

TEST REPORT

Covering the DYNAMIC FREQUENCY SELECTION (DFS) REQUIREMENTS OF

FCC Part 15 Subpart E (UNII)

Ubiquiti Networks Model: Rocket M5T

FCC ID: SWX-RM5T-DFS
IC CERTIFICATION #: 6545A-RM5T

COMPANY: Ubiquiti Networks
2580 Orchard Pkwy
San Jose, CA, 95131

TEST SITE: NTS Silicon Valley
41039 Boyce Road
Fremont, CA 94538

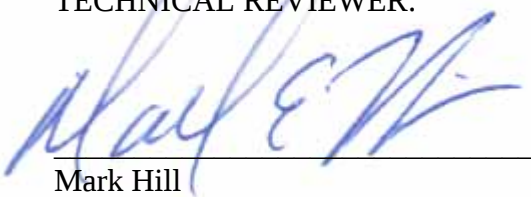
REPORT DATE: September 19, 2012

REISSUE DATE: December 4, 2012

FINAL TEST DATE: August 18-22, and September 5, 2012

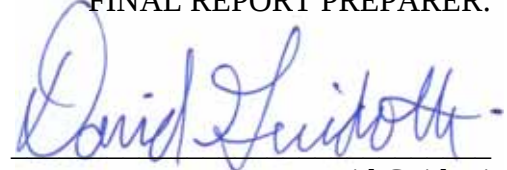
TEST ENGINEER: Mehran Birgani

PROGRAM MGR /
TECHNICAL REVIEWER:



Mark Hill
Staff Engineer

QUALITY ASSURANCE DELEGATE /
FINAL REPORT PREPARER:



David Guidotti
Senior Technical Writer



NTS Silicon Valley is accredited by the A2LA, certificate number 0214.26, to perform the test(s) listed in this report, except where noted otherwise. This report and the information contained herein represent the results of testing test articles identified and selected by the client performed to specifications and/or procedures selected by the client. National Technical Systems (NTS) makes no representations, expressed or implied, that such testing is adequate (or inadequate) to demonstrate efficiency, performance, reliability, or any other characteristic of the articles being tested, or similar products. This report should not be relied upon as an endorsement or certification by NTS of the equipment tested, nor does it represent any statement whatsoever as to its merchantability or fitness of the test article, or similar products, for a particular purpose. This report shall not be reproduced except in full

REVISION HISTORY

Rev #	Date	Comments	Modified By
1.0	09-19-2012	First Release	-
2.0	12-4-2012	Reissued to correct FCC ID	Dave Guidotti

TABLE OF CONTENTS

REVISION HISTORY	2
TABLE OF CONTENTS	3
LIST OF TABLES.....	4
LIST OF FIGURES.....	6
SCOPE.....	7
OBJECTIVE	7
STATEMENT OF COMPLIANCE	7
DEVIATIONS FROM THE STANDARD	7
EQUIPMENT UNDER TEST (EUT) DETAILS	8
GENERAL.....	8
ENCLOSURE.....	8
MODIFICATIONS.....	8
SUPPORT EQUIPMENT.....	9
EUT INTERFACE PORTS	9
EUT OPERATION	9
RADAR WAVEFORMS.....	10
TEST RESULTS.....	11
TEST RESULTS SUMMARY – FCC PART 15, MASTER DEVICE	11
MEASUREMENT UNCERTAINTIES.....	13
DFS TEST METHODS	13
RADIATED TEST METHOD	13
DFS MEASUREMENT INSTRUMENTATION.....	15
RADAR GENERATION SYSTEM	15
CHANNEL MONITORING SYSTEM.....	16
DFS MEASUREMENT METHODS	17
DFS RADAR DETECTION BANDWIDTH	17
DFS – CHANNEL CLOSING TRANSMISSION TIME AND CHANNEL MOVE TIME	17
DFS – CHANNEL NON-OCCUPANCY AND VERIFICATION OF PASSIVE SCANNING.....	17
DFS CHANNEL AVAILABILITY CHECK TIME.....	18
UNIFORM LOADING.....	18
TRANSMIT POWER CONTROL (TPC)	18
SAMPLE CALCULATIONS	19
DETECTION PROBABILITY / SUCCESS RATE	19
THRESHOLD LEVEL	19
APPENDIX A TEST EQUIPMENT CALIBRATION DATA	20
APPENDIX B TEST DATA TABLES FOR RADAR DETECTION PROBABILITY	21
APPENDIX C TEST DATA TABLES AND PLOTS FOR CHANNEL CLOSING	79
FCC PART 15 SUBPART E CHANNEL CLOSING MEASUREMENTS	79
APPENDIX D TEST DATA – CHANNEL AVAILABILITY CHECK.....	86
5250- 5350 MHZ, 5470 – 5725 MHZ	86
APPENDIX E TEST DATA –ANTENNA SPECIFICATION	88
APPENDIX F TEST CONFIGURATION PHOTOGRAPH(S)	107

LIST OF TABLES

Table 1 - FCC Short Pulse Radar Test Waveforms	10
Table 2 - FCC Long Pulse Radar Test Waveforms.....	10
Table 3 - FCC Frequency Hopping Radar Test Waveforms.....	10
Table 4 - FCC Part 15 Subpart E Master Device Test Result Summary (HT10).....	11
Table 5 - FCC Part 15 Subpart E Master Device Test Result Summary (HT20).....	11
Table 6 - FCC Part 15 Subpart E Master Device Test Result Summary (HT40).....	11
Table 7 - FCC Part 15 Subpart E Client Device Test Result Summary	12
Table 8 - Detection Bandwidth Measurements (Bandwidth: +5MHz /-5MHz) (HT10).....	21
Table 9 - Summary of All Results - HT10.....	21
Table 10 - FCC Short Pulse Radar (Type 1) Results HT10.....	22
Table 11 - FCC Short Pulse Radar (Type 2) Results HT10.....	23
Table 12 - FCC Short Pulse Radar (Type 3) Results HT10.....	24
Table 13 - FCC Short Pulse Radar (Type 4) Results HT10.....	25
Table 14 - Long Sequence Waveform Summary HT10.....	26
Table 15 - Long Sequence Waveform Trial#1 (Detected) HT10.....	26
Table 16 - Long Sequence Waveform Trial#2 (Detected) HT10.....	27
Table 17 - Long Sequence Waveform Trial#3 (Detected) HT10.....	27
Table 18 - Long Sequence Waveform Trial#4 (Detected) HT10.....	28
Table 19 - Long Sequence Waveform Trial#5 (Detected) HT10.....	28
Table 20 - Long Sequence Waveform Trial#6 (NOT Detected) HT10	29
Table 21 - Long Sequence Waveform Trial#7 (Detected) HT10.....	29
Table 22 - Long Sequence Waveform Trial#8 (Detected) HT10.....	30
Table 23 - Long Sequence Waveform Trial#9 (Detected) HT10.....	30
Table 24 - Long Sequence Waveform Trial#10 (Detected) HT10.....	31
Table 25 - Long Sequence Waveform Trial#11 (NOT Detected) HT10	31
Table 26 - Long Sequence Waveform Trial#12 (Detected) HT10.....	31
Table 27 - Long Sequence Waveform Trial#13 (Detected) HT10.....	32
Table 28 - Long Sequence Waveform Trial#14 (Detected) HT10.....	32
Table 29 - Long Sequence Waveform Trial#15 (Detected) HT10.....	32
Table 30 - Long Sequence Waveform Trial#16 (NOT Detected) HT10	33
Table 31 - Long Sequence Waveform Trial#17 (Detected) HT10.....	33
Table 32 - Long Sequence Waveform Trial#18 (Detected) HT10.....	34
Table 33 - Long Sequence Waveform Trial#19 (Detected) HT10.....	34
Table 34 - Long Sequence Waveform Trial#20 (Detected) HT10.....	35
Table 35 - Long Sequence Waveform Trial#21 (Detected) HT10.....	35
Table 36 - Long Sequence Waveform Trial#22 (Detected) HT10.....	35
Table 37 - Long Sequence Waveform Trial#23 (Detected) HT10.....	36
Table 38 - Long Sequence Waveform Trial#24 (Detected) HT10.....	36
Table 39 - Long Sequence Waveform Trial#25 (Detected) HT10.....	37
Table 40 - Long Sequence Waveform Trial#26 (Detected) HT10.....	37
Table 41 - Long Sequence Waveform Trial#27 (Detected) HT10.....	37
Table 42 - Long Sequence Waveform Trial#28 (Detected) HT10.....	38
Table 43 - Long Sequence Waveform Trial#29 (Detected) HT10.....	38
Table 44 - Long Sequence Waveform Trial#30 (Detected) HT10.....	39
Table 45 - FCC frequency hopping radar (Type 6) Results HT10	39
Table 46 - Summary of All Results - HT20.....	52
Table 47 - Summary of All Results - HT40.....	52
Table 48 - Long Sequence Waveform Summary HT20.....	52
Table 49 - Long Sequence Waveform Trial#1 (Detected) HT20.....	53
Table 50 - Long Sequence Waveform Trial#2 (NOT Detected) HT20	53
Table 51 - Long Sequence Waveform Trial#3 (Detected) HT20.....	54
Table 52 - Long Sequence Waveform Trial#4 (Detected) HT20.....	54

Table 53 - Long Sequence Waveform Trial#5 (Detected) HT20.....	55
Table 54 - Long Sequence Waveform Trial#6 (Detected) HT20.....	55
Table 55 - Long Sequence Waveform Trial#7 (Detected) HT20.....	55
Table 56 - Long Sequence Waveform Trial#8 (Detected) HT20.....	56
Table 57 - Long Sequence Waveform Trial#9 (Detected) HT20.....	56
Table 58 - Long Sequence Waveform Trial#10 (Detected) HT20.....	57
Table 59 - Long Sequence Waveform Trial#11 (Detected) HT20.....	57
Table 60 - Long Sequence Waveform Trial#12 (Detected) HT20.....	58
Table 61 - Long Sequence Waveform Trial#13 (Detected) HT20.....	58
Table 62 - Long Sequence Waveform Trial#14 (Detected) HT20.....	59
Table 63 - Long Sequence Waveform Trial#15 (Detected) HT20.....	59
Table 64 - Long Sequence Waveform Trial#16 (Detected) HT20.....	60
Table 65 - Long Sequence Waveform Trial#17 (Detected) HT20.....	60
Table 66 - Long Sequence Waveform Trial#18 (Detected) HT20.....	61
Table 67 - Long Sequence Waveform Trial#19 (Detected) HT20.....	61
Table 68 - Long Sequence Waveform Trial#20 (Detected) HT20.....	62
Table 69 - Long Sequence Waveform Trial#21 (Detected) HT20.....	62
Table 70 - Long Sequence Waveform Trial#22 (Detected) HT20.....	63
Table 71 - Long Sequence Waveform Trial#23 (Detected) HT20.....	63
Table 72 - Long Sequence Waveform Trial#24 (Detected) HT20.....	64
Table 73 - Long Sequence Waveform Trial#25 (Detected) HT20.....	64
Table 74 - Long Sequence Waveform Trial#26 (Detected) HT20.....	64
Table 75 - Long Sequence Waveform Trial#27 (Detected) HT20.....	65
Table 76 - Long Sequence Waveform Trial#28 (Detected) HT20.....	65
Table 77 - Long Sequence Waveform Trial#29 (Detected) HT20.....	66
Table 78 - Long Sequence Waveform Trial#30 (Detected) HT20.....	66
Table 79 - Long Sequence Waveform Summary HT40.....	67
Table 80 - Long Sequence Waveform Trial#1 (Detected) HT40.....	67
Table 81 - Long Sequence Waveform Trial#2 (Detected) HT40.....	68
Table 82 - Long Sequence Waveform Trial#3 (Detected) HT40.....	68
Table 83 - Long Sequence Waveform Trial#4 (Detected) HT40.....	68
Table 84 - Long Sequence Waveform Trial#5 (Detected) HT40.....	69
Table 85 - Long Sequence Waveform Trial#6 (Detected) HT40.....	69
Table 86 - Long Sequence Waveform Trial#7 (Detected) HT40.....	69
Table 87 - Long Sequence Waveform Trial#8 (Detected) HT40.....	70
Table 88 - Long Sequence Waveform Trial#9 (Detected) HT40.....	70
Table 89 - Long Sequence Waveform Trial#10 (Detected) HT40.....	70
Table 90 - Long Sequence Waveform Trial#11 (Detected) HT40.....	71
Table 91 - Long Sequence Waveform Trial#12 (Detected) HT40.....	71
Table 92 - Long Sequence Waveform Trial#13 (Detected) HT40.....	72
Table 93 - Long Sequence Waveform Trial#14 (Detected) HT40.....	72
Table 94 - Long Sequence Waveform Trial#15 (Detected) HT40.....	72
Table 95 - Long Sequence Waveform Trial#16 (Detected) HT40.....	73
Table 96 - Long Sequence Waveform Trial#17 (Detected) HT40.....	73
Table 97 - Long Sequence Waveform Trial#18 (Detected) HT40.....	73
Table 98 - Long Sequence Waveform Trial#19 (Detected) HT40.....	74
Table 99 - Long Sequence Waveform Trial#20 (Detected) HT40.....	74
Table 100 - Long Sequence Waveform Trial#21 (Detected) HT40.....	74
Table 101 - Long Sequence Waveform Trial#22 (Detected) HT40.....	75
Table 102 - Long Sequence Waveform Trial#23 (Detected) HT40.....	75
Table 103 - Long Sequence Waveform Trial#24 (Detected) HT40.....	75
Table 104 - Long Sequence Waveform Trial#25 (Detected) HT40.....	76
Table 105 - Long Sequence Waveform Trial#26 (Detected) HT40.....	76
Table 106 - Long Sequence Waveform Trial#27 (Detected) HT40.....	77
Table 107 - Long Sequence Waveform Trial#28 (Detected) HT40.....	77

Table 108 - Long Sequence Waveform Trial#29 (Detected) HT40.....	77
Table 109 - Long Sequence Waveform Trial#30 (Detected) HT40.....	78
Table 110 - FCC Part 15 Subpart E Channel Closing Test Results (HT10).....	79

LIST OF FIGURES

Figure 1 Test Configuration for radiated Measurement Method	13
Figure 2 Channel Closing Time and Channel Move Time (Radar Type 1) Master – 40 second plot.....	79
Figure 3 Close-Up of Transmissions Occurring More Than 200ms After The End of Radar Type 1 Master (HT10)	80
Figure 4 Channel Closing Time and Channel Move Time (Radar Type 5) Master – 40 second plot (HT10)	81
Figure 5 Close-Up of Transmissions Occurring More Than 200ms After The End of Radar Master Type 5 (HT10)	82
Figure 6 Channel Closing Time and Channel Move Time (Radar Type 1) Client– 40 second plot (HT10)	83
Figure 7 Close-Up of Transmissions Occurring More Than 200ms After The End of Radar Type 1 Client (HT10)	84
Figure 8 Radar Channel Non-occupancy Plot.....	85
Figure 9 Plot of EUT Start-Up After CAC (HT10)	86
Figure 10 Radar Applied At Start of CAC (HT20).....	87
Figure 11 Radar Applied At End of CAC (HT20).....	87

SCOPE

Test data has been taken pursuant to the relevant DFS requirements of the following standard(s):

- FCC Part 15 Subpart E Unlicensed National Information Infrastructure (U-NII) Devices.

Tests were performed in accordance with these standards together with the current published versions of the basic standards referenced therein as outlined in NTS Silicon Valley test procedures. The test results recorded herein are based on a single type test of the Ubiquiti Networks model Rocket M5T and therefore apply only to the tested sample. The sample was selected and prepared by Ubiquiti Networks of Ubiquiti Networks.

OBJECTIVE

The objective of the manufacturer is to comply with the standards identified in the previous section. In order to demonstrate compliance, the manufacturer or a contracted laboratory makes measurements and takes the necessary steps to ensure that the equipment complies with the appropriate technical standards. Compliance with some DFS features is covered through a manufacturer statement or through observation of the device.

STATEMENT OF COMPLIANCE

The tested sample of the Ubiquiti Networks model Rocket M5T complied with the DFS requirements of FCC Part 15.407(h)(2).

Maintenance of compliance is the responsibility of the manufacturer. Any modifications to the product should be assessed to determine their potential impact on the compliance status of the device with respect to the standards detailed in this test report.

DEVIATIONS FROM THE STANDARD

Limited testing was performed per the DFS test plan submitted to the FCC under KDB 194449. Due to the similarity Rocket M5T to the LocoStationM5 (FCC ID: SWX-M5LD) a subset of the DFS tests were applied. From the test plan the following tests were performed:

1. Confirmation of the detection bandwidth in the HT10, HT20 and HT40 modes
2. Confirm detection probability for radar types 1-4, and 6 using HT10.
3. Confirm detection probability for radar type 5 using HT10, HT20, and HT40.
4. Channel Close/Move Time for HT10
5. 30 minute Non-Occupancy confirmation
6. Client Mode – Channel close/move time for HT10

EQUIPMENT UNDER TEST (EUT) DETAILS**GENERAL**

The Ubiquiti Networks model Rocket M5T is a wireless network bridge.

The sample was received on August 18, 2012 and tested on August 18-22, and September 5, 2012. The EUT consisted of the following component(s):

Manufacturer	Model	Description	Serial Number
Ubiquiti	Rocket M5T	Wireless network bridge radio	None
Ubiquiti	UBI-POE-24-1	Power supply (POE)	1105-0005429

The manufacturer declared values for the EUT operational characteristics that affect DFS are as follows:

Operating Modes (5250 – 5350 MHz, 5470 – 5725 MHz)

- ☒ Master Device 5250-5350 MHz
- ☒ Master Device 5470-5725 MHz

Antenna Gains / EIRP (5250 – 5350 MHz, 5470 – 5725 MHz)

	5250 – 5350 MHz	5470 – 5725 MHz
Lowest Antenna Gain (dBi)	20	20
Highest Antenna Gain (dBi)	20	20
EIRP Output Power (dBm)	> 23	>23

- ☒ Power can exceed 200mW eirp

Channel Protocol

- ☒ IP Based

ENCLOSURE

The EUT enclosure measures approximately 16.5cm in height, 8.5cm wide and 4.0cm deep. It is primarily constructed of uncoated plastic.

MODIFICATIONS

The EUT did not require modifications during testing in order to comply with the requirements of the standard(s) referenced in this test report.

SUPPORT EQUIPMENT

The following equipment was used as local support equipment for testing:

Manufacturer	Model	Description	Serial Number	FCC ID
Dell	Vostro 1520	Laptop	43469242957	-
Dell	Vostro 1520	Laptop	27209067121	-
Ubiquiti	RocketM5	<i>Wireless network bridge radio</i>	<i>None</i>	<i>SWX-RM5T-DFS</i>

The italicized device was the master device.

EUT INTERFACE PORTS

The I/O cabling configuration during testing was as follows:

Port	Connected To	Cable(s)		
		Description	Shielded/ Unshielded	Length (m)
EUT	EUT POE	Cat 5E	Unshielded	8.0
EUT POE (Data)	Laptop	Cat 5E	Unshielded	1.0

EUT OPERATION

The EUT was operating with the following software:

Master Device: 5.5.4

The manufacturer provided special software that over-rode the non-occupancy mechanism (allowing return to the same channel) for the purposes of determining the probability of detection. This test feature was disabled and the normal operating software enabled for verifying the 30-minute non-occupancy period and channel move time.

The start of the Channel Availability Check was the 15.8s after the command to change channel was sent.

During the in-service monitoring detection probability and channel moving tests the system was configured with a streaming video file from the master device (sourced by the PC connected to the master device via an Ethernet interface) to the client device.

The streamed file was the "FCC" test file and the client device was using Windows Media Player Classic as required by FCC Part 15 Subpart E

RADAR WAVEFORMS

Table 1 - FCC Short Pulse Radar Test Waveforms					
Radar Type	Pulse Width (μsec)	PRI (μsec)	Pulses / burst	Minimum Detection Percentage	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

Table 2 - FCC Long Pulse Radar Test Waveforms							
Radar Type	Pulse Width (μsec)	Chirp Width (MHz)	PRI (μsec)	Pulses / burst	Number of Bursts	Minimum Detection Percentage	Minimum Number of Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

Table 3 - FCC Frequency Hopping Radar Test Waveforms							
Radar Type	Pulse Width (μsec)	PRI (μsec)	Pulses / hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Detection Percentage	Minimum Number of Trials
6	1	333	9	0.333	300	70%	30

TEST RESULTS**TEST RESULTS SUMMARY – FCC Part 15, MASTER DEVICE**

Table 4 - FCC Part 15 Subpart E Master Device Test Result Summary (HT10)						
Description	Radar Type	EUT Band/ Bandwidth	Measured Value	Requirement	Test Data	Status
Channel Availability Check (CAC) Time	Type 1	5470-5725	60s	≥ 60s	Appendix D	PASS
CAC Detection Threshold	Type 1	5470-5725	-64dBm (note 2)	-63dBm (See note 2)	Appendix D	PASS
In-Service Monitoring Detection Threshold	Type 1 Type 2 Type 3 Type 4 Type 5 Type 6	5470-5725	-64dBm (note 2)	-63dBm (See note 2)	Appendix B	PASS
Bandwidth Detection	Type 1	HT10	± 5 MHz	80% of the 99% BW	Appendix B	PASS
Channel closing transmission time	Type 1 Type 5	5470-5725	2.76ms 0ms	≤ 260ms	Appendix C	PASS
Channel move time	Type 1 Type 5	5470-5725	0.47s 0s	≤ 10s	Appendix C	PASS
Non-occupancy period	-	5470-5725	> 30 min	> 30 minutes	Appendix C	PASS
Uniform Loading		-	-	Uniform Loading	Refer to operational description	-
1) Tests were performed using the radiated test method. 2) The measured detection threshold is based on the master device having an antenna gain of 20.0dBi. The measured detection threshold is based on testing the master device using the radiated test method. The limit is based on an eirp of more than 23dBm. 3) The in-service monitoring detection threshold and detection probability measurements were made with the device operating in the 5250 – 5350 MHz and 5500-5700 MHz band.						

Table 5 - FCC Part 15 Subpart E Master Device Test Result Summary (HT20)						
Description	Radar Type	EUT Band/ Bandwidth	Selected Value	Requirement	Test Data	Status
In-Service Monitoring Detection Threshold	Type 5	5470-5725	-64dBm (note 2)	-63dBm (See note 2)	Appendix B	PASS
Bandwidth Detection	Type 1	HT20	± 9 MHz	80% of the 99% BW	Appendix B	PASS

Table 6 - FCC Part 15 Subpart E Master Device Test Result Summary (HT40)						
Description	Radar Type	EUT Band/ Bandwidth	Selected Value	Requirement	Test Data	Status
In-Service Monitoring Detection Threshold	Type 5	5470-5725	-64dBm (note 2)	-63dBm (See note 2)	Appendix B	PASS
Bandwidth Detection	Type 1	HT40	± 18 MHz	80% of the 99% BW	Appendix B	PASS

Table 7 - FCC Part 15 Subpart E Client Device Test Result Summary

Description	Radar Type	EUT Band/ Bandwidth	Measured Value	Requirement	Test Data	Status
Channel closing transmission time	Type 1	5470-5725	0.9ms	$\leq 260\text{ms}$	Appendix C	PASS
Channel move time	Type 1	5470-5725	0.63s	$\leq 10\text{s}$	Appendix C	PASS

MEASUREMENT UNCERTAINTIES

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level, with a coverage factor ($k=2$) and were calculated in accordance with UKAS document LAB 34.

Measurement	Measurement Unit	Expanded Uncertainty
Timing (Channel move time, aggregate transmission time)	ms	Timing resolution +/- 0.24%
Timing (non occupancy period)	seconds	5 seconds
DFS Threshold (radiated)	dBm	1.6
DFS Threshold (conducted)	dBm	1.2

DFS TEST METHODS**RADIATED TEST METHOD**

The combination of master and slave devices is located in an anechoic chamber. The simulated radar waveform is transmitted from a directional horn antenna (typically an EMCO 3115) toward the unit performing the radar detection (radar detection device, RDD). Every effort is made to ensure that the main beam of the EUT's antenna is aligned with the radar-generating antenna.

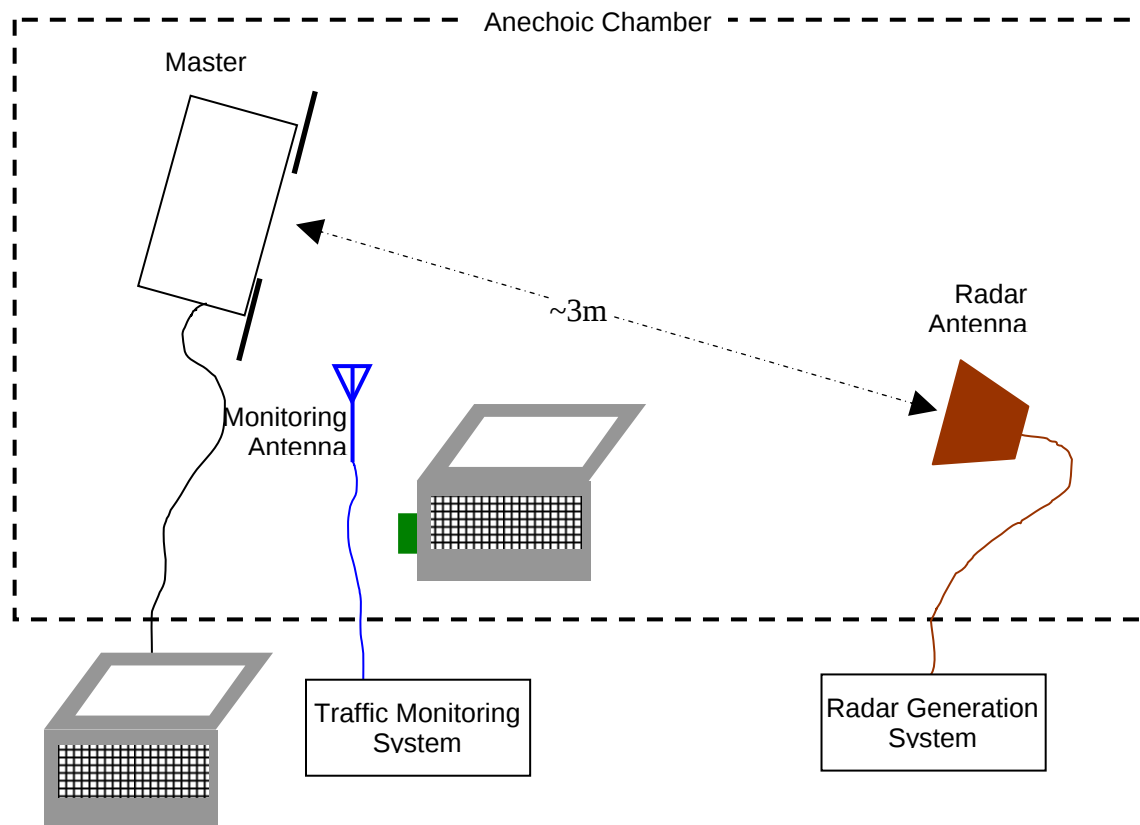


Figure 1 Test Configuration for radiated Measurement Method

The signal level of the simulated waveform is set to a reference level equal to the threshold level (plus 1dB if testing against FCC requirements). Lower levels may also be applied on request of the manufacturer. The level reported is the level at the RDD antenna and so it is not corrected for the RDD's antenna gain. The RDD is configured with the lowest gain antenna assembly intended for use with the device.

The signal level is verified by measuring the CW signal level from the radar generation system using a reference antenna of gain G_{REF} (dBi). The radar signal level is calculated from the measured level, R (dBm), and any cable loss, L (dB), between the reference antenna and the measuring instrument:

$$\text{Applied level (dBm)} = R - G_{REF} + L$$

If both master and client devices have radar detection capability then the device not under test is positioned with absorbing material between its antenna and the radar generating antenna, and the radar level at the non RDD is verified to be at least 20dB below the threshold level to ensure that any responses are due to the RDD detecting radar.

The antenna connected to the channel monitoring subsystem is positioned to allow both master and client transmissions to be observed, with the level of the EUT's transmissions between 6 and 10dB higher than those from the other device.

DFS MEASUREMENT INSTRUMENTATION

RADAR GENERATION SYSTEM

An Agilent PSG is used as the radar-generating source. The integral arbitrary waveform generators are programmed using Agilent's "Pulse Building" software and NTS Silicon Valley custom software to produce the required waveforms, with the capability to produce both un-modulated and modulated (FM Chirp) pulses. Where there are multiple values for a specific radar parameter then the software selects a value at random and, for FCC tests, the software verifies that the resulting waveform is truly unique.

With the exception of the hopping waveforms required by the FCC's rules (see below), the radar generator is set to a single frequency within the radar detection bandwidth of the EUT. The frequency is varied from trial to trial by stepping in 5MHz steps.

Frequency hopping radar waveforms are simulated using a time domain model. A randomly hopping sequence algorithm (which uses each channel in the hopping radar's range once in a hopping sequence) generates a hop sequence. A segment of the first 100 elements of the hop sequence are then examined to determine if it contains one or more frequencies within the radar detection bandwidth of the EUT. If it does not then the first element of the segment is discarded and the next frequency in the sequence is added. The process repeats until a valid segment is produced. The radar system is then programmed to produce bursts at time slots coincident with the frequencies within the segment that fall in the detection bandwidth. The frequency of the generator is stepped in 1 MHz increments across the EUT's detection range.

The radar signal level is verified during testing using a CW signal with the AGC function switched on. Correction factors to account for the fact that pulses are generated with the AGC functions switched off are measured annually and an offset is used to account for this in the software.

The generator output is connected to the coupling port of the conducted set-up or to the radar-generating antenna.

CHANNEL MONITORING SYSTEM

Channel monitoring is achieved using a spectrum analyzer and digital storage oscilloscope. The analyzer is configured in a zero-span mode, center frequency set to the radar waveform's frequency or the center frequency of the EUT's operating channel. The IF output of the analyzer is connected to one input of the oscilloscope.

A signal generator output is set to send either the modulating signal directly or a pulse gate with an output pulse co-incident with each radar pulse. This output is connected to a second input on the oscilloscope and the oscilloscope displays both the channel traffic (via the if input) and the radar pulses on its display.

For in service monitoring tests the analyzer sweep time is set to > 20 seconds and the oscilloscope is configured with a data record length of 10 seconds for the short duration and frequency hopping waveforms, 20 seconds for the long duration waveforms. Both instruments are set for a single acquisition sequence. The analyzer is triggered 500ms before the start of the waveform and the oscilloscope is triggered directly by the modulating pulse train. Timing measurements for aggregate channel transmission time and channel move time are made from the oscilloscope data, with the end of the waveform clearly identified by the pulse train on one trace. The analyzer trace data is used to confirm that the last transmission occurred within the 10-second record of the oscilloscope. If necessary the record length of the oscilloscope is expanded to capture the last transmission on the channel prior to the channel move.

Channel availability check time timing plots are made using the analyzer. The analyzer is triggered at start of the EUT's channel availability check and used to verify that the EUT does not transmit when radar is applied during the check time.

The analyzer detector and oscilloscope sampling mode is set to peak detect for all plots.

DFS MEASUREMENT METHODS**DFS RADAR DETECTION BANDWIDTH**

The radar detection bandwidth is determined by using FCC radar waveform 1 and applying radar pulses at offsets from the center channel frequency by multiples of 1MHz. These bursts are applied with no traffic on the channel. The first frequencies above and below the center channel frequency that have a detection rate below 90% define the radar bandwidth, the actual range being 1MHz below the upper frequency and 1MHz above the lower frequency.

DFS – CHANNEL CLOSING TRANSMISSION TIME AND CHANNEL MOVE TIME

Channel clearing and closing times are measured by applying a burst of radar with the device configured to change channel and by observing the channel for transmissions. The time between the end of the applied radar waveform and the final transmission on the channel is the channel move time.

The aggregate transmission closing time is measured in one of two ways:

FCC/KCC Notice No. 2010-48 – the total time of all individual transmissions from the EUT that are observed starting 200ms at the end of the last radar pulse in the waveform. This value is required to be less than 60ms.

DFS – CHANNEL NON-OCCUPANCY AND VERIFICATION OF PASSIVE SCANNING

The channel that was in use prior to radar detection by the master is additionally monitored for 30 minutes to ensure no transmissions on the vacated channel over the required non-occupancy period. This is achieved by tuning the spectrum analyzer to the vacated channel in zero-span mode and connecting the IF output to an oscilloscope. The oscilloscope is triggered by the radar pulse and set to provide a single sweep (in peak detect mode) that lasts for at least 30 minutes after the end of the channel move time.

For devices with a client-mode that are being evaluated against FCC rules the manufacturer must supply an attestation letter stating that the client device does not employ any active scanning techniques (i.e. does not transmit in the DFS bands without authorization from a Master device).

DFS CHANNEL AVAILABILITY CHECK TIME

It is preferred that the EUT report when it starts the radar channel availability check. If the EUT does not report the start of the check time, then the time to start transmitting on a channel after switching the device on is measured to approximate the time from power-on to the end of the channel availability check. The start of the channel availability check is assumed to be 60 seconds prior to the first transmission on the channel.

To evaluate the channel availability check, a single burst of one radar type is applied within the first 2 seconds of the start of the channel availability check and it is verified that the device does not use the channel by continuing to monitor the channel for a period of at least 60 seconds. The test is repeated by applying a burst of radar in the last 2 seconds (i.e. between 58 and 60 seconds after the start of CAC when evaluating a 60-second CAC) of the channel availability check.

To evaluate the channel availability check, a single burst of each radar type is applied at random periods during the 60-second channel availability check and it is verified that the device does not use the channel by continuing to monitor the channel for a period of at least 60 seconds. The test is performed a total of four times for each radar type.

UNIFORM LOADING

Compliance with the FCC's channel loading requirement is demonstrated through the manufacturer's operational description for the device under test.

TRANSMIT POWER CONTROL (TPC)

Compliance with the transmit power control requirements for devices is demonstrated through measurements showing multiple power levels and manufacturer statements explaining how the power control is implemented.

SAMPLE CALCULATIONS

DETECTION PROBABILITY / SUCCESS RATE

The detection probability, or success rate, for any one radar waveform equals the number of successful trials divided by the total number of trials for that waveform.

In the case of the FCC requirements, for radar waveform types 1 through 4 an additional calculation is made to determine the average detection probability over all four radar waveform types. This calculation is the arithmetic mean of the four individual probabilities.

THRESHOLD LEVEL

The threshold level is the level of the simulated radar waveform at the EUT's antenna. If the test is performed in a conducted fashion then the level at the rf input equals the level at the antenna plus the gain of the antenna assembly, in dBi. The gain of the antenna assembly equals the gain of the antenna minus the loss of the cabling between the rf input and the antenna. The lowest gain value for all antenna assemblies intended for use with the device is used when making this calculation.

If the test is performed using the radiated method then the threshold level is the level at the antenna.

Appendix A Test Equipment Calibration Data

<u>Manufacturer</u>	<u>Description</u>	<u>Model #</u>	<u>Asset #</u>	<u>Cal Due</u>
EMCO	Antenna, Horn, 1-18 GHz	3115	786	19-Dec-13
Hewlett Packard	EMC Spectrum Analyzer	8595EM	780	25-Jan-13
EMCO	Antenna, Horn, 1-18 GHz	3117	1662	25-May-14
Agilent	PSG Vector Signal Generator	E8267C	1877	11-May-13
Tektronix	500MHz, 2CH, 5GS/s Scope	TDS5052B	2118	07-Oct-12

Appendix B Test Data Tables for Radar Detection Probability

Table 8 - Detection Bandwidth Measurements (Bandwidth: +5MHz /-5MHz) (HT10)					
EUT	Radar		Number		Success
Frequency	Type	Frequency	Detected	Not Detected	%
5500.00 MHz	FCC Short Pulse Radar (Type 1)	5494.00 MHz	3	3	50
5500.00 MHz	FCC Short Pulse Radar (Type 1)	5495.00 MHz	10	0	100
5500.00 MHz	FCC Short Pulse Radar (Type 1)	5496.00 MHz	10	0	100
5500.00 MHz	FCC Short Pulse Radar (Type 1)	5497.00 MHz	10	0	100
5500.00 MHz	FCC Short Pulse Radar (Type 1)	5498.00 MHz	10	0	100
5500.00 MHz	FCC Short Pulse Radar (Type 1)	5499.00 MHz	10	0	100
5500.00 MHz	FCC Short Pulse Radar (Type 1)	5500.00 MHz	10	0	100
5500.00 MHz	FCC Short Pulse Radar (Type 1)	5501.00 MHz	10	0	100
5500.00 MHz	FCC Short Pulse Radar (Type 1)	5502.00 MHz	10	0	100
5500.00 MHz	FCC Short Pulse Radar (Type 1)	5503.00 MHz	10	0	100
5500.00 MHz	FCC Short Pulse Radar (Type 1)	5504.00 MHz	10	0	100
5500.00 MHz	FCC Short Pulse Radar (Type 1)	5505.00 MHz	10	0	100
5500.00 MHz	FCC Short Pulse Radar (Type 1)	5506.00 MHz	1	3	25

Table 9 - Summary of All Results - HT10				
Waveform Name	Pd (%)	Pd Required (%)	Number of Trials	Status
FCC Short Pulse Radar (Type 1)	100.0 %	60.0 %	30	PASSED
FCC Short Pulse Radar (Type 2)	93.3 %	60.0 %	30	PASSED
FCC Short Pulse Radar (Type 3)	96.7 %	60.0 %	30	PASSED
FCC Short Pulse Radar (Type 4)	96.7 %	60.0 %	30	PASSED
Aggregate of above results	96.7 %	80.0 %	120	PASSED
Long Sequence	90.0 %	80.0 %	30	PASSED
FCC frequency hopping radar (Type 6)	100.0 %	70.0 %	33	PASSED

Table 10 - FCC Short Pulse Radar (Type 1) Results HT10

Trial #	Pulses/ Burst	Pulse Width (us)	PRI (us)	Detected	Fr (MHz) and level (dBm)	Burst Information
1	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
2	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
3	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
4	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
5	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
6	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
7	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
8	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
9	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
10	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
11	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
12	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
13	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
14	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
15	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
16	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
17	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
18	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
19	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
20	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
21	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
22	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
23	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
24	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
25	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
26	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
27	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
28	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
29	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst
30	18	1.0	1428.0	Yes	5500.0MHz, -64.0dBm	Single burst

Table 11 - FCC Short Pulse Radar (Type 2) Results HT10

Trial #	Pulses/ Burst	Pulse Width (us)	PRI (us)	Detected	Fr (MHz) and level (dBm)	Burst Information
1	27	2.4	153.0	Yes	5500.0MHz, -64.0dBm	Single burst
2	29	4.5	228.0	No	5500.0MHz, -64.0dBm	Single burst
3	29	1.8	184.0	Yes	5500.0MHz, -64.0dBm	Single burst
4	26	2.1	199.0	Yes	5500.0MHz, -64.0dBm	Single burst
5	26	2.3	210.0	Yes	5500.0MHz, -64.0dBm	Single burst
6	26	1.5	183.0	Yes	5500.0MHz, -64.0dBm	Single burst
7	25	3.3	191.0	Yes	5500.0MHz, -64.0dBm	Single burst
8	25	4.8	151.0	Yes	5500.0MHz, -64.0dBm	Single burst
9	27	4.8	216.0	Yes	5500.0MHz, -64.0dBm	Single burst
10	25	1.7	173.0	Yes	5500.0MHz, -64.0dBm	Single burst
11	29	3.0	227.0	No	5500.0MHz, -64.0dBm	Single burst
12	26	4.4	188.0	Yes	5500.0MHz, -64.0dBm	Single burst
13	27	4.2	153.0	Yes	5500.0MHz, -64.0dBm	Single burst
14	25	3.3	159.0	Yes	5500.0MHz, -64.0dBm	Single burst
15	25	3.9	200.0	Yes	5500.0MHz, -64.0dBm	Single burst
16	27	3.5	169.0	Yes	5500.0MHz, -64.0dBm	Single burst
17	29	4.5	221.0	Yes	5500.0MHz, -64.0dBm	Single burst
18	25	1.6	194.0	Yes	5500.0MHz, -64.0dBm	Single burst
19	29	4.2	207.0	Yes	5500.0MHz, -64.0dBm	Single burst
20	27	1.3	211.0	Yes	5500.0MHz, -64.0dBm	Single burst
21	28	4.1	151.0	Yes	5500.0MHz, -64.0dBm	Single burst
22	29	4.0	213.0	Yes	5500.0MHz, -64.0dBm	Single burst
23	26	1.6	186.0	Yes	5500.0MHz, -64.0dBm	Single burst
24	26	2.1	162.0	Yes	5500.0MHz, -64.0dBm	Single burst
25	24	3.0	219.0	Yes	5500.0MHz, -64.0dBm	Single burst
26	27	2.6	169.0	Yes	5500.0MHz, -64.0dBm	Single burst
27	25	3.3	161.0	Yes	5500.0MHz, -64.0dBm	Single burst
28	25	1.5	161.0	Yes	5500.0MHz, -64.0dBm	Single burst
29	25	3.0	219.0	Yes	5500.0MHz, -64.0dBm	Single burst
30	25	2.6	203.0	Yes	5500.0MHz, -64.0dBm	Single burst

Table 12 - FCC Short Pulse Radar (Type 3) Results HT10

Trial #	Pulses/ Burst	Pulse Width (us)	PRI (us)	Detected	Fr (MHz) and level (dBm)	Burst Information
1	16	9.5	361.0	Yes	5500.0MHz, -64.0dBm	Single burst
2	17	7.7	372.0	Yes	5500.0MHz, -64.0dBm	Single burst
3	18	8.5	432.0	Yes	5500.0MHz, -64.0dBm	Single burst
4	17	9.5	306.0	Yes	5500.0MHz, -64.0dBm	Single burst
5	17	7.9	343.0	Yes	5500.0MHz, -64.0dBm	Single burst
6	17	6.4	339.0	Yes	5500.0MHz, -64.0dBm	Single burst
7	18	7.8	340.0	Yes	5500.0MHz, -64.0dBm	Single burst
8	18	9.1	405.0	Yes	5500.0MHz, -64.0dBm	Single burst
9	18	9.9	408.0	Yes	5500.0MHz, -64.0dBm	Single burst
10	17	9.9	467.0	Yes	5500.0MHz, -64.0dBm	Single burst
11	18	6.9	285.0	Yes	5500.0MHz, -64.0dBm	Single burst
12	17	7.6	410.0	Yes	5500.0MHz, -64.0dBm	Single burst
13	17	8.3	309.0	Yes	5500.0MHz, -64.0dBm	Single burst
14	17	8.7	343.0	No	5500.0MHz, -64.0dBm	Single burst
15	17	7.6	327.0	Yes	5500.0MHz, -64.0dBm	Single burst
16	16	9.5	429.0	Yes	5500.0MHz, -64.0dBm	Single burst
17	16	9.2	202.0	Yes	5500.0MHz, -64.0dBm	Single burst
18	17	8.3	446.0	Yes	5500.0MHz, -64.0dBm	Single burst
19	18	6.4	272.0	Yes	5500.0MHz, -64.0dBm	Single burst
20	17	6.3	262.0	Yes	5500.0MHz, -64.0dBm	Single burst
21	16	7.5	337.0	Yes	5500.0MHz, -64.0dBm	Single burst
22	18	9.3	467.0	Yes	5500.0MHz, -64.0dBm	Single burst
23	17	7.2	314.0	Yes	5500.0MHz, -64.0dBm	Single burst
24	18	9.0	412.0	Yes	5500.0MHz, -64.0dBm	Single burst
25	18	7.0	380.0	Yes	5500.0MHz, -64.0dBm	Single burst
26	17	6.7	438.0	Yes	5500.0MHz, -64.0dBm	Single burst
27	16	7.3	283.0	Yes	5500.0MHz, -64.0dBm	Single burst
28	18	9.7	259.0	Yes	5500.0MHz, -64.0dBm	Single burst
29	18	9.7	416.0	Yes	5500.0MHz, -64.0dBm	Single burst
30	18	9.7	412.0	Yes	5500.0MHz, -64.0dBm	Single burst

Table 13 - FCC Short Pulse Radar (Type 4) Results HT10

Trial #	Pulses/ Burst	Pulse Width (us)	PRI (us)	Detected	Fr (MHz) and level (dBm)	Burst Information
1	14	16.4	210.0	Yes	5500.0MHz, -64.0dBm	Single burst
2	13	12.8	485.0	Yes	5500.0MHz, -64.0dBm	Single burst
3	15	17.6	334.0	Yes	5500.0MHz, -64.0dBm	Single burst
4	15	19.6	235.0	Yes	5500.0MHz, -64.0dBm	Single burst
5	14	16.4	383.0	Yes	5500.0MHz, -64.0dBm	Single burst
6	14	19.3	394.0	Yes	5500.0MHz, -64.0dBm	Single burst
7	13	15.5	296.0	Yes	5500.0MHz, -64.0dBm	Single burst
8	14	17.1	439.0	Yes	5500.0MHz, -64.0dBm	Single burst
9	14	13.1	332.0	Yes	5500.0MHz, -64.0dBm	Single burst
10	15	13.2	253.0	Yes	5500.0MHz, -64.0dBm	Single burst
11	14	13.0	352.0	Yes	5500.0MHz, -64.0dBm	Single burst
12	13	19.4	326.0	Yes	5500.0MHz, -64.0dBm	Single burst
13	15	15.2	461.0	Yes	5500.0MHz, -64.0dBm	Single burst
14	13	16.7	298.0	Yes	5500.0MHz, -64.0dBm	Single burst
15	15	17.2	478.0	Yes	5500.0MHz, -64.0dBm	Single burst
16	14	17.8	235.0	Yes	5500.0MHz, -64.0dBm	Single burst
17	13	12.4	491.0	Yes	5500.0MHz, -64.0dBm	Single burst
18	16	11.8	477.0	Yes	5500.0MHz, -64.0dBm	Single burst
19	15	12.5	328.0	Yes	5500.0MHz, -64.0dBm	Single burst
20	12	11.9	314.0	Yes	5500.0MHz, -64.0dBm	Single burst
21	12	11.6	487.0	Yes	5500.0MHz, -64.0dBm	Single burst
22	12	17.8	267.0	Yes	5500.0MHz, -64.0dBm	Single burst
23	15	15.8	469.0	Yes	5500.0MHz, -64.0dBm	Single burst
24	15	11.7	343.0	No	5500.0MHz, -64.0dBm	Single burst
25	12	14.6	449.0	Yes	5500.0MHz, -64.0dBm	Single burst
26	16	13.1	245.0	Yes	5500.0MHz, -64.0dBm	Single burst
27	15	17.7	371.0	Yes	5500.0MHz, -64.0dBm	Single burst
28	15	17.3	462.0	Yes	5500.0MHz, -64.0dBm	Single burst
29	13	15.6	368.0	Yes	5500.0MHz, -64.0dBm	Single burst
30	13	18.9	245.0	Yes	5500.0MHz, -64.0dBm	Single burst

Table 14 - Long Sequence Waveform Summary HT10

Long Sequence Trial	Result	Radar Frequency / Amplitude
Trial #1	Detected	5500.0MHz, -64.0dBm
Trial #2	Detected	5500.0MHz, -64.0dBm
Trial #3	Detected	5500.0MHz, -64.0dBm
Trial #4	Detected	5500.0MHz, -64.0dBm
Trial #5	Detected	5500.0MHz, -64.0dBm
Trial #6	NOT Detected	5500.0MHz, -64.0dBm
Trial #7	Detected	5500.0MHz, -64.0dBm
Trial #8	Detected	5500.0MHz, -64.0dBm
Trial #9	Detected	5500.0MHz, -64.0dBm
Trial #10	Detected	5500.0MHz, -64.0dBm
Trial #11	NOT Detected	5500.0MHz, -64.0dBm
Trial #12	Detected	5500.0MHz, -64.0dBm
Trial #13	Detected	5500.0MHz, -64.0dBm
Trial #14	Detected	5500.0MHz, -64.0dBm
Trial #15	Detected	5500.0MHz, -64.0dBm
Trial #16	NOT Detected	5500.0MHz, -64.0dBm
Trial #17	Detected	5500.0MHz, -64.0dBm
Trial #18	Detected	5500.0MHz, -64.0dBm
Trial #19	Detected	5500.0MHz, -64.0dBm
Trial #20	Detected	5500.0MHz, -64.0dBm
Trial #21	Detected	5500.0MHz, -64.0dBm
Trial #22	Detected	5500.0MHz, -64.0dBm
Trial #23	Detected	5500.0MHz, -64.0dBm
Trial #24	Detected	5500.0MHz, -64.0dBm
Trial #25	Detected	5500.0MHz, -64.0dBm
Trial #26	Detected	5500.0MHz, -64.0dBm
Trial #27	Detected	5500.0MHz, -64.0dBm
Trial #28	Detected	5500.0MHz, -64.0dBm
Trial #29	Detected	5500.0MHz, -64.0dBm
Trial #30	Detected	5500.0MHz, -64.0dBm

Table 15 - Long Sequence Waveform Trial#1 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	99.1	8	1052.0	-	0.792622
2	2	89.3	20	1892.0	-	1.880994
3	1	80.0	8	-	-	2.487227
4	2	76.5	8	1100.0	-	3.628971
5	1	53.2	8	-	-	4.938425
6	3	90.6	10	1074.0	1739.0	5.554207
7	1	76.1	13	-	-	6.872862
8	1	94.3	20	-	-	7.687822
9	1	88.6	7	-	-	8.948077
10	2	92.1	11	1702.0	-	10.268077
11	3	52.7	13	1542.0	1696.0	11.742506

Table 16 - Long Sequence Waveform Trial#2 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	57.6	8	1710.0	-	0.713547
2	1	95.2	12	-	-	1.625960
3	1	52.8	10	-	-	3.615871
4	1	91.9	13	-	-	4.032609
5	1	60.5	18	-	-	5.759921
6	2	78.8	17	1838.0	-	7.048699
7	2	80.7	5	1773.0	-	9.135633
8	3	93.2	8	1591.0	1138.0	10.167069
9	1	98.4	9	-	-	11.449020

Table 17 - Long Sequence Waveform Trial#3 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	1	89.7	9	-	-	0.549215
2	2	96.7	16	1562.0	-	0.776169
3	2	65.9	8	1293.0	-	1.508906
4	2	77.6	8	1043.0	-	2.494611
5	1	70.1	8	-	-	3.051945
6	2	85.9	14	1751.0	-	3.720798
7	2	78.8	16	1357.0	-	4.474257
8	2	72.5	7	1723.0	-	4.822794
9	2	94.7	17	1258.0	-	5.618563
10	3	73.5	19	1756.0	1428.0	6.076644
11	1	77.0	13	-	-	7.161421
12	1	60.3	20	-	-	7.621843
13	3	98.1	14	1900.0	1958.0	8.454533
14	2	96.9	9	1430.0	-	9.020855
15	3	65.6	12	1581.0	1468.0	9.825707
16	2	90.2	9	1320.0	-	10.160781
17	1	82.7	17	-	-	10.973455
18	1	92.5	15	-	-	11.751831

Table 18 - Long Sequence Waveform Trial#4 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	3	56.0	17	1241.0	1983.0	0.430674
2	3	69.6	10	1827.0	1507.0	1.190939
3	1	86.6	13	-	-	1.625795
4	2	66.7	12	1580.0	-	1.961096
5	2	51.7	11	1755.0	-	3.031695
6	1	50.9	9	-	-	3.504235
7	1	80.6	8	-	-	4.196636
8	2	77.8	19	1113.0	-	4.942207
9	1	75.8	11	-	-	5.510754
10	2	50.1	20	1790.0	-	6.162686
11	3	54.2	6	1820.0	1560.0	6.370502
12	2	89.9	17	1009.0	-	7.265325
13	1	96.5	7	-	-	8.138694
14	3	50.6	12	1326.0	1050.0	8.780324
15	1	56.7	20	-	-	9.368509
16	3	77.1	15	1753.0	1713.0	9.852121
17	2	86.0	6	1338.0	-	10.337534
18	3	97.4	12	1588.0	1814.0	11.233291
19	3	79.4	11	1883.0	1509.0	11.869698

Table 19 - Long Sequence Waveform Trial#5 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	94.2	6	1340.0	-	0.528532
2	3	70.9	11	1348.0	1643.0	1.238065
3	2	54.8	7	1002.0	-	3.510171
4	2	93.9	12	1845.0	-	4.034694
5	2	59.1	19	1469.0	-	5.322440
6	2	73.8	6	1787.0	-	6.649087
7	3	59.2	12	1257.0	1419.0	7.657385
8	2	63.9	19	1651.0	-	9.375740
9	2	66.0	11	1921.0	-	9.635880
10	1	64.2	16	-	-	10.980329

Table 20 - Long Sequence Waveform Trial#6 (NOT Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	3	56.1	17	1578.0	1740.0	0.523875
2	3	60.7	7	1832.0	1078.0	1.551675
3	1	87.8	15	-	-	2.841385
4	2	78.8	18	1382.0	-	3.562170
5	1	70.2	10	-	-	4.856392
6	2	77.6	20	1112.0	-	5.518129
7	2	76.1	15	1201.0	-	6.147848
8	2	99.5	12	1562.0	-	7.558943
9	2	70.5	12	1113.0	-	8.506313
10	1	70.9	11	-	-	9.776705
11	2	59.9	8	1453.0	-	10.089714
12	2	72.7	19	1455.0	-	11.283375

Table 21 - Long Sequence Waveform Trial#7 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	52.6	16	1657.0	-	0.278479
2	3	70.9	8	1210.0	1790.0	0.653529
3	2	99.1	7	1036.0	-	1.400757
4	1	90.0	7	-	-	2.480958
5	3	80.0	18	1289.0	1906.0	3.113074
6	2	90.4	12	1207.0	-	3.662111
7	3	56.8	19	1487.0	1718.0	3.970634
8	2	71.8	14	1556.0	-	4.691751
9	2	67.3	12	1642.0	-	5.554837
10	1	93.8	11	-	-	6.182882
11	1	84.8	9	-	-	6.523078
12	2	76.6	18	1835.0	-	7.304164
13	1	93.3	12	-	-	7.937958
14	1	87.3	20	-	-	8.759725
15	2	54.0	11	1494.0	-	9.349215
16	2	69.1	10	1239.0	-	9.503809
17	3	69.1	12	1476.0	1680.0	10.295309
18	1	71.0	19	-	-	11.287090
19	2	84.4	9	1705.0	-	11.963771

Table 22 - Long Sequence Waveform Trial#8 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	66.3	11	1083.0	-	0.420167
2	2	70.8	6	1422.0	-	1.128306
3	1	63.1	18	-	-	1.725320
4	1	68.9	15	-	-	2.571021
5	2	77.6	6	1748.0	-	3.714289
6	2	74.9	8	1620.0	-	3.994747
7	1	57.1	13	-	-	4.506999
8	2	56.9	14	1336.0	-	5.300328
9	1	72.5	10	-	-	6.356937
10	1	63.5	15	-	-	6.751762
11	1	61.0	14	-	-	7.601755
12	3	62.7	11	1287.0	1423.0	8.542040
13	1	96.3	19	-	-	9.721956
14	2	72.3	16	1206.0	-	9.903292
15	2	62.5	16	1512.0	-	10.754727
16	1	76.5	13	-	-	11.773525

Table 23 - Long Sequence Waveform Trial#9 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	1	87.8	5	-	-	0.233023
2	3	86.9	16	1164.0	1634.0	1.143311
3	3	72.8	10	1118.0	1122.0	1.258994
4	2	67.2	11	1806.0	-	2.250194
5	2	64.8	15	1434.0	-	2.986270
6	2	79.7	9	1840.0	-	3.284291
7	1	91.1	8	-	-	3.988574
8	1	61.8	20	-	-	4.636053
9	2	51.8	12	1486.0	-	4.868207
10	2	75.7	16	1964.0	-	5.863944
11	3	77.1	11	1169.0	1640.0	6.238382
12	2	88.8	9	1250.0	-	6.940863
13	2	98.8	16	1700.0	-	7.424598
14	2	97.6	11	1388.0	-	8.225979
15	2	54.4	14	1188.0	-	8.624696
16	2	75.5	6	1368.0	-	9.120272
17	2	58.9	12	1926.0	-	9.899128
18	2	88.0	15	1903.0	-	10.736232
19	3	50.1	18	1041.0	1377.0	11.208101
20	2	97.7	9	1312.0	-	11.842378

Table 24 - Long Sequence Waveform Trial#10 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	3	78.0	5	1151.0	1756.0	0.196588
2	1	60.0	17	-	-	1.501599
3	2	89.9	15	1530.0	-	2.572705
4	2	73.7	13	1490.0	-	3.094099
5	2	91.6	8	1947.0	-	4.004694
6	1	64.9	6	-	-	5.427202
7	1	66.8	16	-	-	6.395224
8	2	51.1	18	1904.0	-	7.266713
9	2	78.6	11	1801.0	-	8.467494
10	2	68.2	6	1036.0	-	9.181585
11	3	58.6	9	1605.0	1941.0	10.993597
12	2	78.5	7	1271.0	-	11.869898

Table 25 - Long Sequence Waveform Trial#11 (NOT Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	88.2	14	1006.0	-	1.214798
2	1	55.5	11	-	-	1.771260
3	1	57.3	11	-	-	3.728855
4	2	84.6	14	1333.0	-	5.126949
5	2	70.0	12	1406.0	-	5.965546
6	2	91.9	12	1668.0	-	7.983103
7	1	86.0	18	-	-	8.385626
8	3	84.6	10	1948.0	1107.0	9.420666
9	2	62.5	18	1299.0	-	11.873486

Table 26 - Long Sequence Waveform Trial#12 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	93.5	13	1402.0	-	0.526448
2	1	78.2	14	-	-	1.300556
3	2	57.4	10	1475.0	-	1.727975
4	2	97.2	9	1998.0	-	2.421012
5	2	78.1	15	1175.0	-	3.418348
6	3	82.8	18	1022.0	1380.0	3.821880
7	3	58.9	15	1892.0	1228.0	4.666995
8	2	92.2	9	1749.0	-	5.695487
9	1	96.0	15	-	-	6.683943
10	2	99.5	6	1066.0	-	7.215646
11	2	56.1	9	1400.0	-	8.020669
12	2	87.0	10	1513.0	-	8.821816
13	1	79.2	6	-	-	9.092932
14	2	71.1	15	1915.0	-	10.230714
15	2	52.4	14	1786.0	-	10.682062
16	2	66.8	14	1976.0	-	11.312950

Table 27 - Long Sequence Waveform Trial#13 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	73.2	10	1197.0	-	0.142353
2	1	85.0	10	-	-	1.733040
3	2	98.7	6	1145.0	-	3.893621
4	3	60.3	6	1502.0	1069.0	4.982107
5	1	55.9	9	-	-	5.648510
6	2	61.0	7	1003.0	-	7.501371
7	3	94.0	17	1256.0	1622.0	8.629969
8	2	61.1	12	1958.0	-	10.014175
9	2	52.2	12	1206.0	-	11.238225

Table 28 - Long Sequence Waveform Trial#14 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	58.6	12	1141.0	-	0.515199
2	3	66.0	9	1674.0	1164.0	1.508433
3	3	61.8	12	1344.0	1319.0	2.818070
4	2	79.8	17	1175.0	-	4.175944
5	2	50.4	20	1943.0	-	4.799401
6	2	97.0	16	1597.0	-	5.486120
7	2	71.2	9	1998.0	-	6.600671
8	3	78.1	19	1139.0	1430.0	8.274821
9	2	78.2	7	1936.0	-	9.538221
10	1	83.4	13	-	-	10.494284
11	2	55.0	13	1629.0	-	11.361543

Table 29 - Long Sequence Waveform Trial#15 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	81.5	7	1147.0	-	0.683032
2	1	88.3	18	-	-	1.105675
3	2	54.0	18	1902.0	-	1.622769
4	2	74.9	17	1382.0	-	2.981899
5	2	97.1	8	1564.0	-	3.593275
6	1	78.7	12	-	-	4.029340
7	1	87.8	16	-	-	4.934212
8	1	79.0	16	-	-	5.794821
9	2	81.7	17	1357.0	-	6.161647
10	2	75.8	17	1762.0	-	7.071117
11	2	93.0	11	1036.0	-	7.878542
12	3	67.0	10	1769.0	1141.0	8.437805
13	3	91.8	17	1662.0	1617.0	9.171472
14	3	84.3	8	1553.0	1170.0	10.114174
15	1	84.3	12	-	-	11.050206
16	2	87.1	8	1540.0	-	11.474507

Table 30 - Long Sequence Waveform Trial#16 (NOT Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	65.8	18	1929.0	-	0.277636
2	2	75.4	18	1550.0	-	2.267076
3	2	84.4	15	1894.0	-	2.504274
4	3	56.4	17	1727.0	1503.0	3.789122
5	2	65.0	7	1540.0	-	5.636645
6	2	81.1	6	1584.0	-	6.305962
7	3	86.3	12	1233.0	1645.0	7.466632
8	2	72.6	18	1686.0	-	9.458148
9	3	61.9	18	1561.0	1913.0	10.610216
10	3	79.0	17	1170.0	1520.0	11.095199

Table 31 - Long Sequence Waveform Trial#17 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	3	65.0	11	1828.0	1684.0	0.645162
2	3	82.5	16	1074.0	1134.0	0.880531
3	1	55.6	7	-	-	1.366883
4	2	95.3	10	1289.0	-	2.010391
5	3	91.6	16	1243.0	1207.0	2.829529
6	3	83.9	9	1217.0	1221.0	3.621393
7	2	77.3	14	1650.0	-	4.542146
8	1	97.2	16	-	-	4.895287
9	3	65.1	5	1955.0	1723.0	5.911567
10	3	93.5	6	1320.0	1873.0	6.117313
11	3	84.7	7	1246.0	1783.0	7.087432
12	2	96.3	17	1912.0	-	7.418793
13	1	55.4	14	-	-	8.545034
14	3	99.0	13	1137.0	1869.0	8.745566
15	2	91.4	20	1201.0	-	9.457363
16	2	67.4	7	1042.0	-	10.447962
17	3	95.3	11	1435.0	1208.0	10.731594
18	2	75.6	19	1658.0	-	11.858670

Table 32 - Long Sequence Waveform Trial#18 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	3	67.0	19	1588.0	1357.0	0.424167
2	1	55.0	14	-	-	1.439233
3	1	92.1	20	-	-	2.589634
4	2	97.2	10	1577.0	-	3.052422
5	2	59.1	16	1304.0	-	3.784016
6	1	90.3	16	-	-	5.348058
7	2	56.0	7	1210.0	-	5.889417
8	3	88.9	6	1136.0	1670.0	6.573449
9	3	88.0	15	1953.0	1807.0	7.759757
10	2	54.4	19	1124.0	-	8.662912
11	1	99.4	12	-	-	9.266105
12	3	94.9	11	1384.0	1969.0	10.954516
13	3	86.3	7	1689.0	1456.0	11.764622

Table 33 - Long Sequence Waveform Trial#19 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	3	75.6	12	1513.0	1694.0	0.188627
2	2	82.1	19	1159.0	-	1.483739
3	3	96.3	6	1832.0	1332.0	2.211254
4	2	54.4	11	1591.0	-	2.287352
5	1	90.9	18	-	-	3.689403
6	1	91.8	17	-	-	3.871616
7	3	51.9	9	1653.0	1107.0	4.970949
8	2	81.1	9	1495.0	-	5.825778
9	1	61.6	14	-	-	6.323345
10	3	56.4	8	1376.0	1492.0	7.389507
11	3	63.6	14	1674.0	1127.0	7.882921
12	2	60.5	12	1720.0	-	8.813238
13	2	55.1	5	1581.0	-	9.648629
14	3	55.6	7	1390.0	1498.0	10.388446
15	2	80.1	5	1467.0	-	11.227201
16	3	66.1	20	1085.0	1548.0	11.495754

Table 34 - Long Sequence Waveform Trial#20 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	83.4	8	1857.0	-	0.099036
2	3	55.4	16	1475.0	1917.0	1.352572
3	2	91.0	10	1797.0	-	3.563910
4	1	59.1	16	-	-	3.899453
5	3	64.5	7	1690.0	1222.0	4.898421
6	2	89.1	9	1489.0	-	6.435750
7	1	54.8	13	-	-	7.616776
8	1	98.4	18	-	-	8.902579
9	2	53.4	15	1802.0	-	10.356529
10	2	95.7	17	1685.0	-	11.673515

Table 35 - Long Sequence Waveform Trial#21 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	1	84.1	15	-	-	0.572646
2	2	76.3	14	1428.0	-	0.808505
3	3	64.6	20	1951.0	1665.0	1.641519
4	2	80.5	10	1650.0	-	2.378223
5	3	69.4	17	1047.0	1173.0	2.921857
6	2	77.1	8	1987.0	-	3.558532
7	1	87.9	7	-	-	4.194111
8	2	65.8	20	1929.0	-	4.727243
9	2	90.7	12	1025.0	-	5.837280
10	1	53.3	18	-	-	6.521650
11	1	71.1	13	-	-	6.932317
12	2	97.0	19	1702.0	-	7.393806
13	2	75.6	8	1502.0	-	8.254353
14	3	69.0	8	1946.0	1938.0	9.139519
15	3	81.1	19	1541.0	1696.0	9.513725
16	1	59.0	19	-	-	10.385261
17	2	64.5	13	1590.0	-	10.991487
18	2	70.1	19	1007.0	-	11.377233

Table 36 - Long Sequence Waveform Trial#22 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	56.6	17	1770.0	-	1.420461
2	3	91.2	12	1774.0	1280.0	2.777272
3	2	99.2	10	1382.0	-	3.192479
4	2	84.7	10	1809.0	-	4.964228
5	2	98.4	7	1371.0	-	6.682828
6	1	61.6	16	-	-	7.948897
7	2	61.4	15	1860.0	-	9.580191
8	2	54.0	10	1704.0	-	11.643628

Table 37 - Long Sequence Waveform Trial#23 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	53.1	19	1549.0	-	0.438123
2	2	56.1	16	1514.0	-	0.901468
3	2	68.5	7	1728.0	-	2.052870
4	2	54.1	16	1143.0	-	2.948940
5	2	91.1	20	1417.0	-	3.299897
6	3	61.6	16	1106.0	1746.0	4.123098
7	3	68.7	7	1008.0	1324.0	5.148198
8	2	83.3	9	1756.0	-	5.392745
9	2	98.9	7	1374.0	-	6.001269
10	2	73.2	7	1542.0	-	7.273594
11	2	50.8	11	1519.0	-	7.738405
12	2	98.6	18	1119.0	-	8.942383
13	2	76.1	18	1822.0	-	9.167110
14	2	50.2	16	1083.0	-	10.172177
15	2	62.3	6	1168.0	-	10.650358
16	3	61.2	8	1026.0	1093.0	11.918838

Table 38 - Long Sequence Waveform Trial#24 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	67.8	11	1365.0	-	0.259189
2	3	63.6	17	1045.0	1830.0	1.278883
3	1	77.4	18	-	-	1.778613
4	3	66.2	19	1685.0	1021.0	2.215875
5	2	81.1	15	1109.0	-	3.121492
6	2	89.8	9	1911.0	-	3.571001
7	2	94.1	9	1114.0	-	4.738187
8	2	97.6	7	1957.0	-	5.337910
9	2	86.1	17	1237.0	-	5.724036
10	3	99.0	16	1475.0	1722.0	6.618954
11	2	73.5	11	1660.0	-	7.571646
12	2	96.2	11	1000.0	-	8.323941
13	1	99.6	19	-	-	8.644294
14	1	54.5	8	-	-	9.875616
15	2	60.2	12	1587.0	-	10.213554
16	2	96.7	9	1514.0	-	10.778595
17	1	64.3	5	-	-	11.308257

Table 39 - Long Sequence Waveform Trial#25 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	1	71.5	11	-	-	0.306119
2	3	83.7	16	1131.0	1661.0	1.494119
3	3	89.1	8	1473.0	1364.0	3.073569
4	2	59.9	13	1500.0	-	5.023075
5	2	73.9	7	1503.0	-	6.371207
6	2	78.5	11	1988.0	-	7.987723
7	2	74.5	7	1806.0	-	8.393179
8	2	59.8	9	1330.0	-	9.665746
9	2	86.2	8	1106.0	-	11.758211

Table 40 - Long Sequence Waveform Trial#26 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	76.6	6	1784.0	-	0.730734
2	2	85.8	16	1388.0	-	2.106072
3	2	82.7	15	1892.0	-	2.869222
4	3	62.9	13	1016.0	1824.0	4.161328
5	2	55.8	7	1731.0	-	4.542340
6	2	62.6	14	1719.0	-	6.171051
7	2	82.3	10	1953.0	-	7.148196
8	1	76.7	10	-	-	8.277953
9	2	98.0	16	1271.0	-	9.658279
10	1	98.7	8	-	-	10.713677
11	2	78.7	11	1614.0	-	11.468654

Table 41 - Long Sequence Waveform Trial#27 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	93.5	13	1806.0	-	0.068778
2	1	71.9	18	-	-	1.397628
3	2	91.2	17	1998.0	-	2.419042
4	3	81.3	16	1853.0	1028.0	2.843503
5	2	53.2	6	1703.0	-	4.467541
6	2	91.8	20	1068.0	-	5.225998
7	2	77.8	11	1086.0	-	6.294929
8	2	99.4	10	1839.0	-	6.856153
9	2	81.8	16	1881.0	-	7.423148
10	2	79.8	15	1007.0	-	8.900126
11	3	50.6	8	1125.0	1172.0	9.660614
12	2	97.2	14	1978.0	-	10.489542
13	3	98.2	11	1410.0	1583.0	11.151765

Table 42 - Long Sequence Waveform Trial#28 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	90.0	19	1045.0	-	0.585834
2	2	66.6	6	1008.0	-	1.051601
3	2	91.1	18	1034.0	-	1.626029
4	1	98.3	5	-	-	2.314778
5	3	57.2	18	1916.0	1935.0	2.422194
6	2	73.2	16	1926.0	-	3.482314
7	2	68.1	9	1990.0	-	3.801400
8	1	87.9	19	-	-	4.543997
9	2	60.0	6	1314.0	-	4.820545
10	1	53.7	19	-	-	5.426565
11	2	81.6	16	1059.0	-	6.490657
12	3	61.9	17	1957.0	1555.0	6.835947
13	3	88.6	18	1950.0	1062.0	7.649864
14	2	98.4	16	1142.0	-	8.161794
15	3	64.3	5	1092.0	1649.0	8.508927
16	3	92.5	10	1015.0	1089.0	9.043869
17	2	66.8	11	1929.0	-	9.927683
18	3	72.9	17	1882.0	1654.0	10.587284
19	2	79.6	6	1958.0	-	10.939453
20	3	84.6	16	1350.0	1547.0	11.416896

Table 43 - Long Sequence Waveform Trial#29 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	1	61.6	13	-	-	0.609149
2	1	92.7	18	-	-	1.149057
3	1	82.3	10	-	-	1.985664
4	2	60.1	17	1503.0	-	3.084087
5	3	84.1	16	1888.0	1166.0	3.885731
6	2	89.9	10	1249.0	-	4.669180
7	2	88.3	18	1830.0	-	5.869426
8	2	61.3	9	1247.0	-	7.048344
9	2	81.5	18	1480.0	-	8.032038
10	1	94.8	9	-	-	8.950826
11	2	51.6	10	1301.0	-	9.542732
12	1	79.0	12	-	-	11.064705
13	2	73.0	11	1763.0	-	11.347673

Table 44 - Long Sequence Waveform Trial#30 (Detected) HT10

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	1	57.3	15	-	-	0.491678
2	2	89.8	14	1554.0	-	1.214593
3	3	87.5	7	1016.0	1232.0	3.575522
4	3	78.1	17	1918.0	1615.0	4.478283
5	2	81.9	19	1838.0	-	5.665639
6	3	50.6	11	1533.0	1483.0	6.910073
7	1	68.6	15	-	-	8.134137
8	1	58.4	12	-	-	8.959206
9	3	91.7	11	1350.0	1988.0	10.460941
10	2	72.1	14	1715.0	-	11.697291

Table 45 - FCC frequency hopping radar (Type 6) Results HT10

Trial #	Pulses/Burst	Pulse Width (us)	PRI (us)	Detected	Fr (MHz) and level (dBm)	Burst Information
1	9	1.0	333.0	Yes	5504.0MHz, -64.0dBm	Hop sequence: 5692, 5443, 5392, 5417, 5290, 5713, 5414, 5561, 5419, 5271, 5718, 5268, 5347, 5516, 5315, 5336, 5716, 5601, 5316, 5320, 5631, 5283, 5436, 5656, 5530, 5646, 5447, 5398, 5486, 5390, 5366, 5541, 5684, 5672, 5256, 5377, 5365, 5434, 5267, 5343, 5275, 5578, 5309, 5298, 5527, 5628, 5386, 5421, 5435, 5538, 5510, 5614, 5560, 5253, 5286, 5429, 5340, 5655, 5537, 5279, 5643, 5613, 5476, 5599, 5339, 5542, 5639, 5668, 5610, 5544, 5680, 5277, 5647, 5404, 5371, 5635, 5337, 5577, 5497, 5252, 5451, 5694, 5525, 5653, 5580, 5552, 5589, 5450, 5354, 5547, 5703, 5463, 5459, 5722, 5345, 5448, 5328, 5251, 5262, 5389 (1 hits)

Table 45 - FCC frequency hopping radar (Type 6) Results HT10

Trial #	Pulses/ Burst	Pulse Width (us)	PRI (us)	Detected	Fr (MHz) and level (dBm)	Burst Information
2	9	1.0	333.0	Yes	5505.0MHz, -64.0dBm	Hop sequence: 5553, 5270, 5417, 5476, 5536, 5560, 5461, 5457, 5677, 5494, 5640, 5567, 5489, 5295, 5338, 5499, 5650, 5638, 5627, 5592, 5648, 5625, 5571, 5585, 5666, 5507, 5586, 5661, 5444, 5296, 5543, 5580, 5333, 5510, 5713, 5279, 5289, 5303, 5470, 5615, 5617, 5619, 5662, 5323, 5525, 5347, 5501, 5382, 5337, 5512, 5254, 5500, 5438, 5537, 5569, 5311, 5415, 5451, 5405, 5260, 5548, 5334, 5587, 5345, 5589, 5258, 5332, 5348, 5404, 5584, 5434, 5604, 5630, 5541, 5651, 5480, 5463, 5688, 5692, 5312, 5546, 5527, 5358, 5620, 5522, 5253, 5649, 5292, 5420, 5724, 5715, 5309, 5397, 5294, 5315, 5460, 5267, 5579, 5505, 5291 (4 hits)
3	9	1.0	333.0	Yes	5495.0MHz, -64.0dBm	Hop sequence: 5273, 5617, 5534, 5270, 5470, 5437, 5540, 5504, 5579, 5723, 5374, 5549, 5679, 5409, 5306, 5267, 5313, 5310, 5609, 5602, 5493, 5489, 5472, 5595, 5500, 5615, 5329, 5424, 5333, 5387, 5619, 5656, 5492, 5287, 5583, 5662, 5259, 5364, 5691, 5508, 5438, 5706, 5597, 5713, 5272, 5567, 5314, 5446, 5612, 5680, 5507, 5611, 5585, 5416, 5553, 5643, 5695, 5511, 5640, 5637, 5556, 5571, 5468, 5261, 5648, 5497, 5501, 5265, 5498, 5596, 5506, 5251, 5482, 5669, 5688, 5522, 5286, 5274, 5317, 5709, 5541, 5722, 5448, 5449, 5635, 5463, 5278, 5651, 5724, 5580, 5418, 5707, 5546, 5318, 5460, 5692, 5532, 5464, 5681, 5657 (5 hits)
4	9	1.0	333.0	Yes	5496.0MHz, -64.0dBm	Hop sequence: 5269, 5490, 5274, 5420, 5408, 5354, 5332, 5317, 5254, 5614, 5714, 5400, 5419, 5504, 5634, 5495, 5325, 5664, 5256, 5687, 5309, 5335, 5586, 5445, 5615, 5441, 5498, 5406, 5334, 5447, 5302, 5378, 5290, 5562, 5428, 5483, 5593, 5645, 5417, 5452, 5327, 5474, 5602, 5298, 5259, 5536, 5503, 5320, 5456, 5397, 5500, 5525, 5623, 5712, 5430, 5413, 5690, 5568, 5718, 5454, 5636, 5641, 5316,

Table 45 - FCC frequency hopping radar (Type 6) Results HT10

Trial #	Pulses/ Burst	Pulse Width (us)	PRI (us)	Detected	Fr (MHz) and level (dBm)	Burst Information
						5281, 5589, 5374, 5643, 5466, 5700, 5411, 5395, 5350, 5591, 5421, 5303, 5683, 5390, 5508, 5724, 5628, 5671, 5605, 5532, 5426, 5460, 5650, 5278, 5686, 5307, 5649, 5480, 5398, 5467, 5365, 5353, 5582, 5519, 5551, 5311, 5484 (5 hits)
5	9	1.0	333.0	Yes	5497.0MHz, -64.0dBm	Hop sequence: 5255, 5496, 5461, 5647, 5367, 5666, 5270, 5690, 5684, 5600, 5400, 5497, 5351, 5578, 5498, 5513, 5424, 5676, 5546, 5309, 5548, 5466, 5555, 5278, 5380, 5644, 5256, 5346, 5275, 5277, 5441, 5283, 5713, 5460, 5288, 5651, 5445, 5662, 5587, 5643, 5709, 5514, 5419, 5691, 5259, 5269, 5564, 5482, 5705, 5590, 5254, 5444, 5720, 5433, 5355, 5543, 5626, 5350, 5586, 5343, 5430, 5440, 5653, 5438, 5570, 5619, 5528, 5531, 5263, 5396, 5499, 5365, 5272, 5373, 5354, 5607, 5521, 5464, 5517, 5701, 5420, 5510, 5305, 5502, 5334, 5504, 5532, 5612, 5352, 5650, 5489, 5669, 5598, 5491, 5611, 5294, 5628, 5697, 5395, 5547 (6 hits)
6	9	1.0	333.0	Yes	5498.0MHz, -64.0dBm	Hop sequence: 5341, 5391, 5708, 5261, 5690, 5564, 5309, 5702, 5537, 5394, 5725, 5291, 5290, 5478, 5688, 5328, 5494, 5625, 5597, 5380, 5565, 5397, 5668, 5629, 5588, 5268, 5568, 5318, 5449, 5609, 5531, 5641, 5308, 5483, 5254, 5574, 5374, 5280, 5448, 5585, 5675, 5524, 5487, 5348, 5474, 5373, 5666, 5331, 5315, 5456, 5446, 5434, 5554, 5457, 5353, 5649, 5549, 5316, 5575, 5667, 5311, 5636, 5525, 5355, 5663, 5277, 5605, 5413, 5421, 5676, 5607, 5276, 5662, 5510, 5665, 5526, 5377, 5624, 5412, 5285, 5409, 5543, 5459, 5473, 5515, 5521, 5553, 5682, 5463, 5657, 5255, 5507, 5637, 5497, 5646, 5583, 5715, 5270, 5559, 5436 (1 hits)
7	9	1.0	333.0	Yes	5499.0MHz, -64.0dBm	Hop sequence: 5562, 5607, 5532, 5641, 5287, 5330, 5435, 5528, 5503, 5426, 5545, 5553, 5331, 5300, 5385, 5383, 5530, 5496, 5558, 5672, 5651, 5365, 5494,

Table 45 - FCC frequency hopping radar (Type 6) Results HT10

Trial #	Pulses/ Burst	Pulse Width (us)	PRI (us)	Detected	Fr (MHz) and level (dBm)	Burst Information
						5313, 5718, 5392, 5369, 5484, 5346, 5411, 5428, 5519, 5650, 5642, 5327, 5360, 5681, 5395, 5388, 5633, 5339, 5434, 5260, 5501, 5699, 5541, 5462, 5363, 5358, 5676, 5290, 5609, 5680, 5272, 5254, 5354, 5258, 5525, 5374, 5637, 5581, 5394, 5444, 5579, 5403, 5598, 5652, 5280, 5624, 5620, 5658, 5506, 5567, 5504, 5324, 5309, 5584, 5603, 5448, 5278, 5585, 5703, 5473, 5693, 5372, 5696, 5648, 5380, 5343, 5382, 5539, 5397, 5401, 5329, 5564, 5419, 5410, 5399, 5559, 5406 (4 hits)
8	9	1.0	333.0	Yes	5500.0MHz, -64.0dBm	Hop sequence: 5531, 5428, 5724, 5568, 5397, 5377, 5652, 5682, 5572, 5485, 5539, 5352, 5253, 5441, 5380, 5680, 5403, 5392, 5679, 5340, 5618, 5335, 5268, 5694, 5524, 5282, 5373, 5499, 5296, 5504, 5404, 5389, 5343, 5250, 5386, 5478, 5676, 5651, 5547, 5382, 5435, 5344, 5359, 5686, 5699, 5580, 5628, 5452, 5348, 5367, 5493, 5396, 5323, 5252, 5663, 5407, 5267, 5495, 5582, 5333, 5591, 5356, 5286, 5532, 5516, 5707, 5481, 5261, 5551, 5557, 5525, 5273, 5277, 5678, 5550, 5410, 5723, 5316, 5464, 5444, 5486, 5604, 5633, 5585, 5549, 5434, 5256, 5264, 5603, 5308, 5424, 5289, 5714, 5326, 5458, 5511, 5457, 5570, 5510, 5385 (3 hits)
9	9	1.0	333.0	Yes	5501.0MHz, -64.0dBm	Hop sequence: 5530, 5441, 5420, 5310, 5449, 5491, 5474, 5427, 5488, 5573, 5371, 5298, 5296, 5561, 5440, 5531, 5460, 5598, 5518, 5686, 5585, 5391, 5288, 5533, 5720, 5411, 5639, 5331, 5618, 5559, 5405, 5311, 5292, 5619, 5490, 5622, 5321, 5664, 5369, 5592, 5575, 5309, 5587, 5651, 5555, 5673, 5250, 5539, 5666, 5308, 5549, 5625, 5278, 5482, 5714, 5264, 5629, 5496, 5344, 5610, 5457, 5572, 5351, 5544, 5357, 5719, 5628, 5334, 5600, 5470, 5366, 5507, 5395, 5398, 5500, 5543, 5509, 5461, 5458, 5517, 5591, 5335, 5478, 5691, 5378, 5601, 5294, 5402,

Table 45 - FCC frequency hopping radar (Type 6) Results HT10

Trial #	Pulses/ Burst	Pulse Width (us)	PRI (us)	Detected	Fr (MHz) and level (dBm)	Burst Information
						5725, 5453, 5437, 5512, 5519, 5492, 5683, 5322, 5387, 5669, 5329, 5692 (2 hits)
10	9	1.0	333.0	Yes	5502.0MHz, -64.0dBm	Hop sequence: 5710, 5570, 5409, 5354, 5433, 5271, 5678, 5547, 5535, 5330, 5621, 5552, 5725, 5631, 5632, 5445, 5479, 5713, 5389, 5608, 5605, 5671, 5559, 5417, 5554, 5698, 5288, 5295, 5351, 5723, 5687, 5561, 5526, 5711, 5643, 5529, 5560, 5391, 5655, 5478, 5406, 5667, 5284, 5371, 5311, 5524, 5461, 5367, 5591, 5566, 5432, 5449, 5607, 5297, 5699, 5471, 5527, 5568, 5279, 5457, 5722, 5564, 5574, 5558, 5509, 5660, 5669, 5360, 5286, 5640, 5685, 5313, 5714, 5694, 5303, 5252, 5379, 5682, 5424, 5362, 5672, 5603, 5580, 5572, 5250, 5287, 5707, 5550, 5385, 5339, 5536, 5338, 5393, 5638, 5537, 5665, 5481, 5567, 5684, 5504 (1 hits)
11	9	1.0	333.0	Yes	5503.0MHz, -64.0dBm	Hop sequence: 5618, 5461, 5515, 5525, 5539, 5408, 5699, 5257, 5674, 5328, 5613, 5488, 5367, 5284, 5683, 5620, 5269, 5494, 5604, 5428, 5464, 5598, 5486, 5288, 5463, 5469, 5567, 5508, 5723, 5455, 5260, 5549, 5693, 5418, 5712, 5345, 5413, 5667, 5651, 5687, 5524, 5594, 5689, 5658, 5725, 5256, 5481, 5411, 5258, 5645, 5374, 5344, 5572, 5661, 5268, 5701, 5452, 5312, 5264, 5331, 5400, 5324, 5437, 5272, 5441, 5517, 5666, 5377, 5293, 5292, 5662, 5695, 5478, 5423, 5355, 5287, 5557, 5416, 5458, 5358, 5514, 5625, 5354, 5652, 5610, 5531, 5681, 5616, 5438, 5426, 5519, 5336, 5528, 5530, 5493, 5363, 5627, 5722, 5393, 5500 (1 hits)
12	9	1.0	333.0	Yes	5504.0MHz, -64.0dBm	Hop sequence: 5549, 5660, 5288, 5314, 5350, 5369, 5357, 5454, 5443, 5412, 5406, 5629, 5678, 5465, 5366, 5367, 5441, 5470, 5260, 5687, 5697, 5411, 5541, 5485, 5562, 5704, 5555, 5707, 5269, 5640, 5591, 5418, 5434, 5643, 5268, 5353, 5616, 5632, 5310, 5477, 5459, 5404, 5271, 5608, 5688, 5691, 5332, 5340,

Table 45 - FCC frequency hopping radar (Type 6) Results HT10

Trial #	Pulses/ Burst	Pulse Width (us)	PRI (us)	Detected	Fr (MHz) and level (dBm)	Burst Information
						5628, 5542, 5584, 5699, 5348, 5581, 5685, 5694, 5409, 5626, 5264, 5617, 5285, 5291, 5424, 5564, 5250, 5493, 5512, 5256, 5649, 5545, 5537, 5710, 5635, 5668, 5593, 5283, 5686, 5719, 5395, 5619, 5394, 5309, 5278, 5405, 5606, 5368, 5529, 5502, 5498, 5530, 5528, 5625, 5336, 5673, 5318, 5414, 5420, 5272, 5402, 5476 (2 hits)
13	9	1.0	333.0	Yes	5505.0MHz, -64.0dBm	Hop sequence: 5325, 5262, 5360, 5523, 5515, 5297, 5424, 5417, 5559, 5383, 5511, 5661, 5657, 5607, 5344, 5349, 5598, 5520, 5260, 5432, 5702, 5457, 5532, 5592, 5283, 5388, 5257, 5263, 5489, 5292, 5666, 5688, 5621, 5543, 5397, 5567, 5724, 5322, 5459, 5605, 5508, 5467, 5359, 5503, 5335, 5682, 5636, 5419, 5411, 5551, 5603, 5616, 5637, 5723, 5668, 5421, 5662, 5581, 5563, 5402, 5626, 5692, 5633, 5707, 5429, 5510, 5625, 5439, 5624, 5301, 5252, 5501, 5376, 5405, 5400, 5484, 5284, 5678, 5642, 5525, 5410, 5587, 5695, 5577, 5384, 5653, 5498, 5527, 5716, 5455, 5663, 5277, 5438, 5422, 5550, 5480, 5531, 5649, 5582, 5264 (3 hits)
14	9	1.0	333.0	Yes	5495.0MHz, -64.0dBm	Hop sequence: 5442, 5400, 5586, 5528, 5379, 5665, 5423, 5664, 5545, 5420, 5393, 5551, 5257, 5588, 5542, 5450, 5473, 5670, 5440, 5411, 5481, 5618, 5654, 5550, 5714, 5655, 5436, 5538, 5462, 5373, 5389, 5676, 5448, 5433, 5591, 5488, 5485, 5612, 5470, 5532, 5703, 5701, 5399, 5677, 5537, 5597, 5624, 5397, 5696, 5595, 5334, 5323, 5570, 5627, 5310, 5325, 5511, 5497, 5685, 5573, 5424, 5375, 5598, 5265, 5669, 5289, 5531, 5579, 5633, 5496, 5258, 5546, 5255, 5709, 5253, 5364, 5621, 5331, 5359, 5314, 5445, 5689, 5260, 5464, 5380, 5628, 5382, 5632, 5568, 5392, 5673, 5417, 5592, 5390, 5443, 5620, 5605, 5581, 5274, 5580 (2 hits)
15	9	1.0	333.0	Yes	5496.0MHz, -64.0dBm	Hop sequence: 5394, 5330, 5379, 5709, 5546, 5283, 5383, 5529,

Table 45 - FCC frequency hopping radar (Type 6) Results HT10

Trial #	Pulses/ Burst	Pulse Width (us)	PRI (us)	Detected	Fr (MHz) and level (dBm)	Burst Information
						5352, 5449, 5488, 5603, 5271, 5560, 5577, 5366, 5413, 5525, 5403, 5607, 5706, 5482, 5385, 5406, 5673, 5375, 5581, 5334, 5305, 5359, 5378, 5622, 5717, 5692, 5626, 5512, 5593, 5549, 5499, 5553, 5659, 5274, 5710, 5539, 5678, 5676, 5511, 5646, 5267, 5657, 5464, 5690, 5365, 5575, 5465, 5719, 5384, 5364, 5563, 5372, 5631, 5370, 5650, 5439, 5637, 5282, 5554, 5491, 5541, 5672, 5518, 5661, 5339, 5665, 5285, 5618, 5321, 5559, 5356, 5275, 5675, 5562, 5251, 5608, 5293, 5272, 5399, 5687, 5353, 5469, 5316, 5338, 5597, 5495, 5569, 5340, 5490, 5324, 5343, 5284 (2 hits)
16	9	1.0	333.0	Yes	5497.0MHz, -64.0dBm	Hop sequence: 5498, 5478, 5342, 5404, 5475, 5541, 5658, 5687, 5420, 5355, 5724, 5639, 5418, 5558, 5587, 5677, 5617, 5532, 5285, 5547, 5264, 5589, 5452, 5513, 5468, 5678, 5455, 5373, 5647, 5562, 5402, 5608, 5630, 5550, 5271, 5668, 5253, 5396, 5707, 5654, 5487, 5397, 5273, 5451, 5657, 5651, 5563, 5436, 5328, 5411, 5254, 5477, 5653, 5274, 5298, 5461, 5403, 5579, 5620, 5275, 5555, 5702, 5556, 5633, 5255, 5330, 5442, 5359, 5602, 5340, 5382, 5597, 5390, 5561, 5662, 5701, 5491, 5496, 5366, 5379, 5510, 5704, 5537, 5380, 5472, 5338, 5486, 5514, 5427, 5348, 5290, 5606, 5450, 5307, 5276, 5426, 5341, 5531, 5484, 5377 (2 hits)
17	9	1.0	333.0	Yes	5498.0MHz, -64.0dBm	Hop sequence: 5609, 5327, 5325, 5661, 5288, 5252, 5468, 5417, 5480, 5672, 5369, 5446, 5467, 5401, 5559, 5285, 5573, 5648, 5587, 5438, 5418, 5297, 5454, 5273, 5337, 5420, 5677, 5486, 5593, 5509, 5686, 5683, 5607, 5251, 5646, 5676, 5397, 5364, 5447, 5647, 5722, 5399, 5690, 5553, 5723, 5310, 5271, 5435, 5320, 5298, 5497, 5642, 5439, 5382, 5445, 5275, 5576, 5507, 5309, 5701, 5413, 5554, 5525, 5684, 5396, 5696, 5548, 5301, 5389, 5528, 5443, 5691, 5636,

Table 45 - FCC frequency hopping radar (Type 6) Results HT10

Trial #	Pulses/ Burst	Pulse Width (us)	PRI (us)	Detected	Fr (MHz) and level (dBm)	Burst Information
						5366, 5712, 5689, 5654, 5561, 5465, 5265, 5524, 5562, 5380, 5272, 5503, 5354, 5299, 5581, 5578, 5405, 5370, 5711, 5615, 5302, 5490, 5348, 5392, 5594, 5626, 5345 (2 hits)
18	9	1.0	333.0	Yes	5499.0MHz, -64.0dBm	Hop sequence: 5596, 5492, 5568, 5365, 5292, 5459, 5426, 5513, 5283, 5702, 5522, 5582, 5316, 5570, 5687, 5480, 5689, 5399, 5393, 5265, 5447, 5608, 5346, 5397, 5653, 5304, 5367, 5631, 5594, 5294, 5552, 5717, 5321, 5630, 5629, 5588, 5337, 5341, 5363, 5664, 5658, 5259, 5280, 5322, 5454, 5638, 5406, 5660, 5443, 5263, 5652, 5675, 5291, 5474, 5644, 5438, 5617, 5344, 5633, 5666, 5663, 5592, 5289, 5558, 5497, 5711, 5429, 5319, 5659, 5694, 5374, 5485, 5489, 5609, 5500, 5431, 5548, 5471, 5486, 5355, 5439, 5305, 5508, 5612, 5432, 5314, 5422, 5353, 5604, 5477, 5412, 5270, 5424, 5564, 5299, 5366, 5584, 5643, 5550, 5333 (2 hits)
19	9	1.0	333.0	Yes	5500.0MHz, -64.0dBm	Hop sequence: 5508, 5398, 5526, 5675, 5602, 5628, 5450, 5267, 5611, 5448, 5593, 5265, 5481, 5432, 5471, 5325, 5369, 5667, 5433, 5420, 5396, 5659, 5670, 5649, 5683, 5352, 5699, 5452, 5692, 5276, 5411, 5336, 5368, 5583, 5549, 5642, 5600, 5252, 5304, 5585, 5681, 5322, 5479, 5346, 5273, 5378, 5288, 5462, 5293, 5522, 5496, 5599, 5446, 5639, 5497, 5282, 5531, 5374, 5491, 5389, 5269, 5528, 5477, 5634, 5713, 5371, 5631, 5451, 5330, 5257, 5359, 5612, 5480, 5333, 5331, 5426, 5532, 5537, 5400, 5623, 5339, 5372, 5665, 5621, 5541, 5250, 5610, 5364, 5454, 5281, 5470, 5673, 5554, 5635, 5501, 5488, 5258, 5402, 5539, 5266 (3 hits)
20	9	1.0	333.0	Yes	5501.0MHz, -64.0dBm	Hop sequence: 5520, 5651, 5456, 5690, 5647, 5270, 5532, 5401, 5611, 5382, 5315, 5503, 5254, 5411, 5466, 5682, 5580, 5259, 5422, 5328, 5453, 5707, 5290, 5282, 5592, 5264, 5418, 5693, 5463, 5379, 5455, 5312, 5377,

Table 45 - FCC frequency hopping radar (Type 6) Results HT10

Trial #	Pulses/ Burst	Pulse Width (us)	PRI (us)	Detected	Fr (MHz) and level (dBm)	Burst Information
						5583, 5529, 5534, 5281, 5723, 5614, 5457, 5488, 5543, 5465, 5591, 5316, 5644, 5337, 5400, 5425, 5636, 5694, 5608, 5519, 5617, 5588, 5494, 5398, 5525, 5406, 5302, 5481, 5351, 5659, 5667, 5331, 5366, 5409, 5530, 5280, 5593, 5271, 5701, 5489, 5551, 5417, 5680, 5299, 5285, 5251, 5339, 5513, 5599, 5389, 5492, 5399, 5320, 5321, 5374, 5310, 5354, 5361, 5265, 5550, 5468, 5699, 5577, 5444, 5637, 5353, 5298 (1 hits)
21	9	1.0	333.0	Yes	5502.0MHz, -64.0dBm	Hop sequence: 5692, 5695, 5292, 5443, 5536, 5465, 5646, 5364, 5407, 5312, 5461, 5490, 5350, 5330, 5438, 5478, 5379, 5313, 5520, 5318, 5708, 5320, 5401, 5527, 5337, 5580, 5280, 5489, 5345, 5448, 5439, 5659, 5427, 5485, 5309, 5433, 5293, 5543, 5682, 5487, 5648, 5387, 5420, 5339, 5432, 5669, 5417, 5557, 5352, 5634, 5446, 5627, 5285, 5307, 5549, 5704, 5717, 5601, 5554, 5261, 5588, 5632, 5529, 5503, 5555, 5550, 5602, 5590, 5398, 5674, 5515, 5315, 5474, 5716, 5482, 5545, 5680, 5617, 5328, 5594, 5718, 5384, 5672, 5624, 5635, 5581, 5361, 5566, 5415, 5396, 5399, 5495, 5347, 5693, 5564, 5582, 5412, 5298, 5441, 5568 (2 hits)
22	9	1.0	333.0	Yes	5503.0MHz, -64.0dBm	Hop sequence: 5416, 5455, 5425, 5377, 5427, 5337, 5542, 5692, 5305, 5308, 5330, 5682, 5391, 5355, 5714, 5611, 5675, 5691, 5695, 5314, 5466, 5527, 5646, 5273, 5299, 5492, 5676, 5412, 5688, 5409, 5576, 5594, 5666, 5487, 5369, 5341, 5307, 5642, 5609, 5315, 5660, 5332, 5265, 5706, 5352, 5257, 5437, 5258, 5689, 5319, 5608, 5419, 5626, 5604, 5458, 5647, 5629, 5440, 5356, 5715, 5724, 5465, 5483, 5296, 5420, 5620, 5324, 5459, 5615, 5422, 5339, 5655, 5293, 5574, 5481, 5502, 5340, 5674, 5570, 5329, 5486, 5475, 5530, 5556, 5325, 5720, 5426, 5323, 5567, 5367, 5623, 5561, 5662, 5336, 5304, 5478, 5703, 5316,

Table 45 - FCC frequency hopping radar (Type 6) Results HT10

Trial #	Pulses/ Burst	Pulse Width (us)	PRI (us)	Detected	Fr (MHz) and level (dBm)	Burst Information
						5523, 5418 (1 hits)
23	9	1.0	333.0	Yes	5504.0MHz, -64.0dBm	Hop sequence: 5510, 5705, 5269, 5627, 5539, 5437, 5311, 5660, 5634, 5555, 5374, 5517, 5375, 5261, 5368, 5643, 5620, 5283, 5524, 5485, 5717, 5363, 5488, 5346, 5303, 5584, 5567, 5693, 5251, 5364, 5600, 5611, 5664, 5548, 5334, 5563, 5562, 5423, 5380, 5617, 5687, 5619, 5595, 5357, 5469, 5306, 5482, 5583, 5478, 5440, 5530, 5726, 5683, 5313, 5366, 5502, 5582, 5468, 5652, 5422, 5411, 5462, 5344, 5610, 5570, 5460, 5626, 5404, 5534, 5585, 5489, 5406, 5454, 5337, 5398, 5446, 5314, 5361, 5396, 5278, 5685, 5723, 5386, 5393, 5501, 5680, 5601, 5521, 5486, 5609, 5675, 5273, 5621, 5255, 5597, 5641, 5300, 5673, 5385, 5275 (2 hits)
24	9	1.0	333.0	Yes	5505.0MHz, -64.0dBm	Hop sequence: 5686, 5640, 5276, 5583, 5568, 5280, 5259, 5392, 5557, 5682, 5550, 5661, 5389, 5719, 5716, 5312, 5654, 5363, 5388, 5718, 5490, 5515, 5637, 5717, 5448, 5287, 5725, 5309, 5330, 5511, 5325, 5546, 5321, 5584, 5605, 5374, 5264, 5479, 5683, 5520, 5408, 5553, 5499, 5518, 5437, 5598, 5390, 5629, 5445, 5439, 5510, 5335, 5440, 5648, 5362, 5308, 5323, 5278, 5360, 5558, 5582, 5517, 5425, 5324, 5616, 5446, 5595, 5315, 5478, 5377, 5523, 5316, 5319, 5402, 5456, 5358, 5476, 5681, 5580, 5653, 5715, 5354, 5351, 5500, 5503, 5355, 5642, 5576, 5318, 5679, 5473, 5289, 5415, 5692, 5655, 5326, 5443, 5464, 5334, 5564 (3 hits)
25	9	1.0	333.0	Yes	5495.0MHz, -64.0dBm	Hop sequence: 5719, 5454, 5303, 5622, 5366, 5446, 5406, 5426, 5644, 5515, 5299, 5365, 5707, 5388, 5510, 5699, 5270, 5726, 5463, 5358, 5372, 5257, 5616, 5364, 5675, 5632, 5523, 5518, 5620, 5528, 5340, 5685, 5695, 5683, 5618, 5487, 5370, 5251, 5698, 5599, 5723, 5268, 5477, 5402, 5549, 5321, 5722, 5357, 5307, 5286, 5712, 5320, 5289, 5407, 5350, 5496, 5485, 5389,

Table 45 - FCC frequency hopping radar (Type 6) Results HT10

Trial #	Pulses/ Burst	Pulse Width (us)	PRI (us)	Detected	Fr (MHz) and level (dBm)	Burst Information
						5276, 5292, 5316, 5546, 5631, 5427, 5615, 5682, 5287, 5636, 5604, 5400, 5575, 5572, 5565, 5535, 5691, 5470, 5507, 5333, 5494, 5667, 5319, 5451, 5318, 5386, 5271, 5378, 5588, 5315, 5424, 5586, 5298, 5387, 5609, 5443, 5540, 5704, 5369, 5589, 5638, 5412 (1 hits)
26	9	1.0	333.0	Yes	5496.0MHz, -64.0dBm	Hop sequence: 5513, 5649, 5277, 5262, 5560, 5545, 5654, 5605, 5721, 5514, 5702, 5587, 5298, 5627, 5265, 5501, 5520, 5494, 5473, 5289, 5436, 5564, 5534, 5418, 5397, 5350, 5269, 5307, 5537, 5309, 5386, 5365, 5469, 5443, 5374, 5296, 5673, 5409, 5655, 5638, 5615, 5306, 5712, 5496, 5256, 5688, 5252, 5653, 5566, 5647, 5454, 5669, 5563, 5599, 5453, 5577, 5718, 5700, 5516, 5308, 5578, 5270, 5352, 5510, 5640, 5305, 5330, 5280, 5529, 5339, 5486, 5361, 5364, 5479, 5567, 5695, 5450, 5643, 5357, 5333, 5573, 5719, 5285, 5568, 5675, 5585, 5300, 5548, 5530, 5452, 5327, 5458, 5424, 5422, 5634, 5663, 5468, 5356, 5724, 5716 (2 hits)
27	9	1.0	333.0	Yes	5497.0MHz, -64.0dBm	Hop sequence: 5417, 5425, 5706, 5396, 5450, 5387, 5634, 5522, 5422, 5657, 5539, 5556, 5397, 5424, 5381, 5477, 5420, 5548, 5723, 5574, 5315, 5481, 5582, 5596, 5656, 5296, 5693, 5297, 5330, 5511, 5547, 5716, 5599, 5365, 5459, 5423, 5704, 5678, 5331, 5469, 5682, 5435, 5561, 5492, 5303, 5703, 5583, 5695, 5722, 5675, 5404, 5275, 5345, 5316, 5279, 5638, 5624, 5324, 5295, 5432, 5631, 5308, 5313, 5440, 5393, 5323, 5516, 5563, 5460, 5721, 5714, 5509, 5595, 5515, 5490, 5636, 5681, 5322, 5697, 5267, 5307, 5363, 5289, 5702, 5264, 5350, 5288, 5725, 5529, 5260, 5558, 5431, 5696, 5690, 5348, 5312, 5284, 5319, 5718, 5501 (1 hits)
28	9	1.0	333.0	Yes	5498.0MHz, -64.0dBm	Hop sequence: 5369, 5448, 5299, 5686, 5296, 5554, 5640, 5689, 5476, 5405, 5277, 5397, 5561, 5481, 5675, 5718, 5486, 5667,

Table 45 - FCC frequency hopping radar (Type 6) Results HT10

Trial #	Pulses/ Burst	Pulse Width (us)	PRI (us)	Detected	Fr (MHz) and level (dBm)	Burst Information
						5297, 5645, 5583, 5365, 5504, 5308, 5526, 5455, 5474, 5376, 5279, 5682, 5620, 5328, 5344, 5627, 5449, 5309, 5291, 5303, 5525, 5314, 5716, 5370, 5287, 5429, 5466, 5447, 5458, 5576, 5655, 5642, 5666, 5538, 5280, 5660, 5546, 5444, 5643, 5264, 5609, 5543, 5676, 5414, 5704, 5713, 5321, 5701, 5584, 5700, 5317, 5255, 5409, 5487, 5386, 5343, 5722, 5648, 5517, 5416, 5725, 5684, 5396, 5547, 5406, 5340, 5657, 5269, 5631, 5565, 5430, 5571, 5551, 5353, 5379, 5351, 5637, 5491, 5355, 5687, 5662, 5663 (1 hits)
29	9	1.0	333.0	Yes	5499.0MHz, -64.0dBm	Hop sequence: 5623, 5347, 5686, 5688, 5342, 5524, 5540, 5553, 5468, 5288, 5331, 5418, 5571, 5365, 5673, 5659, 5672, 5495, 5489, 5670, 5669, 5542, 5570, 5401, 5627, 5333, 5523, 5353, 5404, 5486, 5710, 5616, 5581, 5565, 5270, 5460, 5671, 5338, 5368, 5272, 5656, 5324, 5647, 5372, 5560, 5541, 5392, 5438, 5261, 5713, 5289, 5558, 5449, 5608, 5676, 5628, 5359, 5712, 5601, 5253, 5402, 5663, 5277, 5694, 5724, 5308, 5645, 5588, 5251, 5484, 5626, 5714, 5644, 5273, 5533, 5539, 5513, 5411, 5291, 5257, 5636, 5709, 5600, 5297, 5298, 5563, 5389, 5567, 5352, 5319, 5596, 5293, 5466, 5433, 5658, 5725, 5343, 5632, 5301, 5568 (1 hits)
30	9	1.0	333.0	Yes	5500.0MHz, -64.0dBm	Hop sequence: 5379, 5664, 5552, 5517, 5568, 5436, 5687, 5258, 5545, 5354, 5288, 5717, 5589, 5315, 5612, 5438, 5643, 5284, 5309, 5563, 5621, 5688, 5393, 5630, 5496, 5704, 5391, 5414, 5424, 5598, 5668, 5641, 5442, 5376, 5433, 5666, 5595, 5533, 5446, 5320, 5539, 5466, 5415, 5265, 5700, 5259, 5718, 5618, 5580, 5591, 5334, 5600, 5669, 5538, 5690, 5482, 5257, 5588, 5418, 5634, 5293, 5281, 5278, 5553, 5294, 5405, 5489, 5285, 5596, 5599, 5314, 5708, 5272, 5311, 5255, 5667, 5380, 5302, 5440, 5471, 5725, 5283, 5537,

Table 45 - FCC frequency hopping radar (Type 6) Results HT10

Trial #	Pulses/ Burst	Pulse Width (us)	PRI (us)	Detected	Fr (MHz) and level (dBm)	Burst Information
						5516, 5590, 5693, 5585, 5263, 5455, 5387, 5355, 5329, 5603, 5520, 5705, 5573, 5692, 5652, 5321, 5547 (1 hits)
31	9	1.0	333.0	Yes	5501.0MHz, -64.0dBm	Hop sequence: 5432, 5418, 5713, 5255, 5397, 5321, 5291, 5601, 5705, 5502, 5685, 5338, 5367, 5664, 5484, 5572, 5597, 5262, 5437, 5583, 5626, 5699, 5620, 5280, 5688, 5298, 5300, 5446, 5366, 5564, 5539, 5684, 5674, 5378, 5251, 5541, 5506, 5453, 5559, 5475, 5290, 5264, 5334, 5411, 5627, 5413, 5548, 5726, 5481, 5462, 5371, 5635, 5447, 5617, 5452, 5365, 5260, 5317, 5323, 5261, 5488, 5575, 5576, 5516, 5346, 5563, 5435, 5622, 5630, 5675, 5586, 5605, 5585, 5538, 5533, 5320, 5512, 5666, 5698, 5483, 5387, 5294, 5603, 5655, 5609, 5454, 5639, 5521, 5414, 5326, 5337, 5374, 5487, 5632, 5662, 5289, 5540, 5649, 5287, 5530 (1 hits)
32	9	1.0	333.0	Yes	5502.0MHz, -64.0dBm	Hop sequence: 5393, 5274, 5414, 5372, 5371, 5318, 5701, 5624, 5416, 5333, 5351, 5307, 5296, 5262, 5395, 5476, 5288, 5620, 5461, 5523, 5354, 5281, 5408, 5419, 5641, 5658, 5616, 5413, 5346, 5386, 5480, 5427, 5582, 5321, 5342, 5482, 5490, 5670, 5370, 5602, 5252, 5495, 5450, 5688, 5637, 5325, 5655, 5696, 5630, 5691, 5689, 5439, 5287, 5538, 5621, 5569, 5510, 5548, 5571, 5324, 5533, 5684, 5665, 5431, 5377, 5673, 5561, 5599, 5663, 5681, 5474, 5435, 5585, 5554, 5280, 5559, 5337, 5628, 5618, 5317, 5478, 5503, 5451, 5710, 5695, 5721, 5532, 5573, 5704, 5715, 5703, 5310, 5549, 5314, 5525, 5615, 5487, 5706, 5501, 5253 (3 hits)
33	9	1.0	333.0	Yes	5503.0MHz, -64.0dBm	Hop sequence: 5344, 5721, 5715, 5579, 5691, 5716, 5250, 5292, 5567, 5276, 5392, 5323, 5640, 5326, 5494, 5306, 5541, 5270, 5328, 5618, 5409, 5470, 5363, 5686, 5357, 5445, 5258, 5422, 5404, 5389, 5448, 5654, 5426, 5694, 5447, 5547, 5332, 5418, 5495, 5280, 5339, 5488, 5251,

Table 45 - FCC frequency hopping radar (Type 6) Results HT10

Trial #	Pulses/ Burst	Pulse Width (us)	PRI (us)	Detected	Fr (MHz) and level (dBm)	Burst Information
						5569, 5572, 5295, 5354, 5643, 5578, 5375, 5710, 5672, 5582, 5505, 5679, 5724, 5647, 5665, 5509, 5562, 5708, 5324, 5476, 5287, 5583, 5639, 5430, 5719, 5484, 5487, 5535, 5532, 5309, 5382, 5548, 5722, 5518, 5480, 5403, 5543, 5537, 5376, 5703, 5406, 5379, 5436, 5273, 5591, 5556, 5508, 5456, 5458, 5284, 5259, 5648, 5402, 5584, 5481, 5370, 5568 (2 hits)

Table 46 - Summary of All Results - HT20

Waveform Name	Pd (%)	Pd Required (%)	Number of Trials	Status
Long Sequence	96.7 %	80.0 %	30	PASSED

Table 47 - Summary of All Results - HT40

Waveform Name	Pd (%)	Pd Required (%)	Number of Trials	Status
Long Sequence	100.0 %	80.0 %	30	PASSED

Table 48 - Long Sequence Waveform Summary HT20

Long Sequence Trial	Result	Radar Frequency / Amplitude
Trial #1	Detected	5580.0MHz, -64.0dBm
Trial #2	NOT Detected	5575.0MHz, -64.0dBm
Trial #3	Detected	5585.0MHz, -64.0dBm
Trial #4	Detected	5580.0MHz, -64.0dBm
Trial #5	Detected	5575.0MHz, -64.0dBm
Trial #6	Detected	5585.0MHz, -64.0dBm
Trial #7	Detected	5580.0MHz, -64.0dBm
Trial #8	Detected	5575.0MHz, -64.0dBm
Trial #9	Detected	5585.0MHz, -64.0dBm
Trial #10	Detected	5580.0MHz, -64.0dBm
Trial #11	Detected	5575.0MHz, -64.0dBm
Trial #12	Detected	5585.0MHz, -64.0dBm
Trial #13	Detected	5580.0MHz, -64.0dBm
Trial #14	Detected	5575.0MHz, -64.0dBm
Trial #15	Detected	5585.0MHz, -64.0dBm
Trial #16	Detected	5580.0MHz, -64.0dBm
Trial #17	Detected	5575.0MHz, -64.0dBm
Trial #18	Detected	5585.0MHz, -64.0dBm
Trial #19	Detected	5580.0MHz, -64.0dBm
Trial #20	Detected	5575.0MHz, -64.0dBm
Trial #21	Detected	5585.0MHz, -64.0dBm
Trial #22	Detected	5580.0MHz, -64.0dBm

Table 48 - Long Sequence Waveform Summary HT20

Long Sequence Trial	Result	Radar Frequency / Amplitude
Trial #23	Detected	5575.0MHz, -64.0dBm
Trial #24	Detected	5585.0MHz, -64.0dBm
Trial #25	Detected	5580.0MHz, -64.0dBm
Trial #26	Detected	5575.0MHz, -64.0dBm
Trial #27	Detected	5585.0MHz, -64.0dBm
Trial #28	Detected	5580.0MHz, -64.0dBm
Trial #29	Detected	5575.0MHz, -64.0dBm
Trial #30	Detected	5585.0MHz, -64.0dBm

Table 49 - Long Sequence Waveform Trial#1 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	73.8	8	1674.0	-	0.320506
2	1	54.5	13	-	-	1.140431
3	3	62.3	18	1776.0	1962.0	1.420250
4	2	56.8	18	1302.0	-	2.110564
5	2	87.3	12	1328.0	-	2.802335
6	3	88.2	13	1312.0	1014.0	3.940618
7	3	64.3	11	1213.0	1311.0	4.039833
8	1	93.9	15	-	-	5.220469
9	2	73.4	19	1046.0	-	5.578836
10	3	61.4	20	1711.0	1804.0	6.256613
11	3	96.9	17	1517.0	1223.0	7.018509
12	2	80.6	12	1062.0	-	7.516634
13	3	93.2	5	1504.0	1734.0	8.439493
14	1	74.0	7	-	-	8.681077
15	3	75.9	20	1773.0	1933.0	9.607366
16	1	50.3	6	-	-	10.289722
17	3	87.6	15	1167.0	1824.0	11.273732
18	3	99.4	15	1488.0	1937.0	11.392033

Table 50 - Long Sequence Waveform Trial#2 (NOT Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	91.8	7	1999.0	-	0.232126
2	1	55.6	17	-	-	1.646123
3	1	56.3	9	-	-	2.946211
4	2	91.8	19	1860.0	-	4.147812
5	2	65.1	9	1537.0	-	4.982907
6	1	92.1	8	-	-	5.737720
7	3	92.9	14	1877.0	1769.0	7.588710
8	1	95.3	5	-	-	8.478469
9	2	59.7	17	1136.0	-	8.986113
10	1	67.8	16	-	-	10.667415
11	2	73.7	16	1671.0	-	11.498555

Table 51 - Long Sequence Waveform Trial#3 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	1	70.7	17	-	-	0.379821
2	3	58.0	7	1781.0	1422.0	1.005084
3	3	53.8	8	1690.0	1884.0	1.592470
4	1	80.5	19	-	-	1.901933
5	1	80.6	12	-	-	3.106180
6	1	83.6	19	-	-	3.392219
7	1	58.9	12	-	-	3.999560
8	2	99.1	18	1715.0	-	4.879581
9	2	77.9	13	1999.0	-	5.254042
10	1	92.9	9	-	-	6.294113
11	2	69.2	7	1099.0	-	6.906757
12	2	78.1	18	1519.0	-	7.317087
13	2	85.5	10	1255.0	-	7.935029
14	1	89.0	20	-	-	8.586152
15	2	57.6	17	1850.0	-	9.117908
16	2	100.0	13	1722.0	-	9.933233
17	1	53.8	7	-	-	10.356310
18	3	89.7	6	1186.0	1904.0	10.843213
19	3	64.1	15	1493.0	1780.0	11.763119

Table 52 - Long Sequence Waveform Trial#4 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	3	54.3	19	1193.0	1209.0	0.177970
2	2	98.4	15	1193.0	-	1.406301
3	2	65.5	18	1689.0	-	1.766569
4	2	80.8	13	1683.0	-	2.306343
5	3	52.2	10	1300.0	1566.0	3.576115
6	2	59.2	13	1401.0	-	4.182034
7	2	74.9	5	1878.0	-	4.870786
8	2	60.0	19	1078.0	-	5.324308
9	2	66.3	11	1484.0	-	6.261524
10	2	86.8	16	1649.0	-	6.843363
11	2	98.8	14	1196.0	-	7.661225
12	3	99.2	11	1630.0	1388.0	8.655371
13	2	68.6	19	1118.0	-	9.442276
14	3	81.3	12	1741.0	1015.0	10.110679
15	2	78.9	17	1569.0	-	10.589014
16	1	58.9	9	-	-	11.954977

Table 53 - Long Sequence Waveform Trial#5 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	77.1	8	1594.0	-	1.061003
2	2	74.5	15	1912.0	-	2.478279
3	2	60.1	15	1002.0	-	3.778934
4	2	72.9	6	1808.0	-	5.142442
5	1	65.5	14	-	-	6.063841
6	2	59.0	6	1801.0	-	7.552121
7	3	88.5	12	1017.0	1445.0	10.081684
8	2	67.6	14	1724.0	-	11.006804

Table 54 - Long Sequence Waveform Trial#6 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	1	94.9	6	-	-	0.160013
2	2	61.9	8	1945.0	-	1.828533
3	2	92.6	20	1145.0	-	2.667385
4	2	93.5	20	1349.0	-	3.666081
5	1	99.1	7	-	-	4.607279
6	2	75.4	7	1390.0	-	5.806170
7	3	77.0	14	1059.0	1661.0	6.736615
8	2	72.8	6	1012.0	-	8.056906
9	2	57.6	19	1005.0	-	9.024239
10	2	56.0	20	1627.0	-	10.748590
11	3	58.9	12	1076.0	1557.0	11.100154

Table 55 - Long Sequence Waveform Trial#7 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	1	61.6	12	-	-	0.187747
2	3	75.4	10	1912.0	1643.0	1.268931
3	1	89.8	11	-	-	1.917753
4	3	66.5	19	1112.0	1275.0	2.535842
5	1	76.2	11	-	-	3.834999
6	2	63.7	14	1481.0	-	4.736001
7	1	68.3	8	-	-	5.361593
8	2	66.8	12	1662.0	-	6.096862
9	2	86.3	10	1395.0	-	7.178470
10	2	66.3	7	1293.0	-	7.718885
11	2	97.5	17	1469.0	-	8.473880
12	3	72.7	9	1340.0	1788.0	9.018220
13	3	75.8	7	1759.0	1810.0	10.364046
14	2	94.8	16	1095.0	-	11.046220
15	1	79.1	17	-	-	11.237798

Table 56 - Long Sequence Waveform Trial#8 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	53.7	12	1036.0	-	0.307829
2	1	71.3	20	-	-	1.277212
3	2	55.1	17	1636.0	-	2.059506
4	2	68.6	17	1312.0	-	2.952532
5	3	60.4	14	1567.0	1289.0	3.444438
6	3	61.5	15	1146.0	1208.0	4.028833
7	2	62.3	15	1157.0	-	5.219487
8	1	77.1	12	-	-	5.731602
9	1	79.6	16	-	-	6.347517
10	3	84.5	19	1626.0	1751.0	7.095893
11	2	75.3	8	1476.0	-	8.128067
12	2	59.8	16	1687.0	-	8.826895
13	2	97.9	10	1395.0	-	9.215025
14	1	71.7	19	-	-	10.434512
15	1	86.8	11	-	-	11.033960
16	3	58.9	11	1621.0	1629.0	11.759947

Table 57 - Long Sequence Waveform Trial#9 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	86.7	11	1459.0	-	0.129490
2	2	86.1	13	1156.0	-	1.381915
3	1	67.0	8	-	-	2.226776
4	1	68.6	7	-	-	2.906365
5	2	70.8	16	1821.0	-	3.785611
6	2	86.7	18	1441.0	-	5.428078
7	2	93.6	11	1920.0	-	6.148197
8	2	59.7	16	1818.0	-	6.665209
9	1	92.9	7	-	-	7.431687
10	2	59.9	11	1259.0	-	8.449381
11	1	85.1	9	-	-	9.237357
12	2	81.5	17	1912.0	-	10.611529
13	2	99.5	15	1436.0	-	11.865987

Table 58 - Long Sequence Waveform Trial#10 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	1	95.4	17	-	-	0.055132
2	1	56.8	6	-	-	0.911604
3	1	71.9	12	-	-	1.267808
4	3	71.1	8	1410.0	1309.0	2.043263
5	1	75.4	16	-	-	2.781392
6	2	68.2	10	1281.0	-	3.495670
7	1	91.8	8	-	-	4.102646
8	2	63.8	9	1897.0	-	4.694734
9	3	92.3	16	1831.0	1039.0	4.904275
10	2	76.9	19	1384.0	-	5.877201
11	1	61.2	10	-	-	6.562255
12	1	60.6	9	-	-	6.810684
13	1	62.5	11	-	-	7.545688
14	2	97.2	17	1058.0	-	8.040080
15	2	59.9	10	1208.0	-	8.615645
16	2	55.0	12	1636.0	-	9.317858
17	2	77.4	16	1776.0	-	10.194352
18	1	91.3	19	-	-	10.671474
19	2	78.0	13	1825.0	-	10.965618
20	1	52.6	16	-	-	11.467472

Table 59 - Long Sequence Waveform Trial#11 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	86.4	9	1174.0	-	0.083995
2	3	94.4	5	1914.0	1686.0	1.203224
3	2	69.1	17	1631.0	-	2.332952
4	3	56.9	17	1475.0	1050.0	3.540549
5	2	53.7	14	1919.0	-	4.914853
6	3	87.0	17	1351.0	1465.0	5.773773
7	2	55.0	6	1996.0	-	6.551202
8	2	78.3	10	1411.0	-	7.417767
9	2	92.7	6	1802.0	-	8.226081
10	3	73.3	7	1176.0	1070.0	9.034396
11	3	98.9	6	1574.0	1928.0	10.916184
12	2	77.2	7	1584.0	-	11.410410

Table 60 - Long Sequence Waveform Trial#12 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	64.9	7	1329.0	-	0.519701
2	2	76.5	15	1004.0	-	1.627707
3	3	60.5	13	1230.0	1938.0	3.455145
4	2	97.6	17	1832.0	-	5.226002
5	1	60.1	16	-	-	6.189856
6	3	99.9	6	1593.0	1957.0	6.934906
7	2	96.4	10	1515.0	-	8.426997
8	1	92.2	9	-	-	10.386754
9	2	96.4	9	1512.0	-	11.158813

Table 61 - Long Sequence Waveform Trial#13 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	62.9	9	1443.0	-	0.025230
2	2	51.3	16	1022.0	-	0.855935
3	2	85.5	14	1493.0	-	1.557200
4	3	58.7	9	1608.0	1014.0	2.131480
5	3	62.1	15	1441.0	1627.0	2.846562
6	3	91.2	19	1099.0	1766.0	3.942155
7	2	90.4	9	1216.0	-	4.239026
8	2	60.1	18	1115.0	-	5.263261
9	2	96.7	15	1378.0	-	5.608667
10	2	91.9	5	1601.0	-	6.345568
11	2	50.4	5	1261.0	-	7.034186
12	1	58.4	7	-	-	7.808087
13	2	59.4	19	1766.0	-	8.024782
14	3	92.8	16	1718.0	1226.0	8.875638
15	2	91.6	19	1210.0	-	9.660894
16	2	56.5	14	1168.0	-	10.277456
17	1	71.1	15	-	-	11.150020
18	1	83.8	19	-	-	11.619256

Table 62 - Long Sequence Waveform Trial#14 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	1	93.0	15	-	-	0.221350
2	2	59.6	9	1423.0	-	1.074278
3	2	74.5	20	1455.0	-	1.256054
4	3	92.2	17	1217.0	1946.0	1.930344
5	1	77.3	20	-	-	2.766386
6	2	67.6	17	1128.0	-	3.332435
7	2	87.7	18	1727.0	-	4.088271
8	2	89.7	11	1346.0	-	4.655682
9	2	95.4	12	1608.0	-	5.092066
10	3	63.4	11	1495.0	1912.0	5.586098
11	1	67.2	12	-	-	6.033816
12	1	73.1	16	-	-	6.949338
13	1	80.0	20	-	-	7.753350
14	1	56.5	16	-	-	8.007237
15	2	65.4	14	1725.0	-	8.581498
16	1	76.8	9	-	-	9.086246
17	3	57.8	19	1485.0	1594.0	9.850524
18	2	63.3	13	1470.0	-	10.386482
19	3	56.5	12	1637.0	1267.0	11.007431
20	3	66.8	15	1362.0	1049.0	11.879782

Table 63 - Long Sequence Waveform Trial#15 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	1	57.4	9	-	-	0.087544
2	1	62.4	12	-	-	0.830169
3	2	96.9	8	1600.0	-	2.048784
4	2	87.9	15	1354.0	-	2.280661
5	2	64.5	13	1730.0	-	3.296456
6	1	85.6	5	-	-	3.904805
7	1	97.4	14	-	-	4.742732
8	3	51.4	11	1874.0	1031.0	5.067909
9	2	89.9	18	1354.0	-	5.878567
10	2	96.6	15	1791.0	-	6.640041
11	2	87.9	15	1374.0	-	7.206517
12	3	73.2	5	1980.0	1488.0	8.264456
13	3	90.3	5	1088.0	1847.0	8.893737
14	2	62.0	18	1492.0	-	9.296301
15	3	76.7	19	1523.0	1524.0	10.043696
16	2	92.9	9	1762.0	-	11.167123
17	3	74.4	17	1131.0	1107.0	11.876303

Table 64 - Long Sequence Waveform Trial#16 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	90.6	12	1646.0	-	1.400637
2	2	98.0	15	1225.0	-	2.204820
3	1	62.7	20	-	-	3.761585
4	3	58.2	9	1448.0	1639.0	5.477592
5	2	51.4	8	1085.0	-	6.272145
6	2	59.8	6	1712.0	-	8.419040
7	2	68.6	9	1889.0	-	10.240570
8	1	60.7	8	-	-	10.812452

Table 65 - Long Sequence Waveform Trial#17 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	3	99.7	6	1097.0	1933.0	0.201480
2	2	84.3	12	1319.0	-	1.206544
3	3	59.4	17	1132.0	1201.0	1.519158
4	2	83.7	18	1691.0	-	2.578540
5	1	77.8	15	-	-	2.845169
6	3	57.2	20	1357.0	1843.0	3.870458
7	1	77.0	15	-	-	4.170941
8	1	52.6	15	-	-	5.201423
9	2	57.1	15	1895.0	-	5.767537
10	2	88.5	19	1565.0	-	6.381564
11	2	89.4	16	1914.0	-	6.677937
12	1	73.5	13	-	-	7.475283
13	3	62.9	11	1486.0	1672.0	8.630158
14	2	80.9	15	1273.0	-	9.265367
15	3	68.4	7	1353.0	1537.0	9.874040
16	3	86.4	8	1053.0	1525.0	10.084437
17	3	72.7	11	1203.0	1706.0	11.278936
18	2	58.6	13	1127.0	-	11.656731

Table 66 - Long Sequence Waveform Trial#18 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	3	77.7	17	1910.0	1318.0	0.125357
2	2	71.1	9	1759.0	-	1.314419
3	3	88.3	10	1746.0	1538.0	1.552822
4	2	78.0	18	1999.0	-	2.816299
5	1	98.4	11	-	-	2.974127
6	2	85.0	18	1344.0	-	3.867106
7	2	63.6	6	1814.0	-	4.610080
8	1	95.7	6	-	-	5.518886
9	2	73.2	8	1913.0	-	6.235763
10	2	88.8	5	1146.0	-	6.781361
11	3	54.8	14	1350.0	1133.0	7.524870
12	2	91.2	7	1624.0	-	8.377747
13	2	68.3	16	1572.0	-	8.558802
14	3	53.6	11	1750.0	1285.0	9.342822
15	3	92.9	12	1496.0	1310.0	9.956659
16	2	88.1	16	1498.0	-	10.618438
17	3	77.6	12	1143.0	1699.0	11.454078

Table 67 - Long Sequence Waveform Trial#19 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	56.0	13	1563.0	-	0.243693
2	1	63.3	14	-	-	0.872497
3	2	93.8	9	1430.0	-	1.813384
4	2	57.7	18	1005.0	-	2.590713
5	2	53.5	17	1048.0	-	2.925189
6	2	90.5	9	1783.0	-	3.716696
7	3	94.2	14	1903.0	1249.0	4.447896
8	3	62.8	8	1202.0	1022.0	4.704977
9	2	76.5	5	1710.0	-	5.350273
10	2	92.4	14	1764.0	-	6.180055
11	1	55.7	19	-	-	6.684516
12	3	93.5	13	1208.0	1582.0	7.707742
13	3	77.0	11	1188.0	1577.0	8.147851
14	3	70.6	17	1630.0	1397.0	8.872381
15	2	77.7	17	1706.0	-	9.982309
16	3	57.1	7	1533.0	1258.0	10.137326
17	3	60.8	10	1844.0	1158.0	11.258222
18	2	62.3	7	1973.0	-	11.501100

Table 68 - Long Sequence Waveform Trial#20 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	3	63.9	11	1618.0	1754.0	0.245251
2	2	61.5	15	1462.0	-	1.411188
3	2	63.5	10	1894.0	-	2.440435
4	1	51.8	19	-	-	3.299246
5	2	62.4	14	1543.0	-	4.106218
6	2	74.4	6	1246.0	-	4.712113
7	1	80.3	9	-	-	5.571999
8	2	70.5	18	1904.0	-	6.461056
9	1	92.0	9	-	-	7.147796
10	1	93.9	19	-	-	7.910525
11	3	52.5	18	1609.0	1478.0	9.141522
12	3	98.9	6	1317.0	1445.0	9.855255
13	2	87.6	16	1263.0	-	10.296374
14	2	99.1	5	1439.0	-	11.430923

Table 69 - Long Sequence Waveform Trial#21 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	3	85.4	5	1197.0	1494.0	0.877114
2	2	75.0	14	1312.0	-	1.738228
3	1	83.1	9	-	-	2.293509
4	1	56.6	11	-	-	3.887926
5	1	56.4	13	-	-	4.531860
6	2	88.9	18	1608.0	-	5.567672
7	3	62.1	13	1233.0	1847.0	6.979085
8	3	81.9	11	1663.0	1424.0	7.883953
9	3	52.3	8	1593.0	1930.0	9.600814
10	3	75.8	9	1196.0	1920.0	10.366008
11	3	51.7	5	1177.0	1631.0	11.494109

Table 70 - Long Sequence Waveform Trial#22 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	86.4	19	1789.0	-	0.691971
2	1	61.3	20	-	-	1.188672
3	1	68.7	14	-	-	1.806393
4	1	53.7	17	-	-	2.595436
5	1	54.0	11	-	-	3.164577
6	2	93.3	16	1044.0	-	3.639732
7	3	53.8	20	1804.0	1640.0	4.253340
8	2	88.0	9	1221.0	-	5.151256
9	2	75.1	10	1281.0	-	6.095426
10	3	84.5	17	1349.0	1057.0	6.490005
11	2	51.1	7	1971.0	-	7.334676
12	3	99.3	9	1262.0	1153.0	8.459260
13	2	95.5	14	1263.0	-	8.925770
14	2	51.7	12	1475.0	-	9.195079
15	3	76.8	9	1804.0	1443.0	10.085977
16	2	78.4	18	1380.0	-	11.160642
17	2	65.4	14	1437.0	-	11.396571

Table 71 - Long Sequence Waveform Trial#23 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	63.1	14	1487.0	-	0.668884
2	3	96.3	13	1661.0	1369.0	0.892036
3	3	85.0	10	1774.0	1546.0	1.653770
4	2	86.3	14	1420.0	-	2.176013
5	1	71.5	6	-	-	3.185466
6	2	56.2	18	1149.0	-	4.000726
7	2	84.2	19	1808.0	-	4.729424
8	2	78.4	19	1949.0	-	5.481920
9	2	81.2	13	1715.0	-	6.042185
10	3	96.1	11	1215.0	1374.0	6.383203
11	2	88.6	17	1563.0	-	7.250845
12	1	70.3	15	-	-	7.969497
13	2	80.9	20	1995.0	-	8.532807
14	3	72.3	19	1861.0	1953.0	9.231491
15	3	96.1	9	1189.0	1000.0	10.209016
16	2	72.8	14	1354.0	-	11.244972
17	3	91.0	11	1929.0	1718.0	11.705605

Table 72 - Long Sequence Waveform Trial#24 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	3	51.1	14	1564.0	1167.0	0.249734
2	1	68.1	14	-	-	0.917240
3	2	79.9	6	1205.0	-	1.666297
4	1	79.2	14	-	-	2.725006
5	2	62.0	14	1977.0	-	2.891547
6	2	68.5	11	1351.0	-	3.541039
7	2	75.5	19	1110.0	-	4.921613
8	3	55.8	17	1227.0	1593.0	5.335321
9	2	88.3	9	1432.0	-	5.969646
10	3	73.6	16	1466.0	1772.0	6.714775
11	1	87.1	20	-	-	7.609206
12	2	68.0	19	1138.0	-	8.002647
13	2	77.4	19	1886.0	-	8.812062
14	2	70.3	6	1578.0	-	9.862322
15	1	73.0	9	-	-	10.196507
16	2	58.2	17	1757.0	-	10.756158
17	2	84.0	11	1797.0	-	11.395677

Table 73 - Long Sequence Waveform Trial#25 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	56.1	16	1322.0	-	0.255941
2	2	60.7	11	1832.0	-	2.267201
3	3	76.4	8	1564.0	1468.0	2.917846
4	3	93.6	14	1494.0	1359.0	4.018991
5	3	57.6	5	1867.0	1763.0	5.535171
6	1	68.0	8	-	-	6.854203
7	2	75.1	6	1170.0	-	8.176613
8	1	79.2	12	-	-	9.295223
9	2	77.3	6	1158.0	-	10.553964
10	3	85.7	7	1100.0	1870.0	11.547142

Table 74 - Long Sequence Waveform Trial#26 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	1	97.4	14	-	-	0.662208
2	2	69.0	14	1413.0	-	0.947463
3	3	53.7	6	1874.0	1138.0	2.024057
4	2	99.3	7	1702.0	-	3.128724
5	2	56.8	18	1769.0	-	4.475821
6	3	58.0	6	1931.0	1163.0	5.089775
7	1	97.3	12	-	-	5.810022
8	2	57.3	6	1651.0	-	6.897298
9	2	81.0	7	1380.0	-	7.526796
10	2	60.3	14	1690.0	-	9.187906
11	2	77.1	14	1948.0	-	9.949167
12	1	59.2	12	-	-	10.879768
13	1	86.1	15	-	-	11.680259

Table 75 - Long Sequence Waveform Trial#27 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	50.6	13	1331.0	-	0.309209
2	2	53.3	13	1455.0	-	1.735130
3	3	81.6	16	1015.0	1113.0	3.245984
4	3	86.5	18	1399.0	1163.0	5.104551
5	1	98.9	7	-	-	6.361439
6	3	59.1	12	1369.0	1717.0	7.331947
7	1	70.5	7	-	-	8.567827
8	2	84.7	14	1847.0	-	10.406416
9	1	96.4	14	-	-	11.163245

Table 76 - Long Sequence Waveform Trial#28 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	66.1	11	1929.0	-	0.158172
2	3	64.8	9	1086.0	1352.0	1.157875
3	3	61.9	18	1563.0	1232.0	1.764198
4	2	62.4	13	1018.0	-	2.597889
5	2	57.0	19	1337.0	-	2.722613
6	2	83.0	6	1585.0	-	3.714253
7	3	91.8	14	1905.0	1260.0	4.607284
8	3	55.8	10	1817.0	1902.0	4.740774
9	3	50.9	15	1388.0	1738.0	5.517179
10	1	60.7	16	-	-	6.194700
11	2	98.9	14	1443.0	-	6.775977
12	3	82.2	7	1863.0	1880.0	7.634467
13	1	99.8	16	-	-	8.595957
14	2	97.1	12	1894.0	-	9.306897
15	2	75.0	11	1069.0	-	9.771843
16	3	97.4	11	1690.0	1858.0	10.159605
17	3	59.2	17	1587.0	1256.0	10.930791
18	3	81.5	13	1289.0	1895.0	11.981153

Table 77 - Long Sequence Waveform Trial#29 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	66.3	18	1734.0	-	0.236722
2	3	83.1	17	1860.0	1130.0	1.227969
3	3	88.9	17	1955.0	1580.0	2.215296
4	3	79.5	12	1698.0	1811.0	2.463897
5	2	88.8	20	1547.0	-	3.338461
6	1	70.2	15	-	-	3.904876
7	1	71.5	8	-	-	4.963770
8	2	87.4	6	1829.0	-	5.362678
9	3	83.1	16	1211.0	1331.0	6.606711
10	3	96.5	10	1907.0	1397.0	7.342952
11	3	57.8	19	1837.0	1229.0	7.725802
12	2	99.3	13	1197.0	-	8.374330
13	2	61.2	12	1081.0	-	9.739490
14	2	52.3	14	1376.0	-	10.194745
15	2	96.9	14	1798.0	-	10.897496
16	3	72.5	9	1241.0	1554.0	11.873210

Table 78 - Long Sequence Waveform Trial#30 (Detected) HT20

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	1	81.3	7	-	-	0.392636
2	3	77.6	14	1636.0	1054.0	0.764229
3	1	80.3	6	-	-	1.746416
4	3	96.9	8	1703.0	1479.0	2.183141
5	2	65.3	16	1969.0	-	2.958181
6	1	66.0	12	-	-	4.105053
7	1	54.0	6	-	-	4.878800
8	1	56.9	18	-	-	5.473621
9	3	51.8	14	1825.0	1701.0	5.895143
10	2	95.0	19	1706.0	-	6.632200
11	2	75.3	7	1104.0	-	7.746496
12	3	69.9	11	1201.0	1367.0	7.844217
13	1	82.1	9	-	-	8.806268
14	3	52.7	15	1674.0	1326.0	9.608262
15	2	86.6	15	1241.0	-	10.022586
16	2	87.3	13	1937.0	-	11.233919
17	1	97.6	18	-	-	11.899069

Table 79 - Long Sequence Waveform Summary HT40

Long Sequence Trial	Result	Radar Frequency / Amplitude
Trial #1	Detected	5510.0MHz, -64.0dBm
Trial #2	Detected	5505.0MHz, -64.0dBm
Trial #3	Detected	5500.0MHz, -64.0dBm
Trial #4	Detected	5520.0MHz, -64.0dBm
Trial #5	Detected	5515.0MHz, -64.0dBm
Trial #6	Detected	5510.0MHz, -64.0dBm
Trial #7	Detected	5505.0MHz, -64.0dBm
Trial #8	Detected	5500.0MHz, -64.0dBm
Trial #9	Detected	5520.0MHz, -64.0dBm
Trial #10	Detected	5515.0MHz, -64.0dBm
Trial #11	Detected	5510.0MHz, -64.0dBm
Trial #12	Detected	5505.0MHz, -64.0dBm
Trial #13	Detected	5500.0MHz, -64.0dBm
Trial #14	Detected	5520.0MHz, -64.0dBm
Trial #15	Detected	5515.0MHz, -64.0dBm
Trial #16	Detected	5510.0MHz, -64.0dBm
Trial #17	Detected	5505.0MHz, -64.0dBm
Trial #18	Detected	5500.0MHz, -64.0dBm
Trial #19	Detected	5520.0MHz, -64.0dBm
Trial #20	Detected	5515.0MHz, -64.0dBm
Trial #21	Detected	5510.0MHz, -64.0dBm
Trial #22	Detected	5505.0MHz, -64.0dBm
Trial #23	Detected	5500.0MHz, -64.0dBm
Trial #24	Detected	5520.0MHz, -64.0dBm
Trial #25	Detected	5515.0MHz, -64.0dBm
Trial #26	Detected	5510.0MHz, -64.0dBm
Trial #27	Detected	5505.0MHz, -64.0dBm
Trial #28	Detected	5500.0MHz, -64.0dBm
Trial #29	Detected	5520.0MHz, -64.0dBm
Trial #30	Detected	5515.0MHz, -64.0dBm

Table 80 - Long Sequence Waveform Trial#1 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	3	69.1	5	1689.0	1972.0	0.218741
2	3	73.2	8	1166.0	1380.0	1.431977
3	2	79.4	14	1604.0	-	2.079693
4	2	88.9	12	1296.0	-	3.289273
5	2	53.6	18	1732.0	-	4.746843
6	1	53.8	8	-	-	5.542743
7	2	63.0	11	1698.0	-	6.798820
8	2	85.6	12	1187.0	-	7.367811
9	1	88.5	19	-	-	8.577932
10	3	92.8	9	1220.0	1901.0	9.722093
11	2	62.5	10	1140.0	-	10.827199
12	2	92.9	12	1511.0	-	11.123675

Table 81 - Long Sequence Waveform Trial#2 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	3	95.9	19	1149.0	1071.0	0.383953
2	1	53.9	20	-	-	1.190592
3	2	79.1	13	1381.0	-	2.253405
4	1	52.1	20	-	-	2.647805
5	3	99.9	10	1546.0	1760.0	3.950162
6	3	77.1	9	1314.0	1731.0	4.429426
7	1	98.5	9	-	-	5.104453
8	3	70.9	17	1801.0	1344.0	5.965153
9	2	65.8	18	1605.0	-	6.968375
10	1	95.6	7	-	-	7.926530
11	2	67.9	18	1985.0	-	8.438192
12	2	99.2	14	1396.0	-	8.977915
13	1	96.9	10	-	-	10.047156
14	3	70.7	8	1209.0	1437.0	10.553640
15	1	58.6	7	-	-	11.710436

Table 82 - Long Sequence Waveform Trial#3 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	65.7	16	1414.0	-	0.754249
2	1	69.9	5	-	-	1.191794
3	2	89.9	20	1581.0	-	2.760375
4	2	75.2	5	1461.0	-	3.884432
5	2	90.8	14	1314.0	-	4.551710
6	2	62.3	16	1954.0	-	5.826316
7	2	89.3	17	1414.0	-	6.775813
8	2	89.3	11	1771.0	-	8.601061
9	2	72.1	6	1081.0	-	9.423578
10	3	96.3	17	1308.0	1313.0	10.540560
11	2	59.4	16	1932.0	-	11.140516

Table 83 - Long Sequence Waveform Trial#4 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	84.6	9	1234.0	-	0.422392
2	1	96.6	14	-	-	1.644039
3	1	52.3	15	-	-	2.223526
4	3	97.6	8	1847.0	1030.0	3.323199
5	3	71.4	15	1476.0	1015.0	3.930616
6	2	72.5	5	1423.0	-	5.516399
7	2	82.6	17	1600.0	-	5.658853
8	3	78.6	10	1795.0	1329.0	6.914705
9	1	53.6	8	-	-	7.785617
10	2	51.6	7	1499.0	-	8.810911
11	3	85.0	20	1821.0	1125.0	9.500674
12	2	67.2	15	1350.0	-	10.837467
13	3	60.1	11	1814.0	1108.0	11.400310

Table 84 - Long Sequence Waveform Trial#5 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	1	90.3	15	-	-	0.258573
2	3	96.1	13	1861.0	1005.0	0.889248
3	2	61.8	17	1084.0	-	2.197969
4	2	76.2	12	1496.0	-	3.010538
5	1	93.0	7	-	-	4.067800
6	1	82.2	8	-	-	4.377960
7	3	90.4	19	1532.0	1468.0	5.633363
8	2	99.5	6	1639.0	-	6.328538
9	1	76.0	16	-	-	7.223393
10	1	55.7	8	-	-	8.414779
11	1	50.5	6	-	-	9.038216
12	2	74.3	17	1424.0	-	9.817644
13	2	72.4	18	1958.0	-	11.066241
14	1	89.5	6	-	-	11.784952

Table 85 - Long Sequence Waveform Trial#6 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	1	54.7	19	-	-	0.552279
2	2	55.3	10	1002.0	-	1.004001
3	3	72.6	11	1643.0	1413.0	2.093444
4	2	79.9	11	1345.0	-	2.448666
5	2	89.2	15	1980.0	-	3.415111
6	2	78.5	10	1214.0	-	4.578412
7	3	85.8	13	1718.0	1590.0	4.884661
8	1	69.7	14	-	-	5.798771
9	2	85.2	12	1253.0	-	6.837790
10	2	75.0	5	1947.0	-	7.343692
11	2	89.8	9	1541.0	-	8.330252
12	1	97.7	14	-	-	8.921272
13	2	56.6	15	1796.0	-	10.346534
14	2	71.0	8	1725.0	-	10.898942
15	2	59.9	18	1005.0	-	11.356852

Table 86 - Long Sequence Waveform Trial#7 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	51.5	6	1777.0	-	0.626999
2	2	90.8	6	1292.0	-	1.990004
3	2	71.2	17	1667.0	-	2.783025
4	1	69.4	16	-	-	4.059031
5	2	78.8	10	1844.0	-	5.443215
6	1	58.0	12	-	-	6.010669
7	2	98.4	10	1471.0	-	7.254244
8	3	51.8	17	1264.0	1312.0	7.926790
9	2	86.9	19	1746.0	-	9.159636
10	2	61.7	19	1542.0	-	10.815522
11	3	78.7	12	1557.0	1931.0	11.991605

Table 87 - Long Sequence Waveform Trial#8 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	1	76.0	16	-	-	0.308407
2	2	61.4	8	1597.0	-	1.140577
3	2	73.4	6	1571.0	-	1.977605
4	2	58.7	19	1229.0	-	3.114902
5	2	65.1	15	1416.0	-	3.534844
6	1	94.4	13	-	-	4.423805
7	2	84.2	20	1922.0	-	5.590127
8	2	94.9	17	1074.0	-	6.591513
9	2	66.1	6	1052.0	-	7.327421
10	1	67.3	13	-	-	8.209337
11	1	68.6	12	-	-	9.205063
12	1	60.7	14	-	-	9.837698
13	2	62.8	8	1426.0	-	10.723200
14	3	78.5	12	1073.0	1376.0	11.625193

Table 88 - Long Sequence Waveform Trial#9 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	60.1	13	1686.0	-	0.155643
2	2	57.7	9	1499.0	-	1.382048
3	2	98.5	8	1393.0	-	2.180962
4	2	63.9	16	1760.0	-	3.025139
5	2	93.4	15	1068.0	-	4.103464
6	2	75.1	17	1334.0	-	4.577051
7	2	82.7	13	1889.0	-	5.853988
8	2	58.3	14	1483.0	-	6.698950
9	3	62.5	8	1188.0	1271.0	7.023621
10	2	78.4	18	1062.0	-	8.260566
11	2	93.7	8	1027.0	-	8.953501
12	2	61.1	15	1004.0	-	9.953340
13	3	84.6	12	1495.0	1109.0	10.443455
14	3	66.9	5	1417.0	1274.0	11.530966

Table 89 - Long Sequence Waveform Trial#10 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	91.6	13	1705.0	-	1.104957
2	3	95.2	19	1128.0	1818.0	1.963863
3	2	92.5	18	1100.0	-	2.587005
4	2	88.2	9	1326.0	-	3.834348
5	2	93.0	8	1047.0	-	5.638009
6	2	51.3	15	1597.0	-	6.851419
7	3	86.8	17	1722.0	1537.0	7.913074
8	3	55.0	10	1157.0	1259.0	9.406595
9	3	98.1	18	1313.0	1763.0	10.632739
10	3	71.5	11	1930.0	1403.0	11.552709

Table 90 - Long Sequence Waveform Trial#11 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	85.0	19	1254.0	-	0.469222
2	2	99.2	10	1463.0	-	0.943766
3	2	51.3	16	1333.0	-	1.664305
4	2	54.3	16	1781.0	-	2.418239
5	3	91.3	10	1691.0	1897.0	3.206187
6	3	74.0	5	1497.0	1460.0	3.756003
7	1	72.1	17	-	-	4.566874
8	1	97.7	18	-	-	5.172774
9	2	81.8	19	1870.0	-	5.646537
10	2	57.3	17	1518.0	-	6.543983
11	3	86.3	8	1228.0	1385.0	6.871117
12	2	63.4	10	1076.0	-	7.470806
13	1	69.8	18	-	-	8.432150
14	2	81.5	11	1044.0	-	8.946909
15	1	79.4	17	-	-	9.585733
16	2	60.5	12	1483.0	-	10.632906
17	3	58.4	13	1307.0	1042.0	11.110744
18	1	70.9	6	-	-	11.922192

Table 91 - Long Sequence Waveform Trial#12 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	66.3	8	1893.0	-	0.012830
2	2	55.5	13	1097.0	-	1.240283
3	3	96.0	14	1897.0	1502.0	1.497830
4	3	53.2	19	1506.0	1667.0	2.505672
5	1	97.0	10	-	-	3.030532
6	1	76.9	14	-	-	3.531056
7	2	66.5	9	1110.0	-	4.636584
8	2	97.3	18	1102.0	-	5.217234
9	2	57.3	20	1211.0	-	5.884576
10	1	50.6	13	-	-	6.665419
11	2	59.5	19	1984.0	-	7.574074
12	3	61.8	15	1006.0	1712.0	8.466463
13	2	84.0	14	1292.0	-	8.612727
14	2	77.2	8	1284.0	-	9.771481
15	3	78.7	14	1840.0	1751.0	10.275413
16	3	65.4	12	1814.0	1572.0	10.715334
17	1	54.4	8	-	-	11.555826

Table 92 - Long Sequence Waveform Trial#13 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	60.3	15	1498.0	-	0.674586
2	2	77.2	18	1450.0	-	1.970317
3	3	79.6	16	1771.0	1177.0	2.993957
4	1	69.2	9	-	-	4.017667
5	1	69.1	10	-	-	5.321907
6	2	74.1	5	1053.0	-	6.432247
7	2	59.5	10	1385.0	-	7.824683
8	3	96.0	12	1323.0	1317.0	8.857902
9	2	98.8	6	1653.0	-	10.142384
10	2	77.4	8	1280.0	-	10.934576

Table 93 - Long Sequence Waveform Trial#14 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	3	61.7	18	1913.0	1410.0	0.053137
2	1	97.2	15	-	-	2.663527
3	2	87.5	18	1649.0	-	3.299223
4	3	97.3	6	1188.0	1585.0	5.221125
5	2	82.0	15	1473.0	-	6.916094
6	2	81.1	19	1346.0	-	7.719304
7	3	61.7	15	1695.0	1686.0	9.956790
8	1	52.6	15	-	-	10.605885

Table 94 - Long Sequence Waveform Trial#15 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	84.1	12	1897.0	-	0.192105
2	3	56.5	7	1781.0	1721.0	1.580241
3	2	95.8	6	1462.0	-	2.426395
4	1	67.9	11	-	-	4.039262
5	3	59.5	6	1176.0	1604.0	4.808261
6	2	76.1	8	1013.0	-	5.601101
7	3	74.2	12	1786.0	1064.0	7.189206
8	2	63.7	16	1980.0	-	8.627036
9	1	87.0	9	-	-	8.800981
10	3	51.0	12	1013.0	1924.0	10.756781
11	1	56.0	8	-	-	11.417339

Table 95 - Long Sequence Waveform Trial#16 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	73.1	17	1738.0	-	0.753926
2	2	98.0	16	1703.0	-	2.027669
3	3	68.3	8	1361.0	1309.0	3.153786
4	2	96.9	8	1689.0	-	3.739661
5	3	69.8	9	1979.0	1987.0	4.984912
6	2	51.3	15	1373.0	-	6.013268
7	3	76.4	17	1191.0	1349.0	7.398676
8	2	66.4	8	1723.0	-	8.426801
9	3	53.3	6	1385.0	1834.0	9.394471
10	2	91.6	19	1673.0	-	10.369378
11	2	61.4	19	1713.0	-	10.957818

Table 96 - Long Sequence Waveform Trial#17 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	1	52.9	17	-	-	0.794278
2	2	98.3	19	1829.0	-	0.944818
3	3	52.2	16	1625.0	1657.0	2.725041
4	2	98.3	9	1335.0	-	2.932860
5	2	65.8	16	1046.0	-	4.269654
6	1	69.7	17	-	-	5.299357
7	1	59.8	18	-	-	5.816673
8	2	73.6	17	1574.0	-	7.285346
9	2	51.1	19	1348.0	-	7.730499
10	3	80.7	10	1254.0	1613.0	8.440950
11	2	56.7	5	1739.0	-	10.082878
12	1	51.1	11	-	-	10.935619
13	2	91.6	15	1217.0	-	11.177729

Table 97 - Long Sequence Waveform Trial#18 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	63.1	19	1579.0	-	0.686008
2	2	89.4	8	1506.0	-	1.178863
3	2	51.6	5	1543.0	-	1.716825
4	2	81.5	17	1383.0	-	2.781640
5	1	80.8	18	-	-	3.644336
6	3	62.7	11	1799.0	1633.0	4.489481
7	1	78.2	17	-	-	4.908564
8	2	85.9	6	1069.0	-	5.273050
9	3	62.6	19	1770.0	1638.0	6.254376
10	1	81.8	17	-	-	6.752821
11	2	71.2	12	1699.0	-	7.900054
12	3	66.4	7	1114.0	1979.0	8.589581
13	2	67.7	12	1251.0	-	9.083823
14	2	77.8	11	1944.0	-	10.132859
15	2	72.8	7	1067.0	-	10.642498
16	3	63.8	9	1979.0	1642.0	11.335740

Table 98 - Long Sequence Waveform Trial#19 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	3	60.7	8	1459.0	1038.0	0.118223
2	3	95.1	16	1390.0	1367.0	1.746788
3	2	55.6	12	1014.0	-	2.740936
4	3	72.9	11	1261.0	1406.0	3.647239
5	2	64.3	19	1068.0	-	5.356657
6	2	75.3	17	1349.0	-	5.469398
7	1	53.8	19	-	-	7.107147
8	2	67.1	19	1345.0	-	8.449829
9	2	93.5	12	1102.0	-	8.831093
10	3	61.7	8	1706.0	1941.0	10.584498
11	2	72.0	15	1882.0	-	11.746872

Table 99 - Long Sequence Waveform Trial#20 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	3	50.8	15	1506.0	1483.0	0.108615
2	1	54.0	11	-	-	1.242826
3	3	64.3	8	1918.0	1499.0	1.715663
4	3	52.2	9	1165.0	1031.0	3.116292
5	2	77.7	6	1085.0	-	3.647705
6	2	60.1	5	1744.0	-	4.451420
7	2	88.6	13	1923.0	-	5.685341
8	2	51.2	12	1310.0	-	6.679777
9	2	61.4	15	1146.0	-	7.509662
10	2	95.4	13	1401.0	-	8.089719
11	2	86.9	17	1418.0	-	9.371658
12	2	61.3	9	1451.0	-	9.438187
13	1	51.4	6	-	-	10.926741
14	2	64.6	6	1730.0	-	11.378819

Table 100 - Long Sequence Waveform Trial#21 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	3	73.7	18	1133.0	1980.0	0.585912
2	1	85.8	15	-	-	1.447327
3	2	63.1	7	1103.0	-	1.876660
4	1	96.3	7	-	-	2.893802
5	1	93.4	14	-	-	3.981509
6	2	97.8	16	1144.0	-	4.624030
7	2	59.9	6	1619.0	-	5.604584
8	1	79.0	10	-	-	6.628436
9	1	88.8	16	-	-	7.445445
10	3	77.7	18	1520.0	1266.0	7.809240
11	2	67.0	19	1709.0	-	9.054883
12	1	80.6	7	-	-	9.578568
13	2	69.1	6	1553.0	-	10.519290
14	1	82.9	6	-	-	11.210694

Table 101 - Long Sequence Waveform Trial#22 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	3	80.7	5	1924.0	1790.0	0.437122
2	3	60.4	14	1145.0	1394.0	1.220822
3	3	63.9	7	1976.0	1699.0	2.114237
4	3	79.6	9	1798.0	1235.0	3.538695
5	2	69.2	6	1845.0	-	4.962192
6	1	63.5	19	-	-	5.803419
7	1	96.5	9	-	-	6.856037
8	2	79.2	6	1954.0	-	7.370618
9	2	79.1	8	1139.0	-	8.565008
10	2	58.9	18	1079.0	-	9.295077
11	2	55.0	12	1289.0	-	10.244596
12	3	89.8	18	1140.0	1941.0	11.512049

Table 102 - Long Sequence Waveform Trial#23 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	1	50.6	10	-	-	0.114877
2	2	70.3	8	1288.0	-	0.984626
3	2	84.3	14	1219.0	-	2.079373
4	3	77.8	15	1410.0	1938.0	3.044446
5	3	60.8	19	1185.0	1814.0	3.808376
6	2	69.7	12	1848.0	-	4.936302
7	3	77.4	19	1265.0	1490.0	5.849874
8	2	73.8	15	1167.0	-	6.657285
9	2	82.9	18	1602.0	-	8.041157
10	2	58.7	19	1572.0	-	9.026864
11	1	52.9	8	-	-	10.035123
12	1	78.4	8	-	-	10.381860
13	2	98.3	18	1440.0	-	11.394215

Table 103 - Long Sequence Waveform Trial#24 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	73.5	9	1659.0	-	0.584390
2	2	81.0	20	1513.0	-	1.153325
3	1	79.3	16	-	-	2.726941
4	3	56.3	17	1526.0	1013.0	3.380960
5	1	65.9	10	-	-	4.439458
6	3	73.9	17	1282.0	1613.0	5.302463
7	2	53.1	15	1578.0	-	6.366794
8	1	99.5	7	-	-	7.234979
9	2	74.6	7	1664.0	-	7.586982
10	3	75.7	11	1899.0	1447.0	8.944343
11	2	77.8	16	1097.0	-	9.493103
12	1	85.3	9	-	-	10.909444
13	2	81.8	9	1445.0	-	11.582889

Table 104 - Long Sequence Waveform Trial#25 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	1	77.7	8	-	-	0.456562
2	3	82.6	11	1504.0	1848.0	1.129539
3	1	99.5	8	-	-	1.796084
4	3	68.9	14	1526.0	1015.0	2.034585
5	1	91.6	18	-	-	3.117371
6	3	83.5	10	1592.0	1792.0	3.589118
7	2	88.6	5	1497.0	-	4.390196
8	1	59.7	9	-	-	5.009698
9	2	86.0	6	1299.0	-	5.461697
10	2	54.7	17	1407.0	-	5.863149
11	2	65.2	20	1154.0	-	6.862581
12	3	53.0	20	1786.0	1736.0	7.414830
13	1	87.1	17	-	-	7.725984
14	3	72.6	11	1197.0	1721.0	8.308541
15	1	91.9	14	-	-	9.380143
16	2	79.3	8	1291.0	-	10.094371
17	1	81.0	12	-	-	10.282305
18	2	52.1	6	1887.0	-	10.956959
19	2	92.1	12	1403.0	-	11.867331

Table 105 - Long Sequence Waveform Trial#26 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	72.5	17	1030.0	-	0.467961
2	1	67.1	10	-	-	0.875259
3	2	84.5	6	1940.0	-	1.471235
4	2	73.6	10	1451.0	-	1.957413
5	2	90.6	18	1907.0	-	2.633382
6	2	53.2	18	1153.0	-	3.651527
7	2	80.4	14	1108.0	-	3.798964
8	1	86.9	19	-	-	4.650356
9	2	87.5	18	1278.0	-	5.523093
10	2	63.7	20	1363.0	-	5.929060
11	2	65.4	16	1693.0	-	6.799226
12	1	73.0	20	-	-	7.131355
13	2	89.6	7	1224.0	-	7.647342
14	2	60.4	17	1366.0	-	8.763365
15	2	76.7	19	1825.0	-	8.994147
16	2	75.3	14	1734.0	-	9.897522
17	2	97.5	19	1688.0	-	10.629301
18	3	56.5	9	1034.0	1470.0	11.096386
19	3	55.1	15	1555.0	1093.0	11.714347

Table 106 - Long Sequence Waveform Trial#27 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	1	86.8	15	-	-	0.361832
2	2	54.9	6	1324.0	-	1.133650
3	2	87.1	18	1776.0	-	1.931509
4	2	73.2	8	1544.0	-	2.607562
5	1	51.2	19	-	-	3.409618
6	3	90.7	17	1917.0	1635.0	4.133007
7	1	80.0	9	-	-	4.464914
8	2	60.4	17	1591.0	-	5.628804
9	3	68.5	15	1985.0	1030.0	5.870185
10	2	77.7	11	1001.0	-	6.972011
11	2	63.5	15	1616.0	-	7.062858
12	2	68.9	7	1542.0	-	8.101913
13	2	67.0	6	1502.0	-	9.100816
14	1	72.9	6	-	-	9.686617
15	1	79.3	8	-	-	9.992073
16	2	60.5	7	1455.0	-	10.865722
17	2	58.6	9	1662.0	-	11.806885

Table 107 - Long Sequence Waveform Trial#28 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	83.7	16	1718.0	-	0.321470
2	2	94.6	10	1691.0	-	2.531900
3	2	97.4	16	1739.0	-	3.186123
4	2	70.3	18	1079.0	-	4.889887
5	3	52.1	7	1682.0	1475.0	5.916493
6	1	62.7	14	-	-	6.928832
7	3	81.7	11	1879.0	1109.0	9.216623
8	1	68.2	6	-	-	10.528290
9	2	77.3	15	1387.0	-	11.536724

Table 108 - Long Sequence Waveform Trial#29 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	3	88.8	8	1631.0	1881.0	0.604293
2	2	94.0	6	1090.0	-	1.623531
3	3	74.2	7	1531.0	1821.0	3.443282
4	2	96.1	11	1624.0	-	4.305641
5	2	80.5	9	1584.0	-	5.670353
6	2	65.6	16	1375.0	-	6.875770
7	2	56.5	7	1932.0	-	8.611940
8	3	74.1	16	1382.0	1575.0	10.415559
9	1	85.8	6	-	-	11.732401

Table 109 - Long Sequence Waveform Trial#30 (Detected) HT40

Burst #	# Pulses	Pulse Width (us)	Chirp (MHz)	Interval 1 to 2 (us)	Interval 2 to 3 (us)	Start time (s)
1	2	76.0	14	1881.0	-	0.228733
2	2	82.6	14	1659.0	-	1.571284
3	2	83.4	14	1591.0	-	2.211420
4	2	82.5	18	1772.0	-	3.463120
5	2	65.6	17	1723.0	-	3.874295
6	1	83.1	11	-	-	4.711528
7	3	77.5	18	1369.0	1021.0	5.936534
8	3	95.0	5	1307.0	1779.0	6.805933
9	1	73.1	7	-	-	8.137886
10	2	51.9	12	1657.0	-	8.415603
11	2	61.8	19	1200.0	-	9.627031
12	2	85.0	17	1500.0	-	11.020675
13	2	62.4	17	1582.0	-	11.142561

Appendix C Test Data Tables and Plots for Channel Closing**FCC PART 15 SUBPART E Channel Closing Measurements**

Table 110 - FCC Part 15 Subpart E Channel Closing Test Results (HT10)					
Waveform Type	Channel Closing Transmission Time ¹		Channel Move Time		Result
	Measured	Limit	Measured	Limit	
Radar Type 1	0.9ms	60 ms	0.5s	10 s	PASS
Radar Type 5	0ms	60 ms	0s	10 s	PASS

After the final channel closing test the channel was monitored for a further 30 minutes. No transmissions occurred on the channel.

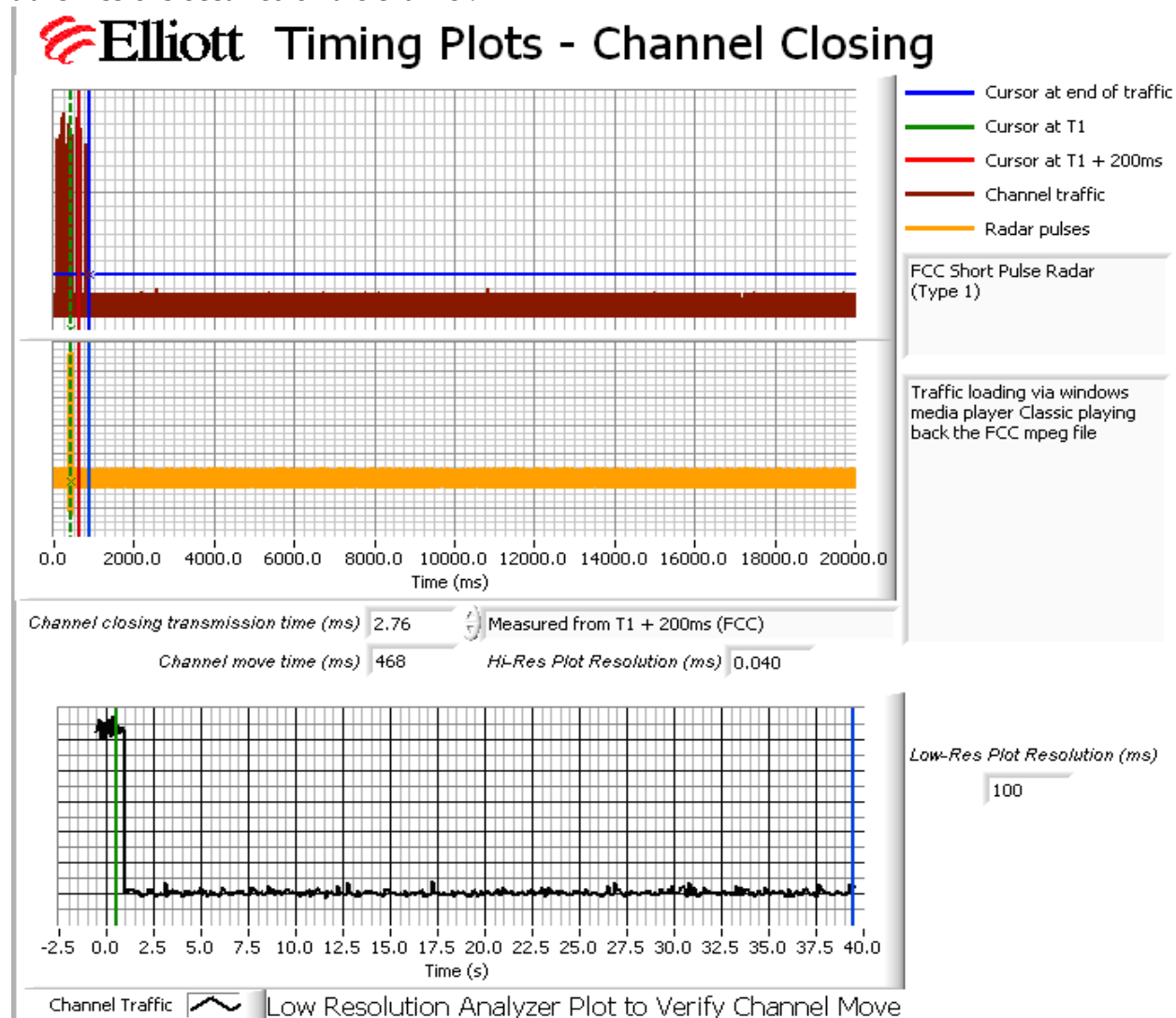


Figure 2 Channel Closing Time and Channel Move Time (Radar Type 1) Master – 40 second plot

¹ Channel closing time for FCC measurements is the aggregate transmission time starting from 200ms after the end of the radar signal to the completion of the channel move.

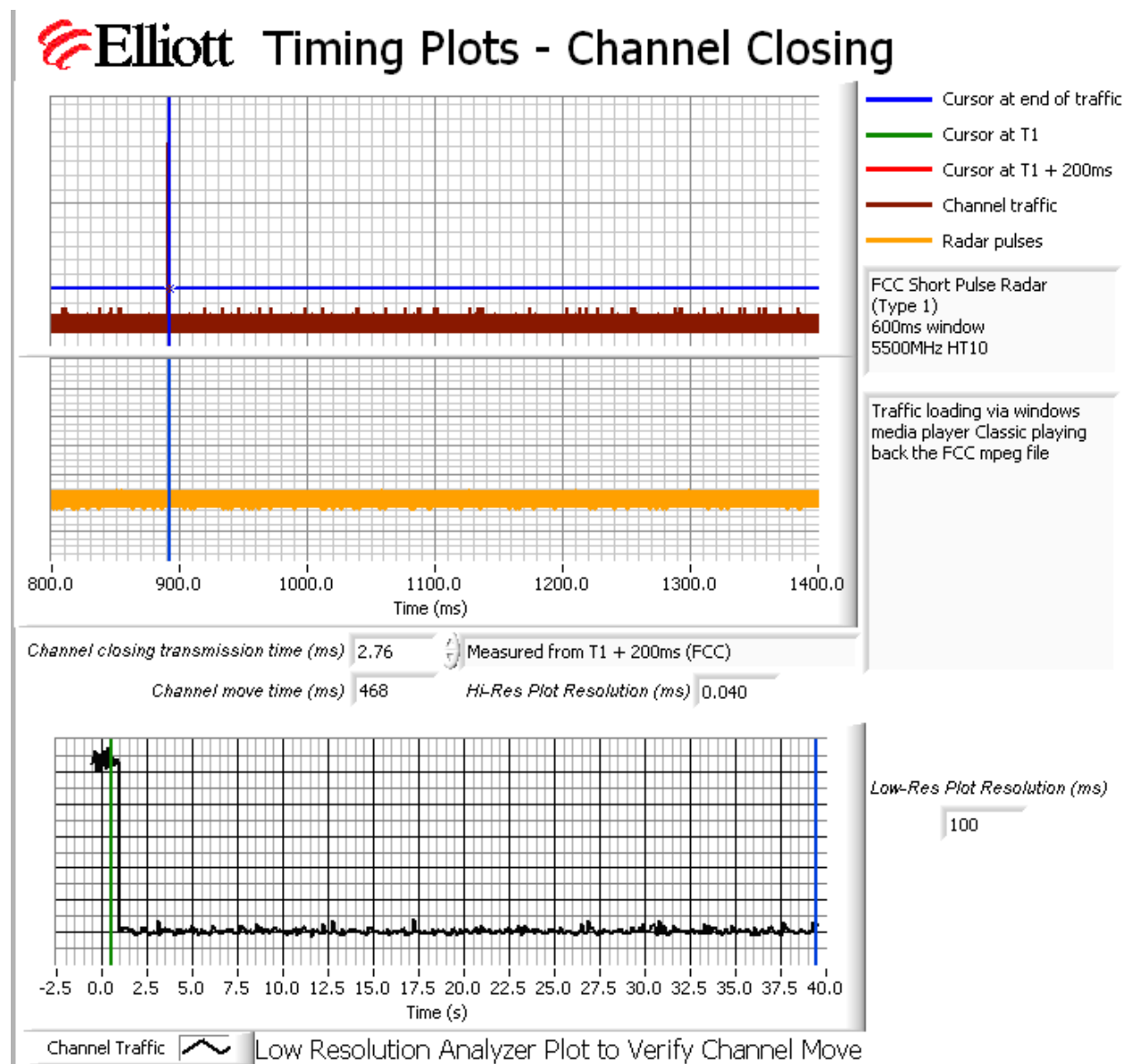


Figure 3 Close-Up of Transmissions Occurring More Than 200ms After The End of Radar Type 1 Master (HT10)

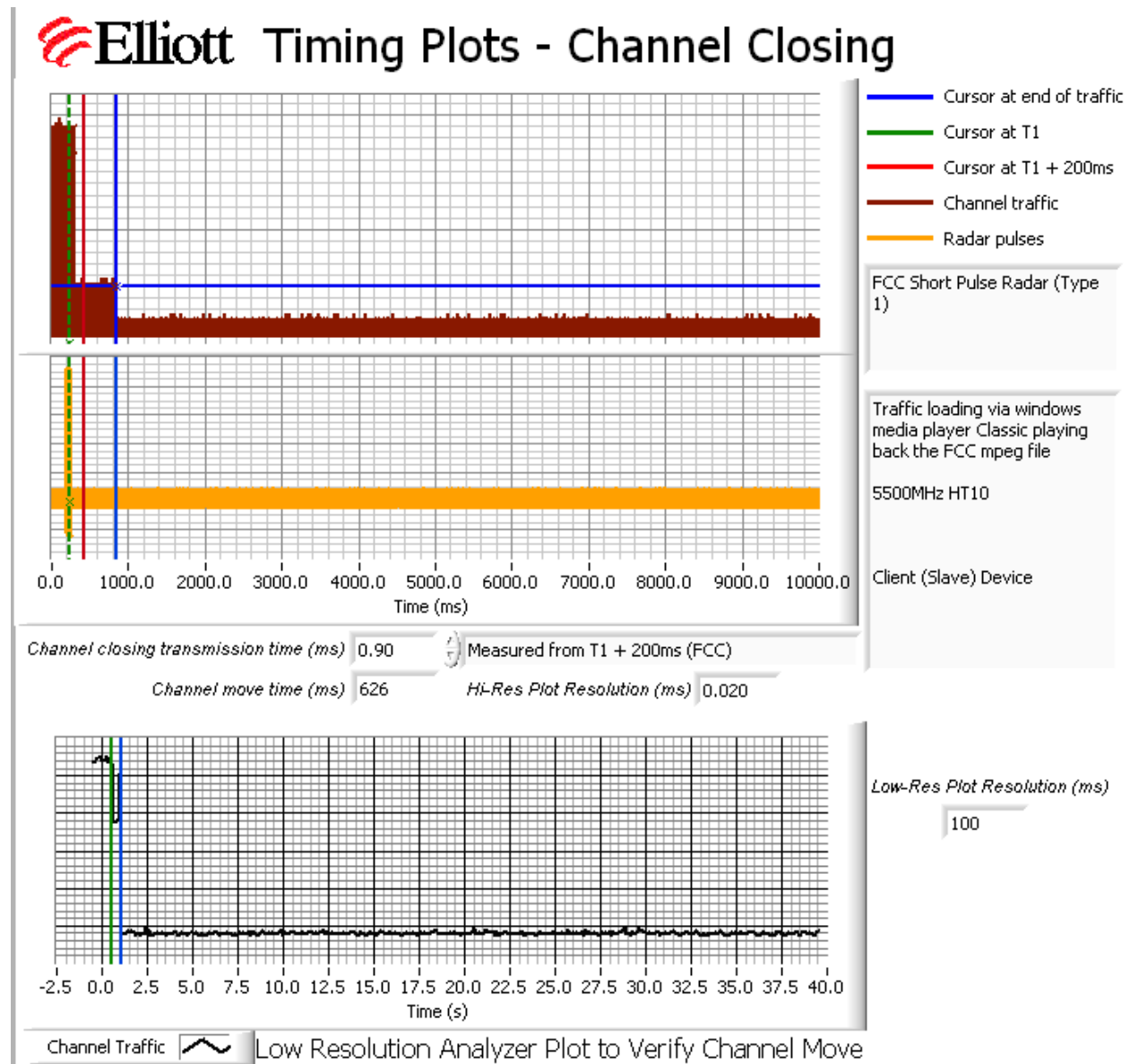


Figure 4 Channel Closing Time and Channel Move Time (Radar Type 5) Master – 40 second plot (HT10)

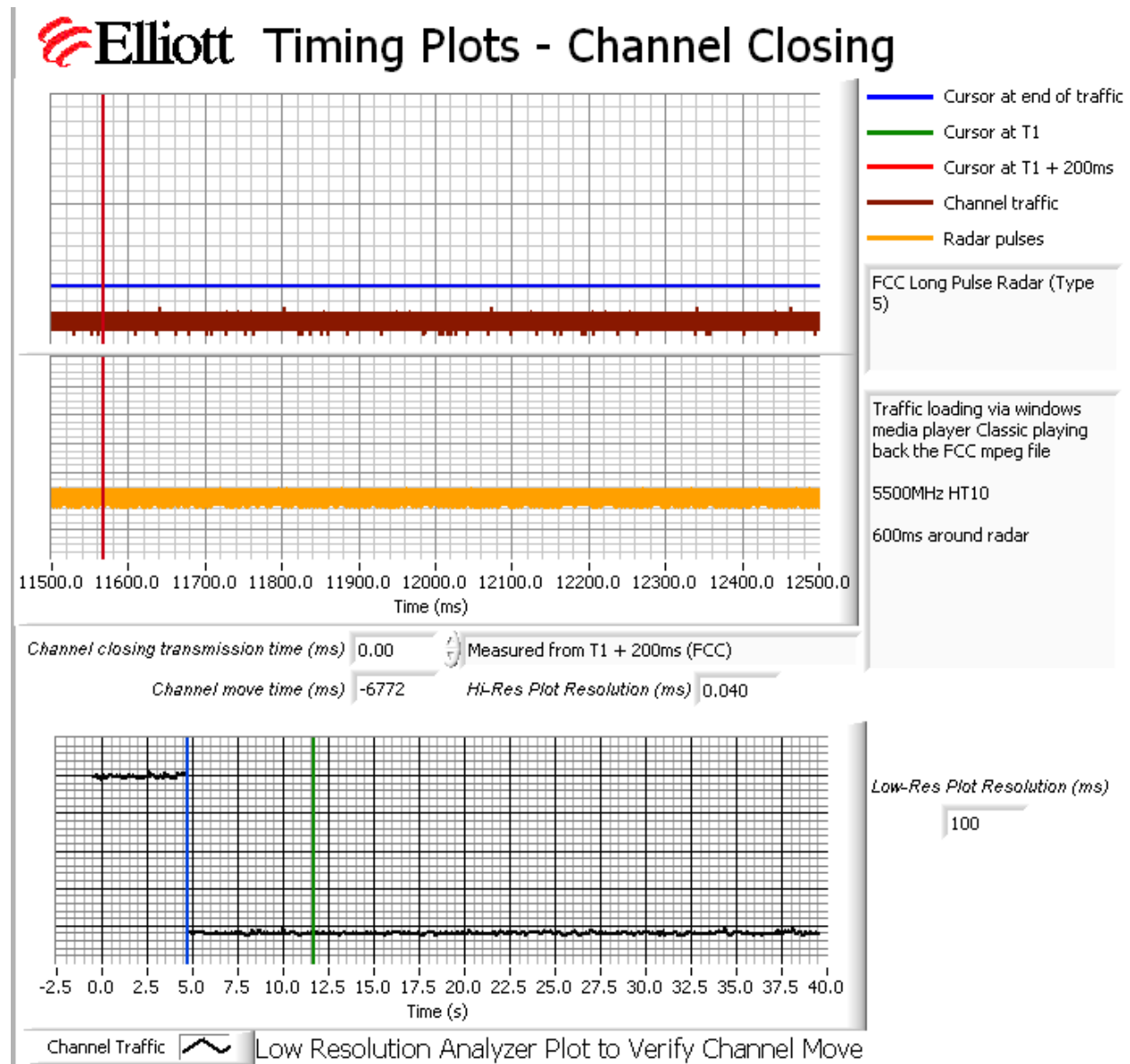


Figure 5 Close-Up of Transmissions Occurring More Than 200ms After The End of Radar Master Type 5 (HT10)

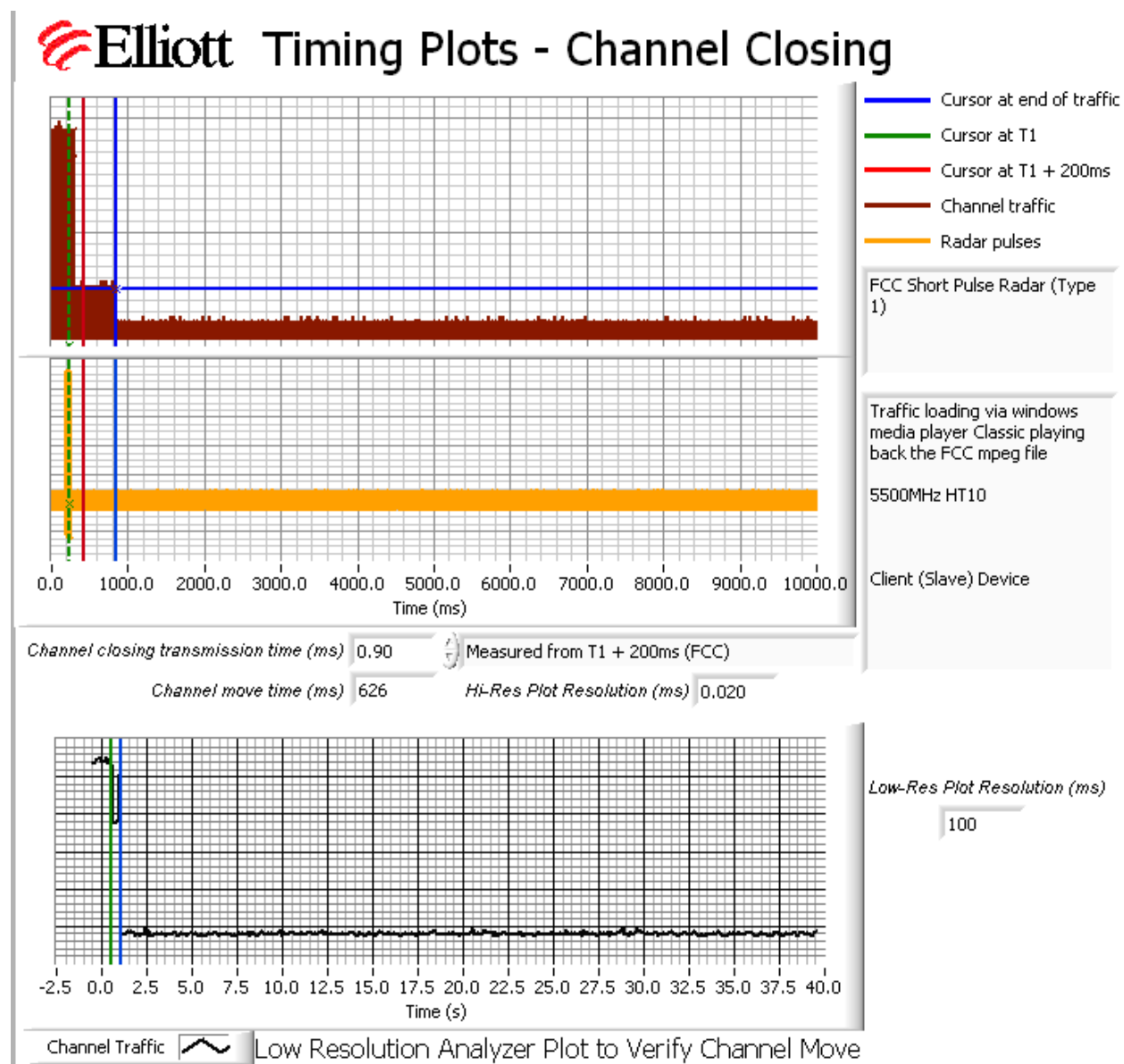


Figure 6 Channel Closing Time and Channel Move Time (Radar Type 1) Client– 40 second plot (HT10)

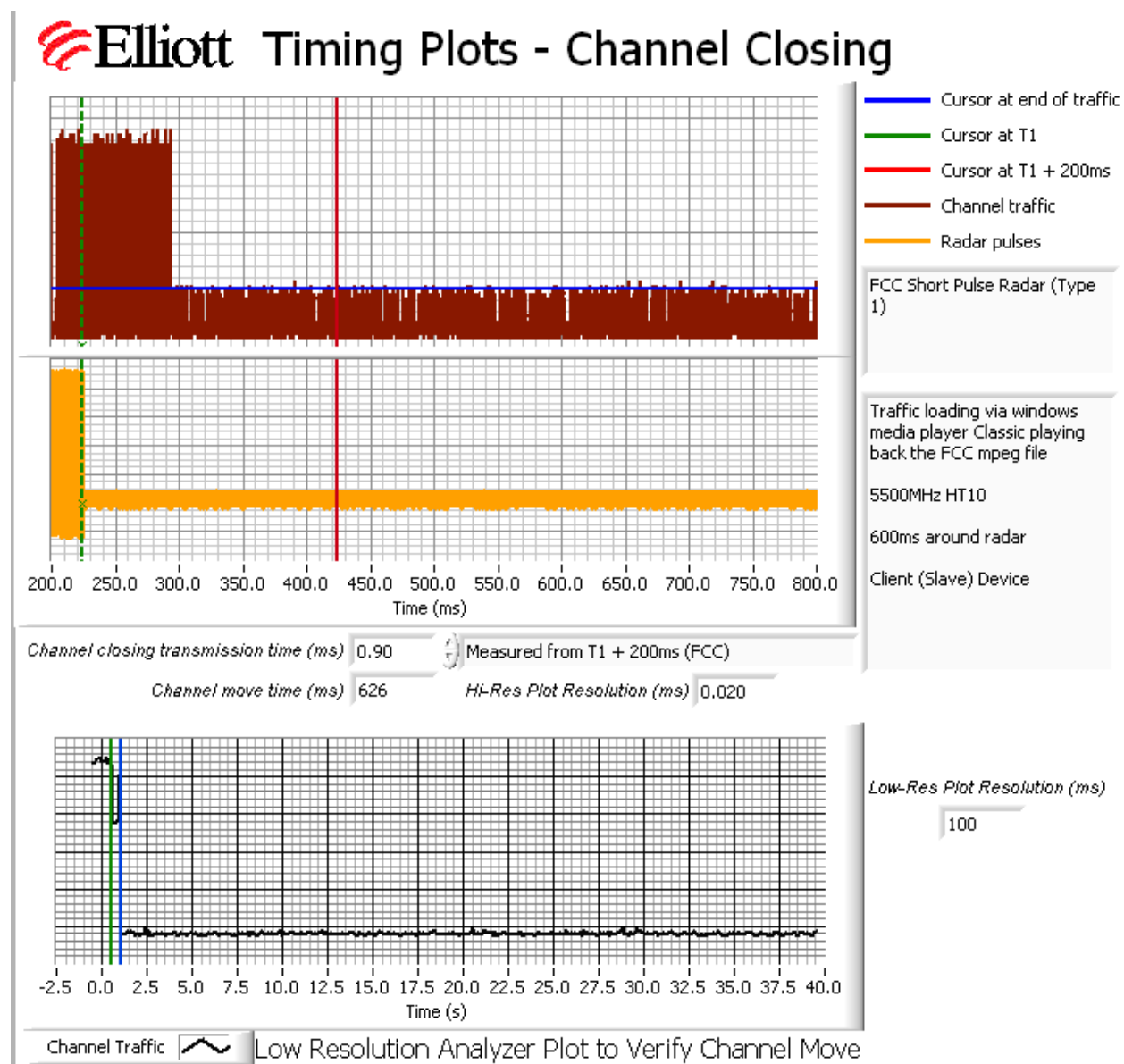


Figure 7 Close-Up of Transmissions Occurring More Than 200ms After The End of Radar Type 1 Client (HT10)

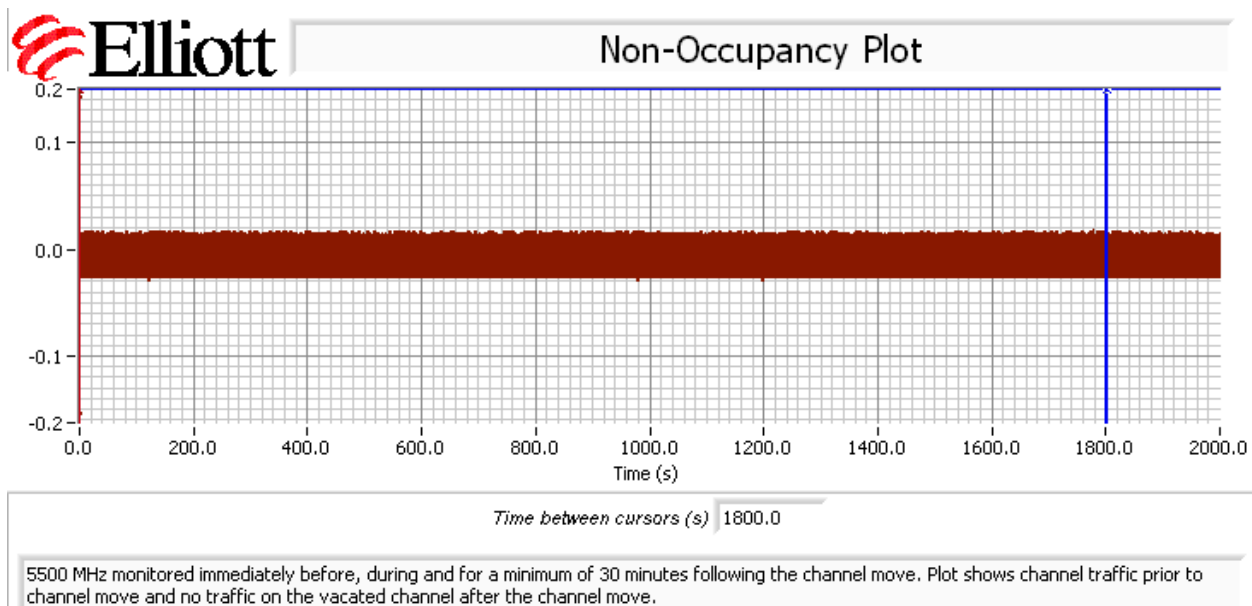


Figure 8 Radar Channel Non-occupancy Plot

The non-occupancy plot was made over a 30-minute time period following the channel move time with the analyzer IF output connected to the scope and tuned to the vacated channel. No transmissions were observed after the channel move had been completed.

Appendix D Test Data – Channel Availability Check**5250- 5350 MHz, 5470 – 5725 MHz**

The first plot shows the first transmissions on a channel after restarting/power cycling the master device, with no radar applied during the CAC. The start of CAC is assumed to be 60 seconds before the first transmission as indicated by the green cursor line.

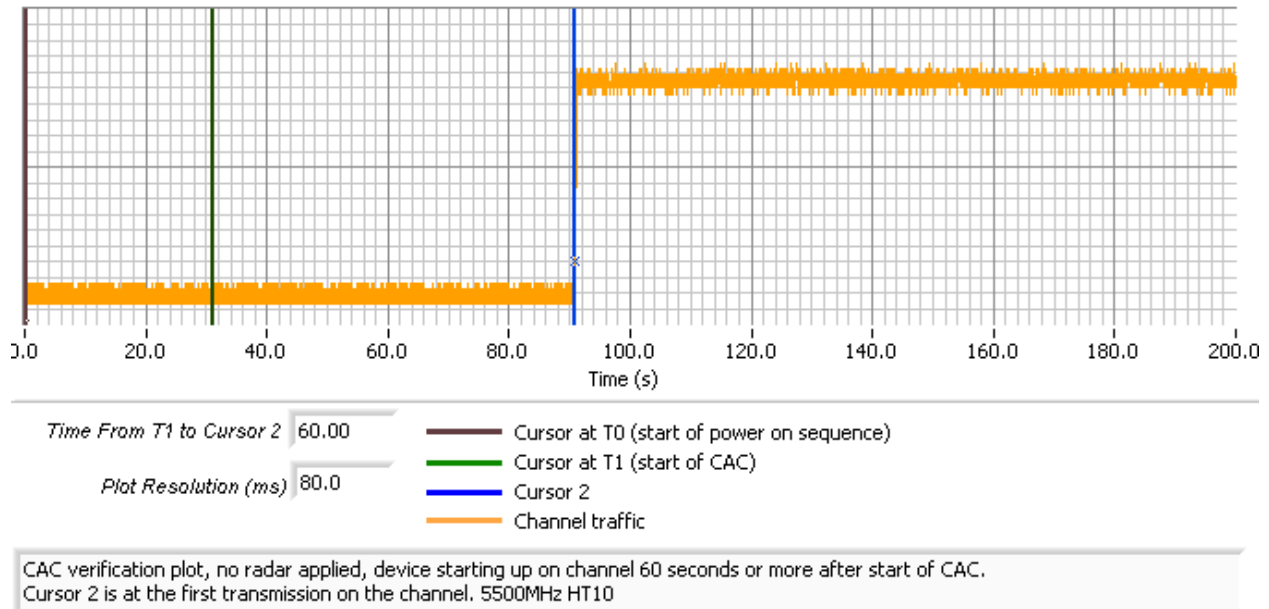
Timing Plots - Channel Availability Check

Figure 9 Plot of EUT Start-Up After CAC (HT10)

The channel availability check (CAC) was made by applying type 1 radar during either the first 6 seconds or last 6 seconds of the CAC period.

The level of the radar signal applied was -63dBm. Measurements were made on channels within 5470-5725 MHz band.

The start time is the same for each of the plots and the green cursor is positioned to coincide with the start of the Channel Availability Check period based on the plot taken with no radar applied during the CAC.

The plots show that there were no transmissions on the channel after the radar burst was applied during the CAC, and confirm that the CAC is at least 60 seconds. The description of “Channel Traffic” in the plot legend indicates the transmissions from both the radar system and the EUT on the start-up channel. In all cases only the radar burst is observed. The resolution of the plot is not fine enough to resolve the individual pulses within the burst.

Timing Plots - Channel Availability Check

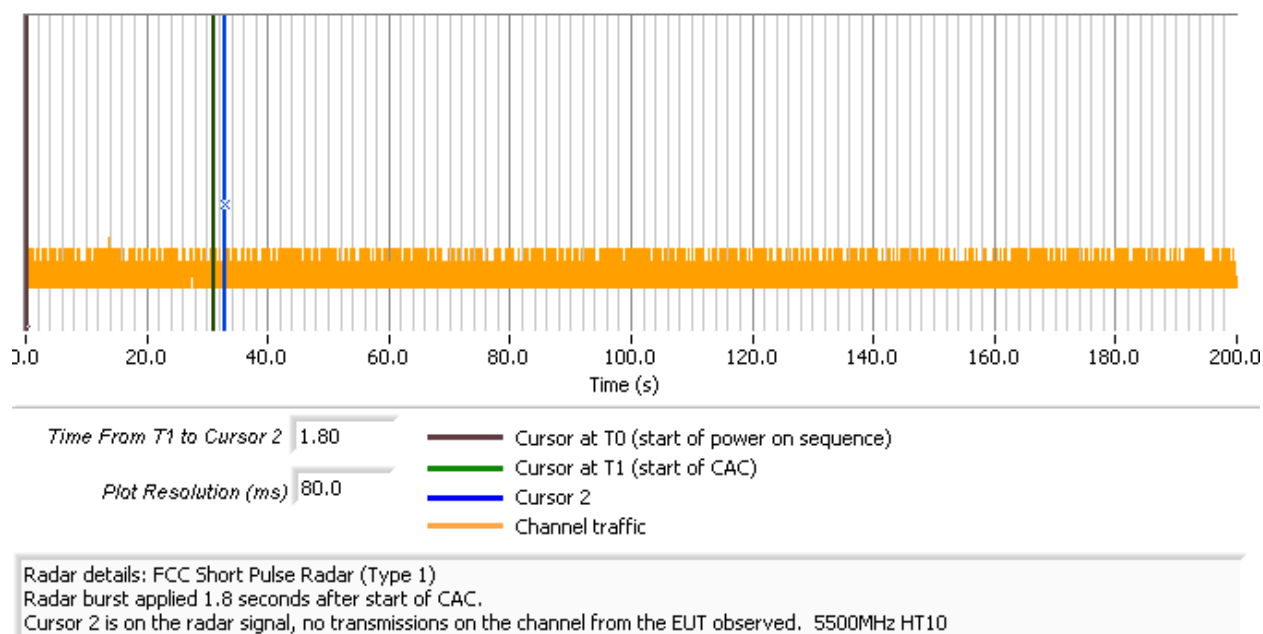


Figure 10 Radar Applied At Start of CAC (HT20)

Timing Plots - Channel Availability Check

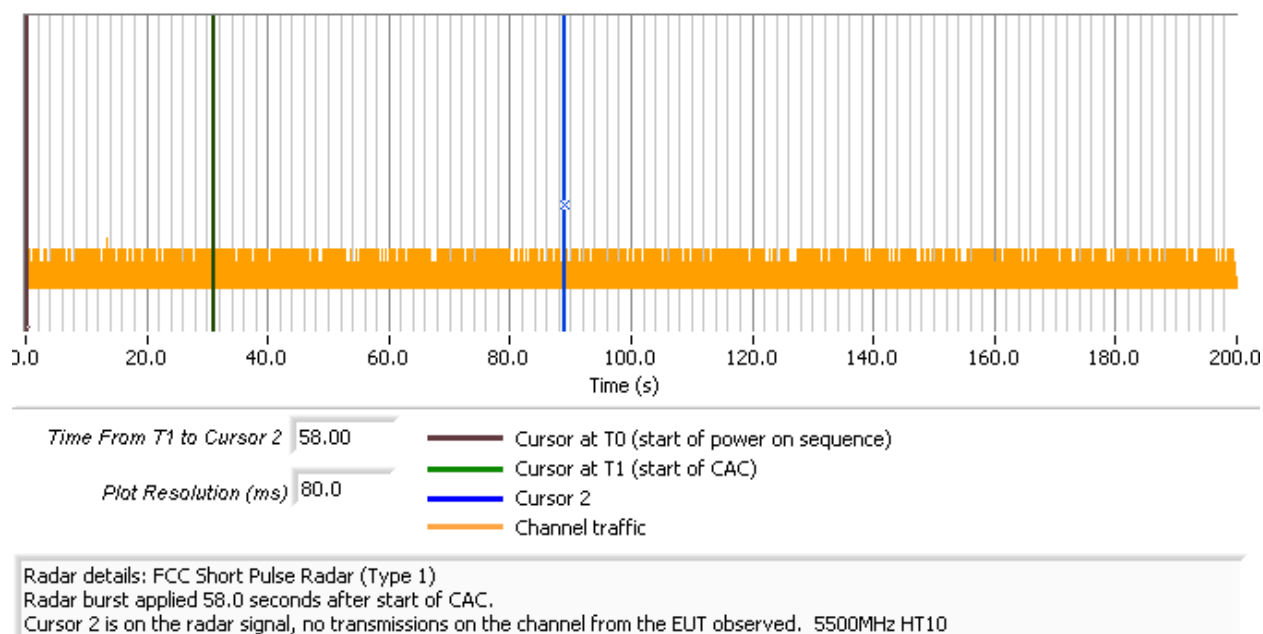
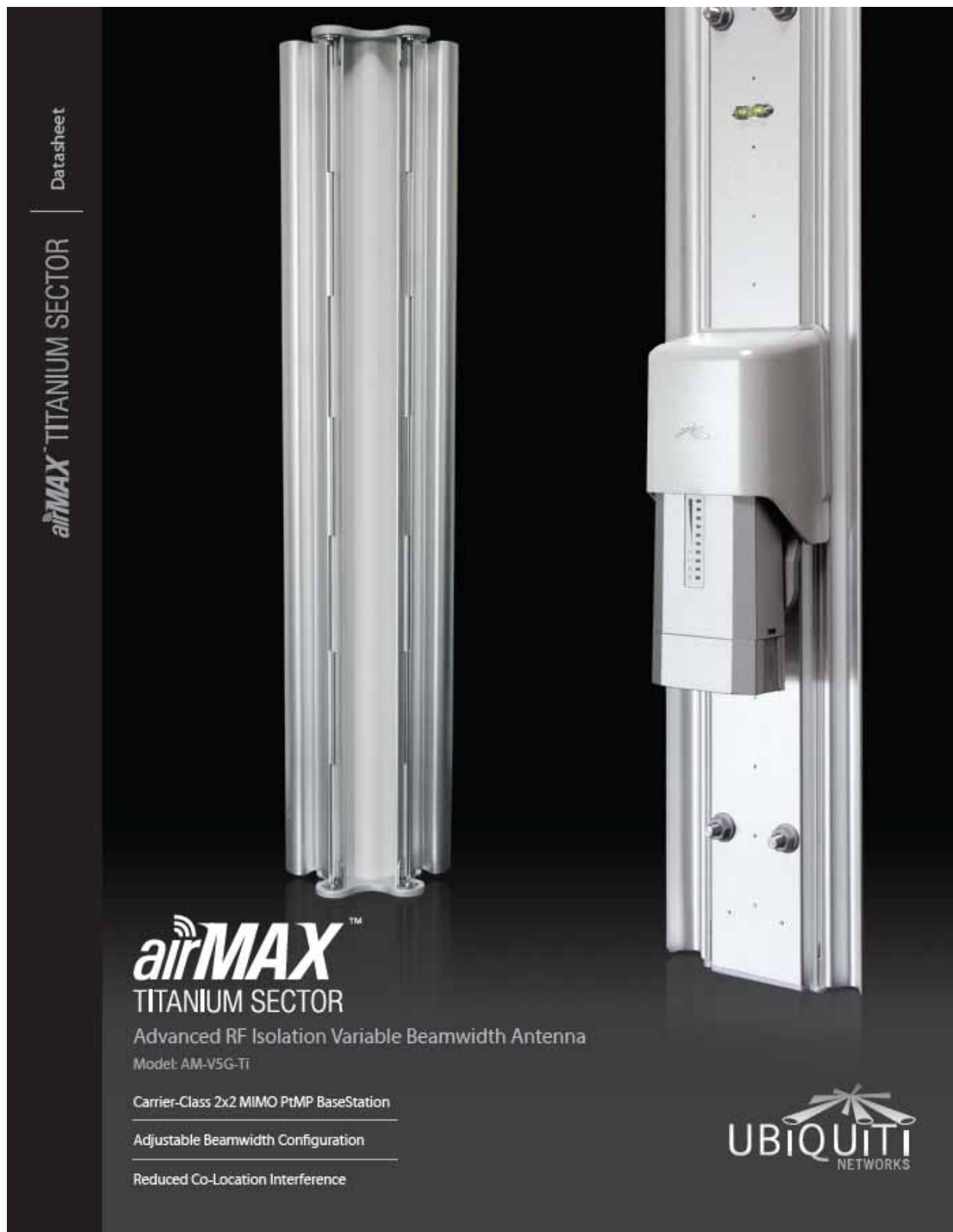


Figure 11 Radar Applied At End of CAC (HT20)

Appendix E Test Data –Antenna Specification



airMAX™
TITANIUM SECTOR**Advanced Carrier-Class
PtMP Basestation Antenna**

Introducing the airMAX Titanium Sector, which continues the evolution of Ubiquiti's best-in-class sector antennas. Advanced RF isolation and variable beamwidth configuration put the Titanium Sector at the forefront of sector antenna technology.

**Reduced Co-Location
Interference**

Drawing on Ubiquiti's depth of electrical and mechanical engineering expertise, Ubiquiti has developed the airMAX Titanium Sector to be highly resistant to noise interference in co-location deployments.

**Adjustable Beamwidth
Configuration**

Having adjustable beamwidth options enhances scalability and streamlines inventory. The airMAX Titanium Sector may be custom configured for any deployment requiring a 60°, 90°, or 120° sector.

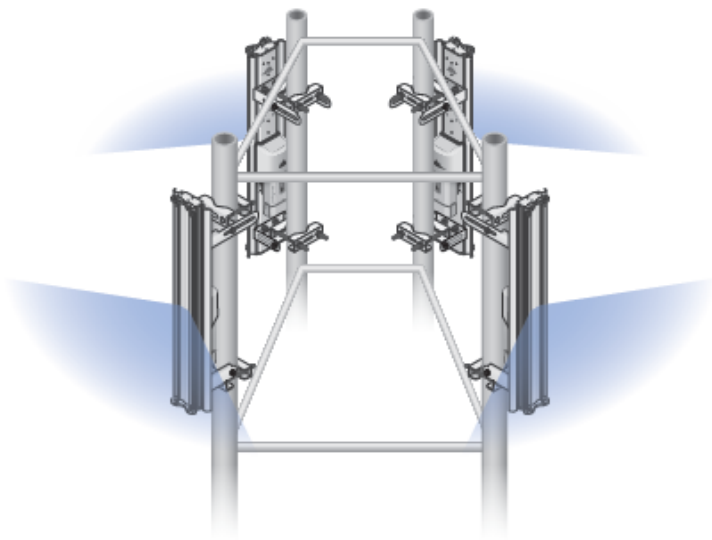
Antenna gain increases respectively with each decrease in beamwidth. Gain is 19 dBi at 120°, 20 dBi at 90°, and 21 dBi at 60°.

Increased Performance

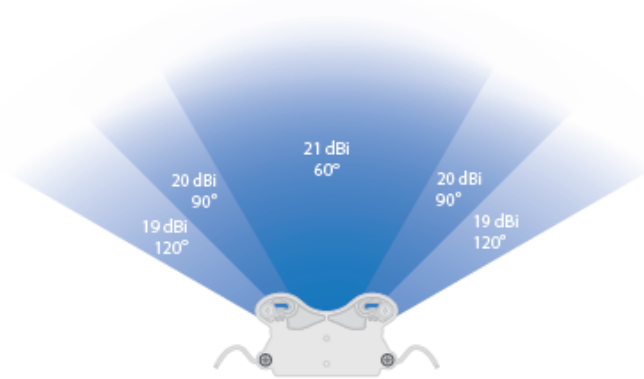
The airMAX Titanium Sector was specifically engineered for optimal performance when paired with a Rocket™M Titanium.

- 20% increase in performance with PtMP networks
- Up to 90% performance improvement in a co-location environment
- Increased durability in harsh weather

 www.ubnt.com/airmax



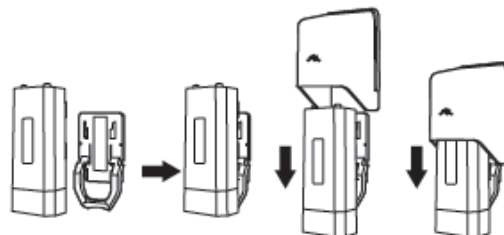
Ideal for Co-Location Deployments



Adjustable Beamwidth

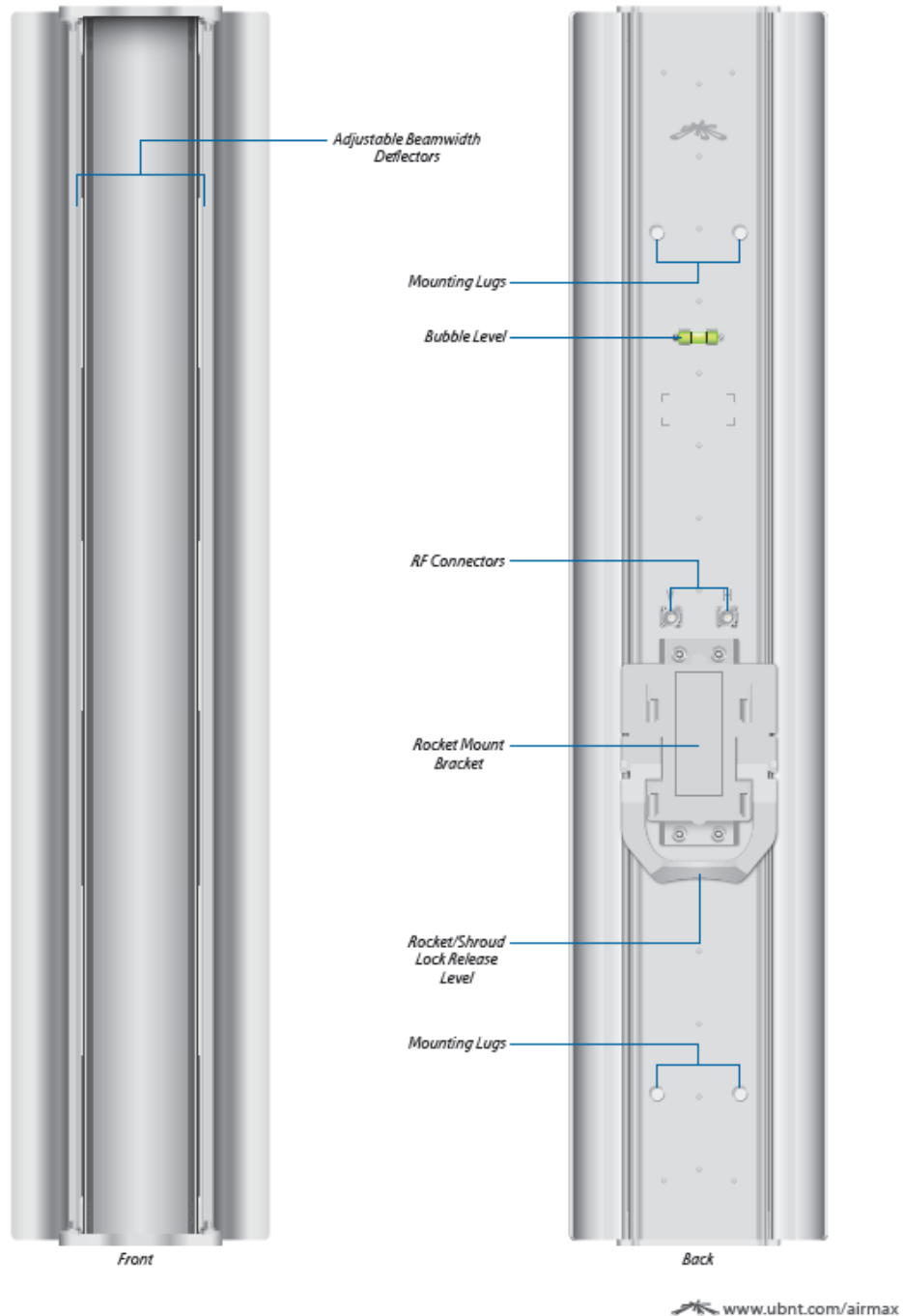
Easily Mount and Protect Your Rocket

The Titanium Sector has an integrated Rocket mount that allows you to mount the Rocket without the use of any tools. The custom-designed Protective Shroud helps to shield your Rocket from the elements.



Overview

Model: AM-V5G-Ti

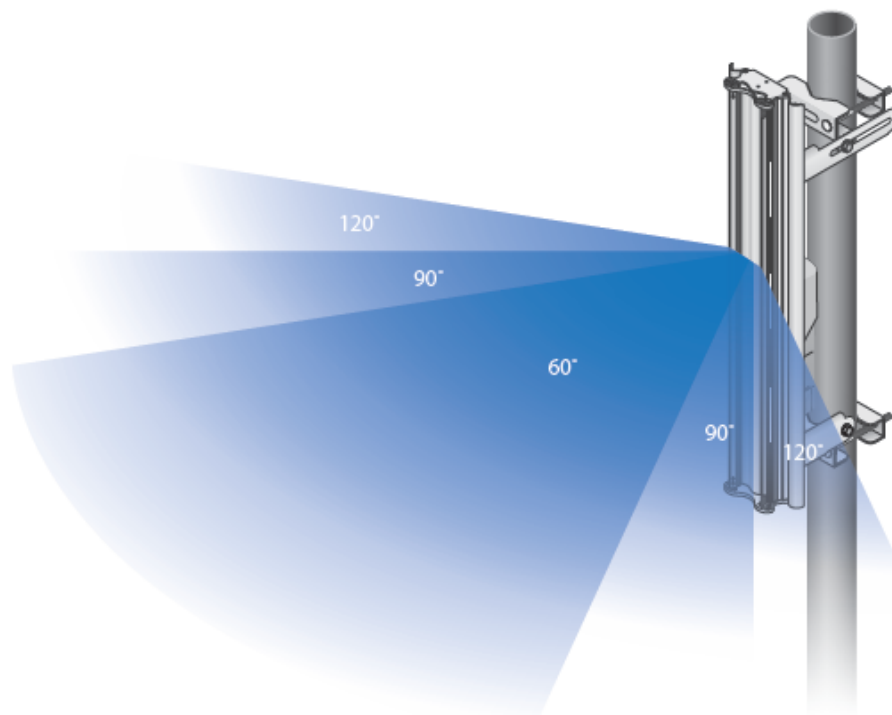


Datasheet

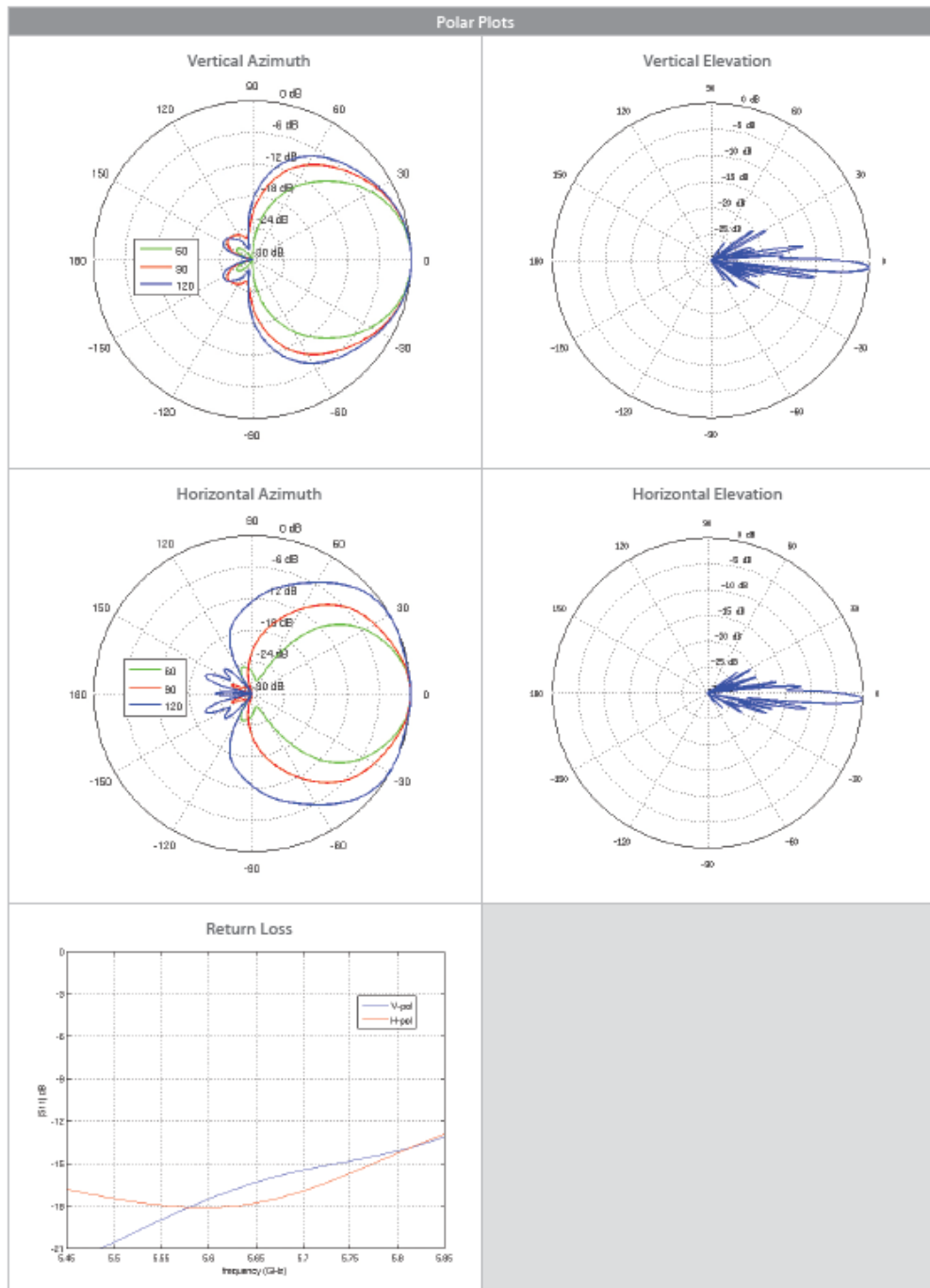
airMAX™ TITANIUM SECTOR

Specifications

Physical / Electrical / Environmental	
Dimensions	721 x 149.1 x 75.7 mm
Weight	3.72 kg (with Brackets)
Frequency Range	5.45 - 5.85 GHz
Beamwidth Angles	60° / 90° / 120°
Gain (Beamwidth Dependent)	21 dBi @ 60° 20 dBi @ 90° 19 dBi @ 120°
Electrical Downtilt	2°
Polarization	Dual Linear
Cross-Pol Isolation	20 dB Min.
F/B Ratio	30 dB
Max. VSWR	1.5:1
RF Connectors	2 SMA Connectors (Weatherproof)
Compatible Radios	RocketM5 RocketM5 GPS RocketM5 Titanium
Mounting	Pole Mount (Kit Included)
ETSI Specification	EN 302 326 DN2
Certifications	CE, FCC, IC
Wind Survivability	160 mph
Wind Loading	37 lbs @ 120 mph



 www.ubnt.com/airmax



TOUGH Cable™

OUTDOOR CARRIER CLASS SHIELDED

Protect your networks from the most brutal environments with Ubiquiti's industrial-grade shielded Ethernet cable, TOUGH Cable.

Increase Performance
Dramatically improve your Ethernet link states, speeds, and overall performance with Ubiquiti TOUGH Cables.

Extreme Weatherproof
Designed for outdoor use, TOUGH Cables have been built to perform even in the harshest weather and environments.

ESD Damage Protection
Protect your networks from devastating electrostatic discharge (ESD) attacks.

Extended Cable Support
TOUGH Cables have been developed to increase power handling performance for extended cable run lengths.

Bulletproof your networks

TOUGH Cable is currently available in two versions: PRO Shielding Protection and CARRIER Shielding Protection.

TOUGH Cable PRO is a Category 5e, outdoor, carrier-class shielded cable with an integrated ESD drain wire.

TOUGH Cable CARRIER is a Category 5e, outdoor, carrier-class shielded cable that features an integrated ESD drain wire, anti-crosstalk divider, and secondary shielding. It is rated to provide optimal performance on Gigabit Ethernet networks.

Additional Information:

- 24 AWG copper conductor pairs
- 26 AWG integrated ESD drain wire to prevent ESD attacks and damage
- PE outdoor-rated, weatherproof jacket
- Multi-layered shielding
- Available in lengths of 1000 ft (304.8 m)

TERMS OF USE: Ubiquiti radio devices must be professionally installed. Shielded Ethernet cable and earth grounding must be used as conditions of product warranty. TOUGH Cable is designed for outdoor installations. It is the installer's responsibility to follow local country regulations, including operation within legal frequency channels, output power, indoor cabling requirements, and Dynamic Frequency Selection (DFS) requirements.

For further information, please visit www.ubnt.com.

All specifications in this document are subject to change without notice.

© 2012 Ubiquiti Networks, Inc. All rights reserved.

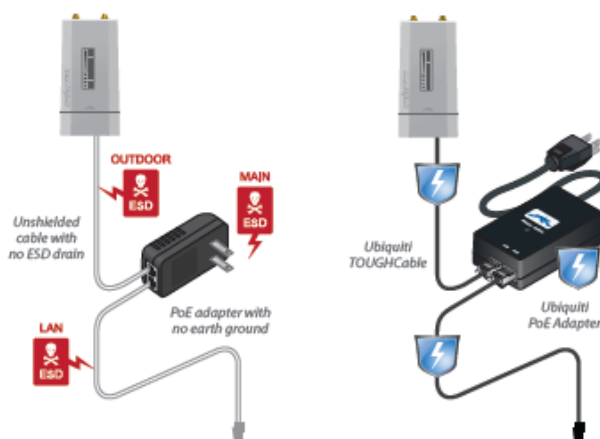


TOUGH Cable Connectors

Specifically designed for use with Ubiquiti TOUGH Cables and available in 100-pc. bags, TOUGH Cable Connectors protect against ESD attacks and Ethernet hardware damage while allowing rapid field deployment without soldering.

ESD attacks are the leading cause for device failures. The diagram below illustrates the areas vulnerable to ESD attacks in a network.

By using a grounded Ubiquiti Power over Ethernet (PoE) Adapter along with Ubiquiti TOUGH Cable and TOUGH Cable Connectors, you can effectively protect against ESD attacks.



www.ubnt.com

PH051112

Appendix F Test Configuration Photograph(s)

