Company: Itron

Test of: RIVA Modular LE

To: FCC CFR 47 Part 15 Subpart C 15.247 ISED RSS-247

Report No.: ITRO09-U2_Radiated Rev A

RADIATED TEST REPORT



RADIATED TEST REPORT



Test of: Itron RIVA Modular LE

To: FCC CFR 47 Part 15 Subpart C 15.247 ISED RSS-247

Test Report Serial No.: ITRO09-U2 Radiated Rev A

This report supersedes: NONE

Applicant: Itron

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Liberty Lake, Washington 99019

USA

Issue Date: 8th March 2019

Master Document Number ITRO09-U2_Master Rev A

Addendum Reports
ITRO09-U2_Conducted Rev A
ITRO09-U2_Radiated Rev A

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MiCOM Labs is an ISO 17025 Accredited Testing Laboratory



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1. TEST RESULTS

1.1. Emissions

1.1.1. Radiated Emissions

	Radiated Test Conditions for Radiated Spurious and Band-Edge Emissions (Restricted Bands)										
Standard:	FCC CFR 47:15.247 Ambient Temp. (°C): 20.0 - 24.5										
Test Heading:	Radiated Spurious and Band- Edge Emissions	Rel. Humidity (%):	32 - 45								
Standard Section(s):	1 16 206 16 200	999 - 1001									
Reference Document(s):	See Normative References										

Test Procedure for Radiated Spurious and Band-Edge Emissions (Restricted Bands)

Radiated emissions for restricted bands above 1 GHz are measured in the anechoic chamber at a 3-meter distance on every azimuth in both horizontal and vertical polarities. The emissions are recorded and maximized as a function of azimuth by rotation through 360° with a spectrum analyzer in peak hold mode. Depending on the frequency band spanned a notch filter and waveguide filter was used to remove the fundamental frequency. The highest emissions relative to the limit are listed for each frequency spanned. Measurements on any restricted band frequency or frequencies above 1 GHz are based on the use of measurement instrumentation employing peak and average detectors. All measurements were performed using a resolution bandwidth of 1 MHz.

Test configuration and setup for Radiated Spurious and Band-Edge Measurement were per the Radiated Test Set-up specified in this document.

Limits for Restricted Bands Peak emission: 74 dBuV/m Average emission: 54 dBuV/m

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Loss, and subtracting Amplifier Gain from the measured reading. All factors are included in the reported data.

FS = R + AF + CORR - FO

where:

FS = Field Strength

R = Measured Spectrum analyzer Input Amplitude

AF = Antenna Factor

CORR = Correction Factor = CL - AG + NFL

CL = Cable Loss

AG = Amplifier Gain

FO = Distance Falloff Factor

NFL = Notch Filter Loss or Waveguide Loss

Example

Given receiver input reading of 51.5 dBmV; Antenna Factor of 8.5 dB; Cable Loss of 1.3 dB; Falloff Factor of 0 dB, an Amplifier Gain of 26 dB and Notch Filter Loss of 1 dB. The Field Strength (FS) of the measured emission is:

FS = 51.5 + 8.5 + 1.3 - 26.0 +1 = 36.3 dBmV/m

Conversion between dBmV/m (or dBmV) and mV/m (or mV) are as follows: Level (dBmV/m) = 20 * Log (level (mV/m))

40 dBmV/m = 100 mV/m 48 dBmV/m = 250 mV/m

Restricted Bands of Operation (15.205)



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(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

	Frequenc	y Band		
MHz	MHz	MHz	GHz	
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15	
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46	
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75	
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5	
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2	
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5	
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7	
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4	
6.31175-6.31225	123-138	2200-2300	14.47-14.5	
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2	
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4	
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12	
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0	
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8	
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5	
12.57675-12.57725	322-335.4	3600-4400	Above 38.6	
13.36-13.41				

- (b) Except as provided in paragraphs (d) and (e) of this section, the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.
- (c) Except as provided in paragraphs (d) and (e) of this section, regardless of the field strength limits specified elsewhere in this subpart, the provisions of this section apply to emissions from any intentional radiator.
- (d) The following devices are exempt from the requirements of this section:
 - (1) Swept frequency field disturbance sensors operating between 1.705 and 37 MHz provided their emissions only sweep through the bands listed in paragraph (a) of this section, the sweep is never stopped with the fundamental emission within the bands listed in paragraph (a) of this section, and the fundamental emission is outside of the bands listed in paragraph (a) of this section more than 99% of the time the device is actively transmitting, without compensation for duty cycle.
 - (2) Transmitters used to detect buried electronic markers at 101.4 kHz which are employed by telephone companies.
 - (3) Cable locating equipment operated pursuant to §15.213.
 - (4) Any equipment operated under the provisions of §15.253, 15.255, and 15.256 in the frequency band 75-85 GHz, or §15.257 of this part.
 - (5) Biomedical telemetry devices operating under the provisions of §15.242 of this part are not subject to the restricted band 608-614 MHz but are subject to compliance within the other restricted bands.



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(6) Transmitters operating under the provisions of subparts D or F of this part.

- (7) Devices operated pursuant to §15.225 are exempt from complying with this section for the 13.36-13.41 MHz band only.
- (8) Devices operated in the 24.075-24.175 GHz band under §15.245 are exempt from complying with the requirements of this section for the 48.15-48.35 GHz and 72.225-72.525 GHz bands only, and shall not exceed the limits specified in §15.245(b).
- (9) Devices operated in the 24.0-24.25 GHz band under §15.249 are exempt from complying with the requirements of this section for the 48.0-48.5 GHz and 72.0-72.75 GHz bands only, and shall not exceed the limits specified in §15.249(a).
- (e) Harmonic emissions appearing in the restricted bands above 17.7 GHz from field disturbance sensors operating under the provisions of §15.245 shall not exceed the limits specified in §15.245(b).



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1.1.1.1 TX Spurious & Restricted Band Emissions

Equipment Configuration for Radiated Digital Emissions

Antenna:	Laird 0600-00048	Variant:	Mode 1
Antenna Gain (dBi):	2.0	Modulation:	GFSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	902.20	Data Rate:	10 KBit/s
Power Setting:	340	Tested By:	JMH

	30.00 - 1000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	902.19	46.96	6.65	- 5.10	48.51	Fundamental	Vertical	100	0			
T 4 N I - 4	Test Notes: Laird 0600-00048 2 dBi Monopole Antenna. 900 MHz notch in front of amp to prevent overload											



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Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	Laird 0600-00048	Variant:	Mode 1
Antenna Gain (dBi):	2.0	Modulation:	GFSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	902.20	Data Rate:	10 KBit/s
Power Setting:	340	Tested By:	JMH

	1000.00 - 10000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	1804.43	63.36	-1.55	-14.44	47.37	Peak (NRB)	Vertical	100	0			Pass
Test Not	es: Laird 2 dE	Bi Monopo	ole Antenr	na		(/						



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Equipment Configuration for Radiated Digital Emissions

Antenna:	Laird 0600-00048	Variant:	Mode 1
Antenna Gain (dBi):	2.0	Modulation:	GFSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	915.20	Data Rate:	10 KBit/s
Power Setting:	340	Tested By:	JMH

Test Measurement Results

	30.00 - 1000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	915.10	48.04	6.67	-4.70	50.01	Fundamental	Vertical	101	0			
Test Not	es: Laird 060	0-00048 2	dBi Mon	opole Ant	enna. 900	MHz notch in fro	nt of amp	to prever	nt overloa	d		

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Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	Laird 0600-00048	Variant:	Mode 1
Antenna Gain (dBi):	2.0	Modulation:	GFSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	915.20	Data Rate:	10 KBit/s
Power Setting:	340	Tested By:	JMH

	1000.00 - 10000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	1830.15	62.87	-1.52	-14.03	47.32	Peak (NRB)	Vertical	100	0		-	Pass
Test Not	es: Laird 0600	0-00048 2	2 dBi Mon	opole Ant	enna							



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Equipment Configuration for Radiated Digital Emissions

Antenna:	Laird 0600-00048	Variant:	Mode 1
Antenna Gain (dBi):	2.0	Modulation:	GFSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	927.75	Data Rate:	10 KBit/s
Power Setting:	340	Tested By:	JMH

	30.00 - 1000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	927.67	61.53	6.72	-4.70	63.55	Fundamental	Vertical	100	0			
#2	953.75	40.27	6.82	-4.30	42.79	Peak (NRB)	Vertical	100	0			Pass
Test Not	es: Laird 060	0-00048 2	dBi Mon	opole Ant	enna. 900	MHz notch in fro	nt of amo	to prever	nt overloa	d		



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Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	Laird 0600-00048	Variant:	Mode 1
Antenna Gain (dBi):	2.0	Modulation:	GFSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	927.75	Data Rate:	10 KBit/s
Power Setting:	340	Tested By:	JMH

	1000.00 - 10000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	1855.46	60.81	-1.56	-13.80	45.45	Peak (NRB)	Vertical	100	0		-	Pass
Test Not	es: Laird 060	0-00048 2	dBi Mon	opole Ant	enna							



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Equipment Configuration for Radiated Digital Emissions

Antenna:	Laird 0600-00048	Variant:	Mode 1
Antenna Gain (dBi):	2.0	Modulation:	GFSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	Нор	Data Rate:	10 KBit/s
Power Setting:	340	Tested By:	JMH

					30.	00 - 1000.00 MF	łz					
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	54.34	46.49	3.73	-21.30	28.92	MaxQP	Vertical	134	104	40.0	-11.1	Pass
#2	861.00	46.23	6.54	-5.40	47.37	Peak (NRB)	Vertical	100	0			Pass
#3	869.48	40.27	6.58	-5.30	41.55	Peak (NRB)	Horizontal	100	0			Pass
#4	880.18	42.42	6.59	-5.20	43.81	Peak (NRB)	Vertical	100	0			Pass
#5	902.24	47.06	6.65	-5.10	48.61	Fundamental	Vertical	100	0			Pass
#6	926.49	61.56	6.72	-4.60	63.68	Fundamental	Vertical	100	0			Pass
#7	939.73	51.36	6.77	-4.30	53.83	Peak (NRB)	Vertical	100	0			Pass
#8	951.82	40.37	6.81	-4.30	42.88	Peak (NRB)	Vertical	100	0			Pass
#9	968.48	24.05	6.85	-4.20	26.70	MaxQP	Vertical	138	352	53.0	-26.3	Pass
Test No	tes: Laird 060	0-00048	2 dBi Mor	nopole Ar	itenna. 900	MHz notch in f	ront of amp t	to preven	t overloa	d, Hopping]	



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Equipment Configuration for Radiated Digital Emissions

Antenna:	Laird 0600-00048	Variant:	Mode 2
Antenna Gain (dBi):	2.0	Modulation:	FSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	902.20	Data Rate:	50 KBit/s
Power Setting:	340	Tested By:	JMH

30.00 - 1000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	902.13	46.94	6.65	-5.10	48.49	Peak (NRB)	Vertical	100	0			Pass



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Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	Laird 0600-00048	Variant:	Mode 2
Antenna Gain (dBi):	2.0	Modulation:	FSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	902.20	Data Rate:	50 KBit/s
Power Setting:	340	Tested By:	JMH

	1000.00 - 10000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	1804.53	64.18	-1.55	-14.44	48.19	Peak (NRB)	Vertical	100	0		-	Pass
Test Not	es: Laird 060	0-00048 2	dBi Mon	opole Ant	enna							



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Equipment Configuration for Radiated Digital Emissions

Antenna:	Laird 0600-00048	Variant:	Mode 2
Antenna Gain (dBi):	2.0	Modulation:	FSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	915.20	Data Rate:	50 KBit/s
Power Setting:	340	Tested By:	JMH

Test Measurement Results

	30.00 - 1000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	915.15	47.53	6.68	-4.80	49.41	Fundamental	Vertical	100	0			Pass
Test Not	es: Laird 0600	0-00048 2	dBi Mon	opole Ant	enna. 900	MHz notch in fro	nt of amp	to prever	nt overloa	d		

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Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	Laird 0600-00048	Variant:	Mode 2
Antenna Gain (dBi):	2.0	Modulation:	FSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	915.20	Data Rate:	50 KBit/s
Power Setting:	340	Tested By:	JMH

	1000.00 - 10000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	1830.27	62.96	-1.52	-14.03	47.41	Peak (NRB)	Vertical	100	0			Pass
Test Not	es: Laird 0600	0-00048 2	dBi Mon	opole Ant	enna	•	•					



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Antenna:	Laird 0600-00048	Variant:	Mode 2
Antenna Gain (dBi):	2.0	Modulation:	FSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	927.60	Data Rate:	50 KBit/s
Power Setting:	340	Tested By:	JMH

	30.00 - 1000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	927.48	61.76	6.72	-4.70	63.78	Fundamental	Vertical	100	0			Pass
#2	953.64	40.41	6.82	-4.30	42.93	Peak (NRB)	Vertical	100	0			Pass
Test Not	tes: Laird 0600	0-00048 2	dBi Mon	opole Ant	enna. 900	MHz notch in fro	nt of amo	to prever	nt overloa	d		



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Antenna:	Laird 0600-00048	Variant:	Mode 2
Antenna Gain (dBi):	2.0	Modulation:	FSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	927.60	Data Rate:	50 Kbit/s
Power Setting:	340	Tested By:	JMH

	1000.00 - 10000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	1855.21	63.69	-1.56	-13.80	48.33	Peak (NRB)	Vertical	149	0			Pass
Test Not	es: Laird 0600	0-00048 2	dBi Mon	opole Ant	enna							



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Equipment Configuration for Radiated Digital Emissions

Antenna:	Laird 0600-00048	Variant:	Mode 2
Antenna Gain (dBi):	2.0	Modulation:	FSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	Нор	Data Rate:	50 KBit/s
Power Setting:	340	Tested By:	JMH

	30.00 - 1000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	55.74	47.09	3.73	-21.30	29.52	MaxQP	Vertical	134	104	40.0	-10.5	Pass
#2	867.57	48.95	6.56	-5.30	50.21	Peak (NRB)	Vertical	100	98			Pass
#3	902.51	43.84	6.65	- 5.10	45.39	Fundamental	Vertical	100	98			
#4	927.42	72.26	6.72	-4.70	74.28	Fundamental	Vertical	100	98			Pass
#5	959.57	54.17	6.81	-4.10	56.88	Peak (NRB)	Vertical	100	0			Pass
#6	972.79	22.83	6.88	-4.10	25.61	MaxQP	Vertical	184	346	53.0	-27.4	Pass
Test No	tes: Laird 060	0-00048 2	dBi Mon	opole Ant	enna. 900	MHz notch in fro	nt of amp	to prever	it overloa	d, Hopping]	



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Equipment Configuration for Radiated Digital Emissions

Antenna:	Laird 0600-00048	Variant:	Mode 3
Antenna Gain (dBi):	2.0	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	903.00	Data Rate:	16.384 Bit/s
Power Setting:	340	Tested By:	JMH

Test Measurement Results

	30.00 - 1000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	875.59	44.61	6.59	-5.20	46.00	Peak (NRB)	Vertical	100	0		-	Pass
#2	902.99	45.48	6.65	-5.10	47.03	Fundamental	Horizontal	100	0			Pass
#3	947.52	40.13	6.79	-4.20	42.72	Peak (NRB)	Vertical	100	0			Pass

Test Notes: Laird 0600-00048 2 dBi Monopole Antenna. 900 MHz notch in front of amp to prevent overload



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Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	Laird 0600-00048	Variant:	Mode 3
Antenna Gain (dBi):	2.0	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	903.00	Data Rate:	16.384 Bit/s
Power Setting:	340	Tested By:	JMH

	1000.00 - 10000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	1806.01	65.34	-1.55	-14.43	49.36	Peak (NRB)	Vertical	149	0		-	Pass
Test Not	Test Notes: Laird 0600-00048 2 dBi Monopole Antenna											



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Antenna:	Laird 0600-00048	Variant:	Mode 3
Antenna Gain (dBi):	2.0	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	915.20	Data Rate:	16.384 Bit/s
Power Setting:	340	Tested By:	JMH

	30.00 - 1000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	874.21	44.43	6.58	-5.20	45.81	Peak (NRB)	Vertical	100	0	-	-	Pass
#2	915.19	47.52	6.68	-4.80	49.40	Fundamental	Vertical	100	0	-	-	Pass
#3	945.74	48.81	6.77	-4.20	51.38	Peak (NRB)	Vertical	100	0	-	-	Pass
#4	960.64	42.47	6.82	-4.30	44.99	MaxQP	Vertical	98	50	53.0	-8.0	Pass
Test Not	Test Notes: Laird 0600-00048 2 dBi Monopole Antenna. 900 MHz notch in front of amp to prevent overload											



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Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	Laird 0600-00048	Variant:	Mode 3
Antenna Gain (dBi):	2.0	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	915.20	Data Rate:	16.384 Bit/s
Power Setting:	340	Tested By:	JMH

	1000.00 - 10000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	1830.38	62.48	-1.52	-14.03	46.93	Peak (NRB)	Vertical	100	0			Pass
Test Not	Fest Notes: Laird 0600-00048 2 dBi Monopole Antenna											



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Antenna:	Laird 0600-00048	Variant:	Mode 3
Antenna Gain (dBi):	2.0	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	926.80	Data Rate:	16.384 Bit/s
Power Setting:	340	Tested By:	JMH

	1000.00 - 10000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	1853.65	63.28	-1.56	-13.81	47.91	Peak (NRB)	Vertical	143	0		-	Pass
Test Not	est Notes: Laird 0600-00048 2 dBi Monopole Antenna											



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Equipment Configuration for Radiated Digital Emissions

Antenna:	Laird 0600-00048	Variant:	Mode 3
Antenna Gain (dBi):	2.0	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	Нор	Data Rate:	16.384 Bit/s
Power Setting:	340	Tested By:	JMH

	30.00 - 1000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	51.59	46.57	3.70	-20.70	29.57	MaxQP	Vertical	175	328	40.0	-10.4	Pass
#2	868.08	57.11	6.56	-5.30	58.37	Peak (NRB)	Vertical	100	0		-	Pass
#3	874.85	45.44	6.58	-5.20	46.82	Peak (NRB)	Vertical	100	0		-	Pass
#4	903.56	45.65	6.67	-4.90	47.42	Fundamental	Vertical	100	0		-	Pass
#5	926.60	73.89	6.72	-4.60	76.01	Fundamental	Vertical	100	0			Pass
#6	946.33	55.42	6.78	-4.20	58.00	Peak (NRB)	Vertical	100	0			Pass
#7	960.44	41.57	6.82	-4.30	44.09	MaxQP	Vertical	147	301	46.0	-1.9	Pass
Test No	Fest Notes: Laird 0600-00048 2 dBi Monopole Antenna. 900 MHz notch in front of amp to prevent overload, Hopping											



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Antenna:	World Products WPANT30088-S1A	Variant:	Mode 1
Antenna Gain (dBi):	2.50	Modulation:	GFSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	902.20	Data Rate:	10 KBit/s
Power Setting:	340	Tested By:	JMH

	30.00 - 1000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	902.20	43.44	6.65	-5.10	44.99	Fundamental	Horizontal	100	0		-	
Test Not	Test Notes: WPANT Antenna 900 MHz notch in front of amp to prevent overloads.											



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Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	World Products WPANT30088-S1A	Variant:	Mode 1
Antenna Gain (dBi):	2.50	Modulation:	GFSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	902.20	Data Rate:	10 KBit/s
Power Setting:		Tested By:	JMH

	1000.00 - 10000.00 MHz												
Num	Num Frequency Raw Cable dBμV AF Level dBμV/m Measurement dBμV/m Pol Type Hgt cm Azt Deg dBμV/m Limit dBμV/m Margin dB μV/m Pass dBμV/m												
#1	1804.41	74.81	-1.55	-14.44	58.82	Peak (NRB)	Horizontal	100	0			Pass	



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Equipment Configuration for Radiated Digital Emissions

Antenna:	World Products WPANT30088-S1A	Variant:	Mode 1
Antenna Gain (dBi):	2.50	Modulation:	GFSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	915.20	Data Rate:	10 KBit/s
Power Setting:	340	Tested By:	JMH

	30.00 - 1000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	915.10	44.40	6.68	-4.80	46.28	Peak (NRB)	Horizontal	100	0			Pass
Test Not	Test Notes: WPANT Antenna 900 MHz notch in front of amp to prevent overloads.											



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Antenna:	World Products WPANT30088-S1A	Variant:	Mode 1
Antenna Gain (dBi):	2.50	Modulation:	GFSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	915.20	Data Rate:	10 KBit/s
Power Setting:	340	Tested By:	JMH

	1000.00 - 10000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	1830.22	72.71	-1.52	-14.03	57.16	Peak (NRB)	Horizontal	100	0			Pass
Test Not	Fest Notes: WPANT Antenna 900 MHz notch in front of amp to prevent overloads.											



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Equipment Configuration for Radiated Digital Emissions

Antenna:	World Products WPANT30088-S1A	Variant:	Mode 1
Antenna Gain (dBi):	2.50	Modulation:	GFSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	927.75	Data Rate:	10 KBit/s
Power Setting:	340	Tested By:	JMH

	30.00 - 1000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	927.76	73.47	6.72	-4.70	75.49	Fundamental	Horizontal	100	0			Pass
#2	953.76	39.33	6.82	-4.30	41.85	Peak (NRB)	Vertical	100	127			Pass
Test No	Test Notes: WPANT Antenna 900 MHz notch in front of amp to prevent overloads.											



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Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	World Products WPANT30088-S1A	Variant:	Mode 1
Antenna Gain (dBi):	2.50	Modulation:	GFSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	927.75	Data Rate:	10 KBit/s
Power Setting:	340	Tested By:	JMH

	1000.00 - 10000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail	
#1	1855.56	70.37	-1.56	-13.80	55.01	Peak (NRB)	Horizontal	100	0			Pass	



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Antenna:	World Products WPANT30088-S1A	Variant:	Mode 1
Antenna Gain (dBi):	2.5	Modulation:	GFSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	Нор	Data Rate:	10 KBit/s
Power Setting:	340	Tested By:	JMH

					30.	00 - 1000.00 MF	łz					
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	54.06	49.54	3.73	-21.10	32.17	MaxQP	Vertical	101	312	40.0	-7.8	Pass
#2	864.09	45.81	6.54	-5.20	47.15	Peak (NRB)	Vertical	100	0		-	Pass
#3	865.22	48.93	6.54	-5.20	50.27	Peak (NRB)	Horizontal	100	0			Pass
#4	902.26	42.31	6.65	-5.10	43.86	Fundamental	Horizontal	100	0		-	
#5	927.51	71.10	6.72	-4.70	73.12	Fundamental	Horizontal	100	0		-	
#6	944.37	48.26	6.77	-4.20	50.83	Peak (NRB)	Horizontal	100	0		-	Pass
#7	956.82	42.69	6.79	-4.20	45.28	Peak (NRB)	Horizontal	100	0		-	Pass
#8	964.79	22.60	6.82	-4.20	25.22	MaxQP	Vertical	180	308	53.0	-27.8	Pass
#9	973.99	22.66	6.89	-4.00	25.55	MaxQP	Vertical	215	357	53.0	-27.5	Pass
#10	976.26	24.81	6.87	-4.00	27.68	MaxQP	Horizontal	105	160	53.0	-25.3	Pass
Test No	Fest Notes: WPANT Antenna 900 MHz notch in front of amp to prevent overloads. Hopping											



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Antenna:	World Products WPANT30088-S1A	Variant:	Mode 2
Antenna Gain (dBi):	2.50	Modulation:	FSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	902.20	Data Rate:	50 KBit/s
Power Setting:	340	Tested By:	JMH

	30.00 - 1000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	902.31	42.68	6.65	-5.10	44.23	Fundamental	Horizontal	100	0		-	
Test Not	Fest Notes: WPANT Antenna 900 MHz notch in front of amp to prevent overloads.											



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Antenna:	World Products WPANT30088-S1A	Variant:	Mode 2
Antenna Gain (dBi):	2.50	Modulation:	FSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	902.20	Data Rate:	50 KBit/s
Power Setting:	340	Tested By:	JMH

	1000.00 - 10000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	1804.44	74.75	-1.55	-14.44	58.76	Peak (NRB)	Horizontal	100	0		-	Pass
Test Not	Test Notes: WPANT Antenna											



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Equipment Configuration for Radiated Digital Emissions

Antenna:	World Products WPANT30088-S1A	Variant:	Mode 2	
Antenna Gain (dBi):	2.50	Modulation:	FSK	
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99	
Channel Frequency (MHz):	915.20	Data Rate:	50 KBit/s	
Power Setting:	340	Tested By:	JMH	

30.00 - 1000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	915.15	43.95	6.68	-4.80	45.83	Fundamental	Horizontal	101	0			Pass
Test Notes: WPANT Antenna 900 MHz notch in front of amp to prevent overloads.												



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Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	World Products WPANT30088-S1A	Variant:	Mode 2
Antenna Gain (dBi):	2.50	Modulation:	FSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	915.20	Data Rate:	50 KBit/s
Power Setting:	340	Tested By:	JMH

	1000.00 - 10000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	1830.31	71.93	-1.52	-14.03	56.38	Peak (NRB)	Horizontal	100	0			Pass
Test Not	tes: WPANT A	Antenna										



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Equipment Configuration for Radiated Digital Emissions

Antenna:	World Products WPANT30088-S1A	Variant:	Mode 2
Antenna Gain (dBi):	Not Applicable	Modulation:	FSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	927.60	Data Rate:	50 KBit/s
Power Setting:	340	Tested By:	JMH

	30.00 - 1000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	927.69	74.07	6.72	-4.70	76.09	Fundamental	Horizontal	100	0			Pass
#2	953.57	39.28	6.82	-4.30	41.80	Peak (NRB)	Horizontal	100	0			Pass
Test Not	est Notes: WPANT Antenna 900 MHz notch in front of amp to prevent overloads.											



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Antenna:	World Products WPANT30088-S1A	Variant:	Mode 2
Antenna Gain (dBi):	2.50	Modulation:	FSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	927.60	Data Rate:	50 KBit/s
Power Setting:	340	Tested By:	JMH

	1000.00 - 10000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	1855.11	69.73	-1.56	-13.80	54.37	Peak (NRB)	Horizontal	100	0			Pass
Test Not	est Notes: WPANT Antenna											



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Equipment Configuration for Radiated Digital Emissions

Antenna:	World Products WPANT30088-S1A	Variant:	Mode 2
Antenna Gain (dBi):	2.50	Modulation:	FSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	Нор	Data Rate:	50 KBit/s
Power Setting:	340	Tested By:	JMH

					30.	00 - 1000.00 MF	łz					
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	54.29	48.87	3.73	-21.10	31.50	MaxQP	Vertical	125	268	40.0	-8.5	Pass
#2	821.16	52.93	6.89	-5.50	40.54	Peak (NRB)	Horizontal	100	0			Pass
#3	850.32	59.61	7.02	-5.50	47.09	Peak (NRB)	Horizontal	100	0			Pass
#4	860.04	63.79	7.11	-5.40	51.28	Peak (NRB)	Horizontal	100	0			Pass
#5	873.65	61.84	7.15	-5.30	49.48	Peak (NRB)	Horizontal	100	0			Pass
#6	902.07	42.13	6.65	-5.10	43.68	Peak (NRB)	Horizontal	100	0			Pass
#7	926.98	70.84	6.72	-4.60	72.96	Peak (NRB)	Horizontal	100	0			Pass
#8	947.40	46.49	6.79	-4.20	49.08	Peak (NRB)	Horizontal	100	0			Pass
#9	949.39	47.42	6.79	-4.20	50.01	Peak (NRB)	Horizontal	100	0			Pass
#10	955.57	48.12	6.79	-4.20	50.71	Peak (NRB)	Horizontal	100	0			Pass
#11	968.57	22.76	6.85	-4.20	25.41	MaxQP	Horizontal	224	66	53.0	-27.6	Pass
#12	971.22	23.11	6.85	-4.00	25.96	MaxQP	Horizontal	171	149	53.0	-27.0	Pass
#13	973.53	23.49	6.89	-4.00	26.38	MaxQP	Horizontal	184	144	53.0	-26.6	Pass
Test No	tes: WPANT A	Antenna	900 MHz	notch in	front of an	np to prevent over	erloads.			•		



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Equipment Configuration for Radiated Digital Emissions

Antenna:	World Products WPANT30088-S1A	Variant:	Mode 3
Antenna Gain (dBi):	Not Applicable	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	903.00	Data Rate:	16384 Bit/s
Power Setting:	340	Tested By:	JMH

	30.00 - 1000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	866.99	43.18	6.54	-5.30	44.42	Peak (NRB)	Horizontal	100	41			Pass
#2	902.99	40.91	6.65	-5.10	42.46	Fundamental	Horizontal	100	0			
#3	946.47	44.52	6.78	-4.20	47.10	Peak (NRB)	Horizontal	100	132			Pass
Test No	Test Notes: WPANT Antenna 900 MHz notch in front of amp to prevent overloads.											



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Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	World Products WPANT30088-S1A	Variant:	Mode 3
Antenna Gain (dBi):	2.50	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	903.00	Data Rate:	16384 Bit/s
Power Setting:	340	Tested By:	JMH

					1000	.00 - 10000.00 N	ИHz					
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	1806.04	76.69	-1.55	-14.43	60.71	Peak (NRB)	Horizontal	100	0			Pass



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Equipment Configuration for Radiated Digital Emissions

Antenna:	World Products WPANT30088-S1A	Variant:	Mode 3
Antenna Gain (dBi):	Not Applicable	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	915.20	Data Rate:	16384 Bit/s
Power Setting:	340	Tested By:	JMH

	30.00 - 1000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail	
#1	873.53	42.08	6.58	-5.30	43.36	Peak (NRB)	Horizontal	100	166			Pass	
#2	915.21	44.13	6.68	-4.80	46.01	Fundamental	Horizontal	100	0		-	Pass	
#3	947.52	50.38	6.79	-4.20	52.97	Peak (NRB)	Horizontal	100	166		-	Pass	
#4	960.19	41.09	6.82	-4.30	43.61	MaxQP	Horizontal	98	150	53.0	-9.4	Pass	
Test No	est Notes: WPANT Antenna 900 MHz notch in front of amp to prevent overloads.												



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Antenna:	World Products WPANT30088-S1A	Variant:	Mode 3
Antenna Gain (dBi):	2.50	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	915.20	Data Rate:	16384 Bit/s
Power Setting:	340	Tested By:	JMH

	1000.00 - 10000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail	
#1	1830.42	73.62	-1.52	-14.03	58.07	Peak (NRB)	Horizontal	100	0			Pass	
Test Not	Fest Notes: WPANT Antenna												



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Equipment Configuration for Radiated Digital Emissions

Antenna:	World Products WPANT30088-S1A	Variant:	Mode 3
Antenna Gain (dBi):	Not Applicable	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	926.80	Data Rate:	16384 Bit/s
Power Setting:	340	Tested By:	JMH

	30.00 - 1000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail	
#1	867.82	35.99	6.56	-5.30	37.25	Peak (NRB)	Horizontal	100	0			Pass	
#2	926.81	71.47	6.72	-4.60	73.59	Fundamental	Horizontal	100	0		-	Pass	
#3	944.78	45.79	6.77	-4.20	48.36	Peak (NRB)	Horizontal	100	0			Pass	
#4	957.56	46.21	6.79	-4.10	48.90	Peak (NRB)	Horizontal	100	0			Pass	
#5	960.21	48.50	6.82	-4.30	51.02	MaxQP	Horizontal	100	143	53.0	-3.0	Pass	
#6	963.07	48.50	6.81	-4.20	51.11	MaxQP	Horizontal	100	149	53.0	-1.9	Pass	
Test No	Fest Notes: WPANT Antenna 900 MHz notch in front of amp to prevent overloads.												



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Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	World Products WPANT30088-S1A	Variant:	Mode 3
Antenna Gain (dBi):	2.50	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	926.80	Data Rate:	16384 Bit/s
Power Setting:	340	Tested By:	JMH

	1000.00 - 10000.00 MHz											
Num	Num Frequency Raw Cable dBμV AF Level dB/m Measurement dBμV/m Pol cm Hgt cm Azt Limit dBμV/m Margin dB μV/m Pass dBμV/m											
#1	1853.63	71.71	-1.56	-13.81	56.34	Peak (NRB)	Horizontal	100	0			Pass



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Equipment Configuration for Radiated Digital Emissions

Antenna:	World Products WPANT30088-S1A	Variant:	Mode 3
Antenna Gain (dBi):	2.5	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	Нор	Data Rate:	16384 Bit/s
Power Setting:	340	Tested By:	JMH

					30.	00 - 1000.00 MF	łz					
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	54.32	51.54	3.73	-21.10	34.17	MaxQP	Vertical	100	348	40.0	-5.8	Pass
#2	866.66	47.42	6.54	-5.30	48.66	Peak (NRB)	Vertical	201	360			Pass
#3	903.73	39.75	6.67	-4.90	41.52	Fundamental	Horizontal	100	0			Pass
#4	926.82	67.25	6.72	-4.60	69.37	Fundamental	Horizontal	100	0			Pass
#5	948.41	49.72	6.79	-4.20	52.31	Peak (NRB)	Horizontal	100	166			Pass
#6	953.37	50.49	6.82	-4.30	53.01	Peak (NRB)	Horizontal	100	166			Pass
#7	958.77	49.07	6.80	-4.30	51.57	Peak (NRB)	Horizontal	100	166			Pass
#8	960.54	39.12	6.82	-4.30	41.64	MaxQP	Horizontal	189	165	53.0	-11.4	Pass
#9	961.75	39.08	6.82	-4.00	41.90	MaxQP	Horizontal	301	154	53.0	-11.1	Pass
#10	962.52	34.07	6.81	-4.10	36.78	MaxQP	Horizontal	101	128	53.0	-16.2	Pass
Test No	Test Notes: WPANT Antenna 900 MHz notch in front of amp to prevent overloads. Hopping											



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A. APPENDIX - GRAPHICAL IMAGES



To: FCC 15.247 & ISED RSS-247

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A.1. Emissions

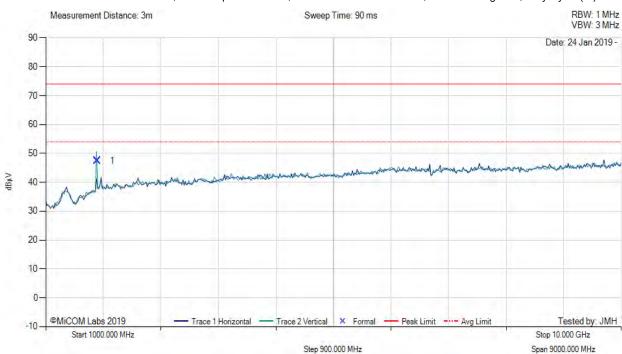
A.1.1. Radiated Emissions

A.1.1.1. TX Spurious & Restricted Band Emissions

MiTest.

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 1, Test Freq: 902.20 MHz, Antenna: Laird 0600-00048, Power Setting: 340, Duty Cycle (%): 99



	1000.00 - 10000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	1804.43	63.36	-1.55	-14.44	47.37	Peak (NRB)	Vertical	100	0			Pass

Test Notes: Laird 2 dBi Monopole Antenna



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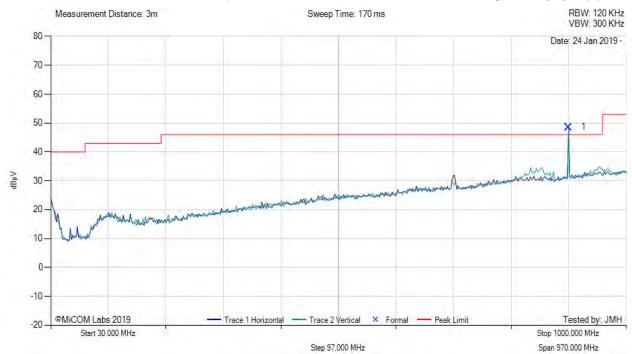
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 1, Test Freq: 902.20 MHz, Antenna: Laird 0600-00048, Power Setting: 340, Duty Cycle (%): 99



	30.00 - 1000.00 MHz											
Num	Num Frequency MHz Raw dBμV Cable Loss dB dB/m dB AF dB/m dB/m dB Level dBμV/m dB Measurement Measurement Type Pol cm Hgt cm Azt Deg dB μV/m dB μV/m dB Margin dB μV/m dB Pass /Fail											
1	902.19	46.96	6.65	-5.10	48.51	Fundamental	Vertical	100	0	-	-	

Test Notes: Laird 0600-00048 2 dBi Monopole Antenna. 900 MHz notch in front of amp to prevent overload



To: FCC 15.247 & ISED RSS-247

Serial #: ITRO09-U2_Radiated Rev A

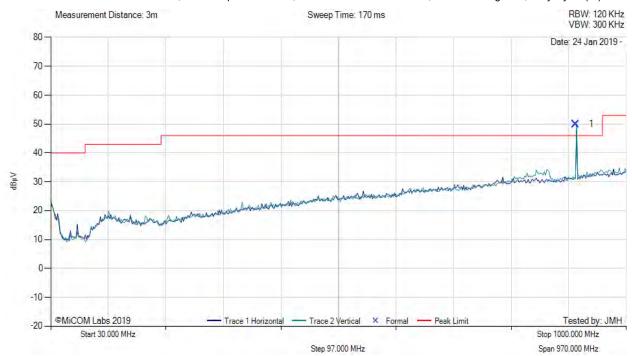
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 1, Test Freq: 915.20 MHz, Antenna: Laird 0600-00048, Power Setting: 340, Duty Cycle (%): 99



					30.0	0 - 1000.00 MHz	Z				
Nim Nim										Pass /Fail	
1	915.10	48.04	6.67	-4.70	50.01	Fundamental	Vertical	101	0	 -	

Test Notes: Laird 0600-00048 2 dBi Monopole Antenna. 900 MHz notch in front of amp to prevent overload



To: FCC 15.247 & ISED RSS-247

Serial #: ITRO09-U2_Radiated Rev A

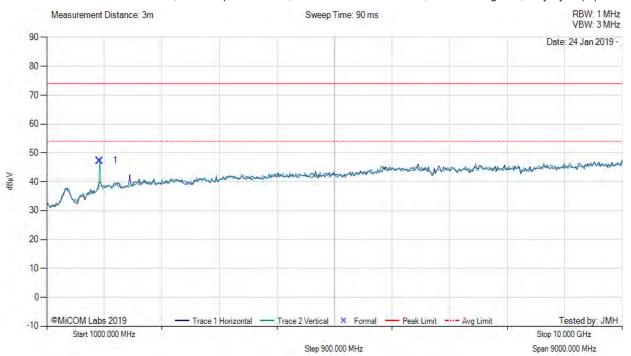
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 1, Test Freq: 915.20 MHz, Antenna: Laird 0600-00048, Power Setting: 340, Duty Cycle (%): 99



					1000.	00 - 10000.00 M	Hz					
Num	Num Frequency MHz Raw dBμV Cable Loss dB/m dB AF dB/m dB/m dB Level dBμV/m dB Measurement Type Pol cm Hgt cm Azt Deg dBμV/m dB μV/m dB Margin dB μV/m dB Pass /Fail											
1	1830.15	62.87	-1.52	-14.03	47.32	Peak (NRB)	Vertical	100	0		1	Pass

Test Notes: Laird 0600-00048 2 dBi Monopole Antenna



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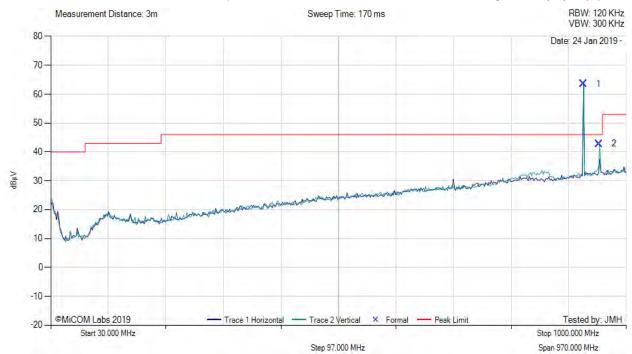
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 1, Test Freq: 926.80 MHz, Antenna: Laird 0600-00048, Power Setting: 340, Duty Cycle (%): 99



					30.0	0 - 1000.00 MHz	Z					
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	927.67	61.53	6.72	-4.70	63.55	Fundamental	Vertical	100	0		-	
2	953.75	40.27	6.82	-4.30	42.79	Peak (NRB)	Vertical	100	0			Pass

Test Notes: Laird 0600-00048 2 dBi Monopole Antenna. 900 MHz notch in front of amp to prevent overload



To: FCC 15.247 & ISED RSS-247

Serial #: ITRO09-U2_Radiated Rev A

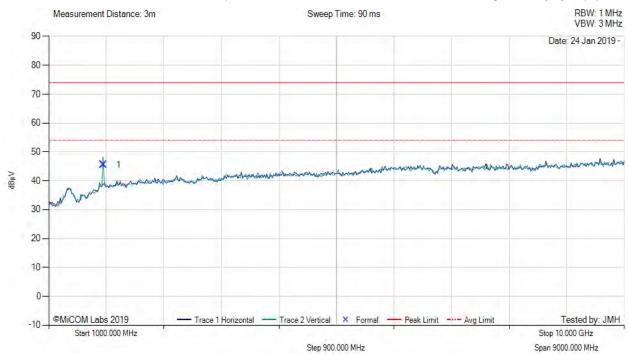
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 1, Test Freq: 927.75 MHz, Antenna: Laird 0600-00048, Power Setting: 340, Duty Cycle (%): 99



					1000.	00 - 10000.00 M	Hz					
Num Frequency Raw dBμV Cable Loss dB dB/m dBμV/m Measurement Type Pol Hgt Azt Limit Margin Pass /Fail												
1	1855.46	60.81	-1.56	-13.80	45.45	Peak (NRB)	Vertical	100	0		-	Pass

Test Notes: Laird 0600-00048 2 dBi Monopole Antenna



To: FCC 15.247 & ISED RSS-247

Serial #: ITRO09-U2_Radiated Rev A

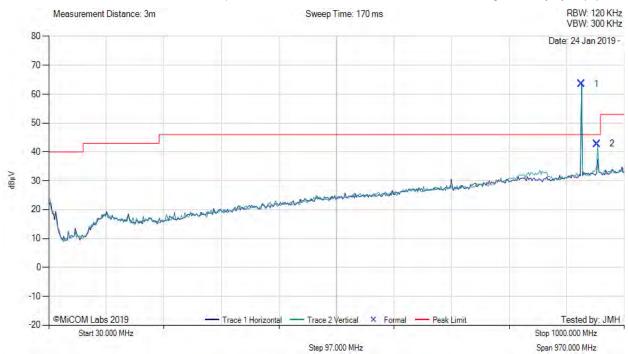
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 1, Test Freq: 927.75 MHz, Antenna: Laird 0600-00048, Power Setting: 340, Duty Cycle (%): 99



					30.0	0 - 1000.00 MHz	Z					
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	927.67	61.53	6.72	-4.70	63.55	Fundamental	Vertical	100	0		-	
2	953.75	40.27	6.82	-4.30	42.79	Peak (NRB)	Vertical	100	0			Pass

Test Notes: Laird 0600-00048 2 dBi Monopole Antenna. 900 MHz notch in front of amp to prevent overload



To: FCC 15.247 & ISED RSS-247

Serial #: ITRO09-U2_Radiated Rev A

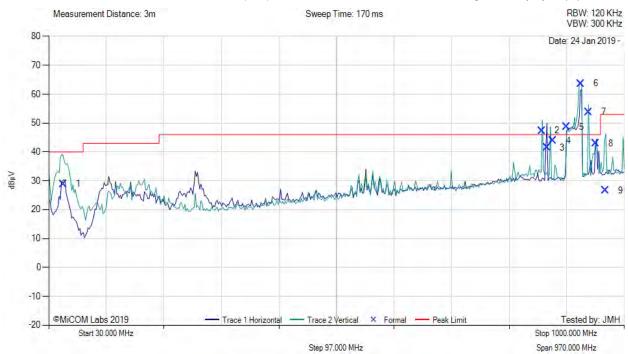
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 1, Test Freq: Hop, Antenna: Laird 0600-00048, Power Setting: 340, Duty Cycle (%): 99



					30.	00 - 1000.00 MH	lz					
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	54.34	46.49	3.73	-21.30	28.92	MaxQP	Vertical	134	104	40.0	-11.1	Pass
2	861.00	46.23	6.54	-5.40	47.37	Peak (NRB)	Vertical	100	0			Pass
3	869.48	40.27	6.58	-5.30	41.55	Peak (NRB)	Horizontal	100	0			Pass
4	880.18	42.42	6.59	-5.20	43.81	Peak (NRB)	Vertical	100	0			Pass
5	902.24	47.06	6.65	-5.10	48.61	Fundamental	Vertical	100	0			Pass
6	926.49	61.56	6.72	-4.60	63.68	Fundamental	Vertical	100	0			Pass
7	939.73	51.36	6.77	-4.30	53.83	Peak (NRB)	Vertical	100	0			Pass
8	951.82	40.37	6.81	-4.30	42.88	Peak (NRB)	Vertical	100	0		-	Pass
9	968.48	24.05	6.85	-4.20	26.70	MaxQP	Vertical	138	352	53.0	-26.3	Pass

Test Notes: Laird 0600-00048 2 dBi Monopole Antenna. 900 MHz notch in front of amp to prevent overload, Hopping



To: FCC 15.247 & ISED RSS-247

Serial #: ITRO09-U2_Radiated Rev A

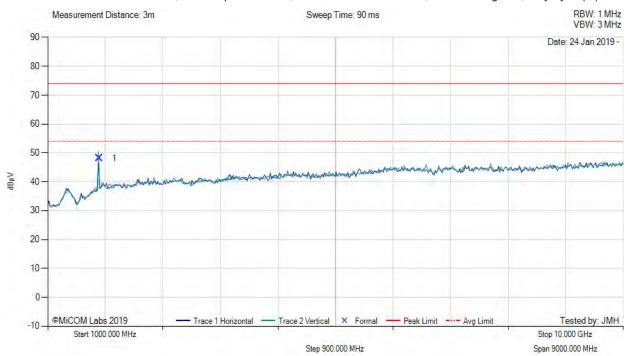
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 2, Test Freq: 902.20 MHz, Antenna: Laird 0600-00048, Power Setting: 340, Duty Cycle (%): 99



					1000.	00 - 10000.00 M	Hz					
Num	Num Frequency MHz Raw dBμV Cable Loss dB/m dB AF dB/m dB/m dB Level dBμV/m dB Measurement Type Pol cm Hgt cm Azt Deg dBμV/m dB Limit dBμV/m dB Margin dB /Fail											
1	1804.53	64.18	-1.55	-14.44	48.19	Peak (NRB)	Vertical	100	0			Pass

Test Notes: Laird 0600-00048 2 dBi Monopole Antenna



To: FCC 15.247 & ISED RSS-247

Serial #: ITRO09-U2_Radiated Rev A

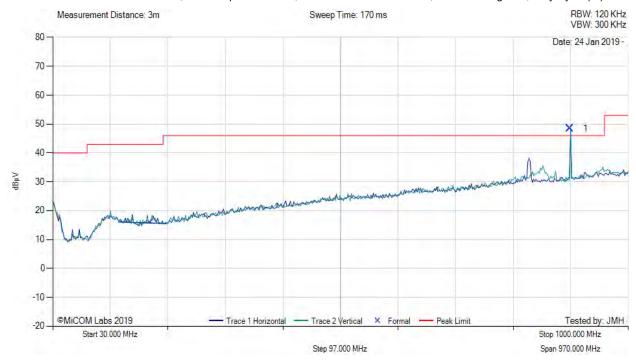
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 2, Test Freq: 902.20 MHz, Antenna: Laird 0600-00048, Power Setting: 340, Duty Cycle (%): 99



					30.0	0 - 1000.00 MHz	Z				
Num Frequency MHz Raw dBμV Cable Loss dB AF dB/m Level dBμV/m Measurement Type Pol cm Hgt cm Azt Deg dBμV/m Limit dBμV/m Margin dB /Fail											
1	902.13	46.94	6.65	-5.10	48.49	Peak (NRB)	Vertical	100	0	 	Pass

Test Notes: Laird 0600-00048 2 dBi Monopole Antenna. 900 MHz notch in front of amp to prevent overload



To: FCC 15.247 & ISED RSS-247

Serial #: ITRO09-U2_Radiated Rev A

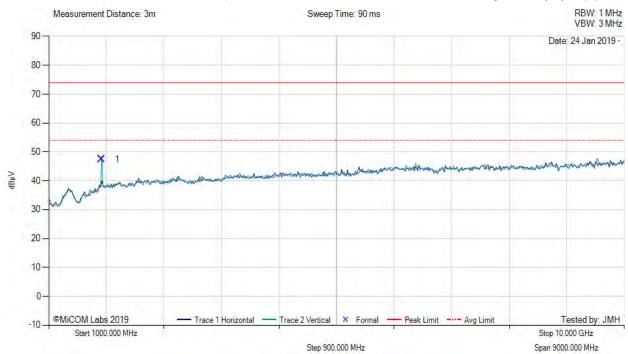
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 2, Test Freq: 915.20 MHz, Antenna: Laird 0600-00048, Power Setting: 340, Duty Cycle (%): 99



					1000.	00 - 10000.00 M	Hz					
Num Frequency MHz Raw dBμV Cable Loss dB AF dB/m Level dBμV/m Measurement Measurement Type Pol cm Hgt cm Azt Deg dBμV/m Limit dBμV/m Margin dB /Fail												
1	1830.27	62.96	-1.52	-14.03	47.41	Peak (NRB)	Vertical	100	0		-	Pass

Test Notes: Laird 0600-00048 2 dBi Monopole Antenna



To: FCC 15.247 & ISED RSS-247

Serial #: ITRO09-U2_Radiated Rev A

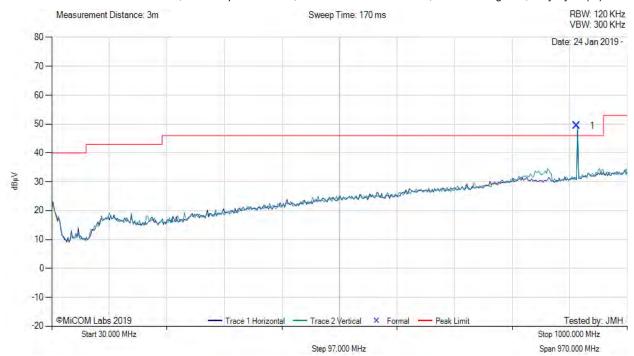
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 2, Test Freq: 915.20 MHz, Antenna: Laird 0600-00048, Power Setting: 340, Duty Cycle (%): 99



					30.0	0 - 1000.00 MH	Z				
Num Frequency MHz Raw dBμV Cable Loss dB AF dB/m Level dBμV/m Measurement Measurement Type Pol cm Hgt cm Azt Deg Limit dBμV/m Margin dB /Fail											
1	915.15	47.53	6.68	-4.80	49.41	Fundamental	Vertical	100	0	 -	Pass

Test Notes: Laird 0600-00048 2 dBi Monopole Antenna. 900 MHz notch in front of amp to prevent overload



To: FCC 15.247 & ISED RSS-247

Serial #: ITRO09-U2_Radiated Rev A

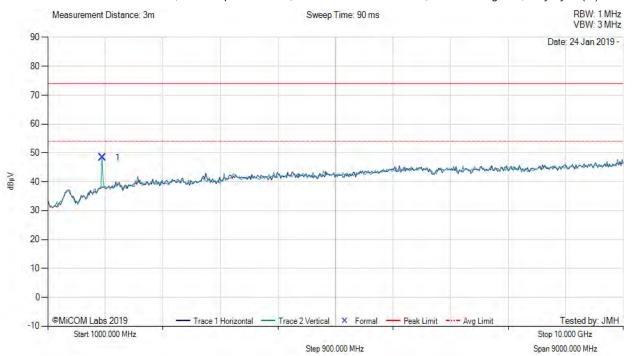
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 2, Test Freq: 927.60 MHz, Antenna: Laird 0600-00048, Power Setting: 340, Duty Cycle (%): 99



					1000.	00 - 10000.00 M	Hz					
Num Frequency MHz Raw dBμV Cable Loss dB AF dB/m Level dBμV/m Measurement Measurement Type Pol cm Hgt Deg dB dBμV/m Azt dBμV/m Limit dB μV/m Margin dB μV/m Pass /Fail												
1	1855.21	63.69	-1.56	-13.80	48.33	Peak (NRB)	Vertical	149	0		-	Pass

Test Notes: Laird 0600-00048 2 dBi Monopole Antenna



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Serial #: ITRO09-U2_Radiated Rev A

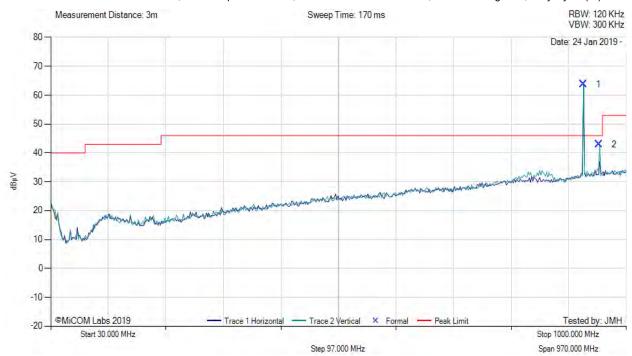
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 2, Test Freq: 927.60 MHz, Antenna: Laird 0600-00048, Power Setting: 340, Duty Cycle (%): 99



					30.0	0 - 1000.00 MHz	Z					
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	927.48	61.76	6.72	-4.70	63.78	Fundamental	Vertical	100	0			Pass
2	953.64	40.41	6.82	-4.30	42.93	Peak (NRB)	Vertical	100	0			Pass

Test Notes: Laird 0600-00048 2 dBi Monopole Antenna. 900 MHz notch in front of amp to prevent overload



To: FCC 15.247 & ISED RSS-247

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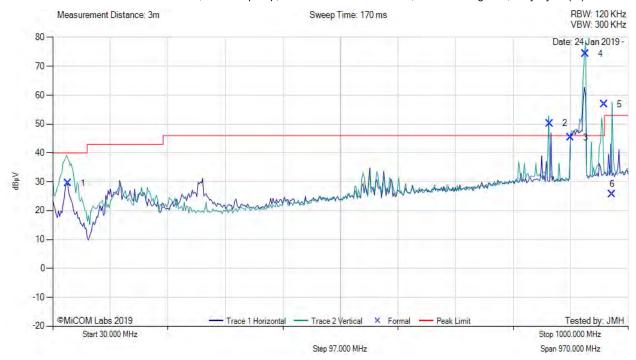
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 2, Test Freq: Hop, Antenna: Laird 0600-00048, Power Setting: 340, Duty Cycle (%): 99



					30.0	0 - 1000.00 MHz	2					
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	55.74	47.09	3.73	-21.30	29.52	MaxQP	Vertical	134	104	40.0	-10.5	Pass
2	867.57	48.95	6.56	-5.30	50.21	Peak (NRB)	Vertical	100	98		1	Pass
3	902.51	43.84	6.65	-5.10	45.39	Fundamental	Vertical	100	98		1	
4	927.42	72.26	6.72	-4.70	74.28	Fundamental	Vertical	100	98		-	Pass
5	959.57	54.17	6.81	-4.10	56.88	Peak (NRB)	Vertical	100	0		1	Pass
6	972.79	22.83	6.88	-4.10	25.61	MaxQP	Vertical	184	346	53.0	-27.4	Pass

Test Notes: Laird 0600-00048 2 dBi Monopole Antenna. 900 MHz notch in front of amp to prevent overload, Hopping



To: FCC 15.247 & ISED RSS-247

Serial #: ITRO09-U2_Radiated Rev A

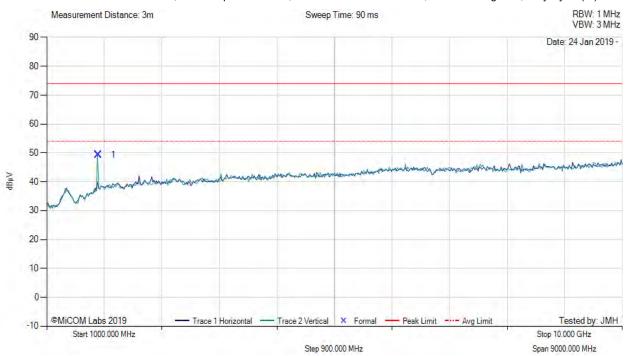
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 3, Test Freq: 903.00 MHz, Antenna: Laird 0600-00048, Power Setting: 340, Duty Cycle (%): 99



	1000.00 - 10000.00 MHz												
Num	Num Frequency MHz Raw dBμV Cable Loss dB AF Level dB/m Measurement Measurement Type Pol measurement Cm Hgt cm Azt Deg Limit dBμV/m Margin dB Pass /Fail												
1	1 1806.01 65.34 -1.55 -14.43 49.36 Peak (NRB) Vertical 149 0 Pass												

Test Notes: Laird 0600-00048 2 dBi Monopole Antenna



To: FCC 15.247 & ISED RSS-247

Serial #: ITRO09-U2_Radiated Rev A

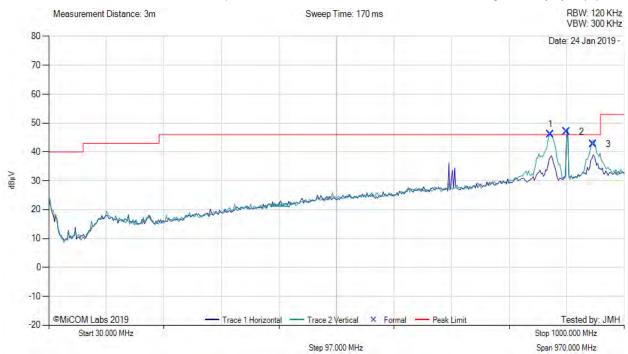
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 3, Test Freq: 903.00 MHz, Antenna: Laird 0600-00048, Power Setting: 340, Duty Cycle (%): 99



	30.00 - 1000.00 MHz													
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail		
1	875.59	44.61	6.59	-5.20	46.00	Peak (NRB)	Vertical	100	0			Pass		
2	902.99	45.48	6.65	-5.10	47.03	Fundamental	Horizontal	100	0		1	Pass		
3	947.52	40.13	6.79	-4.20	42.72	Peak (NRB)	Vertical	100	0			Pass		

Test Notes: Laird 0600-00048 2 dBi Monopole Antenna. 900 MHz notch in front of amp to prevent overload



To: FCC 15.247 & ISED RSS-247

Serial #: ITRO09-U2_Radiated Rev A

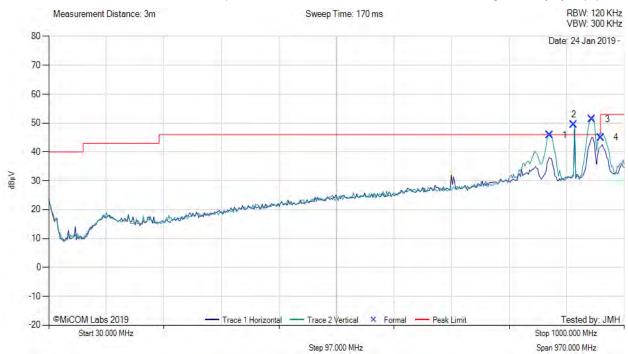
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 3, Test Freq: 915.20 MHz, Antenna: Laird 0600-00048, Power Setting: 340, Duty Cycle (%): 99



	30.00 - 1000.00 MHz														
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail			
1	874.21	44.43	6.58	-5.20	45.81	Peak (NRB)	Vertical	100	0		1	Pass			
2	915.19	47.52	6.68	-4.80	49.40	Fundamental	Vertical	100	0		-	Pass			
3	945.74	48.81	6.77	-4.20	51.38	Peak (NRB)	Vertical	100	0		-	Pass			
4	960.64	42.47	6.82	-4.30	44.99	MaxQP	Vertical	98	50	53.0	-8.0	Pass			

Test Notes: Laird 0600-00048 2 dBi Monopole Antenna. 900 MHz notch in front of amp to prevent overload



To: FCC 15.247 & ISED RSS-247

Serial #: ITRO09-U2_Radiated Rev A

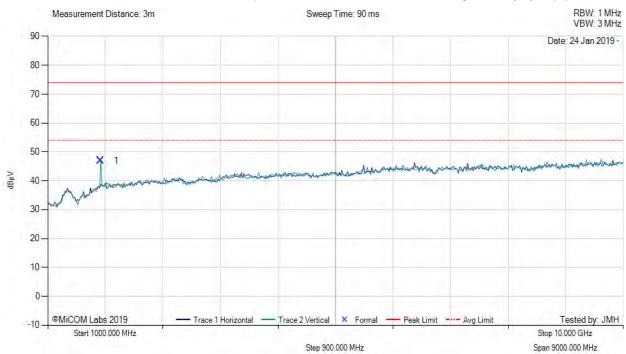
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 3, Test Freq: 915.20 MHz, Antenna: Laird, Power Setting: 340, Duty Cycle (%): 99



	1000.00 - 10000.00 MHz												
Num	Num Frequency MHz Raw dBμV Cable Loss dB /m AF Level dB/m Measurement Measurement Type Pol cm Hgt cm Azt Deg Limit dBμV/m Margin dB Pass /Fail												
1	1 1830.38 62.48 -1.52 -14.03 46.93 Peak (NRB) Vertical 100 0 Pass												

Test Notes: Laird 0600-00048 2 dBi Monopole Antenna



To: FCC 15.247 & ISED RSS-247

Serial #: ITRO09-U2_Radiated Rev A

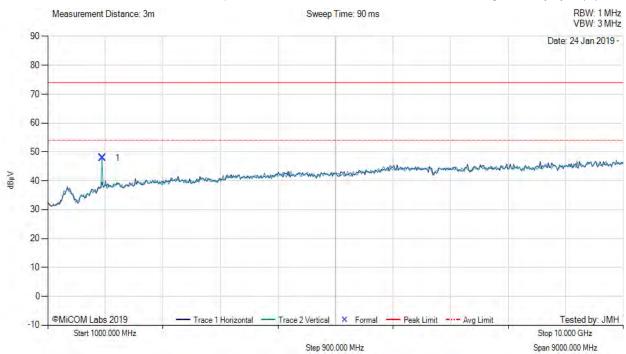
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 3, Test Freq: 926.80 MHz, Antenna: Laird 0600-00048, Power Setting: 340, Duty Cycle (%): 99



	1000.00 - 10000.00 MHz												
Num	Num Frequency MHz Raw dBμV Cable Loss dB AF Level dB/m Measurement Measurement Type Pol measurement Cm Hgt cm Azt Deg Limit dBμV/m Margin dB Pass /Fail												
1	1 1853.65 63.28 -1.56 -13.81 47.91 Peak (NRB) Vertical 143 0 Pass												

Test Notes: Laird 0600-00048 2 dBi Monopole Antenna



To: FCC 15.247 & ISED RSS-247

Serial #: ITRO09-U2_Radiated Rev A

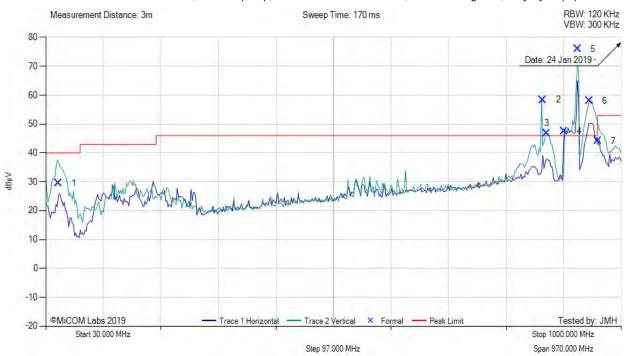
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 3, Test Freq: Hop, Antenna: Laird 0600-00048, Power Setting: 340, Duty Cycle (%): 99



	30.00 - 1000.00 MHz													
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail		
1	51.59	46.57	3.70	-20.70	29.57	MaxQP	Vertical	175	328	40.0	-10.4	Pass		
2	868.08	57.11	6.56	-5.30	58.37	Peak (NRB)	Vertical	100	0		1	Pass		
3	874.85	45.44	6.58	-5.20	46.82	Peak (NRB)	Vertical	100	0		1	Pass		
4	903.56	45.65	6.67	-4.90	47.42	Fundamental	Vertical	100	0		-	Pass		
5	926.60	73.89	6.72	-4.60	76.01	Fundamental	Vertical	100	0		-	Pass		
6	946.33	55.42	6.78	-4.20	58.00	Peak (NRB)	Vertical	100	0		-	Pass		
7	960.44	41.57	6.82	-4.30	44.09	MaxQP	Vertical	147	301	46.0	-1.9	Pass		

Test Notes: Laird 0600-00048 2 dBi Monopole Antenna. 900 MHz notch in front of amp to prevent overload, Hopping



To: FCC 15.247 & ISED RSS-247

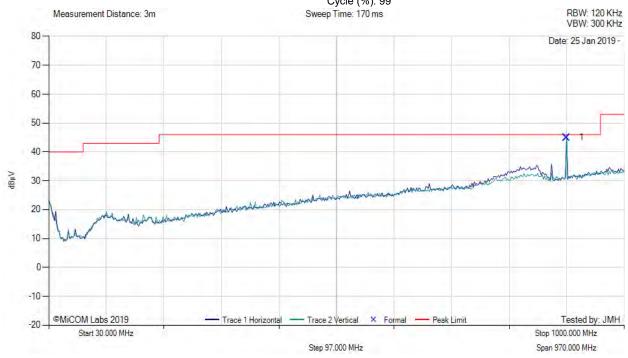
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 1, Test Freq: 902.20 MHz, Antenna: World Products WPANT30088-S1A, Power Setting: 340, Duty Cycle (%): 99



	30.00 - 1000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail	
1	1 902.20 43.44 6.65 -5.10 44.99 Fundamental Horizontal 100 0												

Test Notes: WPANT Antenna.. 900 MHz notch in front of amp to prevent overloads.



To: FCC 15.247 & ISED RSS-247

Serial #: ITRO09-U2_Radiated Rev A

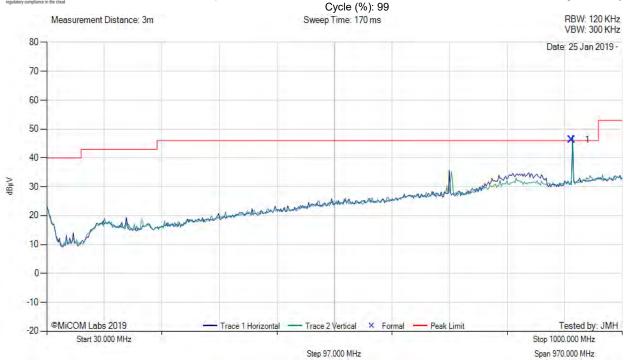
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Mitoct

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 1, Test Freq: 915.20 MHz, Antenna: World Products WPANT30088-S1A, Power Setting: 340, Duty



	30.00 - 1000.00 MHz												
Nim Nim											Pass /Fail		
1	1 915.10 44.40 6.68 -4.80 46.28 Peak (NRB) Horizontal 100 0 Pass												

Test Notes: WPANT Antenna.. 900 MHz notch in front of amp to prevent overloads.



To: FCC 15.247 & ISED RSS-247

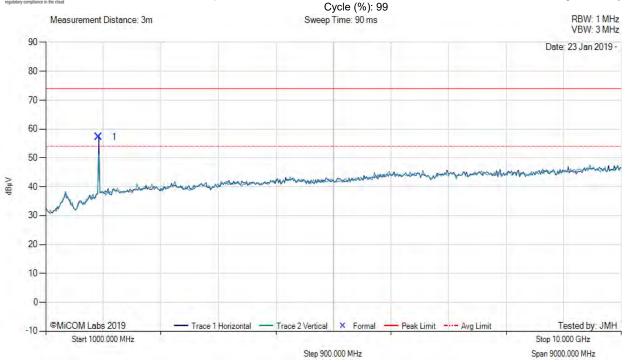
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 1, Test Freq: 915.20 MHz, Antenna: World Products WPANT30088-S1A, Power Setting: 340, Duty



	1000.00 - 10000.00 MHz												
Num	Num Frequency MHz Raw dBμV Cable Loss dB/m dB AF dB/m dB Level dBμV/m dB Measurement dBμV/m Type Pol cm Hgt cm Azt Deg dBμV/m dB Limit dBμV/m dB Pass /Fail												
1	1 1830.22 72.71 -1.52 -14.03 57.16 Peak (NRB) Horizontal 100 0 Pass												



To: FCC 15.247 & ISED RSS-247

Serial #: ITRO09-U2_Radiated Rev A

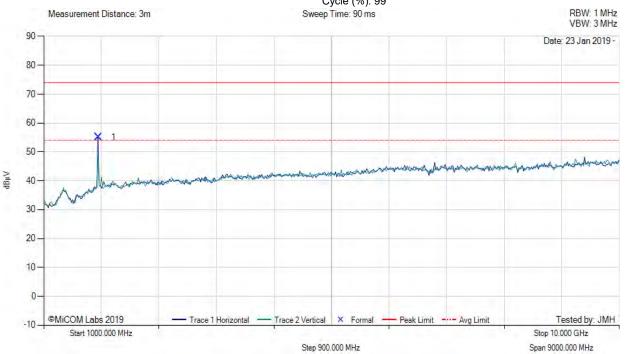
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 1, Test Freq: 927.75 MHz, Antenna: World Products WPANT30088-S1A, Power Setting: 340, Duty Cycle (%): 99



					1000	.00 - 10000.00 N	ИHz					
Num	Num Frequency Raw dBμV Cable Loss dB/m dB/m dB/m Measurement Type Pol Hgt Azt Limit dBμV/m Margin Pass Fail											
1	1855.56	70.37	-1.56	-13.80	55.01	Peak (NRB)	Horizontal	100	0			Pass



To: FCC 15.247 & ISED RSS-247

Serial #: ITRO09-U2_Radiated Rev A

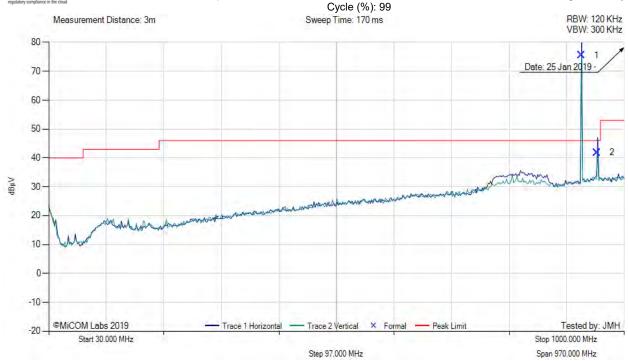
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Mitoct

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 1, Test Freq: 927.75 MHz, Antenna: World Products WPANT30088-S1A, Power Setting: 340, Duty



					30.	00 - 1000.00 MH	lz					
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	927.76	73.47	6.72	-4.70	75.49	Fundamental	Horizontal	100	0			Pass
2	953.76	39.33	6.82	-4.30	41.85	Peak (NRB)	Vertical	100	127			Pass

Test Notes: WPANT Antenna.. 900 MHz notch in front of amp to prevent overloads.



To: FCC 15.247 & ISED RSS-247

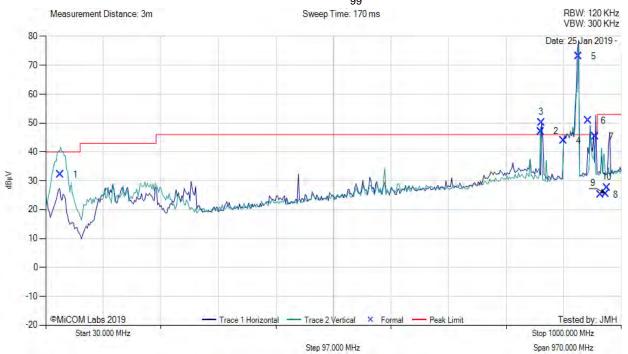
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 1, Test Freq: Hop, Antenna: World Products WPANT30088-S1A, Power Setting: 340, Duty Cycle (%):



					30.	00 - 1000.00 MH	lz					
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	54.06	49.54	3.73	-21.10	32.17	MaxQP	Vertical	101	312	40.0	-7.8	Pass
2	864.09	45.81	6.54	-5.20	47.15	Peak (NRB)	Vertical	100	0		1	Pass
3	865.22	48.93	6.54	-5.20	50.27	Peak (NRB)	Horizontal	100	0		-	Pass
4	902.26	42.31	6.65	-5.10	43.86	Fundamental	Horizontal	100	0			
5	927.51	71.10	6.72	-4.70	73.12	Fundamental	Horizontal	100	0		1	
6	944.37	48.26	6.77	-4.20	50.83	Peak (NRB)	Horizontal	100	0		1	Pass
7	956.82	42.69	6.79	-4.20	45.28	Peak (NRB)	Horizontal	100	0			Pass
8	964.79	22.60	6.82	-4.20	25.22	MaxQP	Vertical	180	308	53.0	-27.8	Pass
9	973.99	22.66	6.89	-4.00	25.55	MaxQP	Vertical	215	357	53.0	-27.5	Pass
10	976.26	24.81	6.87	-4.00	27.68	MaxQP	Horizontal	105	160	53.0	-25.3	Pass

Test Notes: WPANT Antenna.. 900 MHz notch in front of amp to prevent overloads. Hopping



To: FCC 15.247 & ISED RSS-247

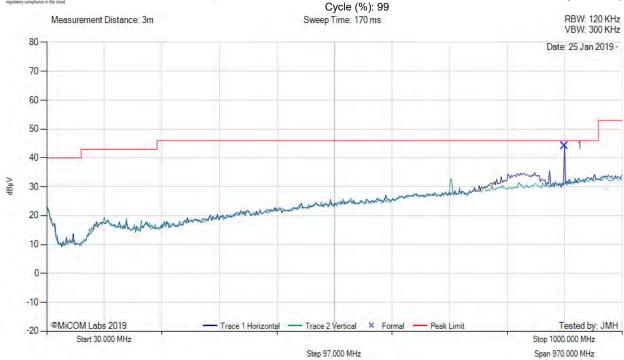
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 2, Test Freq: 902.20 MHz, Antenna: World Products WPANT30088-S1A, Power Setting: 340, Duty



					30.	00 - 1000.00 MH	lz					
Num	Num Frequency MHz Raw dBμV Cable Loss dB/m AF dB/m Level dBμV/m Measurement Type Pol cm Hgt cm Azt Deg dBμV/m Limit dBμV/m Margin dB /Fail											
1	902.31	42.68	6.65	-5.10	44.23	Fundamental	Horizontal	100	0		-	

Test Notes: WPANT Antenna.. 900 MHz notch in front of amp to prevent overloads.



To: FCC 15.247 & ISED RSS-247

Serial #: ITRO09-U2_Radiated Rev A

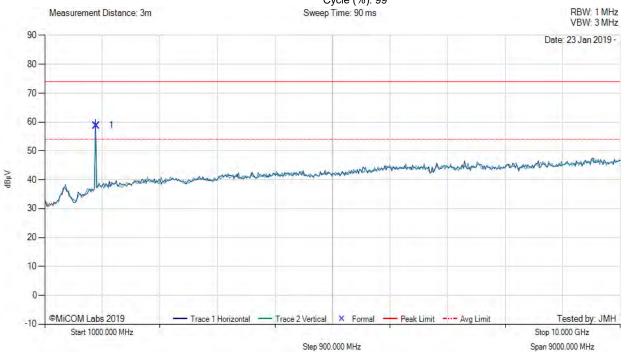
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MiTest

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 2, Test Freq: 902.20 MHz, Antenna: World Products WPANT30088-S1A, Power Setting: 340, Duty Cycle (%): 99



						1000	.00 - 10000.00 N	ИHz					
N	Num Frequency MHz Raw dBμV Cable Loss dB AF dB/m Level dBμV/m Measurement Type Pol Hgt cm Azt Deg Limit dBμV/m Margin dB /Fail												
	1	1804.44	74.75	-1.55	-14.44	58.76	Peak (NRB)	Horizontal	100	0	-	-	Pass



To: FCC 15.247 & ISED RSS-247

Serial #: ITRO09-U2_Radiated Rev A

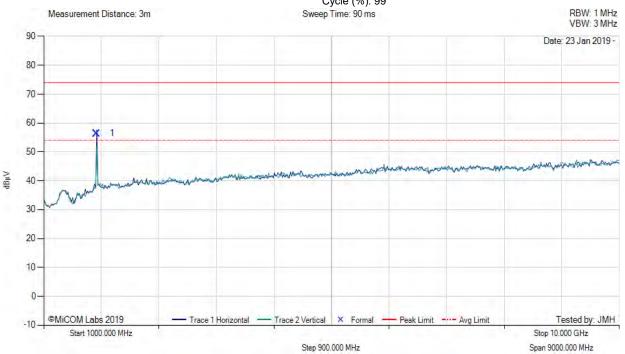
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MiTest

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 2, Test Freq: 915.20 MHz, Antenna: World Products WPANT30088-S1A, Power Setting: 340, Duty Cycle (%): 99



					1000	.00 - 10000.00 N	ИHz					
Num	Num Frequency MHz Raw dBμV Cable Loss dB AF dB/m Level dBμV/m Measurement Type Pol Hgt cm Azt Deg Limit dBμV/m Margin dB μV/m Pass /Fail											
1	1830.31	71.93	-1.52	-14.03	56.38	Peak (NRB)	Horizontal	100	0			Pass



To: FCC 15.247 & ISED RSS-247

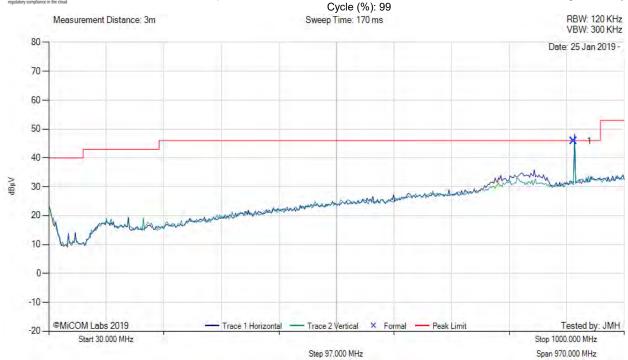
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 2, Test Freq: 915.20 MHz, Antenna: World Products WPANT30088-S1A, Power Setting: 340, Duty



					30.	00 - 1000.00 MH	lz					
Num	Num Frequency MHz Raw dBμV Cable Loss dB AF dB/m Level dBμV/m Measurement Type Pol Hgt cm Azt Deg Limit dBμV/m Margin dB Pass /Fail											
1	915.15	43.95	6.68	-4.80	45.83	Fundamental	Horizontal	101	0		1	Pass

Test Notes: WPANT Antenna.. 900 MHz notch in front of amp to prevent overloads.



To: FCC 15.247 & ISED RSS-247

Serial #: ITRO09-U2_Radiated Rev A

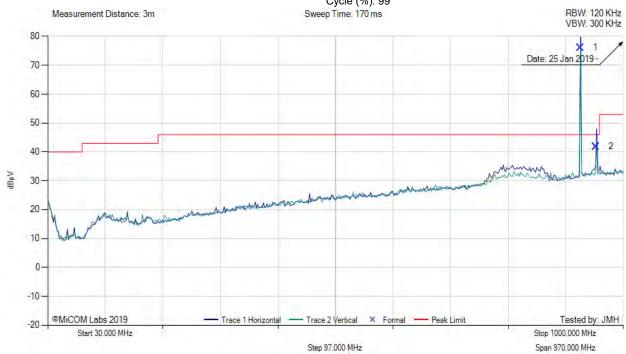
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Mitost

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 2, Test Freq: 927.60 MHz, Antenna: World Products WPANT30088-S1A, Power Setting: 340, Duty Cycle (%): 99



					30.	00 - 1000.00 MH	lz					
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	927.69	74.07	6.72	-4.70	76.09	Fundamental	Horizontal	100	0			Pass
2	953.57	39.28	6.82	-4.30	41.80	Peak (NRB)	Horizontal	100	0			Pass

Test Notes: WPANT Antenna.. 900 MHz notch in front of amp to prevent overloads.



To: FCC 15.247 & ISED RSS-247

Serial #: ITRO09-U2_Radiated Rev A

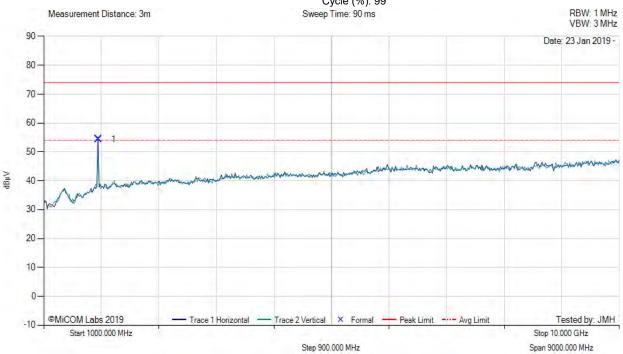
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 2, Test Freq: 927.60 MHz, Antenna: World Products WPANT30088-S1A, Power Setting: 340, Duty Cycle (%): 99



					1000	.00 - 10000.00 N	ИHz					
Num Frequency MHz Raw dBμV Cable Loss dB AF dB/m Level dBμV/m Measurement Type Pol Hgt cm Azt Deg Limit dBμV/m Margin dB Pass /Fail												
1	1855.11	69.73	-1.56	-13.80	54.37	Peak (NRB)	Horizontal	100	0	-	-	Pass



To: FCC 15.247 & ISED RSS-247

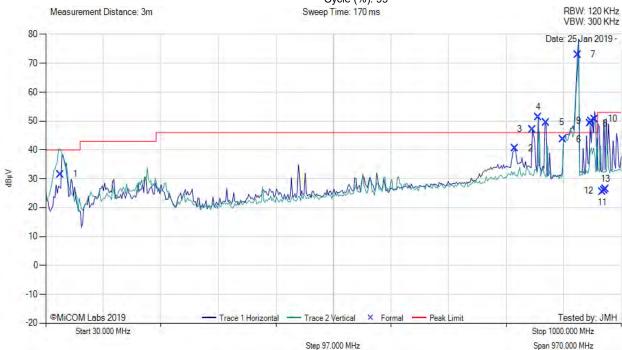
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 2, Test Freq: 0.00 MHz, Antenna: World Products WPANT30088-S1A, Power Setting: 340, Duty Cycle (%): 99



					30.	00 - 1000.00 MH	Iz					
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	54.29	48.87	3.73	-21.10	31.50	MaxQP	Vertical	125	268	40.0	-8.5	Pass
2	821.16	52.93	6.89	-5.50	40.54	Peak (NRB)	Horizontal	100	0		1	Pass
3	850.32	59.61	7.02	-5.50	47.09	Peak (NRB)	Horizontal	100	0		1	Pass
4	860.04	63.79	7.11	-5.40	51.28	Peak (NRB)	Horizontal	100	0			Pass
5	873.65	61.84	7.15	-5.30	49.48	Peak (NRB)	Horizontal	100	0		1	Pass
6	902.07	42.13	6.65	-5.10	43.68	Peak (NRB)	Horizontal	100	0		-	Pass
7	926.98	70.84	6.72	-4.60	72.96	Peak (NRB)	Horizontal	100	0		-	Pass
8	947.40	46.49	6.79	-4.20	49.08	Peak (NRB)	Horizontal	100	0			Pass
9	949.39	47.42	6.79	-4.20	50.01	Peak (NRB)	Horizontal	100	0		-	Pass
10	955.57	48.12	6.79	-4.20	50.71	Peak (NRB)	Horizontal	100	0			Pass
11	968.57	22.76	6.85	-4.20	25.41	MaxQP	Horizontal	224	66	53.0	-27.6	Pass
12	971.22	23.11	6.85	-4.00	25.96	MaxQP	Horizontal	171	149	53.0	-27.0	Pass
13	973.53	23.49	6.89	-4.00	26.38	MaxQP	Horizontal	184	144	53.0	-26.6	Pass

Test Notes: WPANT Antenna.. 900 MHz notch in front of amp to prevent overloads.



To: FCC 15.247 & ISED RSS-247

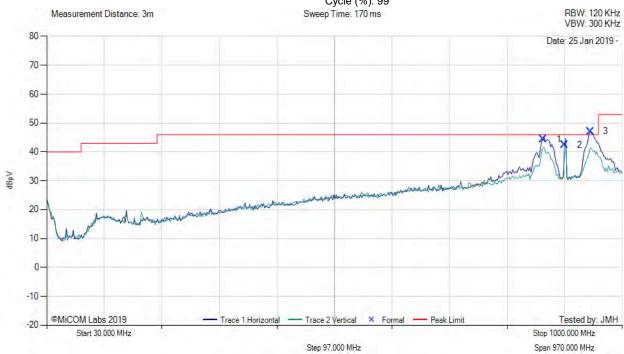
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 3, Test Freq: 903.00 MHz, Antenna: World Products WPANT30088-S1A, Power Setting: 340, Duty Cycle (%): 99



					30.	00 - 1000.00 MH	lz					
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	866.99	43.18	6.54	-5.30	44.42	Peak (NRB)	Horizontal	100	41			Pass
2	902.99	40.91	6.65	-5.10	42.46	Fundamental	Horizontal	100	0		1	
3	946.47	44.52	6.78	-4.20	47.10	Peak (NRB)	Horizontal	100	132			Pass

Test Notes: WPANT Antenna.. 900 MHz notch in front of amp to prevent overloads.



To: FCC 15.247 & ISED RSS-247

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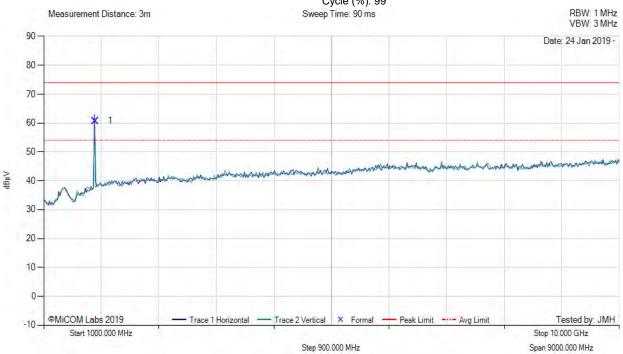
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MiToct

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 3, Test Freq: 903.00 MHz, Antenna: World Products WPANT30088-S1A, Power Setting: 340, Duty Cycle (%): 99



					1000	.00 - 10000.00 N	ИHz					
Num	Frequency MHz											
1	1806.04	76.69	-1.55	-14.43	60.71	Peak (NRB)	Horizontal	100	0			Pass
Test No	tes: WPANT A	Antenna										



To: FCC 15.247 & ISED RSS-247

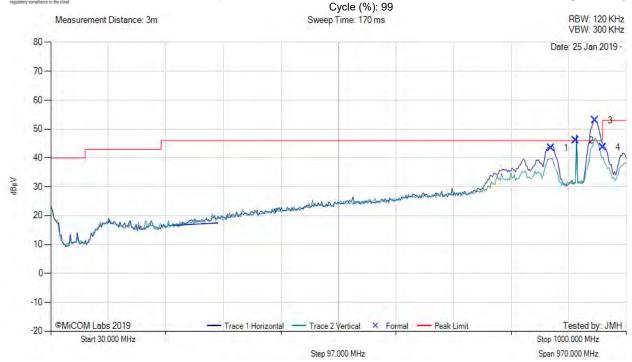
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 3, Test Freq: 915.20 MHz, Antenna: World Products WPANT30088-S1A, Power Setting: 340, Duty



	30.00 - 1000.00 MHz													
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail		
1	873.53	42.08	6.58	-5.30	43.36	Peak (NRB)	Horizontal	100	166			Pass		
2	915.21	44.13	6.68	-4.80	46.01	Fundamental	Horizontal	100	0			Pass		
3	947.52	50.38	6.79	-4.20	52.97	Peak (NRB)	Horizontal	100	166		1	Pass		
4	960.19	41.09	6.82	-4.30	43.61	MaxQP	Horizontal	98	150	53.0	-9.4	Pass		

Test Notes: WPANT Antenna.. 900 MHz notch in front of amp to prevent overloads.



To: FCC 15.247 & ISED RSS-247

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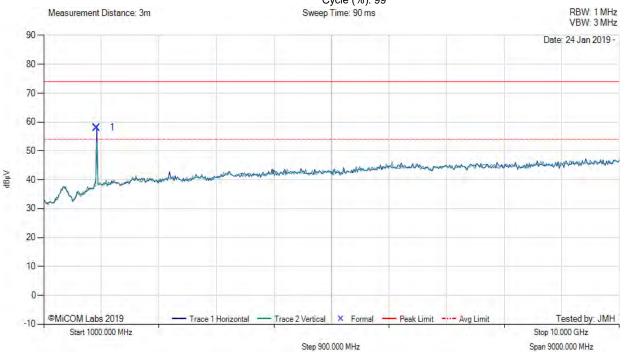
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MiTost

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 3, Test Freq: 915.20 MHz, Antenna: World Products WPANT30088-S1A, Power Setting: 340, Duty Cycle (%): 99



	1000.00 - 10000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	1830.42	73.62	-1.52	-14.03	58.07	Peak (NRB)	Horizontal	100	0		-	Pass



To: FCC 15.247 & ISED RSS-247

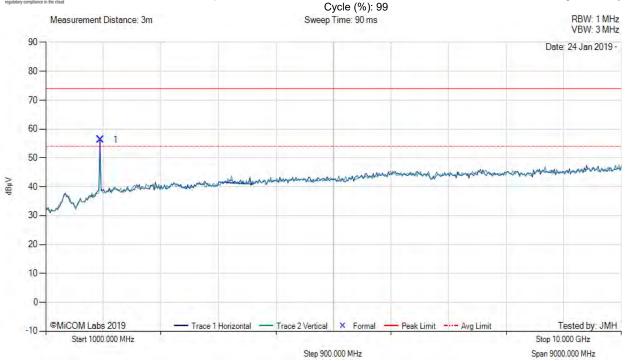
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 3, Test Freq: 926.80 MHz, Antenna: World Products WPANT30088-S1A, Power Setting: 340, Duty



	1000.00 - 10000.00 MHz											
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	1853.63	71.71	-1.56	-13.81	56.34	Peak (NRB)	Horizontal	100	0		-	Pass



To: FCC 15.247 & ISED RSS-247

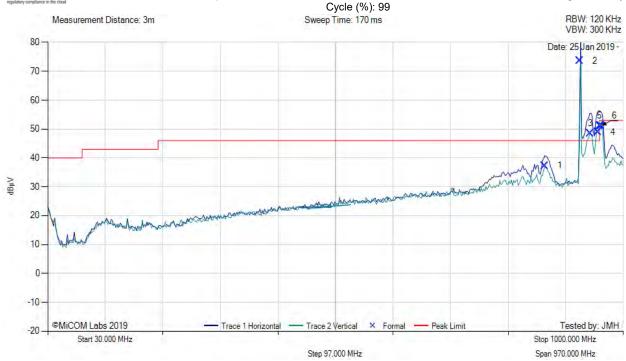
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 3, Test Freq: 926.80 MHz, Antenna: World Products WPANT30088-S1A, Power Setting: 340, Duty



	30.00 - 1000.00 MHz													
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail		
1	867.82	35.99	6.56	-5.30	37.25	Peak (NRB)	Horizontal	100	0			Pass		
2	926.81	71.47	6.72	-4.60	73.59	Fundamental	Horizontal	100	0		1	Pass		
3	944.78	45.79	6.77	-4.20	48.36	Peak (NRB)	Horizontal	100	0	-	-	Pass		
4	957.56	46.21	6.79	-4.10	48.90	Peak (NRB)	Horizontal	100	0		-	Pass		
5	960.21	48.50	6.82	-4.30	51.02	MaxQP	Horizontal	100	143	53.0	-3.0	Pass		
6	963.07	48.50	6.81	-4.20	51.11	MaxQP	Horizontal	100	149	53.0	-1.9	Pass		

Test Notes: WPANT Antenna.. 900 MHz notch in front of amp to prevent overloads.



To: FCC 15.247 & ISED RSS-247

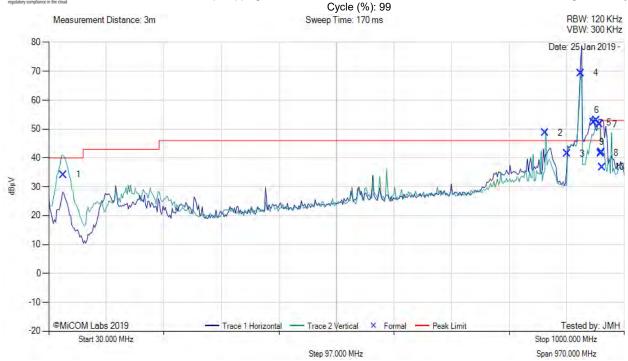
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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: Mode 3, Test Freq: Hopping MHz, Antenna: World Products WPANT30088-S1A, Power Setting: 340, Duty



	30.00 - 1000.00 MHz													
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail		
1	54.32	51.54	3.73	-21.10	34.17	MaxQP	Vertical	100	348	40.0	-5.8	Pass		
2	866.66	47.42	6.54	-5.30	48.66	Peak (NRB)	Vertical	201	360		1	Pass		
3	903.73	39.75	6.67	-4.90	41.52	Fundamental	Horizontal	100	0		1	Pass		
4	926.82	67.25	6.72	-4.60	69.37	Fundamental	Horizontal	100	0			Pass		
5	948.41	49.72	6.79	-4.20	52.31	Peak (NRB)	Horizontal	100	166		1	Pass		
6	953.37	50.49	6.82	-4.30	53.01	Peak (NRB)	Horizontal	100	166		-	Pass		
7	958.77	49.07	6.80	-4.30	51.57	Peak (NRB)	Horizontal	100	166		-	Pass		
8	960.54	39.12	6.82	-4.30	41.64	MaxQP	Horizontal	189	165	53.0	-11.4	Pass		
9	961.75	39.08	6.82	-4.00	41.90	MaxQP	Horizontal	301	154	53.0	-11.1	Pass		
10	962.52	34.07	6.81	-4.10	36.78	MaxQP	Horizontal	101	128	53.0	-16.2	Pass		

Test Notes: WPANT Antenna.. 900 MHz notch in front of amp to prevent overloads.



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