# FCC Test Report

Report No.: AGC02787260302FR01

| | | |
|---|---|---|
| **FCC ID** | : | 2ABYN105 |
| **APPLICATION PURPOSE** | : | Original Equipment |
| **PRODUCT DESIGNATION** | : | Hub Base |
| **BRAND NAME** | : | Godox |
| **MODEL NAME** | : | SkyTalk-H |
| **APPLICANT** | : | GODOX PHOTO EQUIPMENT CO.,LTD |
| **DATE OF ISSUE** | : | 24 Apr. 2026 |
| **STANDARD(S)** | : | FCC Part 15 Subpart D §15.323 |
| **REPORT VERSION** | : | V1.0 |

Attestation of Global Compliance (Shenzhen) Co., Ltd

## Report Revise Record

| Report Version | Revise Time | Issued Date | Valid Version | Notes |
|---|---|---|---|---|
| V1.0 | / | 24 Apr. 2026 | Valid | Initial Release |

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## 1. General Information

| | |
|---|---|
| Applicant | GODOX PHOTO EQUIPMENT CO.,LTD |
| Address | 1st to 4th Floor, Building 2/1st to 4th Floor, Building 4, Yaochuan Industrial Zone, Tangwei Community, Fuhai Street, Baoan District, Shenzhen, 518103 China |
| Manufacturer | GODOX Photo Equipment Co.,Ltd. |
| Address | 4th Floor of Building 1, 1st to 4th Floor of Building 2, 4th Floor of Building 3,1st to 4th Floor of Building 4, Yaochuan Industrial Zone, Tangwei Community, Fuhai Street, Bao'an District, Shenzhen 518103,China |
| Factory | GODOX Photo Equipment Co.,Ltd. |
| Address | 4th Floor of Building 1, 1st to 4th Floor of Building 2, 4th Floor of Building 3,1st to 4th Floor of Building 4, Yaochuan Industrial Zone, Tangwei Community, Fuhai Street, Bao'an District, Shenzhen 518103,China |
| Product Designation | Hub Base |
| Brand Name | Godox |
| Test Model | SkyTalk-H |
| Series Model | N/A |
| Difference Description | N/A |
| Date of receipt of test item | 10 Mar. 2026 |
| Date of Test | 16 Mar. 2026~24 Apr. 2026 |
| Deviation from Standard | No any deviation from the test method |
| Condition of Test Sample | Normal |
| Test Result | Pass |
| Test Report Form No | AGCER-FCC-DECT-V1 |

Note: The test results of this report relate only to the tested sample identified in this report.

| | | |
|---|---|---|
| Prepared By | Bibo Zhang<br>(Project Engineer) | 24 Apr. 2026 |
| Reviewed By | Jack Gui<br>(Reviewer) | 24 Apr. 2026 |
| Approved By | Angela Li<br>(Authorized Officer) | 24 Apr. 2026 |

# 2. Product Information

## 2.1 Product Technical Description

| | |
|---|---|
| Equipment Type | Fixed Part (FP) |
| Frequency Band | 1920 MHz to 1930 MHz |
| Operation Frequency Range | 1921.536 MHz to 1928.448 MHz |
| Hardware Version | 20230810H51 |
| Software Version | V1.0 |
| Type of Modulation | Digital (Gaussian Frequency Shift Keying) |
| Modulation Technique | GFSK |
| Number of channels | 5 RF Channels, 5 × 12 = 60 TDMA Duplex Channels |
| Channel Separation | 1728 kHz |
| Emission Designator | F7D |
| Maximum Transmitter Power | 19.78 dBm |
| Antenna Designation | Rod |
| Antenna Gain | Single-antenna data: 3.43dBi<br>Whole machine test data:1.30dBi |
| Power Supply | Input: DC5V/DC9V 2A V-mount Battery:14.4V or 26V |
| Test Sample Number | 260310164 |

## 2.2 Test Frequency List

| Frequency Band | Channel Number | Frequency |
|---|---|---|
| 1920~1930MHz | 0 | 1928.448 MHz |
| | 1 | 1926.720 MHz |
| | 2 | 1924.992 MHz |
| | 3 | 1923.264 MHz |
| | 4 | 1921.536 MHz |
| Note: All channels operation in the 1920-1930 MHz band, meeting the requirement of FCC 47 CFR Part 15.303 | | |

### 2.3 Related Submittal(S) / Grant (S)

This submittal(s) (test report) is intended for FCC ID: 2ABYN105, filing to comply with Part 2, Part 15 of the Federal Communication Commission rules.

### 2.4 Test Methodology

The tests were performed according to following standards:

| No. | Identity | Document Title |
|---|---|---|
| 1 | FCC 47 CFR Part 2 | Frequency allocations and radio treaty matters; general rules and regulations |
| 2 | FCC 47 CFR Part 15 | Radio Frequency Devices |
| 3 | ANSI C63.4-2014 | American National Standard for Methods of Measurement of Radio- Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz |
| 4 | ANSI C63.10-2013 | American National Standard for Testing Unlicensed Wireless Devices |
| 5 | ANSI C63.17-2013 | American National Standard Methods of Measurement of the Electromagnetic and Operational Compatibility of Unlicensed Personal Communications Services (UPCS) Devices |

### 2.5 Automatic Discontinuation of Transmission

Does the EUT transmit Control and Signaling Information?

| | |
|---|---|
| ☒ Yes | ☐ No |

Type of EUT:

| | |
|---|---|
| ☐ Initiating Device | ☒ Responding Device |

The following tests simulate the reaction of the EUT in case of either absence of information to transmit or operational failure after a connection with the companion device is established.

| No. | Test | EUT Reaction | Results |
|---|---|---|---|
| 1 | Power removed: EUT | A | Pass |
| 2 | Switch Off: EUT | N/A | Pass |
| 3 | Hook-On: EUT | N/A | Pass |
| 4 | Power Removed: Companion Device | B | Pass |
| 5 | Switch Off: Companion Device | B | Pass |
| 6 | Hook-On: Companion Device | B | Pass |

Note:
A - Connection breakdown, Cease of all transmissions
B - Connection breakdown, EUT transmits control and signaling information
C - Connection breakdown, Companion Device transmits control and signaling information
N/A : Not Applicable (EUT does not have On/Off switch and cannot perform Hook-On)

### 2.6 Digital Modulation Techniques

The test sample is an isochronous digital modulated device that operates in 1920-1930 MHz band. This device bases on DECT technology described in European Standards EN 300 175-2 and EN 300 175-3, now operating in frequency channels mentioned above.

The operating modes are MC/TDMA/TDD (Multi carrier / Time Division Multiple Access / Time Division Duplex) using Digital GFSK (Gaussian Frequency Shift Keying) modulation.

For further details see operational description provided by manufacturer.

### 2.7 Special Accessories

Not available for this EUT intended for grant.

### 2.8 Equipment Modifications

Not available for this EUT intended for grant.

### 2.9 Antenna Requirement

| Standard Requirement |
| --- |
| **15.203 requirement:**<br>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, 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. |
| **EUT Antenna:** |
| The prototype uses an antenna with a non-standard interface, and users are not allowed to replace it at will. The gain of the antenna is 3.43dBi. |

# 3. Test Environment

## 3.1 Address of The Test Laboratory

Laboratory: Attestation of Global Compliance (Shenzhen) Co., Ltd.

Address: 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

## 3.2 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

**CNAS-Lab Code: L5488**

Attestation of Global Compliance (Shenzhen) Co., Ltd. has been assessed and proved to follow CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories.)

**A2LA-Lab Cert. No.: 5054.02**

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to follow ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

**FCC-Registration No.: 975832**

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files with Registration 975832.

**IC-Registration No.: 24842(CAB identifier: CN0063)**

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the Certification and Engineering Bureau of Industry Canada. The acceptance letter from the IC is maintained in our files with Registration 24842.

### 3.3 Environmental Conditions

| | Normal Conditions | Extreme Conditions |
|---|---|---|
| Temperature range (℃) | 15 - 35 | 0 - 40 |
| Relative humidity range | 20 % - 75 % | 20 % - 75 % |
| Pressure range (kPa) | 86 - 106 | 86 - 106 |
| Power supply | DC 14.4V | LV DC 12.96V/HV DC 15.84V |
| Note: The Extreme Temperature and Extreme Voltages declared by the manufacturer. | | |

### 3.4 Measurement Uncertainty

The reported uncertainty of measurement y ±U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

| Item | Measurement Uncertainty |
|---|---|
| Uncertainty of Conducted Emission for AC Port | $U_c$ = ±2.9 dB |
| Uncertainty of Radiated Emission below 1GHz | $U_c$ = ±3.9 dB |
| Uncertainty of Radiated Emission above 1GHz | $U_c$ = ±4.9 dB |
| Uncertainty of total RF power, conducted | $U_c$ = ±0.8 dB |
| Uncertainty of RF power density, conducted | $U_c$ = ±2.6 dB |
| Uncertainty of spurious emissions, conducted | $U_c$ = ±2 % |
| Uncertainty of Occupied Channel Bandwidth | $U_c$ = ±2 % |

### 3.5 List of Equipment Used

| ● RF Conducted Test System | | | | | | | |
|---|---|---|---|---|---|---|---|
| Used | Equipment No. | Test Equipment | Manufacturer | Model No. | Serial No. | Last Cal. Date (YY-MM-DD) | Next Cal. Date (YY-MM-DD) |
| ☒ | AGC-ER-E036 | Spectrum Analyzer | Agilent | N9020A | MY49100060 | 2025-05-08 | 2026-05-07 |
| ☒ | AGC-ER-E075 | Small Environmental Tester | SH-242 | ESPEC | 93008290 | 2024-07-24 | 2026-07-23 |
| ☒ | AGC-ER-E037 | Signal Generator | Agilent | N5182A | MY50140530 | 2025-05-08 | 2026-05-07 |
| ☒ | AGC-ER-E033 | RF Test Plat (DECT) | RTX | RTX-2012-HS-RF | N/A | 2024-07-24 | 2026-07-23 |
| ☒ | -- | RF Connection Cable | N/A | 1# | N/A | Each time | N/A |
| ☒ | -- | RF Connection Cable | N/A | 2# | N/A | Each time | N/A |

| ● Radiated Spurious Emission | | | | | | | |
|---|---|---|---|---|---|---|---|
| Used | Equipment No. | Test Equipment | Manufacturer | Model No. | Serial No. | Last Cal. Date (YY-MM-DD) | Next Cal. Date (YY-MM-DD) |
| ☒ | AGC-EM-E116 | EMI Test Receiver | R&S | ESCI | 100034 | 2025-05-08 | 2026-05-07 |
| ☒ | AGC-EM-E061 | Spectrum Analyzer | Agilent | N9010A | MY53470504 | 2025-05-08 | 2026-05-07 |
| ☒ | AGC-EM-E086 | Loop Antenna | ZHINAN | ZN30900C | 18051 | 2026-01-14 | 2028-01-13 |
| ☒ | AGC-EM-E005 | Wideband Antenna | SCHWARZBECK | VULB9168 | VULB9168-494 | 2025-03-24 | 2027-03-23 |
| ☒ | AGC-EM-E102 | Broadband Ridged Horn Antenna | ETS | 3117 | 00154520 | 2025-05-18 | 2026-05-17 |
| ☒ | AGC-EM-E146 | Pre-amplifier | ETS | 3117-PA | 00246148 | 2024-07-24 | 2026-07-23 |
| ☒ | AGC-EM-A116 | Band Stop Filter (1850-1950MHz) | MICRO-TRONICS | BRC50720 | N/A | 2025-05-21 | 2026-05-20 |
| ☒ | AGC-EM-A091 | High Pass Filter 2 (1200-18000MHz) | N/A | N/A | N/A | 2025-05-16 | 2026-05-15 |
| ☒ | AGC-EM-A138 | 6dB Attenuator | Eeatsheep | LM-XX-6-5W | N/A | N/A | N/A |
| ☐ | AGC-EM-A139 | 6dB Attenuator | Eeatsheep | LM-XX-6-5W | N/A | N/A | N/A |

| ● AC Power Line Conducted Emission | | | | | | | |
|---|---|---|---|---|---|---|---|
| Used | Equipment No. | Test Equipment | Manufacturer | Model No. | Serial No. | Last Cal. Date (YY-MM-DD) | Next Cal. Date (YY-MM-DD) |
| ☒ | AGC-EM-A171 | Attenuator | Mini-Circuits | UNAT-10A+ | N/A | 2026-01-13 | 2028-01-12 |
| ☒ | AGC-EM-E023 | Artificial Mains Network | R&S | ESH2-Z5 | 100086 | 2025-05-08 | 2026-05-07 |
| ☒ | AGC-EM-E116 | Test Receiver | R&S | ESCI | 100034 | 2025-05-08 | 2026-05-07 |

| ● Test Software | | | | | |
|---|---|---|---|---|---|
| Used | Equipment No. | Test Equipment | Manufacturer | Model No. | Version Information |
| ☒ | AGC-EM-S011 | RSE Test System | Tonscend | $TS^+$ Ver2.1(JS36-RSE) | 4.0.0.0 |
| ☒ | AGC-EM-S003 | RE Test System | FARA | EZ-EMC | V.RA-03A |
| ☒ | AGC-EM-S001 | CE Test System | R&S | ES-K1 | V1.71 |

# 4.System Test Configuration

## 4.1 EUT Configuration

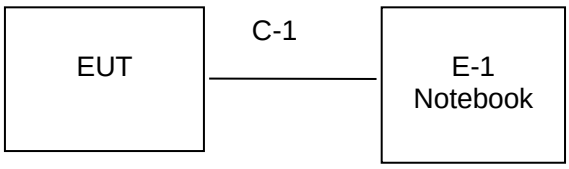
The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

## 4.2 EUT Exercise

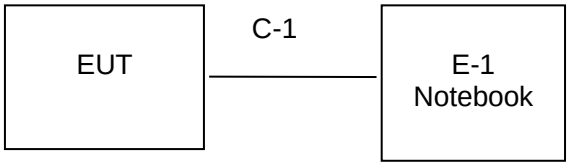
The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

## 4.3 Configuration of Tested System

Radiated Emission Configure:




Conducted Emission Configure:




## 4.4 Equipment Used in Tested System

The following peripheral devices and interface cables were connected during the measurement:

☒ Test Accessories Come From The Manufacturer

| Item | Equipment | Mfr/Brand | Model/Type No. | Note |
|---|---|---|---|---|
| E-1 | Notebook | DELL | Inspiron 3501 | N/A |
| C-1 | USB cable | N/A | N/A | N/A |
| | | | | |
| | | | | |

### 4.5 Summary of Test Results

| No. | FCC Rules | Description of Test | Reference Method | Result |
|---|---|---|---|---|
| 1 | §15.203, §15.317 | Antenna Equipment | Declaration & Visual inspection | Pass |
| 2 | §15.323 (c)(e) | Specific Requirements for Upcs Device | ANSI C63.17-2013 Clause 6.2, 7.3, 7.5, 8.1, 8.2, 8.3, 8.4 and Paragraph 4 | Pass |
| 3 | §15.303 | Channel Frequency | Declaration | Pass |
| 4 | §15.319 (b) | Digital Modulation Techniques | Declaration | Pass |
| 5 | §15.319 (f) | Automatic Discontinuation of Transmission | Manual evaluation | Pass |
| 6 | §15.319(c)(e), §15.31(e) | Peak Transmit Power and Antenna Gain | ANSI C63.17-2013 Clause 6.1.2 | Pass |
| 7 | §15.323 (a) | 26dB Emission Bandwidth &99%Occupied Bandwidth | ANSI C63.17-2013 Clause 6.1.3 or 7.4 | Pass |
| 8 | §15.319 (d) | Power Spectral Density | ANSI C63.17-2013 Clause 6.1.5 | Pass |
| 9 | §15.323 (d) | In-Band Emission | ANSI C63.17-2013 Clause 6.1.6.1 | Pass |
| 10 | §15.323 (d) | Out-of-Band Emission | ANSI C63.17-2013 Clause 6.1.6.2 | Pass |
| 11 | §15.323 (f) | Carrier Frequency Stability | ANSI C63.17-2013 Clause 6.2.1 | Pass |
| 12 | §15.319(g), §15.323(d) §15.209(a), §15.109(a) | Radiated Emission | ANSI C63.10-2013 Clause 11.11 & Clause 11.12 | Pass |
| 13 | §15.207, §15.315 | AC Power Line Conducted Emission | ANSI C63.10-2013 Section 6.2 | Pass |

Note:

1) N/A: In this whole report not applicable.

2) Not required if the Conducted Out-of-Band Emissions test is passed, and assessed in the FCC 47 CFR Part 15B test report.

## 5. Description of Test Modes

| Summary table of Test Cases | |
|---|---|
| Test Item | Modulation |
| | DECT- Portable Part /GFSK |
| Radiated & Conducted Test Cases | Mode 1: UPCS TX CH00_1928.448 MHz (Connect the adapter)<br>Mode 2: UPCS TX CH02_1924.992 MHz (Connect the adapter)<br>Mode 3: UPCS TX CH04_1921.536 MHz (Connect the adapter)<br>Mode 4: Normal Pairing Communication (GAP Mode)+ + AC/DC Adapter |
| AC Conducted Emission | Mode 1: Normal Pairing Communication (GAP Mode) + Battery + AC/DC Adapter |

Note:
1. Only the result of the worst case was recorded in the report, if no other cases.
2. The battery is full-charged during the test.
3. For Radiated Emission, 3axis were chosen for testing for each applicable mode.
4. For Conducted Test method, a temporary antenna connector is provided by the manufacture.

# 6. 26dB Emission Bandwidth & 99% Occupied Bandwidth

## 6.1 Provisions Applicable

Please refer to FCC 47 CFR Part 15.319(c) &15.319(e) for specification details:

Operation shall be contained within the 1920–1930 MHz band. The emission bandwidth shall be less than 2.5 MHz. The power level shall be as specified in § 15.319(c), but in no event shall the emission bandwidth be less than 50 kHz

## 6.2 Measurement Procedure

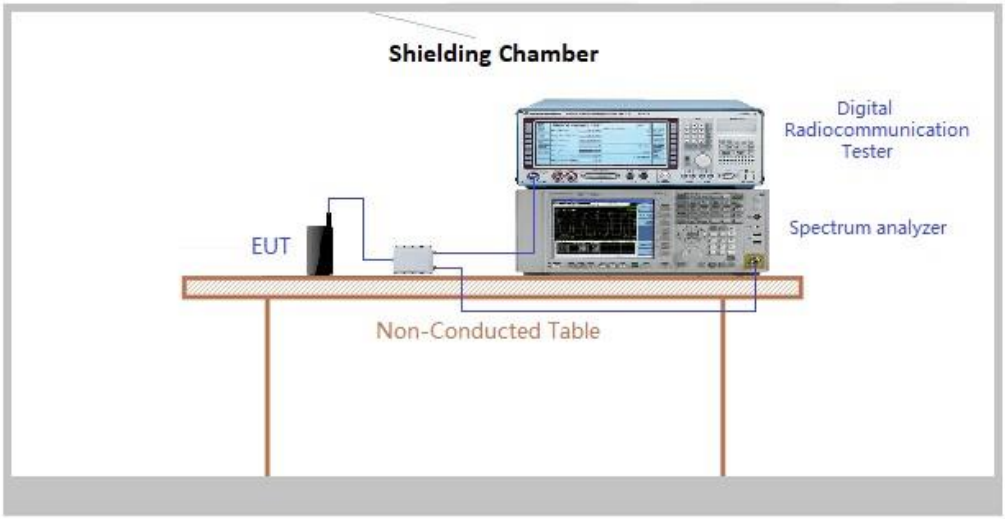
The testing follows the ANSI C63.17-2013 Section 6.1.2

1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power meter.
2. The EUT shall transmit in a burst mode (shall not be configured to transmit continuously) so that transient effects associated with the burst edges are captured by the emission bandwidth measurement.
3. Use the following spectrum analyzer settings:

a) Set RBW: Approximately 1% of the emission bandwidth (a rough estimate may be obtained from peak power level measurement, or use manufacturer's declared value).
b) Set the video bandwidth (VBW) ≥ 3 x RBW.
c) Center frequency: Nominal center frequency of channel.
d) Span: ≥ 2 × the expected emission bandwidth.
e) Sweep time: Coupled to frequency span and RBW.
f) Amplitude scale: Log.
g) Detection: Peak detection with maximum hold enabled.

4. Record the maximum level of the modulated carrier. Find the two furthest frequencies above and below the frequency of the maximum level of the modulated carrier where the signal level is 26 dB below the peak level of the carrier. The difference in frequency between these two frequencies is the emission bandwidth

## 6.3 Measurement Setup (Block Diagram of Configuration)



## 6.4 Measurement Result

Module A

- For Antenna 1

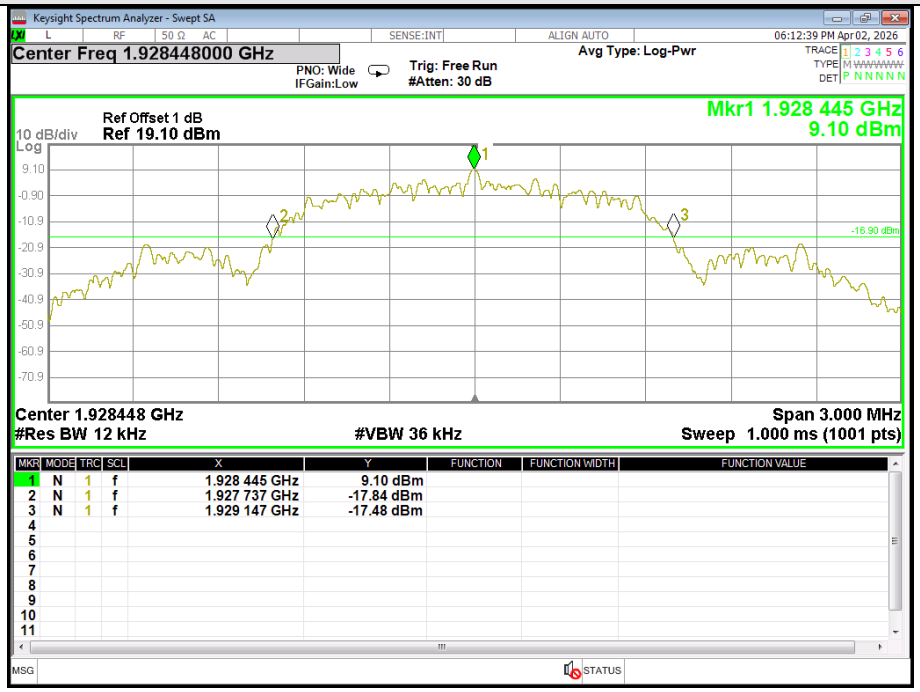
| Channel | Left frequency | Right frequency | 26dB BW(MHz) | Limit |
|---|---|---|---|---|
| Low | 1920.825 | 1922.235 | 1.410 | 50KHz~2.5MHz |
| Mid | 1924.281 | 1925.691 | 1.410 | |
| High | 1927.737 | 1929.147 | 1.410 | |
| AVG | \ | \ | 1.410 | |

- For Antenna 2

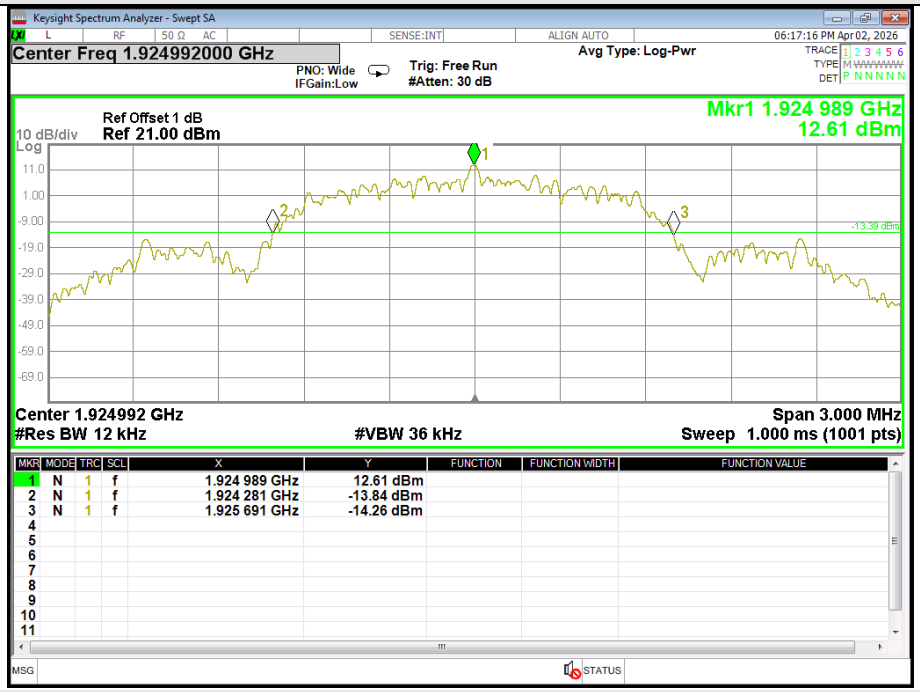
| Channel | Left frequency | Right frequency | 26dB BW(MHz) | Limit |
|---|---|---|---|---|
| Low | 1920.825 | 1922.235 | 1.410 | 50KHz~2.5MHz |
| Mid | 1924.281 | 1925.691 | 1.410 | |
| High | 1927.737 | 1929.147 | 1.410 | |
| AVG | \ | \ | 1.410 | |

**Test Graphs of Occupied Bandwidth and -26dB Bandwidth**
**Antenna 1**

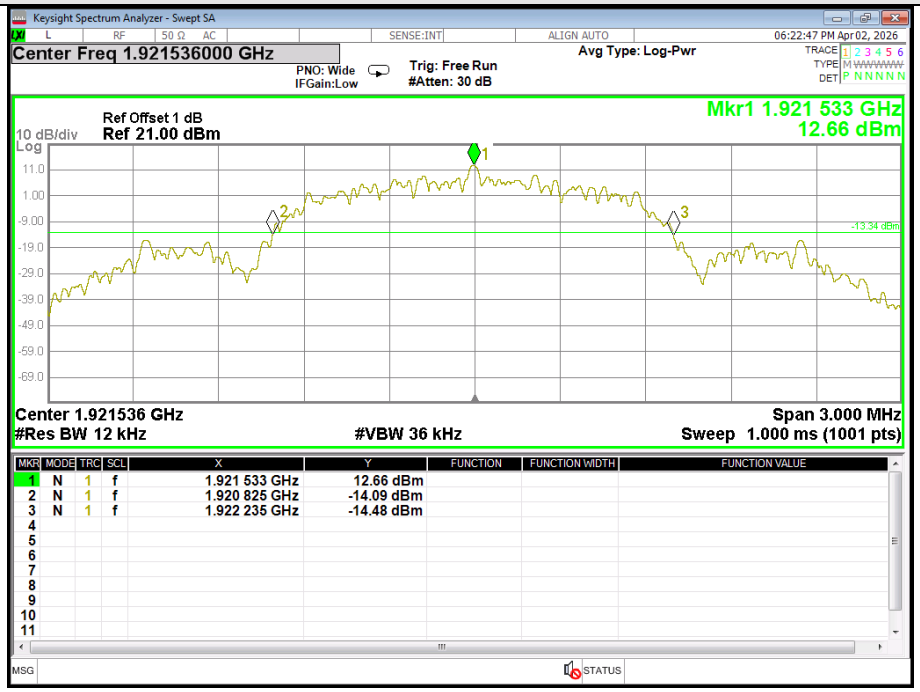
Test_Graph_UPCS_ANT1_CH00_GFSK_EBW



Test_Graph_UPCS_ANT1_CH02_GFSK_EBW

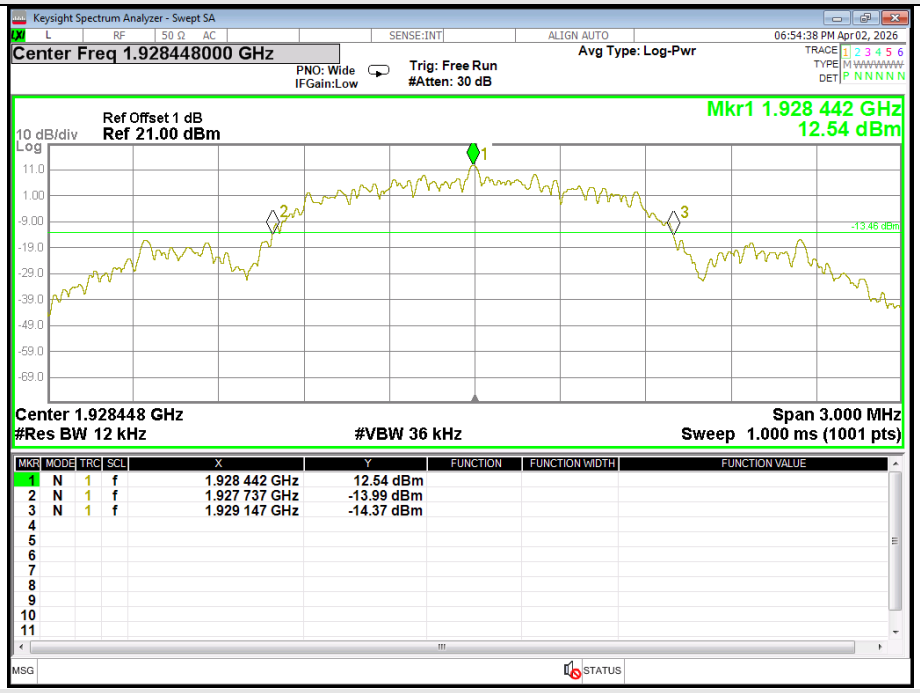



Test_Graph_UPCS_ANT1_CH04_GFSK_EBW

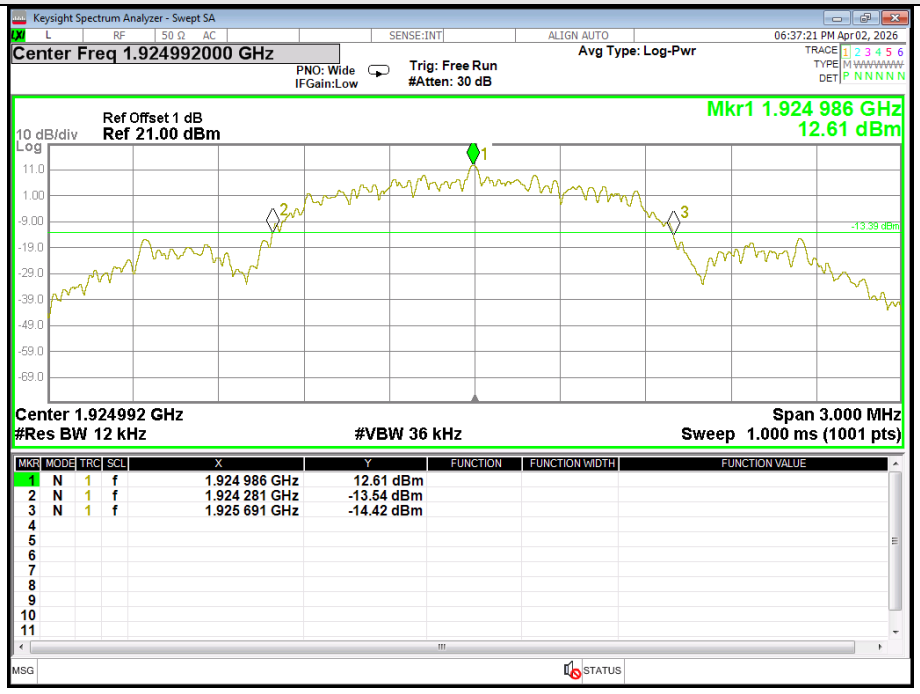


**Antenna 2**

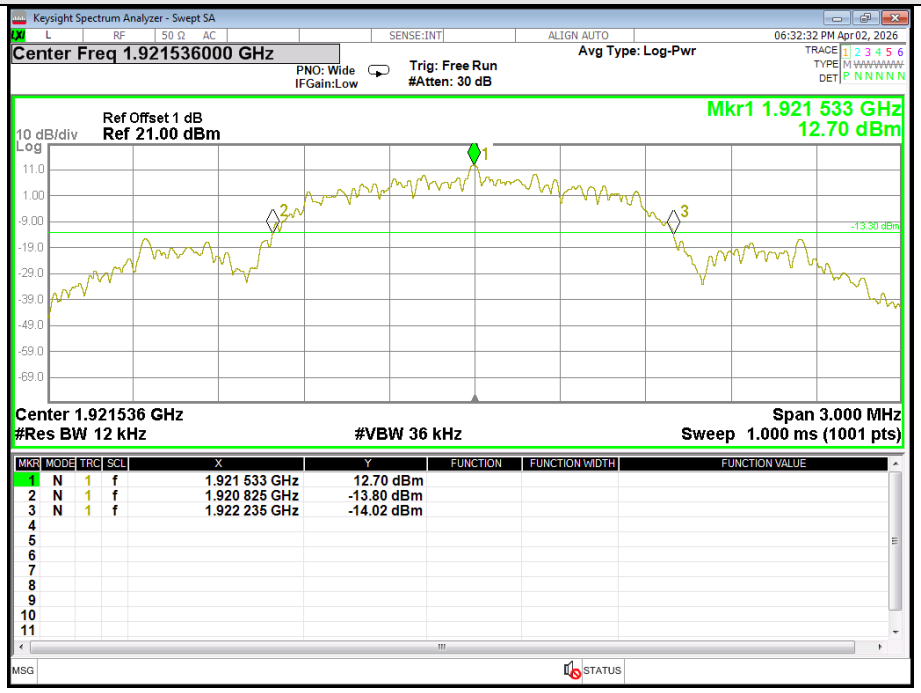
Test_Graph_UPCS_ANT2_CH00_GFSK_EBW




Test_Graph_UPCS_ANT2_CH02_GFSK_EBW



Test_Graph_UPCS_ANT2_CH04_GFSK_EBW



Module B

- For Antenna 1

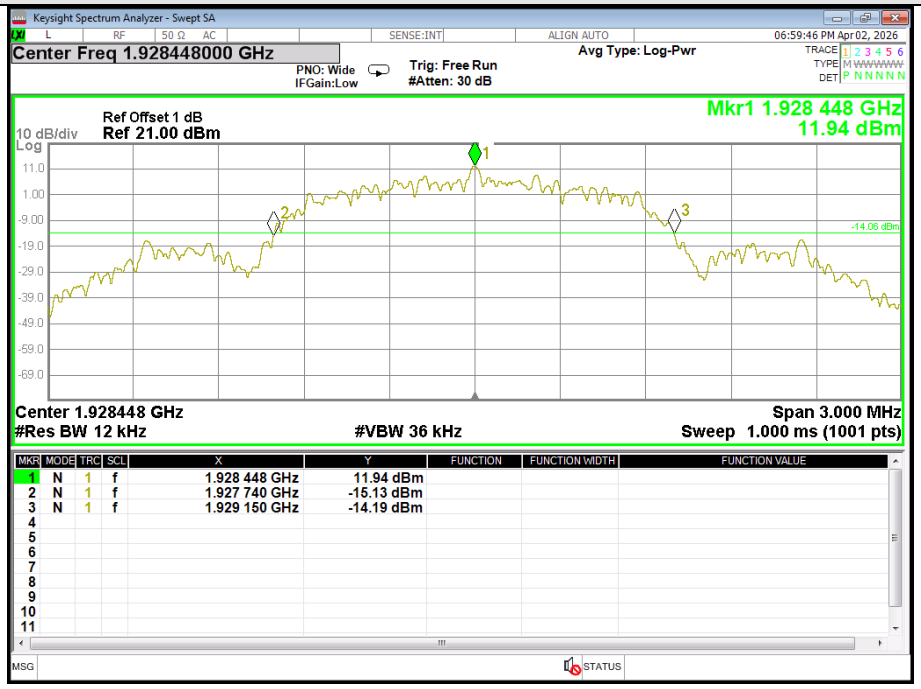
| Channel | Left frequency | Right frequency | 26dB BW(MHz) | Limit |
|---|---|---|---|---|
| Low | 1920.828 | 1922.238 | 1.410 | 50KHz~2.5MHz |
| Mid | 1924.284 | 1925.694 | 1.410 | |
| High | 1927.74 | 1929.15 | 1.410 | |
| AVG | \ | \ | 1.410 | |

- For Antenna 2

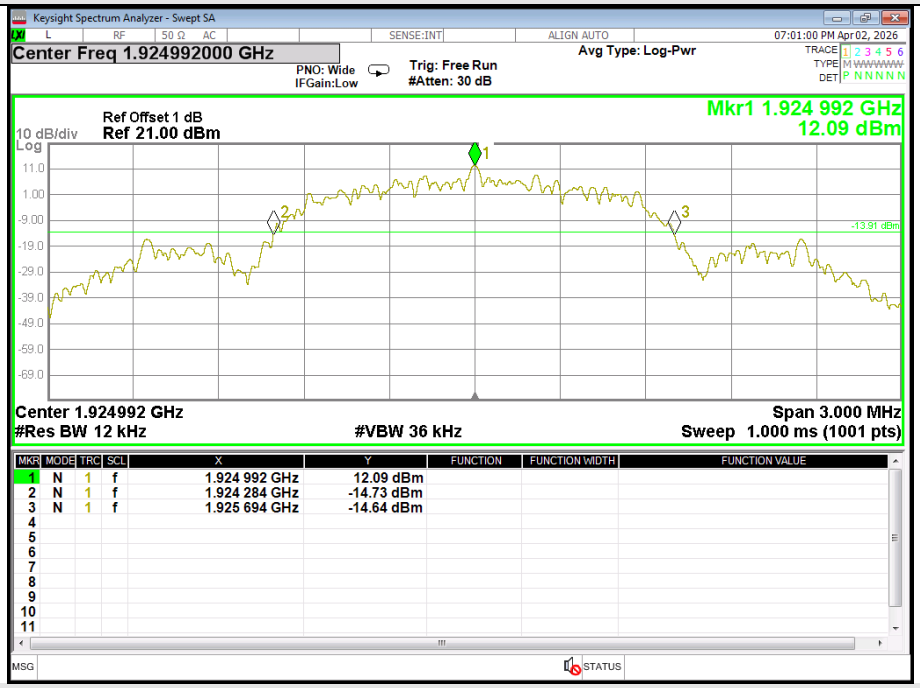
| Channel | Left frequency | Right frequency | 26dB BW(MHz) | Limit |
|---|---|---|---|---|
| Low | 1920.828 | 1922.238 | 1.410 | 50KHz~2.5MHz |
| Mid | 1924.284 | 1925.694 | 1.410 | |
| High | 1927.74 | 1929.15 | 1.410 | |
| AVG | \ | \ | 1.410 | |

**Test Graphs of Occupied Bandwidth and -26dB Bandwidth**
**Antenna 1**

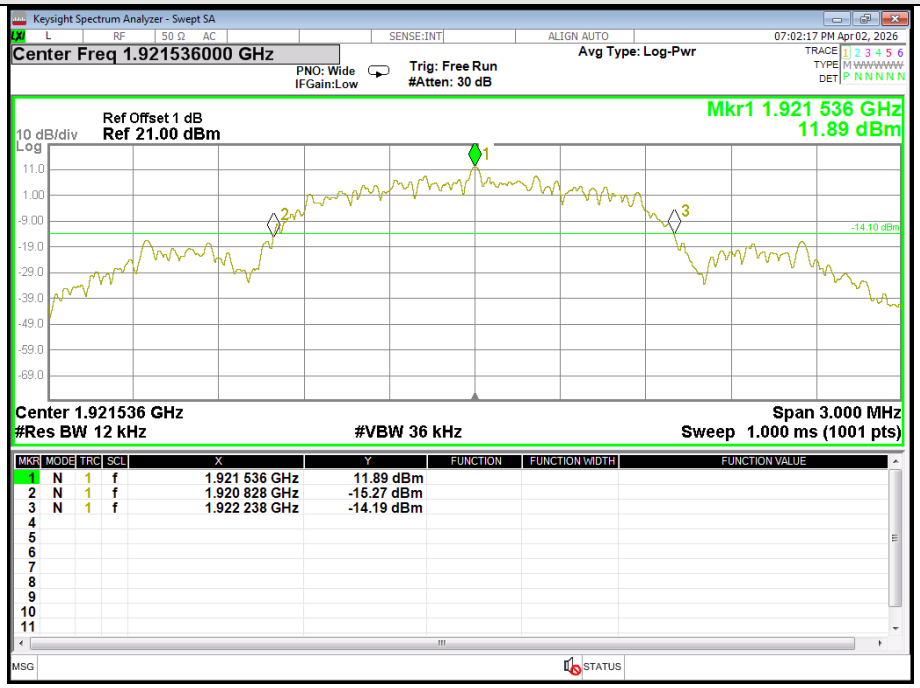
Test_Graph_UPCS_ANT1_CH00_GFSK_EBW



Test_Graph_UPCS_ANT1_CH02_GFSK_EBW

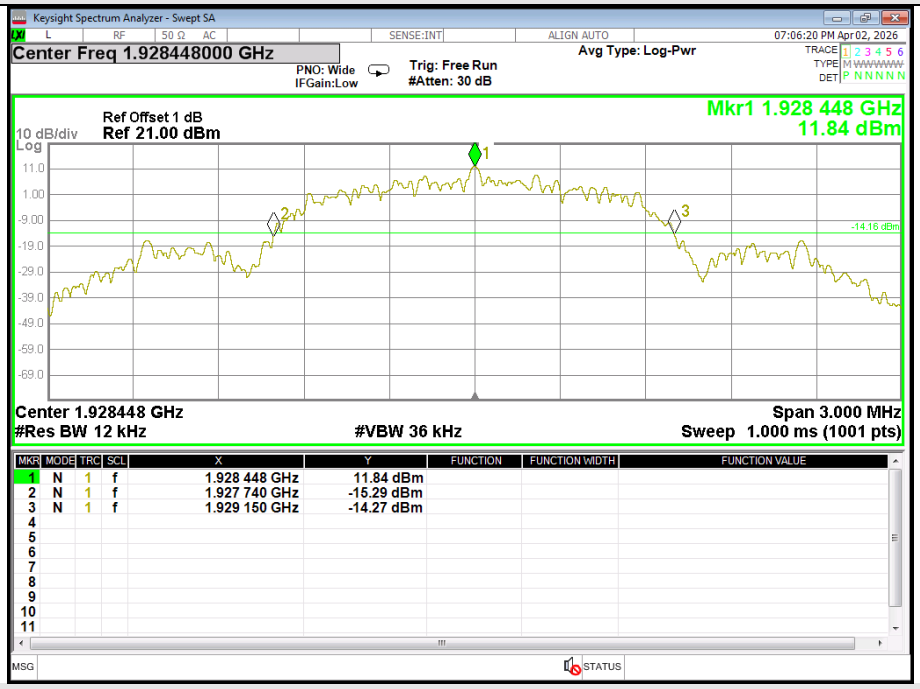



Test_Graph_UPCS_ANT1_CH04_GFSK_EBW

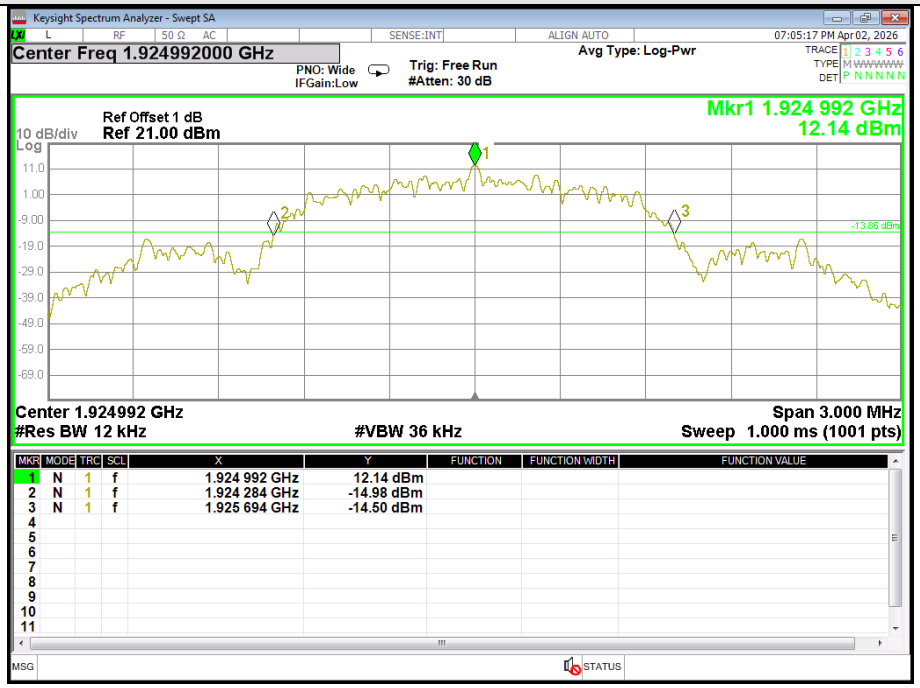


## Antenna 2

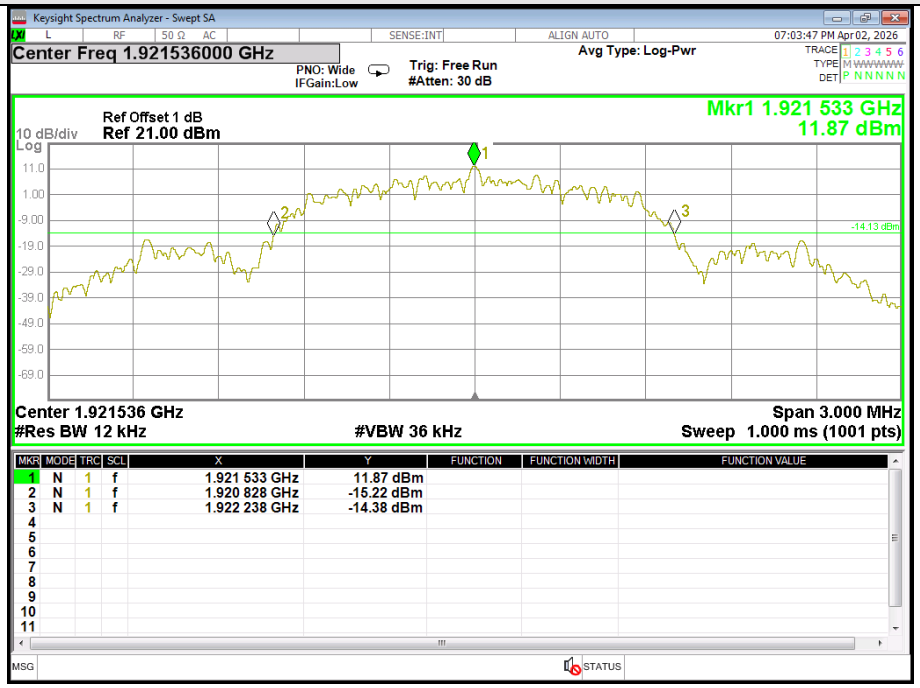
Test_Graph_UPCS_ANT2_CH00_GFSK_EBW




Test_Graph_UPCS_ANT2_CH02_GFSK_EBW



Test_Graph_UPCS_ANT2_CH04_GFSK_EBW



# 7. Peak Transmit Power and Antenna Gain

## 7.1 Provisions Applicable

Please refer to FCC 47 CFR Part 15.319(c) &15.319(e) for specification details:
Peak transmit power shall not exceed 100 microwatts multiplied by the square root of the emission bandwidth in hertz. Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, sensitivity, etc., so as to obtain a true peak measurement for the emission in question over the full bandwidth of the channel.

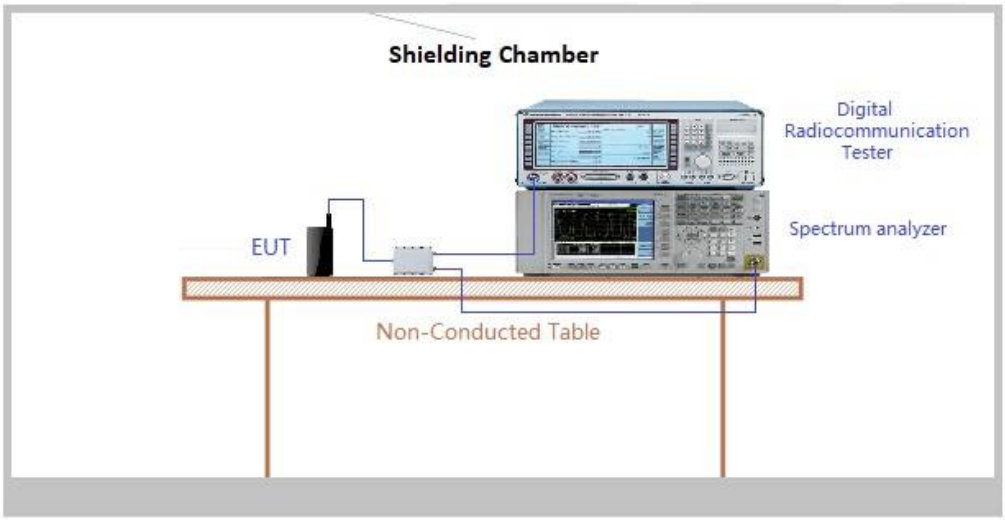
The peak transmit power shall be reduced by the amount in decibels that the maximum directional gain of the antenna exceeds 3 dBi.

## 7.2 Measurement Procedure

The testing follows the ANSI C63.17-2013 Section 6.1.2

| | |
|---|---|
| RBW | ≥ Emission bandwidth |
| Video bandwidth | ≥ RBW |
| Span | Span Zero |
| Center frequency | Nominal center frequency of transmit carrier |
| Amplitude scale | Log (linear may be used if analyzer has sufficient linear dynamic range and accuracy) |
| Detection | Peak detection |
| Trigger Video | Trigger Video |
| Sweep rate | Sufficiently rapid to permit the transmit pulse to be resolved accurately |

## 7.3 Measurement Setup (Block Diagram of Configuration)



### 7.4 Measurement Result

Module A

- For Antenna 1

| Calculation of Peak Transmit Power Limit ($P_{max}$): | | |
|---|---|---|
| ☒ | $P_{max}$ = 5*log$_{10}$ B-10 | When $G_A$ ≤ 3dBi |
| ☐ | $P_{max}$ = 5*log$_{10}$ B-10 dBm-($G_A$ - 3dBi) | When $G_A$ > 3dBi |
| Where, | $G_A$ | = EUT Gain: 3.43 dBi |
| | B | = Measured Emission Bandwidth (Hz) |
| Calculation of EIRP Limit: | | |
| ☐ | $EIRP_{EUT}$ | ≤$P_{max}$ + g, $G_A$> g (g=3dBi) |
| ☒ | $EIRP_{EUT}$ | ≤$P_{max}$ + $G_A$, $G_A$≤ g (g=3dBi) |

| Carrier Channel | Frequency (MHz) | Measured Peak Output Power (dBm) | Limit (uW) | Limit (dBm) |
|---|---|---|---|---|
| Low | 1921.536 | 19.78 | 118743 | 20.32 |
| Mid | 1924.992 | 19.77 | 118743 | 20.32 |
| High | 1928.448 | 19.36 | 118743 | 20.32 |
| EBWLow Channel= | 1410000 | | | Hz |
| EBWMid Channel= | 1410000 | | | Hz |
| EBWHigh Channel= | 1410000 | | | Hz |
| Note:Peak Transmitter Power Limit=100（EBW）1/2μW-0.43 | | | | |

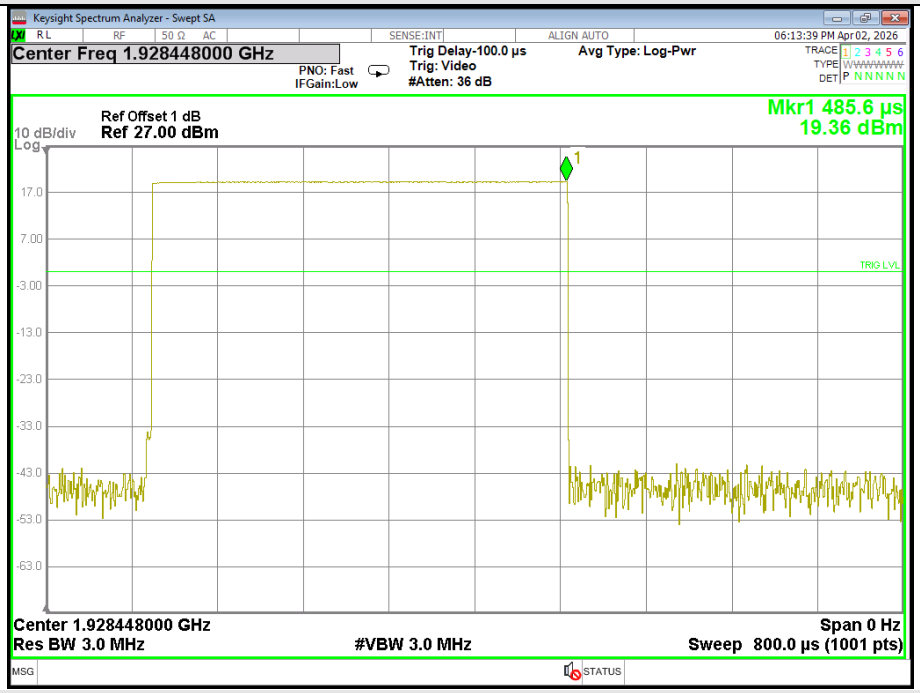
- For Antenna 2

| Calculation of Peak Transmit Power Limit ($P_{max}$): | | |
|---|---|---|
| ☒ | $P_{max}$ = 5*log$_{10}$ B-10 | When $G_A$ ≤ 3dBi |
| ☐ | $P_{max}$ = 5*log$_{10}$ B-10 dBm-($G_A$ - 3dBi) | When $G_A$ > 3dBi |
| Where, | $G_A$ | = EUT Gain: 3.43 dBi |
| | B | = Measured Emission Bandwidth (Hz) |
| Calculation of EIRP Limit: | | |
| ☐ | $EIRP_{EUT}$ | ≤$P_{max}$ + g, $G_A$> g (g=3dBi) |
| ☒ | $EIRP_{EUT}$ | ≤$P_{max}$ + $G_A$, $G_A$≤ g (g=3dBi) |

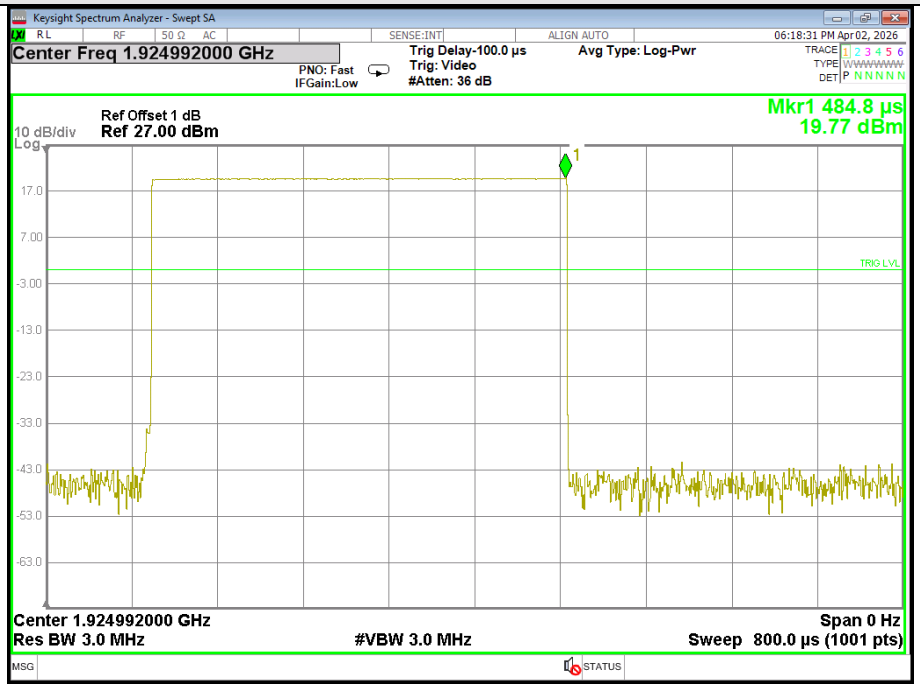
| Carrier Channel | Frequency (MHz) | Measured Peak Output Power (dBm) | Limit (uW) | Limit (dBm) |
|---|---|---|---|---|
| Low | 1921.536 | 19.93 | 118743 | 20.32 |
| Mid | 1924.992 | 19.81 | 118743 | 20.32 |
| High | 1928.448 | 19.71 | 118743 | 20.32 |
| EBWLow Channel= | 1410000 | | | Hz |
| EBWMid Channel= | 1410000 | | | Hz |
| EBWHigh Channel= | 1410000 | | | Hz |
| Note:Peak Transmitter Power Limit=100（EBW）1/2μW-0.43 | | | | |

**Test Graphs of Peak Transmit Power**
Module A
Antenna 1

Test_Graph_UPCS_ANT1_CH00_GFSK_Peak Power




Test_Graph_UPCS_ANT1_CH02_GFSK_ Peak Power



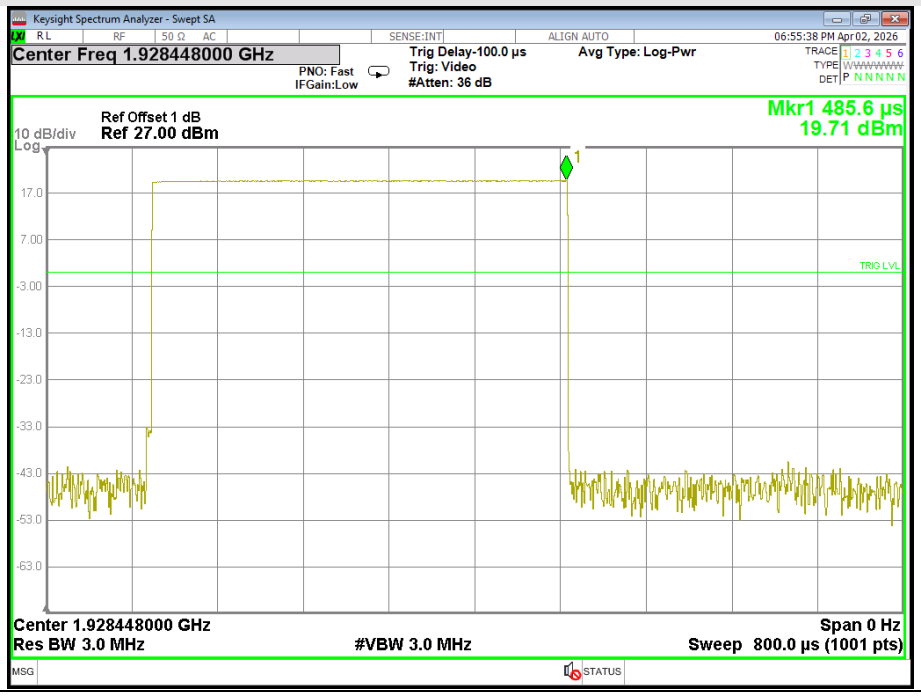
Test_Graph_UPCS_ANT1_CH04_GFSK_ Peak Power


Antenna 2

Test_Graph_UPCS_ANT2_CH00_GFSK_Peak Power

Test_Graph_UPCS_ANT2_CH02_GFSK_ Peak Power


Test_Graph_UPCS_ANT2_CH04_GFSK_ Peak Power



Module B

- For Antenna 1

| Calculation of Peak Transmit Power Limit ($P_{max}$): | | | |
|---|---|---|---|
| ☒ | $P_{max}$ = 5*log$_{10}$ B-10 | | When $G_A \leq$ 3dBi |
| ☐ | $P_{max}$ = 5*log$_{10}$ B-10 dBm-($G_A$ - 3dBi) | | When $G_A >$ 3dBi |
| Where, | $G_A$ | = EUT Gain: 3.43 dBi | |
| | B | = Measured Emission Bandwidth (Hz) | |
| Calculation of EIRP Limit: | | | |
| ☐ | $EIRP_{EUT}$ | ≤$P_{max}$ + g, $G_A$> g (g=3dBi) | |
| ☒ | $EIRP_{EUT}$ | ≤$P_{max}$ + $G_A$, $G_A$≤ g (g=3dBi) | |

| Carrier Channel | Frequency (MHz) | Measured Peak Output Power (dBm) | Limit (uW) | Limit (dBm) |
|---|---|---|---|---|
| Low | 1921.536 | 19.47 | 118743 | 20.32 |
| Mid | 1924.992 | 19.14 | 118743 | 20.32 |
| High | 1928.448 | 19.34 | 118743 | 20.32 |
| $EBW_{Low\ Channel}$= | 1410000 | | | Hz |
| $EBW_{Mid\ Channel}$= | 1410000 | | | Hz |
| $EBW_{High\ Channel}$= | 1410000 | | | Hz |
| Note:Peak Transmitter Power Limit=100（EBW）1/2μW-0.43 | | | | |

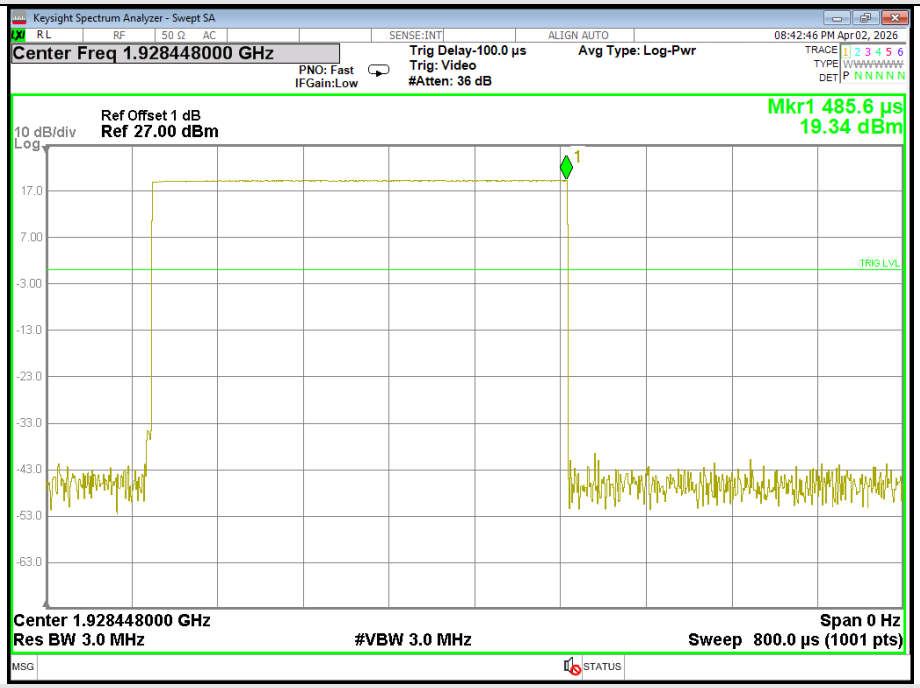
For Antenna 2

| Calculation of Peak Transmit Power Limit ($P_{max}$): | | | |
|---|---|---|---|
| ☒ | $P_{max}$ = 5*log$_{10}$ B-10 | | When $G_A \leq$ 3dBi |
| ☐ | $P_{max}$ = 5*log$_{10}$ B-10 dBm-($G_A$ - 3dBi) | | When $G_A >$ 3dBi |
| Where, | $G_A$ | = EUT Gain: 3.43 dBi | |
| | B | = Measured Emission Bandwidth (Hz) | |
| Calculation of EIRP Limit: | | | |
| ☐ | $EIRP_{EUT}$ | ≤$P_{max}$ + g, $G_A$> g (g=3dBi) | |
| ☒ | $EIRP_{EUT}$ | ≤$P_{max}$ + $G_A$, $G_A$≤ g (g=3dBi) | |

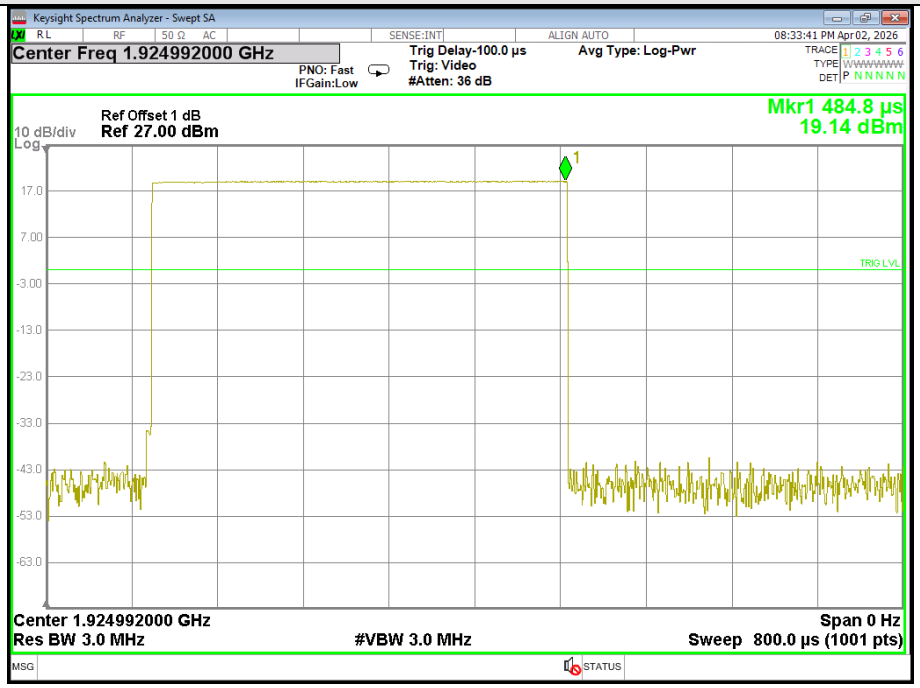
| Carrier Channel | Frequency (MHz) | Measured Peak Output Power (dBm) | Limit (uW) | Limit (dBm) |
|---|---|---|---|---|
| Low | 1921.536 | 19.53 | 118743 | 20.32 |
| Mid | 1924.992 | 19.5 | 118743 | 20.32 |
| High | 1928.448 | 19.49 | 118743 | 20.32 |
| $EBW_{Low\ Channel}$= | 1410000 | | | Hz |
| $EBW_{Mid\ Channel}$= | 1410000 | | | Hz |
| $EBW_{High\ Channel}$= | 1410000 | | | Hz |
| Note:Peak Transmitter Power Limit=100（EBW）1/2μW-0.43 | | | | |

Module B
Antenna 1

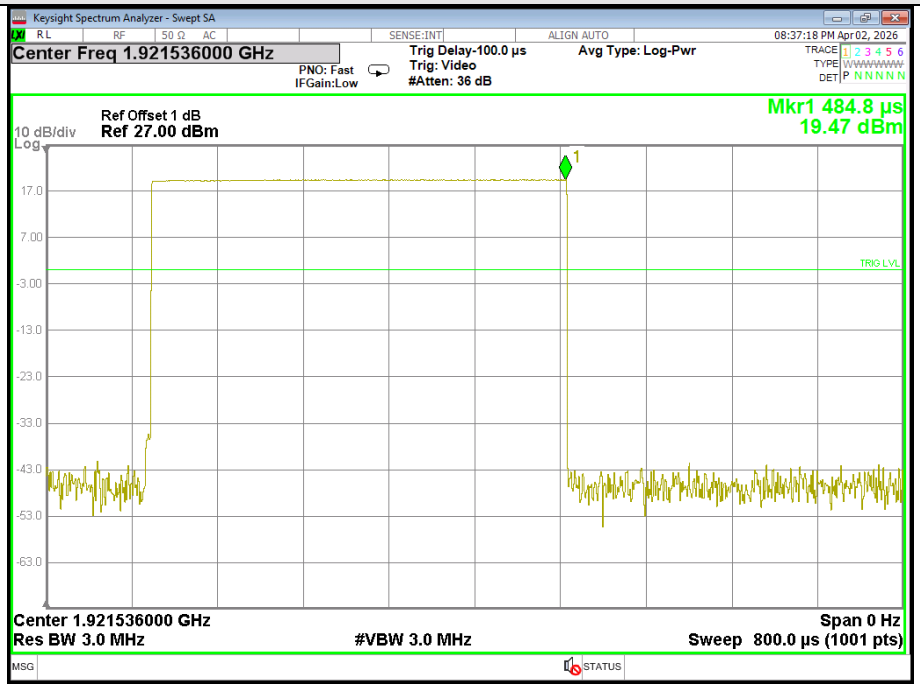
Test_Graph_UPCS_ANT1_CH00_GFSK_Peak Power




Test_Graph_UPCS_ANT1_CH02_GFSK_ Peak Power

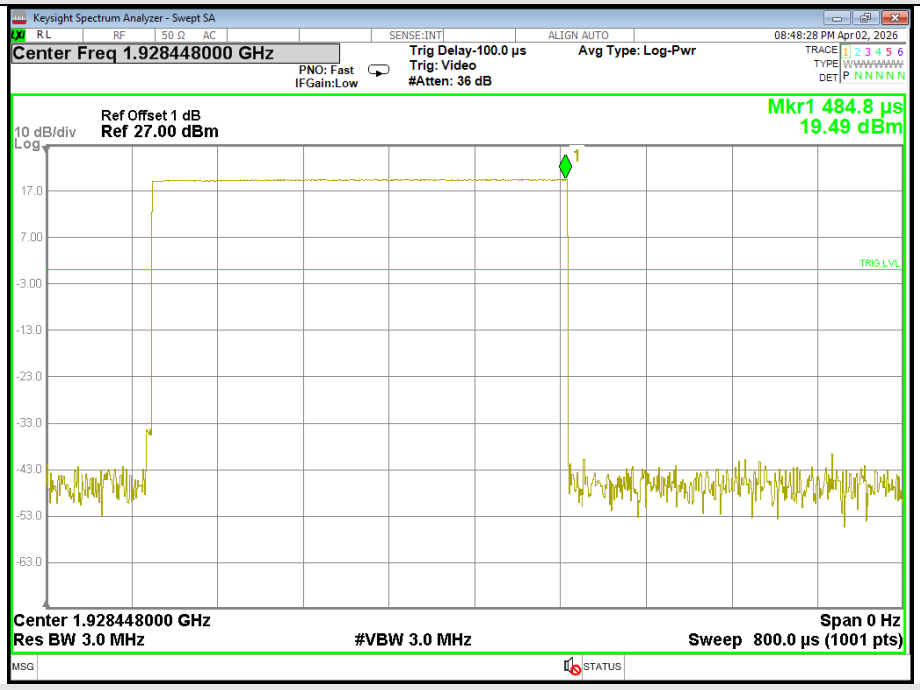


Test_Graph_UPCS_ANT1_CH04_GFSK_ Peak Power



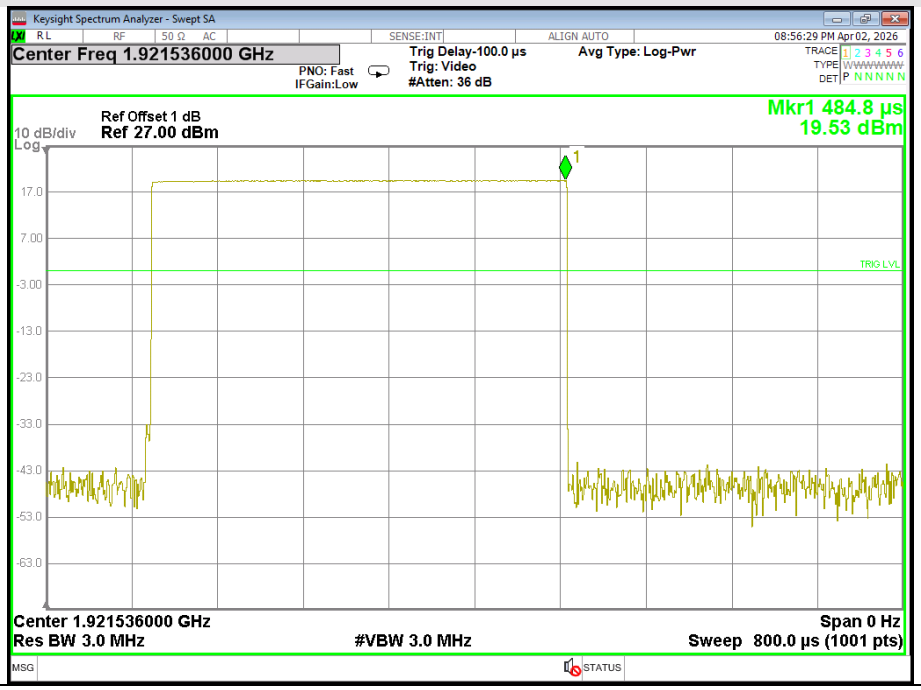

Antenna 2

Test_Graph_UPCS_ANT2_CH00_GFSK_Peak Power




Test_Graph_UPCS_ANT2_CH02_GFSK_ Peak Power


Test_Graph_UPCS_ANT2_CH04_GFSK_ Peak Power



# 8. Power Spectral Density

## 8.1 Provisions Applicable

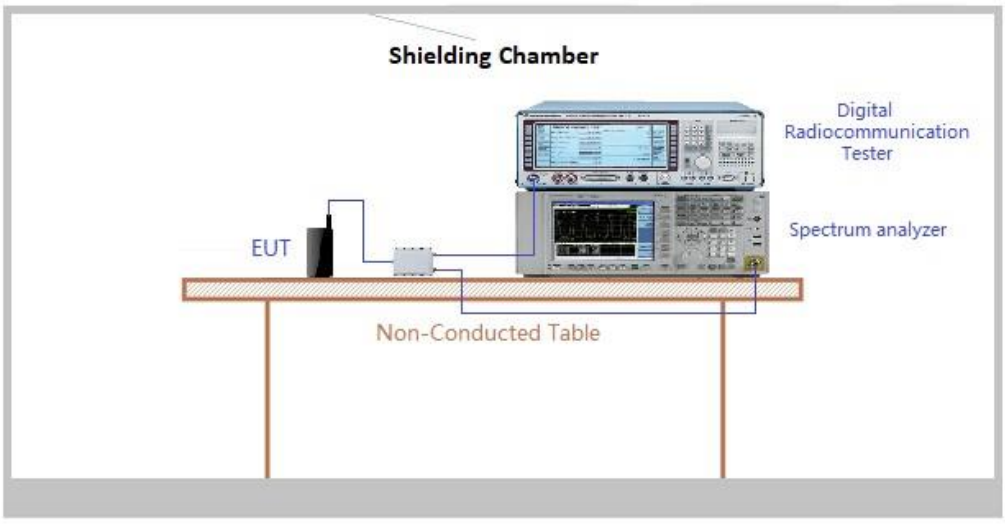
Please refer to FCC 47 CFR Part 15.319(d) for specification details:
Power spectral density shall not exceed 3 milliwatts in any 3 kHz bandwidth as measured with a spectrum analyzer having a resolution bandwidth of 3 kHz.

## 8.2 Measurement Procedure

The testing follows the ANSI C63.17-2013 Section 6.1.5

| | |
|---|---|
| RBW | 3 kHz |
| Video bandwidth | ≥ 3*RBW |
| Span | Span Zero |
| Center frequency | Nominal center frequency of transmit carrier |
| Amplitude scale | RMS |
| Detection | Sample detection and averaged for a minimum of 100 sweeps |
| Trigger Video | External or internal |
| Sweep Time | For burst signals, sufficient to include essentially all of the maximum length burst at the output of a 3 kHz filter (e.g., maximum input burst duration plus 600μs). For continuous signals, 20ms. |

## 8.2 Measurement Setup (Block Diagram of Configuration)



### 8.3 Measurement Result

Module A

- For Antenna 1

| Carrier Channel | Frequency (MHz) | Measured Peak Power Spectral Density (dBm) | Limit(mw) | Limit(dBm) |
|---|---|---|---|---|
| Low | 1921.536 | -2.61 | 3 | 4.77 |
| Mid | 1924.992 | -2.84 | | |
| High | 1928.448 | -2.91 | | |

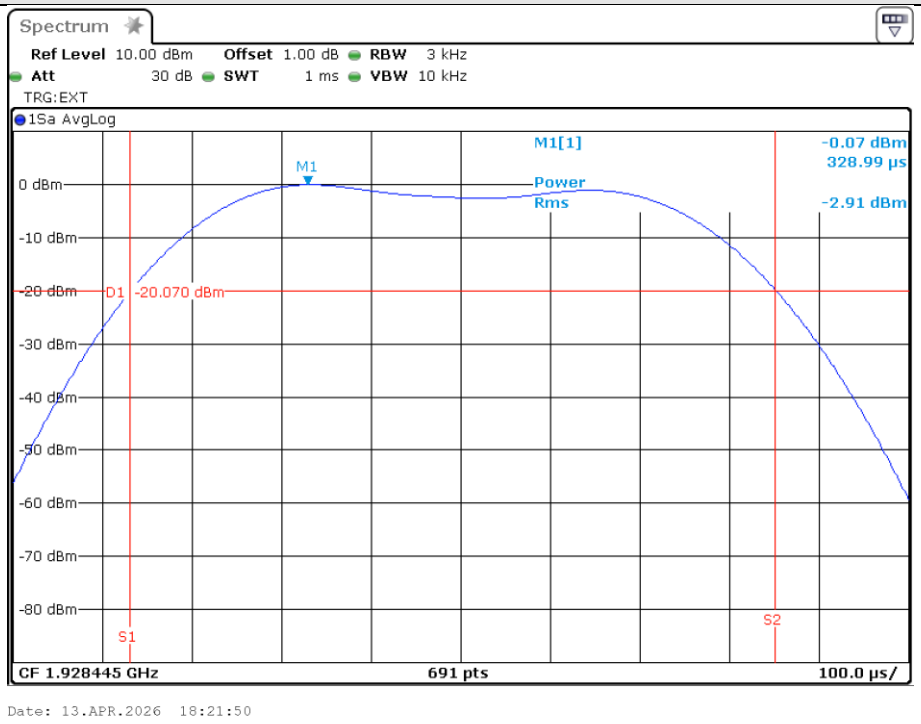
- For Antenna 2

| Carrier Channel | Frequency (MHz) | Measured Peak Power Spectral Density (dBm) | Limit(mw) | Limit(dBm) |
|---|---|---|---|---|
| Low | 1921.536 | -2.39 | 3 | 4.77 |
| Mid | 1924.992 | -1.86 | | |
| High | 1928.448 | -2.25 | | |

## Test Graphs of Power Spectral Density

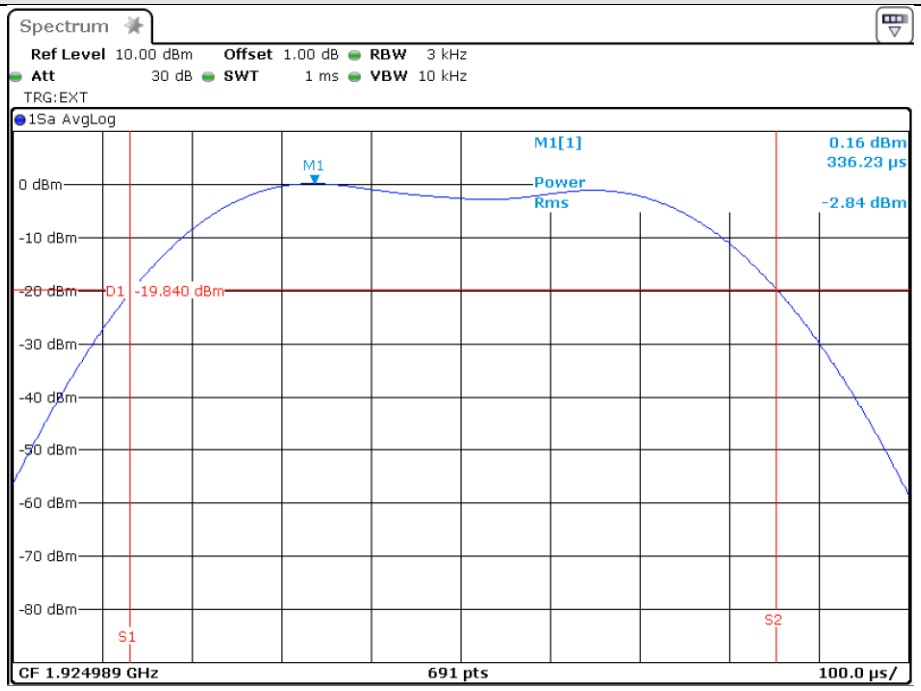
Module A

Test_Graph_UPCS_ANT1_CH00_GFSK_PSD



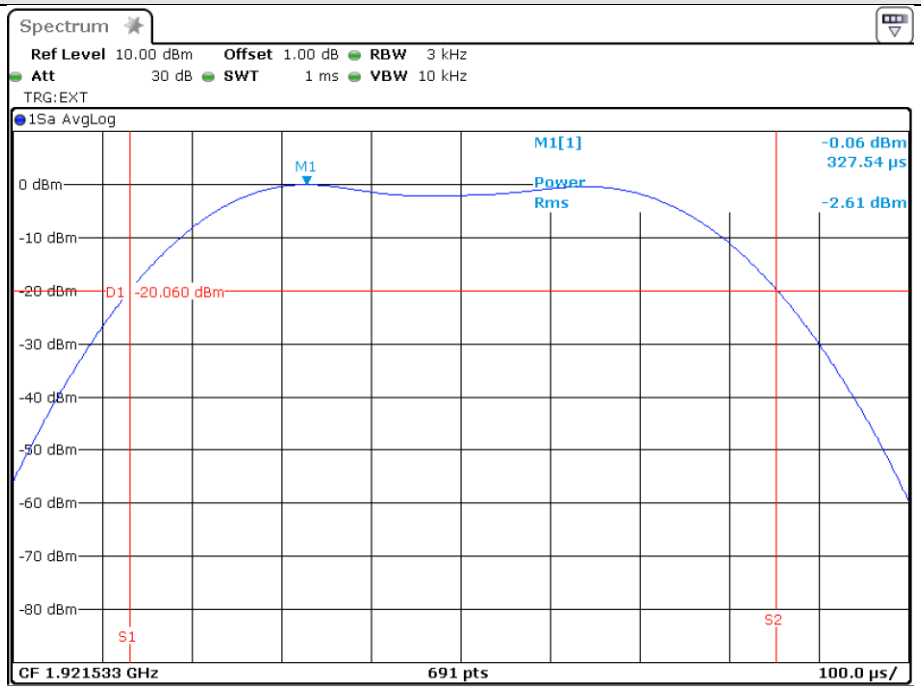

Date: 13.APR.2026 18:21:50

Test_Graph_UPCS_ANT1_CH02_GFSK_PSD



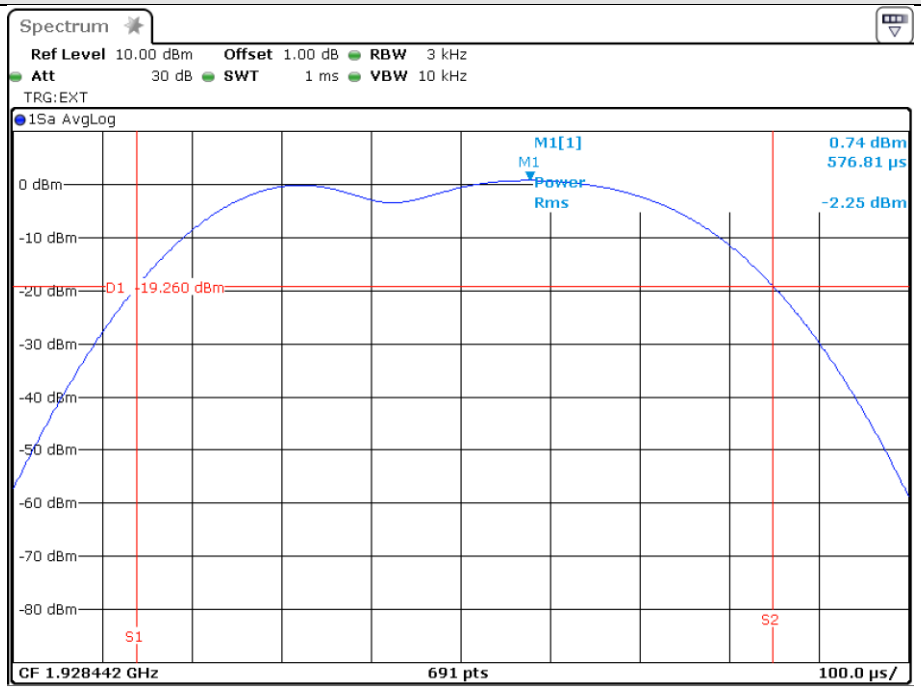

Date: 13.APR.2026 18:22:43

Test_Graph_UPCS_ANT1_CH04_GFSK_PSD



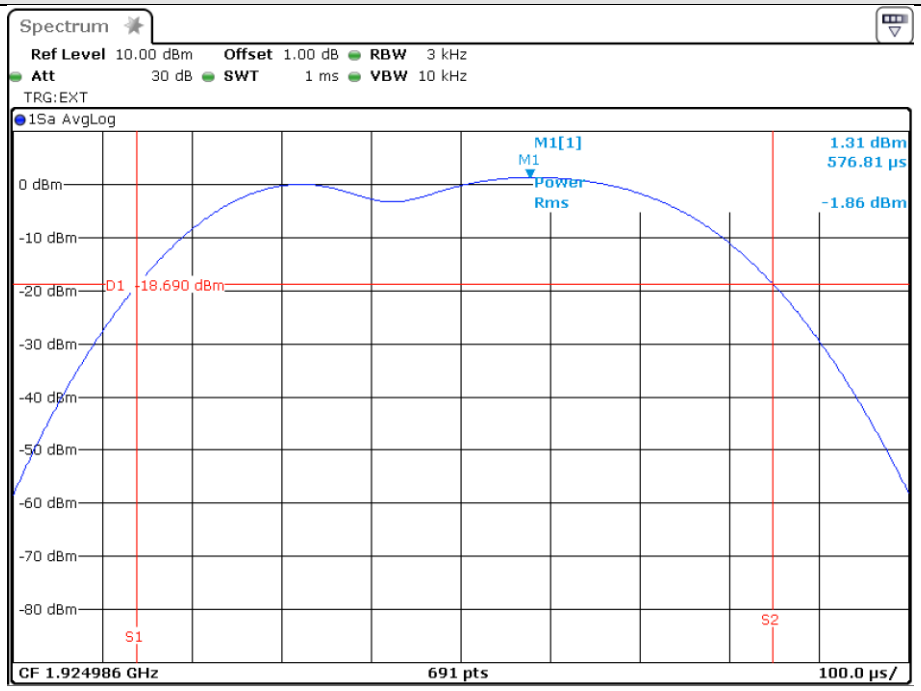

Date: 13.APR.2026 18:23:26

Test_Graph_UPCS_ANT2_CH00_GFSK_PSD



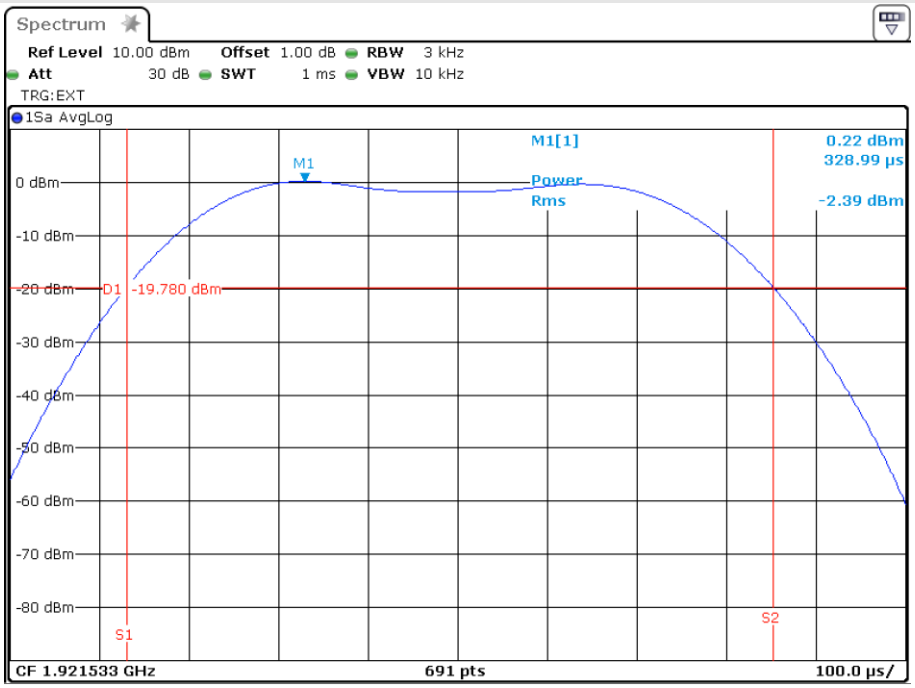

Date: 13.APR.2026 18:26:41

Test_Graph_UPCS_ANT2_CH02_GFSK_PSD




Date: 13.APR.2026 18:26:01

Test_Graph_UPCS_ANT2_CH04_GFSK_PSD




Date: 13.APR.2026 18:25:03

Module B

- For Antenna 1

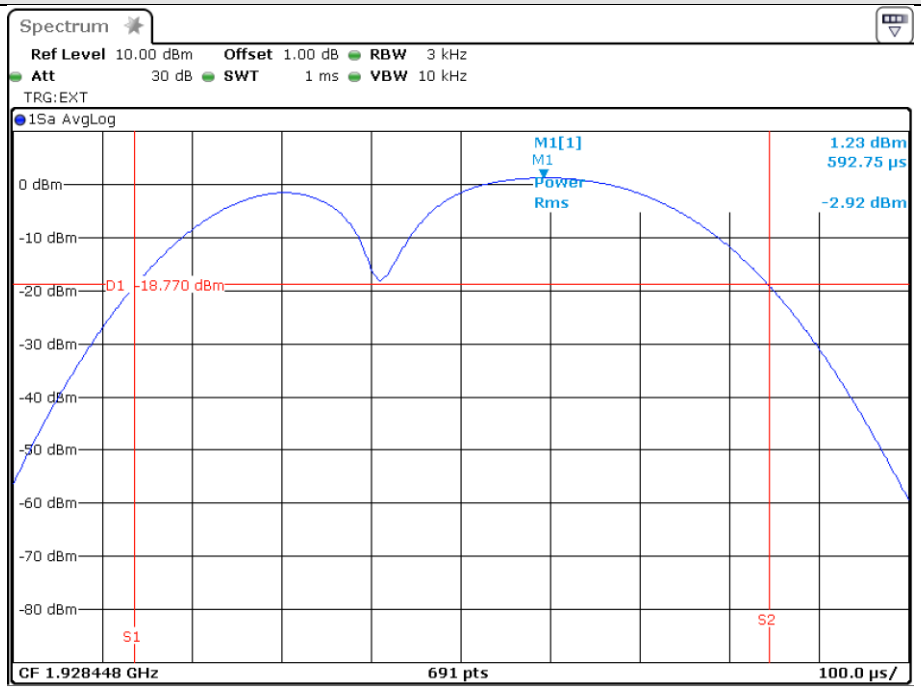
| Carrier Channel | Frequency (MHz) | Measured Peak Power Spectral Density (dBm) | Limit(mw) | Limit(dBm) |
|---|---|---|---|---|
| Low | 1921.536 | -2.56 | 3 | 4.77 |
| Mid | 1924.992 | -2.83 | | |
| High | 1928.448 | -2.92 | | |

- For Antenna 2

| Carrier Channel | Frequency (MHz) | Measured Peak Power Spectral Density (dBm) | Limit(mw) | Limit(dBm) |
|---|---|---|---|---|
| Low | 1921.536 | -2.62 | 3 | 4.77 |
| Mid | 1924.992 | -2.60 | | |
| High | 1928.448 | -2.97 | | |

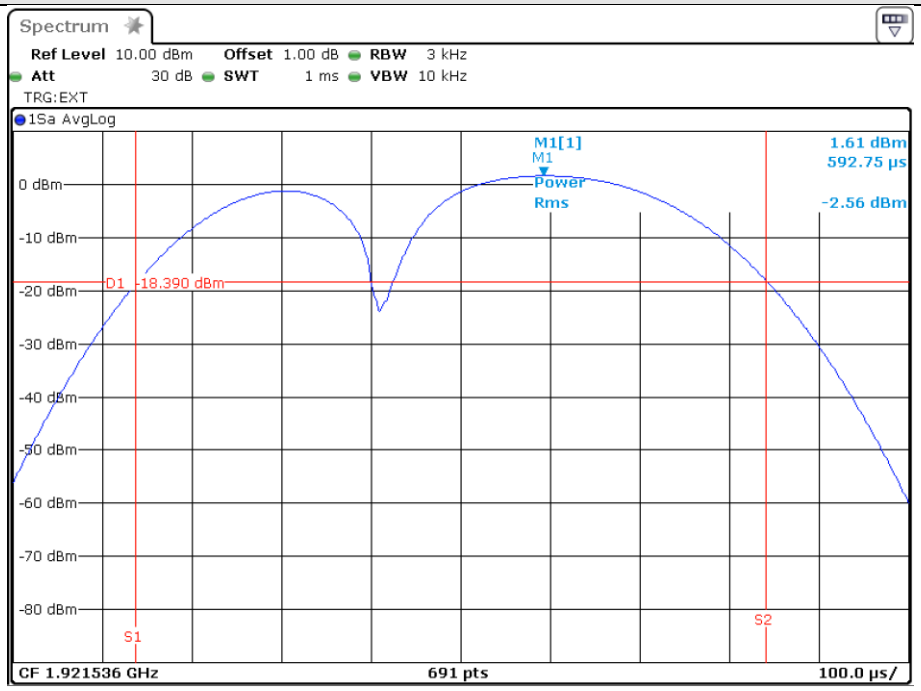
Module B

Test_Graph_UPCS_ANT1_CH00_GFSK_PSD



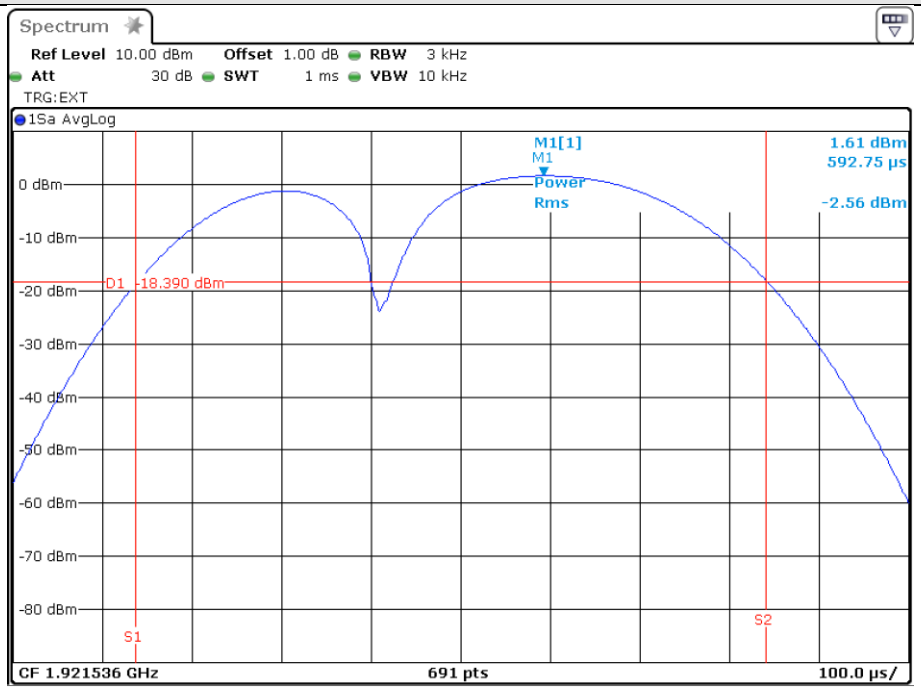

Date: 13.APR.2026 18:19:20

Test_Graph_UPCS_ANT1_CH02_GFSK_PSD



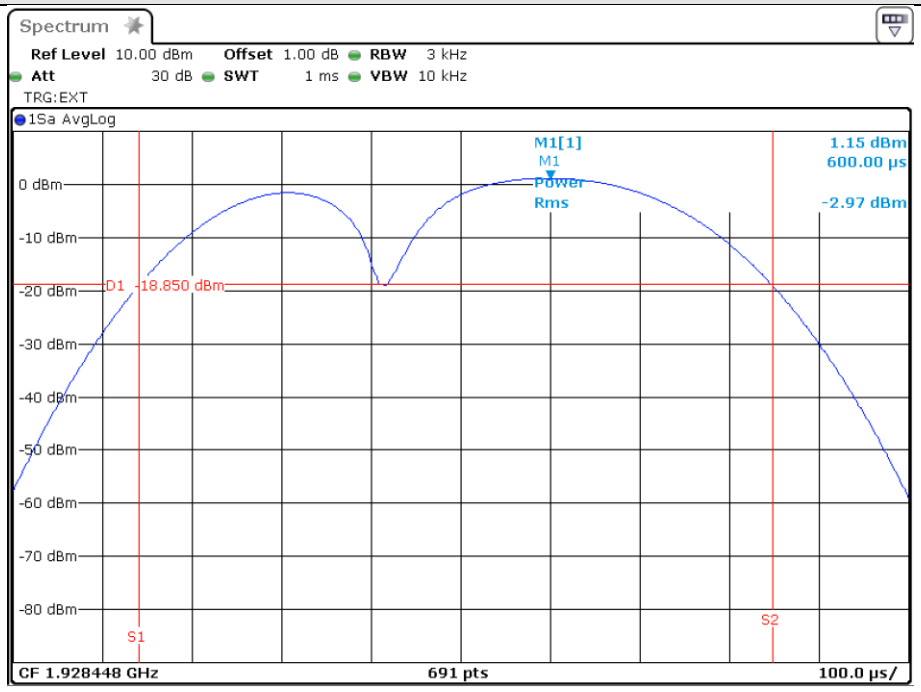

Date: 13.APR.2026 18:17:00

Test_Graph_UPCS_ANT1_CH04_GFSK_PSD



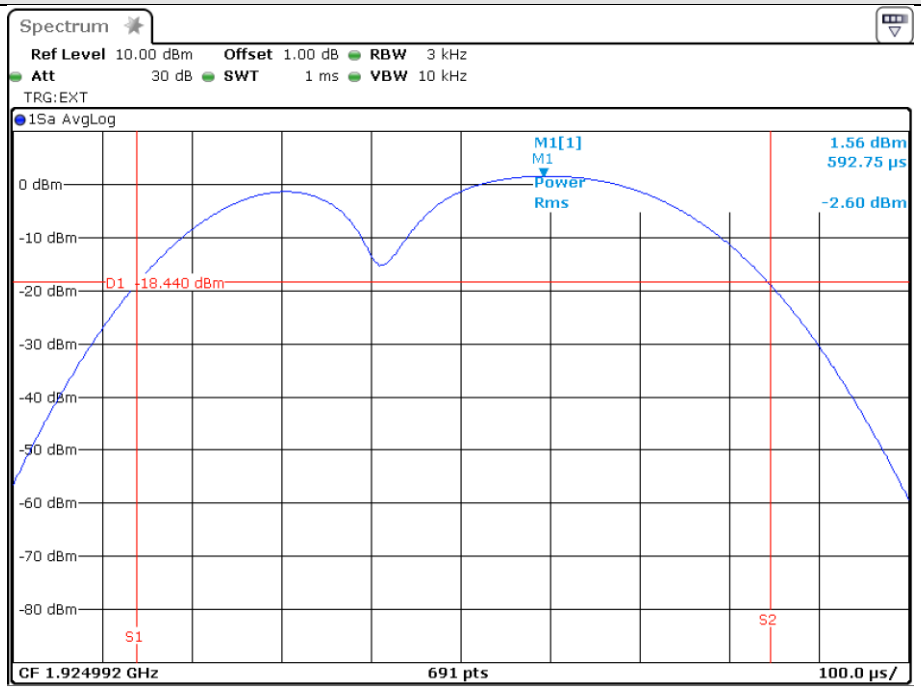

Date: 13.APR.2026 18:17:00

Test_Graph_UPCS_ANT2_CH00_GFSK_PSD



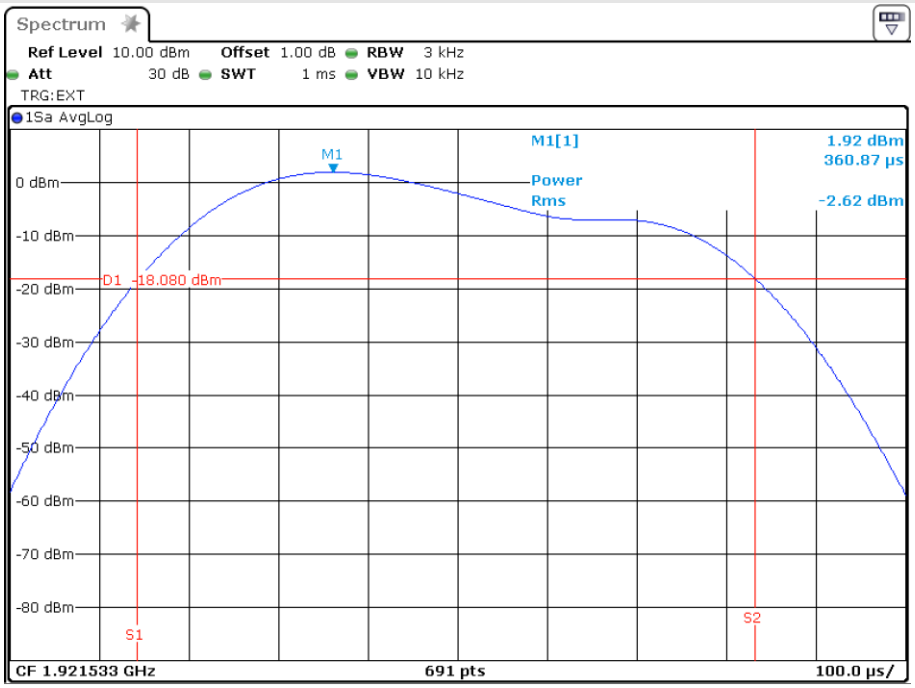

Date: 13.APR.2026 18:12:17

Test_Graph_UPCS_ANT2_CH02_GFSK_PSD




Date: 13.APR.2026 18:13:26

Test_Graph_UPCS_ANT2_CH04_GFSK_PSD




Date: 13.APR.2026 18:14:35

# 9. In-Band Unwanted Emissions

## 9.1 Provisions Applicable

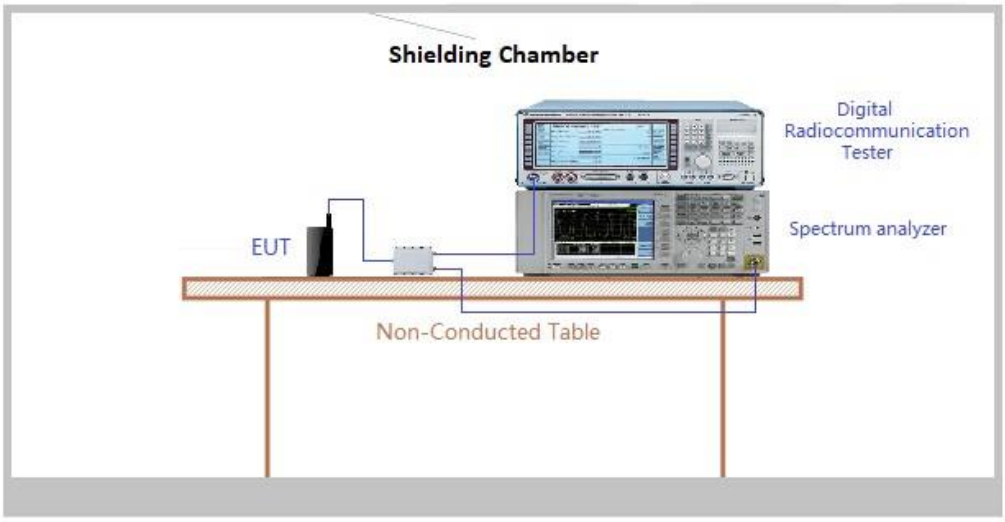
Please refer to FCC 47 CFR Part 15.323(d) for specification details:
Emissions inside the band must comply with the following emission mask: In the bands between 1B and 2B measured from the center of the emission bandwidth the total power emitted by the device shall be at least 30 dB below the transmit power permitted for that device; in the bands between 2B and 3B measured from the center of the emission bandwidth the total power emitted by an intentional radiator shall be at least 50 dB below the transmit power permitted for that radiator; in the bands between 3B and the band edge the total power emitted by an intentional radiator in the measurement bandwidth shall be at least 60 dB below the transmit power permitted for that radiator. B'' is defined as the emission bandwidth of the device in hertz. Compliance with the emission limits is based on the use of measurement instrumentation employing peak detector function with an instrument resolution bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.

## 9.2 Measurement Procedure

The testing follows the ANSI C63.17-2013 Section 6.1.6.1

| | |
|---|---|
| RBW | Approximately 1% of the Emission bandwidth (B) |
| Video bandwidth | ≥ 3*RBW |
| Span | Approximately equal to 3.5 B |
| Center frequency | Nominal center frequency of transmit carrier |
| Detection | Peak detection and max hold enabled |
| Amplitude scale | Log |
| Sweep Time | The sweep time shall be sufficiently slow that the swept frequency rate shall not exceed one RBW per three transmit bursts. |
| Number of sweeps | Sufficient to stabilize the trace |

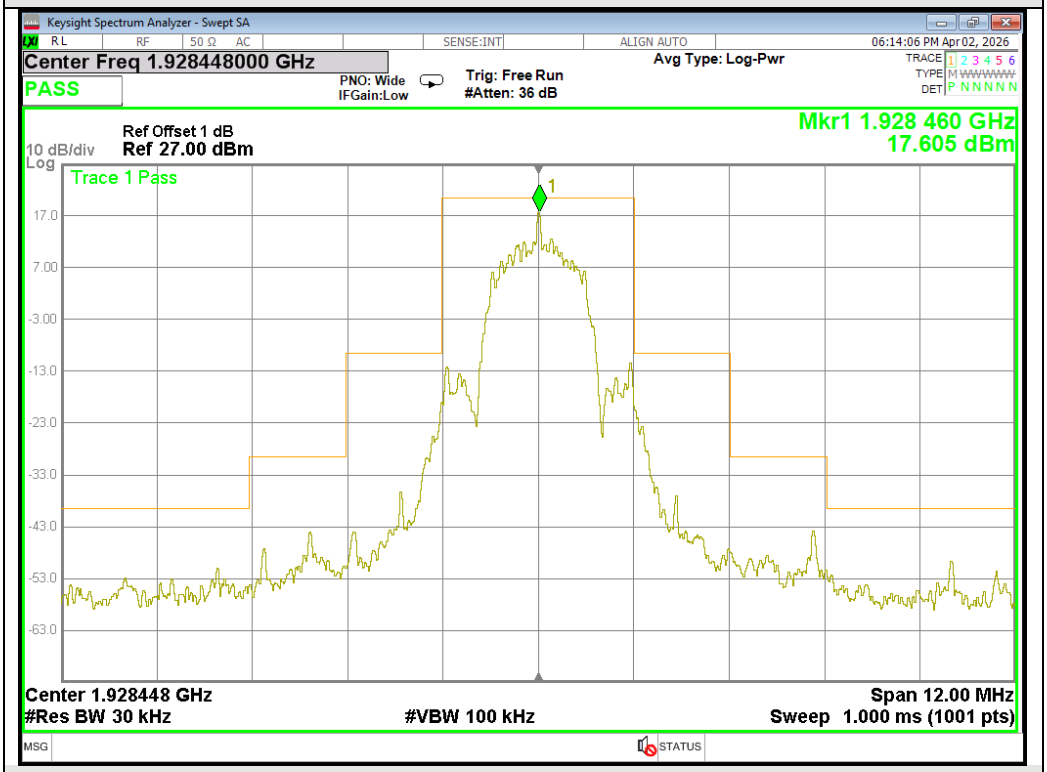
## 9.3 Measurement Setup (Block Diagram of Configuration)



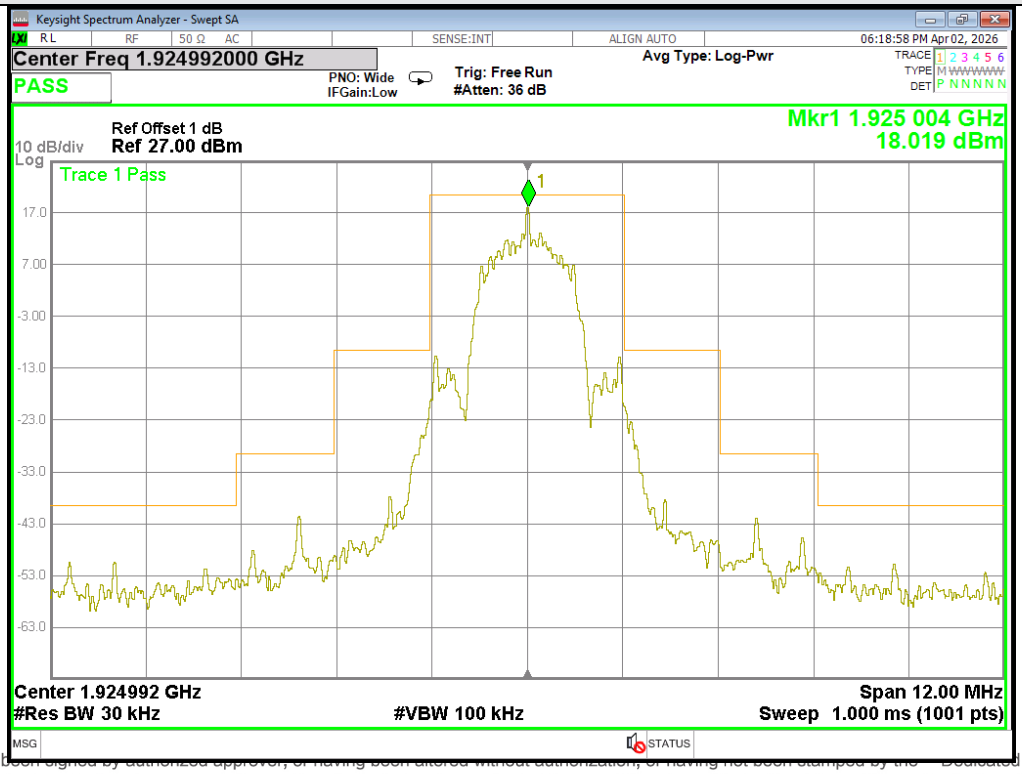
## 9.4 Measurement Result

**Test Graphs of In-Band Unwanted Emissions**
**Module A**

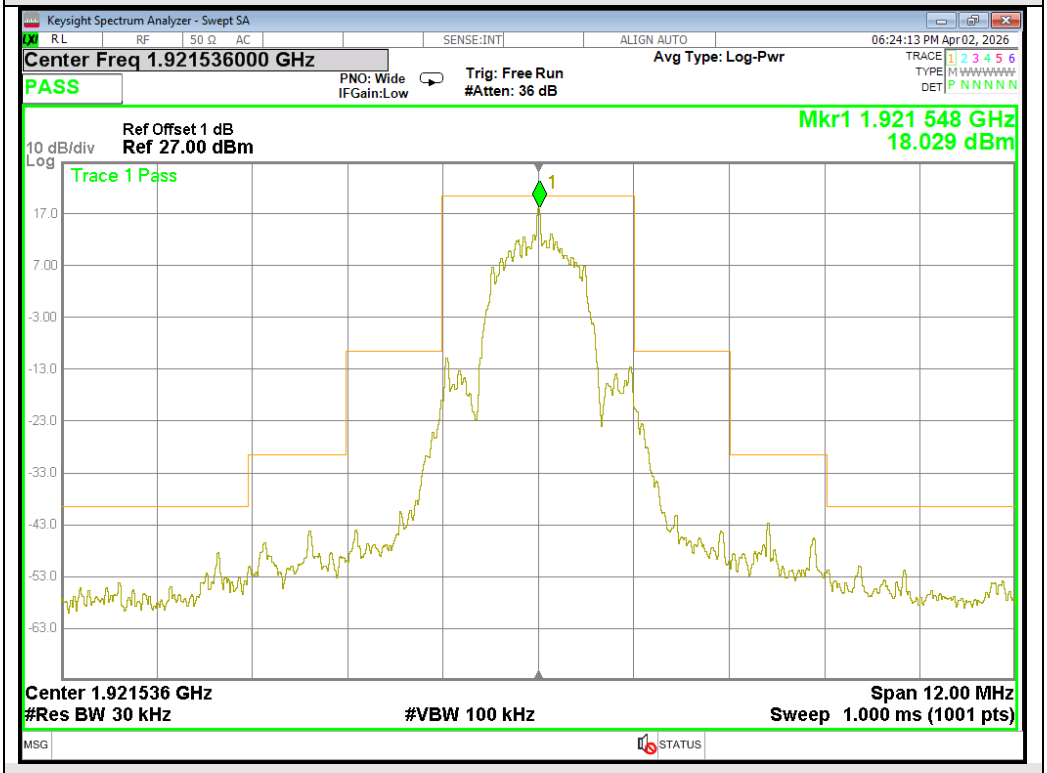
Test_Graph_UPCS_ANT1_CH00_GFSK_Emission Mask



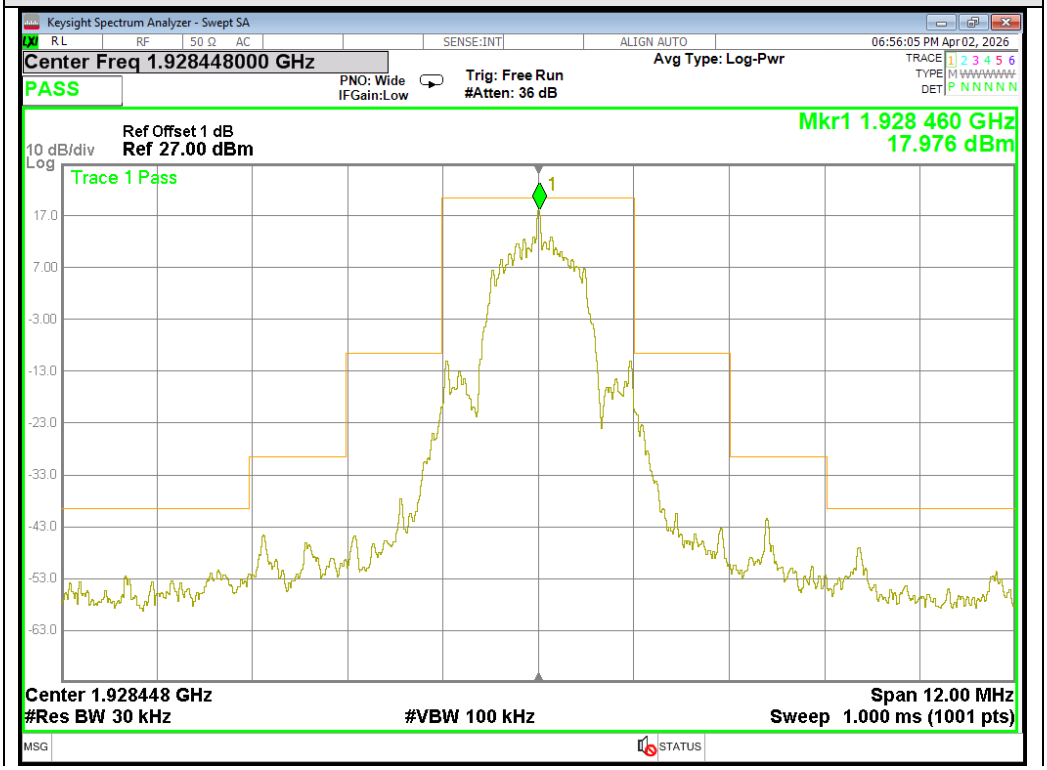

Test_Graph_UPCS_ANT1_CH02_GFSK_ Emission Mask



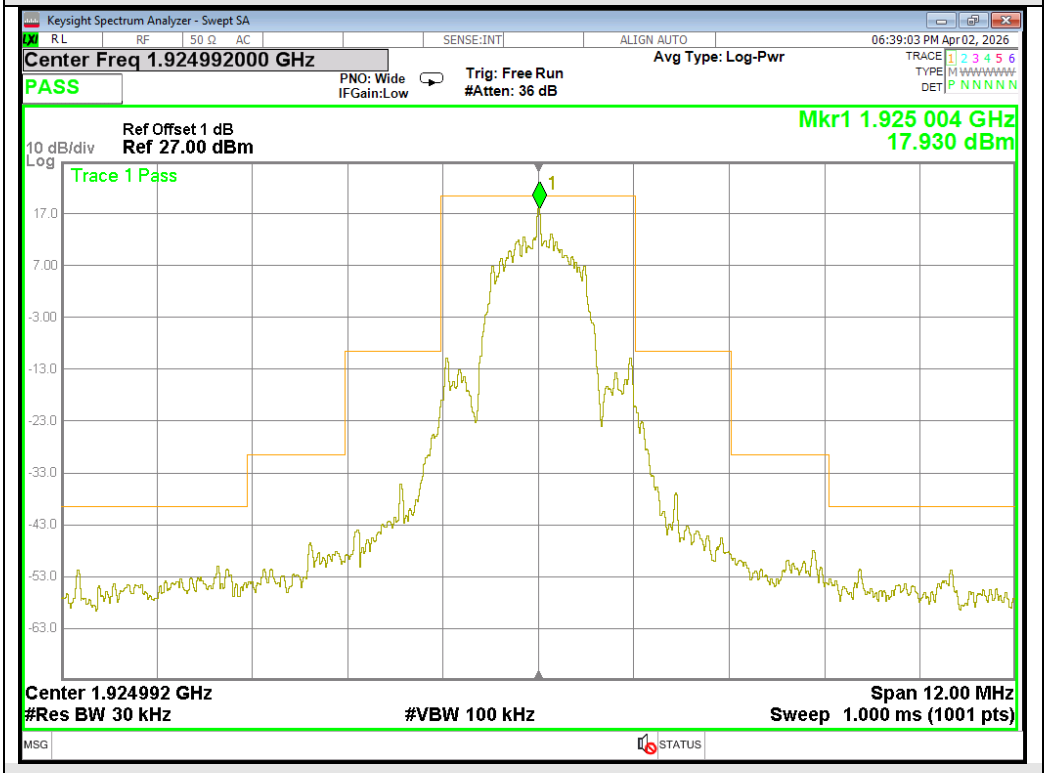
Test_Graph_UPCS_ANT1_CH04_GFSK_ Emission Mask




Test_Graph_UPCS_ANT2_CH00_GFSK_Emission Mask



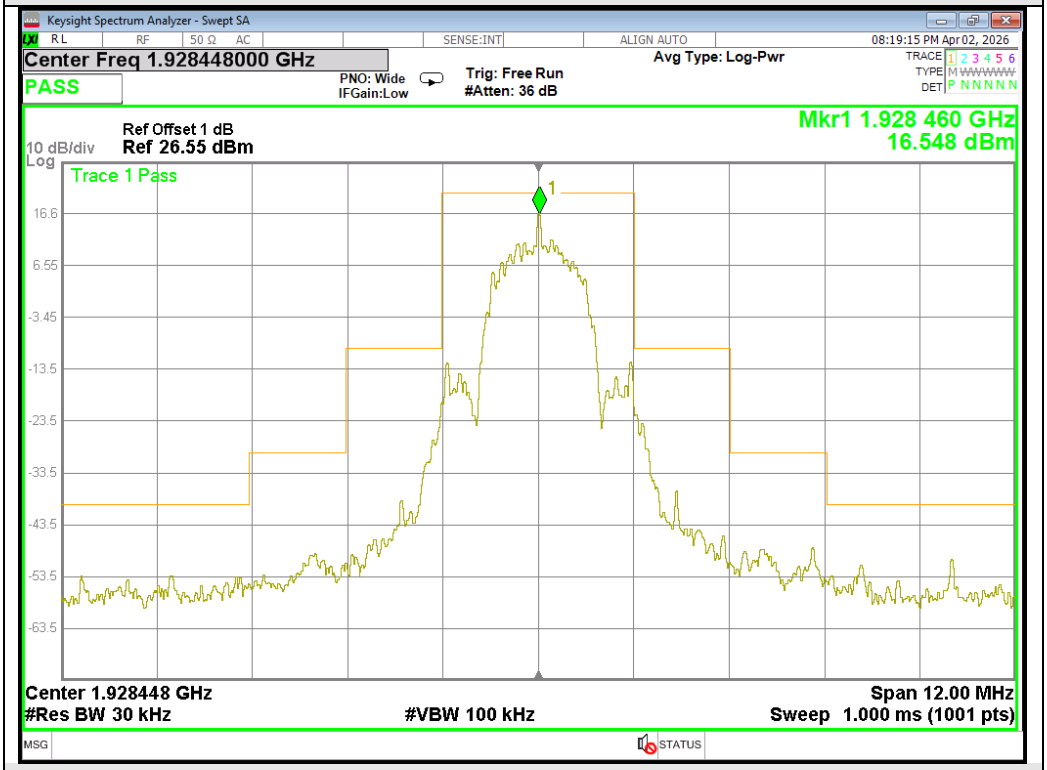
Test_Graph_UPCS_ANT2_CH02_GFSK_ Emission Mask



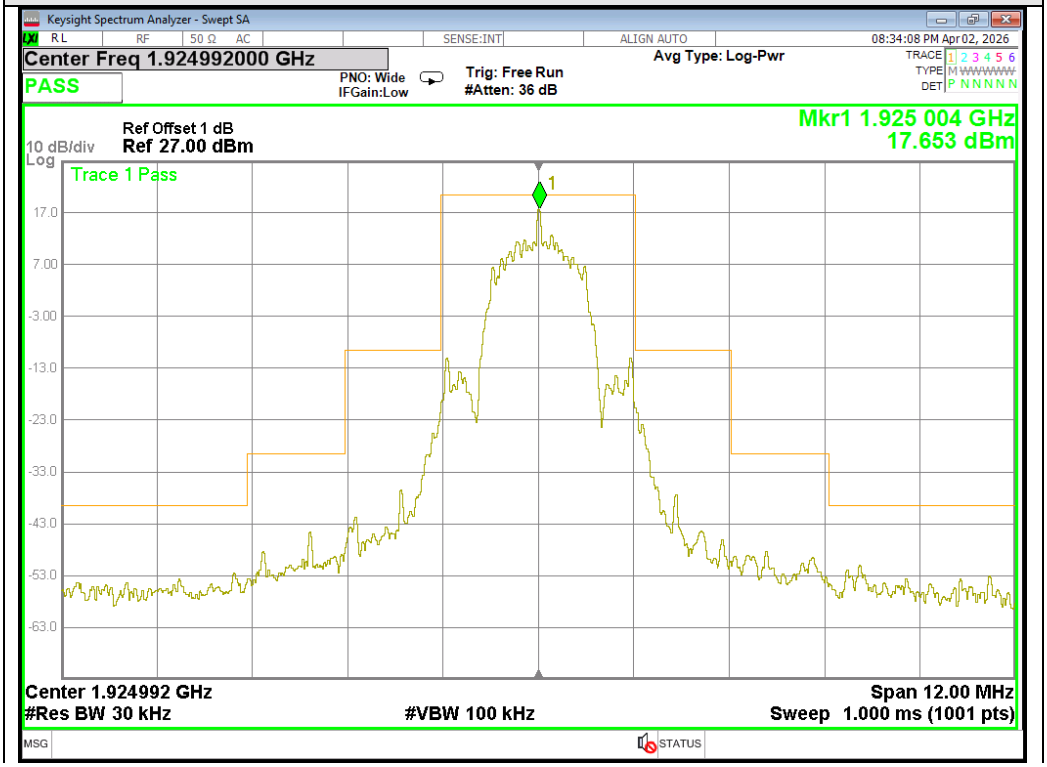

Test_Graph_UPCS_ANT2_CH04_GFSK_ Emission Mask

**Module B**

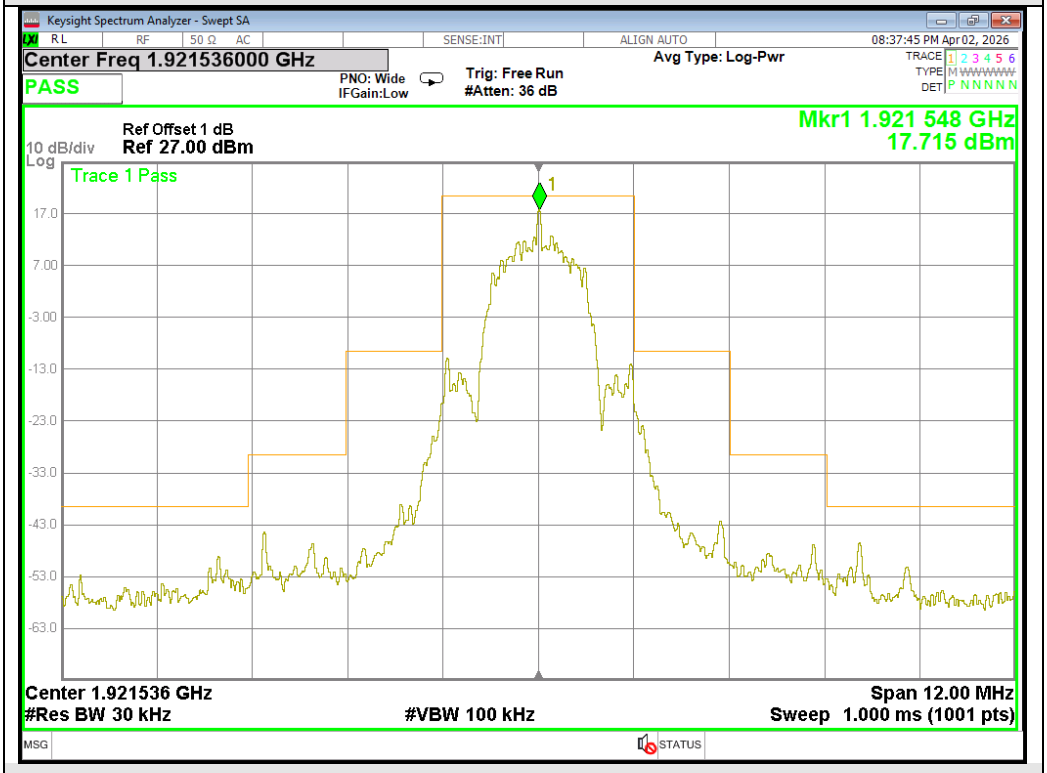
Test_Graph_UPCS_ANT1_CH00_GFSK_Emission Mask



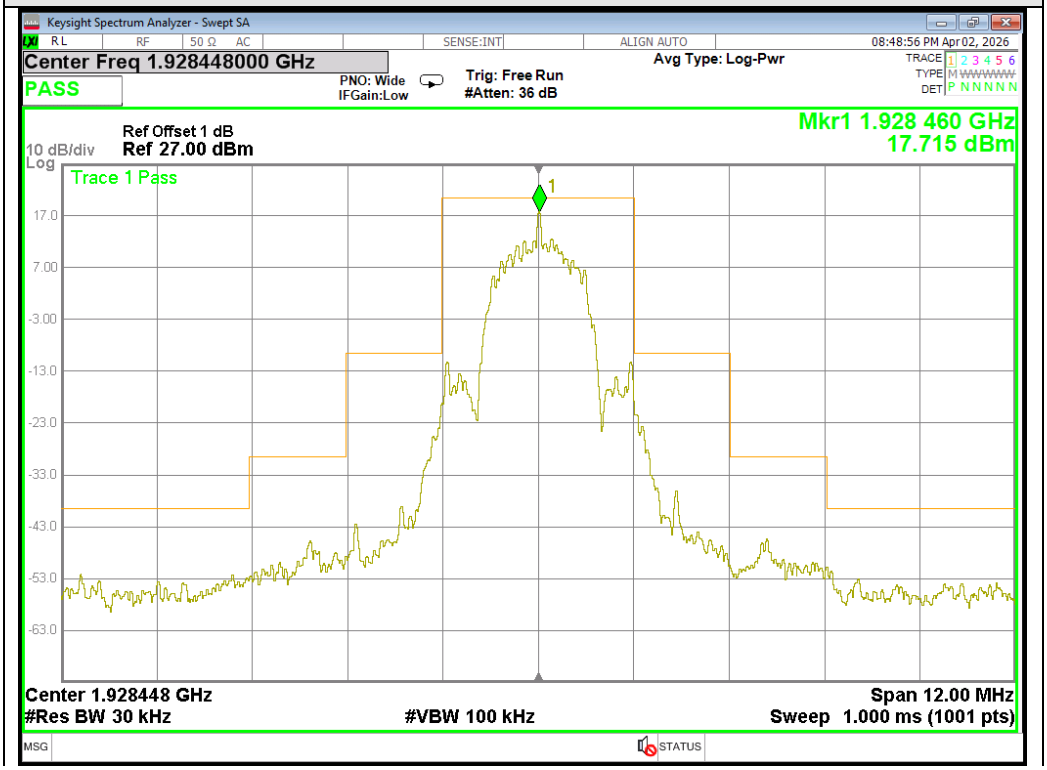

Test_Graph_UPCS_ANT1_CH02_GFSK_ Emission Mask



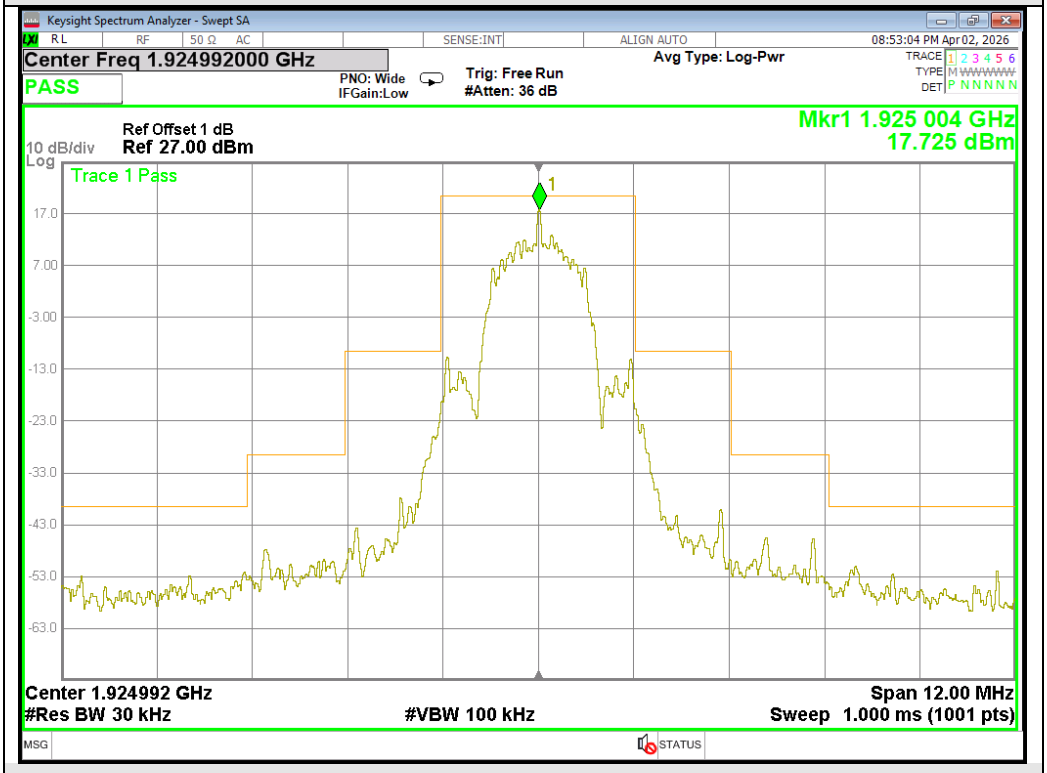
Test_Graph_UPCS_ANT1_CH04_GFSK_ Emission Mask



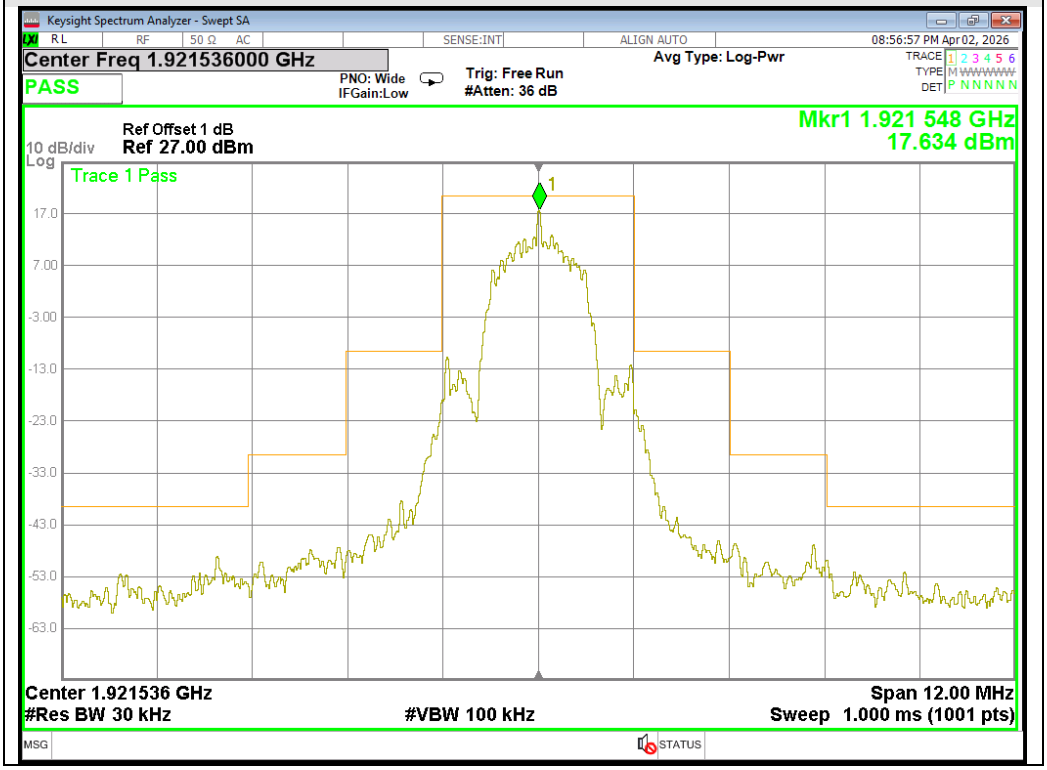

Test_Graph_UPCS_ANT2_CH00_GFSK_Emission Mask



Test_Graph_UPCS_ANT2_CH02_GFSK_ Emission Mask




Test_Graph_UPCS_ANT2_CH04_GFSK_ Emission Mask



# 10. Out-of-Band Unwanted Emissions

## 10.1 Provisions Applicable

Please refer to FCC 47 CFR Part 15.323(d) for specification details:

a) In the region between the band edges and 1.25 MHz below and above the lower and the upper band edges, respectively, the measured emission level shall not exceed −9.5 dBm.

b) In the region between 1.25 and 2.5 MHz below and above the lower and the upper band edges, respectively, the measured emission level shall not exceed −29.5 dBm.

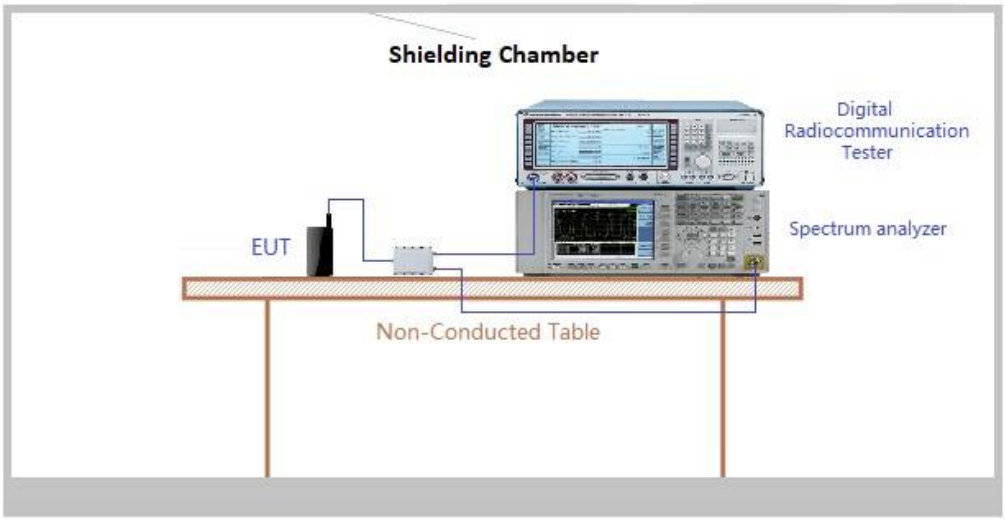
c) In the region at 2.5 MHz or greater below and above the lower and upper band edges, respectively, the measured emission level shall not exceed −39.5 dBm.

## 10.2 Measurement Procedure

The testing follows the ANSI C63.17-2013 Section 6.1.6.2

| | |
|---|---|
| RBW | Approximately 1% of the Emission bandwidth (B) |
| Video bandwidth | ≥ 3*RBW |
| Span | Approximately equal to 3.5 B |
| Center frequency | Nominal center frequency of transmit carrier |
| Detection | Peak detection and max hold enabled |
| Amplitude scale | Log |
| Sweep Time | The sweep time shall be sufficiently slow that the swept frequency rate shall not exceed one RBW per three transmit bursts. |
| Number of sweeps | Sufficient to stabilize the trace |

## 10.3 Measurement Setup (Block Diagram of Configuration)

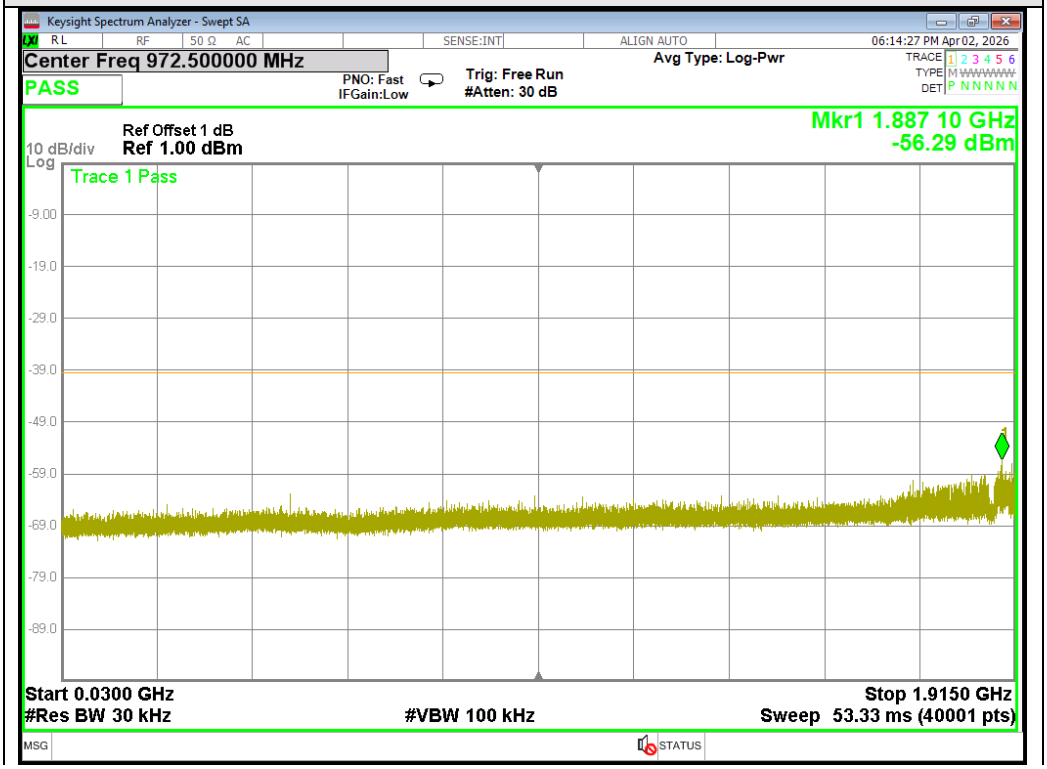


### 10.4 Measurement Result

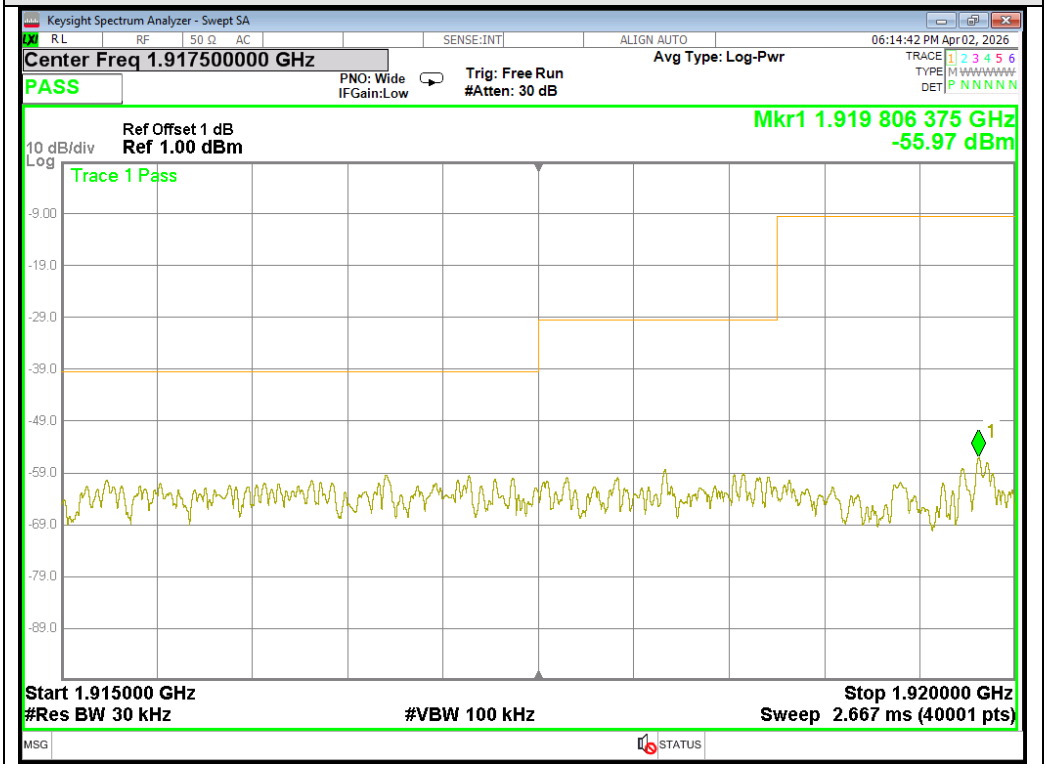
**Test Graphs of Out-of-Band Unwanted Emissions**
**Module A**

| Test Channal | Frequency (MHz) | Range (MHz) | Reading Frequency (MHz) | Reading Level (dBm) | Additional offset (dB) | Result (dBm) | Limits (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 0 | 1928.448 | 1935-20000 | 19993.2 | -53.61 | 4.26 | -49.35 | -39.5 | PASS |
| 2 | 1924.992 | 1935-20000 | 3850.8 | -53.29 | 4.26 | -49.03 | -39.5 | PASS |
| 4 | 1921.536 | 1935-20000 | 16644.4 | -53.94 | 4.26 | -49.68 | -39.5 | PASS |
| Note:The 1dB offset is the maximum deviation within the main frequency band. The maximum deviation within the range of 1935 MHz to 20 GHz is 5.26 dB. The additional offset has been calculated to compensate for this difference. The test results below 1935 MHz can be viewed in the test graph. | | | | | | | | |

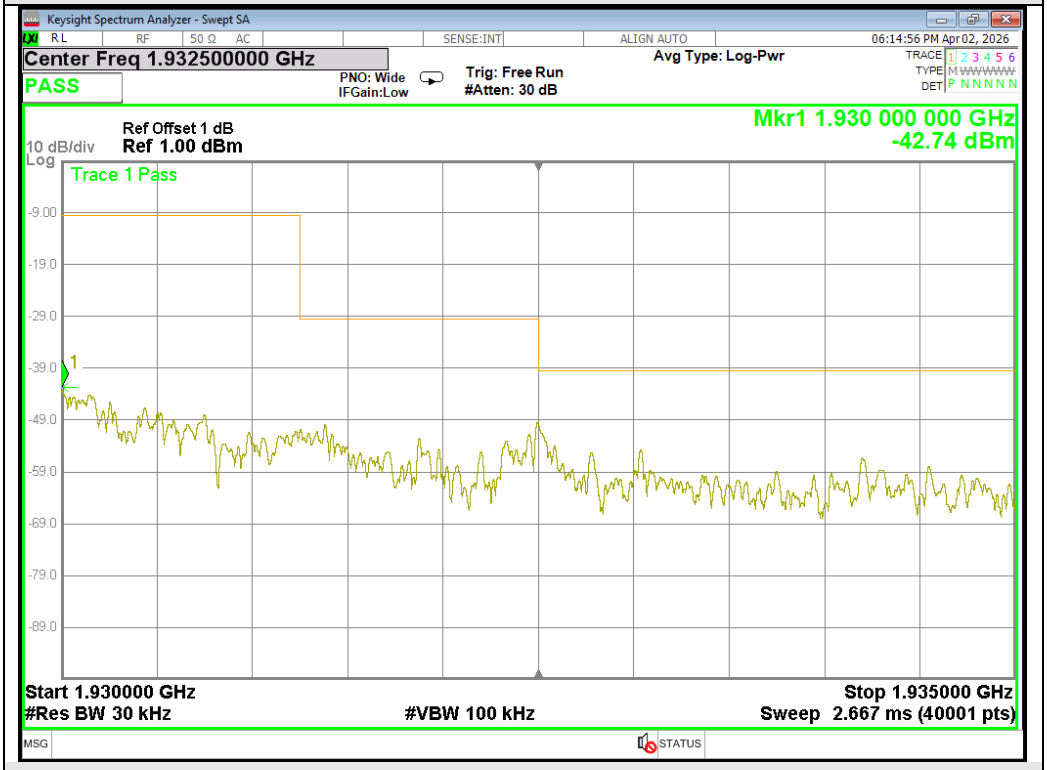
Test_Graph_UPCS_ANT1_CH00_GFSK_ Emissions 30MHz - 1915 MHz



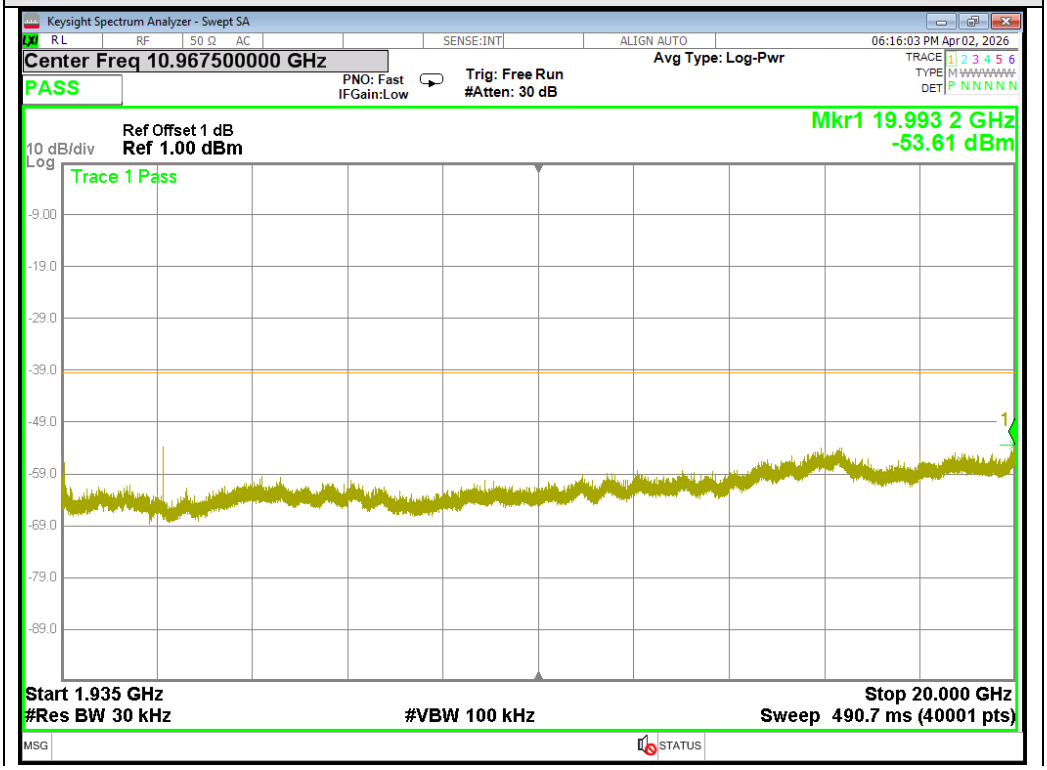
Test_Graph_UPCS_ANT1_CH00_GFSK_ Emissions 1915M-1920M



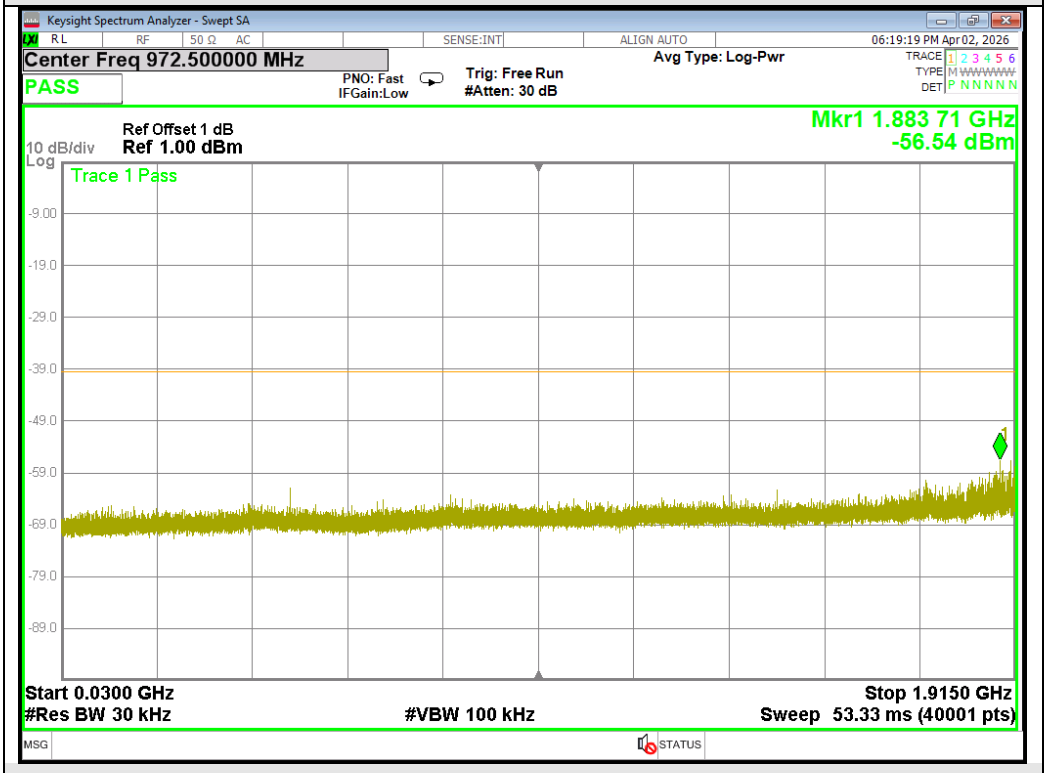
Test_Graph_UPCS_ANT1_CH00_GFSK_ Emissions 1930M-1935M



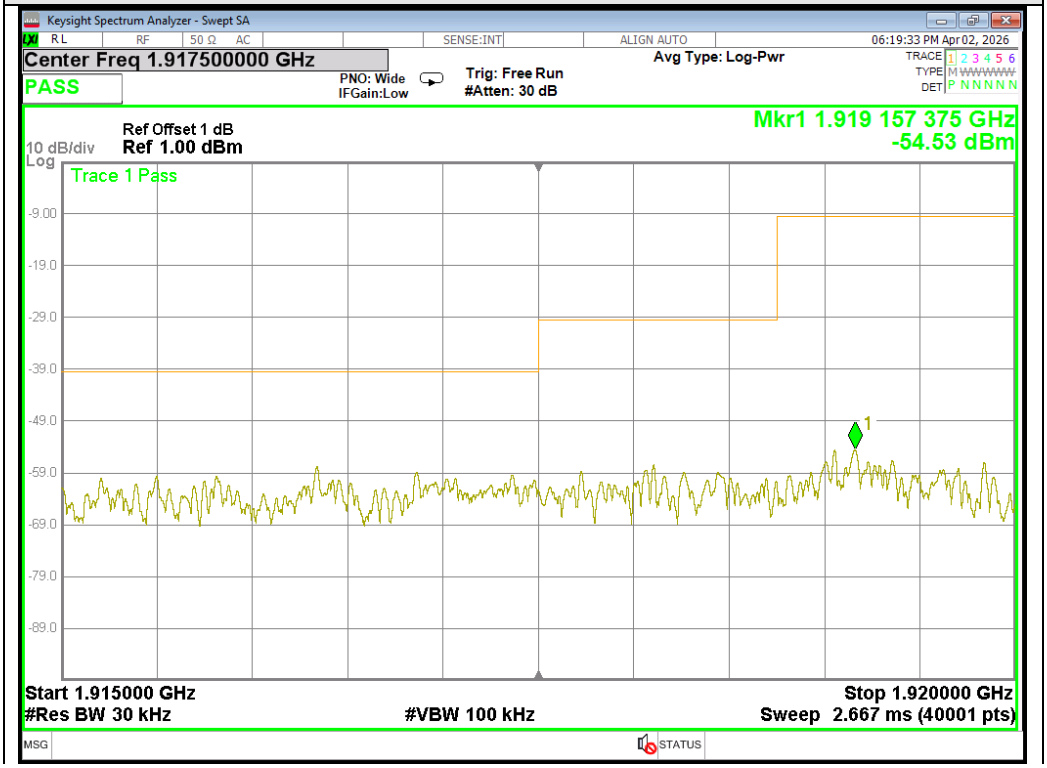

Test_Graph_UPCS_ANT1_CH00_GFSK_ Emissions Band 1935M-20G



Test_Graph_UPCS_ANT1_CH02_GFSK_ Emissions 30MHz - 1915 MHz

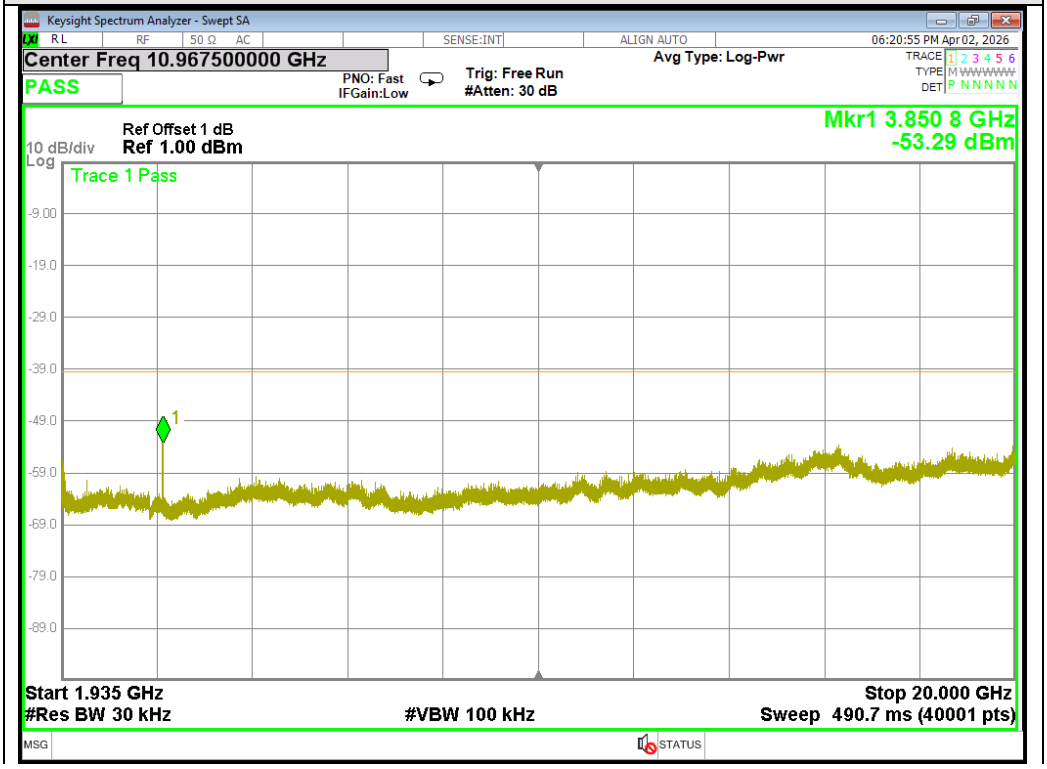



Test_Graph_UPCS_ANT1_CH02_GFSK_ Emissions 1915M-1920M

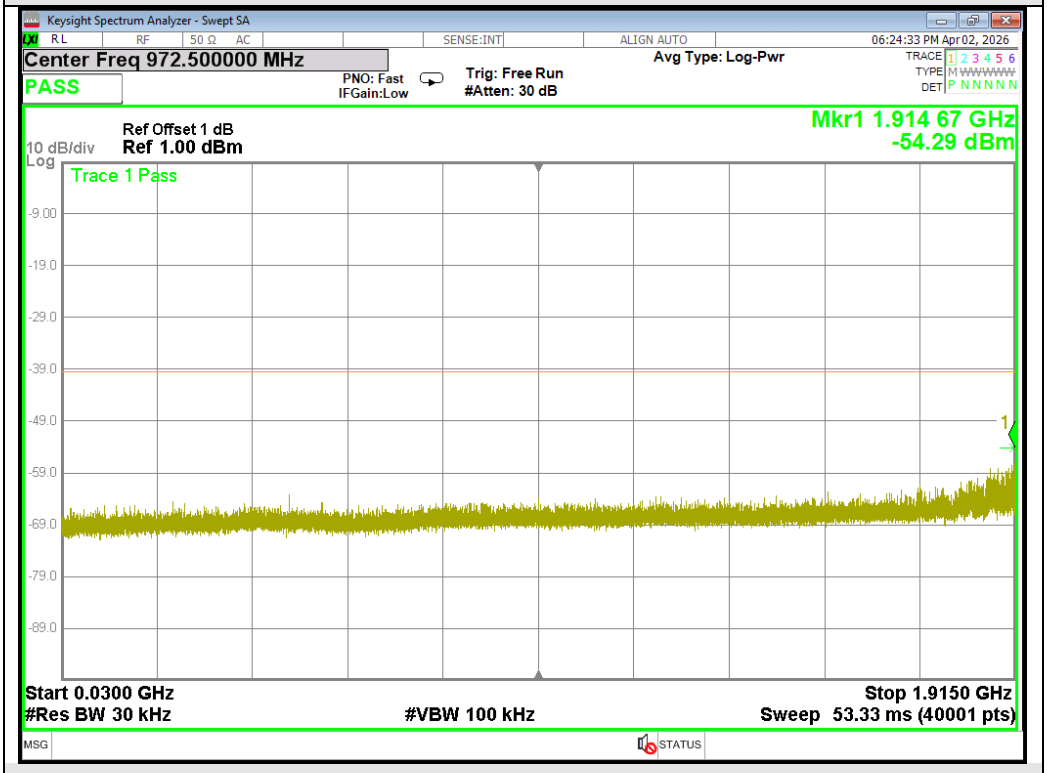


Test_Graph_UPCS_ANT1_CH02_GFSK_ Emissions 1930M-1935M

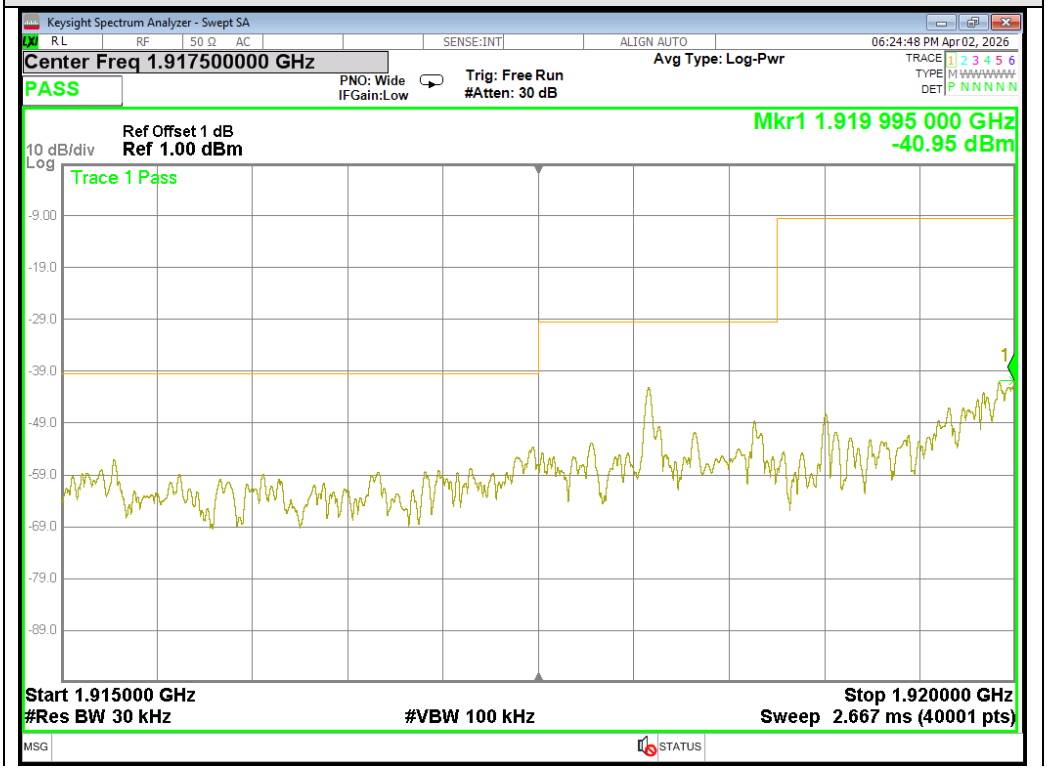

Test_Graph_UPCS_ANT1_CH02_GFSK_ Emissions 1935M-20G



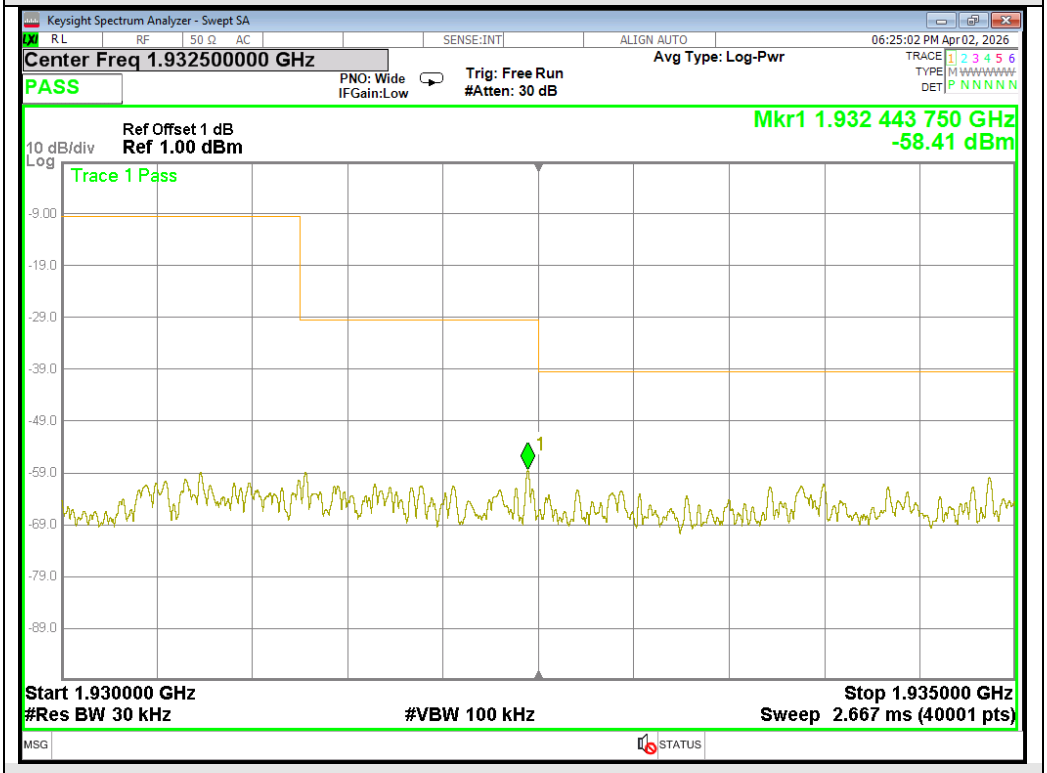
Test_Graph_UPCS_ANT1_CH04_GFSK_ Emissions 30MHz - 1915 MHz



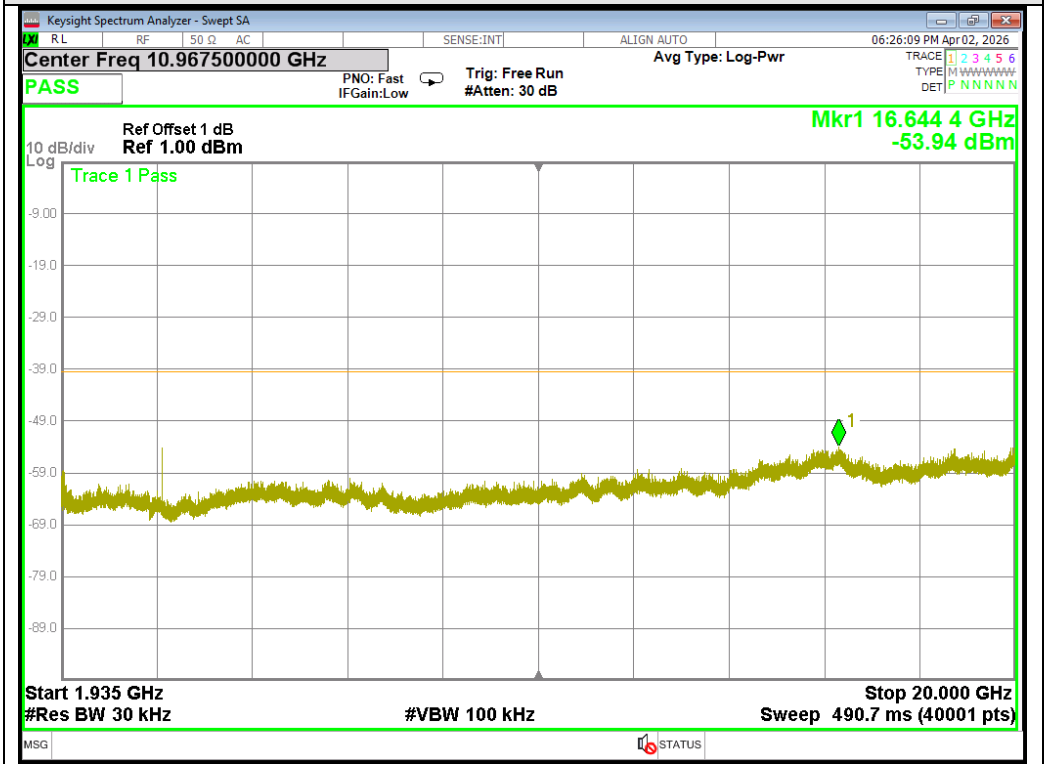

Test_Graph_UPCS_ANT1_CH04_GFSK_ Emissions 1915M-1920M



Test_Graph_UPCS_ANT1_CH04_GFSK_ Emissions 1930M-1935M

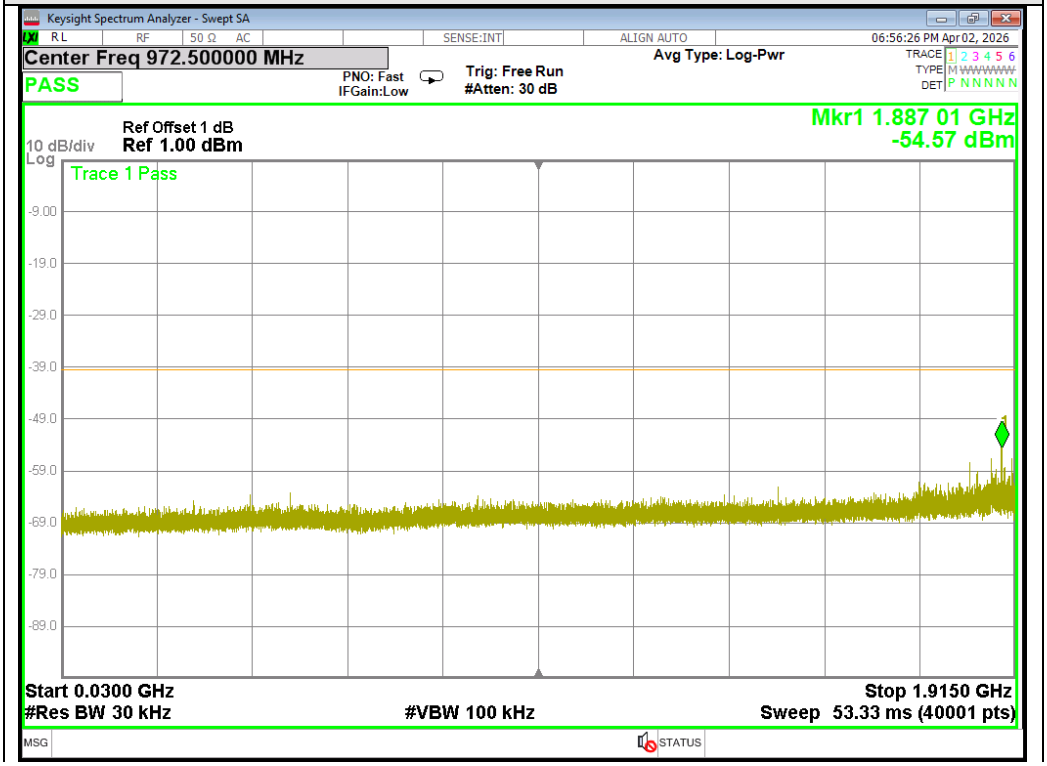



Test_Graph_UPCS_ANT1_CH04_GFSK_ Emissions 1935M-20G

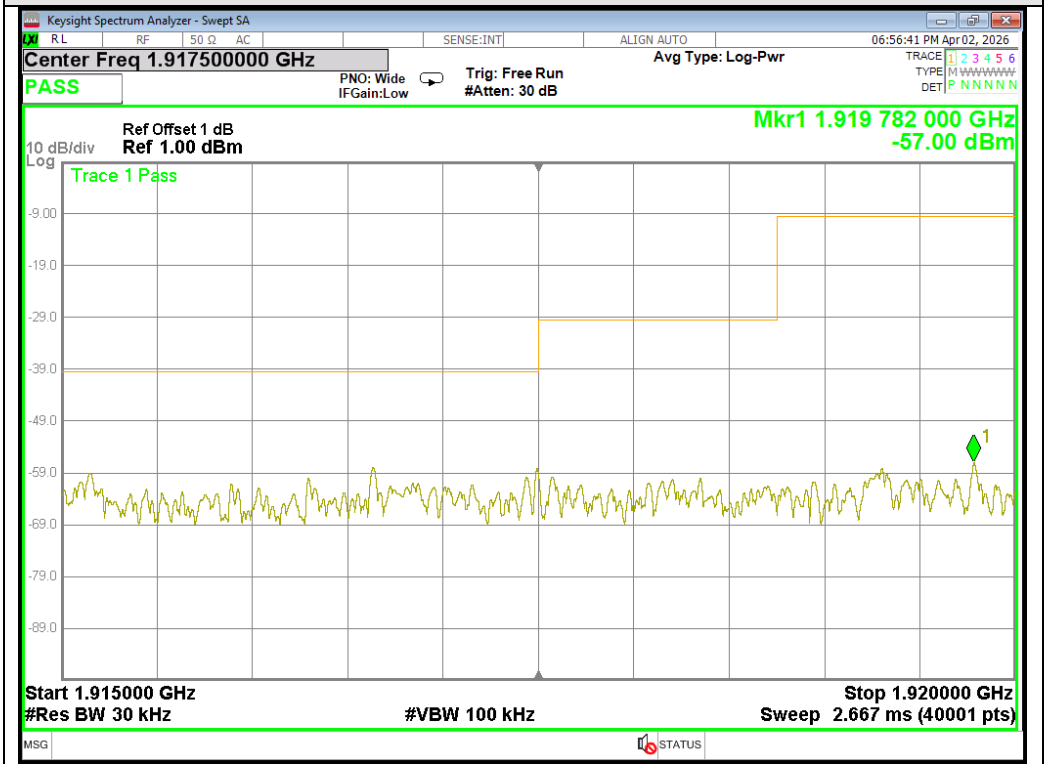


| Test Channal | Frequency (MHz) | Range (MHz) | Reading Frequency (MHz) | Reading Level (dBm) | Additional offset (dB) | Result (dBm) | Limits (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 0 | 1928.448 | 1935-20000 | 16596.6 | -53.61 | 4.26 | -49.35 | -39.5 | PASS |
| 2 | 1924.992 | 1935-20000 | 16537.8 | -54.01 | 4.26 | -49.75 | -39.5 | PASS |
| 4 | 1921.536 | 1935-20000 | 3842.7 | -53.41 | 4.26 | -49.15 | -39.5 | PASS |
| Note:The 1dB offset is the maximum deviation within the main frequency band. The maximum deviation within the range of 1935 MHz to 20 GHz is 5.26 dB. The additional offset has been calculated to compensate for this difference. The test results below 1935 MHz can be viewed in the test graph. | | | | | | | | |

Test_Graph_UPCS_ANT2_CH00_GFSK_ Emissions 30MHz - 1915 MHz

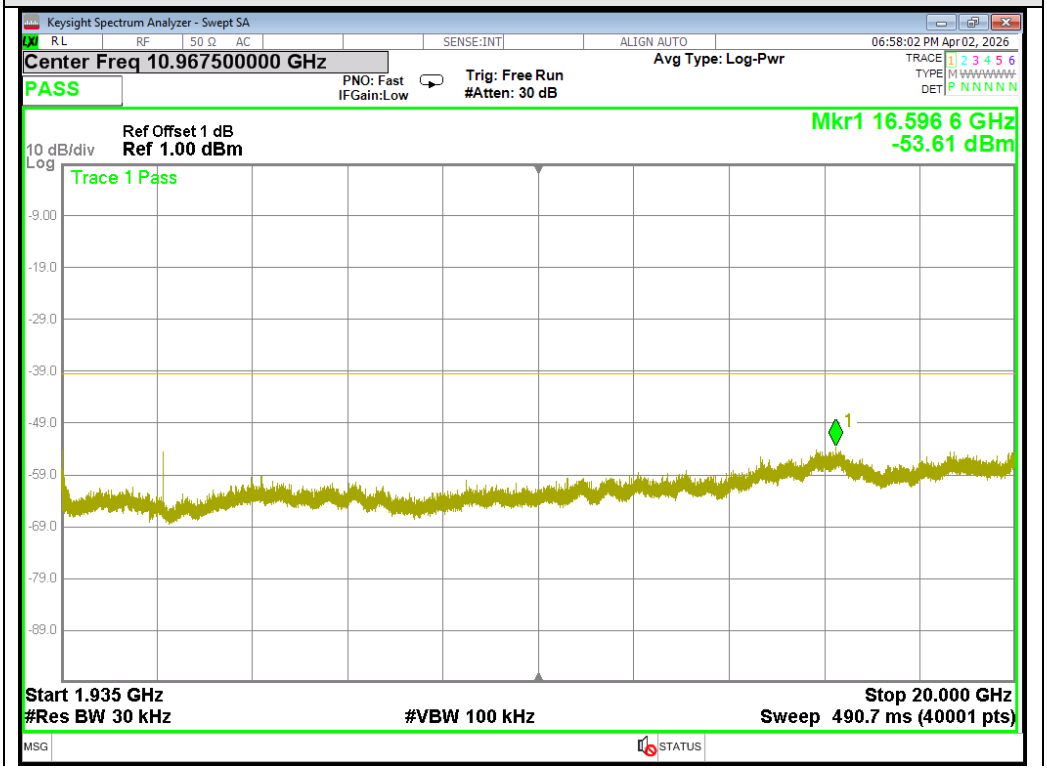


Test_Graph_UPCS_ANT2_CH00_GFSK_ Emissions 1915M-1920M

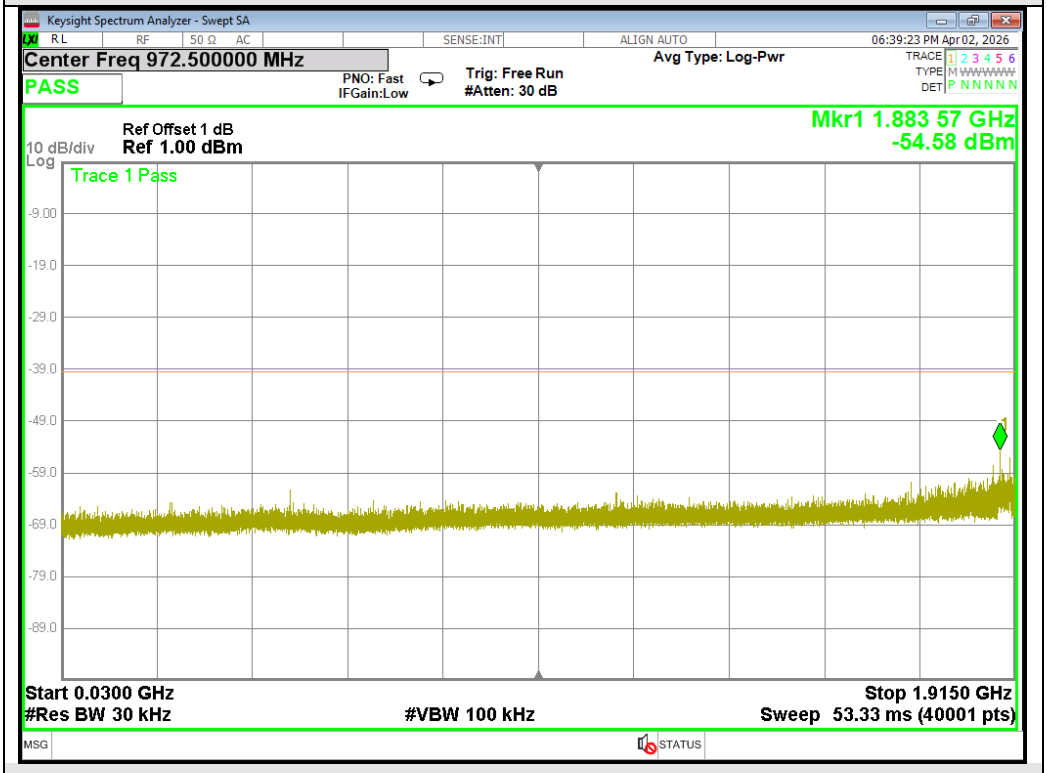


Test_Graph_UPCS_ANT2_CH00_GFSK_ Emissions 1930M-1935M


Test_Graph_UPCS_ANT2_CH00_GFSK_ Emissions Band 1935M-20G



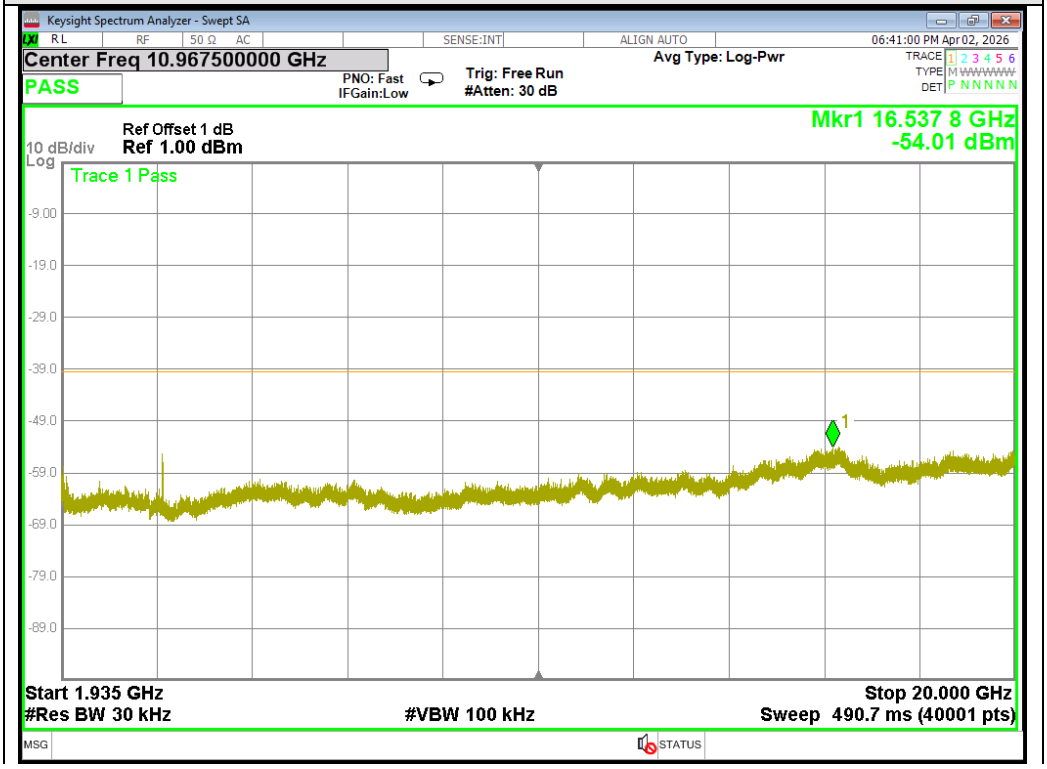
Test_Graph_UPCS_ANT2_CH02_GFSK_ Emissions 30MHz - 1915 MHz



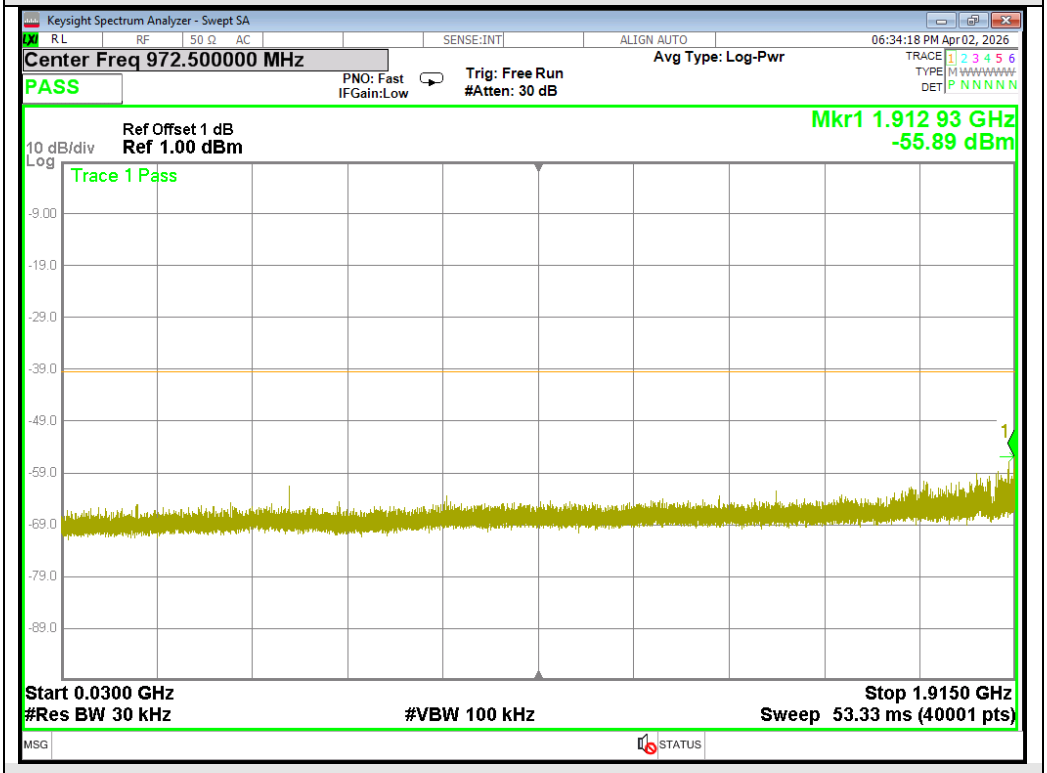

Test_Graph_UPCS_ANT2_CH02_GFSK_ Emissions 1915M-1920M

Test_Graph_UPCS_ANT2_CH02_GFSK_ Emissions 1930M-1935M

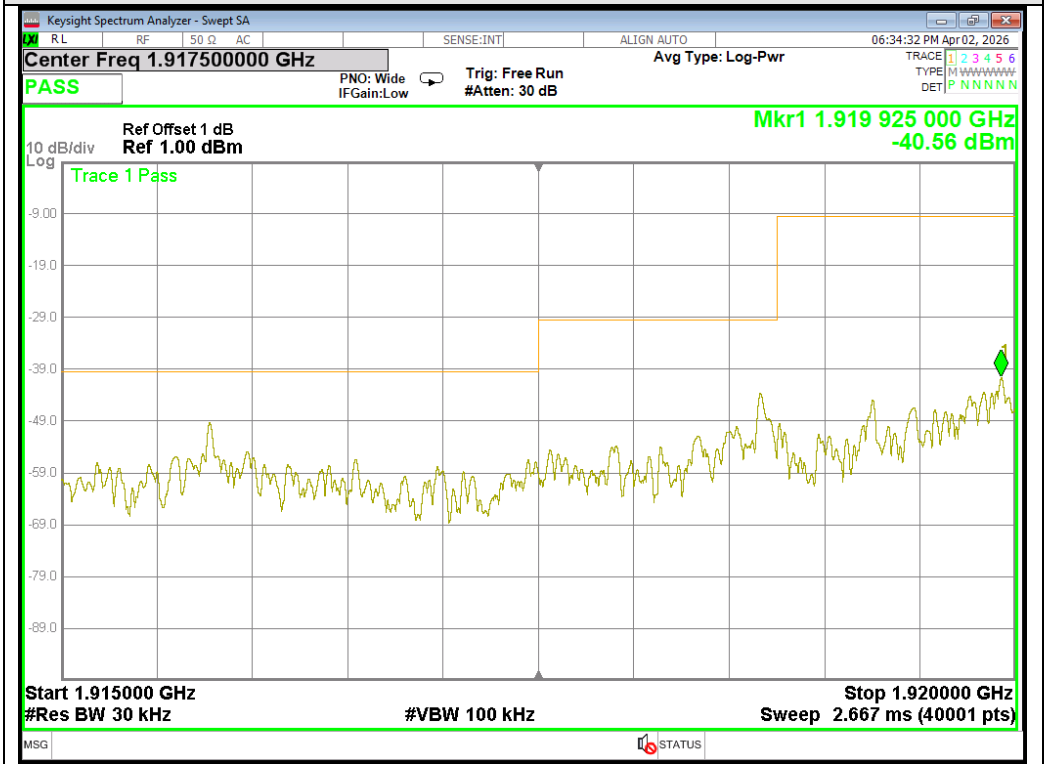

Test_Graph_UPCS_ANT2_CH02_GFSK_ Emissions 1935M-20G



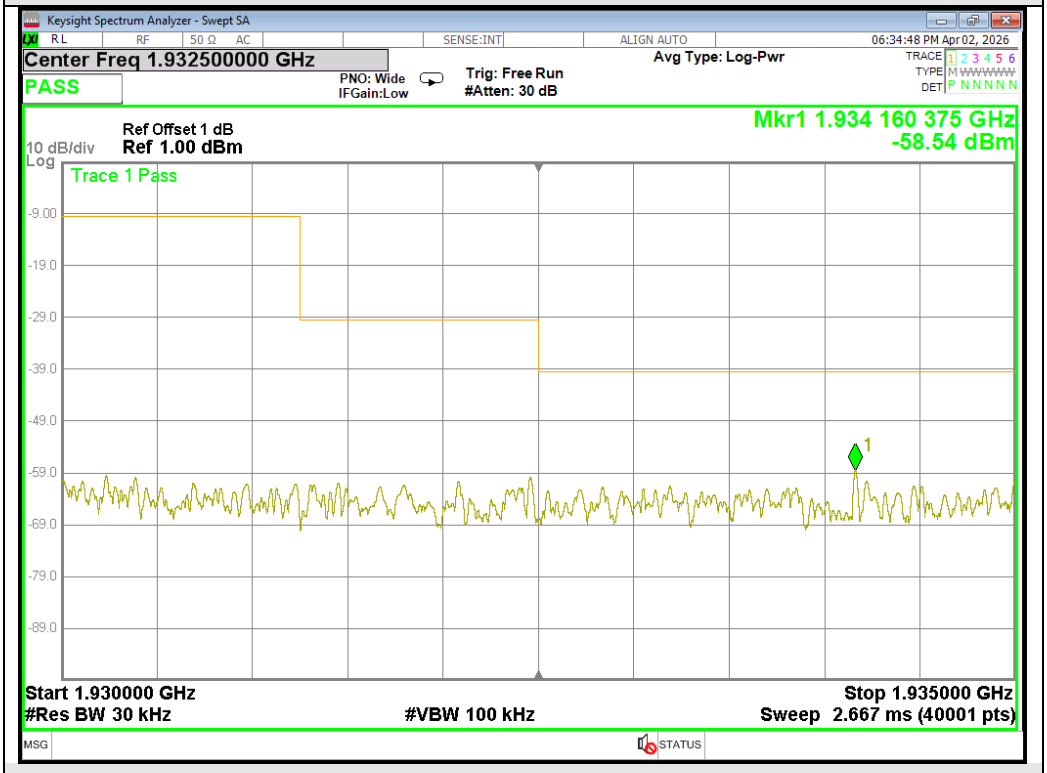
Test_Graph_UPCS_ANT2_CH04_GFSK_ Emissions 30MHz - 1915 MHz



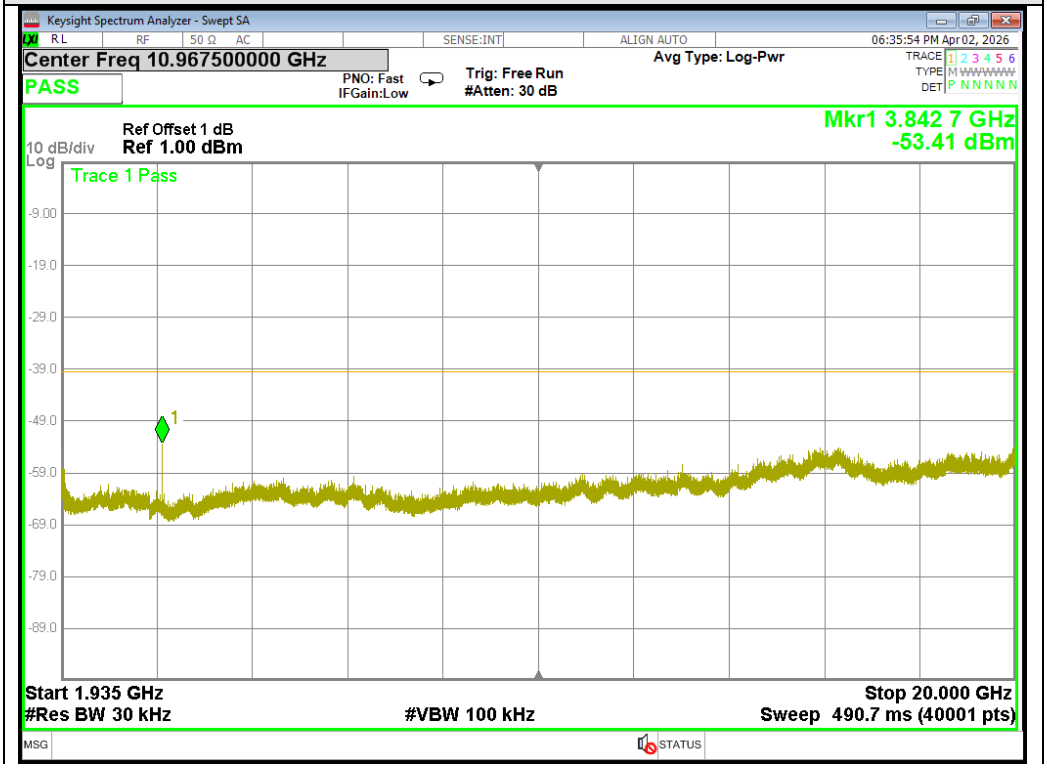

Test_Graph_UPCS_ANT2_CH04_GFSK_ Emissions 1915M-1920M



Test_Graph_UPCS_ANT2_CH04_GFSK_ Emissions 1930M-1935M



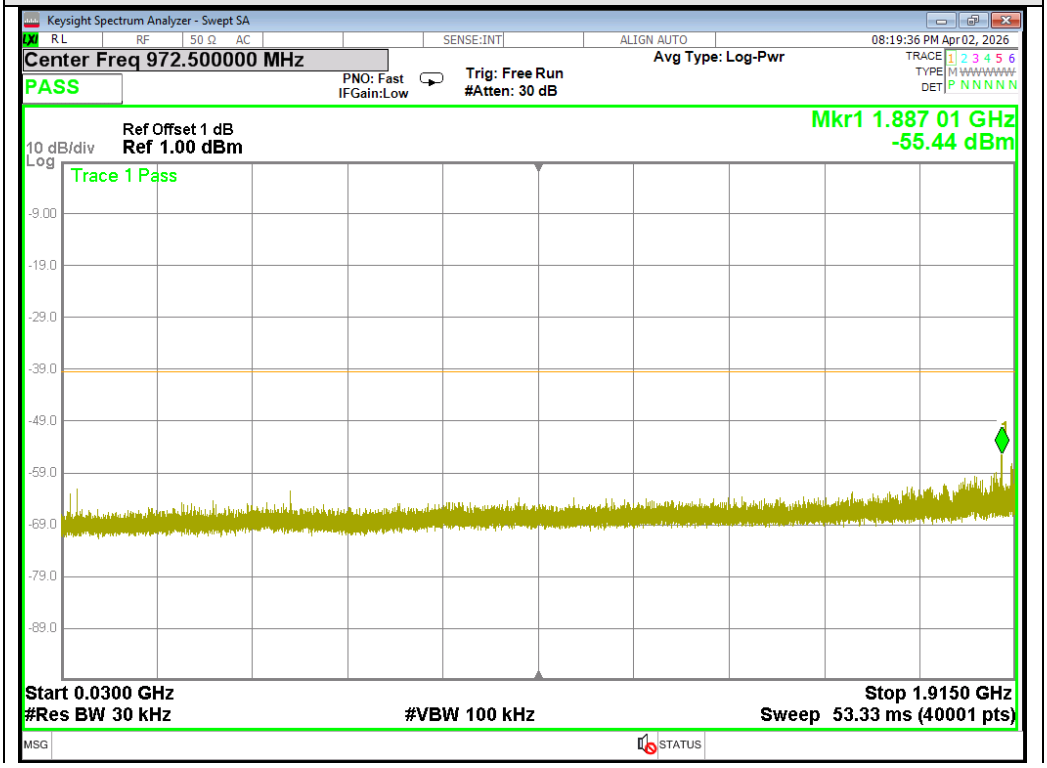

Test_Graph_UPCS_ANT2_CH04_GFSK_ Emissions 1935M-20G



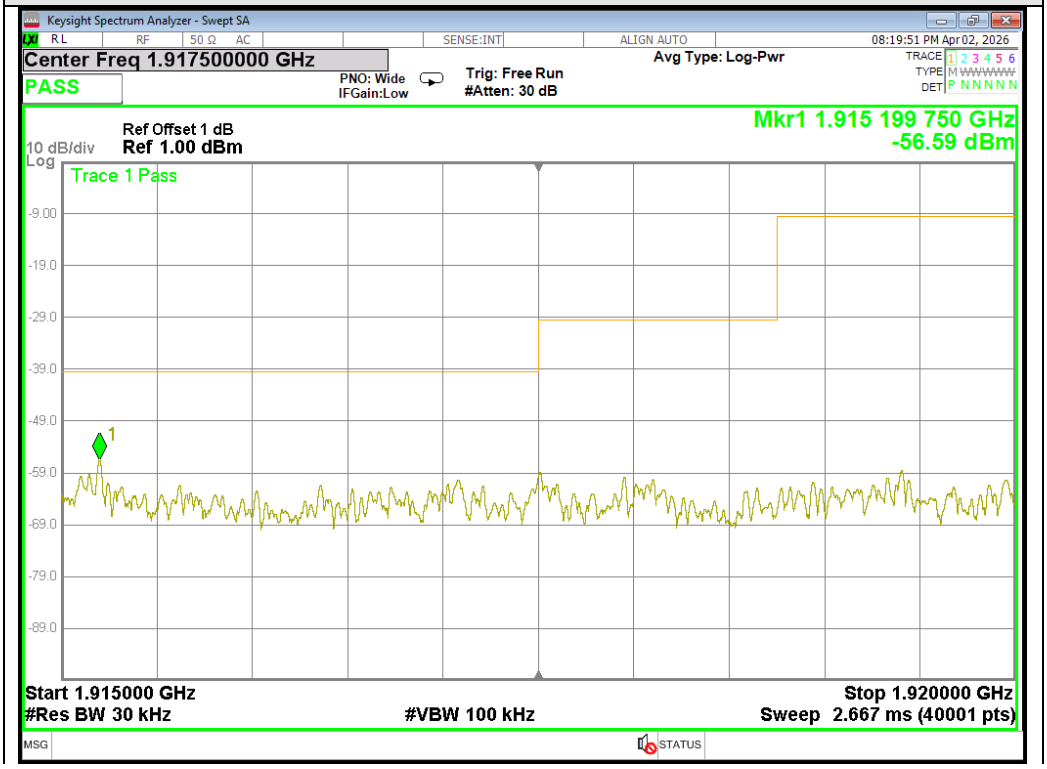
**Module B**

| Test Channal | Frequency (MHz) | Range (MHz) | Reading Frequency (MHz) | Reading Level (dBm) | Additional offset (dB) | Result (dBm) | Limits (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 0 | 1928.448 | 1935-20000 | 16535.6 | -53.64 | 4.26 | -49.38 | -39.5 | PASS |
| 2 | 1924.992 | 1935-20000 | 16581.7 | -53.77 | 4.26 | -49.51 | -39.5 | PASS |
| 4 | 1921.536 | 1935-20000 | 1963 | -52.91 | 4.26 | -48.65 | -39.5 | PASS |
| Note:The 1dB offset is the maximum deviation within the main frequency band. The maximum deviation within the range of 1935 MHz to 20 GHz is 5.26 dB. The additional offset has been calculated to compensate for this difference. The test results below 1935 MHz can be viewed in the test graph. | | | | | | | | |

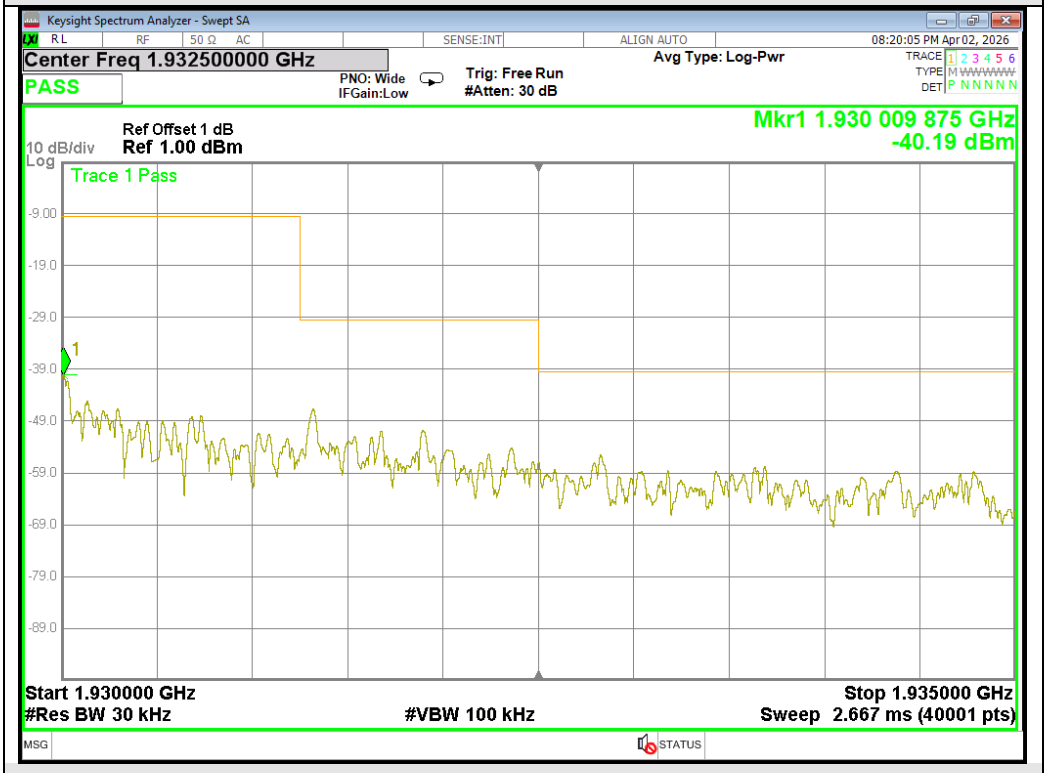
Test_Graph_UPCS_ANT1_CH00_GFSK_ Emissions 30MHz - 1915 MHz



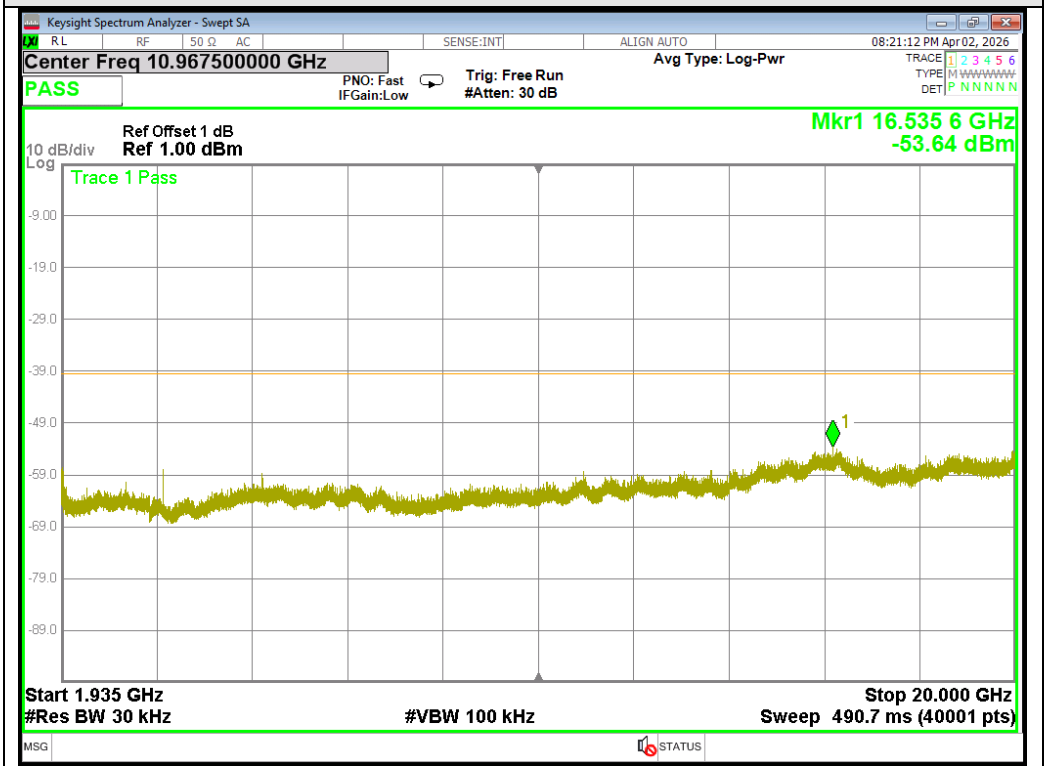
Test_Graph_UPCS_ANT1_CH00_GFSK_ Emissions 1915M-1920M



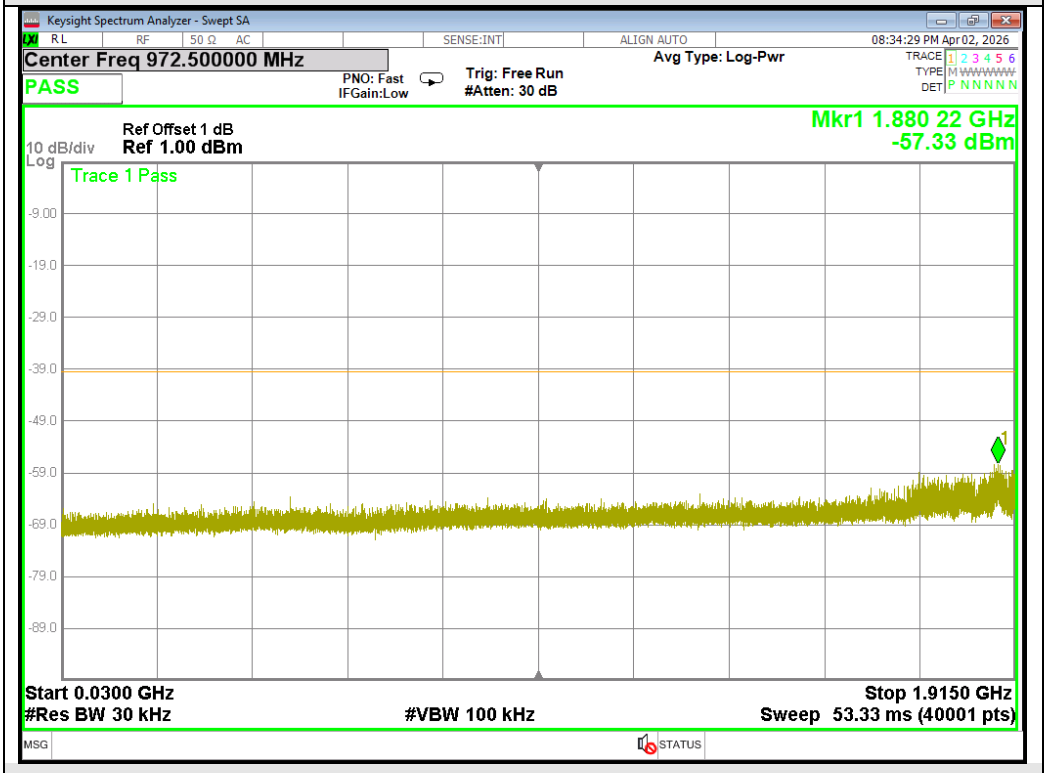
Test_Graph_UPCS_ANT1_CH00_GFSK_ Emissions 1930M-1935M




Test_Graph_UPCS_ANT1_CH00_GFSK_ Emissions Band 1935M-20G



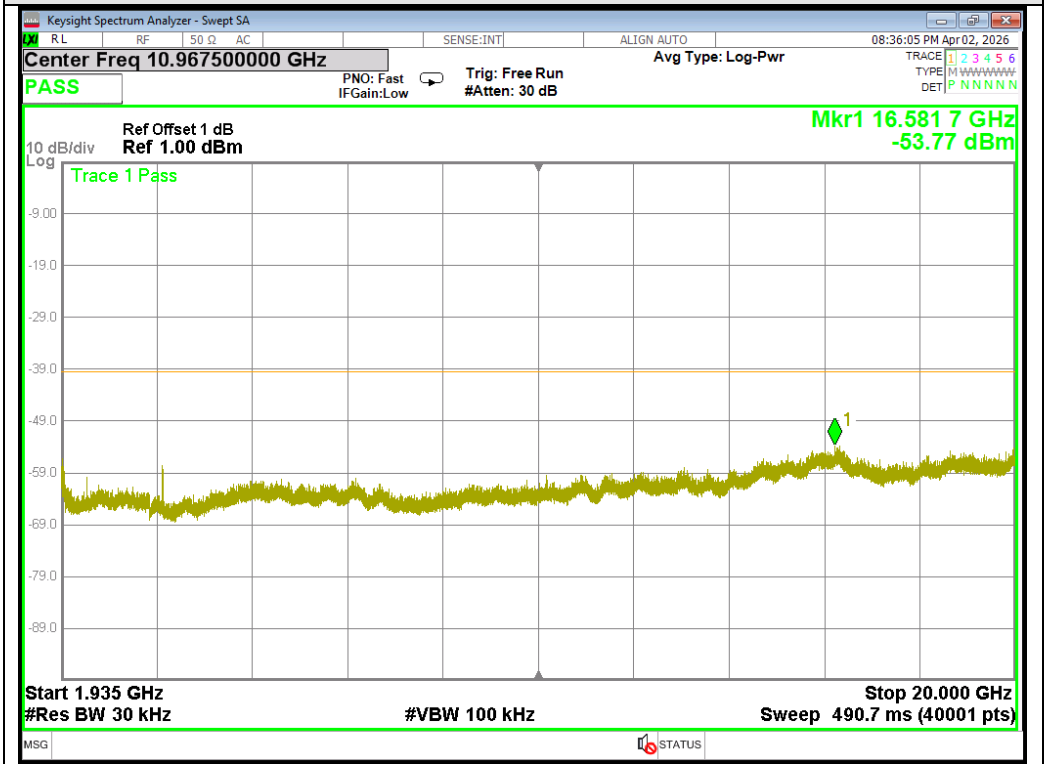
Test_Graph_UPCS_ANT1_CH02_GFSK_ Emissions 30MHz - 1915 MHz



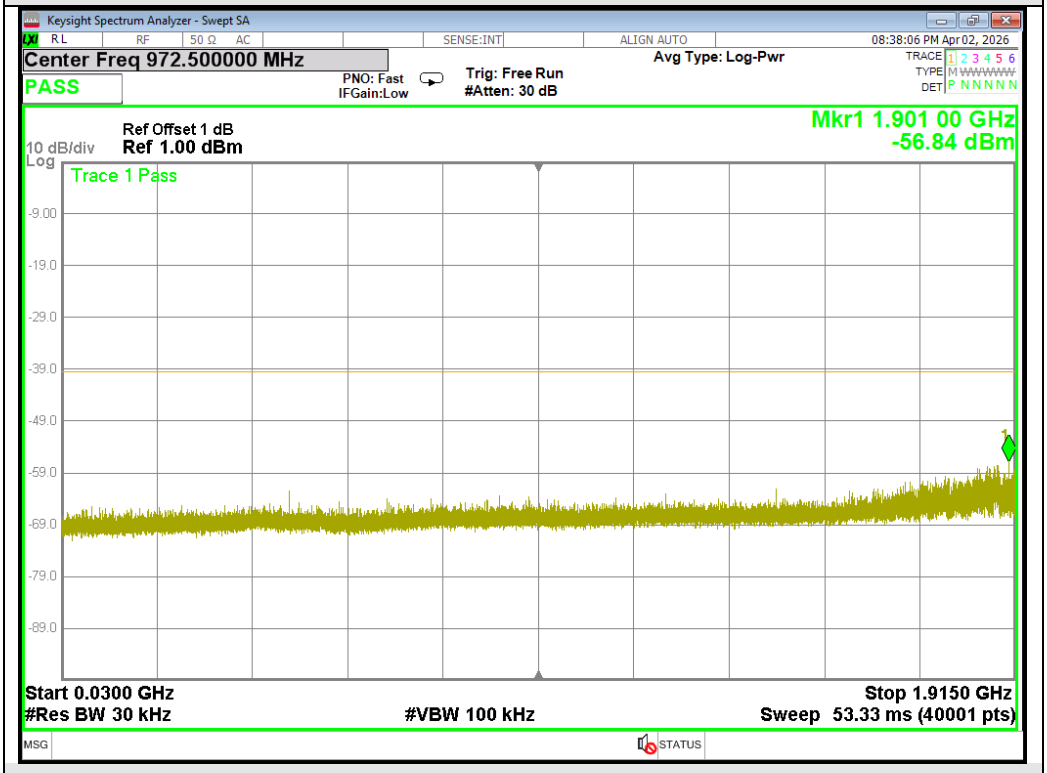

Test_Graph_UPCS_ANT1_CH02_GFSK_ Emissions 1915M-1920M

Test_Graph_UPCS_ANT1_CH02_GFSK_ Emissions 1930M-1935M

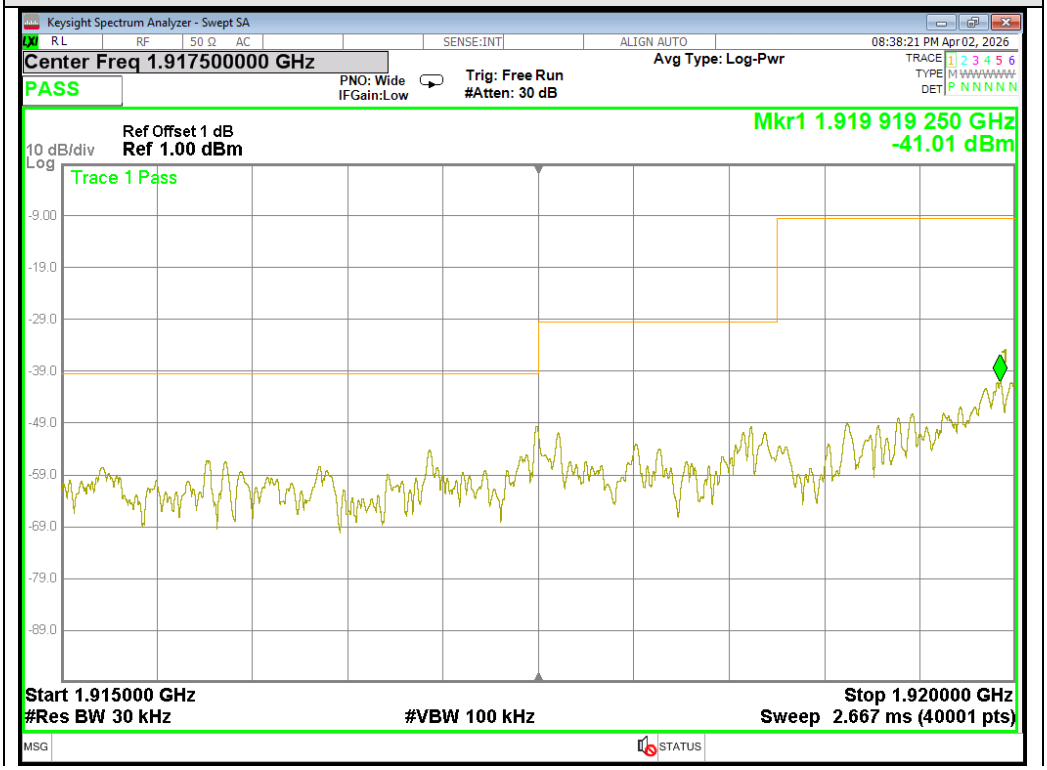

Test_Graph_UPCS_ANT1_CH02_GFSK_ Emissions 1935M-20G



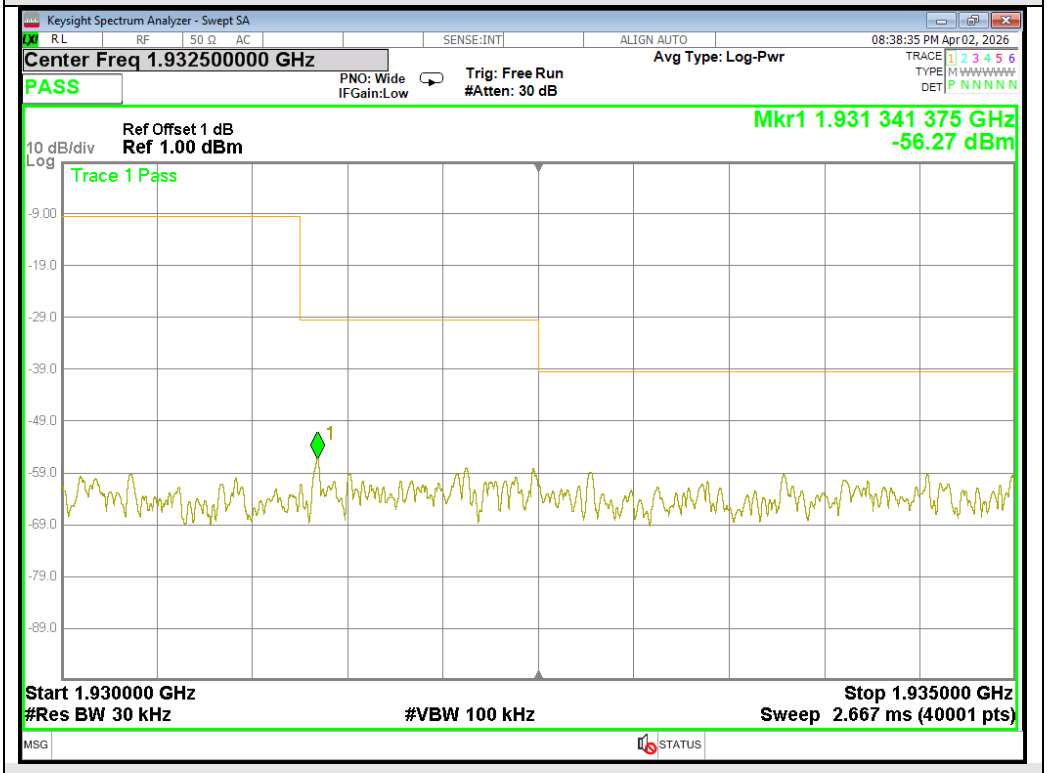
Test_Graph_UPCS_ANT1_CH04_GFSK_ Emissions 30MHz - 1915 MHz



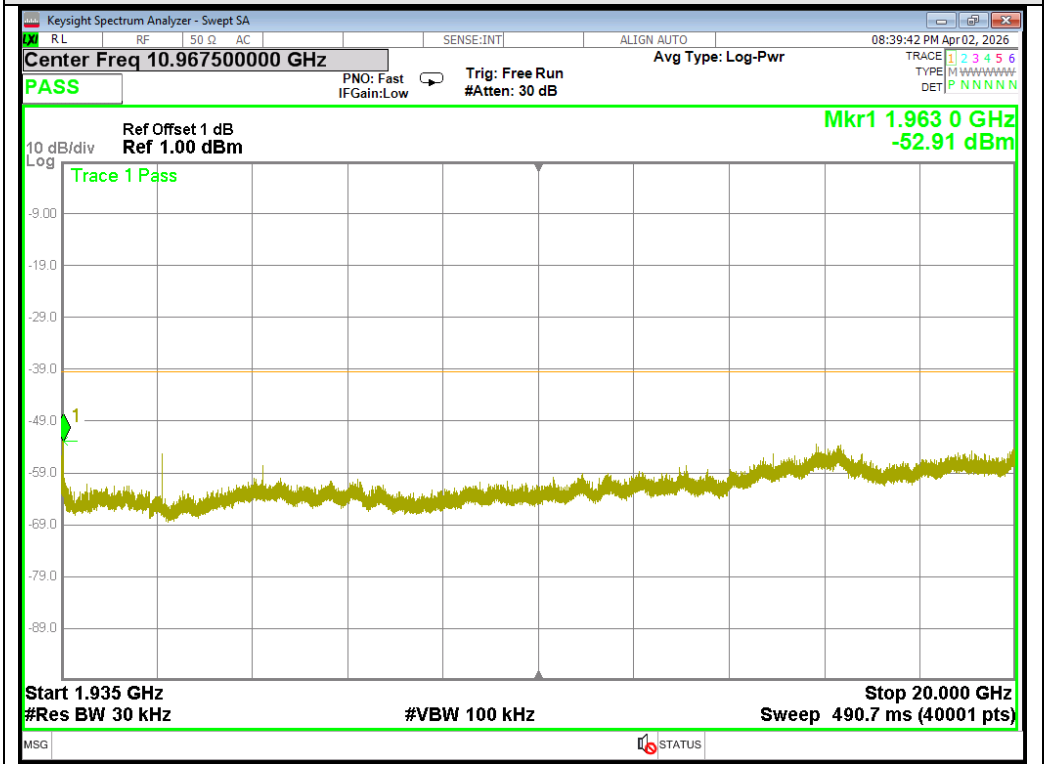

Test_Graph_UPCS_ANT1_CH04_GFSK_ Emissions 1915M-1920M



Test_Graph_UPCS_ANT1_CH04_GFSK_ Emissions 1930M-1935M

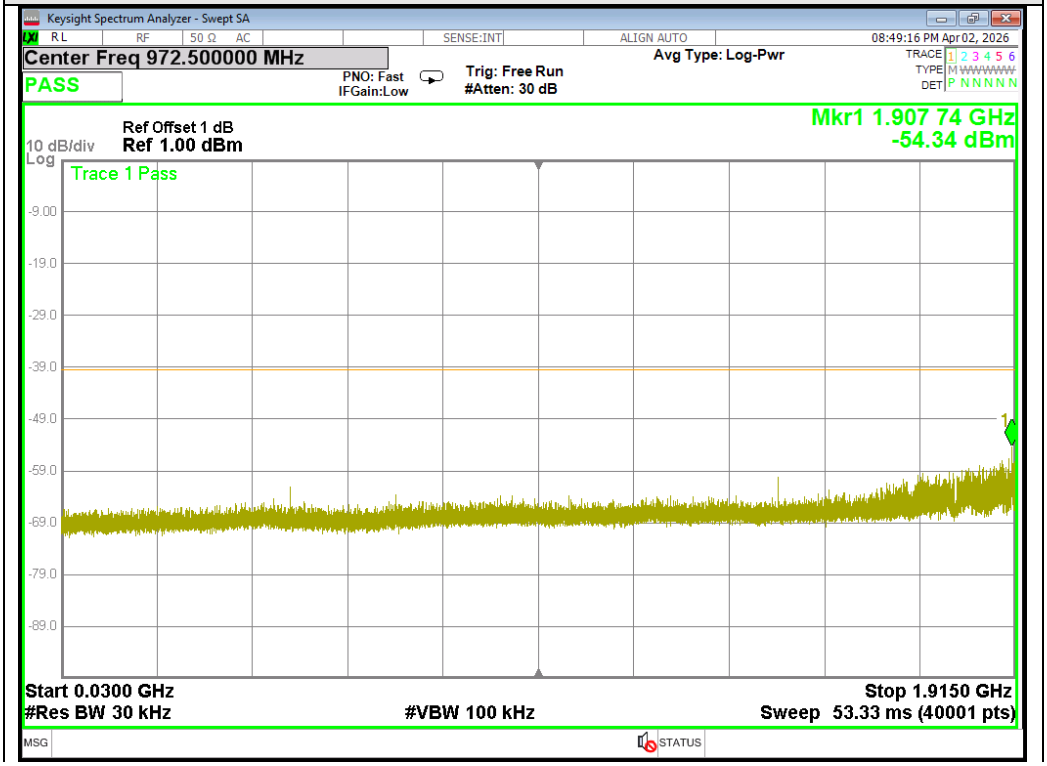



Test_Graph_UPCS_ANT1_CH04_GFSK_ Emissions 1935M-20G

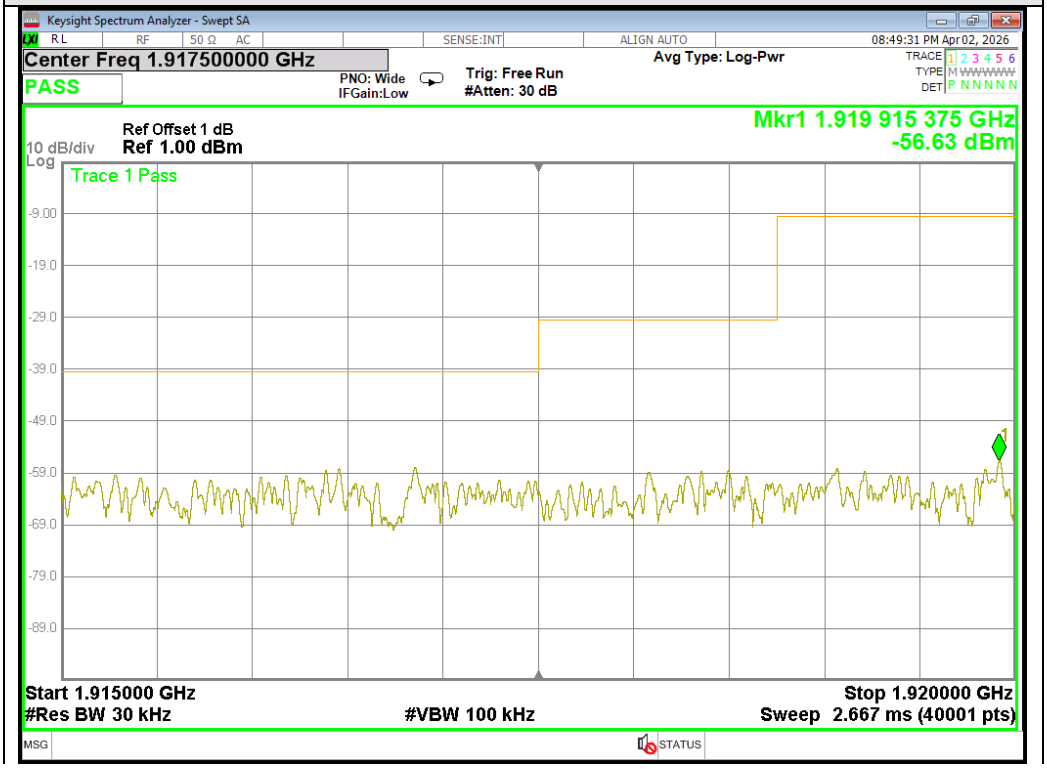


| Test Channal | Frequency (MHz) | Range (MHz) | Reading Frequency (MHz) | Reading Level (dBm) | Additional offset (dB) | Result (dBm) | Limits (dBm) | Result |
|---|---|---|---|---|---|---|---|---|
| 0 | 1928.448 | 1935-20000 | 16662.5 | -53.46 | 4.26 | -49.2 | -39.5 | PASS |
| 2 | 1924.992 | 1935-20000 | 19997.7 | -53.85 | 4.26 | -49.59 | -39.5 | PASS |
| 4 | 1921.536 | 1935-20000 | 16662.5 | -53.46 | 4.26 | -49.2 | -39.5 | PASS |
| Note:The 1dB offset is the maximum deviation within the main frequency band. The maximum deviation within the range of 1935 MHz to 20 GHz is 5.26 dB. The additional offset has been calculated to compensate for this difference. The test results below 1935 MHz can be viewed in the test graph. | | | | | | | | |

Test_Graph_UPCS_ANT2_CH00_GFSK_ Emissions 30MHz - 1915 MHz

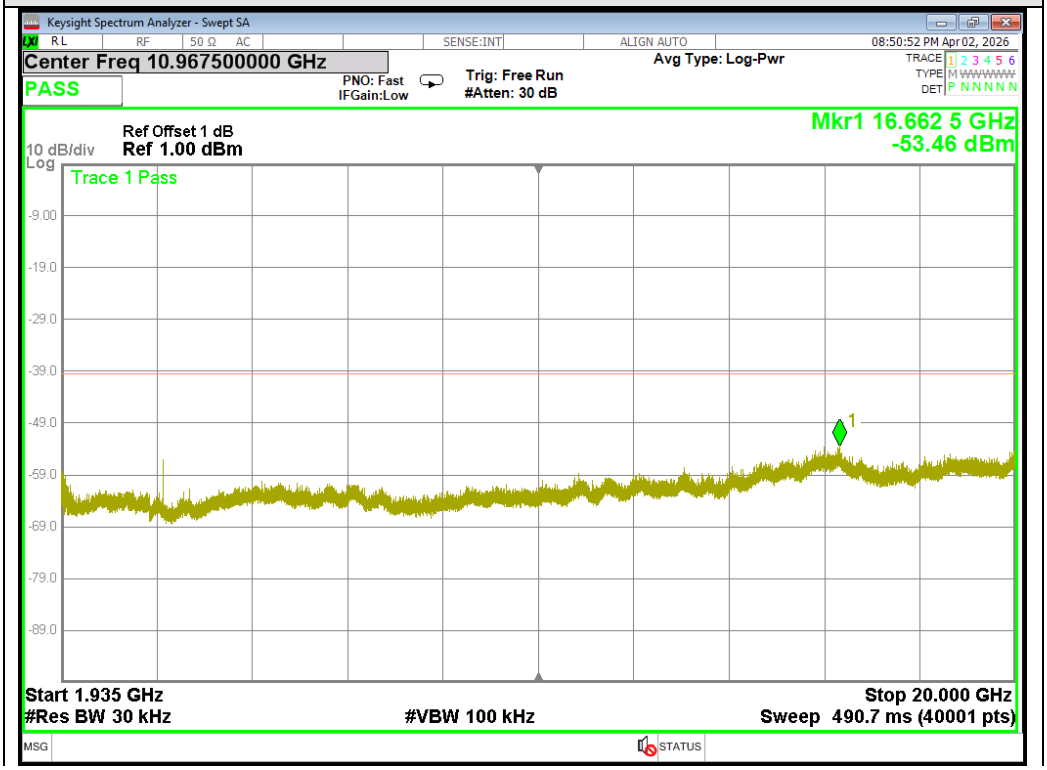


Test_Graph_UPCS_ANT2_CH00_GFSK_ Emissions 1915M-1920M

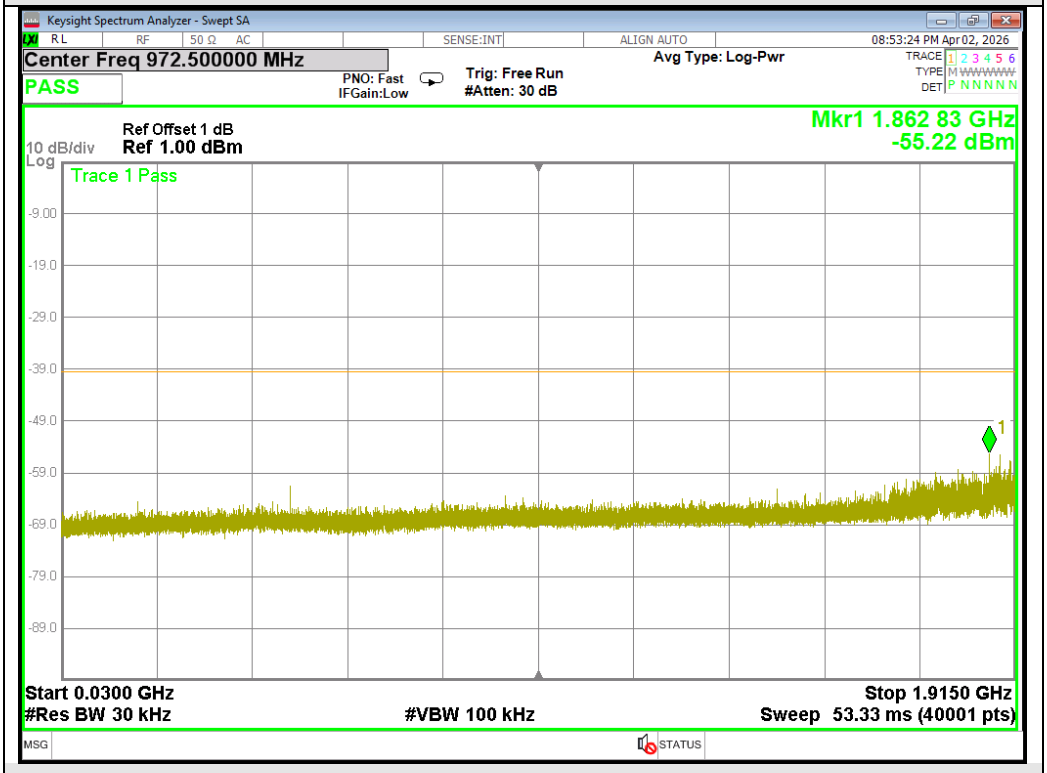


Test_Graph_UPCS_ANT2_CH00_GFSK_ Emissions 1930M-1935M

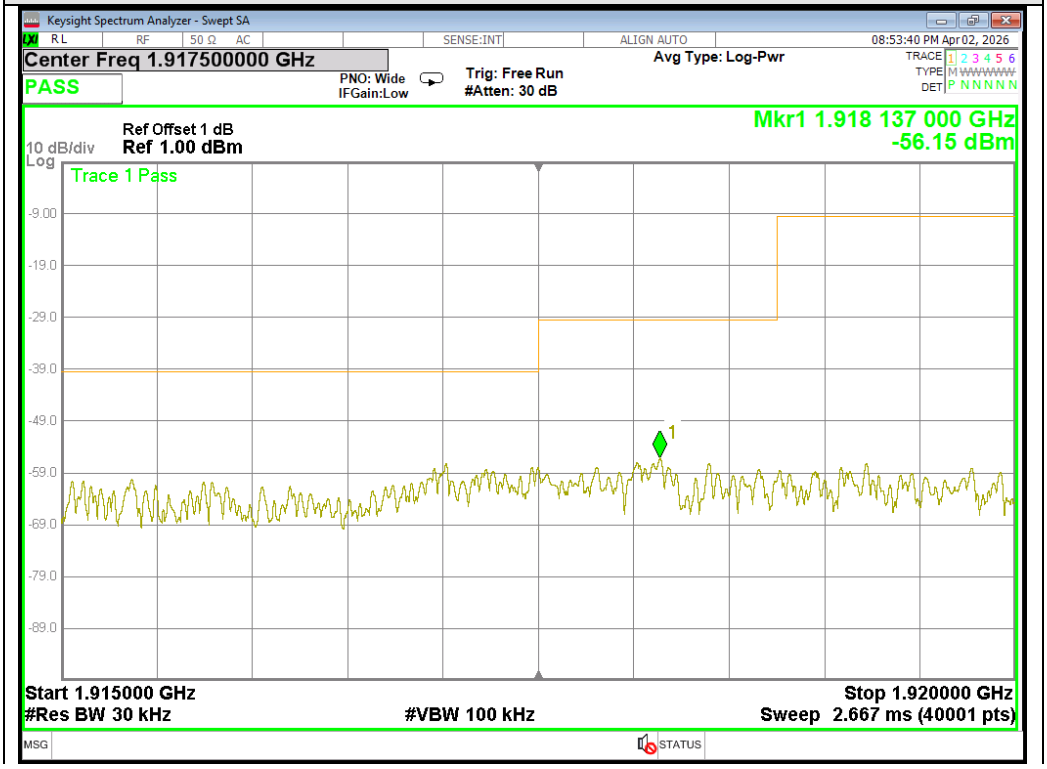

Test_Graph_UPCS_ANT2_CH00_GFSK_ Emissions Band 1935M-20G



Test_Graph_UPCS_ANT2_CH02_GFSK_ Emissions 30MHz - 1915 MHz

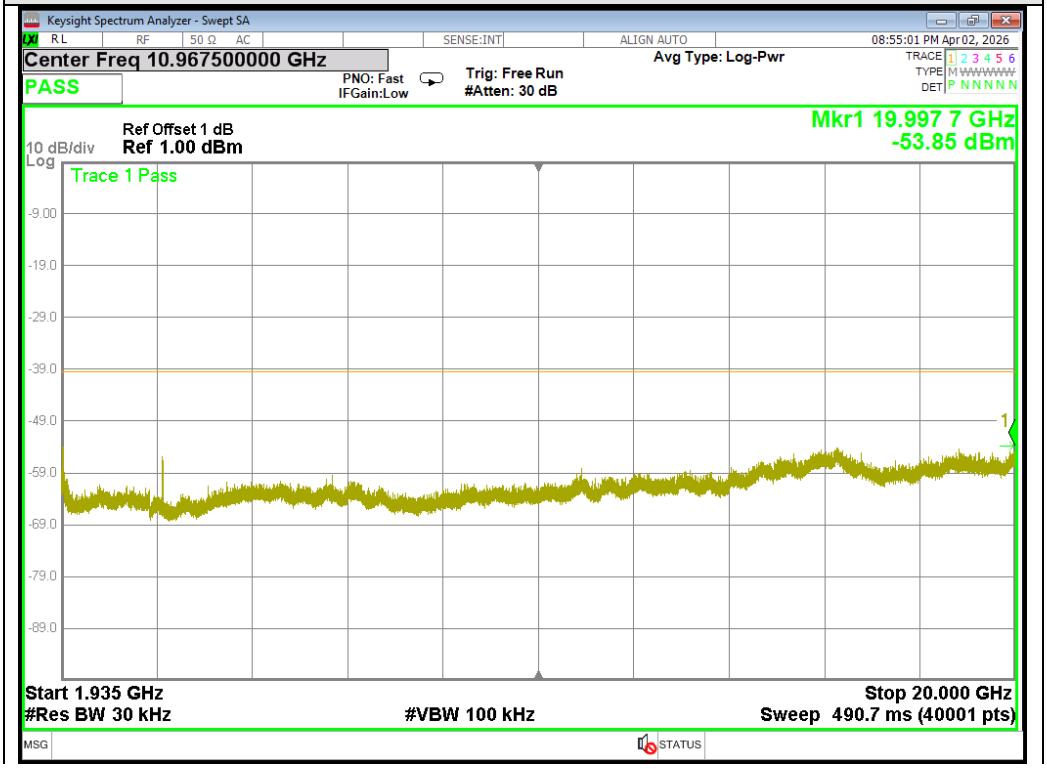



Test_Graph_UPCS_ANT2_CH02_GFSK_ Emissions 1915M-1920M

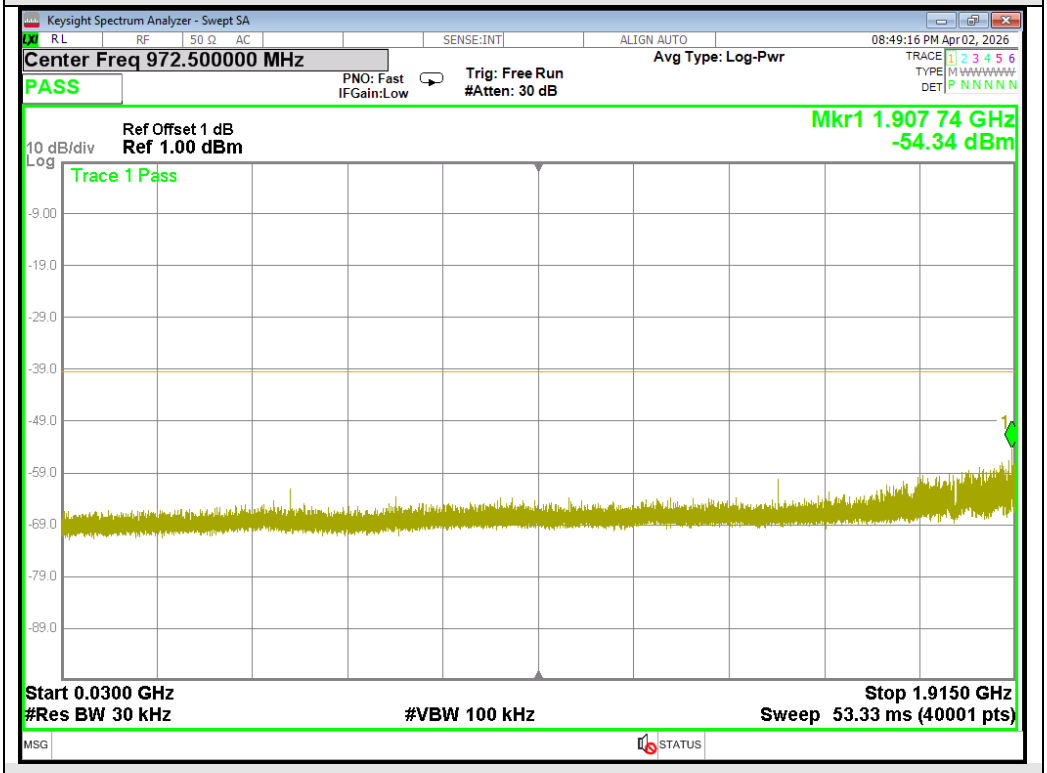


Test_Graph_UPCS_ANT2_CH02_GFSK_ Emissions 1930M-1935M

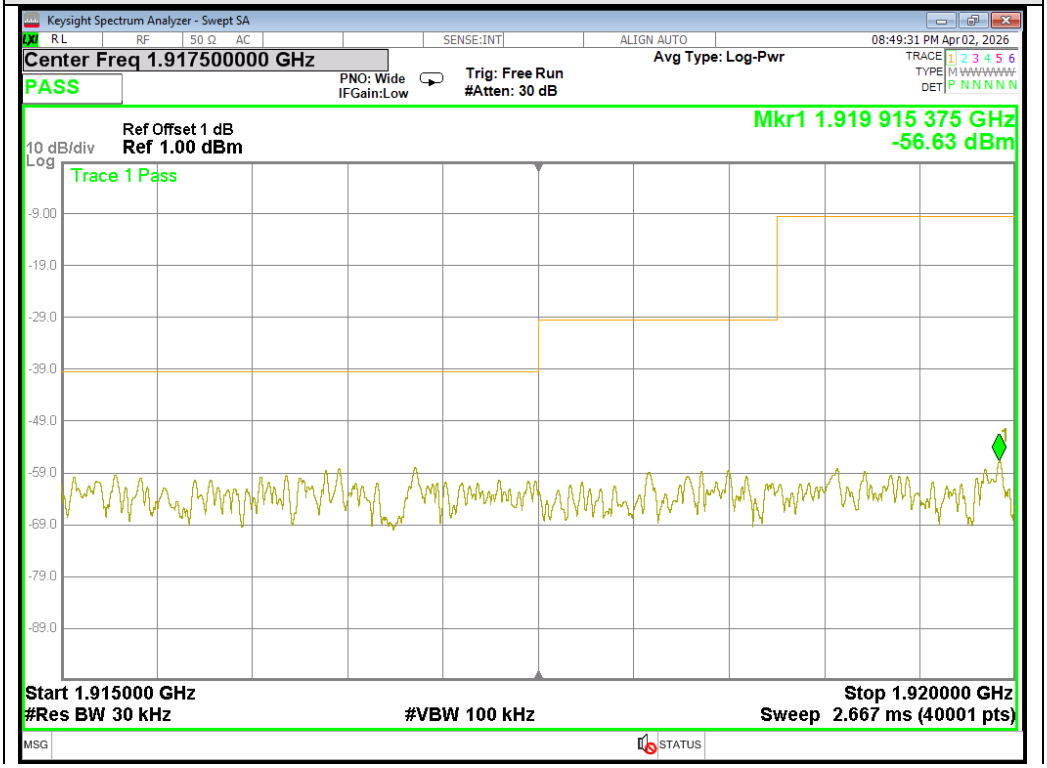

Test_Graph_UPCS_ANT2_CH02_GFSK_ Emissions 1935M-20G



Test_Graph_UPCS_ANT2_CH04_GFSK_ Emissions 30MHz - 1915 MHz

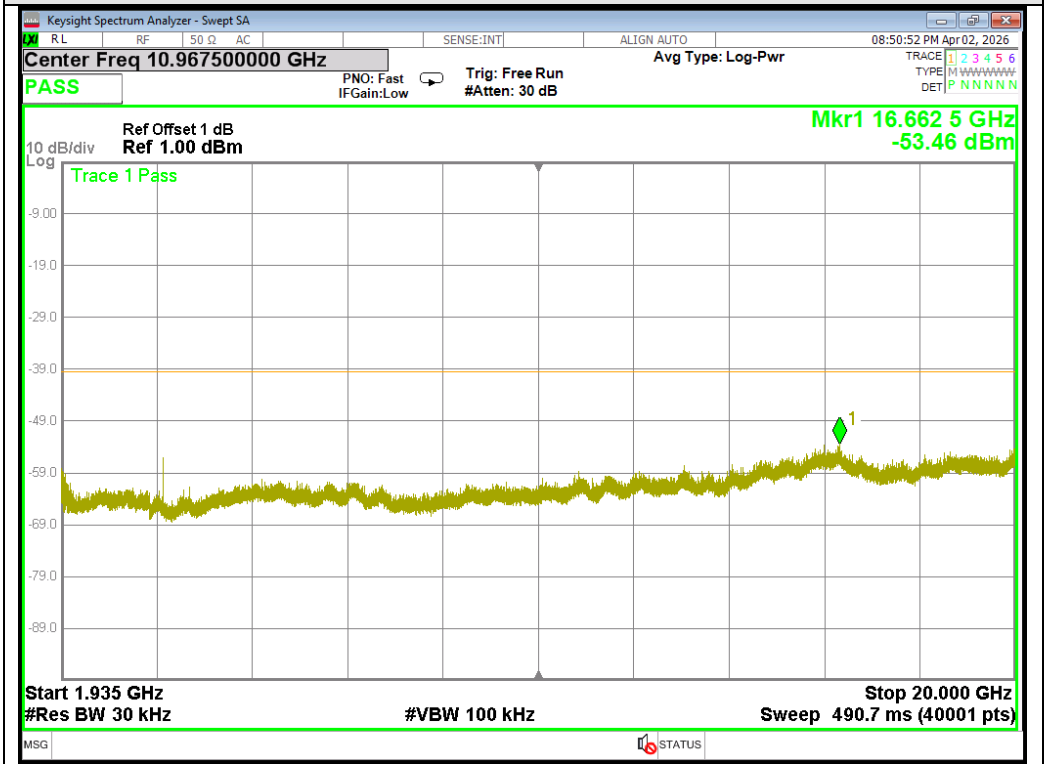



Test_Graph_UPCS_ANT2_CH04_GFSK_ Emissions 1915M-1920M



Test_Graph_UPCS_ANT2_CH04_GFSK_ Emissions 1930M-1935M


Test_Graph_UPCS_ANT2_CH04_GFSK_ Emissions 1935M-20G



# 11. Radiated Emission

## 11.1 Limits of Radiated Emission Test

15.209 Limit in the below table has to be followed

| Frequencies (MHz) | Field Strength (microvolts/meter) | Measurement Distance (meters) |
|---|---|---|
| 0.009~0.490 | 2400/F(kHz) | 300 |
| 0.490~1.705 | 24000/F(kHz) | 30 |
| 1.705~30.0 | 30 | 30 |
| 30~88 | 100 | 3 |
| 88~216 | 150 | 3 |
| 216~960 | 200 | 3 |
| Above 960 | 500 | 3 |

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

Note: All modes were tested for restricted band radiated emission, the test records reported below are the worst result compared to other modes.

## 11.2 Measurement Procedure

1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emission, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz RBW and 3MHz VBW for peak reading. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or

reference ground plane.

7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

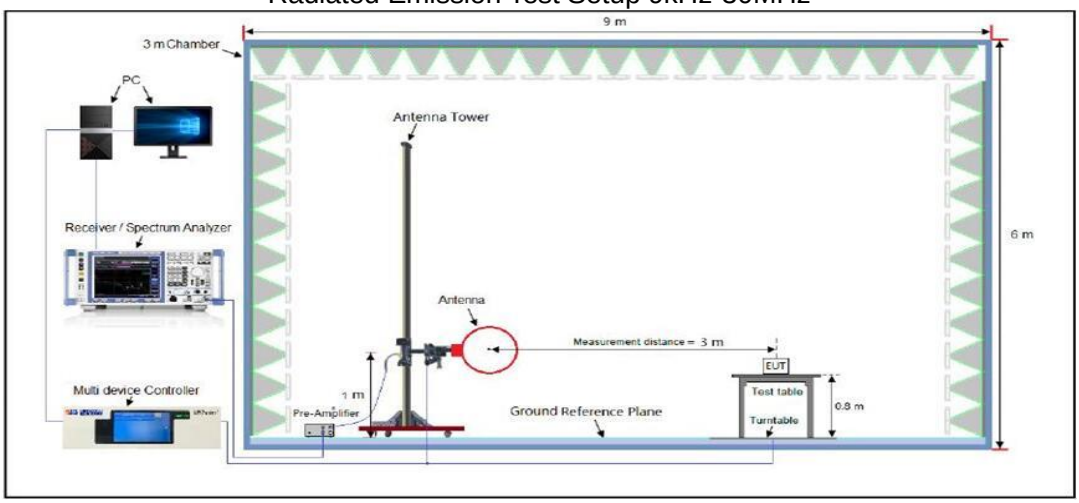
The following table is the setting of spectrum analyzer and receiver.

| Spectrum Parameter | Setting |
|---|---|
| Start ~Stop Frequency | 9kHz~150kHz/RB 200Hz for QP |
| Start ~Stop Frequency | 150kHz~30MHz/RB 9kHz for QP |
| Start ~Stop Frequency | 30MHz~1000MHz/RB 120kHz for QP |
| Start ~Stop Frequency | 1GHz~26.5GHz<br>1MHz/3MHz for Peak, 1MHz/3MHz for Average |

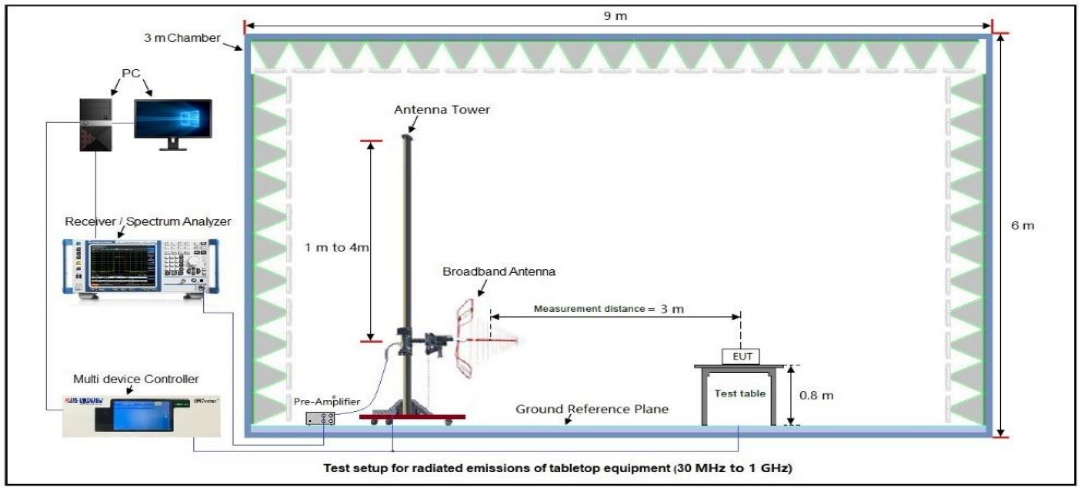
| Receiver Parameter | Setting |
|---|---|
| Start ~Stop Frequency | 9kHz~150kHz/RB 200Hz for QP |
| Start ~Stop Frequency | 150kHz~30MHz/RB 9kHz for QP |
| Start ~Stop Frequency | 30MHz~1000MHz/RB 120kHz for QP |

## 11.3 Measurement Setup (Block Diagram of Configuration)

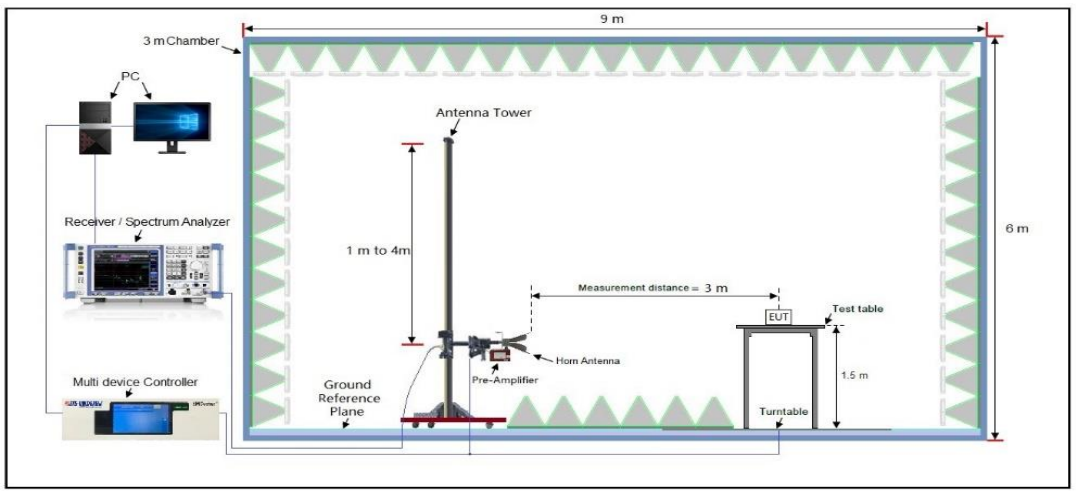
Radiated Emission Test Setup 9kHz-30MHz




Radiated Emission Test Setup 30MHz-1000MHz




Radiated Emission Test Setup Above 1000MHz



### 11.4 Measurement Result

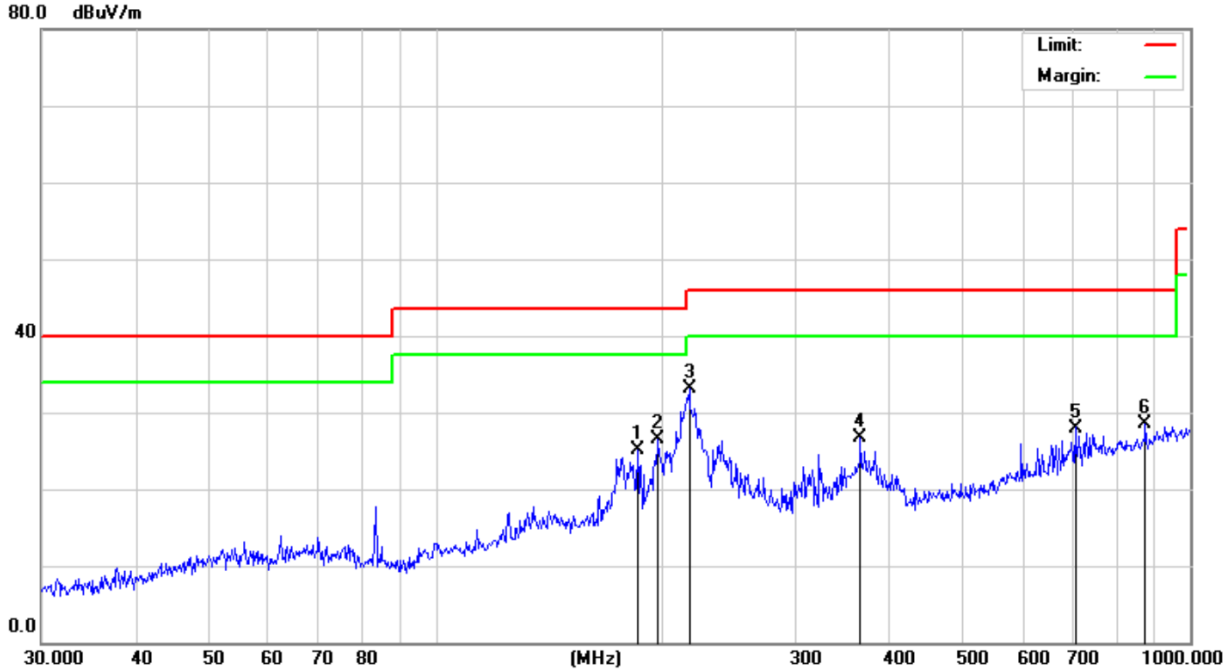
**Radiated Emission Below 30MHz**

The amplitude of spurious emissions from 9kHz to 30MHz which are attenuated more than 20 dB below the permissible value need not be reported.

Radiated Emission Test Results at 30MHz-1GHz

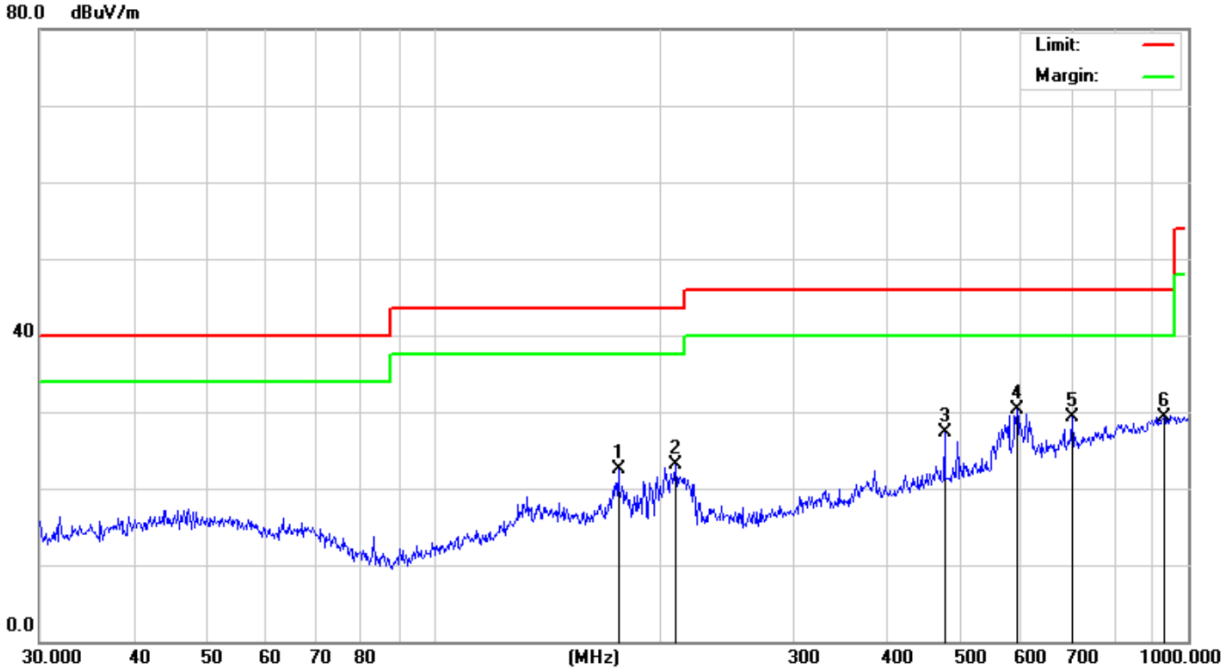
Module A

| | | | |
|---|---|---|---|
| Temperature: | 23.1℃ | Relative Humidity: | 60% |
| Test Voltage: | DC 14.8V | Phase: | Horizontal |
| Test Mode: | TX Mode of ANT 1 | | |



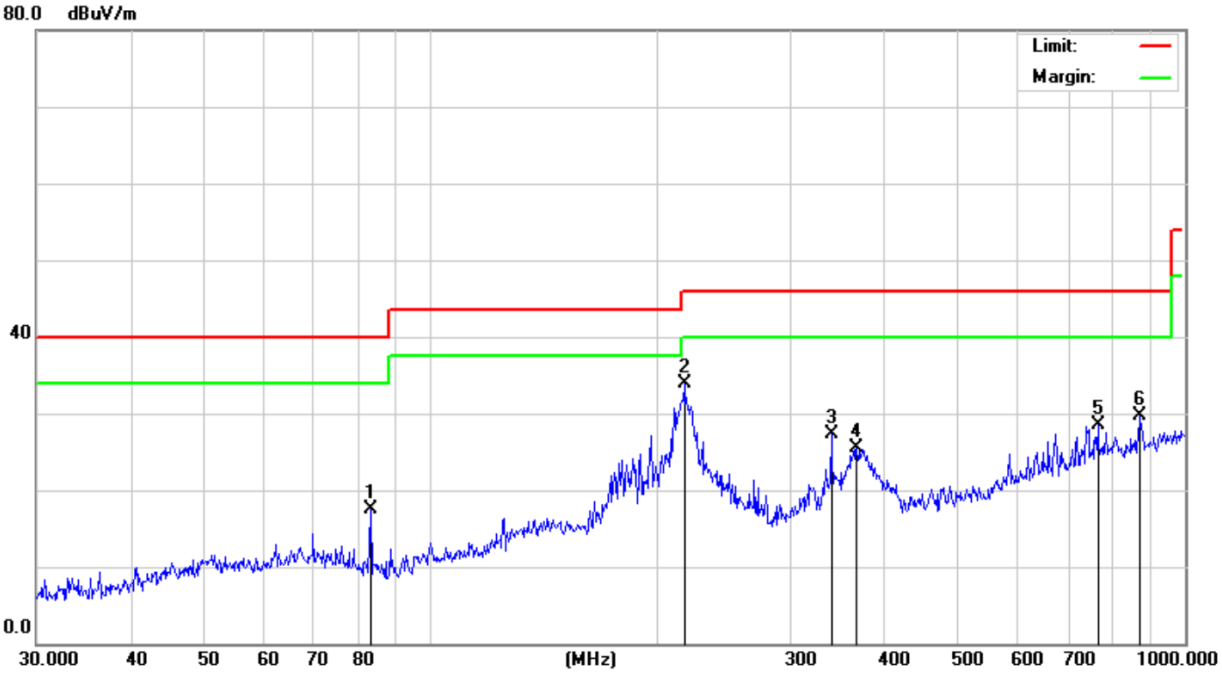

| Frequency [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Detector | Polarity |
|---|---|---|---|---|---|---|
| 185.1379 | 25.04 | -23.87 | 43.50 | 18.46 | peak | Horizontal |
| 197.2001 | 26.59 | -24.57 | 43.50 | 16.91 | peak | Horizontal |
| 216.7828 | 33.06 | -24.79 | 46.00 | 12.94 | peak | Horizontal |
| 365.5391 | 26.76 | -19.85 | 46.00 | 19.24 | peak | Horizontal |
| 704.2261 | 28.00 | -14.58 | 46.00 | 18.0 | peak | Horizontal |
| 872.1832 | 28.55 | -12.30 | 46.00 | 17.45 | peak | Horizontal |

| Temperature: | 23.1℃ | Relative Humidity: | 60% |
|---|---|---|---|
| Test Voltage: | DC 14.8V | Phase: | Vertical |
| Test Mode: | TX Mode of ANT1 | | |



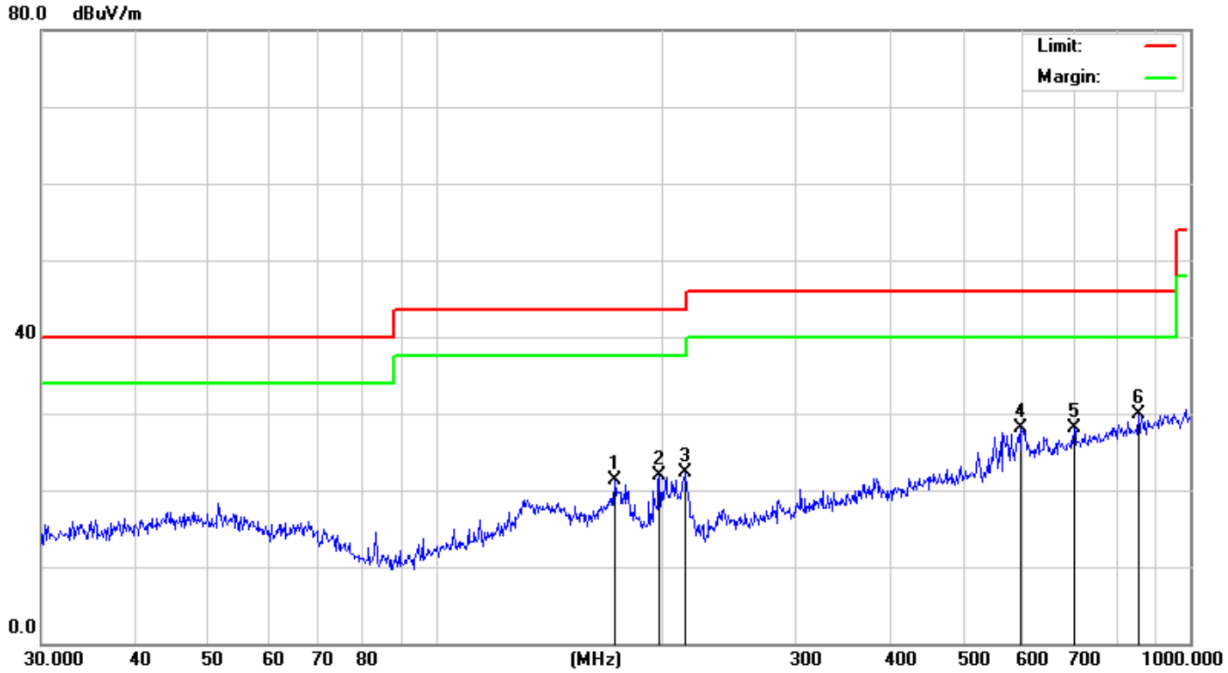

| Frequency [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Detector | Polarity |
|---|---|---|---|---|---|---|
| 175.6516 | 22.54 | -22.00 | 43.50 | 20.96 | peak | Vertical |
| 209.3129 | 23.18 | -24.12 | 43.50 | 20.32 | peak | Vertical |
| 475.4991 | 27.29 | -16.96 | 46.00 | 18.71 | peak | Vertical |
| 593.0497 | 30.25 | -14.24 | 46.00 | 15.75 | peak | Vertical |
| 701.7610 | 29.29 | -12.27 | 46.00 | 16.71 | peak | Vertical |
| 929.0082 | 29.34 | -9.35 | 46.00 | 16.66 | peak | Vertical |

| Temperature: | 23.1℃ | Relative Humidity: | 60% |
|---|---|---|---|
| Test Voltage: | DC 14.8V | Phase: | Horizontal |
| Test Mode: | TX Mode of ANT 2 | | |




| Frequency [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Detector | Polarity |
|---|---|---|---|---|---|---|
| 83.2298 | 17.45 | -28.07 | 40.00 | 22.55 | peak | Horizontal |
| 216.7828 | 33.94 | -24.79 | 46.00 | 12.06 | peak | Horizontal |
| 339.5888 | 27.39 | -20.39 | 46.00 | 18.61 | peak | Horizontal |
| 366.8231 | 25.50 | -19.83 | 46.00 | 20.5 | peak | Horizontal |
| 766.0571 | 28.55 | -13.14 | 46.00 | 17.45 | peak | Horizontal |
| 872.1832 | 29.62 | -12.30 | 46.00 | 16.38 | peak | Horizontal |

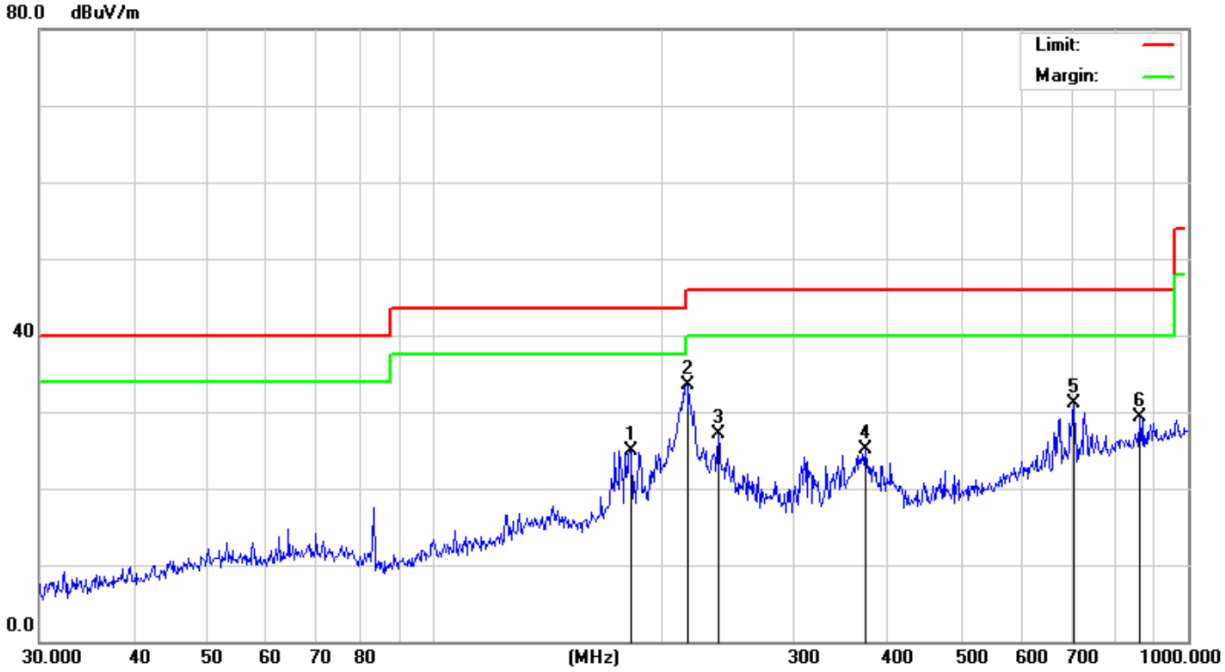
| Temperature: | 23.1℃ | Relative Humidity: | 60% |
|---|---|---|---|
| Test Voltage: | DC 14.8V | Phase: | Vertical |
| Test Mode: | TX Mode of ANT 2 | | |




| Frequency [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Detector | Polarity |
|---|---|---|---|---|---|---|
| 172.5988 | 21.38 | -21.81 | 43.50 | 22.12 | peak | Vertical |
| 197.8926 | 21.96 | -23.69 | 43.50 | 21.54 | peak | Vertical |
| 214.5142 | 22.40 | -23.96 | 43.50 | 21.1 | peak | Vertical |
| 597.2233 | 28.06 | -14.10 | 46.00 | 17.94 | peak | Vertical |
| 701.7609 | 28.07 | -12.27 | 46.00 | 17.93 | peak | Vertical |
| 854.0247 | 29.89 | -10.15 | 46.00 | 16.11 | peak | Vertical |

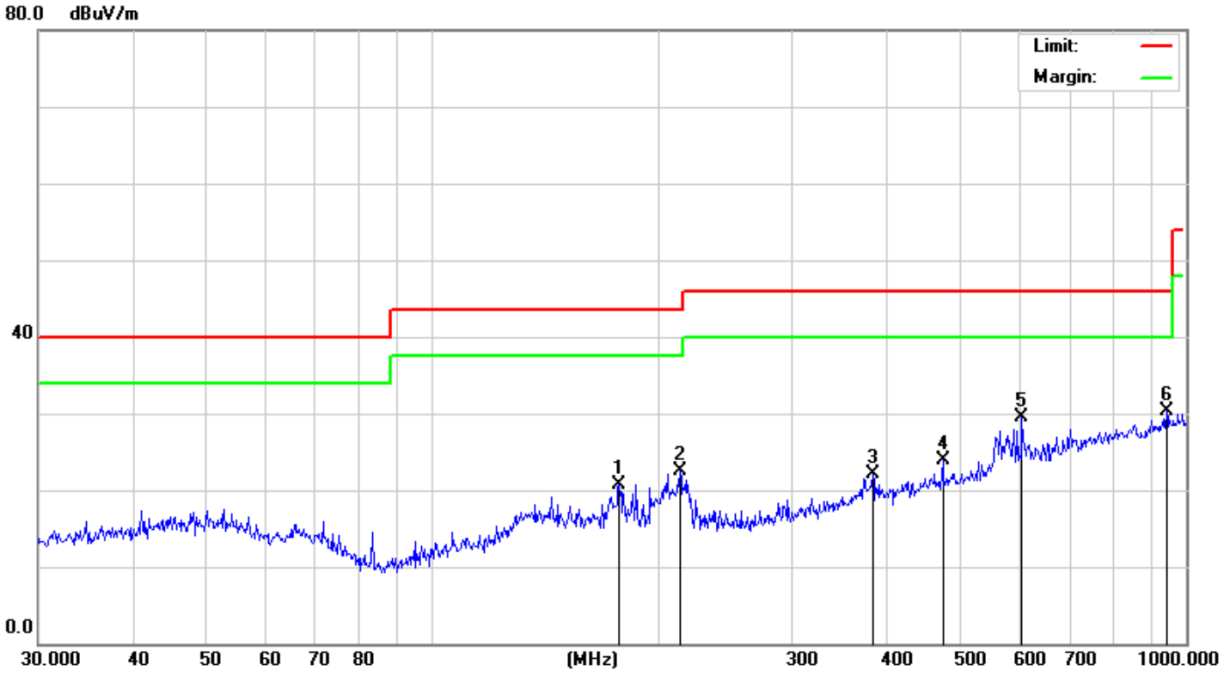
Module B

| | | | |
|---|---|---|---|
| Temperature: | 23.1℃ | Relative Humidity: | 60% |
| Test Voltage: | DC 14.8V | Phase: | Horizontal |
| Test Mode: | TX Mode of ANT 1 | | |




| Frequency [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Detector | Polarity |
|---|---|---|---|---|---|---|
| 182.5592 | 24.89 | -23.63 | 43.50 | 18.61 | peak | Horizontal |
| 216.7828 | 33.58 | -24.79 | 46.00 | 12.42 | peak | Horizontal |
| 238.3102 | 27.10 | -23.39 | 46.00 | 18.9 | peak | Horizontal |
| 373.3112 | 25.18 | -19.72 | 46.00 | 20.82 | peak | Horizontal |
| 704.2261 | 31.01 | -14.58 | 46.00 | 14.99 | peak | Horizontal |
| 863.0562 | 29.27 | -12.34 | 46.00 | 16.73 | peak | Horizontal |

| Temperature: | 23.1℃ | Relative Humidity: | 60% |
|---|---|---|---|
| Test Voltage: | DC 14.8V | Phase: | Vertical |
| Test Mode: | TX Mode of ANT1 | | |




| Frequency [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Detector | Polarity |
|---|---|---|---|---|---|---|
| 176.8878 | 20.71 | -22.21 | 43.50 | 22.79 | peak | Vertical |
| 213.0151 | 22.48 | -24.00 | 43.50 | 21.02 | peak | Vertical |
| 383.9318 | 22.07 | -18.98 | 46.00 | 23.93 | peak | Vertical |
| 475.4991 | 23.87 | -16.96 | 46.00 | 22.13 | peak | Vertical |
| 605.6592 | 29.45 | -13.84 | 46.00 | 16.55 | peak | Vertical |
| 942.1305 | 30.23 | -9.36 | 46.00 | 15.77 | peak | Vertical |