

TEST REPORT ADDENDUM – RADIATED



Test of: Radwin Ltd. AP0168031 Wireless Module

To: FCC CFR 47 15.407 & ISSED RSS-247

Test Report Serial No.: RDWN49-U5_Radiated Addendum Rev A

This report supersedes: NONE

Issue Date: 17th November 2017

As a result of the 6 Mbyte FCC file size limitation potentially large test reports require to be split into smaller components. This document is the Master document controlling Addendum reports as listed below. This Master document combined with the Addendums demonstrate compliance with the standard

Master Document Number	Addendum Reports
RDWN49-U5_Master	RDWN49-U5_Conducted Addendum
	RDWN49-U5_Radiated Addendum

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1. TEST RESULTS

1.1. Radiated

Radiated Test Conditions for Radiated Spurious and Band-Edge Emissions			
Standard:	FCC CFR 47:15.407	Ambient Temp. (°C):	20.0 - 24.5
Test Heading:	Radiated Spurious and Band-Edge Emissions	Rel. Humidity (%):	32 - 45
Standard Section(s):	15.407 (b), 15.205, 15.209	Pressure (mBars):	999 - 1001
Reference Document(s):	See Normative References		

Test Procedure for Radiated Spurious and Band-Edge Emissions

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 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 Undesirable Measurement were per the Radiated Test Set-up specified in this document.

15.407 (b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (4) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.
- (6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.
- (7) The provisions of §15.205 apply to intentional radiators operating under this section.
- (8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

Limits for Restricted Bands (15.205, 15.209)

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

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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

Example:

The following formula is used to convert the equipment isotropic radiated power (eirr) to field strength (dBμV/m);

$$E = 1000000 \times \sqrt{30P} / 3 \mu\text{V/m}$$

where P is the EIRP in Watts

Therefore: -27 dBm/MHz equates to 68.23 dBuV/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)

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

Frequency 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

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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.

(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. TX Spurious & Restricted Band Emissions

1.1.1.1. RADWIN Ltd. RW-9105-5158

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	RADWIN Ltd. RW-9105-5158	Variant:	10 MHz
Antenna Gain (dBi):	19.00	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	5730.00	Data Rate:	6.00 MBit/s
Power Setting:	9.0	Tested By:	SB

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
#1	3599.91	63.56	2.66	-15.59	50.63	Max Peak	Vertical	126	206	68.2	-17.6	Pass
#2	3599.91	58.67	2.66	-15.59	45.74	Max Avg	Vertical	126	206	54.0	-8.3	Pass
#3	5726.05	75.96	3.17	-12.87	66.26	Fundamental	Horizontal	100	0	--	--	
#4	6148.06	71.08	3.27	-11.89	62.46	Max Peak	Horizontal	188	9	68.2	-5.8	Pass
#5	16768.20	47.67	5.73	-0.47	52.93	Max Peak	Vertical	141	108	68.2	-15.3	Pass
#6	16768.20	34.76	5.73	-0.47	40.02	Max Avg	Vertical	141	108	54.0	-14.0	Pass

Test Notes: Antenna Setup: 4 ports Horizontal Vertical Horizontal. 4th port is unused and terminated.

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Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	RADWIN Ltd. RW-9105-5158	Variant:	10 MHz
Antenna Gain (dBi):	19.00	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	5787.00	Data Rate:	6.00 MBit/s
Power Setting:	17.5	Tested By:	SB

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
#1	4832.85	70.85	2.97	-15.14	58.68	Max Peak	Horizontal	151	13	68.2	-9.6	Pass
#2	4832.85	57.26	2.97	-15.14	45.09	Max Avg	Horizontal	151	13	54.0	-8.9	Pass
#3	4867.01	60.55	3.05	-15.10	48.50	Peak (Scan)	Horizontal	100	0	68.2	-19.7	Pass
#4	5785.25	77.16	3.21	-12.78	67.59	Fundamental	Horizontal	100	0	--	--	
#5	6236.63	63.95	3.21	-11.86	55.30	Peak (NRB)	Horizontal	100	0	--	--	Pass
#6	6294.83	74.64	3.19	-12.08	65.75	Max Peak	Horizontal	175	4	68.2	-2.5	Pass

Test Notes: Antenna Setup: 4 ports Horizontal Vertical Horizontal. 4th port is unused and terminated.

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Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	RADWIN Ltd. RW-9105-5158	Variant:	10 MHz
Antenna Gain (dBi):	19.00	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	5845.00	Data Rate:	6.00 MBit/s
Power Setting:	11.0	Tested By:	SB

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
#1	3600.04	64.90	2.66	-15.60	51.96	Max Peak	Vertical	107	197	68.2	-16.3	Pass
#2	3600.04	60.39	2.66	-15.60	47.45	Max Avg	Vertical	107	197	54.0	-6.6	Pass
#3	4864.42	67.03	3.04	-15.02	55.05	Max Peak	Horizontal	156	11	68.2	-13.2	Pass
#4	4864.42	53.69	3.04	-15.02	41.71	Max Avg	Horizontal	156	11	54.0	-12.3	Pass
#5	5842.58	71.72	3.21	-12.95	61.98	Fundamental	Horizontal	100	0	--	--	
#6	6233.11	72.61	3.20	-11.91	63.90	Max Peak	Horizontal	171	6	68.2	-4.3	Pass
#7	6263.53	68.44	3.22	-11.91	59.75	Max Peak	Vertical	156	9	68.2	-8.5	Pass
#8	17442.51	45.37	5.82	2.03	53.22	Max Peak	Vertical	178	123	68.2	-15.0	Pass
#9	17442.51	32.21	5.82	2.03	40.06	Max Avg	Vertical	178	123	54.0	-13.9	Pass

Test Notes: Antenna Setup: 4 ports Horizontal Vertical Horizontal. 4th port is unused and terminated.

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1.1.1.2. RADWIN Ltd. RW-9401-5002

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	RADWIN Ltd. RW-9401-5002	Variant:	10 MHz
Antenna Gain (dBi):	12.50	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	5730.00	Data Rate:	6.00 MBit/s
Power Setting:	19.5	Tested By:	SB

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	4726.57	66.95	2.97	-15.47	54.45	Max Peak	Vertical	147	357	68.2	-13.8	Pass
#2	4726.57	52.84	2.97	-15.47	40.34	Max Avg	Vertical	147	357	54.0	-13.7	Pass
#3	5728.31	76.57	3.17	-12.85	66.89	Fundamental	Vertical	100	0	--	--	
#4	6403.13	71.63	3.19	-11.99	62.83	Max Peak	Vertical	168	179	68.2	-5.4	Pass
#5	7640.06	58.23	3.71	-7.68	54.26	Max Peak	Vertical	191	265	68.2	-14.0	Pass
#6	7640.06	54.31	3.71	-7.68	50.34	Max Avg	Vertical	191	265	54.0	-3.7	Pass
#7	16294.00	47.92	5.67	-0.71	52.88	Max Peak	Vertical	162	229	68.2	-15.4	Pass
#8	16294.00	34.66	5.67	-0.71	39.62	Max Avg	Vertical	162	229	54.0	-14.4	Pass

Test Notes: Antenna Setup: 3 omni directional antennas.

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Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	RADWIN Ltd. RW-9401-5002	Variant:	10 MHz
Antenna Gain (dBi):	12.50	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	5787.00	Data Rate:	6.00 MBit/s
Power Setting:	24.5	Tested By:	SB

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
#1	4734.19	71.22	2.94	-15.47	58.69	Max Peak	Vertical	164	352	68.2	-9.5	Pass
#2	4734.19	57.38	2.94	-15.47	44.85	Max Avg	Vertical	164	352	54.0	-9.2	Pass
#3	5790.65	78.06	3.20	-12.82	68.44	Fundamental	Vertical	100	0	--	--	
#4	6286.01	76.87	3.20	-11.96	68.11	Max Peak	Vertical	175	184	68.2	-0.1	Pass
#5	6291.30	64.45	3.19	-12.04	55.60	Max Peak	Horizontal	198	137	68.2	-12.6	Pass
#6	7716.25	59.61	3.76	-8.03	55.34	Max Peak	Vertical	124	336	68.2	-12.9	Pass
#7	7716.25	56.14	3.76	-8.03	51.87	Max Avg	Vertical	124	336	54.0	-2.1	Pass
#8	16713.74	47.96	5.66	0.35	53.97	Max Peak	Horizontal	109	242	68.2	-14.3	Pass
#9	16713.74	34.80	5.66	0.35	40.81	Max Avg	Horizontal	109	242	54.0	-13.2	Pass

Test Notes: Antenna Setup: 3 omni directional antennas.

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Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	RADWIN Ltd. RW-9401-5002	Variant:	10 MHz
Antenna Gain (dBi):	12.50	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	5845.00	Data Rate:	6.00 MBit/s
Power Setting:	19.5	Tested By:	SB

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
#1	3600.41	59.81	2.66	-15.60	46.87	Max Peak	Vertical	128	215	68.2	-21.4	Pass
#2	3600.41	51.81	2.66	-15.60	38.87	Max Avg	Vertical	128	215	54.0	-15.1	Pass
#3	4831.38	70.09	2.97	-15.15	57.91	Max Peak	Vertical	194	180	68.2	-10.3	Pass
#4	4831.38	56.18	2.97	-15.15	44.00	Max Avg	Vertical	194	180	54.0	-10.0	Pass
#5	5848.64	74.35	3.20	-12.68	64.87	Fundamental	Vertical	100	0	--	--	
#6	6278.96	69.92	3.22	-11.79	61.35	Max Peak	Vertical	189	353	68.2	-6.9	Pass
#7	7793.76	53.02	3.79	-8.01	48.80	Max Peak	Vertical	179	134	68.2	-19.4	Pass
#8	7793.76	40.20	3.79	-8.01	35.98	Max Avg	Vertical	179	134	54.0	-18.0	Pass
#9	16593.99	47.11	5.60	0.96	53.67	Max Peak	Horizontal	111	35	68.2	-14.6	Pass
#10	16593.99	33.97	5.60	0.96	40.53	Max Avg	Horizontal	111	35	54.0	-13.5	Pass

Test Notes: Antenna Setup: 3 omni directional antennas.

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1.1.2. Restricted Edge & Band-Edge Emissions

1.1.2.3. RADWIN Ltd. RW-9105-5158 (19 dBi)

RESULTS SUMMARY FOR RADIATED BAND-EDGE EMISSIONS

5725 MHz Radiated Lower Band-Edge Emissions

RADWIN Ltd. RW-9105-5158		Band-Edge Freq	Limit 68.2dBμV/m	Limit 122.2dBμV/m	Power Setting
Channel Bandwidths	Operating Frequency (MHz)	MHz	dBμV/m	dBμV/m	
10 MHz	5730.00	5725.00	67.92	115.74	9
20 MHz	5735.00	5725.00	66.85	110.77	11.5
40 MHz	5745.00	5725.00	67.81	103.26	11.5
80 MHz	5765.00	5725.00	67.79	99.51	11.5

5850 MHz Radiated Higher Band-Edge Emissions

RADWIN Ltd. RW-9105-5158		Band-Edge Freq	Limit 122.2dBμV/m	Limit 68.2 dBμV/m	Power Setting
Channel Bandwidths	Operating Frequency (MHz)	MHz	dBμV/m	dBμV/m	
10 MHz	5845.00	5850.00	114.08	67.85	11
20 MHz	5840.00	5850.00	107.75	68.00	11.5
40 MHz	5830.00	5850.00	101.04	67.10	11.5
80 MHz	5810.00	5850.00	98.22	68.08	11.5

Click on the links to view the data.

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

Antenna:	RADWIN Ltd. RW-9105-5158	Variant:	10 MHz
Antenna Gain (dBi):	19.00	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	5730.00	Data Rate:	6.00 MBit/s
Power Setting:	9	Tested By:	SB

Test Measurement Results

5600.00 - 5780.00 MHz

Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
#1	5604.62	28.38	3.24	36.30	67.92	Max Avg	Horizontal	151	5	68.2	-0.3	Pass
#2	5725.00	76.07	3.17	36.50	115.74	Max Avg	Horizontal	151	5	122.2	-6.5	Pass
#3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: Antenna Setup: 4 ports Horizontal Vertical Horizontal. 4th port is unused and terminated.

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

Antenna:	RADWIN Ltd. RW-9105-5158	Variant:	20 MHz
Antenna Gain (dBi):	19.00	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	5735.00	Data Rate:	6.50 MBit/s
Power Setting:	11.5	Tested By:	SB

Test Measurement Results

5600.00 - 5780.00 MHz

Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
#1	5645.74	27.35	3.20	36.30	66.85	Max Avg	Horizontal	151	5	68.2	-1.4	Pass
#2	5725.00	71.10	3.17	36.50	110.77	Max Avg	Horizontal	151	5	122.2	-11.4	Pass
#3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: Antenna Setup: 4 ports Horizontal Vertical Horizontal. 4th port is unused and terminated.

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

Antenna:	RADWIN Ltd. RW-9105-5158	Variant:	40 MHz
Antenna Gain (dBi):	19.00	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	5745.00	Data Rate:	13.50 MBit/s
Power Setting:	11.5	Tested By:	SB

Test Measurement Results

5600.00 - 5780.00 MHz

Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
#1	5637.81	28.32	3.19	36.30	67.81	Max Avg	Horizontal	151	5	68.2	-0.4	Pass
#2	5725.00	63.59	3.17	36.50	103.26	Max Avg	Horizontal	151	5	122.2	-18.9	Pass
#3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: Antenna Setup: 4 ports Horizontal Vertical Horizontal. 4th port is unused and terminated.

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

Antenna:	RADWIN Ltd. RW-9105-5158	Variant:	80 MHz
Antenna Gain (dBi):	19.00	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	5765.00	Data Rate:	29.30 MBit/s
Power Setting:	11.5	Tested By:	SB

Test Measurement Results

5600.00 - 5780.00 MHz

Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
#1	5646.82	28.29	3.20	36.30	67.79	Max Avg	Horizontal	151	5	68.2	-0.4	Pass
#2	5725.00	59.84	3.17	36.50	99.51	Max Avg	Horizontal	151	5	122.2	-22.7	Pass
#3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: Antenna Setup: 4 ports Horizontal Vertical Horizontal. 4th port is unused and terminated.

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

Antenna:	RADWIN Ltd. RW-9105-5158	Variant:	10 MHz
Antenna Gain (dBi):	19.00	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	5845.00	Data Rate:	6.00 MBit/s
Power Setting:	11	Tested By:	SB

Test Measurement Results

5770.00 - 6000.00 MHz

Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
#1	5850.00	74.18	3.20	36.70	114.08	Max Avg	Horizontal	151	5	122.2	-8.1	Pass
#3	5933.29	27.86	3.19	36.80	67.85	Max Avg	Horizontal	151	5	68.2	-0.4	Pass
#2	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: Antenna Setup: 4 ports Horizontal Vertical Horizontal. 4th port is unused and terminated.

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

Antenna:	RADWIN Ltd. RW-9105-5158	Variant:	20 MHz
Antenna Gain (dBi):	19.00	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	5840.00	Data Rate:	6.50 MBit/s
Power Setting:	11.5	Tested By:	SB

Test Measurement Results

5770.00 - 6000.00 MHz

Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
#1	5850.00	67.85	3.20	36.70	107.75	Max Avg	Horizontal	151	5	122.2	-14.5	Pass
#3	5992.28	27.87	3.23	36.90	68.00	Max Avg	Horizontal	151	5	68.2	-0.2	Pass
#2	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: Antenna Setup: 4 ports Horizontal Vertical Horizontal. 4th port is unused and terminated.

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

Antenna:	RADWIN Ltd. RW-9105-5158	Variant:	40 MHz
Antenna Gain (dBi):	19.00	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	5830.00	Data Rate:	13.50 MBit/s
Power Setting:	11.5	Tested By:	SB

Test Measurement Results

5770.00 - 6000.00 MHz

Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
#1	5850.00	61.14	3.20	36.70	101.04	Max Avg	Horizontal	151	5	122.2	-20.8	Pass
#3	5952.18	27.06	3.24	36.80	67.10	Max Avg	Horizontal	151	5	68.2	-1.1	Pass
#2	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: Antenna Setup: 4 ports Horizontal Vertical Horizontal. 4th port is unused and terminated.

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

Antenna:	RADWIN Ltd. RW-9105-5158	Variant:	80 MHz
Antenna Gain (dBi):	19.00	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	5810.00	Data Rate:	29.30 MBit/s
Power Setting:	11.5	Tested By:	SB

Test Measurement Results

5770.00 - 6000.00 MHz

Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
#1	5850.00	58.32	3.20	36.70	98.22	Max Avg	Horizontal	151	5	122.2	-24.0	Pass
#3	5937.90	28.08	3.20	36.80	68.08	Max Avg	Horizontal	151	5	68.2	-0.2	Pass
#2	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: Antenna Setup: 4 ports Horizontal Vertical Horizontal. 4th port is unused and terminated.

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1.1.2.4. RADWIN Ltd. RW-9401-5002 (12.50 dBi)

RESULTS SUMMARY FOR RADIATED BAND-EDGE EMISSIONS

5725 MHz Radiated Lower Band-Edge Emissions

RADWIN Ltd. RW-9401-5002		Band-Edge Freq	Limit 68.2dBµV/m	Limit 122.2dBµV/m	Power Setting
Channel Bandwidths	Operating Frequency (MHz)	MHz	dBµV/m	dBµV/m	
10 MHz	5730.00	5725.00	66.62	115.01	19.5
20 MHz	5735.00	5725.00	67.25	110.88	19.5
40 MHz	5745.00	5725.00	67.59	99.33	21
80 MHz	5765.00	5725.00	67.81	93.85	17.5

5850 MHz Radiated Higher Band-Edge Emissions

RADWIN Ltd. RW-9401-5002		Band-Edge Freq	Limit 122.2dBµV/m	Limit 68.2 dBµV/m	Power Setting
Channel Bandwidths	Operating Frequency (MHz)	MHz	dBµV/m	dBµV/m	
10 MHz	5845.00	5850.00	106.73	67.88	19.5
20 MHz	5840.00	5850.00	104.89	67.34	19.5
40 MHz	5830.00	5850.00	104.96	66.76	20.5
80 MHz	5810.00	5850.00	98.40	67.33	17.5

Click on the links to view the data.

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

Antenna:	RADWIN Ltd. RW-9401-5002	Variant:	10 MHz
Antenna Gain (dBi):	12.50	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	5730.00	Data Rate:	6.00 MBit/s
Power Setting:	19.5	Tested By:	SB

Test Measurement Results

5600.00 - 5780.00 MHz

Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
#1	5601.37	27.05	3.27	36.30	66.62	Max Avg	Vertical	152	-2	68.2	-1.6	Pass
#2	5724.81	75.34	3.17	36.50	115.01	Max Avg	Vertical	152	-2	122.2	-7.2	Pass
#3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: Antenna Setup: 3 omni directional antennas.

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

Antenna:	RADWIN Ltd. RW-9401-5002	Variant:	20 MHz
Antenna Gain (dBi):	12.50	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	5735.00	Data Rate:	6.50 MBit/s
Power Setting:	19.5	Tested By:	SB

Test Measurement Results

5600.00 - 5780.00 MHz

Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
#1	5601.08	27.68	3.27	36.30	67.25	Max Avg	Vertical	152	-2	68.2	-1.0	Pass
#2	5725.00	71.21	3.17	36.50	110.88	Max Avg	Vertical	152	-2	122.2	-11.3	Pass
#3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: Antenna Setup: 3 omni directional antennas.

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

Antenna:	RADWIN Ltd. RW-9401-5002	Variant:	40 MHz
Antenna Gain (dBi):	12.50	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	5745.00	Data Rate:	13.50 MBit/s
Power Setting:	21	Tested By:	SB

Test Measurement Results

5600.00 - 5780.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
#1	5650.43	28.08	3.21	36.30	67.59	Max Avg	Vertical	152	-2	68.2	-0.6	Pass
#2	5725.00	59.66	3.17	36.50	99.33	Max Avg	Vertical	152	-2	122.2	-22.9	Pass
#3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: Antenna Setup: 3 omni directional antennas.

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Equipment Configuration for 5725 MHz Radiated Band-Edge Emissions

Antenna:	RADWIN Ltd. RW-9401-5002	Variant:	80 MHz
Antenna Gain (dBi):	12.50	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	5765.00	Data Rate:	29.30 MBit/s
Power Setting:	17.5	Tested By:	SB

Test Measurement Results

5600.00 - 5780.00 MHz

Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
#1	5642.49	28.33	3.18	36.30	67.81	Max Avg	Vertical	152	-2	68.2	-0.4	Pass
#2	5722.11	54.18	3.17	36.50	93.85	Max Avg	Vertical	152	-2	115.4	-21.5	Pass
#3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: Antenna Setup: 3 omni directional antennas.

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

Antenna:	RADWIN Ltd. RW-9401-5002	Variant:	10 MHz
Antenna Gain (dBi):	12.50	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	5845.00	Data Rate:	6.00 MBit/s
Power Setting:	19.5	Tested By:	SB

Test Measurement Results

5770.00 - 6000.00 MHz

Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
#1	5850.00	66.83	3.20	36.70	106.73	Max Avg	Vertical	152	-2	122.2	-15.5	Pass
#3	5951.72	27.84	3.24	36.80	67.88	Max Avg	Vertical	152	-2	68.2	-0.4	Pass
#2	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: Antenna Setup: 3 omni directional antennas.

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

Antenna:	RADWIN Ltd. RW-9401-5002	Variant:	20 MHz
Antenna Gain (dBi):	12.50	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	5840.00	Data Rate:	6.50 MBit/s
Power Setting:	19.5	Tested By:	SB

Test Measurement Results

5770.00 - 6000.00 MHz

Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
#1	5850.00	64.99	3.20	36.70	104.89	Max Avg	Vertical	152	-2	122.2	-17.3	Pass
#3	5942.51	27.32	3.22	36.80	67.34	Max Avg	Vertical	152	-2	68.2	-0.9	Pass
#2	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: Antenna Setup: 3 omni directional antennas.

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

Antenna:	RADWIN Ltd. RW-9401-5002	Variant:	40 MHz
Antenna Gain (dBi):	12.50	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	5830.00	Data Rate:	13.50 MBit/s
Power Setting:	20.5	Tested By:	SB

Test Measurement Results

5770.00 - 6000.00 MHz

Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
#1	5850.00	65.06	3.20	36.70	104.96	Max Avg	Vertical	152	-2	122.2	-17.2	Pass
#3	5928.22	26.77	3.19	36.80	66.76	Max Avg	Vertical	152	-2	68.2	-1.5	Pass
#2	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: Antenna Setup: 3 omni directional antennas.

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Equipment Configuration for 5850 MHz Radiated Band-Edge Emissions

Antenna:	RADWIN Ltd. RW-9401-5002	Variant:	80 MHz
Antenna Gain (dBi):	12.50	Modulation:	OFDM
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	5810.00	Data Rate:	29.30 MBit/s
Power Setting:	17.5	Tested By:	SB

Test Measurement Results

5770.00 - 6000.00 MHz

Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
#1	5850.00	58.50	3.20	36.70	98.40	Max Avg	Vertical	152	-2	122.2	-23.8	Pass
#3	5939.28	27.32	3.21	36.80	67.33	Max Avg	Vertical	152	-2	68.2	-0.9	Pass
#2	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: Antenna Setup: 3 omni directional antennas.

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1.1.3. Digital Emissions

Radiated Test Conditions for Radiated Digital Emissions (0.03 – 1 GHz)			
Standard:	FCC CFR 47:15.247 IC RSS-247	Ambient Temp. (°C):	20.0 - 24.5
Test Heading:	Digital Emissions	Rel. Humidity (%):	32 - 45
Standard Section(s):	15.209	Pressure (mBars):	999 - 1001
Reference Document(s):	See Normative References		
Test Procedure for Radiated Digital Emissions (0.03 – 1 GHz) Testing 30M-1 GHz was performed in a 3-meter anechoic chamber using a CISPR compliant receiver. Preliminary radiated emissions were measured on every azimuth and with the receiving antenna in both horizontal and vertical polarizations. To further maximize emissions the receive antenna was varied between 1 and 4 meters. The emissions are recorded with receiver in peak hold mode. Emissions closest to the limits are measured in the quasi-peak mode with the tuned receiver using a bandwidth of 120 kHz. Only the highest emissions relative to the limit are listed. Test configuration and setup for Radiated Spurious and Band-Edge Measurement were per the Radiated Test Set-up specified in this document. Field Strength Calculation The field strength is calculated by adding the Antenna Factor and Cable Loss, and subtracting Amplifier Gain from the measured reading. In this test facility, the Antenna Factor, Cable Loss, and Amplifier Gains are loaded into the Rohde & Schwarz Receiver and the corrected field strength can be read directly on the receiver. FS = R + AF + CORR where: FS = Field Strength R = Measured Receiver Input Amplitude AF = Antenna Factor CORR = Correction Factor = CL – AG + NFL CL = Cable Loss AG = Amplifier Gain For example: Given a Receiver input reading of 51.5dBmV; Antenna Factor of 8.5dB; Cable Loss of 1.3dB; Falloff Factor of 0dB, an Amplifier Gain of 26dB and Notch Filter Loss of 1dB. The Field Strength of the measured emission is: FS = 51.5 + 8.5 + 1.3 - 26.0 +1 = 36.3dBmV/m Conversion between dBmV/m (or dBmV) and mV/m (or mV) are done as: Level (dBmV/m) = 20 * Log (level (mV/m)) 40 dBmV/m = 100mV/m 48 dBmV/m = 250mV/m Limits for Radiated Digital Emissions (0.03 – 1 GHz) (15.209) (a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:			
Frequency (MHz)	Field Strength		Measurement Distance (m)

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	$\mu\text{V/m}$ (microvolts/meter)	$\text{dB}\mu\text{V/m}$ (dB microvolts/meter)	
0.009-0.490	2400/F(kHz)	--	300
0.490-1.705	24000/F(kHz)	--	30
1.705-30.0	30	29.5	30
30-88	100**	40	3
88-216	150**	43.5	3
216-960	200**	46.0	3
Above 960	500	54.0	3

**Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§15.231 and 15.241.

(b) In the emission table above, the tighter limit applies at the band edges. (c) The level of any unwanted emissions from an intentional radiator operating under these general provisions shall not exceed the level of the fundamental emission. For intentional radiators which operate under the provisions of other sections within this part and which are required to reduce their unwanted emissions to the limits specified in this table, the limits in this table are based on the frequency of the unwanted emission and not the fundamental frequency. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency. (d) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. (e) The provisions in §§15.31, 15.33, and 15.35 for measuring emissions at distances other than the distances specified in the above table, determining the frequency range over which radiated emissions are to be measured, and limiting peak emissions apply to all devices operated under this part. (f) In accordance with §15.33(a), in some cases the emissions from an intentional radiator must be measured to beyond the tenth harmonic of the highest fundamental frequency designed to be emitted by the intentional radiator because of the incorporation of a digital device. If measurements above the tenth harmonic are so required, the radiated emissions above the tenth harmonic shall comply with the general radiated emission limits applicable to the incorporated digital device, as shown in §15.109 and as based on the frequency of the emission being measured, or, except for emissions contained in the restricted frequency bands shown in §15.205, the limit on spurious emissions specified for the intentional radiator, whichever is the higher limit. Emissions which must be measured above the tenth harmonic of the highest fundamental frequency designed to be emitted by the intentional radiator and which fall within the restricted bands shall comply with the general radiated emission limits in §15.109 that are applicable to the incorporated digital device. (g) Perimeter protection systems may operate in the 54-72 MHz and 76-88 MHz bands under the provisions of this section. The use of such perimeter protection systems is limited to industrial, business and commercial applications.

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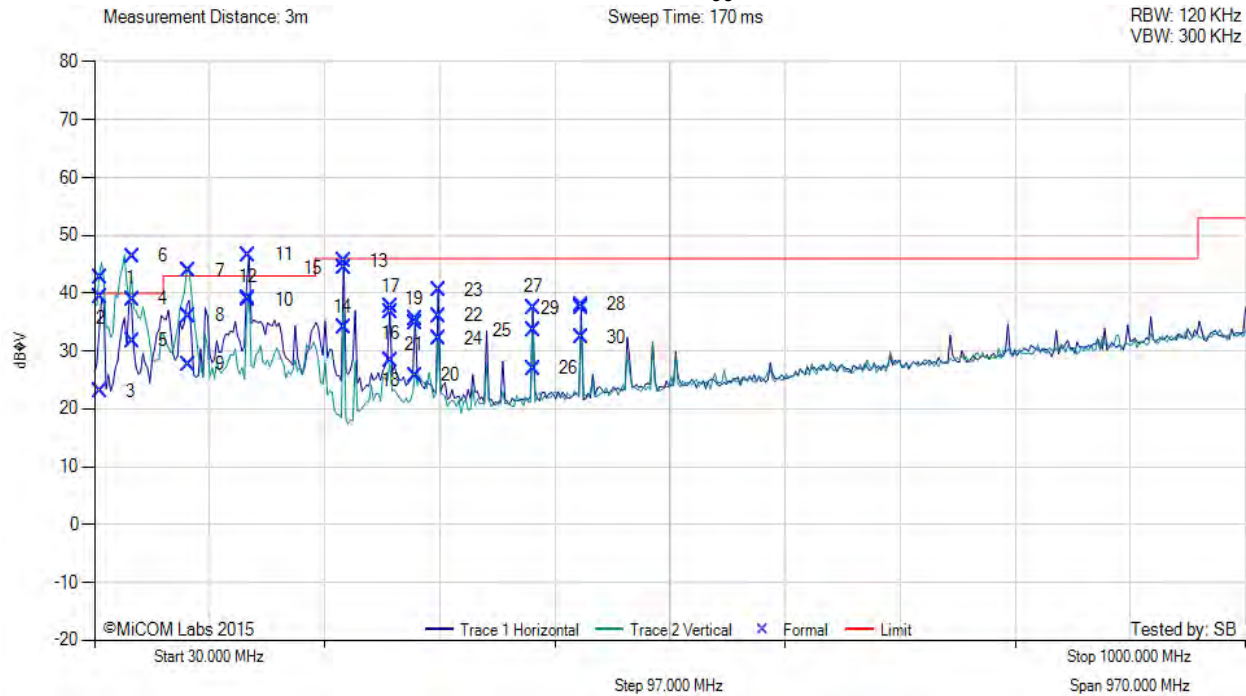


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DIGITAL EMISSIONS



Variant: 5 MHz, Test Freq: 5730.00 MHz, Antenna: RADWIN Ltd RW-9401-5002, Power Setting: 23, Duty Cycle (%): 99



Num	Frequency MHz	Raw dBμV	Cable Loss	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	35.16	52.87	3.46	-41.90	42.75	Peak (Scan)	Vertical					
2	35.16	49.50	3.46	-13.58	39.38	MaxQP	Vertical	100	274	40.0	-0.6	Pass
3	35.16	33.19	3.46	-13.58	23.07	MaxQP	Horizontal	120	30	40.0	-16.9	Pass
4	62.40	59.26	3.66	-23.92	39.00	MaxQP	Vertical	100	292	40.0	-1.0	Pass
5	62.40	52.01	3.66	-23.92	31.75	MaxQP	Horizontal	296	202	40.0	-8.3	Pass
6	62.40	66.64	3.66	-51.98	46.38	Peak (Scan)	Vertical					
7	109.54	58.77	3.93	-46.51	43.88	Peak (Scan)	Vertical					
8	109.54	50.95	3.93	-18.82	36.06	MaxQP	Vertical	103	37	43.0	-6.9	Pass
9	109.54	42.61	3.93	-18.82	27.72	MaxQP	Horizontal	153	107	43.0	-15.3	Pass
10	159.98	53.47	4.18	-46.12	38.85	Peak (Scan)	Horizontal					
11	159.98	56.28	4.18	-18.80	41.68	MaxQP	Horizontal	162	282	43.0	-1.34	Pass
12	159.98	53.82	4.18	-18.80	39.20	MaxQP	Vertical	247	245	43.0	-3.8	Pass
13	239.95	60.02	4.50	-18.95	45.57	MaxQP	Horizontal	118	282	46.0	-0.4	Pass
14	239.95	48.44	4.50	-18.95	33.99	MaxQP	Vertical	100	133	46.0	-12.0	Pass
15	239.95	58.74	4.50	-45.70	44.29	Peak (Scan)	Horizontal					
16	279.97	49.47	4.64	-44.00	36.69	Peak (Scan)	Horizontal					
17	279.97	50.47	4.64	-17.42	37.69	MaxQP	Horizontal	125	16	46.0	-8.3	Pass
18	279.97	41.24	4.64	-17.42	28.46	MaxQP	Vertical	100	120	46.0	-17.5	Pass

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19	299.97	47.92	4.70	-17.20	35.42	MaxQP	Horizontal	104	22	46.0	-10.6	Pass
20	299.97	38.32	4.70	-17.20	25.82	MaxQP	Vertical	101	195	46.0	-20.2	Pass
21	299.97	47.22	4.70	-43.70	34.72	Peak (Scan)	Horizontal					
22	319.98	47.98	4.77	-43.05	36.09	Peak (Scan)	Horizontal					
23	319.98	52.45	4.77	-16.66	40.56	MaxQP	Horizontal	100	278	46.0	-5.4	Pass
24	319.98	44.03	4.77	-16.66	32.14	MaxQP	Vertical	319	185	46.0	-13.9	Pass
25	399.92	43.28	5.02	-14.78	33.52	MaxQP	Horizontal	100	353	46.0	-12.5	Pass
26	399.92	36.75	5.02	-14.78	26.99	MaxQP	Vertical	121	52	46.0	-19.0	Pass
27	399.92	47.27	5.02	-40.74	37.51	Peak (Scan)	Horizontal					
28	439.96	47.01	5.15	-40.07	38.00	Peak (Scan)	Horizontal					
29	439.96	46.47	5.15	-14.16	37.46	MaxQP	Horizontal	100	352	46.0	-8.5	Pass
30	439.96	41.41	5.15	-14.16	32.40	MaxQP	Vertical	121	138	46.0	-13.6	Pass
31	3599.81	42.95	4.98	-50.45	36.76	Peak (Scan)	Vertical					

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1.1.4. ac Wireline Emissions

**FCC, Part 15 Subpart C §15.207
RSS-247**

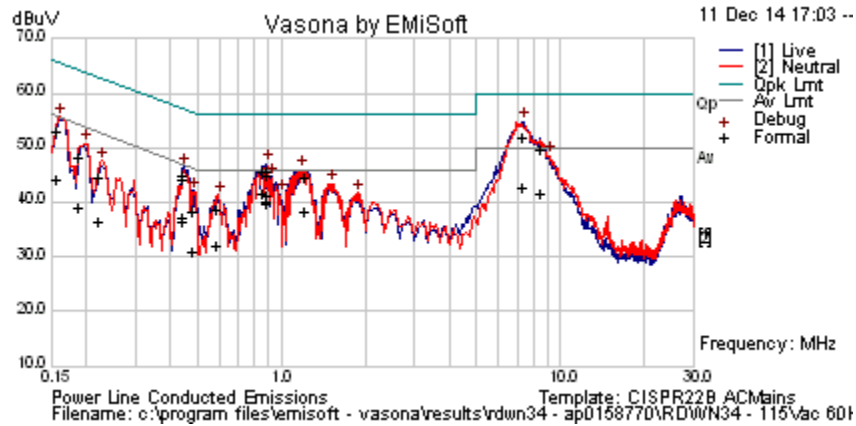
Test Procedure

The EUT is configured in accordance with ANSI C63.4. The conducted emissions are measured in a shielded room with a spectrum analyzer in peak hold in the first instance. Emissions closest to the limit are measured in the quasi-peak mode (QP) with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation. The highest emissions relative to the limit are listed.

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Measurement Results for ac Wireline Conducted Emissions (150 kHz – 30 MHz)

Test Freq.	N/A	Engineer	GMH
Variant	DC Line Emissions	Temp (°C)	20
Freq. Range	0.150 MHz - 30 MHz	Rel. Hum.(%)	75
Power Setting	NA	Press. (mBars)	999
Antenna	N/A		
Test Notes 1	POE: Sinpro 115Vac 60 Hz: 55 Vdc		
Test Notes 2	POE Model #: CPU55A-270-1		



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
0.155	34.1	9.9	0.1	44.1	Average	Neutral	55.75	-11.7	Pass	
0.155	43.1	9.9	0.1	53.1	Quasi Peak	Neutral	65.75	-12.6	Pass	
0.187	38.1	9.9	0.1	48.1	Quasi Peak	Neutral	64.19	-16.1	Pass	
0.187	29.2	9.9	0.1	39.1	Average	Neutral	54.19	-15.1	Pass	
0.217	34.7	9.9	0.1	44.7	Quasi Peak	Neutral	62.92	-18.2	Pass	
0.217	26.4	9.9	0.1	36.3	Average	Neutral	52.92	-16.6	Pass	
0.440	34.8	9.9	0.1	44.8	Quasi Peak	Live	57.06	-12.3	Pass	
0.440	27.2	9.9	0.1	37.2	Average	Live	47.06	-9.8	Pass	
0.440	26.4	9.9	0.1	36.4	Average	Live	47.06	-10.7	Pass	
0.440	34.3	9.9	0.1	44.3	Quasi Peak	Live	57.06	-12.8	Pass	
0.472	28.4	9.9	0.1	38.4	Quasi Peak	Live	56.47	-18.1	Pass	
0.472	21.0	9.9	0.1	31.0	Average	Live	46.47	-15.5	Pass	
0.578	28.8	9.9	0.1	38.9	Quasi Peak	Neutral	56	-17.2	Pass	
0.578	21.9	9.9	0.1	31.9	Average	Neutral	46	-14.1	Pass	
0.843	31.6	9.9	0.1	41.6	Average	Live	46	-4.4	Pass	
0.843	35.8	9.9	0.1	45.9	Quasi Peak	Live	56	-10.2	Pass	

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0.873	29.9	9.9	0.1	39.9	Average	Neutral	46	-6.1	Pass	
0.873	35.0	9.9	0.1	45.1	Quasi Peak	Neutral	56	-10.9	Pass	
0.876	30.1	9.9	0.1	40.2	Average	Live	46	-5.9	Pass	
0.876	35.5	9.9	0.1	45.5	Quasi Peak	Live	56	-10.5	Pass	
0.877	35.8	9.9	0.1	45.8	Quasi Peak	Live	56	-10.2	Pass	
0.877	31.2	9.9	0.1	41.2	Average	Live	46	-4.8	Pass	
1.189	28.2	9.9	0.1	38.2	Average	Neutral	46	-7.8	Pass	
1.189	34.6	9.9	0.1	44.6	Quasi Peak	Neutral	56	-11.4	Pass	
7.294	41.2	10.3	0.3	51.8	Quasi Peak	Live	60	-8.2	Pass	
7.294	32.0	10.3	0.3	42.6	Average	Live	50	-7.4	Pass	
8.379	39.2	10.3	0.3	49.9	Quasi Peak	Neutral	60	-10.1	Pass	
8.379	30.9	10.3	0.3	41.5	Average	Neutral	50	-8.5	Pass	
Legend:	DIG = Digital Device Emission; TX = Transmitter Emission; FUND = Fundamental Frequency									
	NRB = Non-Restricted Band, Limit is 20 dB below Fundamental; RB = Restricted Band									

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Specification

Limits

§15.207 (a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 $\mu\Omega$ line impedance stabilization network (LISN), see §15.207 (a) matrix below. Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal.

§15.207 (a) Limit Matrix

The lower limit applies at the boundary between frequency ranges

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency

Traceability

Test Methodology	Laboratory Measurement Uncertainty
Measurements were made per work instruction WI-EMC-01 'Measurement of Conducted Emissions'	± 2.64 dB



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A. APPENDIX - GRAPHICAL IMAGES

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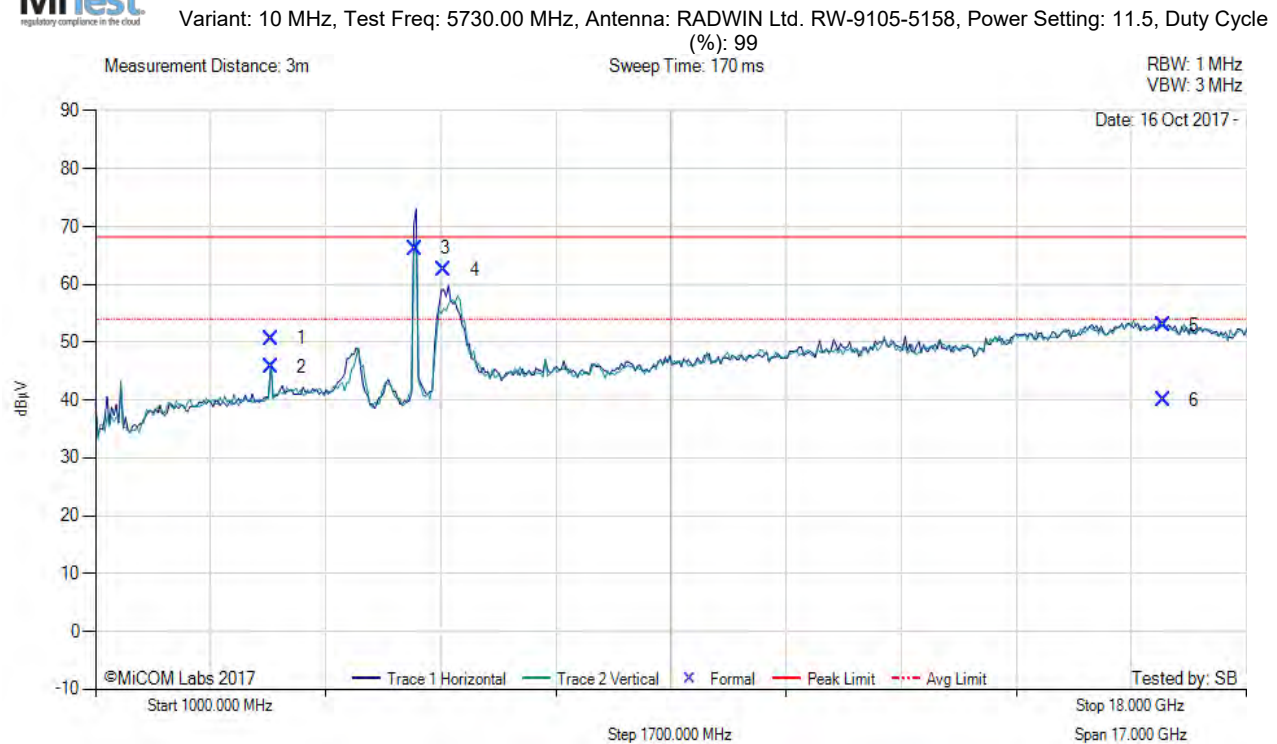
A.1. Radiated

A.1.1. TX Spurious & Restricted Band Emissions

A.1.1.1. RADWIN Ltd. RW-9105-5158



TX SPURIOUS & RESTRICTED BAND EMISSIONS



1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	3599.91	63.56	2.66	-15.59	50.63	Max Peak	Vertical	126	206	68.2	-17.6	Pass
2	3599.91	58.67	2.66	-15.59	45.74	Max Avg	Vertical	126	206	54.0	-8.3	Pass
3	5726.05	75.96	3.17	-12.87	66.26	Fundamental	Horizontal	100	0	--	--	
4	6148.06	71.08	3.27	-11.89	62.46	Max Peak	Horizontal	188	9	68.2	-5.8	Pass
5	16768.20	47.67	5.73	-0.47	52.93	Max Peak	Vertical	141	108	68.2	-15.3	Pass
6	16768.20	34.76	5.73	-0.47	40.02	Max Avg	Vertical	141	108	54.0	-14.0	Pass

Test Notes: Antenna Setup: 4 ports Horizontal Vertical Horizontal. 4th port is unused and terminated.

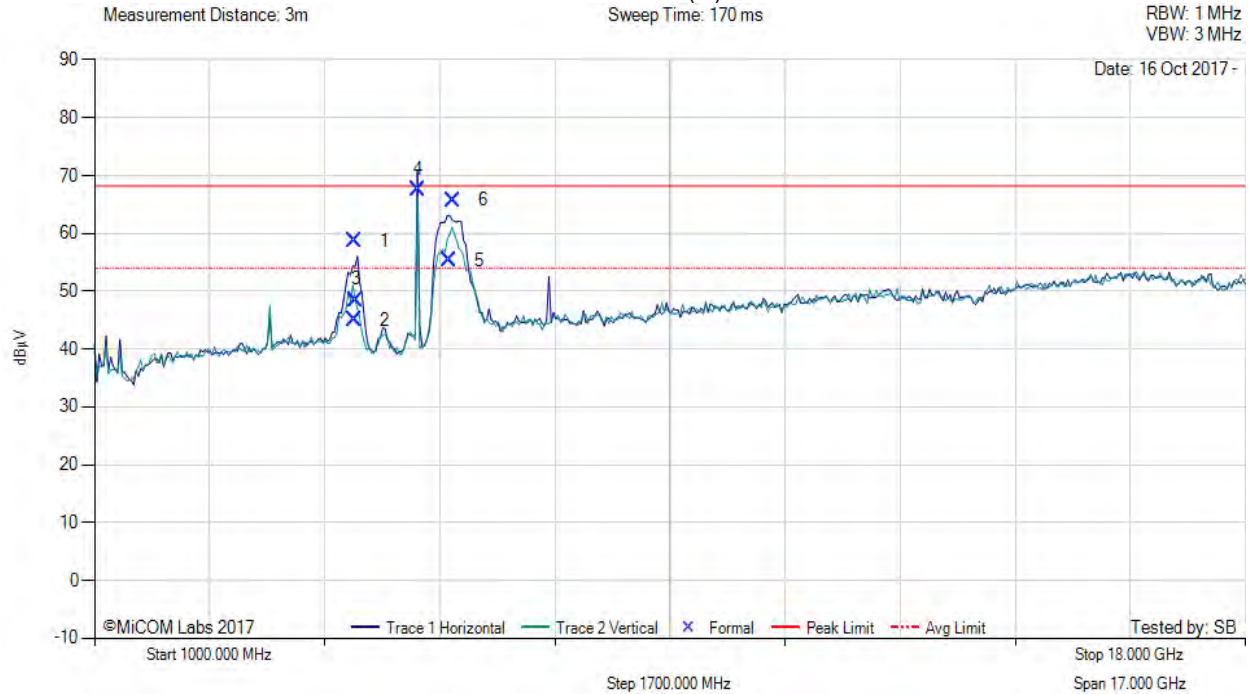
[back to matrix](#)

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TX SPURIOUS & RESTRICTED BAND EMISSIONS



Variant: 10 MHz, Test Freq: 5787.00 MHz, Antenna: RADWIN Ltd. RW-9105-5158, Power Setting: 17.5, Duty Cycle (%): 99



1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	4832.85	70.85	2.97	-15.14	58.68	Max Peak	Horizontal	151	13	68.2	-9.6	Pass
2	4832.85	57.26	2.97	-15.14	45.09	Max Avg	Horizontal	151	13	54.0	-8.9	Pass
3	4867.01	60.55	3.05	-15.10	48.50	Peak (Scan)	Horizontal	100	0	68.2	-19.7	Pass
4	5785.25	77.16	3.21	-12.78	67.59	Fundamental	Horizontal	100	0	--	--	
5	6236.63	63.95	3.21	-11.86	55.30	Peak (NRB)	Horizontal	100	0	--	--	Pass
6	6294.83	74.64	3.19	-12.08	65.75	Max Peak	Horizontal	175	4	68.2	-2.5	Pass

Test Notes: Antenna Setup: 4 ports Horizontal Vertical Horizontal. 4th port is unused and terminated.

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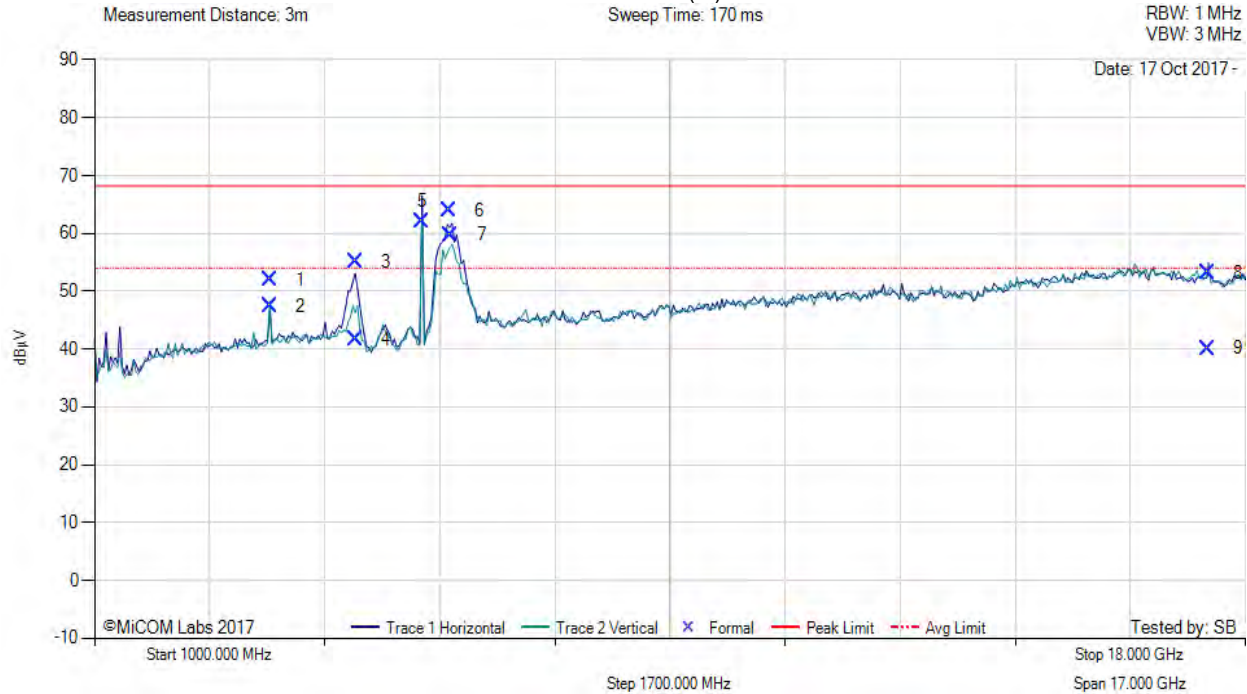


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TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 10 MHz, Test Freq: 5845.00 MHz, Antenna: RADWIN Ltd. RW-9105-5158, Power Setting: 11.5, Duty Cycle (%): 99



1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	3600.04	64.90	2.66	-15.60	51.96	Max Peak	Vertical	107	197	68.2	-16.3	Pass
2	3600.04	60.39	2.66	-15.60	47.45	Max Avg	Vertical	107	197	54.0	-6.6	Pass
3	4864.42	67.03	3.04	-15.02	55.05	Max Peak	Horizontal	156	11	68.2	-13.2	Pass
4	4864.42	53.69	3.04	-15.02	41.71	Max Avg	Horizontal	156	11	54.0	-12.3	Pass
5	5842.58	71.72	3.21	-12.95	61.98	Fundamental	Horizontal	100	0	--	--	
6	6233.11	72.61	3.20	-11.91	63.90	Max Peak	Horizontal	171	6	68.2	-4.3	Pass
7	6263.53	68.44	3.22	-11.91	59.75	Max Peak	Vertical	156	9	68.2	-8.5	Pass
8	17442.51	45.37	5.82	2.03	53.22	Max Peak	Vertical	178	123	68.2	-15.0	Pass
9	17442.51	32.21	5.82	2.03	40.06	Max Avg	Vertical	178	123	54.0	-13.9	Pass

Test Notes: Antenna Setup: 4 ports Horizontal Vertical Horizontal. 4th port is unused and terminated.

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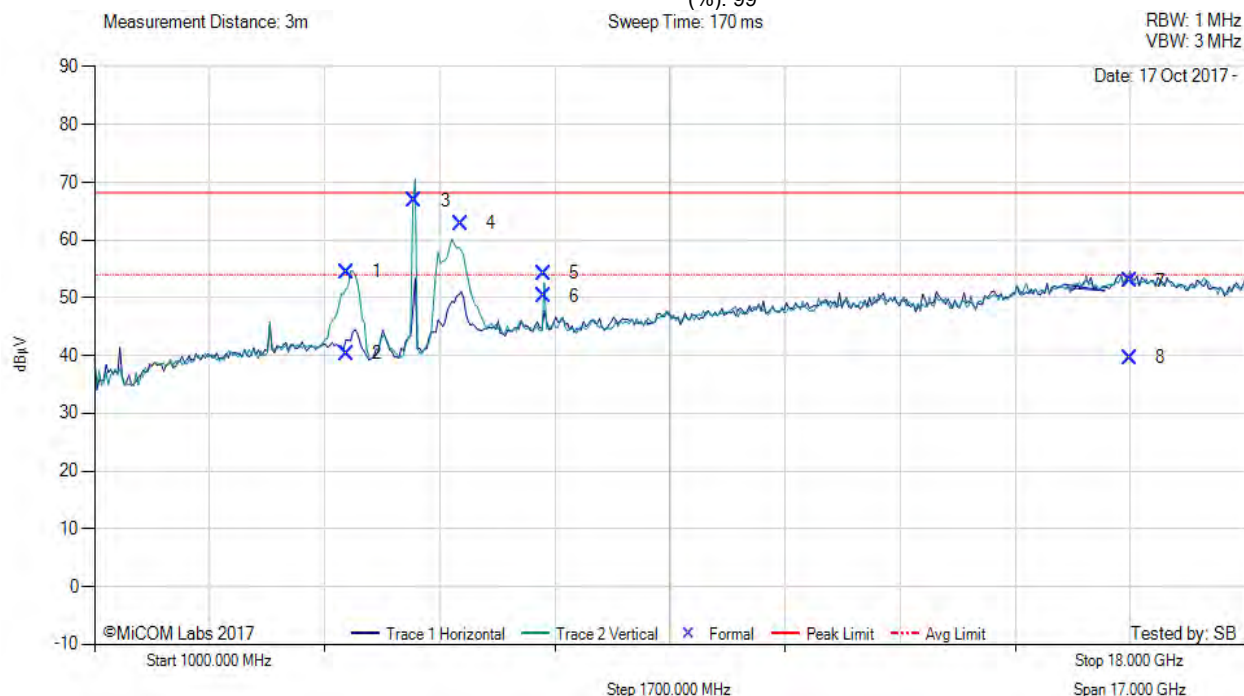
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A.1.1.2. RADWIN Ltd. RW-9401-5002



TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 10 MHz, Test Freq: 5730.00 MHz, Antenna: RADWIN Ltd. RW-9401-5002, Power Setting: 19.5, Duty Cycle (%): 99



1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	4726.57	66.95	2.97	-15.47	54.45	Max Peak	Vertical	147	357	68.2	-13.8	Pass
2	4726.57	52.84	2.97	-15.47	40.34	Max Avg	Vertical	147	357	54.0	-13.7	Pass
3	5728.31	76.57	3.17	-12.85	66.89	Fundamental	Vertical	100	0	--	--	
4	6403.13	71.63	3.19	-11.99	62.83	Max Peak	Vertical	168	179	68.2	-5.4	Pass
5	7640.06	58.23	3.71	-7.68	54.26	Max Peak	Vertical	191	265	68.2	-14.0	Pass
6	7640.06	54.31	3.71	-7.68	50.34	Max Avg	Vertical	191	265	54.0	-3.7	Pass
7	16294.00	47.92	5.67	-0.71	52.88	Max Peak	Vertical	162	229	68.2	-15.4	Pass
8	16294.00	34.66	5.67	-0.71	39.62	Max Avg	Vertical	162	229	54.0	-14.4	Pass

Test Notes: Antenna Setup: 3 omni directional antennas.

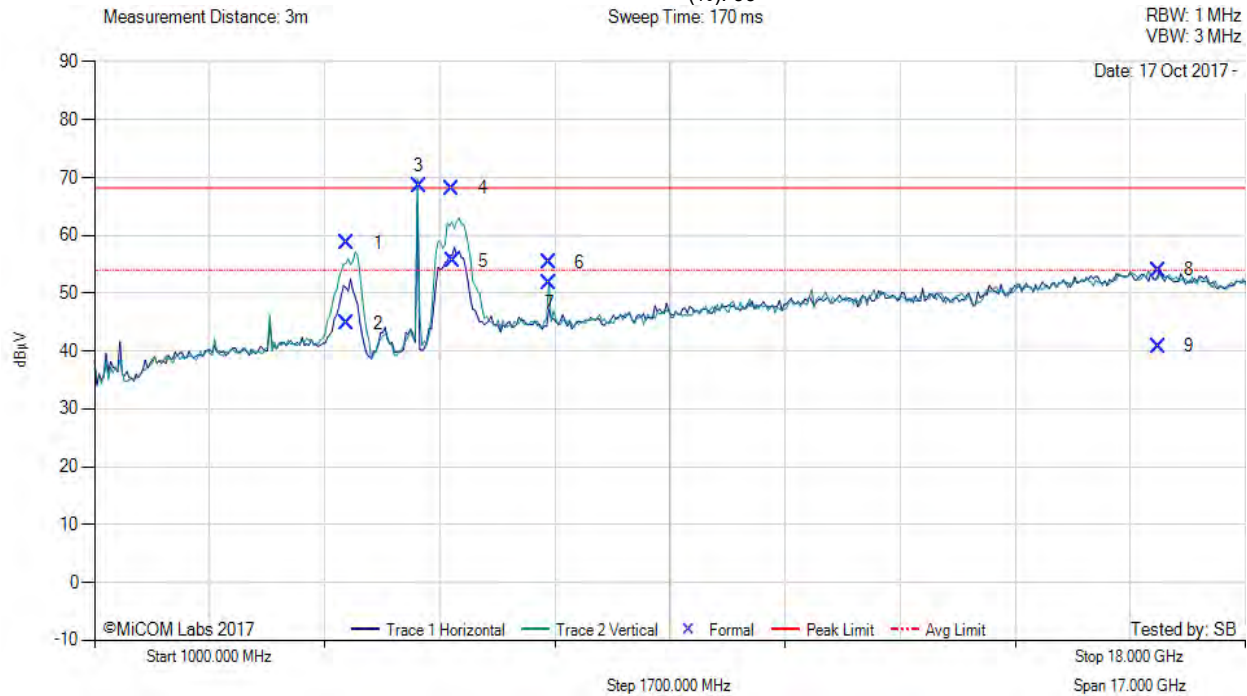
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TX SPURIOUS & RESTRICTED BAND EMISSIONS



Variant: 10 MHz, Test Freq: 5787.00 MHz, Antenna: RADWIN Ltd. RW-9401-5002, Power Setting: 24.5, Duty Cycle (%): 99



1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	4734.19	71.22	2.94	-15.47	58.69	Max Peak	Vertical	164	352	68.2	-9.5	Pass
2	4734.19	57.38	2.94	-15.47	44.85	Max Avg	Vertical	164	352	54.0	-9.2	Pass
3	5790.65	78.06	3.20	-12.82	68.44	Fundamental	Vertical	100	0	--	--	
4	6286.01	76.87	3.20	-11.96	68.11	Max Peak	Vertical	175	184	68.2	-0.1	Pass
5	6291.30	64.45	3.19	-12.04	55.60	Max Peak	Horizontal	198	137	68.2	-12.6	Pass
6	7716.25	59.61	3.76	-8.03	55.34	Max Peak	Vertical	124	336	68.2	-12.9	Pass
7	7716.25	56.14	3.76	-8.03	51.87	Max Avg	Vertical	124	336	54.0	-2.1	Pass
8	16713.74	47.96	5.66	0.35	53.97	Max Peak	Horizontal	109	242	68.2	-14.3	Pass
9	16713.74	34.80	5.66	0.35	40.81	Max Avg	Horizontal	109	242	54.0	-13.2	Pass

Test Notes: Antenna Setup: 3 omni directional antennas.

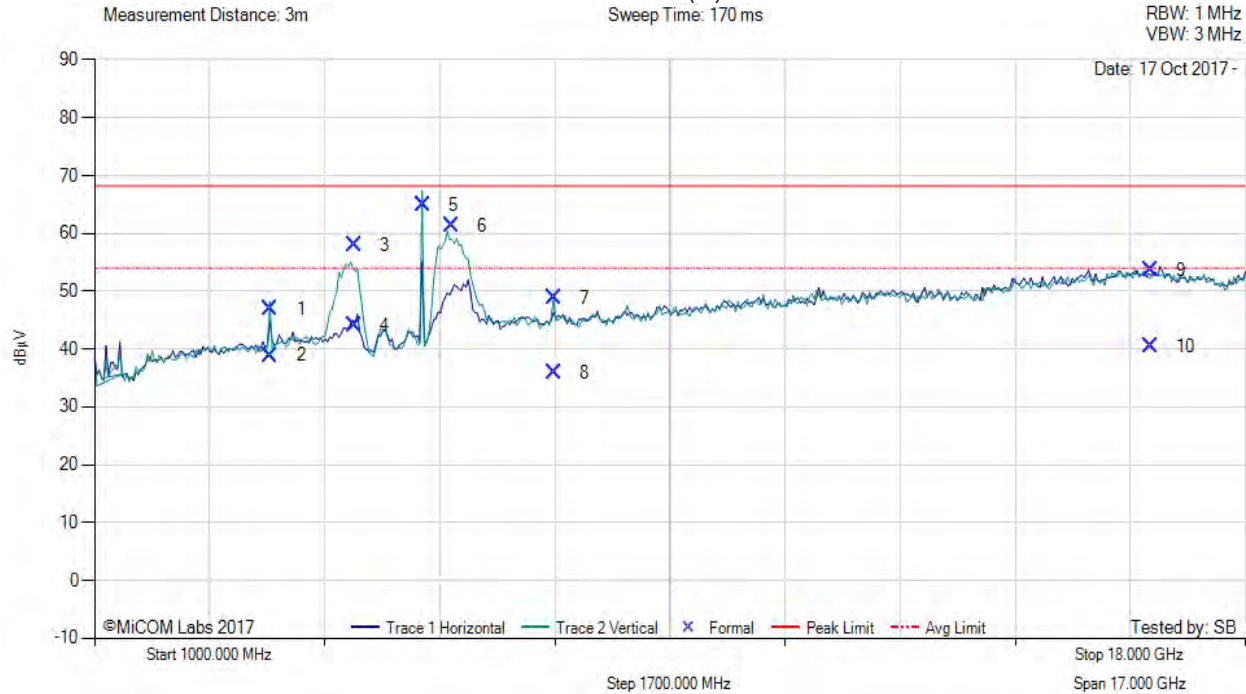
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TX SPURIOUS & RESTRICTED BAND EMISSIONS



Variant: 10 MHz, Test Freq: 5845.00 MHz, Antenna: RADWIN Ltd. RW-9401-5002, Power Setting: 19.5, Duty Cycle (%): 99



1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	3600.41	59.81	2.66	-15.60	46.87	Max Peak	Vertical	128	215	68.2	-21.4	Pass
2	3600.41	51.81	2.66	-15.60	38.87	Max Avg	Vertical	128	215	54.0	-15.1	Pass
3	4831.38	70.09	2.97	-15.15	57.91	Max Peak	Vertical	194	180	68.2	-10.3	Pass
4	4831.38	56.18	2.97	-15.15	44.00	Max Avg	Vertical	194	180	54.0	-10.0	Pass
5	5848.64	74.35	3.20	-12.68	64.87	Fundamental	Vertical	100	0	--	--	
6	6278.96	69.92	3.22	-11.79	61.35	Max Peak	Vertical	189	353	68.2	-6.9	Pass
7	7793.76	53.02	3.79	-8.01	48.80	Max Peak	Vertical	179	134	68.2	-19.4	Pass
8	7793.76	40.20	3.79	-8.01	35.98	Max Avg	Vertical	179	134	54.0	-18.0	Pass
9	16593.99	47.11	5.60	0.96	53.67	Max Peak	Horizontal	111	35	68.2	-14.6	Pass
10	16593.99	33.97	5.60	0.96	40.53	Max Avg	Horizontal	111	35	54.0	-13.5	Pass

Test Notes: Antenna Setup: 3 omni directional antennas.

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Title: Radwin AP0168031
To: FCC Subpart E 15.407, ISSED RSS-247
Serial #: RDWN49-U5_Radiated Addendum Rev A
Issue Date: 17th November 2017
Page: 45 of 61

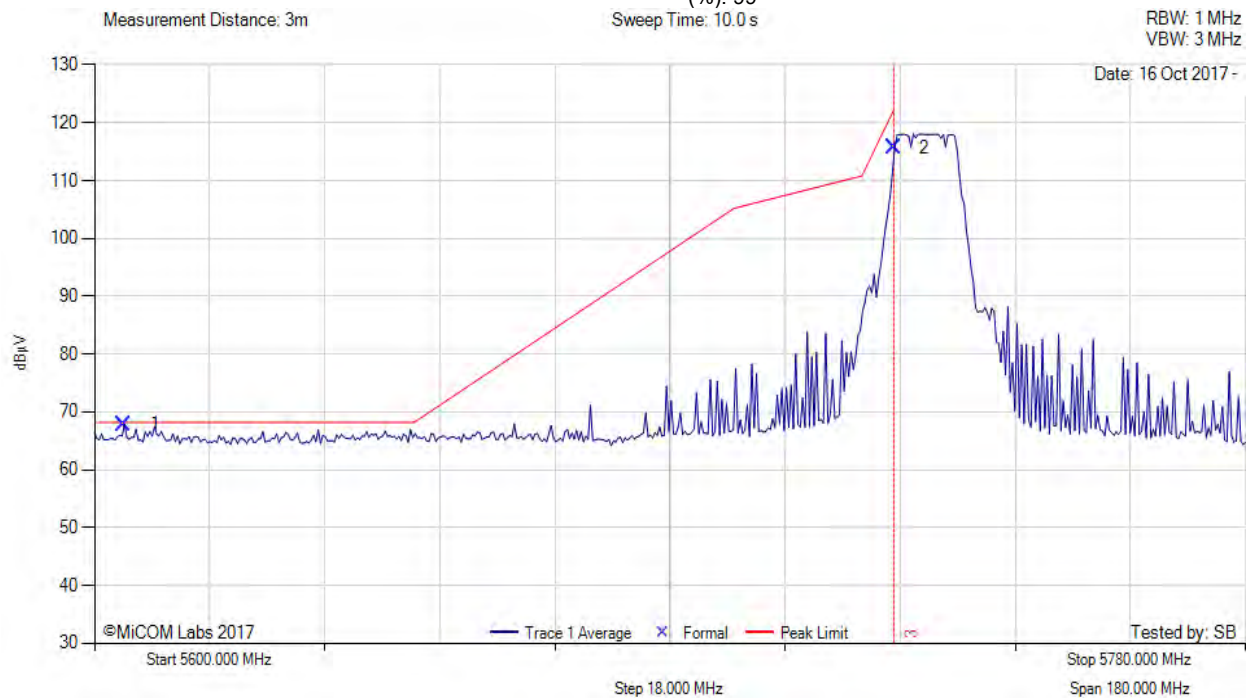
A.1.2. Restricted Edge & Band-Edge Emissions

A.1.2.3. RADWIN Ltd. RW-9105-5158

5725 MHz RADIATED BAND-EDGE EMISSIONS



Variant: 10 MHz, Test Freq: 5730.00 MHz, Antenna: RADWIN Ltd. RW-9105-5158, Power Setting: 9, Duty Cycle (%): 99



5600.00 - 5780.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	5604.62	28.38	3.24	36.30	67.92	Max Avg	Horizontal	151	5	68.2	-0.3	Pass
2	5725.00	76.07	3.17	36.50	115.74	Max Avg	Horizontal	151	5	122.2	-6.5	Pass
3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: Antenna Setup: 4 ports Horizontal Vertical Horizontal. 4th port is unused and terminated.

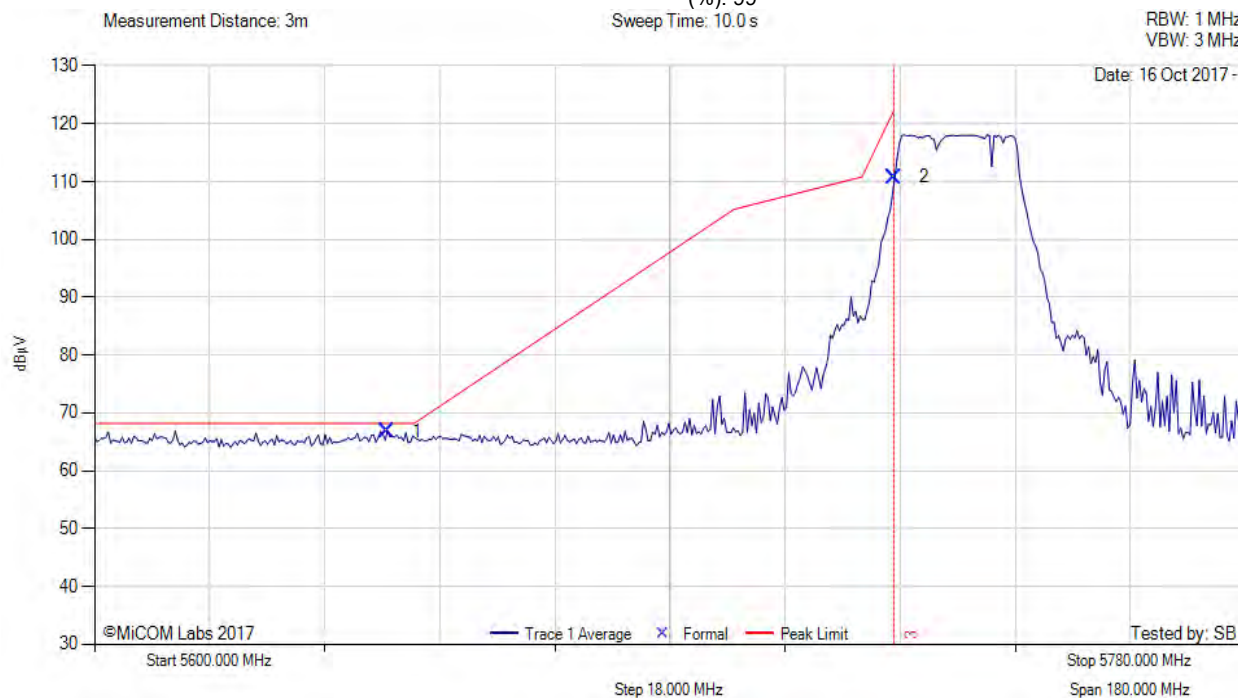
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5725 MHz RADIATED BAND-EDGE EMISSIONS



Variant: 20 MHz, Test Freq: 5735.00 MHz, Antenna: RADWIN Ltd. RW-9105-5158, Power Setting: 11.5, Duty Cycle (%): 99



5600.00 - 5780.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	5645.74	27.35	3.20	36.30	66.85	Max Avg	Horizontal	151	5	68.2	-1.4	Pass
2	5725.00	71.10	3.17	36.50	110.77	Max Avg	Horizontal	151	5	122.2	-11.4	Pass
3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

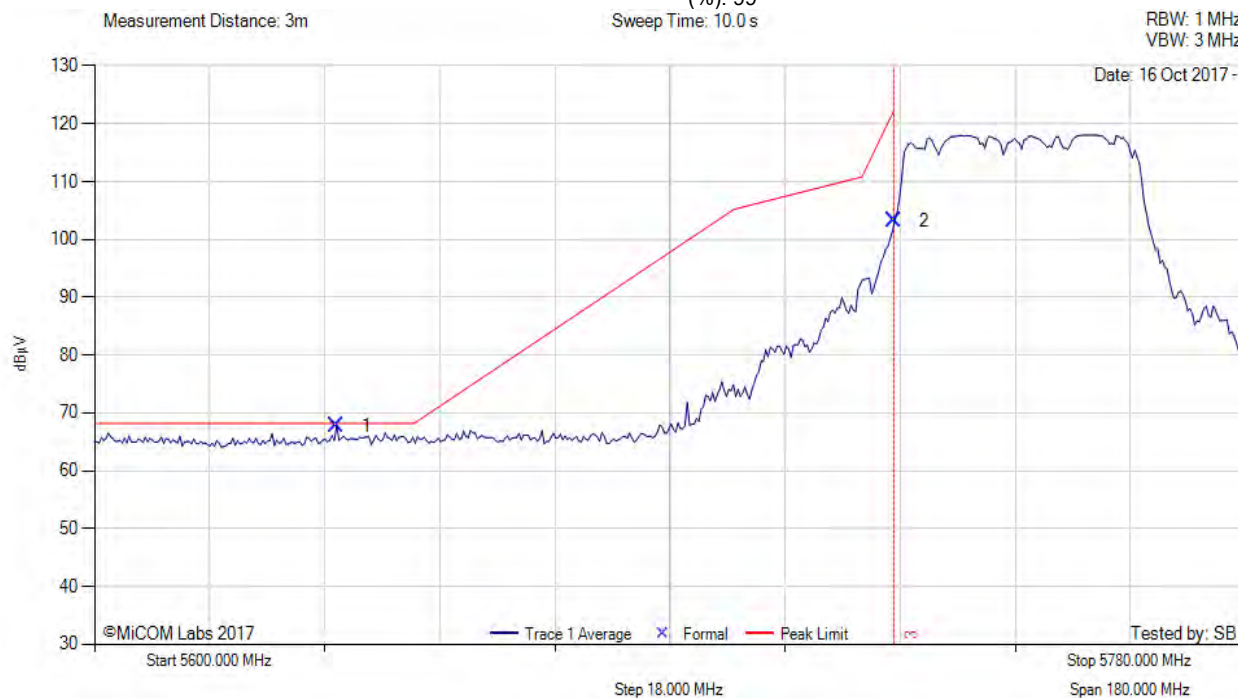
Test Notes: Antenna Setup: 4 ports Horizontal Vertical Horizontal. 4th port is unused and terminated.

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5725 MHz RADIATED BAND-EDGE EMISSIONS



Variant: 40 MHz, Test Freq: 5745.00 MHz, Antenna: RADWIN Ltd. RW-9105-5158, Power Setting: 11.5, Duty Cycle (%): 99



5600.00 - 5780.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	5637.81	28.32	3.19	36.30	67.81	Max Avg	Horizontal	151	5	68.2	-0.4	Pass
2	5725.00	63.59	3.17	36.50	103.26	Max Avg	Horizontal	151	5	122.2	-18.9	Pass
3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

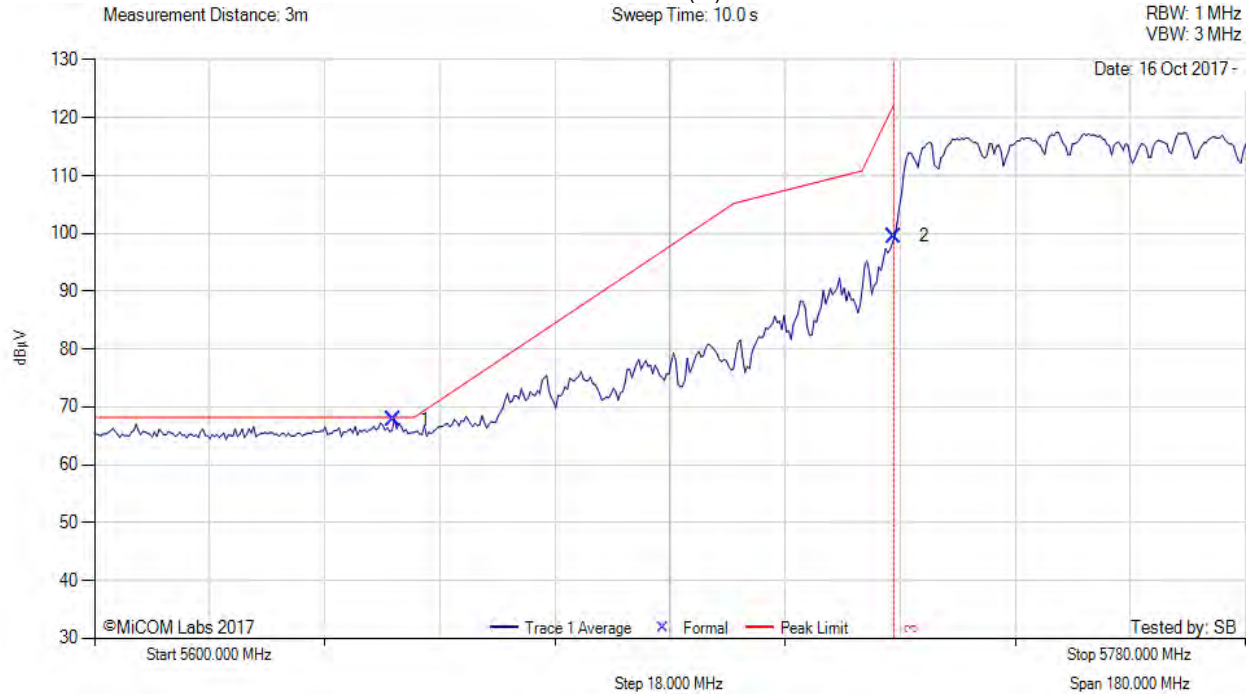
Test Notes: Antenna Setup: 4 ports Horizontal Vertical Horizontal. 4th port is unused and terminated.

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5725 MHz RADIATED BAND-EDGE EMISSIONS



Variant: 80 MHz, Test Freq: 5765.00 MHz, Antenna: RADWIN Ltd. RW-9105-5158, Power Setting: 11.5, Duty Cycle (%): 99



5600.00 - 5780.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	5646.82	28.29	3.20	36.30	67.79	Max Avg	Horizontal	151	5	68.2	-0.4	Pass
2	5725.00	59.84	3.17	36.50	99.51	Max Avg	Horizontal	151	5	122.2	-22.7	Pass
3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

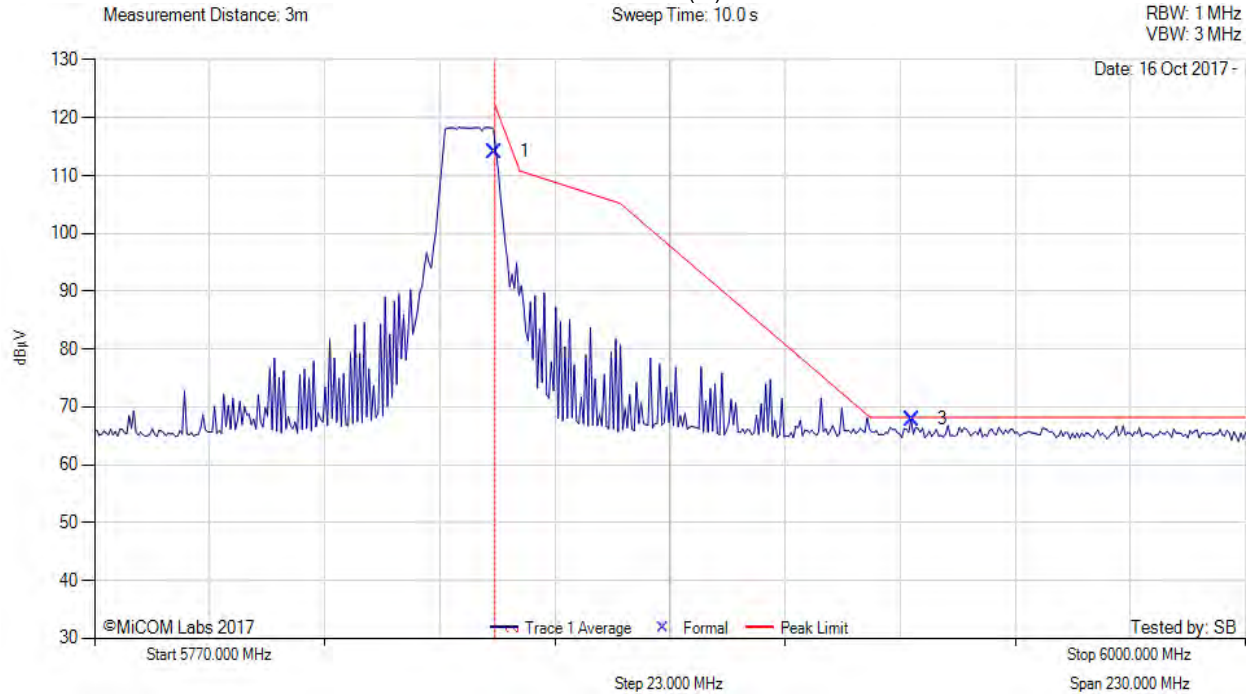
Test Notes: Antenna Setup: 4 ports Horizontal Vertical Horizontal. 4th port is unused and terminated.

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5850 MHz RADIATED BAND-EDGE EMISSIONS



Variant: 10 MHz, Test Freq: 5845.00 MHz, Antenna: RADWIN Ltd. RW-9105-5158, Power Setting: 11, Duty Cycle (%): 99



5770.00 - 6000.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	5850.00	74.18	3.20	36.70	114.08	Max Avg	Horizontal	151	5	122.2	-8.1	Pass
3	5933.29	27.86	3.19	36.80	67.85	Max Avg	Horizontal	151	5	68.2	-0.4	Pass
2	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

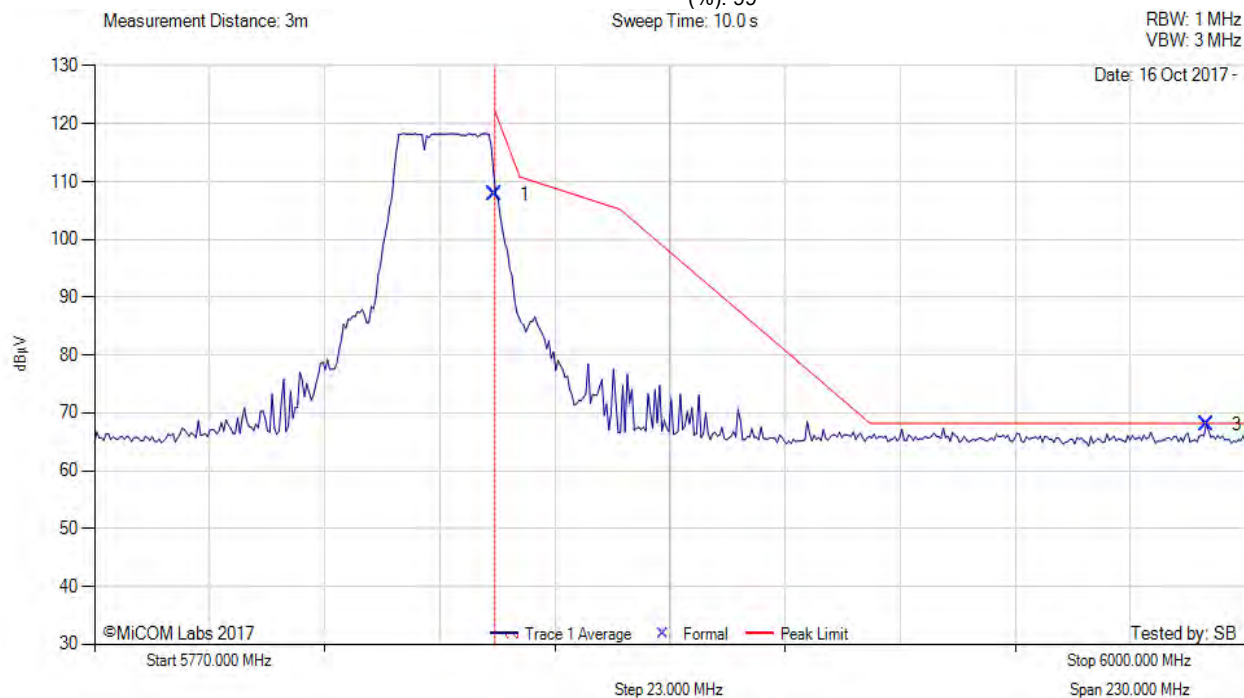
Test Notes: Antenna Setup: 4 ports Horizontal Vertical Horizontal. 4th port is unused and terminated.

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5850 MHz RADIATED BAND-EDGE EMISSIONS



Variant: 20 MHz, Test Freq: 5840.00 MHz, Antenna: RADWIN Ltd. RW-9105-5158, Power Setting: 11.5, Duty Cycle (%): 99



5770.00 - 6000.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	5850.00	67.85	3.20	36.70	107.75	Max Avg	Horizontal	151	5	122.2	-14.5	Pass
3	5992.28	27.87	3.23	36.90	68.00	Max Avg	Horizontal	151	5	68.2	-0.2	Pass
2	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

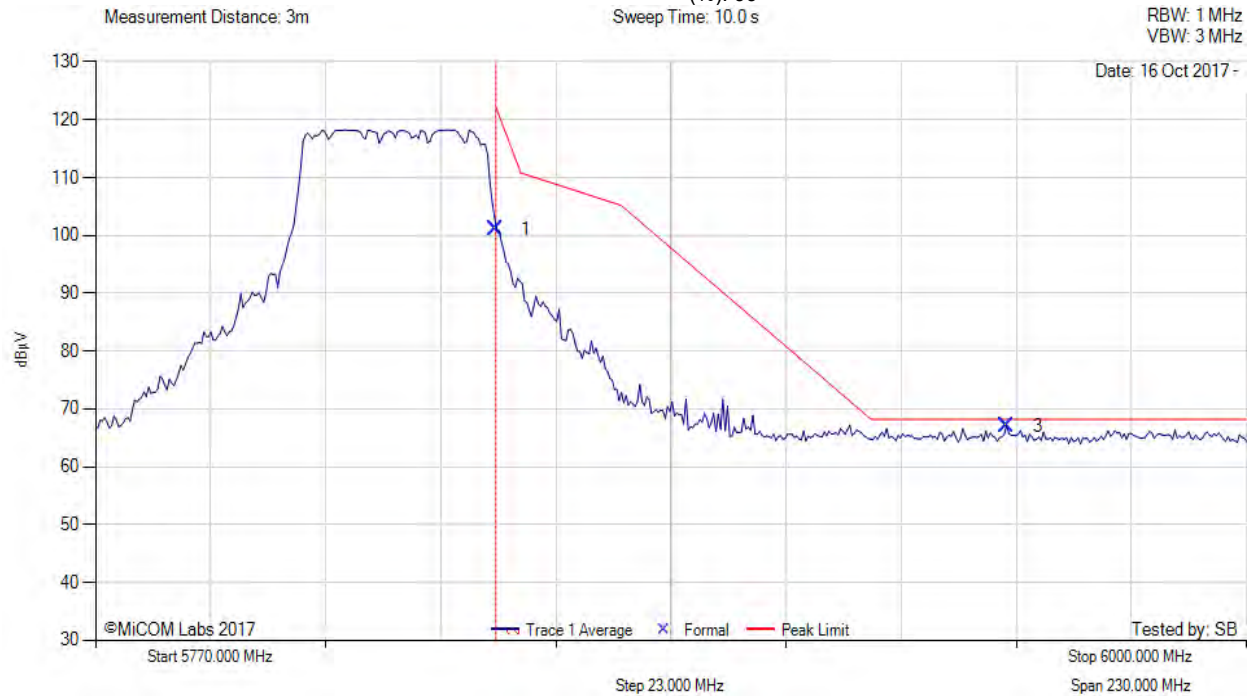
Test Notes: Antenna Setup: 4 ports Horizontal Vertical Horizontal. 4th port is unused and terminated.

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5850 MHz RADIATED BAND-EDGE EMISSIONS

Variant: 40 MHz, Test Freq: 5830.00 MHz, Antenna: RADWIN Ltd. RW-9105-5158, Power Setting: 11.5, Duty Cycle (%): 99



5770.00 - 6000.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	5850.00	61.14	3.20	36.70	101.04	Max Avg	Horizontal	151	5	122.2	-20.8	Pass
3	5952.18	27.06	3.24	36.80	67.10	Max Avg	Horizontal	151	5	68.2	-1.1	Pass
2	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

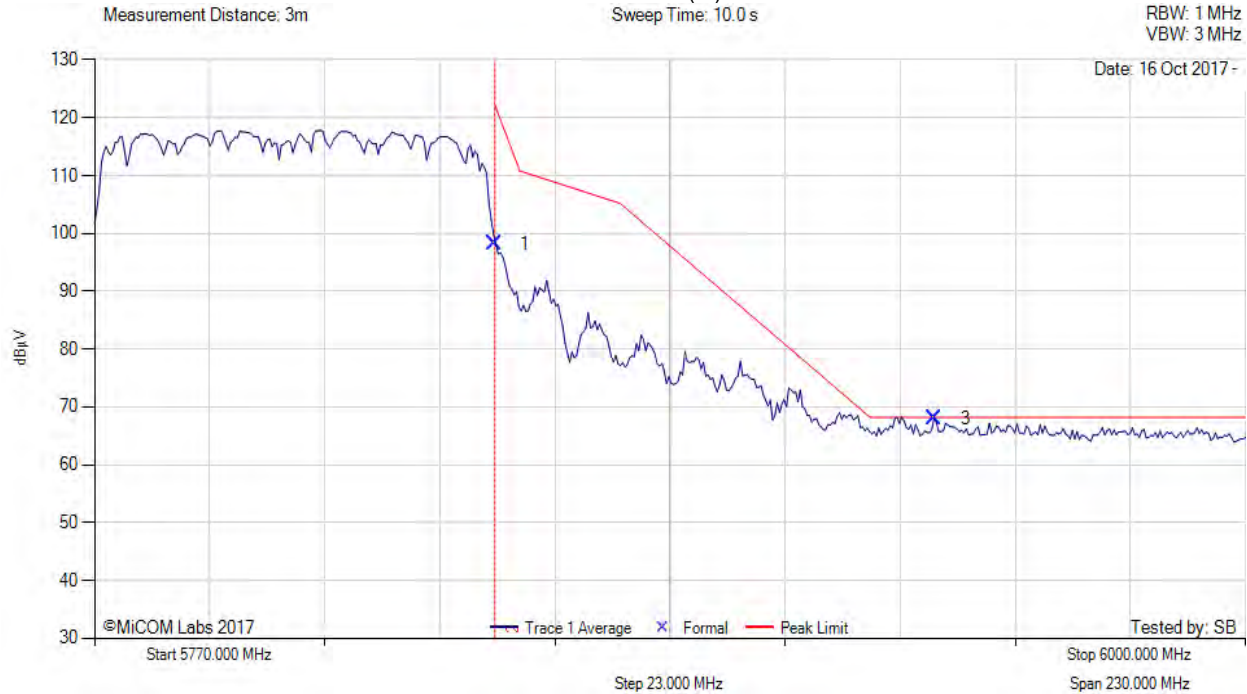
Test Notes: Antenna Setup: 4 ports Horizontal Vertical Horizontal. 4th port is unused and terminated.

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5850 MHz RADIATED BAND-EDGE EMISSIONS



Variant: 80 MHz, Test Freq: 5810.00 MHz, Antenna: RADWIN Ltd. RW-9105-5158, Power Setting: 11.5, Duty Cycle (%): 99



5770.00 - 6000.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	5850.00	58.32	3.20	36.70	98.22	Max Avg	Horizontal	151	5	122.2	-24.0	Pass
3	5937.90	28.08	3.20	36.80	68.08	Max Avg	Horizontal	151	5	68.2	-0.2	Pass
2	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: Antenna Setup: 4 ports Horizontal Vertical Horizontal. 4th port is unused and terminated.

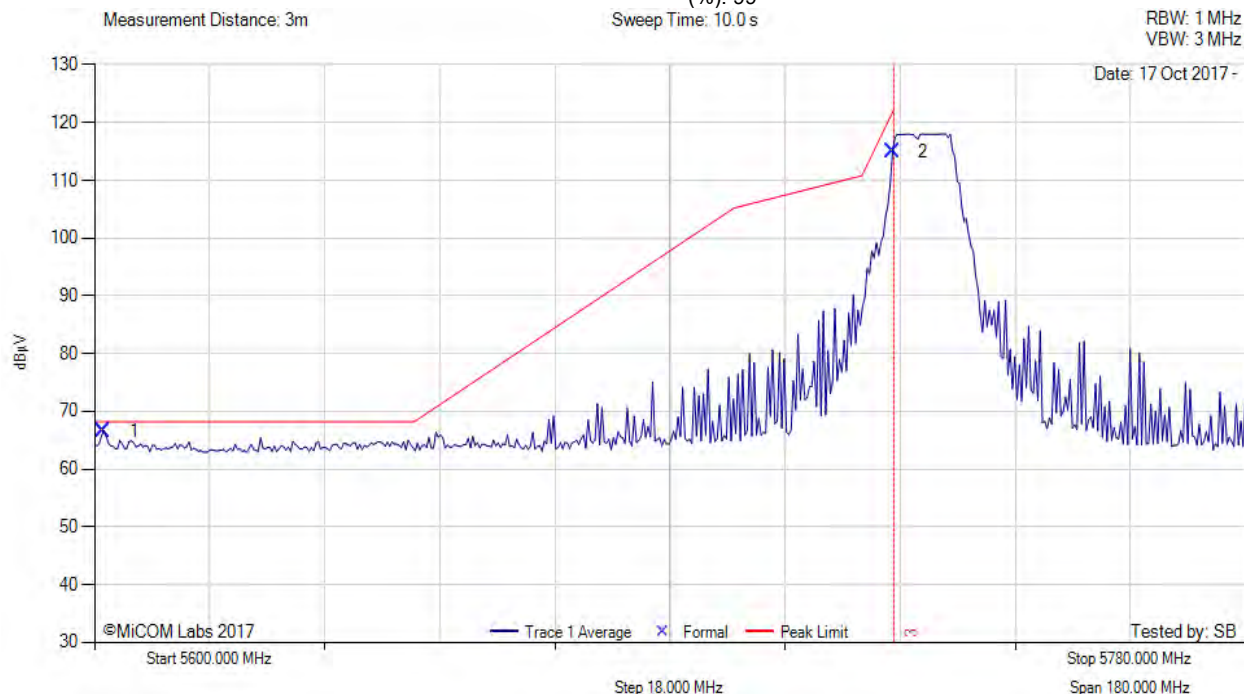
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A.1.2.4. RADWIN Ltd. RW-9401-5002



5725 MHz RADIATED BAND-EDGE EMISSIONS

Variant: 10 MHz, Test Freq: 5730.00 MHz, Antenna: RADWIN Ltd. RW-9401-5002, Power Setting: 19.5, Duty Cycle (%): 99



5600.00 - 5780.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	5601.37	27.05	3.27	36.30	66.62	Max Avg	Vertical	152	-2	68.2	-1.6	Pass
2	5724.81	75.34	3.17	36.50	115.01	Max Avg	Vertical	152	-2	122.2	-7.2	Pass
3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: Antenna Setup: 3 omni directional antennas.

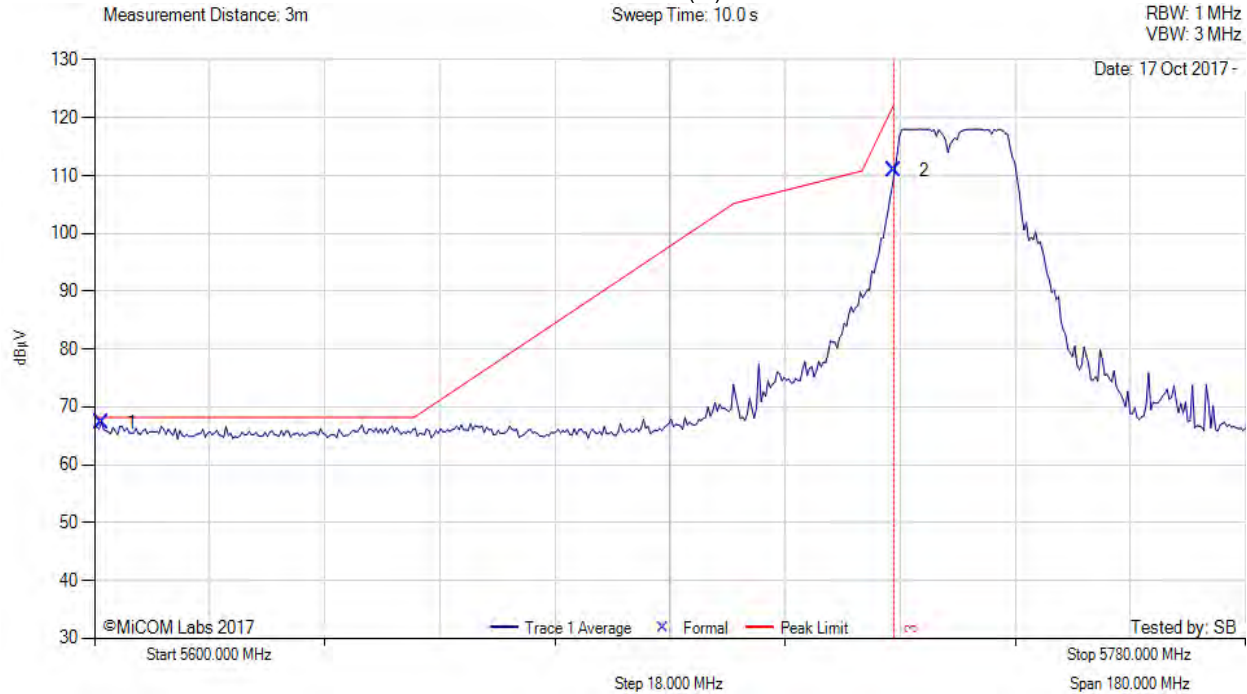
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5725 MHz RADIATED BAND-EDGE EMISSIONS



Variant: 20 MHz, Test Freq: 5735.00 MHz, Antenna: RADWIN Ltd. RW-9401-5002, Power Setting: 19.5, Duty Cycle (%): 99



5600.00 - 5780.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	5601.08	27.68	3.27	36.30	67.25	Max Avg	Vertical	152	-2	68.2	-1.0	Pass
2	5725.00	71.21	3.17	36.50	110.88	Max Avg	Vertical	152	-2	122.2	-11.3	Pass
3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

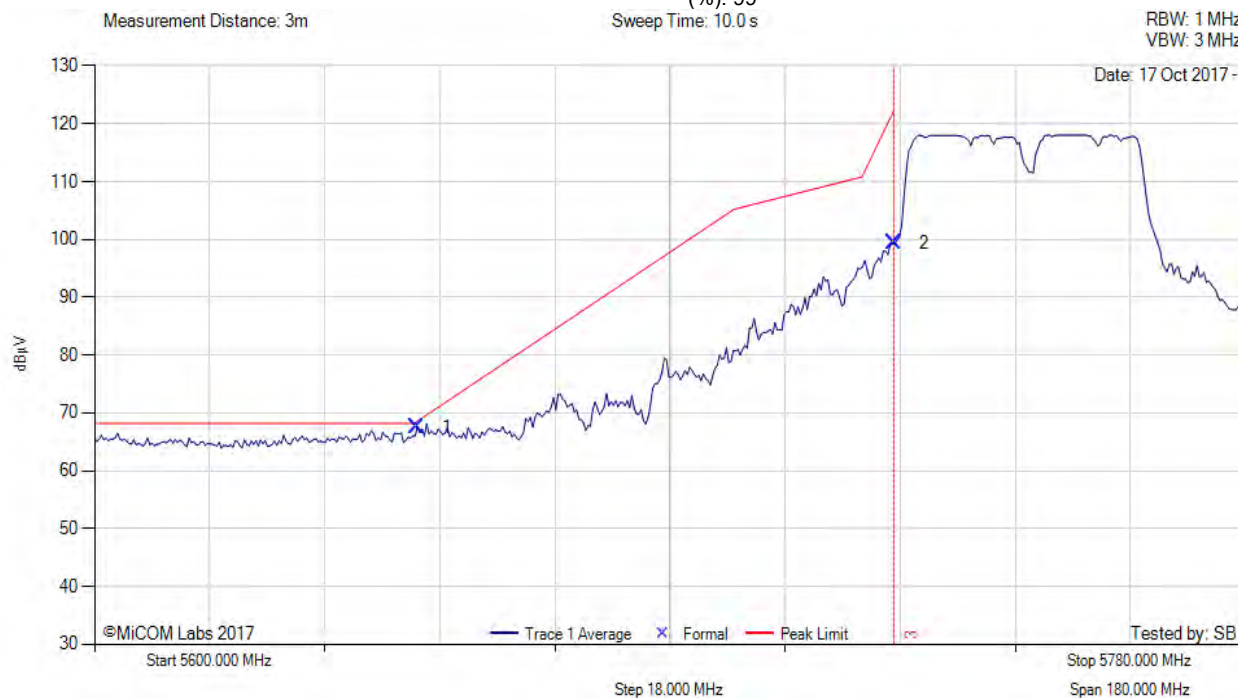
Test Notes: Antenna Setup: 3 omni directional antennas.

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5725 MHz RADIATED BAND-EDGE EMISSIONS

Variant: 40 MHz, Test Freq: 5745.00 MHz, Antenna: RADWIN Ltd. RW-9401-5002, Power Setting: 21, Duty Cycle (%): 99



5600.00 - 5780.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	5650.43	28.08	3.21	36.30	67.59	Max Avg	Vertical	152	-2	68.2	-0.6	Pass
2	5725.00	59.66	3.17	36.50	99.33	Max Avg	Vertical	152	-2	122.2	-22.9	Pass
3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

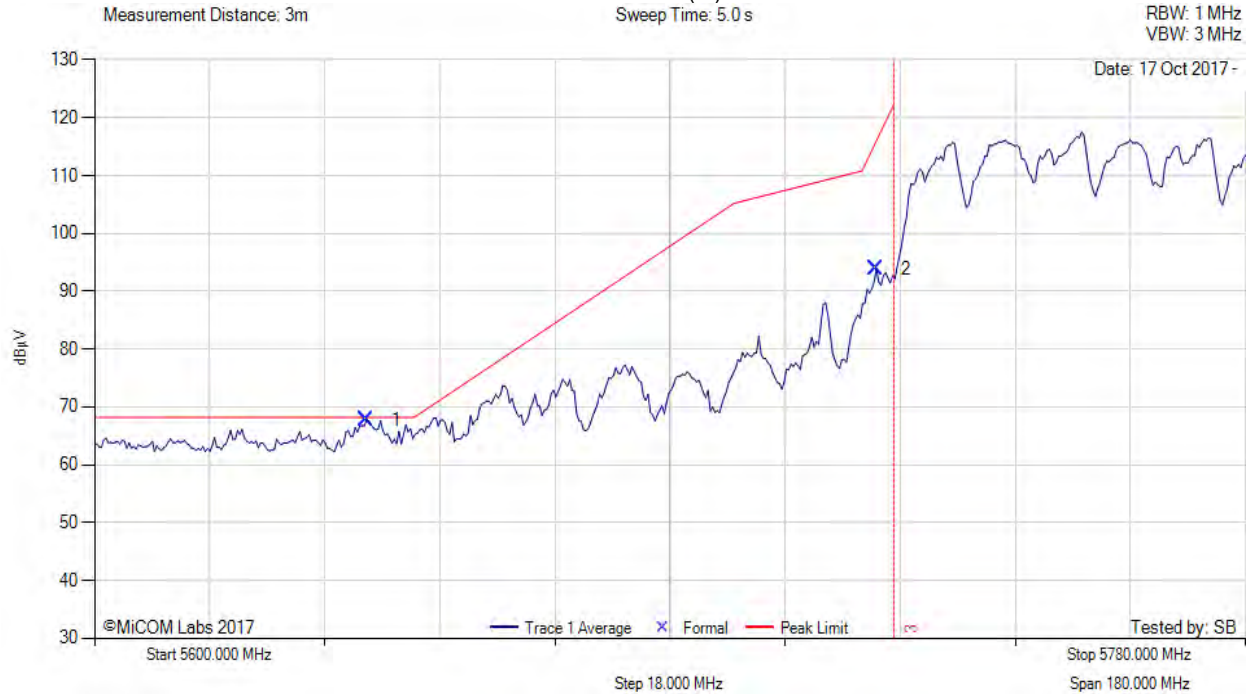
Test Notes: Antenna Setup: 3 omni directional antennas.

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5725 MHz RADIATED BAND-EDGE EMISSIONS



Variant: 80 MHz, Test Freq: 5765.00 MHz, Antenna: RADWIN Ltd. RW-9401-5002, Power Setting: 17.5, Duty Cycle (%): 99



5600.00 - 5780.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	5642.49	28.33	3.18	36.30	67.81	Max Avg	Vertical	152	-2	68.2	-0.4	Pass
2	5722.11	54.18	3.17	36.50	93.85	Max Avg	Vertical	152	-2	115.4	-21.5	Pass
3	5725.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

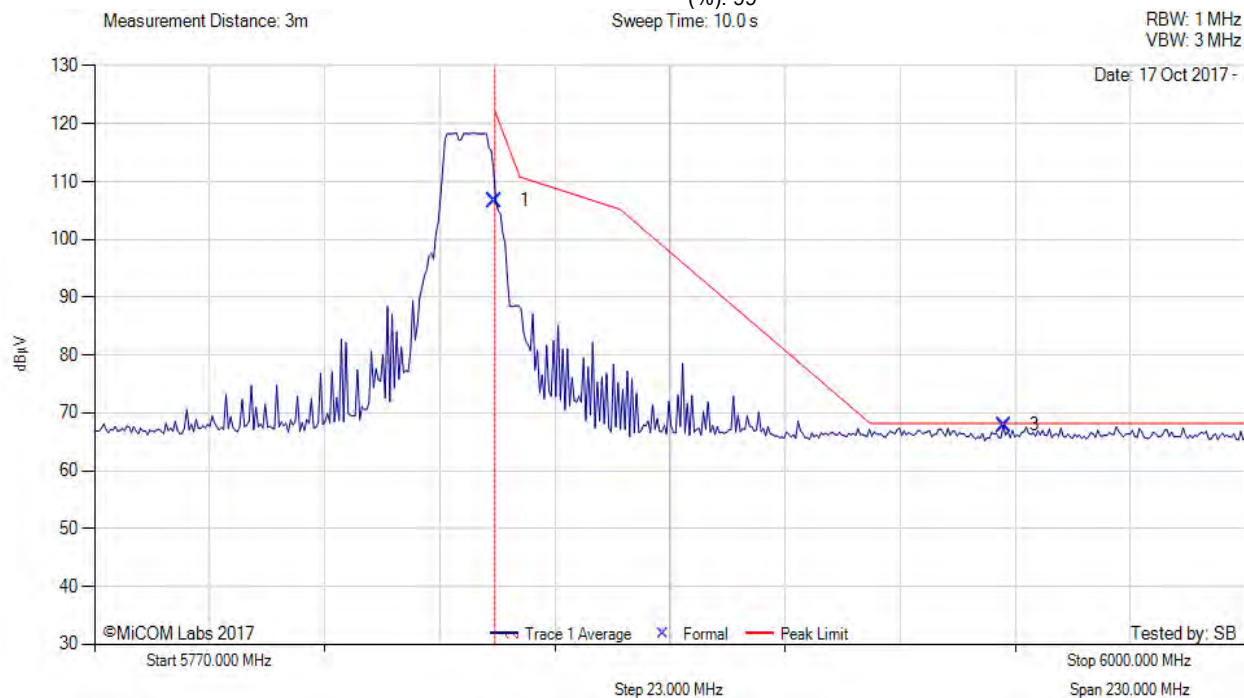
Test Notes: Antenna Setup: 3 omni directional antennas.

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5850 MHz RADIATED BAND-EDGE EMISSIONS

Variant: 10 MHz, Test Freq: 5845.00 MHz, Antenna: RADWIN Ltd. RW-9401-5002, Power Setting: 19.5, Duty Cycle (%): 99



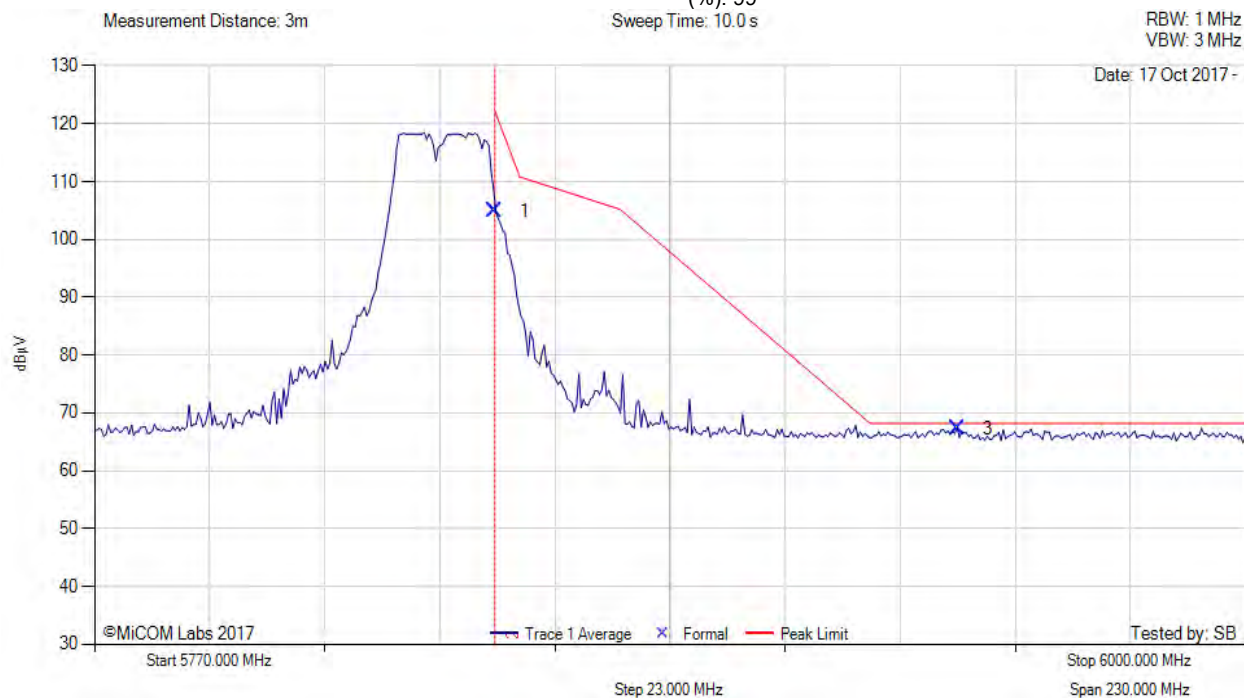
5770.00 - 6000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	5850.00	66.83	3.20	36.70	106.73	Max Avg	Vertical	152	-2	122.2	-15.5	Pass
3	5951.72	27.84	3.24	36.80	67.88	Max Avg	Vertical	152	-2	68.2	-0.4	Pass
2	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--
Test Notes: Antenna Setup: 3 omni directional antennas.												

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5850 MHz RADIATED BAND-EDGE EMISSIONS



Variant: 20 MHz, Test Freq: 5840.00 MHz, Antenna: RADWIN Ltd. RW-9401-5002, Power Setting: 19.5, Duty Cycle (%): 99



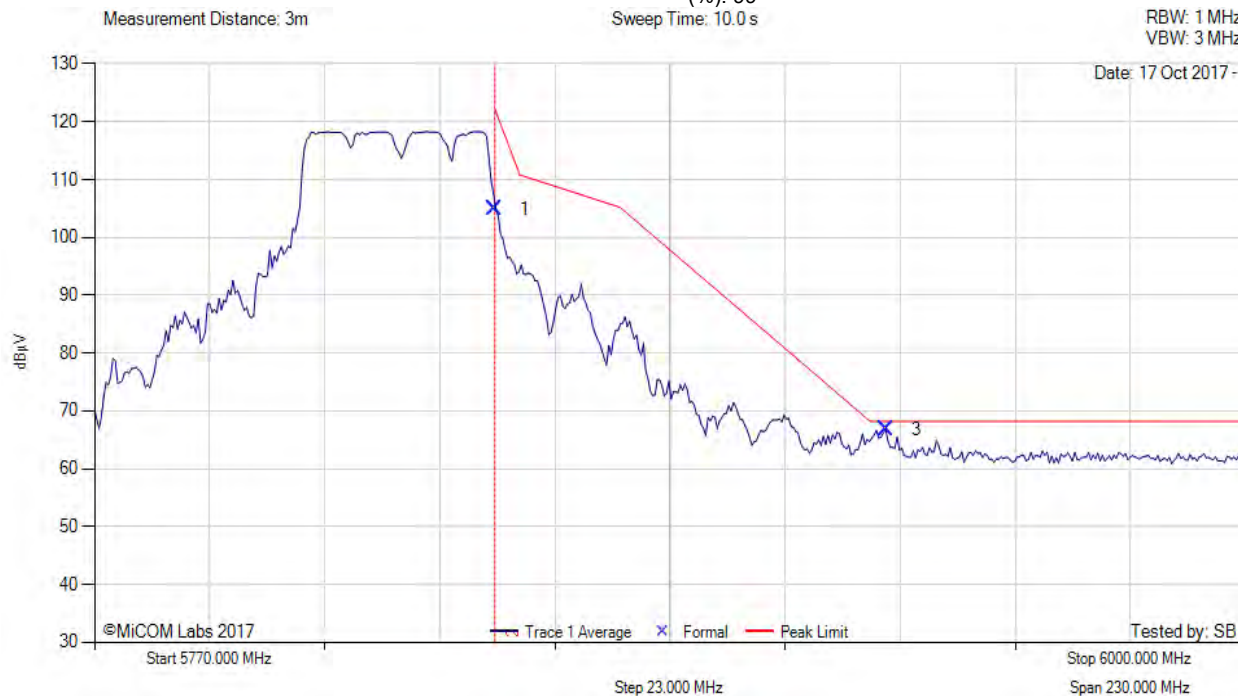
5770.00 - 6000.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	5850.00	64.99	3.20	36.70	104.89	Max Avg	Vertical	152	-2	122.2	-17.3	Pass
3	5942.51	27.32	3.22	36.80	67.34	Max Avg	Vertical	152	-2	68.2	-0.9	Pass
2	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: Antenna Setup: 3 omni directional antennas.

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5850 MHz RADIATED BAND-EDGE EMISSIONS

Variant: 40 MHz, Test Freq: 5830.00 MHz, Antenna: RADWIN Ltd. RW-9401-5002, Power Setting: 20.5, Duty Cycle (%): 99



5770.00 - 6000.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	5850.00	65.06	3.20	36.70	104.96	Max Avg	Vertical	152	-2	122.2	-17.2	Pass
3	5928.22	26.77	3.19	36.80	66.76	Max Avg	Vertical	152	-2	68.2	-1.5	Pass
2	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

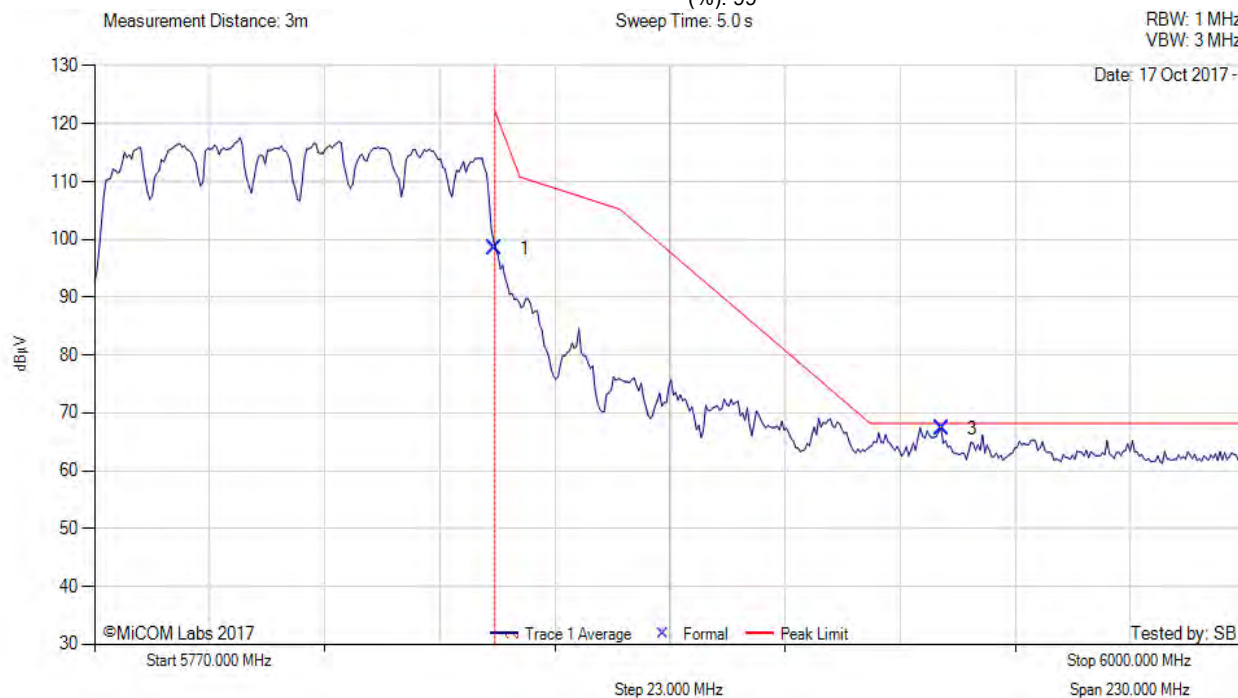
Test Notes: Antenna Setup: 3 omni directional antennas.

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5850 MHz RADIATED BAND-EDGE EMISSIONS



Variant: 80 MHz, Test Freq: 5810.00 MHz, Antenna: RADWIN Ltd. RW-9401-5002, Power Setting: 17.5, Duty Cycle (%): 99



5770.00 - 6000.00 MHz												
Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	5850.00	58.50	3.20	36.70	98.40	Max Avg	Vertical	152	-2	122.2	-23.8	Pass
3	5939.28	27.32	3.21	36.80	67.33	Max Avg	Vertical	152	-2	68.2	-0.9	Pass
2	5850.00	--	--	--	--	Band-Edge	--	--	--	--	--	--
Test Notes: Antenna Setup: 3 omni directional antennas.												

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