

Figure 8.19-11: Received channel list for coordinates set in scenario (d). PLMRS/CMRS operations channel 16 at location coordinates 36.1N, 117.9W

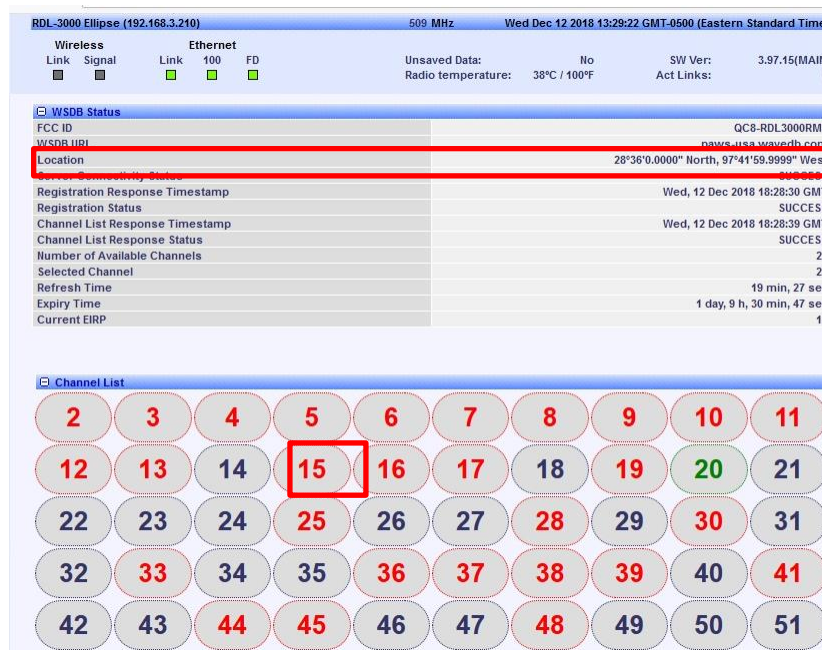


Figure 8.19-12: Received channel list for coordinates set in scenario (e). Offshore radiotelephone on channel 15 at location coordinates 28.6N, 97.1W

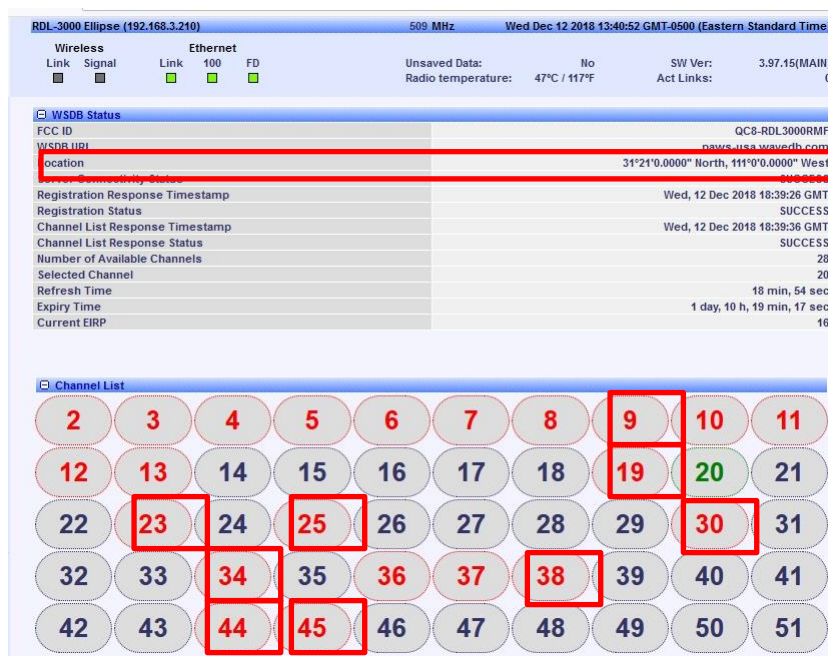


Figure 8.19-13: Received channel list for coordinates set in scenario (g). Mexico border at location coordinates 31.35N, 111.0W

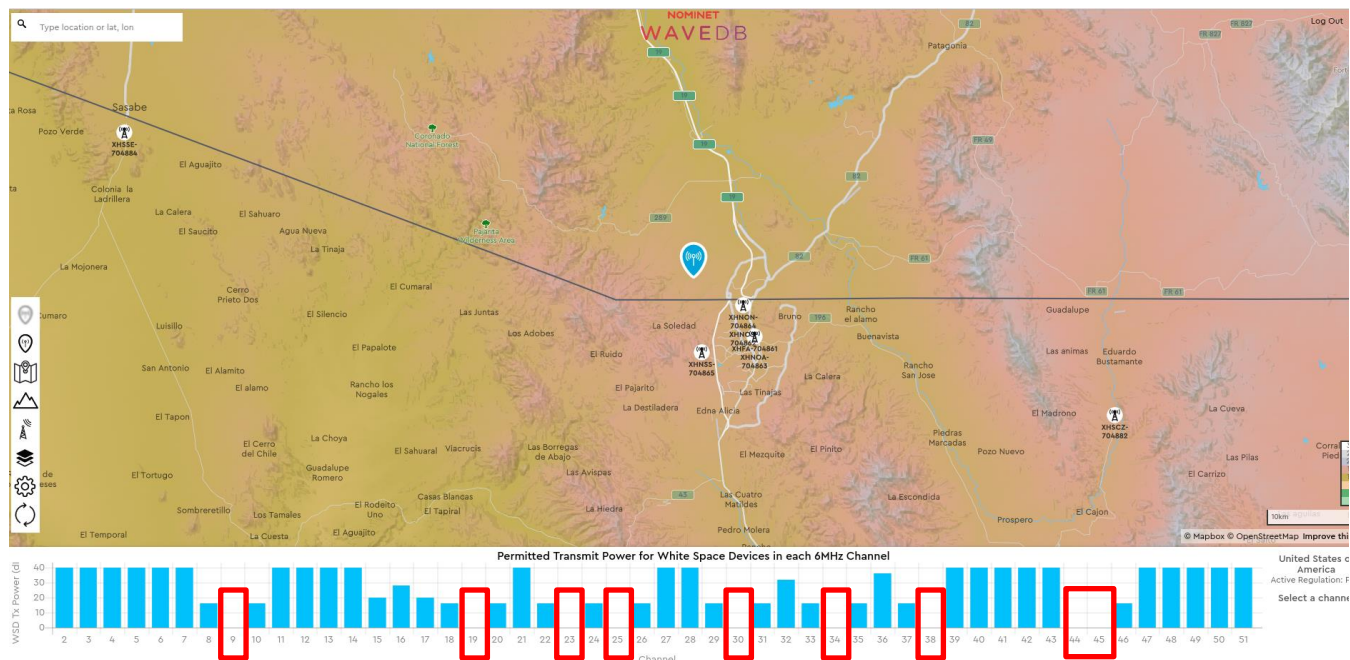


Figure 8.19-14: Channel availability for coordinates set in scenario (g). Mexico border at 31.35N, 111.0W

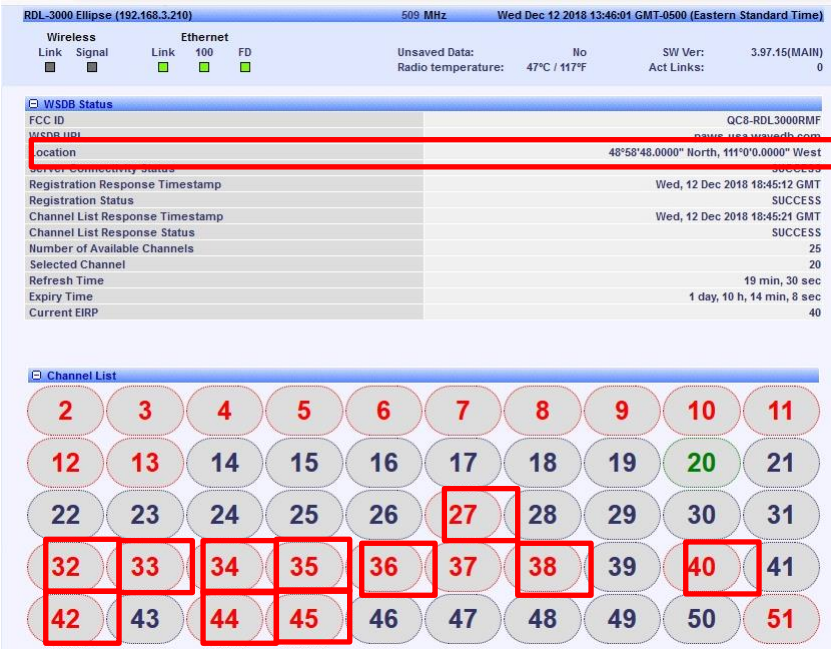


Figure 8.19-15: Received channel list for coordinates set in scenario (g). Canada border at location coordinates 48.98N, 111.0W

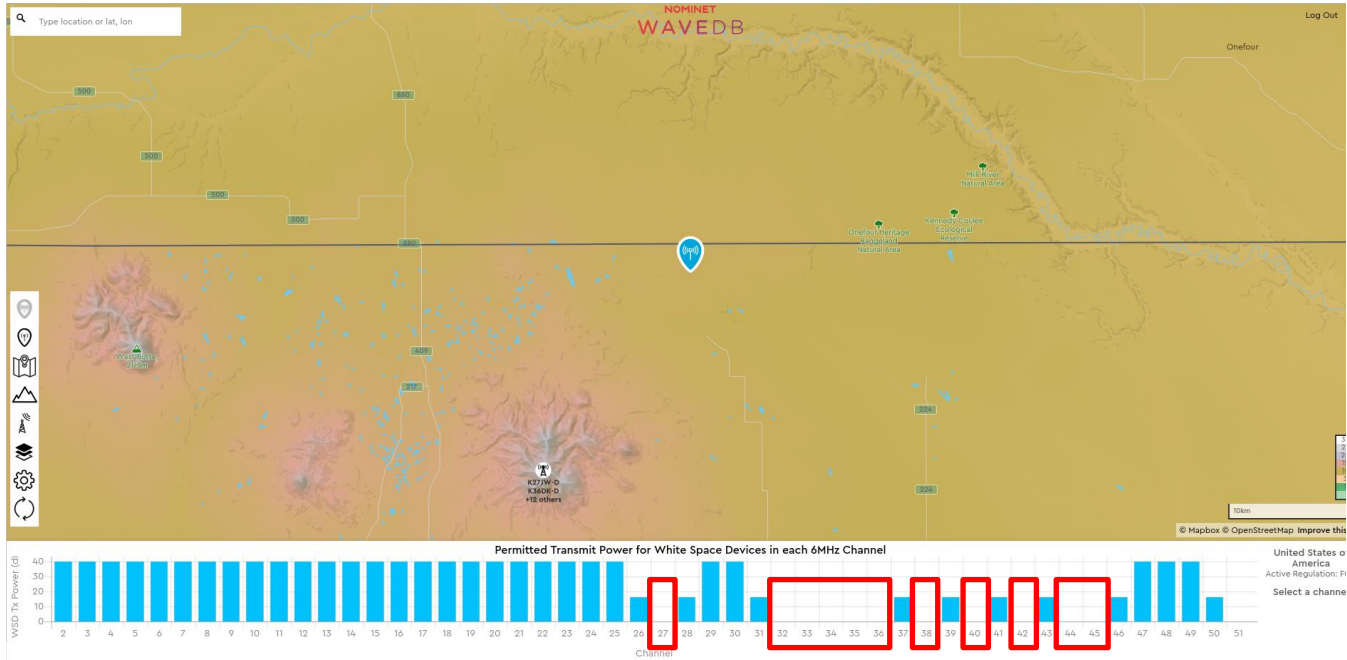


Figure 8.19-16: Channel availability for coordinates set in scenario (g). Canada border at 48.98N, 111.0W

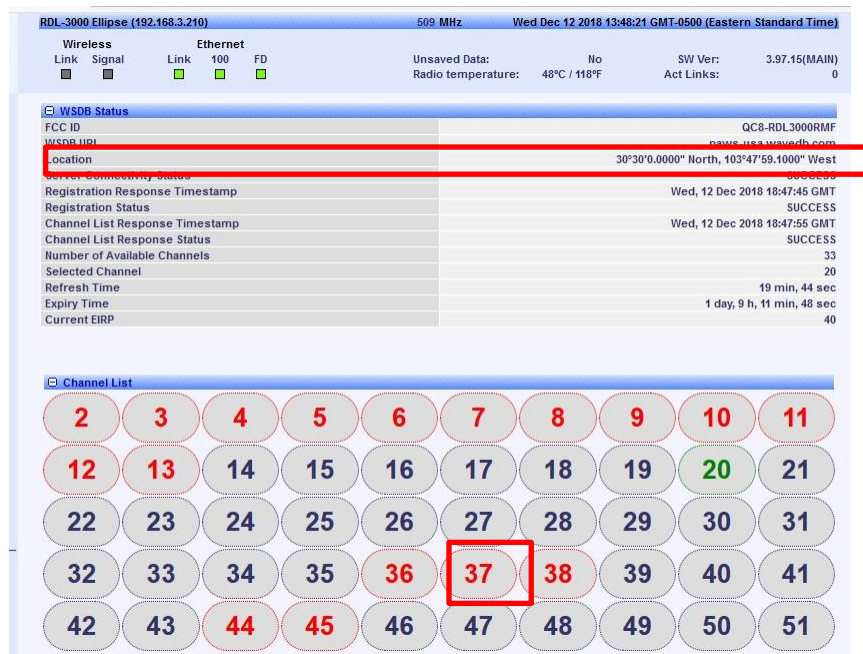


Figure 8.19-17: Received channel list for coordinates set in scenario (h). Radio astronomy services channel 37 at location coordinates 30.5N, 103.8W

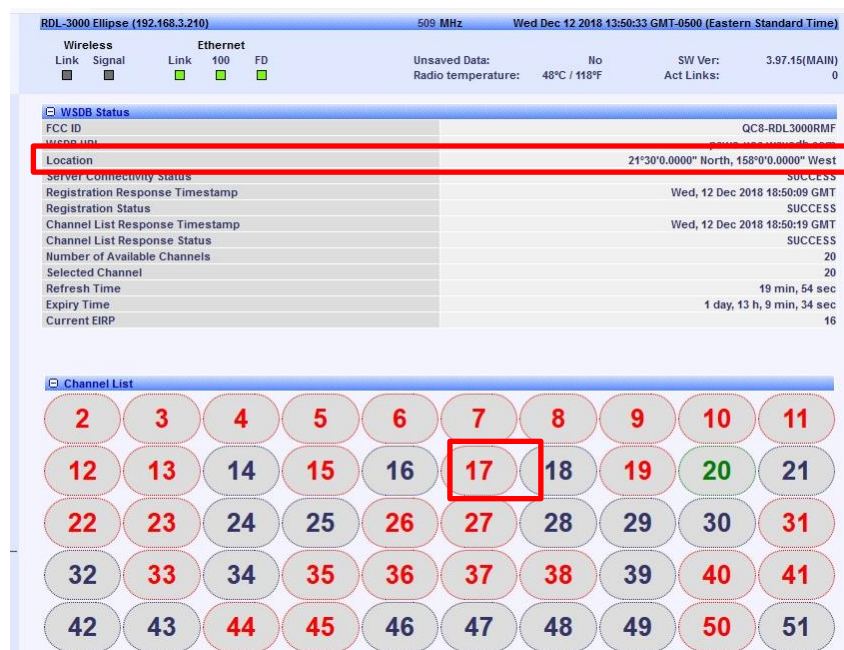


Figure 8.19-18: Received channel list for coordinates set in scenario (k). 488-494 MHz band in Hawaii channel 17 at location coordinates 21.5N, 158.0W

8.20 FCC 15.711(c)(2)(ii), (d)(3), 15.715(e) Fixed and Mode II Power level reduction

8.20.1 Definitions and limits

Using system management software, make a channel availability request to the database. Using the spectrum analyzer, confirm that the WSD operates at no more than the maximum power level indicated by the database and that the power level cannot be set to a higher level than indicated by the database at that specific location. If the device cannot reduce power, it must cease operation. Testing in accordance with KDB 416721 D01, III (2)(o).

8.20.2 Test summary

Test date December 11, 2018

8.20.3 Observations, settings and special notes

EUT was configured with proper registration information and the successful registration was verified. After receiving channel EIRP limit, EUT Tx power and Antenna gain were modified to exceed the limit. It was verified that the output power was automatically reduced to comply with EIRP restriction for the operation channel used.

8.20.4 Test data

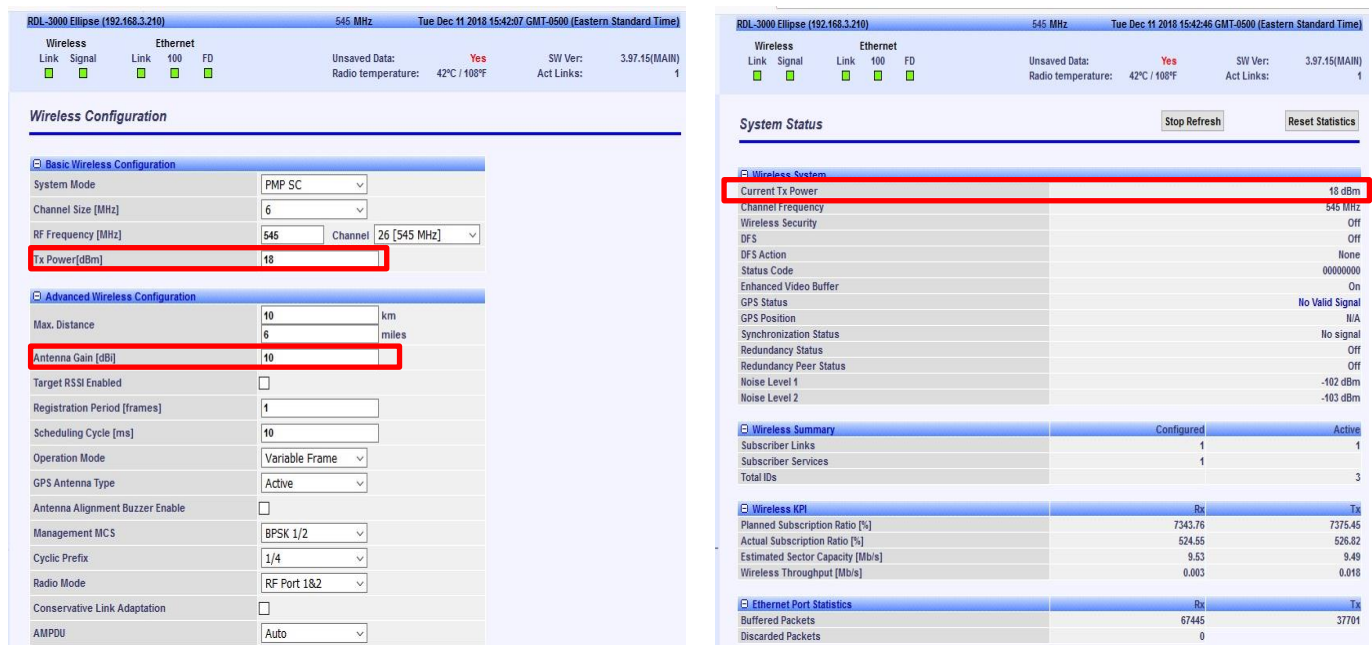
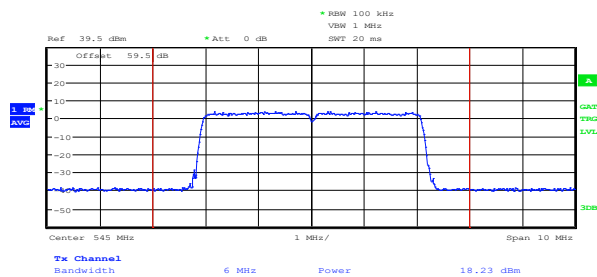


Figure 8.20-1: Tx power and Antenna gain settings to meet EIRP requirement of Base station device at the channel 26. EIRP limit received for this channel is 40 dBm.

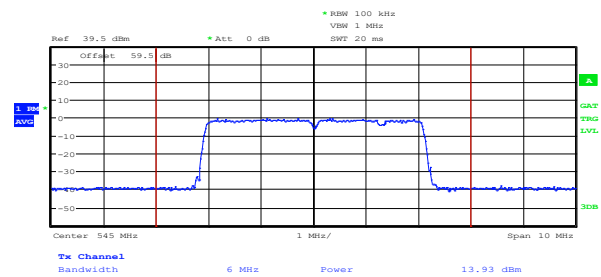
WSD Status	
FCC ID	GC8-RDL3000RMP
WSD URL	sanbox.powershell.uk
Location	37°48'30.3500" North, 100°20'55.1801" West
Server Connectivity Status	SUCCESS
Registration Response Timestamp	Tue, 11 Dec 2018 20:32:38 GMT
Registration Status	SUCCESS
Channel List Response Timestamp	Tue, 11 Dec 2018 20:32:40 GMT
Channel List Response Status	SUCCESS
Number of Available Channels	33
Selected Channel	26
Refresh Time	12 min, 24 sec
Current EIRP	40

Section 8
Test name
Specification

Testing data
 FCC 15.711(c)(2)(ii), (d)(3), 15.715(e) Fixed and Mode II Power level reduction
 FCC Part 15 Subpart H



Date: 12. DEC. 2018 15:41:50



Date: 12. DEC. 2018 15:40:38

Figure 8.20-2: Output power of Base station device measurement on the channel 26 after registration and reception of 40 dBm EIRP limit. Output power = EIRP limit – Antenna gain = 40 dBm – 22 dBi= 18 dBm. Then antenna gain was raised to 26 dBi and output power dropped to 14 dBm.

RDL-3000 Ellipse (192.168.3.210) 545 MHz Tue Dec 11 2018 15:43:35 GMT-0500 (Eastern Standard Time)

Wireless Link Signal Ethernet Link 100 FD Unsaved Data: Yes SW Ver: 3.97.15(MAIN) Act Links: 1

Radio temperature: 42°C / 108°F

Wireless Configuration

Basic Wireless Configuration

System Mode: PMP SC

Channel Size (MHz): 6

RF Frequency (MHz): 545 Channel: 26 [545 MHz]

Tx Power(dBm): 18

Advanced Wireless Configuration

Max. Distance: 10 km

Antenna Gain (dBi): **26**

Target RSSI Enabled: ☐

Registration Period (frames): 1

Scheduling Cycle (ms): 10

Operation Mode: Variable Frame

GPS Antenna Type: Active

Antenna Alignment Buzzer Enable: ☐

Management MCS: BPSK 1/2

Cyclic Prefix: 1/4

Radio Mode: RF Port 1&2

Conservative Link Adaptation: ☐

AMPDU: Auto

RDL-3000 Ellipse (192.168.3.210) 545 MHz Tue Dec 11 2018 15:44:09 GMT-0500 (Eastern Standard Time)

Wireless Link Signal Ethernet Link 100 FD Unsaved Data: Yes SW Ver: 3.97.15(MAIN) Act Links: 1

Radio temperature: 42°C / 108°F

System Status Stop Refresh Reset Statistics

Wireless System

Current Tx Power: **14 dBm**

Channel frequency: 545 MHz

Wireless Security: Off

DFS: Off

DFS Action: None

Status Code: 00000000

Enhanced Video Buffer: On

GPS Status: No Valid Signal

GPS Position: N/A

Synchronization Status: No signal

Redundancy Status: Off

Redundancy Peer Status: Off

Noise Level 1: -104 dBm

Noise Level 2: -104 dBm

Wireless Summary

Configured	Active
Subscriber Links: 1	1
Subscriber Services: 1	1
Total IDs: 3	3

Wireless KPI

	Rx	Tx
Planned Subscription Ratio [%]	7343.76	7375.45
Actual Subscription Ratio [%]	534.55	526.32
Estimated Sector Capacity [Mb/s]	9.53	9.49
Wireless Throughput [Mb/s]	0.003	0.006

Ethernet Port Statistics

	Rx	Tx
Buffered Packets	68495	38244
Discarded Packets	0	0

Figure 8.20-3: Tx power and Antenna gain settings to exceed EIRP requirement of Base station device at the channel 26. EIRP limit received for this channel is 40 dBm. Output power = EIRP limit – Antenna gain = 40 dBm – 26 dBi= 14 dBm, despite the setting of 18 dBm.

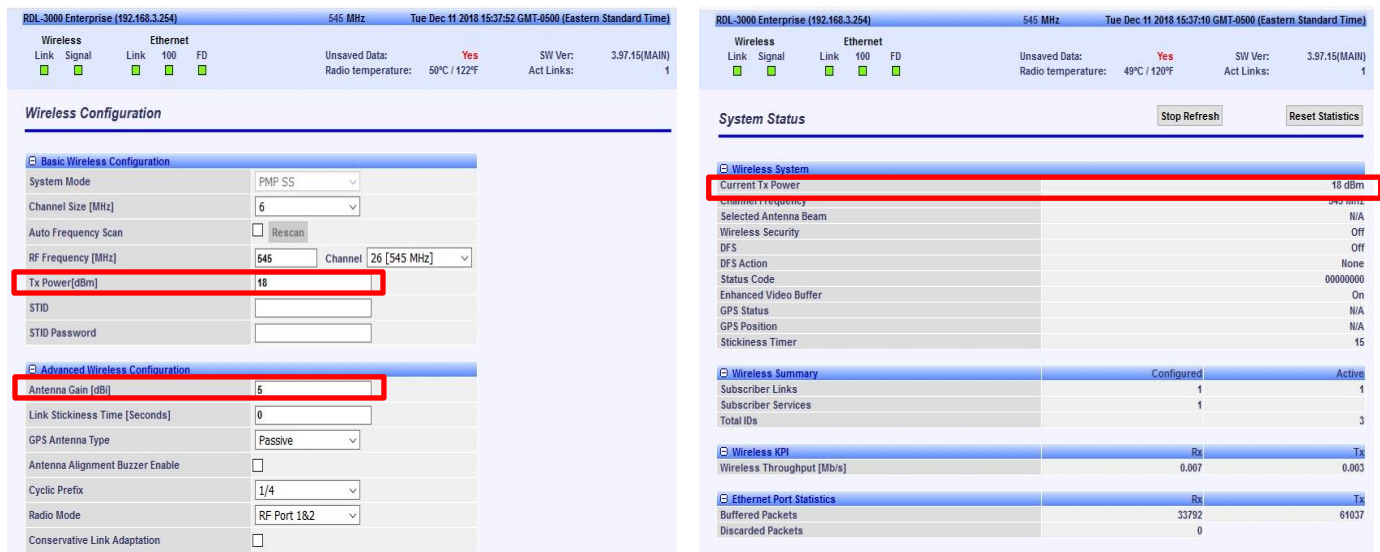


Figure 8.20-4: Tx power and Antenna gain settings to exceed EIRP requirement of Subscriber device at the channel 36. EIRP limit received for this channel is 26 dBm.

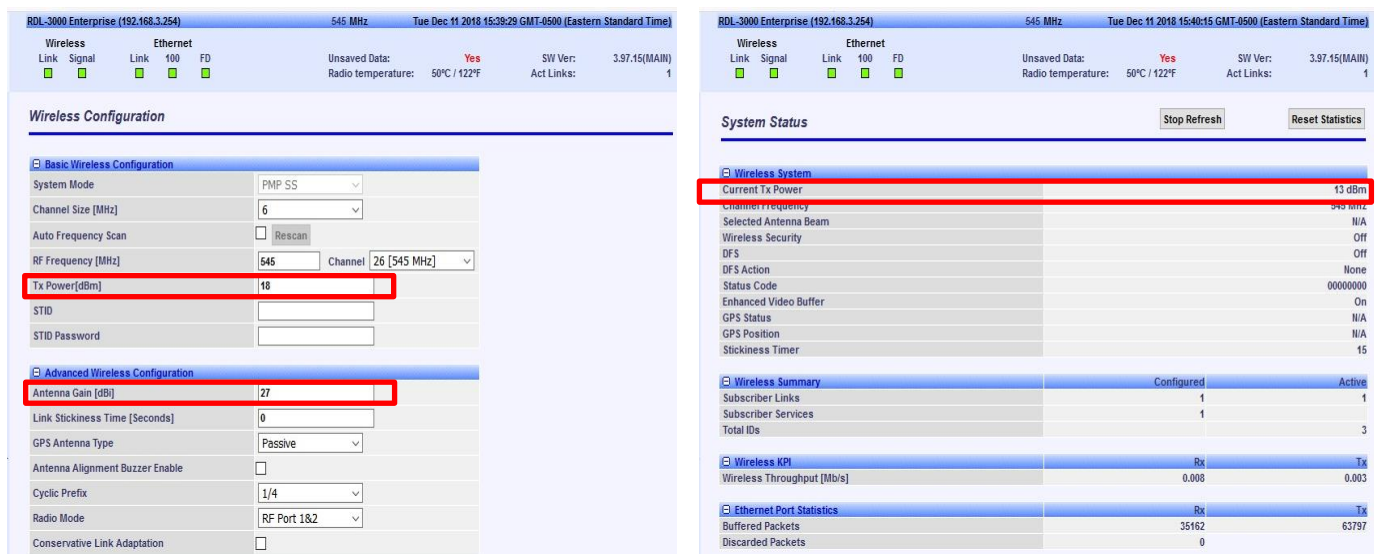


Figure 8.20-5: Tx power and Antenna gain settings to meet EIRP requirement of Subscriber device at the channel 36. EIRP limit received for this channel is 26 dBm. Output power = EIRP limit – Antenna gain = 40 dBm – 27 dBi = 13 dBm, despite the setting of 18 dBm.

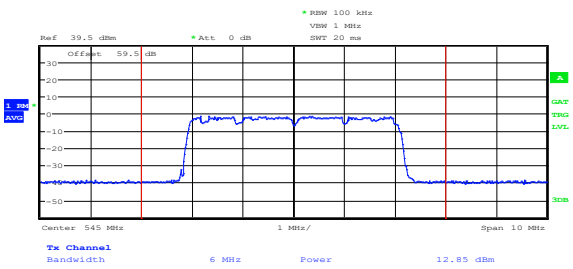
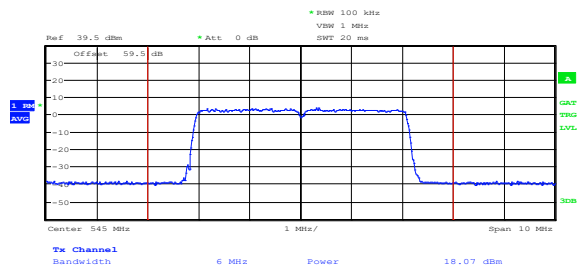


Figure 8.20-6: Output power of Subscriber station device measurement on the channel 26 after registration and reception of 40 dBm EIRP limit. Output power = EIRP limit – Antenna gain = 40 dBm – 5 dBi= 35 dBm, setting was 18 dBm and measurement was 18 dBm. Then antenna gain was raised to 27 dBi and output power dropped to 13 dBm.

8.21 FCC 15.711(j) Security

8.21.1 Definitions and limits

White space devices shall incorporate adequate security measures to ensure that they are capable of communicating for purposes of obtaining lists of available channels only with databases operated by administrators authorized by the Commission, and to ensure that communications between white space devices and databases are secure to prevent corruption or unauthorized interception of data. This requirement applies to communications of channel availability and other spectrum access information between the databases and fixed and Mode II devices (it is not necessary for white space devices to apply security coding to channel availability and channel access information where they are not the originating or terminating device and that they simply pass through).

8.21.2 Test summary

Test date	December 12, 2018
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8.21.3 Observations, settings and special notes

Please see the attached document: RDL-3000-RMF Secure Communications.

Section 9. Block diagrams of test set-ups

9.1 Test setup diagram

