

NORTHWEST EMC

UTC Fire and Security

AVO-BTWIFI (Bluetooth/Wi-Fi module) in the AV-TS7
FCC 15.247:2015

Report # UTCF0027.1



NVLAP Lab Code: 200881-0

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America. This Report may only be duplicated in its entirety

CERTIFICATE OF TEST

Last Date of Test: March 04, 2015
UTC Fire and Security
Model: AVO-BTWIFI (Bluetooth/Wi-Fi module) in the AV-TS7

Radio Equipment Testing

Standards

Specification	Method
FCC 15.247:2015	ANSI C63.10:2009

Results

Method Clause	Test Description	Applied	Results	Comments
6.2	Powerline Conducted Emissions	No	N/A	Not required for Class II Permissive change.
6.5, 6.6	Spurious Radiated Emissions	Yes	Pass	
6.7	Band Edge Compliance	No	N/A	Not required for Class II Permissive change.
6.7	Spurious Conducted Emissions	No	N/A	Not required for Class II Permissive change.
6.9.1	Occupied Bandwidth	No	N/A	Not required for Class II Permissive change.
6.10.2	Output Power	No	N/A	Not required for Class II Permissive change.
6.11.2	Power Spectral Density	No	N/A	Not required for Class II Permissive change.
7.5	Duty Cycle	No	N/A	Not required for Class II Permissive change.

Deviations From Test Standards

None

Approved By:



Tim O'Shea, Operations Manager

Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test.

REVISION HISTORY

Revision Number		Description	Date	Page Number
00		None		

ACCREDITATIONS AND AUTHORIZATIONS

United States

FCC - Designated by the FCC as a Telecommunications Certification Body (TCB). Certification chambers, Open Area Test Sites, and conducted measurement facilities are listed with the FCC.

A2LA - Accredited by A2LA to ISO / IEC 17065 as a product certifier. This allows Northwest EMC to certify transmitters to FCC and IC specifications.

NVLAP - Each laboratory is accredited by NVLAP to ISO 17025

Canada

IC - Recognized by Industry Canada as a Certification Body (CB). Certification chambers and Open Area Test Sites are filed with IC.

European Union

European Commission – Validated by the European Commission as a Conformity Assessment Body (CAB) under the EMC directive and as a Notified Body under the R&TTE Directive.

Australia/New Zealand

ACMA - Recognized by ACMA as a CAB for the acceptance of test data.

Korea

MSIP / RRA - Recognized by KCC's RRA as a CAB for the acceptance of test data.

Japan

VCCI - Associate Member of the VCCI. Conducted and radiated measurement facilities are registered.

Taiwan

BSMI – Recognized by BSMI as a CAB for the acceptance of test data.

NCC - Recognized by NCC as a CAB for the acceptance of test data.

Singapore

IDA – Recognized by IDA as a CAB for the acceptance of test data.

Israel

MOC – Recognized by MOC as a CAB for the acceptance of test data.

Hong Kong

OFCA – Recognized by OFCA as a CAB for the acceptance of test data.

Vietnam

MIC – Recognized by MIC as a CAB for the acceptance of test data.

SCOPE

For details on the Scopes of our Accreditations, please visit:

<http://www.nwemc.com/accreditations/>
<http://gsi.nist.gov/global/docs/cabs/designations.html>

MEASUREMENT UNCERTAINTY

Measurement Uncertainty

When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. Measurement uncertainty is a statistical expression of measurement error qualified by a probability distribution.

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) for each test is on each data sheet. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-2 as applicable), and are available upon request.

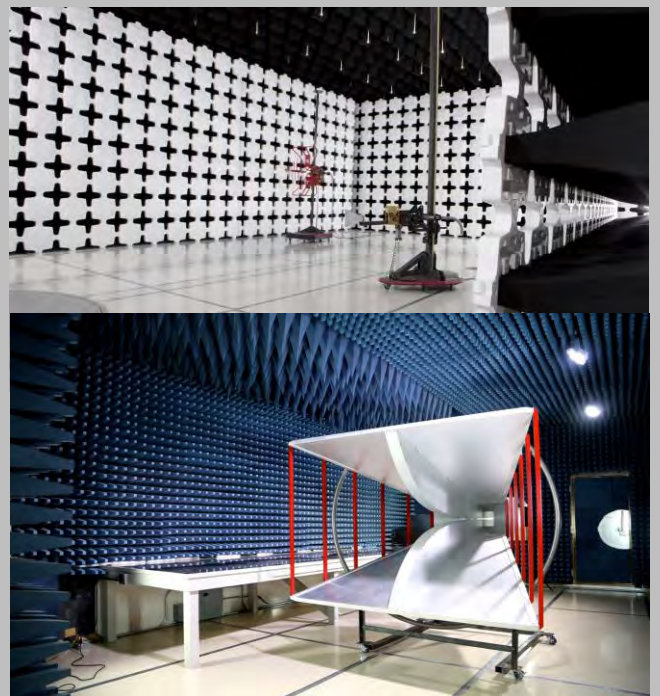
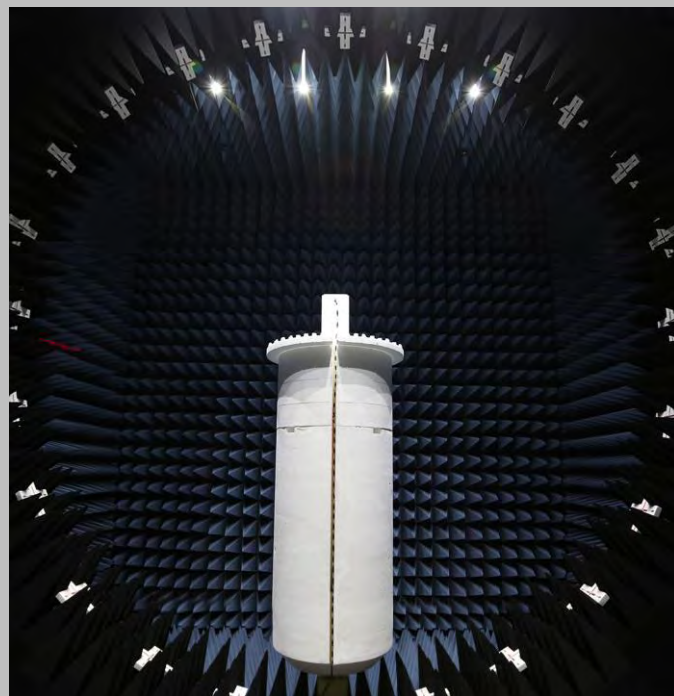
The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

Test	+ MU	- MU
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	0.3 dB	-0.3 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%
Field Strength (dB)	4.7 dB	-4.7 dB
AC Powerline Conducted Emissions (dB)	2.9 dB	-2.9 dB

FACILITIES



California Labs OC01-13 41 Tesla Irvine, CA 92618 (949) 861-8918	Minnesota Labs MN01-08, MN10 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	New York Labs NY01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 554-8214	Oregon Labs EV01-12 22975 NW Evergreen Pkwy Hillsboro, OR 97124 (503) 844-4066	Texas Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	Washington Labs NC01-05 19201 120 th Ave NE Bothell, WA 9801 (425)984-6600
NVLAP					
NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200761-0	NVLAP Lab Code: 200630-0	NVLAP Lab Code:201049-0	NVLAP Lab Code: 200629-0
Industry Canada					
2834B-1, 2834B-3	2834E-1	N/A	2834D-1, 2834D-2	2834G-1	2834F-1
BSMI					
SL2-IN-E-1154R	SL2-IN-E-1152R	N/A	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R
VCCI					
A-0029	A-0109	N/A	A-0108	A-0201	A-0110
Recognized Phase I CAB for ACMA, BSMI, IDA, KCC/RRR, MIC, MOC, NCC, OFCA					
US0158	US0175	N/A	US0017	US0191	US0157



PRODUCT DESCRIPTION

Client and Equipment Under Test (EUT) Information

Company Name:	UTC Fire and Security
Address:	1275 Red Fox Road
City, State, Zip:	Arden Hills, MN 55112
Test Requested By:	Paul Price
Model:	AVO-BTWIFI (Bluetooth/Wi-Fi module) in the AV-TS7
First Date of Test:	March 04, 2015
Last Date of Test:	March 04, 2015
Receipt Date of Samples:	March 04, 2015
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT:
AV-TS7 Touchscreen Security Device with an 802.11bgn wireless interface.
Testing Objective:
To demonstrate compliance of the 802.11 Wi-Fi radio under FCC 15.247 for operation in the 2.4 GHz band(s) under a Class II Permissive Change. Changing the device from a system approval to LMA to include an alternate host. Testing SRE and unintentional emissions in the alternate host AV-TS7.

CONFIGURATIONS

Configuration UTCF0027- 3

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
AVO-BTWIFI (Bluetooth/Wi-Fi module) in the AV-TS7	UTC Fire and Security	AV-TS7	01021041040200000092

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC Adapter	UTC Fire and Security	UTC 22-169	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
DC Power Cable	No	2.5m	No	AC Adapter	AVO-BTWIFI (Bluetooth/Wi-Fi module) in the AV-TS7

MODIFICATIONS

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	3/4/2015	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

MODES OF OPERATION

Transmitting 802.11 2412 MHz (low channel), 2437 MHz (mid channel), and 2462 MHz (high channel); 1 Mbps, 6 Mbps, 11 Mbps, 36 Mbps, 54 Mbps, MCS0, and MCS7.

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

UTCF0027 - 3

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	26500 MHz
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SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Low Pass Filter, 0 - 1000 MHz	Micro-Tronics	LPM50004	HGK	3/2/2015	12 mo
High Pass Filter, 2.8 - 18 GHz	Micro-Tronics	HPM50111	HGQ	3/2/2015	12 mo
Attenuator, 20 dB, 'SMA'	SM Electronics	SA6-20	REO	3/2/2015	12 mo
Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	10/3/2014	12 mo
MN05 Cable	N/A	18-26GHz Standard Gain Horn Cable	MNP	10/3/2014	12 mo
Antenna, Horn	ETS	3160-09	AHG	NCR	0 mo
Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVW	3/2/2015	12 mo
Antenna, Horn	ETS Lindgren	3160-08	AIQ	NCR	0 mo
MN05 Cables	ESM Cable Corp.	Standard Gain Horn Cables	MNJ	3/2/2015	12 mo
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVV	3/2/2015	12 mo
Antenna, Horn	ETS	3160-07	AXP	NCR	0 mo
Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVX	3/14/2014	12 mo
MN05 Cables	ESM Cable Corp.	Double Ridge Guide Horn Cables	MNI	3/2/2015	12 mo
Antenna, Horn	ETS	3115	AJA	6/3/2014	24 mo
Pre-Amplifier	Miteq	AM-1616-1000	PAD	3/2/2015	12 mo
MN05 Cables	ESM Cable Corp.	Bilog Cables	MNH	3/2/2015	12 mo
Antenna, Biconilog	Teseq	CBL 6141B	AYD	12/17/2013	24 mo
Spectrum Analyzer	Agilent	N9010A	AFI	1/27/2015	12 mo

MEASUREMENT BANDWIDTHS

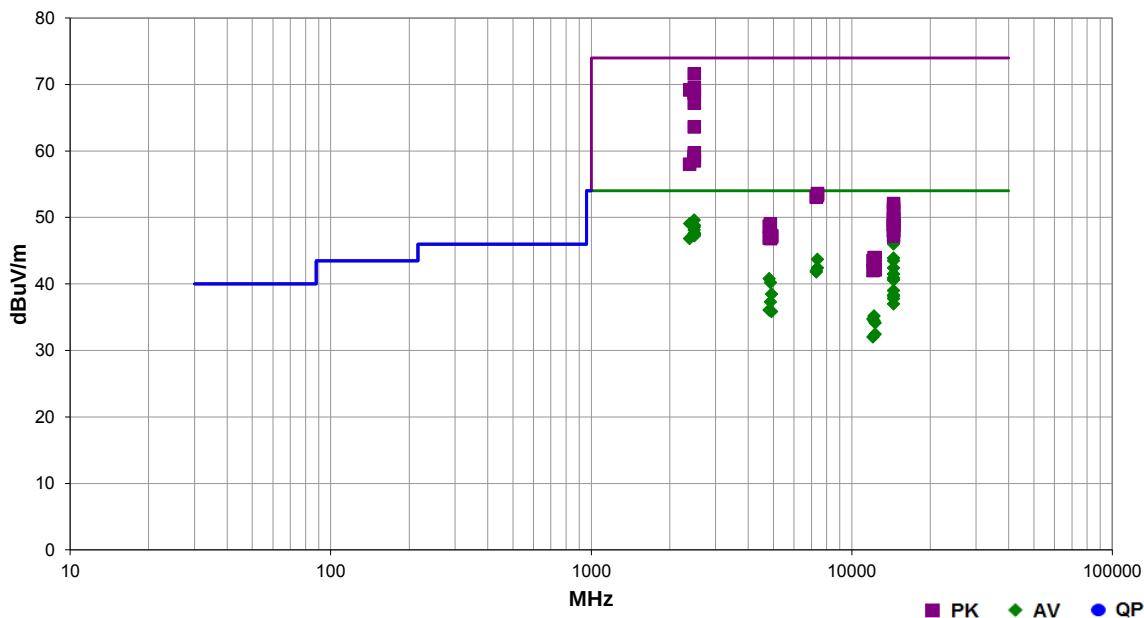
Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

TEST DESCRIPTION

The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify compliance. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and the EUT antenna in three orthogonal axis, and adjusting measurement antenna height and polarization. A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

Work Order:	UTCF0027	Date:	03/04/15	
Project:	None	Temperature:	22.5 °C	
Job Site:	MN05	Humidity:	13.1% RH	
Serial Number:	See Comments	Barometric Pres.:	1026.7 mbar	
		Tested by: Dustin Sparks		
EUT:	AVO-BTWIFI (Bluetooth/Wi-Fi module) in the AV-TS7			
Configuration:	3			
Customer:	UTC Fire and Security			
Attendees:	Paul Price			
EUT Power:	110VAC/60Hz			
Operating Mode:	Transmitting 802.11 2412 MHz (low channel), 2437 MHz (mid channel), and 2462 MHz (high channel); 1 Mbps, 6 Mbps, 11 Mbps, 36 Mbps, 54 Mbps, MCS0, and MCS7.			
Deviations:	None			
Comments:	Serial Number: 01021041040200000092			

Test Specifications					Test Method		
FCC 15.247:2015					ANSI C63.10:2009		
Run #	18	Test Distance (m)	3	Antenna Height(s)	1 to 4(m)	Results	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2483.742	55.1	-3.5	1.4	342.0	3.0	20.0	Horz	PK	0.0	71.6	74.0	-2.4	6 Mbps, high ch, EUT vert
2483.625	33.1	-3.5	1.4	342.0	3.0	20.0	Horz	AV	0.0	49.6	54.0	-4.4	6 Mbps, high ch, EUT vert
2485.067	53.0	-3.5	1.0	358.9	3.0	20.0	Vert	PK	0.0	69.5	74.0	-4.5	6 Mbps, high ch, EUT vert
2484.342	52.7	-3.5	1.0	1.1	3.0	20.0	Horz	PK	0.0	69.2	74.0	-4.8	6 Mbps, high ch, EUT horz
2389.792	53.0	-3.8	1.0	126.0	3.0	20.0	Horz	PK	0.0	69.2	74.0	-4.8	6 Mbps, low ch, EUT vert
2389.942	32.9	-3.8	1.0	126.0	3.0	20.0	Horz	AV	0.0	49.1	54.0	-4.9	6 Mbps, low ch, EUT vert
2484.533	52.4	-3.5	1.0	357.0	3.0	20.0	Horz	PK	0.0	68.9	74.0	-5.1	6 Mbps, high ch, EUT on side
2483.700	32.3	-3.5	1.0	1.1	3.0	20.0	Horz	AV	0.0	48.8	54.0	-5.2	6 Mbps, high ch, EUT horz
2483.625	32.3	-3.5	1.0	357.0	3.0	20.0	Horz	AV	0.0	48.8	54.0	-5.2	6 Mbps, high ch, EUT on side
2483.800	52.2	-3.5	1.0	1.1	3.0	20.0	Vert	PK	0.0	68.7	74.0	-5.3	6 Mbps, high ch, EUT vert
2483.775	32.2	-3.5	1.0	358.9	3.0	20.0	Vert	AV	0.0	48.7	54.0	-5.3	6 Mbps, high ch, EUT vert
2483.558	32.0	-3.5	1.0	1.1	3.0	20.0	Vert	AV	0.0	48.5	54.0	-5.5	6 Mbps, high ch, EUT horz
2483.517	31.6	-3.5	1.0	179.0	3.0	20.0	Horz	AV	0.0	48.1	54.0	-5.9	MCS0, high ch, EUT vert
2487.767	31.1	-3.5	1.0	27.0	3.0	20.0	Horz	AV	0.0	47.6	54.0	-6.4	1 Mbps, high ch, EUT vert
2483.508	31.1	-3.5	1.0	8.1	3.0	20.0	Vert	AV	0.0	47.6	54.0	-6.4	6 Mbps, high ch, EUT on side
14471.980	43.6	4.0	1.0	268.9	3.0	0.0	Vert	AV	0.0	47.6	54.0	-6.4	1 Mbps, low ch, EUT horz
2486.892	30.9	-3.5	1.0	175.0	3.0	20.0	Horz	AV	0.0	47.4	54.0	-6.6	54 Mbps, high ch, EUT vert
2485.133	30.9	-3.5	1.0	258.9	3.0	20.0	Horz	AV	0.0	47.4	54.0	-6.6	36 Mbps, high ch, EUT vert
2483.625	30.9	-3.5	1.0	297.9	3.0	20.0	Horz	AV	0.0	47.4	54.0	-6.6	11 Mbps, high ch, EUT vert
2488.125	30.7	-3.5	1.0	194.0	3.0	20.0	Horz	AV	0.0	47.2	54.0	-6.8	MCS7, high ch, EUT vert
2483.933	50.7	-3.5	1.0	179.0	3.0	20.0	Horz	PK	0.0	67.2	74.0	-6.8	MCS0, high ch, EUT vert
2386.133	30.6	-3.8	1.0	182.0	3.0	20.0	Horz	AV	0.0	46.8	54.0	-7.2	1 Mbps, low ch, EUT vert
14471.880	42.0	4.0	1.0	282.9	3.0	0.0	Vert	AV	0.0	46.0	54.0	-8.0	1 Mbps, low ch, EUT horz
14472.000	39.9	4.0	1.0	66.1	3.0	0.0	Horz	AV	0.0	43.9	54.0	-10.1	1 Mbps, low ch, EUT vert
7385.908	30.3	13.4	1.0	22.1	3.0	0.0	Horz	AV	0.0	43.7	54.0	-10.3	1 Mbps, high ch, EUT vert

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2484.075	47.1	-3.5	1.0	8.1	3.0	20.0	Vert	PK	0.0	63.6	74.0	-10.4	6 Mbps, high ch, EUT on side
14471.930	39.5	4.0	1.0	35.0	3.0	0.0	Vert	AV	0.0	43.5	54.0	-10.5	1 Mbps, low ch, EUT vert
14471.910	38.4	4.0	1.0	289.0	3.0	0.0	Horz	AV	0.0	42.4	54.0	-11.6	1 Mbps, low ch, EUT on side
7386.033	29.0	13.4	1.0	289.0	3.0	0.0	Vert	AV	0.0	42.4	54.0	-11.6	1 Mbps, high ch, EUT horz
7310.883	29.0	13.0	1.0	296.0	3.0	0.0	Vert	AV	0.0	42.0	54.0	-12.0	1 Mbps, mid ch, EUT horz
7311.242	28.8	13.0	1.0	285.0	3.0	0.0	Horz	AV	0.0	41.8	54.0	-12.2	1 Mbps, mid ch, EUT vert
14471.960	37.5	4.0	1.0	89.0	3.0	0.0	Horz	AV	0.0	41.5	54.0	-12.5	1 Mbps, low ch, EUT horz
14471.980	36.9	4.0	1.0	283.9	3.0	0.0	Vert	AV	0.0	40.9	54.0	-13.1	11 Mbps, low ch, EUT horz
4823.967	34.4	6.4	1.0	317.0	3.0	0.0	Vert	AV	0.0	40.8	54.0	-13.2	1 Mbps, low ch, EUT horz
14471.960	36.6	4.0	1.2	176.0	3.0	0.0	Vert	AV	0.0	40.6	54.0	-13.4	1 Mbps, low ch, EUT on side
4873.892	34.4	5.8	1.0	342.0	3.0	0.0	Vert	AV	0.0	40.2	54.0	-13.8	1 Mbps, mid ch, EUT horz
2485.825	43.2	-3.5	1.0	175.0	3.0	20.0	Horz	PK	0.0	59.7	74.0	-14.3	54 Mbps, high ch, EUT vert
2487.392	42.7	-3.5	1.0	27.0	3.0	20.0	Horz	PK	0.0	59.2	74.0	-14.8	1 Mbps, high ch, EUT vert
2483.800	42.5	-3.5	1.0	194.0	3.0	20.0	Horz	PK	0.0	59.0	74.0	-15.0	MCS7, high ch, EUT vert
14471.970	35.0	4.0	1.0	25.0	3.0	0.0	Vert	AV	0.0	39.0	54.0	-15.0	MCS7, low ch, EUT horz
2485.983	42.2	-3.5	1.0	258.9	3.0	20.0	Horz	PK	0.0	58.7	74.0	-15.3	36 Mbps, high ch, EUT vert
2486.117	42.0	-3.5	1.0	297.9	3.0	20.0	Horz	PK	0.0	58.5	74.0	-15.5	11 Mbps, low ch, EUT vert
4923.942	32.9	5.6	1.0	26.1	3.0	0.0	Vert	AV	0.0	38.5	54.0	-15.5	1 Mbps, high ch, EUT horz
14471.920	34.3	4.0	1.1	7.0	3.0	0.0	Vert	AV	0.0	38.3	54.0	-15.7	6 Mbps, low ch, EUT horz
14472.050	34.2	4.0	1.0	13.0	3.0	0.0	Vert	AV	0.0	38.2	54.0	-15.8	54 Mbps, low ch, EUT horz
2386.042	41.8	-3.8	1.0	182.0	3.0	20.0	Horz	PK	0.0	58.0	74.0	-16.0	1 Mbps, low ch, EUT vert
14471.910	33.8	4.0	1.0	360.0	3.0	0.0	Vert	AV	0.0	37.8	54.0	-16.2	MCS0, low ch, EUT horz
4874.008	31.5	5.8	1.0	217.1	3.0	0.0	Horz	AV	0.0	37.3	54.0	-16.7	1 Mbps, mid ch, EUT vert
14471.950	33.0	4.0	1.0	0.0	3.0	0.0	Vert	AV	0.0	37.0	54.0	-17.0	36 Mbps, low ch, EUT horz
4824.058	29.7	6.4	1.4	67.0	3.0	0.0	Horz	AV	0.0	36.1	54.0	-17.9	1 Mbps, low ch, EUT vert
4924.117	30.3	5.6	1.0	200.0	3.0	0.0	Horz	AV	0.0	35.9	54.0	-18.1	1 Mbps, high ch, EUT vert
12185.790	39.4	-4.2	1.0	322.0	3.0	0.0	Vert	AV	0.0	35.2	54.0	-18.8	1 Mbps, mid ch, EUT horz
12060.590	39.3	-4.6	1.0	300.9	3.0	0.0	Horz	AV	0.0	34.7	54.0	-19.3	1 Mbps, low ch, EUT vert
12186.090	38.7	-4.2	1.0	215.0	3.0	0.0	Horz	AV	0.0	34.5	54.0	-19.5	1 Mbps, mid ch, EUT vert
12309.880	38.3	-4.2	1.0	307.9	3.0	0.0	Horz	AV	0.0	34.1	54.0	-19.9	1 Mbps, high ch, EUT vert
7386.000	40.2	13.4	1.0	22.1	3.0	0.0	Horz	PK	0.0	53.6	74.0	-20.4	1 Mbps, high ch, EUT vert
7384.058	40.0	13.4	1.0	289.0	3.0	0.0	Vert	PK	0.0	53.4	74.0	-20.6	1 Mbps, high ch, EUT horz
7311.325	40.1	13.0	1.0	285.0	3.0	0.0	Horz	PK	0.0	53.1	74.0	-20.9	1 Mbps, mid ch, EUT vert
7311.058	40.1	13.0	1.0	296.0	3.0	0.0	Vert	PK	0.0	53.1	74.0	-20.9	1 Mbps, mid ch, EUT horz
12310.010	36.6	-4.2	1.0	250.9	3.0	0.0	Vert	AV	0.0	32.4	54.0	-21.6	1 Mbps, high ch, EUT horz
14471.940	48.1	4.0	1.0	268.9	3.0	0.0	Vert	PK	0.0	52.1	74.0	-21.9	1 Mbps, low ch, EUT horz
12059.970	36.6	-4.6	1.0	329.0	3.0	0.0	Vert	AV	0.0	32.0	54.0	-22.0	1 Mbps, low ch, EUT horz
14471.780	47.4	4.0	1.0	283.9	3.0	0.0	Vert	PK	0.0	51.4	74.0	-22.6	11 Mbps, low ch, EUT horz
14471.830	47.0	4.0	1.0	282.9	3.0	0.0	Vert	PK	0.0	51.0	74.0	-23.0	1 Mbps, low ch, EUT horz
14471.960	46.0	4.0	1.0	360.0	3.0	0.0	Vert	PK	0.0	50.0	74.0	-24.0	MCS0, low ch, EUT horz
14472.060	45.7	4.0	1.0	35.0	3.0	0.0	Vert	PK	0.0	49.7	74.0	-24.3	1 Mbps, low ch, EUT vert
14471.810	45.5	4.0	1.0	66.1	3.0	0.0	Horz	PK	0.0	49.5	74.0	-24.5	1 Mbps, low ch, EUT vert
4873.425	43.2	5.8	1.0	342.0	3.0	0.0	Vert	PK	0.0	49.0	74.0	-25.0	1 Mbps, mid ch, EUT horz
14471.860	45.0	4.0	1.0	89.0	3.0	0.0	Horz	PK	0.0	49.0	74.0	-25.0	1 Mbps, low ch, EUT horz
14471.880	45.0	4.0	1.0	289.0	3.0	0.0	Horz	PK	0.0	49.0	74.0	-25.0	1 Mbps, low ch, EUT on side
14472.070	44.9	4.0	1.1	7.0	3.0	0.0	Vert	PK	0.0	48.9	74.0	-25.1	6 Mbps, low ch, EUT horz
14471.900	44.8	4.0	1.0	25.0	3.0	0.0	Vert	PK	0.0	48.8	74.0	-25.2	MCS7, low ch, EUT horz
4823.792	42.3	6.4	1.0	317.0	3.0	0.0	Vert	PK	0.0	48.7	74.0	-25.3	1 Mbps, low ch, EUT horz
14471.860	44.0	4.0	1.0	13.0	3.0	0.0	Vert	PK	0.0	48.0	74.0	-26.0	54 Mbps, low ch, EUT horz
14471.930	44.0	4.0	1.2	176.0	3.0	0.0	Vert	PK	0.0	48.0	74.0	-26.0	1 Mbps, low ch, EUT on side
4924.458	41.7	5.6	1.0	26.1	3.0	0.0	Vert	PK	0.0	47.3	74.0	-26.7	1 Mbps, high ch, EUT horz
14471.740	43.2	4.0	1.0	0.0	3.0	0.0	Vert	PK	0.0	47.2	74.0	-26.8	36 Mbps, low ch, EUT horz
4924.858	41.5	5.6	1.0	200.0	3.0	0.0	Horz	PK	0.0	47.1	74.0	-26.9	1 Mbps, high ch, EUT vert
4822.650	40.5	6.4	1.4	67.0	3.0	0.0	Horz	PK	0.0	46.9	74.0	-27.1	1 Mbps, low ch, EUT vert
4873.883	41.0	5.8	1.0	217.1	3.0	0.0	Horz	PK	0.0	46.8	74.0	-27.2	1 Mbps, mid ch, EUT vert
12184.760	48.2	-4.2	1.0	322.0	3.0	0.0	Vert	PK	0.0	44.0	74.0	-30.0	1 Mbps, mid ch, EUT horz
12310.380	48.1	-4.2	1.0	307.9	3.0	0.0	Horz	PK	0.0	43.9	74.0	-30.1	1 Mbps, high ch, EUT vert
12059.480	48.1	-4.6	1.0	300.9	3.0	0.0	Horz	PK	0.0	43.5	74.0	-30.5	1 Mbps, low ch, EUT vert
12184.930	47.7	-4.2	1.0	215.0	3.0	0.0	Horz	PK	0.0	43.5	74.0	-30.5	1 Mbps, mid ch, EUT vert
12310.270	46.3	-4.2	1.0	250.9	3.0	0.0	Vert	PK	0.0	42.1	74.0	-31.9	1 Mbps, high ch, EUT horz
12060.580	46.6	-4.6	1.0	329.0	3.0	0.0	Vert	PK	0.0	42.0	74.0	-32.0	1 Mbps, low ch, EUT horz