

## Appendix A

### RF Test Data for Lora-FHSS(902-928MHz Hopping Mode)

#### (Conducted Measurement)

Product Name: LoRa module

Trade Mark: RAK

Test Model: RAK4260(H)

FCC ID: 2AF6B-RAK4260H

#### Environmental Conditions

Temperature:	22.3℃
Relative Humidity:	48%
ATM Pressure:	100.0 kPa
Test Engineer:	Gary Qian
Supervised by:	Eden Hu

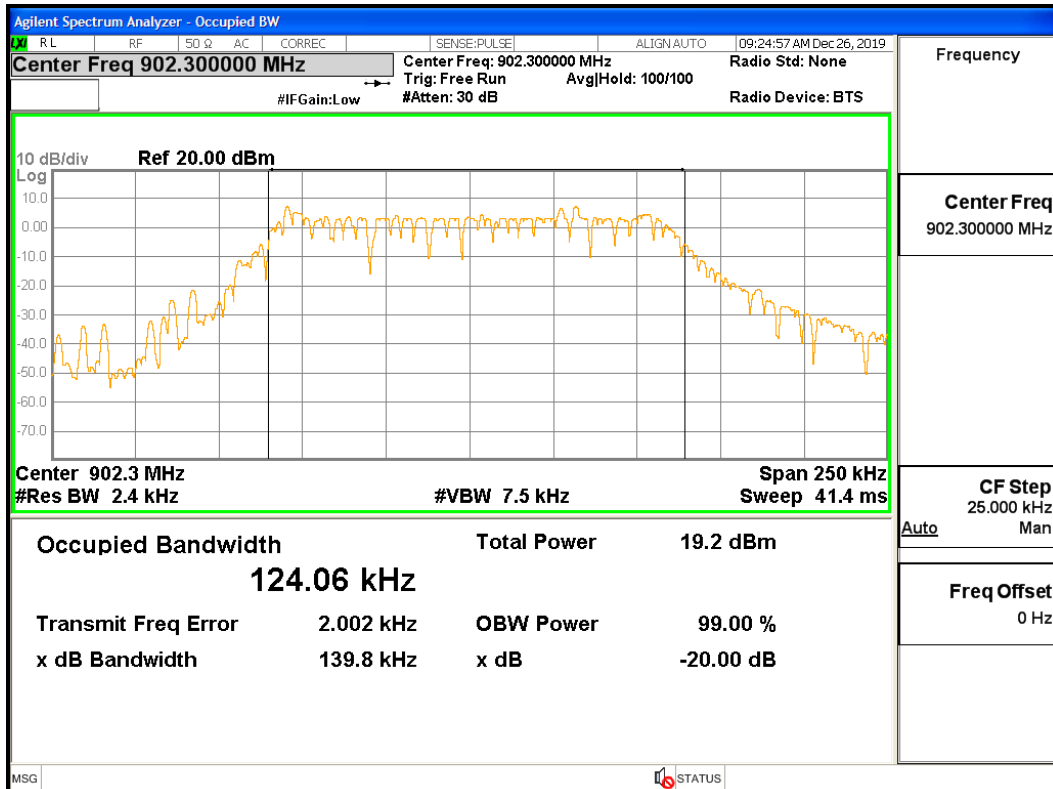
#### A.1 20 dB Bandwidth and 99% Occupied Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit(MHz)	Verdict
LoRa-FHSS	LCH	0.140	Not Specified	PASS
LoRa-FHSS	MCH	0.134	Not Specified	PASS
LoRa-FHSS	HCH	0.141	Not Specified	PASS

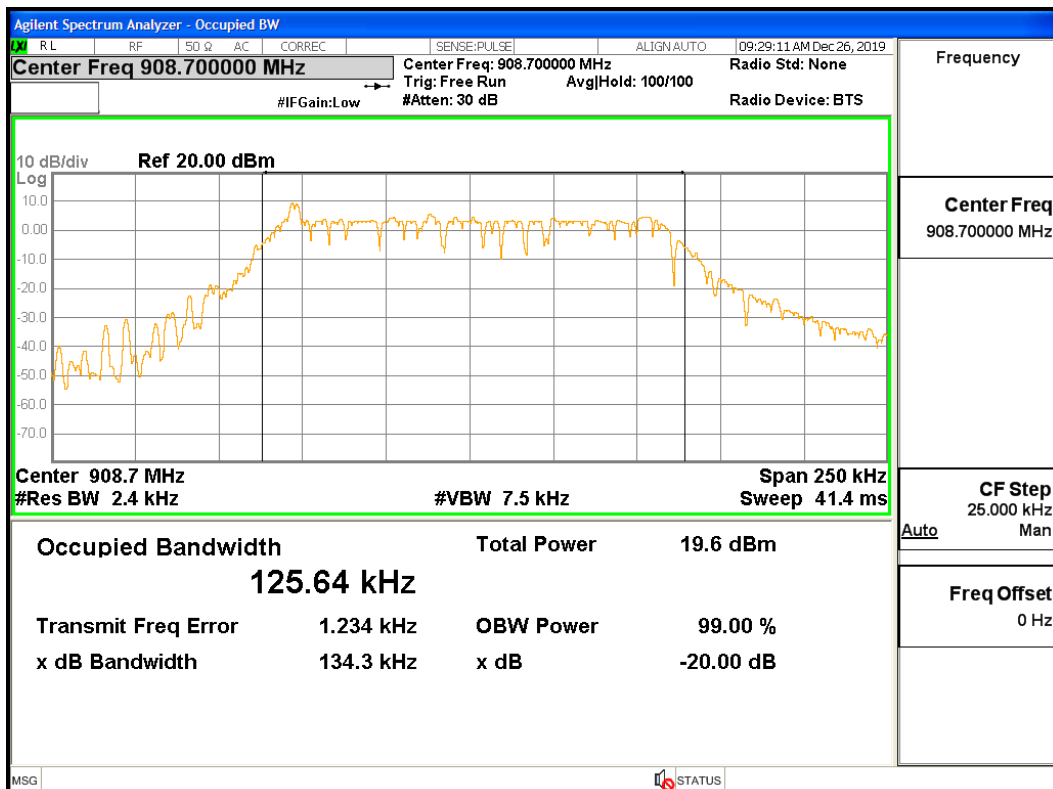
## Test Graph

## Graphs

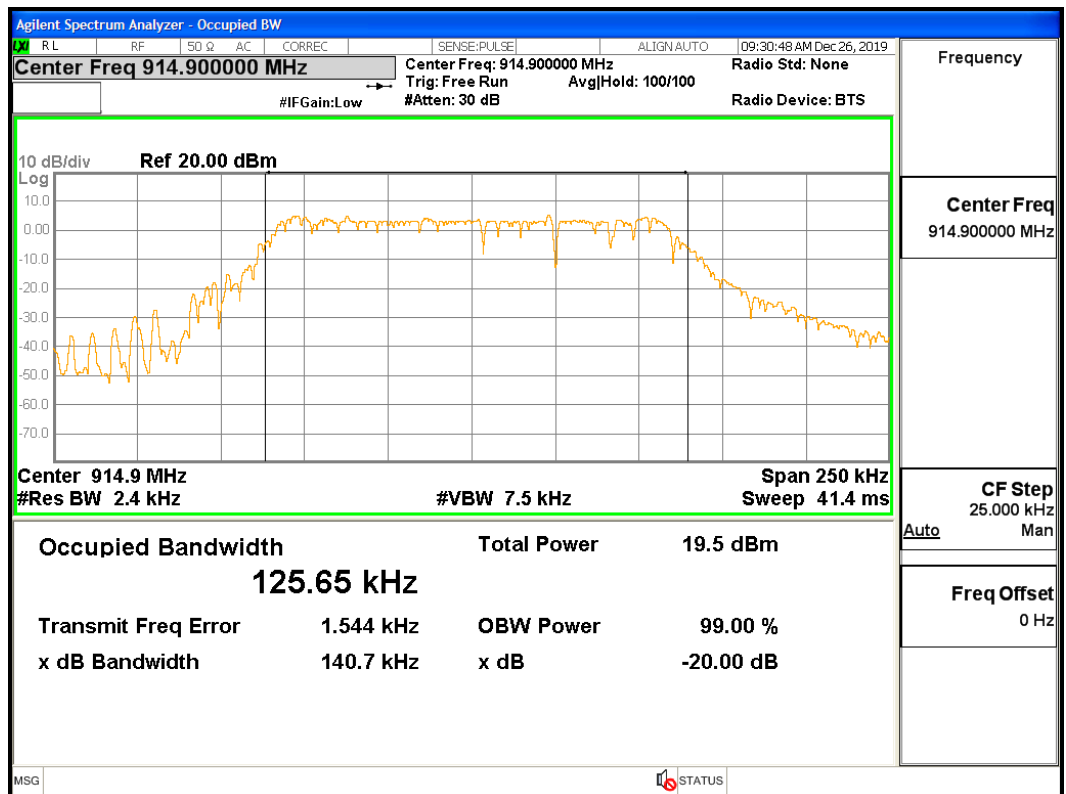
LoRa-FHSS/LCH



LoRa-FHSS/MCH



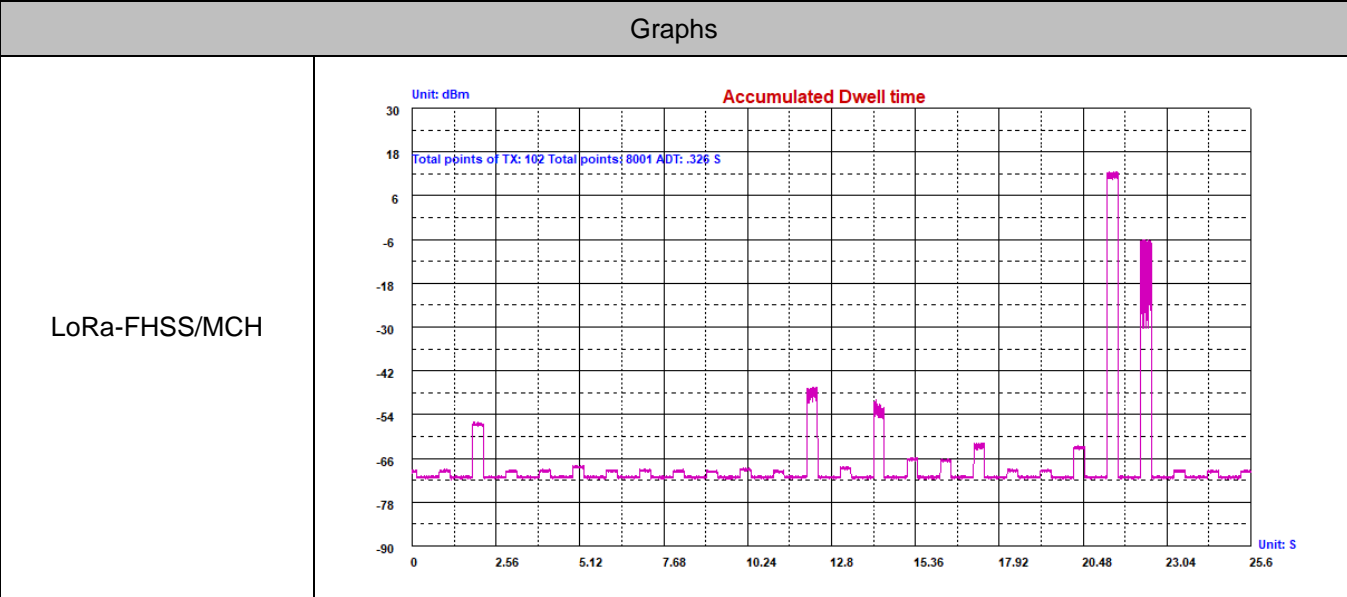
LoRa-FHSS/HCH



A.2 Dwell Time

Mode	Channel	TX <sub>on</sub> Points	Total Points	Dwell Time[s]	Limit [s]	Verdict
LoRa-FHSS	MCH	102	8001	0.326	0.4	PASS

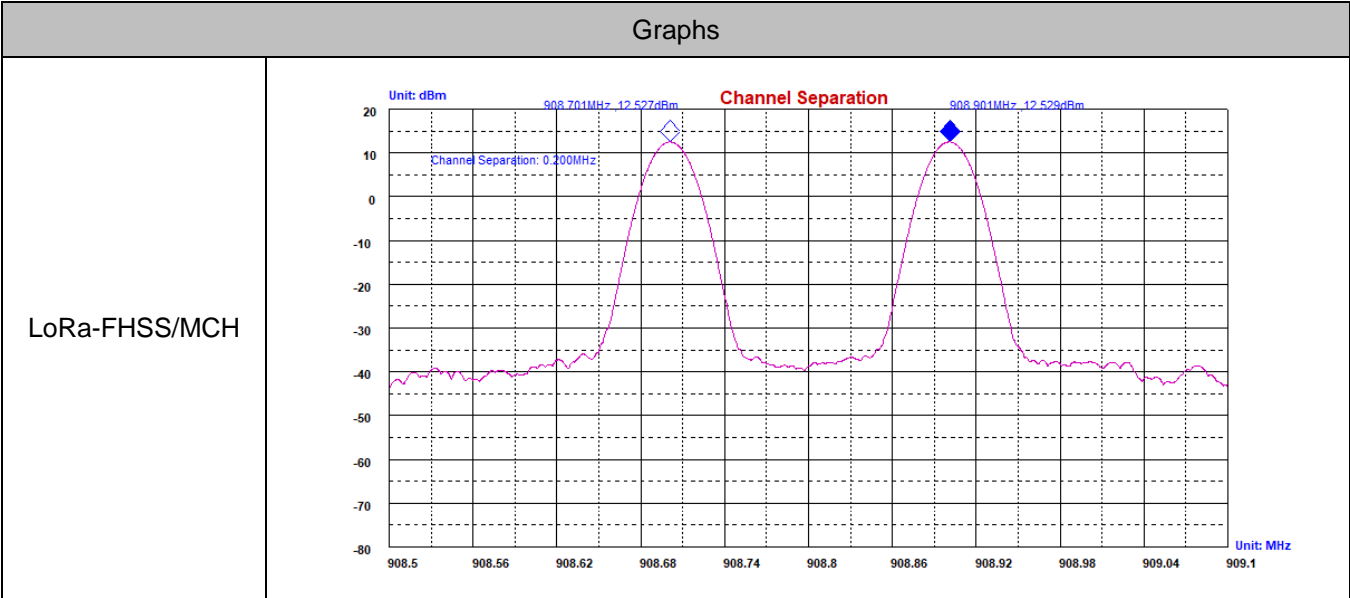
Test Graph



A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [KHz]	Limit [KHz]	Verdict
LoRa-FHSS	MCH	497	64.55	PASS

Test Graph

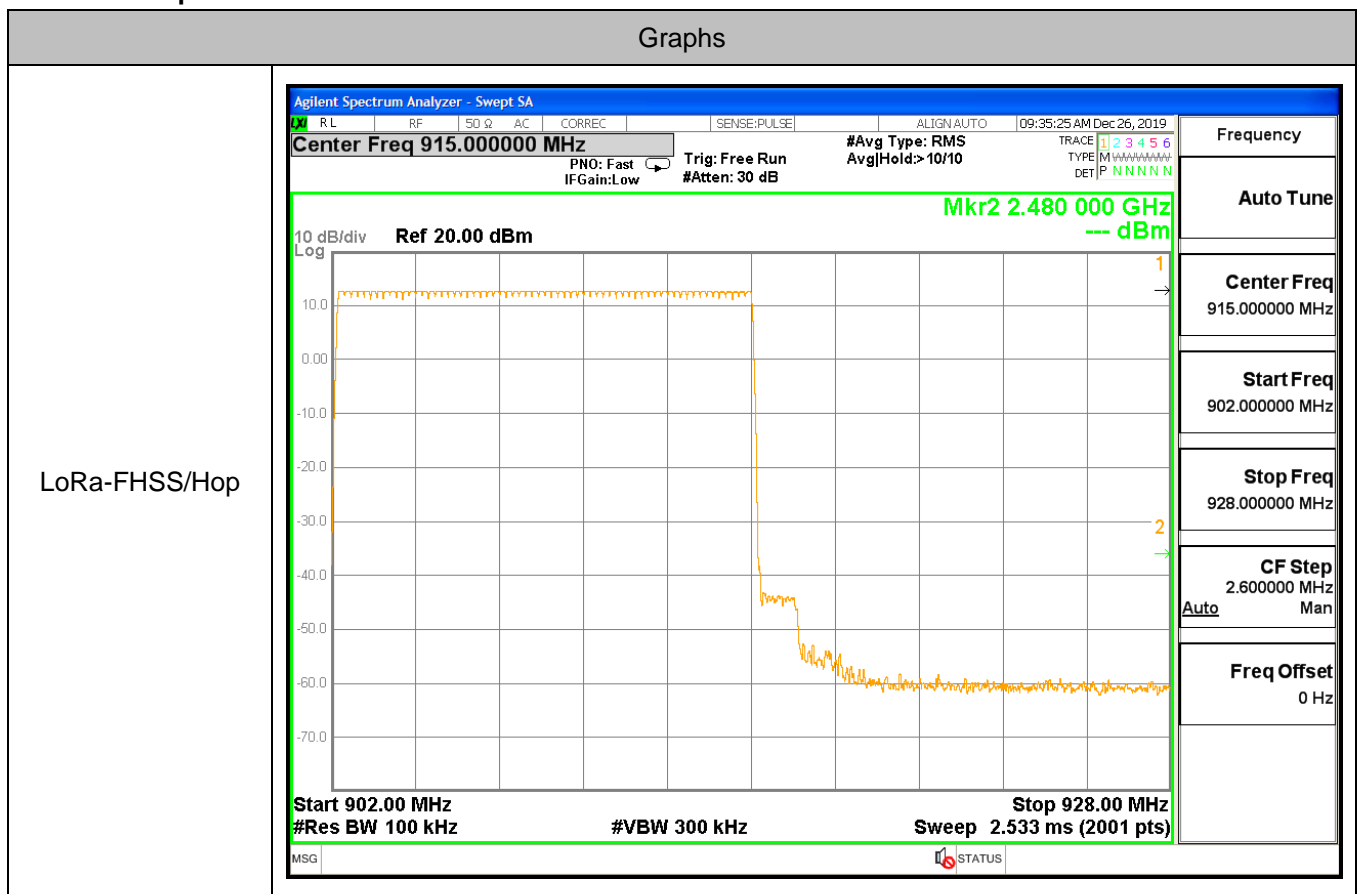


Note: this test under absence of modulation condition.

## A.4 Hopping Channel Number

Mode	Channel.	Number of Hopping Channel[N]	Limit[N]	Verdict
FHSS	Hop	64	>=15	PASS

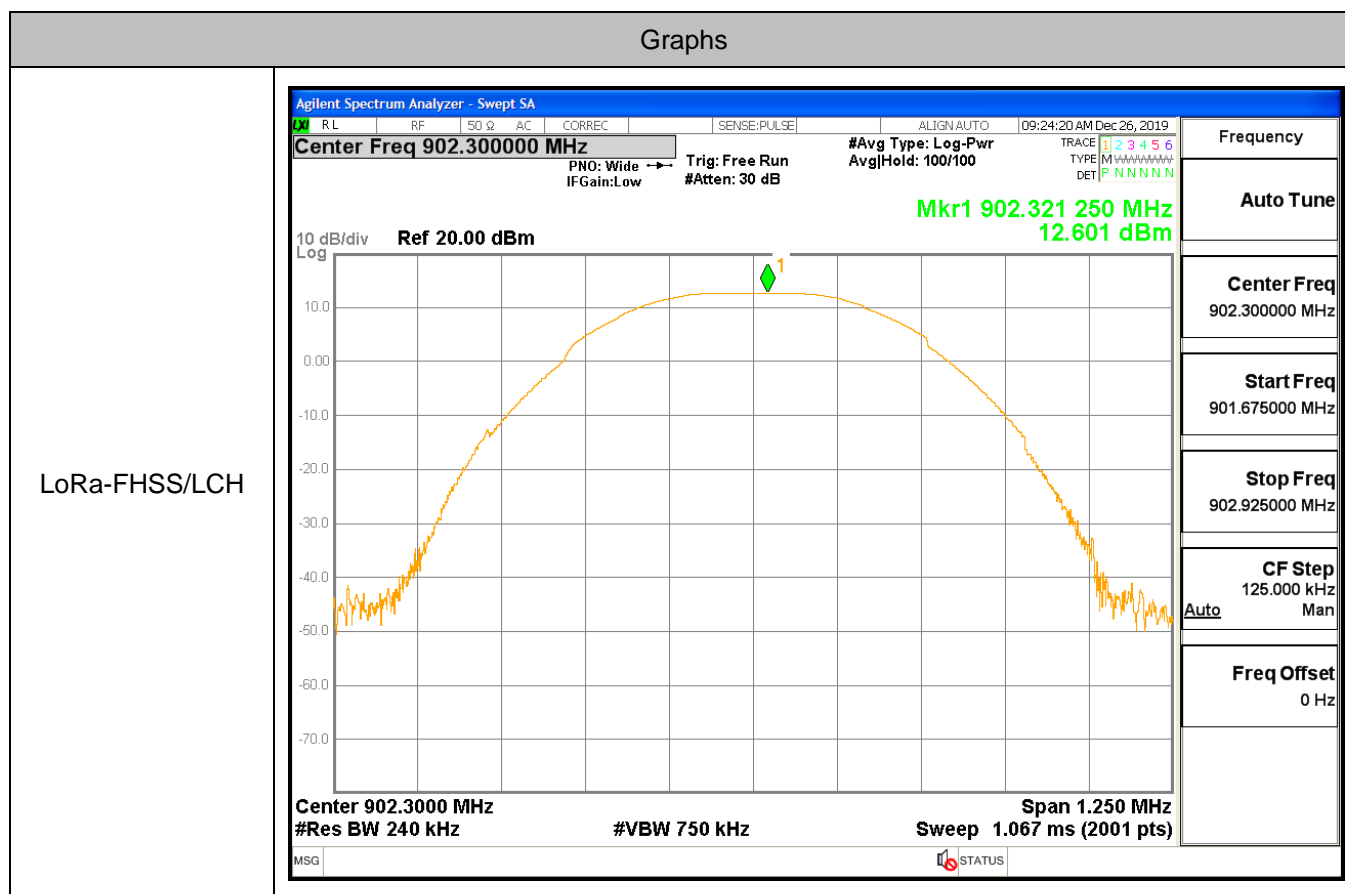
### Test Graph



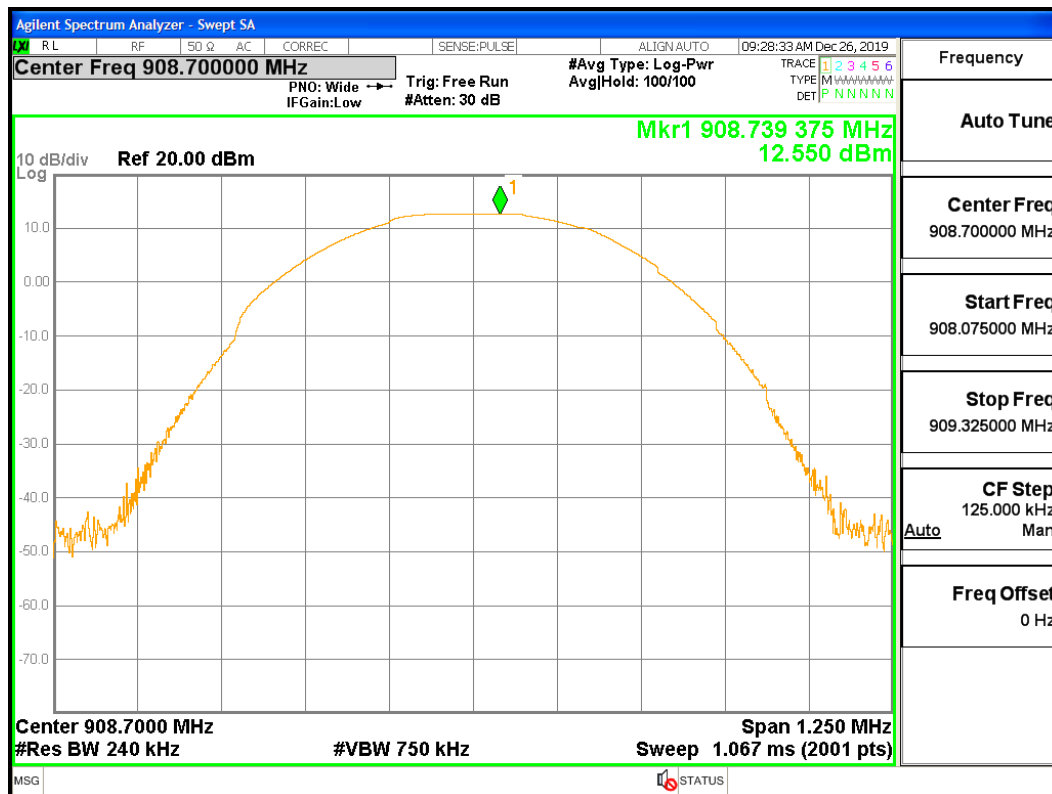
## A.5 Conducted Peak Output Power

Mode	Channel.	Reading Value [dBm]	Limit [dBm]	Verdict
LoRa-FH SS	LCH	12.601	30	PASS
LoRa-FH SS	MCH	12.550	30	PASS
LoRa-FH SS	HCH	12.509	30	PASS

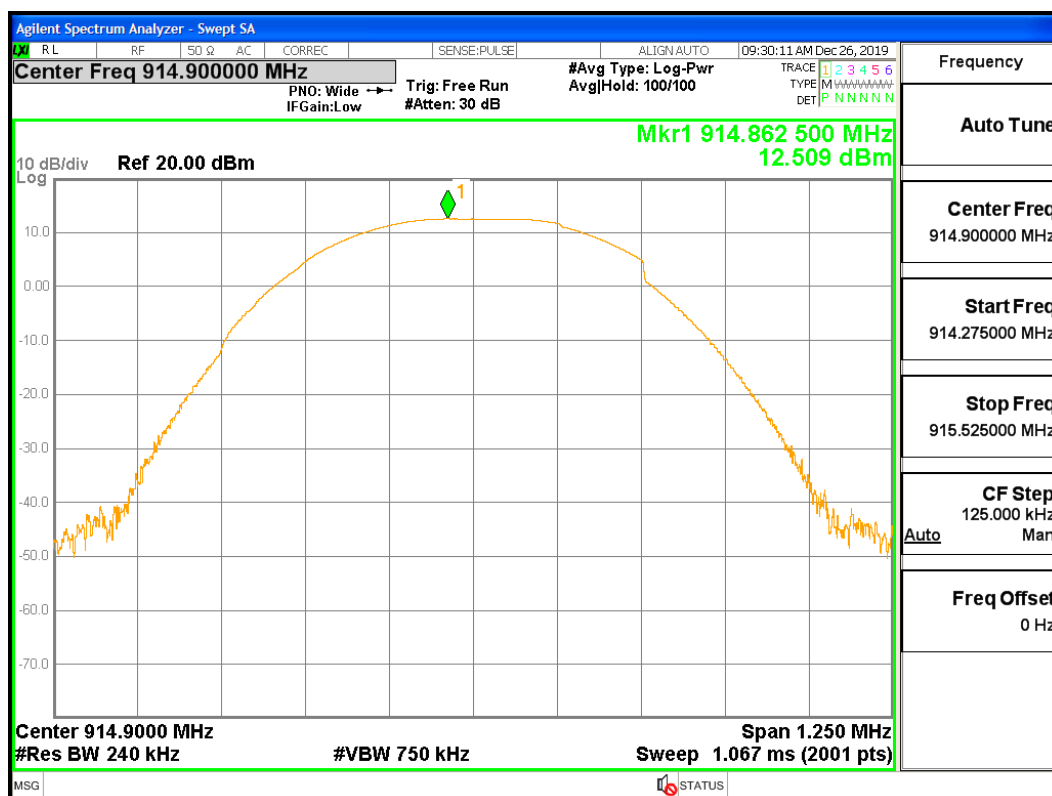
### Test Graph



LoRa-FHSS/MCH



LoRa-FHSS/HCH



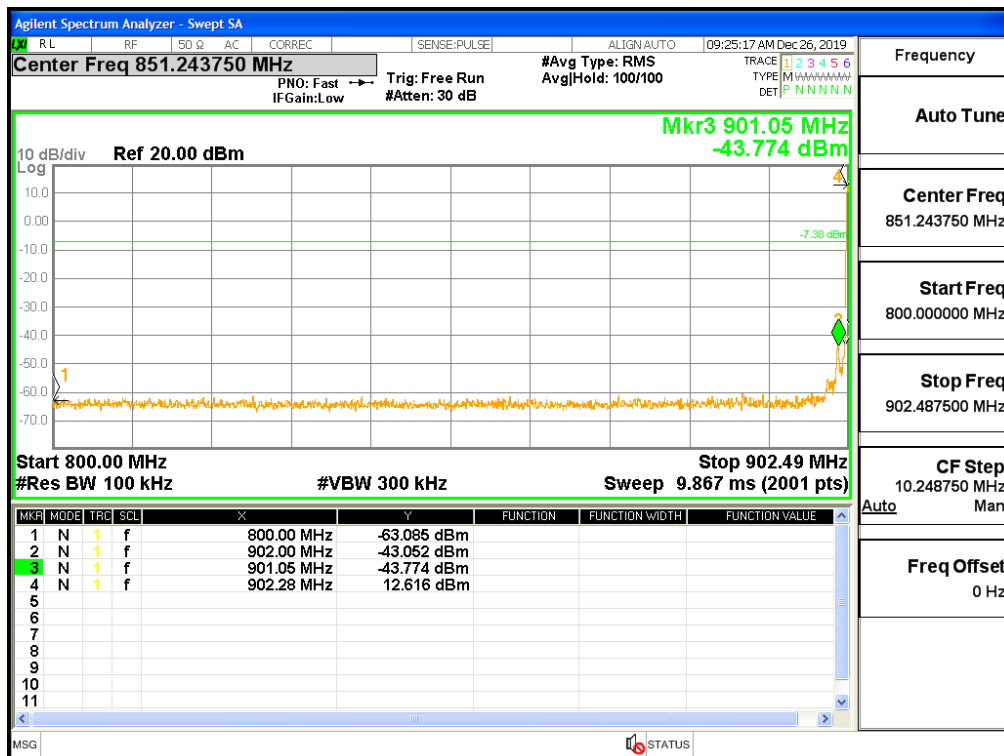
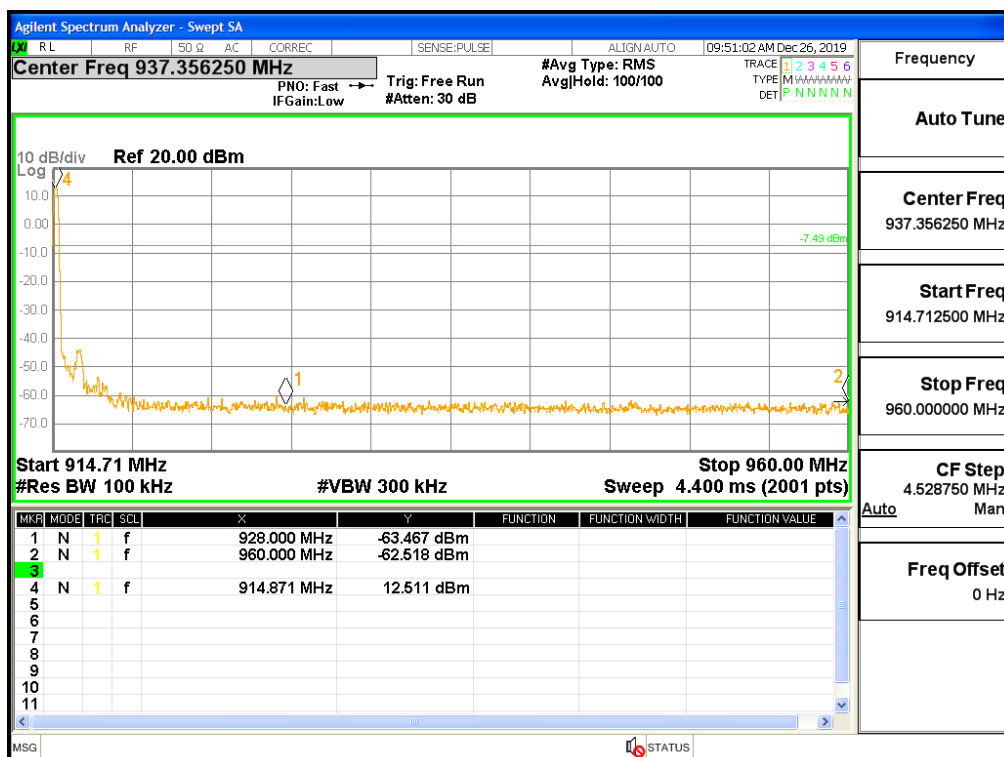


**A.6 Band-edge for RF Conducted Emissions**

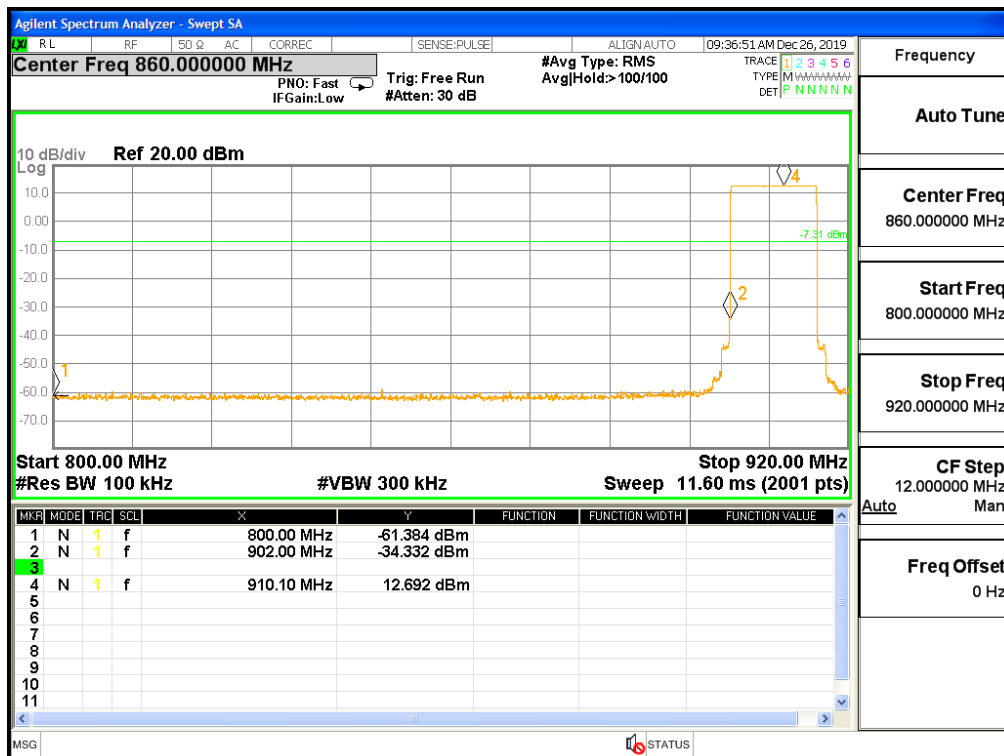
Type	Carrier Frequency(MHz)	Frequency(MHz)	Carrier Frequency Power [dBm]	Bandedge Peak(dBm)	Upper limit(dBm)	Conclusion
LoRa-FHSS	LCH	902	12.616	-43.05	-7.384	Pass
LoRa-FHSS	LCH	800	12.522	-63.66	-7.478	Pass
LoRa-FHSS	HCH	902	18.237	-32.54	-1.763	Pass
LoRa-FHSS	LCH	902	18.233	-40.65	-1.767	Pass
LoRa-FHSS	Hopping	902	12.692	-34.33	-7.308	Pass
LoRa-FHSS	Hopping	902	12.601	-33.47	-7.399	Pass
LoRa-FHSS	Hopping	902	12.568	-55.48	-7.432	Pass
LoRa-FHSS	Hopping	928	12.593	-60.50	-7.407	Pass

## Test Graph

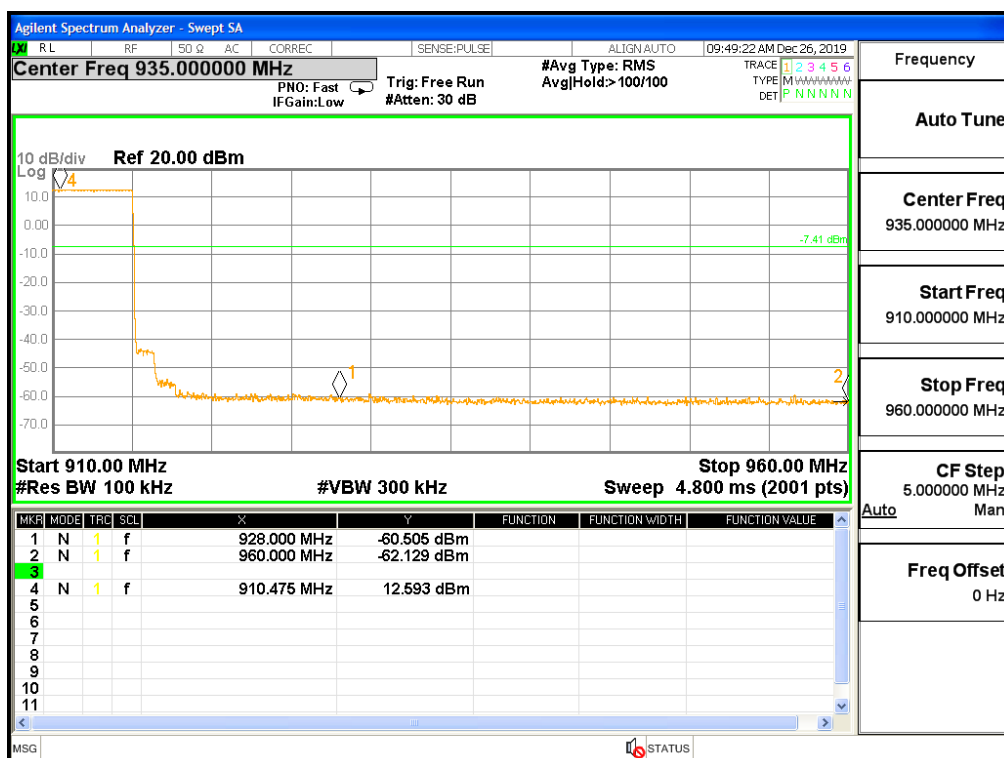
## Graphs

LoRa-FHSS/LCH/No  
HopLoRa-FHSS/HCH/No  
Hop

LoRa-FHSS/LCH/Hop

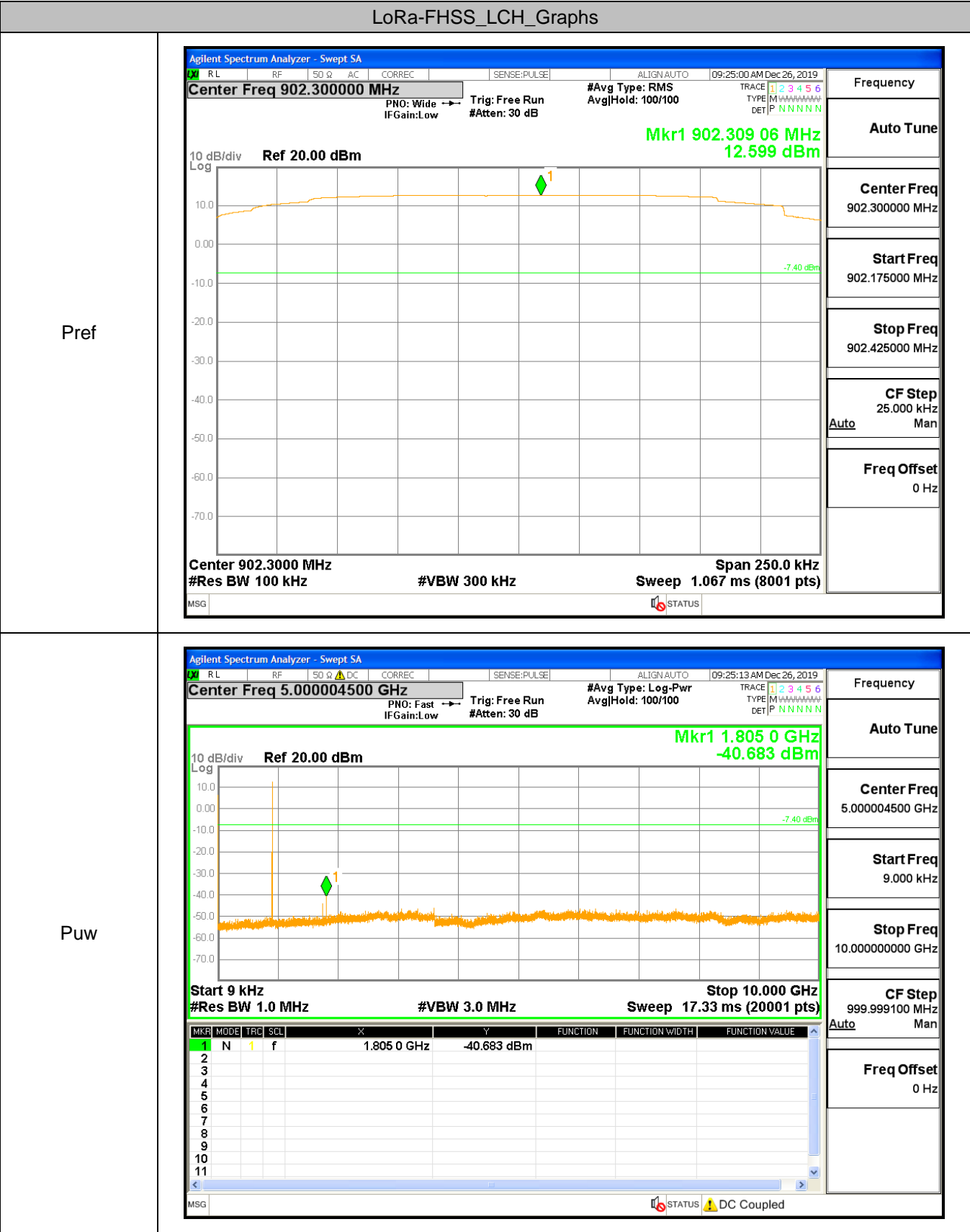


LoRa-FHSS/HCH/Hop



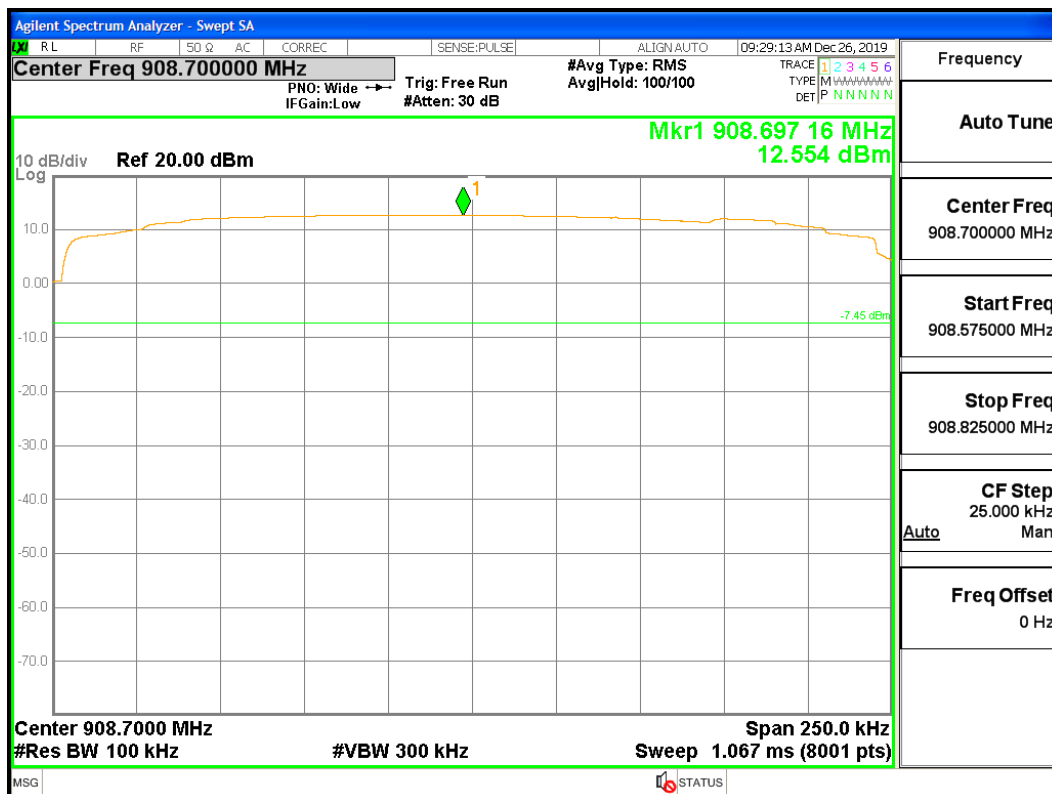
A.7 RF Conducted Spurious Emissions

Test Graph

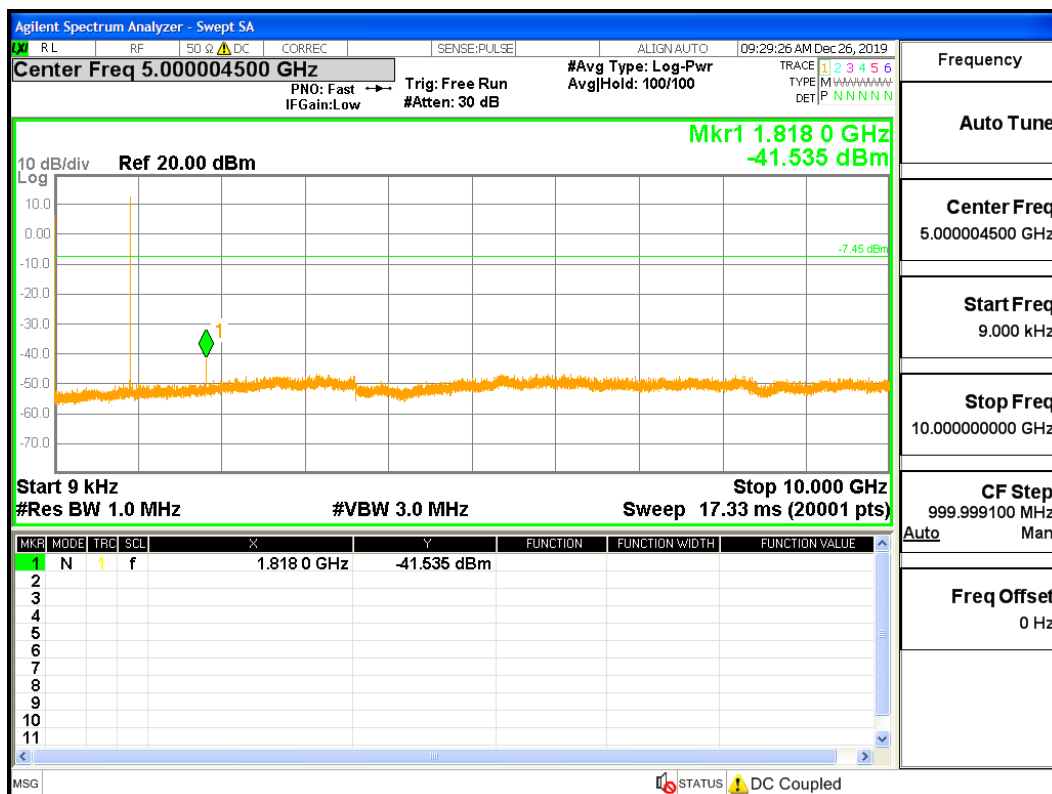


## LoRa-FHSS\_MCH\_Graphs

Pref

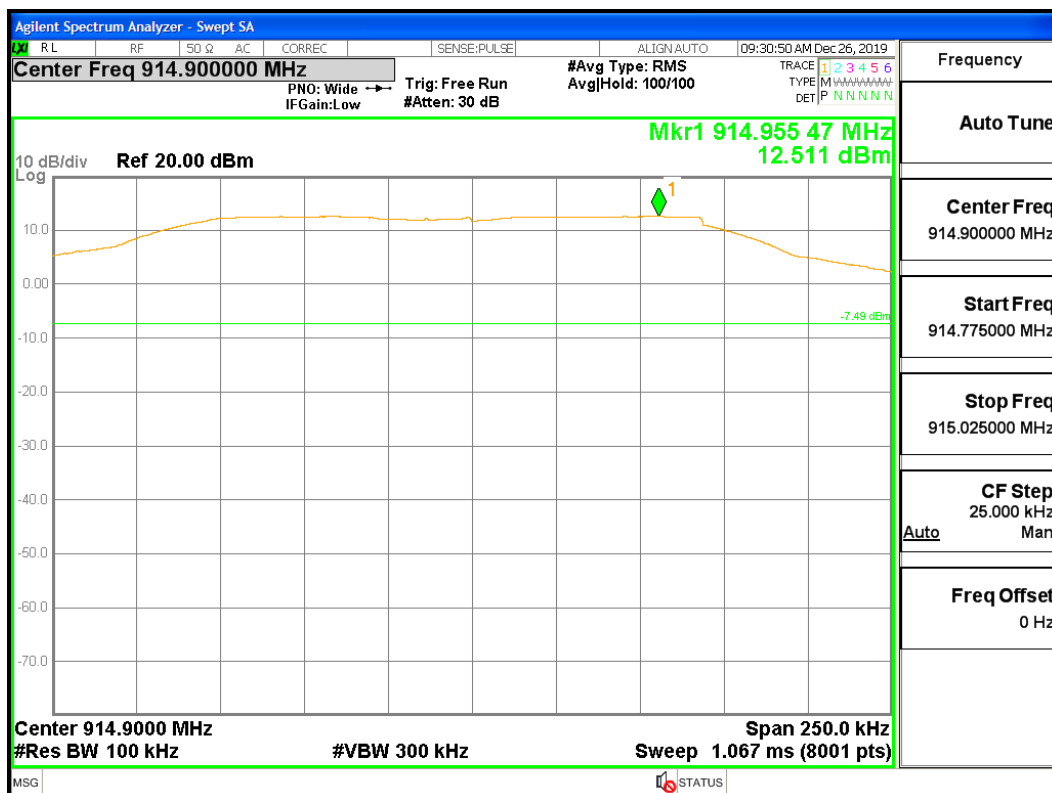


Puw



## LoRa-FHSS\_HCH\_Graphs

Pref



Puw

