Dynamic Frequency Selection (DFS) Test Report

Product Name	:Smart Display
Trade Name	: Verizon
Model No.	:LVD1
FCC ID	: NKR-LVD1-IDU

- Applicant : Wistron NeWeb Corporation
- Address : No. 20, Yuanqu 2nd Rd., Baoshan Township,,Hsinchu County 30844 Taiwan

Issued Date	:	Jun. 16, 2021
Poport No	•	2150100P E3032610103
Report No.	•	21301091(-13032010103
Report version		

Testing Laboratory 3024

The test results relate only to the samples tested.

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	DFS IEST REPORT Issued Date: Jun. 16. 2021
	Report No.: 2150109R-E3032610103
	DEKRA
Product Name	: Smart Display
Applicant	: Wistron NeWeb Corporation
Address	 No. 20, Yuanqu 2nd Rd., Baoshan Township,,Hsinchu County 30844 Taiwan
Manufacturer	: Wistron NeWeb Corporation
Model No.	 No. 20, Yuanqu 2nd Rd., Baoshan Township,,Hsinchu County 30844 Taiwan
FCC ID	: NKR-LVD1-IDU
EUT Voltage	: 12 Vdc(from adapter)
Trade Name	: Verizon
Applicable Standard	 FCC CFR Title 47 Part 15 Subpart E Section 15.407: 2019 ANSI C63.10: 2013
Laboratory Name	: Hsin Chu Laboratory
Address	 No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C.
Test Result	Complied
Documented By	De-Cloudy.
	(Demi Chang / Senior Engineering Adm. Specialist)
Tested By	Scott drang
	(Scott Chang / Senior Engineer)
Approved By	Louis Hou
	(Louis Hsu / Deputy Manager)



Revision History

Version	Description	Issued Date
V1.0	Initial issue of report.	Jun. 16, 2021

Description



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1. General Information

1.1. EUT Description

Product Name	Smart Display					
Trade Name	Verizon	/erizon				
Model No.	LVD1					
DFS Frequency Range /	IEEE 802.11n/a/ac	5260~5320MHz / 4 Channels				
Number of DFS Channels	(20MHz)	5500~5720MHz / 12 Channels				
	IEEE 802.11n/ac (40MHz)	5270~5310MHz / 2 Channels				
		5510~5710MHz / 6 Channels				
	IEEE 802.11ac (80MHz)	5290~5290MHz / 1 Channel				
		5530~5690MHz / 3 Channel				
Type of Modulation	IEEE 802.11n/a/ac 256QAM, 64QAM, 16QAM, QPSK, BPSK					
Data Rate	IEEE 802.11n/a	6, 9, 18, 24, 36, 48, 54Mbps				
	IEEE 802.11ac	Support a subset of the combination of GI, MCS				
		0~MCS 9 and bandwidth defined in 802.11ac				
Channel Control	Auto					
Channel Bandwidth	20/40/80 MHz					
DFS Function	□Master ∎Slave					
TPC Function	□ <500mW not required $\blacksquare \ge 500$ mW employ a TPC*					
Communication Mode	■ IP Based Systems □ Frame Based System □ Other System					

Ant. No.	Brand	Model No.	Antenna Type	Frequency Range	Ant. Gain
0 WNC	N1/A	DCB Antonno	5250 ~ 5350MHz	2.69dBi	
	WINC	IN/A	PCD Antenna	5470 ~ 5725MHz	3.17dBi
1 WNC	NI/A		5250 ~ 5350MHz	2.83dBi	
	WNC	N/A	PCB Antenna	5470 ~ 5725MHz	1.91dBi

Accessories Information				
Power Adapter 1	Delta, ADP-36DW B I/P: 100-120V~60Hz, 0.9A			
	O/P: 12Vdc, 3.0A Cable Out: Shielded, 1.8m			
Power Adapter 2	Lucent Trans, 1A100-US1230 I/P: 100-120V~60Hz, 0.9A O/P: 12Vdc, 3.0A Cable Out: Shielded, 1.8m			



Channel List

IEEE 802.11a & IEEE 802.11n/ac (20MHz)

Working Frequency of Each Channel								
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency	
52	5260 MHz	56	5280 MHz	60	5300 MHz	64	5320 MHz	
100	5500 MHz	104	5520 MHz	108	5540 MHz	112	5560 MHz	
116	5580 MHz	120	5600 MHz	124	5620 MHz	128	5640 MHz	
132	5660 MHz	136	5680 MHz	140	5700 MHz	144	5720 MHz	

IEEE 802.11n/ac (40MHz)

Working Frequency of Each Channel								
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency	
54	5270MHz	62	5310 MHz	102	5510 MHz	110	5550 MHz	
118	5590MHz	126	5630 MHz	134	5670 MHz	144	5720 MHz	

IEEE 802.11ac (80MHz)

Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
58	5290 MHz	106	5530 MHz	122	5610 MHz	138	5690 MHz

Test Mode Mode 1: Normal Link

1.2. Standard Requirement

FCC Part 15.407:

U-NII devices operating in the 5.25-5.35 GHz band and the 5.47-5.725 GHz band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30dBm. A TPC mechanism is not required for systems with an E.I.R.P. of less than 500mW.

U-NII devices operating in the 5.25-5.35 GHz and 5.47-5.725 GHz bands shall employ a DFS radar detection mechanism to detect the presence of radar systems and to avoid co-channel operation with radar systems.

1.3. UNII Device Description

- (1) The EUT operates in the following DFS band:
 - 1. 5250-5350 MHz
 - 2. 5470-5725 MHz
- (2) The U-NII device maximum power is 23.787dBm (E.I.R.P).

Below are the available 50 ohm antenna assemblies and their corresponding gains. 0dBi gain was used to set the -63 dBm threshold level (-64dBm +1 dB) during calibration of the test setup.

DEKRA

- (3) WLAN traffic is generated by the test software "Iperf.exe" from the Master device to the Slave device in the transfer data rate >17%.
- (4) For the 5250-5350 MHz and 5470-5725 MHz bands, the Master device provides, on aggregate, uniform loading of the spectrum across all devices by selecting an operating channel among the available channels using a random algorithm.



1.4. Test Equipment

DFS / SR10-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A	US47140172	2020/06/18	2021/06/17
ESG Vector Signal Generator	Agilent	E4438C	MY45095759	2021/04/23	2022/04/22
MXG Vector Signal Generator	Keysight	N5182B	MY53052548	2021/02/22	2022/02/21
Horn Antenna	Schwarzbeck	BBHA 9120D	639	2020/06/04	2021/06/03
Horn Antenna	Schwarzbeck	BBHA 9120D	01656	2020/10/14	2021/10/13
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2021/01/25	2022/01/24
Spectrum Analyzer	Keysight	N9030B	MY57140404	2020/06/03	2021/06/02
Signal & Spectrum Analyzer	R&S	FSV40	101049	2021/03/31	2022/03/30

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

Instrument	Manufacturer	Type No.	Serial No	FCC ID
Laptop PC	DELL	Vostro A860	CD8BMH1	
Laptop PC	ASUS	K45VD	0343G3110M	
Wireless Router	ASUS	ASUS RT-AX88U	JCITHP000040	MSQ-RTAXHP00
ATT (Qty: 3)	Mini-Circuits	BW-S3W2 DC-18GHz	0025	
RF Cable (Qty: 6)	Schaffner		25494/6	

Software	Manufacturer	Function
Agilent Signal Studio for DFS_V1.0.0	Agilent	Radar Signal Generation Software
Magic iPerf_V1.0	NextDoorDeveloper	iPerf Tool
Device Firmware Version	Verizon	Android version: 10



1.5. Test Setup



1.6. DFS Detection Thresholds

(1) Interference Threshold value, Master or Client incorporating In-Service Monitoring

Maximum Transmit Power	Value (see note)			
[≥] 200 milliwatt	-64dBm			
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62dBm			
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64dBm			
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive an	ntenna.			
Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of				
the test transmission waveforms to account for variations in measurement equi	pment. This will			
ensure that the test signal is at or above the detection threshold level to trigger	a DFS response.			
Note3: EIRP is based on the highest antenna gain. For MIMO devices refer to	KDB Publication			
662911 D01.				

(2) DFS Response requirement values

Parameter	Value		
Non-Occupancy Period	Minimum 30 Minutes		
Channel Availability Check Time	60 Seconds		
	10 Seconds		
Channel Move Time	See Note 1.		
	200 milliseconds + approx. 60 milliseconds over remaining		
Channel Closing Transmission Time	10 seconds period		
	(See Notes 1 and 2)		
U-NII Detection Bandwidth	Minimum 100% of the 99% power bandwidth See Note 3.		
Note 1: Channel Move Time and the Channel Closing Transmission Time should be performed with			

Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.

Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

Note 3: During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

1.7. Radar Test Waveforms

This section provides the parameters for required test waveforms, minimum percentage of successful detections, and the minimum number of trials that must be used for determining DFS conformance. Step intervals of 0.1 microsecond for Pulse Width, 1 microsecond for PRI, 1 MHz for chirp width and 1 for the number of pulses will be utilized for the random determination of specific test waveforms.

Radar	Pulse	PRI	Number of Pulses	Minimum	Minimum
Type	Width	(usec)	rumber of rubes	Percentage of	Number
Type	(usec)	(µsec)		Successful	of
	(µsee)			Detection	Trials
0	1	1428	18	See Note 1	See Note
, i i i i i i i i i i i i i i i i i i i	1	1420	10		1
1	1	Test A: 15 unique	$\left(\left(\begin{array}{c} 1 \end{array} \right) \right)$	60%	30
		PRI values	$\left(\frac{360}{360}\right)^{1}$		
		randomly selected	Roundup		
		Trom the list of 23	19.10		
		PKI values in	(PRI_{\musec})		
		Table Sa			
		DDI volvos			
		randomly calacted			
		within the range			
		of 518, 2066 uses			
		$01318-3000 \ \mu sec$,			
		increment of 1			
		uses evoluting			
		DPL volues			
		selected in Test A			
2	1-5	150-230	23-20	60%	30
3	6-10	200-500	16-18	60%	30
3	11 20	200-500	12.16	60%	30
A garegate (Radar Types	1_4)	12-10	80%	120
Note 1: Sh	ration Types	1-4/	read for the detection he	0070 ndwidth test sh	120
time and d	hannel closing	time tests		nuwium test, em	annet move
time, and channel closing time tests.					

(1) Short Pulse Radar Test Waveforms

A minimum of 30 unique waveforms are required for each of the Short Pulse Radar Types 2 through 4. If more than 30 waveforms are used for Short Pulse Radar Types 2 through 4, then each additional waveform must also be unique and not repeated from the previous waveforms. If more than 30 waveforms are used for Short Pulse Radar Type 1, then each additional waveform is generated with Test B and must also be unique and not repeated from the previous B and must also be unique and not repeated from the previous B and must also be unique and not repeated from the previous B and must also be unique and not repeated from the previous B and must also be unique and not repeated from the previous Waveforms in Tests A or B.



(2) Long Pulse Radar Test Signal

Radar Waveform	Bursts	Number of Pulses Per Burst	Pulse Width (usec)	Chirp Width (MHz)	PRI (usec)	Minimum Percentage of Successful Detection	Minimum Trials
5	8-20	1-3	50-100	5-20	1000-2000	80%	30

The parameters for this waveform are randomly chosen. Thirty unique waveforms are required for the long pulse radar test signal. If more than 30 waveforms are used for the long pulse radar test signal, then each additional waveform must also be unique and not repeated from the previous waveforms.

Each waveform is defined as follows:

- 1) The transmission period for the Long Pulse Radar test signal is 12 seconds.
- 2) There are a total of 8 to 20 Bursts in the 12 second period, with the number of Bursts being randomly chosen. This number is Burst_Count.
- 3) Each Burst consists of 1 to 3 pulses, with the number of pulses being randomly chosen. Each Burst within the 12 second sequence may have a different number of pulses.
- 4) The pulse width is between 50 and 100 microseconds, with the pulse width being randomly chosen. Each pulse within a Burst will have the same pulse width. Pulses in different Bursts may have different pulse widths.
- 5) Each pulse has a linear frequency modulated chirp between 5 and 20 MHz, with the chirp width being randomly chosen. Each pulse within a transmission period will have the same chirp width. The chirp is centered on the pulse. For example, with a radar frequency of 5300 MHz and a 20 MHz chirped signal, the chirp starts at 5290 MHz and ends at 5310 MHz.
- 6) If more than one pulse is present in a Burst, the time between the pulses will be between 1000 and 2000 microseconds, with the time being randomly chosen. If three pulses are present in a Burst, the time between the first and second pulses is chosen independently of the time between the second and third pulses.
- 7) The 12 second transmission period is divided into even intervals. The number of intervals is equal to Burst_Count. Each interval is of length (12,000,000 / Burst_Count) microseconds. Each interval contains one Burst. The start time for the Burst, relative to the beginning of the interval, is between 1 and [(12,000,000 / Burst_Count) (Total Burst Length) + (One Random PRI Interval)] microseconds, with the start time being randomly chosen. The step interval for the start time is 1 microsecond. The start time for each Burst is chosen independently.

A representative example of a Long Pulse radar test waveform:

- 1) The total test signal length is 12 seconds.
- 2) 8 Bursts are randomly generated for the Burst_Count.
- 3) Burst 1 has 2 randomly generated pulses.
- 4) The pulse width (for both pulses) is randomly selected to be 75 microseconds.
- 5) The PRI is randomly selected to be at 1213 microseconds.
- 6) Bursts 2 through 8 are generated using steps 3 5.
- 7) Each Burst is contained in even intervals of 1,500,000 microseconds. The starting location for Pulse 1, Burst 1 is randomly generated (1 to 1,500,000 minus the total Burst 1 length + 1 random PRI interval) at the 325,001 microsecond step. Bursts 2 through 8 randomly fall in successive 1,500,000 microsecond intervals (i.e. Burst 2 falls in the 1,500,001 3,000,000 microsecond range).



Graphical Representation of a Long Pulse radar Test Waveform



(3) Frequency Hopping Radar Test Signal

Radar	Pulse	PRI	Hopping	Pulses	Hopping	Minimum	Minimum
Waveform	Width	$(\mu \operatorname{sec})$	Sequence	геі пор	Rate	Percentage	Trials
	$(\mu \operatorname{sec})$		Length		(kHz)	of	
			(msec)			Successful	
						Detection	
6	1	333	300	9	0.333	70%	30

For the Frequency Hopping Radar Type, the same *Burst* parameters are used for each waveform. The hopping sequence is different for each waveform and a 100-length segment is selected from the hopping sequence defined by the following algorithm:

The first frequency in a hopping sequence is selected randomly from the group of 475 integer frequencies from 5250 – 5724 MHz. Next, the frequency that was just chosen is removed from the group and a frequency is randomly selected from the remaining 474 frequencies in the group. This process continues until all 475 frequencies are chosen for the set. For selection of a random frequency, the frequencies remaining within the group are always treated as equally likely.

1.8. Radar Waveform Calibration

The following equipment setup was used to calibrate the conducted radar waveform. A spectrum analyzer was used to establish the test signal level for each radar type. During this process there were replace 50ohm terminal from master and client device and no transmissions by either the master or client device. The spectrum analyzer was switched to the zero span (time domain) at the frequency of the radar waveform generator. Peak detection was utilized. The spectrum analyzer resolution bandwidth (RBW) and video bandwidth (VBW) were set to 1MHz and 1MHz.

The signal generator amplitude was set so that the power level measured at the spectrum analyzer was -63dBm due to the interference threshold level is not required.

Radiated Calibration Setup





1.9. Radar Waveform Calibration Result

Product	Smart Display		
Test Item	Radar Waveform Calibration		
Date of Test	2021/05/14 Test Site SR10-H		
Temperature (°C)	24.9	Humidity (%RH)	57



Radar Type 0





Calibration Plot (IEEE 802.11ac_20M_5300MHz)

Radar Type 2







Calibration Plot (IEEE 802.11ac_20M_5300MHz)

Radar Type 4







Calibration Plot (IEEE 802.11ac_20M_5300MHz)

Radar Type 6











Calibration Plot (IEEE 802.11ac_20M_5500MHz)

Radar Type 2







Calibration Plot (IEEE 802.11ac_20M_5500MHz)

Radar Type 4







Calibration Plot (IEEE 802.11ac_20M_5500MHz)

Radar Type 6







Radar Type 0 Calibration Plot (IEEE 802.11ac_80M_5290MHz)







Radar Type 2







Calibration Plot (IEEE 802.11ac_80M_5290MHz)

Radar Type 4







Calibration Plot (IEEE 802.11ac_80M_5290MHz)

Radar Type 6











Calibration Plot (IEEE 802.11ac_80M_5530MHz)

Radar Type 2







Calibration Plot (IEEE 802.11ac_80M_5530MHz)

Radar Type 4







Calibration Plot (IEEE 802.11ac_80M_5530MHz)

Radar Type 6



2. In-Service Monitoring for Channel Move Time and Channel Closing Transmission Time and Non-Occupancy Period

2.1. Test Procedure

The EUT was tested according to U-NII test procedure of KDB905462 D02 for compliance to FCC 47CFR 15.407 requirements.

These tests define how the following DFS parameters are verified during In-Service Monitoring; Channel Closing Transmission Time, Channel Move Time, and Non-Occupancy Period. The steps below define the procedure to determine the above mentioned parameters when a radar Burst with a level equal to the DFS Detection Threshold + 1dB (-63dBm) is generated on the Operating Channel of the U-NII device.

A U-NII device operating as a Client Device will associate with the UUT (Master) at 5300MHz/ 5510MHz and 5630MHz.

Stream the MPEG test file from the Master Device to the Client Device on the selected Channel for the entire period of the test.

At time T0 the Radar Waveform generator sends a Burst of pulses for each of the radar types at -63dBm.

Observe the transmissions of the UUT at the end of the radar Burst on the Operating Channel for duration greater than 10 seconds. Measure and record the transmissions from the UUT during the observation time (Channel Move Time). Compare the Channel Move Time and Channel Closing Transmission Time results to the limits defined in the DFS Response requirement values table.

Measure the UUT for more than 30 minutes following the channel close/move time to verify that the UUT does not resume any transmissions on this Channel.

2.2. Test Requirement

Parameter	Value
Channel Move Time	10 Seconds
Channel Closing	200 milliseconds + approx. 60 milliseconds over remaining
Transmission Time	10 seconds period
Non-Occupancy Period	Minimum 30 minutes

2.3. Uncertainty

± 1ms.

2.4. Test Result of Channel Move Time and Channel Closing Transmission Time and

Product	Smart Display				
Teat Item	Channel Move Time and Channel Closing Transmission Time and Non-Occupancy				
Test nem	Period				
Test Mode	Mode 1: Normal Link				
Date of Test	2021/05/24 Test Site SR10-H				
Temperature (°C)	26.4 Humidity (%RH) 57				

Non-Occupancy Period

Channel Move Time and Channel Closing Transmission Time at IEEE 802.11ac_20M_5300MHz



Test Item	Test Result (Sec)	Limit (Sec)
Channel Move Time	0.612	10
Channel Closing Transmission	0.012	200 milliseconds + approx. 60 milliseconds
		over remaining 10 seconds period







Test Item	Test Result (Sec)	Limit (Sec)
Channel Move Time	0.6135	10
Channel Closing Transmission	0.0135	200 milliseconds + approx. 60 milliseconds
		over remaining 10 seconds period







Test Item	Test Result (Sec)	Limit (Sec)
Channel Move Time	0.7155	10
Channel Closing Transmission	0.0165	200 milliseconds + approx. 60 milliseconds
		over remaining 10 seconds period







Test Item	Test Result (Sec)	Limit (Sec)
Channel Move Time	0.8175	10
Channel Closing Transmission	0.0615	200 milliseconds + approx. 60 milliseconds
		over remaining 10 seconds period



30 Minutes Non-Occupancy Period for Radar Test Signal D.3.1 at 5300MHz

Spectrum Analy Swept SA	/zer 1 🔹 🔹	÷					Frequency	· • • • • • • • • • • • • • • • • • • •
	Input: RF Coupling: AC Align: Auto	Input Ζ: 50 Ω Corrections: Off Freq Ref: Int (S)	Atten: 10 dB Preamp: Off	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Log-Po Trig: Free Run	Wer 123456 WWWWWW PNNNNN	Center Frequency 5.30000000 GHz	Settings
1 Spectrum	۲	R	ef Lvi Offset -7	.48 dB	I	Mkr1 1.000 s	0.00000000 Hz	
Scale/Div 10 d	B	R	tef Level -7.48 d	Bm		-30.84 dBm	Swept Span Zero Span	
-17.5							Full Span	
-27.5							Start Freq 5.30000000 GHz	
-37.5							Stop Freq 5.30000000 GHz	
-57.5							AUTO TUNE	
-67.5				estudite topic letters and a second state of the	an alter Alexandre and Analisia de Francisco de		CF Step 1.000000 MHz	
-77.5							Auto Man	
-97.5							Freq Offset	
Center 5.30000 Res BW 1.0 M	00000 GHz Hz		#Video BW 1.0	MHz	Sweep 2.0	Span 0 Hz 000 ks (10001 pts)	X Axis Scale	
1		May 24, 2021 2:22:04 PM					Signal Track (Span Zoom)	

Test Item	Limit	Results
Non-Occupancy Period	30 Minutes	Pass



30 Minutes Non-Occupancy Period for Radar Test Signal D.3.1 at 5500MHz

Spectrum Analy Swept SA	/zer 1 🔹 🕇	-						\$	Frequency	•	:
	Input: RF Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S)	Atten: 10 dB Preamp: Off	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Log Trig: Free Run	-Power	123456 WWWWWW PNNNNN	Center Fi 5.50000	requency D000 GHz	Settings	
1 Spectrum	T	R	ef Lvi Offset -7.1	18 dB		Mkr1	200.0 ms	0.00000	000 Hz		
Scale/Div 10 d	B	R	ef Level -7.18 di	Bm		-30	6.50 dBm	Swe	pt Span Span		
-17.2								Fu	ll Span		
-27.2								Start Free 5.50000	ן 2000 GHz		
-47.2								Stop Free 5.50000	1 0000 GHz		
-57.2									OTUNE		
-67.2		tool best but whether have proved	and the second sec	biletile de sectio de la constant de sec		والمراجل والمراج		CF Step 1.00000) MHz		
-77.2								Auto			
-97.2								Freq Offs 0 Hz	et		
Center 5.50000 Res BW 1.0 Mi	00000 GHz Hz		#Video BW 1.0 N	MHz	Sweep	2.000 ks	Span 0 Hz s (10001 pts)	X Axis So Log	ale		
1)	┍┙ 🔳 ?	May 24, 2021 3:34:52 PM			P + B D + B + B			Signal Tra (Span Zoo	ack m)		

Test Item	Limit	Results
Non-Occupancy Period	30 Minutes	Pass



30 Minutes Non-Occupancy Period for Radar Test Signal D.3.1 at 5290MHz

Spectrum Analy Swept SA	zer 1 🔹 🕇	•					Frequency	• • 👯
	Input: RF Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S)	Atten: 10 dB Preamp: Off	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Log-Pow Trig: Free Run	er 123456 WWWWWW PNNNNN	Center Frequency 5.29000000 GHz	Settings
1 Spectrum	T	R	ef LvI Offset -7.	48 dB	N	lkr1 1.000 s	0.00000000 Hz	
Scale/Div 10 d	B	R	ef Level -7.48 d	Bm		-48.50 dBm	Swept Span Zero Span	
-17.5							Full Span	
-27.5							Start Freq 5 29000000 GHz	
-37.5							Stop Freq	
-47.5 🧲							5.29000000 GHz	
-57.5							AUTO TUNE	
-67.5	des eff. Hereiter i Maria andre Ballynstelle			a hay na yaya ang kana ya kana na kana na sha na ma			CF Step 1.000000 MHz	
-77.5							Auto Man	
-87.5							Freq Offset	
-97.5							0 Hz	
Center 5.29000 Res BW 1.0 MH	00000 GHz Iz		#Video BW 1.0	MHz	Sweep 2.00	Span 0 Hz 00 ks (10001 pts)	X Axis Scale Log Lin	
1)	┍┙ 🔳 ?	May 24, 2021 4:32:19 PM					Signal Track (Span Zoom)	

Test Item	Limit	Results
Non-Occupancy Period	30 Minutes	Pass



30 Minutes Non-Occupancy Period for Radar Test Signal D.3.1 at 5530MHz

Spectrum Anal Swept SA KEYSIGHT ↔	lyzer 1	H Input Z: 50 Ω Corrections: Off Freq Ref: Int (S)	Atten: 10 dB Preamp: Off	PNO: Fast Gate: Off IF Gain: Low	Avg Type: Log- Trig: Free Run	Power	123456 WWWWWW	Frequency 5.53000000 GHz	v v ;;; Settings
Da 1 Spectrum Scale/Div 10 d	dB	F	Ref LvI Offset -6 Ref Level -6.76 c	Sig Track: Off .76 dB IBm		Mkr1 -49	3.400 s .70 dBm	Span 0.00000000 Hz Swept Span	
-16.8								E Zero Span	
-26.8								Start Freq 5.530000000 GHz	
-46.8								5.53000000 GHz	
-66.8	s an and another and a state of		terter en ter en anter et te	an de secto de como e a la cila fac		- de la compañía de l	a baya dana dista da k	CF Step 1.000000 MHz	
-86.8								Auto Man Freq Offset	
-96.8	000000 GHz		#Video BW 1.0	MHz			Span 0 Hz	0 Hz X Axis Scale	
Res BW 1.0 M		May 24, 2021 5:31:26 PM			Sweep	2.000 ks	(10001 pts)	Signal Track	

Test Item	Limit	Results
Non-Occupancy Period	30 Minutes	Pass