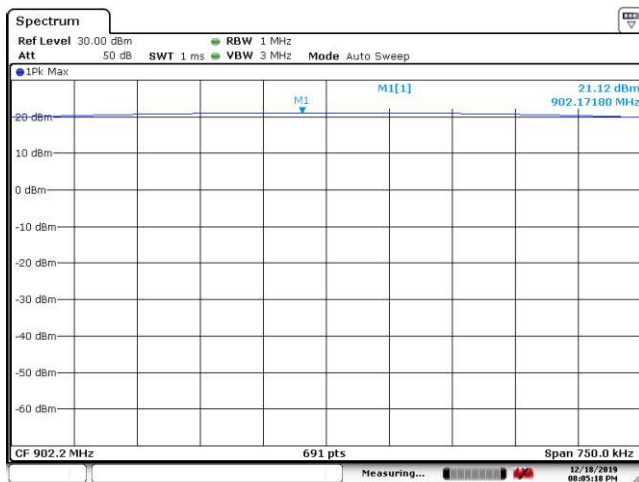
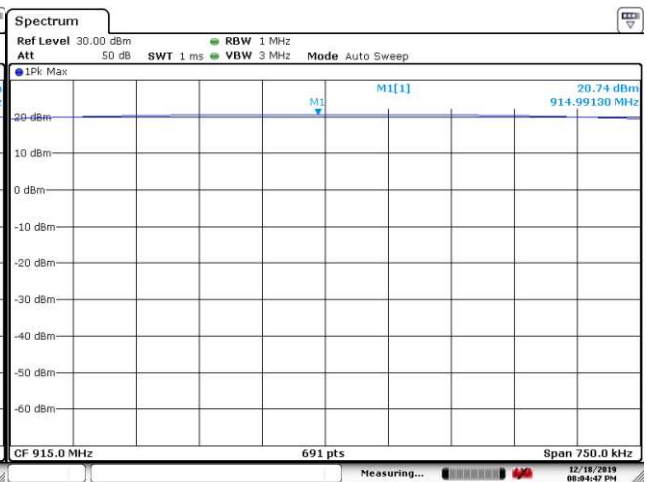


Date: 13. DEC. 2019 13:02:45

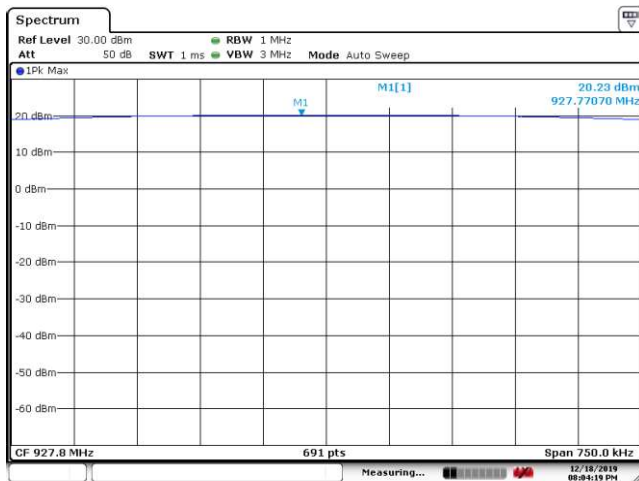
### 7. LoRa 125KHz FHSS, Maximum Peak Conducted Output Power, 902.2MHz~927.8MHz



Date: 18. DEC. 2019 20:05:19

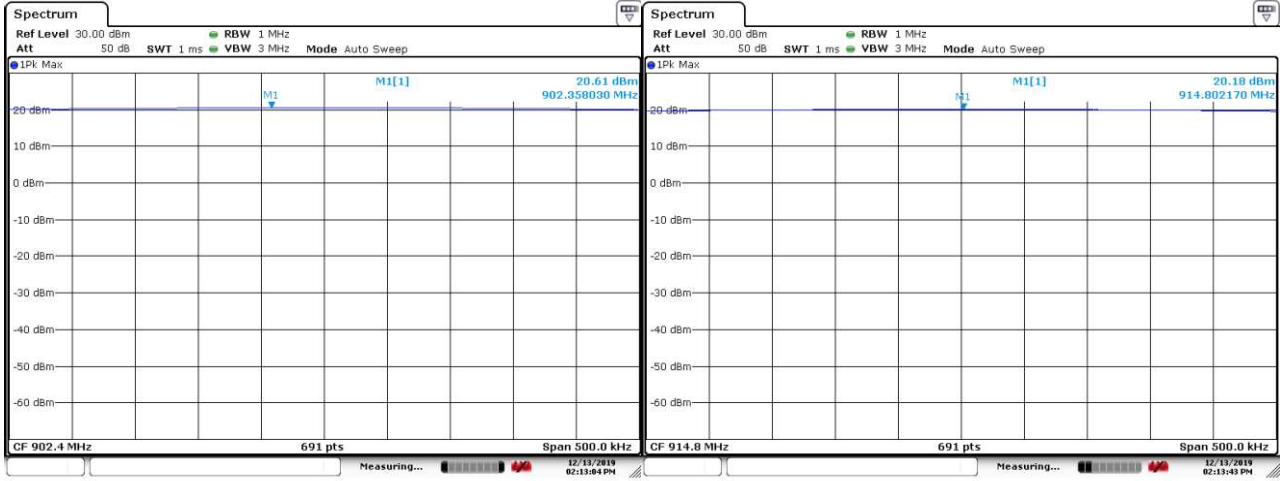


Date: 18. DEC. 2019 20:04:47



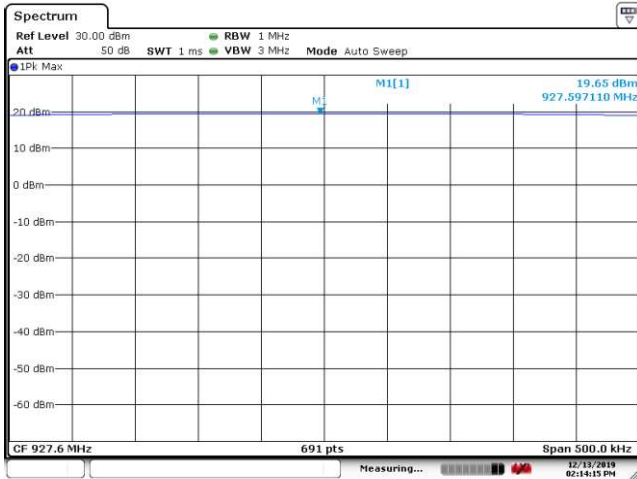
Date: 18. DEC. 2019 20:04:20

8. FSK 150Kbps FHSS, Maximum Peak Conducted Output Power, 902.4MHz~927.6MHz



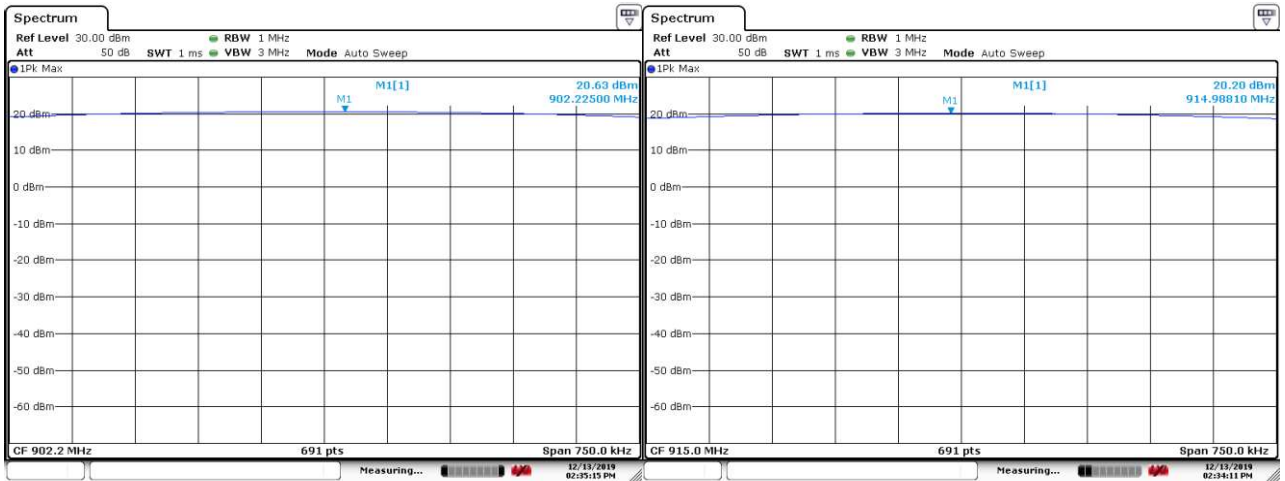
Date: 13.DEC.2019 14:13:05

Date: 13.DEC.2019 14:13:44



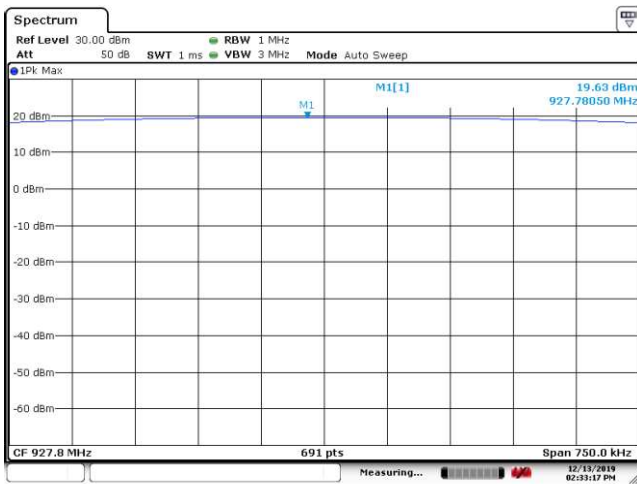
Date: 13.DEC.2019 14:14:16

9. FSK 50Kbps FHSS, Maximum Peak Conducted Output Power, 902.2MHz~927.8MHz

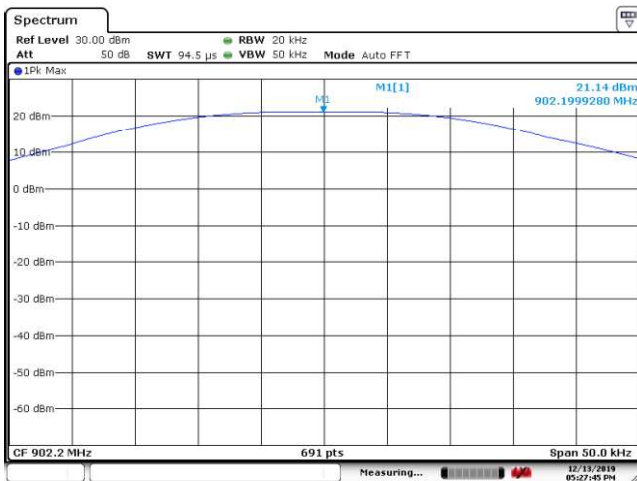


Date: 13.DEC.2019 14:35:16

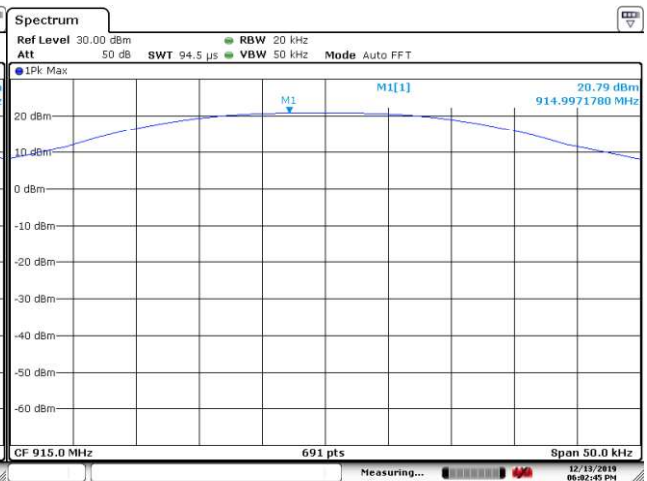
Date: 13.DEC.2019 14:34:12



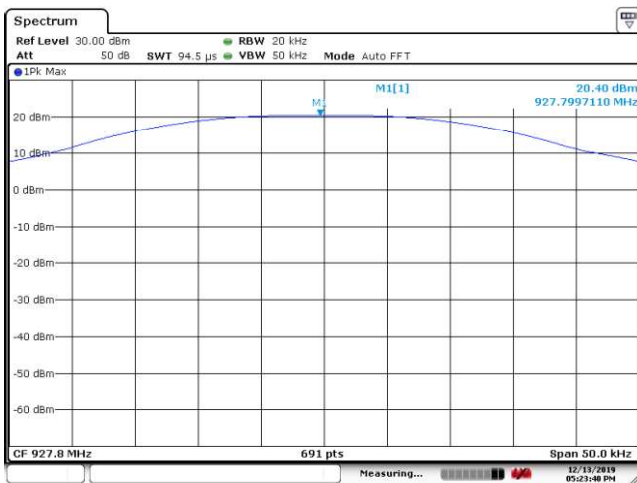
Date: 13. DEC. 2019 14:33:18

**10. FSK 5Kbps FHSS, Maximum Peak Conducted Output Power, 902.2MHz~927.8MHz**


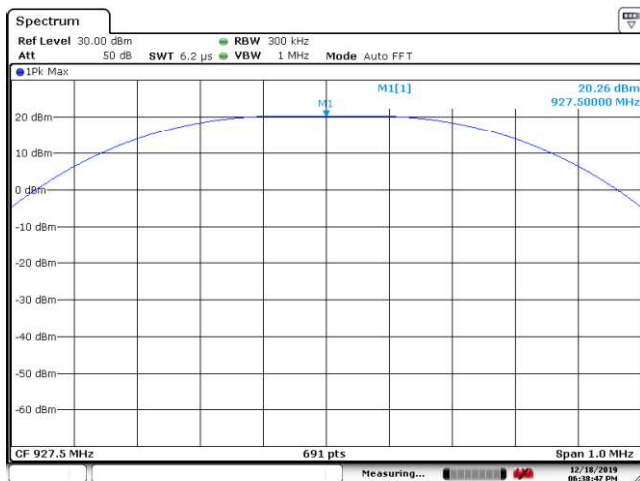
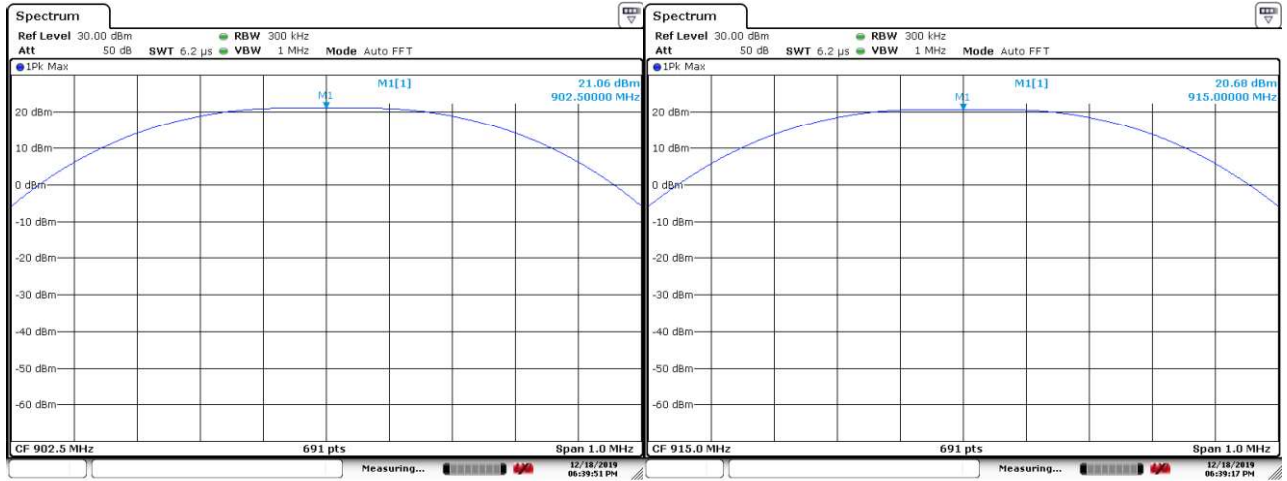
Date: 13. DEC. 2019 17:27:46



Date: 13. DEC. 2019 18:02:46



Date: 13. DEC. 2019 17:23:41

**11. FSK 250Kbps FHSS, Maximum Peak Conducted Output Power, 902.5MHz~927.5MHz**


### 4.1.5 Equivalent Isotropically Radiated Power

**Result:**

**Pass**

Test Specification

Test standard : RSS-247 Issue 2 February 2017 Clause 5.4(a)&(d)  
Limits : For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz: 4 Watt (36dBm)  
Kind of test site : Shielded Room

#### Test Setup

Date of testing : 13.12.2019~18.12.2019  
Input voltage : DC 3.7V  
Operational mode : Test mode of BLE, LoRa DTS, LoRa FHSS, FSK FHSS  
Test channel : Lo, Mi, Hi  
Temperature : 20-22°C  
Relative humidity : 54-57%  
Atmospheric pressure : 101 kPa

**Table 5: Test result of E.I.R.P. for BLE, LoRa DTS, LoRa FHSS and FSK FHSS**

Modulation Type and Operation band	Channel	Channel Frequency (MHz)	Peak Output Power (dBm)	Antenna Gain (dBi)	E.I.R.P. (dBm)	Limit (dBm)
1. BLE 2402MHz~2480MHz	Low Channel	2402	3.43	3.26	6.69	36
	Mid Channel	2440	3.31	3.26	6.57	36
	High Channel	2480	3.03	3.26	6.29	36
2. LoRa 500KHz DTS 902.5MHz~926.5	Low Channel	902.5	20.00	0.14	20.14	36
	Mid Channel	914.5	19.39	0.14	19.53	36
	High Channel	926.5	18.91	0.14	19.05	36
3. LoRa 500KHz DTS 903MHz~914.2MHz	Low Channel	903	19.97	0.14	20.11	36
	Mid Channel	907.8	19.78	0.14	19.92	36
	High Channel	914.2	19.42	0.14	19.56	36
4. LoRa 500KHz DTS 923.3MHz~926.9MHz	Low Channel	923.3	18.98	0.14	19.12	36
	Mid Channel	925.1	18.96	0.14	19.10	36
	High Channel	926.9	18.84	0.14	18.98	36
5. LoRa 250KHz FHSS 902.3MHz~926.7MHz	Low Channel	902.3	20.75	0.14	20.89	36
	Mid Channel	914.3	20.30	0.14	20.44	36
	High Channel	926.7	20.04	0.14	20.18	36
6. LoRa 125KHz FHSS 902.3MHz~914.9MHz	Low Channel	902.3	20.59	0.14	20.73	36
	Mid Channel	908.5	20.43	0.14	20.57	36
	High Channel	914.9	20.12	0.14	20.26	36

7. LoRa 125KHz FHSS 902.2MHz~927.8MHz	Low Channel	902.2	20.12	0.14	20.26	36
	Mid Channel	915	20.74	0.14	20.88	36
	High Channel	927.8	20.23	0.14	20.37	36
8. FSK 150Kbps FHSS 902.4MHz~927.6MHz	Low Channel	902.4	20.61	0.14	20.75	36
	Mid Channel	914.8	20.18	0.14	20.32	36
	High Channel	927.6	19.65	0.14	19.79	36
9. FSK 50Kbps FHSS 902.2MHz~927.8MHz	Low Channel	902.2	20.63	0.14	20.77	36
	Mid Channel	915	20.20	0.14	20.34	36
	High Channel	927.8	19.63	0.14	19.77	36
10. FSK 5Kbps FHSS 902.2MHz~927.8MHz	Low Channel	902.2	21.14	0.14	21.28	36
	Mid Channel	915	20.97	0.14	21.11	36
	High Channel	927.8	20.40	0.14	20.54	36
11. FSK 250Kbps FHSS 902.5MHz~927.5MHz	Low Channel	902.5	21.06	0.14	21.20	36
	Mid Channel	915	20.68	0.14	20.82	36
	High Channel	927.5	20.26	0.14	20.40	36

### 4.1.6 Power Spectral Density

**Result:**

**Pass**

Test Specification

Test standard : FCC Part 15.247(e)  
RSS-247 Issue 2 February 2017 Clause 5.2(b)

Basic standard : ANSI C63.10: 2013

Limits : Not more than 8 dBm in any 3 kHz band

Kind of test site : Shielded Room

#### Test Setup

Date of testing : 13.12.2019~18.12.2019

Input voltage : DC 3.7V

Operational mode : On, BLE, LoRa DTS

Test channel : Lo, Mi, Hi

Temperature : 20-22°C

Relative humidity : 54-57%

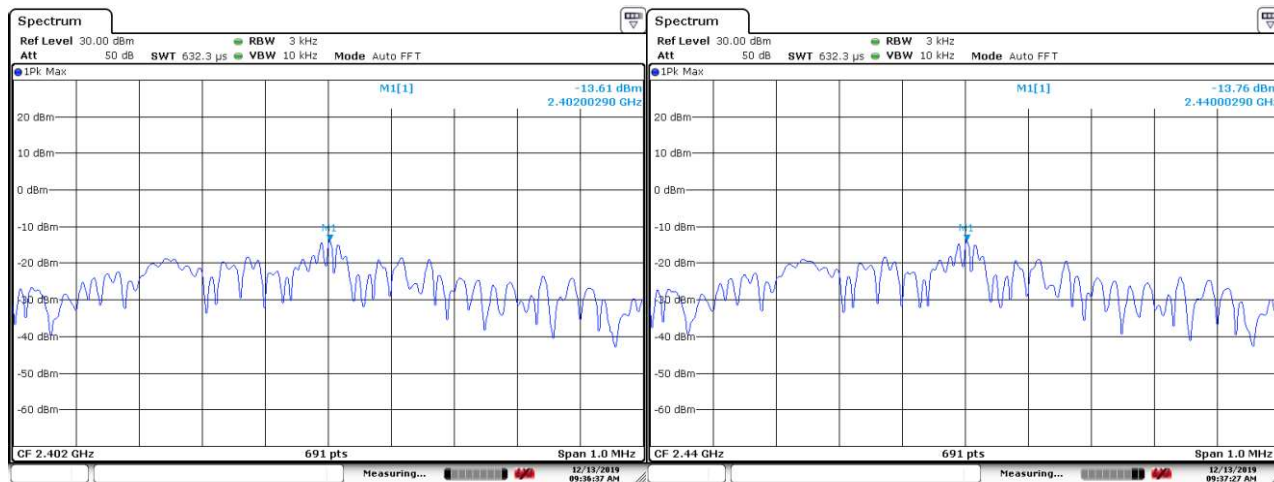
Atmospheric pressure : 101 kPa

**Table 6: Test result of Power Spectral Density for BLE, LoRa DTS**

Modulation Type and Operation band	Channel	Channel Frequency (MHz)	Measured Power Density (dBm)	Limit (dBm)	Result
1. BLE 2402MHz~2480MHz	Low Channel	2402	-13.61	8.0	Pass
	Mid Channel	2440	-13.76	8.0	Pass
	High Channel	2480	-14.00	8.0	Pass
2. LoRa 500KHz DTS 902.5MHz~926.5	Low Channel	902.5	7.14	8.0	Pass
	Mid Channel	914.5	6.32	8.0	Pass
	High Channel	926.5	6.21	8.0	Pass
3. LoRa 500KHz DTS 903MHz~914.2MHz	Low Channel	903	7.36	8.0	Pass
	Mid Channel	907.8	7.22	8.0	Pass
	High Channel	914.2	6.86	8.0	Pass
4. LoRa 500KHz DTS 923.3MHz~926.9MHz	Low Channel	923.3	6.42	8.0	Pass
	Mid Channel	925.1	6.26	8.0	Pass
	High Channel	926.9	6.19	8.0	Pass

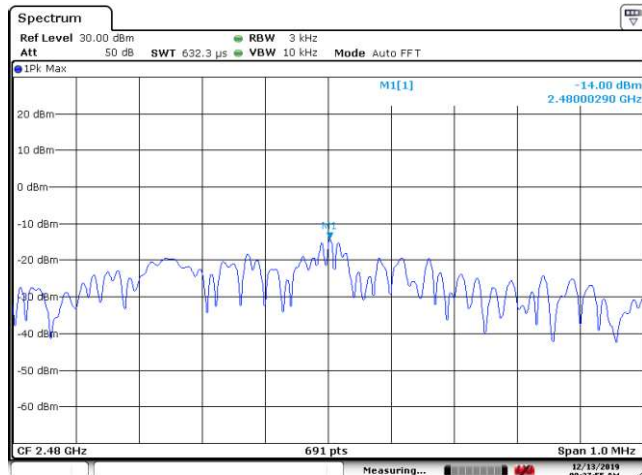
Figure 4: Power Spectral Density

1. BLE, Maximum Conducted Output Power, 2402MHz~2480MHz



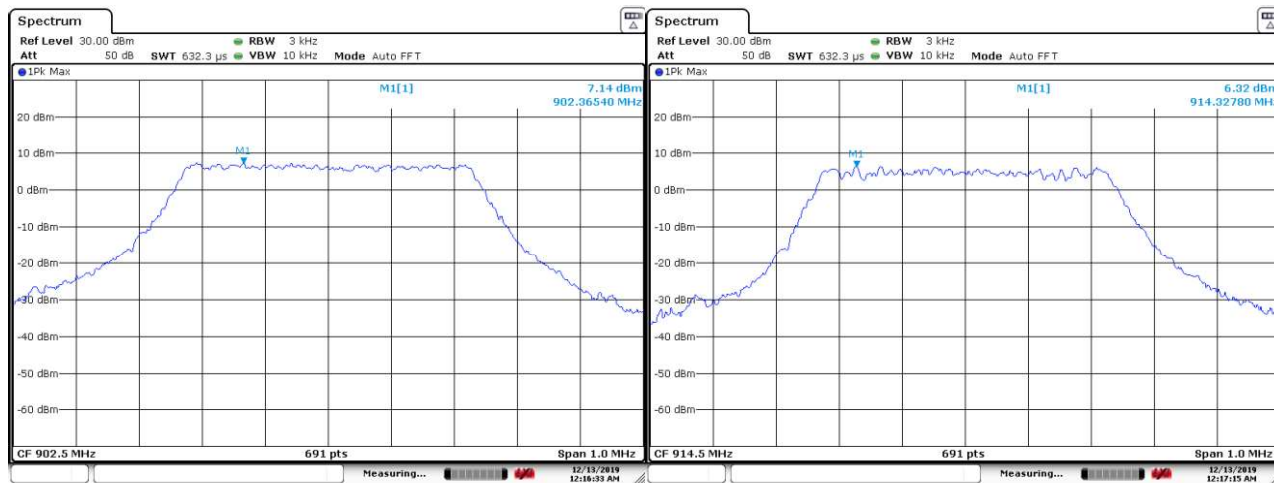
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Date: 13. DEC. 2019 09:37:27



Date: 13. DEC. 2019 09:37:55

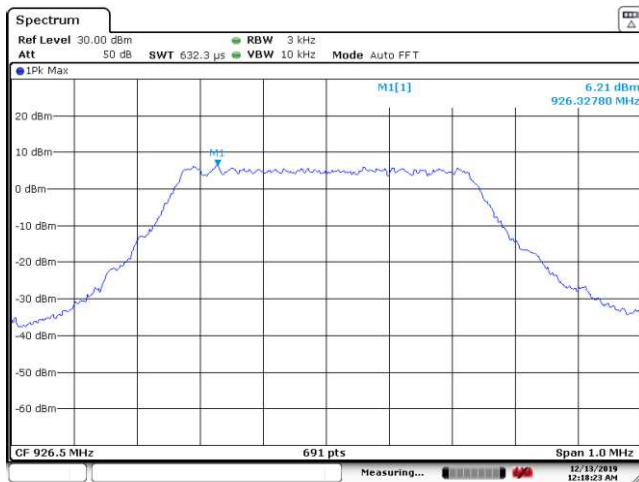
2. LoRa 500KHz DTS, Maximum Conducted Output Power, 902.5MHz~926.5



Date: 13. DEC. 2019 08:16:33

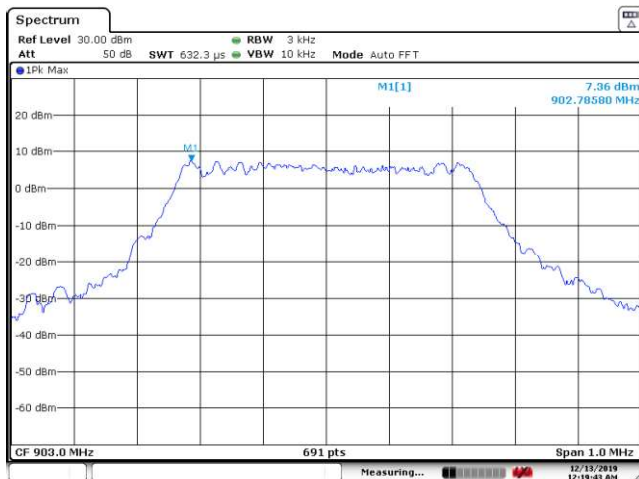
Date: 13. DEC. 2019 08:17:15





Date: 13. DEC. 2019 00:18:23

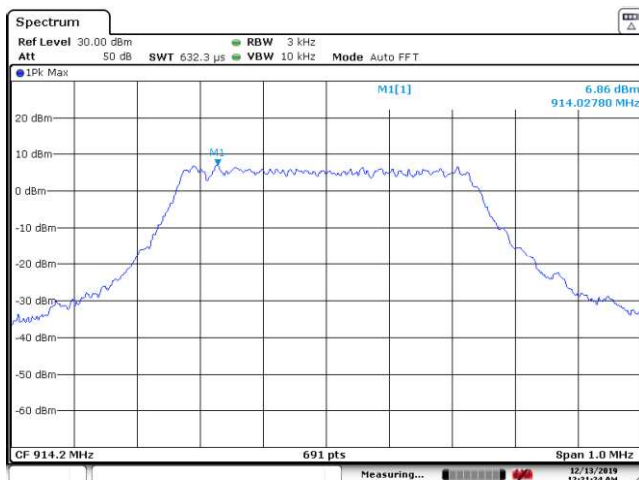
### 3. LoRa 500KHz DTS, Maximum Conducted Output Power, 903MHz~914.2MHz



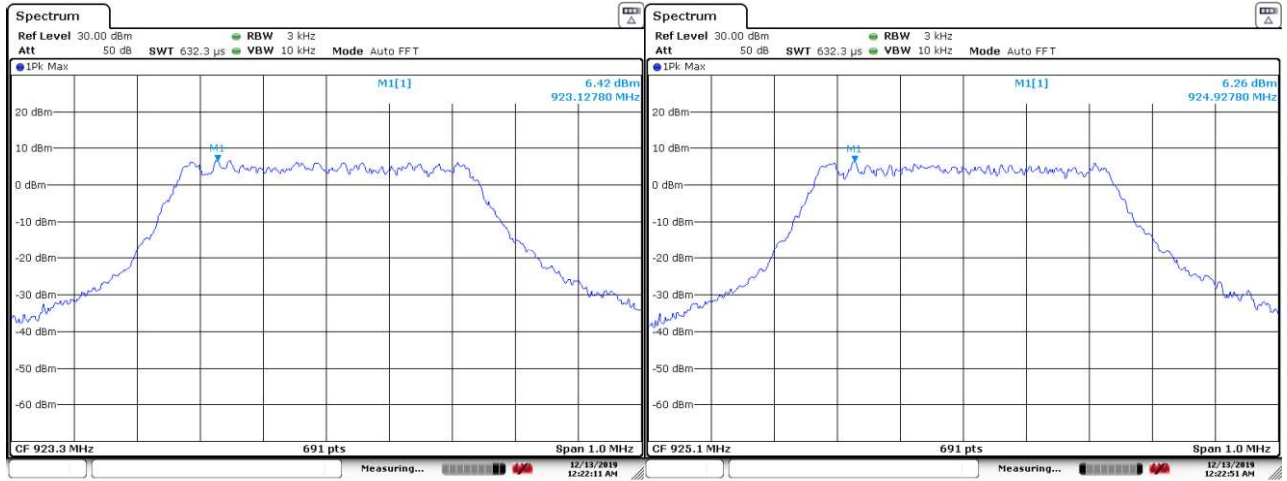
Date: 13. DEC. 2019 00:19:43



Date: 13. DEC. 2019 00:20:35

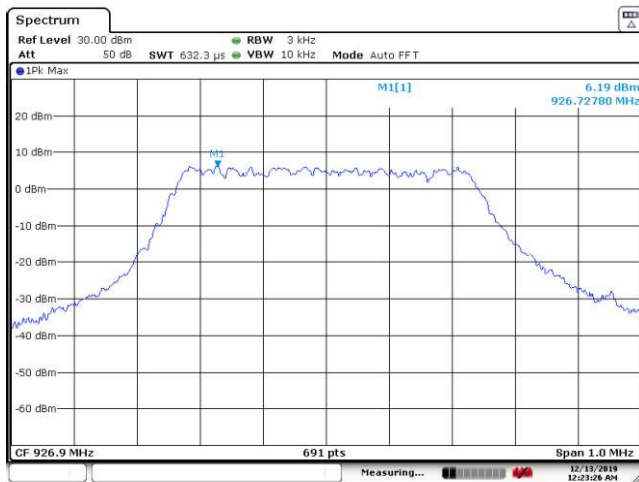


Date: 13. DEC. 2019 00:21:23

**4. LoRa 500KHz DTS, Maximum Conducted Output Power, 923.3MHz~926.9MHz**


Date: 13.DEC.2019 00:22:11

Date: 13.DEC.2019 00:22:51



Date: 13.DEC.2019 00:23:26

### 4.1.7 Conducted Spurious Emissions Measured in 100 kHz Bandwidth

**Result:**

**Pass**

Test Specification	
Test standard	: FCC Part 15.247(d) RSS-247 Issue 2 February 2017 Clause 5.5
Basic standard	: ANSI C63.10: 2013
Limits	: 20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power);
Kind of test site	: Shielded Room

**Test Setup**

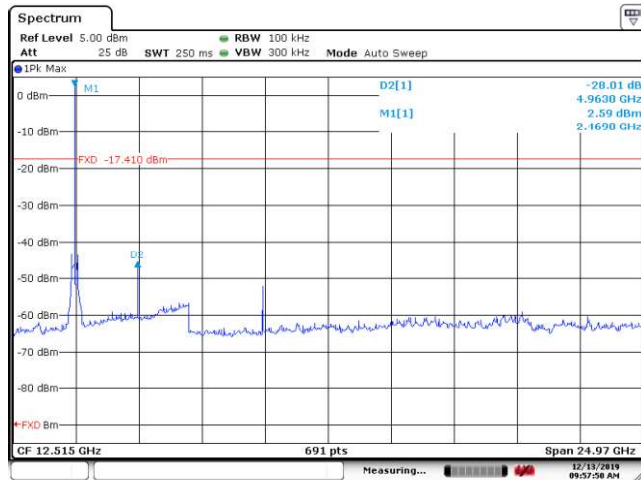
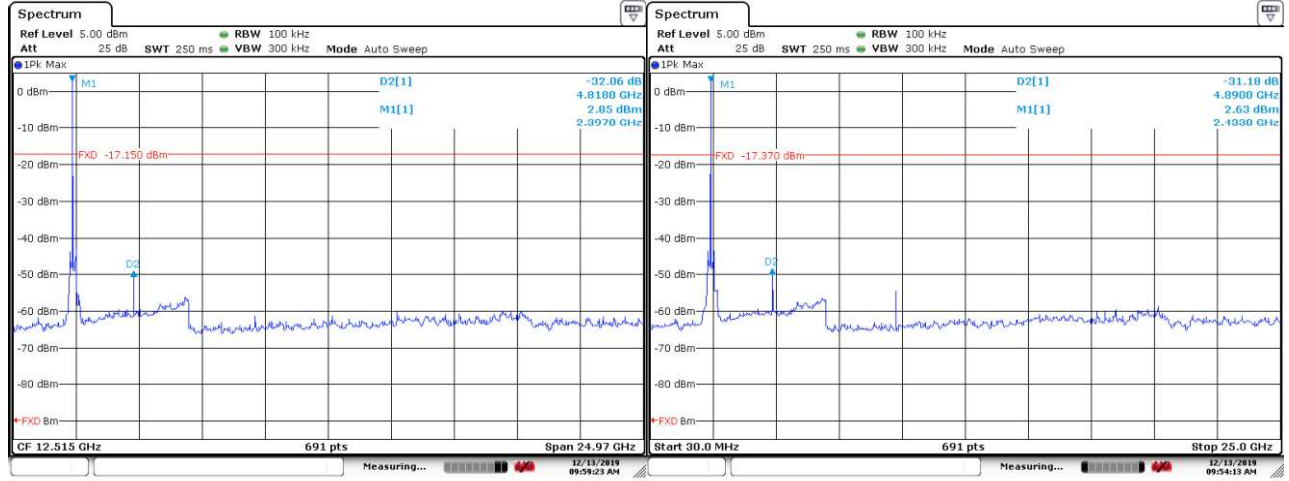
Date of testing	: 13.12.2019~18.12.2019
Input voltage	: DC 3.7V
Operational mode	: Test mode of BLE, LoRa DTS, LoRa FHSS, FSK FHSS
Test channel	: Lo, Mi, Hi
Temperature	: 20-22°C
Relative humidity	: 54-57%
Atmospheric pressure	: 101 kPa

All emissions are more than 20dB below fundamental, compliance is achieved as well.

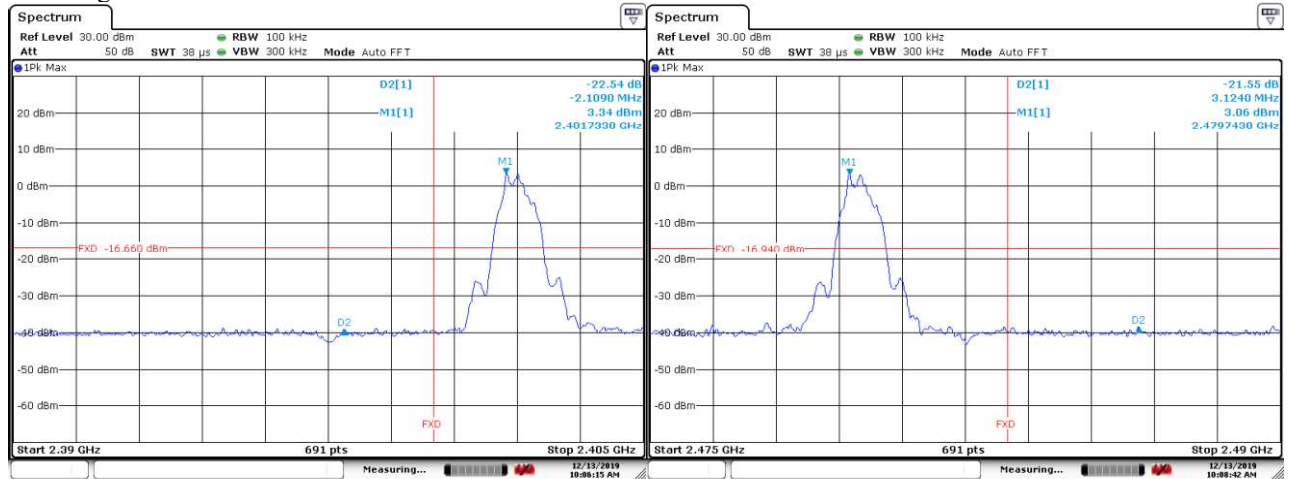
### Figure 5: Conducted Spurious Emission

#### 1. BLE, Conducted Spurious Emission and Band edge, 2402MHz~2480MHz

##### Conducted Spurious Emission

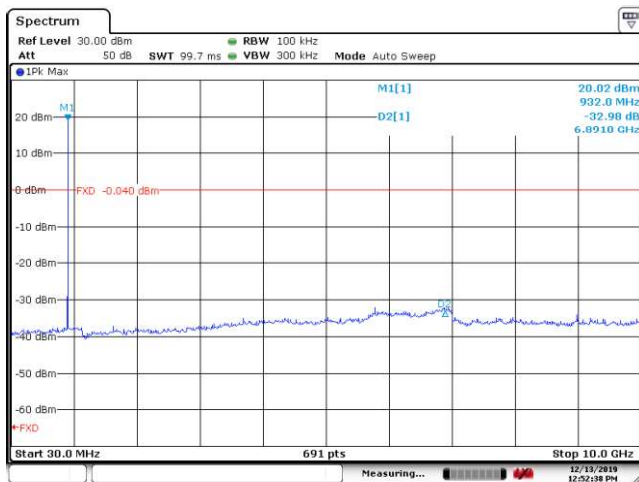
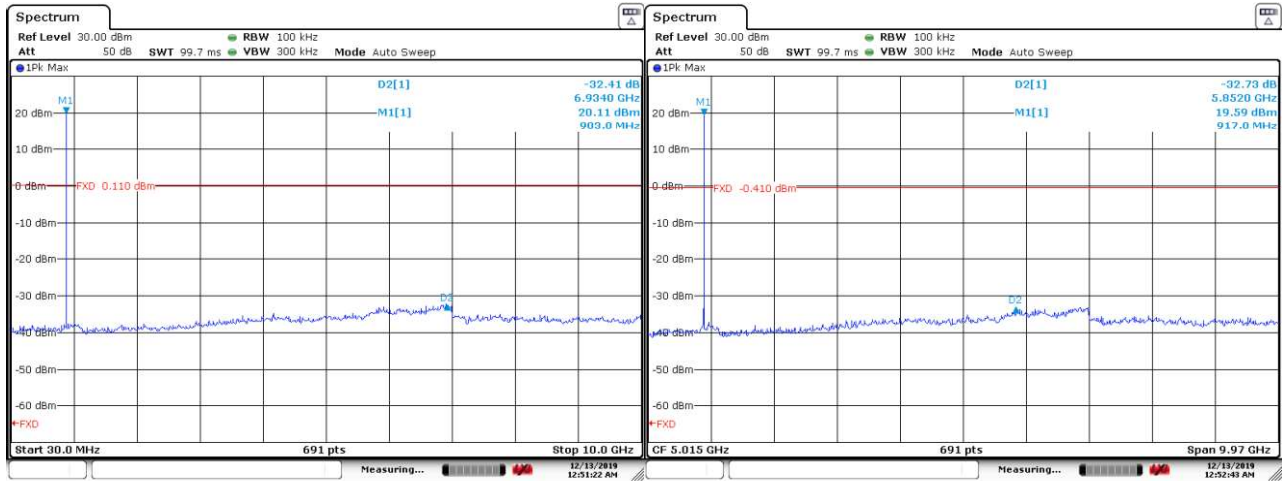


##### Band edge

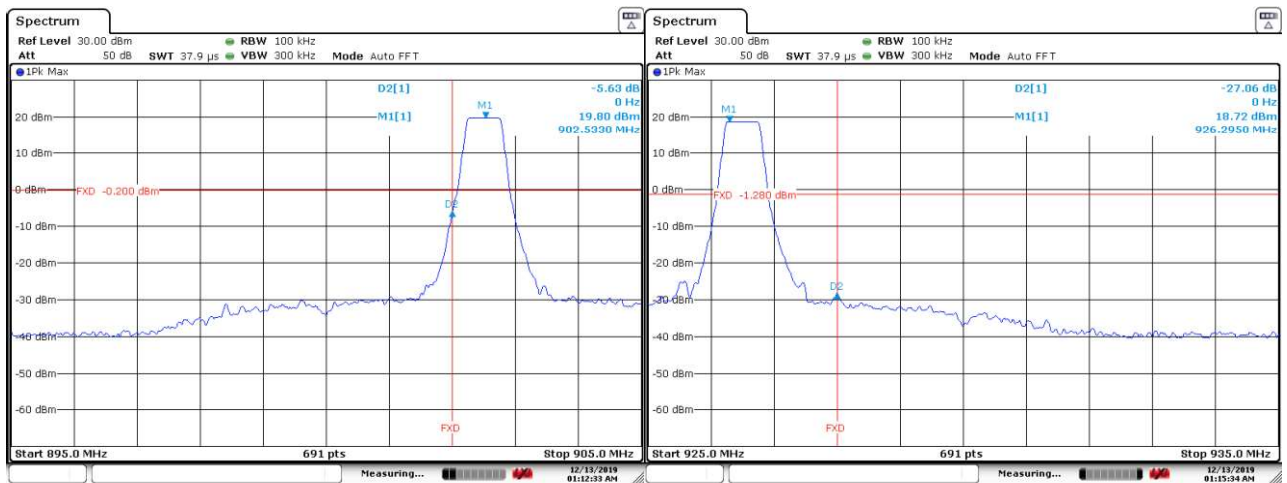


## 2. LoRa 500KHz DTS, Conducted Spurious Emission and Band edge, 902.5MHz~926.5

### Conducted Spurious Emission

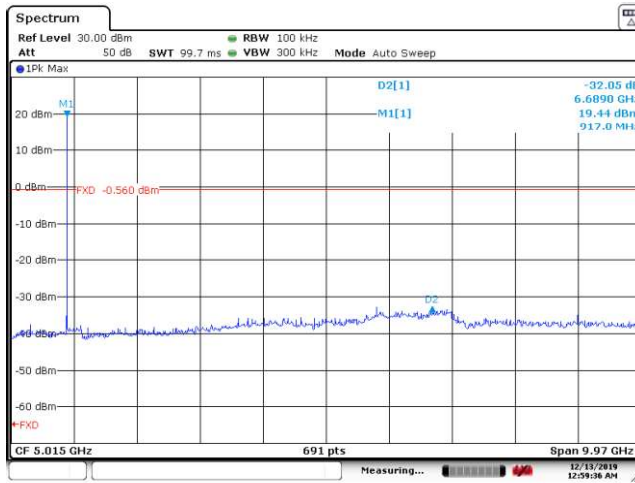
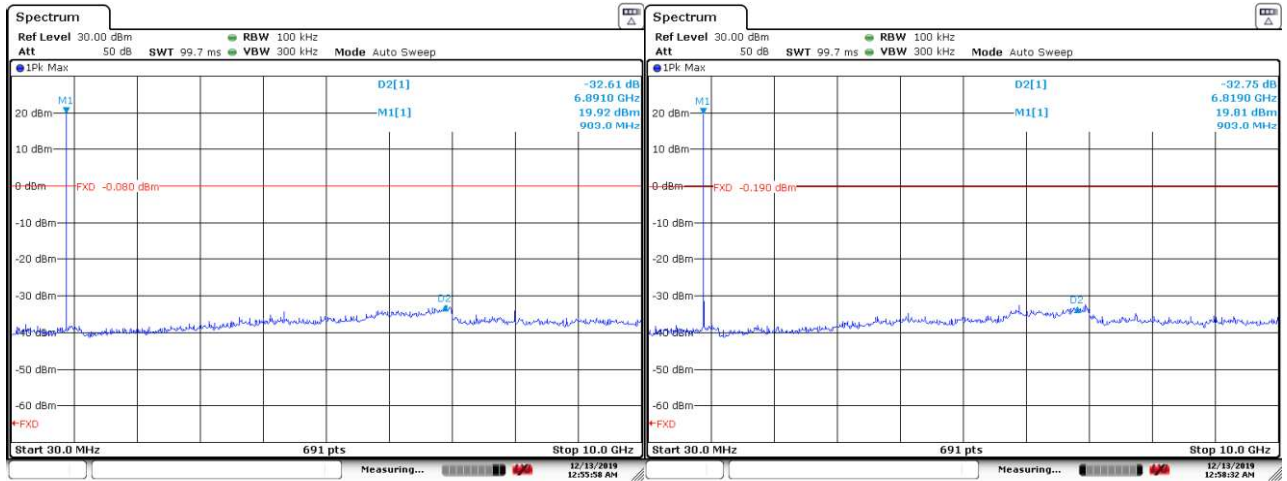


### Band edge

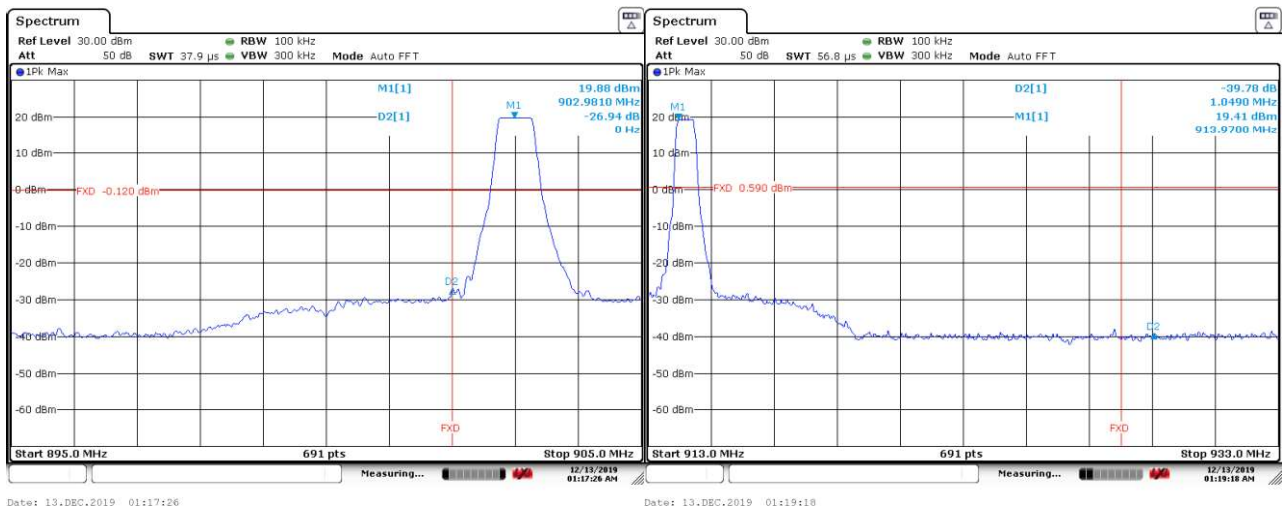


### 3. LoRa 500KHz DTS, Conducted Spurious Emission and Band edge, 903MHz~914.2MHz

#### Conducted Spurious Emission

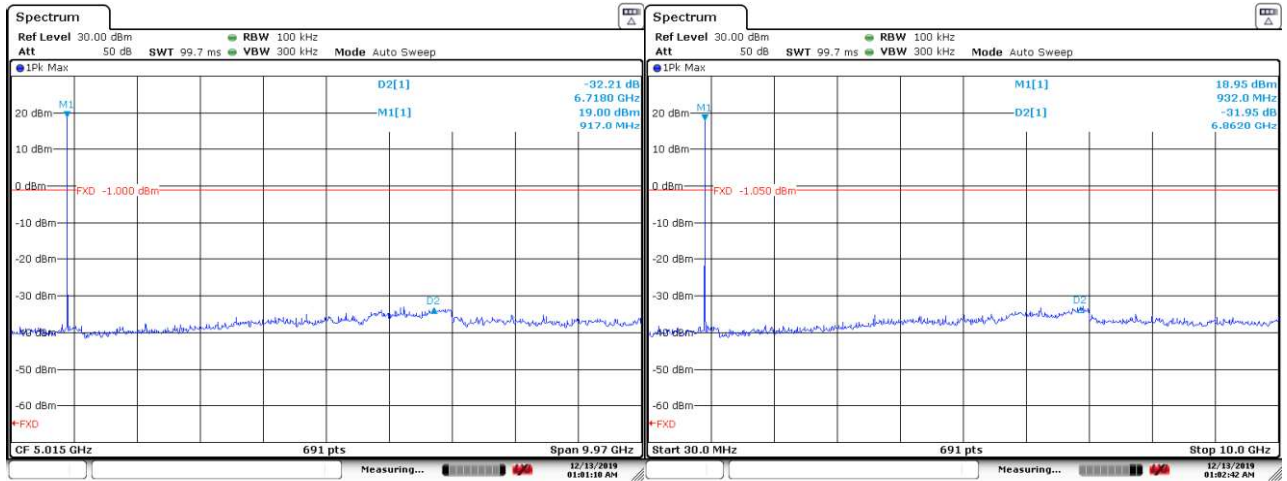


#### Band edge



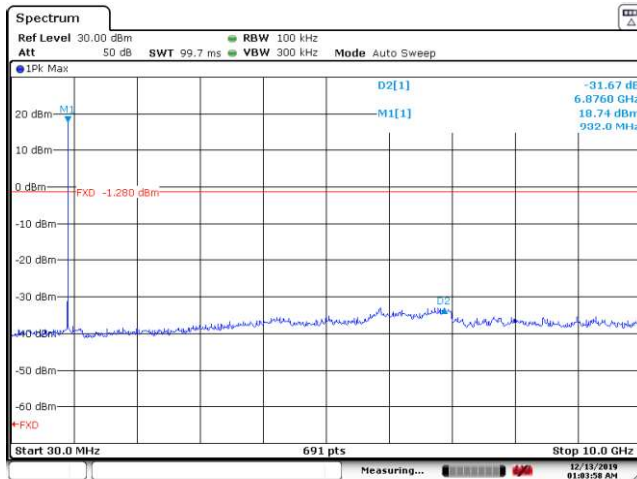
#### 4. LoRa 500KHz DTS, Conducted Spurious Emission and Band edge, 923.3MHz~926.9MHz

##### Conducted Spurious Emission



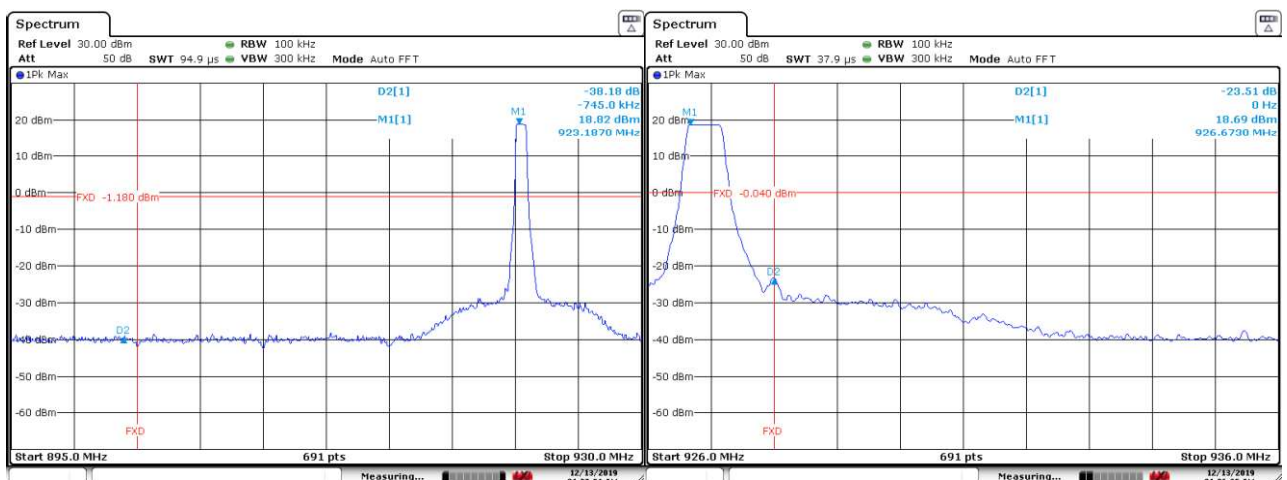
Date: 13.DEC.2019 01:01:10

Date: 13.DEC.2019 01:02:42



Date: 13.DEC.2019 01:03:58

##### Band edge

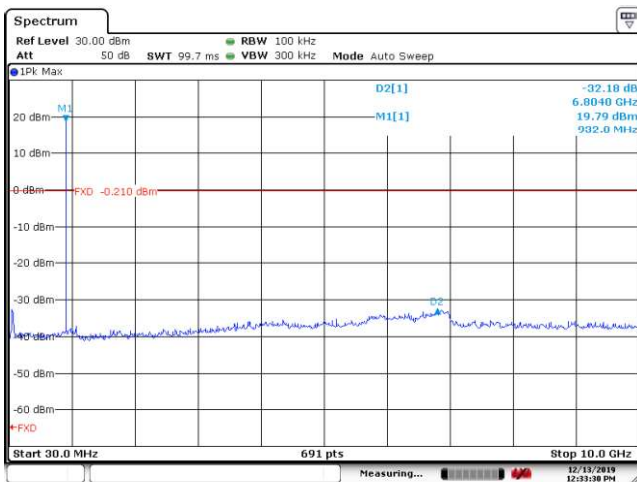
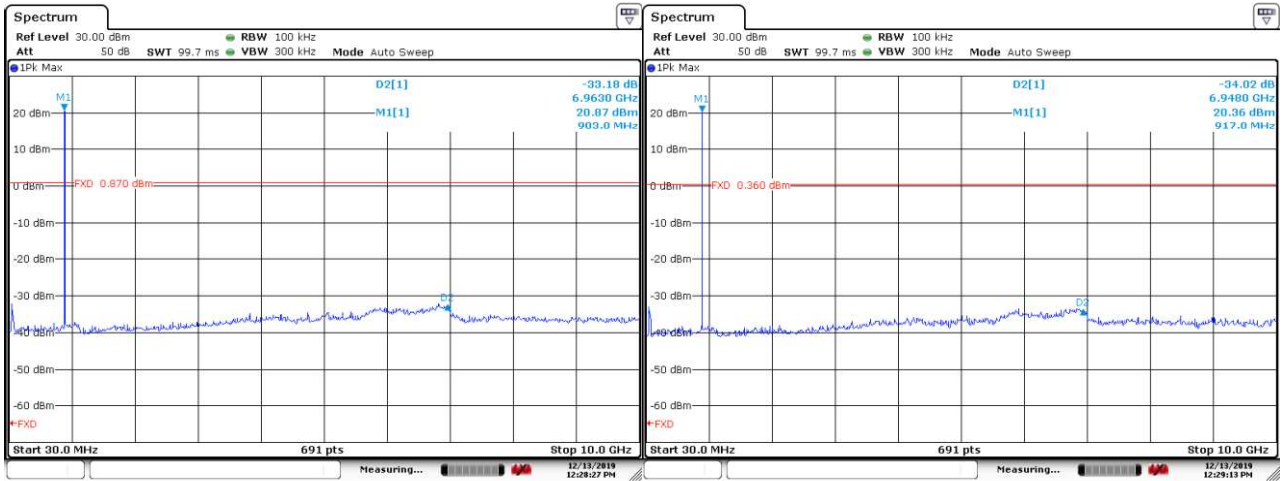


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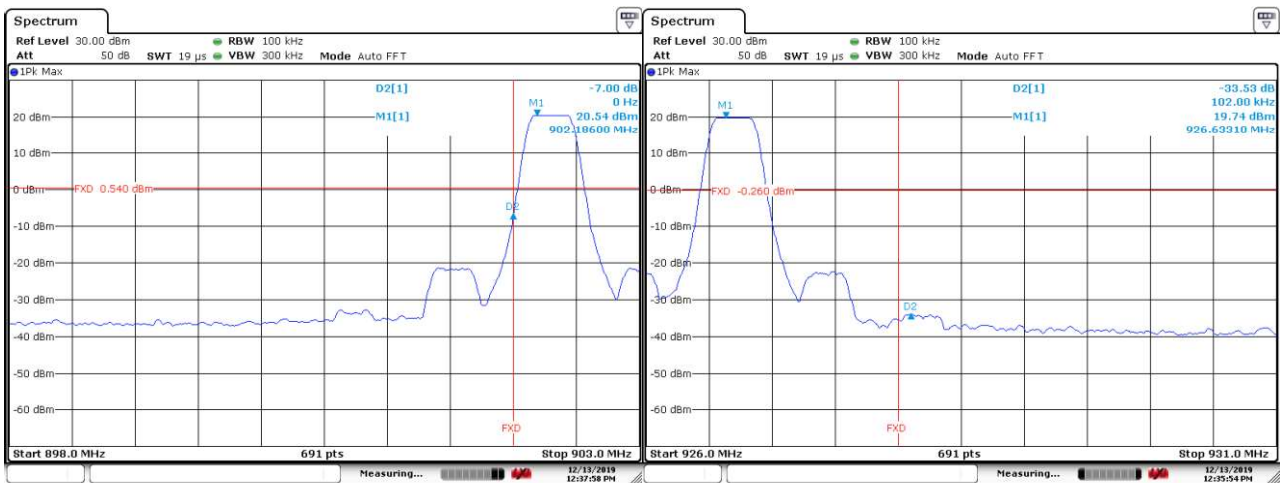
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### 5. LoRa 250KHz FHSS, Conducted Spurious Emission and Band edge, 902.3MHz~926.7MHz

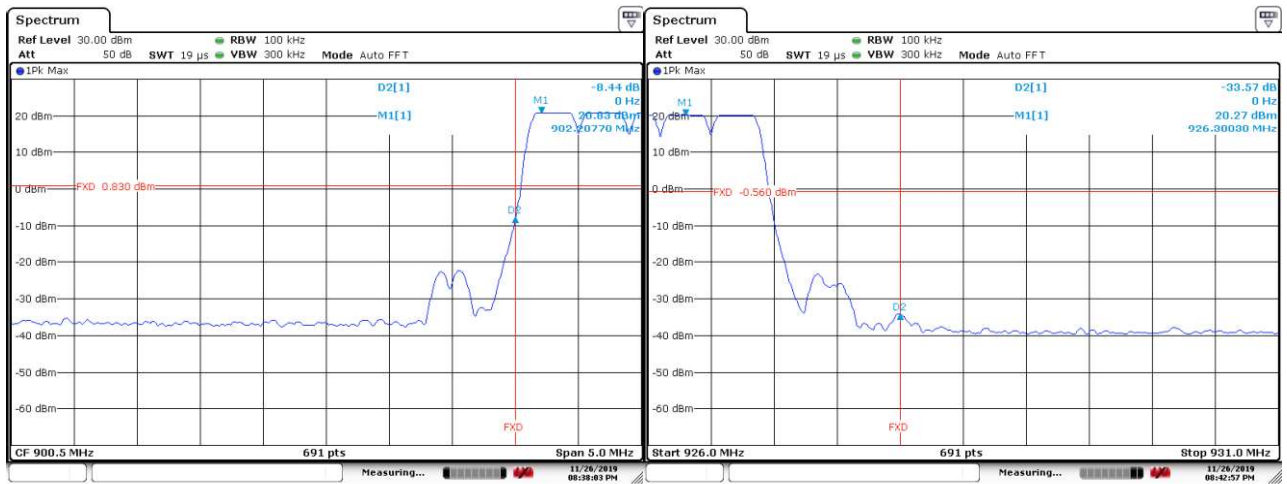
#### Conducted Spurious Emission



#### Band edge





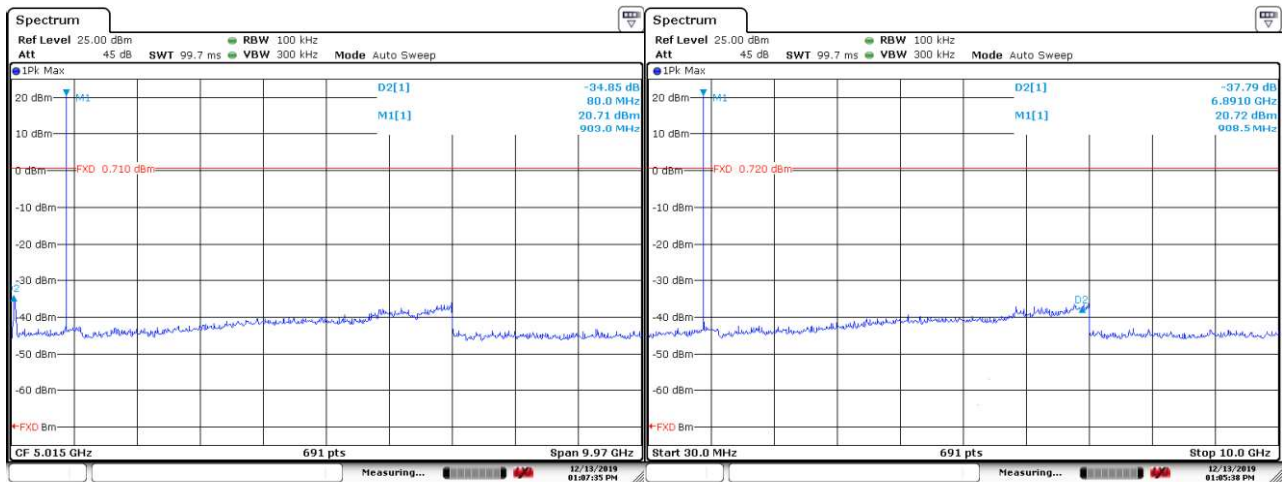


Date: 26.NOV.2019 20:38:03

Date: 26.NOV.2019 20:42:57

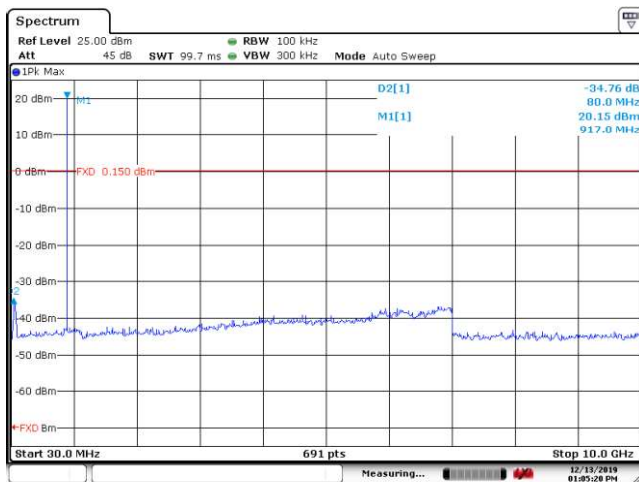
### 6. LoRa 125KHz FHSS, Conducted Spurious Emission, 902.3MHz~914.9MHz

#### Conducted Spurious Emission



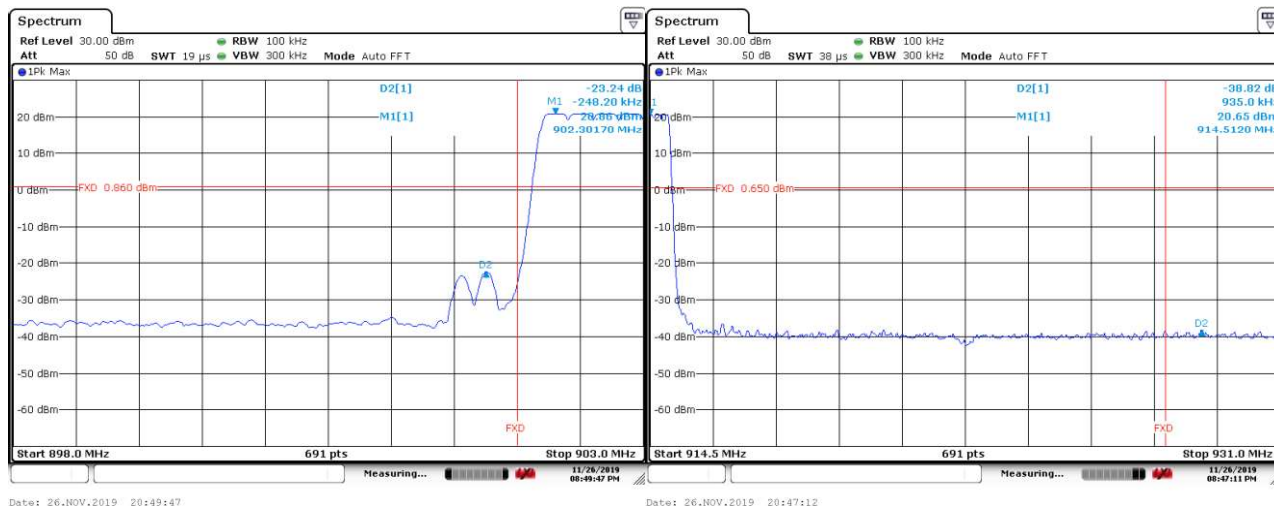
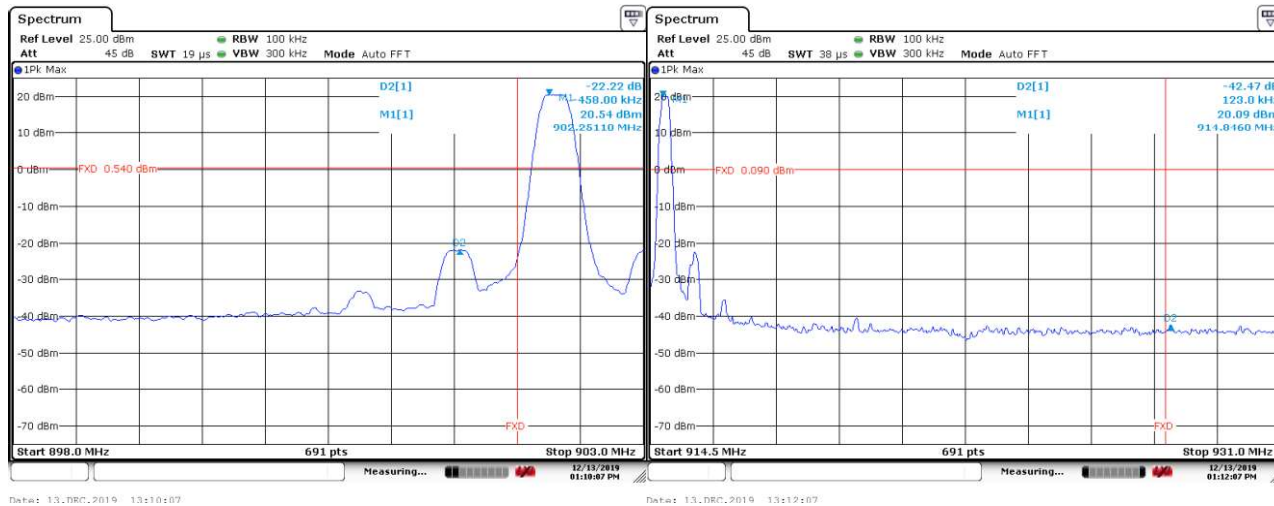
Date: 13.DEC.2019 13:07:55

Date: 13.DEC.2019 13:05:38



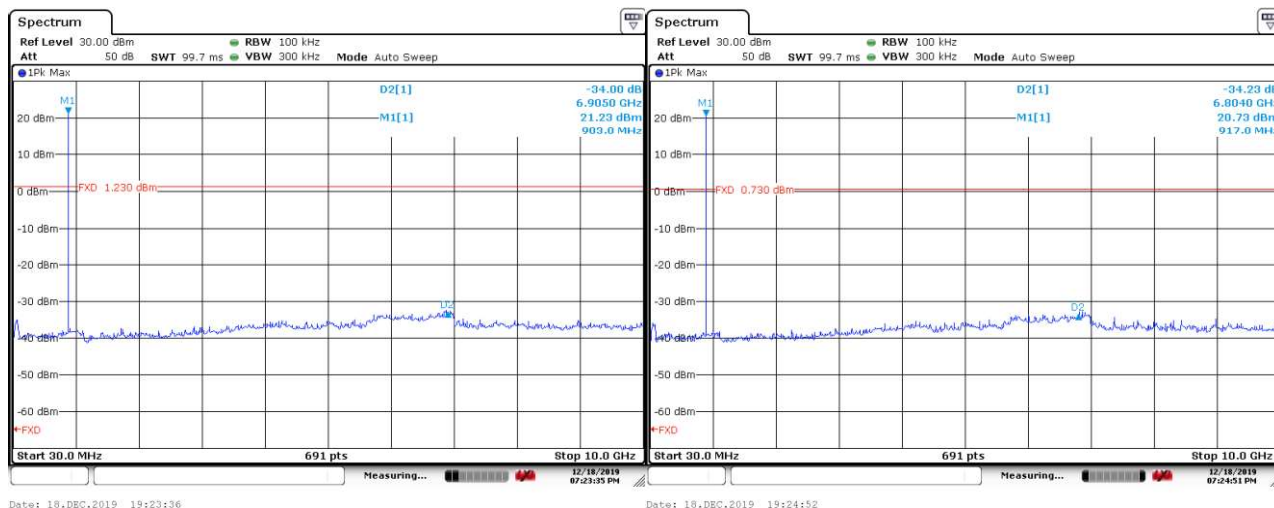
Date: 13.DEC.2019 13:05:20

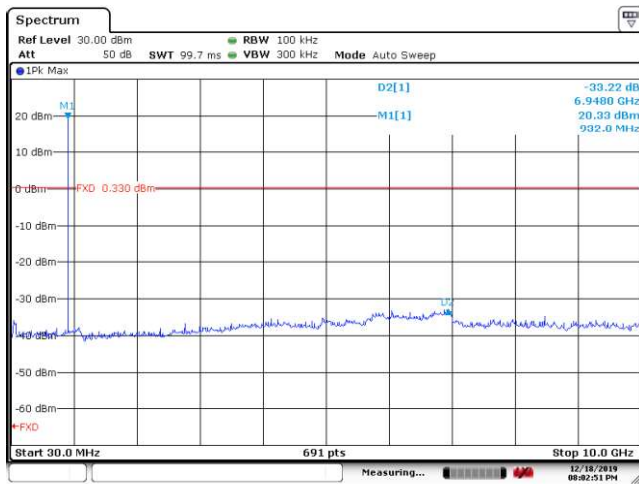
Band edge



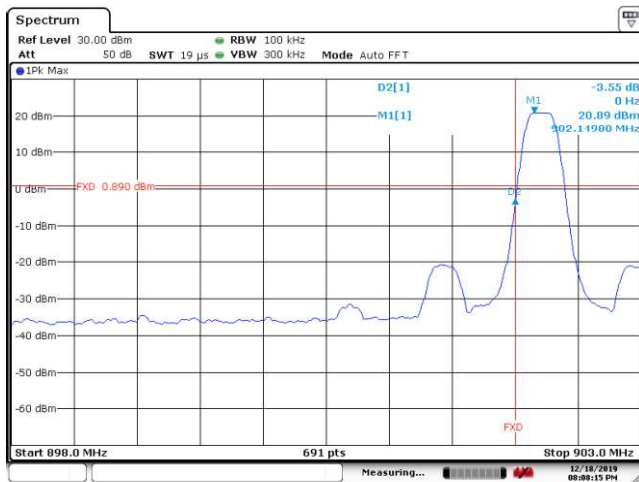
7. LoRa 125KHz FHSS, Conducted Spurious Emission, 902.2MHz~927.8MHz

Conducted Spurious Emission

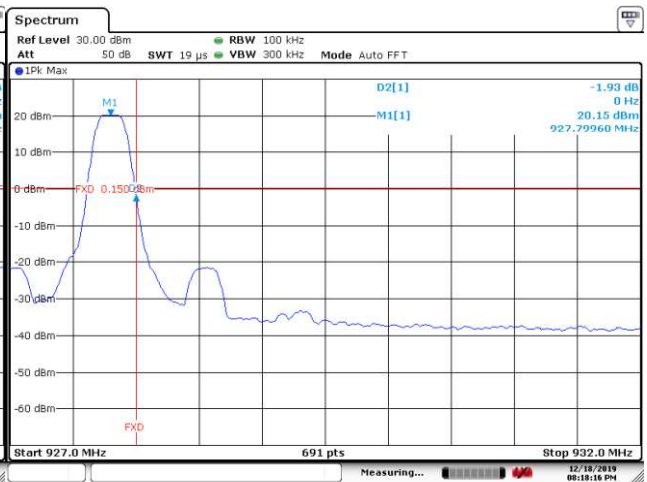




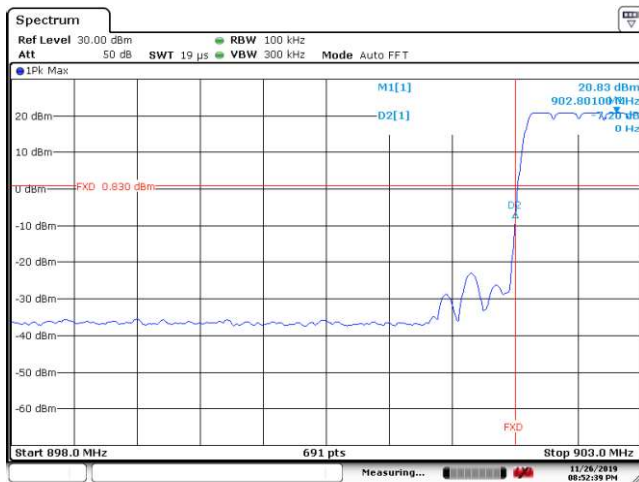
Date: 18. DEC. 2019 20:02:52

**Band edge**


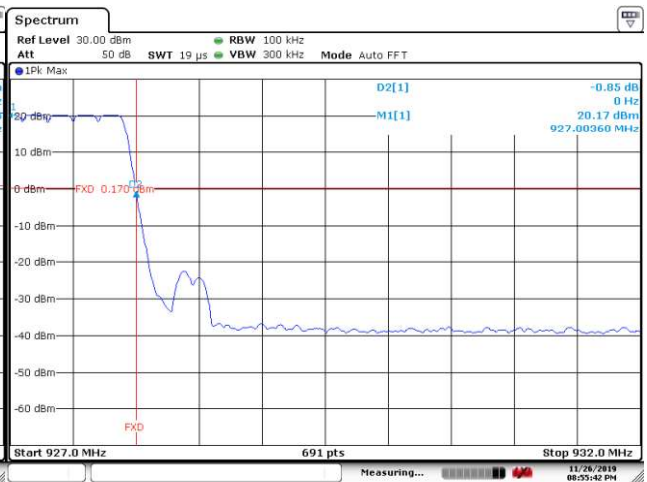
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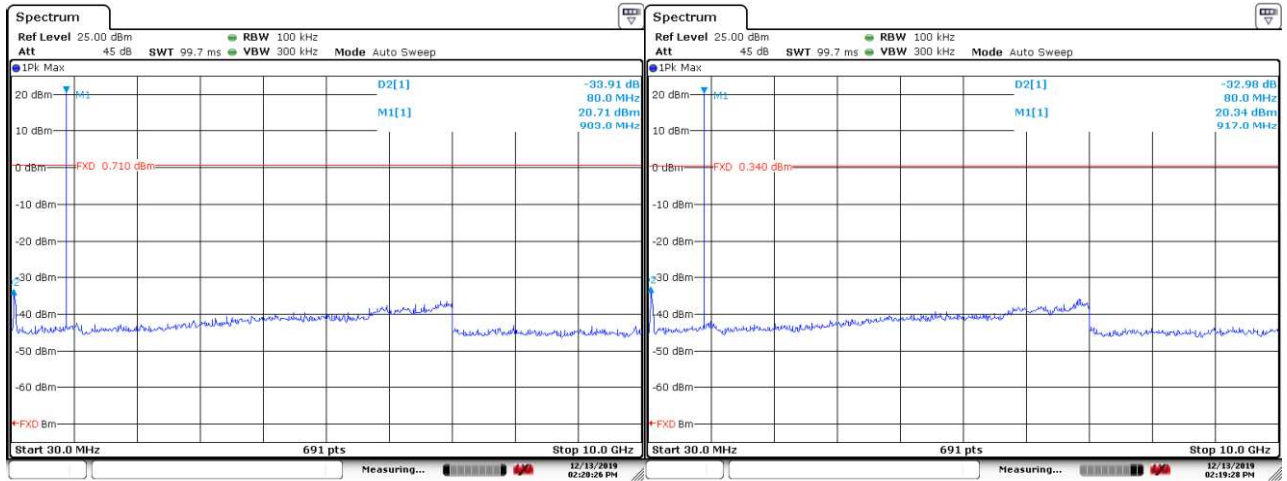
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Date: 26. NOV. 2019 20:52:40

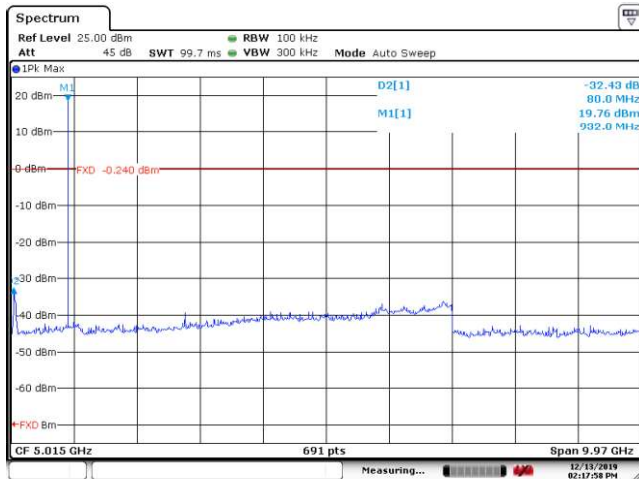


Date: 26. NOV. 2019 20:55:42

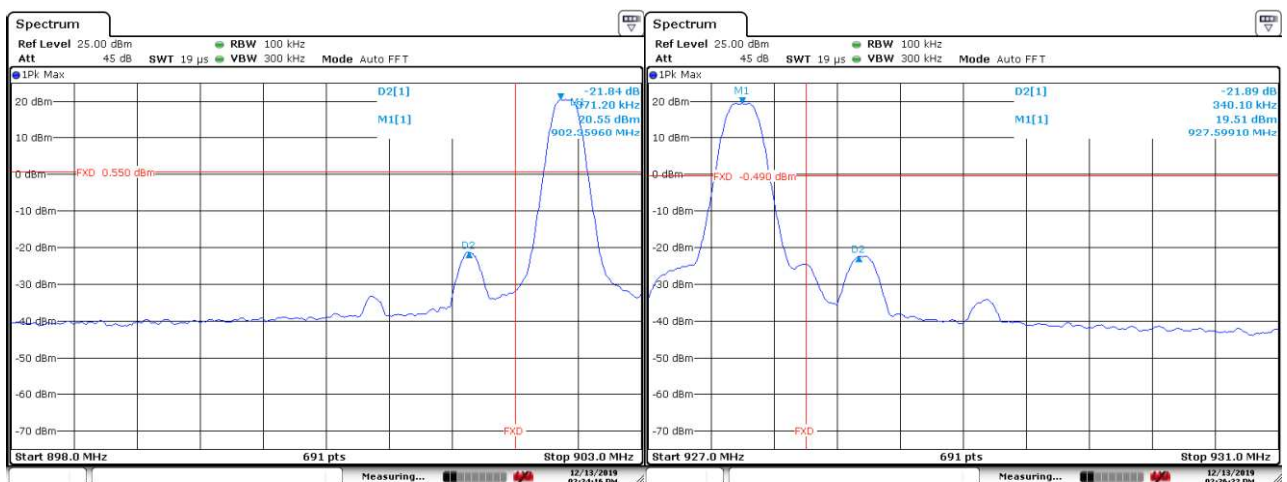
**8. FSK 150Kbps FHSS, Conducted Spurious Emission and Band edge, 902.4MHz~927.6MHz**
**Conducted Spurious Emission**


Date: 13. DEC. 2019 14:20:27

Date: 13. DEC. 2019 14:19:28

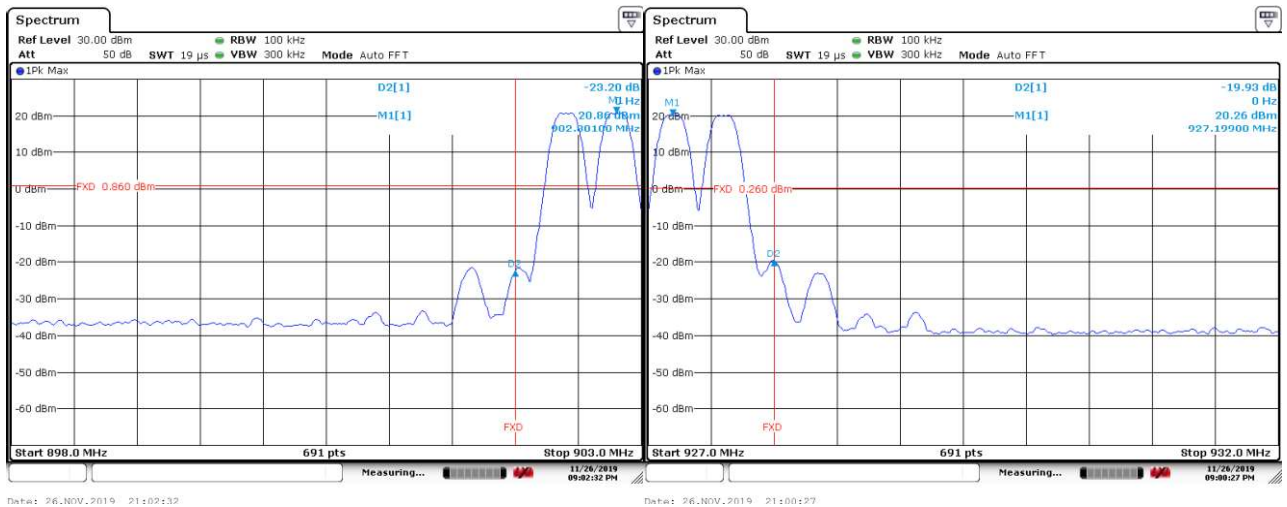


Date: 13. DEC. 2019 14:17:58

**Band edge**


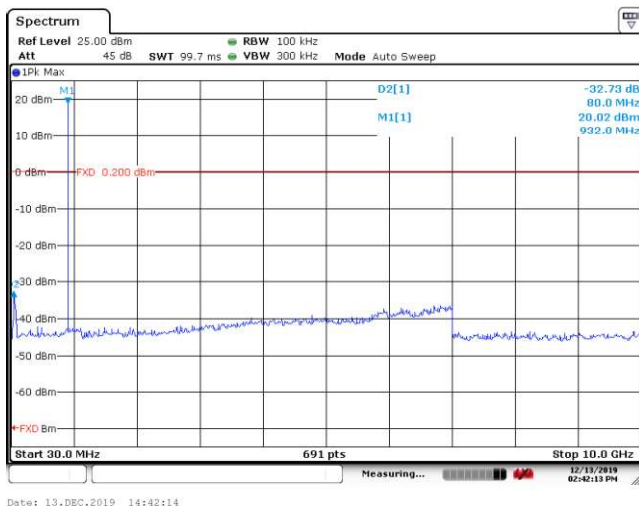
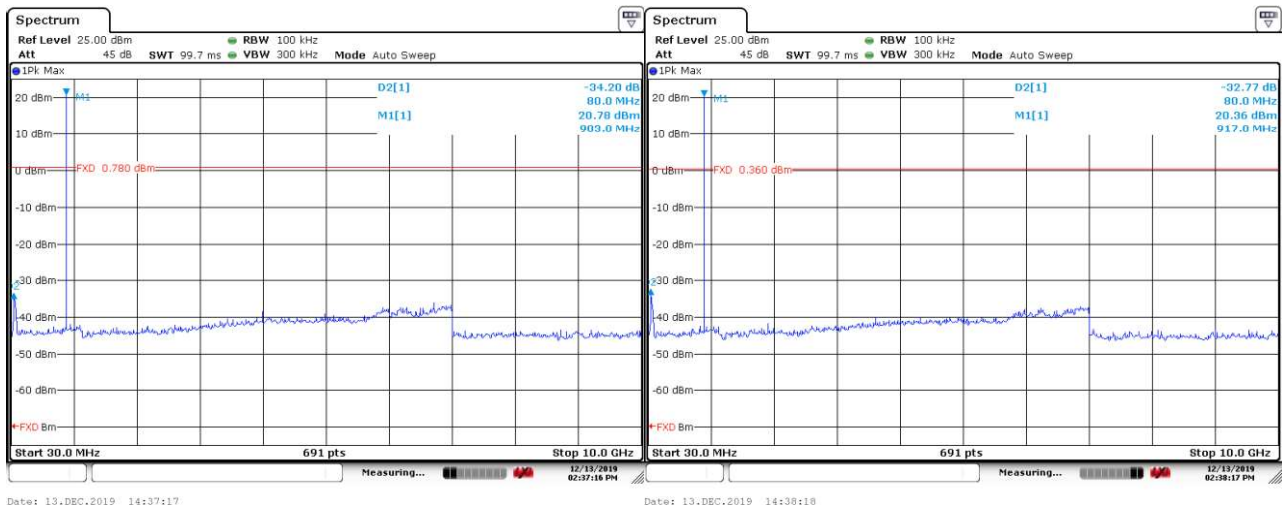
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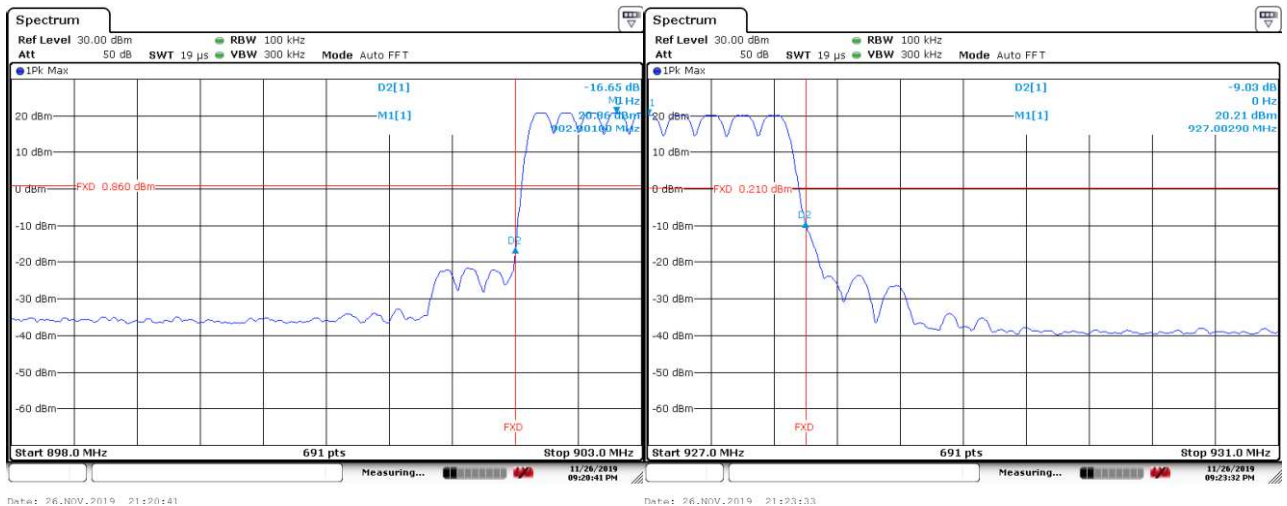
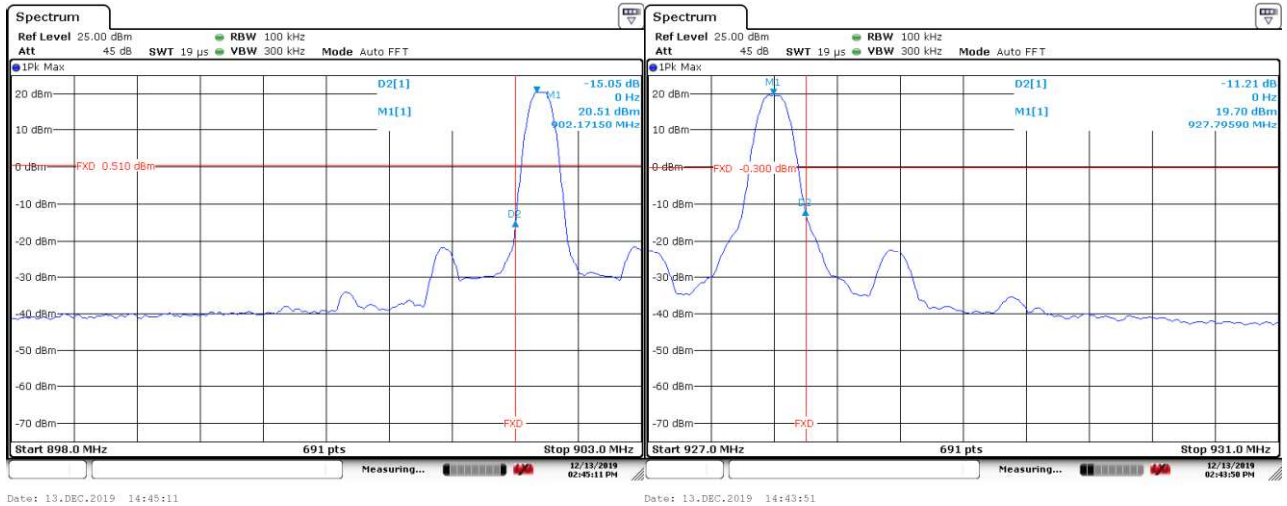
Date: 13. DEC. 2019 14:26:22



### 9. FSK 50Kbps FHSS, Conducted Spurious Emission and Band edge, 902.2MHz~927.8MHz

#### Conducted Spurious Emission



**Band edge**

**10. FSK 5Kbps FHSS, Conducted Spurious Emission and Band edge, 902.2MHz~927.8MHz**
**Conducted Spurious Emission**
