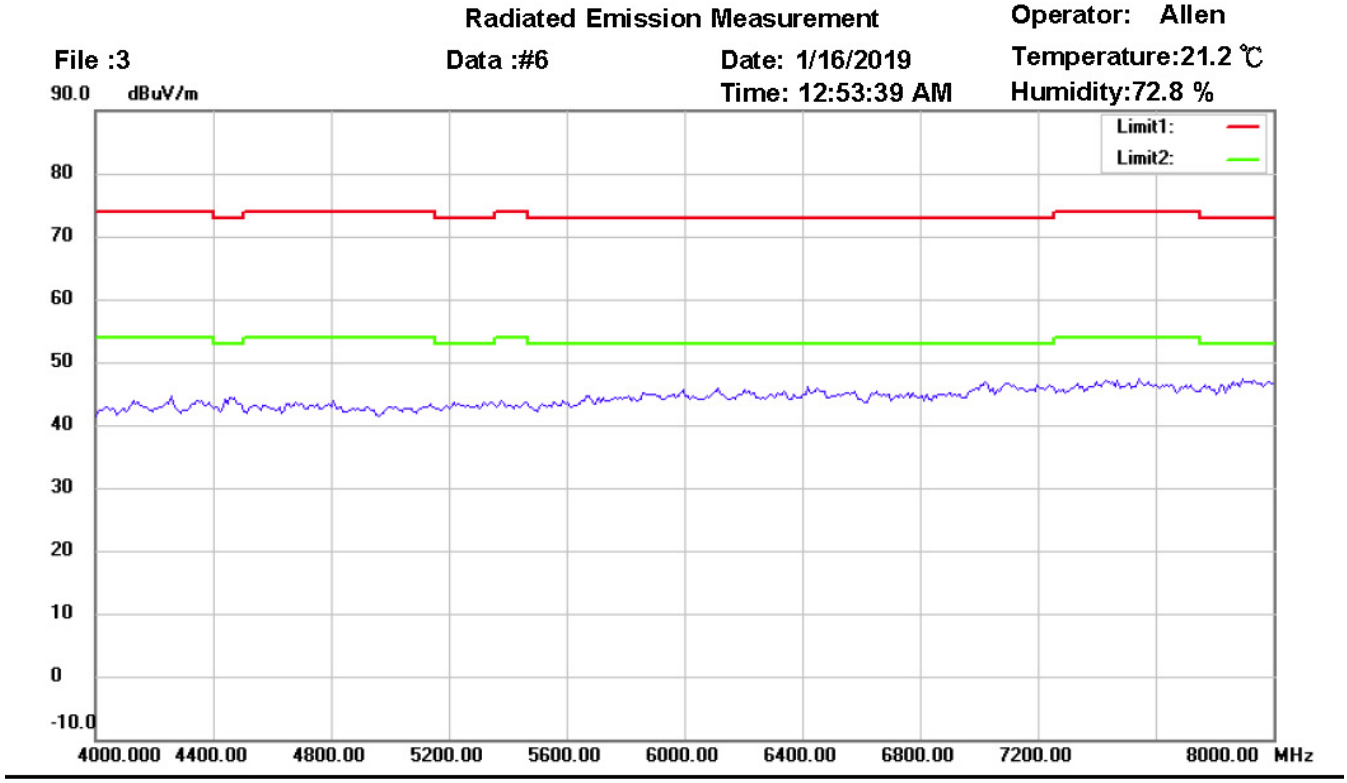
Registration number: W6M21810-18505-C-1
FCC ID: XVBM2F02
IC: 9368A-M2F02




Site : Chamber
Condition : FCC 15.231(433MHz) 4000-8000(PK)<e>
EUT : W6M21810-18505
M/N:
Test Mode : TX 433.92MHz
Note : FSK

Polarization: Vertical
Power : 3 Vd.c.
Distance: 3m

| Mk. | Frequency (MHz) | Reading (dBuV) | Detector | Corr. factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|

Note
1. Correction Factor = Antenna factor + Cable loss - Preamplifier
2. The formula of measured value as: Test Result = Reading + Correction Factor
3. Detector function in the form : PK = Peak, QP = Quasi Peak, AV = Average
4. All not in the table noted test results are more than 20 dB below the relevant limits.

All other not noted test plots do not contain significant test results in relation to the limits
Test results: The unit meet the FCC requirements.

Test equipment used: ETSTW-RE 004, ETSTW-RE 030, ETSTW-RE 062, ETSTW-RE 142, ETSTW-RE 147

## 3.6 Channel Bandwidth

Measurement of Necessary Bandwidth (BN)

ASK

| Used frequency | Bandwidth | Limit |
|---|---|---|
| 433.92 MHz | 59.11823647 kHz | 1.0848 MHz |

FSK

| Used frequency | Bandwidth | Limit |
|---|---|---|
| 433.92 MHz | 133.26653307 kHz | 1.0848 MHz |

Explanation: The bandwidth fulfills the requirements of FCC § 15.231, see attached diagrams.

Limits:

The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

Test equipment used: ETSTW-RE 004

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## 3.7 Antenna requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

Explanation: This Incorporated Antenna is integral antenna which passes antenna requirement.

| | | |
|---|---|---|
| The equipment meets the requirements | yes<br>☒ | no<br>☐ |

## 3.8 Duty Cycle

The correction factor, based on the channel dwell time in a 100ms period, may be mathematically applied to a measurement made with an average detector, to further reduce the measured value.

Average Reading = Peak Reading (dBuV/m) + Duty Cycle Correction

Duty Cycle Correction = 20 log (Cycle)
In order to determine the Duty Cycle, the EUT is measured as:

ASK

| Testing Mode | T period (ms) | T on (ms) | Duty Cycle | Duty Cycle Correction 20*log(Duty Cycle) |
|---|---|---|---|---|
| Transmitting mode | 100 | 16.98718 | 0.16987179 | -15.40 |

FSK

| Testing Mode | T period (ms) | T on (ms) | Duty Cycle | Duty Cycle Correction 20*log(Duty Cycle) |
|---|---|---|---|---|
| Transmitting mode | 100 | 19.55128 | 0.19551282 | -14.18 |

Test equipment used: ETSTW-RE 004

## 3.9 Conducted Measurement at (AC) Power Line

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the table bellows with this provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals.

This measurement was transact first with instrumentation using an average and peak detector and a 10 kHz bandwidth. If the peak detector achieves a calculated level, the measurement is repeated by an instrumentation using a quasi-peak detector.

| Frequency | Level | |
|---|---|---|
| | quasi-peak (dBμV/m) | average (dBμV/m) |
| -- kHz | -- | -- |

Note

1. The formula of measured value as: Test Result = Reading + Correction Factor
2. The Correction Factor = Cable Loss + LISN Insertion Loss + Pulse Limit Loss
3. Detector function in the form : PK = Peak, QP = Quasi Peak, AV = Average
4. All not in the table noted test results are more than 20 dB below the relevant limits.
5. Up Line: QP Limit Line, Down Line: Ave Limit Line.
6. This test is not required because the EUT is battery-used.

**Limits:**

| Frequency of Emission (MHz) | Conducted Limit (dBuV) | |
|---|---|---|
| | Quasi Peak | Average |
| 0.15-0.5 | 66 to 56 | 56 to 46 |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |

Test equipment used: ETSTW-CE 001, ETSTW-CE 003, ETSTW-CE 016, ETSTW-RE 045

## 3.10 Equipment Modification

No modification was made by Worldwide Testing Services (Taiwan) Co., Ltd..

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# Appendix

## A. Measurement diagrams

1. Active Time

2 . Bandwidth

## B. Photos

1. External Photos

2. Internal Photos

3. Set Up Photos

Registration number: W6M21810-18505-C-1
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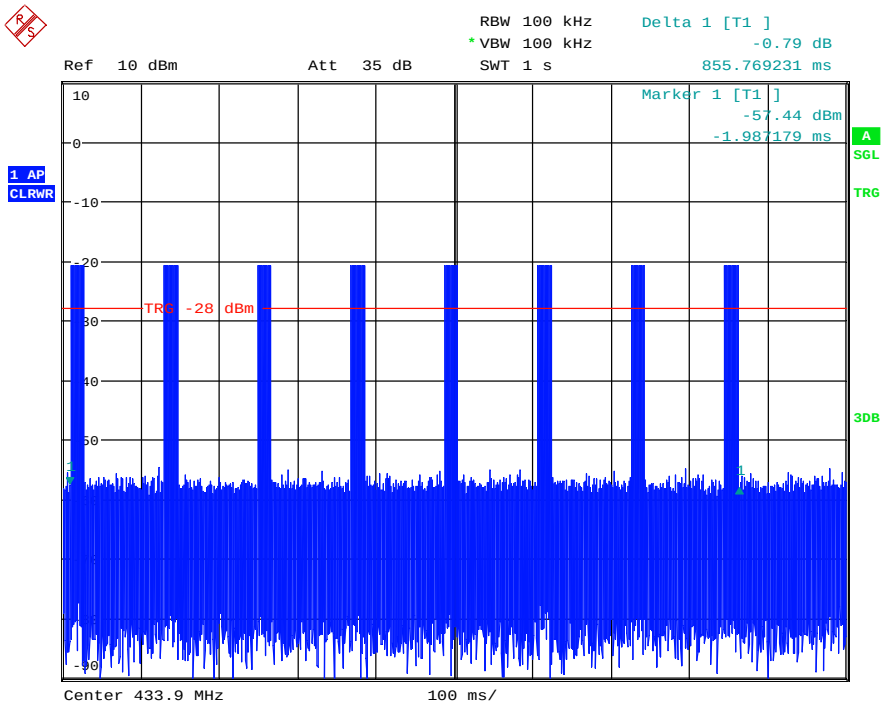
# Active Time

## ASK

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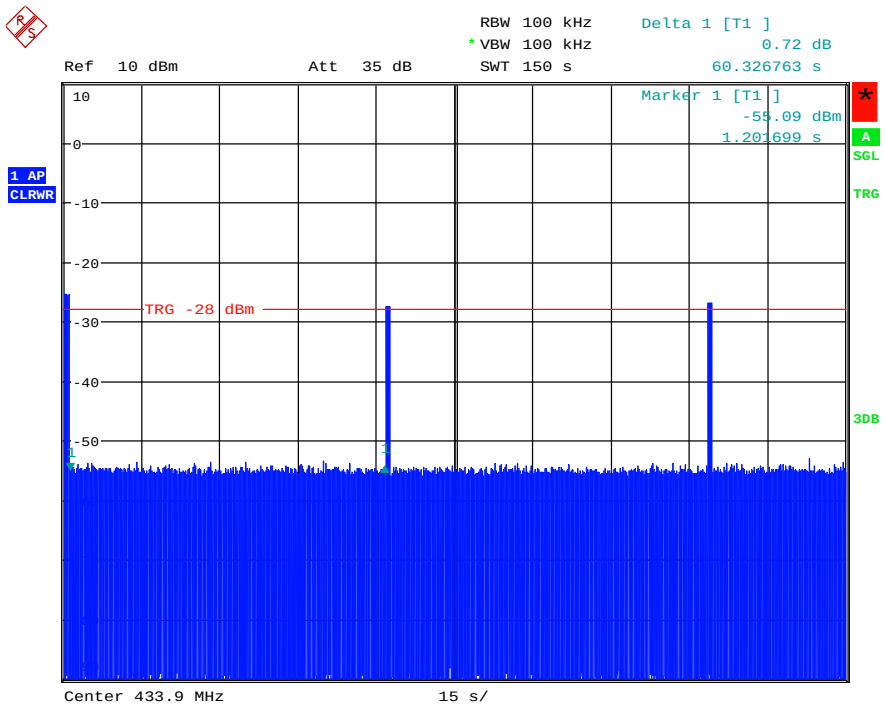


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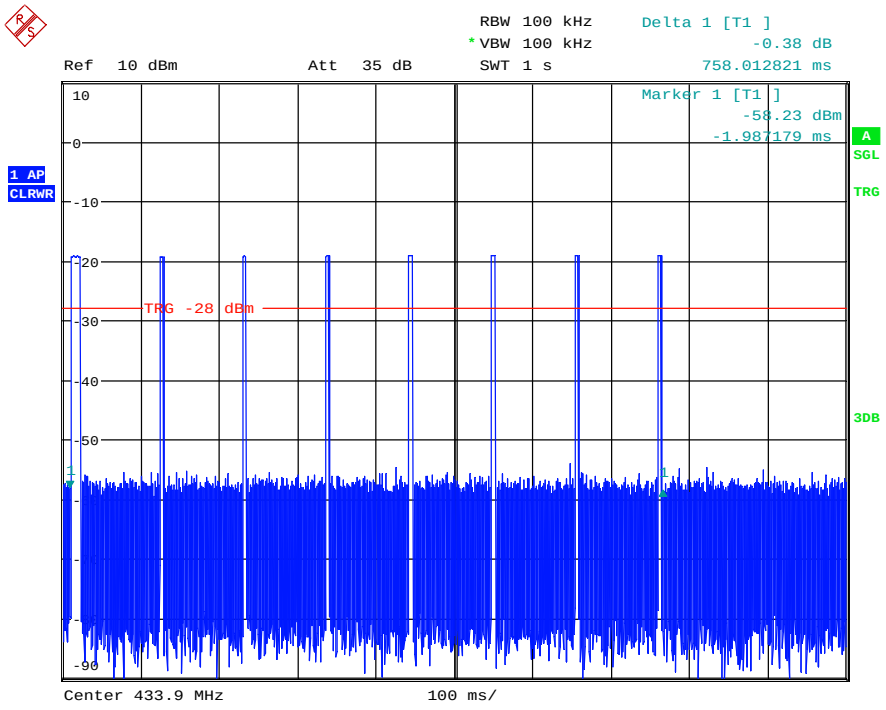
FCC ID: XVBM2F02
IC: 9368A-M2F02

FSK

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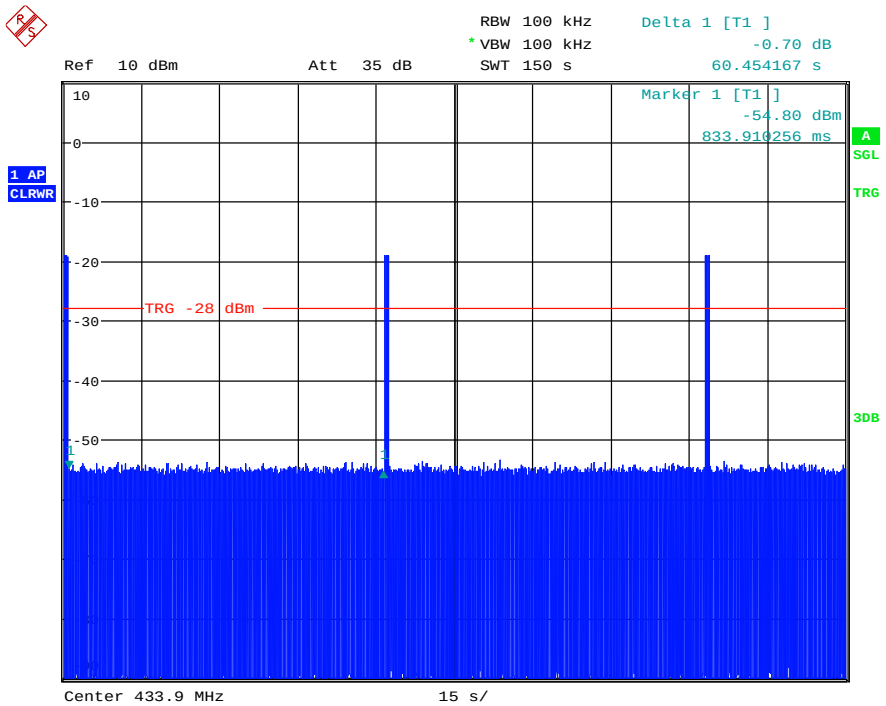
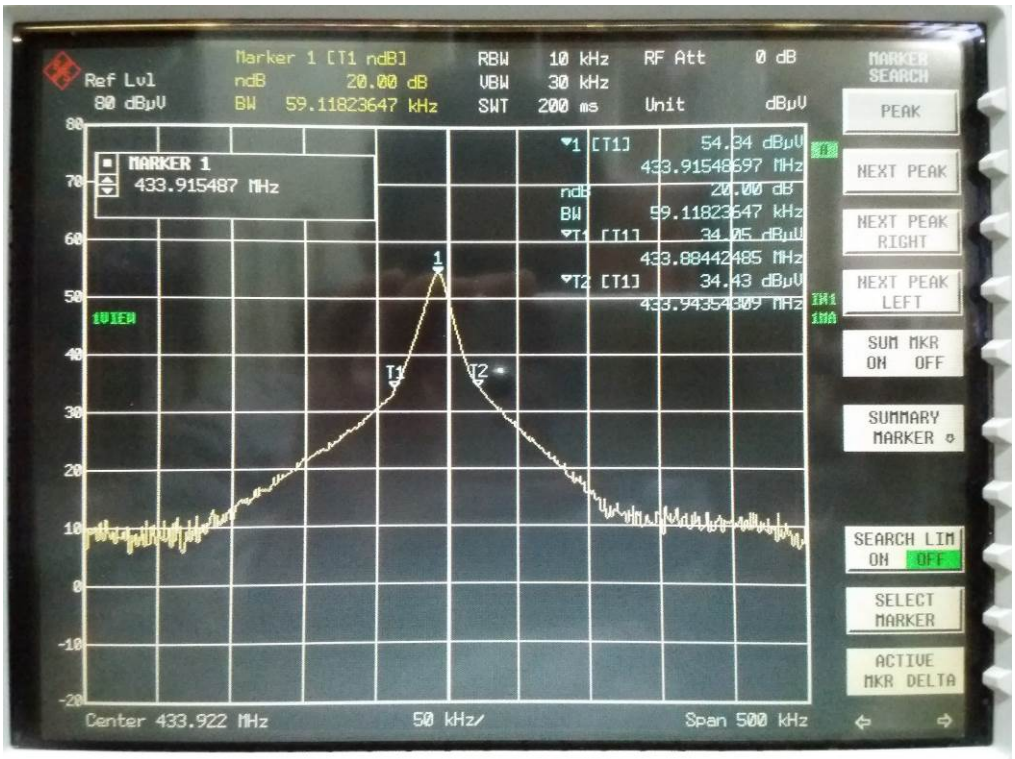



Date: 14.JAN.2019 17:20:35

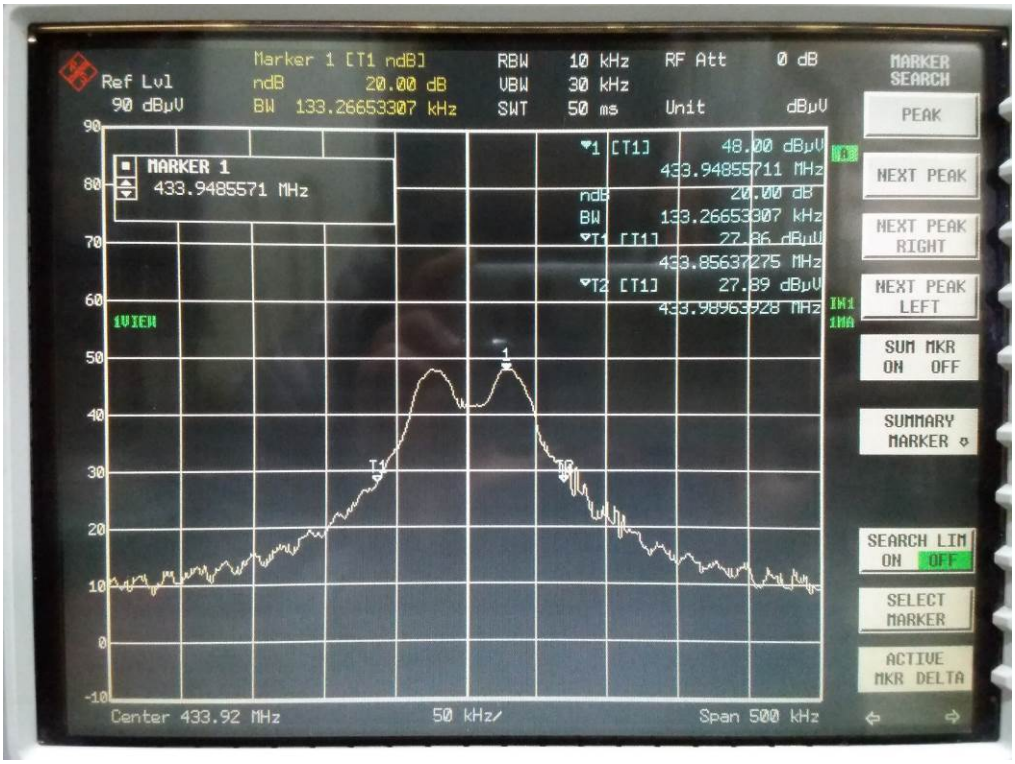
Registration number: W6M21810-18505-C-1
FCC ID: XVBM2F02
IC: 9368A-M2F02

# Bandwidth

## ASK



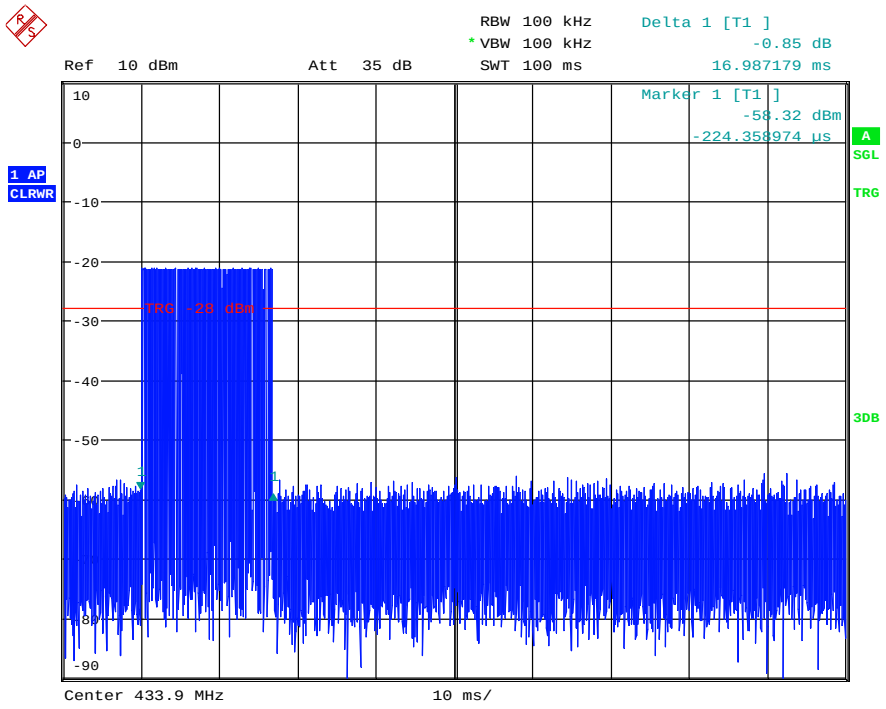

## FSK



Registration number: W6M21810-18505-C-1
FCC ID: XVBM2F02
IC: 9368A-M2F02

# Duty Cycle

## ASK

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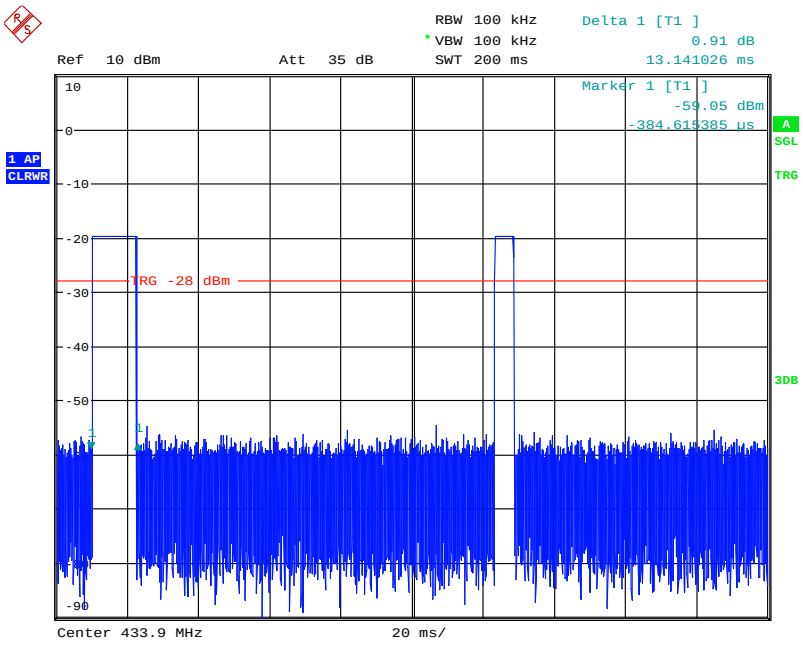
## FSK

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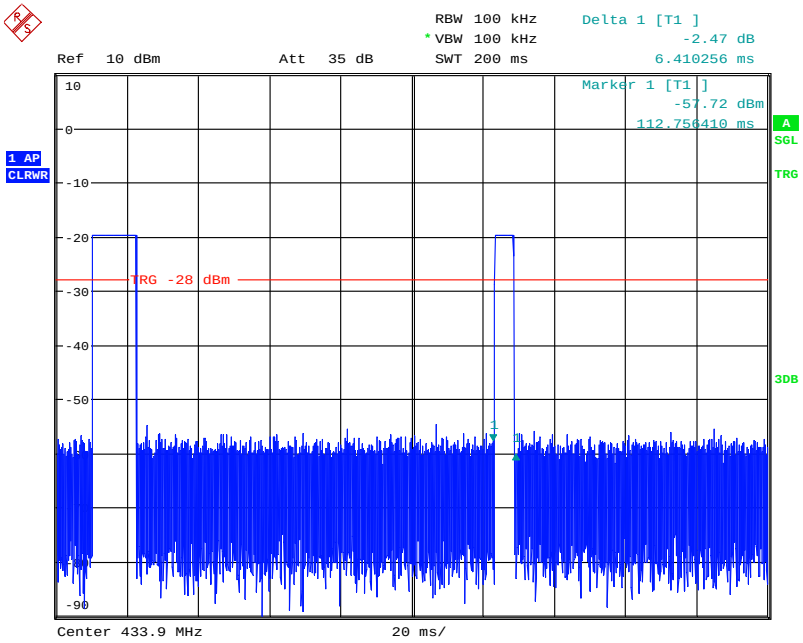
Registration number: W6M21810-18505-C-1
FCC ID: XVBM2F02
IC: 9368A-M2F02




Date: 14.JAN.2019 17:16:45