FCC CFR47 PART 15 SUBPART E
(DFS REQUIREMENTS)
CERTIFICATION TEST REPORT

FOR

FIXED POINT TO POINT WIRELESS BRIDGE

BRAND NAME: MOTOROLA
MODEL SERIES: PTP54600 Full and PTP54600 Lite
MODELS: 5530BH and 5530BH15

FCC ID: QWP54100

REPORT NUMBER: 06U10770-1

ISSUE DATE: FEBRUARY 21, 2007

Prepared for
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	02/21/2007	Initial Issue	MH

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	ORTHOGON SYSTEMS, LTD. UNIT A1, LINHAY BUSINESS PARK, EASTERN ROAD ASHBURTON, DEVON, TQ13 7UP, UK
EUT DESCRIPTION:	Fixed Point to Point Wireless Bridge
BRAND NAME:	MOTOROLA
MODEL SERIES:	PTP54600 Full and PTP54600 Lite
MODEL TESTED:	5530BH15
SERIAL NUMBER:	E252708017DA (Master) and E252708017FH (Slave)
DATE TESTED:	January 11 – 12, 2007

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 15 SUBPART E (DFS REQUIREMENTS)	NO NON-COMPLIANCE NOTED

Compliance Certification Services, Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification Services will constitute fraud and shall nullify the document. No part of this report may be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any government agency.

Approved & Released For CCS By:

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4-2003, FCC CFR 47 Part 2, FCC CFR 47 Part 15 and FCC 06-96 APPENDIX "COMPLIANCE MEASUREMENT PROCEDURES FOR UNLICENSED-NATIONAL INFORMATION INFRASTRUCTURE DEVCIES OPERATING IN THE 5250-5350 MHz AND 5470-5725 MHz BANDS INCORPORATING DYNAMIC FREQUENCY SELECTION".

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 561F Monterey Road, Morgan Hill, California, USA. The sites are constructed in conformance with the requirements of ANSI C63.4, ANSI C63.7 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://www.ccsemc.com.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Radiated Emission, 30 to 200 MHz	+/- 3.3 dB
Radiated Emission, 200 to 1000 MHz	+4.5 / -2.9 dB
Radiated Emission, 1000 to 2000 MHz	+4.5 / -2.9 dB
Power Line Conducted Emission	+/- 2.9 dB

Uncertainty figures are valid to a confidence level of 95%.

5. DESCRIPTION OF EUT

The EUT is a fixed point-to-point wireless link operating in the 5470 to 5725 MHz U-NII band. The hardware is identical for each end of the link; one device is configured as a Master device and the other device is configured as a Slave device. The Master / Slave configuration is selected in software by the manufacturer.

Each device contains two transceivers and one integral dual-polarized patch antenna with a gain of 23 dBi. Each of the transceivers is dedicated to a particular antenna polarization, and they operate simultaneously. The power is adjustable, with a maximum output of 4.8 dBm.

The software is PTP 600 Series Software, version 04.01, modified as engineering build 58600_B1066+ !wdog to incorporate test tools (notavailable to the end user) enabled to simplify testing.

5.1. MANUFACTURER'S DESCRIPTION OF MODEL DIFFERENCES

Units with a 15 suffix (Lite model series) have a throttled data capacity without affecting RF parameters or airside performance such that all versions are identical with respect to worst-case determination. 'The throttled data capacity is achieved in the MAC layer of the product software. The PHY layer is identical in both variants and there is no impact on the operating TDD structure, RF bandwidth, on-air signalling rate, power level, or receiver performance. Therefore, in our opinion, the results from the versions tested apply equally to the entire model series.

6. APPLICABLE LIMITS AND RESULTS

6.1. DYNAMIC FREQUENCY SELECTION

6.1.1. LIMITS

§15.407 (h) and FCC 06-96 APPENDIX "COMPLIANCE MEASUREMENT PROCEDURES FOR UNLICENSED-NATIONAL INFORMATION INFRASTRUCTURE DEVCIES OPERATING IN THE 5250-5350 MHz AND 5470-5725 MHz BANDS INCORPORATING DYNAMIC FREQUENCY SELECTION".

Table 1: Applicability of DFS requirements prior to use of a channel

Requirement	**Operational Mode**		
	Master	**Client (without radar detection)**	**Client (with radar detection)**
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
Uniform Spreading	Yes	Not required	Not required

Table 2: Applicability of DFS requirements during normal operation

Requirement	**Operational Mode**		
	Master	**Client** (without DFS)	**Client** (with DFS)
DFS Detection Threshold	Yes	Not required	Yes
Channel Closing Transmission Time	Yes	Yes	Yes
Channel Move Time	Yes	Yes	Yes

Table 3: 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.	

Table 4: DFS Response requirement values

Parameter	**Value**
Non-occupancy period	30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds
Channel Closing Transmission Time	200 milliseconds + approx. 60 milliseconds over remaining 10 second period
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. 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 approximately 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.	

Table 5 – Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (Microseconds)	PRI (Microseconds)	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

Table 6 – Long Pulse Radar Test Signal

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

Table 7 – Frequency Hopping Radar Test Signal

Radar Waveform	Pulse Width (µsec)	PRI (µsec)	Burst Length (ms)	Pulses per Hop	Hopping Rate (kHz)	Minimum Percentage of Successful Detection	Minimum Trials
6	1	333	300	9	.333	70%	30

6.1.2. TEST AND MEASUREMENT SYSTEM

SYSTEM OVERVIEW

Measurements were performed using both conducted and radiated test methods.

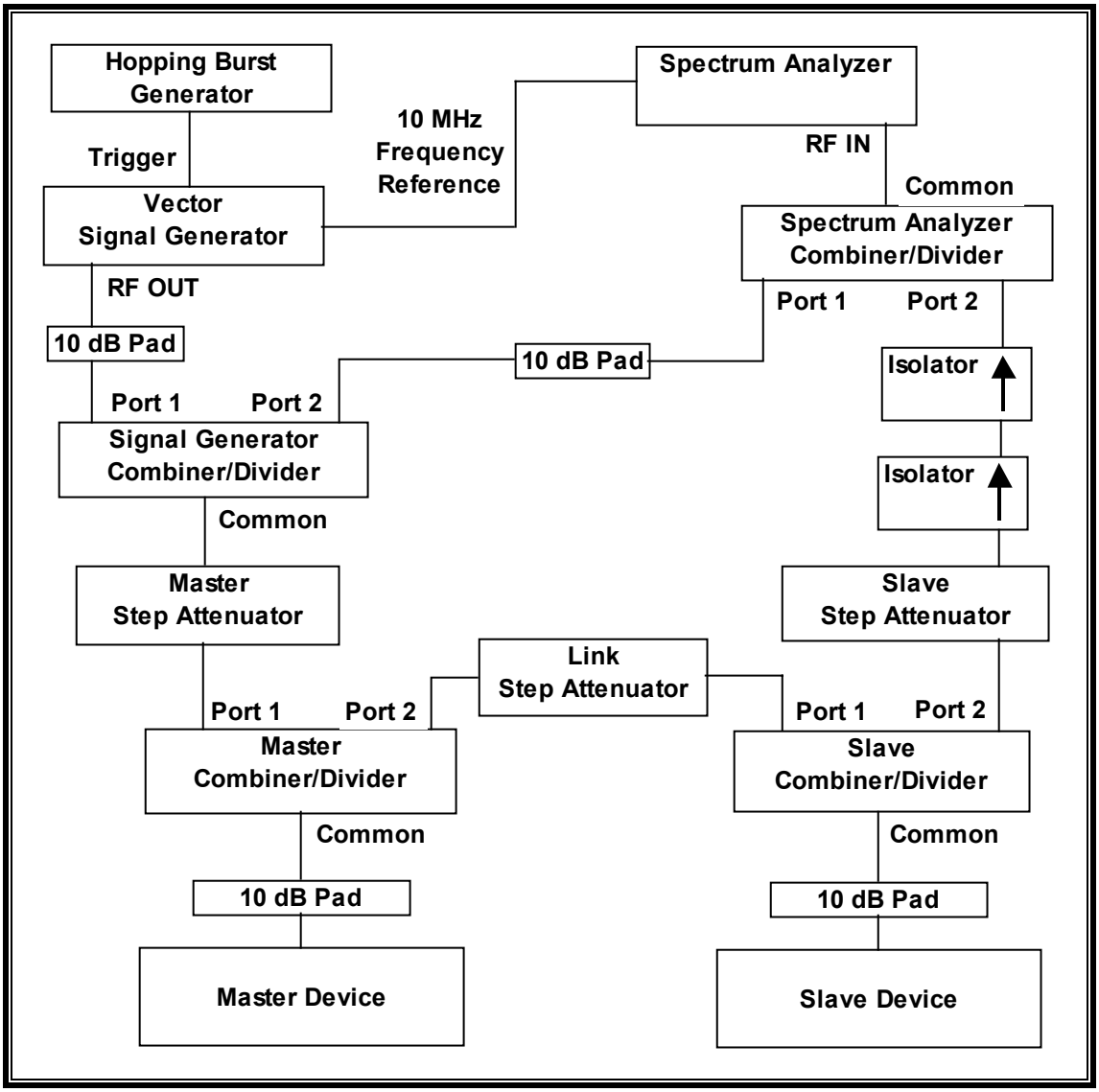
The short pulse and long pulse signal generating system utilizes the NTIA software. The Vector Signal Generator has been validated by the NTIA. The hopping signal generating system utilizes the CCS simulated hopping method and system, which has been validated by the DoD, FCC and NTIA. The software selects waveform parameters from within the bounds of the signal type on a random basis using uniform distribution.

The short pulse types 2, 3 and 4, and the long pulse type 5 parameters are randomized at run-time.

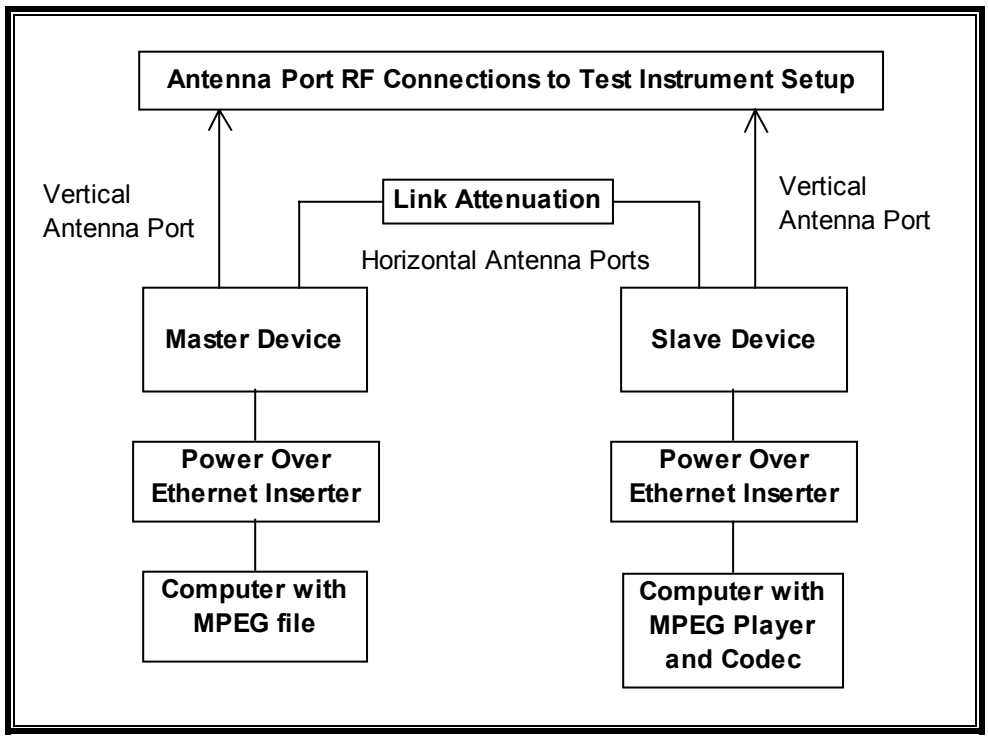
The hopping type 6 pulse parameters are fixed while the hopping sequence is based on the August 2005 NTIA Hopping Frequency List. The initial starting point randomized at run-time and each subsequent starting point is incremented by 475. Each frequency in the 100-length segment is compared to the boundaries of the EUT Detection Bandwidth and the software creates a hopping burst pattern in accordance with Section 7.4.1.3 Method #2 Simulated Freqeuncy Hopping Radar Waveform Generating Subsystem of FCC 06-96 APPENDIX. The frequency of the signal generator is incremented in 1 MHz steps from F_L to F_H for each successive trial. This incremental sequence is repeated as required to generate a minimum of 30 total trials and to maintain a uniform frequency distribution over the entire Detection Bandwidth.

The signal monitoring equipment consists of a spectrum analyzer set to display 8001 bins on the horizontal axis. The time-domain resolution is 2 msec / bin with a 16 second sweep time, meeting the 10 second short pulse reporting criteria. The aggregate ON time is calculated by multiplying the number of bins above a threshold during a particular observation period by the dwell time per bin, with the analyzer set to peak detection and max hold. The time-domain resolution is 3 msec / bin with a 24 second sweep time, meeting the 22 second long pulse reporting criteria and allowing a minimum of 10 seconds after the end of the long pulse waveform.

CONDUCTED METHOD SYSTEM BLOCK DIAGRAM



CONDUCTED METHOD EUT TEST SETUP



SYSTEM CALIBRATION

Connect the spectrum analyzer to the test system in place of the master device. Set the signal generator to CW mode. Adjust the amplitude of the signal generator to yield a measured level of –64 dBm on the spectrum analyzer.

Without changing any of the instrument settings, reconnect the spectrum analyer to the Common port of the Spectrum Analyzer Combiner/Divider and connect a 50 ohm load to the Master Device port of the test system.

Measure the amplitude and calculate the difference from –64 dBm. Adjust the Reference Level Offset of the spectrum analyzer to this difference. Confirm that the signal is displayed at –64 dBm. Readjust the RBW and VBW to 3 MHz, set the span to 10 MHz, and confirm that the signal is still displayed at –64 dBm.

The spectrum analyzer displays the level of the signal generator as received at the antenna ports of the Master Device. The interference detection threshold may be varied from the calibrated value of –64 dBm and the spectrum analyzer will still indicate the level as received by the Master Device.

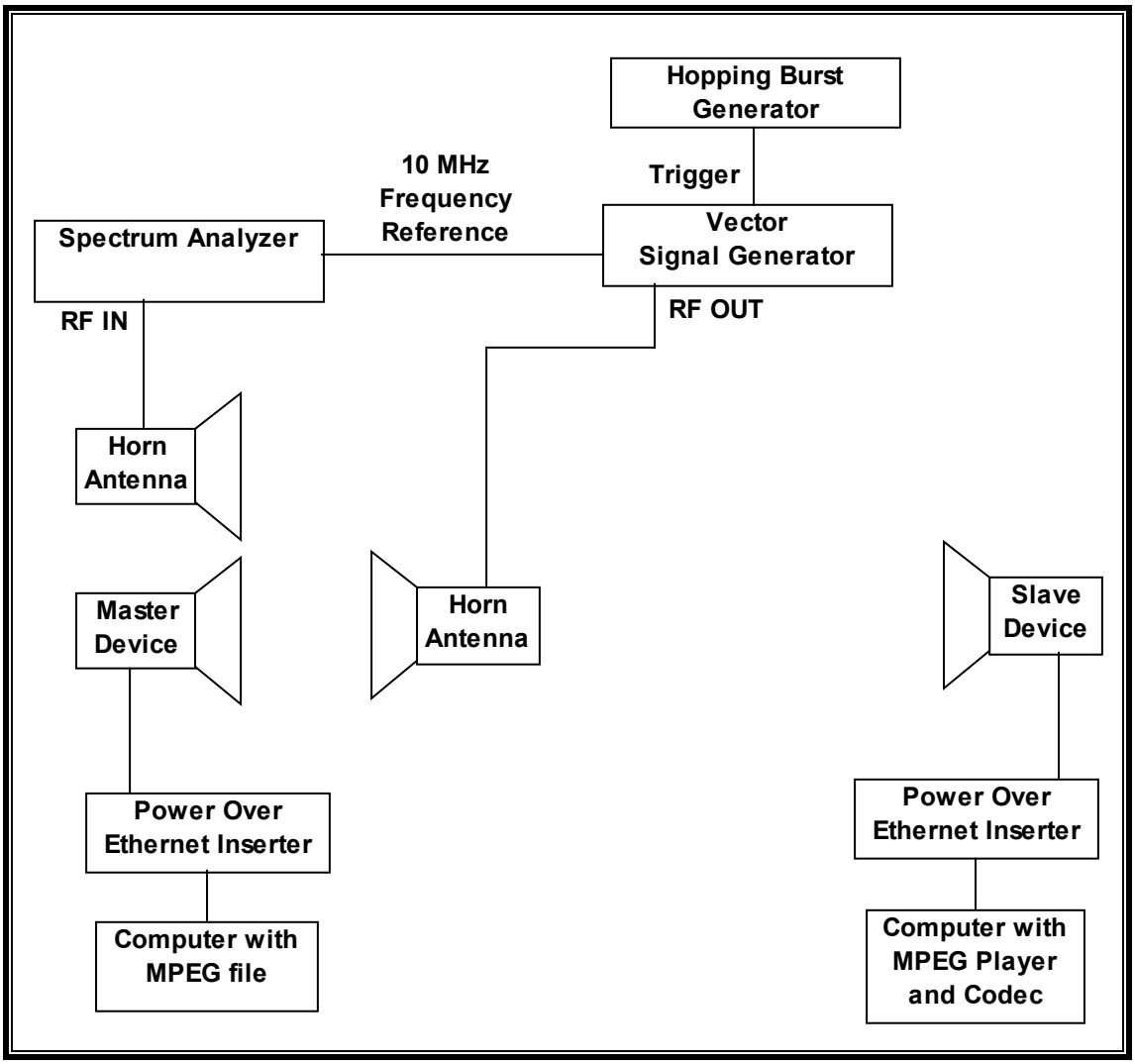
Set the signal generator to produce a radar waveform, trigger a burst manually and measure the level on the spectrum analyzer. Readjust the amplitude of the signal generator as required so that the peak level of the waveform is at a displayed level equal to the required or desired interference detection threshold. Separate signal generator amplitude settings are determined as required for each radar type.

ADJUSTMENT OF DISPLAYED TRAFFIC LEVEL

Establish a link between the Master and Slave, adjusting the Link Step Attenuator as needed to provide a suitable received level at the Master and Slave devices. Stream the video test file to generate WLAN traffic. Confirm that the WLAN traffic level, as displayed on the spectrum analyzer, is at lower amplitude than the radar detection threshold. Confirm that the displayed traffic is from the Master Device. For Master Device testing confirm that the displayed traffic does not include Slave Device traffic. For Slave Device testing confirm that the displayed traffic does not include Master Device traffic.

If a different setting of the Master Step Attenuator is required to meet the above conditions, perform a new System Calibration for the new Master Step Attenuator setting.

RADIATED METHOD SETUP DIAGRAM



6.1.3. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Serial Number**	**Cal Due**
Spectrum Analyzer 3 Hz ~ 44 GHz	Agilent / HP	E4446A	US42070220	7/29/2007
Vector Signal Generator 250kHz-20GHz	Agilent / HP	E8267C	US43320336	11/2/2007
High Speed Digital I/O Card	National Instruments	PCI-6534	HA1612845	1/16/2008

6.1.4. SUPPORT EQUIPMENT

The following EUT support equipment was utilized for the tests documented in this report:

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	**Brand**	**Model**	**Serial Number**	**FCC ID**
Laptop	DELL	PRECISION M90	39-877-078-51	DoC
AC Adapter	DELL	DA90PS0-00	OXD757-48661-63T-6IS8	DoC
Laptop	TOSHIBA	TECRA 8200	12048027PU	DoC
AC Adapter	TOSHIBA	PA3048U-1ACA	1092289G	DoC
Power IDU	MOTOLORA	Canopy Power IDU 150/300 Mbps	604018525	DoC
Power IDU	MOTOLORA	Canopy Power IDU 150/300 Mbps	604018587	DoC

6.1.5. DESCRIPTION OF EUT

The EUT operates over the 5470-5725 MHz range.

The EUT can be configured either as a Master Device or as a Slave Device without Radar Detection. Each installation consists of two devices set up to make a point-to-point link. One of the devices in each installation is configured as the Master and the other device is configured as the Slave.

Within each device, two identical transceivers are connected to one integrated dual-polarized antenna. The antenna has a gain of 23 dBi in each polarization.

The power level is adjustable. The highest composite (horizontal polarization + vertical polarization) power level is 4.8 dBm. The highest composite EIRP is 27.8 dBm.

The rated output power of the Master unit is > 23dBm (EIRP). Therefore the required interference threshold level is –64 dBm. After correction for antenna gain and procedural adjustments, the required conducted threshold at the antenna port is –64 + 23 + 1 = -40 dBm.

The calibrated conducted DFS Detection Threshold level is set to –40 dBm. For test purposes a connector plate is added so that each transmitter may be connected to a 50-ohm coaxial antenna port. The vertically polarized antenna ports are connected to the test system to perform conducted tests. The horizontally polarized antenna ports between the Master and Slave are connected via 60 dB link attenuation to simulate typical link losses in an installed configuration.

The calibrated radiated DFS Detection Threshold level is set to –63 dBm.

WLAN traffic is generated by streaming the video file TestFile.mp2 “6 ½ Magic Hours” from the Master to the Slave in full motion video mode using the media player with the V2.61 Codec package.

The rated output power of the Master unit is > 27dBm (EIRP) therefore TPC is required. TPC is implemented as a receiver-driven function with an 8 dB range of power reduction.

The EUT is a Frame-based system utilizing OFDM modulation with a 26 MHz nominal channel bandwidth. The maximum Talk/Listen ratio is 50% / 50%, and this setting is used for all DFS testing.

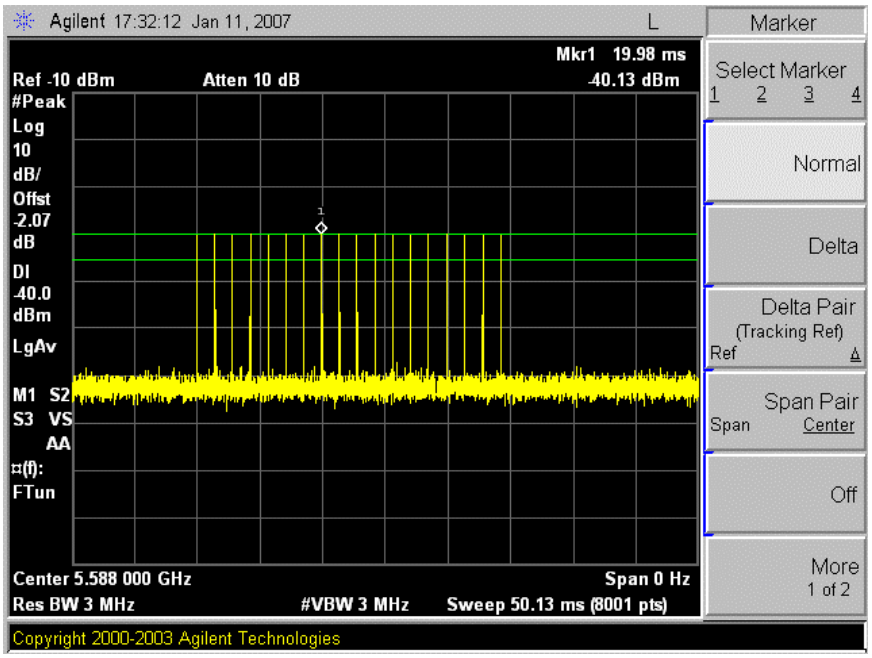
The software is PTP 600 Series Software, version 04.01, modified as engineering build 58600_B1066+ !wdog to incorporate test tools (notavailable to the end user) enabled to simplify testing.

Test results show that the EUT requires 58.72 seconds to complete its initial power-up cycle.

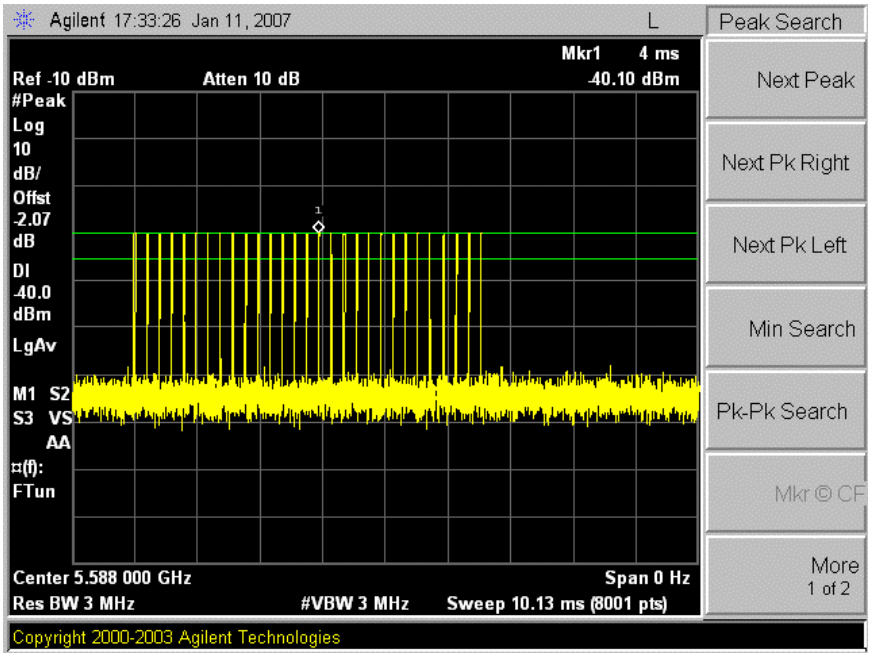
6.1.6. PLOTS OF RADAR WAVEFORM, AND WLAN TRAFFIC

PLOTS OF RADAR WAVEFORMS

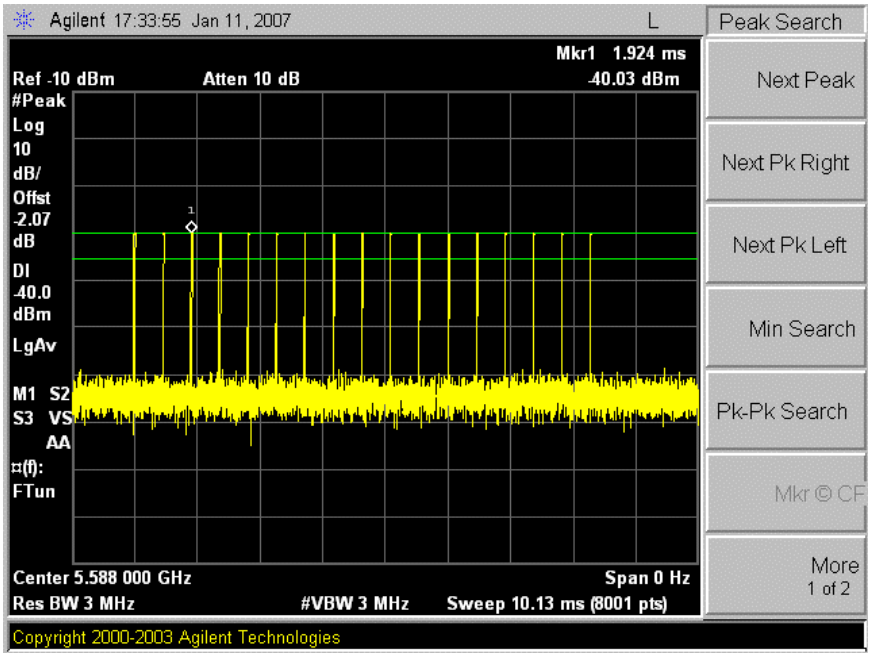
SHORT PULSE RADAR TYPE 1



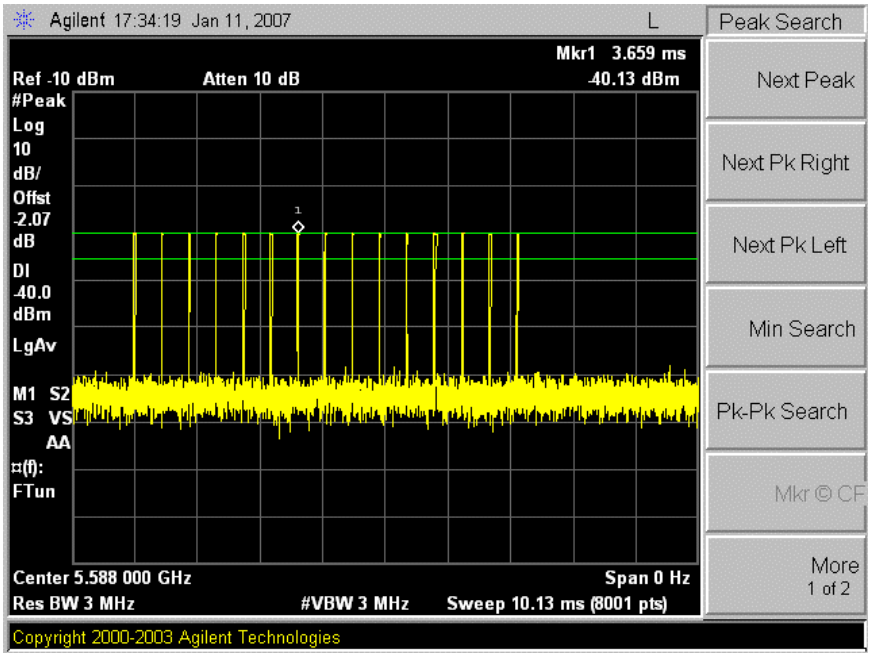
SAMPLE OF RADAR TYPE 2



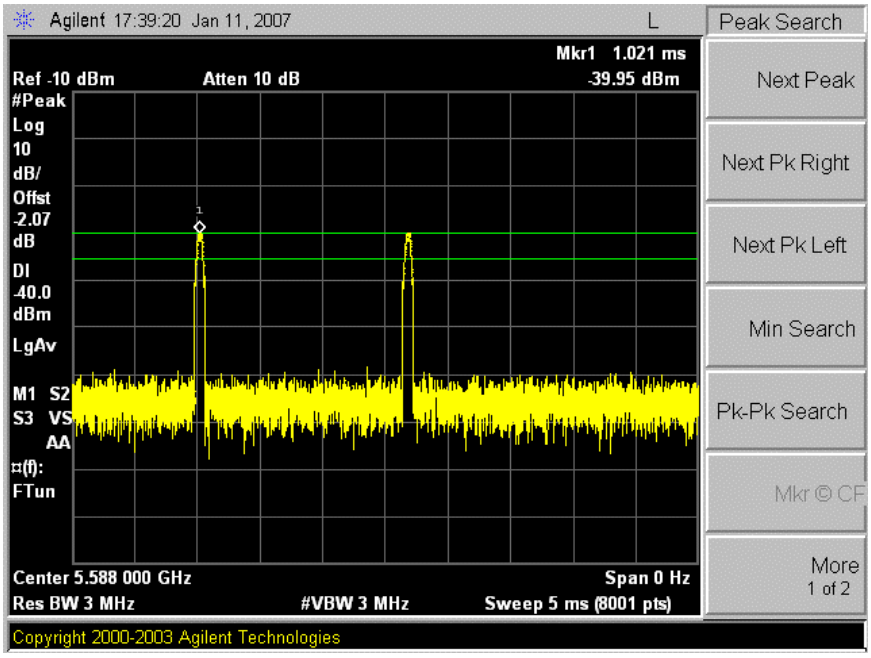
SAMPLE OF RADAR TYPE 3



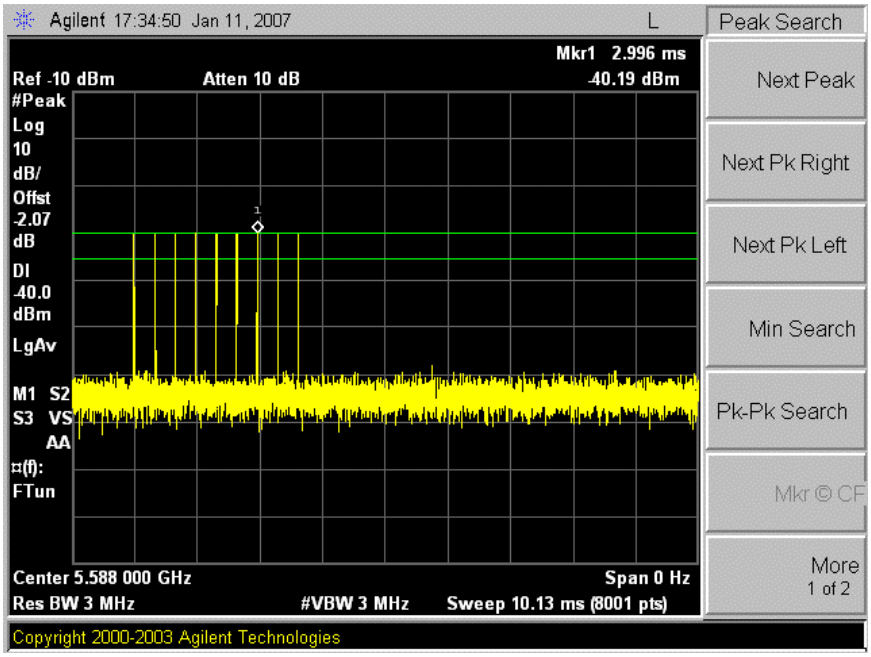
SAMPLE OF RADAR TYPE 4



SAMPLE OF SINGLE BURST OF RADAR TYPE 5

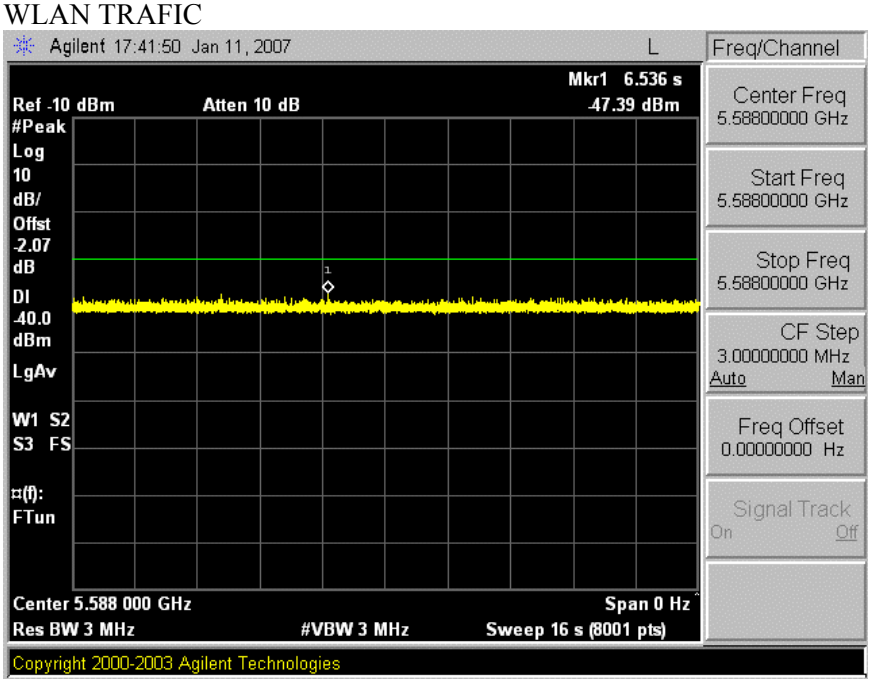


SINGLE BURST OF RADAR TYPE 6



PLOT OF WLAN TRAFFIC FROM MASTER

WLAN TRAFIC



6.1.7. TEST CHANNEL AND METHOD

All tests were performed at a channel center frequency of 5588 MHz. The conducted test method was utilized for timing measurements and the radiated test method was utilized for detection probability measurements.

6.1.8. CHANNEL AVAILABILITY CHECK TIME

TEST PROCEDURE TO DETERMINE INITIAL POWER-UP CYCLE TIME

A link was established on channel, then the EUT was rebooted. The time from the cessation of traffic to the re-initialization of traffic was measured as the time required for the EUT to complete the total power-up cycle. The time to complete the initial power-up period is 60 seconds less than this total power-up time.

TEST PROCEDURE FOR TIMING OF RADAR BURST

With a link established on channel, the EUT was rebooted. A radar signal was triggered within 0 to 6 seconds after the initial power-up period, and transmissions on the channel were monitored on the spectrum analyzer.

The Non-Occupancy list was cleared. With a link established on channel, the EUT was rebooted. A radar signal was triggered within 54 to 60 seconds after the initial power-up period, and transmissions on the channel were monitored on the spectrum analyzer.

CHANNEL AVAILABILITY CHECK TIME RESULTS

No non-compliance noted:

Time required for EUT to complete the initial power-up cycle (sec)
58.72

If a radar signal is detected during the channel availability check then the PC controlling the EUT displays a message stating that radar was detected.

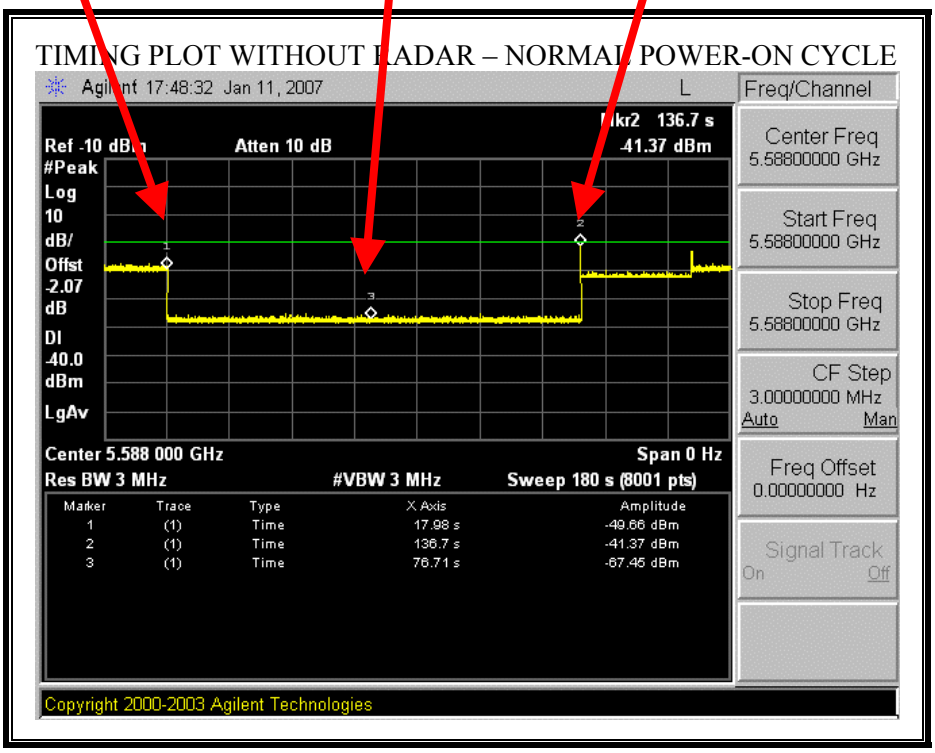
Timing of Radar Burst	Display on Control Computer	Spectrum Analyzer Display
No Radar Triggered	EUT marks Channel as active	Transmissions begin on channel after completion of the initial power-up cycle and the 60 second CAC
Within 0 to 6 second window	EUT indicates radar detected EUT does not display any radar parameter values	No transmissions on channel
Within 54 to 60 second window	EUT indicates radar detected EUT does not display any radar parameter values	No transmissions on channel

TIMING PLOT WITHOUT RADAR DURING CAC

AP is rebooted
Traffic ceases
Start of Initial Power-up cycle

End of Initial Power-up cycle
Start of CAC

End of CAC
Traffic is Initiated



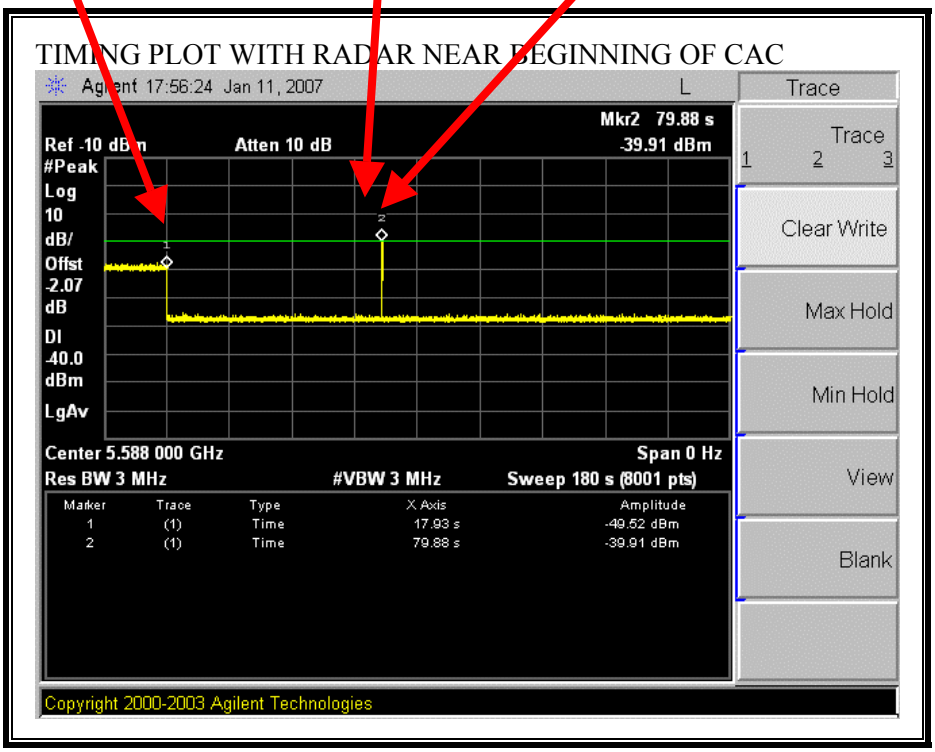
The initial power-up cycle requires (136.7 – 17.98 – 60) = 58.72 seconds.

TIMING PLOT WITH RADAR NEAR BEGINNING OF CAC

AP is rebooted
Traffic ceases
Start of Initial Power-up cycle

End of Initial Power-up cycle
Start of CAC

Radar Signal Applied



The radar signal is applied (79.87 – 17.93) = 61.94 seconds after reboot, which is (61.94 – 58.72) = 3.22 seconds after the start of the CAC period.

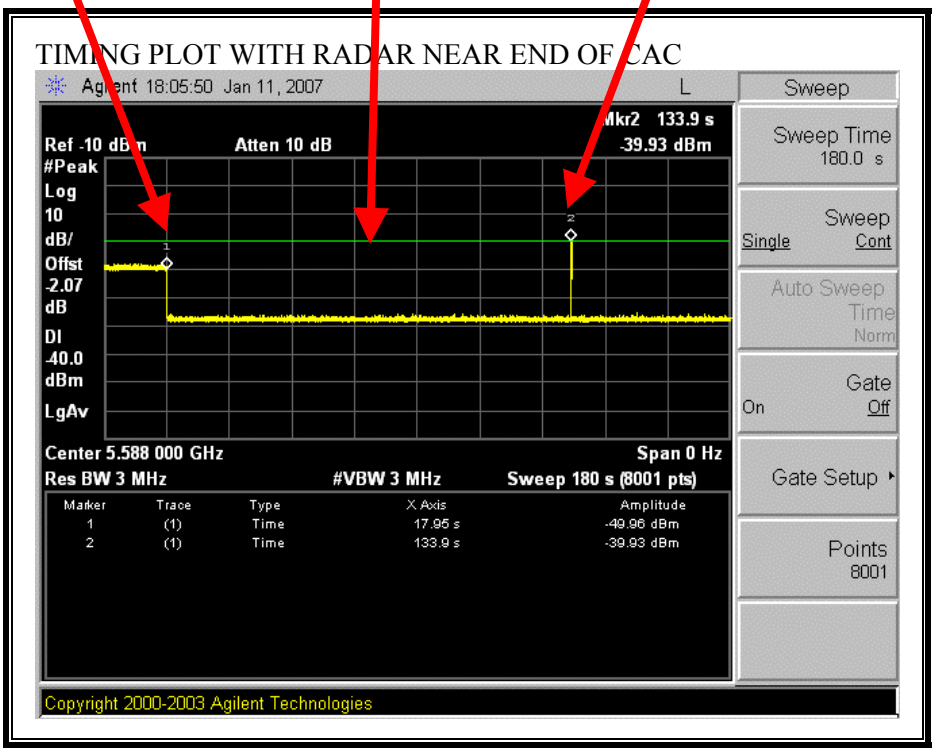
No EUT transmissions were observed after the radar signal.

TIMING PLOT WITH RADAR NEAR END OF CAC

AP is rebooted
Traffic ceases
Start of Initial Power-up cycle

End of Initial Power-up cycle
Start of CAC

Radar Signal Applied



The radar signal is applied (133.9 – 17.96) = 115.94 seconds after reboot, which is (115.94 – 58.72) = 57.22 seconds after the start of the CAC period.

No EUT transmissions were observed after the radar signal.

6.1.9. CHANNEL MOVE TIME AND CHANNEL CLOSING TRANSMISSION TIME FOR CONFIGURATION AS A MASTER DEVICE

GENERAL REPORTING NOTES

The reference marker is set at the end of last radar pulse.

TYPE 1 RADAR REPORTING NOTES

The delta marker is set at the end of the last WLAN transmission following the radar pulse. This delta is the channel move time.

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time =
(Number of analyzer bins showing transmission) * (dwell time per bin)

The observation period over which the aggregate time is calculated
Begins at (Reference Marker + 200 msec)
and
Ends no earlier than (Reference Marker + 10 sec).

TYPE 5 RADAR REPORTING NOTES

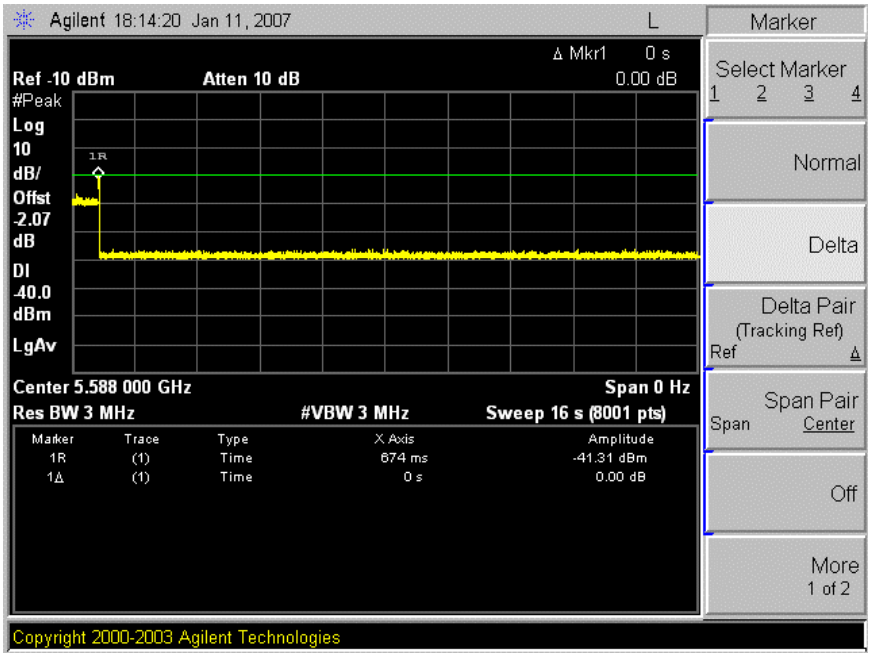
The delta marker is set to 10 seconds after the end of the radar pulse.

TYPE 1 CHANNEL MOVE TIME RESULTS

No non-compliance noted:

Channel Move Time (s)	Limit (s)
0.000	10

MOVE TIME PLOT FOR SHORT PULSE RADAR



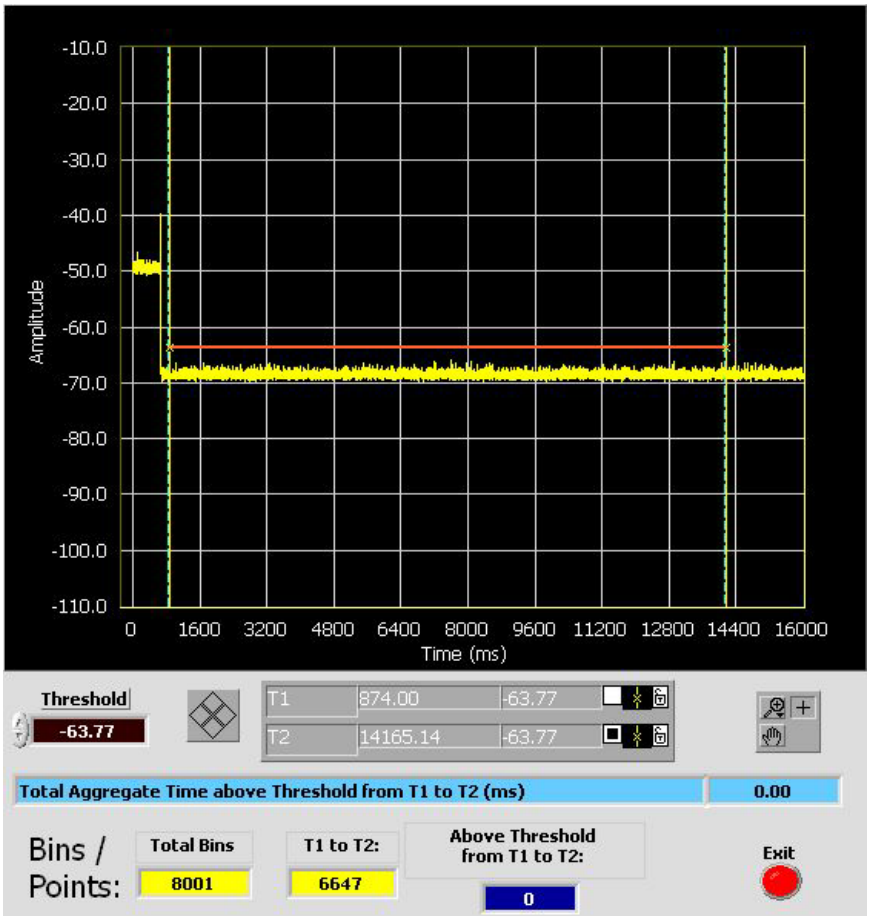
TYPE 1 CHANNEL CLOSING TRANSMISSION TIME RESULTS

No non-compliance noted:

Aggregate Transmission Time (ms)	Limit (ms)	Margin (ms)
0.00	60	60.00

No transmissions are observed during the aggregate monitoring period.

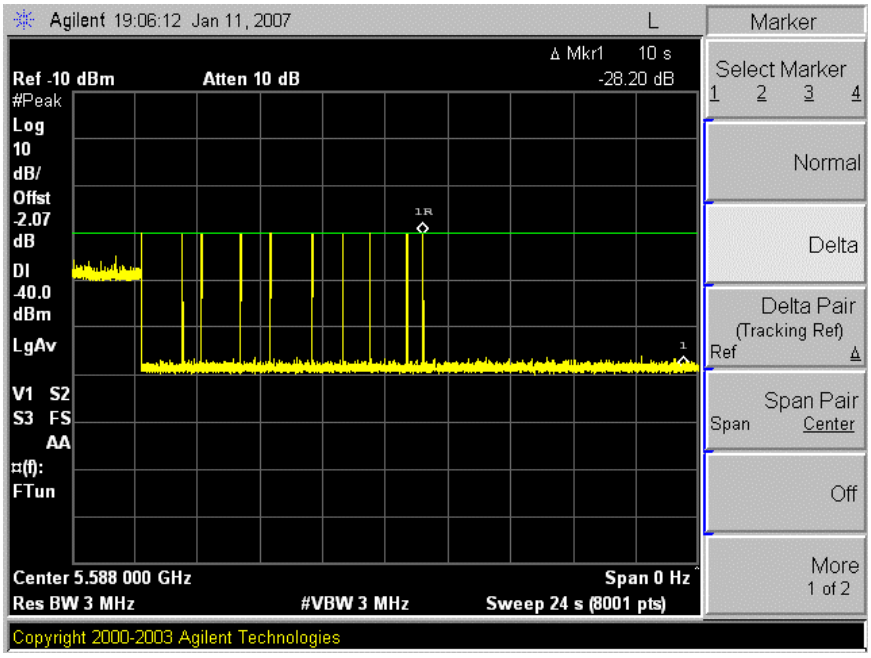
AGGREGATE CLOSING TIME PLOT



TYPE 5 CHANNEL MOVE TIME RESULTS

No non-compliance noted: The traffic ceases prior to the end of the radar waveform, therefore it also ceases prior to 10 seconds after the end of the radar waveform.

MOVE TIME PLOT FOR LONG PULSE RADAR

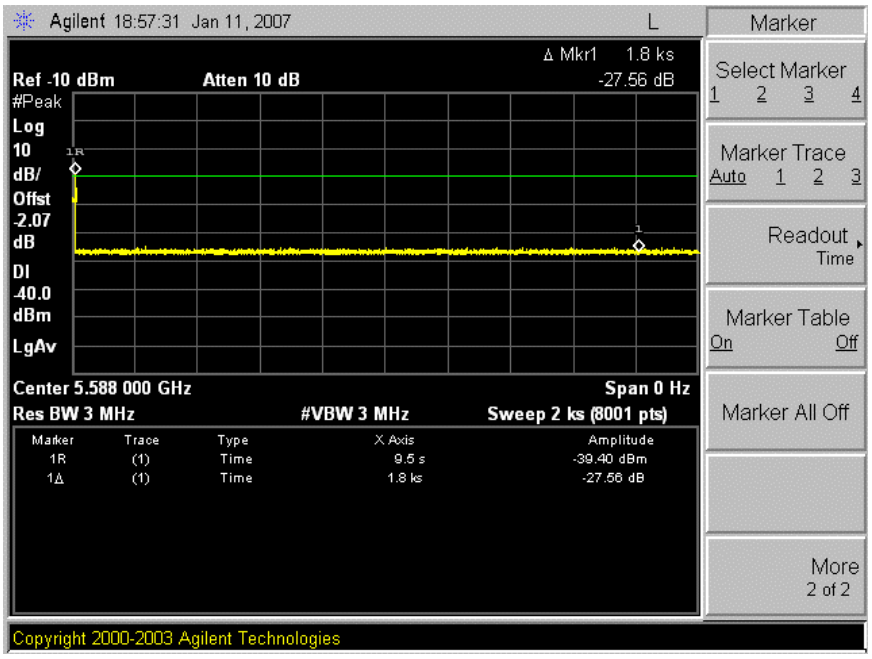


6.1.10. NON-OCCUPANCY PERIOD

RESULTS

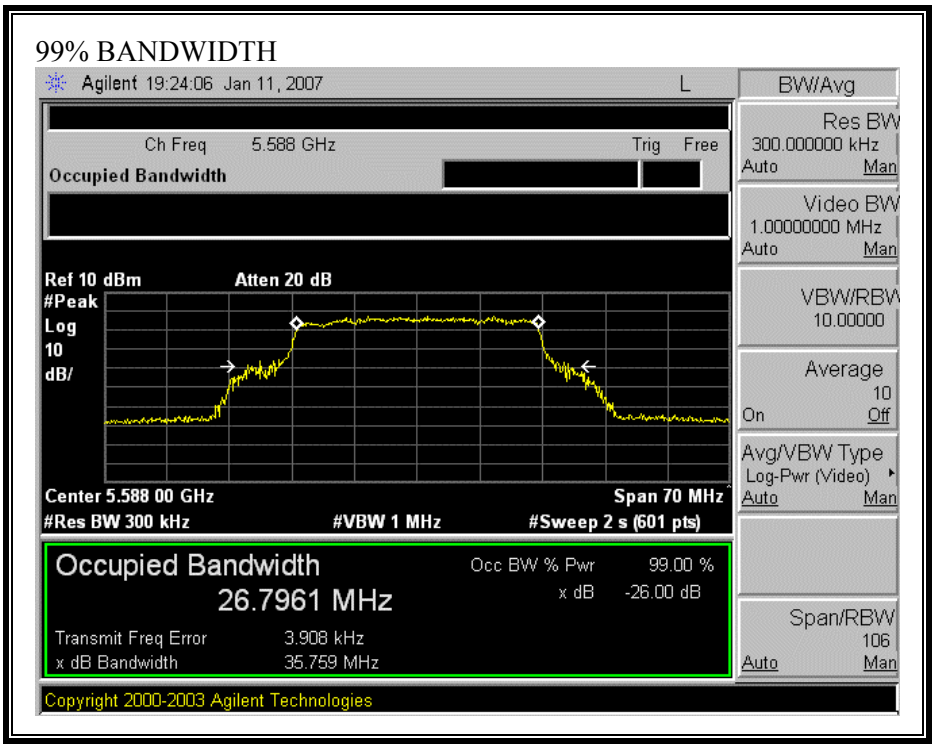
No non-compliance noted: No EUT transmissions were observed on the test channel during the 30 minute observation time.

NON-OCCUPANCY PERIOD PLOT



6.1.11. DETECTION BANDWIDTH

REFERENCE PLOT OF 99% POWER BANDWIDTH



RESULTS

No non-compliance noted:

FL (MHz)	FH (MHz)	Detection Bandwidth (MHz)	99% Power Bandwidth (MHz)	Ratio of Detection BW to 99% Power BW (%)	Minimum Limit (%)
5574	5602	28	26.796	104.5	80

DETECTION BANDWIDTH PROBABILITY

DETECTION BANDWIDTH PROBABILITY RESULTS

Detection Bandwidth Test Results:			Waveform: TYPE 1	
Frequency (MHz)	Number of Trials	Number Detected	Detection (%)	Mark
5573	10	0	0.00	
5574	10	10	100.00	FL
5575	10	10	100.00	
5576	10	10	100.00	
5577	10	10	100.00	
5578	10	10	100.00	
5579	10	10	100.00	
5580	10	10	100.00	
5581	10	10	100.00	
5582	10	10	100.00	
5583	10	10	100.00	
5584	10	10	100.00	
5585	10	10	100.00	
5586	10	10	100.00	
5587	10	10	100.00	
5588	10	9	90.00	
5589	10	10	100.00	
5590	10	10	100.00	
5591	10	10	100.00	
5592	10	10	100.00	
5593	10	10	100.00	
5594	10	10	100.00	
5595	10	10	100.00	
5596	10	10	100.00	
5597	10	10	100.00	
5598	10	10	100.00	
5599	10	10	100.00	
5600	10	10	100.00	
5601	10	10	100.00	
5602	10	10	100.00	FH
5603	10	3	30.00	

6.1.12. IN-SERVICE MONITORING

RESULTS

No non-compliance noted:

Radar Test Summary:				
Signal Type	Waveform/Trial No.	Detection (%)	Limit (%)	Pas/Fail
FCC TYPE 1	30	100.00	60.00	Pass
FCC TYPE 2	30	100.00	60.00	Pass
FCC TYPE 3	30	100.00	60.00	Pass
FCC TYPE 4	30	100.00	60.00	Pass
Aggregate	4	100.00	80.00	Pass
FCC TYPE 5	30	100.00	80.00	Pass
FCC TYPE 6	39	100.00	70.00	Pass

TYPE 1 DETECTION PROBABILITY

Data Sheet for Short Pulse Radar Type 1	
Trial No.	Successful Detection (Yes/No)
1	Yes
2	Yes
3	Yes
4	Yes
5	Yes
6	Yes
7	Yes
8	Yes
9	Yes
10	Yes
11	Yes
12	Yes
13	Yes
14	Yes
15	Yes
16	Yes
17	Yes
18	Yes
19	Yes
20	Yes
21	Yes
22	Yes
23	Yes
24	Yes
25	Yes
26	Yes
27	Yes
28	Yes
29	Yes
30	Yes

TYPE 2 DETECTION PROBABILITY

Data Sheet for Short Pulse Radar Type 2				
Waveform No.	# Pulses per burst	Pulse Width (us)	Pulse repetition Interval (us)	Successful Detection (Yes/No)
2001	29	3.00	200	Yes
2002	23	3.60	182	Yes
2003	23	3.30	227	Yes
2004	26	5.00	199	Yes
2005	24	1.40	155	Yes
2006	23	1.70	188	Yes
2007	24	1.60	207	Yes
2008	28	2.60	199	Yes
2009	25	1.20	160	Yes
2010	23	3.70	198	Yes
2011	24	4.40	178	Yes
2012	25	3.50	168	Yes
2013	29	3.00	182	Yes
2014	29	3.30	184	Yes
2015	27	2.40	194	Yes
2016	24	2.80	186	Yes
2017	25	1.20	193	Yes
2018	25	2.80	167	Yes
2019	29	3.30	172	Yes
2020	27	4.40	200	Yes
2021	23	2.80	171	Yes
2022	26	1.30	209	Yes
2023	23	1.90	227	Yes
2024	23	2.60	153	Yes
2025	27	1.20	205	Yes
2026	23	1.10	159	Yes
2027	28	3.30	208	Yes
2028	24	4.50	195	Yes
2029	29	2.90	152	Yes
2030	23	4.80	197	Yes

TYPE 3 DETECTION PROBABILITY

Data Sheet for Short Pulse Radar Type 3				
Waveform No.	# Pulses per burst	Pulse Width (us)	Pulse repetition Interval (us)	Successful Detection (Yes/No)
3001	17	6.10	461	Yes
3002	16	6.40	396	Yes
3003	18	9.50	448	Yes
3004	16	6.30	427	Yes
3005	17	8.40	437	Yes
3006	16	9.00	448	Yes
3007	18	5.90	369	Yes
3008	17	5.80	398	Yes
3009	16	5.20	293	Yes
3010	17	6.10	459	Yes
3011	18	7.90	444	Yes
3012	16	6.40	465	Yes
3013	18	8.70	448	Yes
3014	16	9.30	404	Yes
3015	16	9.60	495	Yes
3016	18	5.10	368	Yes
3017	17	6.40	401	Yes
3018	17	8.40	454	Yes
3019	18	7.80	453	Yes
3020	16	6.80	486	Yes
3021	16	6.10	287	Yes
3022	17	9.90	306	Yes
3023	16	5.80	440	Yes
3024	18	6.50	411	Yes
3025	17	6.00	453	Yes
3026	18	6.70	336	Yes
3027	18	9.10	329	Yes
3028	17	9.80	376	Yes
3029	16	9.30	276	Yes
3030	18	5.80	287	Yes

TYPE 4 DETECTION PROBABILITY

Data Sheet for Short Pulse Radar Type 4				
Waveform No.	# Pulses per burst	Pulse Width (us)	Pulse repetition Interval (us)	Successful Detection (Yes/No)
4001	15	10.40	442	Yes
4002	12	13.00	253	Yes
4003	12	14.70	296	Yes
4004	12	11.00	362	Yes
4005	15	13.70	433	Yes
4006	14	15.30	397	Yes
4007	16	15.70	285	Yes
4008	12	11.20	357	Yes
4009	13	11.70	408	Yes
4010	16	19.90	429	Yes
4011	14	16.30	310	Yes
4012	12	18.20	269	Yes
4013	12	10.50	291	Yes
4014	15	14.30	382	Yes
4015	14	11.00	358	Yes
4016	13	19.70	451	Yes
4017	16	18.80	487	Yes
4018	15	14.40	307	Yes
4019	14	13.60	417	Yes
4020	14	12.10	470	Yes
4021	16	11.00	395	Yes
4022	16	12.20	256	Yes
4023	15	16.10	271	Yes
4024	13	10.30	286	Yes
4025	16	13.50	436	Yes
4026	14	14.80	283	Yes
4027	16	16.80	438	Yes
4028	15	16.10	351	Yes
4029	12	11.40	315	Yes
4030	15	12.60	341	Yes

TYPE 5 DETECTION PROBABILITY

Data Sheet for Long Pulse Radar Type 5	
Waveform No.	**Successful Detection (Yes/No)**
5001	Yes
5002	Yes
5003	Yes
5004	Yes
5005	Yes
5006	Yes
5007	Yes
5008	Yes
5009	Yes
5010	Yes
5011	Yes
5012	Yes
5013	Yes
5014	Yes
5015	Yes
5016	Yes
5017	Yes
5018	Yes
5019	Yes
5020	Yes
5021	Yes
5022	Yes
5023	Yes
5024	Yes
5025	Yes
5026	Yes
5027	Yes
5028	Yes
5029	Yes
5030	Yes

TYPE 5 WAVEFORM PARAMETERS

Waveform Parameters for Long Pulse Radar Test Signal 5						
Burst #	Number of Pulses	Pulse Width (usec)	Chirp Width (MHz)	Pulse 1 to 2 Pri (usec)	Pulse 2 to 3 Pri (usec)	Starting Location Within Interval (usec)
Waveform Num = 1; Num of Bursts = 10; Burst Interval (us) = 1200000.0; Total number of pulses = 20						
1	2	80	6	1668	---	369449
2	1	50	12	---	---	1962008
3	3	55	11	1499	1201	2641985
4	2	90	14	1489	---	4167540
5	3	60	5	1737	1100	5308491
6	2	95	12	1090	---	6903297
7	1	65	10	---	---	8114873
8	2	50	6	1445	---	9167841
9	3	100	20	1668	1794	10585720
10	1	50	14	---	---	11175354
Waveform Num = 2; Num of Bursts = 13; Burst Interval (us) = 923077.0; Total number of pulses = 24						
1	1	50	20	---	---	660975
2	2	75	7	1781	---	682515
3	1	85	19	---	---	802317
4	2	75	12	1847	---	896774
5	2	55	13	1221	---	1005798
6	2	95	12	1971	---	945496
7	2	65	13	1780	---	882005
8	1	65	10	---	---	652246
9	3	75	8	1557	1492	970700
10	3	50	14	1907	1810	1140543
11	2	75	17	1120	---	591681
12	2	85	14	1339	---	944856
13	1	65	19	---	---	1749787
Waveform Num = 3; Num of Bursts = 16; Burst Interval (us) = 750000.0; Total number of pulses = 31						
1	2	80	20	1333	---	256861
2	3	95	15	1603	1241	759109
3	2	60	16	1560	---	644907
4	1	85	19	---	---	1152332
5	1	50	17	---	---	499175
6	1	85	14	---	---	541817
7	1	60	20	---	---	673831
8	2	70	11	1665	---	1052898
9	3	60	5	1491	1265	536970
10	3	85	11	1264	1346	972325
11	3	60	11	1245	1811	585047
12	2	90	18	1573	---	882964
13	2	50	8	1405	---	475797
14	2	75	11	1713	---	714296
15	1	60	13	---	---	816951
16	2	85	15	1299	---	868702

Burst #	Number of Pulses	Pulse Width (usec)	Chirp Width (MHz)	Pulse 1 to 2 Pri (usec)	Pulse 2 to 3 Pri (usec)	Starting Location Within Interval (usec)
Waveform Num = 4; Num of Bursts = 10; Burst Interval (us) = 1200000.0; Total number of pulses = 18						
1	3	95	19	1920	1049	225992
2	1	70	8	---	---	1867214
3	1	75	16	---	---	765772
4	3	50	5	1363	1932	1033638
5	1	100	8	---	---	1234178
6	2	55	8	1983	---	1004231
7	1	60	15	---	---	1808823
8	2	100	12	1949	---	1343886
9	1	55	18	---	---	1010508
10	3	85	19	1770	1270	1077314
Waveform Num = 5; Num of Bursts = 17; Burst Interval (us) = 705882.0; Total number of pulses = 32						
1	2	95	12	1948	---	345233
2	3	100	15	1812	1860	670485
3	3	95	13	1777	1327	687915
4	1	80	19	---	---	902060
5	1	90	14	---	---	828769
6	2	80	15	1194	---	264790
7	1	90	14	---	---	739277
8	2	50	15	1463	---	971493
9	1	75	8	---	---	565404
10	3	50	5	1756	1579	859908
11	2	90	5	1681	---	324434
12	2	75	6	1546	---	1092720
13	1	60	16	---	---	219819
14	3	90	13	1800	1884	1102453
15	2	65	5	1517	---	944513
16	1	65	10	---	---	520435
17	2	80	9	1857	---	306382
Waveform Num = 6; Num of Bursts = 15; Burst Interval (us) = 800000.0; Total number of pulses = 30						
1	3	80	10	1829	1448	630008
2	3	65	16	1249	1484	388788
3	3	100	13	1499	1156	872094
4	1	100	9	---	---	661720
5	1	70	18	---	---	963541
6	2	65	19	1564	---	879438
7	1	90	14	---	---	1003608
8	2	50	16	1129	---	705494
9	3	100	20	1854	1777	817501
10	2	95	9	1474	---	601890
11	1	100	14	---	---	1059275
12	1	75	11	---	---	761306
13	2	65	6	1937	---	906203
14	3	85	15	1623	1780	127570
15	2	95	19	1859	---	913821

Burst #	Number of Pulses	Pulse Width (usec)	Chirp Width (MHz)	Pulse 1 to 2 Pri (usec)	Pulse 2 to 3 Pri (usec)	Starting Location Within Interval (usec)
Waveform Num = 7; Num of Bursts = 15; Burst Interval (us) = 800000.0; Total number of pulses = 32						
1	3	80	13	1106	1747	153134
2	2	60	16	1139	---	705097
3	1	80	7	---	---	1114551
4	3	65	11	1749	1646	633002
5	2	95	10	1724	---	1119208
6	2	90	17	1485	---	1003874
7	3	75	19	1982	1581	680434
8	2	85	20	1582	---	328697
9	1	85	6	---	---	1149964
10	1	55	19	---	---	930139
11	3	50	17	1288	1235	243320
12	1	55	8	---	---	1032612
13	3	65	18	1042	1026	926643
14	2	90	20	1107	---	1123642
15	3	75	17	1209	1407	240210
Waveform Num = 8; Num of Bursts = 15; Burst Interval (us) = 800000.0; Total number of pulses = 32						
1	3	70	18	1271	1324	307286
2	1	85	20	---	---	629807
3	3	70	15	1664	1349	1320923
4	2	70	11	1427	---	839935
5	3	55	17	1873	1422	193692
6	2	50	14	1772	---	773943
7	3	80	15	1017	1350	874637
8	1	80	11	---	---	1131129
9	3	60	19	1215	1216	1002470
10	3	85	11	1129	1956	484807
11	1	90	17	---	---	1189162
12	2	65	11	1090	---	52083
13	2	90	11	1763	---	1326781
14	1	90	8	---	---	276086
15	2	65	11	1261	---	868645

Burst #	Number of Pulses	Pulse Width (usec)	Chirp Width (MHz)	Pulse 1 to 2 Pri (usec)	Pulse 2 to 3 Pri (usec)	Starting Location Within Interval (usec)
Waveform Num = 9; Num of Bursts = 17; Burst Interval (us) = 705882.0; Total number of pulses = 32						
1	2	100	16	1849	---	526635
2	1	70	7	---	---	712089
3	3	75	16	1473	1957	341404
4	3	75	8	1915	1309	563198
5	2	60	20	1733	---	1288537
6	2	80	20	1215	---	641113
7	2	95	18	1235	---	142602
8	3	80	14	1090	1276	721342
9	1	95	17	---	---	1232709
10	1	85	15	---	---	433602
11	1	90	14	---	---	727654
12	1	50	17	---	---	855204
13	3	95	19	1942	1315	496682
14	1	55	16	---	---	660152
15	2	85	7	1032	---	739810
16	3	50	12	1817	1211	780922
17	1	70	15	---	---	955794
Waveform Num = 10; Num of Bursts = 17; Burst Interval (us) = 705882.0; Total number of pulses = 37						
1	2	60	11	1590	---	281166
2	2	90	20	1200	---	1020263
3	2	90	17	1466	---	626612
4	2	90	7	1562	---	745609
5	3	85	7	1320	1330	632756
6	3	50	8	1226	1853	513506
7	3	65	19	1765	1316	1010480
8	2	50	5	1956	---	213136
9	3	55	10	1774	1736	1068936
10	3	70	13	1304	1570	611282
11	2	50	11	1324	---	788633
12	1	70	15	---	---	291992
13	1	70	7	---	---	961992
14	1	95	6	---	---	800142
15	2	55	15	1518	---	689157
16	2	50	17	1645	---	415737
17	3	90	16	1966	1742	1111868

Burst #	Number of Pulses	Pulse Width (usec)	Chirp Width (MHz)	Pulse 1 to 2 Pri (usec)	Pulse 2 to 3 Pri (usec)	Starting Location Within Interval (usec)
Waveform Num = 11; Num of Bursts = 13; Burst Interval (us) = 923077.0; Total number of pulses = 26						
1	1	80	12	---	---	594648
2	2	55	5	1119	---	366353
3	2	70	11	1684	---	1034427
4	1	95	20	---	---	1041645
5	1	85	18	---	---	723890
6	2	95	13	1628	---	1494095
7	1	80	18	---	---	911810
8	1	75	11	---	---	892112
9	3	70	10	1449	1467	1092050
10	3	95	10	1232	1779	794135
11	3	75	11	1019	1796	855173
12	3	85	17	1898	1258	989478
13	3	65	15	1257	1324	385137
Waveform Num = 12; Num of Bursts = 9; Burst Interval (us) = 1333333.0; Total number of pulses = 20						
1	3	55	5	1919	1397	1325130
2	3	65	12	1484	1466	399279
3	2	55	10	1954	---	1865689
4	3	50	13	1189	1140	1231506
5	2	85	6	1388	---	1242816
6	1	95	8	---	---	1854331
7	1	100	5	---	---	188904
8	2	80	6	1476	---	1210685
9	3	80	13	1956	1640	1789654
Waveform Num = 13; Num of Bursts = 11; Burst Interval (us) = 1090909.0; Total number of pulses = 20						
1	2	60	16	1752	---	74347
2	2	100	19	1790	---	1503291
3	1	50	18	---	---	1220377
4	3	60	13	1962	1534	1366092
5	3	100	10	1824	1121	1013770
6	3	85	20	1842	1115	1318103
7	1	65	9	---	---	764793
8	1	95	17	---	---	1072458
9	2	100	13	1737	---	473751
10	1	90	19	---	---	1720206
11	1	85	18	---	---	353863

Burst #	Number of Pulses	Pulse Width (usec)	Chirp Width (MHz)	Pulse 1 to 2 Pri (usec)	Pulse 2 to 3 Pri (usec)	Starting Location Within Interval (usec)
Waveform Num = 14; Num of Bursts = 13; Burst Interval (us) = 923077.0; Total number of pulses = 29						
1	3	65	17	1757	1157	237180
2	2	50	10	1248	---	715484
3	1	100	8	---	---	1527562
4	3	80	13	1034	1135	529393
5	1	55	19	---	---	851374
6	3	55	14	1570	1459	1104968
7	1	55	12	---	---	1089413
8	2	75	20	1640	---	1192283
9	2	95	13	1961	---	264465
10	3	55	18	1030	1600	1396804
11	2	55	11	1519	---	786084
12	3	55	8	1856	1035	499322
13	3	90	20	1142	1074	1673403
Waveform Num = 15; Num of Bursts = 12; Burst Interval (us) = 1000000.0; Total number of pulses = 27						
1	1	50	14	---	---	343167
2	3	90	10	1591	1756	1418420
3	1	80	17	---	---	599688
4	3	85	9	1084	1592	1459335
5	3	80	13	1400	1567	1047332
6	2	65	8	1069	---	426399
7	3	55	16	1933	1951	1229748
8	2	65	6	1506	---	1221108
9	1	55	8	---	---	235162
10	2	55	11	1926	---	1392335
11	3	100	12	1862	1879	1069177
12	3	50	14	1109	1152	1428376
Waveform Num = 16; Num of Bursts = 10; Burst Interval (us) = 1200000.0; Total number of pulses = 20						
1	3	80	11	1376	1148	708430
2	3	70	15	1410	1603	1642123
3	3	80	19	1008	1322	104376
4	2	100	10	1870	---	2019262
5	1	65	7	---	---	1122900
6	1	95	13	---	---	928394
7	3	85	19	1264	1309	1208167
8	1	100	9	---	---	1793771
9	2	75	6	1225	---	300543
10	1	60	14	---	---	1718487

Burst #	Number of Pulses	Pulse Width (usec)	Chirp Width (MHz)	Pulse 1 to 2 Pri (usec)	Pulse 2 to 3 Pri (usec)	Starting Location Within Interval (usec)
Waveform Num = 17; Num of Bursts = 13; Burst Interval (us) = 923077.0; Total number of pulses = 29						
1	2	50	9	1829	---	168470
2	3	55	9	1177	1378	932675
3	2	60	5	1520	---	1404818
4	3	90	16	1713	1561	949774
5	3	75	12	1705	1270	775380
6	3	80	10	1288	1303	661188
7	3	60	19	1074	1614	1223096
8	2	100	9	1837	---	491365
9	1	85	13	---	---	1625869
10	3	70	5	1371	1227	718434
11	2	85	11	1408	---	890084
12	1	85	8	---	---	336093
13	1	95	12	---	---	1039242
Waveform Num = 18; Num of Bursts = 8; Burst Interval (us) = 1500000.0; Total number of pulses = 16						
1	3	55	5	1019	1313	1111185
2	2	80	8	1843	---	1071089
3	3	70	9	1401	1594	1559432
4	1	70	17	---	---	2071750
5	2	75	12	1403	---	1167131
6	2	95	11	1071	---	1833082
7	2	55	13	1756	---	1536220
8	1	75	20	---	---	1525763
Waveform Num = 19; Num of Bursts = 12; Burst Interval (us) = 1000000.0; Total number of pulses = 21						
1	2	75	13	1083	---	74993
2	3	55	9	1642	1365	1324757
3	3	70	11	1670	1627	1115628
4	2	75	17	1274	---	660611
5	1	75	17	---	---	1773033
6	1	60	10	---	---	302939
7	1	90	19	---	---	1561528
8	1	75	17	---	---	416986
9	1	70	16	---	---	887812
10	3	55	18	1879	1846	1079589
11	1	55	10	---	---	1650536
12	2	70	16	1042	---	1120890

Burst #	Number of Pulses	Pulse Width (usec)	Chirp Width (MHz)	Pulse 1 to 2 Pri (usec)	Pulse 2 to 3 Pri (usec)	Starting Location Within Interval (usec)
Waveform Num = 20; Num of Bursts = 12; Burst Interval (us) = 1000000.0; Total number of pulses = 26						
1	2	80	16	1511	---	65924
2	3	75	9	1867	1556	1657428
3	2	65	18	1822	---	1175029
4	1	50	6	---	---	823085
5	1	65	6	---	---	487529
6	1	60	14	---	---	1057096
7	3	60	10	1676	1417	1125332
8	1	70	12	---	---	1571174
9	3	60	7	1453	1542	238244
10	3	60	20	1061	1965	1010405
11	3	70	17	1313	1504	1496863
12	3	70	15	1621	1174	257951
Waveform Num = 21; Num of Bursts = 10; Burst Interval (us) = 1200000.0; Total number of pulses = 20						
1	1	85	9	---	---	1106600
2	3	100	20	1079	1274	980317
3	2	70	15	1990	---	1422014
4	3	70	14	1052	1848	276121
5	3	65	6	1514	1721	1191357
6	1	50	9	---	---	1943617
7	1	60	6	---	---	960756
8	1	85	8	---	---	762745
9	2	65	19	1307	---	1066045
10	3	65	19	1544	1402	1181579
Waveform Num = 22; Num of Bursts = 14; Burst Interval (us) = 857143.0; Total number of pulses = 22						
1	1	55	18	---	---	358793
2	2	65	16	1486	---	815952
3	1	55	7	---	---	1088651
4	1	60	17	---	---	951244
5	2	75	9	1227	---	268649
6	1	60	20	---	---	1101581
7	1	55	20	---	---	913584
8	3	65	6	1480	1543	640434
9	3	75	9	1752	1201	1387523
10	1	85	12	---	---	598084
11	2	55	5	1385	---	1032407
12	1	100	17	---	---	1052335
13	1	60	15	---	---	734367
14	2	90	11	1788	---	177778

Burst #	Number of Pulses	Pulse Width (usec)	Chirp Width (MHz)	Pulse 1 to 2 Pri (usec)	Pulse 2 to 3 Pri (usec)	Starting Location Within Interval (usec)
Waveform Num = 23; Num of Bursts = 19; Burst Interval (us) = 631579.0; Total number of pulses = 36						
1	2	65	20	1445	---	344160
2	2	60	11	1736	---	340410
3	3	65	10	1053	1904	802456
4	1	65	8	---	---	945427
5	2	90	9	1464	---	230325
6	1	55	16	---	---	913673
7	2	85	17	1664	---	525864
8	2	50	5	1692	---	512428
9	1	75	8	---	---	414514
10	1	100	5	---	---	844931
11	3	50	10	1228	1056	703824
12	1	75	12	---	---	735405
13	3	65	9	1532	1967	370455
14	3	65	7	1493	1929	719696
15	3	75	13	1360	1029	710186
16	1	70	14	---	---	902280
17	1	50	12	---	---	309880
18	2	75	20	1300	---	924045
19	2	75	16	1523	---	628629
Waveform Num = 24; Num of Bursts = 13; Burst Interval (us) = 923077.0; Total number of pulses = 23						
1	2	100	16	1620	---	376643
2	1	50	9	---	---	624693
3	2	65	9	1837	---	891620
4	1	100	5	---	---	1181019
5	1	55	17	---	---	863417
6	2	65	9	1314	---	896226
7	1	100	5	---	---	1260559
8	3	50	13	1589	1719	695215
9	1	85	20	---	---	715943
10	2	65	13	1230	---	1019350
11	3	100	18	1357	1972	1489105
12	3	55	17	1312	1376	407256
13	1	70	8	---	---	1217827

Burst #	Number of Pulses	Pulse Width (usec)	Chirp Width (MHz)	Pulse 1 to 2 Pri (usec)	Pulse 2 to 3 Pri (usec)	Starting Location Within Interval (usec)
Waveform Num = 25; Num of Bursts = 19; Burst Interval (us) = 631579.0; Total number of pulses = 36						
1	1	70	14	---	---	251337
2	1	55	14	---	---	732366
3	2	70	11	1071	---	552351
4	1	65	18	---	---	902615
5	2	55	10	1856	---	655995
6	1	60	6	---	---	330813
7	3	75	16	1674	1900	611518
8	2	75	5	1929	---	774427
9	3	100	20	1122	1182	368496
10	3	95	20	1330	1472	593411
11	1	85	8	---	---	690572
12	1	75	11	---	---	774102
13	3	55	15	1870	1401	470977
14	2	85	5	1164	---	795709
15	2	70	15	1106	---	343394
16	2	70	10	1908	---	1034205
17	1	85	6	---	---	513190
18	2	75	7	1211	---	734741
19	3	60	5	1019	1995	414511
Waveform Num = 26; Num of Bursts = 8; Burst Interval (us) = 1500000.0; Total number of pulses = 17						
1	3	50	5	1123	1973	1078287
2	1	95	13	---	---	1327430
3	1	85	14	---	---	1221068
4	3	60	16	1663	1459	2026405
5	2	100	9	1467	---	1217895
6	2	70	16	1597	---	717524
7	3	60	20	1108	1818	2043020
8	2	85	15	1794	---	2267720
Waveform Num = 27; Num of Bursts = 14; Burst Interval (us) = 857143.0; Total number of pulses = 28						
1	2	90	13	1063	---	450535
2	2	75	5	1123	---	490438
3	2	85	20	1881	---	838978
4	3	50	16	1411	1594	1245068
5	1	80	10	---	---	876214
6	3	50	17	1935	1858	1217189
7	1	75	10	---	---	614815
8	3	95	13	1928	1002	625664
9	2	75	7	1776	---	800223
10	1	100	9	---	---	1364210
11	3	70	8	1903	1451	651978
12	2	75	16	1879	---	716912
13	1	80	15	---	---	820332
14	2	90	19	1705	---	748313

Burst #	Number of Pulses	Pulse Width (usec)	Chirp Width (MHz)	Pulse 1 to 2 Pri (usec)	Pulse 2 to 3 Pri (usec)	Starting Location Within Interval (usec)
Waveform Num = 28; Num of Bursts = 8; Burst Interval (us) = 1500000.0; Total number of pulses = 18						
1	3	80	18	1454	1318	484182
2	3	100	17	1885	1116	1064625
3	2	85	11	1094	---	2637760
4	2	50	8	1421	---	1557766
5	2	75	9	1209	---	1735953
6	3	65	16	1727	1996	1294906
7	2	55	19	1800	---	1372470
8	1	65	9	---	---	564452
Waveform Num = 29; Num of Bursts = 14; Burst Interval (us) = 857143.0; Total number of pulses = 25						
1	2	65	8	1519	---	417567
2	3	100	15	1758	1842	960923
3	2	55	14	1489	---	780866
4	3	95	8	1353	1412	1237911
5	1	55	11	---	---	279680
6	2	80	18	1929	---	1381473
7	2	100	13	1214	---	479465
8	1	85	12	---	---	832676
9	1	60	10	---	---	737490
10	1	50	15	---	---	961500
11	2	60	19	1887	---	1018855
12	3	50	17	1729	1238	989123
13	1	65	12	---	---	1004895
14	1	60	12	---	---	725896
Waveform Num = 30; Num of Bursts = 13; Burst Interval (us) = 923077.0; Total number of pulses = 32						
1	3	80	16	1542	1830	650992
2	3	100	10	1500	1173	1014899
3	3	80	16	1391	1359	552542
4	3	50	13	1451	1531	787516
5	2	95	17	1865	---	1364088
6	1	95	15	---	---	310413
7	3	95	9	1761	1202	1647784
8	3	50	12	1341	1075	875449
9	3	65	9	1821	1900	422016
10	1	65	12	---	---	1460816
11	3	50	16	1084	1189	622331
12	3	55	15	1717	1090	575207
13	1	100	11	---	---	1660259

TYPE 6 DETECTION PROBABILITY

Data Sheet for Hopping Signal				
Trial No.	Starting Index within NTIA August 2005 Sequence	Signal Generator Frequency (MHz)	Hops within Detection BW	Successful Detection (Yes/No)
1	11	5574	7	Yes
2	486	5575	4	Yes
3	961	5576	6	Yes
4	1436	5577	6	Yes
5	1911	5578	7	Yes
6	2386	5579	7	Yes
7	2861	5580	7	Yes
8	3336	5581	8	Yes
9	3811	5582	9	Yes
10	4286	5583	8	Yes
11	4761	5584	10	Yes
12	5236	5585	4	Yes
13	5711	5586	6	Yes
14	6186	5587	8	Yes
15	6661	5588	5	Yes
16	7136	5589	6	Yes
17	8086	5590	8	Yes
18	8561	5591	8	Yes
19	9036	5592	8	Yes
20	9511	5593	6	Yes
21	9986	5594	8	Yes
22	10461	5595	4	Yes
23	10936	5596	3	Yes
24	11411	5597	5	Yes
25	11886	5598	5	Yes
26	12361	5599	8	Yes
27	12836	5600	8	Yes
28	13311	5601	4	Yes
29	13786	5602	9	Yes

Trial No.	Starting Index within NTIA August 2005 Sequence	Signal Generator Frequency (MHz)	Hops within Detection BW	Successful Detection (Yes/No)
30	14261	5574	6	Yes
31	14736	5575	5	Yes
32	15211	5576	7	Yes
33	15686	5577	6	Yes
34	16161	5578	8	Yes
35	16636	5579	3	Yes
36	17111	5580	8	Yes
37	17586	5581	7	Yes
38	18061	5582	2	Yes
39	18536	5583	6	Yes
40	19011	5584	7	Yes
41	19486	5585	3	Yes
42	19961	5586	6	Yes
43	20436	5587	4	Yes
44	20911	5588	6	Yes
45	21386	5589	9	Yes
46	21861	5590	6	Yes
47	22336	5591	6	Yes
48	22811	5592	5	Yes
49	23286	5593	6	Yes
50	23761	5594	4	Yes
51	24236	5595	8	Yes
52	24711	5596	7	Yes
53	25186	5597	3	Yes
54	25661	5598	7	Yes
55	26136	5599	6	Yes
56	26611	5600	7	Yes
57	27086	5601	7	Yes
58	27561	5602	5	Yes

6.1.13. CHANNEL MOVE TIME AND CHANNEL CLOSING TRANSMISSION TIME FOR CONFIGURATION AS A SLAVE DEVICE

GENERAL REPORTING NOTES

The reference marker is set at the end of last radar pulse.

TYPE 1 RADAR REPORTING NOTES

The delta marker is set at the end of the last WLAN transmission following the radar pulse. This delta is the channel move time.

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time =
(Number of analyzer bins showing transmission) * (dwell time per bin)

The observation period over which the aggregate time is calculated
Begins at (Reference Marker + 200 msec)
and
Ends no earlier than (Reference Marker + 10 sec).

TYPE 5 RADAR REPORTING NOTES

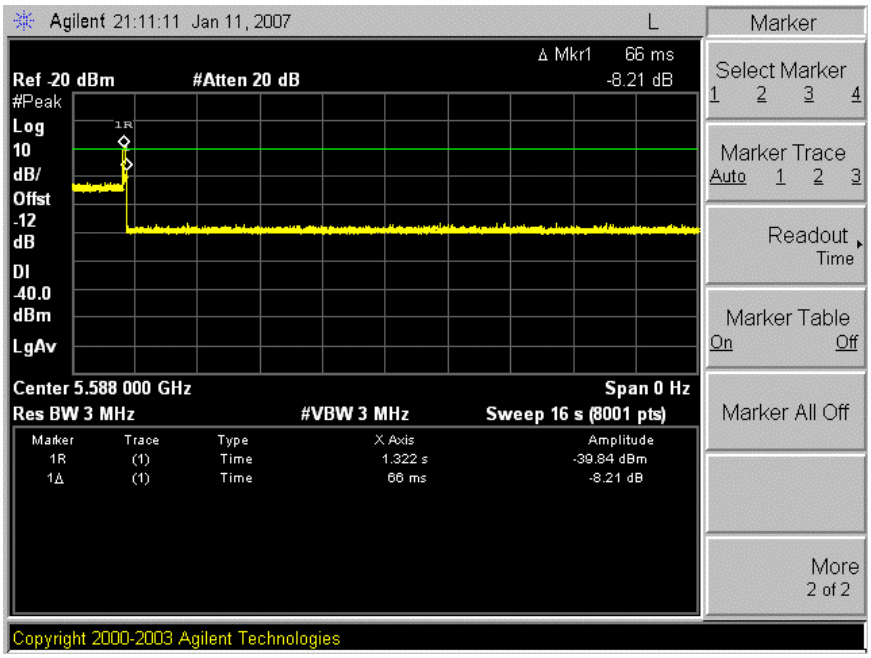
The delta marker is set to 10 seconds after the end of the radar pulse.

TYPE 1 CHANNEL MOVE TIME RESULTS

No non-compliance noted:

Channel Move Time (s)	Limit (s)
0.066	10

MOVE TIME PLOT FOR SHORT PULSE RADAR



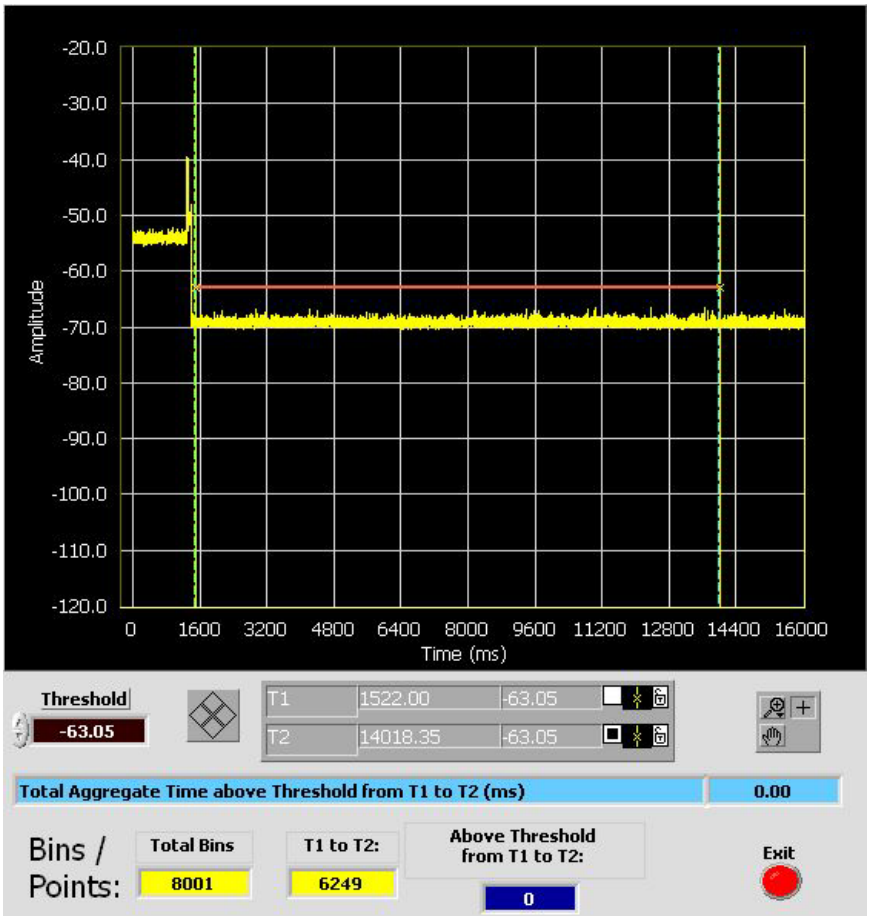
TYPE 1 CHANNEL CLOSING TRANSMISSION TIME RESULTS

No non-compliance noted:

Aggregate Transmission Time (ms)	Limit (ms)	Margin (ms)
0.00	60	60.00

No transmissions are observed during the aggregate monitoring period.

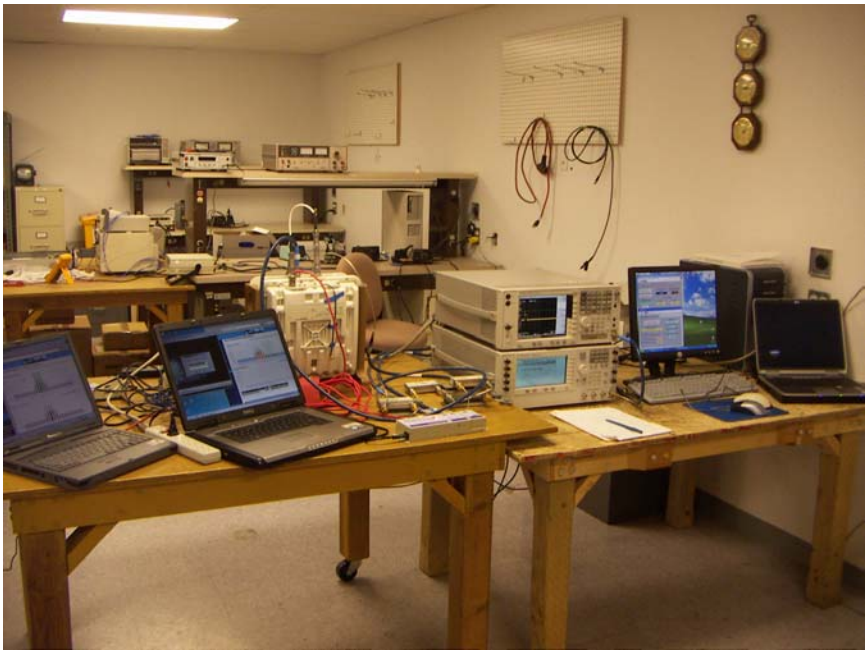
AGGREGATE CLOSING TIME PLOT



7. SETUP PHOTOS

CONDUCTED DFS MEASUREMENT SETUP

CONDUCTED DFS PHOTO



RADIATED DFS MEASUREMENT SETUP

MASTER DEVICE FRONT VIEW

MASTER DEVICE BACK VIEW

SLAVE DEVICE FRONT VIEW

SLAVE DEVICE BACK VIEW

END OF REPORT