Measurement Results

No.1-1776/21-03-04_Annex_MR_A1

Test logging

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Test/s performed:

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2022.09.15 16:56:40 +02'00'

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EUT Information

EUT DEFINITION	
Manufacturer	Riedel
Type	BL-ANT-1008-24
Serial Number	NI
Setup Number	1.0
Version SW	NI
Version FW	NI
Version HW	NI
Comment 1	
Comment 2	
Temperature [°C] Min	0
Temperature [°C] Nom	20
Temperature [°C] Max	55
Voltage [V] Min	10
Voltage [V] Nom	48
Voltage [V] Max	57

FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4

Test References	
TC Start	18.05.2021 07:08:58
Ambit Temp [°C] | Humidity [rel%]	21.0 | 44
System Version	3.0.1.1
Test Specification	FCC Part 15.247
Test Method	
TC Version	0.0.2
My Description	FCC 15.247 Bandwidth 99PCT - 20DB FHSS - Generic 2G4
Add. Information	

EUT Common settings 2G4	
Hopping supported	No
Burst length [ms]	10
Nominal Bandwidth [MHz]	2
User Interaction	No

Test Parameter	
Technology to test	Generic 2G4
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False | Freq [MHz] 2403
Frequency mid to test	True | Freq [MHz] 2441
Frequency high to test	False | Freq [MHz] 2479
Auto Control enabled Power Supply | Climatic Box	Yes | No
Additional Path Loss [dB]	0
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment
Signal analyzerRohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.171
Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI
Power supply,Agilent Technologies,N5767A,US14J1569P,B.00.06,REV:F

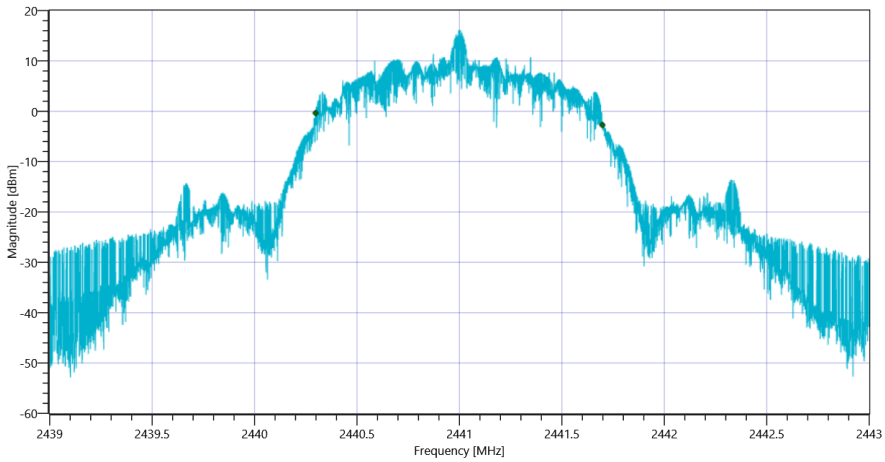
Test at TX 2441 MHz

RESULT: Reference Power cond.					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	15.69	dBm	INFO
Ref. Frequency	---	---	2440.500	MHz	INFO

READ SA SETTINGS:	
RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	20.69 | 10.1 | 30
Start [MHz] | Stop [MHz]	2439.000 | 2443.000
RBW [MHz] | VBW [MHz]	0.050000 | 0.200000
Detector | TraceMode	POS | MAXH
Sweep: Time [ms] | Count | Points per Section | Type	50 | 200 | 10001 | SWE

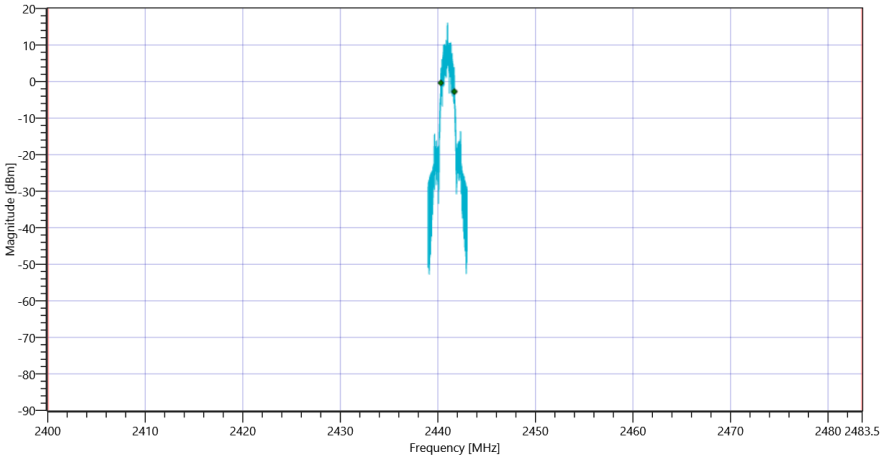
RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	1399.060	kHz	INFO
T1 99%	2400.000000	---	2440.2981	MHz	PASS
T2 99%	---	2483.500000	2441.6971	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4 99PCT

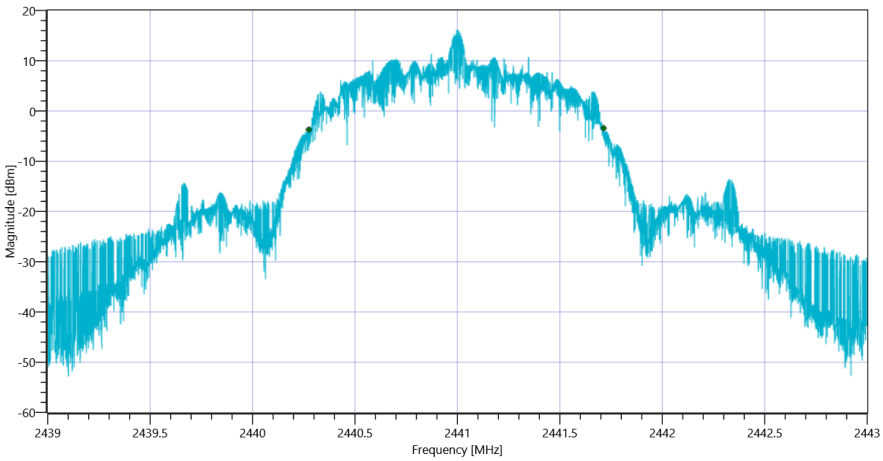
Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4

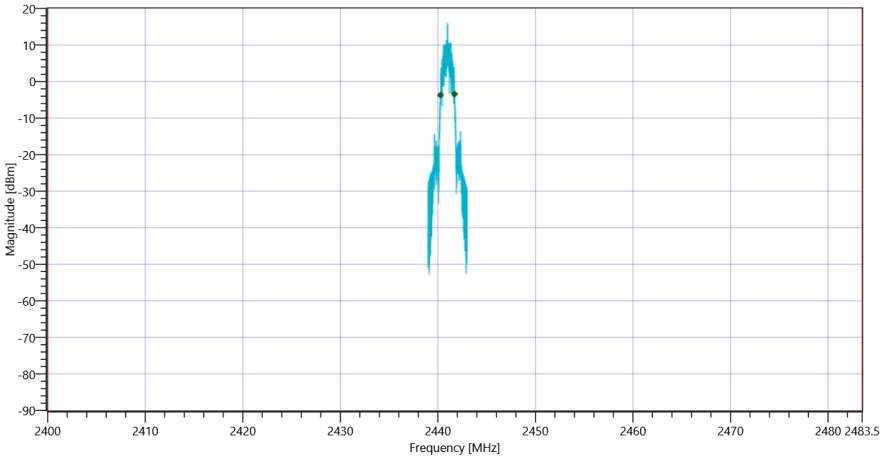
RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	1439	kHz	INFO
T1 20DB	2400.000000	---	2440.2744	MHz	PASS
T2 20dB	---	2483.500000	2441.7136	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4 20dB

Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4

General verdict	PASS

FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4

Test References	
TC Start	17.05.2021 16:23:42
Ambit Temp [°C] | Humidity [rel%]	24.4 | 37
System Version	3.0.1.1
Test Specification	FCC Part 15.247
Test Method	
TC Version	0.0.2
My Description	FCC 15.247 Bandwidth 99PCT - 20DB FHSS - Generic 2G4
Add. Information	

EUT Common settings 2G4	
Hopping supported	No
Burst length [ms]	10
Nominal Bandwidth [MHz]	2
User Interaction	No

Test Parameter	
Technology to test	Generic 2G4
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False | Freq [MHz] 2403
Frequency mid to test	False | Freq [MHz] 2441
Frequency high to test	True | Freq [MHz] 2479
Auto Control enabled Power Supply | Climatic Box	Yes | No
Additional Path Loss [dB]	0
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment
Signal analyzerRohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.171
Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI
Power supply,Agilent Technologies,N5767A,US14J1569P,B.00.06,REV:F

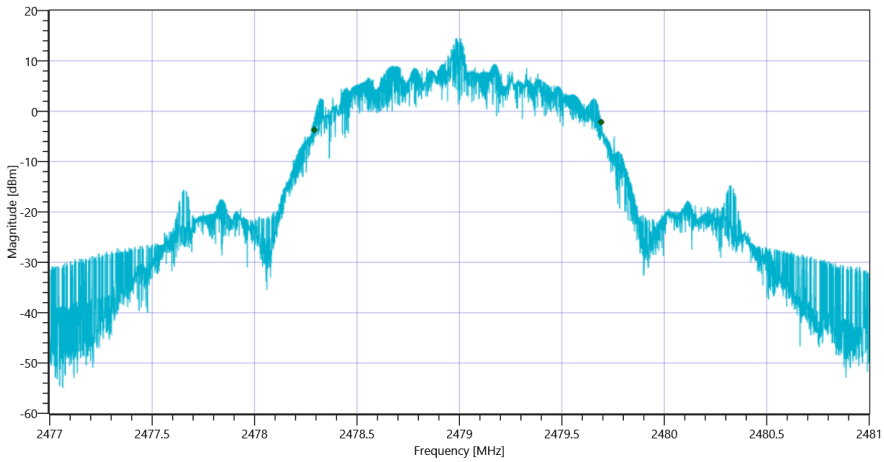
Test at TX 2479 MHz

RESULT: Reference Power cond.					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	14.49	dBm	INFO
Ref. Frequency	---	---	2478.500	MHz	INFO

READ SA SETTINGS:	
RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	19.49 | 10.15 | 25
Start [MHz] | Stop [MHz]	2477.000 | 2481.000
RBW [MHz] | VBW [MHz]	0.050000 | 0.200000
Detector | TraceMode	POS | MAXH
Sweep: Time [ms] | Count | Points per Section | Type	50 | 200 | 10001 | SWE

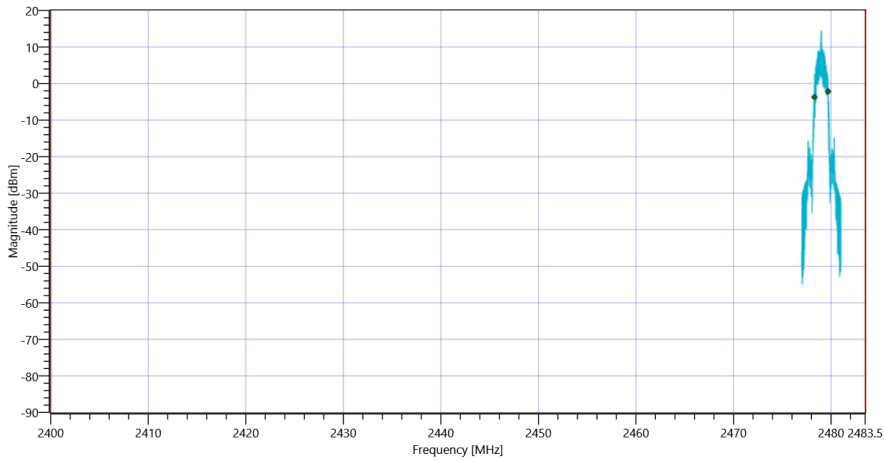
RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	1400.260	kHz	INFO
T1 99%	2400.000000	---	2478.2917	MHz	PASS
T2 99%	---	2483.500000	2479.6919	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4 99PCT

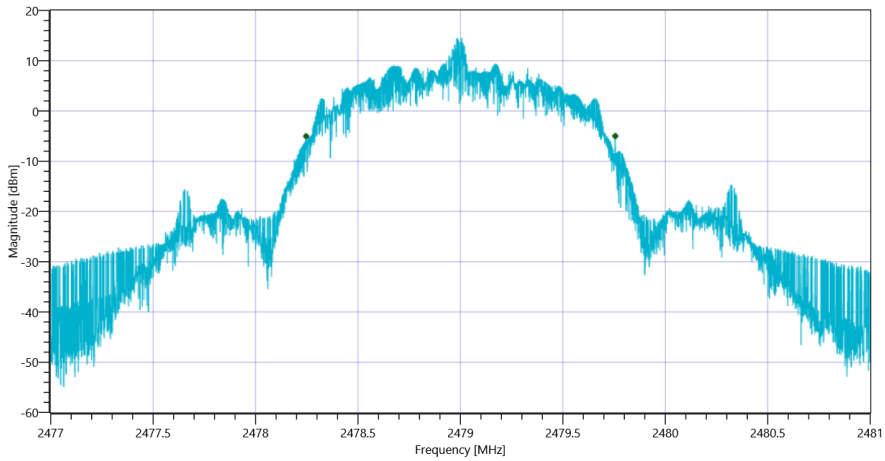
Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4

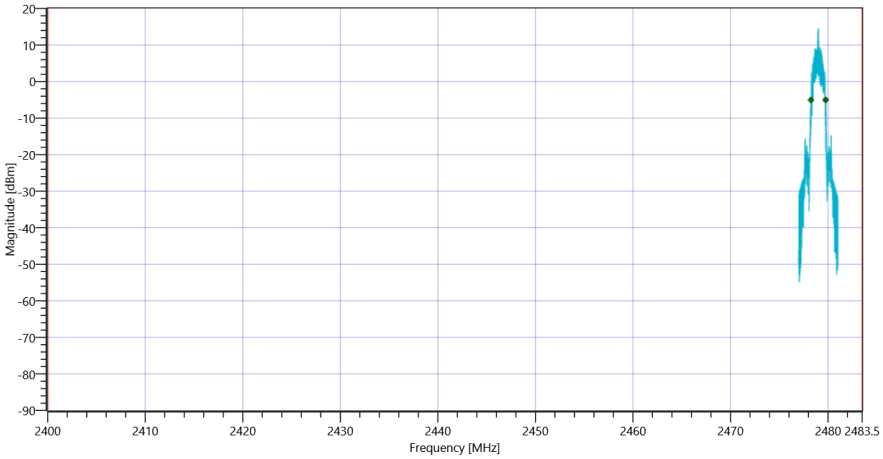
RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	1509	kHz	INFO
T1 20DB	2400.000000	---	2478.2464	MHz	PASS
T2 20dB	---	2483.500000	2479.7556	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4 20dB

Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4

General verdict	PASS

FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4

Test References	
TC Start	17.05.2021 14:18:52
Ambit Temp [°C] | Humidity [rel%]	23.7 | 38
System Version	3.0.1.1
Test Specification	FCC Part 15.247
Test Method	
TC Version	0.0.2
My Description	FCC 15.247 Bandwidth 99PCT-20DB DTS - Generic 2G4
Add. Information	

EUT Common settings 2G4	
Hopping supported	No
Burst length [ms]	10
Nominal Bandwidth [MHz]	2
User Interaction	No

Test Parameter	
Technology to test	Generic 2G4
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True | Freq [MHz] 2403
Frequency mid to test	False | Freq [MHz] 2441
Frequency high to test	False | Freq [MHz] 2479
Auto Control enabled Power Supply | Climatic Box	Yes | No
Additional Path Loss [dB]	0
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment
Signal analyzerRohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.171
Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI
Power supply,Agilent Technologies,N5767A,US14J1569P,B.00.06,REV:F

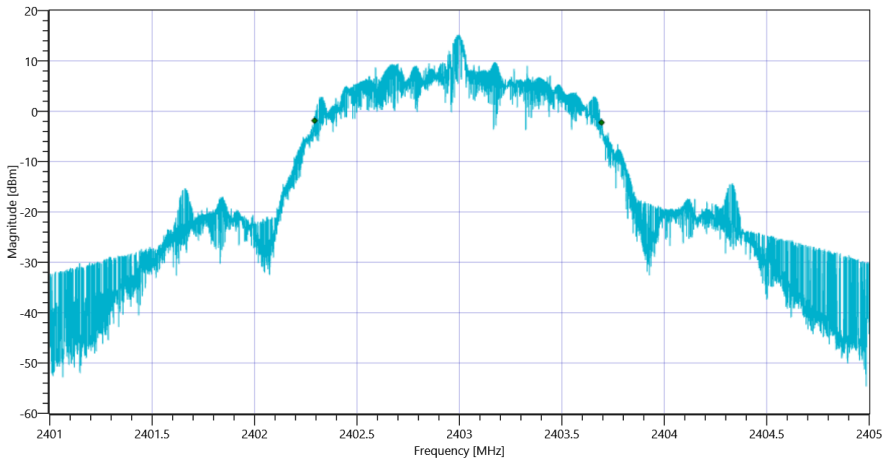
Test at TX 2403 MHz

RESULT: Reference Power cond.					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	14.91	dBm	INFO
Ref. Frequency	---	---	2402.500	MHz	INFO

READ SA SETTINGS:	
RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	19.91 | 10.09 | 25
Start [MHz] | Stop [MHz]	2401.000 | 2405.000
RBW [MHz] | VBW [MHz]	0.050000 | 0.200000
Detector | TraceMode	POS | MAXH
Sweep: Time [ms] | Count | Points per Section | Type	50 | 200 | 10001 | SWE

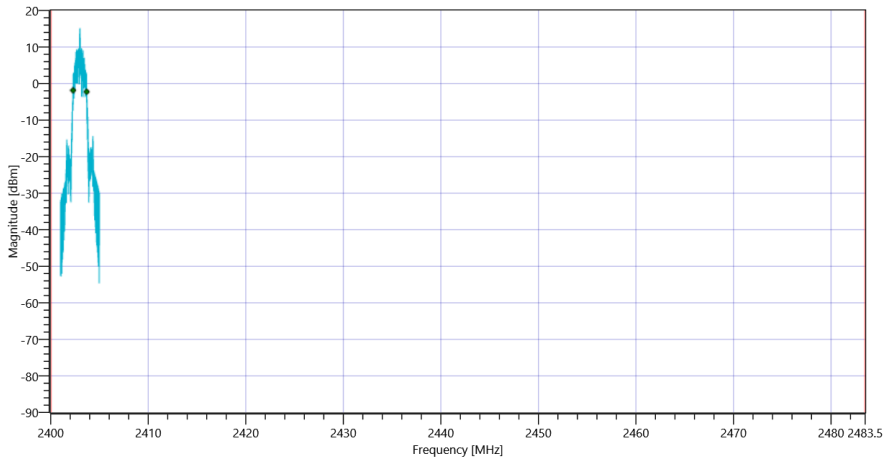
RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 99%	---	---	1401.060	kHz	INFO
T1 99%	2400.000000	---	2402.2925	MHz	PASS
T2 99%	---	2483.500000	2403.6935	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4 99PCT

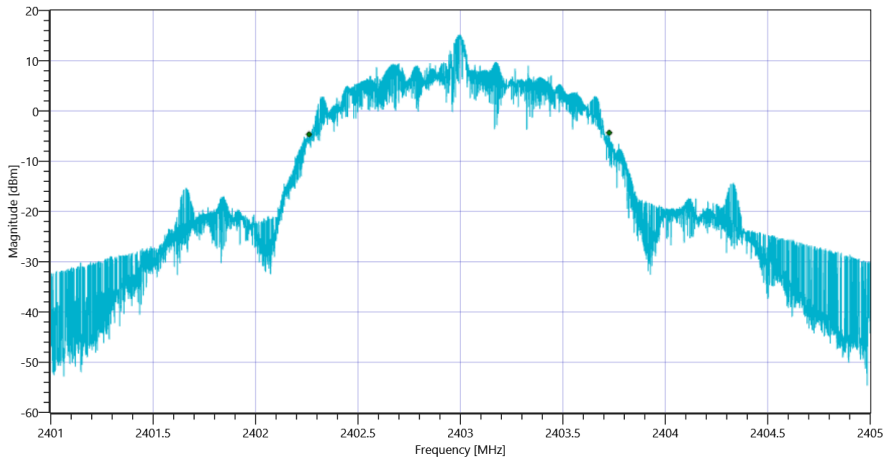
Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4

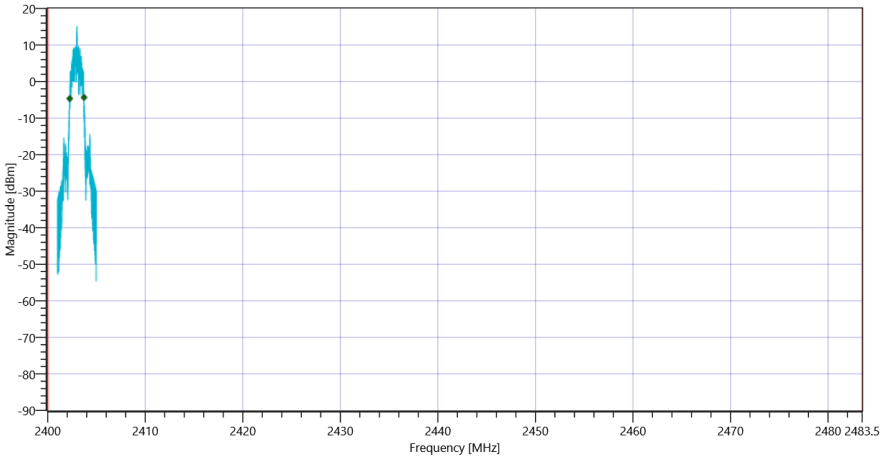
RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Bandwidth 20dB	---	---	1465	kHz	INFO
T1 20DB	2400.000000	---	2402.2608	MHz	PASS
T2 20dB	---	2483.500000	2403.7260	MHz	PASS

Plot: Bandwidth only



FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4 20dB

Plot: Bandwidth within Band



FCC Part 15.247 Bandwidth 99PCT-20dB ~ Generic 2G4

General verdict	PASS

FCC Part 15.247 Maximum Peak Conducted Output Power FHSS ~ Generic 2G4

Test References	
TC Start	18.05.2021 07:08:18
Ambit Temp [°C] | Humidity [rel%]	21.0 | 44
System Version	3.0.1.1
Test Specification	FCC Part 15.247
Test Method	
TC Version	0.0.1
My Description	FCC 15.247 Maximum Peak Output Power Conducted FHSS - Generic 2G4
Add. Information	

EUT Common settings 2G4	
Hopping supported	No
Burst length [ms]	10
Nominal Bandwidth [MHz]	2
User Interaction	No

Test Parameter	
Technology to test	Generic 2G4
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False | Freq [MHz] 2403
Frequency mid to test	True | Freq [MHz] 2441
Frequency high to test	False | Freq [MHz] 2479
Auto Control enabled Power Supply | Climatic Box	Yes | No
Additional Path Loss [dB]	0
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

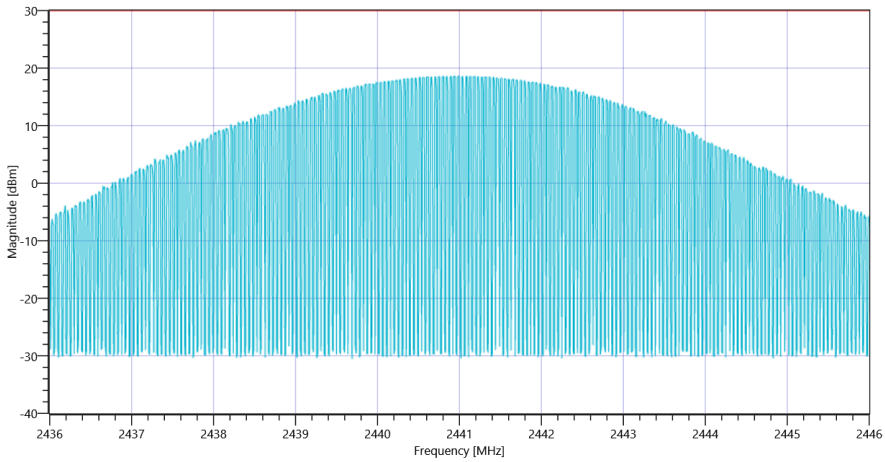
Test Equipment
Signal analyzerRohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.171
Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI
Power supply,Agilent Technologies,N5767A,US14J1569P,B.00.06,REV:F

Test at TX 2441 MHz

RESULT: Reference Power cond.					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	15.64	dBm	INFO
Ref. Frequency	---	---	2441.500	MHz	INFO

READ SA SETTINGS:	
RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	25.64 | 10.1 | 35
Start [MHz] | Stop [MHz]	2436.000 | 2446.000
RBW [MHz] | VBW [MHz]	3.000000 | 10.000000
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	---	30.00	18.58	dBm	PASS
Peak Power	---	1000	72.110748	mW	PASS
Frequency at Peak	---	---	2440.93	MHz	INFO



FCC Part 15.247 Maximum Peak Conducted Output Power FHSS ~ Generic 2G4

General verdict	PASS

FCC Part 15.247 Maximum Peak Conducted Output Power FHSS ~ Generic 2G4

Test References	
TC Start	17.05.2021 16:23:03
Ambit Temp [°C] | Humidity [rel%]	24.4 | 37
System Version	3.0.1.1
Test Specification	FCC Part 15.247
Test Method	
TC Version	0.0.1
My Description	FCC 15.247 Maximum Peak Output Power Conducted FHSS - Generic 2G4
Add. Information	

EUT Common settings 2G4	
Hopping supported	No
Burst length [ms]	10
Nominal Bandwidth [MHz]	2
User Interaction	No

Test Parameter	
Technology to test	Generic 2G4
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False | Freq [MHz] 2403
Frequency mid to test	False | Freq [MHz] 2441
Frequency high to test	True | Freq [MHz] 2479
Auto Control enabled Power Supply | Climatic Box	Yes | No
Additional Path Loss [dB]	0
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

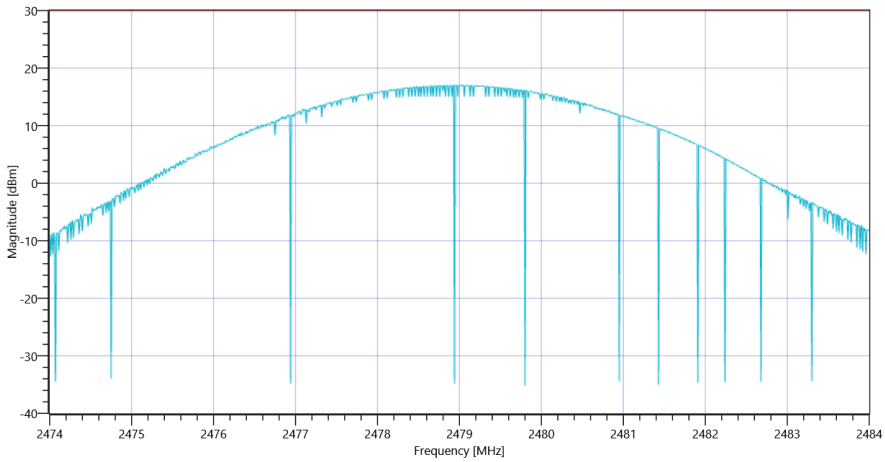
Test Equipment
Signal analyzerRohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.171
Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI
Power supply,Agilent Technologies,N5767A,US14J1569P,B.00.06,REV:F

Test at TX 2479 MHz

RESULT: Reference Power cond.					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	14.48	dBm	INFO
Ref. Frequency	---	---	2478.500	MHz	INFO

READ SA SETTINGS:	
RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	24.48 | 10.15 | 30
Start [MHz] | Stop [MHz]	2474.000 | 2484.000
RBW [MHz] | VBW [MHz]	3.000000 | 10.000000
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	---	30.00	17	dBm	PASS
Peak Power	---	1000	50.118723	mW	PASS
Frequency at Peak	---	---	2478.96	MHz	INFO



FCC Part 15.247 Maximum Peak Conducted Output Power FHSS ~ Generic 2G4

General verdict	PASS

FCC Part 15.247 Maximum Peak Conducted Output Power FHSS ~ Generic 2G4

Test References	
TC Start	17.05.2021 15:51:18
Ambit Temp [°C] | Humidity [rel%]	23.7 | 38
System Version	3.0.1.1
Test Specification	FCC Part 15.247
Test Method	
TC Version	0.0.1
My Description	FCC 15.247 Maximum Peak Output Power Conducted FHSS - Generic 2G4
Add. Information	

EUT Common settings 2G4	
Hopping supported	No
Burst length [ms]	10
Nominal Bandwidth [MHz]	2
User Interaction	No

Test Parameter	
Technology to test	Generic 2G4
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True | Freq [MHz] 2403
Frequency mid to test	False | Freq [MHz] 2441
Frequency high to test	False | Freq [MHz] 2479
Auto Control enabled Power Supply | Climatic Box	Yes | No
Additional Path Loss [dB]	0
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

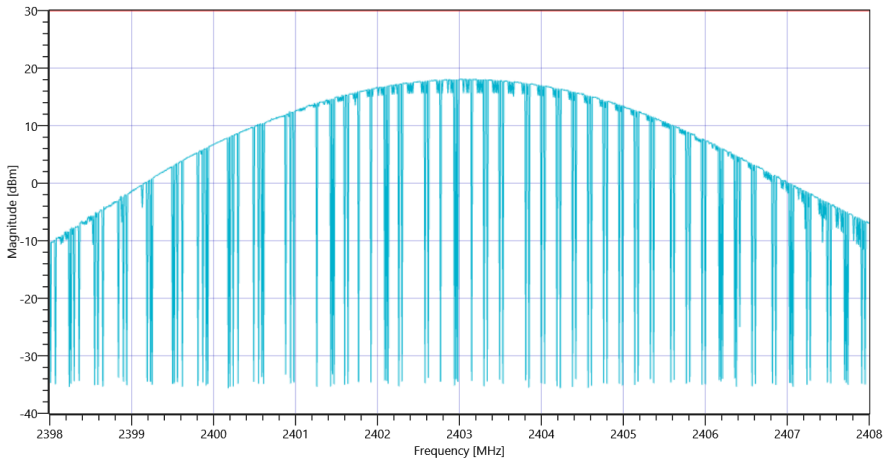
Test Equipment
Signal analyzerRohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.171
Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI
Power supply,Agilent Technologies,N5767A,US14J1569P,B.00.06,REV:F

Test at TX 2403 MHz

RESULT: Reference Power cond.					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	15.06	dBm	INFO
Ref. Frequency	---	---	2402.500	MHz	INFO

READ SA SETTINGS:	
RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	25.06 | 10.09 | 30
Start [MHz] | Stop [MHz]	2398.000 | 2408.000
RBW [MHz] | VBW [MHz]	3.000000 | 10.000000
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	---	30.00	18.06	dBm	PASS
Peak Power	---	1000	63.973484	mW	PASS
Frequency at Peak	---	---	2403.16	MHz	INFO



FCC Part 15.247 Maximum Peak Conducted Output Power FHSS ~ Generic 2G4

General verdict	PASS

FCC Part 15.247 Number Of Hopping Channels FHSS ~ Generic 2G4

Test References	
TC Start	17.05.2021 13:10:21
Ambit Temp [°C] | Humidity [rel%]	23.6 | 38
System Version	3.0.1.1
Test Specification	FCC Part 15.247
Test Method	
TC Version	0.0.1
My Description	FCC 15.247 Number Of Hopping Channels FHSS - Generic 2G4
Add. Information	

EUT Common settings 2G4	
Hopping supported	No
Burst length [ms]	10
Nominal Bandwidth [MHz]	2
User Interaction	No

Test Parameter	
Technology to test	Generic 2G4
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False | Freq [MHz] 2403
Frequency mid to test	False | Freq [MHz] 2441
Frequency high to test	False | Freq [MHz] 2479
Auto Control enabled Power Supply | Climatic Box	No | No
Additional Path Loss [dB]	0
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

Test Equipment
Signal analyzerRohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.171
Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI

Test at TX hopping MHz

RESULT: Reference Power cond.					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	16.15	dBm	INFO
Ref. Frequency	---	---	2434.910	MHz	INFO

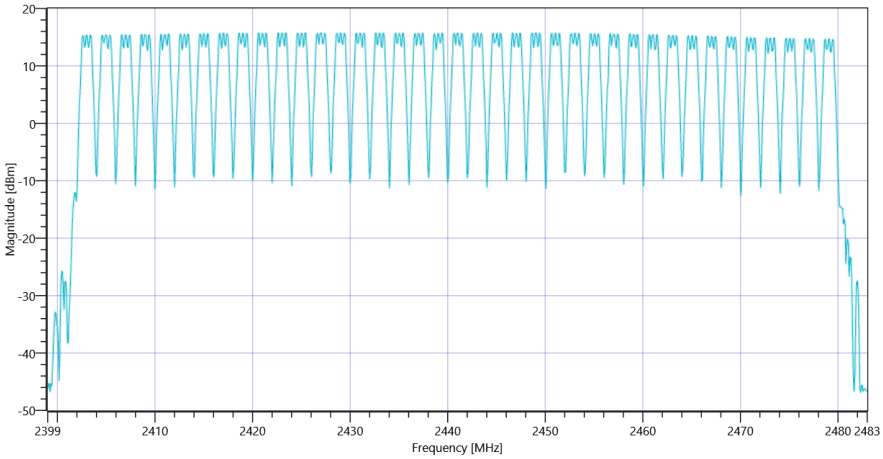
READ SA SETTINGS:	
RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	21.15 | 10.1 | 30
Start [MHz] | Stop [MHz]	2399.000 | 2483.000
RBW [MHz] | VBW [MHz]	0.200000 | 0.500000
Detector | TraceMode	POS | MAXH
Sweep: Time [ms] | Count | Points per Section | Type	1 | 10000 | 1001 | SWE

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Hopp channel (rounded)	---	---	2403	MHz	INFO
Hopp channel (rounded)	---	---	2403	MHz	INFO
Hopp channel (rounded)	---	---	2403	MHz	INFO
Hopp channel (rounded)	---	---	2405	MHz	INFO
Hopp channel (rounded)	---	---	2405	MHz	INFO
Hopp channel (rounded)	---	---	2407	MHz	INFO
Hopp channel (rounded)	---	---	2407	MHz	INFO
Hopp channel (rounded)	---	---	2407	MHz	INFO
Hopp channel (rounded)	---	---	2409	MHz	INFO
Hopp channel (rounded)	---	---	2409	MHz	INFO
Hopp channel (rounded)	---	---	2409	MHz	INFO
Hopp channel (rounded)	---	---	2411	MHz	INFO
Hopp channel (rounded)	---	---	2411	MHz	INFO
Hopp channel (rounded)	---	---	2413	MHz	INFO
Hopp channel (rounded)	---	---	2413	MHz	INFO
Hopp channel (rounded)	---	---	2413	MHz	INFO
Hopp channel (rounded)	---	---	2415	MHz	INFO
Hopp channel (rounded)	---	---	2415	MHz	INFO
Hopp channel (rounded)	---	---	2415	MHz	INFO

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Hopp channel (rounded)	---	---	2417	MHz	INFO
Hopp channel (rounded)	---	---	2417	MHz	INFO
Hopp channel (rounded)	---	---	2417	MHz	INFO
Hopp channel (rounded)	---	---	2419	MHz	INFO
Hopp channel (rounded)	---	---	2419	MHz	INFO
Hopp channel (rounded)	---	---	2421	MHz	INFO
Hopp channel (rounded)	---	---	2421	MHz	INFO
Hopp channel (rounded)	---	---	2421	MHz	INFO
Hopp channel (rounded)	---	---	2423	MHz	INFO
Hopp channel (rounded)	---	---	2423	MHz	INFO
Hopp channel (rounded)	---	---	2423	MHz	INFO
Hopp channel (rounded)	---	---	2425	MHz	INFO
Hopp channel (rounded)	---	---	2425	MHz	INFO
Hopp channel (rounded)	---	---	2425	MHz	INFO
Hopp channel (rounded)	---	---	2427	MHz	INFO
Hopp channel (rounded)	---	---	2427	MHz	INFO
Hopp channel (rounded)	---	---	2429	MHz	INFO
Hopp channel (rounded)	---	---	2429	MHz	INFO
Hopp channel (rounded)	---	---	2431	MHz	INFO
Hopp channel (rounded)	---	---	2431	MHz	INFO
Hopp channel (rounded)	---	---	2433	MHz	INFO
Hopp channel (rounded)	---	---	2433	MHz	INFO
Hopp channel (rounded)	---	---	2433	MHz	INFO
Hopp channel (rounded)	---	---	2435	MHz	INFO
Hopp channel (rounded)	---	---	2435	MHz	INFO
Hopp channel (rounded)	---	---	2437	MHz	INFO
Hopp channel (rounded)	---	---	2437	MHz	INFO
Hopp channel (rounded)	---	---	2437	MHz	INFO

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Hopp channel (rounded)	---	---	2439	MHz	INFO
Hopp channel (rounded)	---	---	2439	MHz	INFO
Hopp channel (rounded)	---	---	2441	MHz	INFO
Hopp channel (rounded)	---	---	2441	MHz	INFO
Hopp channel (rounded)	---	---	2441	MHz	INFO
Hopp channel (rounded)	---	---	2443	MHz	INFO
Hopp channel (rounded)	---	---	2443	MHz	INFO
Hopp channel (rounded)	---	---	2443	MHz	INFO
Hopp channel (rounded)	---	---	2445	MHz	INFO
Hopp channel (rounded)	---	---	2445	MHz	INFO
Hopp channel (rounded)	---	---	2447	MHz	INFO
Hopp channel (rounded)	---	---	2447	MHz	INFO
Hopp channel (rounded)	---	---	2447	MHz	INFO
Hopp channel (rounded)	---	---	2449	MHz	INFO
Hopp channel (rounded)	---	---	2449	MHz	INFO
Hopp channel (rounded)	---	---	2449	MHz	INFO
Hopp channel (rounded)	---	---	2451	MHz	INFO
Hopp channel (rounded)	---	---	2451	MHz	INFO
Hopp channel (rounded)	---	---	2451	MHz	INFO
Hopp channel (rounded)	---	---	2453	MHz	INFO
Hopp channel (rounded)	---	---	2453	MHz	INFO
Hopp channel (rounded)	---	---	2455	MHz	INFO
Hopp channel (rounded)	---	---	2455	MHz	INFO
Hopp channel (rounded)	---	---	2455	MHz	INFO
Hopp channel (rounded)	---	---	2457	MHz	INFO
Hopp channel (rounded)	---	---	2457	MHz	INFO
Hopp channel (rounded)	---	---	2457	MHz	INFO
Hopp channel (rounded)	---	---	2459	MHz	INFO

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Hopp channel (rounded)	---	---	2459	MHz	INFO
Hopp channel (rounded)	---	---	2459	MHz	INFO
Hopp channel (rounded)	---	---	2461	MHz	INFO
Hopp channel (rounded)	---	---	2461	MHz	INFO
Hopp channel (rounded)	---	---	2461	MHz	INFO
Hopp channel (rounded)	---	---	2463	MHz	INFO
Hopp channel (rounded)	---	---	2463	MHz	INFO
Hopp channel (rounded)	---	---	2465	MHz	INFO
Hopp channel (rounded)	---	---	2465	MHz	INFO
Hopp channel (rounded)	---	---	2465	MHz	INFO
Hopp channel (rounded)	---	---	2467	MHz	INFO
Hopp channel (rounded)	---	---	2467	MHz	INFO
Hopp channel (rounded)	---	---	2469	MHz	INFO
Hopp channel (rounded)	---	---	2469	MHz	INFO
Hopp channel (rounded)	---	---	2471	MHz	INFO
Hopp channel (rounded)	---	---	2471	MHz	INFO
Hopp channel (rounded)	---	---	2471	MHz	INFO
Hopp channel (rounded)	---	---	2473	MHz	INFO
Hopp channel (rounded)	---	---	2473	MHz	INFO
Hopp channel (rounded)	---	---	2473	MHz	INFO
Hopp channel (rounded)	---	---	2475	MHz	INFO
Hopp channel (rounded)	---	---	2475	MHz	INFO
Hopp channel (rounded)	---	---	2475	MHz	INFO
Hopp channel (rounded)	---	---	2477	MHz	INFO
Hopp channel (rounded)	---	---	2477	MHz	INFO
Σ Hopping channels	15	---	100	Number	PASS



FCC Part 15.247 Number Of Hopping Channels FHSS ~ Generic 2G4

General verdict	PASS

FCC Part 15.247 TX Spurious Conduced ~ Generic 2G4

Test References	
TC Start	18.05.2021 07:09:57
Ambit Temp [°C] | Humidity [rel%]	21.1 | 44
System Version	3.0.1.1
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 FHSS - Generic 2G4
Add. Information	

EUT Common settings 2G4	
Hopping supported	No
Burst length [ms]	10
Nominal Bandwidth [MHz]	2
User Interaction	No

Test Parameter	
Technology to test	Generic 2G4
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False | Freq [MHz] 2403
Frequency mid to test	True | Freq [MHz] 2441
Frequency high to test	False | Freq [MHz] 2479
Auto Control enabled Power Supply | Climatic Box	Yes | No
Additional Path Loss [dB]	0
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

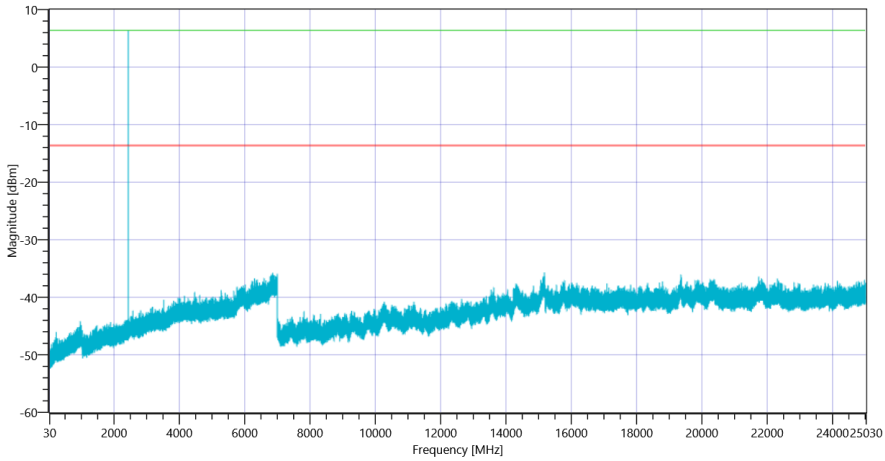
Test Equipment
Signal analyzerRohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.171
Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI
Power supply,Agilent Technologies,N5767A,US14J1569P,B.00.06,REV:F

Test at TX 2441 MHz

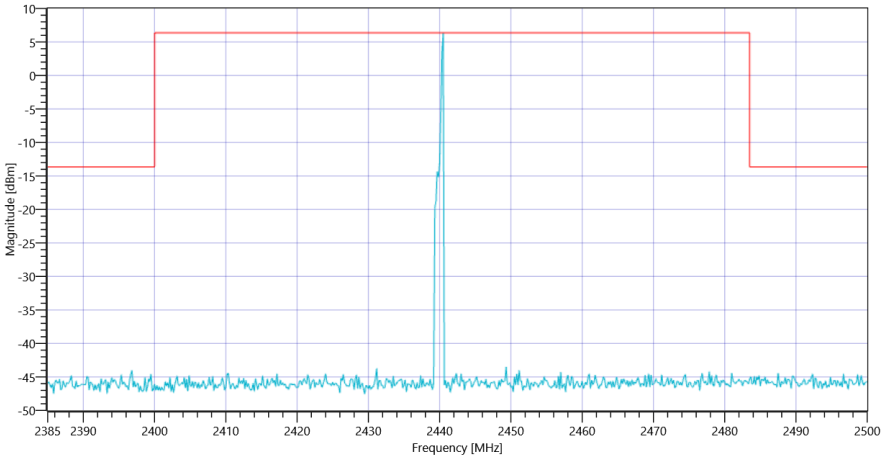
RESULT: Reference Power cond.					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	15.61	dBm	INFO
Ref. Frequency	---	---	2440.500	MHz	INFO

READ SA SETTINGS:	
RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	15.61 | 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 | 40 | 3001 | SWE

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2440.50 MHz	---	---	6.37	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 15180.833 MHz	0	---	22.06	dB	INFO



FCC Part 15.247 TX Spurious Conduced ~ Generic 2G4 2441



FCC Part 15.247 TX Spurious Conduced ~ Generic 2G4 2441

General verdict	PASS

FCC Part 15.247 TX Spurious Conduced ~ Generic 2G4

Test References	
TC Start	17.05.2021 16:24:44
Ambit Temp [°C] | Humidity [rel%]	24.3 | 37
System Version	3.0.1.1
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 FHSS - Generic 2G4
Add. Information	

EUT Common settings 2G4	
Hopping supported	No
Burst length [ms]	10
Nominal Bandwidth [MHz]	2
User Interaction	No

Test Parameter	
Technology to test	Generic 2G4
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	False | Freq [MHz] 2403
Frequency mid to test	False | Freq [MHz] 2441
Frequency high to test	True | Freq [MHz] 2479
Auto Control enabled Power Supply | Climatic Box	Yes | No
Additional Path Loss [dB]	0
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

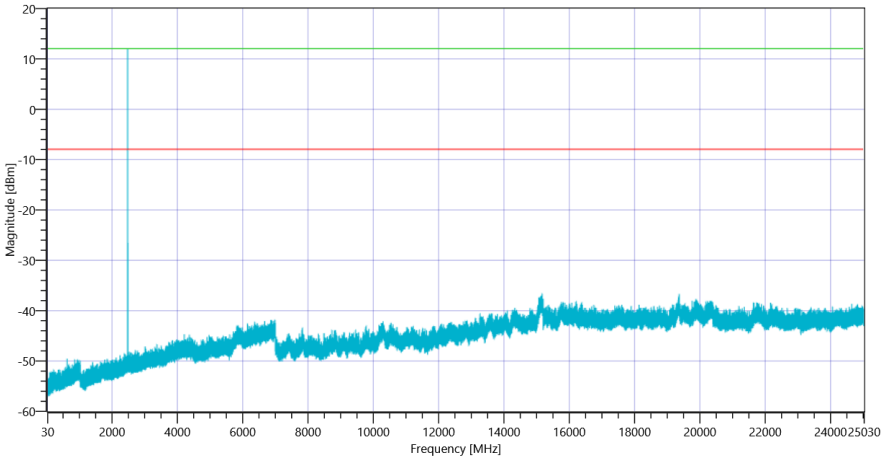
Test Equipment
Signal analyzerRohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.171
Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI
Power supply,Agilent Technologies,N5767A,US14J1569P,B.00.06,REV:F

Test at TX 2479 MHz

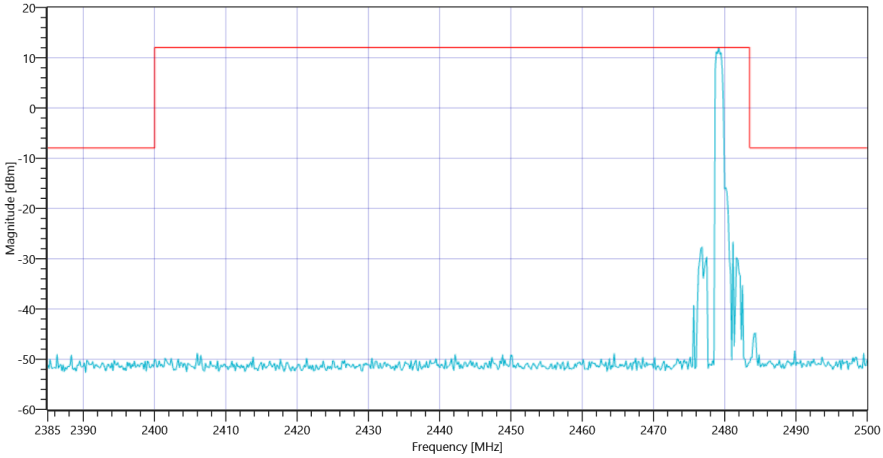
RESULT: Reference Power cond.					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	14.48	dBm	INFO
Ref. Frequency	---	---	2479.500	MHz	INFO

READ SA SETTINGS:	
RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	14.48 | 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	250 | 56 | 3001 | SWE

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2479.17 MHz	---	---	12.04	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 15172 MHz	0	---	28.63	dB	INFO



FCC Part 15.247 TX Spurious Conduced ~ Generic 2G4 2479



General verdict	PASS

FCC Part 15.247 TX Spurious Conduced ~ Generic 2G4

Test References	
TC Start	17.05.2021 16:06:34
Ambit Temp [°C] | Humidity [rel%]	23.9 | 38
System Version	3.0.1.1
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 FHSS - Generic 2G4
Add. Information	

EUT Common settings 2G4	
Hopping supported	No
Burst length [ms]	10
Nominal Bandwidth [MHz]	2
User Interaction	No

Test Parameter	
Technology to test	Generic 2G4
Antenna Port used	1
Temperature	nom
Voltage	nom
Frequency low to test	True | Freq [MHz] 2403
Frequency mid to test	False | Freq [MHz] 2441
Frequency high to test	False | Freq [MHz] 2479
Auto Control enabled Power Supply | Climatic Box	Yes | No
Additional Path Loss [dB]	0
Switched Path	EUT - SignalingUnit - SpectrumAnalyzer

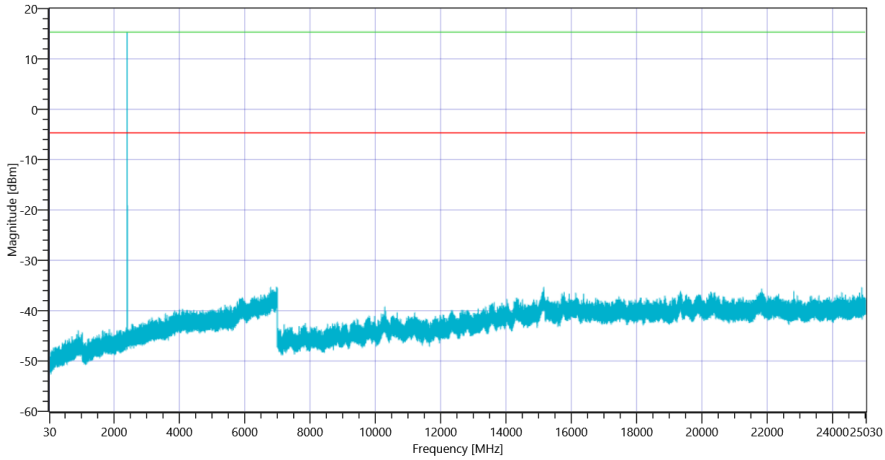
Test Equipment
Signal analyzerRohde&Schwarz,FSV-30,1321.3008K30/103809,3.70
Signaling unit,Rohde&Schwarz,CMW,1201.0002k75/100683,3.7.171
Switch matrix,CTCadvanced,RSM-1 NI DAQ,29655273,NI
Power supply,Agilent Technologies,N5767A,US14J1569P,B.00.06,REV:F

Test at TX 2403 MHz

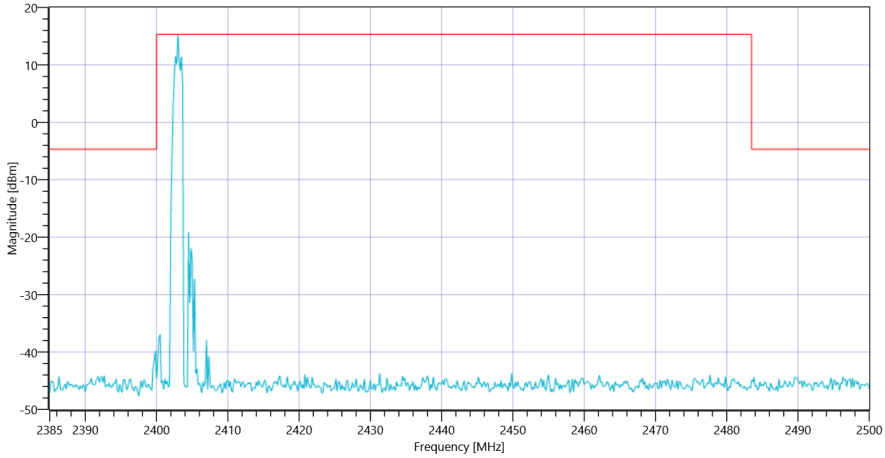
RESULT: Reference Power cond.					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Ref. Power 1MHz/1MHz cond.	---	---	15.08	dBm	INFO
Ref. Frequency	---	---	2402.500	MHz	INFO

READ SA SETTINGS:	
RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	15.08 | 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	250 | 32 | 3001 | SWE

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Reference @ 2403.00 MHz	---	---	15.32	dBm	INFO
No peaks detected	---	---			PASS
Lowest margin to limit 6976.833 MHz	0	---	30.58	dB	INFO



FCC Part 15.247 TX Spurious Conduced ~ Generic 2G4 2403



General verdict	PASS

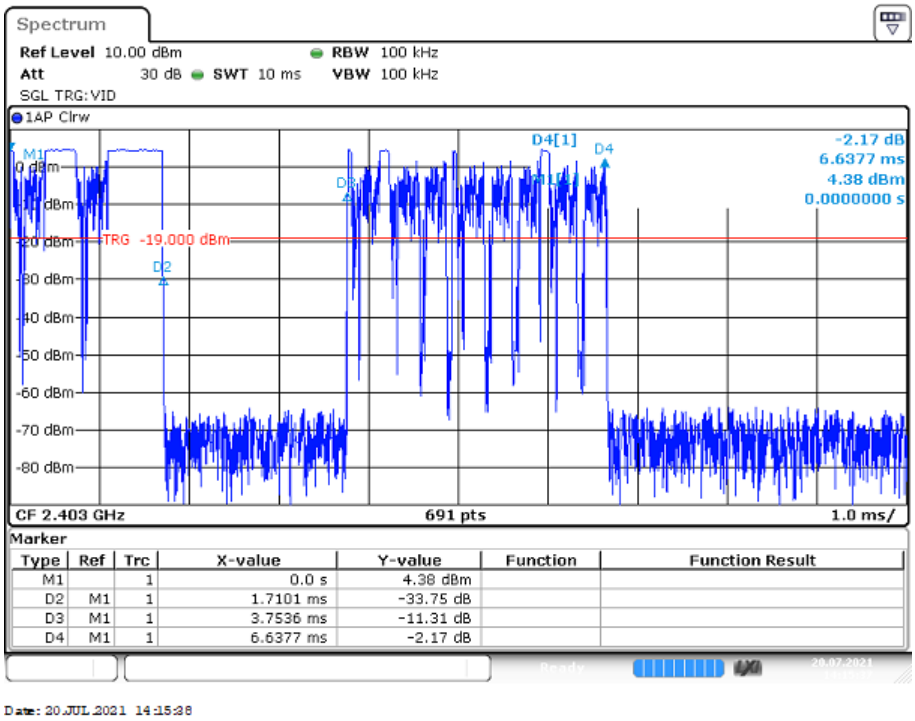
Hardcopy Spectrum Analyzer ~

Test References	
TC Start	20.07.2021 14:18:47
Ambit Temp [°C] | Humidity [rel%]	27.8 | 37
System Version	3.0.1.5
Test Specification	None
Test Method	
TC Version	0.0.1
My Description	Hardcopy Spectrum Analyzer
Add. Information	

Test Parameter	
Technology to test	
Switched Path	None

Test Equipment
Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70

READ SA SETTINGS:	
RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	10.00 | 0 | 30
Start [MHz] | Stop [MHz]	2403.000 | 2403.000
RBW [MHz] | VBW [MHz]	0.100000 | 0.100000
Detector | TraceMode	APE | WRIT
Sweep: Time [ms] | Count | Points per Section | Type	10 | 0 | 691 | SWE



Hardcopy Spectrum Analyzer ~

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Marker Readout					
Marker 1 Time	---	---	0.000	ms	INFO

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Delta Marker Readout					
Delta Marker 2 Time	---	---	1.710	ms	INFO
Delta Marker 2 Level	---	---	-33.755	dB	INFO
Delta Marker 3 Time	---	---	3.754	ms	INFO
Delta Marker 3 Level	---	---	-11.313	dB	INFO
Delta Marker 4 Time	---	---	6.638	ms	INFO
Delta Marker 4 Level	---	---	-2.166	dB	INFO

General verdict	INFO

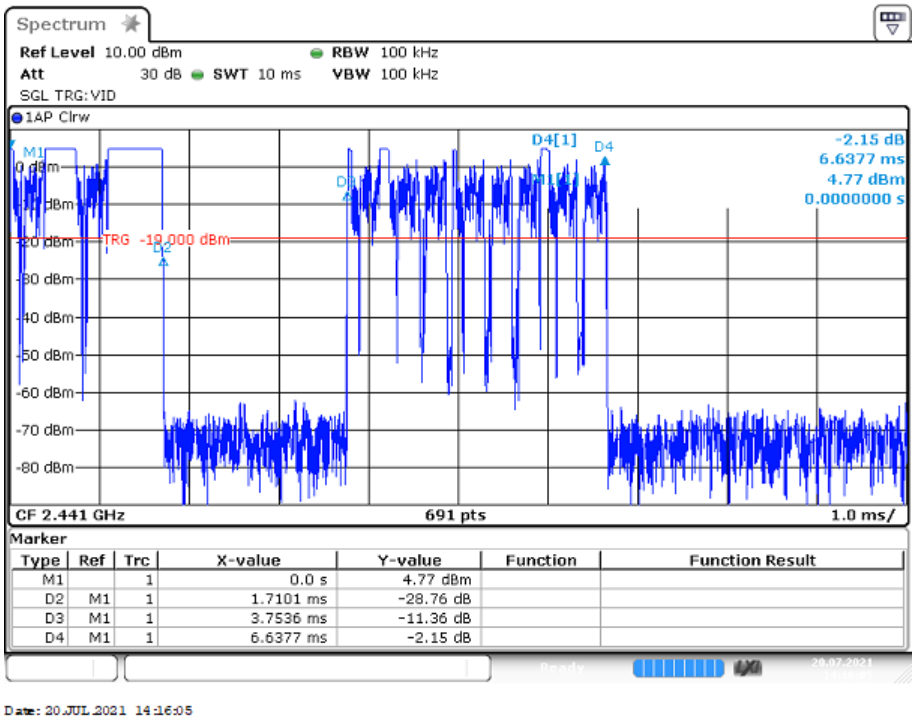
Hardcopy Spectrum Analyzer ~

Test References	
TC Start	20.07.2021 14:19:15
Ambit Temp [°C] | Humidity [rel%]	27.9 | 37
System Version	3.0.1.5
Test Specification	None
Test Method	
TC Version	0.0.1
My Description	Hardcopy Spectrum Analyzer
Add. Information	

Test Parameter	
Technology to test	
Switched Path	None

Test Equipment
Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70

READ SA SETTINGS:	
RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	10.00 | 0 | 30
Start [MHz] | Stop [MHz]	2441.000 | 2441.000
RBW [MHz] | VBW [MHz]	0.100000 | 0.100000
Detector | TraceMode	APE | WRIT
Sweep: Time [ms] | Count | Points per Section | Type	10 | 0 | 691 | SWE



Hardcopy Spectrum Analyzer ~

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Marker Readout					
Marker 1 Time	---	---	0.000	ms	INFO

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Delta Marker Readout					
Delta Marker 2 Time	---	---	1.710	ms	INFO
Delta Marker 2 Level	---	---	-28.757	dB	INFO
Delta Marker 3 Time	---	---	3.754	ms	INFO
Delta Marker 3 Level	---	---	-11.363	dB	INFO
Delta Marker 4 Time	---	---	6.638	ms	INFO
Delta Marker 4 Level	---	---	-2.155	dB	INFO

General verdict	INFO

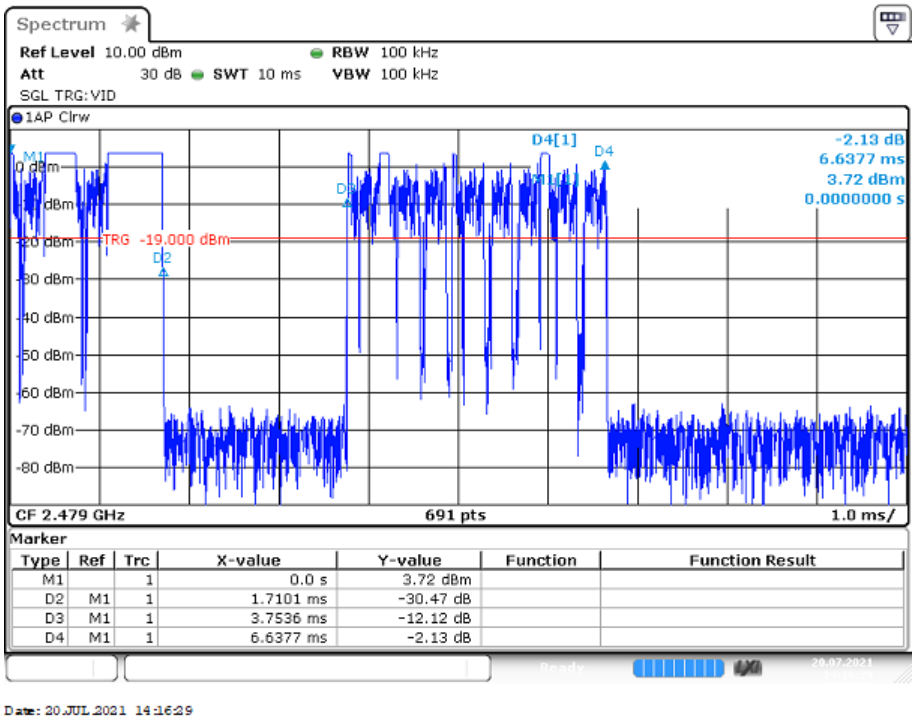
Hardcopy Spectrum Analyzer ~

Test References	
TC Start	20.07.2021 14:19:40
Ambit Temp [°C] | Humidity [rel%]	27.9 | 37
System Version	3.0.1.5
Test Specification	None
Test Method	
TC Version	0.0.1
My Description	Hardcopy Spectrum Analyzer
Add. Information	

Test Parameter	
Technology to test	
Switched Path	None

Test Equipment
Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70

READ SA SETTINGS:	
RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	10.00 | 0 | 30
Start [MHz] | Stop [MHz]	2479.000 | 2479.000
RBW [MHz] | VBW [MHz]	0.100000 | 0.100000
Detector | TraceMode	APE | WRIT
Sweep: Time [ms] | Count | Points per Section | Type	10 | 0 | 691 | SWE



Hardcopy Spectrum Analyzer ~

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Marker Readout					
Marker 1 Time	---	---	0.000	ms	INFO

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Delta Marker Readout					
Delta Marker 2 Time	---	---	1.710	ms	INFO
Delta Marker 2 Level	---	---	-30.470	dB	INFO
Delta Marker 3 Time	---	---	3.754	ms	INFO
Delta Marker 3 Level	---	---	-12.122	dB	INFO
Delta Marker 4 Time	---	---	6.638	ms	INFO
Delta Marker 4 Level	---	---	-2.128	dB	INFO

General verdict	INFO

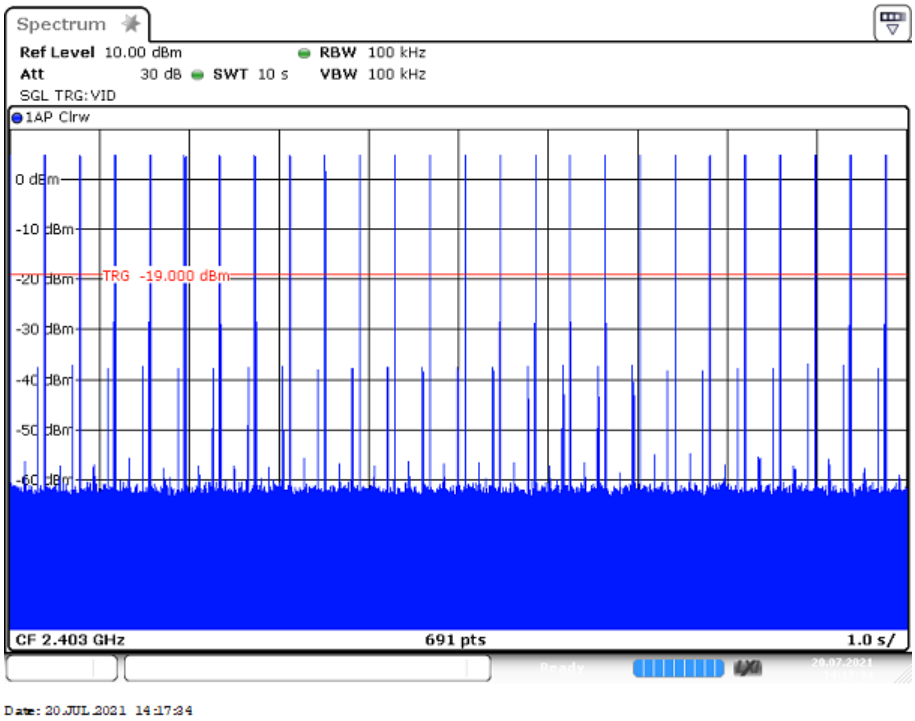
Hardcopy Spectrum Analyzer ~

Test References	
TC Start	20.07.2021 14:20:44
Ambit Temp [°C] | Humidity [rel%]	28.0 | 38
System Version	3.0.1.5
Test Specification	None
Test Method	
TC Version	0.0.1
My Description	Hardcopy Spectrum Analyzer
Add. Information	

Test Parameter	
Technology to test	
Switched Path	None

Test Equipment
Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70

READ SA SETTINGS:	
RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	10.00 | 0 | 30
Start [MHz] | Stop [MHz]	2403.000 | 2403.000
RBW [MHz] | VBW [MHz]	0.100000 | 0.100000
Detector | TraceMode	APE | WRIT
Sweep: Time [ms] | Count | Points per Section | Type	10000 | 0 | 691 | SWE



Hardcopy Spectrum Analyzer ~

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Marker Readout					

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Delta Marker Readout					

General verdict	INFO

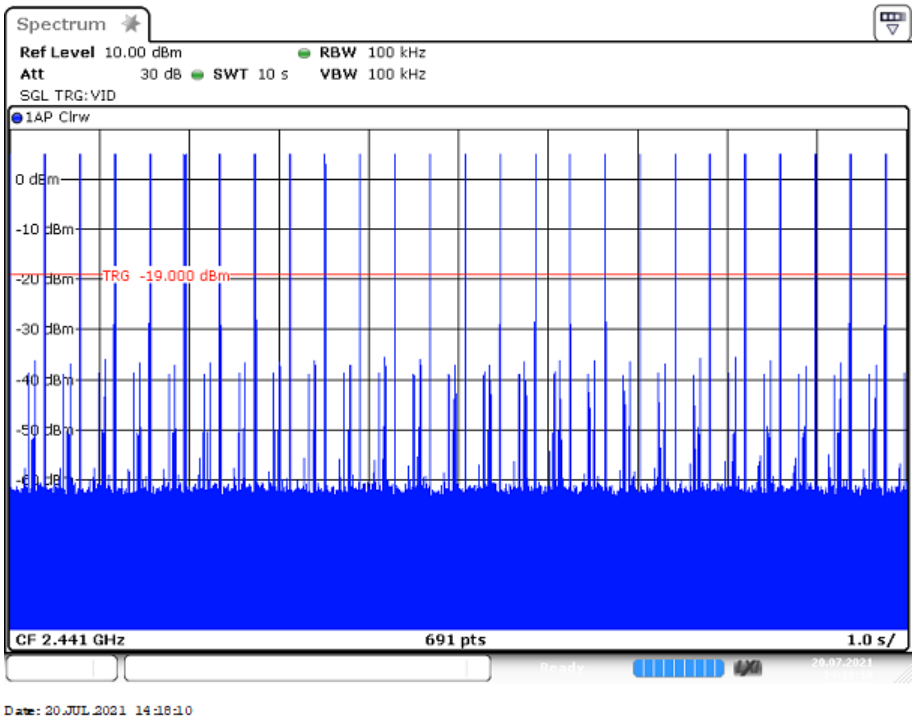
Hardcopy Spectrum Analyzer ~

Test References	
TC Start	20.07.2021 14:21:20
Ambit Temp [°C] | Humidity [rel%]	28.1 | 37
System Version	3.0.1.5
Test Specification	None
Test Method	
TC Version	0.0.1
My Description	Hardcopy Spectrum Analyzer
Add. Information	

Test Parameter	
Technology to test	
Switched Path	None

Test Equipment
Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70

READ SA SETTINGS:	
RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	10.00 | 0 | 30
Start [MHz] | Stop [MHz]	2441.000 | 2441.000
RBW [MHz] | VBW [MHz]	0.100000 | 0.100000
Detector | TraceMode	APE | WRIT
Sweep: Time [ms] | Count | Points per Section | Type	10000 | 0 | 691 | SWE



Hardcopy Spectrum Analyzer ~

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Marker Readout					

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Delta Marker Readout					

General verdict	INFO

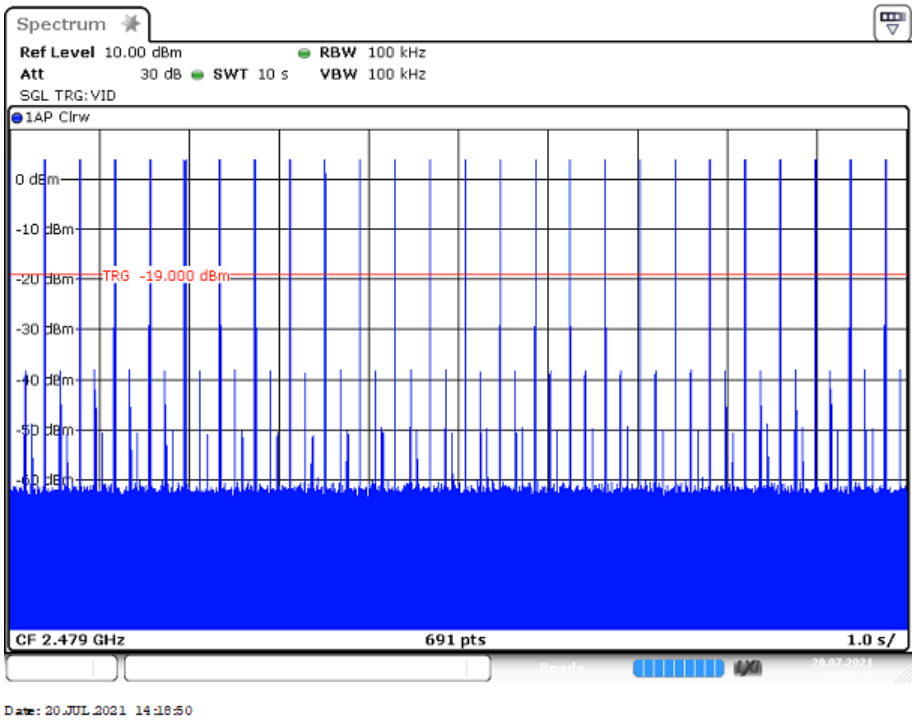
Hardcopy Spectrum Analyzer ~

Test References	
TC Start	20.07.2021 14:22:00
Ambit Temp [°C] | Humidity [rel%]	28.1 | 38
System Version	3.0.1.5
Test Specification	None
Test Method	
TC Version	0.0.1
My Description	Hardcopy Spectrum Analyzer
Add. Information	

Test Parameter	
Technology to test	
Switched Path	None

Test Equipment
Signal analyzer,Rohde&Schwarz,FSV-30,1321.3008K30/103809,3.70

READ SA SETTINGS:	
RefLevel [dBm] | RefLevelOffset [dB] | InpAtt [dB]	10.00 | 0 | 30
Start [MHz] | Stop [MHz]	2479.000 | 2479.000
RBW [MHz] | VBW [MHz]	0.100000 | 0.100000
Detector | TraceMode	APE | WRIT
Sweep: Time [ms] | Count | Points per Section | Type	10000 | 0 | 691 | SWE



Hardcopy Spectrum Analyzer ~

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Marker Readout					

RESULT					
Test Description	Lower Limit	Upper Limit	Measured	Unit	Verdict
Delta Marker Readout					

General verdict	INFO

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