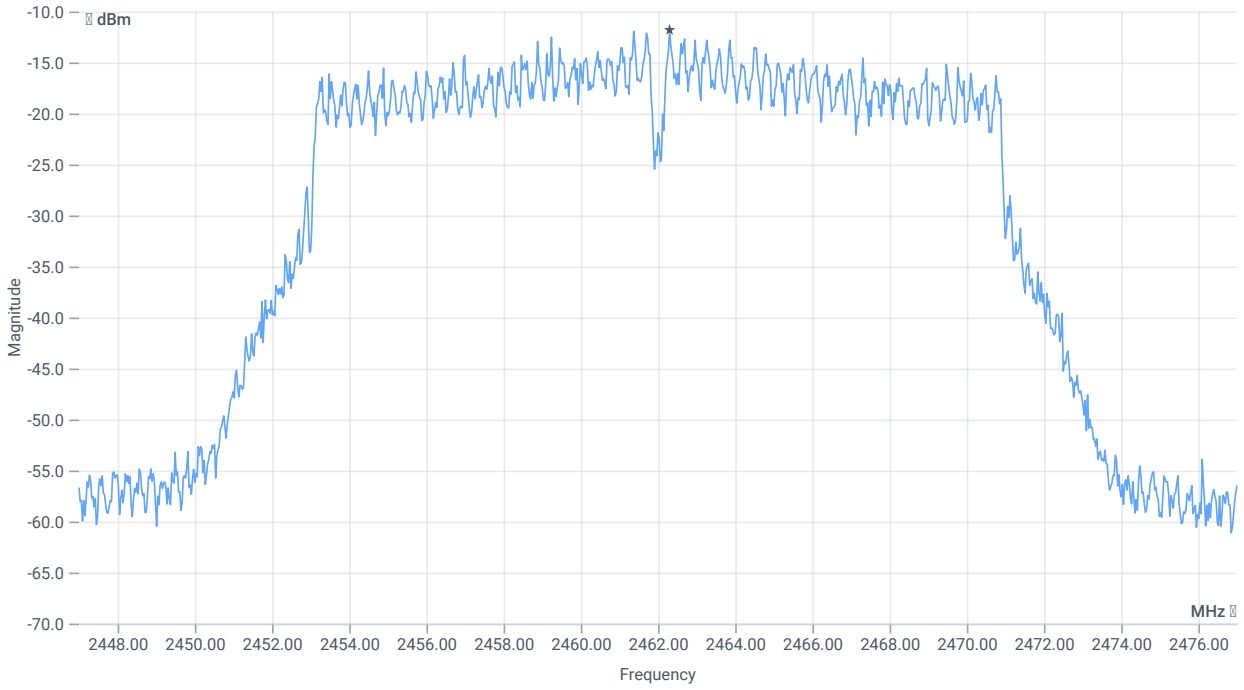
Test at TX 2462 MHz

RESULT: Reference Power cond.

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Ref. Power 1MHz/1MHz cond.	---	---	10.42	dBm	INFO
Ref. Frequency	---	---	2463.300	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	15.42 | 14.04 | 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



Peak PSD

RESULT

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Max Peak power Density	---	8	-11.81	dBm/3KHz	PASS

Verdict
PASS

FCC 15.247 # Bandwidth 6dB DTS ~ WLAN2G4 ac-HT20 mode

Test References

TC Start	08.02.2023 11:27:20
Ambit Temp [°C] | Humidity [rel%]	23.5 | 22
System Version	3.3.4.3
Test Specification	FCC 15.247 -
Test Method	
TC Version	0.0.1
My Description	FCC 15.247 Bandwidth 6dB DTS - WLAN2G4 n-HT20 mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	2
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 n-HT20 mode
Antenna Port used	2
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]	0.7
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.70
Switch matrix,CTCadvanced,SPM-4 NI DAQ,28016133,NI

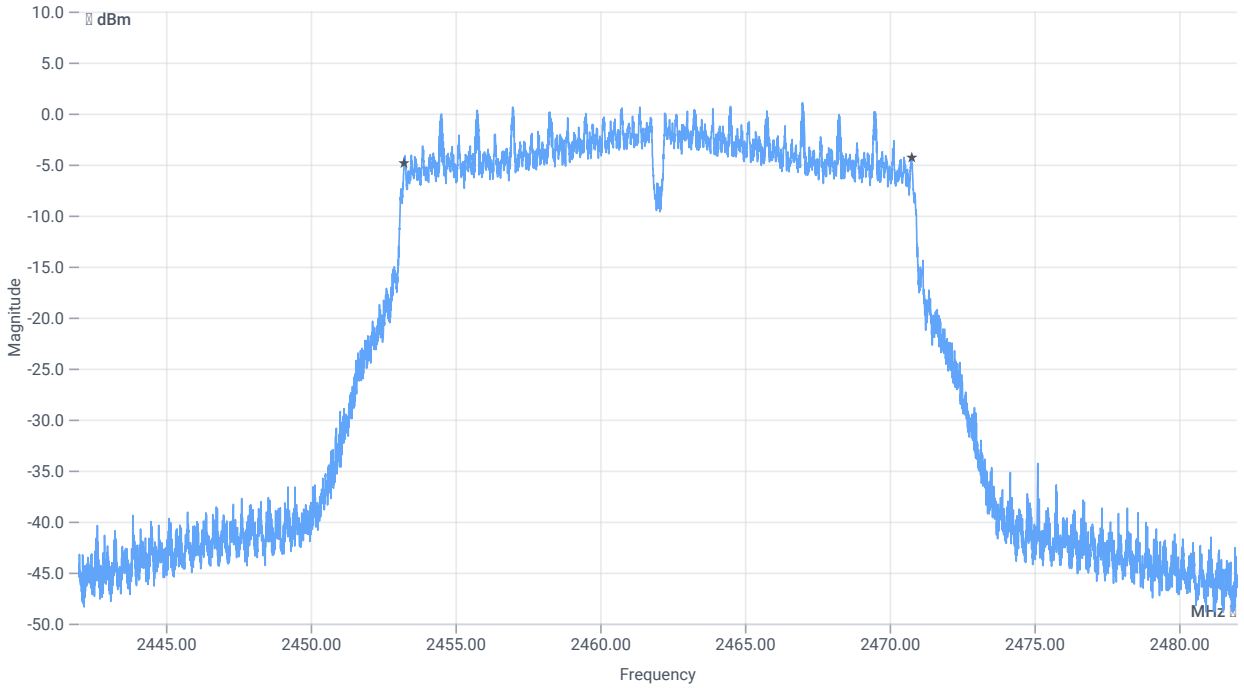
Test at TX 2462 MHz

RESULT: Reference Power cond.

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Ref. Power 1MHz/1MHz cond.	---	---	10.10	dBm	INFO
Ref. Frequency	---	---	2460.700	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	15.10 | 14.04 | 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



BW 6dB

RESULT

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
DTS Bandwidth (6dB)	500	---	17544	kHz	PASS

Verdict
PASS

FCC 15.247 # Maximum peak conducted output power PM DTS ~ WLAN2G4 ac-HT20 mode

Test References

TC Start	08.02.2023 11:26:38
Ambit Temp [°C] | Humidity [rel%]	23.5 | 22
System Version	3.3.4.3
Test Specification	FCC 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 Max Peak Output Power Powermeter Conducted DTS - WLAN2G4 n-HT20 mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	2
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 n-HT20 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]	0.7
Switched Path	EUT - SignalingUnit - PowerMeter

Test Equipment

Switch matrix,CTCadvanced,SPM-4 NI DAQ,28016133,NI
Power sensor,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.	---	---	25.03	dBm	PASS

Verdict
PASS

FCC 15.247 # TX spurious conducted 20dBc ~ WLAN2G4 ac-HT20 mode

Test References

TC Start	08.02.2023 11:19:59
Ambit Temp [°C] | Humidity [rel%]	23.6 | 21
System Version	3.3.4.3
Test Specification	FCC 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 DTS - WLAN2G4 nHT20_mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	2
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 n-HT20 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]	0.7
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

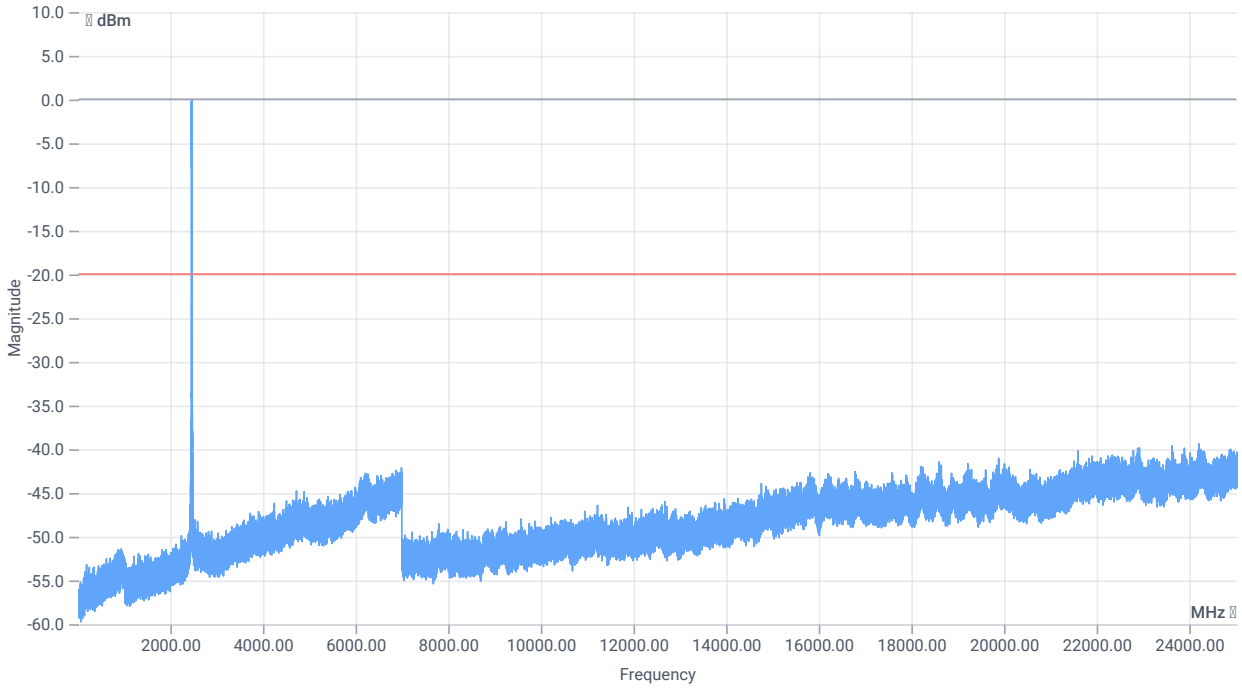
Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.70
Switch matrix,CTCadvanced,SPM-4 NI DAQ,28016133,NI

Test at TX 2462 MHz

RESULT: Reference Power cond.

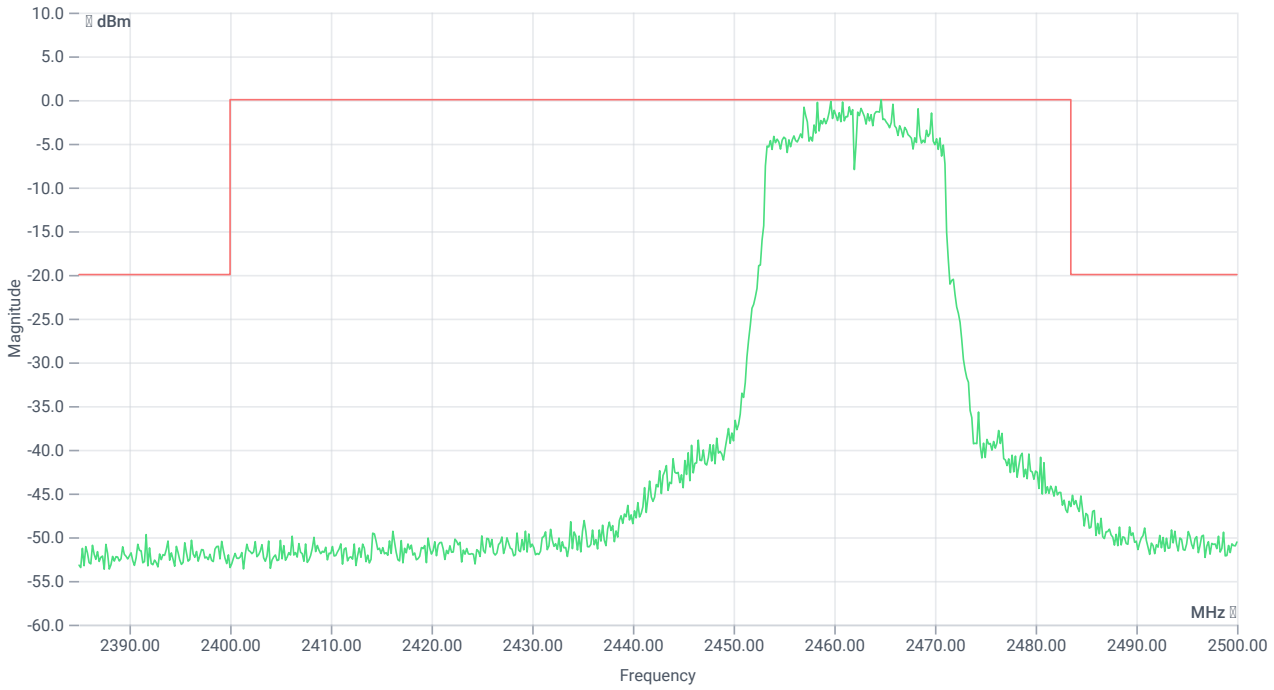
Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Ref. Power 1MHz/1MHz cond.	---	---	9.49	dBm	INFO
Ref. Frequency	---	---	2461.100	MHz	INFO



TX emissions

READ SA SETTINGS:

RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	9.49 | 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	200 | 25 | 3001 | SWE



TX emissions band zoomed

RESULT

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Reference @ 2464.67 MHz	---	---	0.03	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 24210.833 MHz	0	---	19.4	dB	INFO

Verdict
PASS

FCC 15.247, ISED RSS247 # Bandwidth 99PCT and 20dB ~ WLAN2G4 ac-HT20 mode

Test References

TC Start	08.02.2023 11:19:22
Ambit Temp [°C] | Humidity [rel%]	23.7 | 21
System Version	3.3.4.3
Test Specification	FCC 15.247, ISED RSS247 -
Test Method	
TC Version	0.0.2
My Description	FCC 15.247 Bandwidth 99PCT-20dB DTS - WLAN2G4 n-HT20 mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	2
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 n-HT20 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]	0.7
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.70
Switch matrix,CTCadvanced,SPM-4 NI DAQ,28016133,NI

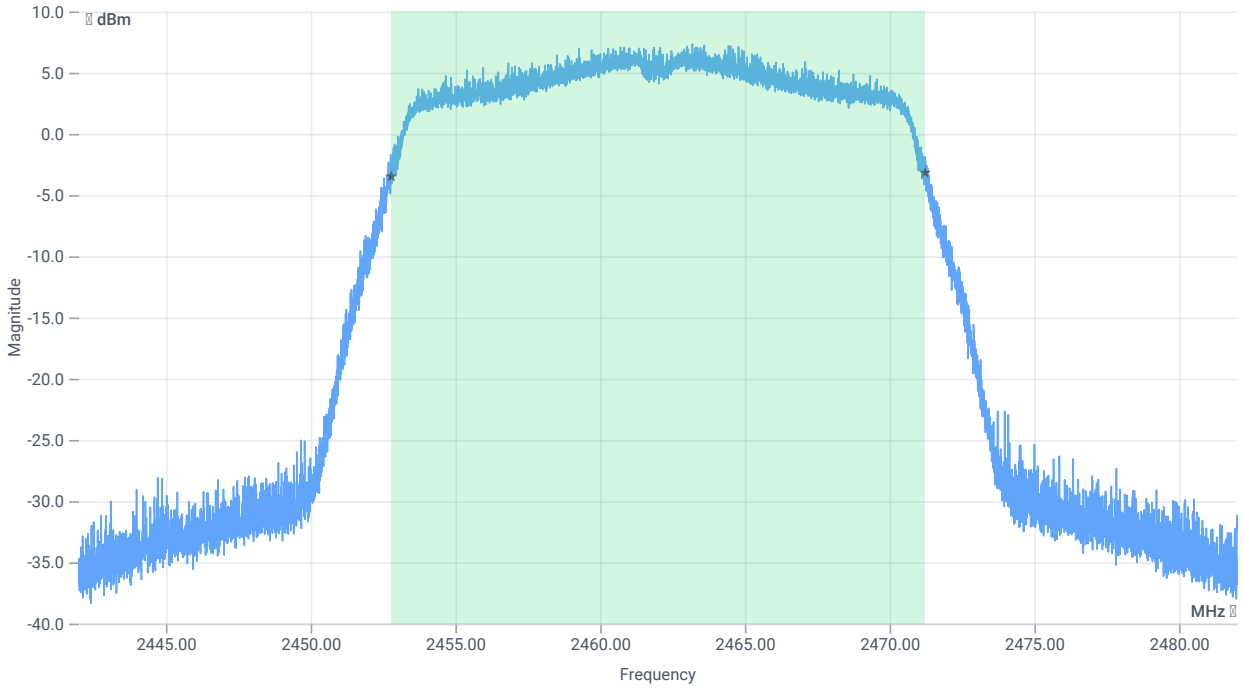
Test at TX 2462 MHz

RESULT: Reference Power cond.

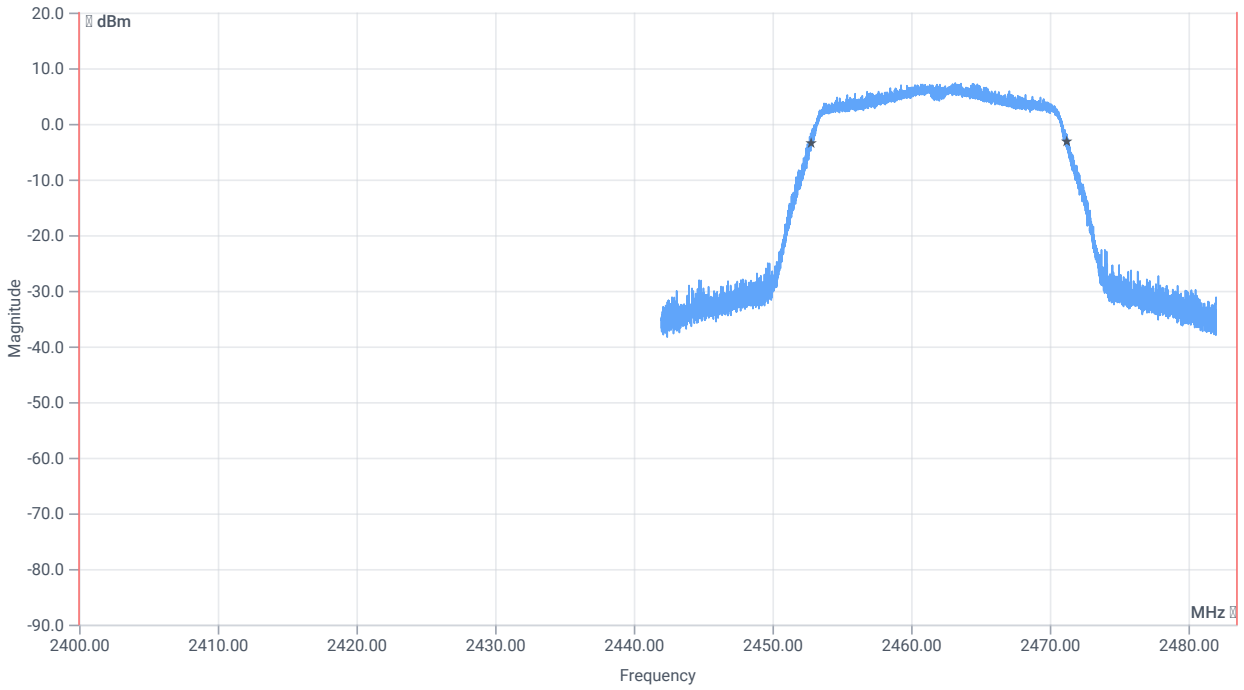
Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Ref. Power 1MHz/1MHz cond.	---	---	9.88	dBm	INFO
Ref. Frequency	---	---	2463.000	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	14.88 | 14.04 | 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



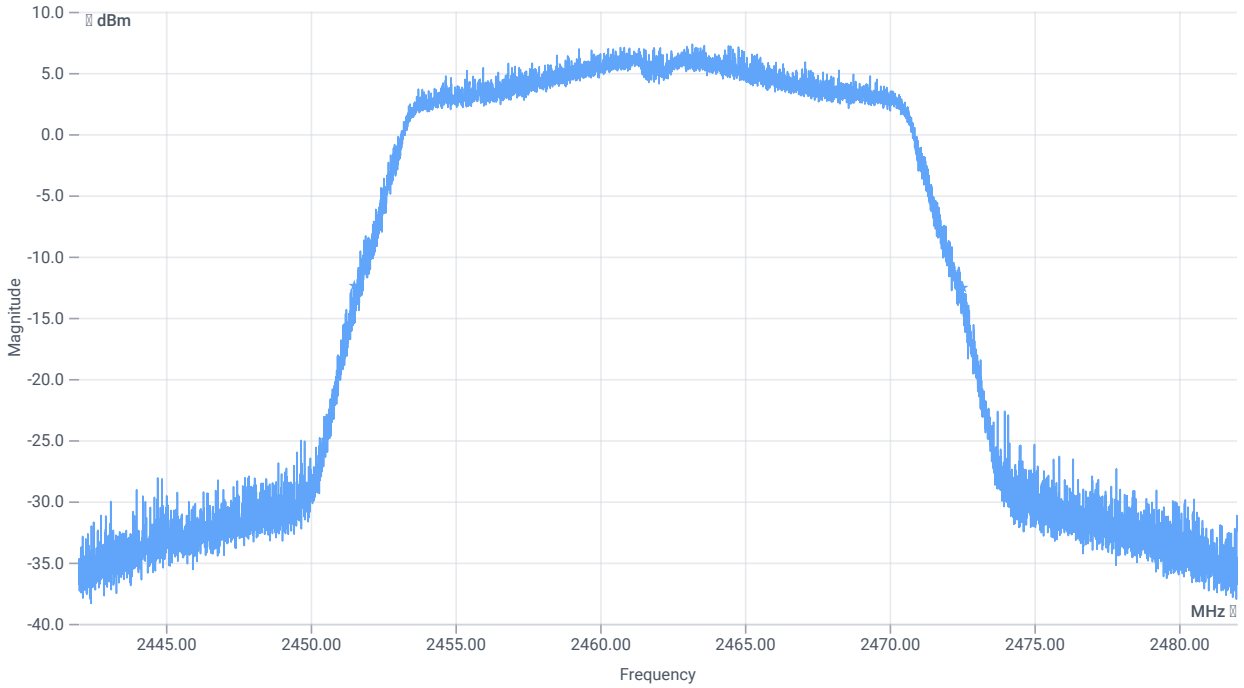
BW 99PCT



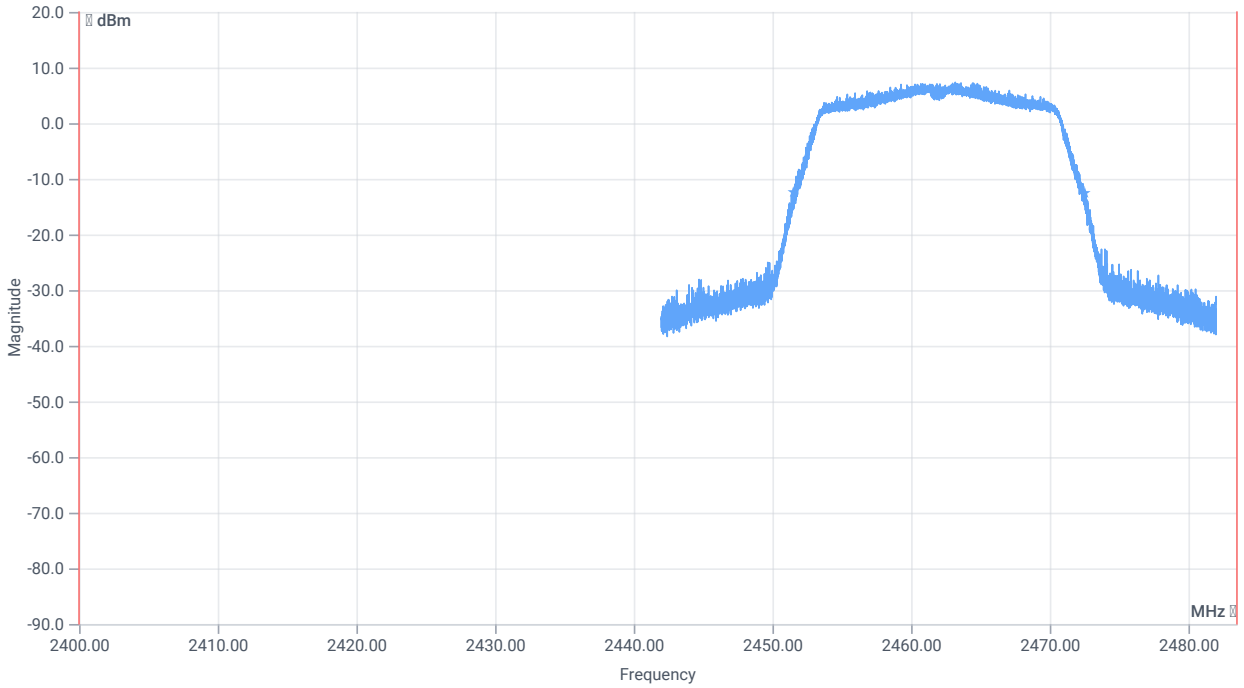
BW within Band 99PCT

RESULT

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Bandwidth 99%	---	---	18430.000	kHz	INFO
T1 99%	2400.000000	---	2452.7929	MHz	PASS
T2 99%	---	2483.500000	2471.2231	MHz	PASS



BW 20dB



BW within Band 20dB

RESULT

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Bandwidth 20dB	---	---	21024	kHz	INFO
T1 20DB	2400.000000	---	2451.5080	MHz	PASS
T2 20dB	---	2483.500000	2472.5320	MHz	PASS

Verdict
PASS

FCC 15.247 # Peak power spectral density DTS ~ WLAN2G4 ac-HT20 mode

Test References

TC Start	08.02.2023 11:18:41
Ambit Temp [°C] | Humidity [rel%]	23.7 | 21
System Version	3.3.4.3
Test Specification	FCC 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 - WLAN2G4 nHT20_mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	2
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 n-HT20 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]	0.7
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.70
Switch matrix,CTCadvanced,SPM-4 NI DAQ,28016133,NI

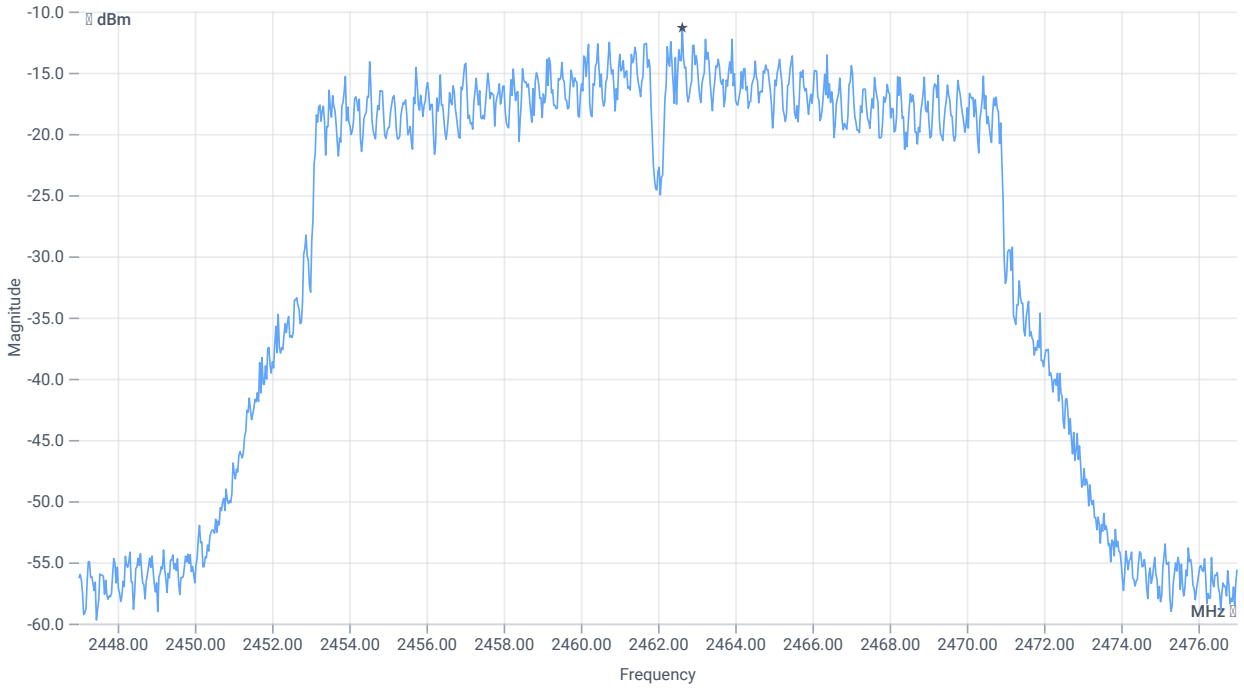
Test at TX 2462 MHz

RESULT: Reference Power cond.

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Ref. Power 1MHz/1MHz cond.	---	---	10.08	dBm	INFO
Ref. Frequency	---	---	2460.600	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	15.08 | 14.04 | 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



Peak PSD

RESULT

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Max Peak power Density	---	8	-11.33	dBm/3KHz	PASS

Verdict
PASS

FCC 15.247 # Bandwidth 6dB DTS ~ WLAN2G4 ac-HT20 mode

Test References

TC Start	08.02.2023 11:18:08
Ambit Temp [°C] | Humidity [rel%]	23.7 | 21
System Version	3.3.4.3
Test Specification	FCC 15.247 -
Test Method	
TC Version	0.0.1
My Description	FCC 15.247 Bandwidth 6dB DTS - WLAN2G4 n-HT20 mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	2
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 n-HT20 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]	0.7
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.70
Switch matrix,CTCadvanced,SPM-4 NI DAQ,28016133,NI

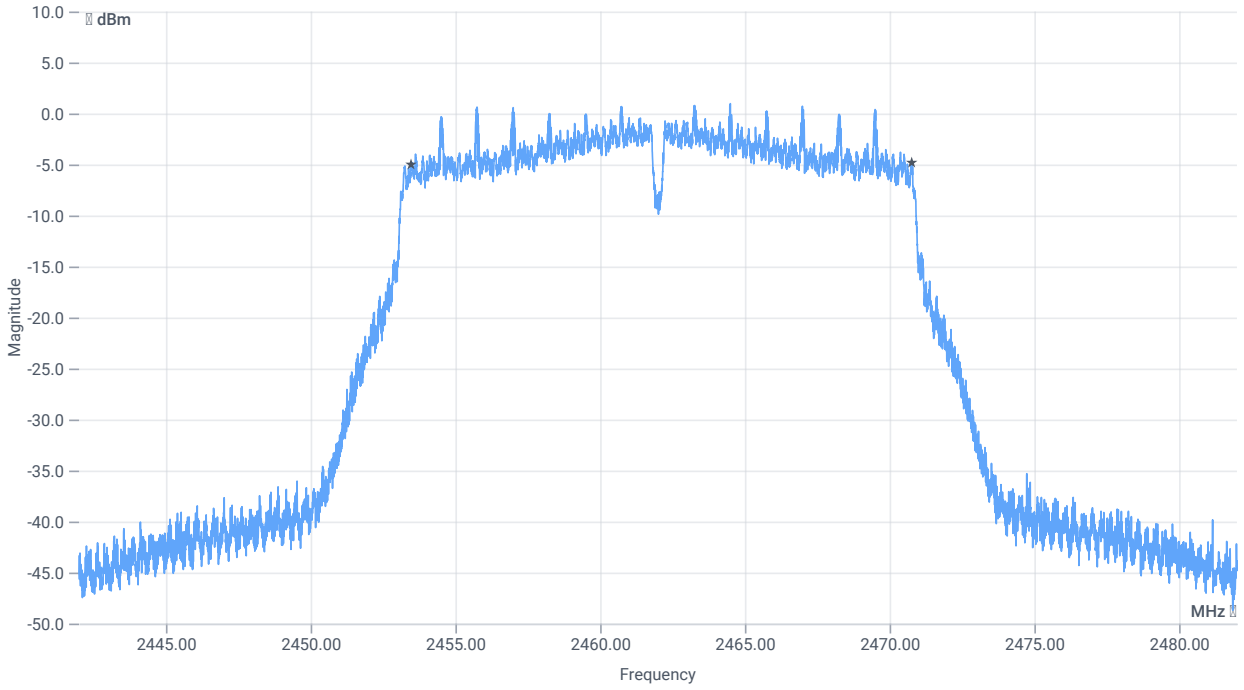
Test at TX 2462 MHz

RESULT: Reference Power cond.

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Ref. Power 1MHz/1MHz cond.	---	---	10.07	dBm	INFO
Ref. Frequency	---	---	2460.600	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	15.07 | 14.04 | 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



BW 6dB

RESULT

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
DTS Bandwidth (6dB)	500	---	17296	kHz	PASS

Verdict
PASS

FCC 15.247 # Maximum peak conducted output power PM DTS ~ WLAN2G4 ac-HT20 mode

Test References

TC Start	08.02.2023 11:16:01
Ambit Temp [°C] | Humidity [rel%]	23.6 | 20
System Version	3.3.4.3
Test Specification	FCC 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 Max Peak Output Power Powermeter Conducted DTS - WLAN2G4 n-HT20 mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	2
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 n-HT20 mode
Antenna Port used	2
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]	0.7
Switched Path	EUT - SignalingUnit - PowerMeter

Test Equipment

Switch matrix,CTCadvanced,SPM-4 NI DAQ,28016133,NI
Power sensor,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.	---	---	24.93	dBm	PASS

Verdict
PASS

FCC 15.247 # TX spurious conducted 20dBc ~ WLAN2G4 ac-HT20 mode

Test References

TC Start	08.02.2023 11:09:21
Ambit Temp [°C] | Humidity [rel%]	23.5 | 22
System Version	3.3.4.3
Test Specification	FCC 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 DTS - WLAN2G4 nHT20_mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	2
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 n-HT20 mode
Antenna Port used	2
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]	0.7
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

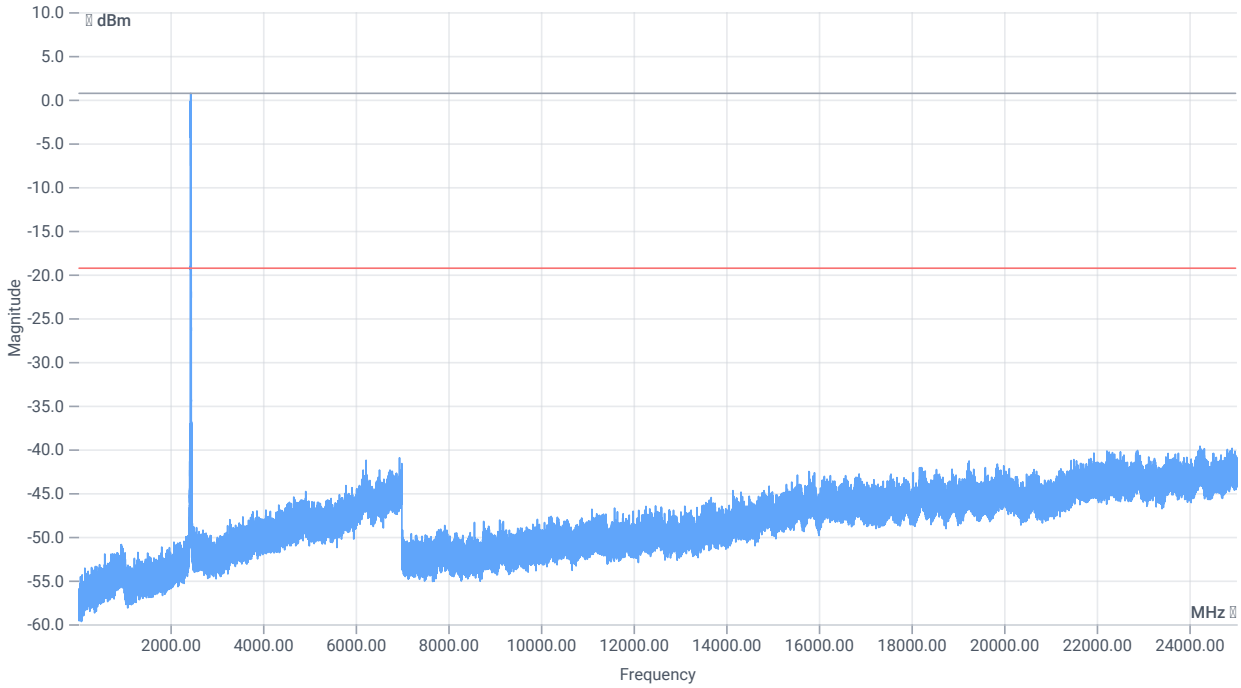
Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.70
Switch matrix,CTCadvanced,SPM-4 NI DAQ,28016133,NI

Test at TX 2437 MHz

RESULT: Reference Power cond.

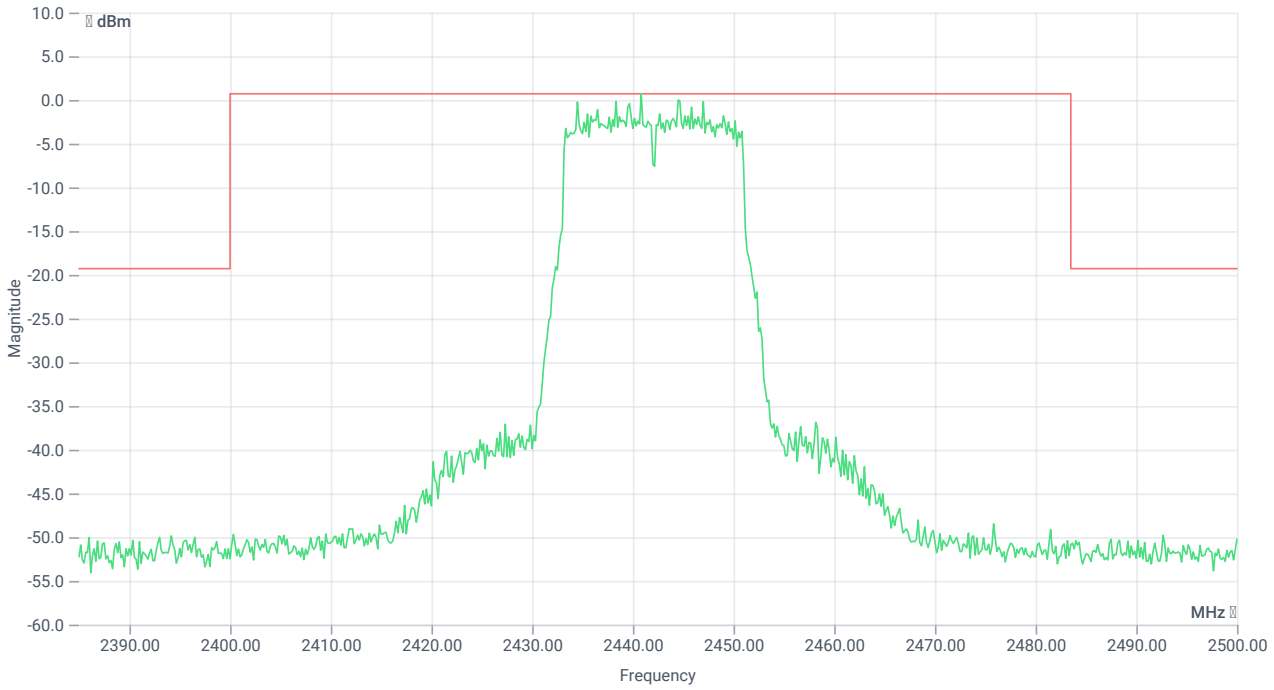
Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Ref. Power 1MHz/1MHz cond.	---	---	9.53	dBm	INFO
Ref. Frequency	---	---	2439.400	MHz	INFO



TX emissions

READ SA SETTINGS:

RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	9.53 | 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	200 | 25 | 3001 | SWE



TX emissions band zoomed

RESULT

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Reference @ 2440.83 MHz	---	---	0.71	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 24231.833 MHz	0	---	20.36	dB	INFO

Verdict
PASS

FCC 15.247, ISED RSS247 # Bandwidth 99PCT and 20dB ~ WLAN2G4 ac-HT20 mode

Test References

TC Start	08.02.2023 11:08:45
Ambit Temp [°C] | Humidity [rel%]	23.5 | 23
System Version	3.3.4.3
Test Specification	FCC 15.247, ISED RSS247 -
Test Method	
TC Version	0.0.2
My Description	FCC 15.247 Bandwidth 99PCT-20dB DTS - WLAN2G4 n-HT20 mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	2
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 n-HT20 mode
Antenna Port used	2
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]	0.7
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.70
Switch matrix,CTCadvanced,SPM-4 NI DAQ,28016133,NI

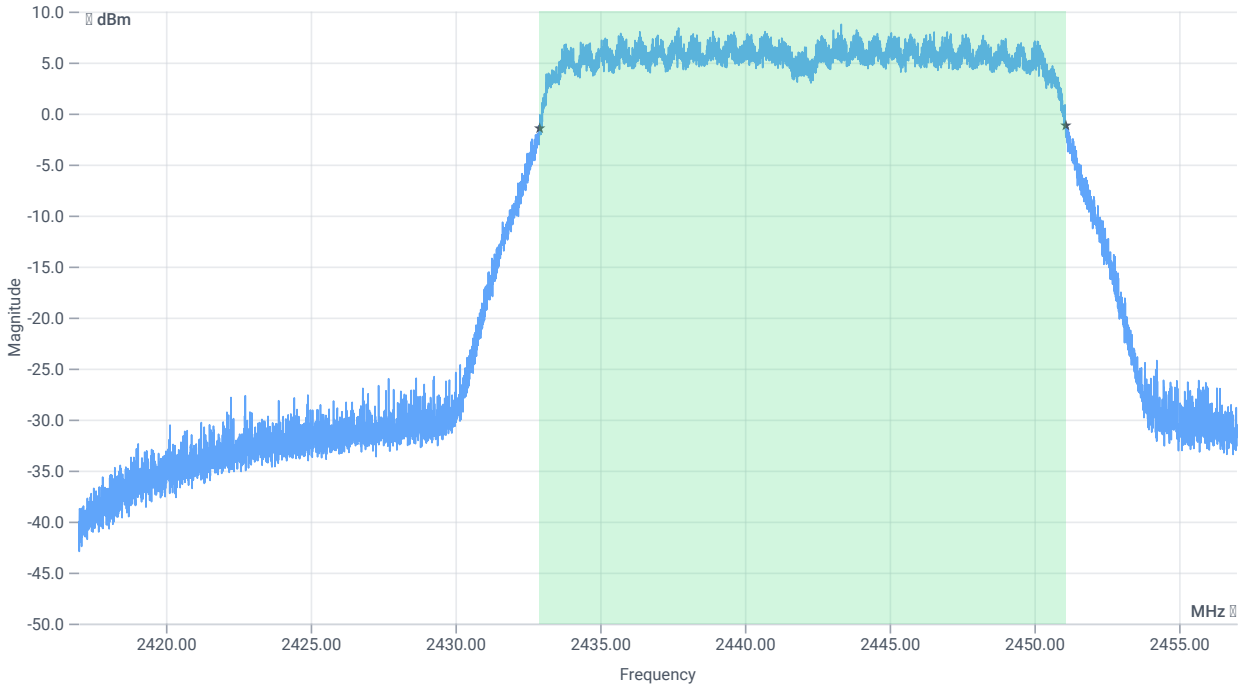
Test at TX 2437 MHz

RESULT: Reference Power cond.

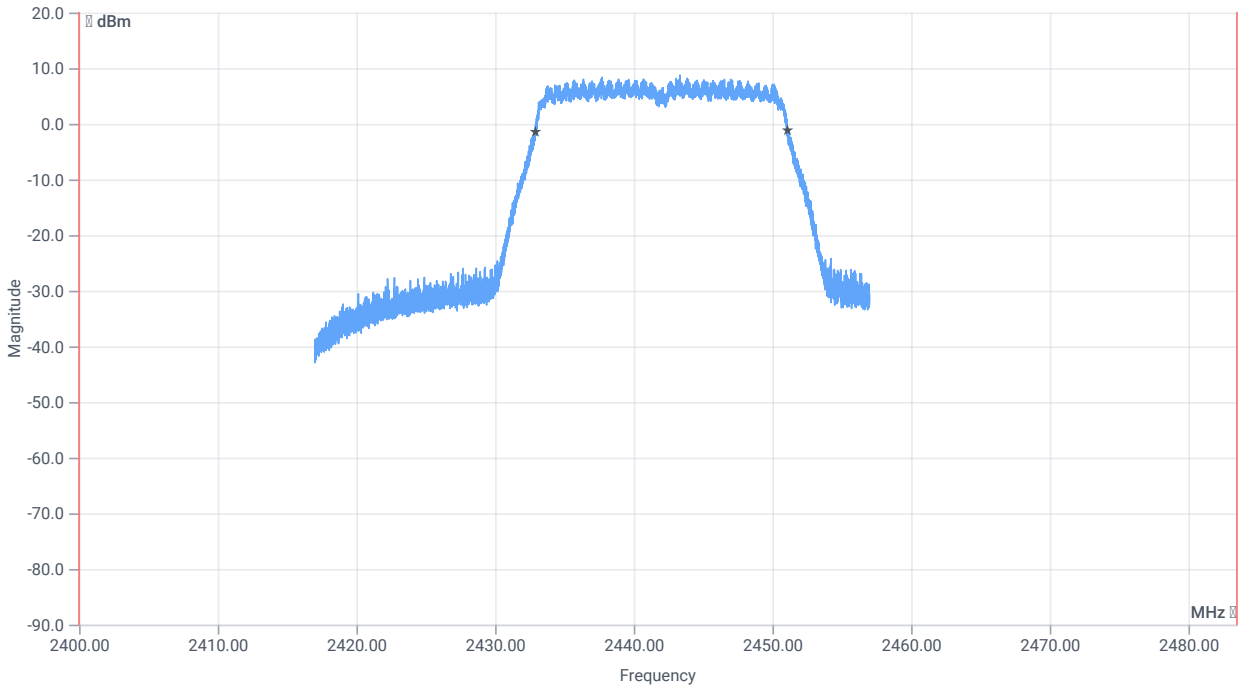
Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Ref. Power 1MHz/1MHz cond.	---	---	9.61	dBm	INFO
Ref. Frequency	---	---	2438.900	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	14.61 | 14.2 | 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



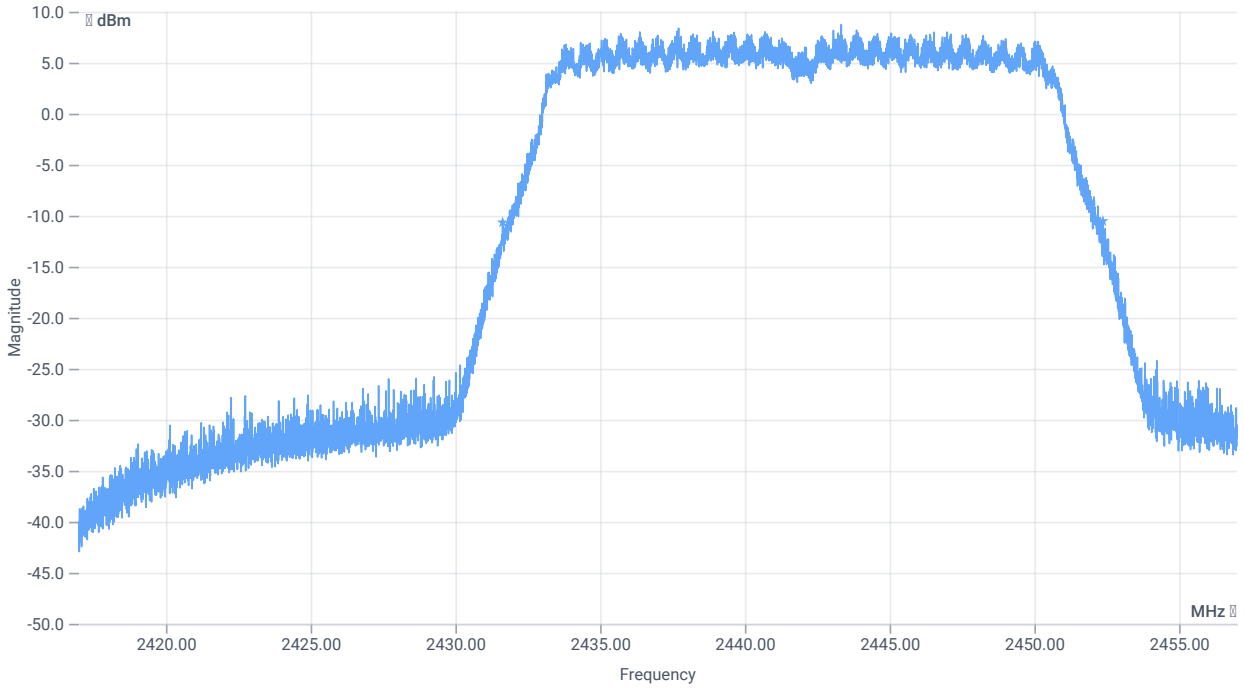
BW 99PCT



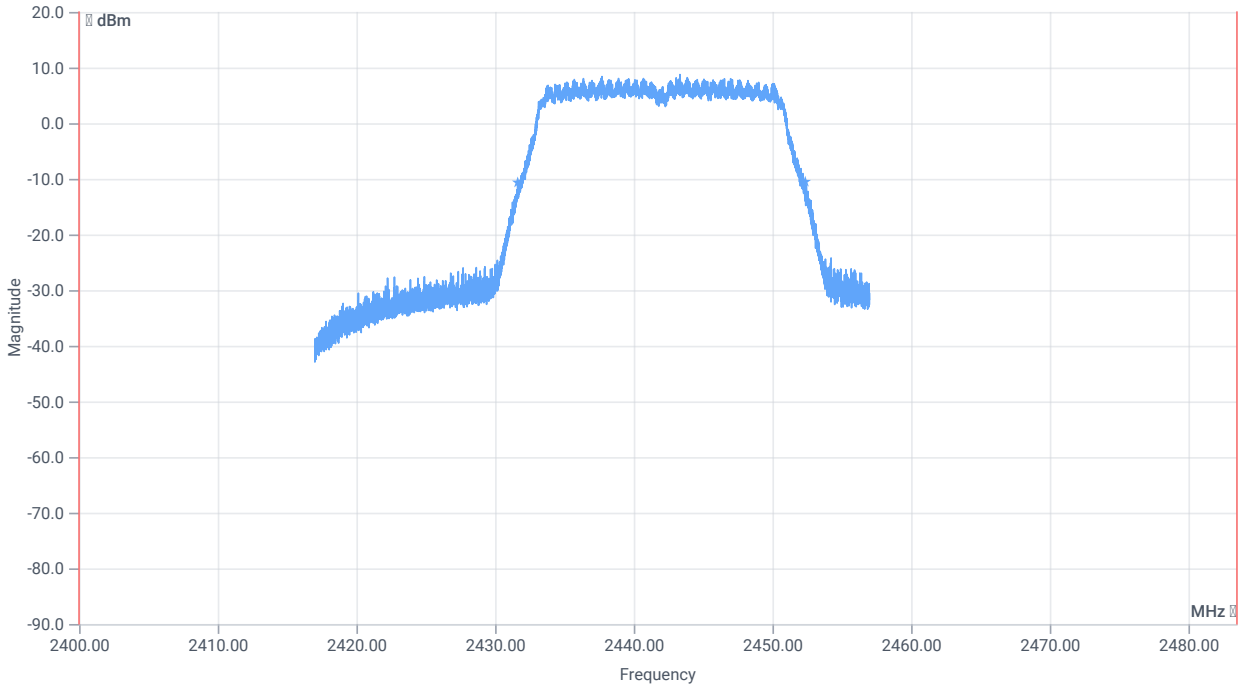
BW within Band 99PCT

RESULT

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Bandwidth 99%	---	---	18178.000	kHz	INFO
T1 99%	2400.000000	---	2432.9124	MHz	PASS
T2 99%	---	2483.500000	2451.0906	MHz	PASS



BW 20dB



BW within Band 20dB

RESULT

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Bandwidth 20dB	---	---	20736	kHz	INFO
T1 20DB	2400.000000	---	2431.6320	MHz	PASS
T2 20dB	---	2483.500000	2452.3680	MHz	PASS

Verdict
PASS

FCC 15.247 # Peak power spectral density DTS ~ WLAN2G4 ac-HT20 mode

Test References

TC Start	08.02.2023 11:08:04
Ambit Temp [°C] | Humidity [rel%]	23.5 | 23
System Version	3.3.4.3
Test Specification	FCC 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 - WLAN2G4 nHT20_mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	2
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 n-HT20 mode
Antenna Port used	2
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]	0.7
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.70
Switch matrix,CTCadvanced,SPM-4 NI DAQ,28016133,NI

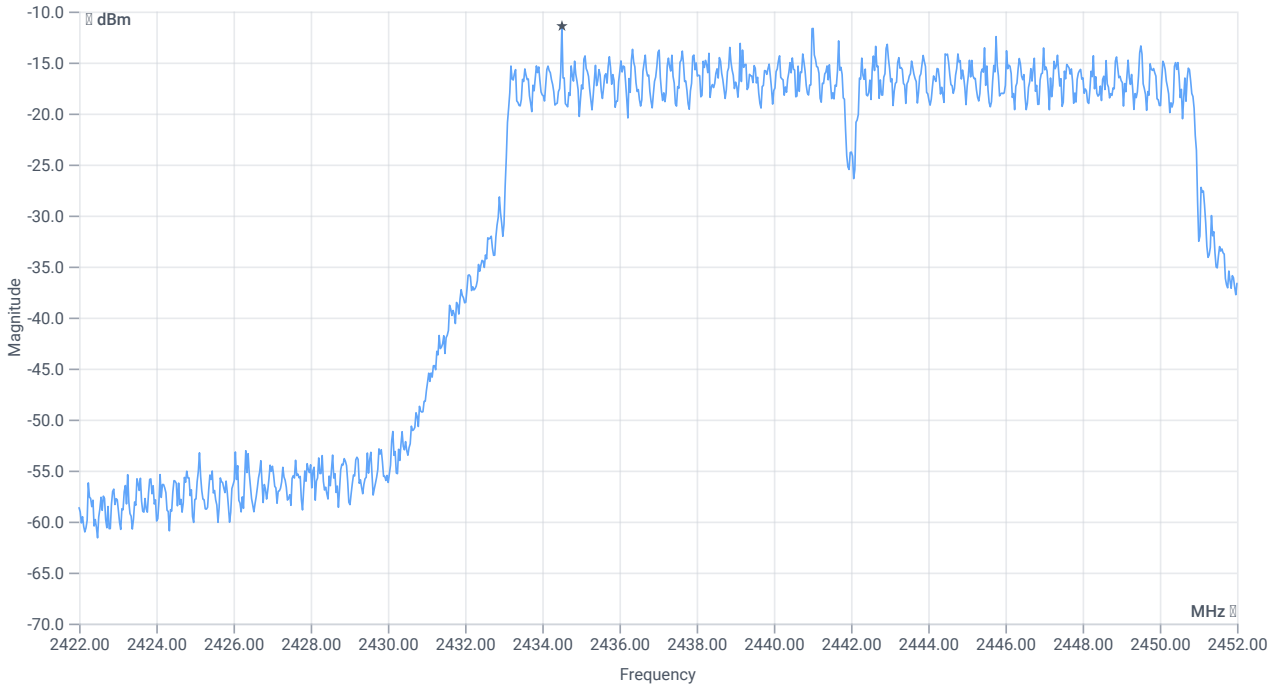
Test at TX 2437 MHz

RESULT: Reference Power cond.

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Ref. Power 1MHz/1MHz cond.	---	---	9.96	dBm	INFO
Ref. Frequency	---	---	2444.090	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	14.96 | 14.2 | 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



Peak PSD

RESULT

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Max Peak power Density	---	8	-11.43	dBm/3KHz	PASS

Verdict
PASS

FCC 15.247 # Bandwidth 6dB DTS ~ WLAN2G4 ac-HT20 mode

Test References

TC Start	08.02.2023 11:07:31
Ambit Temp [°C] | Humidity [rel%]	23.5 | 22
System Version	3.3.4.3
Test Specification	FCC 15.247 -
Test Method	
TC Version	0.0.1
My Description	FCC 15.247 Bandwidth 6dB DTS - WLAN2G4 n-HT20 mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	2
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 n-HT20 mode
Antenna Port used	2
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]	0.7
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.70
Switch matrix,CTCadvanced,SPM-4 NI DAQ,28016133,NI

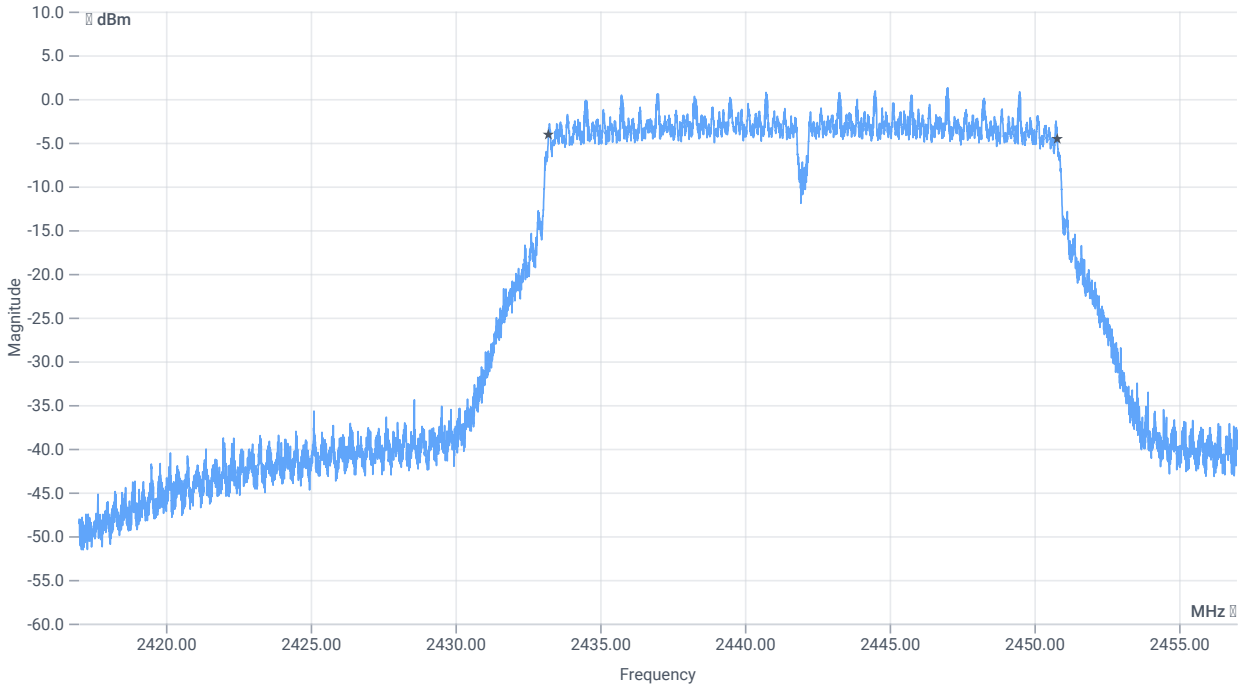
Test at TX 2437 MHz

RESULT: Reference Power cond.

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Ref. Power 1MHz/1MHz cond.	---	---	9.98	dBm	INFO
Ref. Frequency	---	---	2442.590	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	14.98 | 14.2 | 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



BW 6dB

RESULT

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
DTS Bandwidth (6dB)	500	---	17580	kHz	PASS

Verdict
PASS

FCC 15.247 # Maximum peak conducted output power PM DTS ~ WLAN2G4 ac-HT20 mode

Test References

TC Start	08.02.2023 11:06:49
Ambit Temp [°C] | Humidity [rel%]	23.5 | 22
System Version	3.3.4.3
Test Specification	FCC 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 Max Peak Output Power Powermeter Conducted DTS - WLAN2G4 n-HT20 mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	2
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 n-HT20 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]	0.7
Switched Path	EUT - SignalingUnit - PowerMeter

Test Equipment

Switch matrix,CTCadvanced,SPM-4 NI DAQ,28016133,NI
Power sensor,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.	---	---	25.25	dBm	PASS

Verdict
PASS

FCC 15.247 # TX spurious conducted 20dBc ~ WLAN2G4 ac-HT20 mode

Test References

TC Start	08.02.2023 11:00:09
Ambit Temp [°C] | Humidity [rel%]	23.5 | 23
System Version	3.3.4.3
Test Specification	FCC 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 DTS - WLAN2G4 nHT20_mode
Add. Information	

EUT Common Settings WLAN2G4

Number of Antenna Ports	2
User Interaction	No

Test Parameter

Technology to test	WLAN2G4 n-HT20 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]	0.7
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment

Signal analyzer,Rohde&Schwarz,FSV-40,1307.9002K40/101042,3.70
Switch matrix,CTCadvanced,SPM-4 NI DAQ,28016133,NI