
$30 \mathrm{MHz} \sim 1 \mathrm{GHz}$

$1 \mathrm{GHz} \sim 25 \mathrm{GHz}$

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CH： 2441 MHz


$30 \mathrm{MHz} \sim 1 \mathrm{GHz}$

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1GHz～25GHz
$\mathrm{CH}: 2480 \mathrm{MHz}$


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$30 \mathrm{MHz} \sim 1 \mathrm{GHz}$

$1 \mathrm{GHz} \sim 25 \mathrm{GHz}$

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## 11．NUMBER OF HOPPING FREQUENCY

## 11．1 Test Limit

Frequency hopping systems in the $2400-2483.5 \mathrm{MHz}$ 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 2400 MHz to 2483.5 MHz with $\mathrm{RBW}=1 \mathrm{MHz}$ and VBW $=3 \mathrm{MHz}$ ．

11．3 TestSetup


11．4 Test Result
PASS

| Modulation | Number of Hopping <br> Channel | Limit | Result |
| :---: | :---: | :---: | :---: |
| GFSK | 78 | $\geq 15$ | Pass |
| m／4DQPSK | 78 |  |  |
| 8DPSK | 78 |  |  |

GFSK


## п／4DQPSK



8DPSK


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 $\quad \mathrm{RBW}=1 \mathrm{MHz}$ and VBW $=3 \mathrm{MHz}$ ，Span $=0 \mathrm{~Hz}$ ．

## 12．3 TestSetup



## 12．4 Test Result

## PASS

| Type | Modulation | CH | Pulse <br> time（ms） | Dwell <br> Time（ms） | Limit（ms） | Result |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dwell <br> 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： 2441 MHz

$\mathrm{CH}: 2480 \mathrm{MHz}$


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| Type | Modulation | CH | Pulse <br> time（ms） | Dwell <br> Time（ms） | Limit（ms） | Result |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dwell <br> Time | T／4DQPSKK | Low | 2.95 | 314.67 | 400 | Pass |
|  |  | 2.94 | 313.60 | 400 | Pass |  |
|  | High | 2.95 | 314.67 | 400 | Pass |  |

CH：2402MHz

$\mathrm{CH}: 2441 \mathrm{MHz}$


CH： 2480 MHz


| Type | Modulation | CH | Pulse <br> time $(\mathrm{ms})$ | Dwell <br> Time $(\mathrm{ms})$ | Limit（ms） | Result |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dwell <br> Time | 8DPSK | Low | 2.94 | 313.60 | 400 | Pass |
|  |  | Mid | 2.95 | 314.67 | 400 | Pass |
|  | High | 2.94 | 313.60 | 400 | Pass |  |

$\mathrm{CH}: 2402 \mathrm{MHz}$


CH： 2441 MHz

$\mathrm{CH}: 2480 \mathrm{MHz}$


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## 13．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 $2400-2483.5 \mathrm{MHz}$ 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 shal I 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 $5^{\text {th }}$ 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 is 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．

## 14．ANTENNA REQUIREMENT

## 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 0 dBi ．

## BT ANTENNA：



15．PHOTOGRAPH OF TEST

RadiatedEmission
（Below 1G）


## Conducted Emission


＊＊＊End of Report＊＊＊

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