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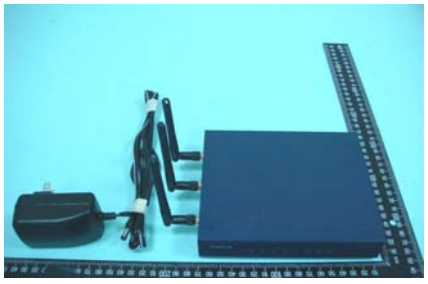
FCC Dynamic Frequency Selection Test Report

Applicant's company	**Ralink Technology Corporation**
Applicant Address	4F, No. 2 , Technology 5th Road Hsin-Chu Science Park Hsin-Chu , Taiwan , ROC
FCC ID	**VQF-AP2800D**
Manufacturer's company	**Ralink Technology Corporation**
Manufacturer Address	4F, No. 2 , Technology 5th Road Hsin-Chu Science Park Hsin-Chu , Taiwan , ROC

Product Name	Ralink 802.11n dual band AP
Brand Name	Ralink
Model Name	AP2800D
Test Standard(s)	47 CFR FCC Part 15 Subpart E § 15.407
Test Freq. Range	5250 ~ 5350MHz
Received Date	Sep. 26, 2007
Final Test Date	Oct. 18, 2007
Submission Type	Original Equipment
Operating Mode	Master



Statement

The test result in this report refers exclusively to the presented test model / sample.
Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.
The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in FCC OET Order 06-96A (2006) and 47 CFR FCC Part 15 Subpart E § 15.407. The test equipment used to perform the test is calibrated and traceable to NML/ROC.

Testing Laboratory
1190

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History of This Test Report

Original Issue Date: Apr. 18, 2008

Report No.: FZ7O0803

■ No additional attachment.

☐ Additional attachment were issued as following record:

Attachment No.	Issue Date	Description

Certificate No.: CB9610063

1. CERTIFICATE OF COMPLIANCE

Product Name	:	Ralink 802.11n dual band AP
Brand Name	:	Ralink
Model Name	:	AP2800D
Applicant	:	Ralink Technology Corporation
Test Rule Part(s)	:	47 CFR FCC Part 15 Subpart E § 15.407

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Sep. 26, 2007 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.

Wayne Hsu

SPORTON INTERNATIONAL INC.

2. SUMMARY OF THE TEST RESULT

Applied Standard: OET Order 06-96A (2006)			
Part	**Appendix**	**Description of Test**	**Result**
5.2	7.8.1	UNII Detection Bandwidth Measurement	Complies
5.3	7.8.2.1	Initial Channel Availability Check Time	Complies
5.4	7.8.2.2	Radar Burst at the Beginning of the Channel Availability Check Time	Complies
5.5	7.8.2.3	Radar Burst at the End of the Channel Availability Check Time	Complies
5.6	7.8.3	In-Service Monitoring for Channel Move Time, Channel Closing Transmission Time and Non-Occupancy Period	Complies
5.7	7.4	Statistical Performance Check	Complies

3. GENERAL INFORMATION

3.1. Standard Requirement

FCC 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 30 dBm. A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.

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.

3.2. Product Specification Table

Specification Items	Description
Product Type	WLAN (2TX, 3RX)
Radio Type	Intentional Transceiver
Power Type	From power adapter
Modulation	see the below table for draft n OFDM (BPSK / QPSK / 16QAM / 64QAM) for IEEE 802.11a
Data Rate (Mbps)	see the below table for draft n OFDM (6/9/12/18/24/36/48/54) for IEEE 802.11a
Operating Frequency Range	5250~5350 MHz
Channel Bandwidth	20 MHz operating channel bandwidth
DFS Function	5260~5320 MHz
Max. Con. Power (DFS band)	Draft n: 17.36 dBm 11a: 15.55 dBm
Max. EIRP Power (DFS band)	Draft n: 19.32 dBm 11a: 17.51 dBm
TPC Function	This device does not exceed 27dBm eirp, so no transmit power control is implemented.
Operating Mode	Master
Communication Mode	IP based system
Power-on cycle	20MHz: Requires 19.09 seconds to complete its power-on cycle.
Uniform Spreading	For the 5250-5350 MHz band, 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.
Software Version	RT2880 2.1.1.3
Carrier Frequencies	Please refer to section 3.5
Antenna	Please refer to section 3.6

Antenna & Band width

Antenna	Single (TX)		Two (TX)	
Band width Mode	20 MHz	40 MHz	20 MHz	40 MHz
802.11a	V	X	X	X
Draft n	X	X	V	X

Draft n spec

MCS Index	Nss	Modulation	R	NBPSC	NCBPS		NDBPS		Data rate(Mbps) 800nsGI	
					20MHz	40MHz	20MHz	40MHz	20MHz	40MHz
0	1	BPSK	1/2	1	52	108	26	54	6.5	13.5
1	1	QPSK	1/2	2	104	216	52	108	13.0	27.0
2	1	QPSK	3/4	2	104	216	78	162	19.5	40.5
3	1	16-QAM	1/2	4	208	432	104	216	26.0	54.0
4	1	16-QAM	3/4	4	208	432	156	324	39.0	81.0
5	1	64-QAM	2/3	6	312	648	208	432	52.0	108.0
6	1	64-QAM	3/4	6	312	648	234	486	58.5	121.5
7	1	64-QAM	5/6	6	312	648	260	540	65.0	135.0
8	2	BPSK	1/2	1	104	216	52	108	13.0	27.0
9	2	QPSK	1/2	2	208	432	104	216	26.0	54.0
10	2	QPSK	3/4	2	208	432	156	324	39.0	81.0
11	2	16-QAM	1/2	4	416	864	208	432	52.0	108.0
12	2	16-QAM	3/4	4	416	864	312	648	78.0	162.0
13	2	64-QAM	2/3	6	624	1296	416	864	104.0	216.0
14	2	64-QAM	3/4	6	624	1296	468	972	117.0	243.0
15	2	64-QAM	5/6	6	624	1296	520	1080	130.0	270.0

Symbol	Explanation
NSS	Number of spatial streams
R	Code rate
NBPSC	Number of coded bits per single carrier
NCBPS	Number of coded bits per symbol
NDBPS	Number of data bits per symbol
GI	guard interval

3.3. Accessories

Power	Brand	Model	Rating
Adapter	SEC	SSW-1587	Input: 100-240VAC, 50/60Hz, Output: 12VDC, 2.0A

3.4. Manufacturer Statement

Manufacturer statement confirming that information regarding the parameters of the detected *Radar Waveforms* are not available to the end user.

3.5. Table for DFS Band Carrier Frequencies

There is one bandwidth system for draft n.
For both 20MHz bandwidth systems, use Channel 52, 56, 60, 64.
There is one bandwidth system for IEEE 802.11a.
For both 20MHz bandwidth systems, use Channel 52, 56, 60, 64.

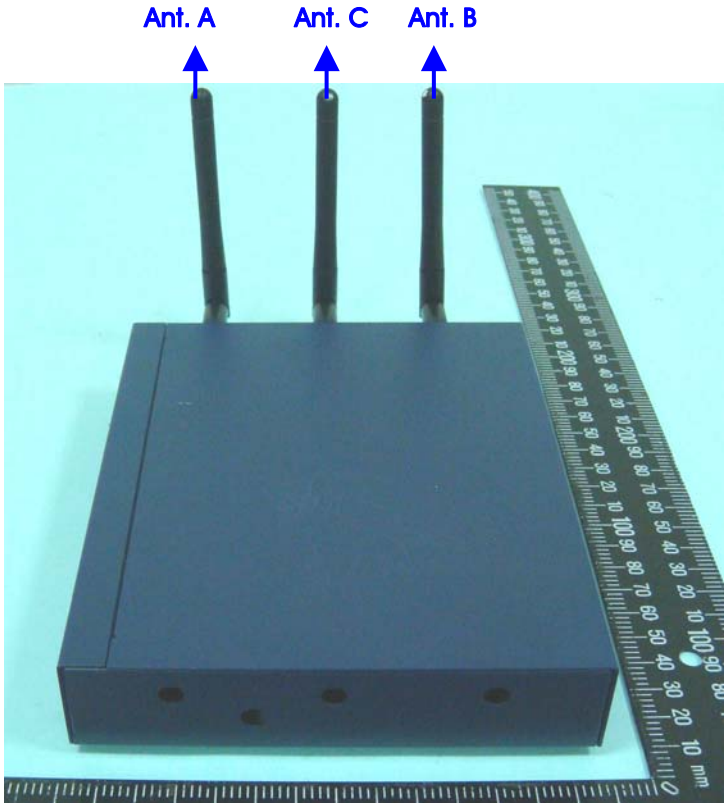
Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5250~5350 MHz Band 2 (DFS Band)	52	5260 MHz	60	5300 MHz
	56	5280 MHz	64	5320 MHz

3.6. Antenna Information on DFS Band

Antenna cable is not supplied with this device; no cable loss had been taken into account.

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Remark
A	ACON	WPS05018	Dipole Antenna	Reversed-SMA	1.96	TX/RX Ant.
B	ACON	WPS05018	Dipole Antenna	Reversed-SMA	1.96	TX/RX Ant.
C	ACON	WPS05018	Dipole Antenna	Reversed-SMA	1.96	RX Ant.

Note: The EUT has three antennas.
For Draft n
Ant. A and Ant. B can both transmit simultaneously.
Ant. A, Ant. B and Ant. C can both receive simultaneously.
For 802.11a
Antenna A can be used as transmitting antenna.
Ant. A, Ant. B and Ant. C can both receive simultaneously.



Note: Regarding to antenna gain pattern measurement verification refer to appendix B antenna specification and test report.

4. DFS DETECTION THRESHOLDS AND RADAR TEST WAVEFORMS

4.1. Interference Threshold values, Master or Client incorporating In-Service Monitoring

Maximum Transmit Power	Value (see note)
≥ 200 milliwatt	-64 dBm
< 200 milliwatt	-62 dBm
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna. 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 equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.	

The radar *Detection Threshold*, lowest antenna gain is the parameter of Interference *radar DFS detection threshold*, The Interference ***Detection Threshold*** is the -62dBm + 1.96 dBi+ 1 dB= -59.04 dBm.

4.2. DFS Response requirement values

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 80% of the 99% power bandwidth See Note 3.

Note 1: The instant that the *Channel Move Time* and the *Channel Closing Transmission Time* begins is as follows:

- For the Short pulse radar Test Signals this instant is the end of the *Burst*.
- For the Frequency Hopping radar Test Signal, this instant is the end of the last radar *Burst* generated.
- For the Long Pulse radar Test Signal this instant is the end of the 12 second period defining the radar transmission.

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 *Channel* changes (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 1 is used and for each frequency step the minimum percentage of detection is 90%. Measurements are performed with no data traffic.

4.3. Radar Test Waveforms Minimum Step

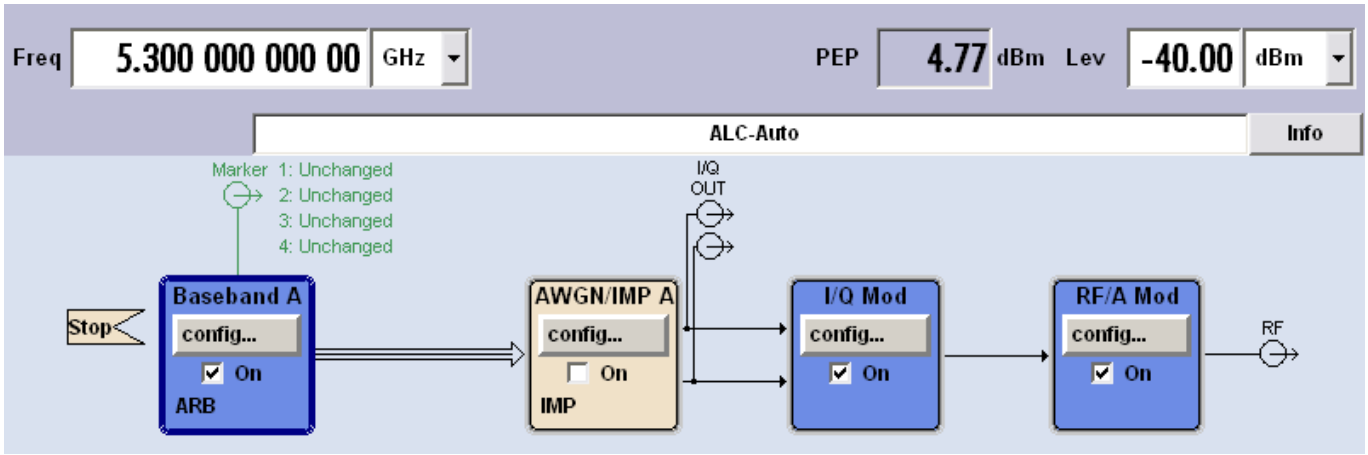
Step intervals of 0.1 microsecond for Pulse Width, 1 microsecond for PRI, 1 MHz for chirp width and 1 for the number of pulses will be utilized for the random determination of specific test waveforms.

4.4. Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (μsec)	PRI (μsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Trials
1	1	1428	18	60%	30
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120

A minimum of 30 unique waveforms are required for each of the short pulse radar types 2 through 4. For short pulse radar type 1, the same waveform is used a minimum of 30 times. 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. The aggregate is the average of the percentage of successful detections of short pulse radar types 1-4.

FCC Radar Types (1~4) System Diagram



Used R&S SMU200A (Vector SG with one ARB) or SG + ARB

B11: Base-band Generator with ARB (16 M samples) and Digital Modulation

B13: Base-band Main Module

B106: frequency range (100 kHz to 6 GHz)

For selecting the waveform parameters from within the bounds of the signal type, system were random selection using uniform distribution.

4.5. Long Pulse Radar Test Waveform

Radar Type	Pulse Width (μsec)	Chirp Width (MHz)	PRI (μsec)	Number of Pulses per *Burst*	Number of *Bursts*	Minimum Percentage of Successful Detection	Minimum Trials
5	50-100	5-20	1000-2000	1-3	8-20	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 FM chirp between 5 and 20 MHz, with the chirp width being randomly chosen. Each pulse within a Burst will have the same chirp width. Pulses in different Bursts may have different chirp widths. 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.

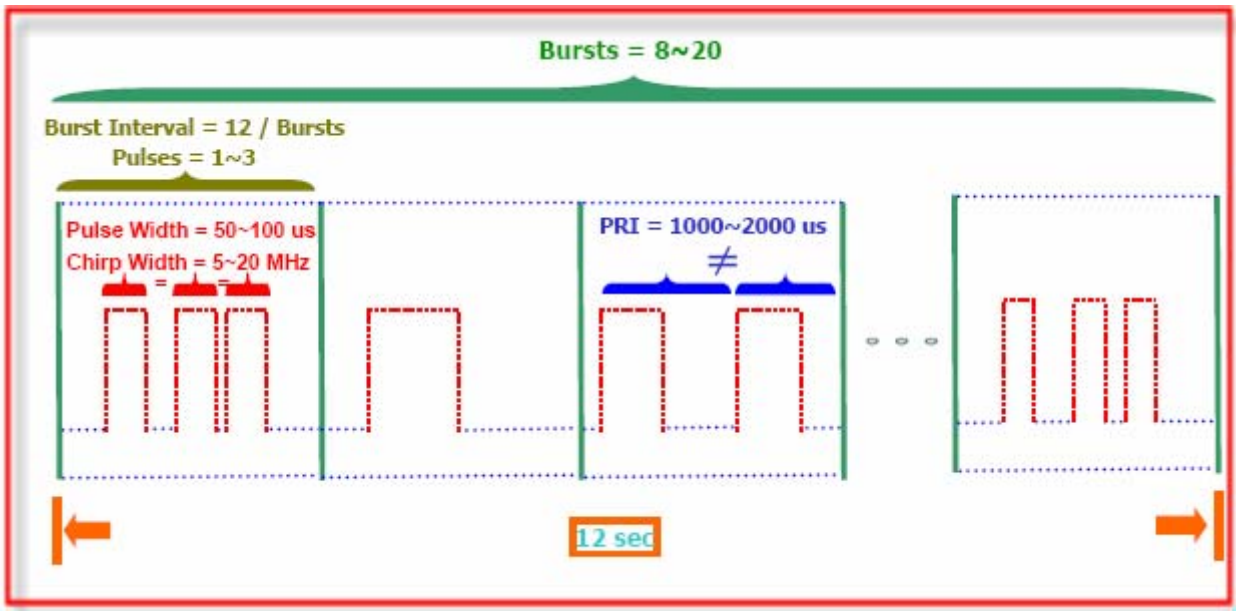
(3) Burst 1 has 2 randomly generated pulses.

(4) The pulse width (for both pulses) is randomly selected to be 75 microseconds.

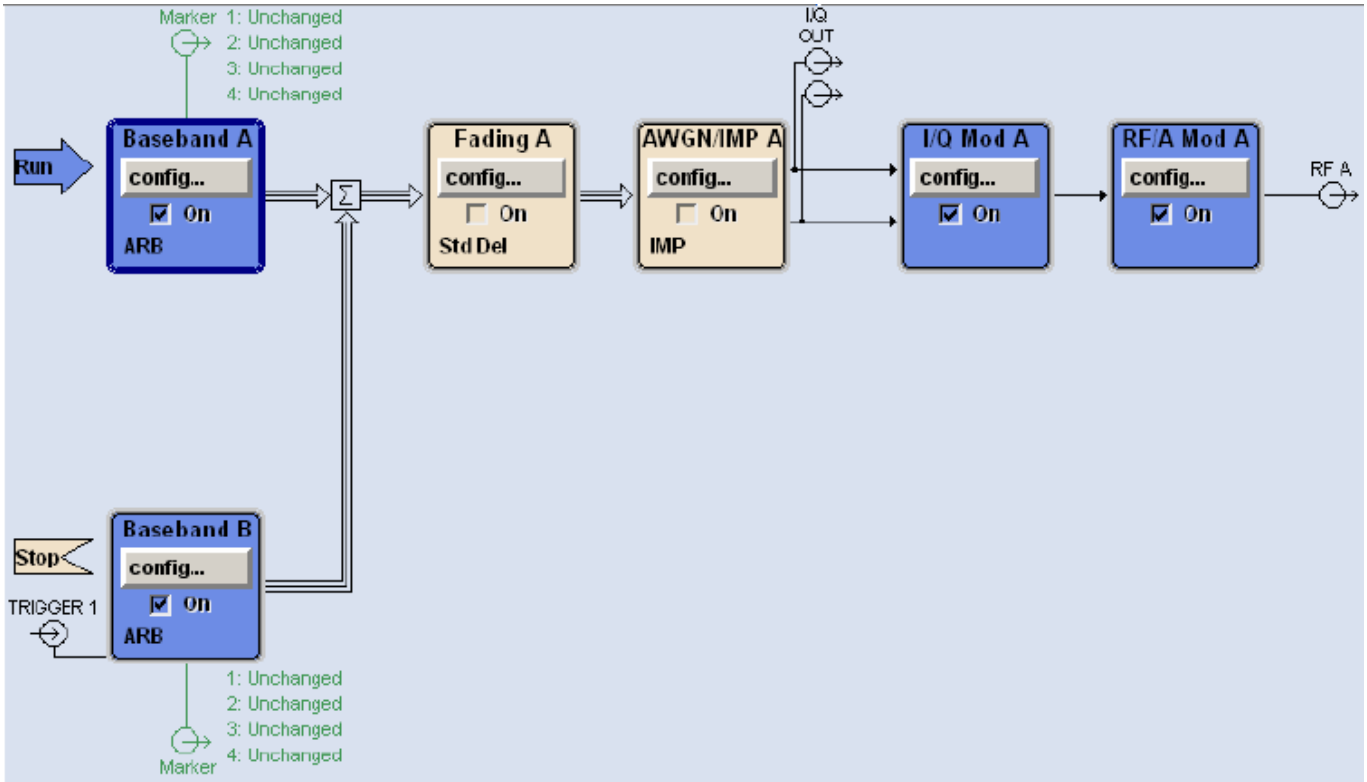
(5) The PRI is randomly selected to be at 1213 microseconds.

(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).



FCC Radar Types (5) System Diagram



Used R&S SMU200A (Vector SG with two ARB)

Path A / Path B Two B11: Base-band Generator with ARB (16 M samples) and Digital Modulation

B13: Base-band Main Module

B106: frequency range (100 kHz to 6 GHz)

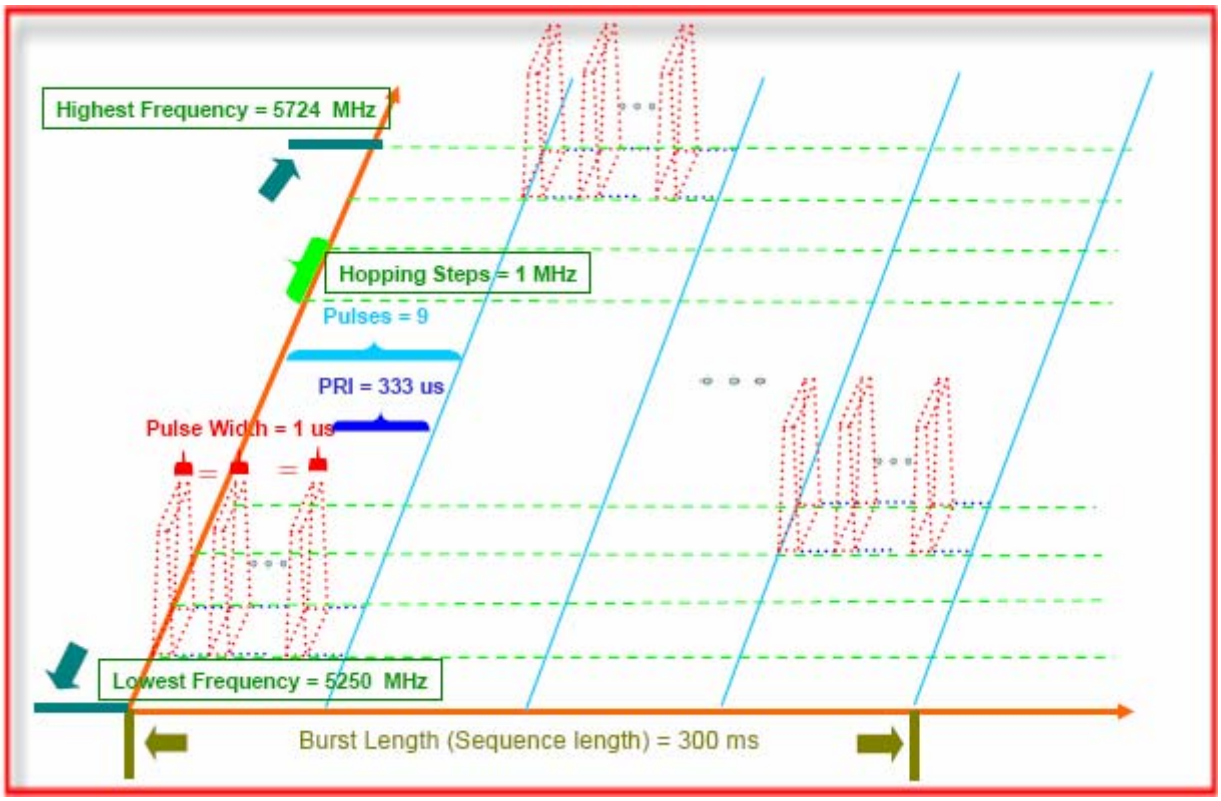
For selecting the waveform parameters from within the bounds of the signal type, system was random selection using uniform distribution.

4.6. Frequency Hopping Radar Test Waveform

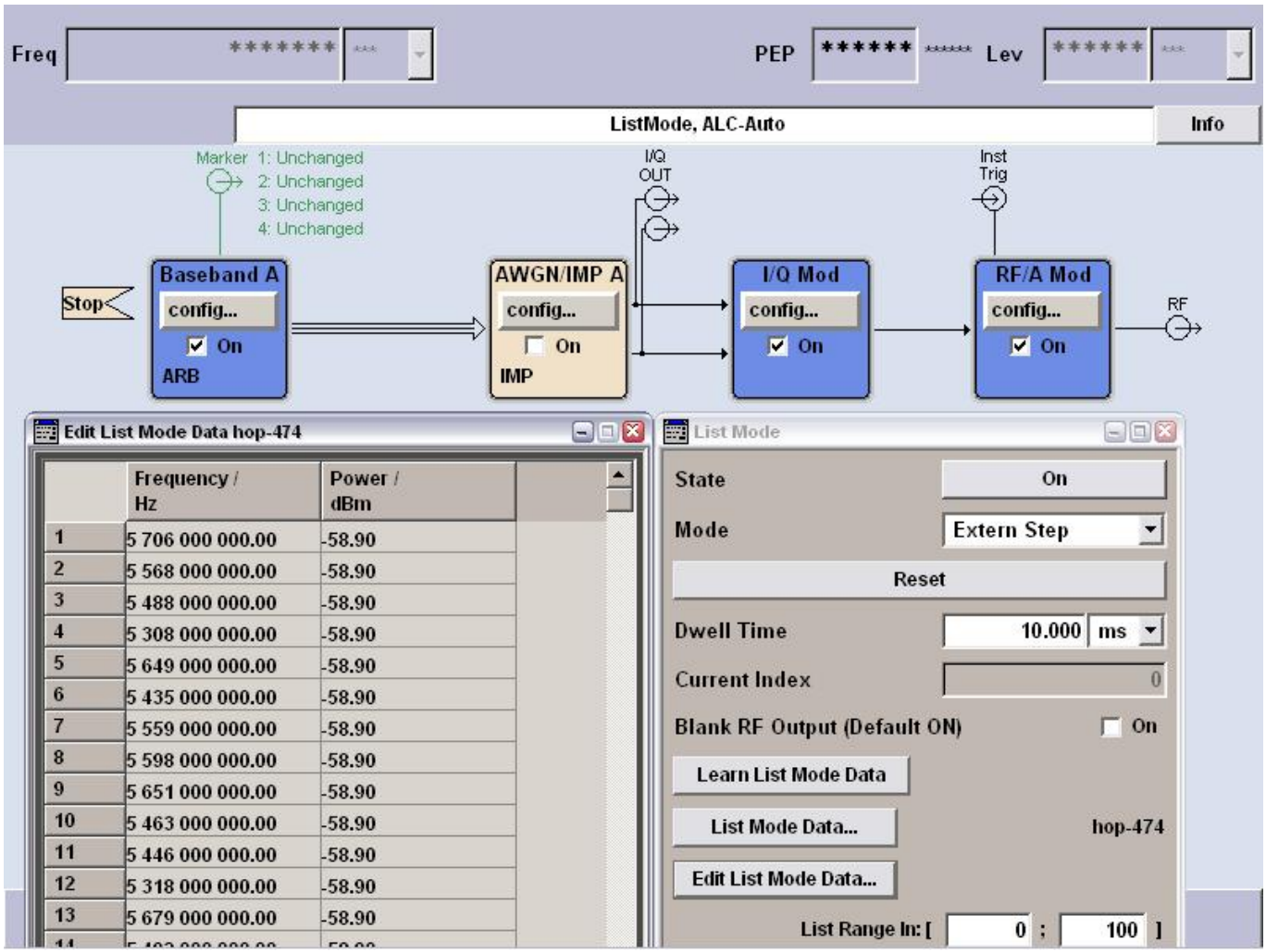
Radar Type	Pulse Width (μsec)	PRI (μsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Trials
6	1	333	9	0.333	300	70%	30

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.



FCC Radar Types (6) System Diagram



Used R&S SMU200A (Vector SG with one ARB)

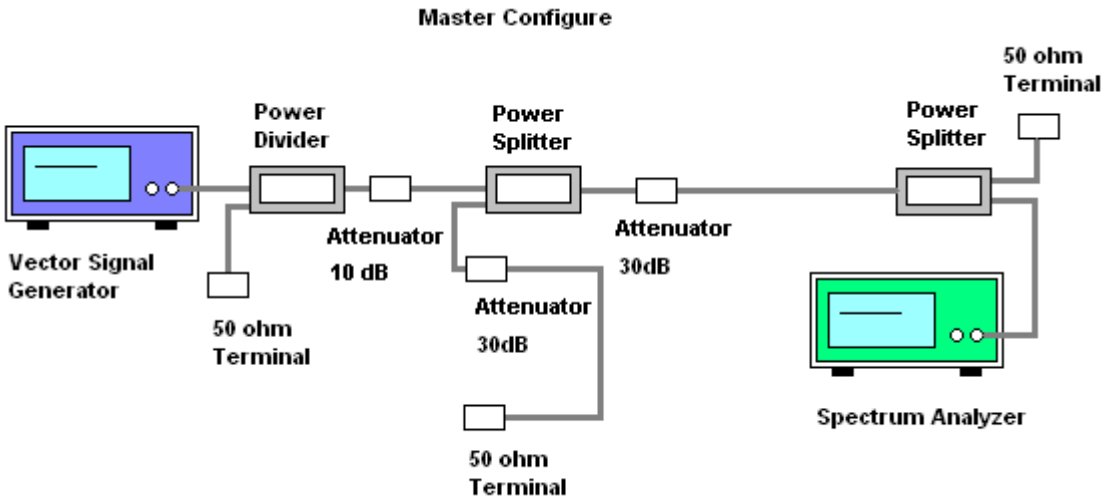
B11: Base-band Generator with ARB (16 M samples) and Digital Modulation

B13: Base-band Main Module

B106: frequency range (100 kHz to 6 GHz)

For selecting the waveform parameters from within the bounds of the signal type, system were random selection using uniform distribution.

4.7. Conducted Calibration Setup



4.8. Radar Waveform Calibration Procedure

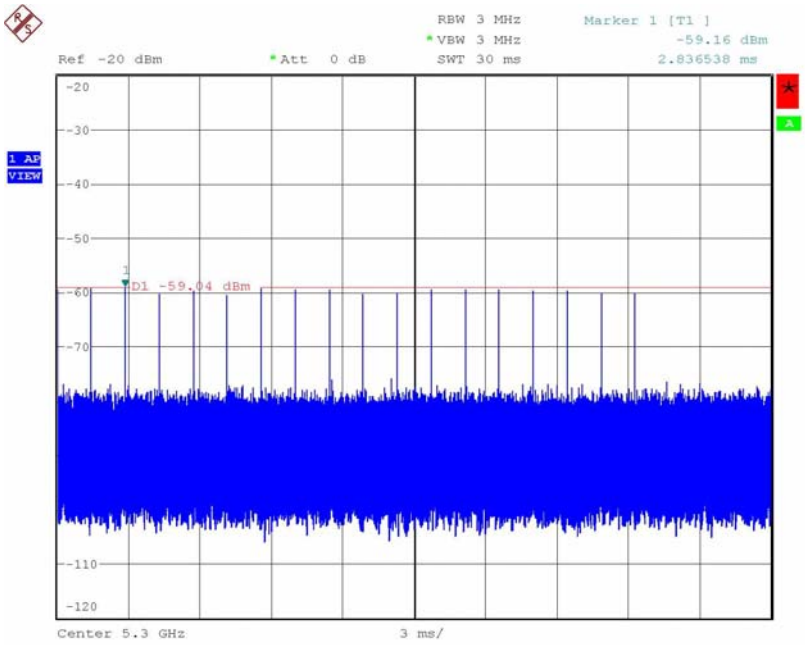
The Interference **Radar Detection Threshold Level** is -62dBm + 1.96 dBi+ 1 dB= -59.04 dBm that had been taken into account the output power range and antenna gain. The above equipment setup was used to calibrate the conducted Radar Waveform. A vector signal generator was utilized to establish the test signal level for each radar type. During this process there were replace 50ohm terminal form 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 used. The spectrum analyzer resolution bandwidth (RBW) and video bandwidth (VBW) were set to at least 3 MHz. The vector signal generator amplitude was set so that the power level measured at the spectrum analyzer was -62dBm + 1.96 dBi+ 1 dB= -59.04 dBm. Capture the spectrum analyzer plots on short pulse radar types, long pulse radar type and hopping radar waveform.

4.9. Calibration Deviation

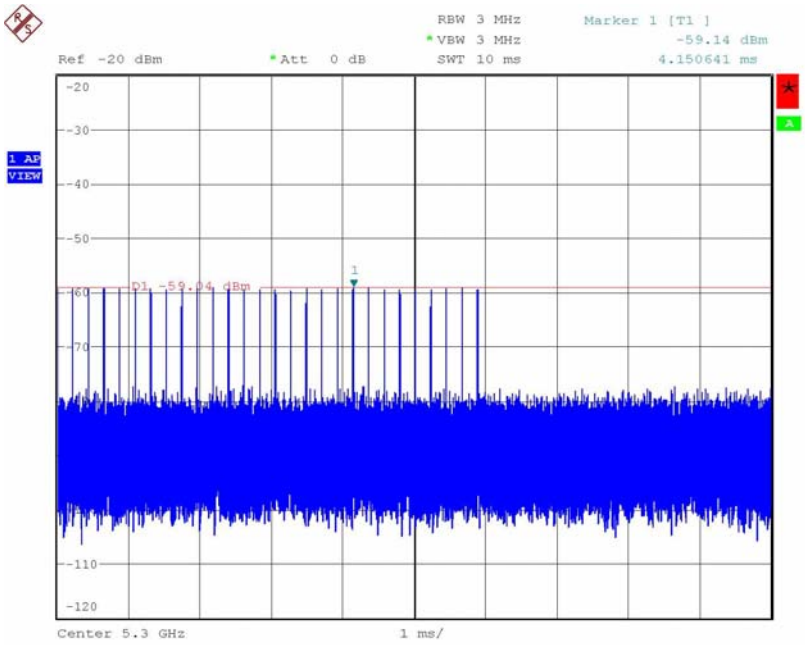
There is no deviation with the original standard.

4.10. Radar Waveform Calibration Result

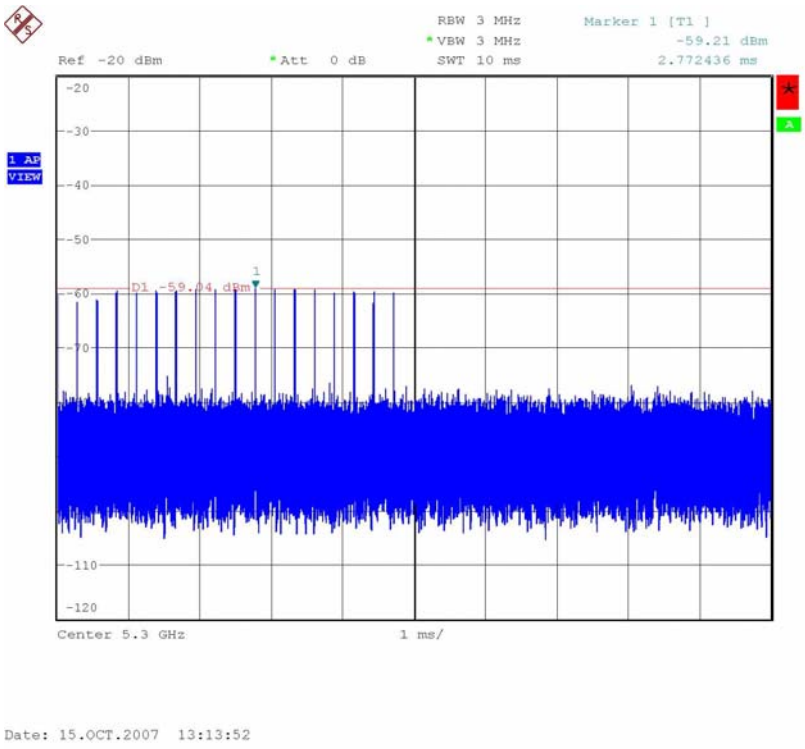
Radar #1 DFS detection threshold level and the burst of pulses on the Channel frequency



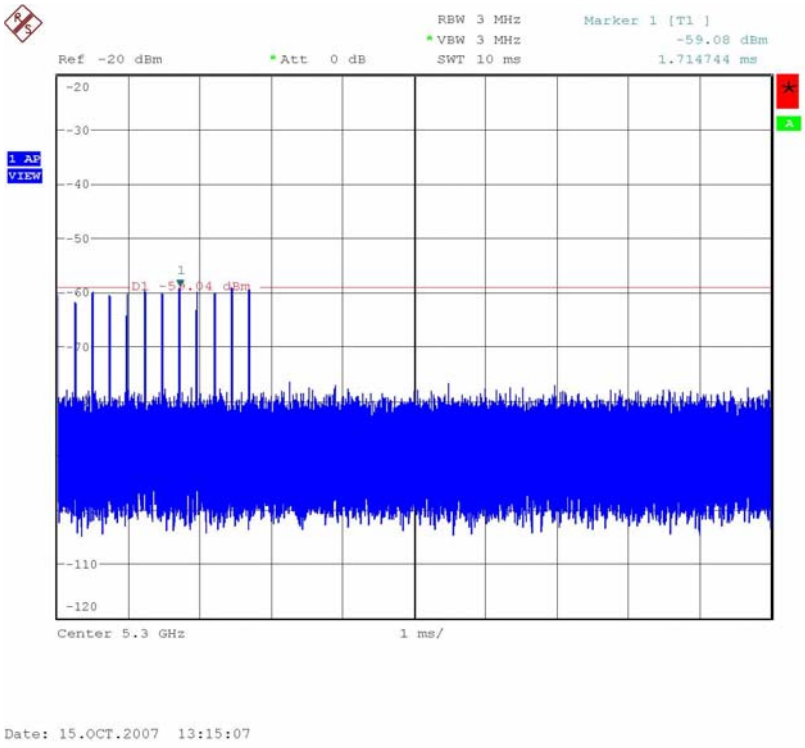
Radar #2 DFS detection threshold level and the burst of pulses on the Channel frequency



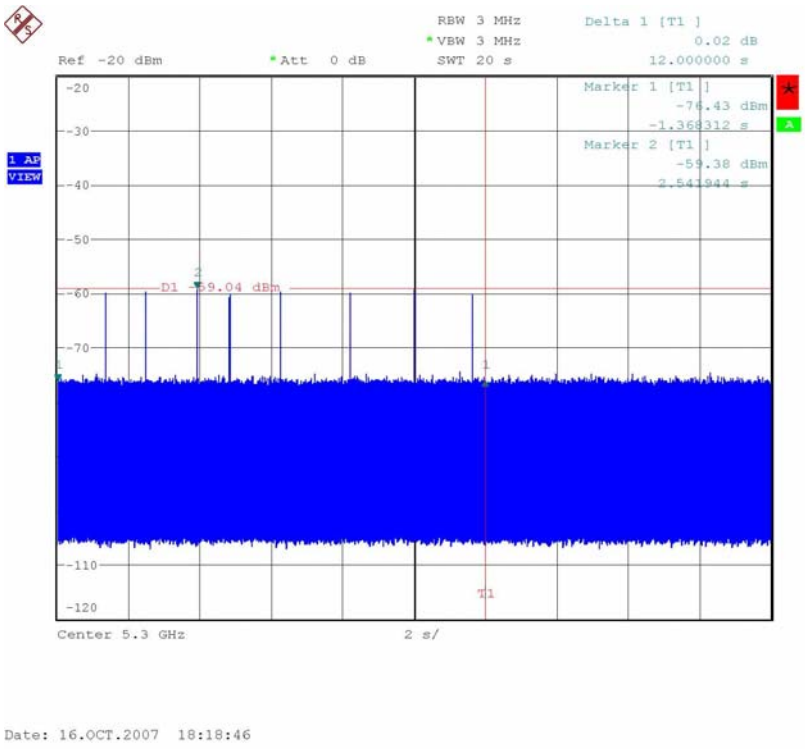
Radar #3 DFS detection threshold level and the burst of pulses on the Channel frequency



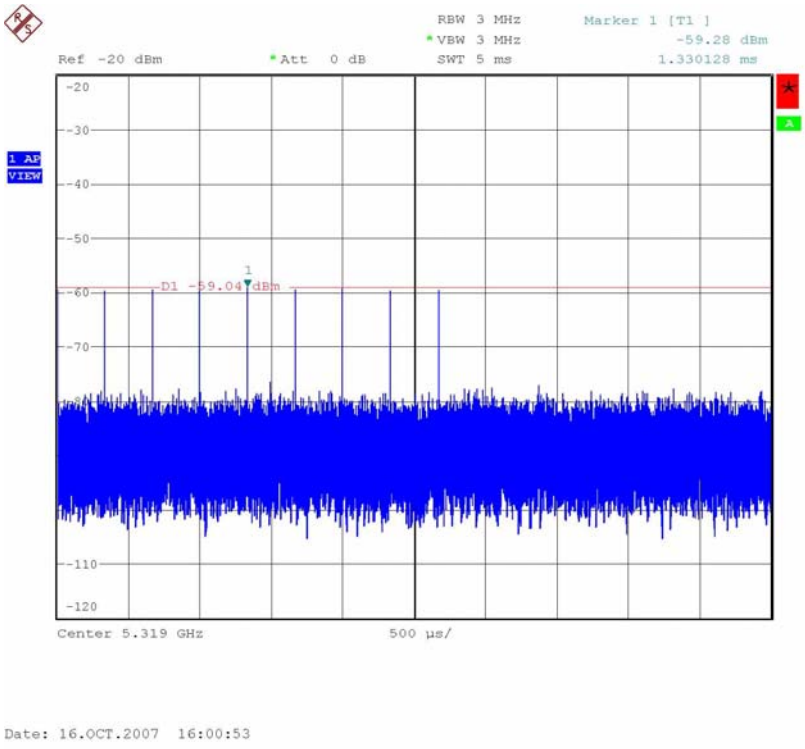
Radar #4 DFS detection threshold level and the burst of pulses on the Channel frequency



Radar #5 DFS detection threshold level and 12sec long burst on the Channel frequency



Radar #6 DFS detection threshold level and a single hop (9 pulses) on the Channel frequency within UNII detection bandwidth.

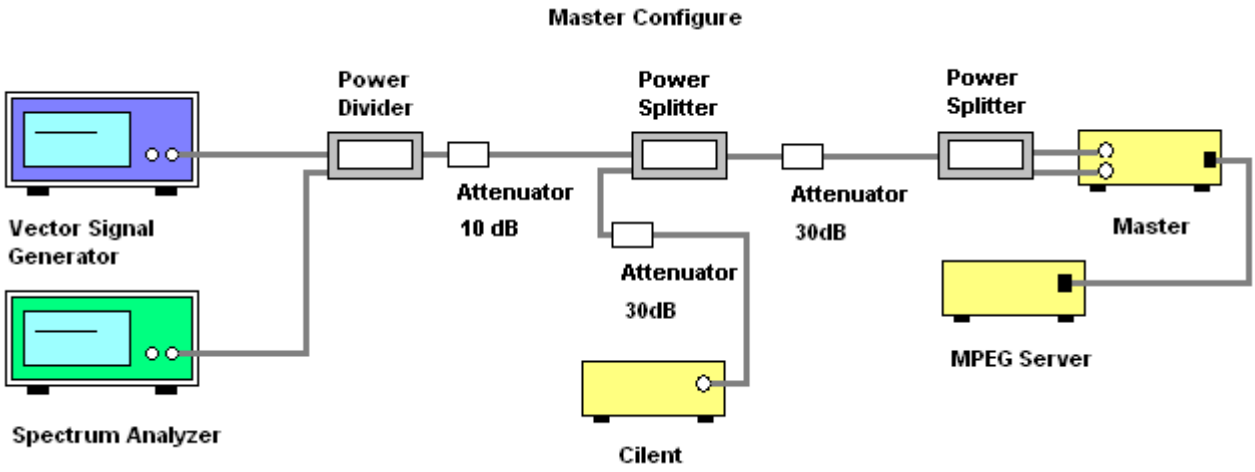


5. TEST SETUP AND TEST RESULT

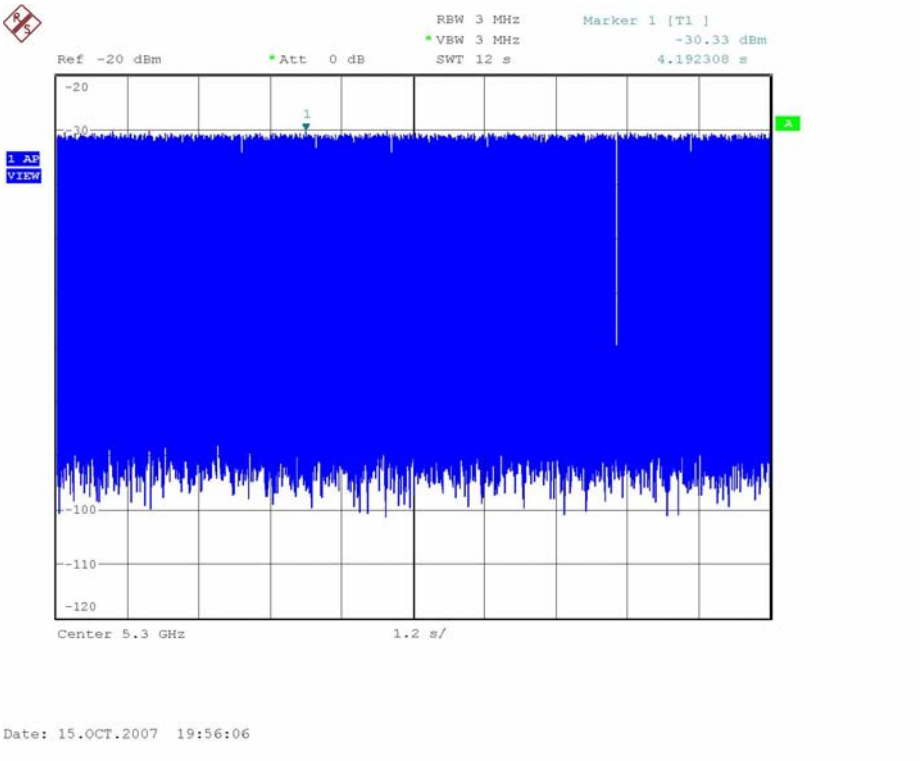
5.1. Test setup

5.1.1. Test Setup Diagram

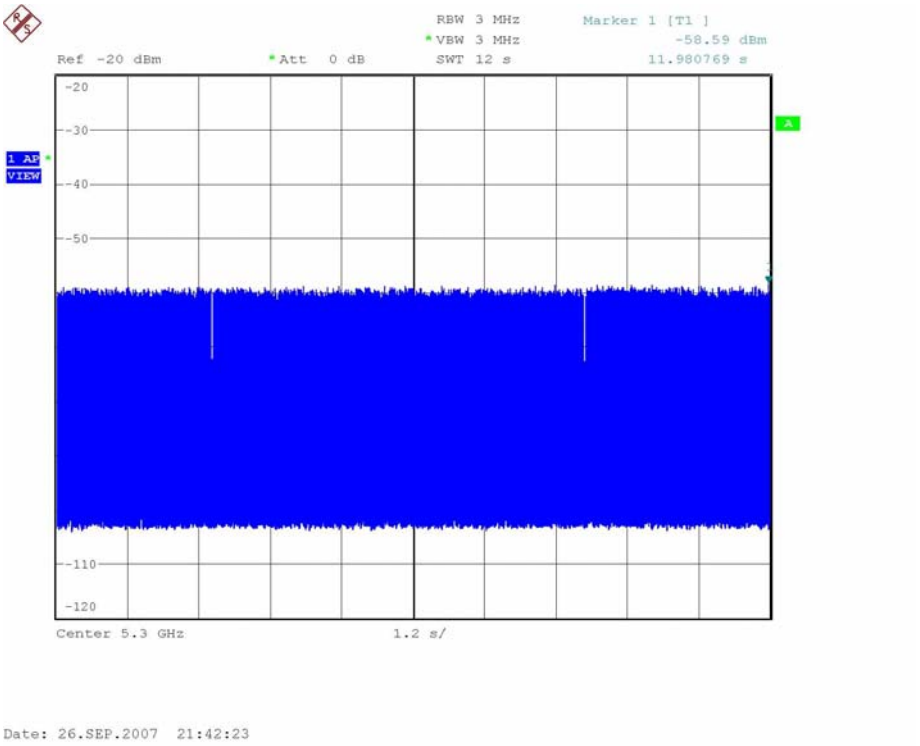
Following is the test setup for generate the radar waveforms and used to monitor UNII device.



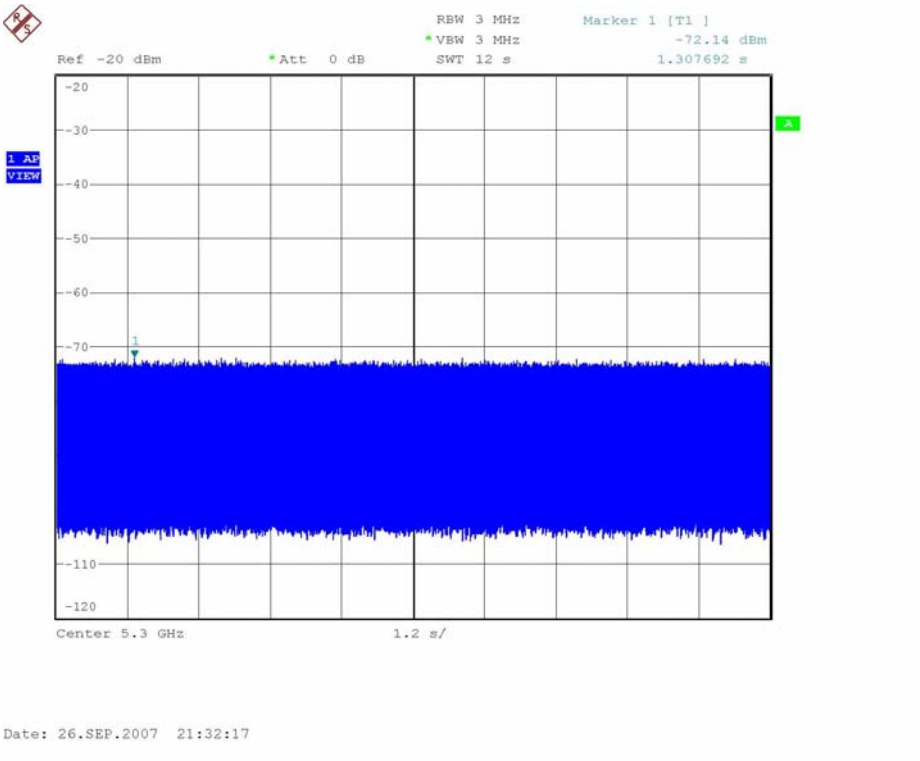
Master Data Traffic Plot (20 MHz)



Slave Data Traffic Plot



Without Data Traffic Plot (Noise Plot)



5.1.2. Test Setup Photo

5.1.3. Supporting Units

Support Units	Brand	Model No.	FCC ID
Notebook	DELL	D505	E2K24GBRL
Notebook	DELL	D505	E2K24GBRL
Wireless Cardbus	Ralink	RT2860	N/A (See note)

Note: This is a prototype radio module, not available for sale.

5.1.4. Test Setup Operation

System testing was performed with the designated MPEG test file that streams full motion video from the Access Point to the Client in full motion video mode using the media player with the V2.61 Codec package. This file is used by IP and Frame based systems for loading the test channel during the In-service compliance testing of the U-NII device.

The waveform parameters from within the bounds of the signal type are selected randomly using uniform distribution.

A spectrum analyzer is used as a monitor to verify that the EUT has vacated the Channel within the (Channel Closing Transmission Time and Channel Move Time, and does not transmit on a Channel during the Non-Occupancy Period after the detection and Channel move. It is also used to monitor EUT transmissions during the Channel Availability Check Time.

5.2. UNII Detection Bandwidth Measurement

5.2.1. Limit

Minimum 80% of the UNII 99% transmission power bandwidth. During the *U-NII Detection Bandwidth* detection test, radar type 1 is used and for each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

5.2.2. Test Procedures

1. Adjust the equipment to produce a single Burst of the Short Pulse Radar Type 1 at the center frequency of the EUT Operating Channel at the specified DFS Detection Threshold level.
2. The generating equipment is configured as shown in the Conducted Test Setup above section 4.1.1.
3. The EUT is set up as a stand-alone device (no associated Client and no traffic). Frame based systems will be set to a talk/listen ratio of 0%/100% during this test.
4. Generate single radar Burst, and note the response of the EUT. Repeat for a minimum of 10 trials. The EUT must detect the Radar Waveform using the specified U-NII Detection Bandwidth criterion.
5. Starting at the center frequency of the EUT operating Channel, increase the radar frequency in 1 MHz steps, repeating the above item 4 test sequence, until the detection rate falls below the U-NII Detection Bandwidth criterion. Record the highest frequency (denote as FH) at which detection is greater than or equal to the U-NII Detection Bandwidth criterion. Recording the detection rate at frequencies above FH is not required to demonstrate compliance.
6. Starting at the center frequency of the EUT operating Channel, decrease the radar frequency in 1 MHz steps, repeating the above item 4 test sequence, until the detection rate falls below the U-NII Detection Bandwidth criterion. Record the lowest frequency (denote as FL) at which detection is greater than or equal to the U-NII Detection Bandwidth criterion. Recording the detection rate at frequencies below FL is not required to demonstrate compliance.
7. The U-NII Detection Bandwidth is calculated as follows: U-NII Detection Bandwidth = FH – FL
8. The U-NII Detection Bandwidth must be at least 80% of the EUT transmitter 99% power, otherwise, the EUT does not comply with DFS requirements.

5.2.3. Test Deviation

There is no deviation with the original standard.

5.2.4. Test Result for UNII Detection Bandwidth

For 20MHz

EUT Frequency=5300MHz											
Radar Frequency (MHz)	DFS Detection Trials (1=Detection, 0= No Detection)										
	1	2	3	4	5	6	7	8	9	10	Detection Rate (%)
5289	0	0	0	0	0	0	0	0	0	0	0 %
5290	1	0	1	1	1	0	1	0	1	1	70 %
5291 (FL)	1	1	1	1	1	1	1	1	1	1	100 %
5292	1	1	1	1	1	1	1	1	1	1	100 %
5293	1	1	1	1	1	1	1	1	1	1	100 %
5294	1	1	1	1	1	1	1	1	1	1	100 %
5295	1	1	1	1	1	1	1	1	1	1	100 %
5296	1	1	1	1	1	1	1	1	1	1	100 %
5297	1	1	1	1	1	1	1	1	1	1	100 %
5298	1	1	1	1	1	1	1	1	1	1	100 %
5299	1	1	1	1	1	1	1	1	1	1	100 %
5300	1	1	1	1	1	1	1	1	1	1	100 %
5301	1	1	1	1	1	1	1	1	1	1	100 %
5302	1	1	1	1	1	1	1	1	1	1	100 %
5303	1	1	1	1	1	1	1	1	1	1	100 %
5304	1	1	1	1	1	1	1	1	1	1	100 %
5305	1	1	1	1	1	1	1	1	1	1	100 %
5306	1	1	1	1	1	1	1	1	1	1	100 %
5307	1	1	1	1	1	1	1	1	1	1	100 %
5308	1	1	1	1	1	1	1	1	1	1	100 %
5309 (FH)	1	1	1	1	1	1	1	1	1	1	100 %
5310	0	1	0	1	1	0	1	0	1	1	60 %
5311	0	0	0	0	0	0	0	0	0	0	0 %
Detection Bandwidth = FH-FL = 5309MHz-5291MHz = 18MHz											
EUT 99% Bandwidth = 17.05MHz (see note)											
UNII Detection Bandwidth Min. Limit (MHz): 17.05MHz x 80% = 13.64MHz											

Note: All UNII channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5300 MHz. The 99% channel bandwidth is 17.05MHz. (See the 99% BW section of the RF report for further measurement details).

5.3. Initial Channel Availability Check Time Measurement

5.3.1. Limit

The EUT shall perform a Channel Availability Check to ensure that there is no radar operating on the channel. After power-up sequence, receive at least 1 minute on the intended operating frequency.

5.3.2. Test Procedures

1. The U-NII devices will be powered on and be instructed to operate on the appropriate 5300MHz (for 20MHz). The spectrum analyzer will be set to zero span mode with a 3 MHz RBW and 3 MHz VBW on the *Channel* occupied by the radar (Ch_r) with a 3 minute sweep time. The spectrum analyzer's sweep will be started at the same time power is applied to the U-NII device.
2. The EUT should not transmit any beacon or data transmissions until at least 1 minute after the completion of the power-on cycle. Measurement system showing its nominal noise floor is marker 1.

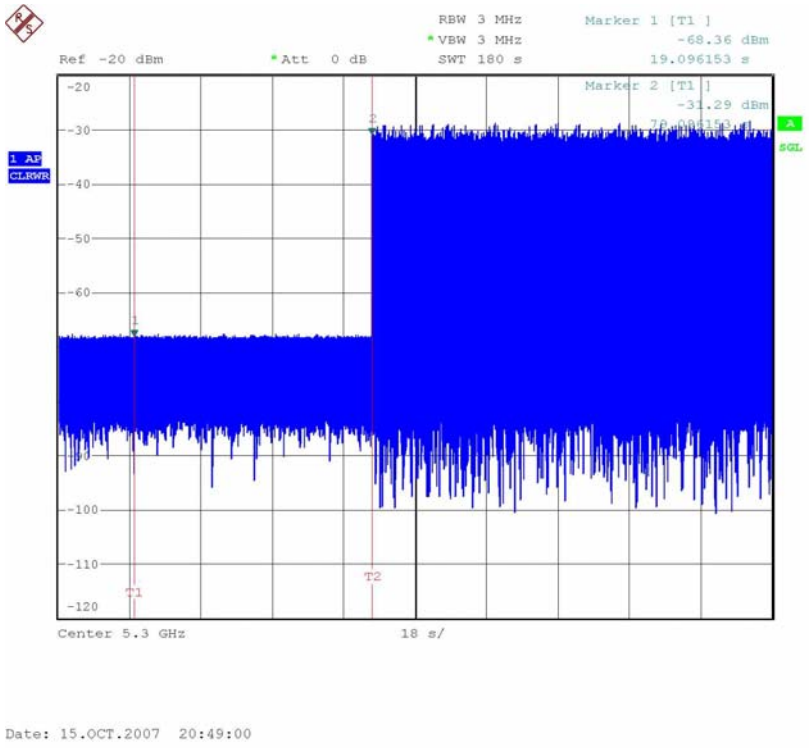
5.3.3. Test Deviation

There is no deviation with the original standard.

5.3.4. Test Result for Initial Channel Availability Check Time

For 20MHz

The EUT does not transmit any beacon or data transmissions until at least 1 minute after the completion of the power-on cycle (19.09 sec). The initial power up time of the EUT is indicated by marker 1 (19.09 sec). Initial beacons/data transmissions are indicated by marker 2 (79.09 sec).



5.4. Radar Burst at the Beginning of the Channel Availability Check Time Measurement

5.4.1. Limit

In beginning of the Channel Availability Check (CAC) Time, radar is detected on this channel, select another intended channel and perform a CAC on that channel.

5.4.2. Test Procedures

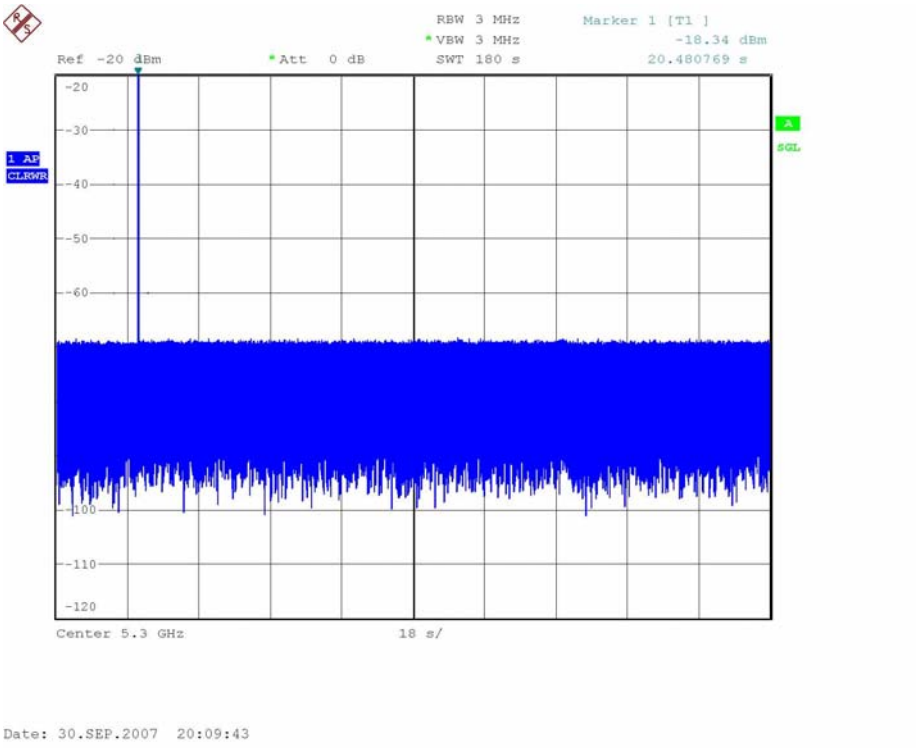
1. The steps below define the procedure to verify successful radar detection on the selected Channel during a period equal to the Channel Availability Check Time and avoidance of operation on that Channel when a radar Burst with a level equal to the DFS Detection Threshold + 1 dB occurs at the beginning of the Channel Availability Check Time.
2. The EUT is in completion power-up cycle (from T0 to T1). T1 denotes the instant when the EUT has completed its power-up sequence. The Channel Availability Check Time commences at instant T1 and will end no sooner than T1 + 60 seconds. A single Burst of short pulse of radar type 1 at DFS Detection Threshold + 1 dB will commence within a 6 second window starting at T1.
3. Visual indication on the EUT of successful detection of the radar Burst will be recorded and reported. Observation of emissions at 5300MHz (for 20MHz) will continue for 159.52 seconds (for 20MHz), after the radar Burst has been generated. Verify that during the 180 seconds measurement window no EUT transmissions occurred at 5300MHz (for 20MHz).

5.4.3. Test Deviation

There is no deviation with the original standard.

5.4.4. Results of Radar Burst at the Beginning of the Channel Availability Check Time

For 20MHz



5.5. Radar Burst at the End of the Channel Availability Check Time Measurement

5.5.1. Limit

In the end of Channel Availability Check (CAC) Time, radar is detected on this channel, select another intended channel and perform a CAC on that channel.

5.5.2. Test Procedures

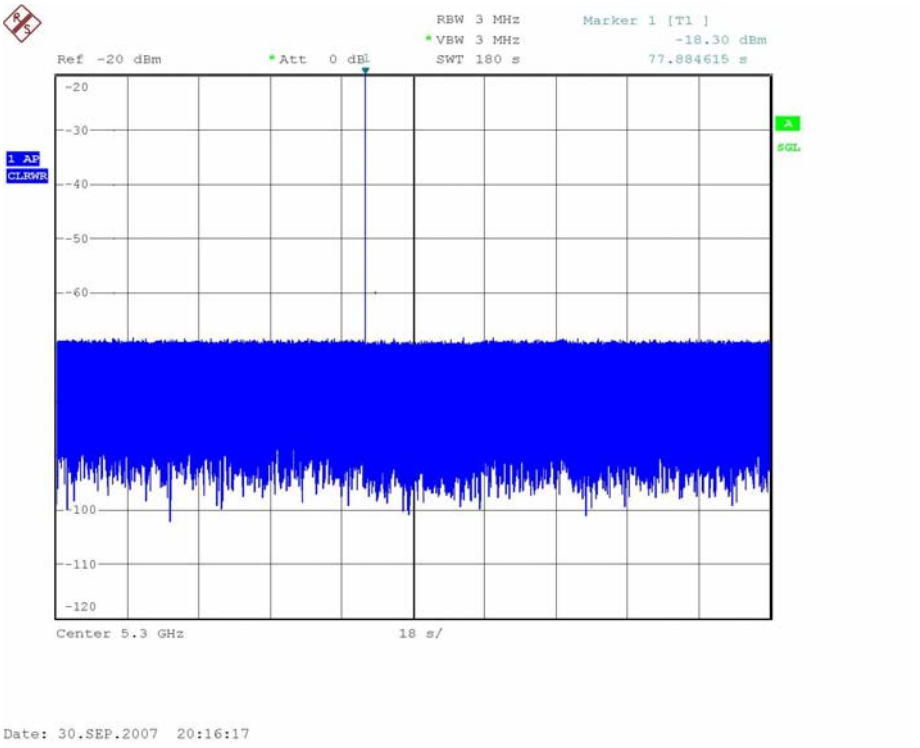
1. The steps below define the procedure to verify successful radar detection on the selected Channel during a period equal to the Channel Availability Check Time and avoidance of operation on that Channel when a radar Burst with a level equal to the DFS Detection Threshold + 1 dB occurs at the end of the Channel Availability Check Time.
2. The EUT is powered on at T0. T1 denotes the instant when the EUT has completed its power-up sequence. The Channel Availability Check Time commences at instant T1 and will end no sooner than T1 + 60 seconds. A single Burst of short pulse of radar type 1 at DFS Detection Threshold + 1 dB will commence within a 6 second window starting at T1+ 54 seconds.
3. Visual indication on the EUT of successful detection of the radar Burst will be recorded and reported. Observation of emissions at 5300MHz (for 20MHz) will continue for 102.12 seconds (for 20MHz), after the radar Burst has been generated. Verify that during the 180 seconds measurement window no EUT transmissions occurred at 5300MHz (for 20MHz).

5.5.3. Test Deviation

There is no deviation with the original standard.

5.5.4. Results of Radar Burst at the end of the Channel Availability Check Time

For 20MHz



5.6. In-Service Monitoring for Channel Move Time, Channel Closing Transmission Time and Non-Occupancy Period Measurement

5.6.1. Limit

The EUT has In-Service Monitoring function to continuously monitor the radar signals, If radar is detected, must leave the channel (Shutdown). The Channel Move Time to cease all transmissions on the current Channel upon detection of a Radar Waveform above the DFS Detection Threshold within 10 sec. The total duration of Channel Closing Transmission Time is 260ms, consisting of data signals and the aggregate of control signals, by a U-NII device during the Channel Move Time. The Non-Occupancy Period time is 30 minute during which a Channel will not be utilized after a Radar Waveform is detected on that Channel.

5.6.2. Test Procedures

1. When a radar Burst with a level equal to the DFS Detection Threshold + 1dB is generated on the Operating Channel of the U-NII device. A U-NII device operating as a Client Device will associate with the Master at Channel. 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 Detection Threshold + 1dB.
2. Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel. Measure and record the transmissions from the EUT during the observation time (Channel Move Time). One 12 second plot been reported for the Short Pulse Radar Types 1 and one for the Long Pulse Radar Type test in a 22 second plot. The plot for the Short Pulse Radar Types start at the end of the radar burst. The *Channel Move Time* will be calculated based on the plot of the Short Pulse Radar Type. The Long Pulse Radar Type plot show the device ceased transmissions within the 10 second window after detection has occurred. The plot for the Long Pulse Radar Type should start at the beginning of the 12 second waveform.
3. Measurement of the aggregate duration of the Channel Closing Transmission Time method. With the spectrum analyzer set to zero span tuned to the center frequency of the EUT operating channel at the radar simulated frequency, peak detection, and max hold, the dwell time per bin is given by: **For Type 1: Dwell (1.6ms)= S (1 sec) / B (625), Type 5: Dwell (35.2ms)= S (22 sec) / B (625);** where **Dwell** is the dwell time per spectrum analyzer sampling bin, **S** is the sweep time and **B** is the number of spectrum analyzer sampling bins. An upper bound of the aggregate duration of the intermittent control signals of *Channel Closing Transmission Time* is calculated by: **Type 1: C (6.4 ms)= N (4) X Dwell (1.6 ms), Type 5: C (0 ms)= N (0) X Dwell (35.2 ms)**; where **C** is the Closing Time, **N** is the number of spectrum analyzer sampling bins (intermittent control signals) showing a U-NII transmission and **Dwell** is the dwell time per bin.
4. Measure the EUT for more than 30 minutes following the channel close/move time to verify that the EUT does not resume any transmissions on this Channel.

5.6.3. Test Deviation

There is no deviation with the original standard.

5.6.4. Result of Channel Move Time & Channel Closing Transmission Time & Non-Occupancy Period

For 20MHz

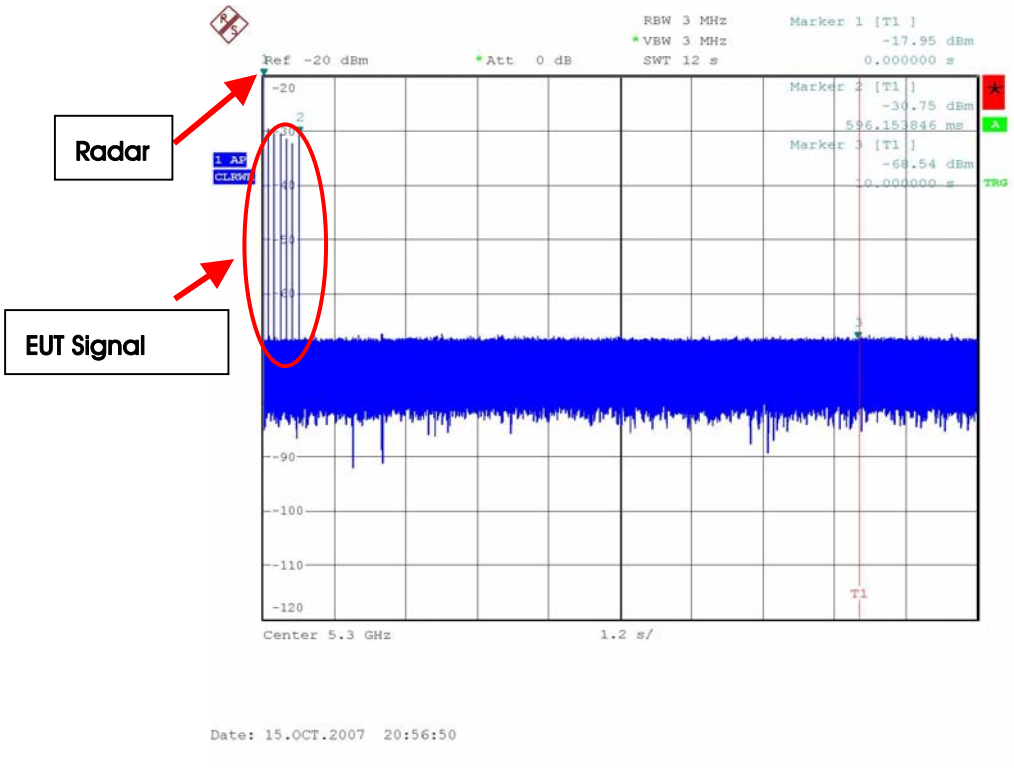
Parameter	Test Result		Limit
	Type 1	Type 5	
Test Channel (MHz)	5300	5300	-
Channel Move Time (msec)	596.15	0	＜ 10s
Intermittent Control Signals(ms) (Note)	6.4	0	＜ 60ms
Non-Occupancy Period (min.)	≧30	-	≧ 30 min

Note: 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.

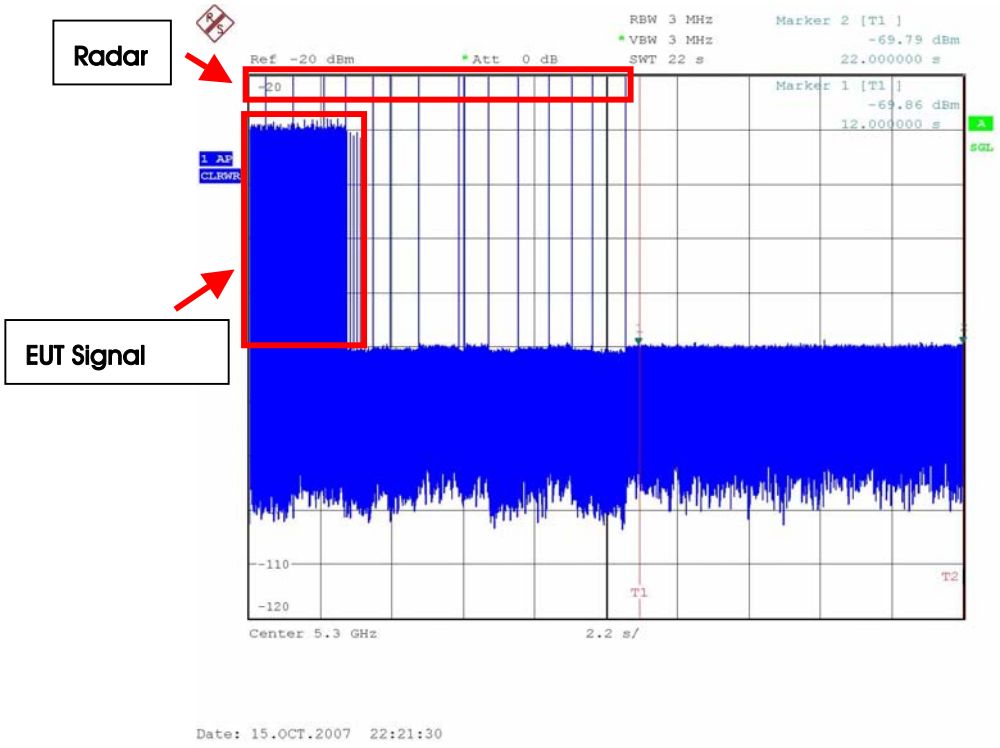
5.6.5. Channel Move Time Plot

For 20MHz

Radar #1 Channel Move Time



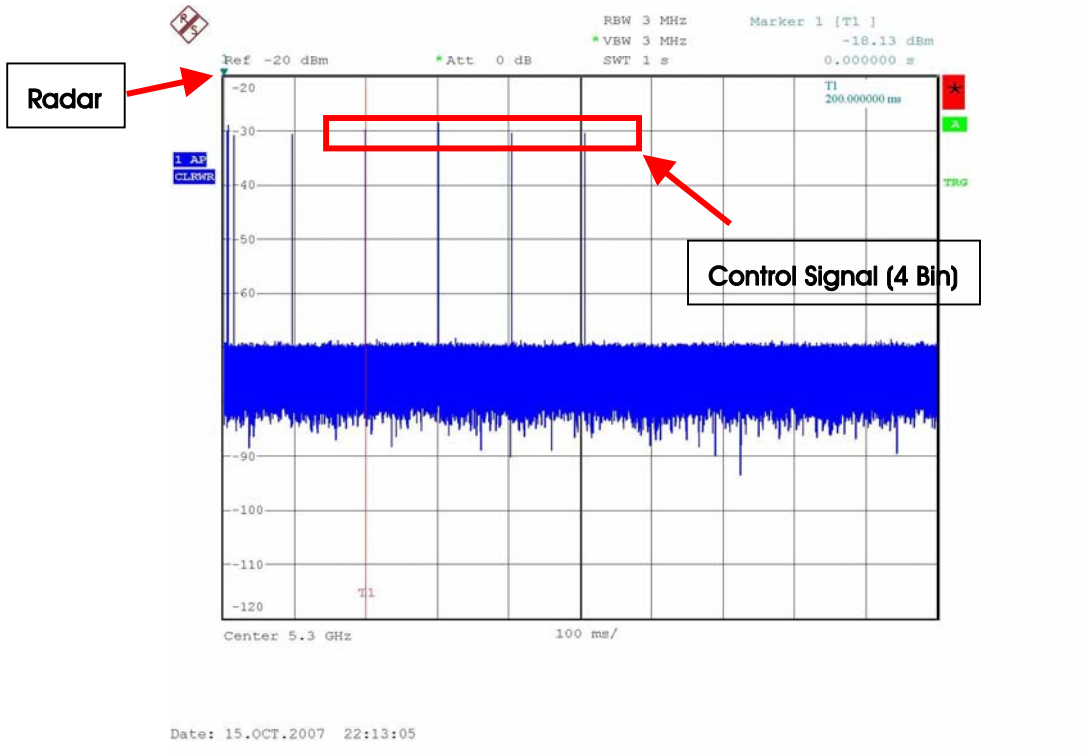
Radar #5 Channel Move Time



5.6.6. Channel Closing Transmission Time Plot

For 20MHz

Radar #1 Channel Closing Transmission Time is comprised of 200 ms starting at the beginning of the Channel Move Time plus 6.4 ms additional intermittent control signals



After end radar burst (200ms), no continuous data signal bursts were from client device. Therefore these 4 bin signals are acknowledge control signals from EUT.

Dwell is the dwell time per spectrum analyzer sampling bin.

S is the sweep time

B is the number of spectrum analyzer sampling bins

C is the intermittent control signals of Channel Closing Transmission Time

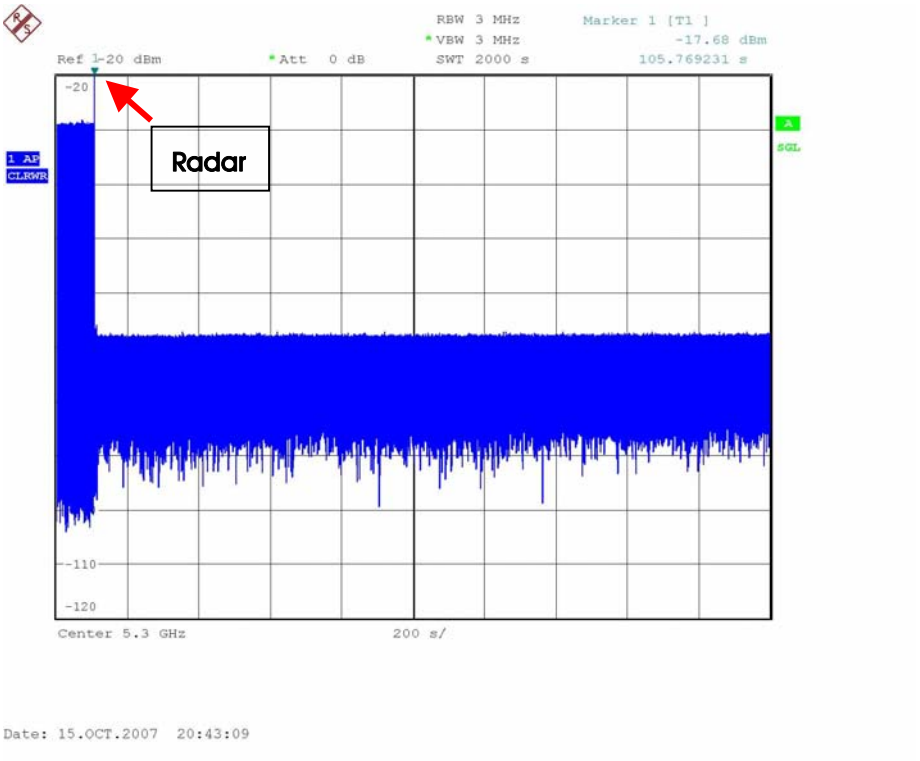
N is the number of spectrum analyzer sampling bins (intermittent control signals) showing a U-NII transmission

For 20MHz, Type 1: Dwell (1.6ms)= S (1 sec) / B (625), C (6.4 ms)= N (4) X Dwell (1.6 ms)

5.6.7. Non-Occupancy Period Plot

For 20MHz

Radar #1 Non-Occupancy Period



5.7. Statistical Performance Check Measurement

5.7.1. Limit

The minimum percentage of successful detection requirements found in below table when a radar burst with a level equal to the DFS Detection Threshold + 1dB is generated on the Operating Channel of the U-NII device (In- Service Monitoring).

Radar Type	Minimum Number of Trails	Detection Probability
1	30	Pd > 60%
2	30	Pd > 60%
3	30	Pd > 60%
4	30	Pd > 60%
Aggregate (Radar Types 1-4)	120	Pd > 80%
5	30	Pd > 80%
6	30	Pd > 70%

The percentage of successful detection is calculated by:

$$\frac{TotalWaveformDetections}{TotalWaveformTrails} \times 100 = \text{Probability of Detection Radar Waveform}$$

In addition an aggregate minimum percentage of successful detection across all Short Pulse Radar Types 1-4 is required and is calculated as follows:

$$\frac{Pd1 + Pd2 + Pd3 + Pd4}{4}$$

5.7.2. Test Procedures

1. Stream the MPEG test file from the Master Device to the Client Device on the test Channel for the entire period of the test.
2. At time T0 the Radar Waveform generator sends the individual waveform for each of the Radar Types 1-6, at levels equal to the DFS Detection Threshold + 1dB, on the Operating Channel.
3. Observe the transmissions of the EUT at the end of the Burst on the Operating Channel for duration greater than 10 seconds for Short Pulse Radar Types 1-4 and 6 to ensure detection occurs.
4. Observe the transmissions of the EUT at the end of the Burst on the Operating Channel for duration greater than 22 seconds for Long Pulse Radar Type 5 to ensure detection occurs.
5. The device can utilize a test mode to demonstrate when detection occurs to prevent the need to reset the device between trial runs.
6. The Minimum number of trails, minimum percentage of successful detection and the average minimum percentage of successful detection are found in below table.

5.7.3. Test Deviation

There is no deviation with the original standard.

5.7.4. Test Result of Statistical Performance Check

For 20MHz

Type 1 Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection ; 0=No Detection
1	5260	1	1428	18	1
2	5280	1	1428	18	1
3	5320	1	1428	18	1
4	5300	1	1428	18	1
5	5280	1	1428	18	1
6	5260	1	1428	18	1
7	5320	1	1428	18	1
8	5300	1	1428	18	1
9	5260	1	1428	18	1
10	5320	1	1428	18	1
11	5300	1	1428	18	1
12	5280	1	1428	18	1
13	5300	1	1428	18	1
14	5320	1	1428	18	1
15	5260	1	1428	18	1
16	5280	1	1428	18	1
17	5260	1	1428	18	1
18	5320	1	1428	18	1
19	5280	1	1428	18	1
20	5300	1	1428	18	1
21	5320	1	1428	18	1
22	5260	1	1428	18	1
23	5280	1	1428	18	0
24	5300	1	1428	18	1
25	5320	1	1428	18	1
26	5260	1	1428	18	1
27	5280	1	1428	18	1
28	5300	1	1428	18	1
29	5280	1	1428	18	1
30	5260	1	1428	18	1
Detection Percentage (%)					96.67

Type 2 Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection ; 0=No Detection
1	5320	2.6	221	23	1
2	5300	4.6	198	27	1
3	5260	1.1	184	29	1
4	5280	4.8	203	24	1
5	5300	2.4	162	25	1
6	5280	3.4	204	28	1
7	5260	2.3	170	27	1
8	5320	3.5	184	23	1
9	5280	4.9	150	27	1
10	5260	4.6	211	29	1
11	5320	2.9	158	23	1
12	5300	2.6	226	27	0
13	5260	1.6	204	26	1
14	5280	3.9	181	25	1
15	5320	4.6	202	24	1
16	5300	4.1	194	27	1
17	5320	2.3	193	28	1
18	5280	3.9	173	29	1
19	5260	4.3	188	23	1
20	5300	1.5	215	26	1
21	5280	4.9	227	27	0
22	5260	1.1	199	23	1
23	5300	4.5	155	29	1
24	5320	4.0	190	27	1
25	5300	2.4	151	23	1
26	5260	2.5	180	28	1
27	5280	2.5	228	23	0
28	5320	2.5	203	25	1
29	5260	1.5	188	25	1
30	5280	1.9	217	24	1
Detection Percentage (%)					90.00

Type 3 Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulse Width (us)	PRI (us)	Pulses / Burst	1=Detection ; 0=No Detection
1	5320	8.0	205	16	0
2	5280	6.7	382	18	1
3	5300	8.6	418	16	1
4	5260	9.4	351	17	1
5	5280	7.4	383	18	1
6	5260	9.8	232	16	1
7	5300	9.1	377	17	1
8	5320	9.6	457	16	1
9	5280	8.0	471	18	1
10	5300	9.0	304	18	1
11	5260	8.0	316	17	1
12	5320	9.8	325	16	1
13	5280	8.0	409	17	1
14	5300	9.9	200	17	0
15	5260	8.8	458	16	1
16	5320	8.0	232	18	1
17	5280	8.3	250	16	1
18	5300	8.7	270	16	1
19	5320	7.7	350	17	1
20	5260	7.1	230	16	1
21	5280	7.3	416	18	1
22	5320	7.6	498	18	1
23	5300	7.3	286	17	1
24	5260	7.3	287	16	1
25	5300	7.5	462	17	1
26	5320	6.2	300	17	1
27	5280	6.4	323	18	1
28	5300	7.1	420	16	1
29	5320	7.2	395	18	1
30	5280	8.4	377	16	1
Detection Percentage (%)					93.33

Type 4 Radar Statistical Performance

Trail #	*Test Freq. (MHz)*	*Pulse Width (us)*	*PRI (us)*	*Pulses / Burst*	*1=Detection ; 0=No Detection*
1	5280	18.0	242	15	1
2	5300	19.9	279	12	1
3	5260	12.9	487	14	0
4	5280	15.0	452	13	1
5	5260	16.3	230	12	1
6	5300	19.8	238	13	1
7	5320	18.2	420	16	1
8	5280	16.3	452	15	1
9	5300	14.2	495	12	0
10	5260	17.8	228	16	1
11	5320	19.1	211	16	1
12	5280	18.4	283	15	1
13	5300	11.8	411	12	1
14	5260	14.2	284	13	1
15	5320	13.9	202	12	1
16	5280	17.8	340	14	1
17	5300	15.6	290	16	1
18	5320	14.6	250	16	1
19	5260	14.4	484	15	0
20	5280	18.9	387	13	1
21	5320	11.1	348	15	1
22	5300	13.8	291	16	1
23	5260	14.3	295	12	1
24	5300	12.5	300	12	1
25	5320	12.5	322	14	1
26	5280	12.5	383	13	1
27	5300	15.7	322	16	1
28	5320	19.8	469	13	1
29	5280	18.6	406	15	1
30	5320	15.9	238	14	1
Detection Percentage (%)					90.00

Total Type 1~4 Radar Statistical Performance

Radar Type #	Detection Percentage (%)
1	96.67
2	90.00
3	93.33
4	90.00
Total 1~4	92.50

Type 5 Radar Statistical Performance

Trail #	1=Detection ; 0=No Detection	Trail #	1=Detection ; 0=No Detection	Trail #	1=Detection ; 0=No Detection
1	1	11	1	21	1
2	1	12	1	22	1
3	1	13	1	23	1
4	1	14	1	24	1
5	1	15	1	25	0
6	1	16	1	26	1
7	0	17	1	27	1
8	0	18	1	28	1
9	0	19	1	29	1
10	0	20	1	30	1
Detection Percentage (%)					83.33

Test Frequency (MHz)			5280			
Trail Number			1			
Number of Bursts in Trial			12			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	1	75.5	5			0.003658
2	1	61.8	9			1.529901
3	3	74.4	6	1255.6	1330.6	2.951972
4	2	65.9	11	1703.1		3.038072
5	2	80.8	8	1886.2		4.885843
6	1	98.1	16			5.281738
7	3	62.8	10	1474.2	1427.2	6.746502
8	1	92.5	18			7.74991
9	2	72.7	12	1302.3		8.035675
10	3	70.3	11	1031.7	1634.7	9.089628
11	2	92.7	15	917.3		10.039865
12	1	52.5	11			11.195005
Detection Check (1=Detection ; 0=No Detection)						1

Test Frequency (MHz)			5260			
Trail Number			2			
Number of Bursts in Trial			12			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	2	66.3	16	1226.7		0.285712
2	1	94.2	10			1.976335
3	3	96.7	12	1103.3	1341.3	2.322566
4	3	60.8	13	1771.2		3.713283
5	2	70	8	1469		4.883841
6	1	93	18			5.005228
7	3	87.7	15	1611.3	992.3	6.460524
8	1	84.5	16			7.013019
9	2	89	7	1284		8.817605
10	2	66.4	6	1820.6		9.323715
11	3	71.5	10	1594.5	1898.5	10.462576
12	1	71.1	13			11.496266
Detection Check (1=Detection ; 0=No Detection)						1

Test Frequency (MHz)			5320			
Trail Number			3			
Number of Bursts in Trial			11			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	2	51.7	7	1146.3		0.647836
2	1	93.2	15			1.409398
3	3	79.6	10	1290.4	964.4	2.872945
4	2	85.8	14	1559.2		4.049183
5	2	76.5	14	1210.5	1553.5	4.494059
6	1	61.7	8			5.716328
7	3	83.6	7	1205.4	993.4	7.308202
8	1	59.8	5			8.119962
9	2	69.9	10	1355.1		9.532813
10	3	94.3	10	1747.7	1408.7	10.751035
11	1	68.3	18			11.053268
Detection Check (1=Detection ; 0=No Detection)						1

Test Frequency (MHz)			5300			
Trail Number			4			
Number of Bursts in Trial			11			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	2	61.8	18	1000.2		0.514076
2	1	75.8	14			1.4181
3	3	75.8	10	1036.2	1699.2	2.607987
4	3	93.1	13	1699.2	1215.9	3.284108
5	2	53.8	10	1635.2		5.222126
6	1	69.5	16			5.474866
7	1	95.8	12			7.156099
8	2	53.8	13	1636.2		8.311208
9	2	79.7	17	1484.3		9.03862
10	3	96.9	10	978.1	1394.1	10.768322
11	1	79.4	9			11.137131
Detection Check (1=Detection ; 0=No Detection)						1

Test Frequency (MHz)			5260			
Trail Number			5			
Number of Bursts in Trial			13			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	3	76.5	5	1658.5	1885.5	0.341903
2	3	89.5	5	1162.5	1012.5	1.03929
3	1	92.5	15			2.530435
4	2	82.5	5	1869.5		3.352797
5	1	68.5	9			3.783207
6	3	78.3	17	1239.7	936.7	5.292381
7	1	91	6			6.334407
8	2	59.3	7	1898.7		6.688649
9	2	58	13	1884		7.6006
10	3	92.8	17	1029.2	1258.2	8.865035
11	1	77.4	10			9.464201
12	3	90.8	10	1219.2	1458.2	10.488185
13	2	87.9	8	1764.1		11.914643
Detection Check (1=Detection ; 0=No Detection)						1

Test Frequency (MHz)			5300			
Trail Number			6			
Number of Bursts in Trial			13			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	1	94	12			0.430078
2	3	73	12	1537	1338	1.384694
3	1	80.3	14			1.973542
4	2	82	12	1191		3.472224
5	2	66.7	11			4.340979
6	3	77	19	1766.3		5.218648
7	1	78.9	18	1918	1880	6.275836
8	2	96.7	11			6.987451
9	3	60.1	14	922.3		8.030177
10	3	84.1	11	1135.9	1926.9	9.097999
11	1	92.8	17			9.386174
12	3	68	5	1712	1535	10.683635
13	2	79.4	19	1453.6		11.607565
Detection Check (1=Detection ; 0=No Detection)						1

Test Frequency (MHz)			5320			
Trail Number			7			
Number of Bursts in Trial			9			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	3	50.9	16	1321.1	1333.1	0.077627
2	2	73.9	16	1538.1		2.317135
3	3	71.9	17	1596.1	1584.1	2.684349
4	1	54.3	14			4.779891
5	2	84.2	9	1055.8		5.502401
6	1	99.3	18			6.827573
7	1	89.5	13			8.051166
8	3	78.1	5	1436.9	1262.9	9.980082
9	2	51.1	13	1700.9		11.274601
Detection Check (1=Detection ; 0=No Detection)						0

Test Frequency (MHz)			5280			
Trail Number			8			
Number of Bursts in Trial			9			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	2	75.5	7	1280.5		0.051915
2	2	74.6	12	1011.4		1.972064
3	3	78.2	8	1092.8	1026.8	3.509341
4	1	52.1	15			5.059381
5	3	71.8	11	1168.2	935.2	6.581598
6	2	57.2	6	1831.8		7.028016
7	1	54	8			8.760839
8	3	86.8	12	1267.2	1639.2	10.426408
9	1	78.5	17			11.081612
Detection Check (1=Detection ; 0=No Detection)						0

Test Frequency (MHz)			5300			
Trail Number			9			
Number of Bursts in Trial			8			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	1	90.6	9			1.368312
2	1	95.7	15			2.504728
3	2	57.9	9	1501.1		3.923551
4	3	90	17	1673	1708	4.848792
5	2	90.2	13	1584.8		6.262989
6	2	53.4	18	1909.6		8.218717
7	1	75.1	9			10.019717
8	3	84.8	8	1357.2	1857.2	11.649192
Detection Check (1=Detection ; 0=No Detection)						0

Test Frequency (MHz)			5320			
Trail Number			10			
Number of Bursts in Trial			8			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	1	60.7	9			0.353222
2	3	59.2	13	1331.8	1077.8	1.659461
3	2	96.1	8	1237.9		3.432174
4	3	70.5	16	1145.5	1708.5	5.432909
5	2	63.2	13	1721.8		6.953575
6	1	51.5	7			8.82639
7	1	89.1	5			10.242227
8	2	86.1	12	1499.9		10.759333
Detection Check (1=Detection ; 0=No Detection)						0

Test Frequency (MHz)			5280			
Trail Number			11			
Number of Bursts in Trial			15			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	1	81.8	7			0.255617
2	3	55.4	5	1016.6	1310.6	0.929954
3	2	61.7	18	1616.3		1.699277
4	3	78.6	19	1882.4	1115.4	2.51622
5	3	75.3	7	1730.7	1082.7	3.350667
6	1	88.6	7			4.671144
7	2	74.1	5	1510.9		5.553525
8	1	75	18			6.315577
9	3	79.5	8	1722.5	925.5	7.021793
10	1	91.5	6			7.652757
11	2	74.8	9	1531.2		8.144794
12	2	88.4	10	1475.6		9.507618
13	1	51.7	16			9.965188
14	3	88.1	12	1605.9	1230.9	10.60083
15	2	63.2	16	1448.8		11.228243
Detection Check (1=Detection ; 0=No Detection)						1

Test Frequency (MHz)			5260			
Trail Number			12			
Number of Bursts in Trial			15			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	1	51.3	11			0.4202
2	3	56.3	12	1767.7	1360.7	1.045128
3	2	61.7	10	1582.3		2.054476
4	2	90.5	8	1722.5		2.830215
5	3	87.8	13	1288.2	1741.2	3.432245
6	1	50.9	19			4.196566
7	1	54.4	12			4.953029
8	2	91.6	18	1612.4		6.311483
9	3	87.7	6	1436.3	1258.3	7.14187
10	3	65.7	16	1723.3	1896.3	7.944048
11	1	75.3	12			8.374995
12	2	73.7	15	1892.3		9.016434
13	2	96.2	13	1411.8		10.197913
14	1	70.1	12			10.817077
15	3	52.7	13	1021.3	1393.3	11.848236
Detection Check (1=Detection ; 0=No Detection)						1

Test Frequency (MHz)			5280			
Trail Number			13			
Number of Bursts in Trial			14			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	3	81.6	15	1326.4	1816.4	0.420027
2	3	81.6	9	960.4	1855.4	1.213961
3	1	73.5	12			2.412241
4	2	61.7	5	1305.3		2.705526
5	1	63.1	15			4.149665
6	3	61.4	15	1499.6	1396.6	4.418842
7	1	99.3	11			5.456509
8	2	74.9	5	1604.1		6.153274
9	2	64.3	7	1079.7		7.420401
10	3	71.1	15	1154.9	1510.9	8.105166
11	1	59.4	12			9.087685
12	1	84.5	17			9.743762
13	3	99.1	11	1357.9	1730.9	10.514412
14	2	78.4	12	1576.6		11.920466
Detection Check (1=Detection ; 0=No Detection)						1

Test Frequency (MHz)			5320			
Trail Number			14			
Number of Bursts in Trial			14			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	1	58.9	15			0.26676
2	2	89.3	18	1728.7		1.250019
3	1	53.6	14			1.804563
4	2	66.6	14	1719.4		2.650483
5	2	64.2	12	1649.8		3.910049
6	3	57.4	19	1085.6	1816.6	4.529777
7	1	64.9	10			5.348374
8	2	69	19	1700		6.227024
9	2	62	16	1885		7.189539
10	3	69.2	8	1711.8	1049.8	8.019511
11	3	80.1	19	1763.9	1461.9	8.711083
12	1	84.4	9			9.670463
13	3	59.6	19	1597.4	1092.4	10.840806
14	3	69.7	17	1392.3	1694.3	11.966423
Detection Check (1=Detection ; 0=No Detection)						1

Test Frequency (MHz)			5260			
Trail Number			15			
Number of Bursts in Trial			17			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	2	59.5	14	1515.5		0.154623
2	1	71.2	5			0.860435
3	3	72.1	13	1820.9	1327.9	1.56626
4	2	50.4	19	1603.6		2.272135
5	3	99.2	11	1157.8	1085.8	2.977376
6	1	53.8	13			3.682861
7	2	93.4	7	1133.6		4.388707
8	3	59.4	7	1374.6	993.6	5.094518
9	2	53.6	13	1092.4		5.799787
10	1	59.8	8			6.50567
11	3	97.7	6	1593.3	1125.3	7.209959
12	1	84.2	10			7.915377
13	3	93.2	9	1104.8	1300.8	8.619959
14	1	97.7	11			9.326217
15	2	71.2	6	1580.8		10.032059
16	2	79.8	8	1537.2		10.736631
17	3	77.2	17	1423.8	1233.8	11.442475
Detection Check (1=Detection ; 0=No Detection)						1

Test Frequency (MHz)			5300			
Trail Number			16			
Number of Bursts in Trial			17			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	2	92.4	13	1522.6		0.354862
2	2	85.9	16	1893.1		0.860452
3	3	65.9	7	1857.1	1823.1	1.526845
4	1	95.1	9			2.256871
5	3	87.1	11	934.9	928.9	2.958635
6	1	73.5	8			3.945874
7	2	68.7	8	1508.3		4.756882
8	3	52.1	11	1324.9	987.9	5.036528
9	1	76.4	10			5.945372
10	3	96.4	5	1337.6	1898.6	6.852981
11	2	83.4	11	1597.6		7.535962
12	1	96.5	18			8.018265
13	1	79.7	16			8.625478
14	1	73	14			9.347658
15	2	86.4	13	1439.6		9.925348
16	3	90.8	17	1502.2	1389.2	10.754826
17	3	67.1	16	1532.9	1649.9	11.458283
Detection Check (1=Detection ; 0=No Detection)						1

Test Frequency (MHz)			5260			
Trail Number			17			
Number of Bursts in Trial			18			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	3	95.8	12	1628.2	1867.2	0.132542
2	2	52.2	15	1291.8		0.865214
3	1	99.9	11			1.685231
4	3	97.4	8	1853.6	1822.6	2.035426
5	2	98.4	11	1706.6		2.846253
6	3	74.2	12	1752.8	1348.8	3.625642
7	1	63.1	6			4.123561
8	2	70.3	13	1127.7		4.953621
9	3	85.5	10	1782.5	1179.5	5.512365
10	2	73.3	18	1409.7		6.125403
11	1	50.9	10			6.865868
12	3	64.7	13	1564.3	1184.3	7.421568
13	1	56.1	10			8.088234
14	3	86.3	12	980.7	1184.7	8.645235
15	1	78	13			9.236581
16	2	62.9	11	1426.1		10.132561
17	2	88.8	10	1513.2		10.765249
18	3	67.4	14	1249.6	1172.6	11.235461
Detection Check (1=Detection ; 0=No Detection)						1

Test Frequency (MHz)			5280			
Trail Number			18			
Number of Bursts in Trial			18			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	3	67.7	13	1787.3	1501.3	0.193161
2	2	96	10	1092		0.840518
3	1	74.5	7			1.97969
4	3	95	8	907	1443	2.372262
5	2	82.3	10	961.7		2.691289
6	3	84.1	17	978.9	1507.9	3.711257
7	1	63	10			4.05388
8	2	93.6	19	1059.4		5.119453
9	1	61.4	9			5.565324
10	1	86	14			6.228245
11	1	63.3	10			6.802603
12	3	88.6	6	979.4	984.4	7.553159
13	2	86.6	9	1035.4		8.068688
14	3	62.4	16	1234.6	985.6	8.939294
15	2	65.9	11	1859.1		9.445705
16	2	51.5	15	1339.5		10.042487
17	1	98.7	10			10.888558
18	3	66.3	19	1350.7	1640.7	11.906444
Detection Check (1=Detection ; 0=No Detection)						1

Test Frequency (MHz)			5300			
Trail Number			19			
Number of Bursts in Trial			19			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	3	13	13	1499.3	1528.3	0.125412
2	1	17	17			0.782539
3	3	17	17	1939.3	1576.3	1.526841
4	1	11	11			2.156487
5	1	14	14			2.651285
6	3	9	9	1629.4	1414.4	3.326582
7	2	7	7	1535.8		3.988625
8	3	14	14	1343	1104	4.725418
9	2	14	14	1553.1		5.326874
10	3	13	13	1520.9	918.9	5.933652
11	1	13	13			6.529425
12	2	11	11	1028.4		7.149632
13	3	15	15	1525.4	1407.4	7.759932
14	2	19	19	1369.6		8.425981
15	1	8	8			9.258412
16	1	9	9			9.925874
17	2	9	9	1050.3		1.026582
18	3	5	5	1701.2	1173.2	10.963658
19	2	6	6	1305.2		11.456981
Detection Check (1=Detection ; 0=No Detection)						1

Test Frequency (MHz)			5320			
Trail Number			20			
Number of Bursts in Trial			19			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	3	74.8	15	1654.2	1233.2	0.145982
2	1	89.9	5			1.058238
3	3	58.4	7	1156.6	1161.6	1.435873
4	2	69.9	10	1722.1		2.058964
5	2	52.6	16	1393.4		2.799658
6	3	51.5	5	1113.5	1706.5	3.158357
7	1	72.2	12			4.215839
8	3	79.2	13	1336.8	1332.8	4.835982
9	2	83.7	7	1758.3		5.365821
10	1	52.8	5			5.793588
11	1	86.9	11			6.523987
12	3	83.5	13	1468.5	1231.5	7.233985
13	2	73.9	18	1220.1		7.736982
14	2	60.6	5	1880.4		8.536827
15	1	86.3	6			8.935821
16	3	97.4	14	1855.6	912.6	9.726853
17	1	86.7	11			10.236581
18	2	50.7	14	1644.3		10.836582
19	3	60.2	5	1924.8	1679.8	11.436882
Detection Check (1=Detection ; 0=No Detection)						1

Test Frequency (MHz)			5300			
Trail Number			21			
Number of Bursts in Trial			20			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	2	80.5	10	1697.5		0.546448
2	1	72.8	5			0.648691
3	3	71	8	1728	1497	1.673517
4	1	75.9	10			2.025762
5	1	54.5	11			2.534224
6	3	89.7	11	1854.3	1023.3	3.251572
7	2	81.7	13	1285.3		3.757399
8	3	59.1	10	1476.9	1529.9	4.604714
9	2	73.4	15	1281.6		4.987161
10	3	76	13	993	1043	5.610535
11	1	55.3	19			6.424881
12	2	70.2	11	1911.8		6.679663
13	3	60.5	5	939.5	1600.5	7.23943
14	2	95	5	964		7.924694
15	1	68.6	6			8.552192
16	1	99.3	5			9.466622
17	2	84.8	18	1172.2		9.696724
18	3	97	10	1390	1123	10.603979
19	2	56.9	5	1291.1		10.940382
20	3	97.1	7	1558.9	1362.9	11.654047
Detection Check (1=Detection ; 0=No Detection)						1

Test Frequency (MHz)			5280			
Trail Number			22			
Number of Bursts in Trial			20			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	1	96.7	7			0.288367
2	1	54.7	17			0.660896
3	3	52.6	10	1536.4	1334.4	1.309965
4	2	64.1	17	1168.9		1.923650
5	2	80.1	18	1808.9		2.620524
6	3	78.4	19	1726.6	1378.6	3.143297
7	3	84.3	17	1539.7	1402.7	3.735001
8	3	81	17	1881	1717	4.666585
9	2	74.1	18	1575.9		4.851931
10	1	62.6	15			5.483962
11	1	67.4	15			6.577008
12	2	60.4	15	946.6		7.056458
13	1	51.6	7			7.440565
14	2	93.6	13	1476.4		8.285629
15	3	97.5	8	1675.5	1795.5	8.889250
16	3	73.7	6	1463.3	1294.3	9.442593
17	2	91.3	9	916.7		9.726948
18	1	56.5	7			10.209408
19	2	72.6	14	1831.4		10.836022
20	3	64.7	16	1625.3	1406.3	11.597510
Detection Check (1=Detection ; 0=No Detection)						1

Test Frequency (MHz)			5260			
Trail Number			23			
Number of Bursts in Trial			10			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	3	53.1	7	1855.9	1567.9	1.093781
2	2	74	10	1650		2.074529
3	3	67	8	1180	1612	3.356414
4	1	70.4	17			4.286839
5	2	52.4	19	1670		5.302676
6	1	81.5	10			6.143705
7	3	63.3	18	1599	1563	8.121928
8	3	67.8	14	1581	1328	8.584076
9	3	75.9	14	1741	1811	9.956952
10	2	55.7	11	1626		10.944306
Detection Check (1=Detection ; 0=No Detection)						1

Test Frequency (MHz)			5320			
Trail Number			24			
Number of Bursts in Trial			10			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	2	96.9	19	1008.1		0.283689
2	2	99	19	1492		1.676999
3	3	87.1	13	989.9	1019.9	2.426967
4	1	61.1	18			3.625360
5	3	62.2	11	1243.8	1766.8	5.925658
6	1	76	10			6.865716
7	3	87.2	17	1144.8	1665.8	7.529060
8	2	81.5	15	1055.5		9.383932
9	1	69.8	17			10.622080
10	2	92	19	1683		10.957742
Detection Check (1=Detection ; 0=No Detection)						1

Test Frequency (MHz)			5260			
Trail Number			25			
Number of Bursts in Trial			18			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	3	95.8	12	1628.2	1867.2	0.193161
2	2	52.2	15	1291.8		0.840518
3	1	99.9	11			1.979690
4	3	97.4	8	1853.6	1822.6	2.372262
5	2	98.4	11	1706.6		2.691289
6	3	74.2	12	1752.8	1348.8	3.711257
7	1	63.1	6			4.053880
8	2	70.3	13	1127.7		5.119453
9	3	85.5	10	1782.5	1179.5	5.565324
10	2	73.3	18	1409.7		6.228245
11	1	50.9	10			6.802603
12	3	64.7	13	1564.3	1184.3	7.553159
13	1	56.1	10			8.068688
14	3	86.3	12	980.7	1184.7	8.939294
15	1	78	13			9.445705
16	2	62.9	11	1426.1		10.042487
17	2	88.8	10	1513.2		10.888558
18	3	67.4	14	1249.6	1172.6	11.906444
Detection Check (1=Detection ; 0=No Detection)						0

Test Frequency (MHz)			5280			
Trail Number			26			
Number of Bursts in Trial			18			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	3	67.7	13	1787.3	1501.3	0.112570
2	2	96	10	1092		1.255096
3	1	74.5	7			1.412975
4	3	95	8	907	1443	2.493459
5	2	82.3	10	961.7		3.067281
6	3	84.1	17	978.9	1507.9	3.446941
7	1	63	10			4.579577
8	2	93.6	19	1059.4		5.217556
9	1	61.4	9			5.387260
10	1	86	14			6.143497
11	1	63.3	10			7.135011
12	3	88.6	6	979.4	984.4	7.341585
13	2	86.6	9	1035.4		8.453636
14	3	62.4	16	1234.6	985.6	8.940530
15	2	65.9	13	1859.1		9.344649
16	2	51.5	15	1339.5		10.280439
17	1	98.7	10			10.757074
18	3	66.3	19	1350.7	1640.7	11.601805
Detection Check (1=Detection ; 0=No Detection)						1

Test Frequency (MHz)			5300			
Trail Number			27			
Number of Bursts in Trial			19			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	3	13	13	1499.3	1528.3	0.256452
2	1	17	17			0.842562
3	3	17	17	1939.3	1576.3	1.536871
4	1	11	11			1.989632
5	1	14	14			2.678226
6	3	9	9	1629.4	1414.4	3.425987
7	2	7	7	1535.8		4.026852
8	3	14	14	1343	1104	4.685231
9	2	14	14	1553.1		5.342962
10	3	13	13	1520.9	918.9	5.847952
11	1	13	13			6.528941
12	2	11	11	1028.4		7.167813
13	3	15	15	1525.4	1407.4	7.735842
14	2	19	19	1369.6		8.365821
15	1	8	8			9.069523
16	1	9	9			9.874569
17	2	9	9	1050.3		10.368521
18	3	5	5	1701.2	1173.2	10.987654
19	2	6	6	1305.2		11.698752
Detection Check (1=Detection ; 0=No Detection)						1

Test Frequency (MHz)			5320			
Trail Number			28			
Number of Bursts in Trial			20			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	2	80.5	10	1697.5		0.546448
2	1	72.8	5			0.648691
3	3	71	8	1728	1497	1.673517
4	1	75.9	10			2.025762
5	1	54.5	11			2.534224
6	3	89.7	11	1854.3	1023.3	3.251572
7	2	81.7	13	1285.3		3.757399
8	3	59.1	10	1476.9	1529.9	4.604714
9	2	73.4	15	1281.6		4.987161
10	3	76	13	993	1043	5.610535
11	1	55.3	19			6.424881
12	2	70.2	11	1911.8		6.679663
13	3	60.5	5	939.5	1600.5	7.239430
14	2	95	5	964		7.924694
15	1	68.6	6			8.552192
16	1	99.3	5			9.466622
17	2	84.8	18	1172.2		9.696724
18	3	97	10	1390	1123	10.603979
19	2	56.9	5	1291.1		10.940382
20	3	97.1	7	1558.9	1362.9	11.654047
Detection Check (1=Detection ; 0=No Detection)						1

Test Frequency (MHz)			5280			
Trail Number			29			
Number of Bursts in Trial			17			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	2	92.4	13	1522.6		0.103129
2	2	85.9	16	1893.1		0.809003
3	3	65.9	7	1857.1	1823.1	1.514872
4	1	95.1	9			2.220736
5	3	87.1	11	934.9	928.9	2.926659
6	1	73.5	8			3.632511
7	2	68.7	8	1508.3		4.338129
8	3	52.1	11	1324.9	987.9	5.043856
9	1	76.4	10			5.749758
10	3	96.4	5	1337.6	1898.6	6.455638
11	2	83.4	11	1597.6		7.161533
12	1	96.5	18			7.867325
13	1	79.7	16			8.573102
14	1	73	14			9.279652
15	2	86.4	13	1439.6		9.985456
16	3	90.8	17	1502.2	1389.2	10.690725
17	3	67.1	16	1532.9	1649.9	11.396745
Detection Check (1=Detection ; 0=No Detection)						1

Test Frequency (MHz)			5260			
Trail Number			30			
Number of Bursts in Trial			16			
Burst#	No. of Pulses	Pulse Width (us)	Chirp (MHz)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Starting Location Within Interval (s)
1	1	57.4	14			0.472419
2	3	83.9	15	1079.1	1717.1	0.861133
3	2	67.1	17	1333.9		1.822100
4	2	91.3	14	1877.7		2.679041
5	3	60.1	9	1784.9	1515.9	3.219408
6	1	72.3	11			4.454844
7	2	92.6	7	1077.4		5.169008
8	1	86.2	12			5.476228
9	3	86.8	18	1713.2	1589.2	6.009079
10	1	98.7	6			7.247320
11	2	90.2	19	1747.8		7.640035
12	2	63.9	9	1657.1		8.752849
13	1	73.2	11			9.365509
14	3	51.9	9	1842.1	1910.1	9.792446
15	3	71.8	6	931.2	1825.2	10.872322
16	2	56.9	8	1860.1		11.513196
Detection Check (1=Detection ; 0=No Detection)						1

Type 6 Radar Statistical Performance

Trail #	Test Freq. (MHz)	Pulses / Hop	Pulse Width (us)	PRI (us)	1=Detection ; 0=No Detection
1	5300	9	1	333	1
2	5280	9	1	333	1
3	5300	9	1	333	1
4	5320	9	1	333	1
5	5260	9	1	333	1
6	5280	9	1	333	1
7	5260	9	1	333	1
8	5320	9	1	333	0
9	5280	9	1	333	1
10	5300	9	1	333	1
11	5320	9	1	333	1
12	5260	9	1	333	1
13	5280	9	1	333	1
14	5300	9	1	333	1
15	5320	9	1	333	1
16	5260	9	1	333	1
17	5280	9	1	333	0
18	5300	9	1	333	1
19	5280	9	1	333	1
20	5260	9	1	333	1
21	5320	9	1	333	1
22	5300	9	1	333	1
23	5280	9	1	333	0
24	5260	9	1	333	1
25	5320	9	1	333	1
26	5300	9	1	333	1
27	5260	9	1	333	1
28	5320	9	1	333	1
29	5280	9	1	333	1
30	5300	9	1	333	1
Detection Percentage (%)					90.00

6. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum Analyzer	R&S	FSP30	100023	9kHz ~ 30GHz	Dec. 17, 2006	Conducted (TH01-HY)
Power Meter	R&S	NRVS	100444	DC ~ 40GHz	Jun. 27, 2007	Conducted (TH01-HY)
Power Sensor	R&S	NRV-Z51	100458	DC ~ 30GHz	Jun. 27, 2007	Conducted (TH01-HY)
Power Sensor	R&S	NRV-Z32	100057	30MHz ~ 6GHz	Jun. 27, 2007	Conducted (TH01-HY)
AC Power Source	HPC	HPA-500W	HPA-9100024	AC 0 ~ 300V	May 04, 2007*	Conducted (TH01-HY)
DC Power Source	G.W.	GPC-6030D	C671845	DC 1V ~ 60V	Mar. 03, 2007	Conducted (TH01-HY)
Temp. and Humidity Chamber	KSON	THS-C3L	612	N/A	Oct. 01, 2007	Conducted (TH01-HY)
RF CABLE-1m	Jye Bao	RG142	CB034-1m	20MHz ~ 7GHz	Dec. 01, 2006	Conducted (TH01-HY)
RF CABLE-2m	Jye Bao	RG142	CB035-2m	20MHz ~ 1GHz	Dec. 01, 2006	Conducted (TH01-HY)
Vector Signal Generator	R&S	SMU200A	102098	100kHz ~ 6GHz	Nov. 14, 2006	Conducted (TH01-HY)
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	Mar. 07, 2007	Conducted (TH01-HY)
RF Power Divider	HP	11636A	102934	N/A	N/A	Conducted (TH01-HY)
RF Power Splitter	Anaren	44100	881840 / 881850	N/A	N/A	Conducted (TH01-HY)
RF Power Splitter	Anaren	42100	8817950 / 8817960	N/A	N/A	Conducted (TH01-HY)
RF Cable-0.5m	SUHNER	SUCOFLEX 106	TH01-HY –01~06	1GHz~26.5GHz	Feb. 04, 2007	Conducted (TH01-HY)

Note: Calibration Interval of instruments listed above is one year.

* Calibration Interval of instruments listed above is two year.

7. TEST LOCATION

SHIJR	ADD	:	6Fl., No. 106, Sec. 1, Shintai 5th Rd., Shijr City, Taipei, Taiwan 221, R.O.C.
	TEL	:	886-2-2696-2468
	FAX	:	886-2-2696-2255
HWA YA	ADD	:	No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.
	TEL	:	886-3-327-3456
	FAX	:	886-3-318-0055
LINKOU	ADD	:	No. 30-2, Dingfu Tsuen, Linkou Shiang, Taipei, Taiwan 244, R.O.C
	TEL	:	886-2-2601-1640
	FAX	:	886-2-2601-1695
DUNGHU	ADD	:	No. 3, Lane 238, Kangle St., Neihu Chiu, Taipei, Taiwan 114, R.O.C.
	TEL	:	886-2-2631-4739
	FAX	:	886-2-2631-9740
JUNGHE	ADD	:	7Fl., No. 758, Jungjeng Rd., Junghe City, Taipei, Taiwan 235, R.O.C.
	TEL	:	886-2-8227-2020
	FAX	:	886-2-8227-2626
NEIHU	ADD	:	4Fl., No. 339, Hsin Hu 2nd Rd., Taipei 114, Taiwan, R.O.C.
	TEL	:	886-2-2794-8886
	FAX	:	886-2-2794-9777
JHUBEI	ADD	:	No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C.
	TEL	:	886-3-656-9065
	FAX	:	886-3-656-9085

8. TAF CERTIFICATE OF ACCREDITATION

Certificate No. : L1190-070110

財團法人全國認證基金會
Taiwan Accreditation Foundation

Certificate of Accreditation

This is to certify that

Sporton International Inc.
EMC & Wireless Communications Laboratory
No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.

is accredited in respect of laboratory

Accreditation Criteria	:	ISO/IEC 17025:2005
Accreditation Number	:	1190
Originally Accredited	:	December 15, 2003
Effective Period	:	January 10, 2007 to January 09, 2010
Accredited Scope	:	Testing Field, see described in the Appendix
Specific Accreditation Program	:	Accreditation Program for Designated Testing Laboratory for Commodities Inspection Accreditation Program for Telecommunication Equipment Testing Laboratory

Jay-San Chen
President, Taiwan Accreditation Foundation
Date : January 10, 2007

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The Appendix forms an integral part of this Certificate, which shall be invalid when used without the Appendix.