Measurement Results

No.1-5761/23-01-04_Annex_MR3

Test logging

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2023.04.12 09:27:48 +02'00'

David Lang
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FCC 15.247 # Maximum peak conducted output power PM DTS ~ WLAN2G4 n-HT20 mode

Test References

TC Start	08.02.2023 09:16:53
Ambit Temp [°C] | Humidity [rel%]	22.8 | 24
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.	---	---	25.3	dBm	PASS

Verdict
PASS

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

Test References

TC Start	08.02.2023 09:10:13
Ambit Temp [°C] | Humidity [rel%]	22.7 | 24
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

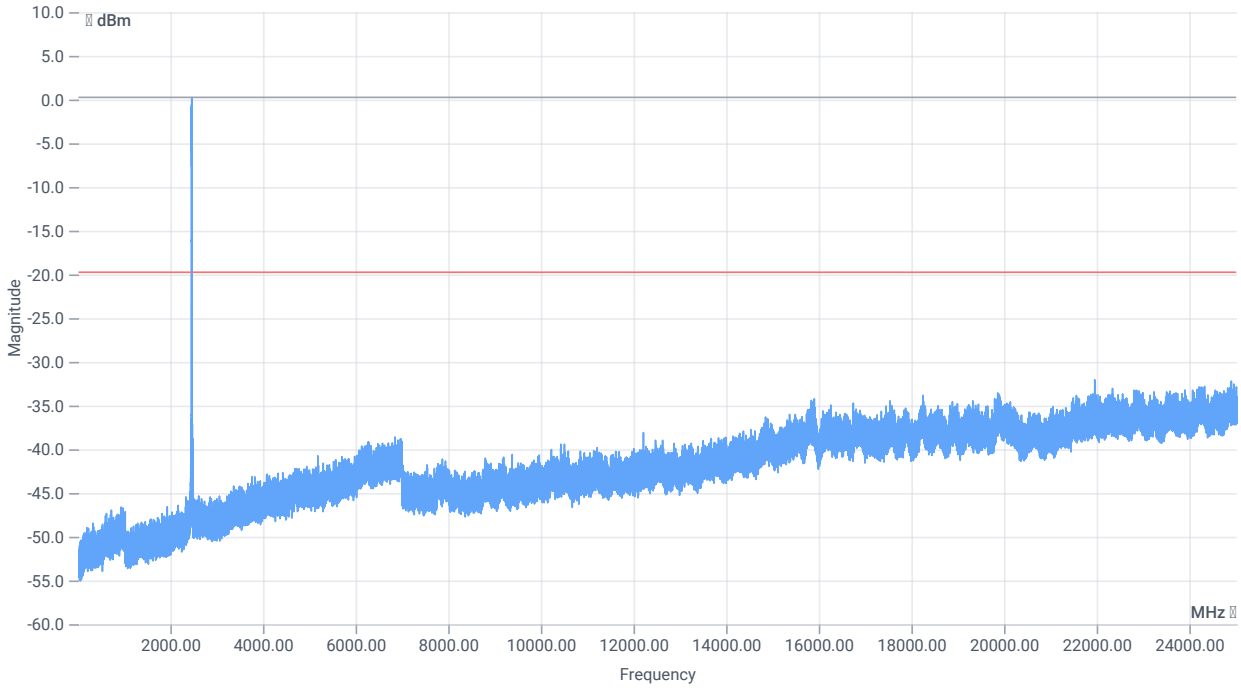
Test Equipment

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.

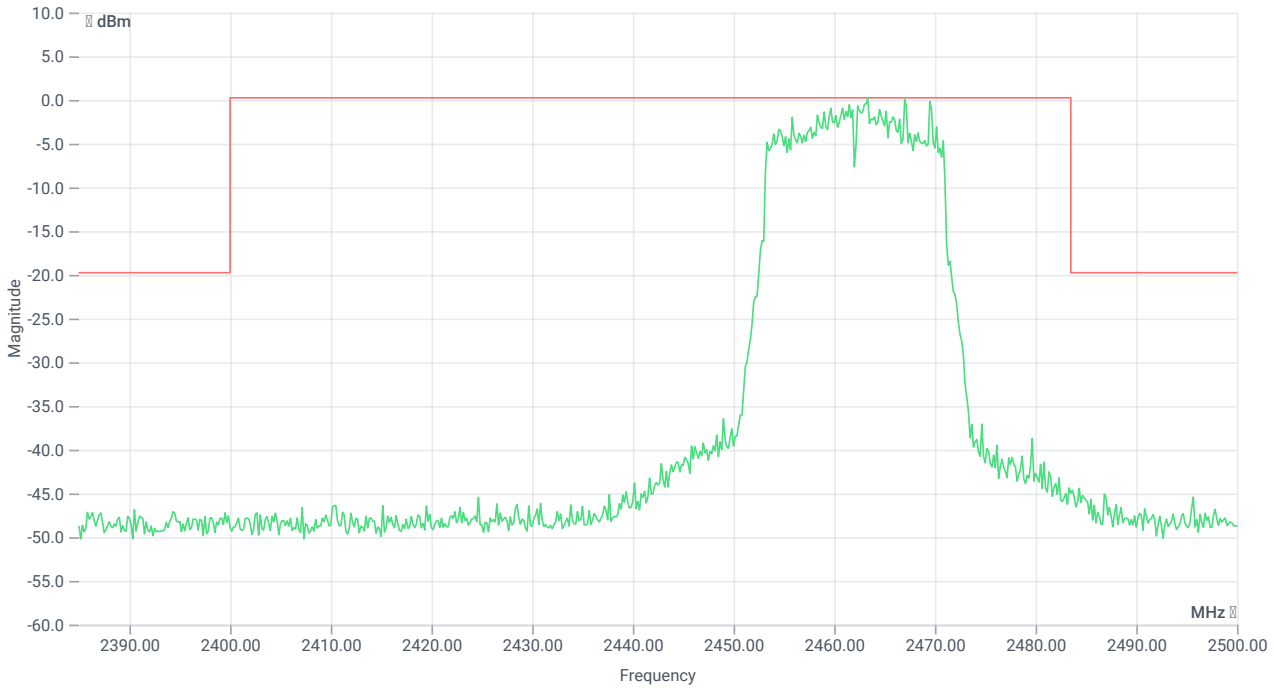
Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Ref. Power 1MHz/1MHz cond.	---	---	10.55	dBm	INFO
Ref. Frequency	---	---	2461.400	MHz	INFO



TX emissions

READ SA SETTINGS:

RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	10.55 | 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 @ 2463.33 MHz	---	---	0.25	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 21959.833 MHz	0	---	12.3	dB	INFO

Verdict
PASS

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

Test References

TC Start	08.02.2023 09:09:37
Ambit Temp [°C] | Humidity [rel%]	22.7 | 24
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

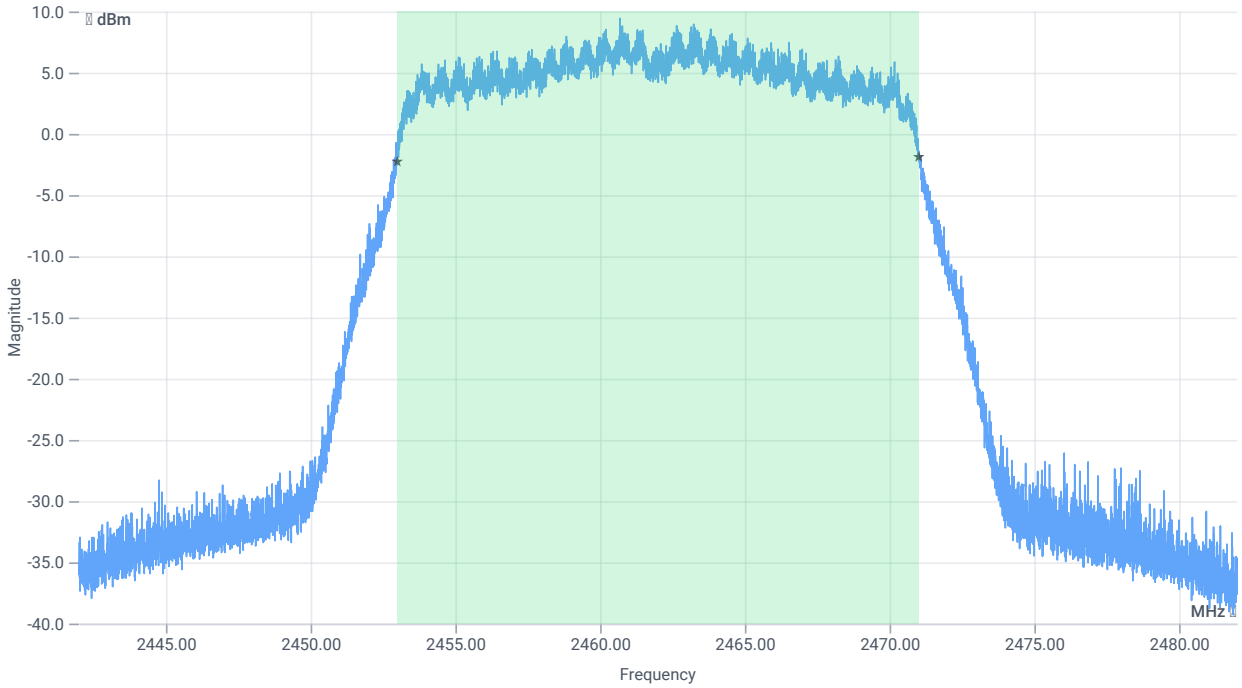
Test at TX 2462 MHz

RESULT: Reference Power cond.

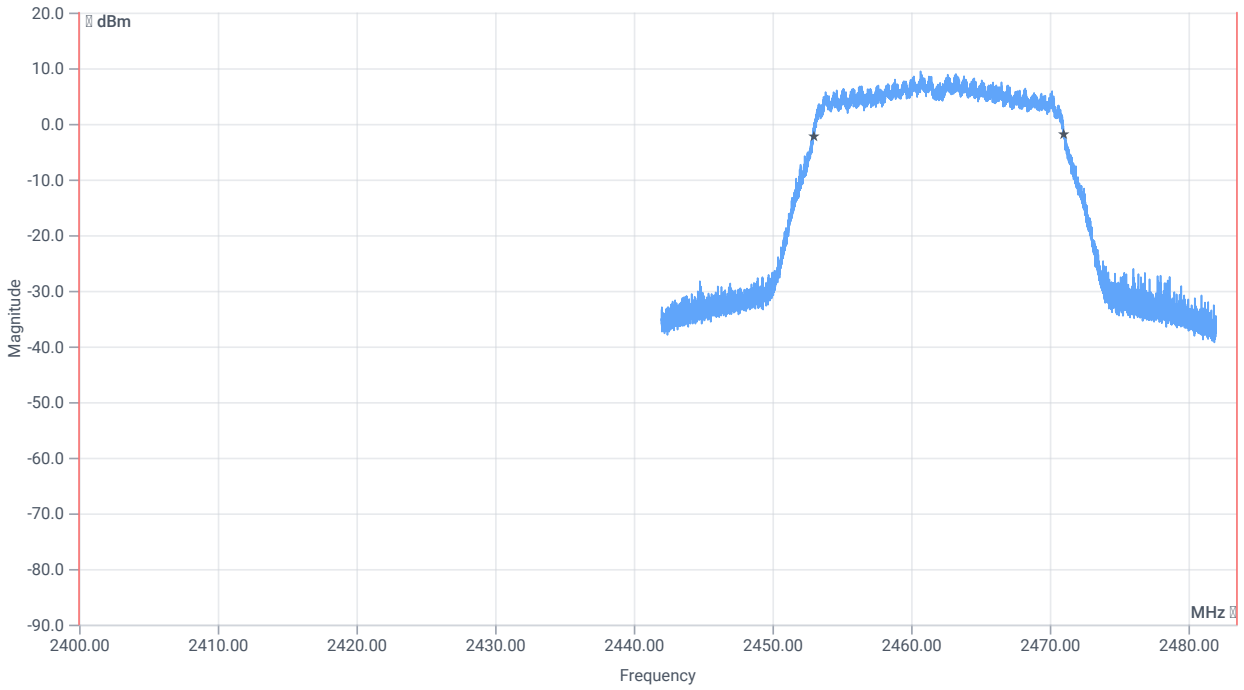
Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Ref. Power 1MHz/1MHz cond.	---	---	10.20	dBm	INFO
Ref. Frequency	---	---	2460.300	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	15.20 | 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



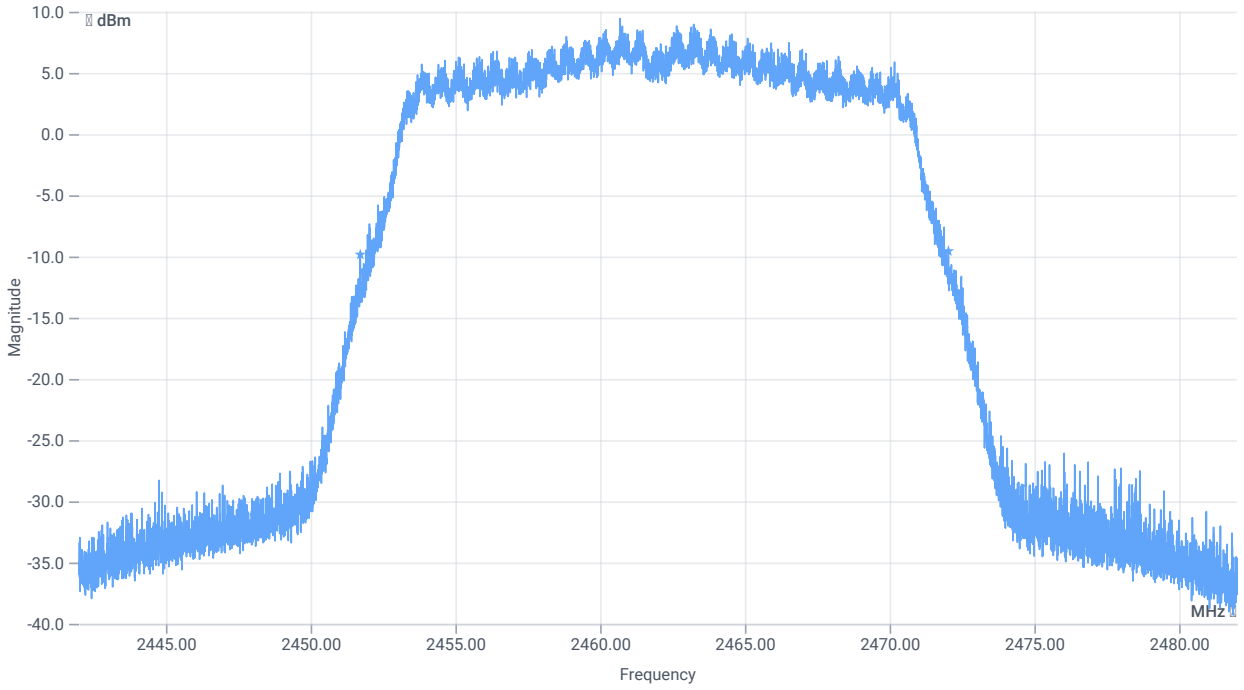
BW 99PCT



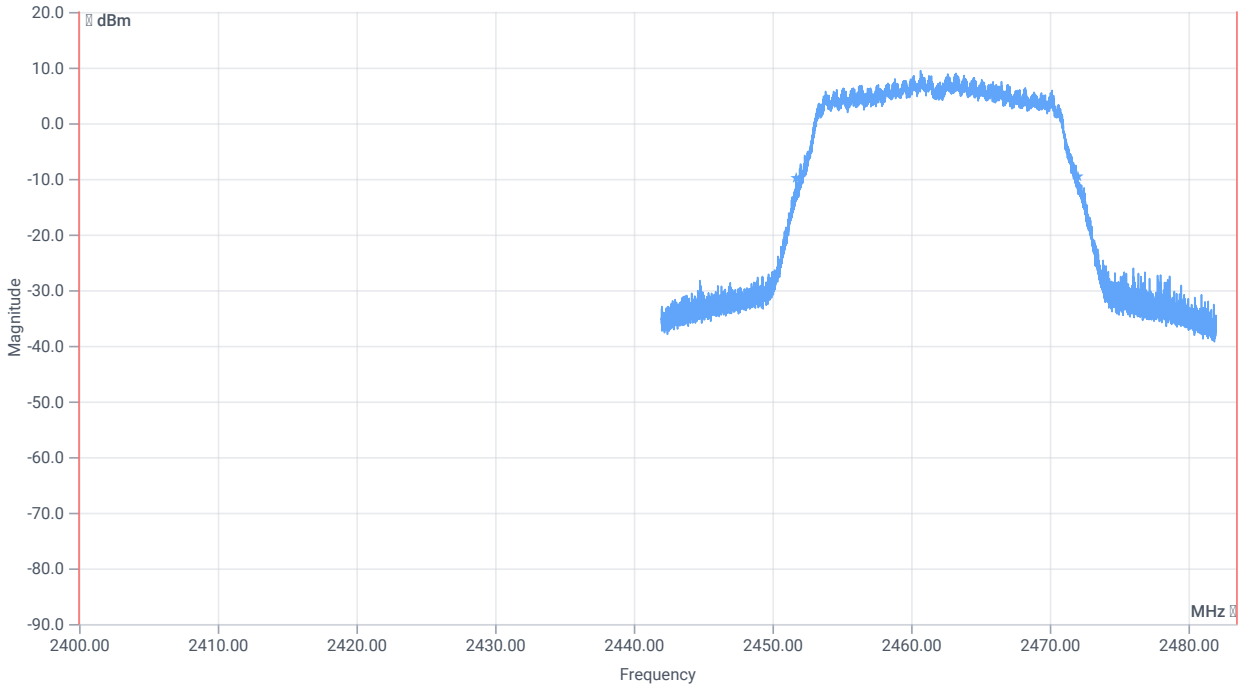
BW within Band 99PCT

RESULT

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Bandwidth 99%	---	---	18014.000	kHz	INFO
T1 99%	2400.000000	---	2452.9929	MHz	PASS
T2 99%	---	2483.500000	2471.0071	MHz	PASS



BW 20dB



BW within Band 20dB

RESULT

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Bandwidth 20dB	---	---	20316	kHz	INFO
T1 20DB	2400.000000	---	2451.7160	MHz	PASS
T2 20dB	---	2483.500000	2472.0320	MHz	PASS

Verdict
PASS

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

Test References

TC Start	08.02.2023 09:08:56
Ambit Temp [°C] | Humidity [rel%]	22.7 | 24
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

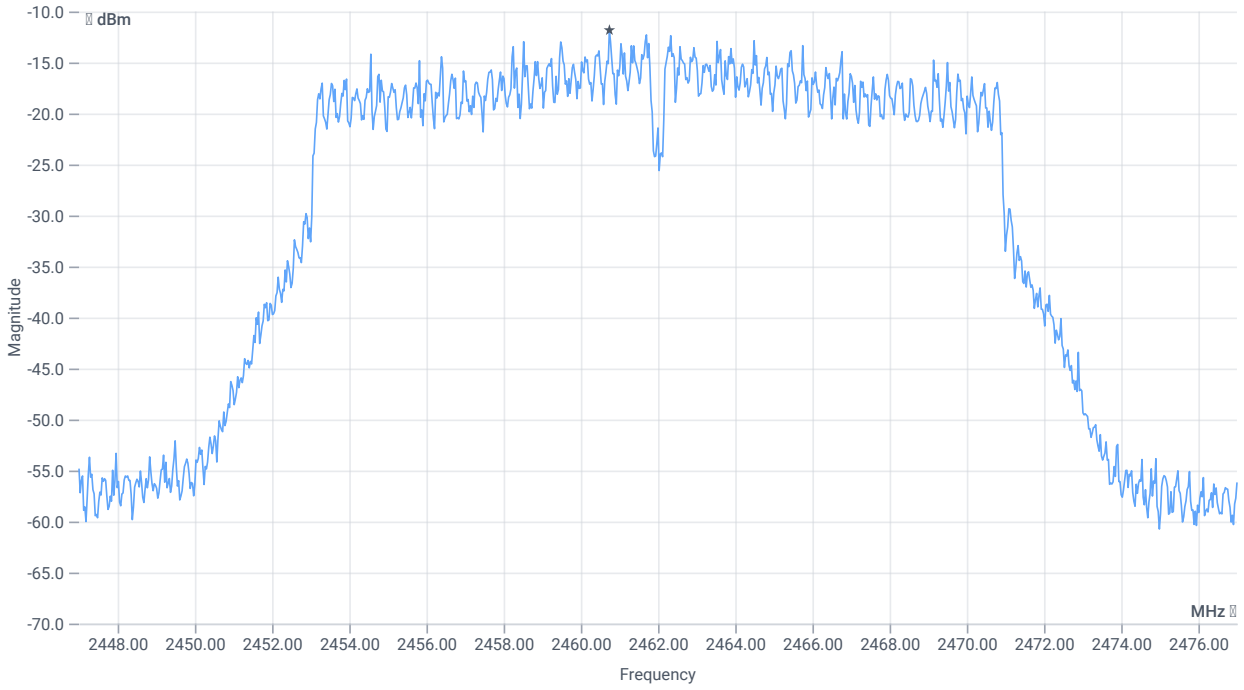
Test at TX 2462 MHz

RESULT: Reference Power cond.

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Ref. Power 1MHz/1MHz cond.	---	---	10.33	dBm	INFO
Ref. Frequency	---	---	2461.200	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	15.33 | 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	-11.83	dBm/3KHz	PASS

Verdict
PASS

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

Test References

TC Start	08.02.2023 09:08:22
Ambit Temp [°C] | Humidity [rel%]	22.7 | 24
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

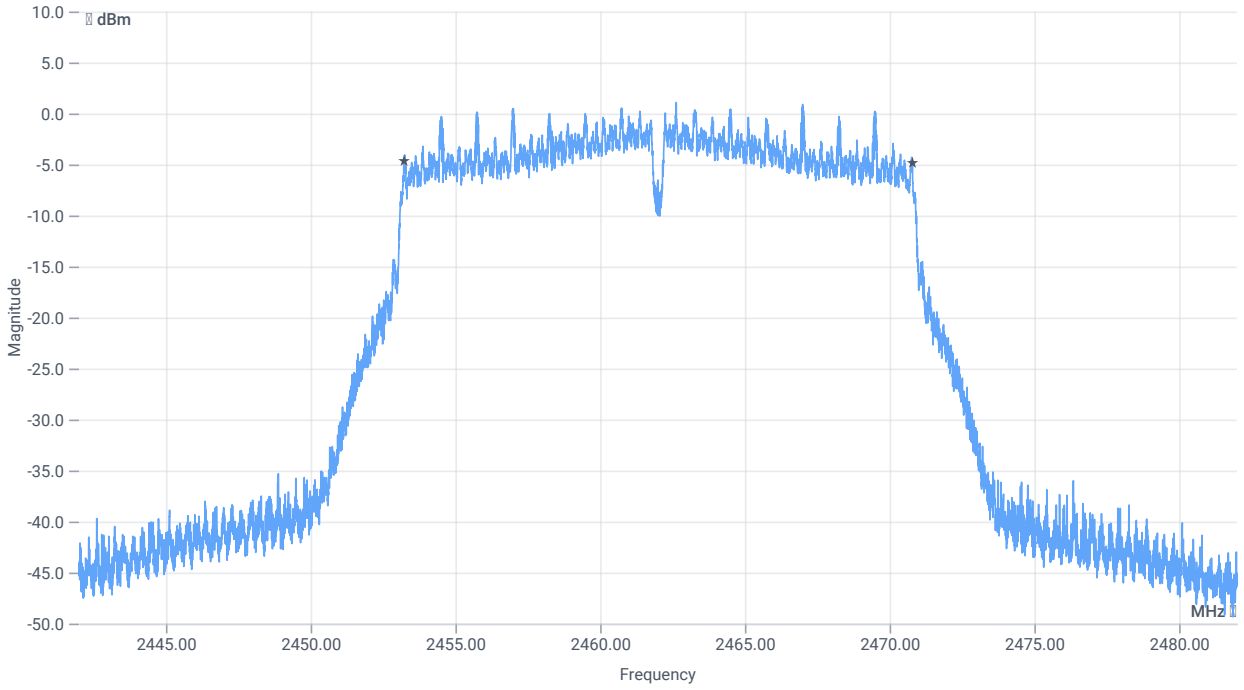
Test at TX 2462 MHz

RESULT: Reference Power cond.

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Ref. Power 1MHz/1MHz cond.	---	---	9.86	dBm	INFO
Ref. Frequency	---	---	2463.200	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	14.86 | 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	---	17564	kHz	PASS

Verdict
PASS

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

Test References

TC Start	08.02.2023 09:07:41
Ambit Temp [°C] | Humidity [rel%]	22.7 | 24
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.	---	---	25.05	dBm	PASS

Verdict
PASS

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

Test References

TC Start	08.02.2023 09:01:01
Ambit Temp [°C] | Humidity [rel%]	22.7 | 24
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

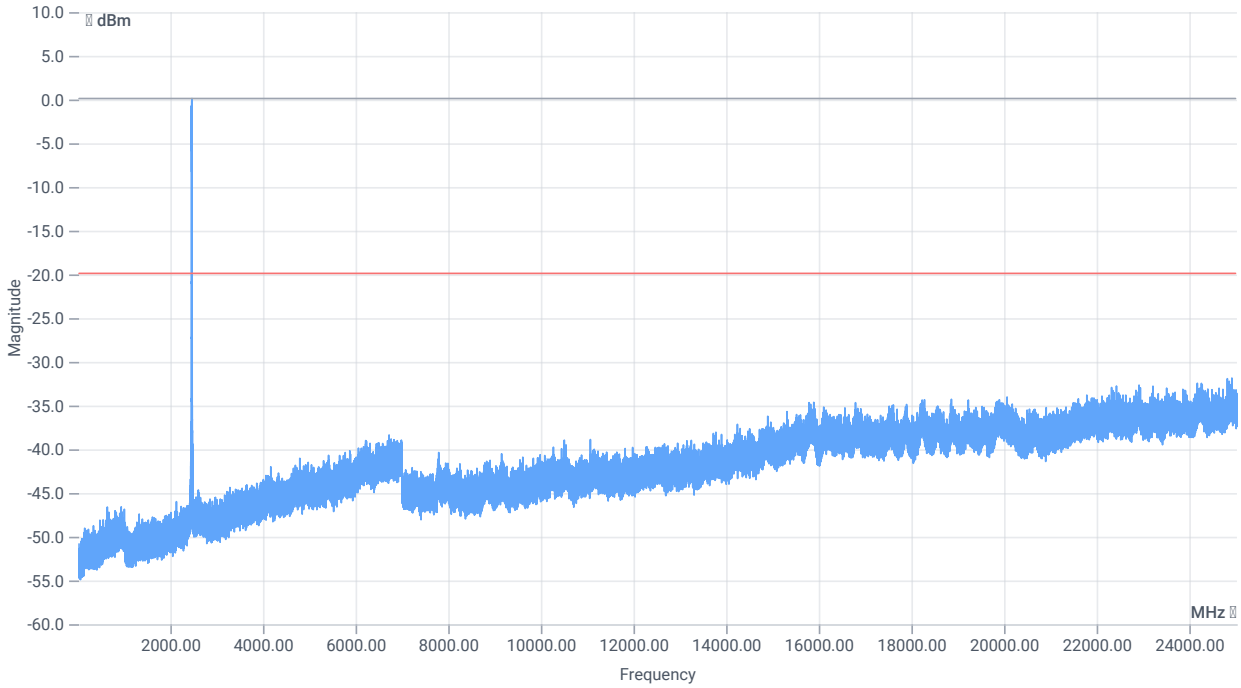
Test Equipment

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.

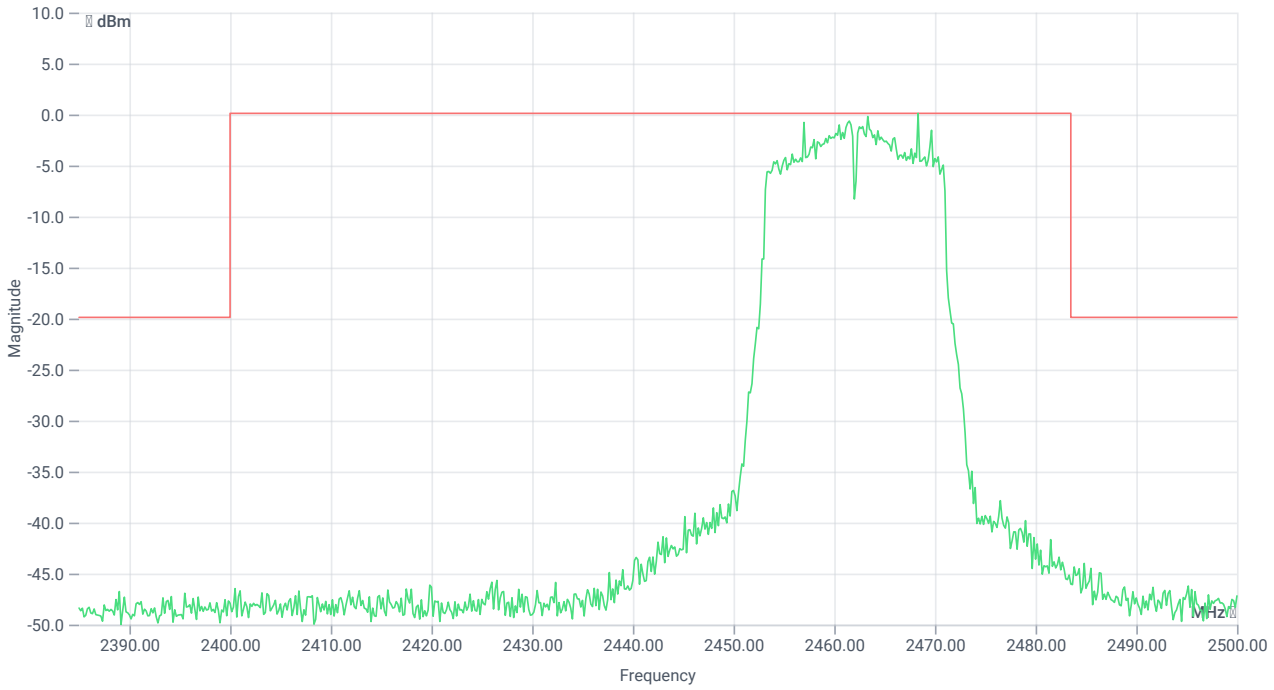
Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Ref. Power 1MHz/1MHz cond.	---	---	10.13	dBm	INFO
Ref. Frequency	---	---	2463.000	MHz	INFO



TX emissions

READ SA SETTINGS:

RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	10.13 | 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 @ 2468.33 MHz	---	---	0.12	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 30 MHz	0	---	-149.18	dB	INFO

Verdict
PASS

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

Test References

TC Start	08.02.2023 09:00:25
Ambit Temp [°C] | Humidity [rel%]	22.7 | 24
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

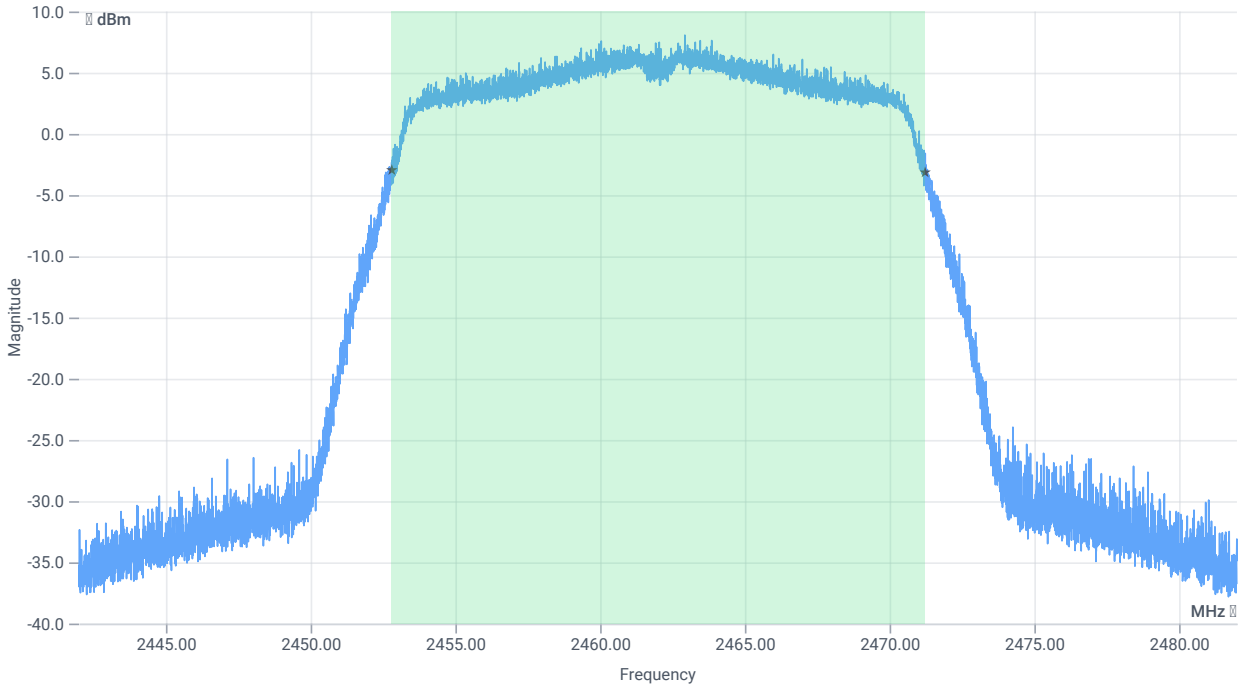
Test at TX 2462 MHz

RESULT: Reference Power cond.

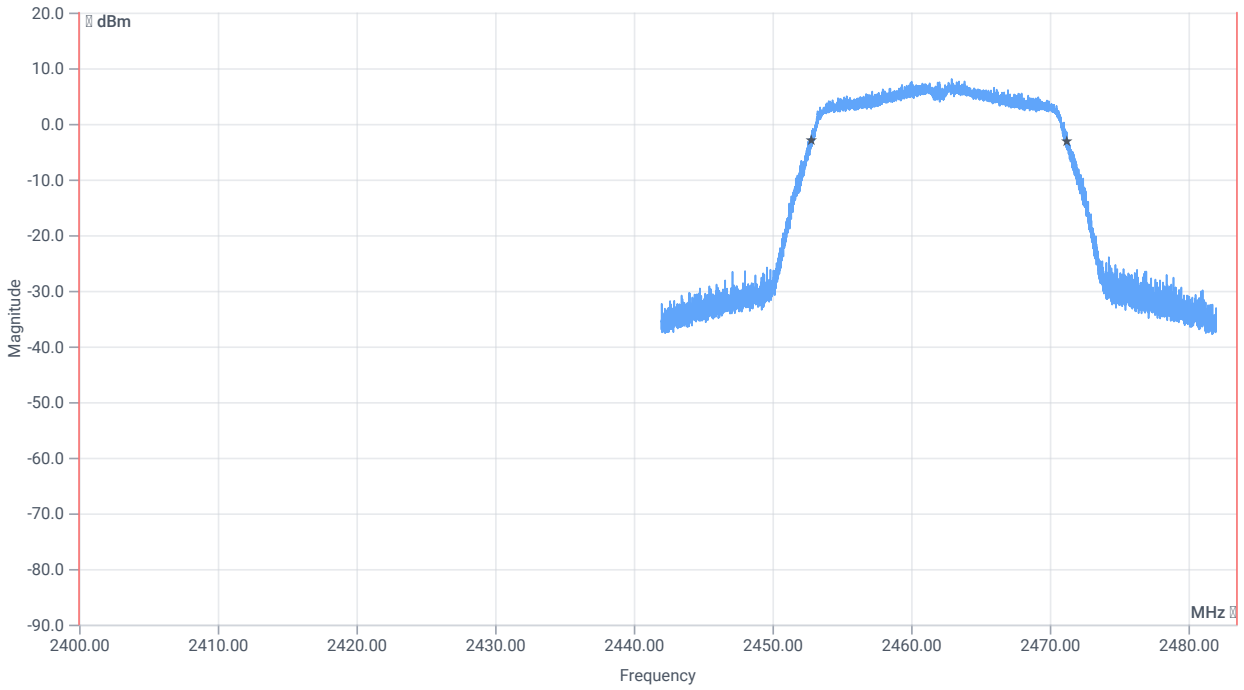
Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Ref. Power 1MHz/1MHz cond.	---	---	9.79	dBm	INFO
Ref. Frequency	---	---	2463.200	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	14.79 | 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



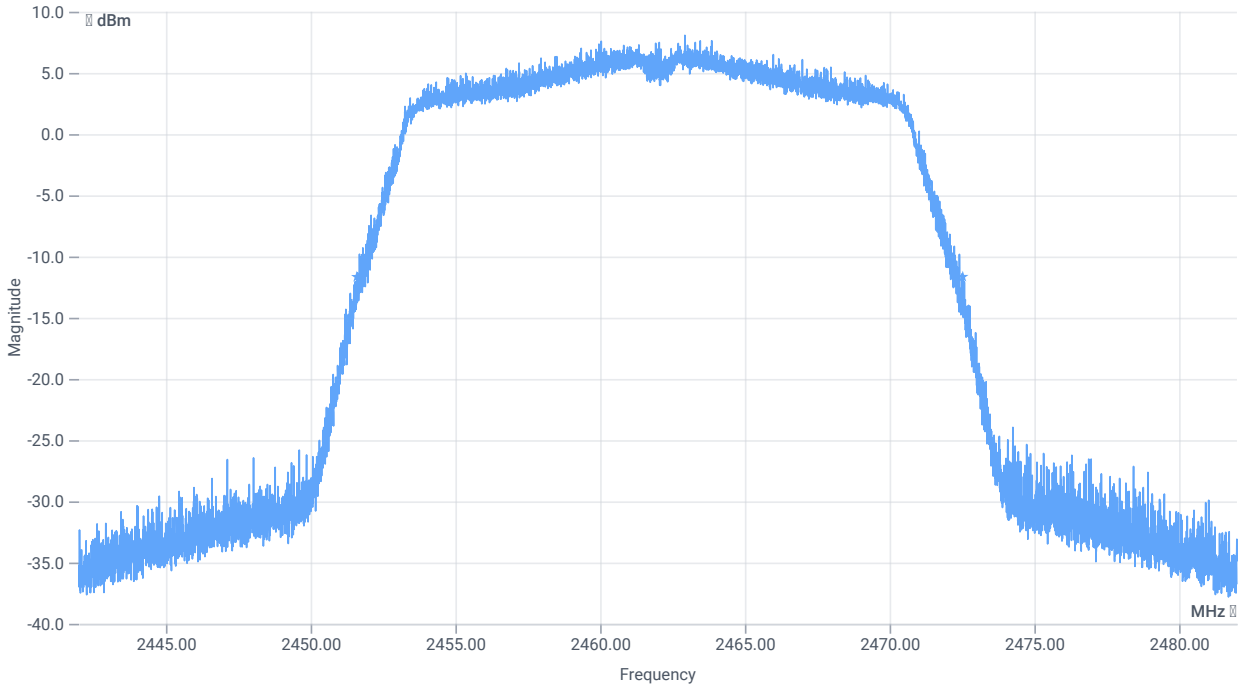
BW 99PCT



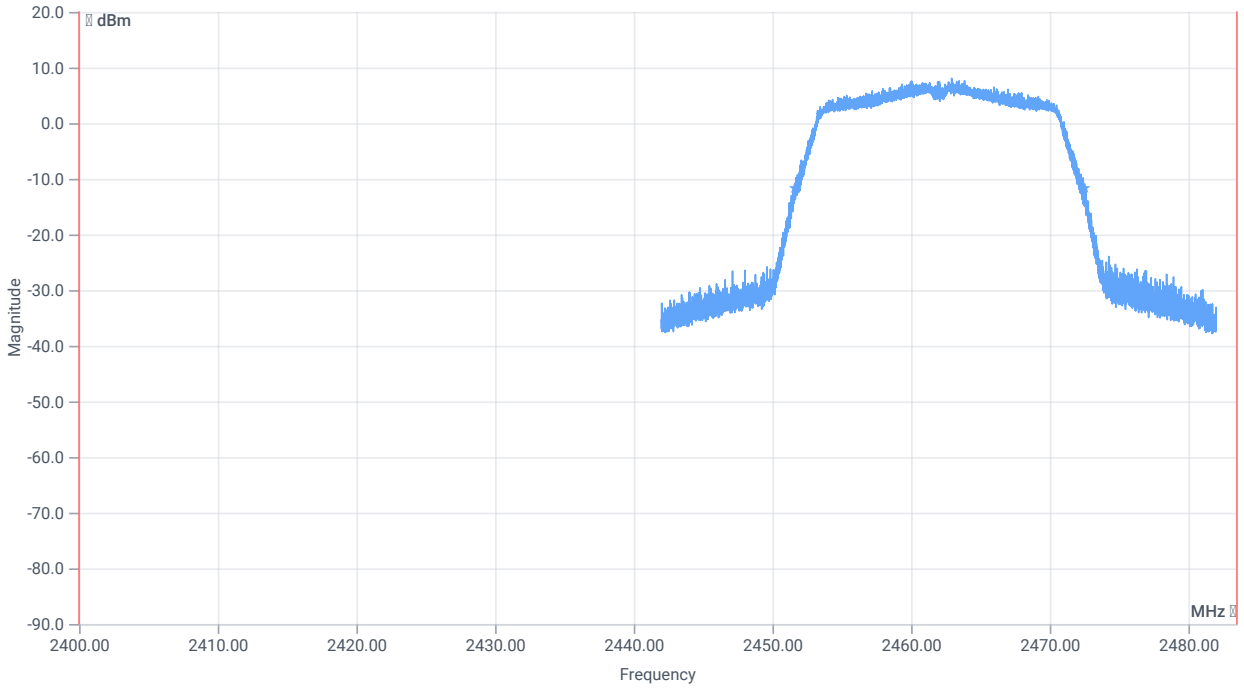
BW within Band 99PCT

RESULT

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Bandwidth 99%	---	---	18422.000	kHz	INFO
T1 99%	2400.000000	---	2452.8049	MHz	PASS
T2 99%	---	2483.500000	2471.2271	MHz	PASS



BW 20dB



BW within Band 20dB

RESULT

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Bandwidth 20dB	---	---	20932	kHz	INFO
T1 20DB	2400.000000	---	2451.5960	MHz	PASS
T2 20dB	---	2483.500000	2472.5280	MHz	PASS

Verdict
PASS

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

Test References

TC Start	08.02.2023 08:59:44
Ambit Temp [°C] | Humidity [rel%]	22.7 | 24
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

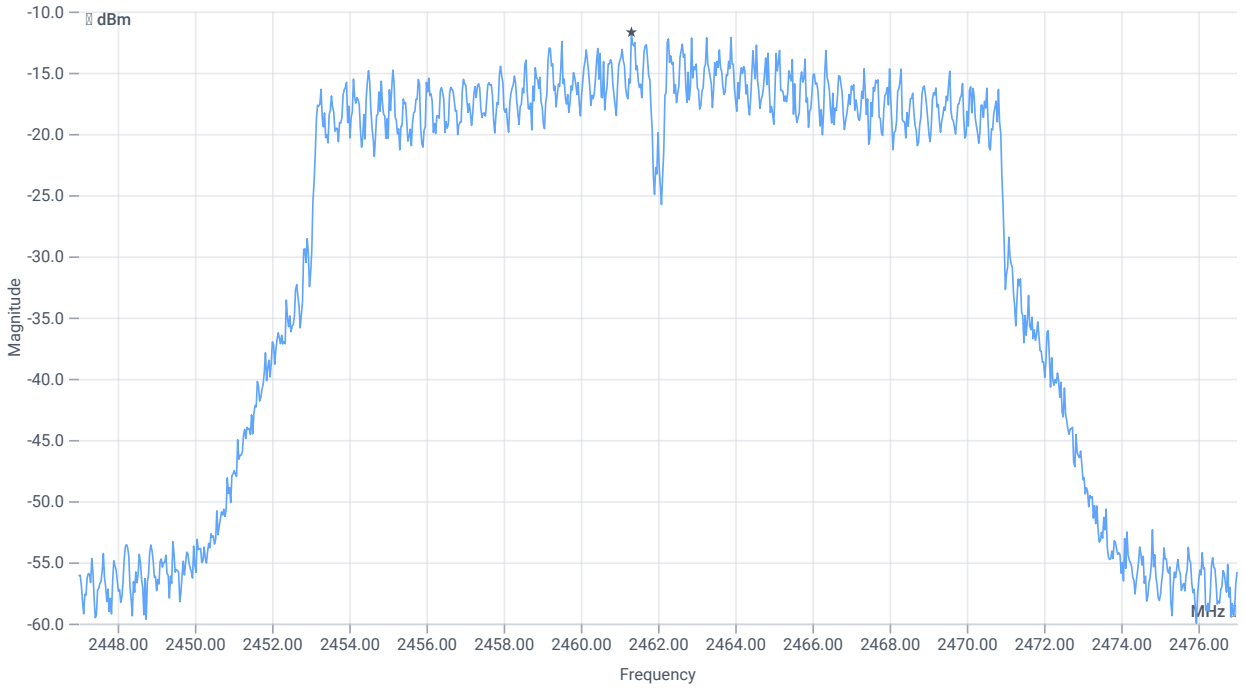
Test at TX 2462 MHz

RESULT: Reference Power cond.

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Ref. Power 1MHz/1MHz cond.	---	---	10.10	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]	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	-11.7	dBm/3KHz	PASS

Verdict
PASS

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

Test References

TC Start	08.02.2023 08:59:10
Ambit Temp [°C] | Humidity [rel%]	22.7 | 24
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

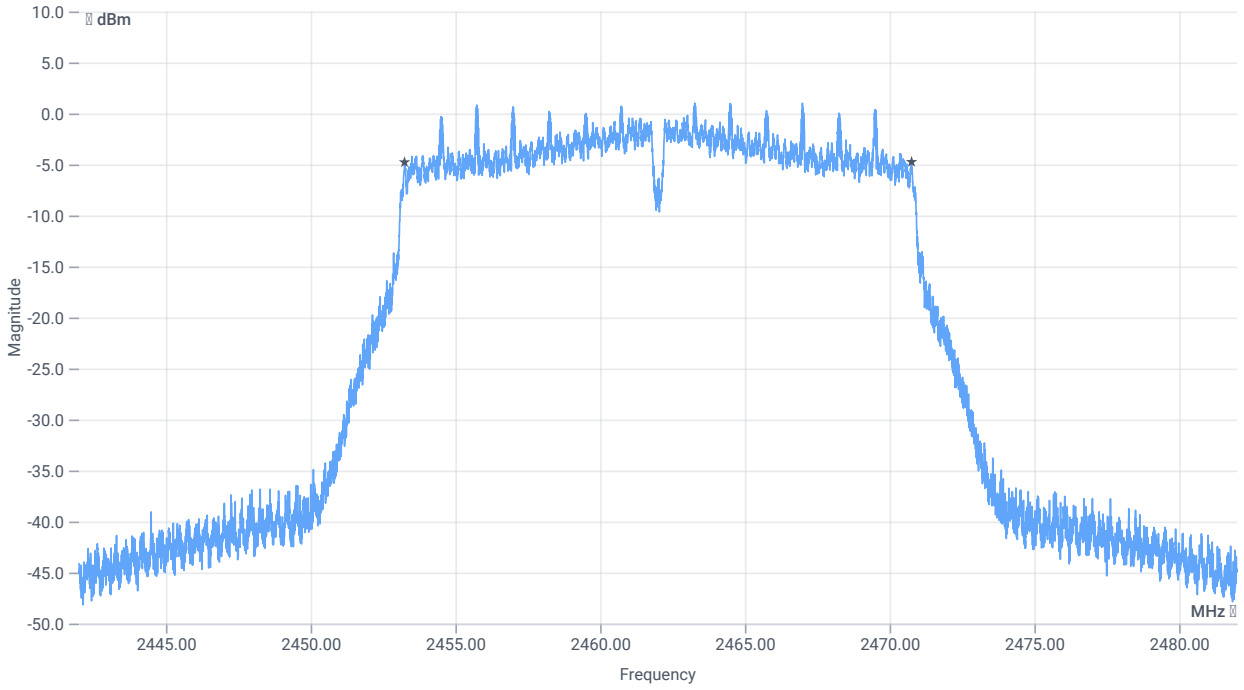
Test at TX 2462 MHz

RESULT: Reference Power cond.

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Ref. Power 1MHz/1MHz cond.	---	---	9.59	dBm	INFO
Ref. Frequency	---	---	2460.400	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	14.59 | 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	---	17516	kHz	PASS

Verdict
PASS

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

Test References

TC Start	08.02.2023 08:57:00
Ambit Temp [°C] | Humidity [rel%]	22.7 | 24
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.	---	---	25.73	dBm	PASS

Verdict
PASS

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

Test References

TC Start	08.02.2023 08:50:21
Ambit Temp [°C] | Humidity [rel%]	22.6 | 24
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

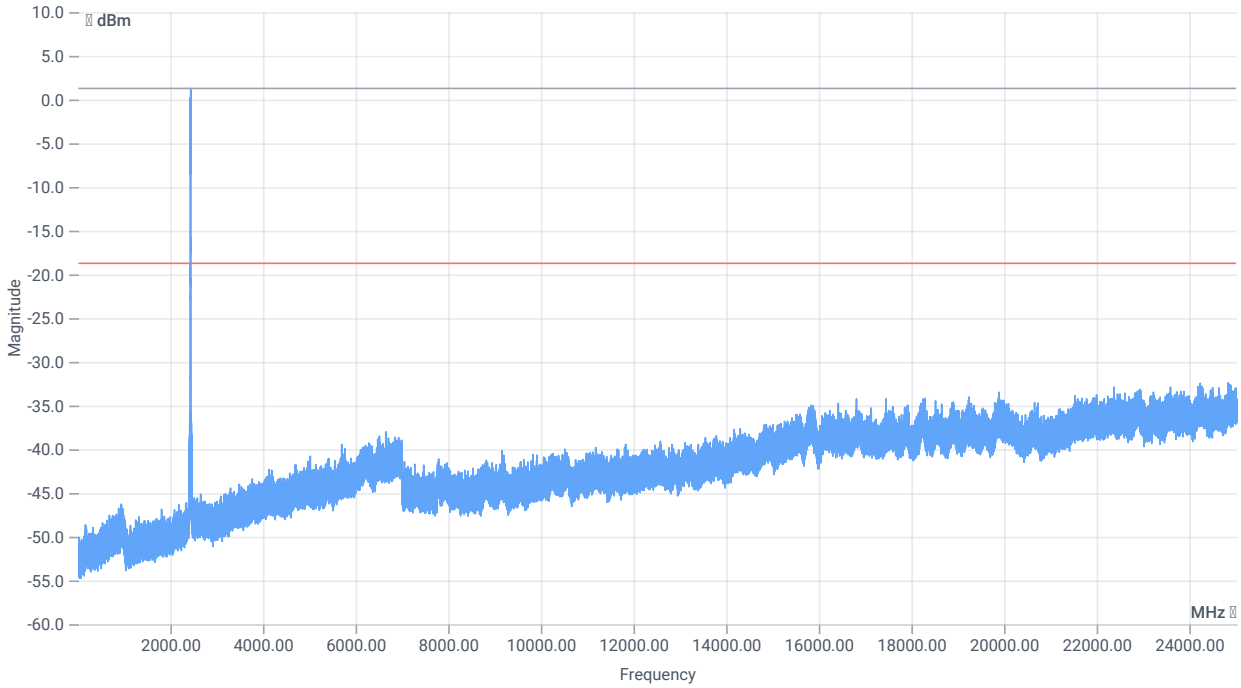
Test Equipment

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.

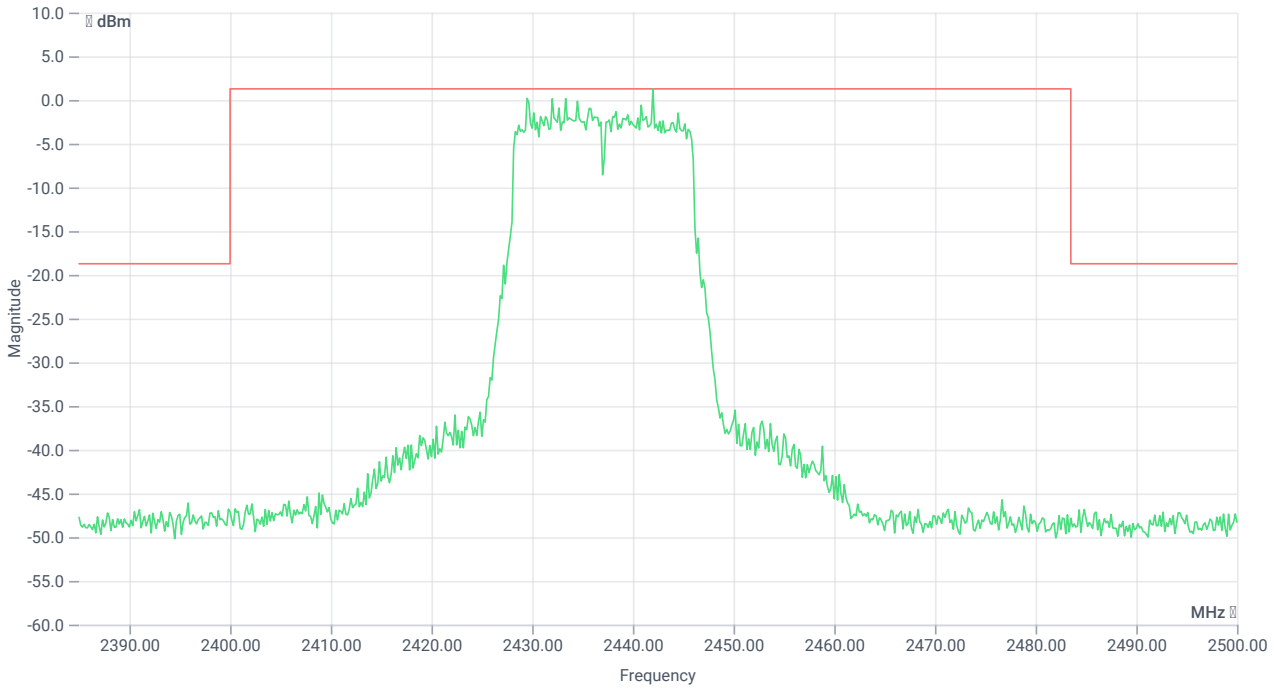
Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Ref. Power 1MHz/1MHz cond.	---	---	10.86	dBm	INFO
Ref. Frequency	---	---	2438.500	MHz	INFO



TX emissions

READ SA SETTINGS:

RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	10.86 | 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 @ 2442.00 MHz	---	---	1.27	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 24843 MHz	0	---	13.66	dB	INFO

Verdict
PASS

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

Test References

TC Start	08.02.2023 08:49:44
Ambit Temp [°C] | Humidity [rel%]	22.6 | 24
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

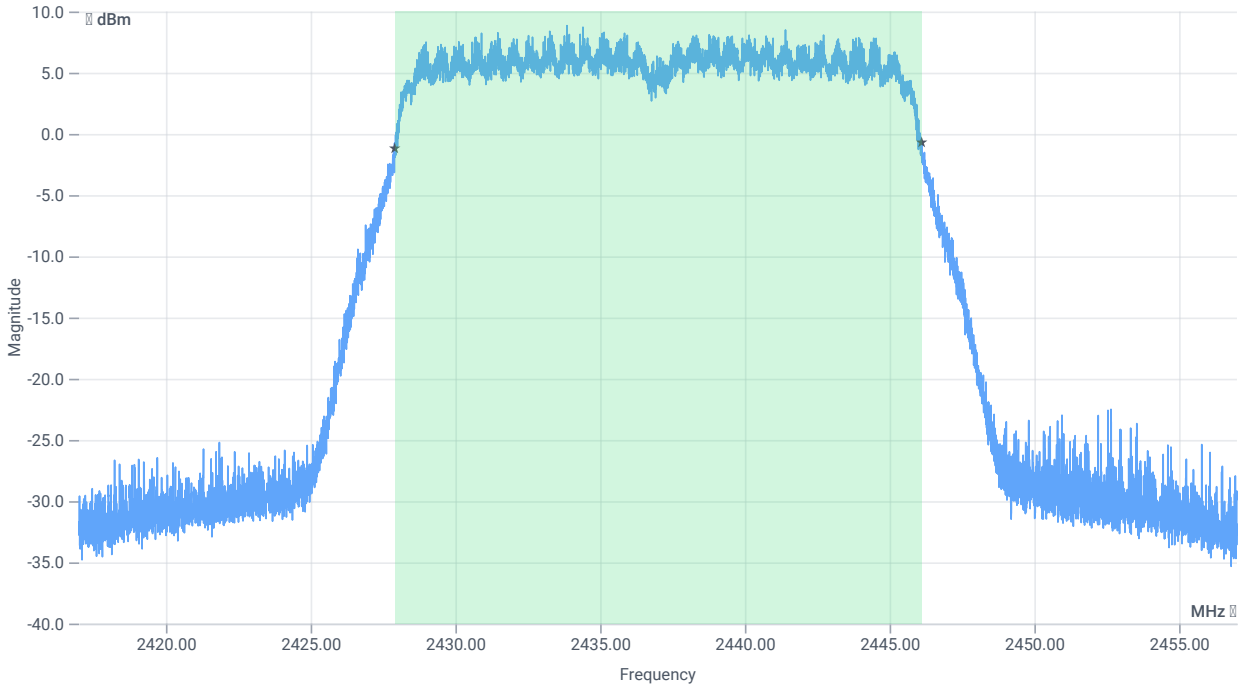
Test at TX 2437 MHz

RESULT: Reference Power cond.

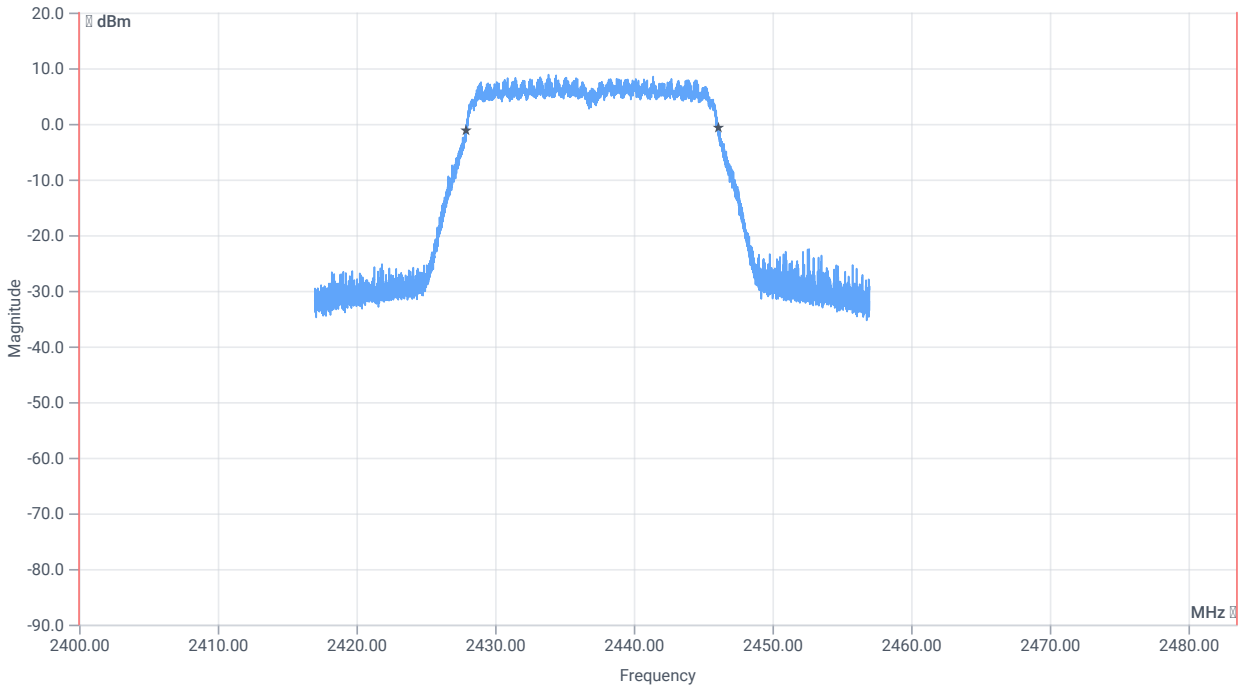
Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Ref. Power 1MHz/1MHz cond.	---	---	9.87	dBm	INFO
Ref. Frequency	---	---	2436.400	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	14.87 | 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



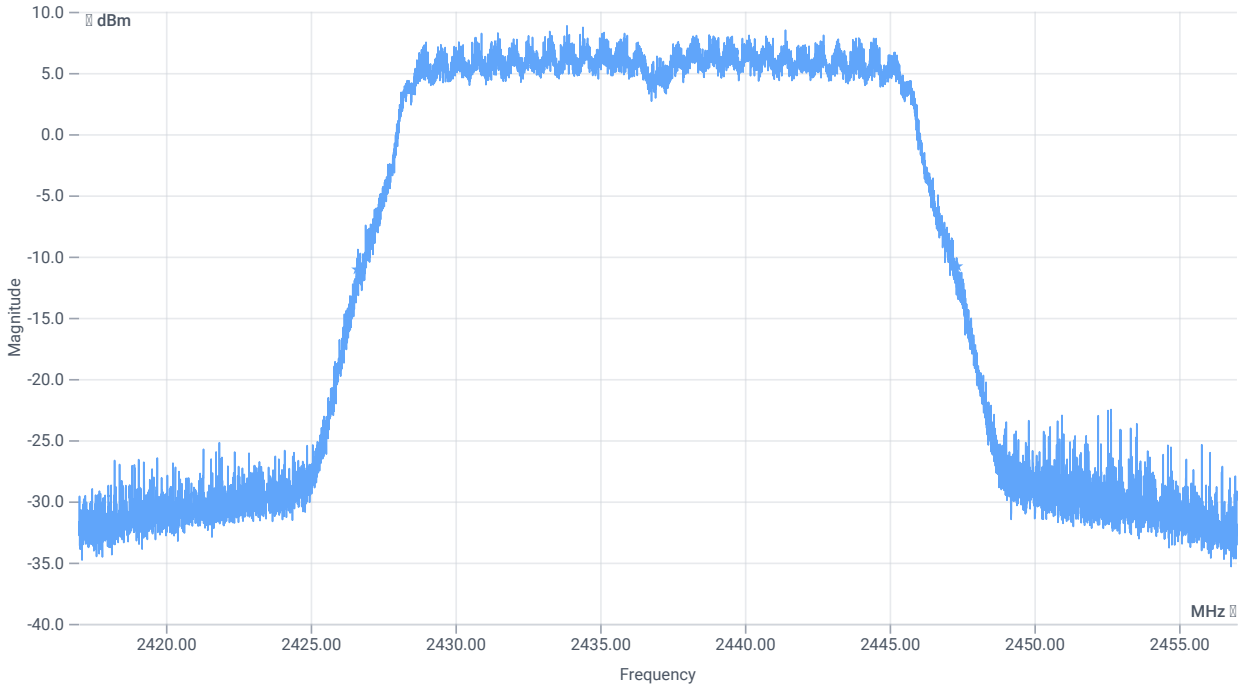
BW 99PCT



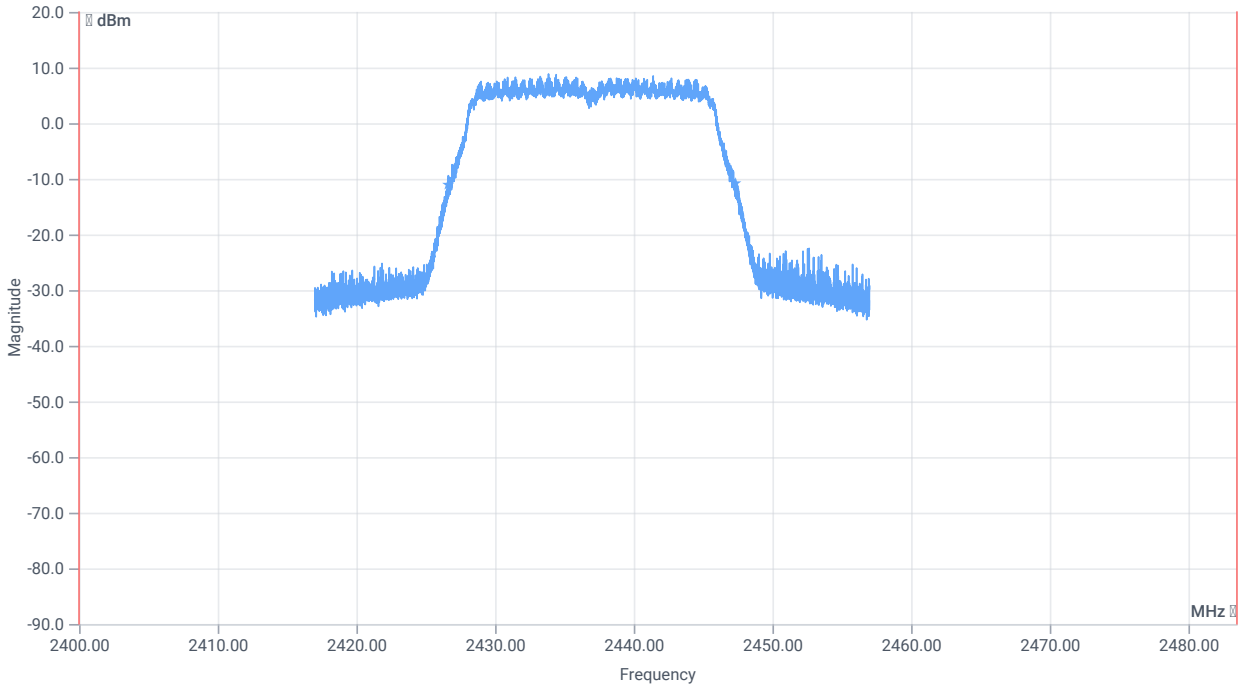
BW within Band 99PCT

RESULT

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Bandwidth 99%	---	---	18202.000	kHz	INFO
T1 99%	2400.000000	---	2427.9049	MHz	PASS
T2 99%	---	2483.500000	2446.1071	MHz	PASS



BW 20dB



BW within Band 20dB

RESULT

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Bandwidth 20dB	---	---	20748	kHz	INFO
T1 20DB	2400.000000	---	2426.6000	MHz	PASS
T2 20dB	---	2483.500000	2447.3480	MHz	PASS

Verdict
PASS

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

Test References

TC Start	08.02.2023 08:49:03
Ambit Temp [°C] | Humidity [rel%]	22.6 | 24
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

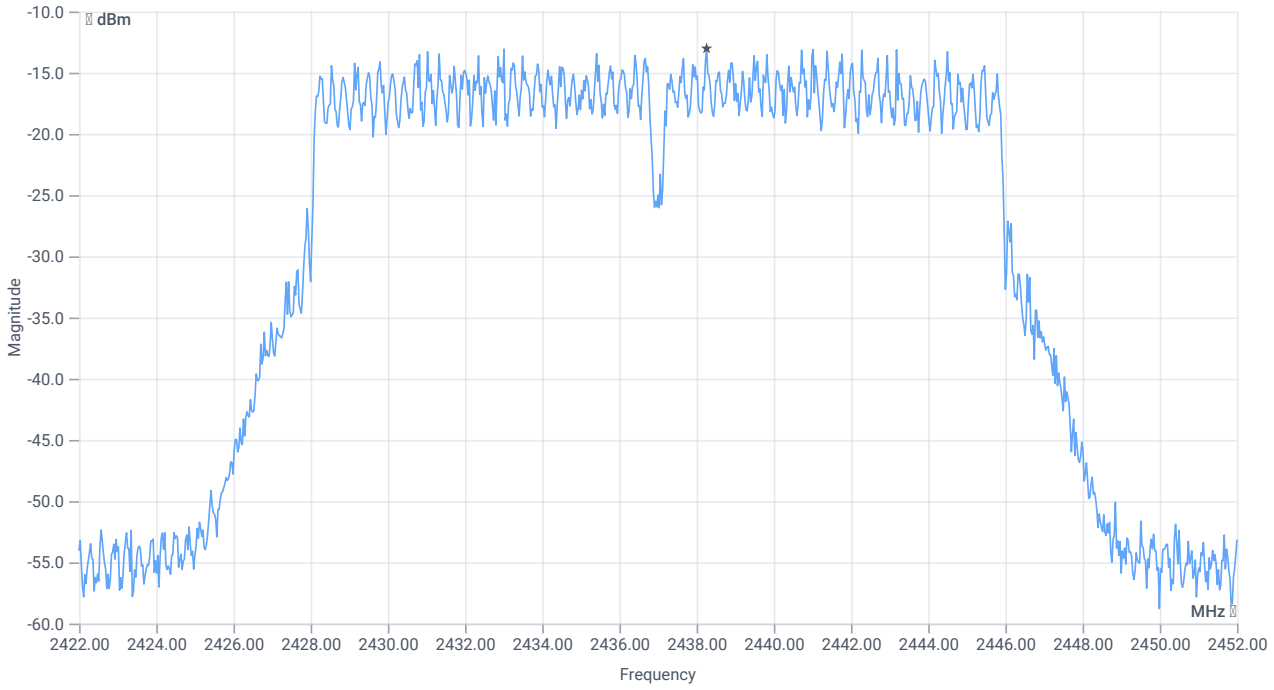
Test at TX 2437 MHz

RESULT: Reference Power cond.

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Ref. Power 1MHz/1MHz cond.	---	---	10.25	dBm	INFO
Ref. Frequency	---	---	2434.800	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	15.25 | 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	-13.02	dBm/3KHz	PASS

Verdict
PASS

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

Test References

TC Start	08.02.2023 08:48:30
Ambit Temp [°C] | Humidity [rel%]	22.6 | 24
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

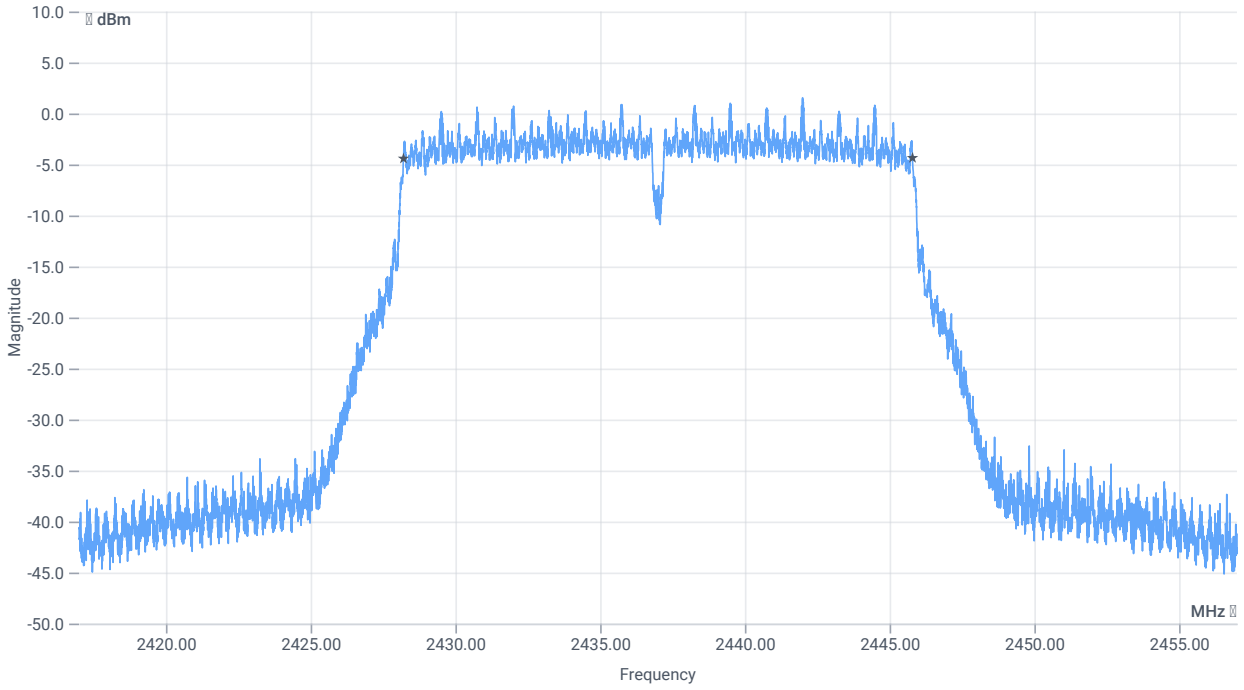
Test at TX 2437 MHz

RESULT: Reference Power cond.

Test Description	*Lower Limit*	*Upper Limit*	*Measured*	*Unit*	*Verdict*
Ref. Power 1MHz/1MHz cond.	---	---	9.80	dBm	INFO
Ref. Frequency	---	---	2440.500	MHz	INFO

READ SA SETTINGS:

RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	14.80 | 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	---	17584	kHz	PASS

Verdict
PASS

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

Test References

TC Start	08.02.2023 08:47:48
Ambit Temp [°C] | Humidity [rel%]	22.6 | 24
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.	---	---	26.22	dBm	PASS

Verdict
PASS

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

Test References

TC Start	08.02.2023 08:41:09
Ambit Temp [°C] | Humidity [rel%]	22.6 | 24
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