

SPURIOUS RADIATED EMISSIONS



PSA-ESCI 2017.01.26

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 Antenna 1 at Low Ch 2412MHz, High Ch 2462MHz

Transmitting Antenna 1 at Low Ch 2412MHz, Mid Ch 2437MHz, High Ch 2462MHz

Transmitting Antenna 0 at Low Ch 2412MHz, High Ch 2462MHz

Transmitting Antenna 0 at Low Ch 2412MHz, Mid Ch 2437MHz, High Ch 2462MHz

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

HNYW0203 - 2

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	26500 MHz
-----------------	--------	----------------	-----------

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
Filter - High Pass	Micro-Tronics	HPM50111	HGC	3/4/2016	12 mo
Attenuator	Weinschel Corp	4H-20	AWB	3/9/2016	12 mo
Filter - Low Pass	Micro-Tronics	LPM50004	HHV	8/5/2016	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	PAL	10/12/2016	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-08	AJG	NCR	0 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	PAK	10/18/2016	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-07	AJF	NCR	0 mo
Cable	Northwest EMC	8-18GHz	TXD	5/31/2016	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	PAJ	5/31/2016	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AJN	9/15/2016	24 mo
Cable	Northwest EMC	1-8.2 GHz	TXC	5/31/2016	12 mo
Amplifier - Pre-Amplifier	Miteq	AM-1551	PAH	11/9/2016	12 mo
Antenna - Biconilog	ETS Lindgren	3143B	AYF	4/13/2016	24 mo
Cable	Northwest EMC	RE 9kHz - 1GHz	TXB	11/9/2016	12 mo
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFL	10/4/2016	12 mo

TEST DESCRIPTION

The highest gain antenna of each type to be used with the EUT was tested. The EUT was configured for the required transmit frequencies and the modes as showed in the data sheets.

For each configuration, the spectrum was scanned throughout the specified range as part of the exploratory investigation of the emissions. These “pre-scans” are not included in the report. Final measurements on individual emissions were then made and included in this test report.

The individual emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis if required, and adjusting the measurement antenna height and polarization (per ANSI C63.10). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

QP = Quasi-Peak Detector
PK = Peak Detector
AV = RMS Detector

Measurements were made to satisfy the specific requirements of the test specification for out of band emissions as well as the restricted band requirements.

If there are no detectable emissions above the noise floor, the data included may show noise floor measurements for reference only.

Measurements at the edges of the allowable band may be presented in an alternative method as provided for in the ANSI C63.10 Marker-Delta method. This method involves performing an in-band fundamental measurement followed by a screen capture of the fundamental and out-of-band emission using reduced measurement instrumentation bandwidths. The amplitude delta measured on this screen capture is applied to the fundamental emission value to show the out-of-band emission level as applied to the limit.



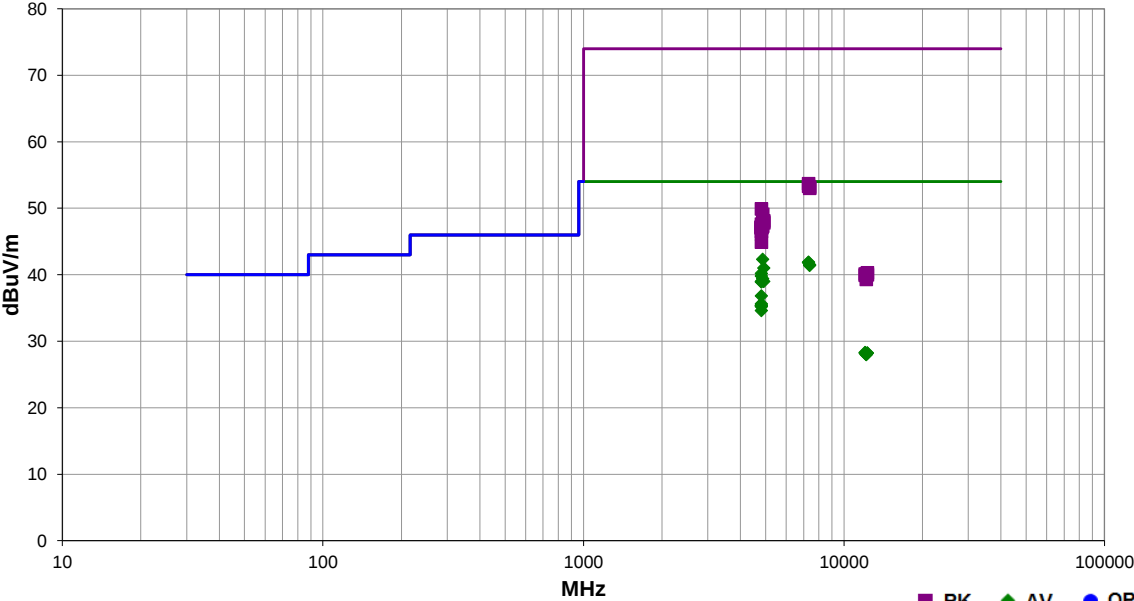
SPURIOUS RADIATED EMISSIONS

EmiRS 2016.08.26 PSA-ESCI 2017.01.26

Work Order:	HCYU0203	Date:	02/09/17	
Project:	None	Temperature:	22.9 °C	
Job Site:	TX02	Humidity:	26.4% RH	
Serial Number:	0027324	Barometric Pres.:	1033 mbar	Tested by: Jonathan Kiefer
EUT:	RTH9580WF01			
Configuration:	2			
Customer:	Honeywell, Automation and Control Solutions			
Attendees:	None			
EUT Power:	110VAC/60Hz			
Operating Mode:	Transmitting Antenna 0 at Low Ch 2412MHz, Mid Ch 2437MHz, High Ch 2462MHz			
Deviations:	None			
Comments:	Harmonics.			

Test Specifications	Test Method
FCC 15.247:2017	ANSI C63.10:2013

Run #	34	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
4823.967	39.0	6.2	1.0	153.9	3.0	0.0	Horz	AV	0.0	45.2	54.0	-8.8	Low Ch, EUT Vertical, 1 Mbps
4873.942	36.0	6.3	1.7	211.0	3.0	0.0	Horz	AV	0.0	42.3	54.0	-11.7	Mid Ch, EUT Vertical, 1 Mbps
7310.183	28.3	13.6	1.0	349.0	3.0	0.0	Vert	AV	0.0	41.9	54.0	-12.1	Mid Ch, EUT Vertical, 1 Mbps
7311.358	28.2	13.6	1.0	308.0	3.0	0.0	Horz	AV	0.0	41.8	54.0	-12.2	Mid Ch, EUT Vertical, 1 Mbps
7386.142	27.9	13.6	1.0	212.0	3.0	0.0	Horz	AV	0.0	41.5	54.0	-12.5	High Ch, EUT Vertical, 1 Mbps
7385.550	27.8	13.6	1.0	303.9	3.0	0.0	Vert	AV	0.0	41.4	54.0	-12.6	High Ch, EUT Vertical, 1 Mbps
4924.008	34.5	6.5	1.0	260.0	3.0	0.0	Horz	AV	0.0	41.0	54.0	-13.0	High Ch, EUT Vertical, 1 Mbps
4823.958	34.0	6.2	1.0	140.0	3.0	0.0	Vert	AV	0.0	40.2	54.0	-13.8	Low Ch, EUT Vertical, 1 Mbps
4823.983	33.6	6.2	3.4	207.0	3.0	0.0	Vert	AV	0.0	39.8	54.0	-14.2	Low Ch, EUT Horizontal, 1 Mbps
4873.967	33.1	6.3	3.6	254.0	3.0	0.0	Vert	AV	0.0	39.4	54.0	-14.6	Mid Ch, EUT Vertical, 1 Mbps
4823.975	32.8	6.2	1.0	50.0	3.0	0.0	Horz	AV	0.0	39.0	54.0	-15.0	Low Ch, EUT Horizontal, 1 Mbps
4923.967	32.5	6.5	1.0	249.9	3.0	0.0	Vert	AV	0.0	39.0	54.0	-15.0	High Ch, EUT Vertical, 1 Mbps
4823.983	32.7	6.2	1.8	219.0	3.0	0.0	Horz	AV	0.0	38.9	54.0	-15.1	Low Ch, EUT On Side, 1 Mbps
4824.075	30.6	6.2	3.2	279.0	3.0	0.0	Horz	AV	0.0	36.8	54.0	-17.2	Low Ch, EUT Vertical, 11 Mbps
4822.375	29.4	6.2	2.8	315.0	3.0	0.0	Horz	AV	0.0	35.6	54.0	-18.4	Low Ch, EUT Vertical, 54 Mbps
4821.900	29.2	6.2	2.2	277.0	3.0	0.0	Horz	AV	0.0	35.4	54.0	-18.6	Low Ch, EUT Vertical, 6 Mbps
4821.883	29.2	6.2	1.2	190.9	3.0	0.0	Horz	AV	0.0	35.4	54.0	-18.6	Low Ch, EUT Vertical, 36 Mbps
4821.983	29.1	6.2	1.2	181.0	3.0	0.0	Horz	AV	0.0	35.3	54.0	-18.7	Low Ch, EUT Vertical, MCS0
4822.025	29.0	6.2	1.2	225.0	3.0	0.0	Horz	AV	0.0	35.2	54.0	-18.8	Low Ch, EUT Vertical, MCS7
4823.933	28.4	6.2	1.0	129.0	3.0	0.0	Vert	AV	0.0	34.6	54.0	-19.4	Low Ch, EUT On Side, 1 Mbps
7311.367	40.1	13.6	1.0	349.0	3.0	0.0	Vert	PK	0.0	53.7	74.0	-20.3	Mid Ch, EUT Vertical, 1 Mbps
7312.367	39.7	13.6	1.0	308.0	3.0	0.0	Horz	PK	0.0	53.3	74.0	-20.7	Mid Ch, EUT Vertical, 1 Mbps

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
7384.858	39.6	13.6	1.0	212.0	3.0	0.0	Horz	PK	0.0	53.2	74.0	-20.8	High Ch, EUT Vertical, 1 Mbps
7388.367	39.4	13.6	1.0	303.9	3.0	0.0	Vert	PK	0.0	53.0	74.0	-21.0	High Ch, EUT Vertical, 1 Mbps
4823.975	43.7	6.2	1.0	153.9	3.0	0.0	Horz	PK	0.0	49.9	74.0	-24.1	Low Ch, EUT Vertical, 1 Mbps
4873.992	42.8	6.3	1.7	211.0	3.0	0.0	Horz	PK	0.0	49.1	74.0	-24.9	Mid Ch, EUT Vertical, 1 Mbps
12058.430	30.5	-2.2	1.2	99.0	3.0	0.0	Horz	AV	0.0	28.3	54.0	-25.7	Low Ch, EUT Vertical, 1 Mbps
12058.460	30.4	-2.2	1.2	235.0	3.0	0.0	Vert	AV	0.0	28.2	54.0	-25.8	Low Ch, EUT Vertical, 1 Mbps
12307.910	29.8	-1.6	1.2	208.9	3.0	0.0	Horz	AV	0.0	28.2	54.0	-25.8	High Ch, EUT Vertical, 1 Mbps
12307.660	29.8	-1.6	1.2	15.9	3.0	0.0	Vert	AV	0.0	28.2	54.0	-25.8	High Ch, EUT Vertical, 1 Mbps
4924.108	41.6	6.5	1.0	260.0	3.0	0.0	Horz	PK	0.0	48.1	74.0	-25.9	High Ch, EUT Vertical, 1 Mbps
12187.170	30.0	-2.0	1.2	142.9	3.0	0.0	Horz	AV	0.0	28.0	54.0	-26.0	Mid Ch, EUT Vertical, 1 Mbps
12187.090	30.0	-2.0	1.2	265.0	3.0	0.0	Vert	AV	0.0	28.0	54.0	-26.0	Mid Ch, EUT Vertical, 1 Mbps
4924.150	41.3	6.5	1.0	249.9	3.0	0.0	Vert	PK	0.0	47.8	74.0	-26.2	High Ch, EUT Vertical, 1 Mbps
4824.367	41.4	6.2	3.2	279.0	3.0	0.0	Horz	PK	0.0	47.6	74.0	-26.4	Low Ch, EUT Vertical, 11 Mbps
4874.042	41.0	6.3	3.6	254.0	3.0	0.0	Vert	PK	0.0	47.3	74.0	-26.7	Mid Ch, EUT Vertical, 1 Mbps
4823.975	41.0	6.2	1.0	140.0	3.0	0.0	Vert	PK	0.0	47.2	74.0	-26.8	Low Ch, EUT Vertical, 1 Mbps
4824.133	41.0	6.2	1.0	50.0	3.0	0.0	Horz	PK	0.0	47.2	74.0	-26.8	Low Ch, EUT Horizontal, 1 Mbps
4823.850	40.9	6.2	3.4	207.0	3.0	0.0	Vert	PK	0.0	47.1	74.0	-26.9	Low Ch, EUT Horizontal, 1 Mbps
4826.083	40.8	6.3	2.2	277.0	3.0	0.0	Horz	PK	0.0	47.1	74.0	-26.9	Low Ch, EUT Vertical, 6 Mbps
4823.442	40.9	6.2	1.2	190.9	3.0	0.0	Horz	PK	0.0	47.1	74.0	-26.9	Low Ch, EUT Vertical, 36 Mbps
4821.792	40.9	6.2	1.2	225.0	3.0	0.0	Horz	PK	0.0	47.1	74.0	-26.9	Low Ch, EUT Vertical, MCS7
4822.350	40.8	6.2	2.8	315.0	3.0	0.0	Horz	PK	0.0	47.0	74.0	-27.0	Low Ch, EUT Vertical, 54 Mbps
4823.142	40.7	6.2	1.2	181.0	3.0	0.0	Horz	PK	0.0	46.9	74.0	-27.1	Low Ch, EUT Vertical, MCS0
4823.983	40.3	6.2	1.8	219.0	3.0	0.0	Horz	PK	0.0	46.5	74.0	-27.5	Low Ch, EUT On Side, 1 Mbps
4824.100	38.7	6.2	1.0	129.0	3.0	0.0	Vert	PK	0.0	44.9	74.0	-29.1	Low Ch, EUT On Side, 1 Mbps
12309.800	41.8	-1.5	1.2	15.9	3.0	0.0	Vert	PK	0.0	40.3	74.0	-33.7	High Ch, EUT Vertical, 1 Mbps
12061.380	42.3	-2.2	1.2	99.0	3.0	0.0	Horz	PK	0.0	40.1	74.0	-33.9	Low Ch, EUT Vertical, 1 Mbps
12184.040	42.1	-2.0	1.2	265.0	3.0	0.0	Vert	PK	0.0	40.1	74.0	-33.9	Mid Ch, EUT Vertical, 1 Mbps
12311.680	41.5	-1.5	1.2	208.9	3.0	0.0	Horz	PK	0.0	40.0	74.0	-34.0	High Ch, EUT Vertical, 1 Mbps
12059.230	42.1	-2.2	1.2	235.0	3.0	0.0	Vert	PK	0.0	39.9	74.0	-34.1	Low Ch, EUT Vertical, 1 Mbps
12187.450	41.3	-2.0	1.2	142.9	3.0	0.0	Horz	PK	0.0	39.3	74.0	-34.7	Mid Ch, EUT Vertical, 1 Mbps

SPURIOUS RADIATED EMISSIONS

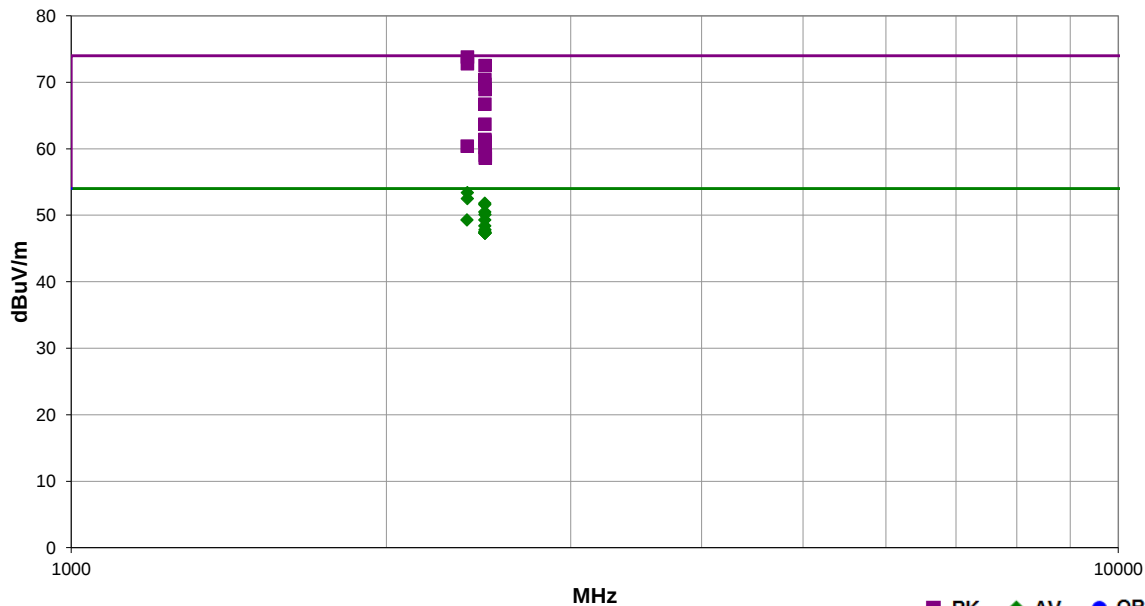


EmiRS 2016.06.26 PSA-ESCI 2017.01.26

Work Order:	HNYW0203	Date:	02/13/17	<i>Jonathan Kiefer</i>
Project:	None	Temperature:	23.3 °C	
Job Site:	TX02	Humidity:	35.8% RH	
Serial Number:	0027324	Barometric Pres.:	1027 mbar	
EUT: RTH9580WF01				Tested by: Jonathan Kiefer
Configuration:	2			
Customer:	Honeywell, Automation and Control Solutions			
Attendees:	None			
EUT Power:	110VAC/60Hz			
Operating Mode:	Transmitting Antenna 0 at Low Ch 2412MHz, High Ch 2462MHz			
Deviations:	None			
Comments:	Band Edge.			

Test Specifications	Test Method
FCC 15.247:2017	ANSI C63.10:2013

Run #	37	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
2389.927	59.2	-5.4	2.3	61.0	3.0	20.0	Horz	PK	0.0	73.8	74.0	-0.2	Low Ch, EUT Horizontal, 6 Mbps
2389.900	38.8	-5.4	2.3	61.0	3.0	20.0	Horz	AV	0.0	53.4	54.0	-0.6	Low Ch, EUT Horizontal, 6 Mbps
2389.363	58.2	-5.4	1.2	61.0	3.0	20.0	Horz	PK	0.0	72.8	74.0	-1.2	Low Ch, EUT Horizontal, MCS0
2483.960	57.2	-4.7	1.3	45.9	3.0	20.0	Horz	PK	0.0	72.5	74.0	-1.5	High Ch, EUT Horizontal, MCS0
2389.967	37.9	-5.4	1.2	61.0	3.0	20.0	Horz	AV	0.0	52.5	54.0	-1.5	Low Ch, EUT Horizontal, MCS0
2483.550	36.5	-4.7	1.3	45.9	3.0	20.0	Horz	AV	0.0	51.8	54.0	-2.2	High Ch, EUT Horizontal, MCS0
2483.530	36.3	-4.7	1.8	58.9	3.0	20.0	Horz	AV	0.0	51.6	54.0	-2.4	High Ch, EUT Horizontal, 6 Mbps
2483.543	35.2	-4.7	2.0	73.0	3.0	20.0	Horz	AV	0.0	50.5	54.0	-3.5	High Ch, EUT Vertical, 6 Mbps
2483.517	55.1	-4.7	1.8	58.9	3.0	20.0	Horz	PK	0.0	70.4	74.0	-3.6	High Ch, EUT Horizontal, 6 Mbps
2483.600	34.8	-4.7	1.2	46.9	3.0	20.0	Horz	AV	0.0	50.1	54.0	-3.9	High Ch, EUT Horizontal, 36 Mbps
2483.567	54.4	-4.7	1.2	46.9	3.0	20.0	Horz	PK	0.0	69.7	74.0	-4.3	High Ch, EUT Horizontal, 36 Mbps
2483.500	34.0	-4.7	1.1	123.0	3.0	20.0	Vert	AV	0.0	49.3	54.0	-4.7	High Ch, EUT Vertical, 6 Mbps
2388.043	34.7	-5.4	2.0	63.9	3.0	20.0	Horz	AV	0.0	49.3	54.0	-4.7	Low Ch, EUT Horizontal, 1 Mbps
2483.730	53.6	-4.7	2.0	73.0	3.0	20.0	Horz	PK	0.0	68.9	74.0	-5.1	High Ch, EUT Vertical, 6 Mbps
2483.543	33.1	-4.7	1.2	225.9	3.0	20.0	Horz	AV	0.0	48.4	54.0	-5.6	High Ch, EUT Horizontal, 54 Mbps
2483.633	32.5	-4.7	1.5	340.9	3.0	20.0	Horz	AV	0.0	47.8	54.0	-6.2	High Ch, EUT Horizontal, MCS7
2483.530	32.2	-4.7	1.2	238.9	3.0	20.0	Horz	AV	0.0	47.5	54.0	-6.5	High Ch, EUT On Side, 6 Mbps
2484.027	32.1	-4.7	1.2	135.0	3.0	20.0	Horz	AV	0.0	47.4	54.0	-6.6	High Ch, EUT Horizontal, 1 Mbps
2483.697	32.0	-4.7	1.2	309.0	3.0	20.0	Vert	AV	0.0	47.3	54.0	-6.7	High Ch, EUT Horizontal, 6 Mbps
2483.643	32.0	-4.7	1.2	182.0	3.0	20.0	Vert	AV	0.0	47.3	54.0	-6.7	High Ch, EUT On Side, 6 Mbps
2483.767	32.0	-4.7	1.2	288.0	3.0	20.0	Horz	AV	0.0	47.3	54.0	-6.7	High Ch, EUT Horizontal, 11 Mbps
2483.523	51.4	-4.7	1.1	123.0	3.0	20.0	Vert	PK	0.0	66.7	74.0	-7.3	High Ch, EUT Vertical, 6 Mbps

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
2483.527	48.4	-4.7	1.2	225.9	3.0	20.0	Horz	PK	0.0	63.7	74.0	-10.3	High Ch, EUT Horizontal, 54 Mbps
2483.590	46.1	-4.7	1.2	309.0	3.0	20.0	Vert	PK	0.0	61.4	74.0	-12.6	High Ch, EUT Horizontal, 6 Mbps
2483.547	45.9	-4.7	1.5	340.9	3.0	20.0	Horz	PK	0.0	61.2	74.0	-12.8	High Ch, EUT Horizontal, MCS7
2483.643	45.7	-4.7	1.2	238.9	3.0	20.0	Horz	PK	0.0	61.0	74.0	-13.0	High Ch, EUT On Side, 6 Mbps
2388.240	45.8	-5.4	2.0	63.9	3.0	20.0	Horz	PK	0.0	60.4	74.0	-13.6	Low Ch, EUT Horizontal, 1 Mbps
2484.163	44.9	-4.7	1.2	182.0	3.0	20.0	Vert	PK	0.0	60.2	74.0	-13.8	High Ch, EUT On Side, 6 Mbps
2485.493	43.7	-4.7	1.2	135.0	3.0	20.0	Horz	PK	0.0	59.0	74.0	-15.0	High Ch, EUT Horizontal, 1 Mbps
2484.900	43.3	-4.7	1.2	288.0	3.0	20.0	Horz	PK	0.0	58.6	74.0	-15.4	High Ch, EUT Horizontal, 11 Mbps



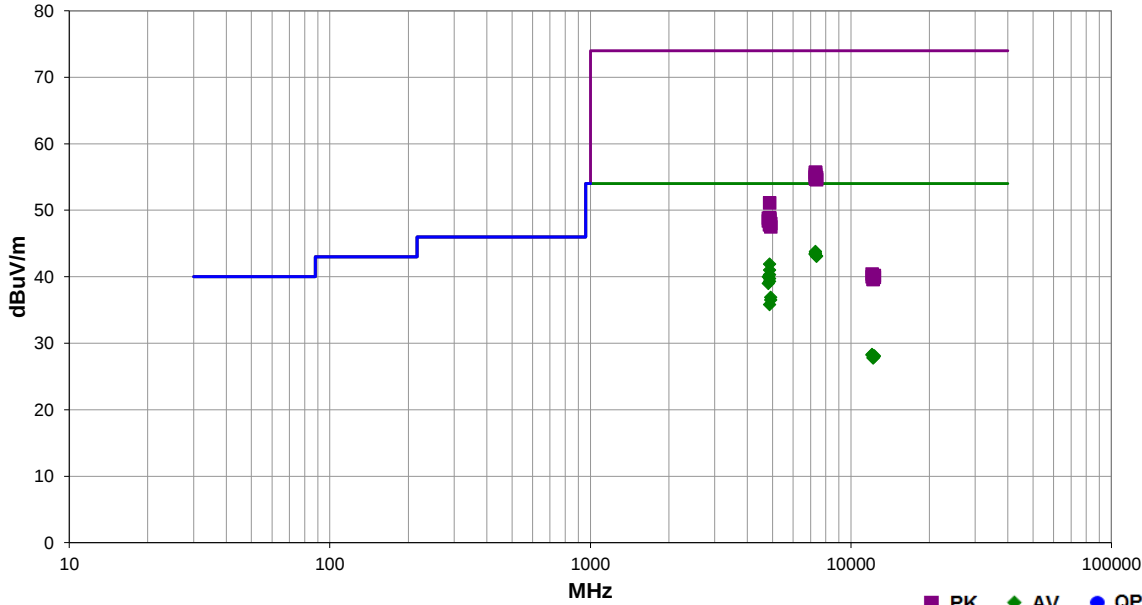
SPURIOUS RADIATED EMISSIONS

EmiRS 2016.08.26 PSA-ESCI 2017.01.26

Work Order:	HNYW0203	Date:	02/13/17	<i>Jonathan Kiefer</i>
Project:	None	Temperature:	23.3 °C	
Job Site:	TX02	Humidity:	35.8% RH	
Serial Number:	0027324	Barometric Pres.:	1027 mbar	
Tested by: Jonathan Kiefer				
EUT:	RTH9580WF01			
Configuration:	2			
Customer:	Honeywell, Automation and Control Solutions			
Attendees:	None			
EUT Power:	110VAC/60Hz			
Operating Mode:	Transmitting Antenna 1 at Low Ch 2412MHz, Mid Ch 2437MHz, High Ch 2462MHz			
Deviations:	None			
Comments:	Harmonics.			

Test Specifications	Test Method
FCC 15.247:2017	ANSI C63.10:2013

Run #	38	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
7312.558	30.2	13.6	1.2	354.0	3.0	0.0	Horz	AV	0.0	43.8	54.0	-10.2	Mid Ch, EUT Vertical, 11 Mbps
7313.467	29.9	13.6	3.0	66.0	3.0	0.0	Horz	AV	0.0	43.5	54.0	-10.5	Mid Ch, EUT Vertical, 6 Mbps
7311.908	29.9	13.6	1.2	222.0	3.0	0.0	Horz	AV	0.0	43.5	54.0	-10.5	Mid Ch, EUT Vertical, 36 Mbps
7313.192	29.8	13.6	2.0	165.9	3.0	0.0	Horz	AV	0.0	43.4	54.0	-10.6	Mid Ch, EUT Vertical, 1 Mbps
7312.500	29.8	13.6	1.2	312.0	3.0	0.0	Vert	AV	0.0	43.4	54.0	-10.6	Mid Ch, EUT Vertical, 1 Mbps
7311.817	29.8	13.6	1.2	184.9	3.0	0.0	Horz	AV	0.0	43.4	54.0	-10.6	Mid Ch, EUT Vertical, 54 Mbps
7313.483	29.8	13.6	1.2	303.0	3.0	0.0	Horz	AV	0.0	43.4	54.0	-10.6	Mid Ch, EUT Vertical, MCS0
7313.017	29.8	13.6	1.2	355.0	3.0	0.0	Horz	AV	0.0	43.4	54.0	-10.6	Mid Ch, EUT Vertical, MCS7
7386.917	29.5	13.6	1.2	336.0	3.0	0.0	Horz	AV	0.0	43.1	54.0	-10.9	High Ch, EUT Vertical, 1 Mbps
7388.442	29.5	13.6	1.2	80.0	3.0	0.0	Vert	AV	0.0	43.1	54.0	-10.9	High Ch, EUT Vertical, 1 Mbps
4874.075	35.6	6.3	1.2	213.0	3.0	0.0	Horz	AV	0.0	41.9	54.0	-12.1	Mid Ch, EUT Vertical, 1 Mbps
4873.983	34.7	6.3	1.2	250.9	3.0	0.0	Horz	AV	0.0	41.0	54.0	-13.0	Mid Ch, EUT Horizontal, 1 Mbps
4873.950	34.0	6.3	1.2	265.0	3.0	0.0	Vert	AV	0.0	40.3	54.0	-13.7	Mid Ch, EUT Vertical, 1 Mbps
4823.958	33.8	6.2	2.2	261.0	3.0	0.0	Vert	AV	0.0	40.0	54.0	-14.0	Low Ch, EUT Vertical, 1 Mbps
4874.000	33.4	6.3	1.2	344.0	3.0	0.0	Vert	AV	0.0	39.7	54.0	-14.3	Mid Ch, EUT Horizontal, 1 Mbps
4873.958	33.0	6.3	1.5	129.9	3.0	0.0	Horz	AV	0.0	39.3	54.0	-14.7	Mid Ch, EUT On Side, 1 Mbps
4823.967	32.8	6.2	1.2	285.9	3.0	0.0	Horz	AV	0.0	39.0	54.0	-15.0	Low Ch, EUT Vertical, 1 Mbps
4924.050	30.4	6.5	1.2	314.0	3.0	0.0	Horz	AV	0.0	36.9	54.0	-17.1	High Ch, EUT Vertical, 1 Mbps
4923.933	30.0	6.5	2.1	222.0	3.0	0.0	Vert	AV	0.0	36.5	54.0	-17.5	High Ch, EUT Vertical, 1 Mbps
4873.875	29.5	6.3	3.7	0.0	3.0	0.0	Vert	AV	0.0	35.8	54.0	-18.2	Mid Ch, EUT On Side, 1 Mbps
7313.008	42.1	13.6	1.2	222.0	3.0	0.0	Horz	PK	0.0	55.7	74.0	-18.3	Mid Ch, EUT Vertical, 36 Mbps
7311.967	42.1	13.6	1.2	303.0	3.0	0.0	Horz	PK	0.0	55.7	74.0	-18.3	Mid Ch, EUT Vertical, MCS0

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
7308.817	41.8	13.6	3.0	66.0	3.0	0.0	Horz	PK	0.0	55.4	74.0	-18.6	Mid Ch, EUT Vertical, 6 Mbps
7312.517	41.7	13.6	1.2	354.0	3.0	0.0	Horz	PK	0.0	55.3	74.0	-18.7	Mid Ch, EUT Vertical, 11 Mbps
7309.908	41.4	13.6	2.0	165.9	3.0	0.0	Horz	PK	0.0	55.0	74.0	-19.0	Mid Ch, EUT Vertical, 1 Mbps
7308.933	41.4	13.6	1.2	312.0	3.0	0.0	Vert	PK	0.0	55.0	74.0	-19.0	Mid Ch, EUT Vertical, 1 Mbps
7312.192	41.4	13.6	1.2	184.9	3.0	0.0	Horz	PK	0.0	55.0	74.0	-19.0	Mid Ch, EUT Vertical, 54 Mbps
7385.675	41.3	13.6	1.2	80.0	3.0	0.0	Vert	PK	0.0	54.9	74.0	-19.1	High Ch, EUT Vertical, 1 Mbps
7310.500	41.1	13.6	1.2	355.0	3.0	0.0	Horz	PK	0.0	54.7	74.0	-19.3	Mid Ch, EUT Vertical, MCS7
7386.583	41.0	13.6	1.2	336.0	3.0	0.0	Horz	PK	0.0	54.6	74.0	-19.4	High Ch, EUT Vertical, 1 Mbps
4874.258	44.8	6.3	1.2	213.0	3.0	0.0	Horz	PK	0.0	51.1	74.0	-22.9	Mid Ch, EUT Vertical, 1 Mbps
4873.975	42.6	6.3	1.2	250.9	3.0	0.0	Horz	PK	0.0	48.9	74.0	-25.1	Mid Ch, EUT Horizontal, 1 Mbps
4824.058	42.6	6.2	2.2	261.0	3.0	0.0	Vert	PK	0.0	48.8	74.0	-25.2	Low Ch, EUT Vertical, 1 Mbps
4873.925	42.4	6.3	1.2	265.0	3.0	0.0	Vert	PK	0.0	48.7	74.0	-25.3	Mid Ch, EUT Vertical, 1 Mbps
4874.183	42.4	6.3	1.2	344.0	3.0	0.0	Vert	PK	0.0	48.7	74.0	-25.3	Mid Ch, EUT Horizontal, 1 Mbps
4874.033	42.1	6.3	1.5	129.9	3.0	0.0	Horz	PK	0.0	48.4	74.0	-25.6	Mid Ch, EUT On Side, 1 Mbps
4823.542	42.2	6.2	1.2	285.9	3.0	0.0	Horz	PK	0.0	48.4	74.0	-25.6	Low Ch, EUT Vertical, 1 Mbps
12058.910	30.5	-2.2	1.2	180.0	3.0	0.0	Vert	AV	0.0	28.3	54.0	-25.7	Low Ch, EUT Vertical, 1 Mbps
12059.080	30.4	-2.2	1.2	172.9	3.0	0.0	Horz	AV	0.0	28.2	54.0	-25.8	Low Ch, EUT Vertical, 1 Mbps
12309.570	29.6	-1.5	1.2	218.0	3.0	0.0	Vert	AV	0.0	28.1	54.0	-25.9	High Ch, EUT Vertical, 1 Mbps
4923.342	41.5	6.5	1.2	314.0	3.0	0.0	Horz	PK	0.0	48.0	74.0	-26.0	High Ch, EUT Vertical, 1 Mbps
12307.690	29.6	-1.6	1.2	130.9	3.0	0.0	Horz	AV	0.0	28.0	54.0	-26.0	High Ch, EUT Vertical, 1 Mbps
12187.380	29.8	-2.0	1.2	225.0	3.0	0.0	Horz	AV	0.0	27.8	54.0	-26.2	Mid Ch, EUT Vertical, 1 Mbps
12182.930	29.8	-2.0	1.2	157.0	3.0	0.0	Vert	AV	0.0	27.8	54.0	-26.2	Mid Ch, EUT Vertical, 1 Mbps
4873.575	41.5	6.3	3.7	0.0	3.0	0.0	Vert	PK	0.0	47.8	74.0	-26.2	Mid Ch, EUT On Side, 1 Mbps
4925.792	41.0	6.5	2.1	222.0	3.0	0.0	Vert	PK	0.0	47.5	74.0	-26.5	High Ch, EUT Vertical, 1 Mbps
12058.630	42.6	-2.2	1.2	172.9	3.0	0.0	Horz	PK	0.0	40.4	74.0	-33.6	Low Ch, EUT Vertical, 1 Mbps
12310.310	41.7	-1.5	1.2	130.9	3.0	0.0	Horz	PK	0.0	40.2	74.0	-33.8	High Ch, EUT Vertical, 1 Mbps
12059.330	42.2	-2.2	1.2	180.0	3.0	0.0	Vert	PK	0.0	40.0	74.0	-34.0	Low Ch, EUT Vertical, 1 Mbps
12311.730	41.4	-1.5	1.2	218.0	3.0	0.0	Vert	PK	0.0	39.9	74.0	-34.1	High Ch, EUT Vertical, 1 Mbps
12184.140	41.6	-2.0	1.2	225.0	3.0	0.0	Horz	PK	0.0	39.6	74.0	-34.4	Mid Ch, EUT Vertical, 1 Mbps
12185.480	41.6	-2.0	1.2	157.0	3.0	0.0	Vert	PK	0.0	39.6	74.0	-34.4	Mid Ch, EUT Vertical, 1 Mbps

SPURIOUS RADIATED EMISSIONS



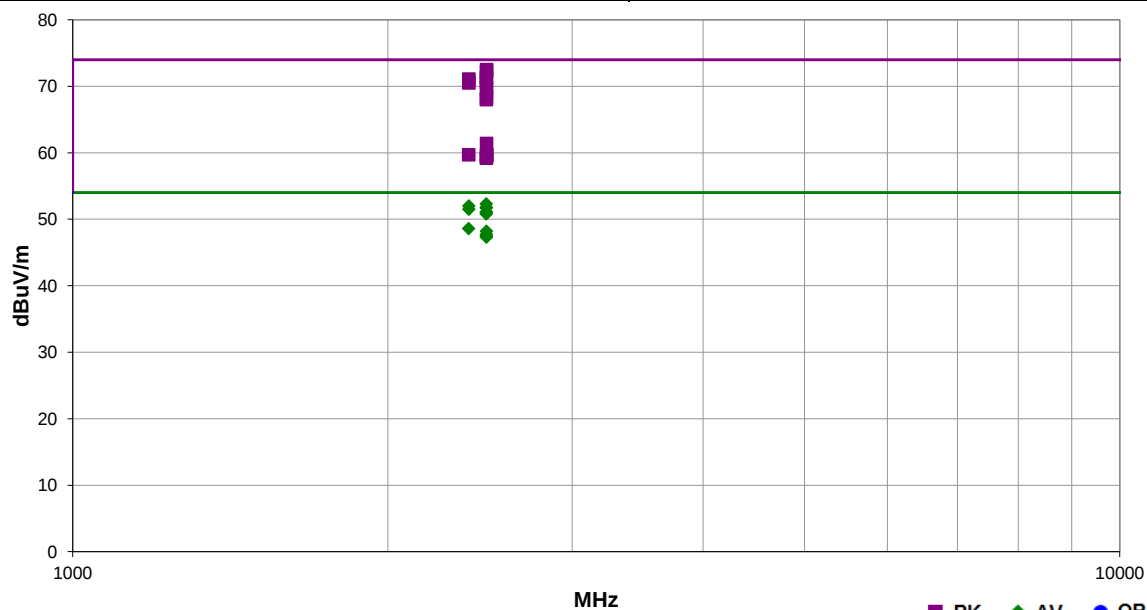
EmiRS 2016.08.26

PSA-ESCI 2017.01.26

Work Order:	HNW0203	Date:	02/13/17	
Project:	None	Temperature:	23.3 °C	
Job Site:	TX02	Humidity:	35.8% RH	
Serial Number:	0027324	Barometric Pres.:	1027 mbar	
EUT:		RTH9580WF01		
Configuration:	2			
Customer:	Honeywell, Automation and Control Solutions			
Attendees:	None			
EUT Power:	110VAC/60Hz			
Operating Mode:	Transmitting Antenna 1 at Low Ch 2412MHz, High Ch 2462MHz			
Deviations:	None			
Comments:	Band Edge.			

Test Specifications	Test Method
FCC 15.247:2017	ANSI C63.10:2013

Run #	41	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
2483.620	57.2	-4.7	1.2	61.0	3.0	20.0	Vert	PK	0.0	72.5	74.0	-1.5	High Ch, EUT On Side, 36 Mbps
2483.513	37.0	-4.7	1.2	44.0	3.0	20.0	Vert	AV	0.0	52.3	54.0	-1.7	High Ch, EUT On Side, 6 Mbps
2483.610	56.9	-4.7	1.2	44.0	3.0	20.0	Vert	PK	0.0	72.2	74.0	-1.8	High Ch, EUT On Side, 6 Mbps
2389.933	37.4	-5.4	1.2	50.0	3.0	20.0	Vert	AV	0.0	52.0	54.0	-2.0	Low Ch, EUT On Side, 6 Mbps
2483.540	36.5	-4.7	1.7	226.9	3.0	20.0	Horz	AV	0.0	51.8	54.0	-2.2	High Ch, EUT Vertical, 6 Mbps
2483.513	36.4	-4.7	3.0	3.0	3.0	20.0	Horz	AV	0.0	51.7	54.0	-2.3	High Ch, EUT Horizontal, 6 Mbps
2389.983	36.9	-5.4	2.1	33.9	3.0	20.0	Vert	AV	0.0	51.5	54.0	-2.5	Low Ch, EUT On Side, 36 Mbps
2483.570	56.0	-4.7	1.7	226.9	3.0	20.0	Horz	PK	0.0	71.3	74.0	-2.7	High Ch, EUT Vertical, 6 Mbps
2483.547	35.8	-4.7	1.2	61.0	3.0	20.0	Vert	AV	0.0	51.1	54.0	-2.9	High Ch, EUT On Side, 36 Mbps
2389.997	56.5	-5.4	1.2	50.0	3.0	20.0	Vert	PK	0.0	71.1	74.0	-2.9	Low Ch, EUT On Side, 36 Mbps
2483.663	35.7	-4.7	1.2	4.9	3.0	20.0	Vert	AV	0.0	51.0	54.0	-3.0	High Ch, EUT On Side, MCS0
2483.510	35.6	-4.7	1.2	34.9	3.0	20.0	Vert	AV	0.0	50.9	54.0	-3.1	High Ch, EUT On Side, 54 Mbps
2483.577	35.5	-4.7	1.2	51.9	3.0	20.0	Vert	AV	0.0	50.8	54.0	-3.2	High Ch, EUT On Side, MCS7
2483.590	55.3	-4.7	3.0	3.0	3.0	20.0	Horz	PK	0.0	70.6	74.0	-3.4	High Ch, EUT Horizontal, 6 Mbps
2389.793	55.9	-5.4	2.1	33.9	3.0	20.0	Vert	PK	0.0	70.5	74.0	-3.5	Low Ch, EUT On Side, 36 Mbps
2483.713	54.5	-4.7	1.2	4.9	3.0	20.0	Vert	PK	0.0	69.8	74.0	-4.2	High Ch, EUT On Side, MCS0
2388.537	34.0	-5.4	1.1	24.0	3.0	20.0	Vert	AV	0.0	48.6	54.0	-5.4	Low Ch, EUT On Side, 1 Mbps
2483.633	53.1	-4.7	1.2	34.9	3.0	20.0	Vert	PK	0.0	68.4	74.0	-5.6	High Ch, EUT On Side, 54 Mbps
2483.613	32.9	-4.7	1.2	61.0	3.0	20.0	Vert	AV	0.0	48.2	54.0	-5.8	High Ch, EUT On Side, 1 Mbps
2483.510	52.7	-4.7	1.2	51.9	3.0	20.0	Vert	PK	0.0	68.0	74.0	-6.0	High Ch, EUT On Side, MCS7
2483.667	32.4	-4.7	1.2	147.9	3.0	20.0	Vert	AV	0.0	47.7	54.0	-6.3	High Ch, EUT Vertical, 6 Mbps
2483.507	32.4	-4.7	1.2	3.0	3.0	20.0	Vert	AV	0.0	47.7	54.0	-6.3	High Ch, EUT On Side, 11 Mbps

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
2483.543	32.1	-4.7	1.2	201.9	3.0	20.0	Horz	AV	0.0	47.4	54.0	-6.6	High Ch, EUT On Side, 6 Mbps
2483.890	32.0	-4.7	1.2	207.0	3.0	20.0	Vert	AV	0.0	47.3	54.0	-6.7	High Ch, EUT Horizontal, 6 Mbps
2483.720	46.1	-4.7	1.2	147.9	3.0	20.0	Vert	PK	0.0	61.4	74.0	-12.6	High Ch, EUT Vertical, 6 Mbps
2484.640	44.4	-4.7	1.2	3.0	3.0	20.0	Vert	PK	0.0	59.7	74.0	-14.3	High Ch, EUT On Side, 11 Mbps
2388.870	45.1	-5.4	1.1	24.0	3.0	20.0	Vert	PK	0.0	59.7	74.0	-14.3	Low Ch, EUT On Side, 1 Mbps
2484.117	44.3	-4.7	1.2	61.0	3.0	20.0	Vert	PK	0.0	59.6	74.0	-14.4	High Ch, EUT On Side, 1 Mbps
2484.140	44.1	-4.7	1.2	201.9	3.0	20.0	Horz	PK	0.0	59.4	74.0	-14.6	High Ch, EUT On Side, 6 Mbps
2483.557	43.9	-4.7	1.2	207.0	3.0	20.0	Vert	PK	0.0	59.2	74.0	-14.8	High Ch, EUT Horizontal, 6 Mbps