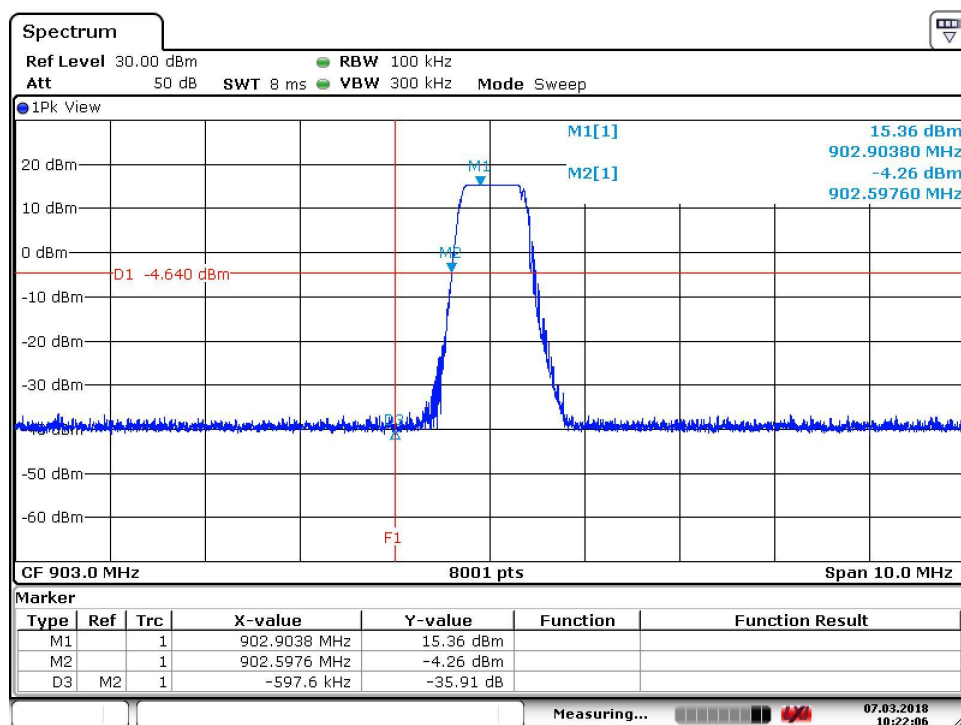

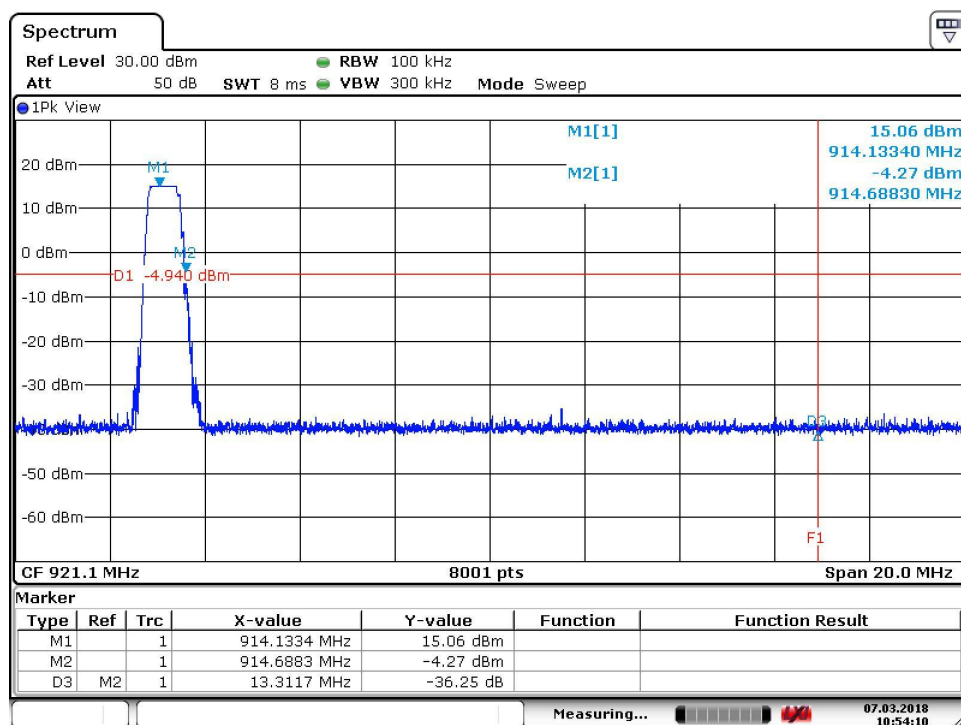
		1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		<h2>Band Edge Measurements</h2>	
DNB Job Number:		86088		Date: 7 Mar 2018	
Customer:		Vutiliti Inc.			
Model Number:		VUHDRF1			
Description:		500 kHz LoRa Modular Transmitter			
		Conformance Standard FCC Part 15 Clause 15.247(a,2,d)			
Ambient Temperature		Relative Humidity		Barometric Pressure	
21 °C		25 %		101.2 kPa	
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No J Payne					
Conducted Band Edge Measurement				Freq Delta (MHz)	
Limit	Lower (MHz)	Upper (MHz)			Pass/Fail
902	902.598		0.598		Pass




Date: 7.MAR.2018 10:22:06

		1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		<h2>Band Edge Measurements</h2>	
DNB Job Number:		86088		Date: 7 Mar 2018	
Customer:		Vutiliti Inc.			
Model Number:		VUHDRF1			
Description:		500 kHz LoRa Modular Transmitter			
Ambient Temperature		Relative Humidity		Barometric Pressure	
21 °C		25 %		101.2 kPa	
EUT performed within the requirements of the applicable standard [X] Yes [] No J Payne					
Conducted Band Edge Measurement				Freq Delta (MHz)	
Limit	Lower (MHz)	Upper (MHz)	Freq Delta (MHz)		Pass/Fail
930		914.688	15.312		Pass



Date: 7.MAR.2018 10:54:10

		1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		FHSS Characteristics	
DNB Job Number:		86088		Date: 7 Mar 2018	
Customer:		Vutiliti Inc.			
Model Number:		VUHDRF1			
Description:		125 kHz LoRa Modular Transmitter (FHSS)			
Conformance Standard FCC Part 15 Clause 15.247(g & h)					
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>Les Payne</i>					

15.247g,h FHSS Characteristics

For the device's operation in FHSS modes, the software in use is derived from the reference implementation of a LoRaWAN stack¹ version 4.4.0, with no modifications to the radio interface. This code base has been tested to conform to LoRaWAN 1.0.2² and LoRaWAN Regional Parameters 1.0.2³ under the US915 region.

Per the LoRaWAN spec, they require a device to change among the required channel set in a pseudo-random order, while following maximum transmit time on a single channel. (Page 6)

- 17 End-devices may transmit on any channel available at any time, using any available data
18 rate, as long as the following rules are respected:
- 19 • The end-device changes channel in a pseudo-random fashion for every
20 transmission. The resulting frequency diversity makes the system more robust to
21 interferences.
 - 22 • The end-device respects the maximum transmit duty cycle relative to the sub-band
23 used and local regulations.
 - 24 • The end-device respects the maximum transmit duration (or dwell time) relative to
25 the sub-band used and local regulations.
- 26 While this document specifies the protocol details, various operational parameters that are
27 based on the regional regulations, such as maximum transmit duty-cycle and dwell time per
28 sub-band, are described in a separate document (LoRaWAN Regional Parameters
29 [PARAMS]). This document separation allows addition of new regional parameters without
30 having to modify the base protocol specification.

In the regional parameters, they list the regulations for the band as requirements to follow and provide the list of channels they use. (Page 13)

2.2 US 902-928MHz ISM Band

This section defines the regional parameters for the USA, Canada and all other countries adopting the entire FCC-Part15 regulations in 902-928 ISM band.

2.2.1 US902-928 Preamble Format

The following synchronization words should be used:

Modulation	Sync word	Preamble length
LORA	0x34	8 symbols

LoRaWAN does not make use of GFSK modulation in the US902-928 ISM band.

2.2.2 US902-928 Channel Frequencies

The 915 MHz ISM Band shall be divided into the following channel plans.

- Upstream – 64 channels numbered 0 to 63 utilizing LoRa 125 kHz BW varying from DR0 to DR3, using coding rate 4/5, starting at 902.3 MHz and incrementing linearly by 200 kHz to 914.9 MHz
- Upstream – 8 channels numbered 64 to 71 utilizing LoRa 500 kHz BW at DR4 starting at 903.0 MHz and incrementing linearly by 1.6 MHz to 914.2 MHz
- Downstream – 8 channels numbered 0 to 7 utilizing LoRa 500 kHz BW at DR8 to DR13, starting at 923.3 MHz and incrementing linearly by 600 kHz to 927.5 MHz

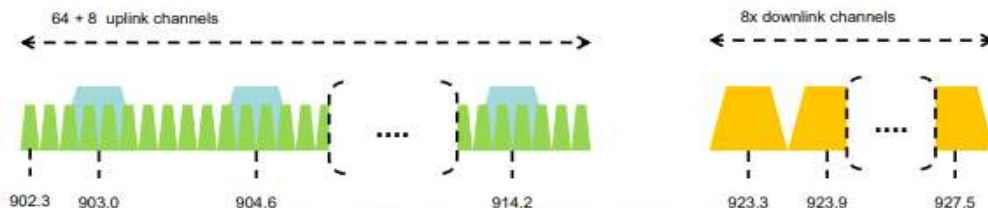



Figure 1: US902-928 channel frequencies

915 MHz ISM band end-devices are required to operate in compliance with the relevant regulatory specifications, to include.

- Frequency-Hopping, Spread-Spectrum (FHSS) mode, which requires the device transmit at a measured conducted power level no greater than +30 dBm, for a period of no more than 400 msec and over at least 50 channels, each of which occupy no greater than 250 kHz of bandwidth.
- Digital Transmission System (DTS) mode, which requires that the device use channels greater than or equal to 500 kHz and comply to a conducted Power Spectral Density measurement of no more than +8 dBm per 3kHz of spectrum. In practice, this limits the conducted output power of an end-device to +26 dBm.
- Hybrid mode, which requires that the device transmit over multiple channels (this may be less than the 50 channels required for FHSS mode, but is recommended to be at least 4) while complying with the Power Spectral Density requirements of DTS mode and the 400 msec dwell time of FHSS mode. In practice this limits the measured conducted power of the end-device to 21 dBm.
- Devices which use an antenna system with a directional gain greater than +6 dBi, but reduce the specified conducted output power by the amount in dB of directional gain over +6 dBi.

		1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Hopping Channels	
DNB Job Number:		86088		Date: 7 Mar 2018	
Customer:		Vutiliti Inc.			
Model Number:		VUHDRF1			
Description:		125 kHz LoRa Modular Transmitter (FHSS)			
Environmental Conditions					
Ambient Temperature		Relative Humidity		Barometric Pressure	
21 °C		25 %		101.2 kPa	
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>Les Payne</i>					

15.247 Number of Hopping Frequencies

The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:

Span = the frequency band of operation

RBW 1% of the span


VBW RBW

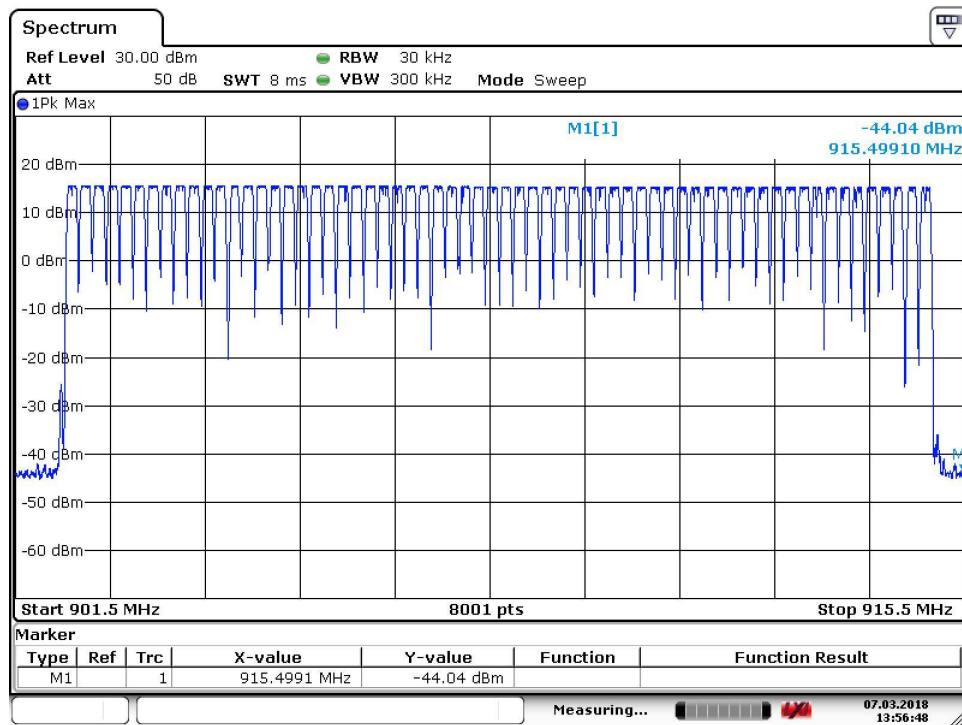
Sweep = auto

Detector function = peak


Trace = max hold

Allow the trace to stabilize. It may prove necessary to break the span up to sections, in order to clearly show all of the hopping frequencies. The limit is specified in one of the subparagraphs of this Section. Submit this plot(s).

		1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		<h2>Hopping Channels</h2>	
DNB Job Number:	86088	Date:	7 Mar 2018	Conformance Standard FCC Part 15 Clause 15.247(a,1,iii)	
Customer:	Vutiliti Inc.				
Model Number:	VUHDRF1				
Description:	125 kHz LoRa Modular Transmitter (FHSS)				
Environmental Conditions					
Ambient Temperature		Relative Humidity		Barometric Pressure	
21 °C		25 %		101.2 kPa	
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>Les Payne</i>					
Center Frequency	Frequency Span	Hopping Channels	Min Limit	Pass/Fail	
908.500 MHz	14 MHz	64	15	Pass	



Date: 7.MAR.2018 13:56:48

	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Max Time on Channel Freq
DNB Job Number:	86088	Date:	7 Mar 2018
Customer:	Vutiliti Inc.		Conformance Standard FCC Part 15
Model Number:	VUHDRF1		
Description:	125 kHz LoRa Modular Transmitter (FHSS)		Clause 15.247(a,1,iii)
Environmental Conditions			
Ambient Temperature	Relative Humidity	Barometric Pressure	
21 °C	25 %	101.2 kPa	
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>Les Payne</i>			

15.247 Time of Occupancy (Dwell Time)

The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:

Span = zero span, centered on a hopping channel

RBW = 1 MHz

VBW = RBW


Sweep = as necessary to capture the entire dwell time per hopping channel

Detector function = peak

Trace = max hold

Trigger = video (positive trace)

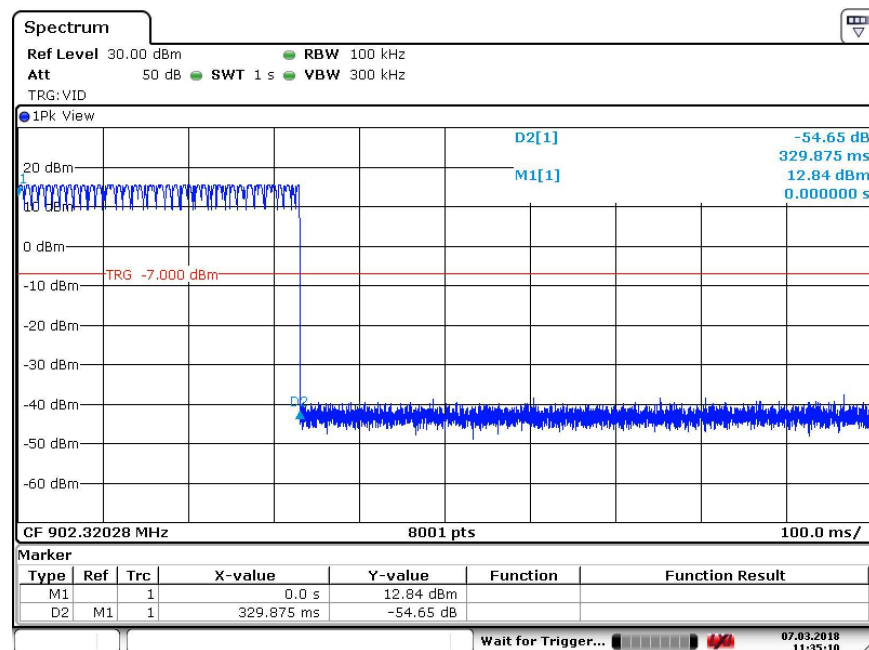
If possible, use the marker-delta function to determine the dwell time. If this value varies with different modes of operation (e.g., data rate, modulation format, etc.), repeat this test for each variation. The limit is specified in one of the subparagraphs of this Section. Submit this plot(s). An oscilloscope may be used instead of a spectrum analyzer.

		1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Max Time on Channel Freq	
DNB Job Number:	86088	Date:	7 Mar 2018	Conformance Standard FCC Part 15 Clause 15.247(a,1,iii)	
Customer:	Vutiliti Inc.				
Model Number:	VUHDRF1				
Description:	125 kHz LoRa Modular Transmitter (FHSS)				
Environmental Conditions					
Ambient Temperature		Relative Humidity		Barometric Pressure	
21 °C		25 %		101.2 kPa	
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>Les Payne</i>					
Center Freq Chl	Pulse Duration	Number of Pulses in 31.6 Seconds	Calculated on time	Allowed On Time	Pass/Fail
902.320MHz	0.329875 Sec	1	0.329875 Sec	0.4sec in 25.6 sec window	Pass


Single channel on time = 0.329875 sec = 329.875 msec = 329875 usec

Calculated on time = 1 * 329.875 msec = 329.875 msec = 0.329875 seconds

Limit is based upon 0.4seconds times number of hopping channels = 0.4 * 64 = 25.6 sec



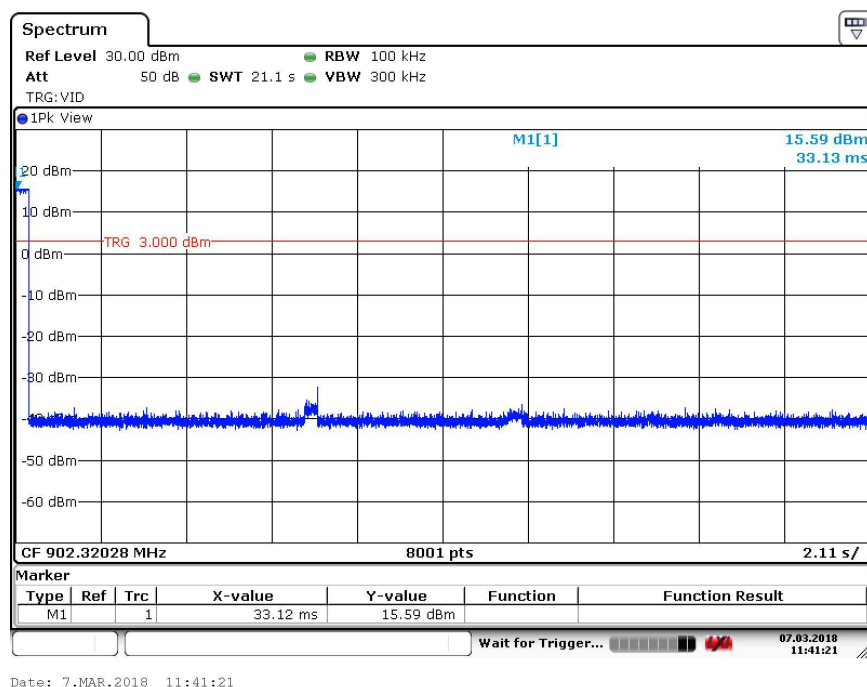
Date: 7.MAR.2018 11:35:10


		1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Max Time on Channel Freq	
DNB Job Number:	86088	Date:	7 Mar 2018	Conformance Standard FCC Part 15 Clause 15.247(a,1,iii)	
Customer:	Vutiliti Inc.				
Model Number:	VUHDRF1				
Description:	125 kHz LoRa Modular Transmitter (FHSS)				
Environmental Conditions					
Ambient Temperature		Relative Humidity		Barometric Pressure	
21 °C		25 %		101.2 kPa	
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>Les Payne</i>					
Center Freq Chl	Pulse Duration	Number of Pulses in 31.6 Seconds	Calculated on time	Allowed On Time	Pass/Fail
902.320MHz	0.329875 Sec	1	0.329875 Sec	0.4sec in 25.6 sec window	Pass

Single channel on time = 0.329875 sec = 329.875 msec = 329875 usec

Calculated on time = 1 * 329.875 msec = 329.875 msec = 0.329875 seconds

Limit is based upon 0.4seconds times number of hopping channels = 0.4 * 64 = 25.6 sec



	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Channel Separation	
DNB Job Number:	86088	Date:	7 Mar 2018	Conformance Standard FCC Part 15
Customer:	Vutiliti Inc.			
Model Number:	VUHDRF1			
Description:	125 kHz LoRa Modular Transmitter (FHSS)			Clause 15.247(a,1,iii)
Environmental Conditions				
Ambient Temperature		Relative Humidity		Barometric Pressure
21 °C		25 %		101.2 kPa
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>Les Payne</i>				

15.247 Carrier Frequency Separation

The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:

Span = wide enough to capture the peaks of two adjacent channels

Resolution (or IF) Bandwidth (RBW) 1% of the span


Video (or Average) Bandwidth (VBW) RBW

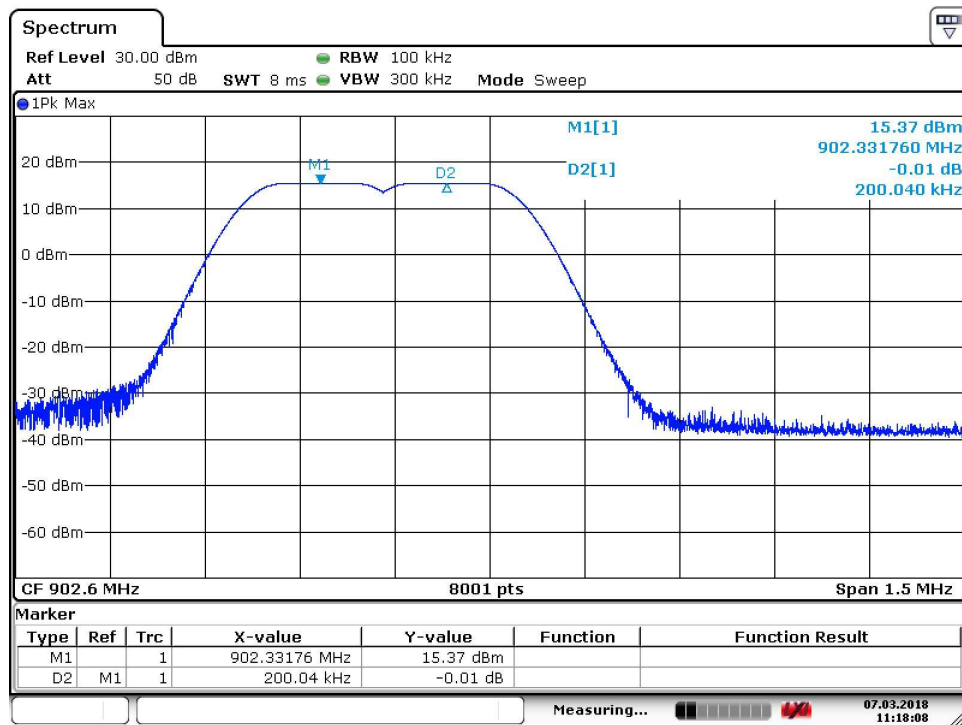
Sweep = auto

Detector function = peak


Trace = max hold

Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section. Submit this plot.

		1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Channel Separation	
DNB Job Number:	86088	Date:	7 Mar 2018	Conformance Standard FCC Part 15 Clause 15.247(a,1,iii)	
Customer:	Vutiliti Inc.				
Model Number:	VUHDRF1				
Description:	125 kHz LoRa Modular Transmitter (FHSS)				
Environmental Conditions					
Ambient Temperature		Relative Humidity		Barometric Pressure	
21 °C		25 %		101.2 kPa	
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>Les Payne</i>					
Hopping Channel 1	Hopping Channel 2	Delta	Limit (2/3 the 20dB BW)	Pass/Fail	
902.331	902.531	200 kHz	94 kHz	Pass	



Date: 7.MAR.2018 11:18:08

		1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Conducted Spurious	
DNB Job Number:		86088		Date: 7 Mar 2018	
Customer:		Vutiliti Inc.			
Model Number:		VUHDRF1			
Description:		LoRa Modular Transmitter			
		Test Procedure			
Ambient Temperature		Relative Humidity		Barometric Pressure	
21 °C		25 %		101.2 kPa	
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No J Payne					

Test Procedure: ANSI C63.10-2013

15.247 (a,2,d) Spurious RF Conducted Emissions

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span.

RBW = 100 kHz


VBW RBW

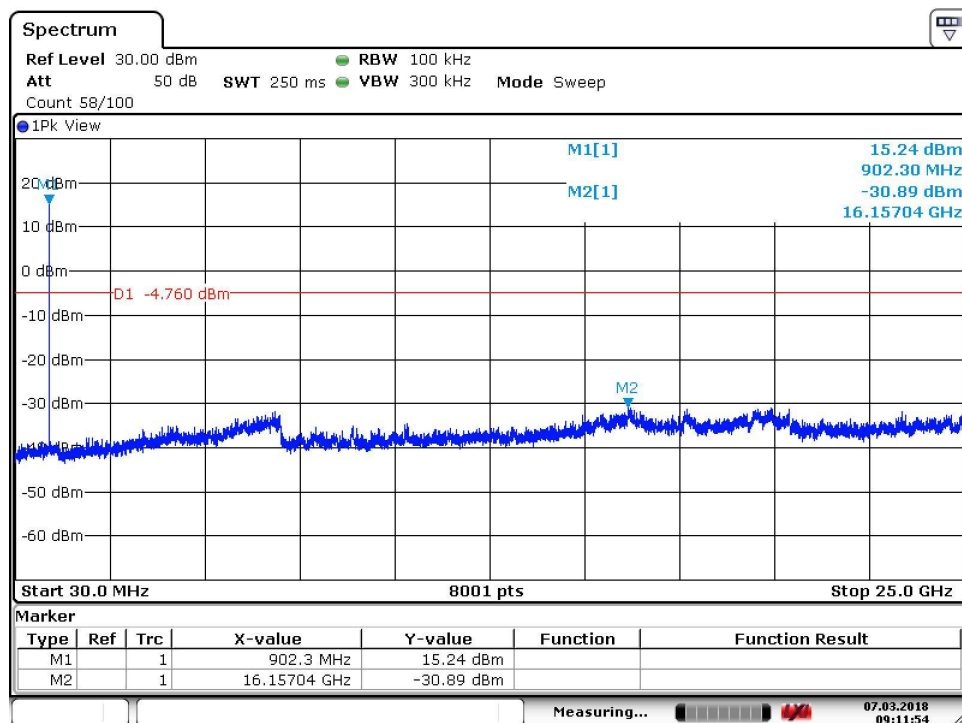
Sweep = auto

Detector function = peak


Trace = max hold

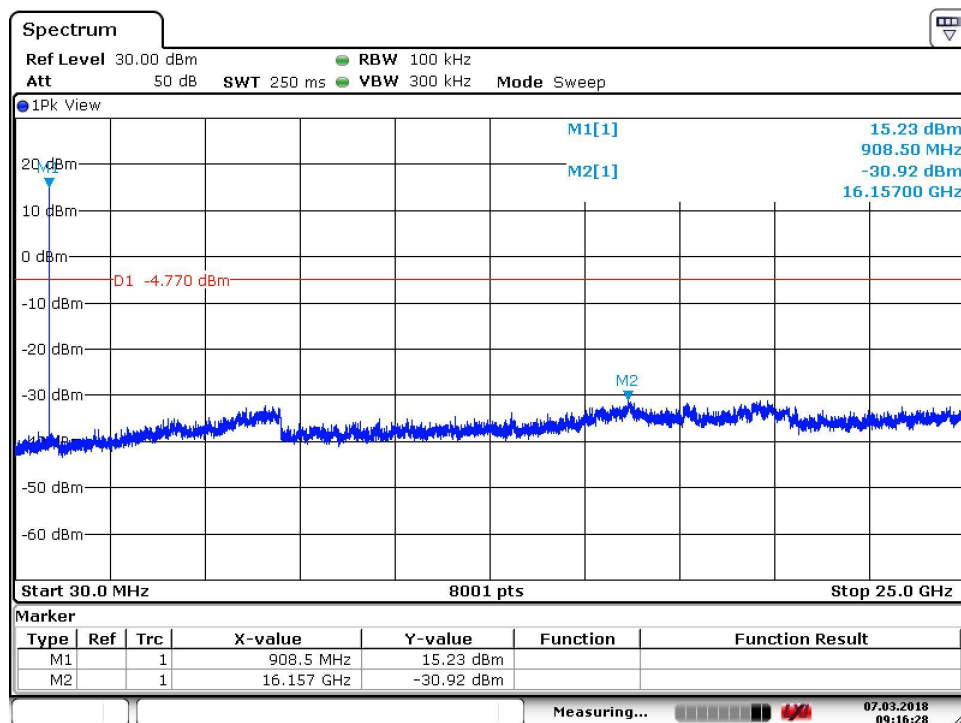
Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded. The level displayed must comply with the limit specified in this Section. Submit these plots.

		1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Conducted Spurious		
DNB Job Number:		86088		Date: 7 Mar 2018		Conformance Standard FCC Part 15
Customer:		Vutiliti Inc.				
Model Number:		VUHDRF1				
Description:		125 kHz LoRa Modular Transmitter				Clause 15.247(a,2,d)
Ambient Temperature			Relative Humidity		Barometric Pressure	
21 °C			25 %		101.2 kPa	
EUT performed within the requirements of the applicable standard [X] Yes [] No J Payne						
Peak Output Power		Reading (dBm)		-20dBc (dBm)		Pass/Fail
15.27 dBm		15.24		-4.76		Pass




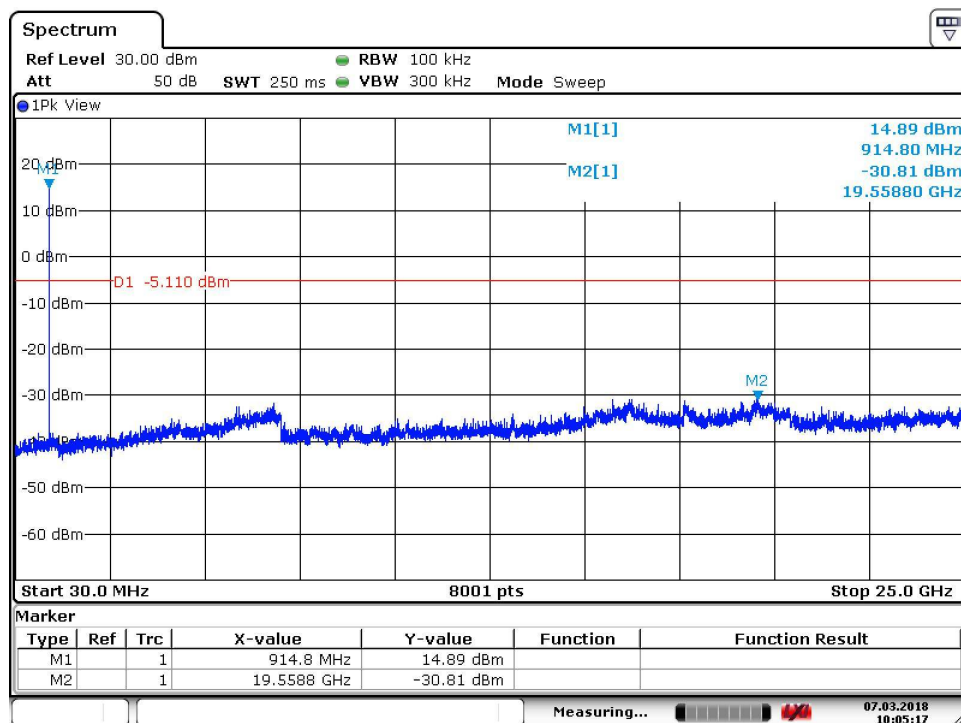
Date: 7.MAR.2018 09:11:54

		1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		<h2 style="text-align: center;">Conducted Spurious</h2>		
DNB Job Number:		86088				Date: 7 Mar 2018
Customer:		Vutiliti Inc.				Conformance Standard FCC Part 15
Model Number:		VUHDRF1				
Description:		125 kHz LoRa Modular Transmitter				Clause 15.247(a,2,d)
Ambient Temperature		Relative Humidity		Barometric Pressure		
21 °C		25 %		101.2 kPa		
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No J Payne						
Peak Output Power	Reading (dBm)	-20dBc (dBm)	Pass/Fail			
15.12 dBm	15.23	-4.77	Pass			




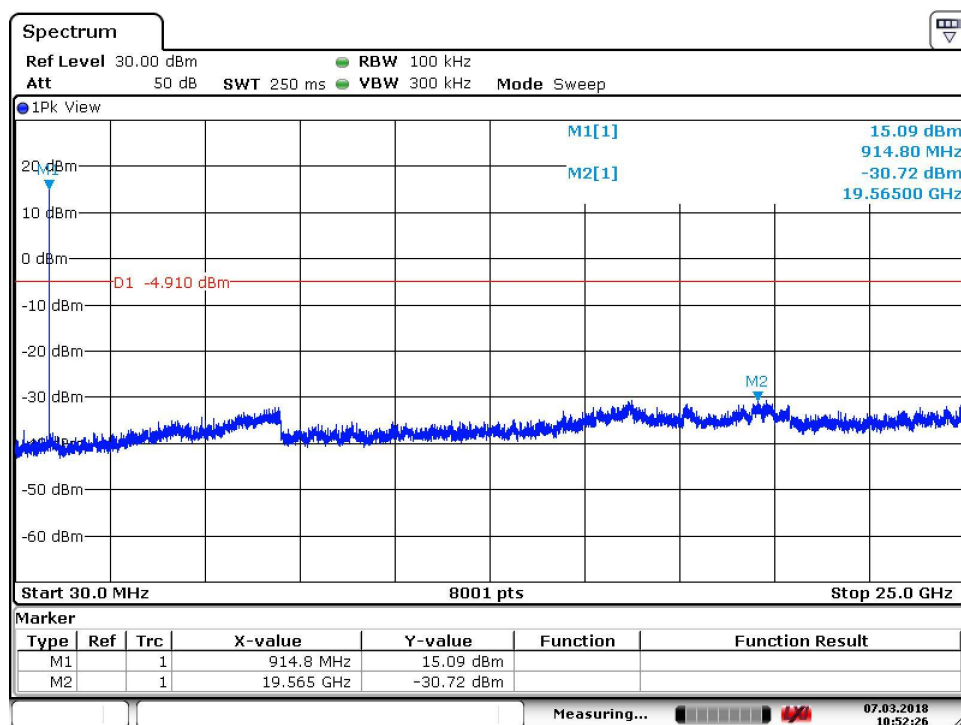
Date: 7.MAR.2018 09:16:28

		1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Conducted Spurious	
DNB Job Number:		86088		Date: 7 Mar 2018	
Customer:		Vutiliti Inc.		Conformance Standard FCC Part 15	
Model Number:		VUHDRF1			
Description:		125 kHz LoRa Modular Transmitter		Clause 15.247(a,2,d)	
Ambient Temperature		Relative Humidity		Barometric Pressure	
21 °C		25 %		101.2 kPa	
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No J Payne					
Peak Output Power		Reading (dBm)		-20dBc (dBm)	
14.89 dBm		14.89		-5.11	
				Pass	




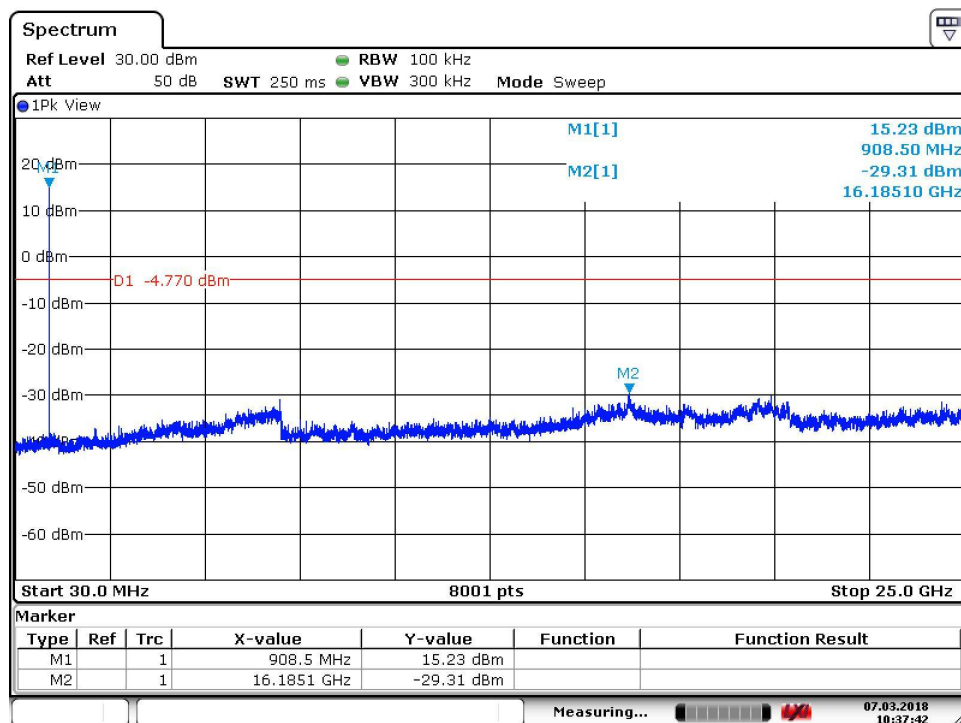
Date: 7.MAR.2018 10:05:17

		1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		<h2 style="text-align: center;">Conducted Spurious</h2>	
DNB Job Number: 86088		Date: 7 Mar 2018			
Customer: Vutiliti Inc.					
Model Number: VUHDRF1					
Description: 500 kHz LoRa Modular Transmitter					
Ambient Temperature		Relative Humidity		Barometric Pressure	
21 °C		25 %		101.2 kPa	
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No J Payne					
Peak Output Power	Reading (dBm)	-20dBc (dBm)	Pass/Fail		
15.43 dBm	15.09	-4.91	Pass		




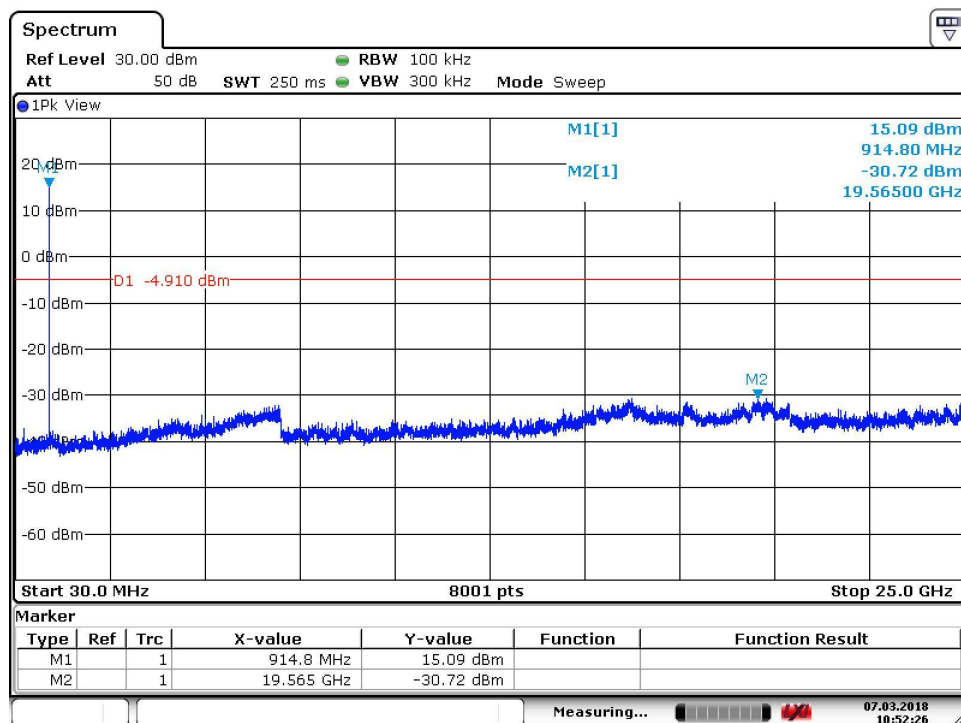
Date: 7.MAR.2018 10:52:26

		1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		<h2 style="text-align: center;">Conducted Spurious</h2>		
DNB Job Number:		86088				Date: 7 Mar 2018
Customer:		Vutiliti Inc.				Conformance Standard FCC Part 15
Model Number:		VUHDRF1				
Description:		500 kHz LoRa Modular Transmitter				Clause 15.247(a,2,d)
Ambient Temperature		Relative Humidity		Barometric Pressure		
21 °C		25 %		101.2 kPa		
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No J Payne						
Peak Output Power	Reading (dBm)	-20dBc (dBm)	Pass/Fail			
15.30 dBm	15.23	-4.77	Pass			



Date: 7.MAR.2018 10:37:42

		1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		<h2 style="text-align: center;">Conducted Spurious</h2>		
DNB Job Number:		86088				Date: 7 Mar 2018
Customer:		Vutiliti Inc.				Conformance Standard FCC Part 15
Model Number:		VUHDRF1				
Description:		500 kHz LoRa Modular Transmitter				Clause 15.247(a,2,d)
Ambient Temperature		Relative Humidity		Barometric Pressure		
21 °C		25 %		101.2 kPa		
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No J Payne						
Peak Output Power	Reading (dBm)	-20dBc (dBm)	Pass/Fail			
15.11 dBm	15.09	-4.91	Pass			



Date: 7.MAR.2018 10:52:26


15.247(a,2,e): Power spectral density(PSD).

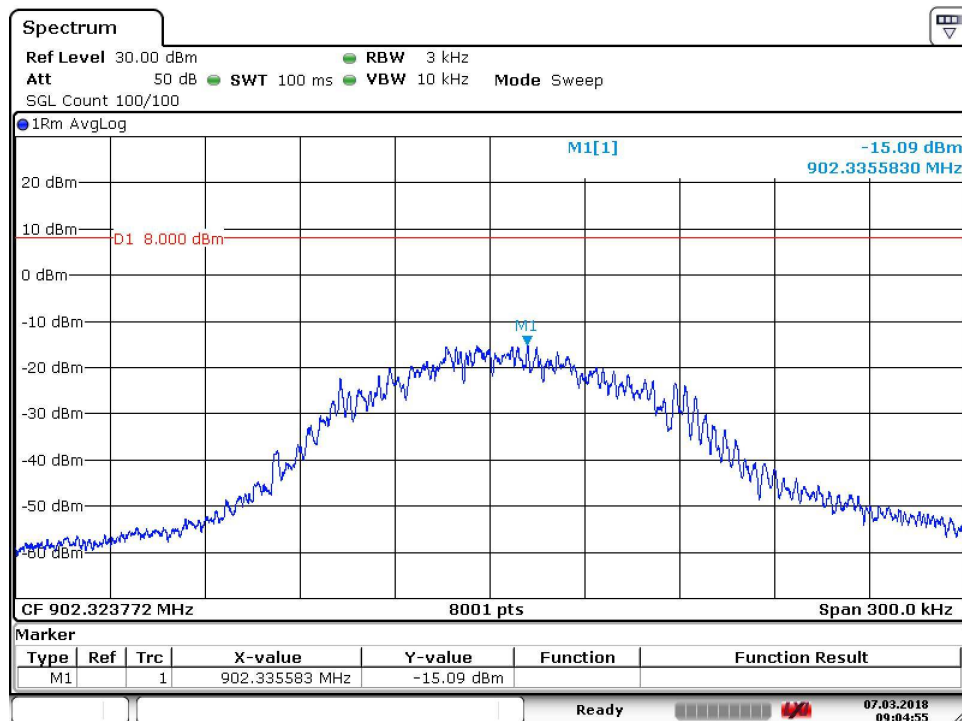
Test Procedure: ANSI C63.10-2013

Clause 11.10.2 Method PKPSD (peak PSD)


The following procedure shall be used if the maximum peak conducted output power was used to determine compliance, and it is optional if the maximum conducted (average) output power was used to determine compliance:

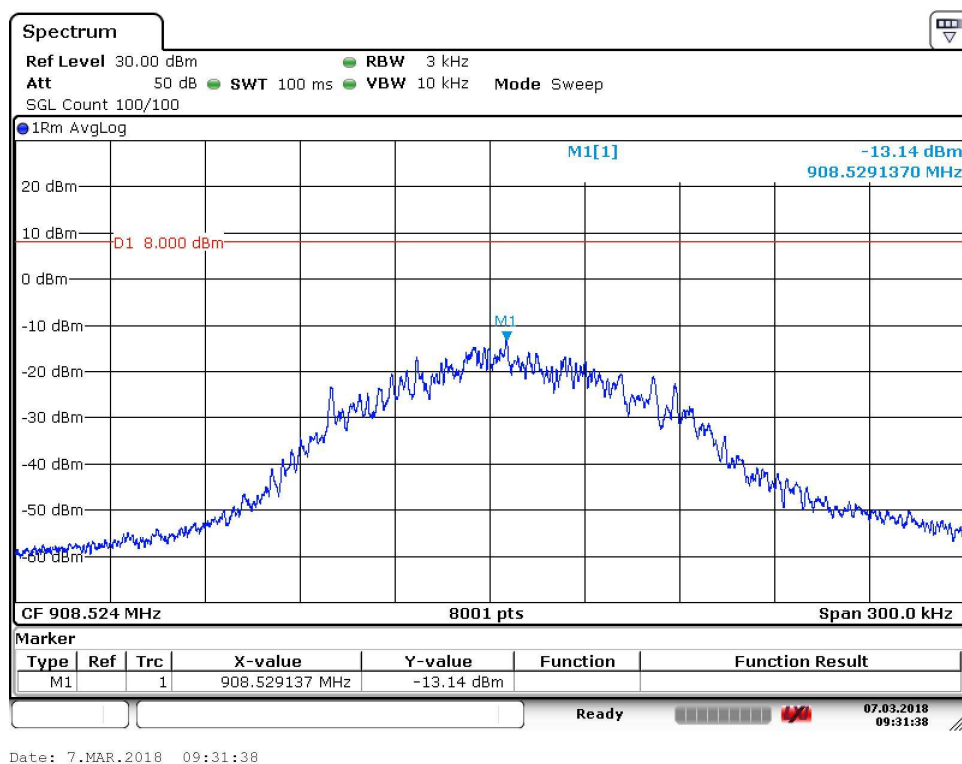
- a) Set analyzer center frequency to DTS channel center frequency
- b) Set the span to 1.5 times the DTS bandwidth
- c) Set the RBW to $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$
- d) Set the VBW $\geq [3 \times \text{RBW}]$
- e) Detector = peak
- f) Sweep time = auto couple
- g) Trace mode = max hold
- h) Allow trace to fully stabilize
- i) Use the peak marker function to determine the maximum amplitude level within the RBW
- j) If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat
- k) Submit plots


		1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		<h2>Power Spectral Density</h2>	
DNB Job Number:	86088	Date:	7 Mar 2018	Conformance Standard FCC Part 15 Clause 15.247(d)	
Customer:	Vutiliti Inc.				
Model Number:	VUHDRF1				
Description:	125 kHz LoRa Modular Transmitter				
Environmental Conditions					
Ambient Temperature		Relative Humidity		Barometric Pressure	
21 °C		25 %		101.2 kPa	
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No J Payne					
Channel	Freq MHz	Meas PSD (dBm)	Limit (dBm)	Delta (dBm)	Pass/Fail
Low	902.300	-15.09	8.0	-23.09	Pass

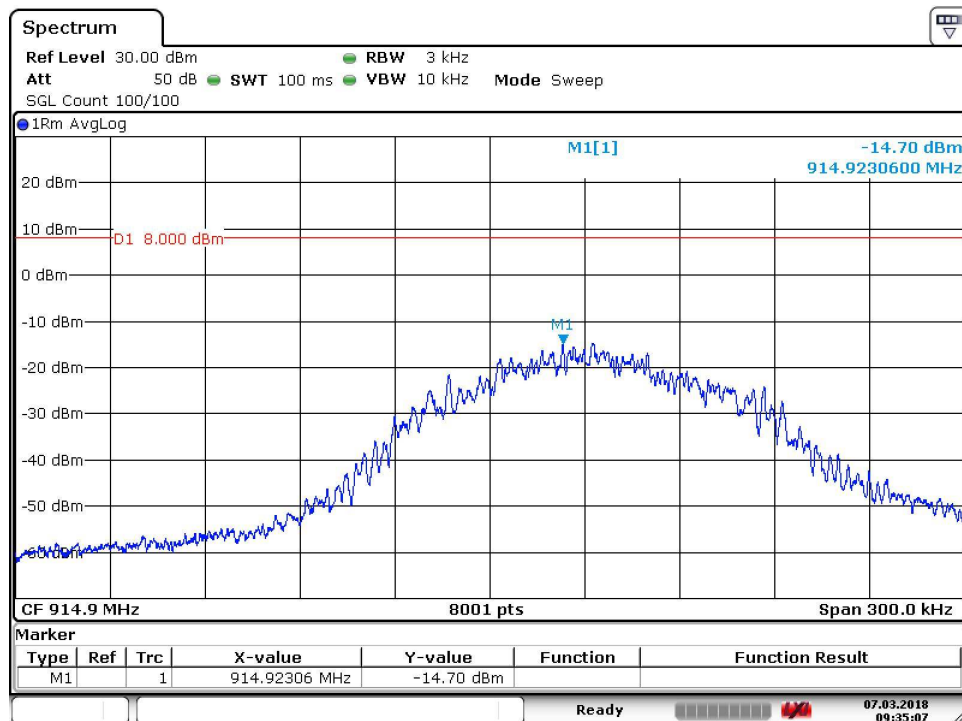


Date: 7.MAR.2018 09:04:55


		1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		<h2>Power Spectral Density</h2>	
DNB Job Number:	86088	Date:	7 Mar 2018	Conformance Standard FCC Part 15 Clause 15.247(d)	
Customer:	Vutiliti Inc.				
Model Number:	VUHDRF1				
Description:	125 kHz LoRa Modular Transmitter				
Environmental Conditions					
Ambient Temperature		Relative Humidity		Barometric Pressure	
21 °C		25 %		101.2 kPa	
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No J Payne					
Channel	Freq MHz	Meas PSD (dBm)	Limit (dBm)	Delta (dBm)	Pass/Fail
Middle	908.500	-13.14	8.0	-21.14	Pass

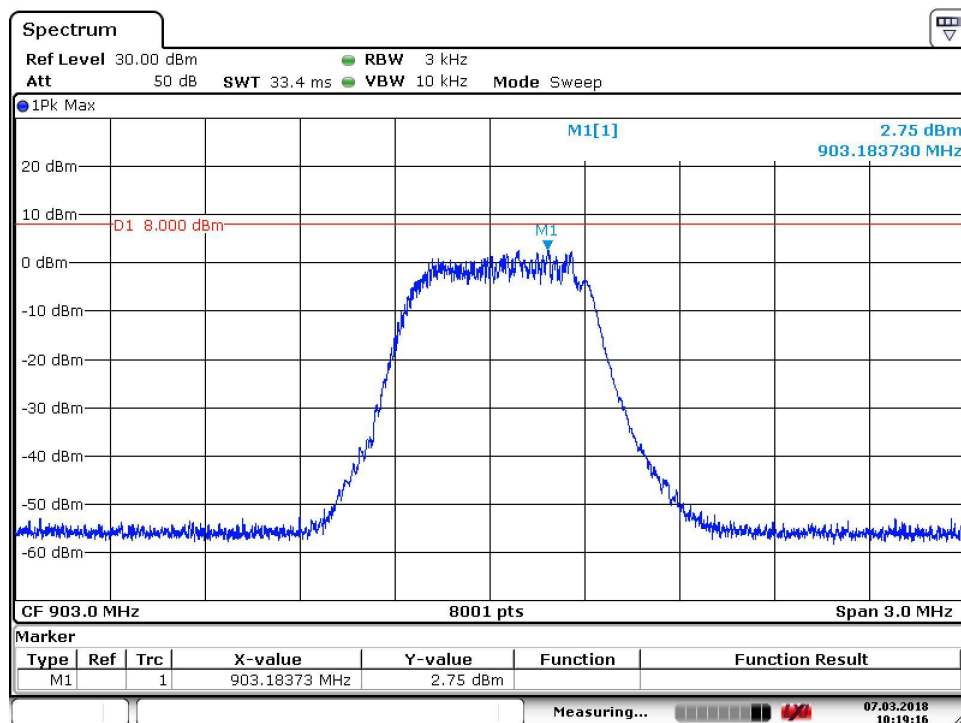


		1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		<h2>Power Spectral Density</h2>	
DNB Job Number:	86088	Date:	7 Mar 2018	Conformance Standard FCC Part 15 Clause 15.247(d)	
Customer:	Vutiliti Inc.				
Model Number:	VUHDRF1				
Description:	125 kHz LoRa Modular Transmitter				
Environmental Conditions					
Ambient Temperature		Relative Humidity		Barometric Pressure	
21 °C		25 %		101.2 kPa	
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No J Payne					
Channel	Freq MHz	Meas PSD (dBm)	Limit (dBm)	Delta (dBm)	Pass/Fail
High	914.900	-14.70	8.0	-22.7	Pass




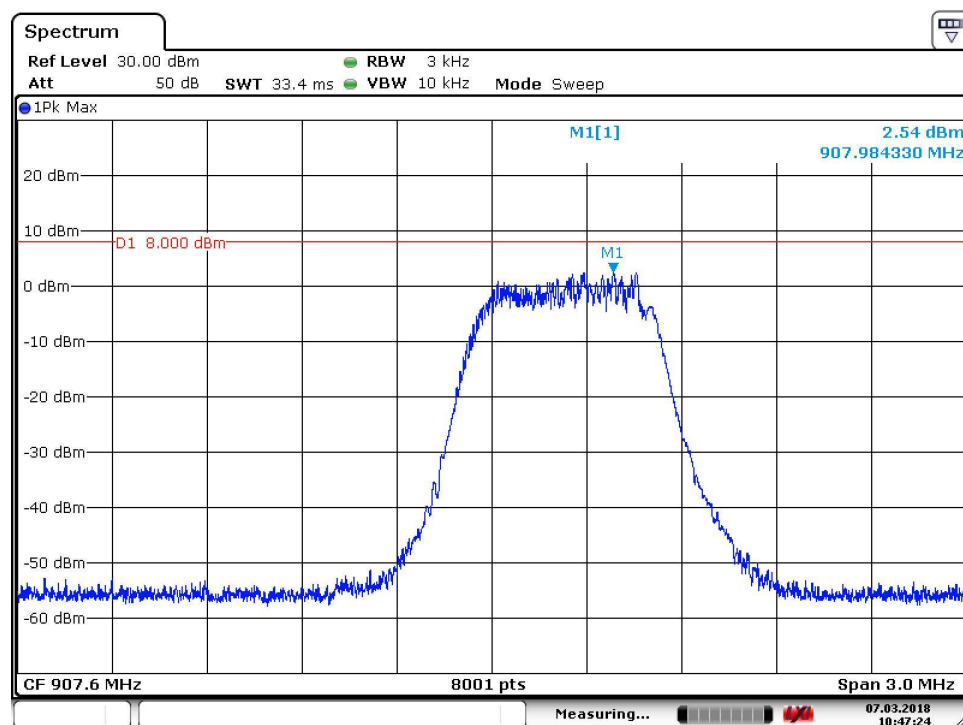
Date: 7.MAR.2018 09:35:08

	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Power Spectral Density		
DNB Job Number:	86088	Date:	7 Mar 2018	Conformance Standard	
Customer:	Vutiliti Inc.				
Model Number:	VUHDRF1			FCC Part 15	
Description:	500 kHz LoRa Modular Transmitter			Clause 15.247(d)	
Environmental Conditions					
Ambient Temperature		Relative Humidity		Barometric Pressure	
21 °C		25 %		101.2 kPa	
EUT performed within the requirements of the applicable standard [X] Yes [] No J Payne					
Channel	Freq MHz	Meas PSD (dBm)	Limit (dBm)	Delta (dBm)	Pass/Fail
Low	902.300	2.75	8.0	-5.25	Pass




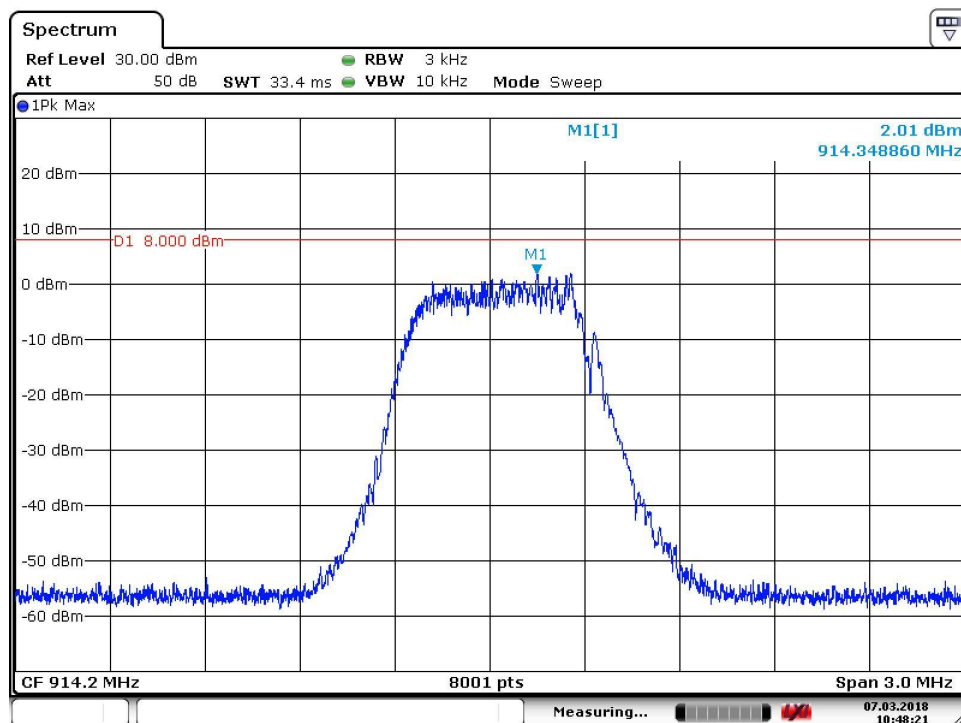
Date: 7.MAR.2018 10:19:16

		1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		<h2>Power Spectral Density</h2>	
DNB Job Number:	86088	Date:	7 Mar 2018	Conformance Standard FCC Part 15 Clause 15.247(d)	
Customer:	Vutiliti Inc.				
Model Number:	VUHDRF1				
Description:	500 kHz LoRa Modular Transmitter				
Environmental Conditions					
Ambient Temperature		Relative Humidity		Barometric Pressure	
21 °C		25 %		101.2 kPa	
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No J Payne					
Channel	Freq MHz	Meas PSD (dBm)	Limit (dBm)	Delta (dBm)	Pass/Fail
Middle	908.500	2.54	8.0	-5.46	Pass



Date: 7.MAR.2018 10:47:24

		1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Power Spectral Density	
DNB Job Number:		86088		Date: 7 Mar 2018	
Customer:		Vutiliti Inc.			
Model Number:		VUHDRF1			
Description:		500 kHz LoRa Modular Transmitter			
Environmental Conditions					
Ambient Temperature		Relative Humidity		Barometric Pressure	
21 °C		25 %		101.2 kPa	
EUT performed within the requirements of the applicable standard <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No J Payne					
Channel	Freq MHz	Meas PSD (dBm)	Limit (dBm)	Delta (dBm)	Pass/Fail
High	914.900	2.01	8.0	-5.99	Pass



Date: 7.MAR.2018 10:48:21

2.1033 (b) (7) Equipment Photographs

Supplied separately for confidentiality

End of Report UT86088B-003