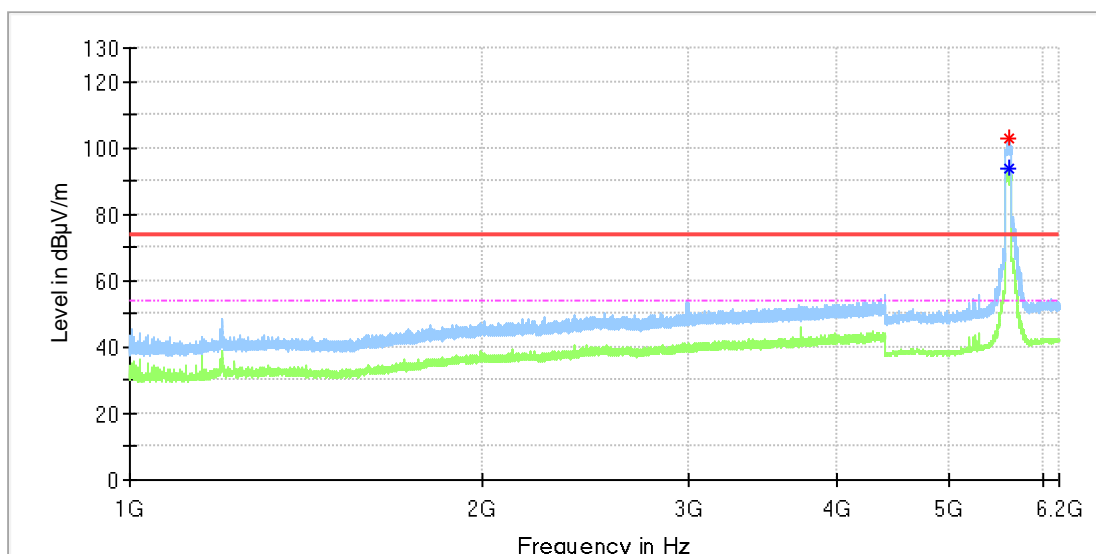


EUT Information

EUT Name:	BT & WLAN Module
Model:	BTWDB01
TestMode:	WIFI 5G_11ac80_Ch122
Test Voltage::	DC 3.3V
Remark:	Temp 24 Humi:47%
Test Standard:	FCC 15.407
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
5617.000000	102.70	---			100.0	H	236.0	13.8
5613.000000	---	94.01			100.0	H	266.0	13.8

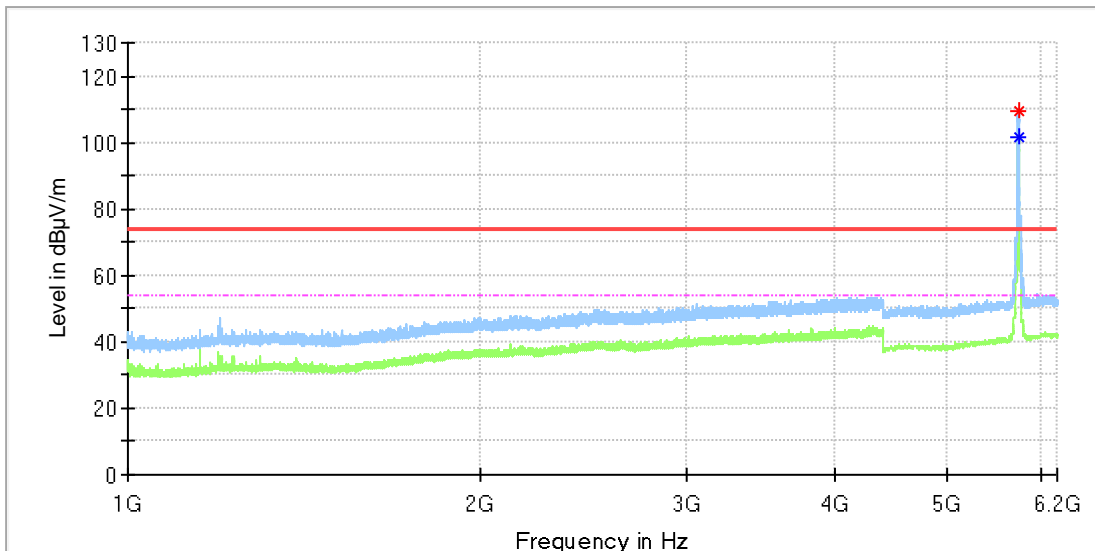
Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

U-NII-3 Band:

EUT Information

EUT Name:	BT & WLAN Module
Model:	BTWDB01
Test Mode:	WIFI 5G_11a_Ch149
Test Voltage::	DC 3.3V
Remark:	Temp 23 Humi:45%
Test Standard:	FCC 15.407
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

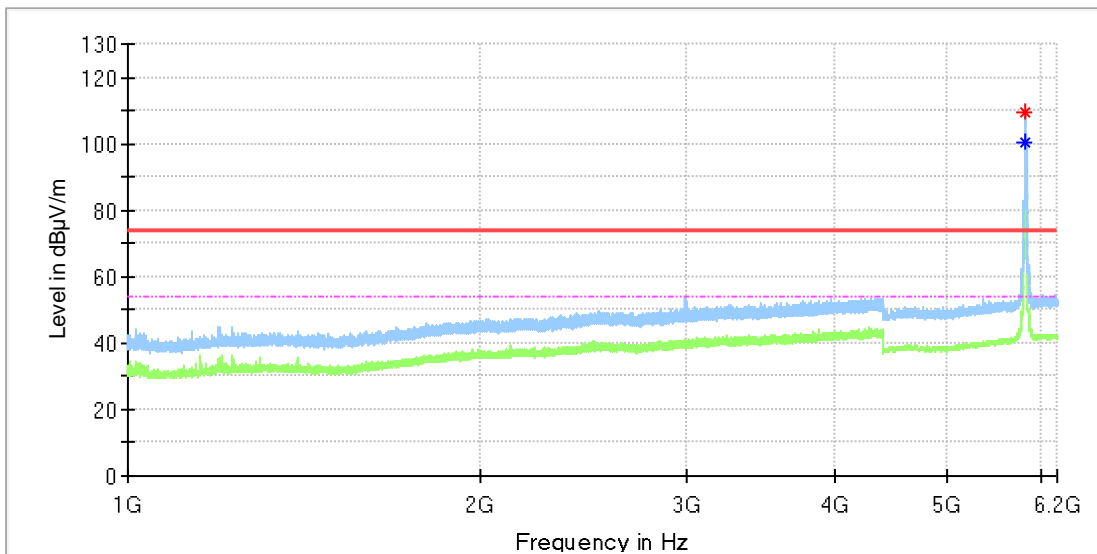
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
5744.000000	---	101.51			100.0	H	259.0	13.9
5746.000000	109.44	---			100.0	H	259.0	13.9

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name:	BT & WLAN Module
Model:	BTWDB01
Test Mode:	WIFI 5G_11a_Ch165
Test Voltage::	DC 3.3V
Remark:	Temp 23 Humi:45%
Test Standard:	FCC 15.407
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

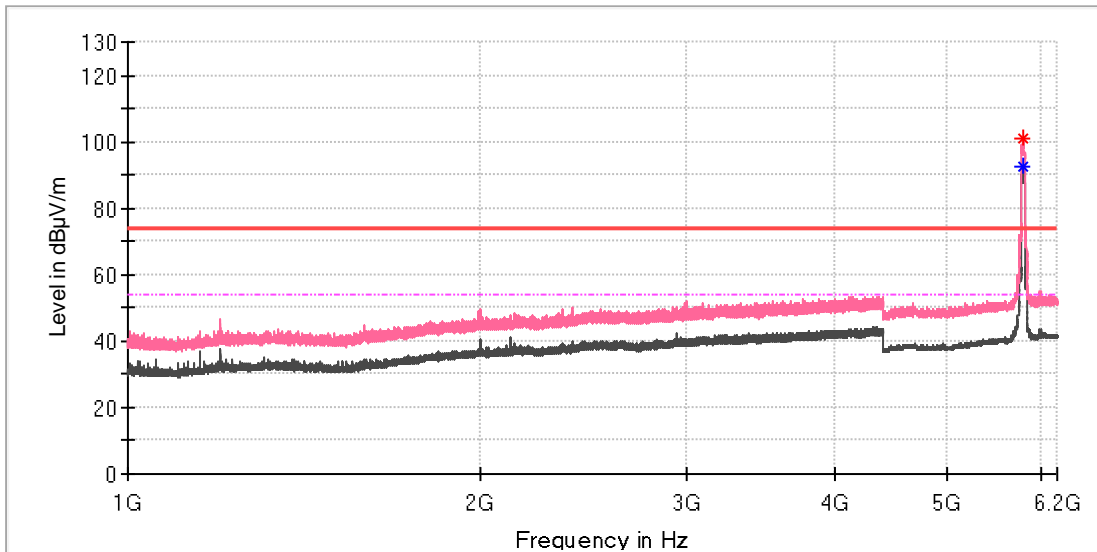
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
5826.000000	109.20	---			100.0	H	261.0	14.1
5826.500000	---	100.33			100.0	H	261.0	14.1

Final Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name:	BT & WLAN Module
Model:	BTWDB01
TestMode:	WIFI 5G_11n40_Ch159
Test Voltage::	DC 3.3V
Remark:	Temp 24 Humi:47%
Test Standard:	FCC 15.407
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
5792.000000	100.80	---			100.0	V	42.0	14.0
5797.500000	---	92.29			100.0	V	42.0	14.0

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

7. Frequency Stability

Test Mode: 802.11a Mode					
Frequency (MHz)	Voltage (Vac)	Temperature (°C)	Measurement Frequency (MHz)	Frequency deviation (Hz)	ppm
5180	120	-5	5179.884	-0.116	-22.3938
		0	5179.885	-0.115	-22.2008
		10	5179.886	-0.114	-22.0077
		20	5179.887	-0.113	-21.8147
		30	5179.881	-0.119	-22.973
		40	5179.882	-0.118	-22.7799
	45	5179.885	-0.115	-22.2008	
	108	25	5179.884	-0.116	-22.3938
	132	25	5179.885	-0.115	-22.2008

Test Mode: 802.11a Mode					
Frequency (MHz)	Voltage (Vac)	Temperature (°C)	Measurement Frequency (MHz)	Frequency deviation (Hz)	ppm
5320	120	-5	5319.881	-0.119	-22.3684
		0	5319.884	-0.116	-21.8045
		10	5319.882	-0.118	-22.1805
		20	5319.883	-0.117	-21.9925
		30	5319.887	-0.113	-21.2406
		40	5319.878	-0.122	-22.9323
	45	5319.877	-0.123	-23.1203	
	108	25	5319.88	-0.12	-22.5564
	132	25	5319.881	-0.119	-22.3684

Test Mode: 802.11a Mode					
Frequency (MHz)	Voltage (Vac)	Temperature (°C)	Measurement Frequency (MHz)	Frequency deviation (Hz)	ppm
5500	120	-5	5499.886	-0.114	-20.7273
		0	5499.885	-0.115	-20.9091
		10	5499.887	-0.113	-20.5455
		20	5499.883	-0.117	-21.2727
		30	5499.882	-0.118	-21.4545
		40	5499.881	-0.119	-21.6364
		45	5499.879	-0.121	-22
	108	25	5499.876	-0.124	-22.5455
	132	25	5499.877	-0.123	-22.3636

Test Mode: 802.11a Mode					
Frequency (MHz)	Voltage (Vac)	Temperature (°C)	Measurement Frequency (MHz)	Frequency deviation (Hz)	ppm
5825	120	-5	5824.87	-0.13	-22.3176
		0	5824.872	-0.128	-21.9742
		10	5824.872	-0.128	-21.9742
		20	5824.873	-0.127	-21.8026
		30	5824.873	-0.127	-21.8026
		40	5824.875	-0.125	-21.4592
		45	5824.877	-0.123	-21.1159
	108	25	5824.876	-0.124	-21.2876
	132	25	5824.875	-0.125	-21.4592

8. Dynamic Frequency Selection (DFS)

FCC 15.407 DFS only 2017

DFS In-Service Monitoring (5290 MHz; 18.000 dBm; 80 MHz)

Test according to FCC title 47 part 15 ?5.407(h), KDB 905462 D02 U-NII DFS Compliance Procedures New Rules v02

Measurement Summary

DUT Frequency (MHz)	Radar Type No.	Type of Measurement value	Overall Result
5290.000000	0	First of all Transmitt Test	---
5290.000000	0	Channel Move Time	PASS
5290.000000	0	Channel Closing Transmission Time	PASS
5290.000000	0	Non-occupancy period	PASS

(continuation of the "Measurement Summary" table from column 4 ...)

DUT Frequency (MHz)	Overall Comment
5290.000000	not performed / not finished
5290.000000	
5290.000000	
5290.000000	

Channel Move Time Detailed Results

DUT Frequency (MHz)	Radar Type No.	CMT Tx Time (s)	CMT Limit (s)	CMT Result
5290.000000	0	4.120	10.000	PASS

(continuation of the "Channel Move Time Detailed Results" table from column 5 ...)

DUT Frequency (MHz)	CMT Comment
5290.000000	Tx Time value is last trailing edge found within sweep. See Note 1.

Channel Closing Transmission Time Detailed Results

DUT Frequency (MHz)	Radar Type No.	CCTT Type of Value	CCTT No. of Pulses found	CCTT Tx Time (ms)
5290.000000	0	first 200 ms	35	6.556
5290.000000	0	remaining 10.0 second(s) period	45	21.004

(continuation of the "Channel Closing Transmission Time Detailed Results" table from column 5 ...)

DUT Frequency (MHz)	CCTT Tx Time Limit (ms)	CCTT Result	CCTT Comment
5290.000000	200.000	PASS	See Note 1.
5290.000000	60.000	PASS	See Note 1.

Non-occupancy period Detailed Results

DUT Frequency (MHz)	Radar Type No.	NOP No. of Pulses found	NOP No. of Pulses Limit	NOP Tx Time (s)	NOP Tx Time Limit (s)
5290.000000	0	0	0	0.000	0.000

(continuation of the "Non-occupancy period Detailed Results" table from column 6 ...)

DUT Frequency (MHz)	NOP Result
5290.000000	PASS

FCC 15.407 DFS only 2017

Transmitting Test Detailed Results

DUT Frequency (MHz)	Tx-Test Result	Tx-Test Comment
5290.000000	---	not performed / not finished

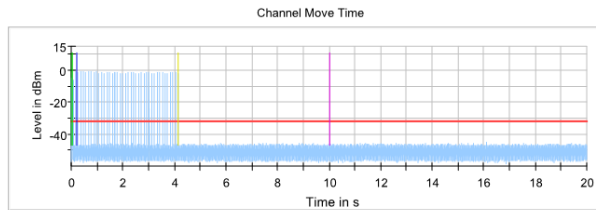
Radar level verification

Description / Formula	Value	Unit
IF(({DFS Mode(0/1/2)}=0)or({DFS Mode(0/1/2)}=1) , IF((dBm2W({Nominal Power[dBm]}>0.2) , -64 , IF({Configured PSD[dBm]}<10) , -62 , -64))+ {Attenuation Vector Generator to DUT[dB]} , -50+ {Attenuation Vector Generator to COMP[dB]}+ {Radar Signal Level Offset[dB]})	Given setting / formula to calculate Vector Generator level	--
Configured DUT EIRP:	31.62	mW
Configured DUT PSD:	-3.70	dBm/MHz
Requirement of the Detection threshold value for this given values acc. to FCC clause 5.2 / Table 3	-62	dBm
Vector Generator level setting	-3.29	dBm
Configured overall pathloss from Vector Generator RF out to DUT connector of 'DUT to OSP'-cable	34.83	dB
Given additional level added to the amplitude of the waveform to account for variations in measurement equipment acc. to FCC clause 5.2 / Table 3 / Note 2	1.00	dB
This results in the following radar signal level at the DUT	-38.12	dBm

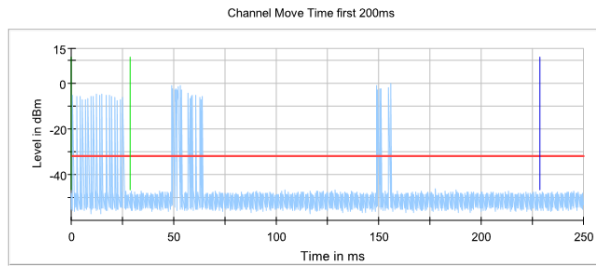
Additional Information

Note	Description
Note 1:	Because of the radar pulse event at the beginning, the investigation of the trace begins with an offset of 28.7 ms conforming to the end of the Radar burst.
Note 2:	Channel move time (CMT) / channel closing transmission time (CCTT) measurement was made with hi resolution video sweep using OSP DAQ channel
Note 3:	Because of the substantially higher sampling rate of the video signal the results for CCTT and CMT are more accurate than in the graphics visible. Reached timing accuracy of the video trace: approx 4
Note 4:	The Non-Occupancy Period trace starts at the end of the Channel move time trace (20.000 secs.) Labeling of the x-axis (time) is relative to its beginning (0 secs.)

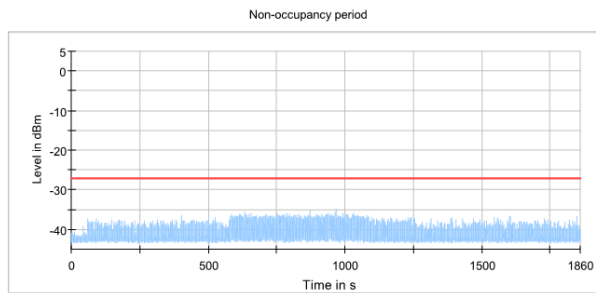
FCC 15.407 DFS only 2017



- Channel Move Time
- Threshold
- Start of Radar
- Trigger at end of Radar
- First 200ms of Channel Closing Tx Time
- 10sec Channel Move Time Limit
- Last measured edge of Channel Closing Tx Time



- Channel Move Time first 200ms
- Threshold
- Start of Radar
- Trigger at end of Radar
- First 200ms of Channel Closing Tx Time



- Non-occupancy period
- Threshold

FCC 15.407 DFS only 2017

Channel Move Time; Channel Closing Transmission Time

Setting	Instrument Value	Target Value
Center Frequency	5.29000 GHz	5.29000 GHz
Span	ZeroSpan	ZeroSpan
RBW	3.000 MHz	>= 3.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	30001	~ 30001
SweepTime	20.000 s	20.000 s
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	0.000 dB
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
SweepType	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 s	0.000 s

Non-occupancy period

Setting	Instrument Value	Target Value
Center Frequency	5.29000 GHz	5.29000 GHz
Span	ZeroSpan	ZeroSpan
RBW	3.000 MHz	>= 3.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	30001	~ 30001
SweepTime	1.860 ks	1.860 ks
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	0.000 dB
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
SweepType	Sweep	AUTO
Preamp	off	off

OSP Video Detector

Setting	Instrument Value	Target Value
Measurement Time	20.000 s	20.000 s
Samplerate	2500 kHz	2500 kHz
Tracepoints	50000000	50000000
Time resolution	4.000	4.000
Detector	Peak	Peak

FCC 15.407 DFS only 2017

DFS In-Service Monitoring (5530 MHz; 18.000 dBm; 80 MHz)

Test according to FCC title 47 part 15 75.407(h), KDB 905462 D02 U-NII DFS Compliance Procedures New Rules v02

Measurement Summary

DUT Frequency (MHz)	Radar Type No.	Type of Measurement value	Overall Result
5530.000000	0	First of all Transmitt Test	---
5530.000000	0	Channel Move Time	PASS
5530.000000	0	Channel Closing Transmission Time	PASS
5530.000000	0	Non-occupancy period	PASS

(continuation of the "Measurement Summary" table from column 4 ...)

DUT Frequency (MHz)	Overall Comment
5530.000000	not performed / not finished
5530.000000	
5530.000000	
5530.000000	

Channel Move Time Detailed Results

DUT Frequency (MHz)	Radar Type No.	CMT Tx Time (s)	CMT Limit (s)	CMT Result
5530.000000	0	4.077	10.000	PASS

(continuation of the "Channel Move Time Detailed Results" table from column 5 ...)

DUT Frequency (MHz)	CMT Comment
5530.000000	Tx Time value is last trailing edge found within sweep. See Note 1.

Channel Closing Transmission Time Detailed Results

DUT Frequency (MHz)	Radar Type No.	CCTT Type of Value	CCTT No. of Pulses found	CCTT Tx Time (ms)
5530.000000	0	first 200 ms	4	1.136
5530.000000	0	remaining 10.0 second(s) period	38	20.252

(continuation of the "Channel Closing Transmission Time Detailed Results" table from column 5 ...)

DUT Frequency (MHz)	CCTT Tx Time Limit (ms)	CCTT Result	CCTT Comment
5530.000000	200.000	PASS	See Note 1.
5530.000000	60.000	PASS	See Note 1.

Non-occupancy period Detailed Results

DUT Frequency (MHz)	Radar Type No.	NOP No. of Pulses found	NOP No. of Pulses Limit	NOP Tx Time (s)	NOP Tx Time Limit (s)
5530.000000	0	0	0	0.000	0.000

(continuation of the "Non-occupancy period Detailed Results" table from column 6 ...)

DUT Frequency (MHz)	NOP Result
5530.000000	PASS

FCC 15.407 DFS only 2017

Transmitting Test Detailed Results

DUT Frequency (MHz)	Tx-Test Result	Tx-Test Comment
5530.000000	---	not performed / not finished

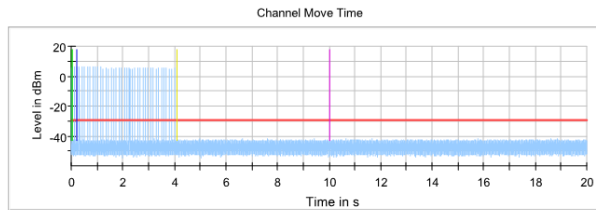
Radar level verification

Description / Formula	Value	Unit
IF({DFS Mode(0/1/2)}=0)or({DFS Mode(0/1/2)}=1) , IF((dBm2W(Nominal Power[dBm])>0.2) , -64 , IF({Configured PSD[dBm]}<10) , -62 , -64)+{Attenuation Vector Generator to DUT[dB]} , -50+{Attenuation Vector Generator to COMP[dB]}+{Radar Signal Level Offset[dB]}	Given setting / formula to calculate Vector Generator level	--
Configured DUT EIRP:	31.62	mW
Configured DUT PSD:	-3.70	dBm/MHz
Requirement of the Detection threshold value for this given values acc. to FCC clause 5.2 / Table 3	-62	dBm
Vector Generator level setting	-1.56	dBm
Configured overall pathloss from Vector Generator RF out to DUT connector of 'DUT to OSP'-cable	35.95	dB
Given additional level added to the amplitude of the waveform to account for variations in measurement equipment acc. to FCC clause 5.2 / Table 3 / Note 2	1.00	dB
This results in the following radar signal level at the DUT	-37.51	dBm

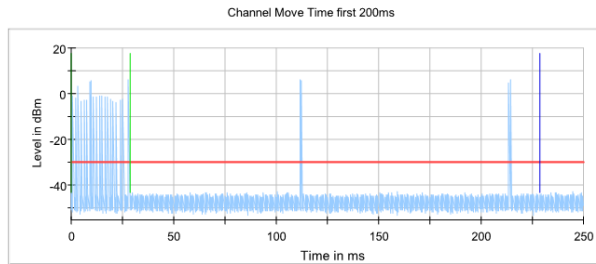
Additional Information

Note	Description
Note 1:	Because of the radar pulse event at the beginning, the investigation of the trace begins with an offset of 28.7 ms conforming to the end of the Radar burst.
Note 2:	Channel move time (CMT) / channel closing transmission time (CCTT) measurement was made with hi resolution video sweep using OSP DAQ channel
Note 3:	Because of the substantially higher sampling rate of the video signal the results for CCTT and CMT are more accurate than in the graphics visible. Reached timing accuracy of the video trace: approx 4
Note 4:	The Non-Occupancy Period trace starts at the end of the Channel move time trace (20.000 secs.) Labeling of the x-axis (time) is relative to its beginning (0 secs.)

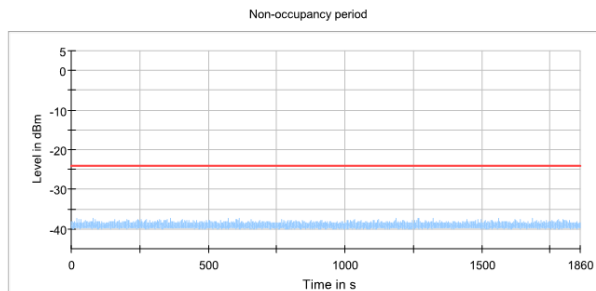
FCC 15.407 DFS only 2017



- Channel Move Time
- Threshold
- Start of Radar
- Trigger at end of Radar
- First 200ms of Channel Closing Tx Time
- 10sec Channel Move Time Limit
- Last measured edge of Channel Closing Tx Time



- Channel Move Time first 200ms
- Threshold
- Start of Radar
- Trigger at end of Radar
- First 200ms of Channel Closing Tx Time



- Non-occupancy period
- Threshold

FCC 15.407 DFS only 2017

Channel Move Time; Channel Closing Transmission Time

Setting	Instrument Value	Target Value
Center Frequency	5.53000 GHz	5.53000 GHz
Span	ZeroSpan	ZeroSpan
RBW	3.000 MHz	>= 3.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	30001	~ 30001
SweepTime	20.000 s	20.000 s
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	0.000 dB
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
SweepType	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 s	0.000 s

Non-occupancy period

Setting	Instrument Value	Target Value
Center Frequency	5.53000 GHz	5.53000 GHz
Span	ZeroSpan	ZeroSpan
RBW	3.000 MHz	>= 3.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	30001	~ 30001
SweepTime	1.860 ks	1.860 ks
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	0.000 dB
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	3 dB	3 dB
Trace Mode	Clear Write	Clear Write
SweepType	Sweep	AUTO
Preamp	off	off

OSP Video Detector

Setting	Instrument Value	Target Value
Measurement Time	20.000 s	20.000 s
Samplerate	2500 kHz	2500 kHz
Tracepoints	5000000	5000000
Time resolution	4.000	4.000
Detector	Peak	Peak