



# DFS Test Report

## FCC 15.407 & RSS-210, Issue 7

For  
Integrated Service Access Point

Model #: ISAP

U.S.A

FCC: V27-DT40ISAP  
IC: 3282B-DT40ISAP

TEST REPORT #:EMC\_CETEC\_030\_DFS\_FCC\_Rev1  
DATE: 2008-7-15



FCC listed:  
A2LA  
accredited

IC recognized  
#  
3462B

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## 1 Assessment

The following is in compliance with the applicable criteria specified in FCC rules Part 15.407 of the Code of Federal Regulations.

Company	Description	Model #
Elektrobit Wireless Communications, Ltd.	Integrated Service Access Point	ISAP

Technical responsibility for area of testing:

Peter Mu

2008-7-15

EMC & Radio

(EMC Project Engineer)

Date

Section

Name

Signature

This report is prepared by:

Marc Douat

2008-7-15

EMC & Radio

(EMC Project Engineer)

Date

Section

Name

Signature

The test results of this test report relate exclusively to the test item specified in Identification of the Equipment under Test. The CETECOM Inc. USA does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of the CETECOM Inc USA.

## 2 Administrative Data

### 2.1 Identification of the Testing Laboratory

<b>Company Name:</b>	<b>CETECOM Inc.</b>
<b>Department:</b>	<b>EMC</b>
<b>Address:</b>	<b>411 Dixon Landing Road Milpitas, CA 95035 U.S.A.</b>
<b>Telephone:</b>	<b>+1 (408) 586 6200</b>
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<b>Lab Manager:</b>	<b>Lothar Schmidt</b>

### 2.2 Identification of the Client

<b>Applicant's Name:</b>	<b>Elektrobit Wireless Communications, Ltd.</b>
<b>Address Line 1:</b>	<b>Automaatitie 1, FIN 90460</b>
<b>Address Line 2:</b>	
<b>City/ Zip Code</b>	<b>FIN 90460 Oulunsalo</b>
<b>Country:</b>	<b>Finland</b>
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<b>Fax:</b>	<b>+10 55 253 2070</b>
<b>e-mail:</b>	<b>Jussi.harju@elektrobit.com</b>

### 2.3 Identification of the Manufacturer

Same as above applicant.

### 3 Equipment under Test (EUT)

#### 3.1 Specification of the Equipment under Test

<b>Product Type</b>	<b>Integrated Service Access Point</b>
<b>Marketing Name:</b>	<b>Integrated Service Access Point</b>
<b>Model No:</b>	<b>ISAP</b>
<b>Operating Frequency:</b>	<b>5125 MHz – 5250 MHz 5250 MHz – 5350MHz 5470 MHz – 5725 MHz</b>
<b>Type(s) of Modulation:</b>	<b>OFDM</b>
<b>Antenna Type:</b>	<b>Whip (2.6dBi)</b>
<b>Maximum Output Power<sup>1</sup>:</b>	<b>Sub-band 2: 5250-5350MHz HT20 mode: EIRP: 22.3dBm (171mW) Conducted: 19.7dBm (93.85mW)  Sub-band 3: 5470-5725MHz HT20 mode: EIRP: 18.3dBm (67.57mW) Conducted: 15.7dBm (37.13mW)</b>
<b>Frequency tested:</b>	<b>5300 and 5600 MHz</b>
<b>Channels tested:</b>	<b>60 and 120</b>
<b>Bandwidth tested:</b>	<b>20 MHz and 40 MHz</b>

#### 3.2 Support Equipment

<b>Product Type</b>	<b>Linksys-Cisco Slave Cardbus PCMCIA</b>
<b>Marketing Name:</b>	<b>Dual Band Wireless-N Notebook Adapter</b>
<b>Model No:</b>	<b>WPC600N</b>

<b>Product Type</b>	<b>Dell Laptop</b>
<b>Marketing Name:</b>	<b>Inspiron</b>
<b>Model No:</b>	<b>5150</b>

<sup>1</sup> See test report EMC\_CETEC\_030\_15.407 for full power measurements

#### **4 Subject Of Investigation**

Dynamic Frequency Selection is tested to FCC 06-96. The following measurements were performed:

U-NII Detection Bandwidth

Initial Channel Availability Check Time

Radar Burst at the Beginning of the Channel Availability Check Time

Radar Burst at the End of the Channel Availability Check Time

Channel Closing Transmission Time

Channel Move Time

Non-Occupancy Period

Statistical Performance Check

The EUT was tested as a Master Device.

All measurements were performed on 5300 MHz at maximum power. 5600 MHz was only verified as the results were the same as 5300 MHz. The master device can operate with a 20 or 40 MHz bandwidth. 20 MHz was used for the DFS tests with verifications done at 40 MHz.

The EUT antenna gain is 2.6dBi. For the measurements the radar detection threshold level was calibrated to -64dBm, + 1dBm to account for variations in measurement equipment. In this case the client can use a 0dBi gain antenna if so desired. The device has three antenna ports, a power splitter was used to apply radar to all ports.

#### **5 User Access Restriction**

The manufacturer of this product declares that user access will be blocked.

#### **6 Measurement Uncertainty**

Time  $\leq 10\%$

Conducted power  $\leq 0.25\text{dB}$

## 7 DFS Applicability and Limits

### 7.1 DYNAMIC FREQUENCY SELECTION FREQUENCIES

<u>DFS BANDS</u>	
<b>5250 – 5350 MHz</b>	<b>5470 – 5725 MHz</b>

### 7.2 Applicability of DFS Requirements Prior to Use of a Channel (FCC 06-96 Section, 5.1)

Requirement	Operational mode		
	Master	Client Without Radar Detection	Client With Radar Detection
<i>Non-Occupancy Period</i>	Yes	Not required	Yes
<i>DFS Detection Threshold</i>	Yes	Not required	Yes
<i>Channel Availability Check Time</i>	Yes	Not required	Not required
<i>Uniform Spreading</i>	Yes	Not required	Not required
<i>U-NII Detection Bandwidth</i>	Yes	Not required	Yes

### 7.3 Applicability of DFS requirements during normal operation (FCC 06-96, Section 5.1)

Requirement	Operational mode		
	Master	Client Without Radar Detection	Client With Radar Detection
<i>DFS Detection Threshold</i>	Yes	Not required	Yes
<i>Channel Closing Transmission Time</i>	Yes	Yes	Yes
<i>Channel Move Time</i>	Yes	Yes	Yes
<i>U-NII Detection Bandwidth</i>	Yes	Not required	Yes

#### 7.4 DFS Detection Thresholds for Master Devices and Client Devices with Radar Detection (FCC 06-96, Section 5.2)

Maximum Transmit Power	Values (See Notes 1 and 2)
> 200 milliwatt	-64 dBm
< 200 milliwatt	-62 dBm
<p>Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna.</p> <p>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.</p>	

#### 7.5 DFS Response Requirement Values (FCC 06-96, Section 5.3)

Parameter	Value
<b>Non-Occupancy Period</b>	<b>Minimum 30 minutes</b>
<b>Channel Availability Check Time</b>	<b>60 seconds</b>
<b>Channel Move Time</b>	<b>10 seconds</b> <b>See Note 1.</b>
<b>Channel Closing Transmission Time</b>	<b>200 milliseconds + an aggregate of 60 milliseconds over the remaining 10 second period</b> <b>See Notes 1 and 2.</b>
<b>U-NII Detection Bandwidth</b>	<b>Minimum 80% of the U-NII 99% transmission power bandwidth. See Note 3</b>
<p><b>Note 1:</b> The instant that the <i>Channel Move Time</i> and the <i>Channel Closing Transmission Time</i> begins is as follows:</p> <ul style="list-style-type: none"> <li>For the Short Pulse Radar Test Signals this instant is the end of the <i>Burst</i>.</li> <li>For the Frequency Hopping radar Test Signal, this instant is the end of the last radar <i>Burst</i> generated.</li> <li>For the Long Pulse Radar Test Signal this instant is the end of the 12 second period defining the <i>Radar Waveform</i>.</li> </ul> <p><b>Note 2:</b> The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signal required to facilitate a Channel move (an aggregated of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quite periods in between transmissions.</p> <p><b>Note 3:</b> 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.</p>	



## 7.6 Parameters of Short Pulse Radar Test Waveforms (FCC 06-96, Section 6.1)

Radar Type	Pulse Width (μsec)	PRI (μs)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Number of 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

## 7.7 Parameters of Long Pulse Radar Test Waveforms (FCC 06-96, Section 6.2)

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

## 7.8 Parameters of Frequency Hopping Radar Test Waveforms (FCC 06-96, Section 6.3)

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

## 8 Conducted Measurements

### 8.1 U-NII DETECTION BANDWIDTH

The 99% bandwidth in HT20 mode is 18 MHz. In HT40 mode it is 37MHz.

HT20 mode:

$$F_H = 5291 \text{ MHz}$$

$$F_L = 5309 \text{ MHz}$$

$$U\text{-NII Detection Bandwidth} = 18\text{MHz}$$

HT40 mode:

$$F_H = 5570 \text{ MHz}$$

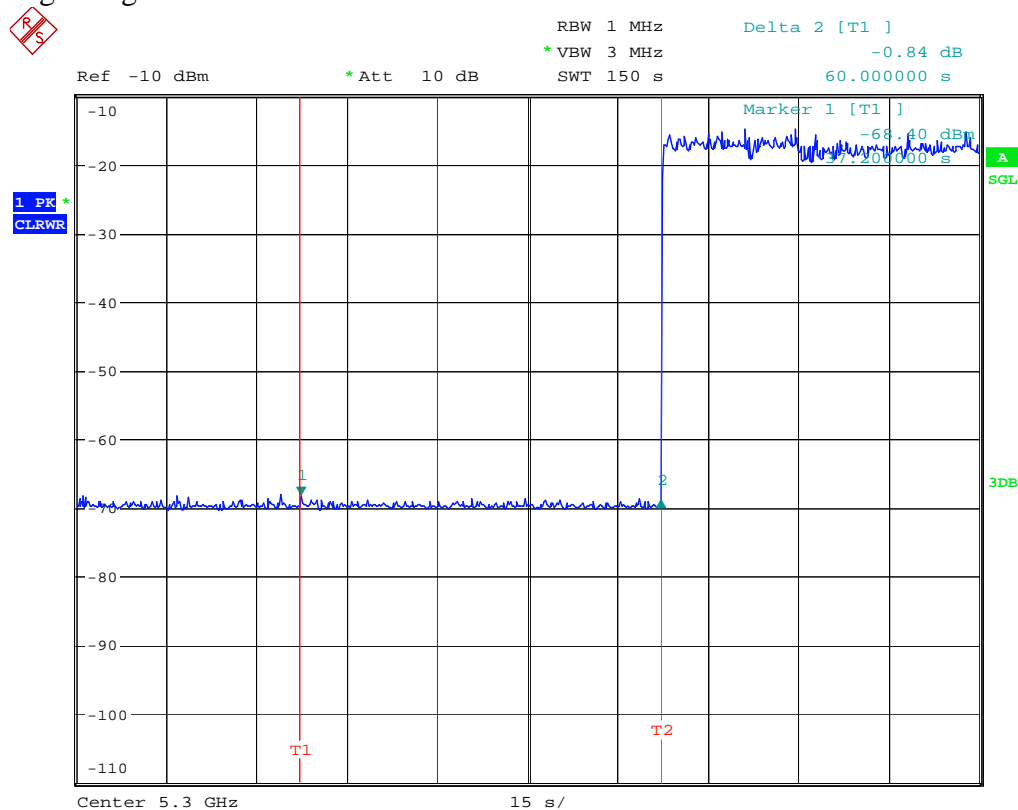
$$F_L = 5610 \text{ MHz}$$

$$U\text{-NII Detection Bandwidth} = 40 \text{ MHz}$$

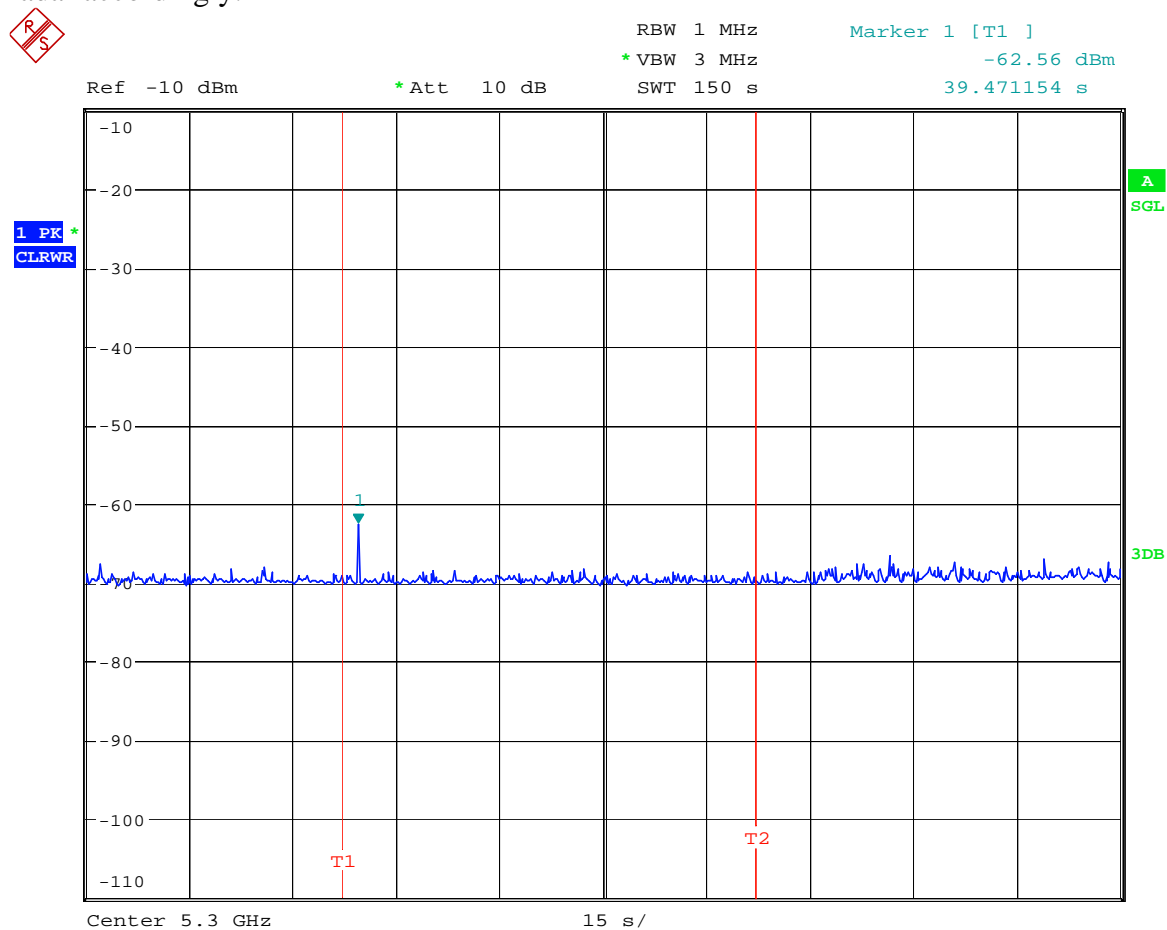
The U-NII Detection Bandwidths are greater than or equal to the 99% bandwidth which meets the requirement of 80%.

### 8.2 Channel Availability Check

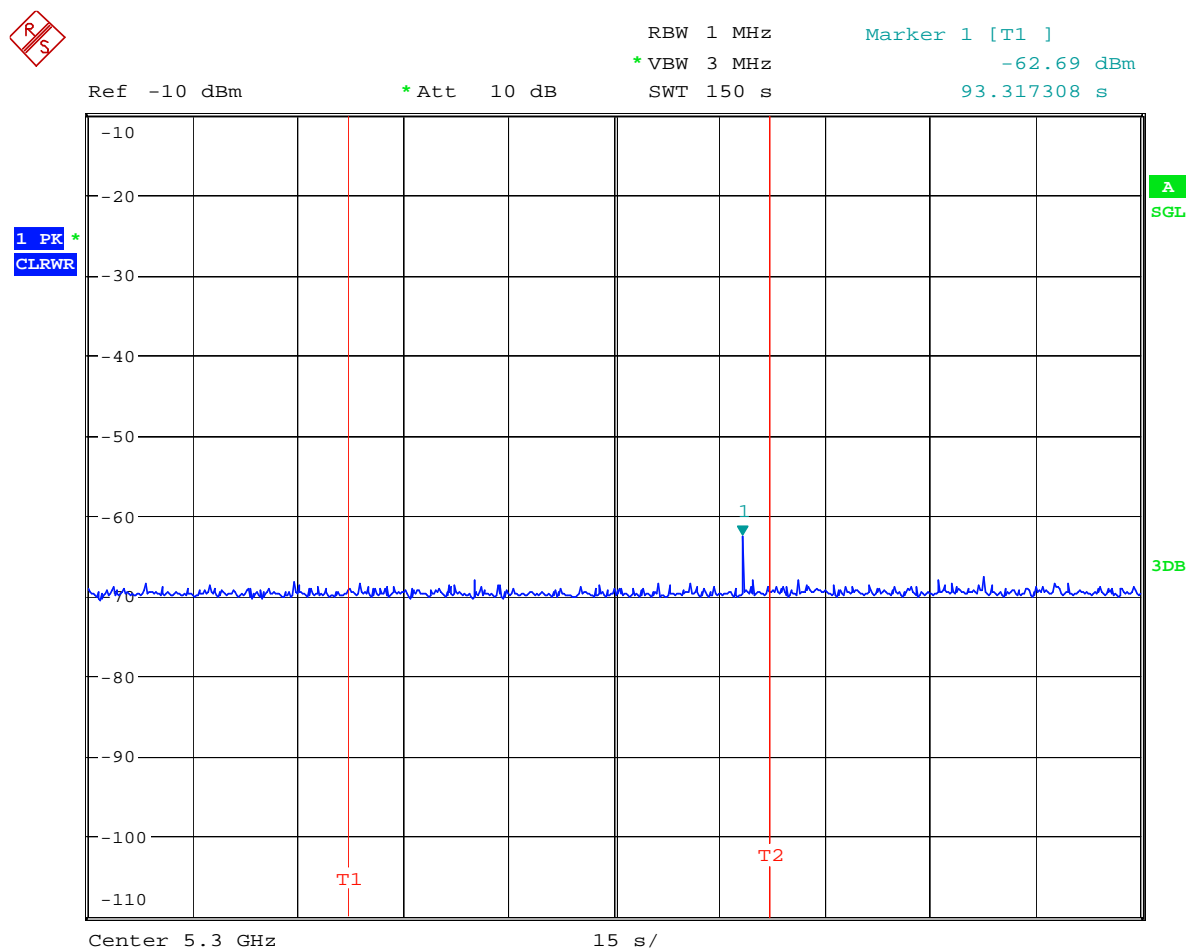
The 60 seconds start and end are displayed below. The vertical lines in the plots show when the 60 seconds CAC starts and when it ends. This will help determine when to hit the devices with radar at the beginning and at the end.



Plot below is the beginning of the CAC with radar being introduced 2 seconds after the 60 seconds CAC had commenced. An additional 1 minute and 40 seconds was set after the 60 seconds CAC to show that the channel detected the radar and moved to another channel. 5600 MHz was also verified and detected radar accordingly.



Plot below is the end of the CAC with radar being introduced 3 seconds before the 60 seconds CAC ended. An additional 1 minute and 40 seconds was set after the 60 seconds CAC to show that the channel detected the radar and moved to another channel. 5600 MHz was also verified and detected radar accordingly.

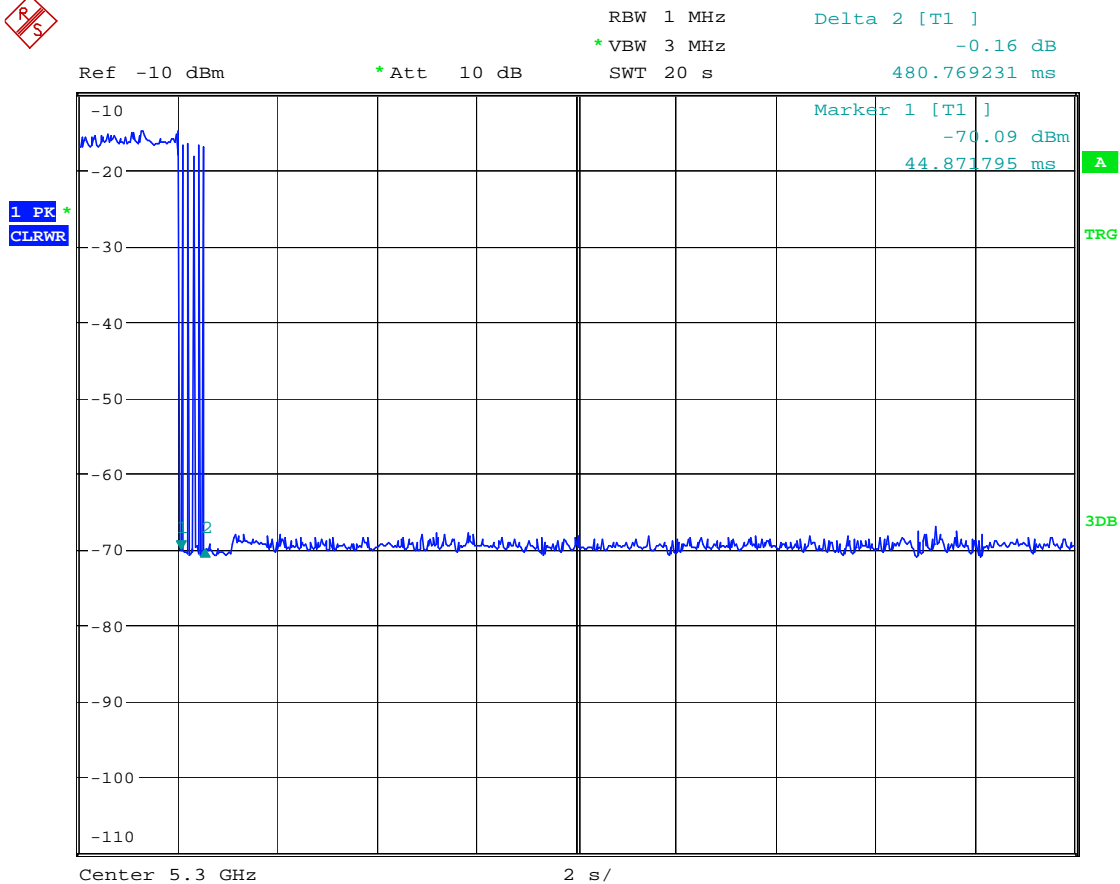


Date: 15.MAY.2008 14:40:22

### 8.3 In-Service Monitoring for Channel Move Time and Closing Time

#### Channel Move Time with Radar Type 1

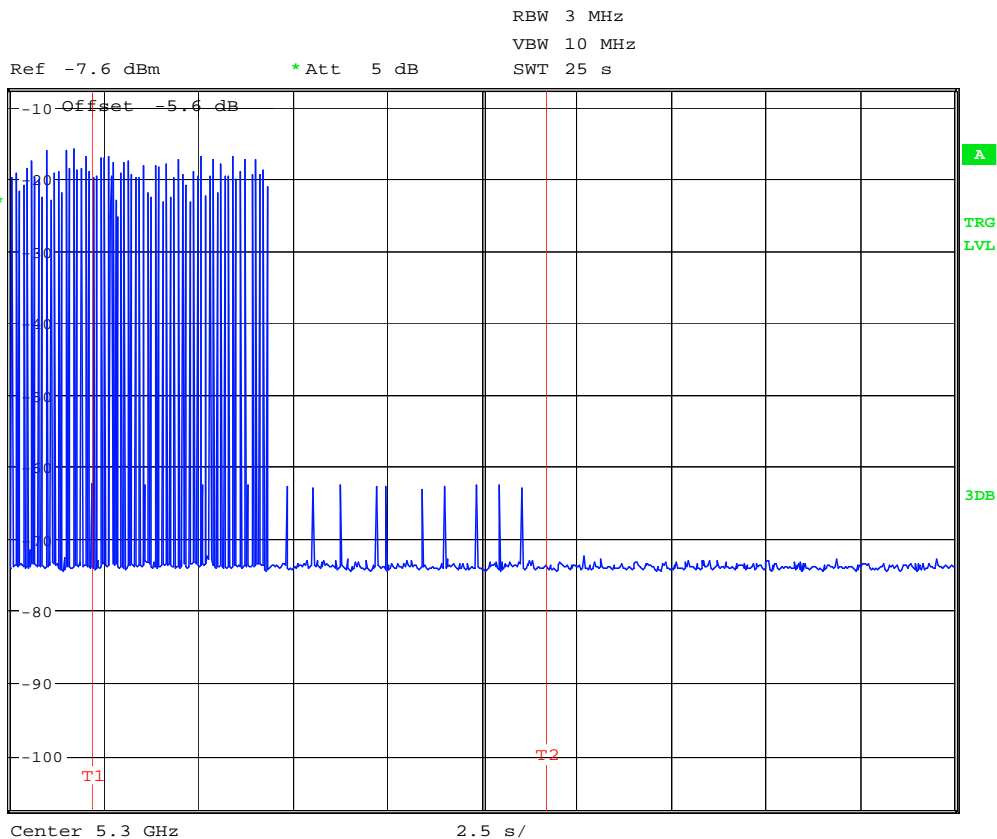
The device stops transmission within 10 seconds after the radar burst



Date: 15.MAY.2008 14:54:58

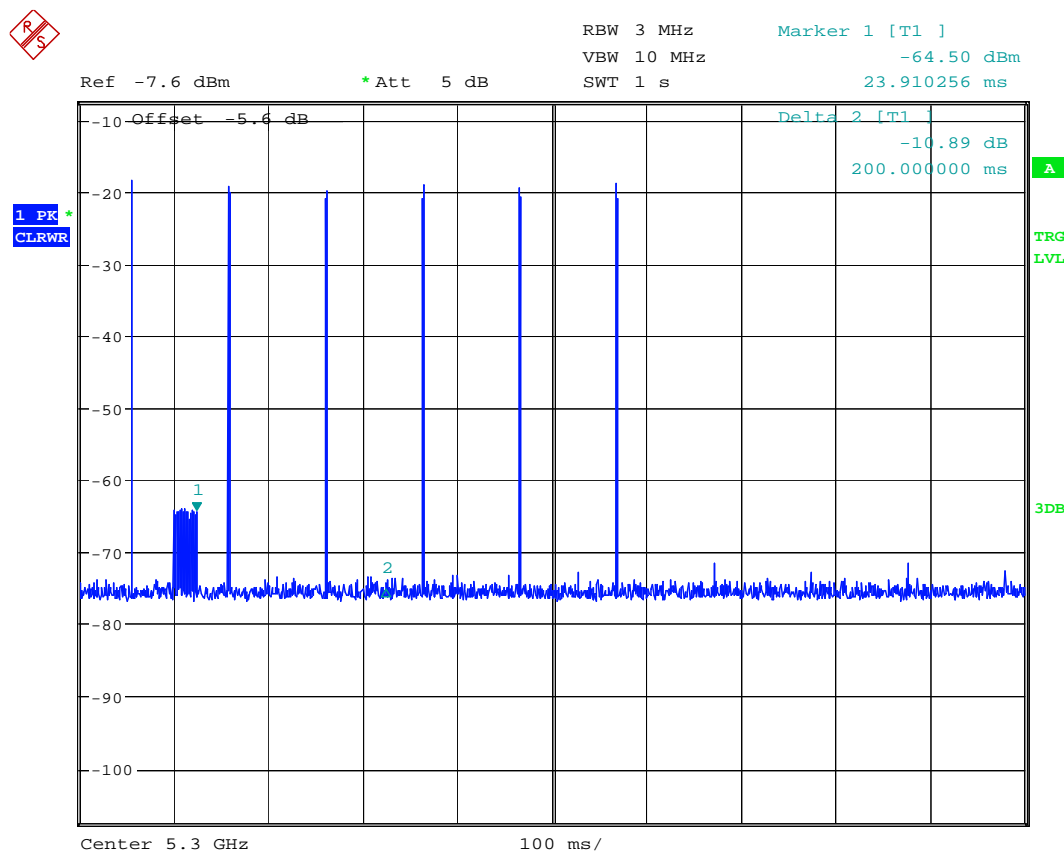
## Channel Move Time with Radar Type 5

The device stops transmission within 10 seconds after the radar sequence



## Channel Closing Time with Radar Type 1

See table below for aggregated transmission time 200ms after the end of the burst.



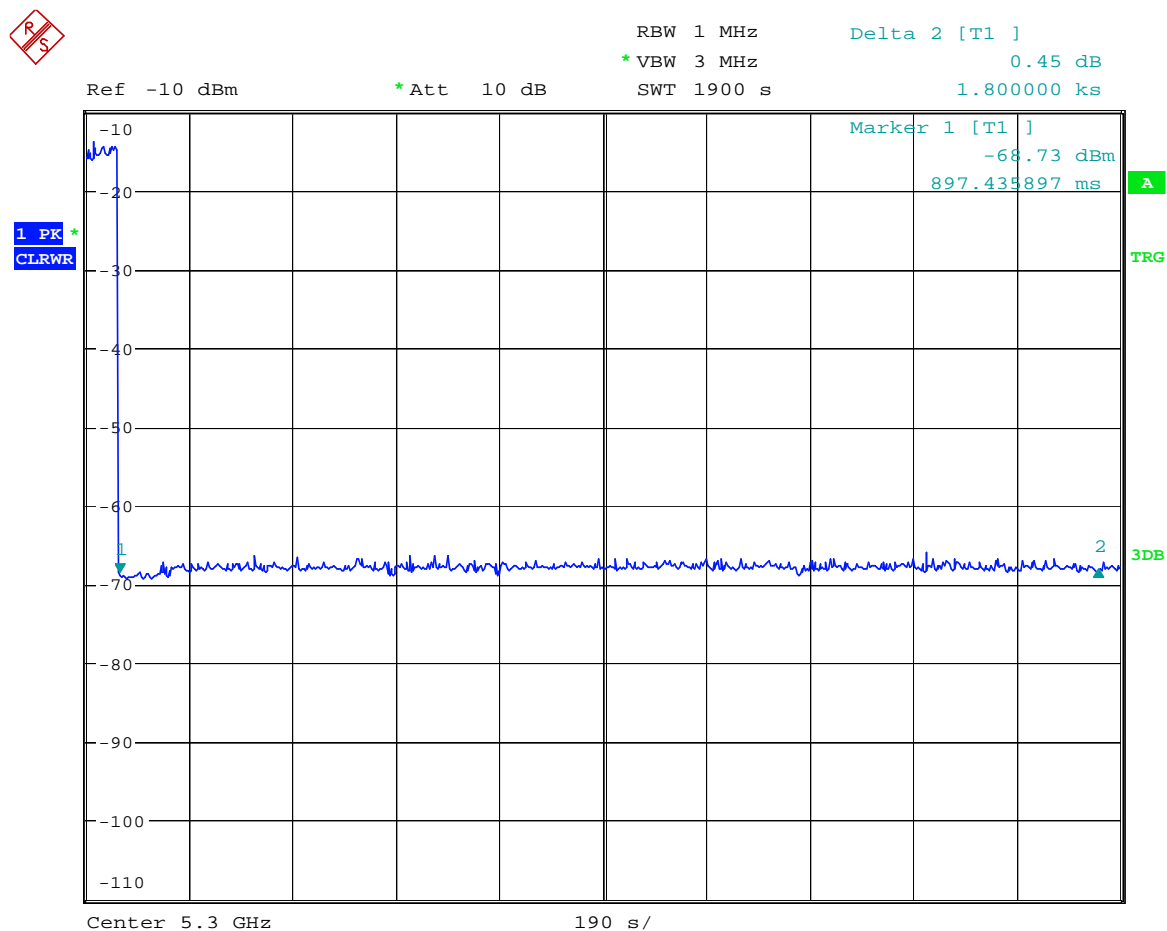
Date: 10.JUL.2008 10:35:55

**RADAR TYPE 1**

Analyzer Total bins	2001	(Sweep points)
# of Bins	1,753.06	
Analyzer Sweep (s)	1.00	(Analyzer sweep time)
Analyzer (ms)	1,000.0	
Transmission Time (seconds)	0.876	(Measured from the end of the radar pulse to the end of the sweep)
Transmission Time (ms)	876.1	
Dwell time per bin (second)	0.00050	
Dwell time per bin (ms)	0.49975	
Number of bins with WLAN Tx	6.0	(Number of transmission points after 200ms)
Aggregate (seconds)	0.0030	
Aggregate (ms)	3.0	
FCC result	Pass	FCC limit: 60 ms aggregated (After 200 ms)

## 8.4 Non-Occupancy Period

A 1900 seconds sweep was set on the spectrum analyzer to show that the channel moves when radar is detected and does not return to the same channel during the 30 minutes non-occupancy period requirement.



Date: 15.MAY.2008 16:45:39





## 8.5 In-Service Monitoring – Detection Probability

Radar Type	Pulse Width (μsec)	PRI (μs)	Number of Pulses	Percentage of Successful Detection	Number of Trials
1	1	1428	18	93.3%	30
2	1–5	150-230	23-29	96.9%	32
3	6–10	200-500	16-18	90.0%	30
4	11–20	200-500	12-16	93.3%	30
Aggregate (Radar Types 1-4)				93.4%	122

Radar Type	Pulse Width (μsec)	Chirp Width (MHz)	PRI (μs)	Number of Pulses per Burst	Number of Bursts	Percentage of Successful Detection	Number of Trials
5	50-100	5-20	1000-2000	1-3	8-20	96.7%	30

Radar Type	Pulse Width (μsec)	PRI (μsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Percentage of Successful Detection	Number of Trials
6	1	333	9	0.333	300	96.7%	30

### FCC Type 1 Radar Statistical Performance

05/28/2008-11:33:30

Trial #	Fc(MHz)	Pulses/Burst	Pulse Width (uS)	PRI (us)	Detection
1	5333.3	18	1.0	1428	1
2	5333.3	18	1.0	1428	1
3	5333.3	18	1.0	1428	1
4	5333.3	18	1.0	1428	1
5	5333.3	18	1.0	1428	1
6	5333.3	18	1.0	1428	1
7	5333.3	18	1.0	1428	1
8	5333.3	18	1.0	1428	1
9	5333.3	18	1.0	1428	1
10	5333.3	18	1.0	1428	1
11	5333.3	18	1.0	1428	1
12	5333.3	18	1.0	1428	1
13	5333.3	18	1.0	1428	1
14	5333.3	18	1.0	1428	1
15	5333.3	18	1.0	1428	1
16	5333.3	18	1.0	1428	1
17	5333.3	18	1.0	1428	1
18	5333.3	18	1.0	1428	1
19	5333.3	18	1.0	1428	1
20	5333.3	18	1.0	1428	1
21	5333.3	18	1.0	1428	1
22	5333.3	18	1.0	1428	1
23	5333.3	18	1.0	1428	1
24	5333.3	18	1.0	1428	1
25	5333.3	18	1.0	1428	1
26	5333.3	18	1.0	1428	1
27	5333.3	18	1.0	1428	1
28	5333.3	18	1.0	1428	1
29	5333.3	18	1.0	1428	1
30	5333.3	18	1.0	1428	1

Number Detected 28

Total Trials 30

Detection Percentage 93.3



## FCC Type 2 Radar Statistical Performance

05/28/2008-11:44:12

Trial #	Pulses/Burst	Pulse Width (uS)	PRI (uS)	Detection	Comment
1	25	2.7	185	1	
2	28	3.5	185	1	
3	25	1.4	179	1	
4	23	2.8	150	1	
5	29	1.3	218	1	
6	27	4.9	215	1	
7	24	3.3	192	1	
8	27	1.0	160	1	
9	25	2.8	223	1	
10	24	4.5	161	1	
11	28	2.3	178	1	
12	26	1.2	212	1	
13	27	3.7	212	1	
14	23	1.8	218	1	
15	25	2.2	161	1	
16	29	5.0	160	1	
17	27	2.0	175	1	
18	23	2.0	189	1	
19	28	1.6	194	1	
20	24	4.5	170	1	
21	23	2.6	156	1	
22	27	2.8	207	1	
23	26	3.8	204	1	
24	23	2.3	205	1	
25	27	4.9	228	1	
26	26	1.1	178		
27	28	2.0	189	1	
28	28	2.4	227	1	
29	26	1.8	230	1	
30	25	2.8	173	1	
31	29	2.6	178	1	
32	26	4.6	230	1	

Number Detected 31

Total Trials 32

Detection Percentage 96.9

## FCC Type 3 Radar Statistical Performance

05/28/2008-11:55:28

Trial #	Pulses/Burst	Pulse Width (uS)	PRI (uS)	Detection	Comment
1	17	7.8	374	1	
2	17	6.8	477	1	
3	16	6.6	455		
4	18	6.7	401		
5	16	9.1	357	1	
6	18	8.6	476	1	
7	18	9.4	313	1	
8	18	8.2	385	1	
9	16	6.3	435	1	
10	17	9.1	472	1	
11	18	7.4	298	1	
12	18	7.9	277	1	
13	16	6.5	279	1	
14	16	9.2	298	1	
15	18	7.8	338	1	
16	17	8.5	334	1	
17	16	7.2	361	1	
18	17	9.7	407	1	
19	16	6.8	261	1	
20	16	8.2	267	1	
21	16	9.7	453	1	
22	16	7.7	484	1	
23	18	7.1	256	1	
24	16	6.6	265	1	
25	16	6.5	225	1	
26	17	8.4	360	1	
27	16	6.8	252	1	
28	17	9.6	213		
29	16	7.1	322	1	
30	18	9.6	368	1	

Number Detected 27

Total Trials 30

Detection Percentage 90.0

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FCC Type 4 Radar Statistical Performance

05/28/2008-12:15:00

Trial #	Pulses/Burst	Pulse Width (uS)	PRI (uS)	Detection	Comment
1	12	17.7	488	1	
2	13	14.8	354	1	
3	14	15.3	231	1	
4	12	17.2	317	1	
5	15	15.2	478	1	
6	12	17.1	499	1	
7	15	11.8	214	1	
8	15	16.5	237	1	
9	14	15.9	280	1	
10	16	14.6	290	1	
11	14	16.5	206	1	
12	15	19.7	289	1	
13	15	17.6	233	1	
14	15	14.1	413	1	
15	15	14.5	496	1	
16	16	13.8	358	1	
17	12	13.8	464	1	
18	13	14.6	221	1	
19	15	19.3	487		
20	15	13.3	385		
21	16	18.1	438	1	
22	13	19.5	271	1	
23	13	17.6	460	1	
24	12	17.7	296	1	
25	12	17.6	464	1	
26	13	19.6	347	1	
27	14	12.6	243	1	
28	15	17.4	422	1	
29	15	13.2	407	1	
30	16	15.0	216	1	

Number Detected 28

Total Trials 30

Detection Percentage 93.3



## FCC Type 5 Radar Statistical Performance

07/10/2008-09:17:17

Trial	Table	Detectio n
1	Type 5 Statistics 1	1
2	Type 5 Statistics 2	1
3	Type 5 Statistics 3	1
4	Type 5 Statistics 4	
5	Type 5 Statistics 5	1
6	Type 5 Statistics 6	1
7	Type 5 Statistics 7	1
8	Type 5 Statistics 8	1
9	Type 5 Statistics 9	1
10	Type 5 Statistics 10	1
11	Type 5 Statistics 11	1
12	Type 5 Statistics 12	1
13	Type 5 Statistics 13	1
14	Type 5 Statistics 14	1
15	Type 5 Statistics 15	1
16	Type 5 Statistics 16	1
17	Type 5 Statistics 17	1
18	Type 5 Statistics 18	1
19	Type 5 Statistics 19	1
20	Type 5 Statistics 20	1
21	Type 5 Statistics 21	1
22	Type 5 Statistics 22	1
23	Type 5 Statistics 23	1
24	Type 5 Statistics 24	1
25	Type 5 Statistics 25	1
26	Type 5 Statistics 26	1
27	Type 5 Statistics 27	1
28	Type 5 Statistics 28	1
29	Type 5 Statistics 29	1
30	Type 5 Statistics 30	1

Number Detected 29

Total Trials 30

Detection Percentage 96.7

## Type 5 Statistics 1

Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S)
0	1	20	71.3			0.161308
1	3	8	88.4	1204	1096	0.751335
2	2	13	86.3	1695		1.607802
3	2	18	92.9	1452		2.065664
4	3	17	92.9	1453	1494	2.425159
5	2	10	57.2	1148		3.027927
6	3	11	55.4	1146	1431	3.790722
7	2	10	75	1601		4.562595

## Type 5 Statistics 15

Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S)
0	3	17	76.8	1704	1518	0.45765
1	1	11	99.4			1.31108
2	3	15	85	1282	1414	1.73533
3	2	10	50.8	1840		2.94088
4	3	13	78.3	1588	1350	4.27298
5	2	10	63.5	1386		5.0051
6	2	12	65	1848		5.79963
7	2	19	93.2	1537		6.79115

8	2	6	57.1	1883		5.1733 5.58321	8	2	14	66.5	1144			7.0058 7 8.0689
9	2	17	82.9	1689		8 6.51528	9	1	11	70				5 8.7241
10	1	6	54.2			3 6.64128	10	1	19	60.5				5 9.5223
11	2	19	62.5	1003		7 7.47700	11	2	5	59.8	1056			3 11.072
12	1	9	71.2			3 8.07082	12	1	18	67.7				1 11.497
13	1	9	81.4			8.82348	13	2	19	63.7	1127			7
14	3	13	52.3	1120	1211	3 9.09957	Type 5 Statistics 16							
15	3	5	98.8	1271	1333	6 9.68565	Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S)	
16	2	5	74.2	1659		7 10.5820	0	1	12	70.3			0.7455	
17	2	9	71.8	1367		4 11.1177	1	2	17	92.4	1923		3	
18	2	14	90.1	1252		5 11.4425	2	2	10	59.9	1320		1.0030	
19	3	19	79.8	1305	1658	1	3	3	19	87.6	1715	1079	7	
Type 5 Statistics 2							4	1	11	70.2			2.4396	
Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S)	5	2	10	54.9	1513		2	
0	1	8	59.1			0.44075	6	1	17	94.2			4.8011	
1	3	13	99.8	1584	1817	7 0.63511	7	2	19	86.1	1157		3	
2	1	14	92.6			6 1.31010	8	3	14	68.3	1774	1203	5.8557	
3	3	20	53.6	1524	1854	1 2.22078	9	1	18	79.1			6.7884	
4	1	10	51.9			5 2.63470	10	2	19	57.2	1238		7.2541	
5	1	11	90.9			5	11	2	7	56.5	1641		3	
6	3	19	66.8	1453	1765	3.47661 3.71699	12	1	11	86.5			8.2179	
7	2	17	73.5	1145		2 4.58091	13	1	7	66.2			4	
8	3	13	87.4	1146	1550	5.25165 9	Type 5 Statistics 17							
9	3	12	71.8	1482	1902	5.70132	Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S)	
10	2	10	51.7	1821		6.17649 2 7.13199	0	1	6	91			0.4026	
11	1	19	57.2			8	1	1	17	97.8			1	
12	2	12	77.3	1094		7.62968 8.24264	2	1	13	78.7			1.1015	
13	3	14	80.3	1661	1513	5 8.61526	3	2	16	52	1531		1.8072	
14	2	15	86.5	1661		4 9.11749	4	1	6	92.8			7	
15	1	13	57.2			1 9.97191	5	3	14	79.1	1876	1521	1.9606	
16	2	15	53.8	1041		8 10.7219	6	2	11	57.4	1727		3	
17	3	16	97.2	1917	1124	3 11.3639	7	2	15	64.4	1283		3.0949	
18	3	10	84.3	1449	1672	2	8	2	19	68.1	1365		6	
19	2	8	50.4	1811		11.9525	9	1	10	72.7			3.4019	
Type 5 Statistics 3							10	2	10	89.7	1942		8	
Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S)	11	2	19	91.8	1913		3.9742	
0	3	10	83.2	1653	1739	0.16410 3 1.06803	12	3	18	75	1841	1188	3	
1	1	18	89.2			9 2.11374	13	1	19	56.9			7.4050	
2	3	10	51.1	1521	1296	4 2.77664	14	2	9	81.7	1194		8.0717	
3	2	20	99.7	1400		3 3.28149	15	3	9	72.1	1357	1178	7	
4	3	17	78.5	1394	1690	9	16	1	12	75.6			8.3846	



5	2	16	88.1	1670		3.90417 4.56595	17	3	19	97.2	1107	1634	10.848 7
6	1	15	86.6			7 5.83162	18	2	16	90	1709		11.383 9
7	3	17	78.7	1531	1254	8 6.40597	Type 5 Statistics 18						
8	2	17	66.3	1709		4 7.42778	Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S) 0.0124
9	2	15	62.3	1151		8 8.11392	0	1	11	80.7			8 1.0020
10	2	13	85.1	1466		5 8.96807	1	1	13	71			8 1.3577
11	1	7	53.1			3 9.22198	2	3	15	79.2	1262	1134	9 2.1587
12	1	14	88.8			5 10.3996	3	2	6	93.4	1723		4 3.2880
13	1	19	85			5 10.9059	4	1	11	83.9			4 3.4373
14	2	14	51	1363		5 11.3729	5	2	10	72.3	1633		9 4.6092
15	3	7	85.8	1489	1751	5	6	2	9	96	1731		4.7047 7
Type 5 Statistics 4							7	2	8	57.6	1303		
Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S) 0.50558	8	2	9	70.2	1297		5.8419 6
0	1	12	79			5 1.34709	9	2	16	98.7	1379		3 6.3080
1	2	6	86.4	1349		2 1.97175	10	2	14	85.8	1088		8 7.3005
2	3	13	94.7	1810	1351	2 2.33742	11	1	6	67.3			1 7.5138
3	2	9	67.5	1834		4 2.39073	12	2	15	64.6	1555		1 8.5299
4	2	13	58.3	1669		4 3.39073	13	2	17	63	1215		9 8.7480
5	2	6	58.4	1360		5 3.98184	14	3	11	94.4	1411	1934	9.7413 10.155
6	2	5	74.9	1461		7 4.57475	15	2	10	55	1517		7 10.691
7	2	12	53	1856		5 5.67587	16	1	18	54			8 11.534
8	2	10	71.6	1643		9 6.11162	17	3	15	70.1	1730	1678	1
9	3	16	94.3	1169	1769	6 6.83788	Type 5 Statistics 19						
10	3	11	74.7	1040	1302	7.79528	Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S) 0.0194
11	3	14	60.9	1836	1609	9 8.39977	0	2	9	58.5	1726		4 1.4359
12	1	12	59.9			8 9.32751	1	2	5	56.2	1240		8 2.5750
13	1	17	80.3			3 10.4698	2	3	6	70.6	1653	1628	4 3.9922
14	2	18	94	1696		10.9099 11.9923	3	2	19	58.3	1652		6 5.0190
15	1	10	53.6			1	4	2	13	74.1	1119		3 6.5308
Type 5 Statistics 5							5	2	14	79.9	1108		9 6.9979
Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S) 0.51034	6	2	7	66.1	1880		2 7.8018
0	1	6	79.8			9 1.31262	7	2	9	63.9	1125		2 9.6323
1	3	18	94.9	1716	1725	9 1.41785	8	2	18	73.3	1055		2 9.9429
2	3	15	91.5	1937	1730	9 2.38368	9	1	13	97.6			5 11.227
3	1	6	77.8			4 3.26302	10	2	15	64.3	1168		3
4	1	17	63.9			6 3.78623	Type 5 Statistics 20						
5	2	18	67.6	1013		4 4.51912	Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S) 0.7869
6	3	12	84.2	1722	1691	8 5.31955	0	3	9	70.3	1327	1554	4 1.0104
7	3	19	52.2	1009	1625	6 6.18919	1	1	18	58.8			5 2.1662
8	3	6	91.2	1832	1957	2	2	1	8	72.5			7
9	3	16	88	1117	1341	7.03432							



10	1	15	91.6			7.52553 8	3	3	11	55.3	1615	1240	3.5093 3
11	2	16	80.9	1442		7.99807 7	4	2	14	99.7	1142		4.6082 6
12	2	12	71.4	1920		8.76820 1	5	3	19	90.9	1168	1048	5.2304 9
13	3	10	98.8	1578	1644	9.50852 10.2682 8	6	3	12	54.4	1384	1403	6.7276 7.8121 6
14	1	15	58.2			10.6949 9	7	2	12	85.1	1204		8.1538 4
15	3	5	89.9	1745	1692	11.5669 8	8	2	16	85	1363		9.2639 4
16	2	17	83.7	1059			9	2	14	54.1	1823		10.066 11.281 8
Type 5 Statistics 6							10	2	18	90.3	1178		
Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S)	11	2	17	92.7	1390		
0	1	12	64.8			0.68865 1	Type 5 Statistics 21						
1	2	18	62.5	1777		1.14172 5	Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S)
2	2	9	54.5	1561		1.65758 8	0	3	13	69.1	1680	1918	0.5041 7
3	2	8	80.3	1980		2.52344 4	1	2	14	59.2	1675		0.8084 1
4	3	16	71.9	1626	1846	3.67314 7	2	1	14	81.5			1.8364 8
5	1	16	50.3			4.25223 2	3	3	10	84.1	1511	1313	2.1234 8
6	3	7	84.8	1835	1091	5.17537 9	4	3	13	81.2	1425	1832	3.1386 7
7	1	12	58.3			5.44936 3	5	3	7	63.4	1466	1553	3.7104 7
8	3	10	92.9	1554	1754	6.40547 4	6	2	6	70	1193		4.6815 5
9	1	12	63.9			7.13498 9	7	2	13	73.7	1179		5.4472 6
10	3	15	67.6	1732	1624	7.59226 1	8	2	13	55.2	1218		6.3104 8
11	1	10	89.8			8.61663 8	9	2	15	74.8	1987		6.8391 7.6588 7
12	2	19	65.3	1115		9.05026 3	10	2	14	93.8	1376		8.2857 8
13	1	6	85.9			9.97998 8	11	1	8	76			8.5385 9
14	2	13	93.6	1229		10.8554 2	12	1	11	80			9.5058 4
15	2	8	87.8	1598		11.6864 8	13	1	15	68.3			10.132 8
Type 5 Statistics 7							14	2	11	93.5	1369		10.723 2
Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S)	15	1	8	83.1			11.572 7
0	2	5	62.7	1411		0.29263	16	3	8	53.2	1033	1499	
1	2	6	92.7	1050		1.17212	Type 5 Statistics 22						
2	3	8	74.7	1415	1941	1.84651 8	Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S)
3	2	7	63.8	1866		2.35929 8	0	3	7	91.1	1044	1900	0.4485 1
4	3	19	69	1027	1212	3.02031 3	1	1	7	79.8			0.8447 8
5	2	15	88	1245		3.54077 6	2	2	7	73.2	1902		1.4425 3
6	3	18	76.6	1542	1756	4.39234 5	3	2	12	94.4	1182		2.3691 1
7	2	13	65	1229		4.69367 7	4	3	17	57.1	1513	1057	3.4115 9
8	3	10	78.5	1645	1913	5.19305 6.16046 6	5	3	10	94.5	1059	1832	3.8855 1
9	2	5	66.6	1620		6.61850 5	6	1	12	86.8			4.6893 1
10	3	10	56.6	1357	1903	7.31865 9	7	3	16	87.9	1473	1392	4.9559 2
11	3	9	77.4	1110	1248	7.72093 2	8	2	12	76.1	1740		6.1794 9
12	2	17	89	1801		8.33210 2	9	2	14	83.1	1270		6.5298 6
13	3	15	85.2	1468	1973		10	3	6	84.4	1488	1765	7.3206 9



14	2	16	89.2	1917		9.401677	11	2	16	71.5	1132		8.30019
15	3	8	90.9	1432	1611	10.08507	12	3	9	80.6	1397	1746	8.77543
16	2	6	60.9	1266		10.40115	13	2	7	88.2	1334		9.42062
17	1	5	62.7			11.24386	14	3	18	66.3	1492	1950	10.5109
18	1	17	65.8			11.94323	15	2	12	97.6	1014		10.9597
							16	2	5	95.9	1110		11.4206
Type 5 Statistics 8													
Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S)	Type 5 Statistics 23						
0	2	8	78.1	1037		0.097629	Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S)
1	3	11	96	1644	1202	0.781943	0	1	6	67.1			0.52022
2	2	16	74.7	1993		1.472533	1	1	17	86.4			1.69883
3	2	16	56.3	1212		2.396851	2	2	9	92.5	1666		2.10878
4	2	6	67.9	1318		2.775015	3	2	6	81	1815		2.81843
5	2	9	95.3	1046		3.52333	4	3	14	99.3	1788	1050	4.15327
6	2	11	81.4	1055		4.173169	5	2	7	59.4	1143		5.14627
7	1	6	87.6			4.922282	6	3	6	51.8	1707	1312	6.45358
8	2	18	63.9	1282		5.395656	7	2	10	60.4	1363		6.88346
9	3	16	65.1	1692	1109	6.515781	8	3	17	90	1839	1396	7.77379
10	2	7	96.8	1928		7.26282	9	1	14	72.9			8.68368
11	2	14	94.5	1578		7.422333	10	3	7	74.9	1612	1615	9.90599
12	2	6	65	1774		8.484056	11	2	13	78.1	1846		10.2589
13	3	6	54.8	1496	1580	8.865746	12	1	16	93.2			11.4038
14	3	12	90.3	1756	1224	9.436684	Type 5 Statistics 24						
15	2	11	68.4	1958		10.30142	Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S)
16	1	16	51.1			11.26711	0	2	10	76.6	1586		0.74807
17	1	20	77.6			11.50371	1	2	15	83.8	1412		1.65589
Type 5 Statistics 9							2	2	6	87.9	1121		1.99897
Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S)	3	2	14	88.6	1551		3.49863
0	3	15	65.6	1143	1273	0.575409	4	2	9	68.8	1114		3.85971
1	1	15	94.4			0.954031	5	2	8	51.2	1746		5.23461
2	3	20	65.9	1972	1959	1.591212	6	1	13	60.8			5.71874
3	2	18	89.8	1936		2.983222	7	2	10	70.3	1055		6.87137
4	2	16	53.5	1638		3.651943	8	2	15	85.1	1633		8.07967
5	3	14	70.9	1259	1714	3.943528	9	1	18	66.1			8.3549
6	2	15	81.6	1802		4.902845	10	2	20	62.7	1683		9.5124
7	2	14	75	1048		5.828168	11	3	15	91	1008	1801	10.36
8	3	20	85.1	1084	1044	6.324131	12	1	10	87.4			11.4728
9	2	14	70.4	1617		7.157731	Type 5 Statistics 25						
10	2	19	55.2	1505		7.760217	Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S)
11	3	18	60.8	1506	1868	8.770375	0	2	16	86	1374		0.34672
12	1	18	50.5			9.308998	1	2	13	85.9	1419		1.27916
13	2	11	95.5	1111		10.19913							





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							10.9875						2.1814		
14	1	15	91				4	2	2	11	84.8	1171		3	
							11.8472							2.8201	
15	1	14	60.6				9	3	2	20	72	1109		6	
														3.9586	
Type 5 Statistics 10								4	2	10	62	1047		9	
								5	2	12	83.4	1037		4.7741	
														9	
Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S)		6	3	10	54	1969	1097	5.2848	
						0.11175								5	
0	3	17	79.3	1835	1614	2		7	2	11	84.3	1740		5.6135	
						0.98848		8	2	18	64.7	1858		4	
1	2	5	92.1	1644		4								6.9644	
						2.00168								5	
2	3	19	63.7	1810	1574	2		9	3	15	69.4	1659	1263	7.4569	
						2.12204								3	
3	3	13	98.2	1039	1352	5		10	3	7	94.3	1770	1012	8.5299	
						3.22095								9	
4	3	17	53.8	1674	1161	1		11	1	8	53.9			9.3653	
						4.08844								9	
5	2	9	75.1	1645		3		12	1	9	68.9			9.6390	
						4.68373								1	
6	2	17	55.2	1936		3		13	2	11	71.4	1982		10.809	
						5.62814								6	
7	1	14	63.4			7		14	2	12	88.9	1630		11.412	
						6.30591									
8	2	18	94.2	1891		4		Type 5 Statistics 26							
						7.01058									
10	1	6	84.7			5		Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S)	
						8.05214									
11	2	8	89.6	1783		1		0	1	15	57.6			0.4711	
						8.63561								1.2438	
12	3	6	85.9	1772	1718	8		1	1	17	87.1			2	
						9.23592								2.6156	
13	3	9	88.6	1007	1956	8		2	1	10	61.4			8	
						10.0950								3.5225	
14	3	11	94.9	1811	1337	5		3	3	14	91.3	1317	1507	8	
						10.9533								4.7028	
15	1	10	66.4			6		4	1	13	82.1			7	
						11.7334								6.3367	
16	2	7	76.9	1275		8		5	2	13	80.2	1051		3	
														7.2907	
Type 5 Statistics 11								6	1	16	96.5			2	
														7.7469	
								7	3	18	53.1	1284	1896	8	
Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S)		8	3	18	70.8	1660	1437	9.4410	
						1.07682								3	
0	3	6	64.2	1036	1532	6		9	1	14	70.1			10.277	
						1.52902								4	
1	1	13	96.9			1		10	2	14	81.8	1182		10.970	
						3.53280								9	
2	3	14	72.3	1273	1097	7		Type 5 Statistics 27							
						4.21505									
3	1	5	56.3			1		Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S)	
														0.4766	
4	2	9	56.1	1006		4		0	3	10	90.4	1205	1225	1	
						6.97684								1.2780	
5	2	20	82	1758		1		1	2	12	84.2	1585		8	
						7.44054								1.4555	
6	1	18	81.7			8		2	1	16	83.7			7	
						9.52882								2.7925	
7	1	10	97.3			4		3	2	16	66.1	1305		5	
						10.2585								3.4512	
8	1	11	72.3			3		4	3	13	83.4	1256	1797	6	
						11.3286								4.0357	
9	2	6	67.1	1790		6		5	2	19	55.3	1899		8	
														4.4953	
Type 5 Statistics 12								6	3	18	64.3	1604	1727	9	
Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	Pulse Start(S)		7	1	17	94.8			5.5604	
						0.05050								1	
0	3	6	87.9	1098	1464	1		8	2	11	99.9	1392		6.3060	
						1.21666								2	
1	3	18	80.7	1154	1940	5		9	1	20	81.8			6.6517	
						1.57743								2	
2	3	14	59.5	1123	1658	2		10	3	11	97.7	1702	1286	7.4702	
						2.97714								1	
3	3	15	66.2	1118	1150	8		11	2	13	55.5	1083		7.9189	
														7	



4	2	6	51.6	1205	3.12629 3 3.85379	12	2	12	86.2	1604	8.5530 4 9.3810
5	1	18	76.7		2 4.87822	13	1	5	77.7		4 10.461
6	1	8	80		5 5.70103	14	2	8	73.6	1632	5 10.997
7	1	20	92.9		8 6.70211	15	3	9	83.3	1185	1 11.300
8	1	7	96.4		5 7.11786	16	2	14	80.1	1774	6
9	2	14	80.7	1952	2 8.03525	Type 5 Statistics 28					
10	3	14	65.8	1881	3 8.61467	Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)
11	1	17	80.9		8 9.43931	0	2	8	56.7	1235	Pulse Start(S) 0.0767
12	3	18	59.6	1786	5 9.81675	1	3	14	53.3	1038	6 1.7724
13	2	18	70.4	1443	10.5417	2	2	7	94.3	1782	4 2.8736
14	1	18	91.5		6 11.3906	3	1	19	65.4		6 3.4502
15	3	12	82.1	1486	7	4	2	19	97.9	1724	5 4.8522
Type 5 Statistics 13						5	3	19	50.3	1731	9 5.3423
Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	6	1	12	87		8 6.2541
0	1	16	56.6			7	2	11	90.6	1591	1 7.3526
1	1	10	87			8	1	20	79.9		5 8.2715
2	1	12	60.2			9	3	6	67.3	1515	3 9.3149
3	2	15	81.7	1493		10	2	15	74.7	1963	3 10.511
4	2	19	77	1431		11	1	14	54.1		11.741 5
5	3	8	75	1693	1187	Type 5 Statistics 29					
6	2	5	59.2	1462		Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)
7	1	18	90.2			0	1	9	80.6		Pulse Start(S) 0.9457
8	2	12	68.9	1617		1	2	5	85.2	1443	2 1.8469
9	1	8	93.5			2	2	8	55	1857	1 2.7613
10	1	6	73.5			3	2	11	51.1	1091	9 3.9623
11	1	5	61.1			4	2	6	54.4	1002	5.1898 3
Type 5 Statistics 14						5	3	17	74.3	1118	7.1654 5
Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)	6	1	16	52.7		7.3034 5
0	1	11	78.8			7	2	11	61.2	1238	8.9158 2
1	2	20	54.9	1700		8	2	8	71.6	1205	10.455 4
2	2	12	50.7	1166		9	2	9	50.9	1534	11.105 1
3	2	19	71.1	1277		Type 5 Statistics 30					
4	3	16	72.7	1649	1974	Burst #	Pulses	Chirp (MHz)	PW (uS)	Pulse 1-2 spacing (uS)	Pulse 2-3 spacing (uS)
5	3	20	66.1	1551	1837	0	3	17	69.9	1853	Pulse Start(S) 0.3392
6	3	14	85.3	1879	1082	1	2	7	69.8	1389	3 1.3866
7	3	19	50.8	1825	1105	2	3	15	71.4	1128	7 2.2815
8	2	16	81.1	1033		3	1	14	84.9		4 2.6102
9	1	11	95.9			4	3	12	88.6	1132	8 3.7146
						5	2	11	69.9	1989	1 4.6721
						6	2	18	90.4	1190	8 5.5072

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	7	2	16	87.2	1203		6.5953
	8	2	15	82.9	1104		7.3748
	9	3	5	81.8	1940	1833	2
	10	2	9	93.2	1435		8.0831
	11	2	12	51.5	1072		1
	12	2	17	60.4	1623		9.2696
	13	3	16	78.9	1665	1555	3
							9.5254
							9
							10.893
							5
							11.609
							8



FCC Type 6 Radar Statistical Performance						NOTE: The actual frequencies are different then what the SW report displays.
05/28/2008-12:43:32						FL = 5291 MHz FC = 5300 MHz FH = 5309 MHz
Trial#	Fc (MHz)	Pulses	PW (uS)	PRI (uS)	Detection	Hopping Sequence
1	5333.3	9	1	333	1	5383.0, 5666.0, 5329.0, 5643.0, 5348.0, 5503.0, 5438.0, 5707.0, 5604.0, 5377.0, 5402.0, 5568.0, 5358.0, 5494.0, 5724.0, 5447.0, 5420.0, 5433.0, 5536.0, 5553.0, 5380.0, 5581.0, 5711.0, 5686.0, 5545.0, 5365.0, 5469.0, 5634.0, 5272.0, 5399.0, 5446.0, 5319.0, 5692.0, 5417.0, 5613.0, 5299.0, 5373.0, 5253.0, 5297.0, 5327.0, 5532.0, 5656.0, 5570.0, 5473.0, 5437.0, 5397.0, 5650.0, 5697.0, 5603.0, 5571.0, 5533.0, 5371.0, 5611.0, 5350.0, 5550.0, 5391.0, 5716.0, 5702.0, 5459.0, 5261.0, 5710.0, 5588.0, 5719.0, 5337.0, 5592.0, 5342.0, 5531.0, 5294.0, 5461.0, 5557.0, 5309.0, 5378.0, 5583.0, 5633.0, 5626.0, 5292.0, 5277.0, 5629.0, 5600.0, 5482.0, 5366.0, 5393.0, 5300.0, 5641.0, 5471.0, 5288.0, 5354.0, 5431.0, 5414.0, 5696.0, 5594.0, 5668.0, 5681.0, 5388.0, 5636.0, 5527.0, 5255.0, 5418.0, 5698.0, 5334.0 (number of hits: 1)
2	5333.3	9	1	333	1	5453.0, 5272.0, 5616.0, 5306.0, 5512.0, 5450.0, 5435.0, 5280.0, 5502.0, 5610.0, 5319.0, 5479.0, 5535.0, 5326.0, 5331.0, 5485.0, 5253.0, 5264.0, 5408.0, 5462.0, 5687.0, 5579.0, 5416.0, 5634.0, 5419.0, 5525.0, 5505.0, 5433.0, 5636.0, 5553.0, 5593.0, 5468.0, 5403.0, 5276.0, 5368.0, 5457.0, 5265.0, 5531.0, 5426.0, 5294.0, 5266.0, 5679.0, 5445.0, 5530.0, 5310.0, 5683.0, 5669.0, 5480.0, 5590.0, 5542.0, 5532.0, 5469.0, 5701.0, 5410.0, 5361.0, 5442.0, 5676.0, 5712.0, 5431.0, 5271.0, 5447.0, 5588.0, 5704.0, 5287.0, 5567.0, 5484.0, 5690.0, 5260.0, 5355.0, 5582.0, 5291.0, 5629.0, 5504.0, 5259.0, 5503.0, 5536.0, 5322.0, 5263.0, 5475.0, 5534.0, 5388.0, 5286.0, 5461.0, 5681.0, 5556.0, 5678.0, 5670.0, 5292.0, 5713.0, 5603.0, 5521.0, 5441.0, 5401.0, 5383.0, 5528.0, 5644.0, 5351.0, 5623.0, 5332.0, 5463.0 (number of hits: 2)
3	5333.3	9	1	333	1	5280.0, 5627.0, 5343.0, 5459.0, 5685.0, 5259.0, 5575.0, 5644.0, 5424.0, 5656.0, 5507.0, 5702.0, 5418.0, 5608.0, 5482.0, 5540.0, 5496.0, 5681.0, 5710.0, 5360.0, 5670.0, 5721.0, 5556.0, 5366.0, 5294.0, 5692.0, 5301.0, 5317.0, 5539.0, 5662.0, 5563.0, 5401.0, 5615.0, 5568.0, 5255.0, 5486.0, 5417.0, 5664.0, 5687.0, 5655.0, 5266.0, 5342.0, 5550.0, 5677.0, 5719.0, 5469.0, 5274.0, 5657.0, 5610.0, 5407.0, 5518.0, 5283.0, 5415.0, 5434.0, 5320.0, 5521.0, 5465.0, 5378.0, 5547.0, 5648.0, 5284.0, 5403.0, 5609.0, 5698.0, 5684.0, 5468.0, 5373.0, 5577.0, 5545.0, 5429.0, 5718.0, 5643.0, 5338.0, 5256.0, 5676.0, 5720.0, 5562.0, 5367.0, 5696.0, 5634.0, 5515.0, 5604.0, 5535.0, 5298.0, 5432.0, 5324.0, 5722.0, 5699.0, 5325.0, 5391.0, 5665.0, 5350.0, 5679.0, 5433.0, 5618.0, 5253.0, 5466.0, 5492.0, 5383.0, 5335.0 (number of hits: 1)
4	5333.3	9	1	333	1	5580.0, 5306.0, 5434.0, 5694.0, 5530.0, 5381.0, 5300.0, 5623.0, 5717.0, 5644.0, 5337.0, 5317.0, 5565.0, 5478.0, 5587.0, 5640.0, 5325.0, 5606.0, 5466.0, 5547.0, 5380.0, 5576.0, 5630.0, 5629.0, 5399.0, 5705.0, 5573.0, 5670.0, 5407.0, 5658.0, 5459.0, 5256.0, 5588.0, 5569.0, 5265.0, 5659.0, 5619.0, 5555.0, 5394.0, 5551.0, 5523.0, 5266.0, 5401.0, 5310.0, 5433.0, 5642.0, 5596.0, 5651.0, 5510.0, 5364.0, 5334.0, 5458.0, 5259.0, 5305.0, 5635.0, 5457.0, 5524.0, 5250.0, 5440.0, 5333.0, 5553.0, 5487.0, 5684.0, 5435.0, 5482.0, 5409.0, 5294.0, 5589.0, 5676.0, 5327.0, 5284.0, 5319.0, 5706.0, 5652.0, 5267.0, 5513.0, 5332.0, 5260.0, 5494.0, 5722.0, 5689.0, 5593.0, 5255.0, 5586.0, 5432.0, 5707.0, 5560.0, 5356.0, 5454.0, 5386.0, 5475.0, 5299.0, 5653.0, 5269.0, 5489.0, 5624.0, 5683.0, 5503.0, 5455.0, 5638.0 (number of hits: 3)
5	5333.3	9	1	333	1	5594.0, 5559.0, 5494.0, 5496.0, 5349.0, 5467.0, 5430.0, 5628.0, 5682.0, 5484.0, 5660.0, 5304.0, 5437.0, 5324.0, 5392.0, 5332.0, 5655.0, 5347.0, 5539.0, 5718.0, 5292.0, 5485.0, 5301.0, 5421.0, 5410.0, 5466.0, 5444.0, 5329.0, 5632.0, 5680.0, 5688.0, 5624.0, 5527.0, 5604.0, 5477.0, 5471.0, 5291.0, 5338.0, 5330.0, 5287.0, 5456.0, 5696.0, 5415.0, 5658.0, 5461.0, 5408.0, 5512.0, 5597.0, 5422.0, 5375.0, 5504.0, 5610.0, 5386.0, 5507.0, 5583.0, 5463.0, 5322.0, 5374.0, 5530.0, 5571.0, 5333.0, 5279.0, 5425.0, 5653.0, 5709.0, 5502.0, 5412.0, 5582.0, 5665.0, 5616.0, 5637.0, 5701.0, 5290.0, 5700.0, 5440.0, 5659.0, 5483.0, 5623.0, 5293.0, 5529.0, 5618.0, 5599.0, 5564.0, 5650.0, 5357.0, 5646.0, 5678.0, 5455.0, 5670.0, 5566.0, 5356.0, 5589.0, 5318.0, 5254.0, 5558.0, 5713.0, 5283.0, 5298.0, 5673.0, 5403.0 (number of hits: 3)
6	5333.3	9	1	333	1	5636.0, 5445.0, 5394.0, 5311.0, 5418.0, 5366.0, 5443.0, 5411.0, 5583.0, 5264.0, 5341.0, 5430.0, 5397.0, 5268.0, 5262.0, 5441.0, 5327.0, 5516.0, 5406.0, 5344.0, 5453.0, 5381.0, 5346.0, 5284.0, 5429.0, 5279.0, 5289.0, 5555.0, 5650.0, 5465.0, 5492.0, 5695.0, 5420.0, 5256.0, 5587.0, 5535.0, 5310.0, 5272.0, 5537.0, 5579.0, 5607.0, 5263.0, 5519.0, 5601.0, 5351.0, 5432.0, 5624.0, 5380.0, 5712.0, 5569.0, 5331.0, 5709.0, 5705.0, 5384.0, 5408.0, 5358.0, 5367.0, 5565.0, 5542.0, 5710.0, 5659.0, 5580.0, 5403.0, 5399.0, 5563.0, 5548.0, 5523.0, 5604.0, 5575.0, 5389.0, 5665.0, 5362.0, 5419.0, 5696.0, 5329.0, 5400.0, 5479.0, 5308.0, 5559.0, 5375.0, 5444.0, 5657.0, 5687.0, 5685.0, 5692.0, 5702.0, 5621.0, 5718.0, 5538.0, 5370.0, 5259.0, 5630.0, 5336.0, 5460.0, 5574.0, 5536.0, 5714.0, 5270.0, 5661.0, 5667.0 (number of hits: 2)
7	5333.3	9	1	333		



						5506.0, 5420.0, 5713.0, 5449.0, 5476.0, 5257.0, 5502.0, 5393.0, 5536.0, 5600.0, 5670.0, 5652.0, 5496.0, 5385.0, 5481.0, 5325.0, 5258.0, 5383.0, 5284.0, 5349.0, 5664.0, 5330.0, 5567.0, 5610.0, 5289.0, 5353.0, 5381.0, 5484.0, 5545.0, 5300.0, 5608.0, 5346.0, 5251.0, 5609.0, 5497.0, 5363.0, 5397.0, 5396.0, 5273.0, 5414.0, 5438.0, 5432.0, 5277.0, 5433.0, 5607.0, 5515.0, 5663.0, 5531.0, 5304.0, 5416.0, 5594.0, 5358.0, 5486.0, 5261.0, 5311.0, 5472.0, 5380.0, 5303.0, 5709.0, 5272.0, 5639.0, 5547.0, 5315.0, 5592.0, 5473.0, 5367.0, 5428.0, 5297.0, 5463.0, 5661.0, 5648.0, 5320.0, 5313.0, 5281.0, 5267.0, 5336.0, 5629.0, 5660.0, 5576.0, 5500.0, 5549.0, 5505.0, 5469.0, 5597.0, 5485.0, 5599.0, 5680.0, 5693.0, 5622.0, 5580.0, 5681.0, 5559.0, 5571.0, 5548.0, 5400.0, 5424.0, 5694.0, 5448.0, 5721.0, 5434.0 (number of hits: 2 )
8	5333.3	9	1	333	1	5455.0, 5646.0, 5532.0, 5353.0, 5516.0, 5370.0, 5698.0, 5489.0, 5597.0, 5320.0, 5454.0, 5669.0, 5721.0, 5475.0, 5424.0, 5667.0, 5653.0, 5629.0, 5435.0, 5504.0, 5627.0, 5402.0, 5302.0, 5385.0, 5346.0, 5452.0, 5464.0, 5620.0, 5293.0, 5643.0, 5695.0, 5347.0, 5551.0, 5392.0, 5533.0, 5294.0, 5541.0, 5450.0, 5356.0, 5587.0, 5433.0, 5456.0, 5411.0, 5303.0, 5366.0, 5537.0, 5513.0, 5560.0, 5358.0, 5527.0, 5359.0, 5666.0, 5375.0, 5523.0, 5574.0, 5341.0, 5364.0, 5335.0, 5711.0, 5608.0, 5469.0, 5430.0, 5399.0, 5508.0, 5507.0, 5540.0, 5547.0, 5479.0, 5284.0, 5550.0, 5461.0, 5687.0, 5316.0, 5558.0, 5717.0, 5296.0, 5418.0, 5593.0, 5498.0, 5420.0, 5668.0, 5325.0, 5409.0, 5295.0, 5596.0, 5672.0, 5429.0, 5466.0, 5580.0, 5720.0, 5465.0, 5379.0, 5686.0, 5497.0, 5365.0, 5266.0, 5398.0, 5641.0, 5336.0, 5275.0 (number of hits: 2 )
9	5333.3	9	1	333	1	5410.0, 5606.0, 5299.0, 5340.0, 5270.0, 5485.0, 5607.0, 5335.0, 5318.0, 5555.0, 5306.0, 5526.0, 5718.0, 5534.0, 5408.0, 5353.0, 5550.0, 5388.0, 5271.0, 5518.0, 5559.0, 5711.0, 5697.0, 5317.0, 5641.0, 5648.0, 5722.0, 5355.0, 5499.0, 5458.0, 5562.0, 5529.0, 5313.0, 5601.0, 5343.0, 5482.0, 5704.0, 5287.0, 5690.0, 5636.0, 5693.0, 5434.0, 5662.0, 5336.0, 5436.0, 5487.0, 5366.0, 5683.0, 5544.0, 5527.0, 5554.0, 5598.0, 5621.0, 5428.0, 5302.0, 5677.0, 5681.0, 5547.0, 5479.0, 5659.0, 5542.0, 5465.0, 5452.0, 5551.0, 5600.0, 5344.0, 5430.0, 5301.0, 5399.0, 5647.0, 5626.0, 5584.0, 5608.0, 5519.0, 5706.0, 5363.0, 5389.0, 5361.0, 5605.0, 5266.0, 5512.0, 5712.0, 5592.0, 5330.0, 5307.0, 5267.0, 5523.0, 5259.0, 5574.0, 5494.0, 5698.0, 5644.0, 5472.0, 5511.0, 5570.0, 5665.0, 5431.0, 5409.0, 5356.0, 5670.0 (number of hits: 3 )
10	5333.3	9	1	333	1	5328.0, 5558.0, 5687.0, 5632.0, 5594.0, 5621.0, 5418.0, 5460.0, 5718.0, 5263.0, 5285.0, 5592.0, 5650.0, 5581.0, 5683.0, 5356.0, 5251.0, 5503.0, 5403.0, 5663.0, 5389.0, 5404.0, 5527.0, 5565.0, 5662.0, 5379.0, 5327.0, 5516.0, 5350.0, 5517.0, 5500.0, 5677.0, 5391.0, 5657.0, 5333.0, 5694.0, 5394.0, 5457.0, 5524.0, 5709.0, 5703.0, 5369.0, 5529.0, 5488.0, 5549.0, 5649.0, 5443.0, 5314.0, 5528.0, 5280.0, 5623.0, 5575.0, 5541.0, 5297.0, 5283.0, 5284.0, 5501.0, 5429.0, 5264.0, 5462.0, 5482.0, 5638.0, 5322.0, 5505.0, 5442.0, 5681.0, 5292.0, 5600.0, 5654.0, 5495.0, 5548.0, 5256.0, 5504.0, 5436.0, 5337.0, 5471.0, 5711.0, 5551.0, 5597.0, 5258.0, 5695.0, 5405.0, 5667.0, 5485.0, 5311.0, 5601.0, 5331.0, 5508.0, 5612.0, 5254.0, 5434.0, 5421.0, 5412.0, 5468.0, 5678.0, 5664.0, 5253.0, 5346.0, 5633.0, 5674.0 (number of hits: 2 )
11	5333.3	9	1	333	1	5493.0, 5723.0, 5275.0, 5625.0, 5559.0, 5390.0, 5466.0, 5638.0, 5271.0, 5357.0, 5274.0, 5480.0, 5692.0, 5283.0, 5292.0, 5583.0, 5624.0, 5336.0, 5485.0, 5501.0, 5435.0, 5724.0, 5523.0, 5281.0, 5504.0, 5347.0, 5262.0, 5632.0, 5446.0, 5670.0, 5460.0, 5518.0, 5447.0, 5455.0, 5512.0, 5553.0, 5660.0, 5489.0, 5410.0, 5411.0, 5269.0, 5605.0, 5282.0, 5569.0, 5425.0, 5386.0, 5627.0, 5720.0, 5421.0, 5519.0, 5619.0, 5424.0, 5458.0, 5503.0, 5687.0, 5478.0, 5276.0, 5647.0, 5420.0, 5325.0, 5497.0, 5587.0, 5676.0, 5329.0, 5674.0, 5473.0, 5683.0, 5575.0, 5716.0, 5286.0, 5468.0, 5327.0, 5399.0, 5408.0, 5467.0, 5693.0, 5438.0, 5429.0, 5696.0, 5290.0, 5385.0, 5461.0, 5555.0, 5308.0, 5612.0, 5322.0, 5430.0, 5307.0, 5595.0, 5646.0, 5440.0, 5312.0, 5607.0, 5656.0, 5442.0, 5622.0, 5403.0, 5431.0, 5377.0, 5338.0 (number of hits: 1 )
12	5333.3	9	1	333	1	5630.0, 5517.0, 5546.0, 5722.0, 5451.0, 5257.0, 5372.0, 5352.0, 5452.0, 5341.0, 5647.0, 5444.0, 5534.0, 5413.0, 5425.0, 5543.0, 5664.0, 5523.0, 5673.0, 5253.0, 5312.0, 5518.0, 5622.0, 5414.0, 5558.0, 5577.0, 5542.0, 5457.0, 5641.0, 5450.0, 5336.0, 5407.0, 5721.0, 5516.0, 5393.0, 5400.0, 5256.0, 5507.0, 5716.0, 5514.0, 5308.0, 5642.0, 5540.0, 5663.0, 5499.0, 5251.0, 5633.0, 5676.0, 5680.0, 5357.0, 5259.0, 5658.0, 5388.0, 5423.0, 5366.0, 5284.0, 5707.0, 5686.0, 5462.0, 5454.0, 5252.0, 5498.0, 5408.0, 5556.0, 5491.0, 5318.0, 5570.0, 5508.0, 5262.0, 5390.0, 5471.0, 5322.0, 5279.0, 5564.0, 5280.0, 5294.0, 5669.0, 5584.0, 5696.0, 5285.0, 5429.0, 5436.0, 5391.0, 5691.0, 5532.0, 5627.0, 5591.0, 5420.0, 5299.0, 5698.0, 5296.0, 5541.0, 5604.0, 5606.0, 5324.0, 5684.0, 5493.0, 5531.0, 5510.0, 5603.0 (number of hits: 1 )
13	5333.3	9	1	333	1	5689.0, 5418.0, 5336.0, 5547.0, 5499.0, 5362.0, 5654.0, 5341.0, 5417.0, 5515.0, 5274.0, 5698.0, 5658.0, 5696.0, 5712.0, 5554.0, 5475.0, 5250.0, 5577.0, 5585.0, 5309.0, 5551.0, 5611.0, 5661.0, 5693.0, 5358.0, 5299.0, 5421.0, 5469.0, 5715.0, 5695.0, 5553.0, 5440.0, 5722.0, 5386.0, 5570.0, 5284.0, 5592.0, 5633.0, 5511.0, 5382.0, 5675.0, 5306.0, 5369.0, 5258.0, 5603.0, 5437.0, 5523.0, 5649.0, 5526.0, 5372.0, 5632.0, 5254.0, 5494.0, 5459.0, 5580.0, 5639.0, 5623.0, 5280.0, 5265.0, 5439.0, 5690.0, 5539.0, 5596.0, 5708.0, 5349.0, 5615.0, 5638.0, 5311.0, 5474.0, 5644.0, 5381.0, 5449.0, 5455.0, 5487.0, 5270.0, 5326.0, 5541.0, 5645.0, 5330.0, 5529.0, 5287.0, 5314.0, 5565.0, 5573.0, 5571.0, 5552.0, 5664.0, 5400.0, 5304.0, 5682.0, 5629.0, 5622.0, 5465.0, 5412.0, 5540.0, 5453.0, 5561.0, 5532.0, 5364.0 (number of hits: 2 )
14	5333.3	9	1	333	1	



						5590.0, 5639.0, 5717.0, 5655.0, 5580.0, 5340.0, 5475.0, 5567.0, 5517.0, 5296.0, 5584.0, 5355.0, 5452.0, 5367.0, 5623.0, 5610.0, 5467.0, 5386.0, 5428.0, 5519.0, 5506.0, 5582.0, 5326.0, 5561.0, 5337.0, 5558.0, 5523.0, 5323.0, 5537.0, 5522.0, 5264.0, 5429.0, 5662.0, 5532.0, 5291.0, 5369.0, 5464.0, 5374.0, 5453.0, 5273.0, 5640.0, 5393.0, 5338.0, 5544.0, 5275.0, 5451.0, 5265.0, 5602.0, 5647.0, 5376.0, 5425.0, 5713.0, 5315.0, 5665.0, 5446.0, 5432.0, 5294.0, 5306.0, 5601.0, 5719.0, 5457.0, 5593.0, 5295.0, 5605.0, 5680.0, 5363.0, 5455.0, 5403.0, 5424.0, 5329.0, 5276.0, 5349.0, 5619.0, 5328.0, 5524.0, 5630.0, 5695.0, 5723.0, 5540.0, 5266.0, 5357.0, 5400.0, 5617.0, 5488.0, 5592.0, 5462.0, 5431.0, 5559.0, 5681.0, 5676.0, 5615.0, 5354.0, 5502.0, 5627.0, 5441.0, 5343.0, 5419.0, 5669.0, 5614.0, 5331.0 (number of hits: 1 )
15	5333.3	9	1	333	1	5534.0, 5662.0, 5352.0, 5380.0, 5397.0, 5279.0, 5412.0, 5544.0, 5264.0, 5446.0, 5678.0, 5280.0, 5315.0, 5560.0, 5471.0, 5394.0, 5669.0, 5344.0, 5585.0, 5430.0, 5563.0, 5688.0, 5410.0, 5389.0, 5367.0, 5676.0, 5600.0, 5583.0, 5318.0, 5535.0, 5690.0, 5278.0, 5502.0, 5465.0, 5683.0, 5306.0, 5519.0, 5718.0, 5696.0, 5415.0, 5614.0, 5617.0, 5338.0, 5297.0, 5653.0, 5313.0, 5321.0, 5274.0, 5665.0, 5345.0, 5641.0, 5542.0, 5517.0, 5271.0, 5567.0, 5715.0, 5262.0, 5480.0, 5595.0, 5347.0, 5685.0, 5423.0, 5458.0, 5476.0, 5545.0, 5687.0, 5591.0, 5530.0, 5538.0, 5556.0, 5552.0, 5588.0, 5391.0, 5550.0, 5681.0, 5483.0, 5341.0, 5288.0, 5721.0, 5710.0, 5494.0, 5310.0, 5252.0, 5273.0, 5420.0, 5576.0, 5439.0, 5666.0, 5377.0, 5705.0, 5374.0, 5330.0, 5695.0, 5300.0, 5548.0, 5516.0, 5378.0, 5512.0, 5645.0, 5414.0 (number of hits: 1 )
16	5333.3	9	1	333	1	5506.0, 5696.0, 5525.0, 5325.0, 5655.0, 5605.0, 5304.0, 5668.0, 5294.0, 5523.0, 5301.0, 5500.0, 5308.0, 5447.0, 5582.0, 5298.0, 5620.0, 5262.0, 5299.0, 5631.0, 5408.0, 5445.0, 5330.0, 5575.0, 5694.0, 5254.0, 5508.0, 5496.0, 5443.0, 5717.0, 5610.0, 5383.0, 5395.0, 5346.0, 5480.0, 5689.0, 5431.0, 5573.0, 5290.0, 5295.0, 5522.0, 5382.0, 5425.0, 5637.0, 5546.0, 5602.0, 5667.0, 5592.0, 5347.0, 5441.0, 5633.0, 5596.0, 5617.0, 5641.0, 5531.0, 5711.0, 5390.0, 5499.0, 5464.0, 5401.0, 5286.0, 5576.0, 5591.0, 5353.0, 5599.0, 5528.0, 5723.0, 5682.0, 5350.0, 5671.0, 5516.0, 5318.0, 5487.0, 5563.0, 5648.0, 5680.0, 5611.0, 5387.0, 5388.0, 5669.0, 5630.0, 5427.0, 5543.0, 5439.0, 5550.0, 5398.0, 5273.0, 5454.0, 5581.0, 5638.0, 5614.0, 5323.0, 5554.0, 5453.0, 5434.0, 5322.0, 5692.0, 5653.0, 5580.0, 5698.0 (number of hits: 1 )
17	5333.3	9	1	333	1	5573.0, 5678.0, 5468.0, 5674.0, 5493.0, 5610.0, 5582.0, 5274.0, 5433.0, 5525.0, 5440.0, 5408.0, 5457.0, 5322.0, 5394.0, 5615.0, 5690.0, 5692.0, 5503.0, 5650.0, 5652.0, 5484.0, 5471.0, 5584.0, 5714.0, 5498.0, 5653.0, 5719.0, 5431.0, 5679.0, 5358.0, 5500.0, 5651.0, 5456.0, 5311.0, 5397.0, 5255.0, 5583.0, 5402.0, 5509.0, 5476.0, 5644.0, 5499.0, 5355.0, 5621.0, 5577.0, 5708.0, 5418.0, 5697.0, 5570.0, 5699.0, 5486.0, 5642.0, 5592.0, 5350.0, 5450.0, 5389.0, 5458.0, 5659.0, 5635.0, 5576.0, 5351.0, 5285.0, 5663.0, 5365.0, 5529.0, 5684.0, 5411.0, 5323.0, 5313.0, 5542.0, 5720.0, 5537.0, 5518.0, 5564.0, 5656.0, 5412.0, 5280.0, 5686.0, 5304.0, 5660.0, 5415.0, 5593.0, 5586.0, 5328.0, 5338.0, 5543.0, 5293.0, 5553.0, 5534.0, 5523.0, 5541.0, 5409.0, 5430.0, 5257.0, 5333.0, 5266.0, 5601.0, 5462.0, 5624.0 (number of hits: 1 )
18	5333.3	9	1	333	1	5573.0, 5462.0, 5506.0, 5461.0, 5696.0, 5614.0, 5343.0, 5566.0, 5299.0, 5593.0, 5414.0, 5426.0, 5475.0, 5320.0, 5315.0, 5432.0, 5621.0, 5584.0, 5394.0, 5457.0, 5294.0, 5293.0, 5347.0, 5556.0, 5634.0, 5344.0, 5340.0, 5409.0, 5469.0, 5627.0, 5306.0, 5255.0, 5412.0, 5373.0, 5441.0, 5601.0, 5312.0, 5519.0, 5356.0, 5410.0, 5325.0, 5558.0, 5486.0, 5623.0, 5678.0, 5268.0, 5256.0, 5492.0, 5645.0, 5653.0, 5607.0, 5545.0, 5700.0, 5466.0, 5308.0, 5562.0, 5430.0, 5589.0, 5349.0, 5339.0, 5510.0, 5452.0, 5702.0, 5403.0, 5445.0, 5446.0, 5279.0, 5709.0, 5269.0, 5668.0, 5715.0, 5600.0, 5712.0, 5392.0, 5383.0, 5314.0, 5539.0, 5267.0, 5648.0, 5571.0, 5637.0, 5541.0, 5615.0, 5714.0, 5266.0, 5532.0, 5563.0, 5332.0, 5586.0, 5377.0, 5523.0, 5348.0, 5666.0, 5499.0, 5568.0, 5522.0, 5282.0, 5647.0, 5424.0, 5489.0 (number of hits: 1 )
19	5333.3	9	1	333	1	5395.0, 5625.0, 5663.0, 5321.0, 5357.0, 5626.0, 5370.0, 5547.0, 5450.0, 5613.0, 5354.0, 5308.0, 5489.0, 5491.0, 5256.0, 5454.0, 5505.0, 5705.0, 5431.0, 5535.0, 5295.0, 5653.0, 5410.0, 5484.0, 5532.0, 5299.0, 5672.0, 5596.0, 5522.0, 5592.0, 5536.0, 5343.0, 5463.0, 5550.0, 5619.0, 5570.0, 5655.0, 5468.0, 5483.0, 5577.0, 5571.0, 5409.0, 5487.0, 5420.0, 5568.0, 5482.0, 5529.0, 5459.0, 5669.0, 5306.0, 5293.0, 5473.0, 5564.0, 5467.0, 5608.0, 5656.0, 5554.0, 5518.0, 5440.0, 5277.0, 5681.0, 5530.0, 5539.0, 5495.0, 5634.0, 5510.0, 5339.0, 5408.0, 5344.0, 5282.0, 5259.0, 5654.0, 5620.0, 5623.0, 5595.0, 5336.0, 5574.0, 5285.0, 5615.0, 5559.0, 5327.0, 5351.0, 5710.0, 5545.0, 5635.0, 5392.0, 5685.0, 5723.0, 5689.0, 5466.0, 5455.0, 5499.0, 5273.0, 5717.0, 5666.0, 5504.0, 5331.0, 5567.0, 5588.0, 5503.0 (number of hits: 2 )
20	5333.3	9	1	333	1	5723.0, 5459.0, 5693.0, 5546.0, 5277.0, 5343.0, 5671.0, 5341.0, 5402.0, 5348.0, 5330.0, 5547.0, 5324.0, 5446.0, 5284.0, 5290.0, 5376.0, 5437.0, 5321.0, 5536.0, 5621.0, 5318.0, 5369.0, 5690.0, 5521.0, 5489.0, 5527.0, 5681.0, 5305.0, 5586.0, 5448.0, 5403.0, 5651.0, 5434.0, 5630.0, 5673.0, 5370.0, 5430.0, 5319.0, 5609.0, 5336.0, 5491.0, 5610.0, 5597.0, 5323.0, 5293.0, 5519.0, 5649.0, 5551.0, 5644.0, 5417.0, 5502.0, 5561.0, 5315.0, 5253.0, 5303.0, 5474.0, 5488.0, 5413.0, 5617.0, 5663.0, 5685.0, 5496.0, 5615.0, 5350.0, 5650.0, 5261.0, 5405.0, 5359.0, 5263.0, 5598.0, 5335.0, 5482.0, 5701.0, 5439.0, 5704.0, 5338.0, 5429.0, 5273.0, 5302.0, 5579.0, 5707.0, 5614.0, 5578.0, 5599.0, 5292.0, 5289.0, 5653.0, 5530.0, 5362.0, 5487.0, 5486.0, 5339.0, 5659.0, 5333.0, 5524.0, 5296.0, 5307.0, 5326.0, 5329.0 (number of hits: 4 )
21	5333.3	9	1	333	1	



						5584.0, 5276.0, 5319.0, 5422.0, 5396.0, 5475.0, 5567.0, 5702.0, 5291.0, 5636.0, 5367.0, 5392.0, 5670.0, 5257.0, 5497.0, 5454.0, 5722.0, 5660.0, 5719.0, 5519.0, 5696.0, 5674.0, 5678.0, 5654.0, 5450.0, 5331.0, 5682.0, 5453.0, 5266.0, 5329.0, 5414.0, 5512.0, 5718.0, 5285.0, 5680.0, 5391.0, 5697.0, 5260.0, 5551.0, 5490.0, 5616.0, 5358.0, 5443.0, 5591.0, 5533.0, 5413.0, 5442.0, 5553.0, 5520.0, 5255.0, 5418.0, 5581.0, 5593.0, 5585.0, 5633.0, 5603.0, 5476.0, 5268.0, 5467.0, 5694.0, 5494.0, 5370.0, 5707.0, 5631.0, 5681.0, 5716.0, 5524.0, 5552.0, 5271.0, 5646.0, 5300.0, 5496.0, 5482.0, 5485.0, 5614.0, 5703.0, 5330.0, 5597.0, 5590.0, 5282.0, 5306.0, 5409.0, 5569.0, 5563.0, 5456.0, 5638.0, 5348.0, 5559.0, 5309.0, 5662.0, 5724.0, 5440.0, 5381.0, 5477.0, 5487.0, 5493.0, 5691.0, 5578.0, 5618.0, 5425.0
22	5333.3	9	1	333	1	(number of hits: 2 ) 5364.0, 5656.0, 5391.0, 5446.0, 5355.0, 5450.0, 5422.0, 5284.0, 5373.0, 5599.0, 5691.0, 5591.0, 5467.0, 5468.0, 5408.0, 5323.0, 5671.0, 5524.0, 5723.0, 5625.0, 5565.0, 5252.0, 5658.0, 5397.0, 5275.0, 5295.0, 5532.0, 5491.0, 5262.0, 5327.0, 5465.0, 5515.0, 5365.0, 5597.0, 5538.0, 5438.0, 5655.0, 5562.0, 5559.0, 5315.0, 5387.0, 5546.0, 5362.0, 5553.0, 5280.0, 5539.0, 5404.0, 5368.0, 5411.0, 5567.0, 5472.0, 5334.0, 5667.0, 5484.0, 5263.0, 5480.0, 5390.0, 5417.0, 5687.0, 5590.0, 5466.0, 5332.0, 5560.0, 5356.0, 5293.0, 5575.0, 5620.0, 5529.0, 5350.0, 5573.0, 5333.0, 5433.0, 5291.0, 5416.0, 5623.0, 5442.0, 5614.0, 5705.0, 5458.0, 5264.0, 5311.0, 5608.0, 5641.0, 5426.0, 5483.0, 5526.0, 5414.0, 5430.0, 5444.0, 5307.0, 5304.0, 5253.0, 5716.0, 5582.0, 5436.0, 5425.0, 5607.0, 5576.0, 5300.0, 5306.0
23	5333.3	9	1	333	1	(number of hits: 3 ) 5543.0, 5342.0, 5357.0, 5377.0, 5345.0, 5667.0, 5724.0, 5256.0, 5660.0, 5285.0, 5534.0, 5594.0, 5698.0, 5405.0, 5494.0, 5638.0, 5583.0, 5404.0, 5555.0, 5679.0, 5722.0, 5579.0, 5703.0, 5526.0, 5383.0, 5501.0, 5456.0, 5520.0, 5415.0, 5721.0, 5717.0, 5680.0, 5261.0, 5650.0, 5347.0, 5442.0, 5509.0, 5569.0, 5470.0, 5701.0, 5461.0, 5630.0, 5277.0, 5629.0, 5648.0, 5388.0, 5714.0, 5290.0, 5659.0, 5507.0, 5386.0, 5429.0, 5284.0, 5531.0, 5500.0, 5323.0, 5567.0, 5270.0, 5360.0, 5278.0, 5496.0, 5566.0, 5601.0, 5616.0, 5538.0, 5550.0, 5397.0, 5704.0, 5518.0, 5337.0, 5314.0, 5523.0, 5341.0, 5708.0, 5498.0, 5516.0, 5265.0, 5691.0, 5599.0, 5398.0, 5483.0, 5427.0, 5336.0, 5348.0, 5273.0, 5707.0, 5508.0, 5457.0, 5521.0, 5666.0, 5384.0, 5281.0, 5513.0, 5424.0, 5664.0, 5462.0, 5617.0, 5656.0, 5343.0, 5675.0
24	5333.3	9	1	333	1	(number of hits: 1 ) 5280.0, 5649.0, 5387.0, 5370.0, 5701.0, 5483.0, 5315.0, 5413.0, 5260.0, 5456.0, 5322.0, 5318.0, 5632.0, 5688.0, 5453.0, 5467.0, 5475.0, 5640.0, 5365.0, 5563.0, 5528.0, 5490.0, 5389.0, 5691.0, 5537.0, 5366.0, 5313.0, 5712.0, 5670.0, 5310.0, 5417.0, 5561.0, 5346.0, 5577.0, 5398.0, 5541.0, 5645.0, 5580.0, 5406.0, 5602.0, 5254.0, 5659.0, 5455.0, 5372.0, 5489.0, 5527.0, 5690.0, 5471.0, 5464.0, 5517.0, 5723.0, 5618.0, 5300.0, 5662.0, 5457.0, 5390.0, 5615.0, 5491.0, 5388.0, 5519.0, 5405.0, 5450.0, 5297.0, 5660.0, 5705.0, 5501.0, 5461.0, 5294.0, 5622.0, 5463.0, 5360.0, 5462.0, 5479.0, 5692.0, 5253.0, 5695.0, 5488.0, 5706.0, 5562.0, 5616.0, 5474.0, 5495.0, 5324.0, 5533.0, 5482.0, 5699.0, 5655.0, 5343.0, 5323.0, 5515.0, 5708.0, 5255.0, 5375.0, 5272.0, 5687.0, 5407.0, 5684.0, 5516.0, 5385.0, 5333.0
25	5333.3	9	1	333	1	(number of hits: 1 ) 5398.0, 5294.0, 5505.0, 5419.0, 5621.0, 5623.0, 5362.0, 5276.0, 5258.0, 5433.0, 5469.0, 5542.0, 5299.0, 5442.0, 5335.0, 5328.0, 5496.0, 5396.0, 5556.0, 5707.0, 5622.0, 5287.0, 5422.0, 5337.0, 5552.0, 5537.0, 5282.0, 5391.0, 5273.0, 5484.0, 5481.0, 5541.0, 5715.0, 5447.0, 5539.0, 5394.0, 5361.0, 5330.0, 5665.0, 5666.0, 5352.0, 5356.0, 5438.0, 5609.0, 5301.0, 5663.0, 5341.0, 5631.0, 5510.0, 5647.0, 5280.0, 5443.0, 5407.0, 5512.0, 5689.0, 5563.0, 5323.0, 5613.0, 5547.0, 5436.0, 5618.0, 5426.0, 5314.0, 5615.0, 5554.0, 5676.0, 5560.0, 5642.0, 5476.0, 5379.0, 5673.0, 5420.0, 5428.0, 5567.0, 5298.0, 5390.0, 5321.0, 5427.0, 5549.0, 5467.0, 5421.0, 5685.0, 5334.0, 5703.0, 5710.0, 5347.0, 5528.0, 5538.0, 5437.0, 5716.0, 5509.0, 5629.0, 5403.0, 5593.0, 5569.0, 5553.0, 5681.0, 5434.0, 5450.0, 5706.0
26	5333.3	9	1	333	1	(number of hits: 3 ) 5430.0, 5349.0, 5385.0, 5341.0, 5716.0, 5312.0, 5446.0, 5276.0, 5584.0, 5423.0, 5304.0, 5537.0, 5366.0, 5707.0, 5565.0, 5404.0, 5256.0, 5506.0, 5284.0, 5612.0, 5458.0, 5299.0, 5575.0, 5555.0, 5640.0, 5383.0, 5474.0, 5314.0, 5424.0, 5486.0, 5522.0, 5328.0, 5503.0, 5674.0, 5418.0, 5480.0, 5623.0, 5490.0, 5374.0, 5695.0, 5531.0, 5627.0, 5471.0, 5656.0, 5587.0, 5577.0, 5509.0, 5339.0, 5719.0, 5601.0, 5464.0, 5420.0, 5439.0, 5255.0, 5303.0, 5643.0, 5483.0, 5529.0, 5306.0, 5352.0, 5681.0, 5710.0, 5658.0, 5407.0, 5579.0, 5448.0, 5473.0, 5687.0, 5382.0, 5468.0, 5363.0, 5370.0, 5280.0, 5603.0, 5308.0, 5498.0, 5552.0, 5615.0, 5384.0, 5510.0, 5293.0, 5406.0, 5463.0, 5425.0, 5574.0, 5616.0, 5535.0, 5322.0, 5395.0, 5389.0, 5422.0, 5454.0, 5639.0, 5264.0, 5499.0, 5257.0, 5528.0, 5684.0, 5505.0, 5333.0
27	5333.3	9	1	333	1	(number of hits: 1 ) 5566.0, 5422.0, 5283.0, 5573.0, 5270.0, 5367.0, 5412.0, 5437.0, 5337.0, 5615.0, 5618.0, 5656.0, 5397.0, 5636.0, 5647.0, 5273.0, 5365.0, 5394.0, 5677.0, 5307.0, 5683.0, 5512.0, 5482.0, 5498.0, 5546.0, 5362.0, 5441.0, 5545.0, 5661.0, 5714.0, 5405.0, 5564.0, 5676.0, 5552.0, 5274.0, 5436.0, 5357.0, 5264.0, 5349.0, 5662.0, 5252.0, 5494.0, 5340.0, 5638.0, 5690.0, 5445.0, 5418.0, 5632.0, 5326.0, 5269.0, 5491.0, 5377.0, 5650.0, 5414.0, 5699.0, 5705.0, 5432.0, 5657.0, 5384.0, 5637.0, 5372.0, 5304.0, 5380.0, 5426.0, 5604.0, 5578.0, 5286.0, 5493.0, 5663.0, 5395.0, 5710.0, 5553.0, 5316.0, 5454.0, 5457.0, 5317.0, 5392.0, 5461.0, 5551.0, 5310.0, 5385.0, 5319.0, 5496.0, 5444.0, 5375.0, 5431.0, 5435.0, 5673.0, 5642.0, 5311.0, 5421.0, 5355.0, 5296.0, 5711.0, 5655.0, 5696.0, 5531.0, 5724.0, 5536.0, 5331.0
28	5333.3	9	1	333	1	(number of hits: 1 )



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						5634.0, 5510.0, 5483.0, 5452.0, 5435.0, 5546.0, 5664.0, 5660.0, 5525.0, 5553.0, 5574.0, 5313.0, 5429.0, 5503.0, 5265.0, 5666.0, 5405.0, 5560.0, 5310.0, 5352.0, 5327.0, 5475.0, 5481.0, 5421.0, 5673.0, 5511.0, 5519.0, 5631.0, 5687.0, 5451.0, 5284.0, 5607.0, 5530.0, 5325.0, 5702.0, 5586.0, 5616.0, 5414.0, 5345.0, 5487.0, 5268.0, 5595.0, 5645.0, 5612.0, 5663.0, 5341.0, 5517.0, 5290.0, 5578.0, 5722.0, 5677.0, 5716.0, 5617.0, 5637.0, 5386.0, 5575.0, 5539.0, 5354.0, 5456.0, 5465.0, 5285.0, 5601.0, 5448.0, 5570.0, 5651.0, 5593.0, 5428.0, 5412.0, 5351.0, 5641.0, 5441.0, 5410.0, 5544.0, 5353.0, 5569.0, 5691.0, 5450.0, 5425.0, 5557.0, 5684.0, 5385.0, 5543.0, 5417.0, 5437.0, 5547.0, 5296.0, 5638.0, 5336.0, 5387.0, 5295.0, 5267.0, 5368.0, 5343.0, 5512.0, 5650.0, 5589.0, 5688.0, 5470.0, 5333.0, 5554.0 (number of hits: 2 )
29	5333.3	9	1	333	1	5263.0, 5652.0, 5700.0, 5625.0, 5662.0, 5485.0, 5271.0, 5472.0, 5369.0, 5403.0, 5598.0, 5567.0, 5626.0, 5644.0, 5590.0, 5717.0, 5388.0, 5365.0, 5368.0, 5680.0, 5628.0, 5526.0, 5381.0, 5273.0, 5554.0, 5318.0, 5617.0, 5413.0, 5319.0, 5341.0, 5389.0, 5640.0, 5363.0, 5458.0, 5357.0, 5605.0, 5441.0, 5619.0, 5387.0, 5415.0, 5566.0, 5632.0, 5434.0, 5689.0, 5710.0, 5298.0, 5592.0, 5591.0, 5390.0, 5464.0, 5257.0, 5666.0, 5474.0, 5664.0, 5571.0, 5671.0, 5425.0, 5679.0, 5456.0, 5651.0, 5672.0, 5417.0, 5577.0, 5310.0, 5261.0, 5340.0, 5342.0, 5488.0, 5527.0, 5358.0, 5334.0, 5498.0, 5621.0, 5556.0, 5616.0, 5589.0, 5281.0, 5386.0, 5395.0, 5513.0, 5376.0, 5649.0, 5682.0, 5573.0, 5532.0, 5436.0, 5653.0, 5299.0, 5633.0, 5512.0, 5705.0, 5511.0, 5684.0, 5493.0, 5460.0, 5404.0, 5328.0, 5482.0, 5711.0, 5461.0 (number of hits: 1 )
30	5333.3	9	1	333	1	

Number Detected 29

Total Trials 30

Detection Percentage 96.7

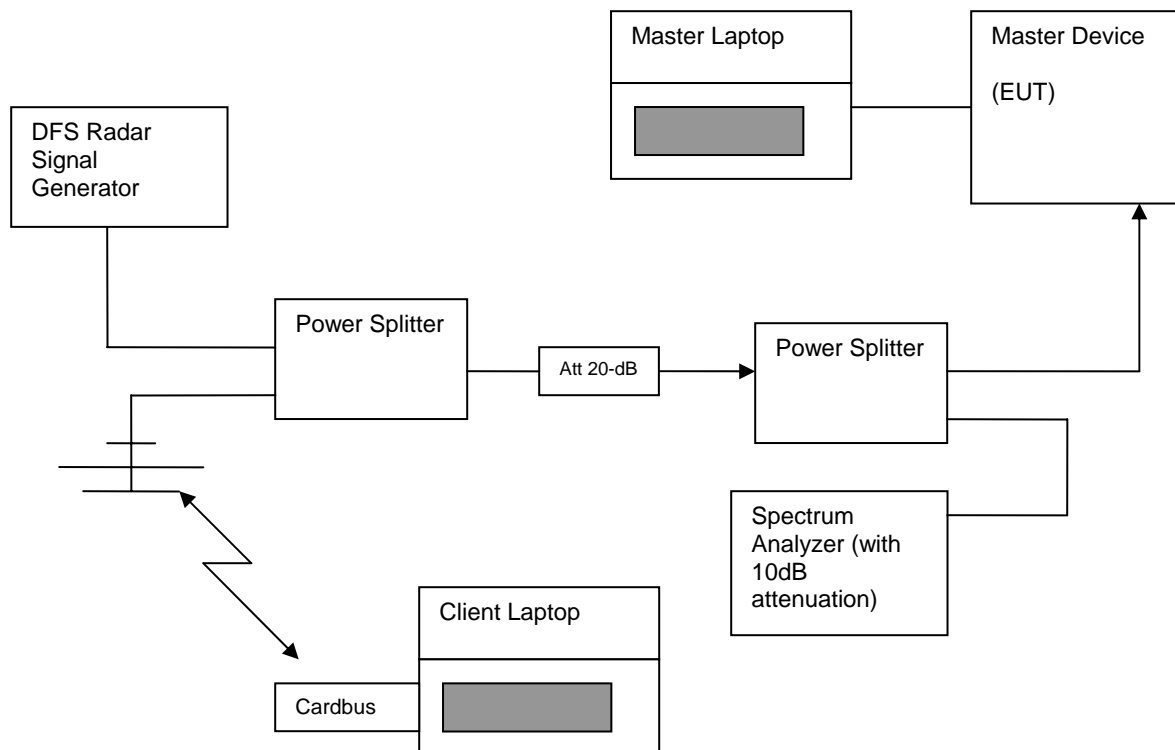


**9 TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS**

No	Instrument/Ancillary	Type	Manufacturer	Serial No.	Cal Due	Interval
E149	Spectrum Analyzer	FSU	Rohde & Schwarz	200302	Nov. 2008	1 year
E171	ASCOR Upconverter	7206	National Instruments	N/A	December 2008	1 year
E153	DFS Waveform Generator / PXI 5421 Card	NI PXI-1042	National Instruments	E965F1	Sep. 30, 2008	1 year
E152	DFS Signal Generator / PXI 5610 Card	NI PXI 1042	National Instruments	E93740	Aug. 27, 2008	1 year

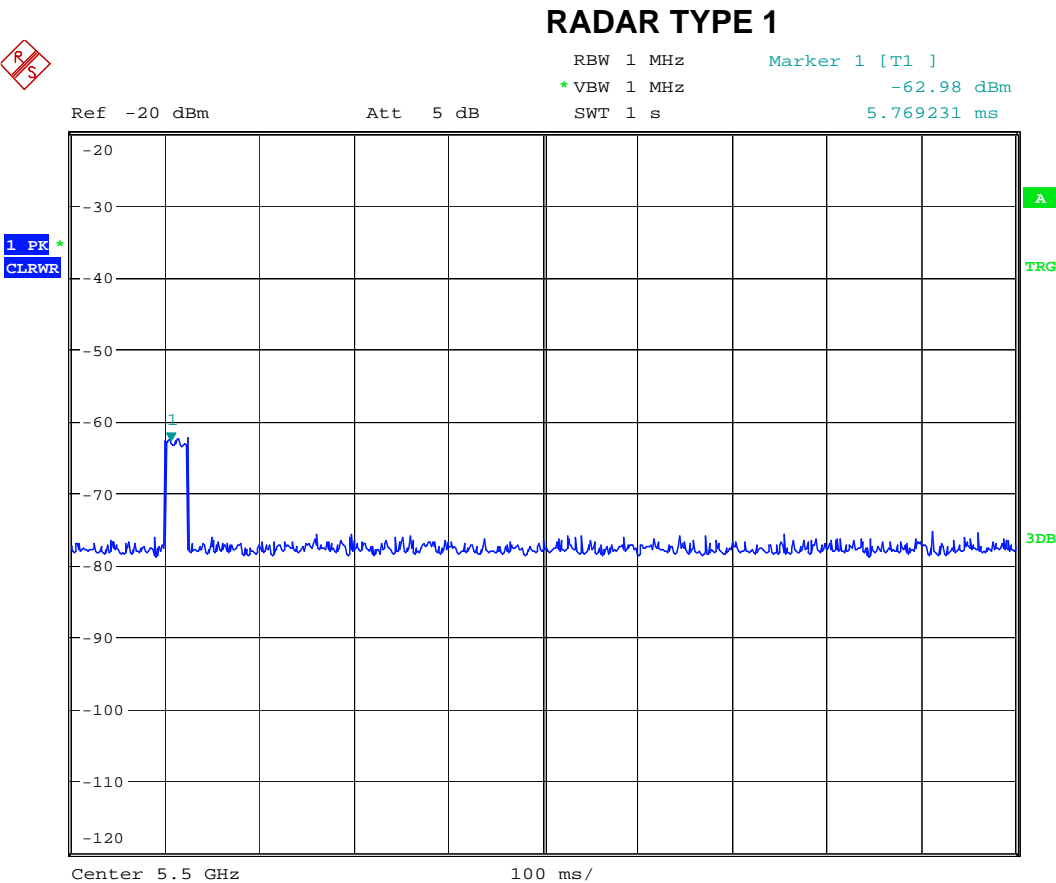
## 10 BLOCK DIAGRAMS

### Conducted setup A





11 ANNEX A (Calibrated radar levels)





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RADAR TYPE 2

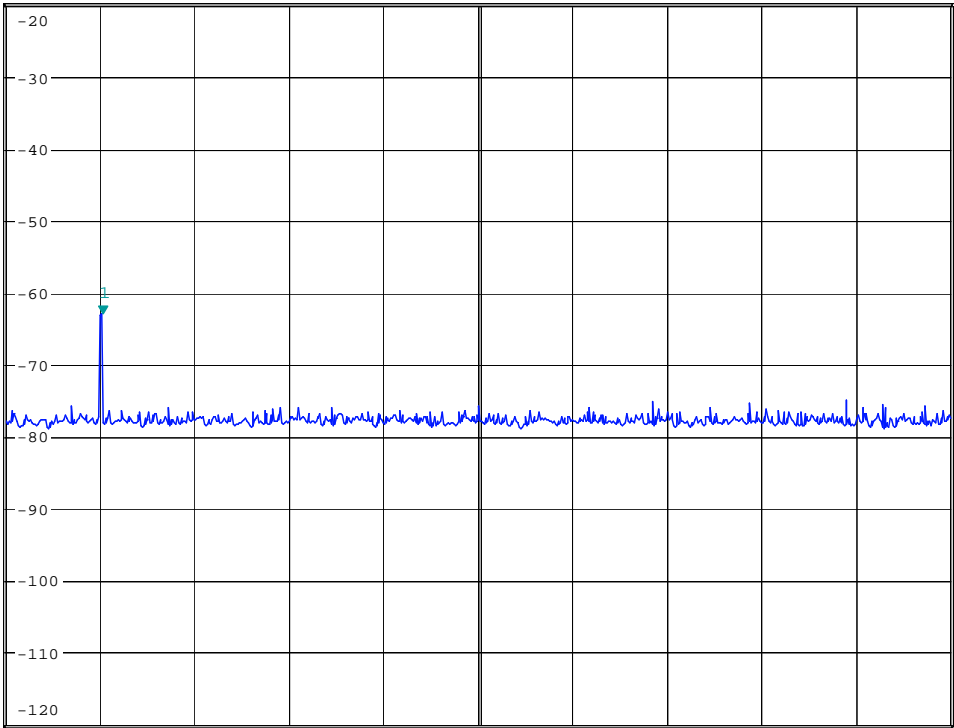


RBW 1 MHz      Marker 1 [T1 ]  
\*VBW 1 MHz      -63.23 dBm  
SWT 1 s      2.564103 ms

Ref -20 dBm

Att 5 dB

1 PK\*  
CLRWR



Center 5.5 GHz

100 ms/

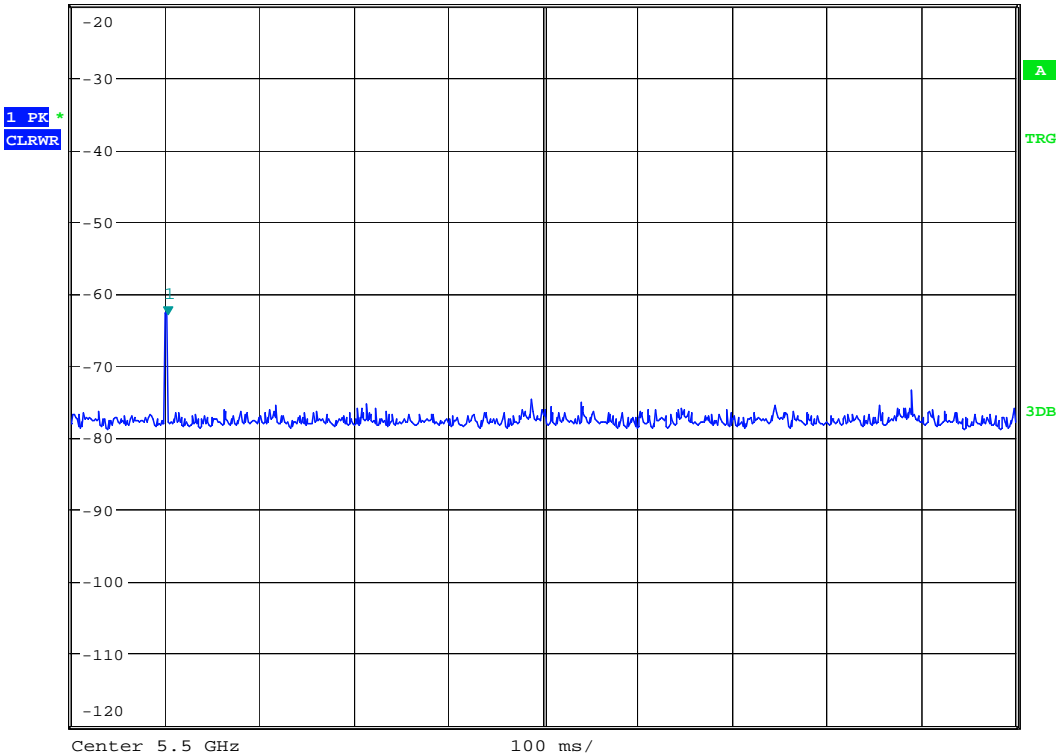


:

RADAR TYPE 3



Ref -20 dBm Att 5 dB RBW 1 MHz Marker 1 [T1 ]  
\*VBW 1 MHz -63.17 dBm  
SWT 1 s 2.564103 ms



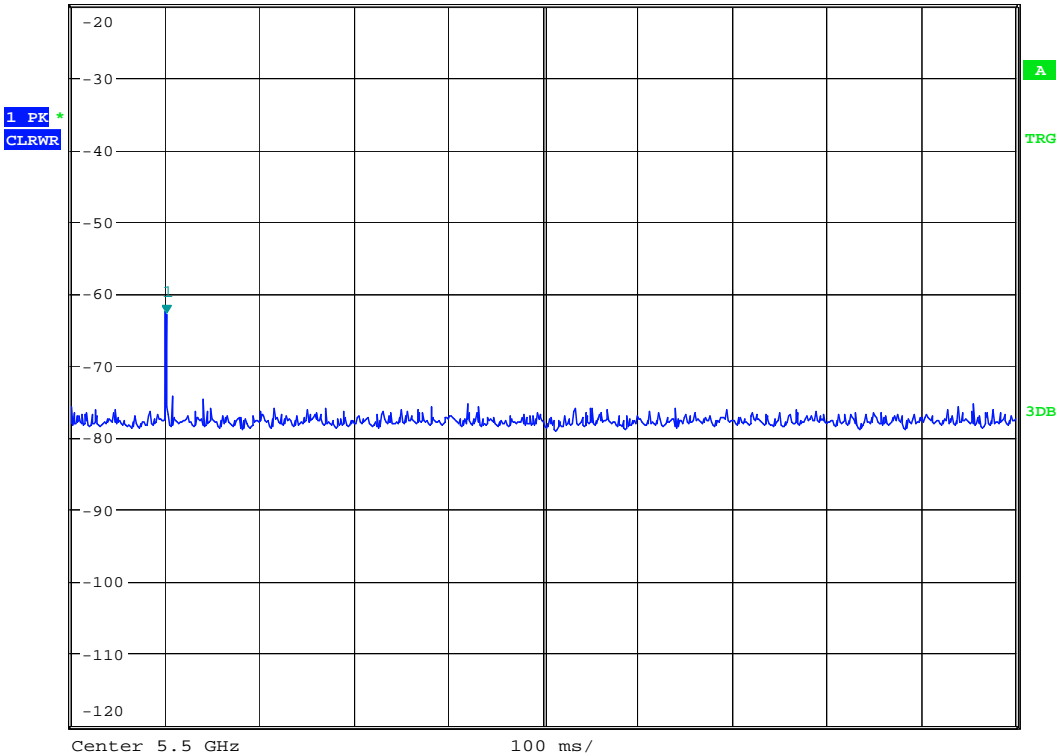


:

RADAR TYPE 4

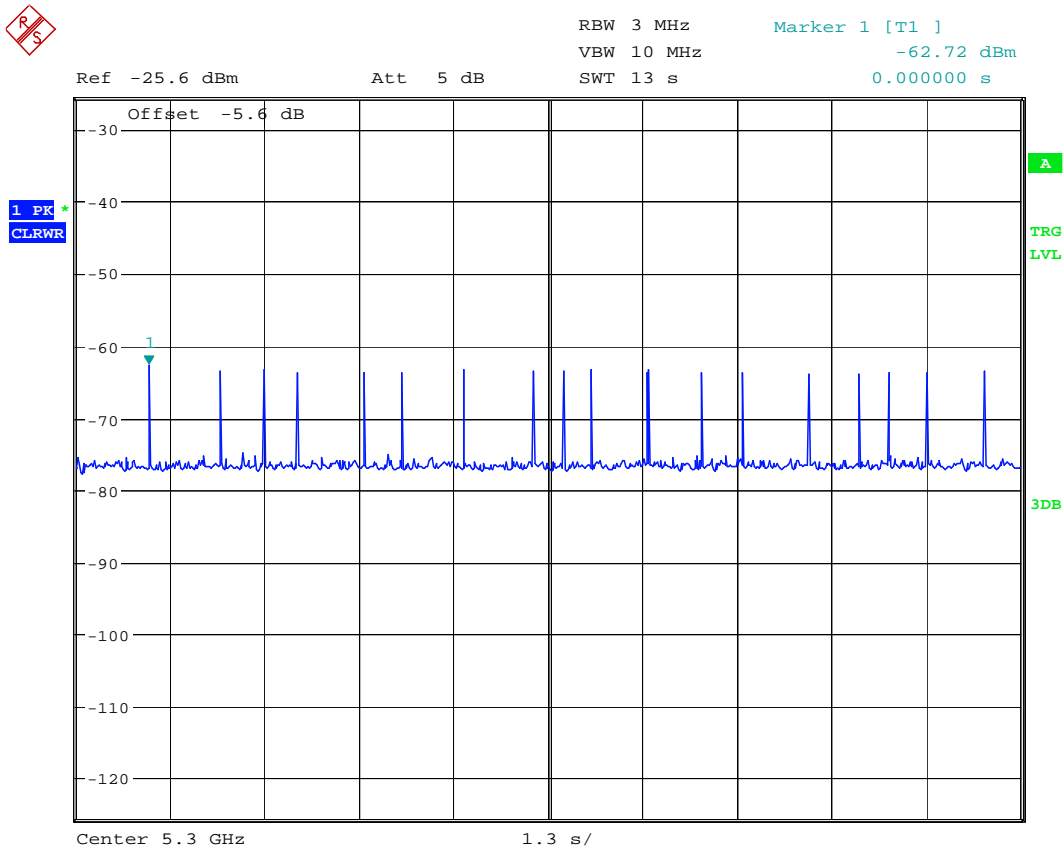


RBW 1 MHz Marker 1 [T1 ]  
\*VBW 1 MHz -62.92 dBm  
Ref -20 dBm Att 5 dB SWT 1 s 961.538462  $\mu$ s





RADAR TYPE 5



Date: 10.JUL.2008 10:56:14

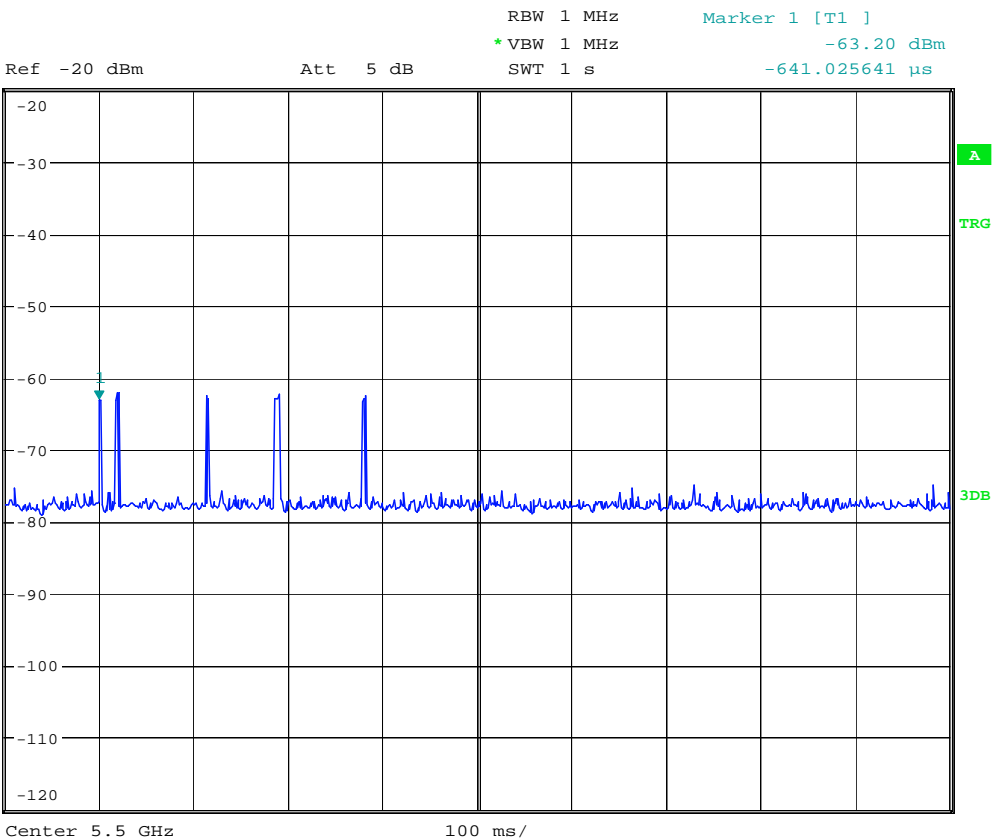


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RADAR TYPE 6



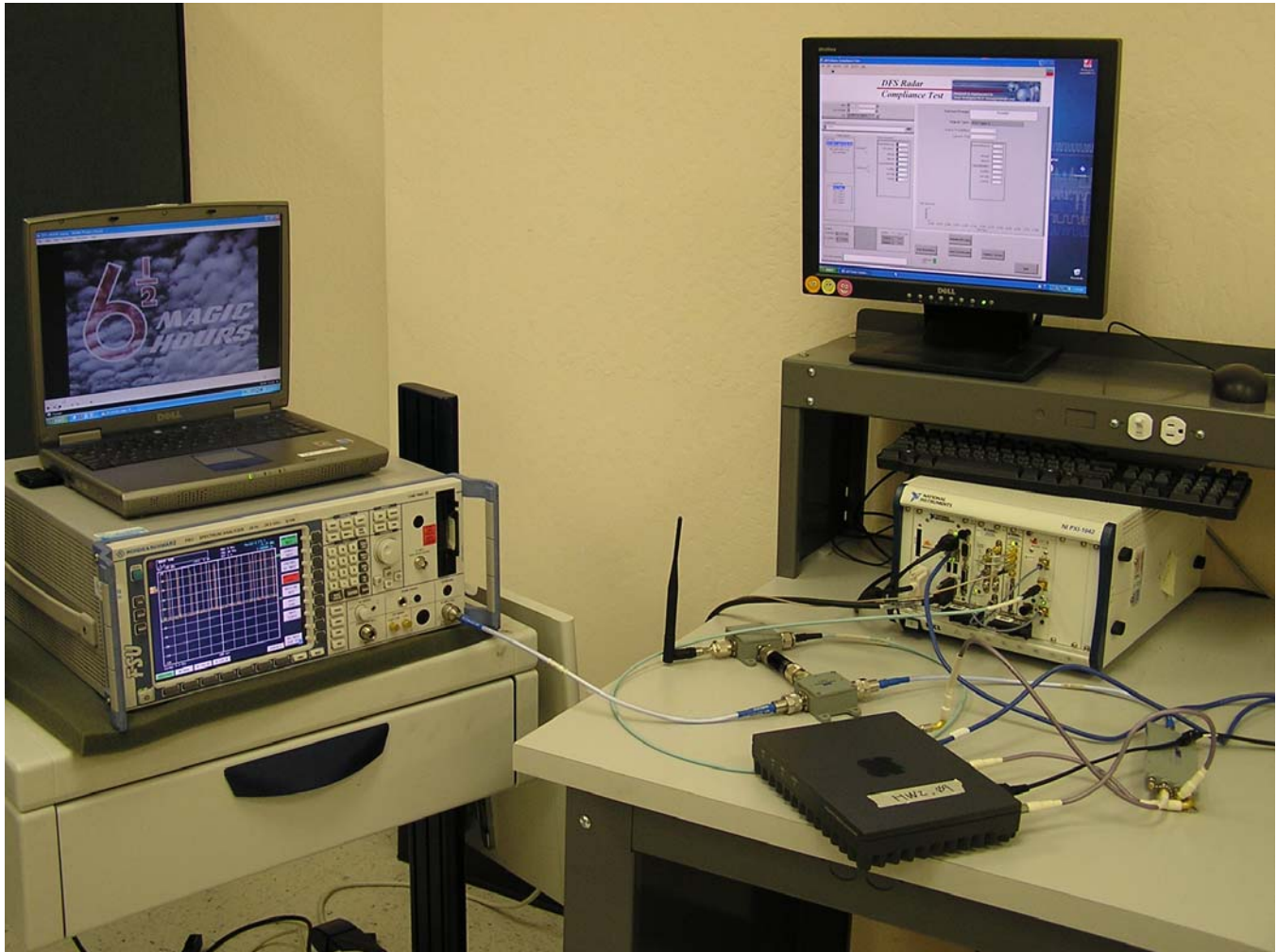
1 PK \*  
CLRWR



Date: 14.APR.2008 15:50:53



## 12 ANNEX B (Setup Photo)





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### **13 Revision History**

2008-07-10            Original report.

2008-07-15            Updated Subject of Investigation. Updated Measurement Uncertainty.  
Updated Operating Frequency, Maximum Output Power, Bandwidth  
tested, and added Channels tested. Updated User Access Restriction.