



30MHz~1GHz



1GHz~25GHz



CH: 2441MHz





30MHz~1GHz



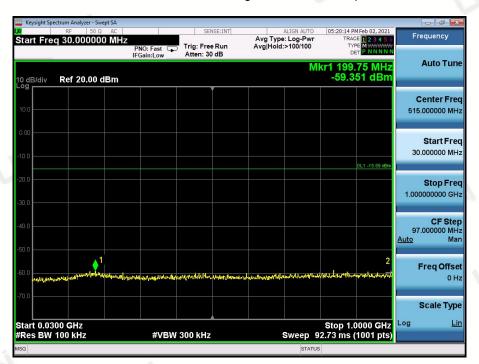




1GHz~25GHz







30MHz~1GHz



1GHz~25GHz

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# 11. NUMBER OF HOPPING FREQUENCY

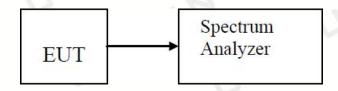
#### 11.1 Test Limit

Frequency hopping systems in the 2400 - 2483.5MHz band shall use at least 15 channels.

## 11.2 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. Set spectrum analyzer start 2400MHz to 2483.5MHz with RBW=1MHz and VBW=3MHz.

#### 11.3 TestSetup



#### 11.4 Test Result

#### **PASS**

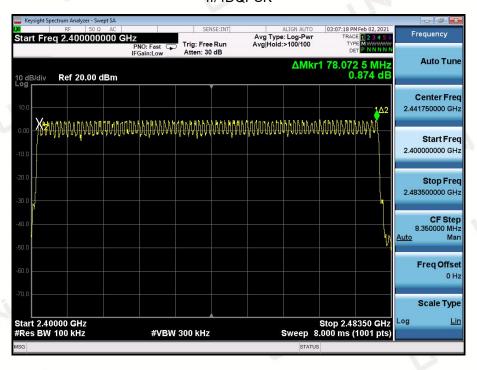
Modulation	Number of Hopping Channel	Limit	Result
GFSK	78	1 10	
π/4DQPSK	78	≥15	Pass
8DPSK	78		

## **GFSK**

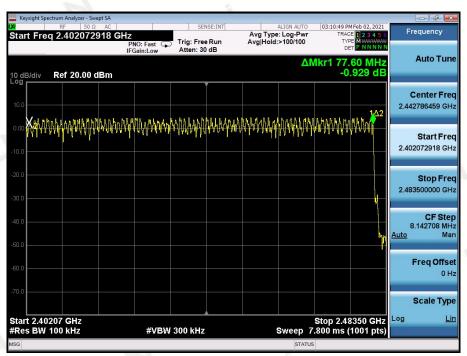




#### π/4DQPSK



#### 8DPSK



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# 12. TIME OF OCCUPANCY(DWELL TIME)

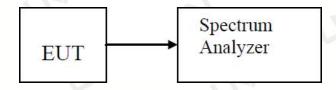
## 12.1 Test Limit

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a pe-riod of 0.4 seconds multiplied by the number of hopping channels employed.

#### 12.2 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. Set center frequency of spectrum analyzer=operating frequency with RBW=1MHz and VBW=3MHz,Span=0Hz.

## 12.3 TestSetup



#### 12.4 Test Result

## **PASS**

Туре	Modulation	СН	Pulse time(ms)	Dwell Time(ms)	Limit(ms)	Result
Dwell Time	GFSK	Low	2.93	312.53	400	Pass
		Mid	2.93	312.53	400	Pass
		High	2.93	312.53	400	Pass

CH: 2402MHz

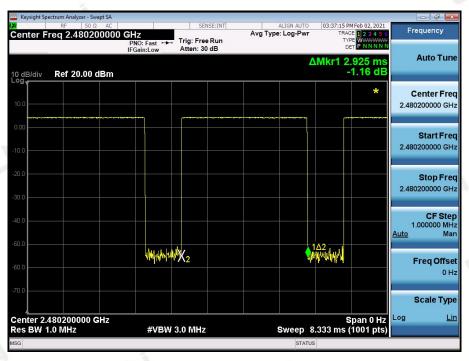






## CH: 2441MHz



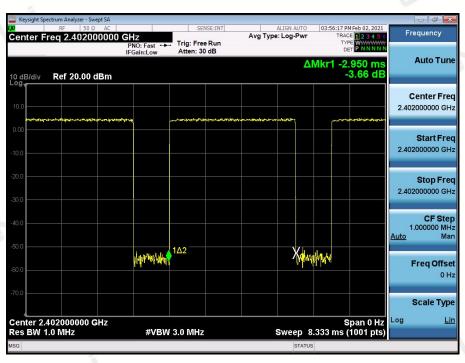




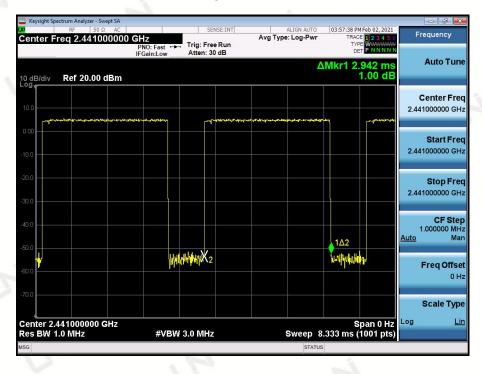
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Туре	Modulation	СН	Pulse time(ms)	Dwell Time(ms)	Limit(ms)	Result
Dwell Time	π/4DQPSK	Low	2.95	314.67	400	Pass
		Mid	2.94	313.60	400	Pass
		High	2.95	314.67	400	Pass

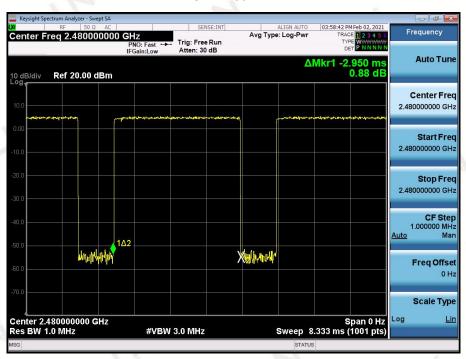
CH: 2402MHz



CH: 2441MHz

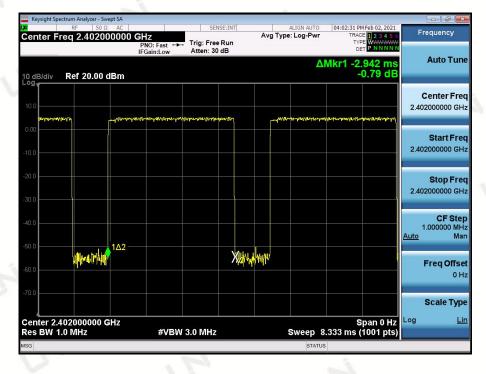


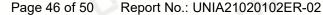




Туре	Modulation	СН	Pulse time(ms)	Dwell Time(ms)	Limit(ms)	Result
Dwell Time	8DPSK	Low	2.94	313.60	400	Pass
		Mid	2.95	314.67	400	Pass
		High	2.94	313.60	400	Pass

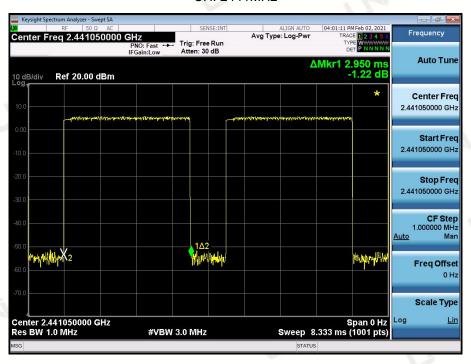
CH: 2402MHz

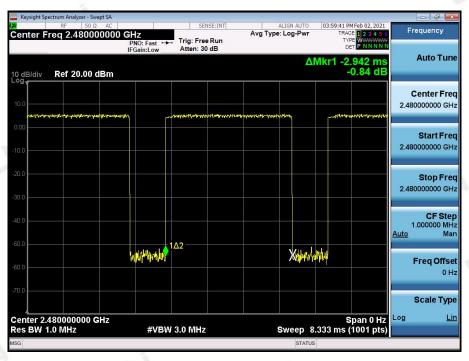






## CH: 2441MHz







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#### PSEUDORANDOM FREQUENCY HPPPING SEQUENCE

## For 47 CFR Part 15C section 15.247 (a)(1) requirement

Frequency hopping systems shall have hopping channel carrier fre-quencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hop-ping channel, whichever is greater. Al-ternatively, frequency hopping systems operating in the 2400 – 2483.5 MHz band may have hopping channel carrier fre-quencies

that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop

to chan-nel frequencies that are selected at the system hopping rate from a pseudo ran-domly ordered list of hopping fre-quencies. Each frequency must be used equally on the average by each trans-mitter. The system receivers shall have input bandwidths that match the hop-ping channel bandwidths of their cor-responding transmitters and shall shift frequencies in synchronization with the transmitted signals.

## TEUT Pseudorandom Frequency Hopping Sequence Requirement

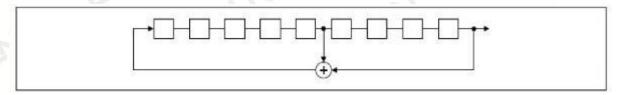
The pseudorandom frequency hopping sequence may be generated in a nice-stage shift register whose 5<sup>th</sup> and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the frist stage. The sequence begins with the frist one of 9 consecutive ones, for example: the shift register

initialized with nine ones.

Number of shift register stages:9

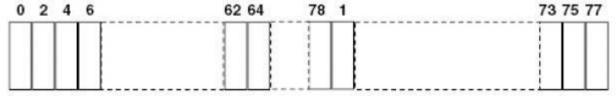
Length of pseudo-random sequence:29-1=511 bits

Longest sequence of zeros:8(non-inverted signal)



# Linear Feedback Shift Register for Generation of the PRBS sequence

An explame of pseudorandom frequency hopping sequence as follows:



Each frequency used equally one the average by each transmitter.

The system receiver have input bandwidths that match the hopping channel bandwidths of their corresponding transmitter and shift frequencies in synchronization with the transmitted signals.





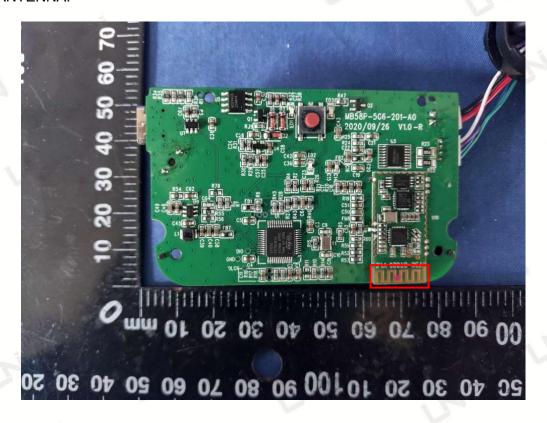
## Standard Applicable:

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed toensure that no antenna other than that furnished by the responsible party shall be used with the device.

## Antenna Connected Construction

The antenna used in this product is an Internal Antenna, The directional gains of antenna used for transmitting is 0dBi.

## BT ANTENNA:







# 15. PHOTOGRAPH OF TEST



RadiatedEmission (Below 1G)



Radiated Emission (Above 1G)









**Conducted Emission** 

\*\*\*End of Report\*\*\*