

Company: Itron

Test of: RIVA Modular LE

To: FCC CFR 47 Part 15 Subpart C 15.247
ISED IC RSS-247

Report No.: ITRO09-U2_Conducted Rev A

CONDUCTED TEST REPORT



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Test of: Itron RIVA Modular LE

To: FCC CFR 47 Part 15 Subpart C 15.247
ISED IC RSS-247

Test Report Serial No.: ITRO09-U2_Conducted Rev A

This report supersedes: NONE

Applicant: Itron
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USA

Issue Date: 8th March 2019

Master Document Number
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ITRO09-U2_Conducted Rev A
ITRO09-U2_Radiated Rev A

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1. TEST RESULTS

1.1. 20 dB & 99% Bandwidth

| Conducted Test Conditions for 20 dB and 99% Bandwidth | | | |
|---|---|---------------------|-------------|
| Standard: | FCC CFR 47:15.247 ISED RSS 247 | Ambient Temp. (°C): | 24.0 - 27.5 |
| Test Heading: | 20 dB and 99 % Bandwidth | Rel. Humidity (%): | 32 - 45 |
| Standard Section(s): | 15.247 (a)(1)(i)/(ii) RSS-247 5.1 (a)(c) | Pressure (mBars): | 999 - 1001 |
| Reference Document(s): | See Normative References | | |

Test Procedure for 20 dB and 99% Bandwidth Measurement

The bandwidth at 20 dB and 99 % was measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency.

Testing was performed under ambient conditions at nominal voltage. Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured and reported.

Test configuration and setup used for the measurement was per the Conducted Test Set-up specified in this document.

Limits for 20 dB and 99% Bandwidth

(a) Operation under the provisions of this Section is limited to frequency hopping and digitally modulated intentional radiators that comply with the following provisions:

(1) Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies 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 channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

(i) For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

(ii) Frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies. The maximum 20 dB bandwidth of the hopping channel is 1 MHz. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

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Equipment Configuration for 20 dB 99% Bandwidth

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 1 | Duty Cycle (%): | 99 |
| Data Rate: | 10kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | GFSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Test Frequency | Measured 20 dB Bandwidth (MHz) | | | | 20 dB Bandwidth (MHz) | | Limit | Lowest Margin |
|----------------|--------------------------------|---|---|---|-----------------------|--------|-------|---------------|
| | Port(s) | | | | Highest | Lowest | | |
| MHz | a | b | c | d | | | MHz | MHz |
| 902.2 | 0.021 | | | | 0.021 | 0.021 | 0.5 | -0.48 |
| 915.2 | 0.021 | | | | 0.021 | 0.021 | 0.5 | -0.48 |
| 927.8 | 0.021 | | | | 0.021 | 0.021 | 0.5 | -0.48 |

| Test Frequency | Measured 99% Bandwidth (MHz) | | | | Maximum 99% Bandwidth (MHz) | | |
|----------------|------------------------------|---|---|---|-----------------------------|---|--|
| | Port(s) | | | | | | |
| | MHz | a | b | c | | d | |
| 902.2 | 0.020 | | | | 0.020 | | |
| 915.2 | 0.020 | | | | 0.020 | | |
| 927.8 | 0.020 | | | | 0.020 | | |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|----------------------------------|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | ±2.81 dB |

Note: click the links in the above matrix to view the graphical image (plot).

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Equipment Configuration for 20 dB 99% Bandwidth

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 2 | Duty Cycle (%): | 99 |
| Data Rate: | 50kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | FSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Test Frequency | Measured 20 dB Bandwidth (MHz) | | | | 20 dB Bandwidth (MHz) | | Limit | Lowest Margin |
|----------------|--------------------------------|---|---|---|-----------------------|--------|-------|---------------|
| | Port(s) | | | | Highest | Lowest | | |
| MHz | a | b | c | d | | | MHz | MHz |
| 902.2 | 0.259 | | | | 0.259 | 0.259 | 0.5 | -0.24 |
| 915.2 | 0.266 | | | | 0.266 | 0.266 | 0.5 | -0.23 |
| 927.6 | 0.266 | | | | 0.266 | 0.266 | 0.5 | -0.23 |

| Test Frequency | Measured 99% Bandwidth (MHz) | | | | Maximum 99% Bandwidth (MHz) | | |
|-------------------|------------------------------|---|---|---|--------------------------------------|---|--|
| | Port(s) | | | | | | |
| | MHz | a | b | c | | d | |
| 902.2 | 0.242 | | | | 0.242 | | |
| 915.2 | 0.240 | | | | 0.240 | | |
| 927.6 | 0.242 | | | | 0.242 | | |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|----------------------------------|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | ±2.81 dB |

Note: click the links in the above matrix to view the graphical image (plot).

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Equipment Configuration for 20 dB 99% Bandwidth

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 3 | Duty Cycle (%): | 99 |
| Data Rate: | 16384bps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | OOK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Test Frequency | Measured 20 dB Bandwidth (MHz) | | | | 20 dB Bandwidth (MHz) | | Limit | Lowest Margin |
|----------------|--------------------------------|---|---|---|-----------------------|--------|-------|---------------|
| | Port(s) | | | | Highest | Lowest | | |
| MHz | a | b | c | d | | | MHz | MHz |
| 903.0 | 0.125 | | | | 0.125 | 0.125 | 0.5 | -0.38 |
| 915.0 | 0.125 | | | | 0.125 | 0.125 | 0.5 | -0.38 |
| 926.8 | 0.144 | | | | 0.144 | 0.144 | 0.5 | -0.36 |

| Test Frequency | Measured 99% Bandwidth (MHz) | | | | Maximum 99% Bandwidth (MHz) | | |
|----------------|------------------------------|---|---|---|-----------------------------|--|--|
| | Port(s) | | | | | | |
| MHz | a | b | c | d | | | |
| 903.0 | 0.281 | | | | 0.281 | | |
| 915.0 | 0.281 | | | | 0.281 | | |
| 926.8 | 0.283 | | | | 0.283 | | |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|----------------------------------|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | ±2.81 dB |

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Equipment Configuration for 20 dB 99% Bandwidth

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 4 | Duty Cycle (%): | 99 |
| Data Rate: | 100kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | FSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Test Frequency | Measured 20 dB Bandwidth (MHz) | | | | 20 dB Bandwidth (MHz) | | Limit | Lowest Margin |
|----------------|--------------------------------|---|---|---|-----------------------|--------|-------|---------------|
| | Port(s) | | | | Highest | Lowest | MHz | MHz |
| MHz | a | b | c | d | | | | |
| 902.3 | 0.402 | | | | 0.402 | 0.402 | 0.5 | -0.10 |
| 914.9 | 0.402 | | | | 0.402 | 0.402 | 0.5 | -0.10 |
| 926.9 | 0.402 | | | | 0.402 | 0.402 | 0.5 | -0.10 |

| Test Frequency | Measured 99% Bandwidth (MHz) | | | | Maximum 99% Bandwidth (MHz) | | |
|----------------|------------------------------|---|---|---|-----------------------------|--|--|
| | Port(s) | | | | | | |
| MHz | a | b | c | d | | | |
| 902.3 | 0.247 | | | | 0.247 | | |
| 914.9 | 0.247 | | | | 0.247 | | |
| 926.9 | 0.248 | | | | 0.248 | | |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|----------------------------------|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | ±2.81 dB |

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Equipment Configuration for 20 dB 99% Bandwidth

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 5 | Duty Cycle (%): | 99 |
| Data Rate: | 150kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | GFSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Test Frequency | Measured 20 dB Bandwidth (MHz) | | | | 20 dB Bandwidth (MHz) | | Limit | Lowest Margin |
|----------------|--------------------------------|---|---|---|-----------------------|--------|-------|---------------|
| | Port(s) | | | | Highest | Lowest | | |
| MHz | a | b | c | d | | | MHz | MHz |
| 902.4 | 0.188 | | | | 0.188 | 0.188 | 0.5 | -0.31 |
| 915.2 | 0.188 | | | | 0.188 | 0.188 | 0.5 | -0.31 |
| 927.6 | 0.188 | | | | 0.188 | 0.188 | 0.5 | -0.31 |

| Test Frequency | Measured 99% Bandwidth (MHz) | | | | Maximum 99% Bandwidth (MHz) | | |
|----------------|------------------------------|---|---|---|-----------------------------|--|--|
| | Port(s) | | | | | | |
| MHz | a | b | c | d | | | |
| 902.4 | 0.183 | | | | 0.183 | | |
| 915.2 | 0.183 | | | | 0.183 | | |
| 927.6 | 0.183 | | | | 0.183 | | |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|----------------------------------|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | ±2.81 dB |

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1.2. Frequency Hopping Tests

| Conducted Test Conditions for Frequency Hopping Measurements | | | |
|--|---|---------------------|-------------|
| Standard: | FCC CFR 47:15.247 ISED RSS 247 | Ambient Temp. (°C): | 24.0 - 27.5 |
| Test Heading: | Frequency Hopping Tests | Rel. Humidity (%): | 32 - 45 |
| Standard Section(s): | 15.247 (a)(1)(i)/(ii) RSS-247 5.1 (a)(c) | Pressure (mBars): | 999 - 1001 |
| Reference Document(s): | See Normative References, FCC Public Notice DA 00-705 | | |

Test Procedure for Frequency Hopping Measurements

These tests cover the following measurements:

- i) channel separation
- ii) channel occupancy
- iii) dwell time
- iv) number of hopping frequencies

Frequency hopping testing was measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency or hopping mode.

Testing was performed under ambient conditions at nominal voltage. Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured and reported.

Test configuration and setup used for the measurement was per the Conducted Test Set-up specified in this document.

Limits for Frequency Hopping Measurements

(a) Operation under the provisions of this Section is limited to frequency hopping and digitally modulated intentional radiators that comply with the following provisions:

(1) Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies 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 channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

(i) For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

(ii) Frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies. The maximum 20 dB bandwidth of the hopping channel is 1 MHz. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

(iii) Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

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1.2.1. Number of Hopping Channels

| Equipment Configuration for Number of Hopping Channels | | | |
|--|--|--|--|
|--|--|--|--|

| | | | |
|--------------------------------|--------|-----------------------------------|----------------|
| Variant: | Mode 1 | Antenna: | Not Applicable |
| Data Rate: | 10kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | GFSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| Duty Cycle (%): | 99.0 | Tested By: | SB |
| Engineering Test Notes: | | | |

| Test Measurement Results |
|--------------------------|
|--------------------------|

| Frequency Range (MHz) | Number of Hopping Channels | Limit | Pass / Fail |
|-----------------------------|----------------------------|-----------|-------------|
| 902.0-910.0 | 170 | --- | --- |
| 910.0-920.0 | 172 | --- | --- |
| 920.0-928.0 | 170 | --- | --- |
| Total number of Hops | 512 | 50 | Pass |

| Traceability to Industry Recognized Test Methodologies | |
|--|----------------------------------|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | ±2.81 dB |

Note: click the links in the above matrix to view the graphical image (plot).

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Equipment Configuration for Number of Hopping Channels

| | | | |
|--------------------------------|--------|-----------------------------------|----------------|
| Variant: | Mode 2 | Antenna: | Not Applicable |
| Data Rate: | 50kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | FSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| Duty Cycle (%): | 99.0 | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Frequency Range (MHz) | Number of Hopping Channels | Limit | Pass / Fail |
|-----------------------------|----------------------------|-----------|-------------|
| 902.0-910.0 | 42 | --- | --- |
| 910.0-920.0 | 43 | --- | --- |
| 920.0-928.0 | 43 | --- | --- |
| Total number of Hops | 128 | 50 | Pass |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|----------------------------------|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | ±2.81 dB |

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| Equipment Configuration for Number of Hopping Channels | | | |
|--|--|--|--|
|--|--|--|--|

| | | | |
|-------------------------|----------|----------------------------|----------------|
| Variant: | Mode 3 | Antenna: | Not Applicable |
| Data Rate: | 16384bps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | OOK | Beam Forming Gain (Y)(dB): | Not Applicable |
| Duty Cycle (%): | 99.0 | Tested By: | SB |
| Engineering Test Notes: | | | |

| Test Measurement Results |
|--------------------------|
|--------------------------|

| Frequency Range (MHz) | Number of Hopping Channels | Limit | Pass / Fail |
|-----------------------|----------------------------|-------|-------------|
| 902.0-910.0 | 40 | --- | --- |
| 910.0-920.0 | 40 | --- | --- |
| 920.0-928.0 | 40 | --- | --- |
| Total number of Hops | 120 | 50 | Pass |

| Traceability to Industry Recognized Test Methodologies | |
|--|--|
|--|--|

| | |
|--------------------------|----------------------------------|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | ±2.81 dB |

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Equipment Configuration for Number of Hopping Channels

| | | | |
|--------------------------------|---------|-----------------------------------|----------------|
| Variant: | Mode 4 | Antenna: | Not Applicable |
| Data Rate: | 100kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | FSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| Duty Cycle (%): | 99.0 | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Frequency Range (MHz) | Number of Hopping Channels | Limit | Pass / Fail |
|-----------------------|----------------------------|-------|-------------|
| Total number of Hops | 90 | >50 | Pass |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|----------------------------------|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | ±2.81 dB |

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| Equipment Configuration for Number of Hopping Channels |
|--|
|--|

| | | | |
|--------------------------------|---------|-----------------------------------|----------------|
| Variant: | Mode 5 | Antenna: | Not Applicable |
| Data Rate: | 150kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | GFSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| Duty Cycle (%): | 99.0 | Tested By: | SB |
| Engineering Test Notes: | | | |

| Test Measurement Results |
|--------------------------|
|--------------------------|

| Frequency Range (MHz) | Number of Hopping Channels | Limit | Pass / Fail |
|-----------------------------|----------------------------|-----------|-------------|
| 902.0-910.0 | 20 | --- | --- |
| 910.0-920.0 | 24 | --- | --- |
| 920.0-928.0 | 20 | --- | --- |
| Total number of Hops | 64 | 50 | Pass |

| Traceability to Industry Recognized Test Methodologies | |
|--|----------------------------------|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | ±2.81 dB |

Note: click the links in the above matrix to view the graphical image (plot).

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1.2.2. Channel Separation

| Equipment Configuration for Channel Separation | | | |
|--|--|--|--|
|--|--|--|--|

| | | | |
|--------------------------------|--------|-----------------------------------|----------------|
| Variant: | Mode 1 | Antenna: | Not Applicable |
| Data Rate: | 10kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | GFSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| Duty Cycle (%): | 99.0 | Tested By: | SB |
| Engineering Test Notes: | | | |

| Test Measurement Results |
|--------------------------|
|--------------------------|

| Center Frequency (MHz) | Chan Separation (MHz) | Limit (MHz) | Pass / Fail |
|------------------------|-----------------------|-------------|-------------|
| 915.2 | 0.050 | 0.025 | Pass |

| Traceability to Industry Recognized Test Methodologies | |
|--|----------------------------------|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | ±2.81 dB |

Note: click the links in the above matrix to view the graphical image (plot).

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Equipment Configuration for Channel Separation

| | | | |
|--------------------------------|--------|-----------------------------------|----------------|
| Variant: | Mode 2 | Antenna: | Not Applicable |
| Data Rate: | 50kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | FSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| Duty Cycle (%): | 99.0 | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Center Frequency (MHz) | Chan Separation (MHz) | Limit (MHz) | Pass / Fail |
|------------------------|-----------------------|-------------|-------------|
| 915.2 | 0.200 | 0.025 | Pass |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|----------------------------------|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | ±2.81 dB |

Note: click the links in the above matrix to view the graphical image (plot).

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Equipment Configuration for Channel Separation

| | | | |
|--------------------------------|----------|-----------------------------------|----------------|
| Variant: | Mode 3 | Antenna: | Not Applicable |
| Data Rate: | 16384bps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | OOK | Beam Forming Gain (Y)(dB): | Not Applicable |
| Duty Cycle (%): | 99.0 | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Center Frequency (MHz) | Chan Separation (MHz) | Limit (MHz) | Pass / Fail |
|------------------------|-----------------------|-------------|-------------|
| 915.0 | 0.200 | 0.025 | Pass |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|----------------------------------|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | ±2.81 dB |

Note: click the links in the above matrix to view the graphical image (plot).

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Equipment Configuration for Channel Separation

| | | | |
|--------------------------------|---------|-----------------------------------|----------------|
| Variant: | Mode 4 | Antenna: | Not Applicable |
| Data Rate: | 100kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | FSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| Duty Cycle (%): | 99.0 | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Center Frequency (MHz) | Chan Separation (MHz) | Limit (MHz) | Pass / Fail |
|------------------------|-----------------------|-------------|-------------|
| 914.9 | 0.309 | 0.402 | Pass |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|----------------------------------|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | ±2.81 dB |

Note: click the links in the above matrix to view the graphical image (plot).

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Equipment Configuration for Channel Separation

| | | | |
|--------------------------------|---------|-----------------------------------|----------------|
| Variant: | Mode 5 | Antenna: | Not Applicable |
| Data Rate: | 150kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | GFSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| Duty Cycle (%): | 99.0 | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Center Frequency (MHz) | Chan Separation (MHz) | Limit (MHz) | Pass / Fail |
|------------------------|-----------------------|-------------|-------------|
| 915.2 | 0.400 | 0.188 | Pass |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|----------------------------------|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | ±2.81 dB |

Note: click the links in the above matrix to view the graphical image (plot).

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1.2.3. Dwell Time & Channel Occupancy

Equipment Configuration for Channel Occupancy

| | | | |
|--------------------------------|--------|-----------------------------------|----------------|
| Variant: | Mode 1 | Antenna: | Not Applicable |
| Data Rate: | 10kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | GFSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| Duty Cycle (%): | | Tested By: | |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency(MHz) | Dwell Time (Single Burst) (S) | Channel Occupancy (mS) | Observation Period (S) | Channel Occupancy Limit (mS) | Pass / Fail |
|------------------------|-------------------------------|-------------------------|------------------------|------------------------------|-------------|
| 915.20 | 0.399 | 398.900 | 20 | 400.000 | Pass |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|----------------------------------|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | ±2.81 dB |

Note: click the links in the above matrix to view the graphical image (plot).

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Equipment Configuration for Dwell Time & Channel Occupancy

| | | | |
|--------------------------------|--------|-----------------------------------|----------------|
| Variant: | Mode 2 | Antenna: | Not Applicable |
| Data Rate: | 50kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | FSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| Duty Cycle (%): | 99.0 | Tested By: | |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency(MHz) | Dwell Time (Single Burst) (S) | Channel Occupancy (mS) | Observation Period (S) | Channel Occupancy Limit (mS) | Pass / Fail |
|------------------------|-------------------------------|-------------------------|------------------------|------------------------------|-------------|
| 915.2 | 0.396 | 396.000 | 20 | 400.000 | Pass |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|----------------------------------|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | ±2.81 dB |

Note: click the links in the above matrix to view the graphical image (plot).

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Equipment Configuration for Dwell Time & Channel Occupancy

| | | | |
|--------------------------------|----------|-----------------------------------|----------------|
| Variant: | Mode 3 | Antenna: | Not Applicable |
| Data Rate: | 16384bps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | OOK | Beam Forming Gain (Y)(dB): | Not Applicable |
| Duty Cycle (%): | 99.0 | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency(MHz) | Dwell Time (Single Burst) (S) | Channel Occupancy (mS) | Observation Period (S) | Channel Occupancy Limit (mS) | Pass / Fail |
|------------------------|-------------------------------|-------------------------|------------------------|------------------------------|-------------|
| 915.00 | 0.398 | 398.000 | 20.00 | 400.000 | Pass |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|--|
| Work Instruction: | |
| Measurement Uncertainty: | |

Note: click the links in the above matrix to view the graphical image (plot).

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Equipment Configuration for Channel Occupancy

| | | | |
|--------------------------------|---------|-----------------------------------|----------------|
| Variant: | Mode 4 | Antenna: | Not Applicable |
| Data Rate: | 100kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | FSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| Duty Cycle (%): | | Tested By: | |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency(MHz) | Dwell Time (Single Burst) (S) | Channel Occupancy (mS) | Observation Period (S) | Channel Occupancy Limit (mS) | Pass / Fail |
|------------------------|-------------------------------|-------------------------|------------------------|------------------------------|-------------|
| 915.2 | 0.396 | 398.200 | 20 | 400.000 | Pass |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|----------------------------------|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | ±2.81 dB |

Note: click the links in the above matrix to view the graphical image (plot).

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Equipment Configuration for Channel Occupancy

| | | | |
|--------------------------------|---------|-----------------------------------|----------------|
| Variant: | Mode 5 | Antenna: | Not Applicable |
| Data Rate: | 150kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | GFSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| Duty Cycle (%): | | Tested By: | |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency(MHz) | Dwell Time (Single Burst) (S) | Channel Occupancy (mS) | Observation Period (S) | Channel Occupancy Limit (mS) | Pass / Fail |
|------------------------|-------------------------------|-------------------------|------------------------|------------------------------|-------------|
| 915.2 | 0.398 | 398.200 | 20 | 400.000 | Pass |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|----------------------------------|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | ±2.81 dB |

Note: click the links in the above matrix to view the graphical image (plot).

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1.3. Output Power

| Conducted Test Conditions for Fundamental Emission Output Power | | | |
|---|--|---------------------|-------------|
| Standard: | FCC CFR 47:15.247 ISED RSS 247 | Ambient Temp. (°C): | 24.0 - 27.5 |
| Test Heading: | Output Power | Rel. Humidity (%): | 32 - 45 |
| Standard Section(s): | 15.247 (a)(1), (b)(1)/(2)/(3) RSS-247 5.1 (a)(c) RSS-247 5.4 (a) | Pressure (mBars): | 999 - 1001 |
| Reference Document(s): | See Normative References | | |

Test Procedure for Fundamental Emission Output Power Measurement

In the case of average power measurements an average power sensor was utilized.

For peak power measurements the spectrum analyzer built-in power function was used to integrate peak power over the 20 dB bandwidth.

Testing was performed under ambient conditions, nominal voltage. Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured, summed (Σ) and reported.

Test configuration and setup used for the measurement was per the Conducted Test Set-up specified in this document.

Supporting Information
Calculated Power = A + G + Y+ 10 log (1/x) dBm

A = Total Power [10*Log10 (10^{a/10} + 10^{b/10} + 10^{c/10} + 10^{d/10})]
G = Antenna Gain
Y = Beamforming Gain
x = Duty Cycle (average power measurements only)

Limits for Fundamental Emission Output Power

(a) Operation under the provisions of this Section is limited to frequency hopping and digitally modulated intentional radiators that comply with the following provisions:

(1) Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies 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 channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

(b) The maximum peak conducted output power of the intentional radiator shall not exceed the following for frequency hopping systems:

(1) For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

(2) For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.

(3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum

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conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

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Equipment Configuration for Output Power Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 1 | Duty Cycle (%): | 99.0 |
| Data Rate: | 10kbps | Antenna Gain (dBi): | 2.00 |
| Modulation: | GFSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Test Frequency | Measured Output Power (dBm) | | | | Calculated Total Power Σ Port(s) | Limit | Margin | EUT Power Setting |
|----------------|-----------------------------|---|---|---|---|-------|--------|-------------------|
| | Port(s) | | | | | | | |
| MHz | a | b | c | d | dBm | dBm | dB | |
| 902.2 | 29.53 | | | | 29.53 | 30.00 | -0.47 | 340.00 |
| 915.2 | 29.05 | | | | 29.05 | 30.00 | -0.95 | 340.00 |
| 927.8 | 29.45 | | | | 29.45 | 30.00 | -0.55 | 340.00 |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---------------------------------|
| Work Instruction: | WI-01 MEASURING RF OUTPUT POWER |
| Measurement Uncertainty: | ± 1.33 dB |

Note Power settings listed are values used to power the transmitter up.

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Equipment Configuration for Output Power Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 2 | Duty Cycle (%): | 99.0 |
| Data Rate: | 50kbps | Antenna Gain (dBi): | 2.00 |
| Modulation: | FSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Test Frequency | Measured Output Power (dBm) | | | | Calculated Total Power Σ Port(s) | Limit | Margin | EUT Power Setting |
|----------------|-----------------------------|---|---|---|-------------------------------------|-------|--------|-------------------|
| | Port(s) | | | | | | | |
| MHz | a | b | c | d | dBm | dBm | dB | |
| 902.2 | 29.20 | | | | 29.20 | 30.00 | -0.80 | |
| 915.2 | 29.29 | | | | 29.29 | 30.00 | -0.71 | |
| 927.6 | 29.44 | | | | 29.44 | 30.00 | -0.56 | |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---------------------------------|
| Work Instruction: | WI-01 MEASURING RF OUTPUT POWER |
| Measurement Uncertainty: | ± 1.33 dB |

Note Power settings listed are values used to power the transmitter up.

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Equipment Configuration for Output Power Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 3 | Duty Cycle (%): | 99.0 |
| Data Rate: | 16384bps | Antenna Gain (dBi): | 2.00 |
| Modulation: | OOK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Test Frequency | Measured Output Power (dBm) | | | | Calculated Total Power Σ Port(s) | Limit | Margin | EUT Power Setting |
|----------------|-----------------------------|---|---|---|---|-------|--------|-------------------|
| | Port(s) | | | | | | | |
| MHz | a | b | c | d | dBm | dBm | dB | |
| 903.0 | 29.41 | | | | 29.41 | 30 | -0.59 | 340.00 |
| 915.0 | 29.26 | | | | 29.26 | 30 | -0.74 | 340.00 |
| 926.8 | 29.39 | | | | 29.39 | 30 | -0.61 | 340.00 |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---------------------------------|
| Work Instruction: | WI-01 MEASURING RF OUTPUT POWER |
| Measurement Uncertainty: | ± 1.33 dB |

Note Power settings listed are values used to power the transmitter up.

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Equipment Configuration for Output Power Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 4 | Duty Cycle (%): | 99.0 |
| Data Rate: | 100kbps | Antenna Gain (dBi): | 2.00 |
| Modulation: | FSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Test Frequency | Measured Output Power (dBm) | | | | Calculated Total Power Σ Port(s) | Limit | Margin | EUT Power Setting |
|----------------|-----------------------------|---|---|---|-------------------------------------|-------|--------|-------------------|
| | Port(s) | | | | | | | |
| MHz | a | b | c | d | dBm | dBm | dB | |
| 902.3 | 29.01 | | | | 29.01 | 30.00 | -0.99 | 340.00 |
| 914.9 | 29.22 | | | | 29.22 | 30.00 | -0.78 | 340.00 |
| 926.9 | 29.17 | | | | 29.17 | 30.00 | -0.83 | 340.00 |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---------------------------------|
| Work Instruction: | WI-01 MEASURING RF OUTPUT POWER |
| Measurement Uncertainty: | ± 1.33 dB |

Note Power settings listed are values used to power the transmitter up.

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Equipment Configuration for Output Power Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 5 | Duty Cycle (%): | 99.0 |
| Data Rate: | 150kbps | Antenna Gain (dBi): | 2.00 |
| Modulation: | GFSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Test Frequency | Measured Output Power (dBm) | | | | Calculated Total Power Σ Port(s) | Limit | Margin | EUT Power Setting |
|----------------|-----------------------------|---|---|---|-------------------------------------|-------|--------|-------------------|
| | Port(s) | | | | | | | |
| MHz | a | b | c | d | dBm | dBm | dB | |
| 902.4 | 29.14 | | | | 29.14 | 30 | -0.86 | 340.00 |
| 915.2 | 29.27 | | | | 29.27 | 30 | -0.73 | 340.00 |
| 927.6 | 29.21 | | | | 29.21 | 30 | -0.79 | 340.00 |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---------------------------------|
| Work Instruction: | WI-01 MEASURING RF OUTPUT POWER |
| Measurement Uncertainty: | ± 1.33 dB |

Note Power settings listed are values used to power the transmitter up.

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1.4. Emissions

1.4.1. Conducted Emissions

| Conducted Test Conditions for Transmitter Conducted Spurious and Band-Edge Emissions | | | |
|--|--|----------------------------|-------------|
| Standard: | FCC CFR 47:15.247 ISSED RSS 247 | Ambient Temp. (°C): | 24.0 - 27.5 |
| Test Heading: | Transmitter Conducted Spurious and Band-Edge Emissions | Rel. Humidity (%): | 32 - 45 |
| Standard Section(s): | 15.247 (d) RSS-247 5.5 | Pressure (mBars): | 999 - 1001 |
| Reference Document(s): | See Normative References | | |

Test Procedure for Transmitter Conducted Spurious and Band-Edge Emissions Measurement

Transmitter Conducted Spurious and Band-Edge emissions were measured at a limit of 30 dBc (average detector) or 20 dBc (peak detector) below the highest in-band spectral density measured with a spectrum analyzer connected to the antenna terminal. Measurements were made while EUT was operating in transmit mode of operation at the appropriate centre frequency closest to the band-edge. Emissions were maximized during the measurement and limits derived from the peak spectral power and drawn on each plot.

Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured separately. Testing was performed under ambient conditions at nominal voltage only.

Test configuration and setup used for the measurement was per the Conducted Test Set-up specified in this document.

Limits Transmitter Conducted Spurious and Band-Edge Emissions

(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

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1.4.1.1. Conducted Unwanted Spurious Emissions

Equipment Configuration for Unwanted Emissions Peak

| | | | |
|--------------------------------|----------------|-------------------------------|----------------|
| Variant: | Mode 1 | Duty Cycle (%): | 99 |
| Data Rate: | 10kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | GFSK | Beam Forming Gain (Y): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Test Frequency | Frequency Range | Unwanted Emissions Peak (dBm) | | | | | | | |
|----------------|-----------------|-------------------------------|-------|--------|-------|--------|-------|--------|-------|
| | | Port a | | Port b | | Port c | | Port d | |
| MHz | MHz | SE | Limit | SE | Limit | SE | Limit | SE | Limit |
| 902.2 | 30.0 - 10000.0 | -34.547 | 7.92 | | | | | | |
| 915.2 | 30.0 - 10000.0 | -35.566 | 8.00 | | | | | | |
| 927.8 | 30.0 - 10000.0 | -35.664 | 7.75 | | | | | | |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

Note: click the links in the above matrix to view the graphical image (plot).

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Equipment Configuration for Unwanted Emissions Peak

| | | | |
|--------------------------------|----------------|-------------------------------|----------------|
| Variant: | Mode 2 | Duty Cycle (%): | 99 |
| Data Rate: | 50kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | FSK | Beam Forming Gain (Y): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Test Frequency | Frequency Range | Unwanted Emissions Peak (dBm) | | | | | | | |
|----------------|-----------------|-------------------------------|-------|--------|-------|--------|-------|--------|-------|
| | | Port a | | Port b | | Port c | | Port d | |
| MHz | MHz | SE | Limit | SE | Limit | SE | Limit | SE | Limit |
| 902.2 | 30.0 - 10000.0 | -46.592 | -3.90 | | | | | | |
| 915.2 | 300.0 - 10000.0 | -48.229 | -4.16 | | | | | | |
| 927.6 | 30.0 - 10000.0 | -10.072 | -4.24 | | | | | | |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

Note: click the links in the above matrix to view the graphical image (plot).

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Equipment Configuration for Unwanted Emissions Peak

| | | | |
|--------------------------------|----------------|-------------------------------|----------------|
| Variant: | Mode 3 | Duty Cycle (%): | 99 |
| Data Rate: | 16384bps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | OOK | Beam Forming Gain (Y): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Test Frequency | Frequency Range | Unwanted Emissions Peak (dBm) | | | | | | | |
|----------------|-----------------|-------------------------------|-------|--------|-------|--------|-------|--------|-------|
| | | Port a | | Port b | | Port c | | Port d | |
| MHz | MHz | SE | Limit | SE | Limit | SE | Limit | SE | Limit |
| 903.0 | 30.0 - 10000.0 | -40.167 | 1.94 | | | | | | |
| 915.0 | 30.0 - 10000.0 | -41.243 | 2.23 | | | | | | |
| 926.8 | 30.0 - 10000.0 | -40.746 | 2.07 | | | | | | |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

Note: click the links in the above matrix to view the graphical image (plot).

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Equipment Configuration for Unwanted Emissions Peak

| | | | |
|--------------------------------|----------------|-------------------------------|----------------|
| Variant: | Mode 4 | Duty Cycle (%): | 99 |
| Data Rate: | 100kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | FSK | Beam Forming Gain (Y): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Test Frequency | Frequency Range | Unwanted Emissions Peak (dBm) | | | | | | | |
|----------------|-----------------|-------------------------------|-------|--------|-------|--------|-------|--------|-------|
| | | Port a | | Port b | | Port c | | Port d | |
| MHz | MHz | SE | Limit | SE | Limit | SE | Limit | SE | Limit |
| 902.3 | 30.0 - 10000.0 | -47.527 | -4.40 | | | | | | |
| 914.9 | 30.0 - 10000.0 | -48.217 | -4.40 | | | | | | |
| 926.9 | 30.0 - 10000.0 | -48.262 | -4.84 | | | | | | |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

Note: click the links in the above matrix to view the graphical image (plot).

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Equipment Configuration for Unwanted Emissions Peak

| | | | |
|--------------------------------|----------------|-------------------------------|----------------|
| Variant: | Mode 5 | Duty Cycle (%): | 99 |
| Data Rate: | 150kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | GFSK | Beam Forming Gain (Y): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Test Frequency | Frequency Range | Unwanted Emissions Peak (dBm) | | | | | | | |
|----------------|-----------------|-------------------------------|-------|--------|-------|--------|-------|--------|-------|
| | | Port a | | Port b | | Port c | | Port d | |
| MHz | MHz | SE | Limit | SE | Limit | SE | Limit | SE | Limit |
| 902.4 | 30.0 - 10000.0 | 27.771 | 7.77 | | | | | | |
| 915.2 | 30.0 - 10000.0 | 27.661 | 7.66 | | | | | | |
| 927.6 | 30.0 - 10000.0 | -18.311 | -4.52 | | | | | | |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

Note: click the links in the above matrix to view the graphical image (plot).

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1.4.1.2. Conducted Band-Edge Emissions

Equipment Configuration for Conducted Low Band-Edge Emissions (Hopping) Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 1 | Duty Cycle (%): | 99.0 |
| Data Rate: | 10kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | GFSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency: | 902.2 MHz | | | | | |
|------------------------------|-----------------------------|------------------|--------------------|-----------------|---------------------|--------|
| Band-Edge Frequency: | 902.0 MHz | | | | | |
| Test Frequency Range: | 875.0 - 905.0 MHz | | | | | |
| Port(s) | Band-Edge Markers and Limit | | | Revised Limit | | Margin |
| | M1 Amplitude (dBm) | Plot Limit (dBm) | M2 Frequency (MHz) | Amplitude (dBm) | M2A Frequency (MHz) | (MHz) |
| a | -9.24 | -3.51 | 902.00 | | | 0.000 |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

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Equipment Configuration for Conducted Low Band-Edge Emissions (Hopping) Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 2 | Duty Cycle (%): | 99.0 |
| Data Rate: | 50kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | FSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency: | 902.2 MHz | | | | | |
|------------------------------|-----------------------------|------------------|--------------------|-----------------|---------------------|--------|
| Band-Edge Frequency: | 902.0 MHz | | | | | |
| Test Frequency Range: | 875.0 - 905.0 MHz | | | | | |
| Port(s) | Band-Edge Markers and Limit | | | Revised Limit | | Margin |
| | M1 Amplitude (dBm) | Plot Limit (dBm) | M2 Frequency (MHz) | Amplitude (dBm) | M2A Frequency (MHz) | (MHz) |
| a | 1.35 | 2.99 | 901.90 | | | -0.100 |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

Note: click the links in the above matrix to view the graphical image (plot).

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Equipment Configuration for Conducted Low Band-Edge Emissions (Hopping) Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 3 | Duty Cycle (%): | 99.0 |
| Data Rate: | 16384bps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | OOK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency: | 903.0 MHz | | | | | |
|------------------------------|-----------------------------|------------------|--------------------|-----------------|---------------------|--------|
| Band-Edge Frequency: | 902.0 MHz | | | | | |
| Test Frequency Range: | 875.0 - 905.0 MHz | | | | | |
| Port(s) | Band-Edge Markers and Limit | | | Revised Limit | | Margin |
| | M1 Amplitude (dBm) | Plot Limit (dBm) | M2 Frequency (MHz) | Amplitude (dBm) | M2A Frequency (MHz) | (MHz) |
| a | -4.08 | 8.89 | 902.70 | | | -0.700 |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

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Equipment Configuration for Conducted Low Band-Edge Emissions (Hopping) Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 4 | Duty Cycle (%): | 99.0 |
| Data Rate: | 100kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | FSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency: | 902.2 MHz | | | | | |
|------------------------------|-----------------------------|------------------|--------------------|-----------------|---------------------|--------|
| Band-Edge Frequency: | 902.0 MHz | | | | | |
| Test Frequency Range: | 875.0 - 905.0 MHz | | | | | |
| Port(s) | Band-Edge Markers and Limit | | | Revised Limit | | Margin |
| | M1 Amplitude (dBm) | Plot Limit (dBm) | M2 Frequency (MHz) | Amplitude (dBm) | M2A Frequency (MHz) | (MHz) |
| a | -8.51 | -3.39 | 902.10 | | | -0.100 |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

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Equipment Configuration for Conducted Low Band-Edge Emissions (Hopping) Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 5 | Duty Cycle (%): | 99.0 |
| Data Rate: | 150kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | GFSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency: | 902.4 MHz | | | | | |
|------------------------------|-----------------------------|------------------|--------------------|-----------------|---------------------|--------|
| Band-Edge Frequency: | 902.0 MHz | | | | | |
| Test Frequency Range: | 875.0 - 905.0 MHz | | | | | |
| Port(s) | Band-Edge Markers and Limit | | | Revised Limit | | Margin |
| | M1 Amplitude (dBm) | Plot Limit (dBm) | M2 Frequency (MHz) | Amplitude (dBm) | M2A Frequency (MHz) | (MHz) |
| a | -27.35 | -2.95 | 902.20 | | | -0.200 |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

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Equipment Configuration for Conducted Low Band-Edge Emissions (Static) Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 1 | Duty Cycle (%): | 99.0 |
| Data Rate: | 10kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | GFSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency: | 902.2 MHz | | | | | |
|------------------------------|-----------------------------|------------------|--------------------|-----------------|---------------------|--------|
| Band-Edge Frequency: | 902.0 MHz | | | | | |
| Test Frequency Range: | 875.0 - 905.0 MHz | | | | | |
| Port(s) | Band-Edge Markers and Limit | | | Revised Limit | | Margin |
| | M1 Amplitude (dBm) | Plot Limit (dBm) | M2 Frequency (MHz) | Amplitude (dBm) | M2A Frequency (MHz) | (MHz) |
| a | 1.41 | 8.43 | 902.00 | | | 0.000 |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

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Equipment Configuration for Conducted Low Band-Edge Emissions (Static) Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 2 | Duty Cycle (%): | 99.0 |
| Data Rate: | 50kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | FSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency: | 902.2 MHz | | | | | |
|------------------------------|-----------------------------|------------------|--------------------|-----------------|---------------------|--------|
| Band-Edge Frequency: | 902.0 MHz | | | | | |
| Test Frequency Range: | 875.0 - 905.0 MHz | | | | | |
| Port(s) | Band-Edge Markers and Limit | | | Revised Limit | | Margin |
| | M1 Amplitude (dBm) | Plot Limit (dBm) | M2 Frequency (MHz) | Amplitude (dBm) | M2A Frequency (MHz) | (MHz) |
| a | -3.94 | -3.51 | 901.90 | | | -0.100 |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

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Equipment Configuration for Conducted Low Band-Edge Emissions (Static) Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 3 | Duty Cycle (%): | 99.0 |
| Data Rate: | 16384bps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | OOK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency: | 903.0 MHz | | | | | |
|------------------------------|-----------------------------|------------------|--------------------|-----------------|---------------------|--------|
| Band-Edge Frequency: | 902.0 MHz | | | | | |
| Test Frequency Range: | 875.0 - 905.0 MHz | | | | | |
| Port(s) | Band-Edge Markers and Limit | | | Revised Limit | | Margin |
| | M1 Amplitude (dBm) | Plot Limit (dBm) | M2 Frequency (MHz) | Amplitude (dBm) | M2A Frequency (MHz) | (MHz) |
| a | -10.03 | 2.77 | 902.70 | | | -0.700 |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

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Equipment Configuration for Conducted Low Band-Edge Emissions (Static) Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 4 | Duty Cycle (%): | 99.0 |
| Data Rate: | 100kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | FSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency: | 902.3 MHz | | | | | |
|------------------------------|-----------------------------|------------------|--------------------|-----------------|---------------------|--------|
| Band-Edge Frequency: | 902.0 MHz | | | | | |
| Test Frequency Range: | 875.0 - 905.0 MHz | | | | | |
| Port(s) | Band-Edge Markers and Limit | | | Revised Limit | | Margin |
| | M1 Amplitude (dBm) | Plot Limit (dBm) | M2 Frequency (MHz) | Amplitude (dBm) | M2A Frequency (MHz) | (MHz) |
| a | -7.82 | -3.77 | 902.00 | | | -0.000 |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

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Equipment Configuration for Conducted Low Band-Edge Emissions (Static) Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 5 | Duty Cycle (%): | 99.0 |
| Data Rate: | 150kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | GFSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency: | 902.4 MHz | | | | | |
|------------------------------|-----------------------------|------------------|--------------------|-----------------|---------------------|--------|
| Band-Edge Frequency: | 902.0 MHz | | | | | |
| Test Frequency Range: | 875.0 - 905.0 MHz | | | | | |
| Port(s) | Band-Edge Markers and Limit | | | Revised Limit | | Margin |
| | M1 Amplitude (dBm) | Plot Limit (dBm) | M2 Frequency (MHz) | Amplitude (dBm) | M2A Frequency (MHz) | (MHz) |
| a | -17.02 | 8.14 | 902.20 | | | -0.200 |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

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Equipment Configuration for Conducted Upper Band-Edge Emissions (Hopping) Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 1 | Duty Cycle (%): | 99.0 |
| Data Rate: | 10kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | GFSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency: | 927.8 MHz | | | | | |
|------------------------------|-----------------------------|------------------|--------------------|-----------------|---------------------|--------|
| Band-Edge Frequency: | 928.0 MHz | | | | | |
| Test Frequency Range: | 925.0 - 945.0 MHz | | | | | |
| Port(s) | Band-Edge Markers and Limit | | | Revised Limit | | Margin |
| | M3 Amplitude (dBm) | Plot Limit (dBm) | M2 Frequency (MHz) | Amplitude (dBm) | M2A Frequency (MHz) | (MHz) |
| a | -14.27 | -3.70 | 927.90 | | | -0.100 |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

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Equipment Configuration for Conducted Upper Band-Edge Emissions (Hopping) Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 2 | Duty Cycle (%): | 99.0 |
| Data Rate: | 50kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | FSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency: | 927.6 MHz | | | | | |
|------------------------------|-----------------------------|------------------|--------------------|-----------------|---------------------|--------|
| Band-Edge Frequency: | 928.0 MHz | | | | | |
| Test Frequency Range: | 925.0 - 950.0 MHz | | | | | |
| Port(s) | Band-Edge Markers and Limit | | | Revised Limit | | Margin |
| | M3 Amplitude (dBm) | Plot Limit (dBm) | M2 Frequency (MHz) | Amplitude (dBm) | M2A Frequency (MHz) | (MHz) |
| a | -9.19 | 2.64 | 927.80 | | | -0.200 |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

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Equipment Configuration for Conducted Upper Band-Edge Emissions (Hopping) Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 3 | Duty Cycle (%): | 99.0 |
| Data Rate: | 16.384bps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | OOK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency: | 926.8 MHz | | | | | |
|------------------------------|-----------------------------|------------------|--------------------|-----------------|---------------------|--------|
| Band-Edge Frequency: | 928.0 MHz | | | | | |
| Test Frequency Range: | 925.0 - 950.0 MHz | | | | | |
| Port(s) | Band-Edge Markers and Limit | | | Revised Limit | | Margin |
| | M3 Amplitude (dBm) | Plot Limit (dBm) | M2 Frequency (MHz) | Amplitude (dBm) | M2A Frequency (MHz) | (MHz) |
| a | -6.12 | 8.92 | 927.10 | | | -0.900 |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

Note: click the links in the above matrix to view the graphical image (plot).

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Title: Itron RIVA Modular LE
To: FCC 15.247 & ISED RSS-247
Serial #: ITRO09-U2 Rev A
Issue Date: 8th March 2019
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Equipment Configuration for Conducted Upper Band-Edge Emissions (Hopping) Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 4 | Duty Cycle (%): | 99.0 |
| Data Rate: | 100kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | FSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency: | 927.6 MHz | | | | | |
|------------------------------|-----------------------------|------------------|--------------------|-----------------|---------------------|--------|
| Band-Edge Frequency: | 928.0 MHz | | | | | |
| Test Frequency Range: | 925.0 - 950.0 MHz | | | | | |
| Port(s) | Band-Edge Markers and Limit | | | Revised Limit | | Margin |
| | M3 Amplitude (dBm) | Plot Limit (dBm) | M2 Frequency (MHz) | Amplitude (dBm) | M2A Frequency (MHz) | (MHz) |
| a | -41.03 | -3.56 | 927.50 | | | -0.500 |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

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Equipment Configuration for Conducted Upper Band-Edge Emissions (Hopping) Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 5 | Duty Cycle (%): | 99.0 |
| Data Rate: | 150kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | GFSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency: | 927.6 MHz | | | | | |
|------------------------------|-----------------------------|------------------|--------------------|-----------------|---------------------|--------|
| Band-Edge Frequency: | 928.0 MHz | | | | | |
| Test Frequency Range: | 925.0 - 945.0 MHz | | | | | |
| Port(s) | Band-Edge Markers and Limit | | | Revised Limit | | Margin |
| | M3 Amplitude (dBm) | Plot Limit (dBm) | M2 Frequency (MHz) | Amplitude (dBm) | M2A Frequency (MHz) | (MHz) |
| a | -31.49 | -4.20 | 927.80 | | | -0.200 |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

Note: click the links in the above matrix to view the graphical image (plot).

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Equipment Configuration for Conducted Upper Band-Edge Emissions (Static) Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 1 | Duty Cycle (%): | 99.0 |
| Data Rate: | 10kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | GFSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency: | 927.8 MHz | | | | | |
|------------------------------|-----------------------------|------------------|--------------------|-----------------|---------------------|--------|
| Band-Edge Frequency: | 928.0 MHz | | | | | |
| Test Frequency Range: | 925.0 - 950.0 MHz | | | | | |
| Port(s) | Band-Edge Markers and Limit | | | Revised Limit | | Margin |
| | M3 Amplitude (dBm) | Plot Limit (dBm) | M2 Frequency (MHz) | Amplitude (dBm) | M2A Frequency (MHz) | (MHz) |
| a | -5.72 | 7.82 | 927.90 | | | -0.100 |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

Note: click the links in the above matrix to view the graphical image (plot).

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Equipment Configuration for Conducted Upper Band-Edge Emissions (Static) Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 2 | Duty Cycle (%): | 99.0 |
| Data Rate: | 50kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | FSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency: | 927.6 MHz | | | | | |
|------------------------------|-----------------------------|------------------|--------------------|-----------------|---------------------|--------|
| Band-Edge Frequency: | 928.0 MHz | | | | | |
| Test Frequency Range: | 925.0 - 950.0 MHz | | | | | |
| Port(s) | Band-Edge Markers and Limit | | | Revised Limit | | Margin |
| | M3 Amplitude (dBm) | Plot Limit (dBm) | M2 Frequency (MHz) | Amplitude (dBm) | M2A Frequency (MHz) | (MHz) |
| a | -17.72 | -4.24 | 927.80 | | | -0.200 |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

Note: click the links in the above matrix to view the graphical image (plot).

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Equipment Configuration for Conducted Upper Band-Edge Emissions (Static) Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 3 | Duty Cycle (%): | 99.0 |
| Data Rate: | 16.384bps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | OOK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency: | 926.8 MHz | | | | | |
|------------------------------|-----------------------------|------------------|--------------------|-----------------|---------------------|--------|
| Band-Edge Frequency: | 928.0 MHz | | | | | |
| Test Frequency Range: | 925.0 - 950.0 MHz | | | | | |
| Port(s) | Band-Edge Markers and Limit | | | Revised Limit | | Margin |
| | M3 Amplitude (dBm) | Plot Limit (dBm) | M2 Frequency (MHz) | Amplitude (dBm) | M2A Frequency (MHz) | (MHz) |
| a | -12.37 | 2.48 | 927.10 | | | -0.900 |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

Note: click the links in the above matrix to view the graphical image (plot).

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Equipment Configuration for Conducted Upper Band-Edge Emissions (Static) Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 4 | Duty Cycle (%): | 99.0 |
| Data Rate: | 100kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | FSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency: | 926.9 MHz | | | | | |
|------------------------------|-----------------------------|------------------|--------------------|-----------------|---------------------|--------|
| Band-Edge Frequency: | 928.0 MHz | | | | | |
| Test Frequency Range: | 925.0 - 950.0 MHz | | | | | |
| Port(s) | Band-Edge Markers and Limit | | | Revised Limit | | Margin |
| | M3 Amplitude (dBm) | Plot Limit (dBm) | M2 Frequency (MHz) | Amplitude (dBm) | M2A Frequency (MHz) | (MHz) |
| a | -47.03 | -4.47 | 927.20 | | | -0.800 |

Traceability to Industry Recognized Test Methodologies

| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

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Equipment Configuration for Conducted Upper Band-Edge Emissions (Static) Peak

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | Mode 5 | Duty Cycle (%): | 99.0 |
| Data Rate: | 150kbps | Antenna Gain (dBi): | Not Applicable |
| Modulation: | GFSK | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Channel Frequency: | 927.6 MHz | | | | | |
|------------------------------|-----------------------------|------------------|--------------------|-----------------|---------------------|--------|
| Band-Edge Frequency: | 928.0 MHz | | | | | |
| Test Frequency Range: | 925.0 - 950.0 MHz | | | | | |
| Port(s) | Band-Edge Markers and Limit | | | Revised Limit | | Margin |
| | M3 Amplitude (dBm) | Plot Limit (dBm) | M2 Frequency (MHz) | Amplitude (dBm) | M2A Frequency (MHz) | (MHz) |
| a | -29.68 | -4.53 | 927.80 | | | -0.200 |

Traceability to Industry Recognized Test Methodologies

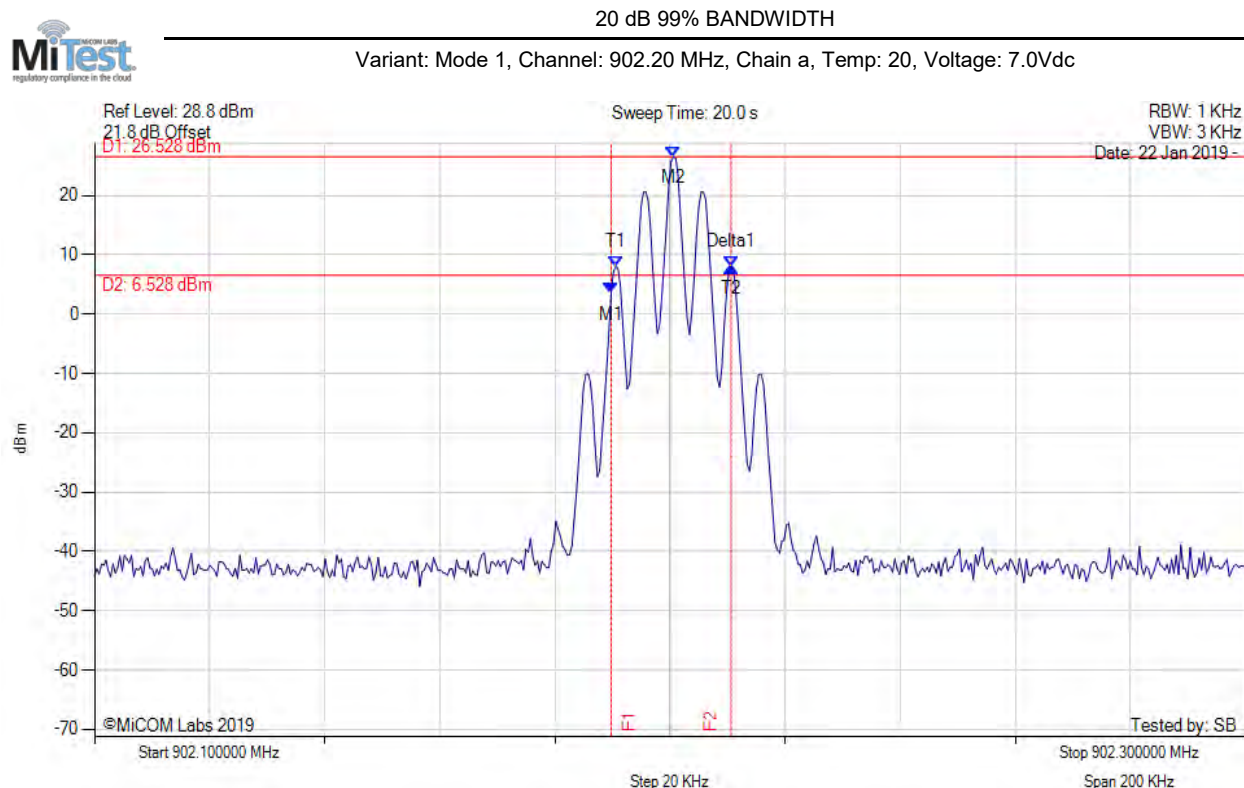
| | |
|--------------------------|---|
| Work Instruction: | WI-05 MEASUREMENT OF SPURIOUS EMISSIONS |
| Measurement Uncertainty: | <=40 GHz ± 2.37 dB, > 40 GHz ± 4.6 dB |

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A. APPENDIX - GRAPHICAL IMAGES

A.1. 20 dB & 99% Bandwidth



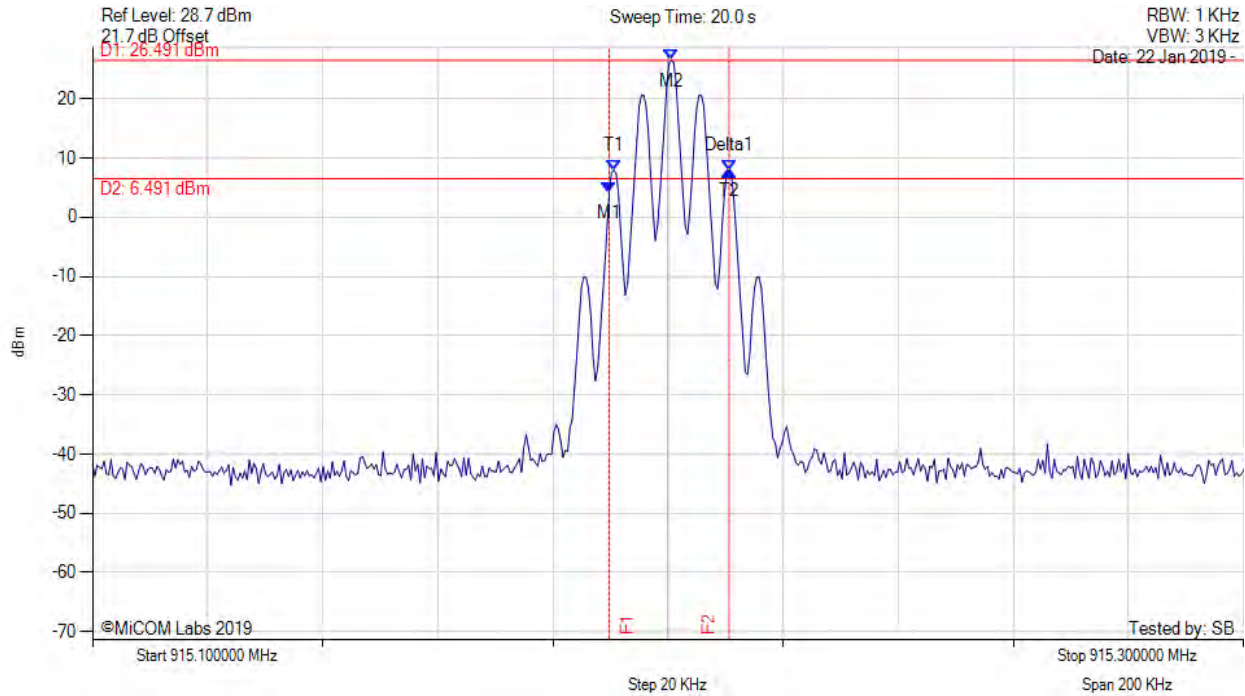
| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 902.190 MHz : 3.551 dBm M2 : 902.201 MHz : 26.528 dBm Delta1 : 21 KHz : 4.401 dB T1 : 902.191 MHz : 7.958 dBm T2 : 902.211 MHz : 7.952 dBm OBW : 20 KHz | Measured 20 dB Bandwidth: 0.021 MHz Limit: 0.5 kHz Margin: 0.48 MHz |

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20 dB 99% BANDWIDTH

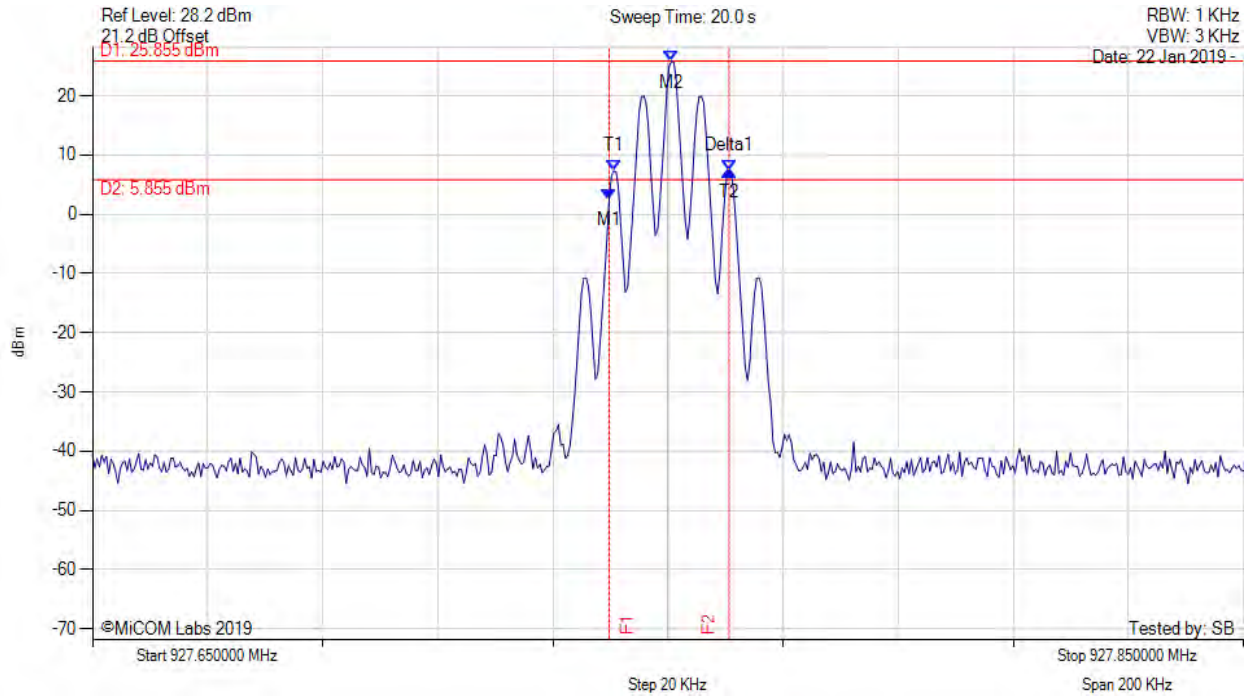
Variant: Mode 1, Channel: 915.20 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 915.190 MHz : 4.199 dBm M2 : 915.201 MHz : 26.491 dBm Delta1 : 21 KHz : 3.728 dB T1 : 915.191 MHz : 7.944 dBm T2 : 915.211 MHz : 7.927 dBm OBW : 20 KHz | Measured 20 dB Bandwidth: 0.021 MHz Limit: 0.5 kHz Margin: 0.48 MHz |

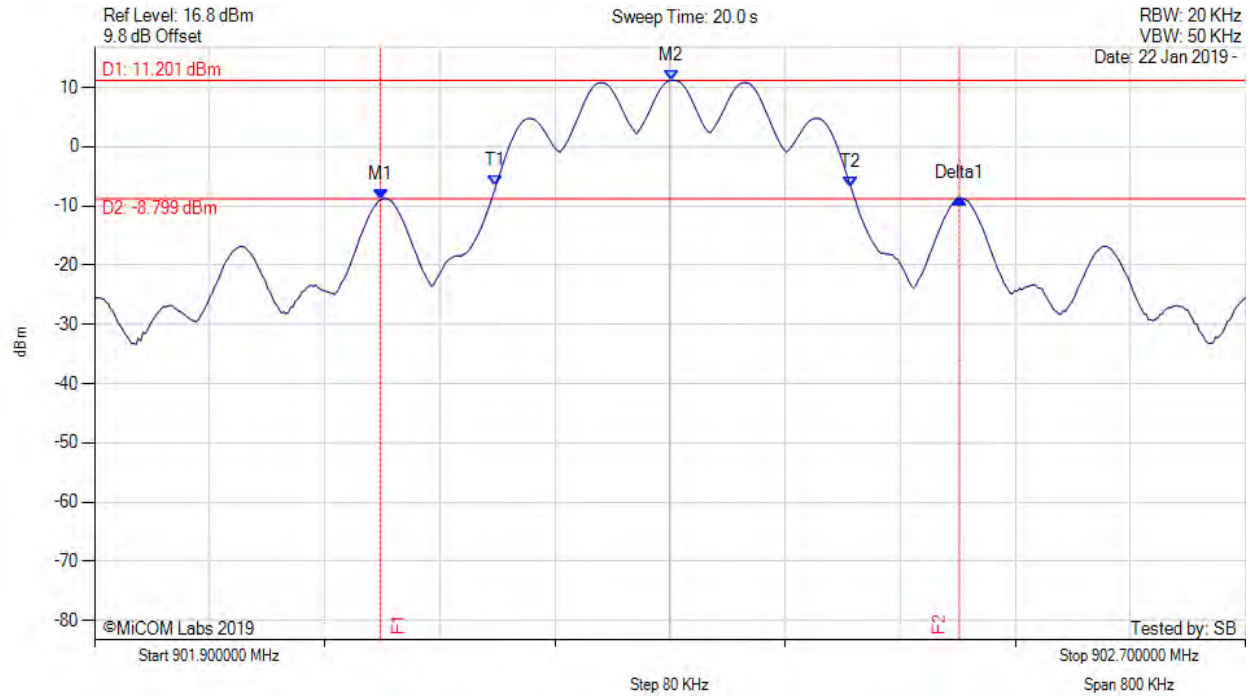
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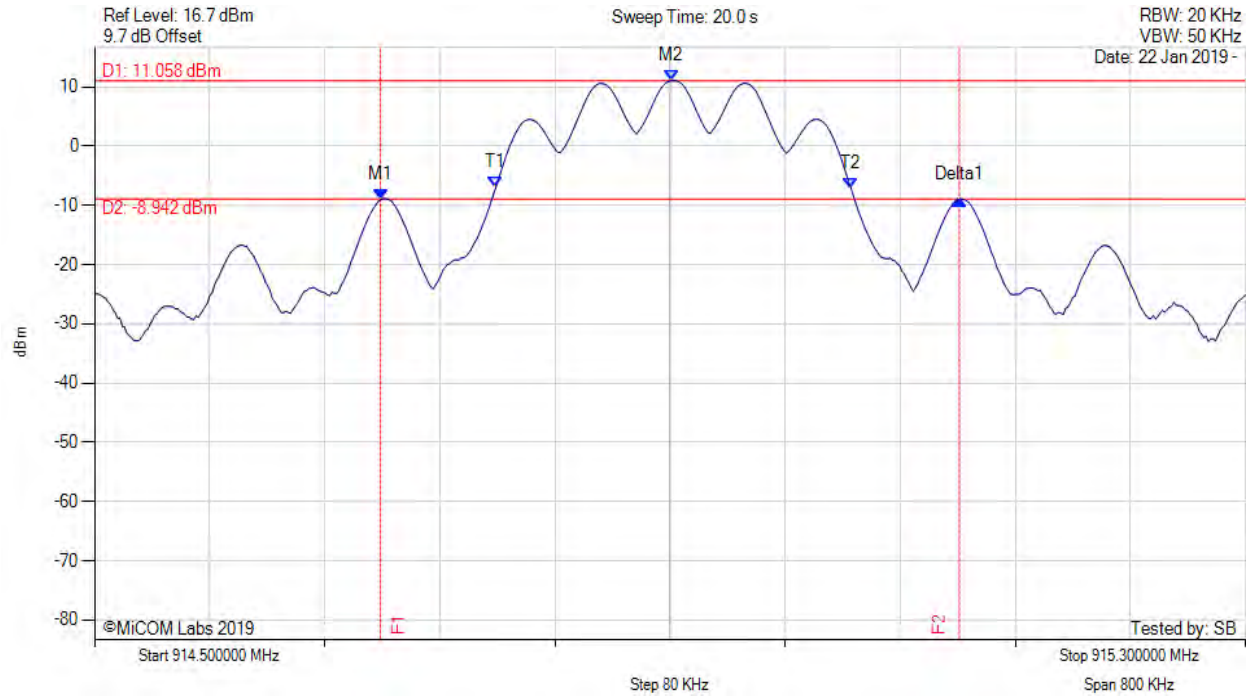
| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 927.740 MHz : 2.587 dBm M2 : 927.751 MHz : 25.855 dBm Delta1 : 21 KHz : 4.728 dB T1 : 927.741 MHz : 7.328 dBm T2 : 927.761 MHz : 7.315 dBm OBW : 20 KHz | Measured 20 dB Bandwidth: 0.021 MHz Limit: 0.5 kHz Margin: 0.48 MHz |

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| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 902.099 MHz : -8.953 dBm M2 : 902.301 MHz : 11.201 dBm Delta1 : 402 KHz : 0.195 dB T1 : 902.179 MHz : -6.684 dBm T2 : 902.426 MHz : -6.861 dBm OBW : 247 KHz | Measured 20 dB Bandwidth: 0.402 MHz Limit: 0.5 kHz Margin: 0.10 MHz |

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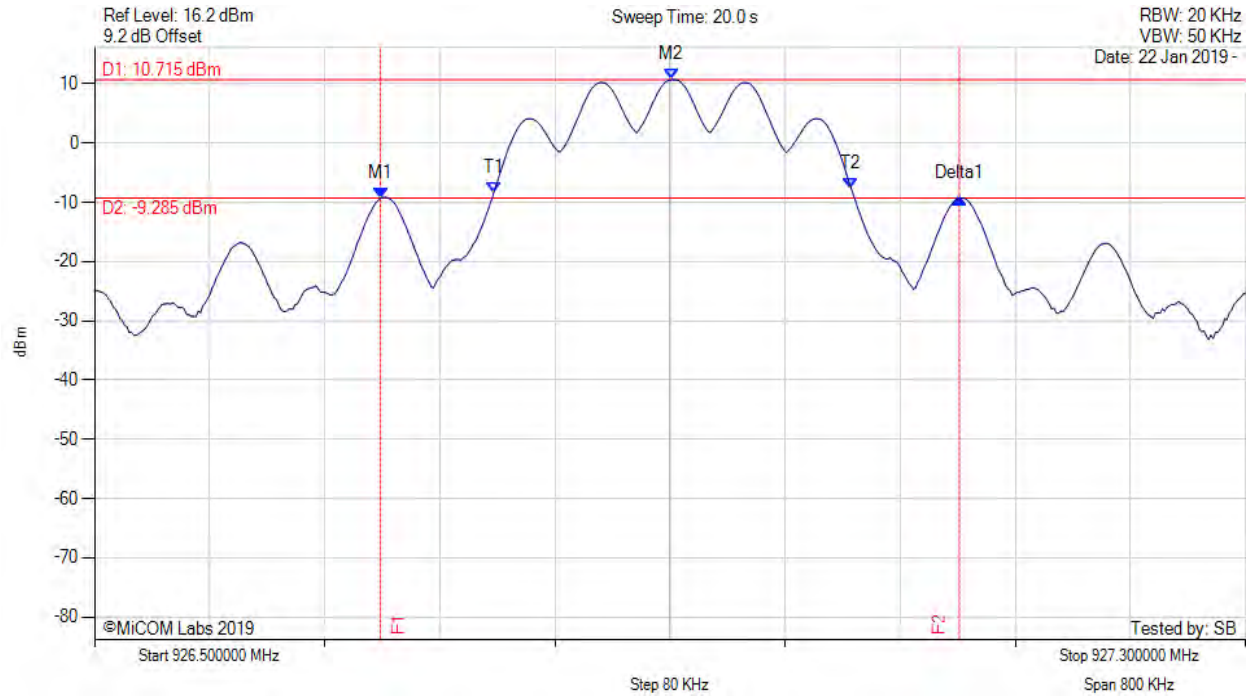
| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 914.699 MHz : -9.072 dBm M2 : 914.901 MHz : 11.058 dBm Delta1 : 402 KHz : 0.108 dB T1 : 914.779 MHz : -6.965 dBm T2 : 915.026 MHz : -7.186 dBm OBW : 247 KHz | Measured 20 dB Bandwidth: 0.402 MHz Limit: 0.5 kHz Margin: 0.10 MHz |

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20 dB 99% BANDWIDTH

Variant: Mode 4, Channel: 926.90 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 926.699 MHz : -9.297 dBm M2 : 926.901 MHz : 10.715 dBm Delta1 : 402 KHz : -0.002 dB T1 : 926.777 MHz : -8.465 dBm T2 : 927.026 MHz : -7.572 dBm OBW : 248 KHz | Measured 20 dB Bandwidth: 0.402 MHz Limit: 0.5 kHz Margin: 0.10 MHz |

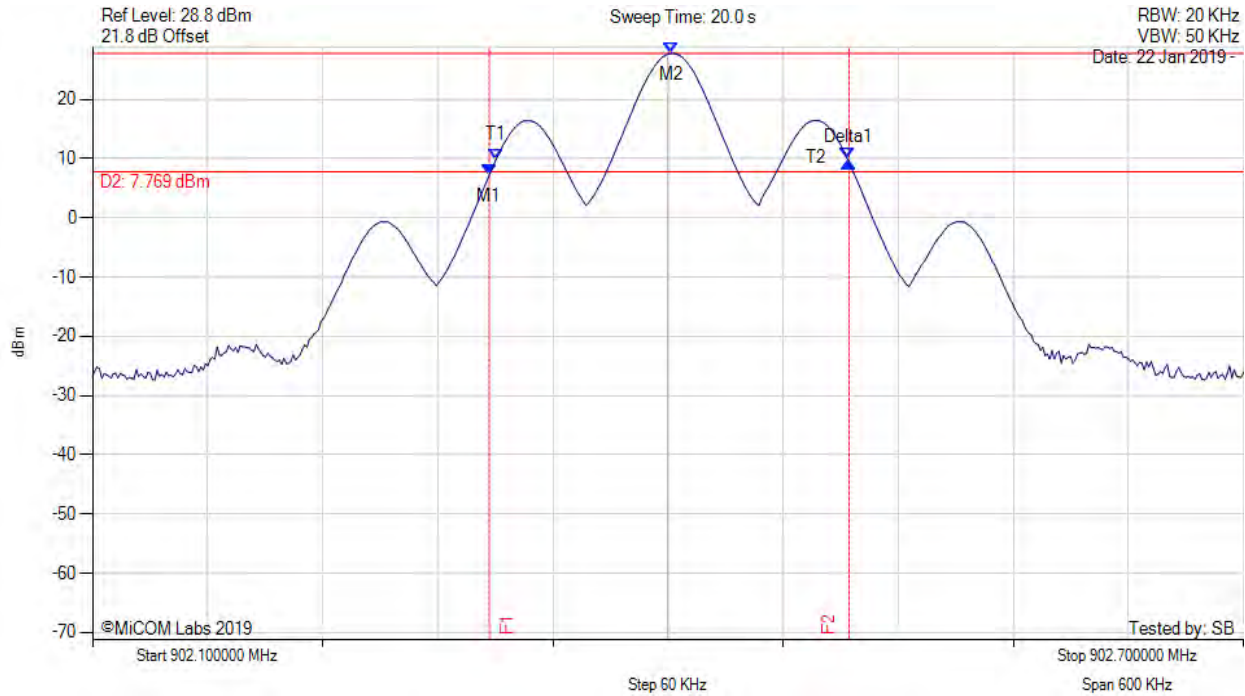
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20 dB 99% BANDWIDTH

Variant: Mode 5, Channel: 902.40 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 902.307 MHz : 7.220 dBm M2 : 902.402 MHz : 27.769 dBm Delta1 : 188 KHz : 2.203 dB T1 : 902.310 MHz : 9.907 dBm T2 : 902.493 MHz : 10.185 dBm OBW : 183 KHz | Measured 20 dB Bandwidth: 0.188 MHz Limit: 0.5 kHz Margin: 0.31 MHz |

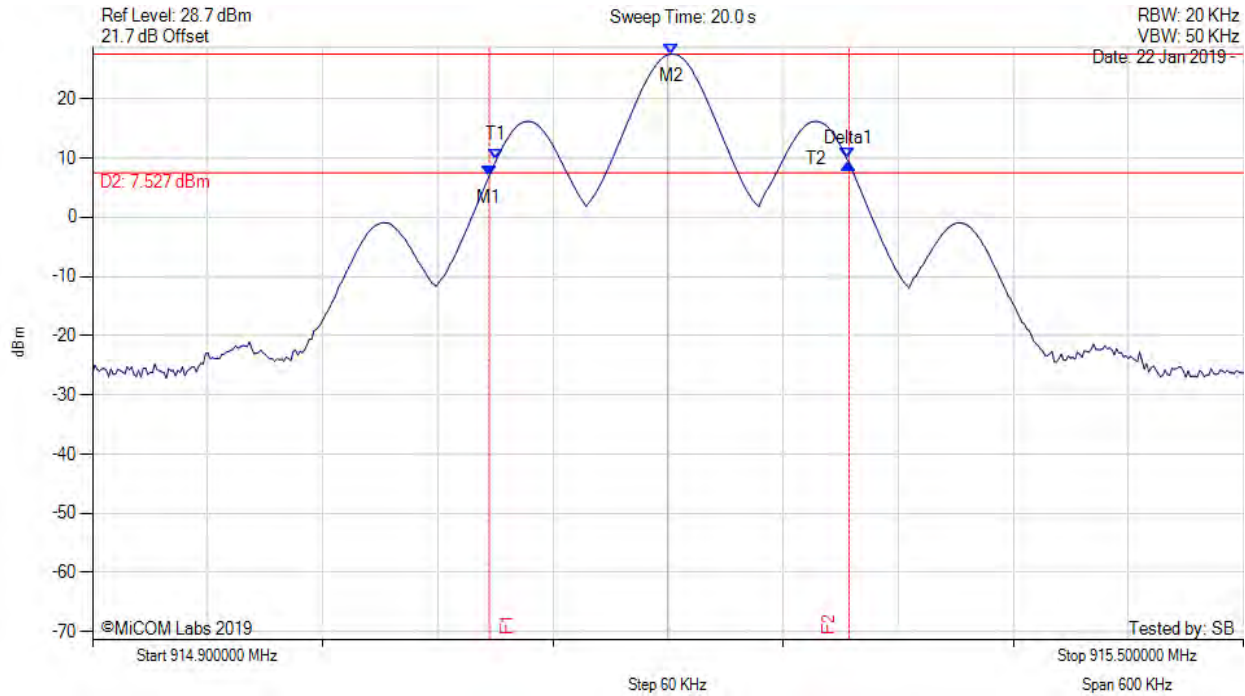
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20 dB 99% BANDWIDTH

Variant: Mode 5, Channel: 915.20 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 915.107 MHz : 6.963 dBm M2 : 915.202 MHz : 27.527 dBm Delta1 : 188 KHz : 2.170 dB T1 : 915.110 MHz : 9.648 dBm T2 : 915.293 MHz : 9.904 dBm OBW : 183 KHz | Measured 20 dB Bandwidth: 0.188 MHz Limit: 0.5 kHz Margin: 0.31 MHz |

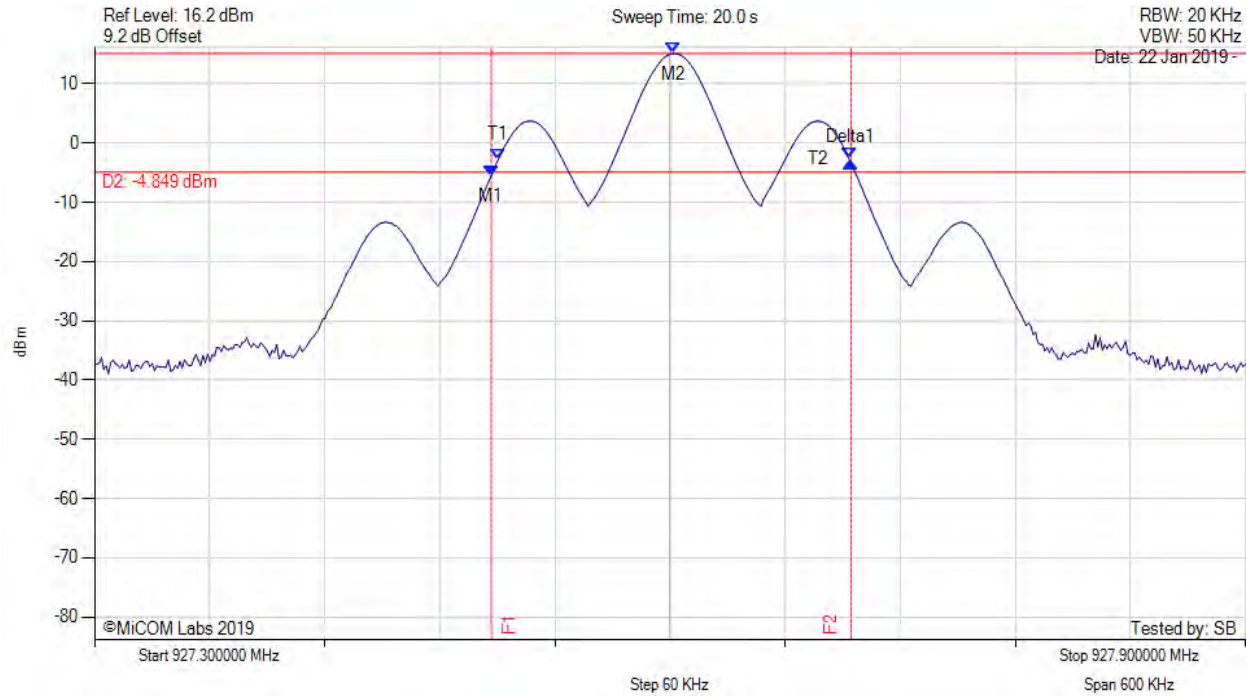
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20 dB 99% BANDWIDTH

Variant: Mode 5, Channel: 927.60 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 927.507 MHz : -5.463 dBm M2 : 927.602 MHz : 15.151 dBm Delta1 : 188 KHz : 2.158 dB T1 : 927.510 MHz : -2.781 dBm T2 : 927.693 MHz : -2.553 dBm OBW : 183 KHz | Measured 20 dB Bandwidth: 0.188 MHz Limit: 0.5 kHz Margin: 0.31 MHz |

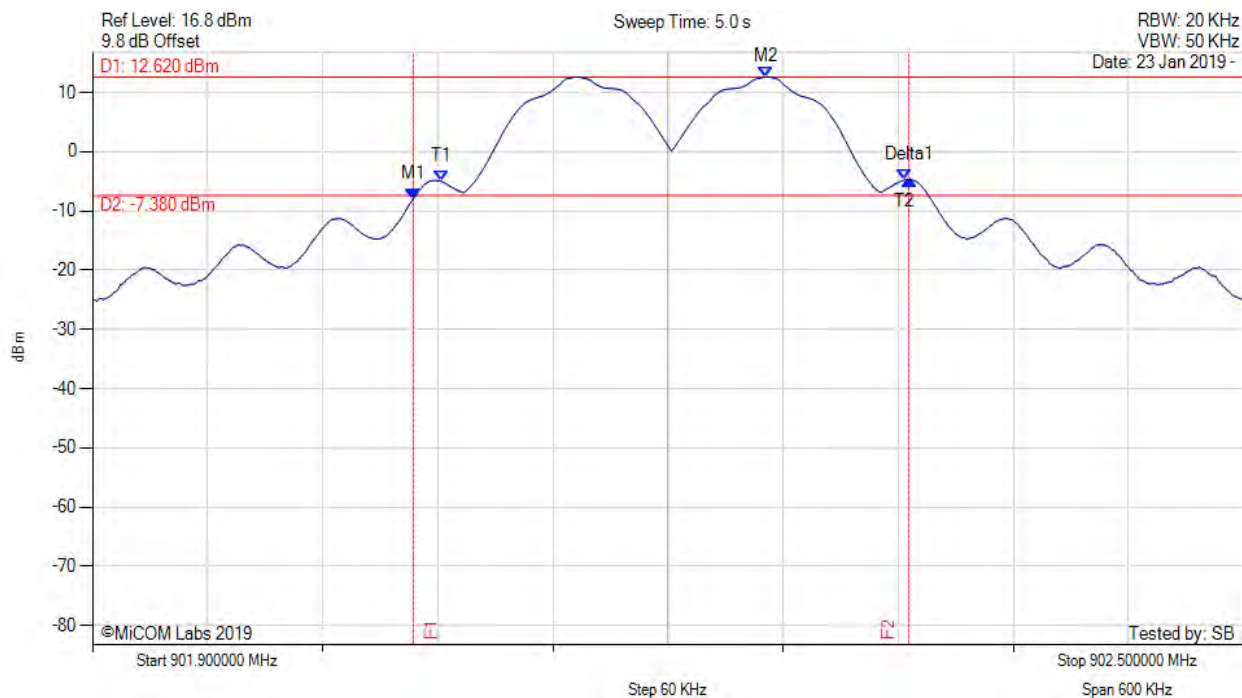
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20 dB 99% BANDWIDTH

Variant: Mode 2, Channel: 902.20 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 902.067 MHz : -7.908 dBm M2 : 902.251 MHz : 12.625 dBm Delta1 : 259 KHz : 3.242 dB T1 : 902.082 MHz : -4.977 dBm T2 : 902.323 MHz : -4.764 dBm OBW : 242 KHz | Measured 20 dB Bandwidth: 0.259 MHz Limit: 0.5 kHz Margin: 0.24 MHz |

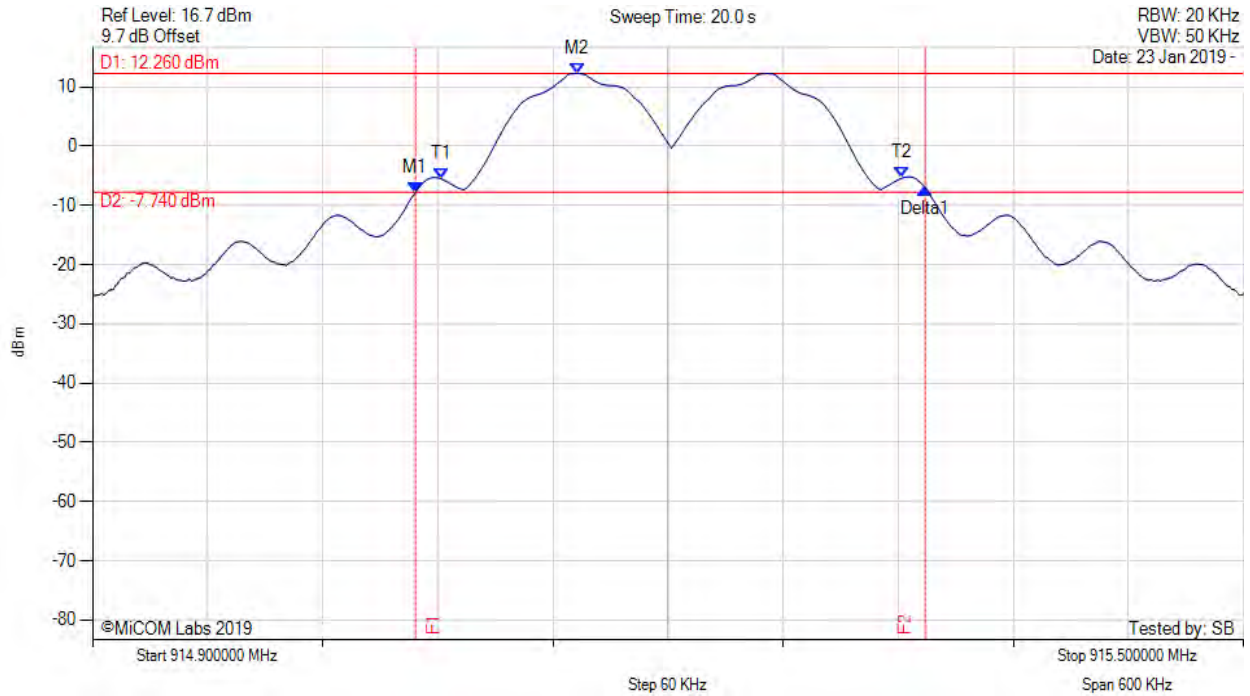
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20 dB 99% BANDWIDTH

Variant: Mode 2, Channel: 915.20 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 915.068 MHz : -7.811 dBm M2 : 915.153 MHz : 12.260 dBm Delta1 : 266 KHz : 0.718 dB T1 : 915.082 MHz : -5.474 dBm T2 : 915.322 MHz : -5.372 dBm OBW : 240 KHz | Measured 20 dB Bandwidth: 0.266 MHz Limit: 0.5 kHz Margin: 0.23 MHz |

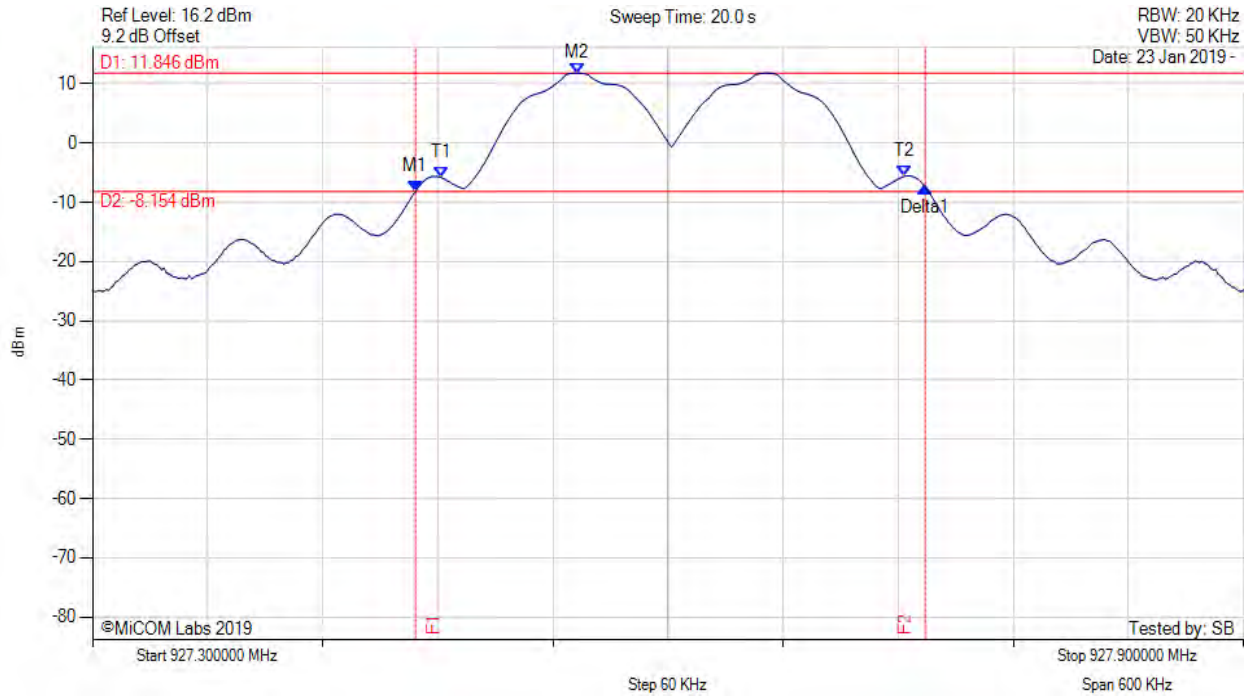
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20 dB 99% BANDWIDTH

Variant: Mode 2, Channel: 927.60 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 927.468 MHz : -8.227 dBm M2 : 927.553 MHz : 11.846 dBm Delta1 : 266 KHz : 0.838 dB T1 : 927.482 MHz : -5.764 dBm T2 : 927.723 MHz : -5.596 dBm OBW : 242 KHz | Measured 20 dB Bandwidth: 0.266 MHz Limit: 0.5 kHz Margin: 0.23 MHz |

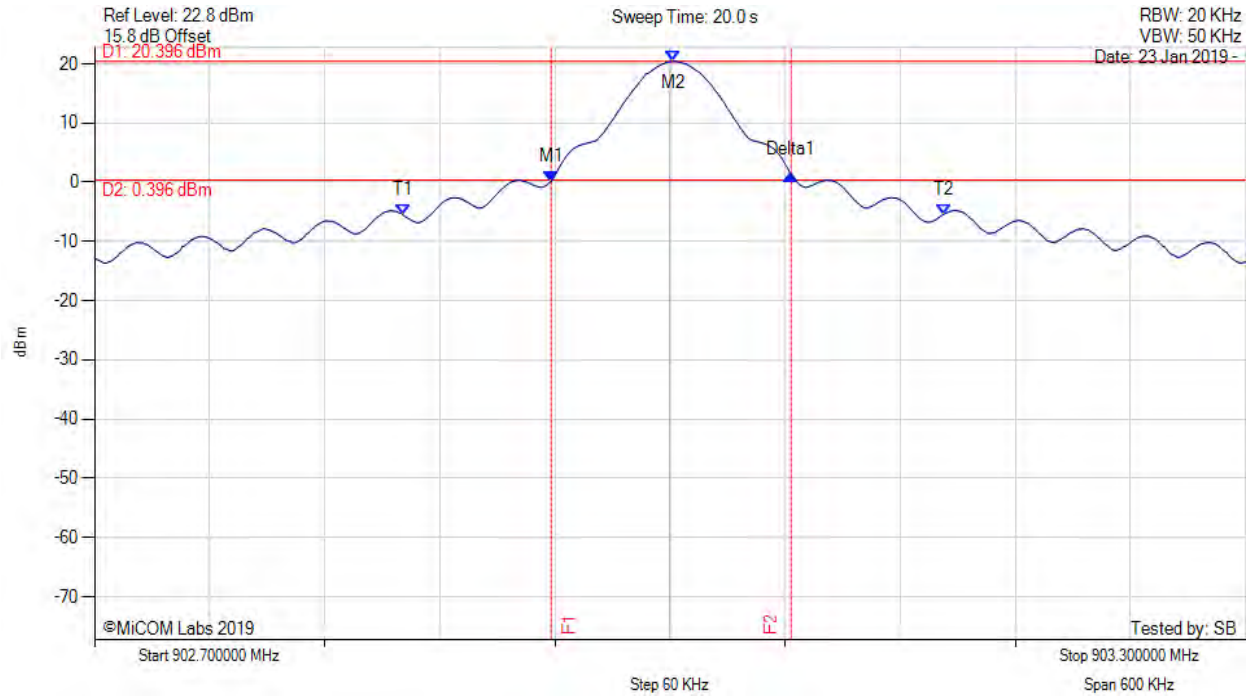
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20 dB 99% BANDWIDTH

Variant: Mode 3, Channel: 903.00 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 902.938 MHz : 0.179 dBm M2 : 903.002 MHz : 20.396 dBm Delta1 : 125 KHz : 1.001 dB T1 : 902.861 MHz : -5.569 dBm T2 : 903.142 MHz : -5.434 dBm OBW : 281 KHz | Measured 20 dB Bandwidth: 0.125 MHz Limit: 0.5 kHz Margin: 0.38 MHz |

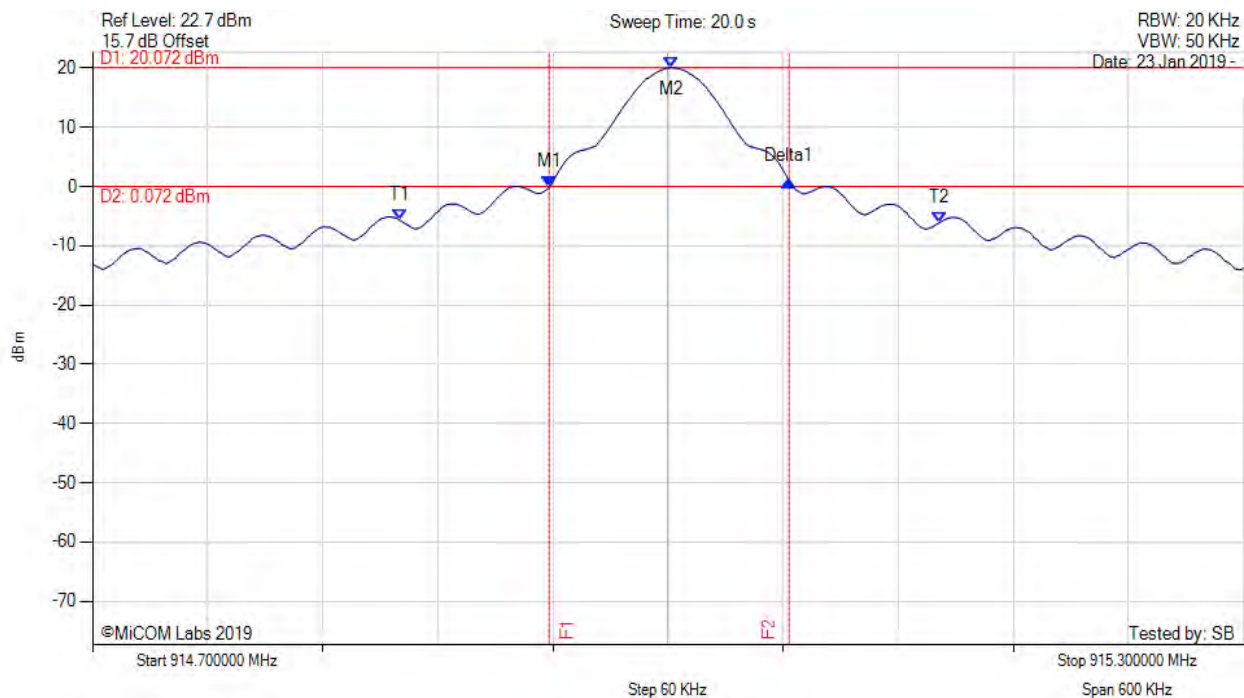
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20 dB 99% BANDWIDTH

Variant: Mode 3, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 914.938 MHz : -0.100 dBm M2 : 915.002 MHz : 20.072 dBm Delta1 : 125 KHz : 0.954 dB T1 : 914.860 MHz : -5.610 dBm T2 : 915.141 MHz : -6.128 dBm OBW : 281 KHz | Measured 20 dB Bandwidth: 0.125 MHz Limit: 0.5 kHz Margin: 0.38 MHz |

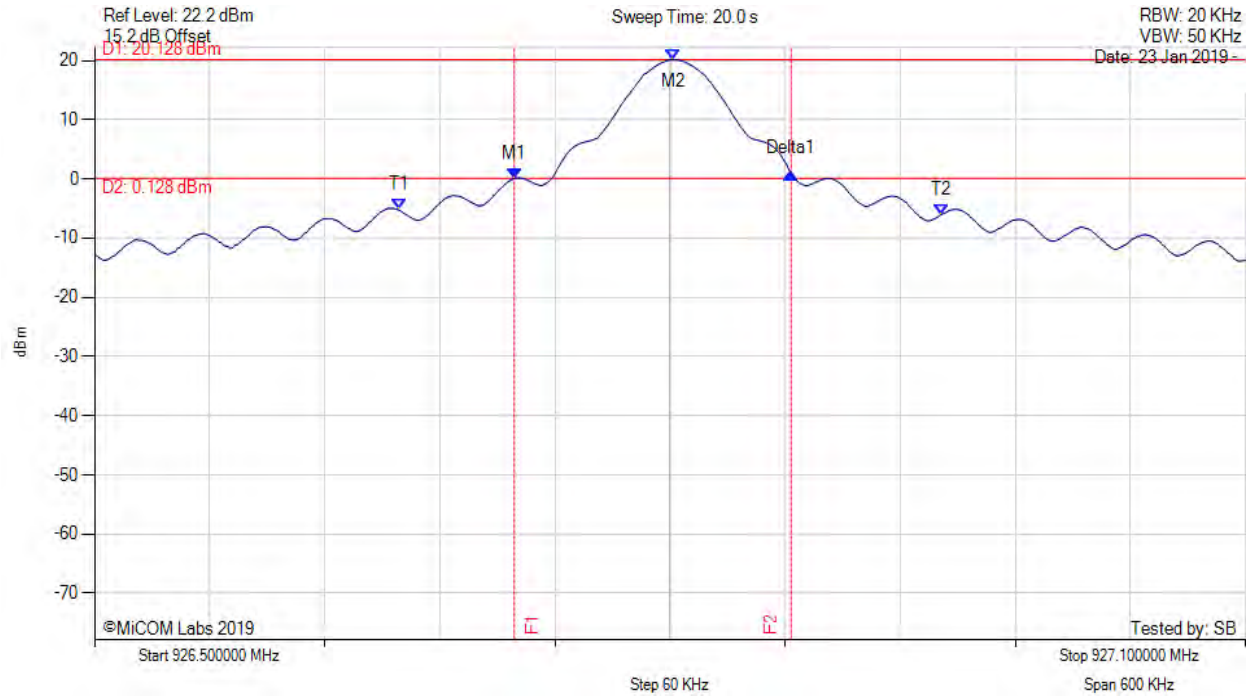
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20 dB 99% BANDWIDTH

Variant: Mode 3, Channel: 926.80 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 926.719 MHz : 0.085 dBm M2 : 926.802 MHz : 20.128 dBm Delta1 : 144 KHz : 0.854 dB T1 : 926.659 MHz : -5.225 dBm T2 : 926.941 MHz : -6.041 dBm OBW : 283 KHz | Measured 20 dB Bandwidth: 0.144 MHz Limit: 0.5 kHz Margin: 0.36 MHz |

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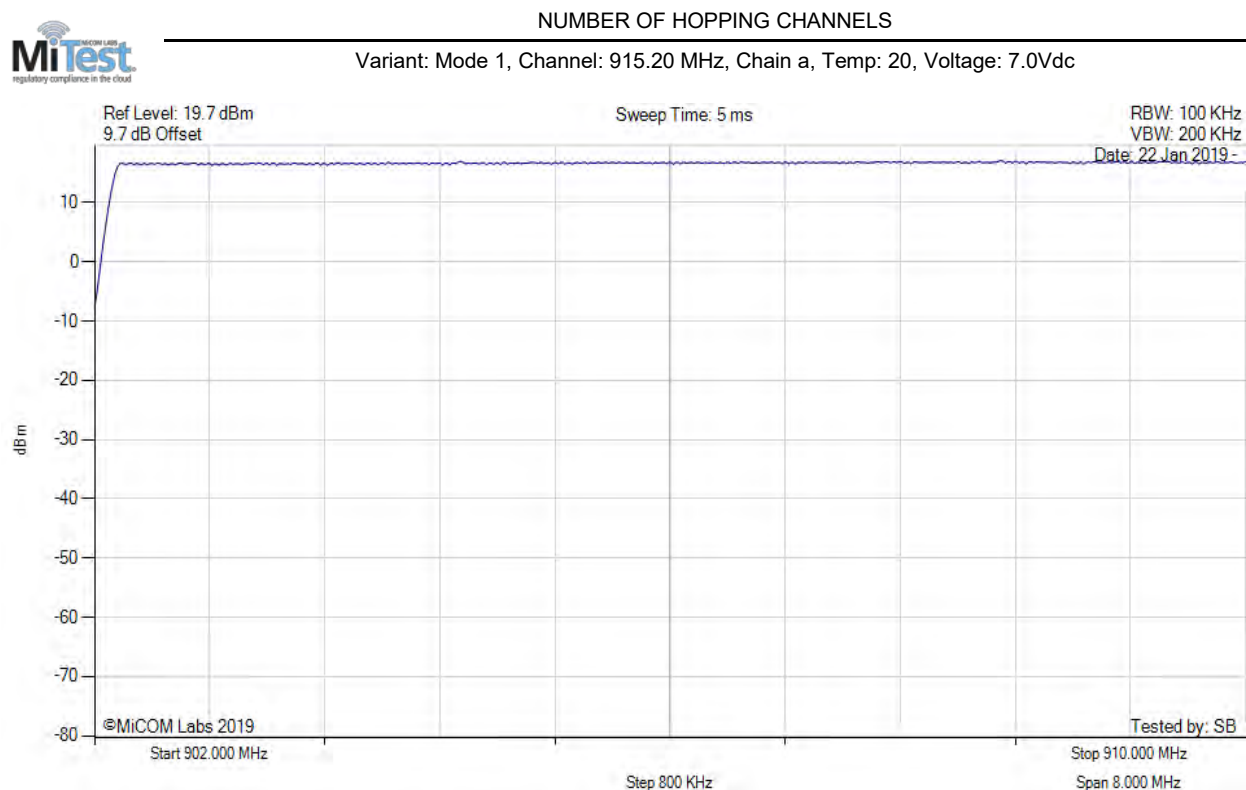
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Title: Itron RIVA Modular LE
To: FCC 15.247 & ISSED RSS-247
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Issue Date: 8th March 2019
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A.2. Frequency Hopping Tests

A.2.1. Number of Hopping Channels



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|----------------------------|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | | Channel Frequency: 915.20 MHz |

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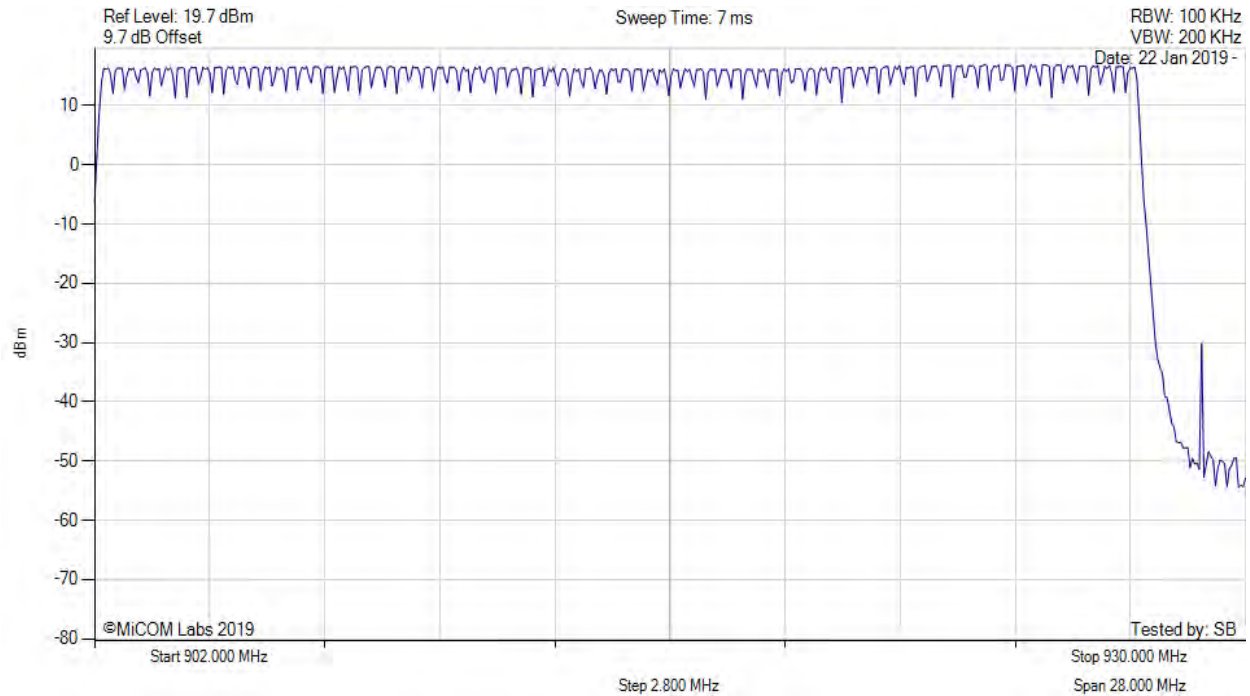


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NUMBER OF HOPPING CHANNELS

Variant: Mode 4, Channel: 914.9 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|----------------------------|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | | Channel Frequency: 914.90 MHz |

[back to matrix](#)

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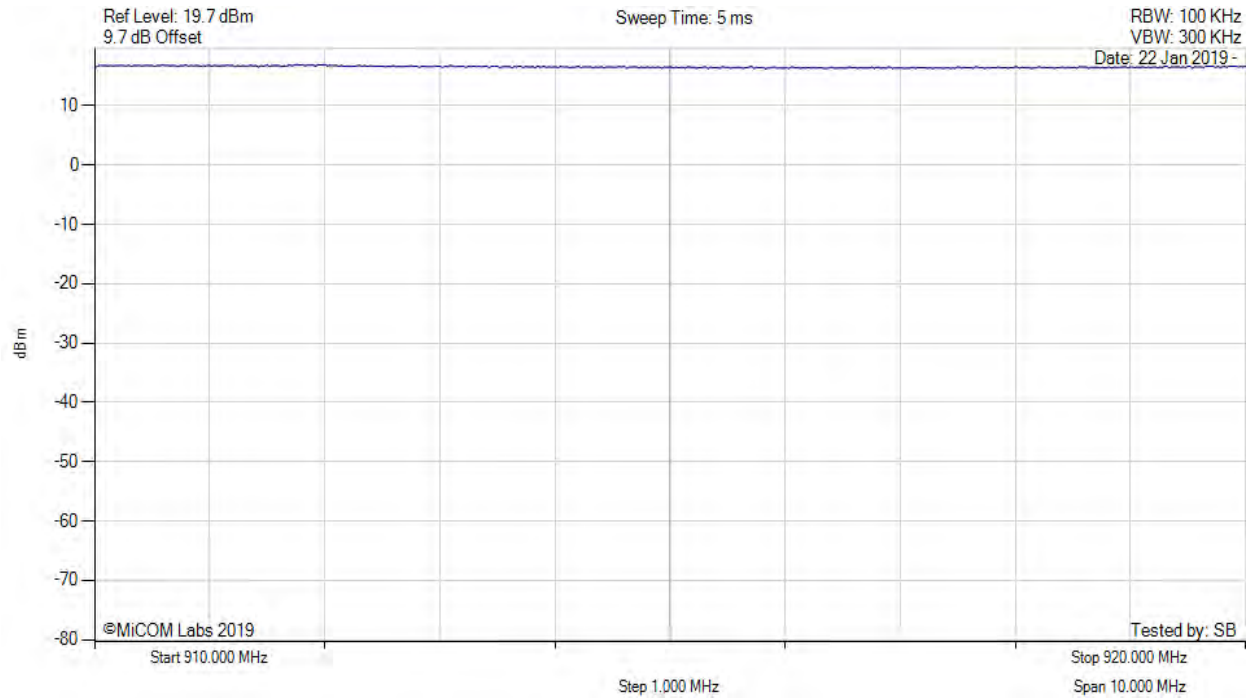


Title: Itron RIVA Modular LE
To: FCC 15.247 & ISED RSS-247
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NUMBER OF HOPPING CHANNELS

Variant: Mode 1, Channel: 915.20 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|----------------------------|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | | Channel Frequency: 915.20 MHz |

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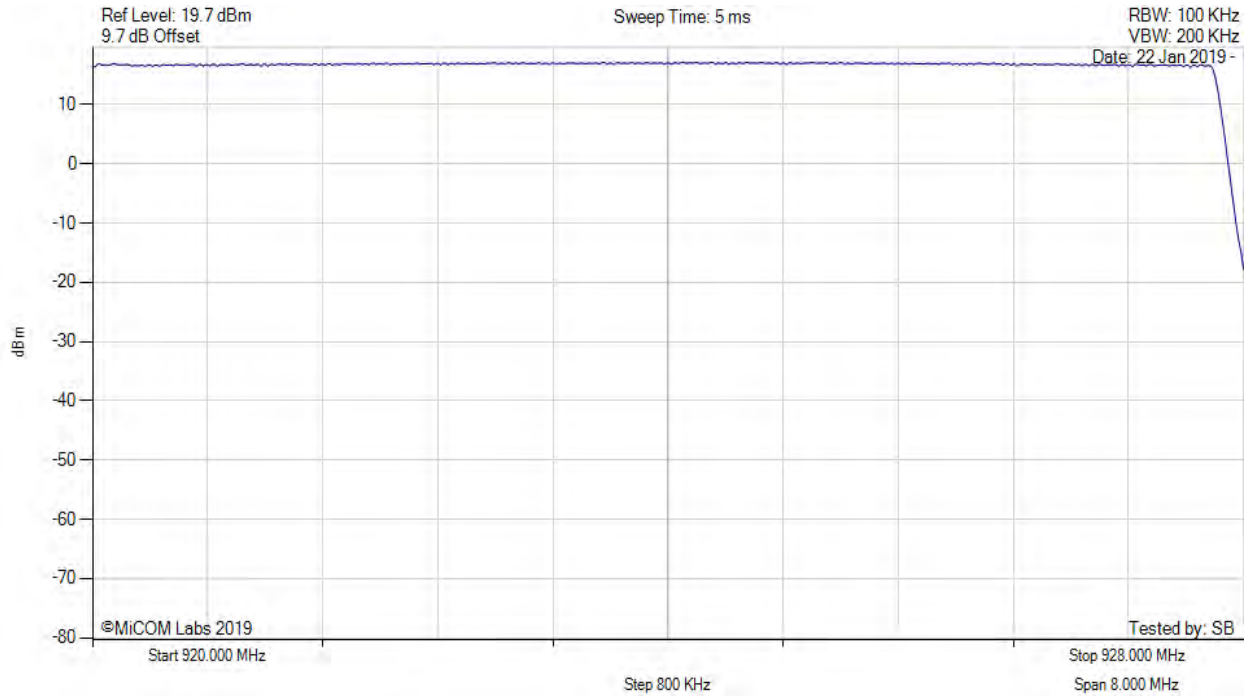


Title: Itron RIVA Modular LE
To: FCC 15.247 & ISED RSS-247
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NUMBER OF HOPPING CHANNELS

Variant: Mode 1, Channel: 915.20 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|----------------------------|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | | Channel Frequency: 915.20 MHz |

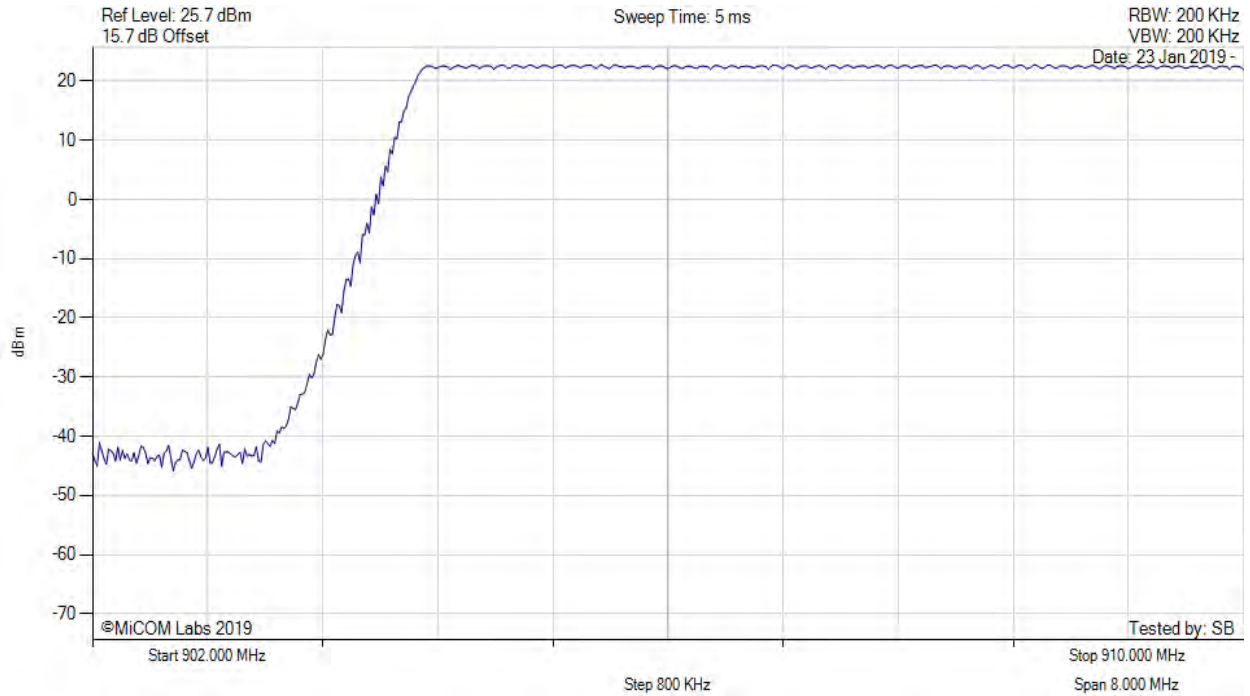
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NUMBER OF HOPPING CHANNELS

Variant: Mode 2, Channel: 915.20 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|----------------------------|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | | Channel Frequency: 915.20 MHz |

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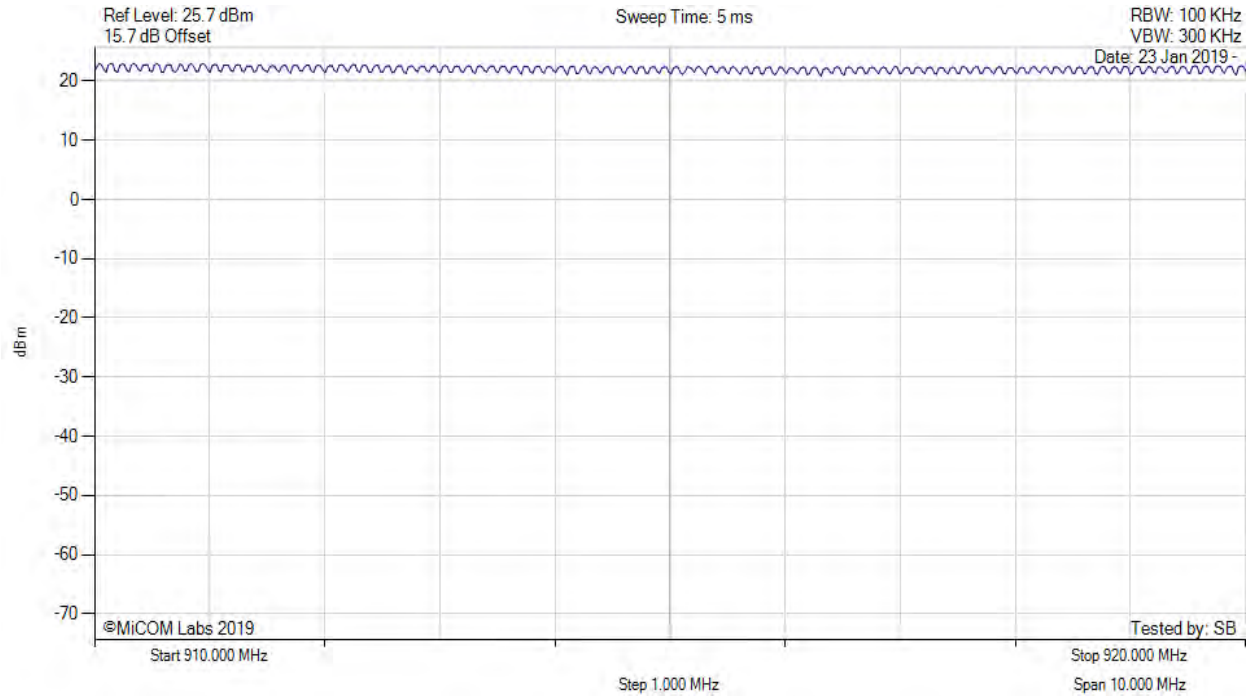


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NUMBER OF HOPPING CHANNELS

Variant: Mode 2, Channel: 915.20 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|----------------------------|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | | Channel Frequency: 915.20 MHz |

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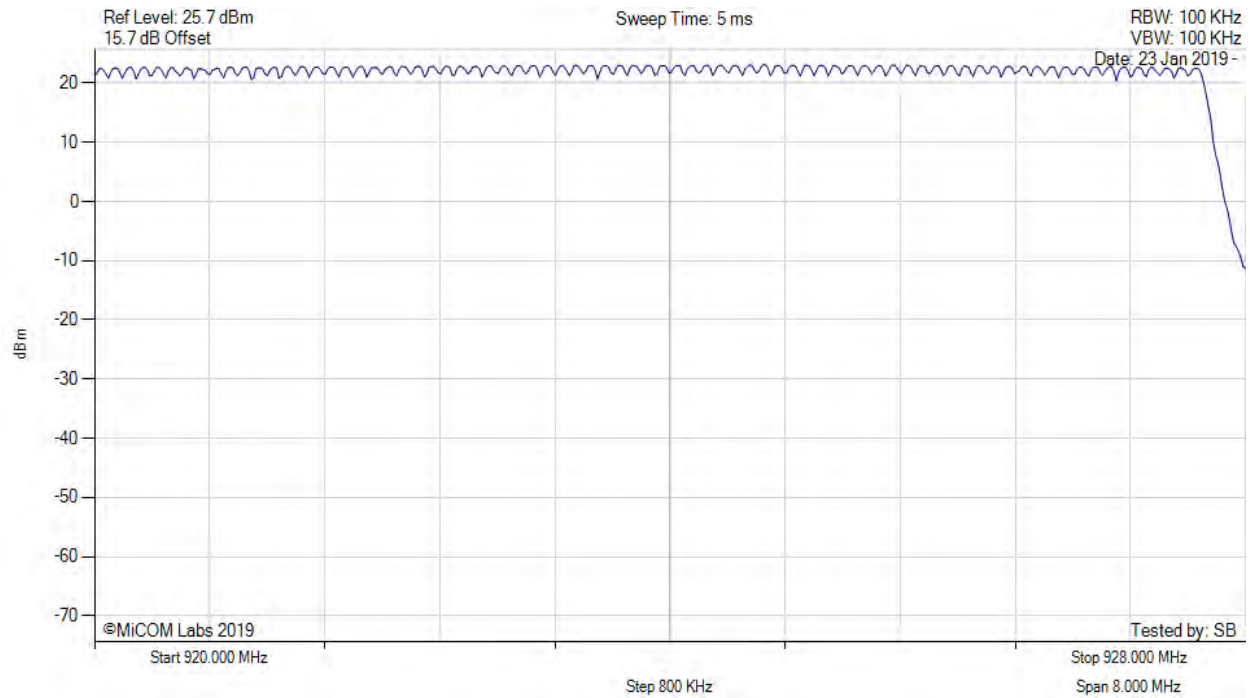


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NUMBER OF HOPPING CHANNELS

Variant: Mode 2, Channel: 915.20 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|----------------------------|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | | Channel Frequency: 915.20 MHz |

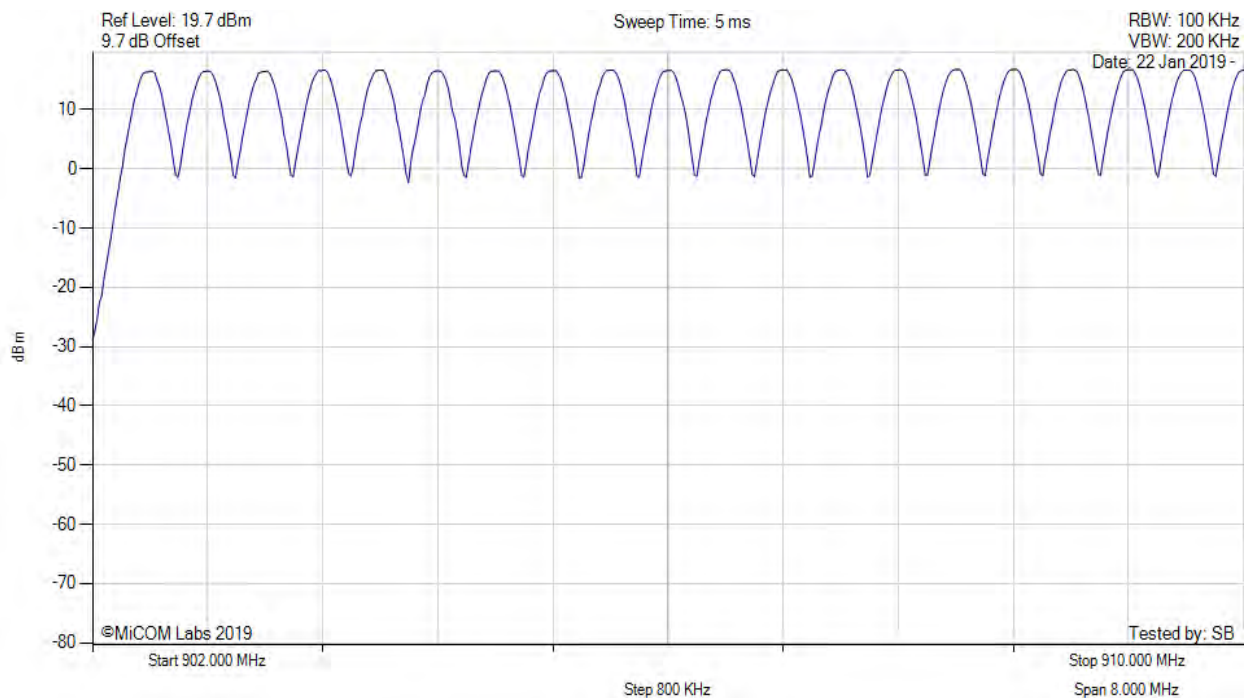
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NUMBER OF HOPPING CHANNELS

Variant: Mode 5, Channel: 915.20 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|----------------------------|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | | Channel Frequency: 915.20 MHz |

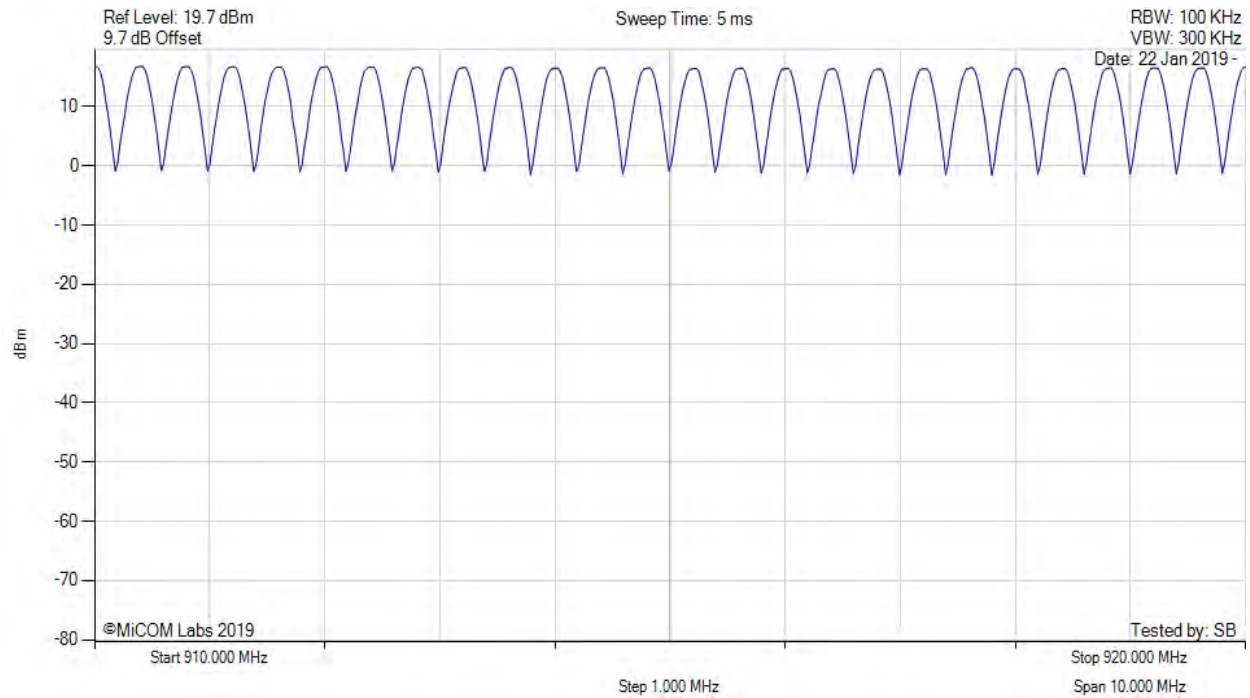
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NUMBER OF HOPPING CHANNELS

Variant: Mode 5, Channel: 915.20 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|----------------------------|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | | Channel Frequency: 915.20 MHz |

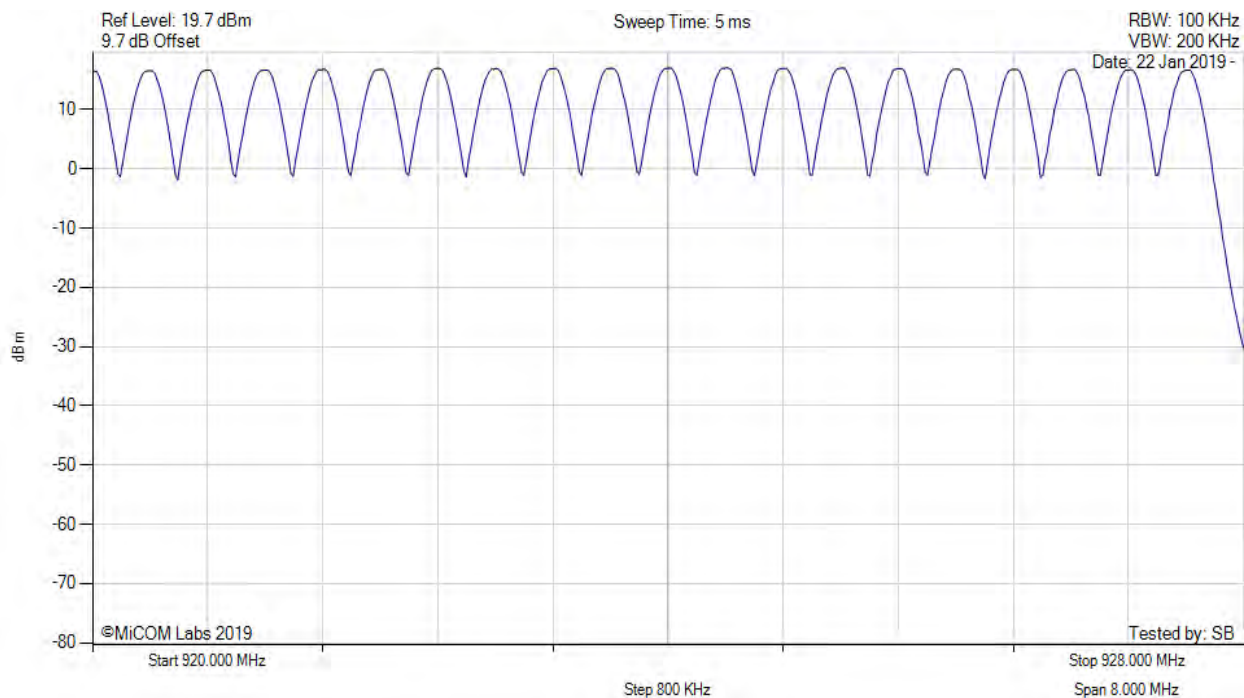
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NUMBER OF HOPPING CHANNELS

Variant: Mode 5, Channel: 915.20 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|----------------------------|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | | Channel Frequency: 915.20 MHz |

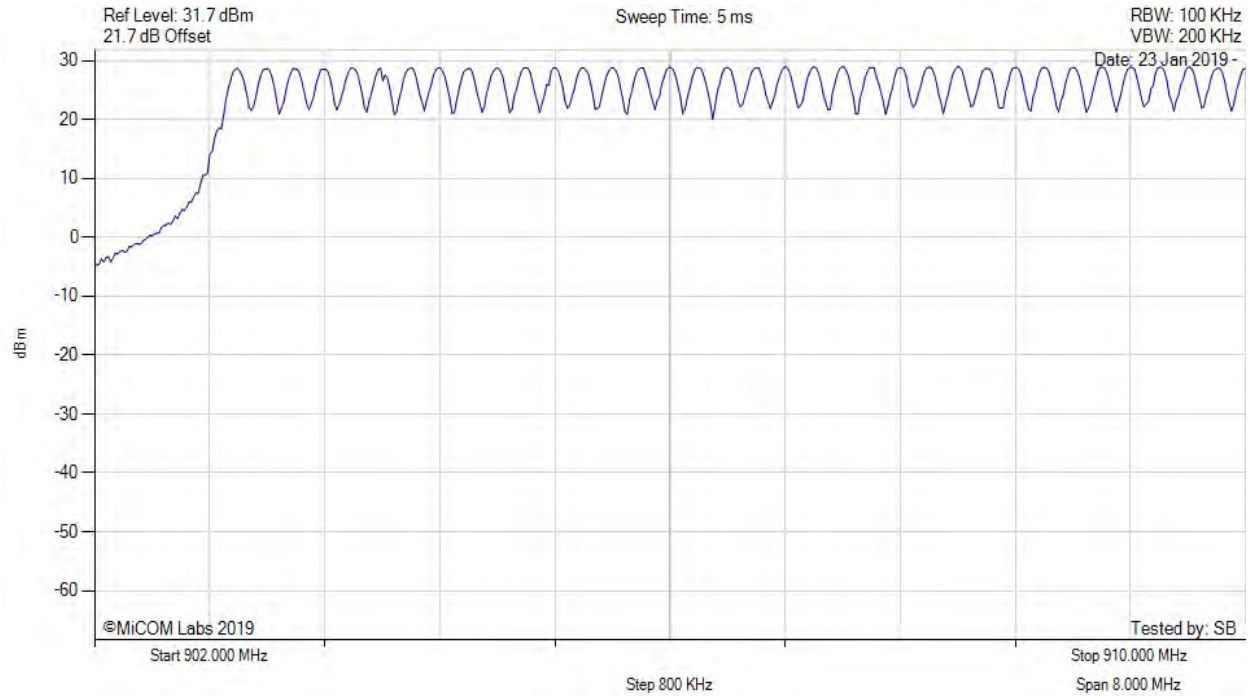
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NUMBER OF HOPPING CHANNELS

Variant: Mode 3, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|----------------------------|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | | Channel Frequency: 915.00 MHz |

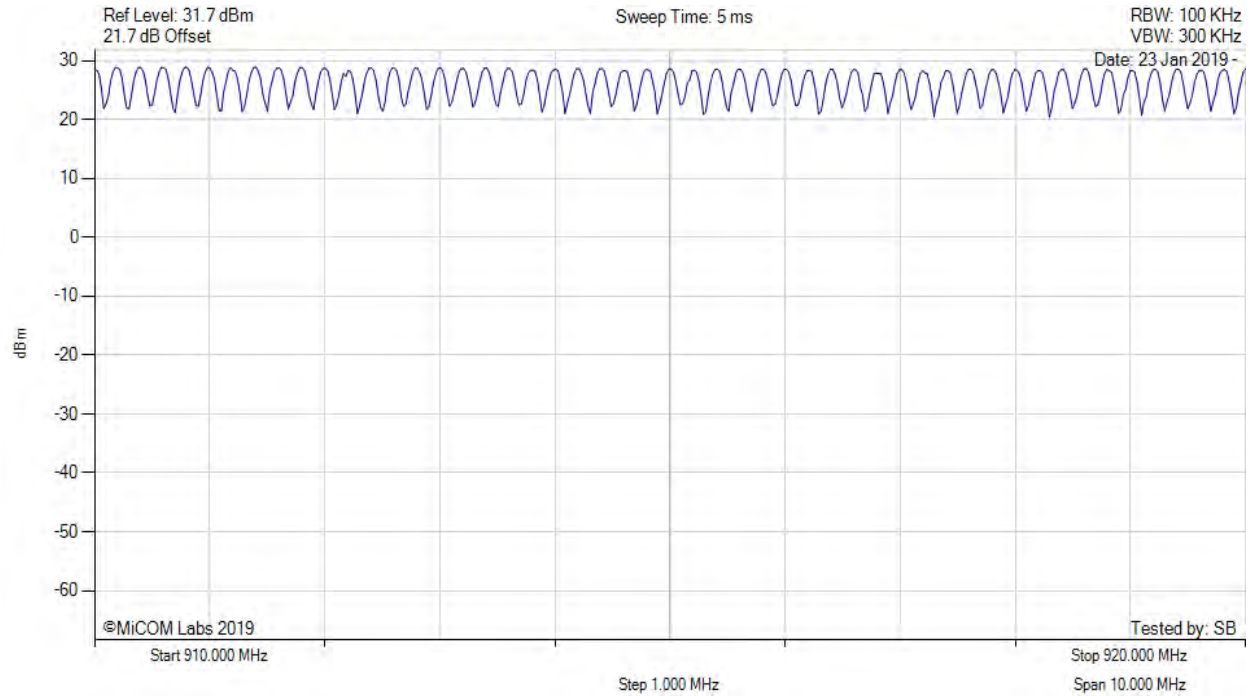
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NUMBER OF HOPPING CHANNELS

Variant: Mode 2, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|----------------------------|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | | Channel Frequency: 915.00 MHz |

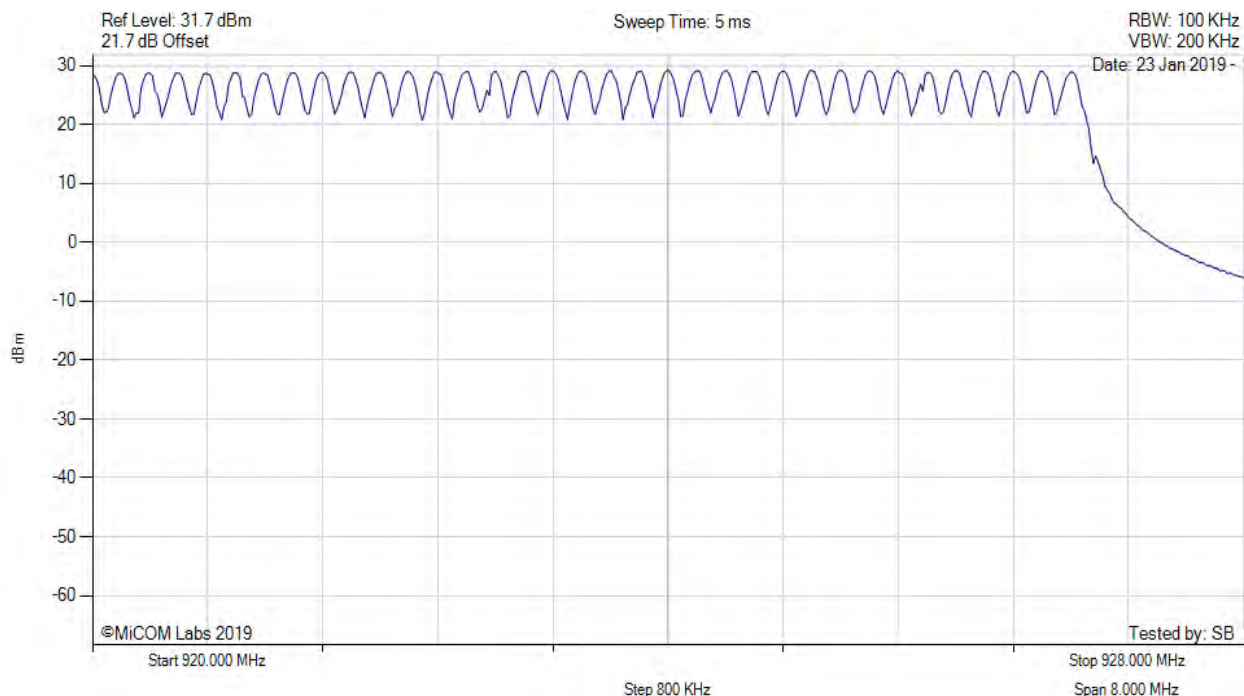
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NUMBER OF HOPPING CHANNELS

Variant: Mode 2, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|----------------------------|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | | Channel Frequency: 915.00 MHz |

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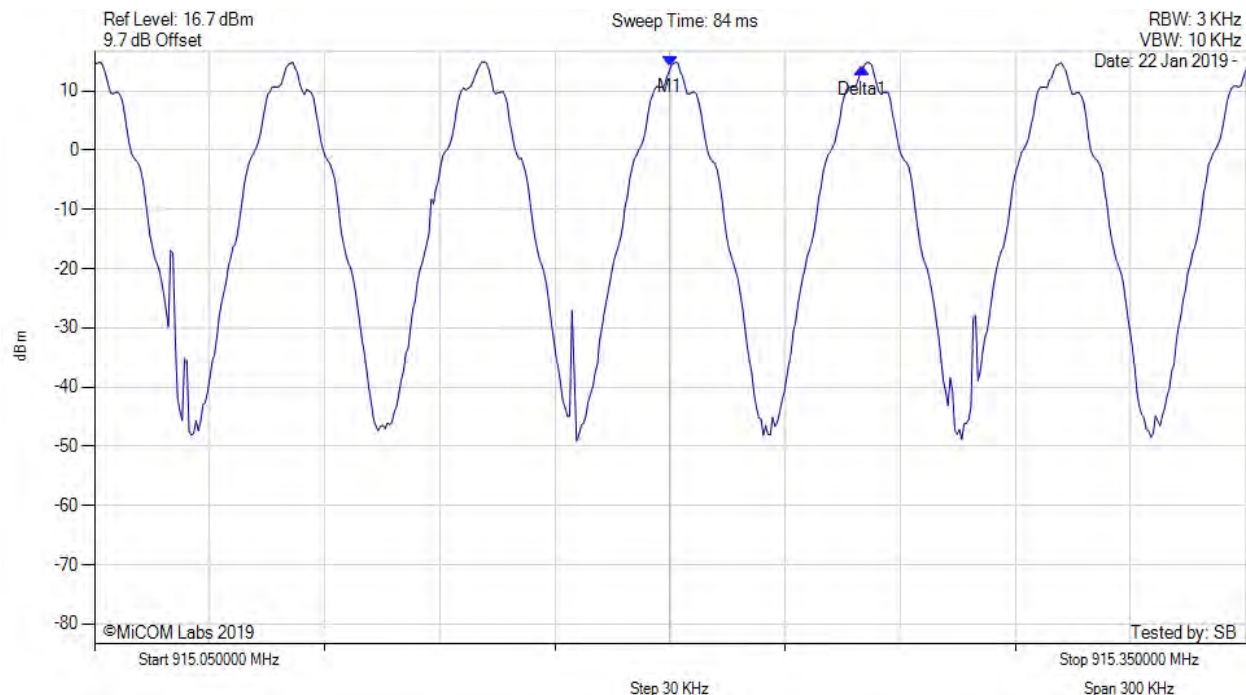
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A.2.2. Channel Separation



CHANNEL SEPARATION

Variant: Mode 1, Channel: 915.20 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 915.200 MHz : 14.188 dBm Delta1 : 50 KHz : -0.409 dB | Channel Frequency: 915.20 MHz |

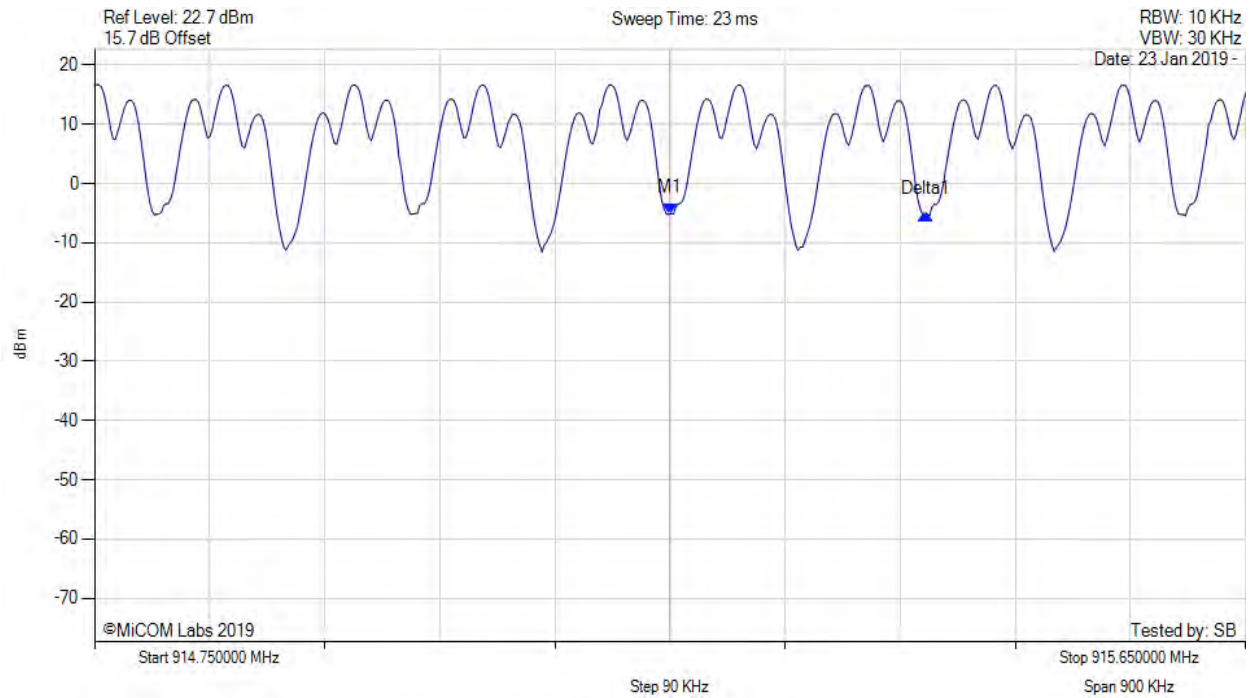
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CHANNEL SEPARATION

Variant: Mode 2, Channel: 915.20 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 915.200 MHz : -5.014 dBm Delta1 : 200 KHz : -0.128 dB | Channel Frequency: 915.20 MHz |

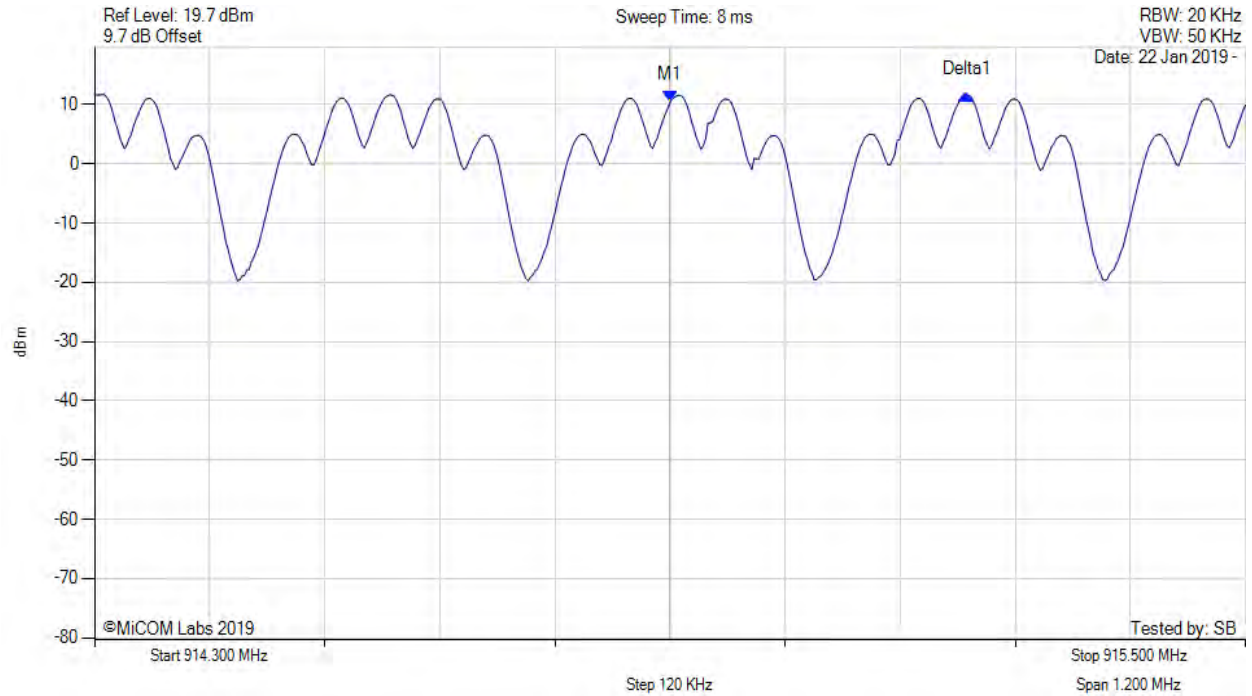
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CHANNEL SEPARATION

Variant: Mode 4, Channel: 914.90 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 914.900 MHz : 10.684 dBm Delta1 : 309 KHz : 0.946 dB | Channel Frequency: 914.90 MHz |

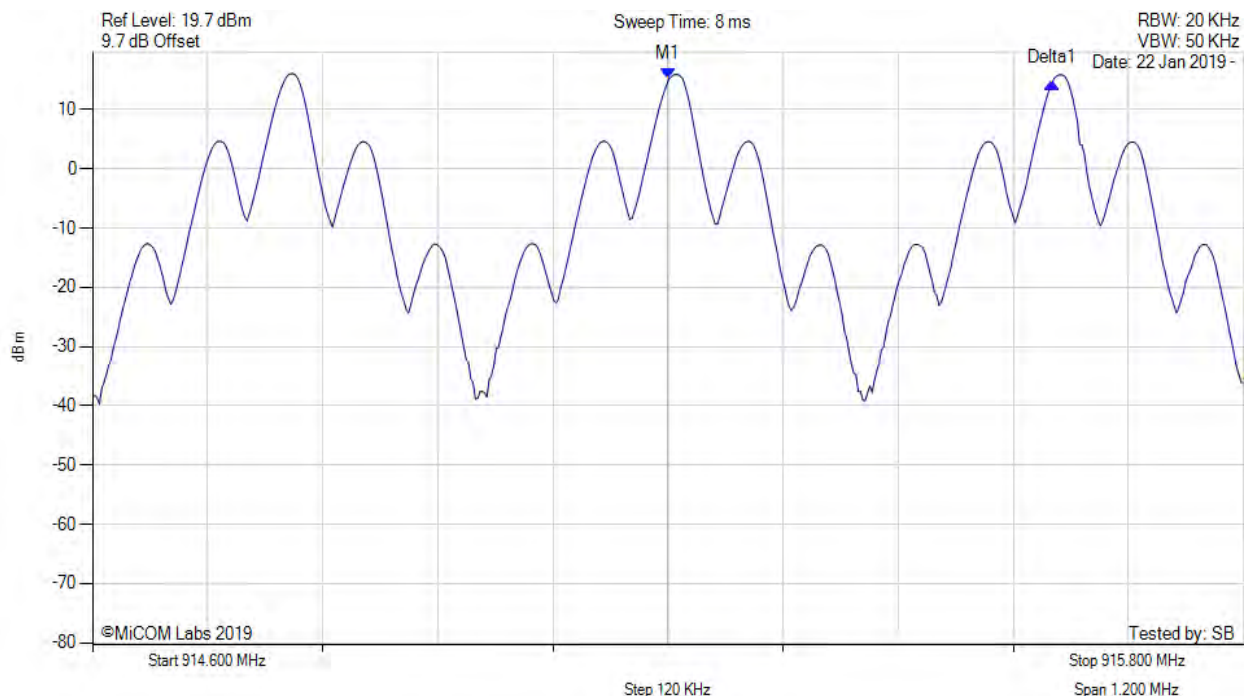
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CHANNEL SEPARATION

Variant: Mode 5, Channel: 915.20 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 915.200 MHz : 15.252 dBm Delta1 : 400 KHz : -0.791 dB | Channel Frequency: 915.20 MHz |

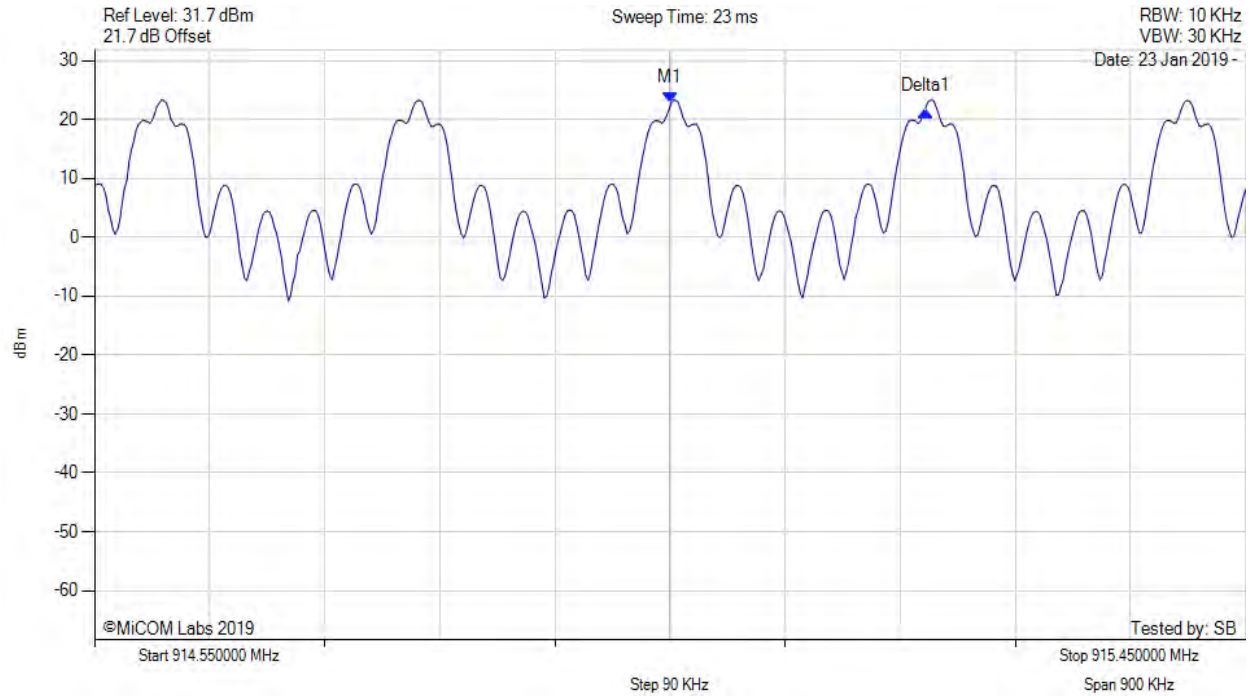
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CHANNEL SEPARATION

Variant: Mode 3, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc

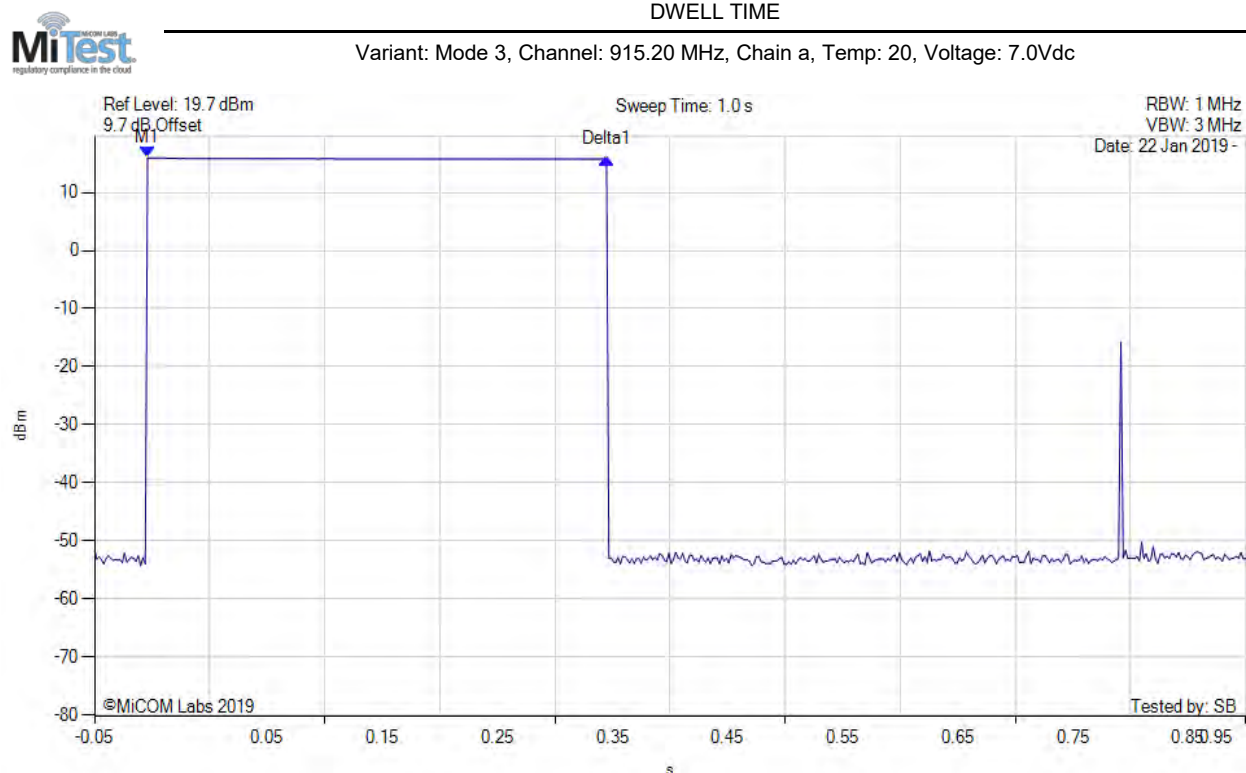


| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 915.000 MHz : 22.808 dBm Delta1 : 200 KHz : -1.279 dB | Channel Frequency: 915.00 MHz |

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A.2.3. Dwell Time



| Analyzer Setup | Marker:Time:Amplitude | Test Results |
|---|--|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1(915.20 MHz) : -0.004 s : 15.988 dBm Delta1(915.20 MHz) : 0.399 s : -0.220 dB | Channel Frequency: 915.20 MHz |

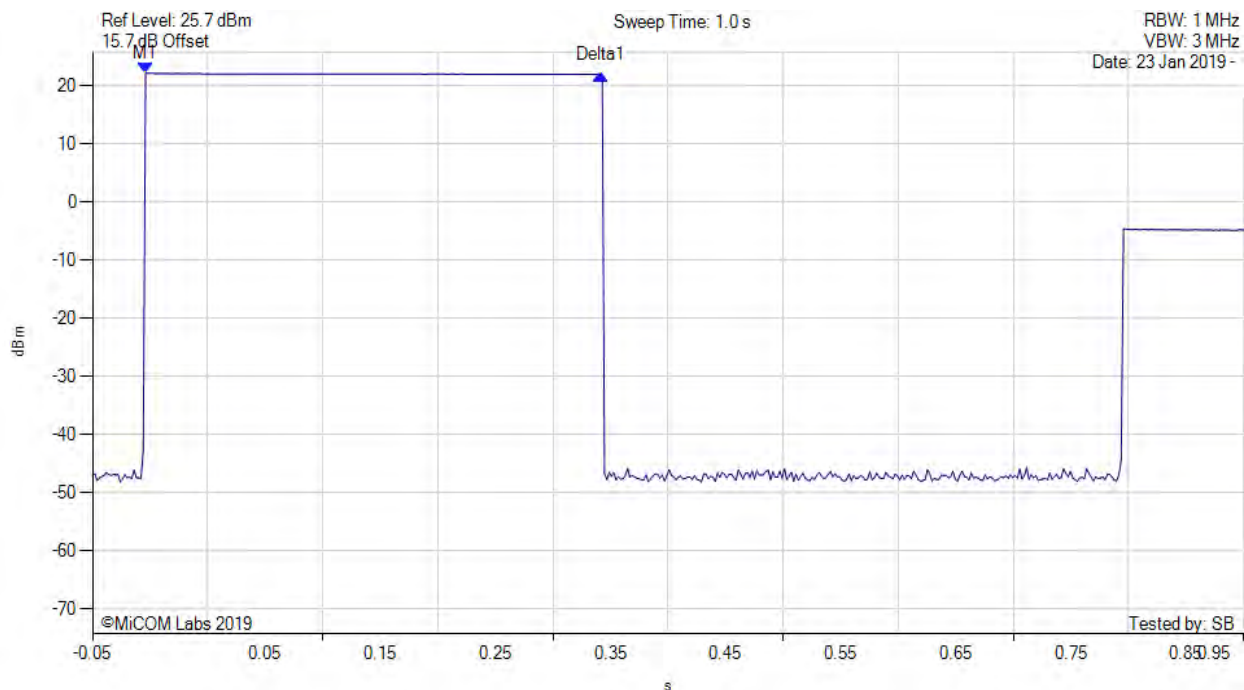
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DWELL TIME

Variant: Mode 2, Channel: 915.20 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



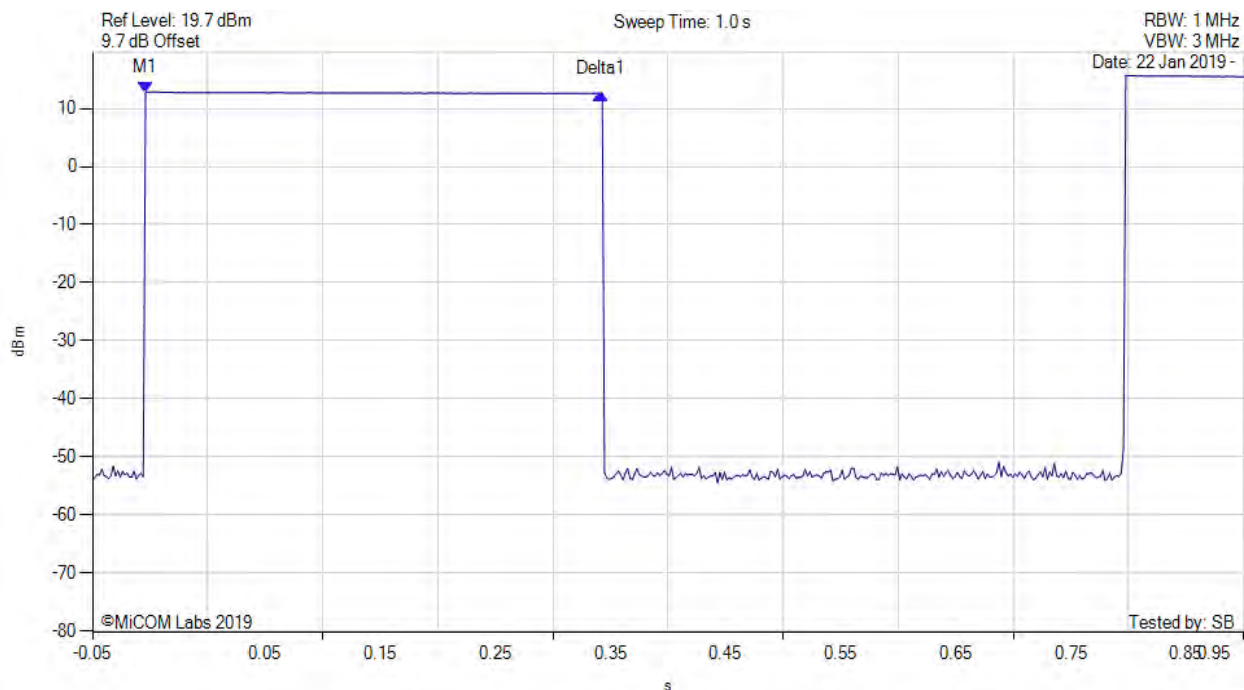
| Analyzer Setup | Marker:Time:Amplitude | Test Results |
|---|--|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1(915.20 MHz) : -0.004 s : 22.110 dBm Delta1(915.20 MHz) : 0.396 s : -0.214 dB | Channel Frequency: 915.20 MHz |

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DWELL TIME

Variant: Mode 4, Channel: 914.90 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



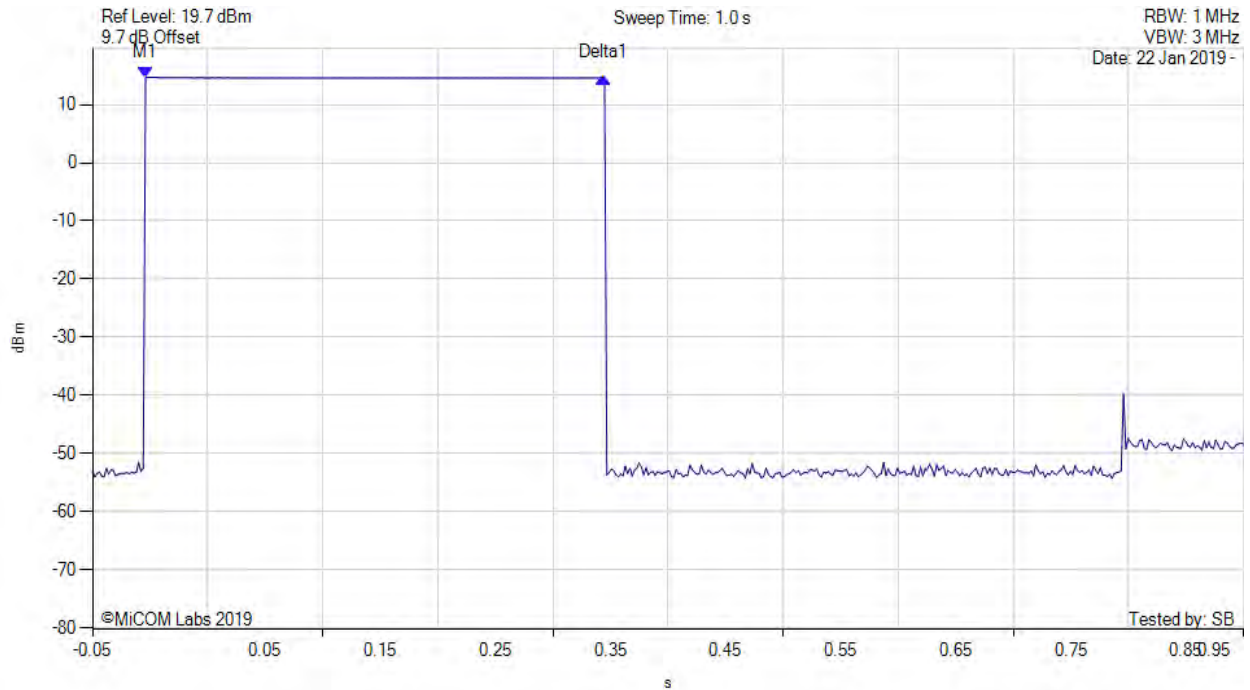
| Analyzer Setup | Marker:Time:Amplitude | Test Results |
|--|--|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = CLR/WRITE | M1(914.90 MHz) : -0.004 s : 12.838 dBm Delta1(914.90 MHz) : 0.396 s : -0.254 dB | Channel Frequency: 914.90 MHz |

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DWELL TIME

Variant: Mode 5, Channel: 915.20 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Time:Amplitude | Test Results |
|---|--|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1(915.20 MHz) : -0.004 s : 14.701 dBm Delta1(915.20 MHz) : 0.398 s : -0.092 dB | Channel Frequency: 915.20 MHz |

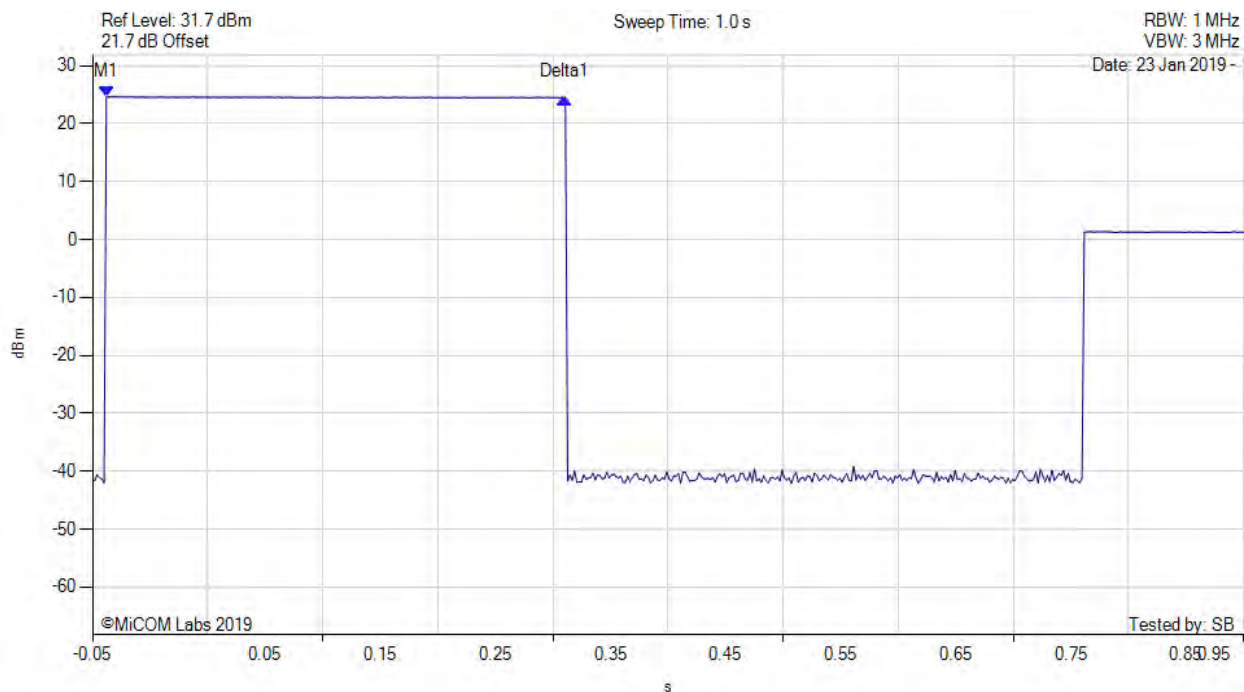
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DWELL TIME

Variant: Mode 2, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Time:Amplitude | Test Results |
|---|--|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1(915.00 MHz) : -0.038 s : 24.582 dBm Delta1(915.00 MHz) : 0.398 s : -0.073 dB | Channel Frequency: 915.00 MHz |

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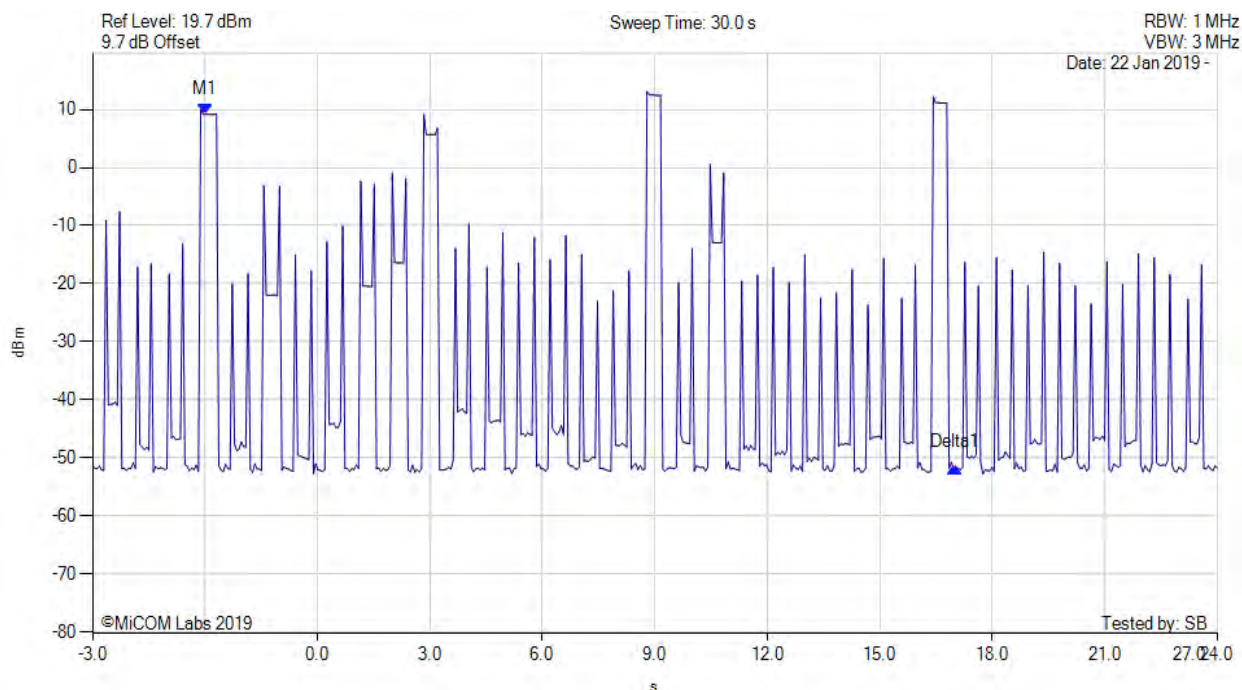
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A.2.4. Channel Occupancy



CHANNEL OCCUPANCY

Variant: Mode 3, Channel: 915.20 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Time:Amplitude | Test Results |
|---|--|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1(915.20 MHz) : 0.000 s : 9.184 dBm Delta1(915.20 MHz) : 20.000 s : -60.864 dB | Channel Frequency: 915.20 MHz |

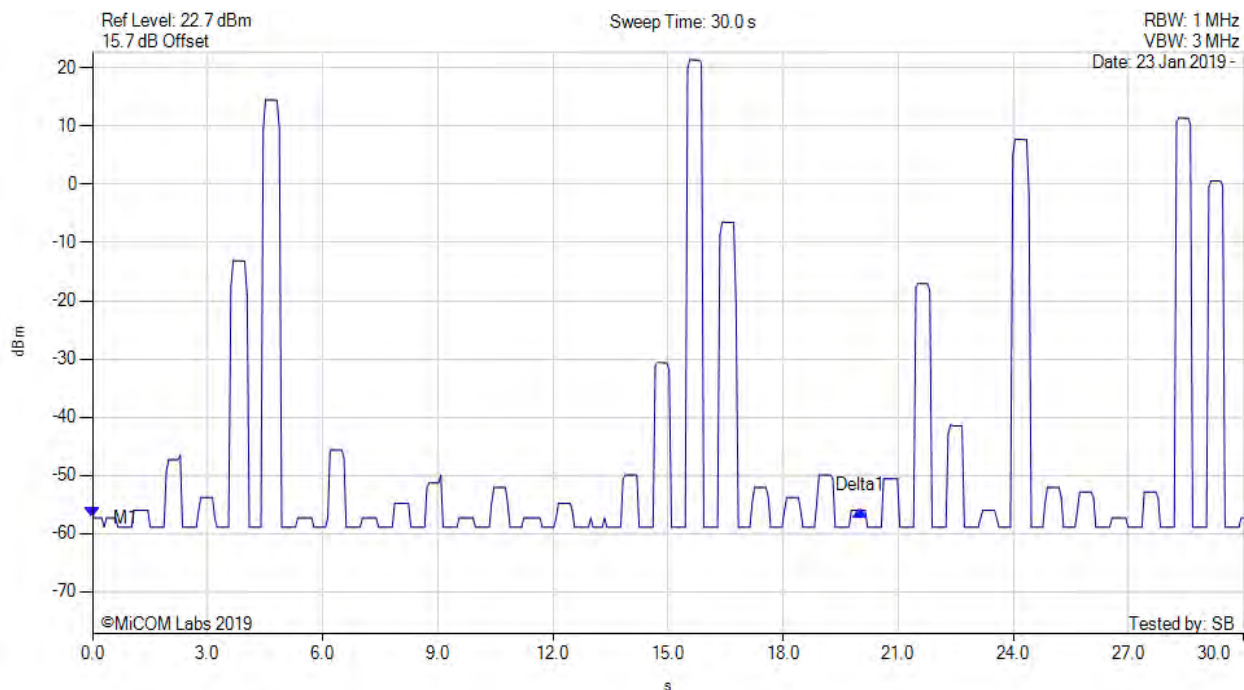
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CHANNEL OCCUPANCY

Variant: Mode 2, Channel: 915.20 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Time:Amplitude | Test Results |
|--|--|-------------------------------|
| Detector = RMS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1(915.20 MHz) : 0.000 s : -57.302 dBm Delta1(915.20 MHz) : 20.000 s : 1.339 dB | Channel Frequency: 915.20 MHz |

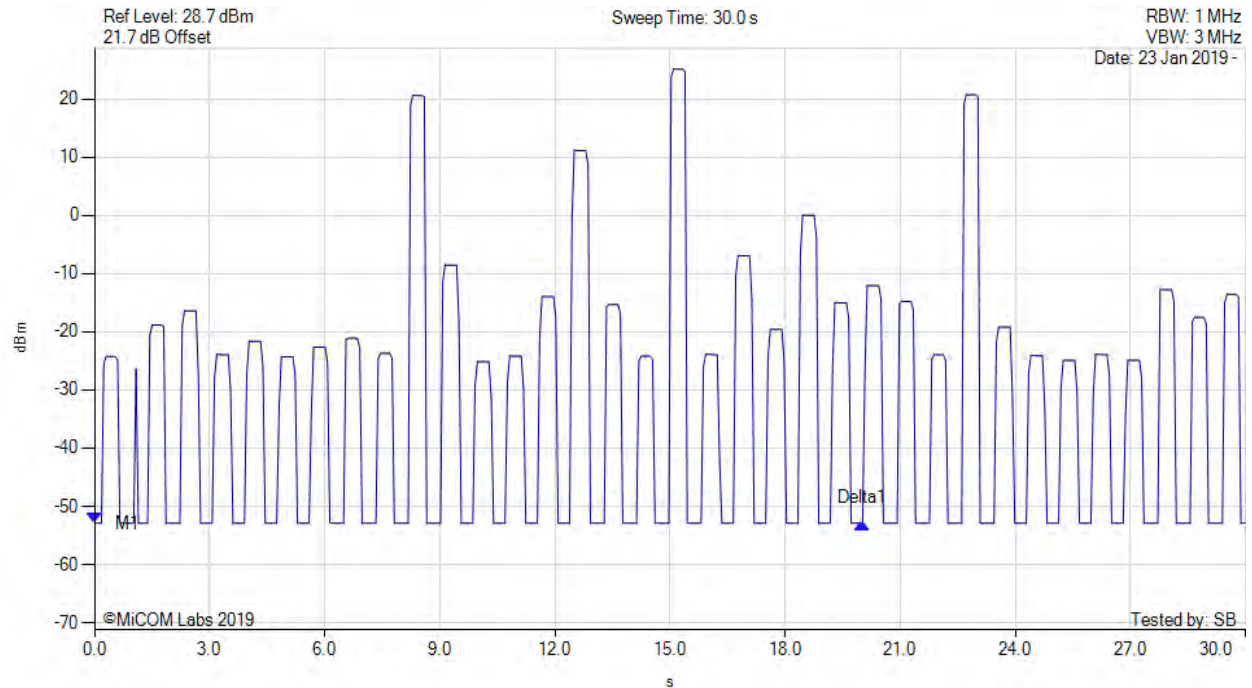
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CHANNEL OCCUPANCY



Variant: Mode 2, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Time:Amplitude | Test Results |
|--|--|-------------------------------|
| Detector = RMS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1(915.00 MHz) : 0.000 s : -52.886 dBm Delta1(915.00 MHz) : 20.000 s : 0.000 dB | Channel Frequency: 915.00 MHz |

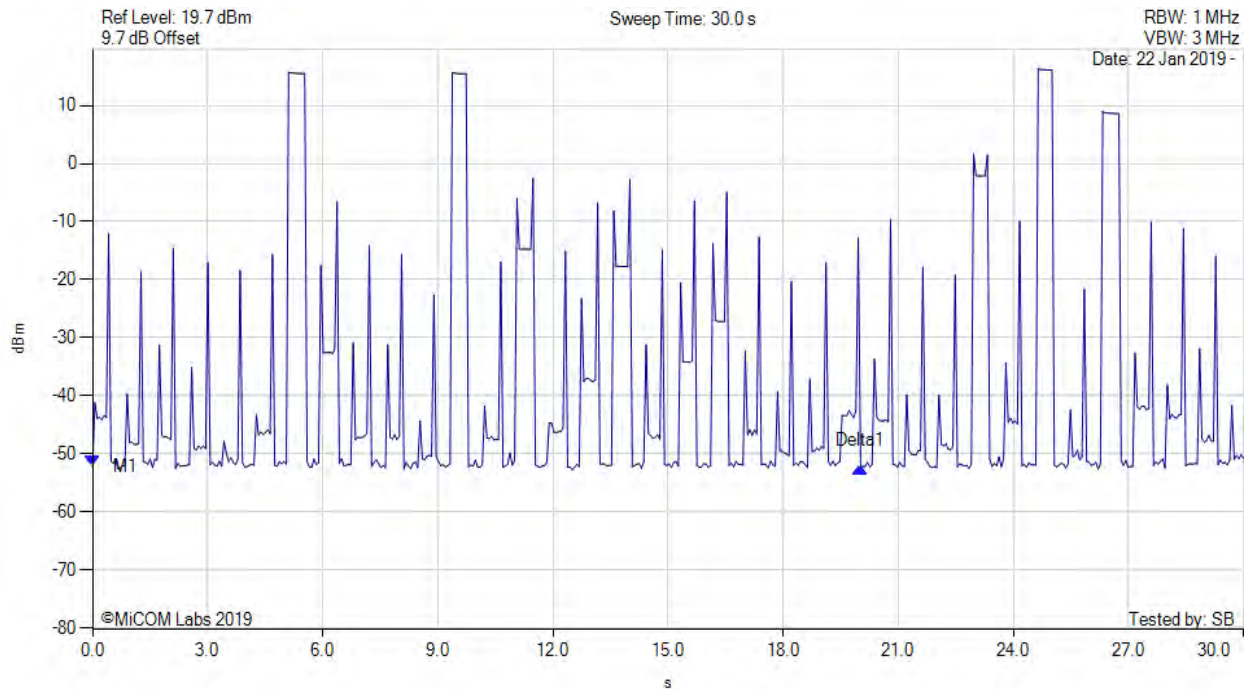
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CHANNEL OCCUPANCY

Variant: Mode 4, Channel: 915.20 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Time:Amplitude | Test Results |
|--|---|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = CLR/WRITE | M1(914.90 MHz) : 0.000 s : -52.225 dBm Delta1(914.90 MHz) : 20.000 s : -0.022 dB | Channel Frequency: 914.90 MHz |

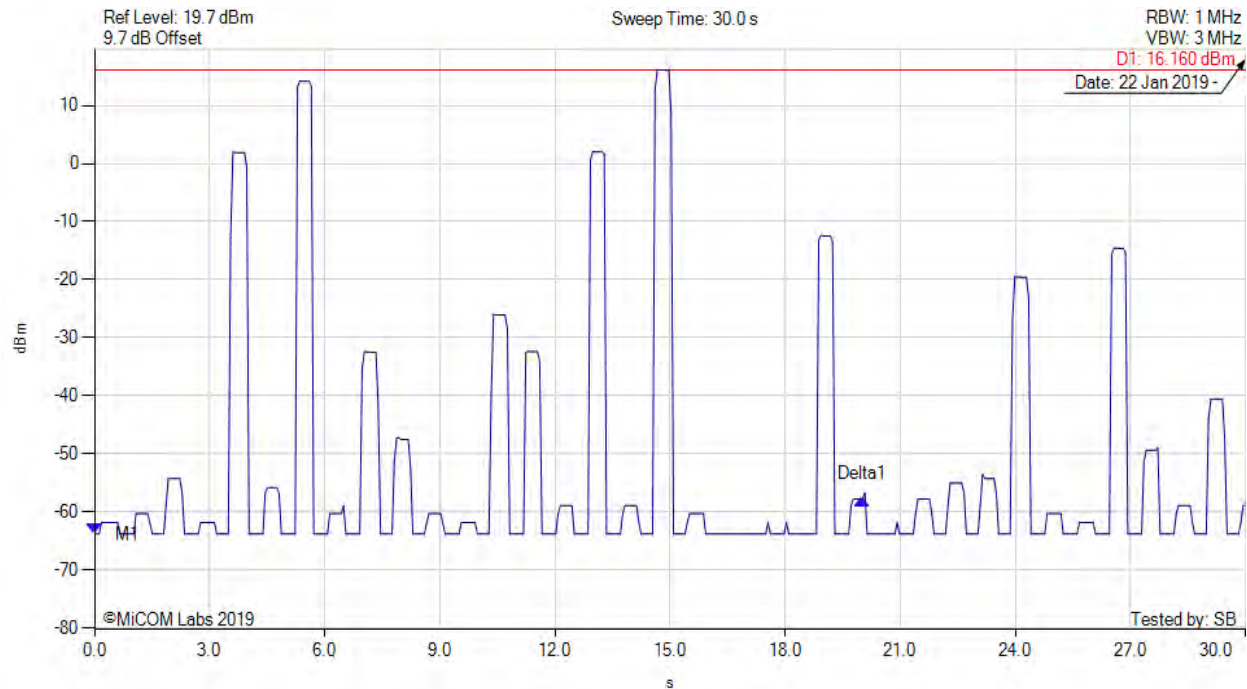
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CHANNEL OCCUPANCY

Variant: Mode 5, Channel: 915.20 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Time:Amplitude | Test Results |
|--|--|-------------------------------|
| Detector = RMS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1(915.20 MHz) : 0.000 s : -63.824 dBm Delta1(915.20 MHz) : 20.000 s : 6.021 dB | Channel Frequency: 915.20 MHz |

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A.3. Output Power

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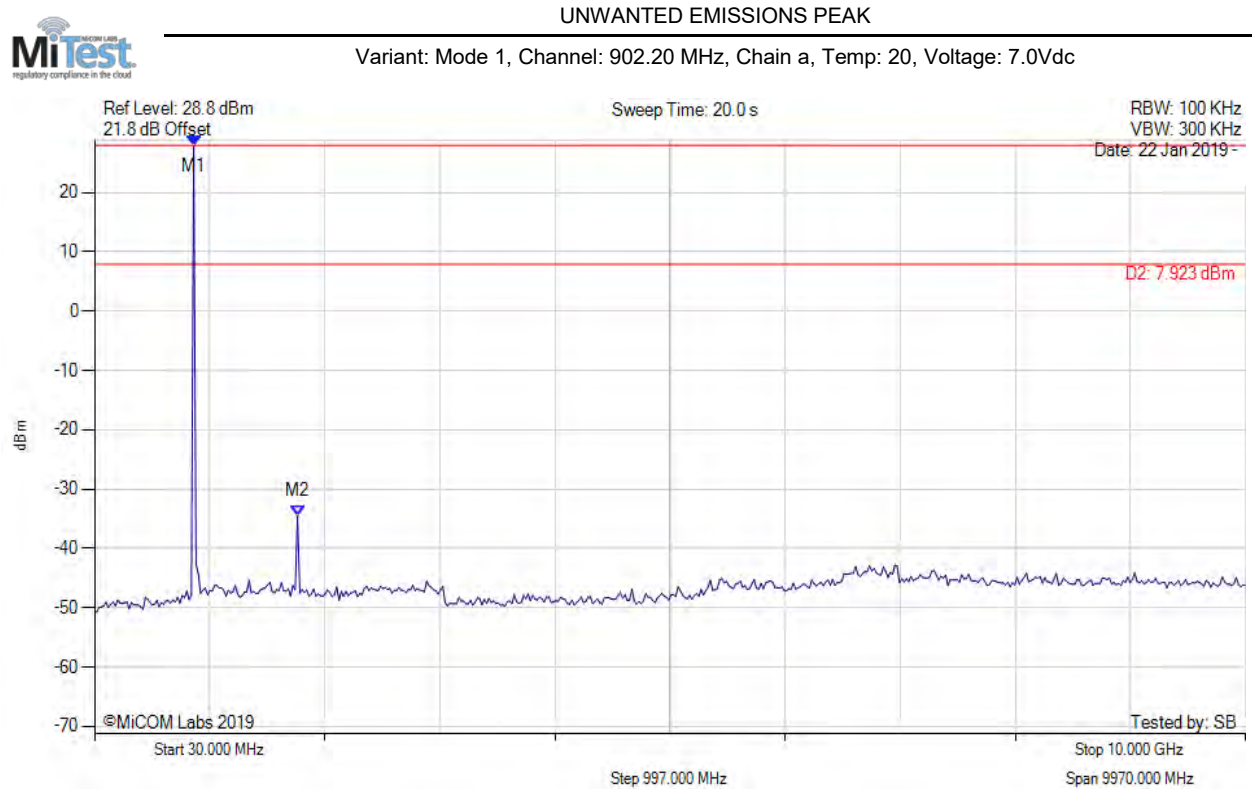
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A.4. Emissions

A.4.1. Conducted Emissions

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A.4.1.1. Conducted Unwanted Spurious Emissions



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|--------------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 889.138 MHz : 27.923 dBm M2 : 1788.236 MHz : -34.547 dBm | Limit: 7.92 dBm Margin: -42.47 dB |

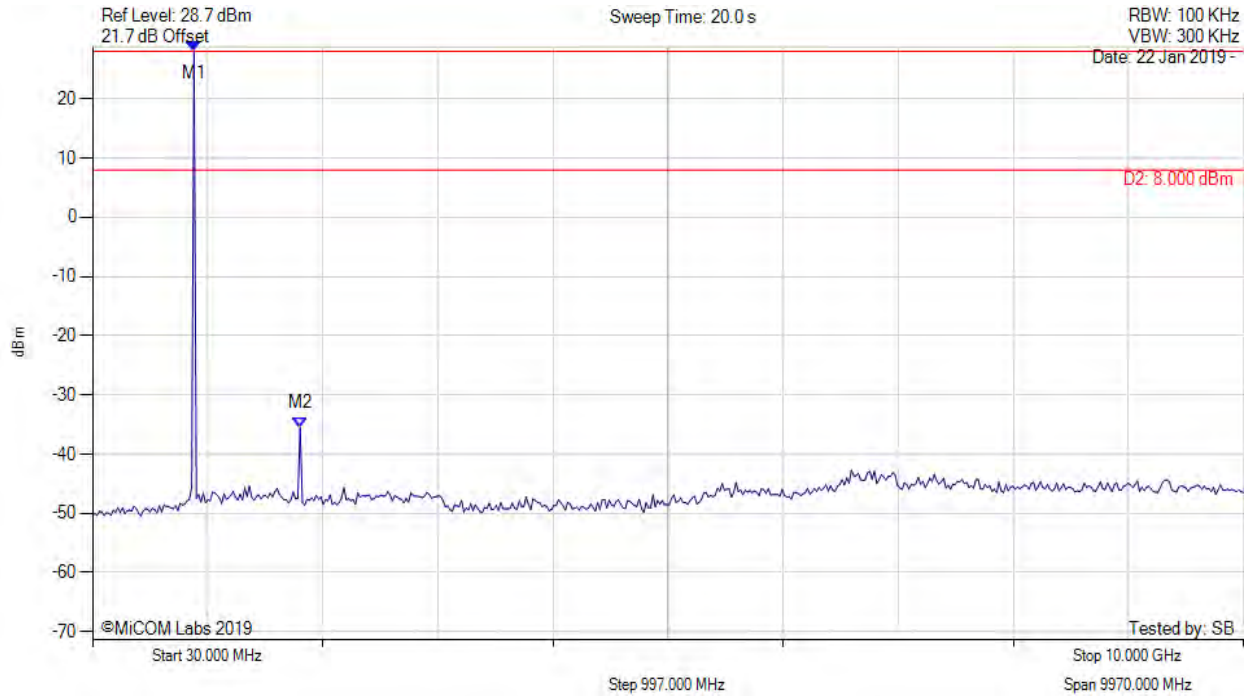
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UNWANTED EMISSIONS PEAK

Variant: Mode 1, Channel: 915.20 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|--------------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 909.118 MHz : 28.000 dBm M2 : 1828.196 MHz : -35.566 dBm | Limit: 8.00 dBm Margin: -43.57 dB |

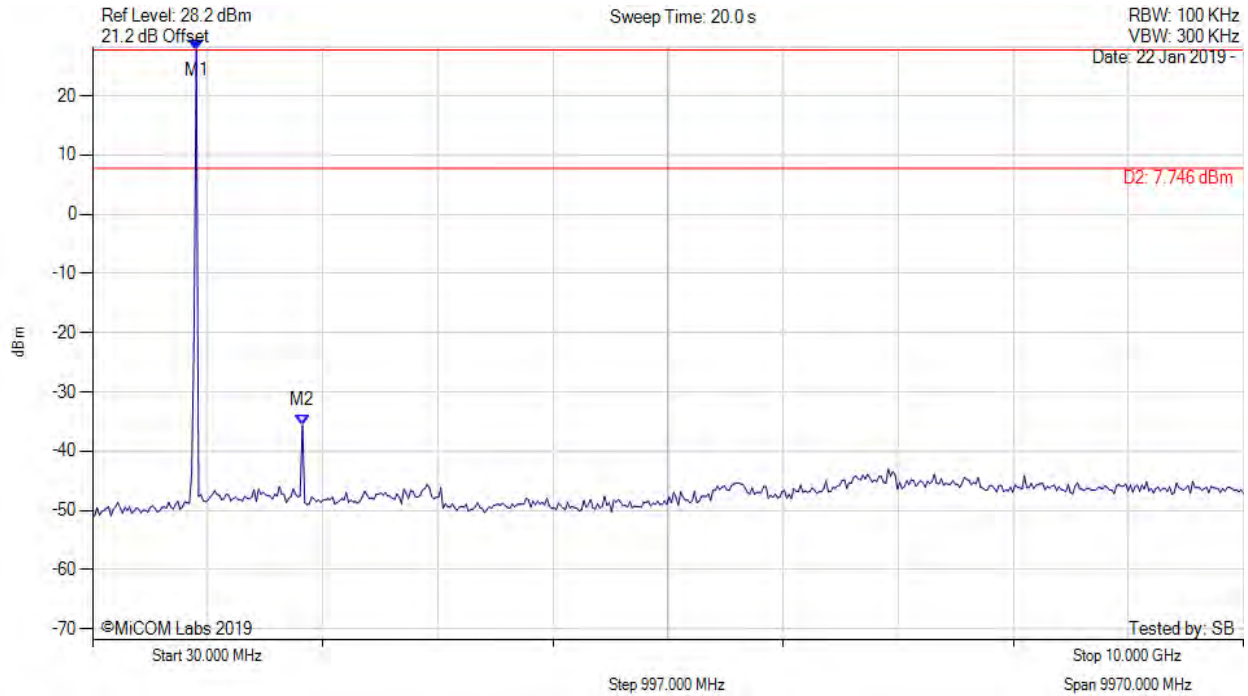
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UNWANTED EMISSIONS PEAK

Variant: Mode 1, Channel: 927.75 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|--------------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 929.098 MHz : 27.746 dBm M2 : 1848.176 MHz : -35.664 dBm | Limit: 7.75 dBm Margin: -43.41 dB |

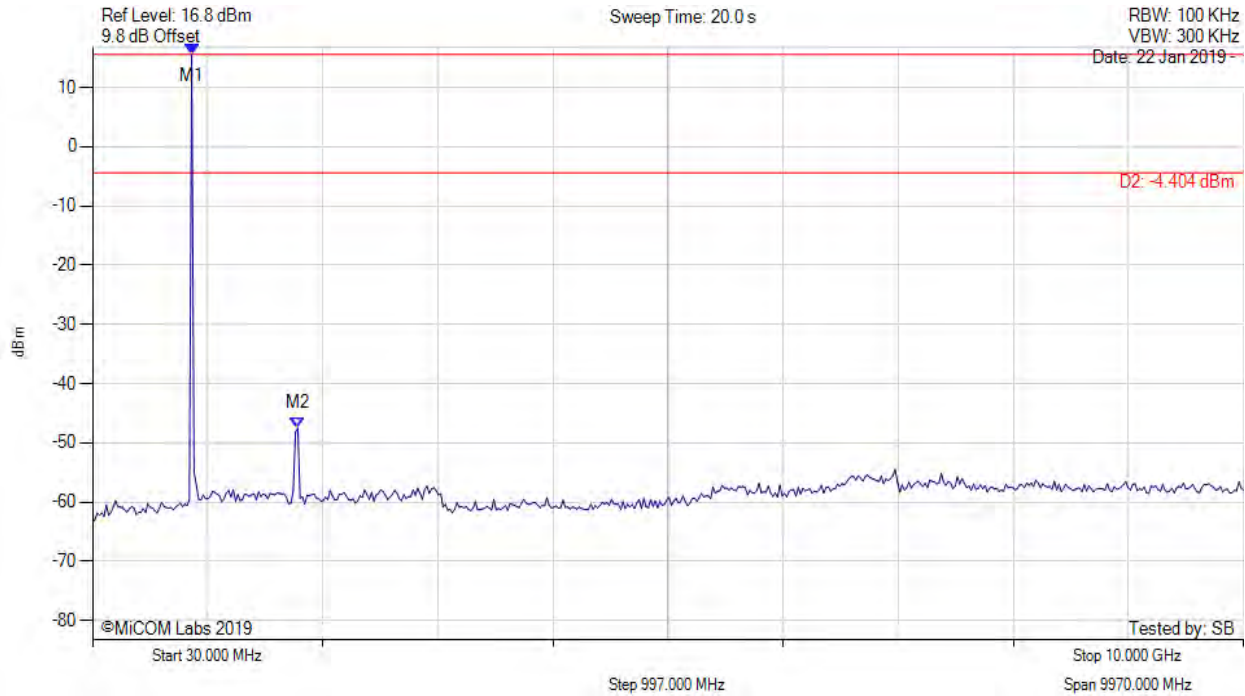
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UNWANTED EMISSIONS PEAK

Variant: Mode 4, Channel: 902.30 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|---------------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 889.138 MHz : 15.596 dBm M2 : 1808.216 MHz : -47.527 dBm | Limit: -4.40 dBm Margin: -43.13 dB |

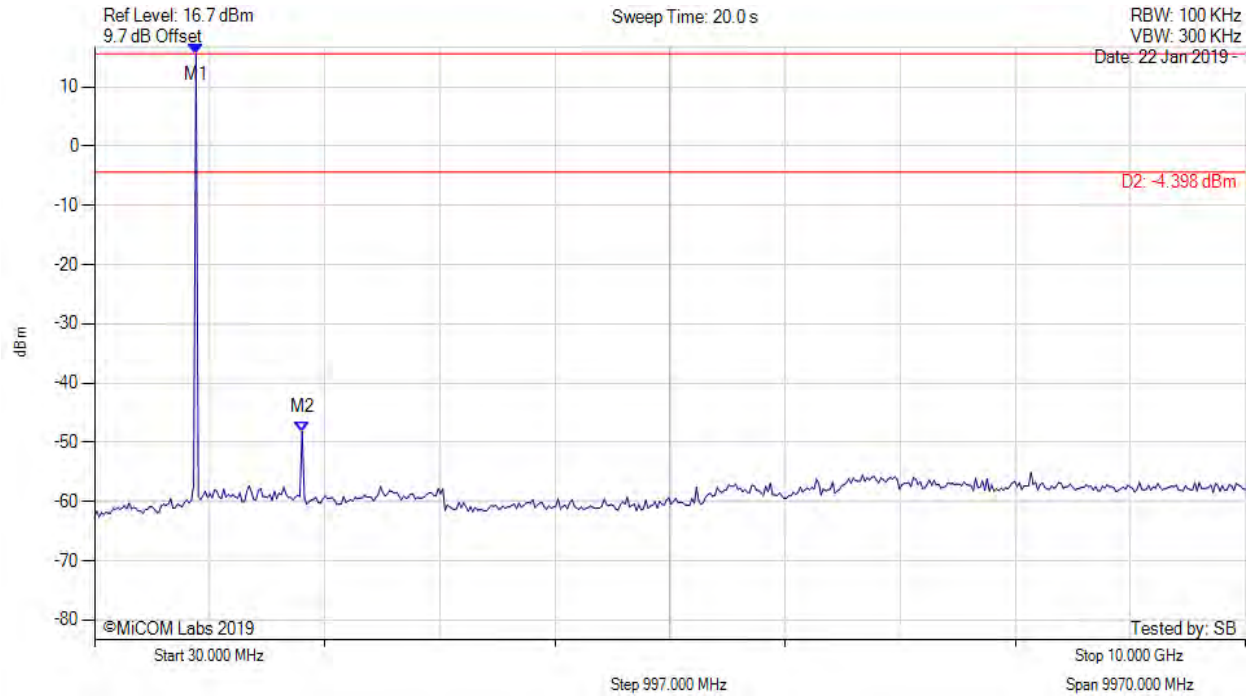
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UNWANTED EMISSIONS PEAK

Variant: Mode 4, Channel: 914.90 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|---------------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 909.118 MHz : 15.602 dBm M2 : 1828.196 MHz : -48.217 dBm | Limit: -4.40 dBm Margin: -43.82 dB |

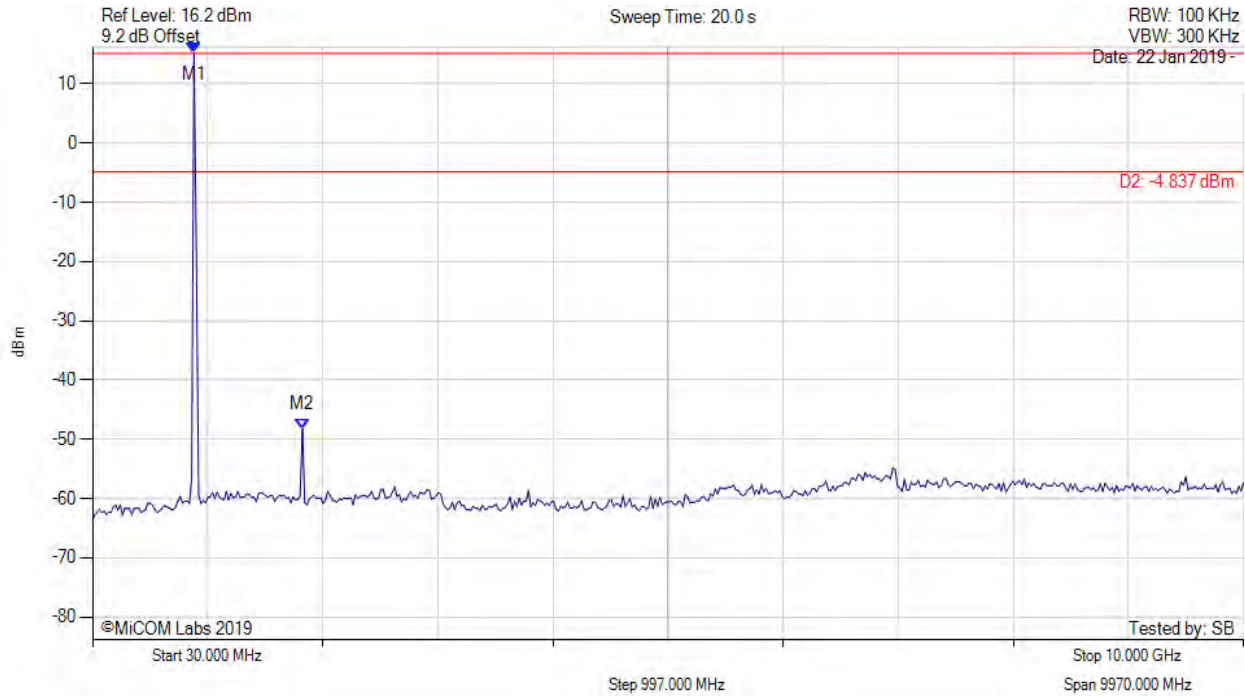
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UNWANTED EMISSIONS PEAK

Variant: Mode 4, Channel: 926.90 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|---------------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 909.118 MHz : 15.163 dBm M2 : 1848.176 MHz : -48.262 dBm | Limit: -4.84 dBm Margin: -43.42 dB |

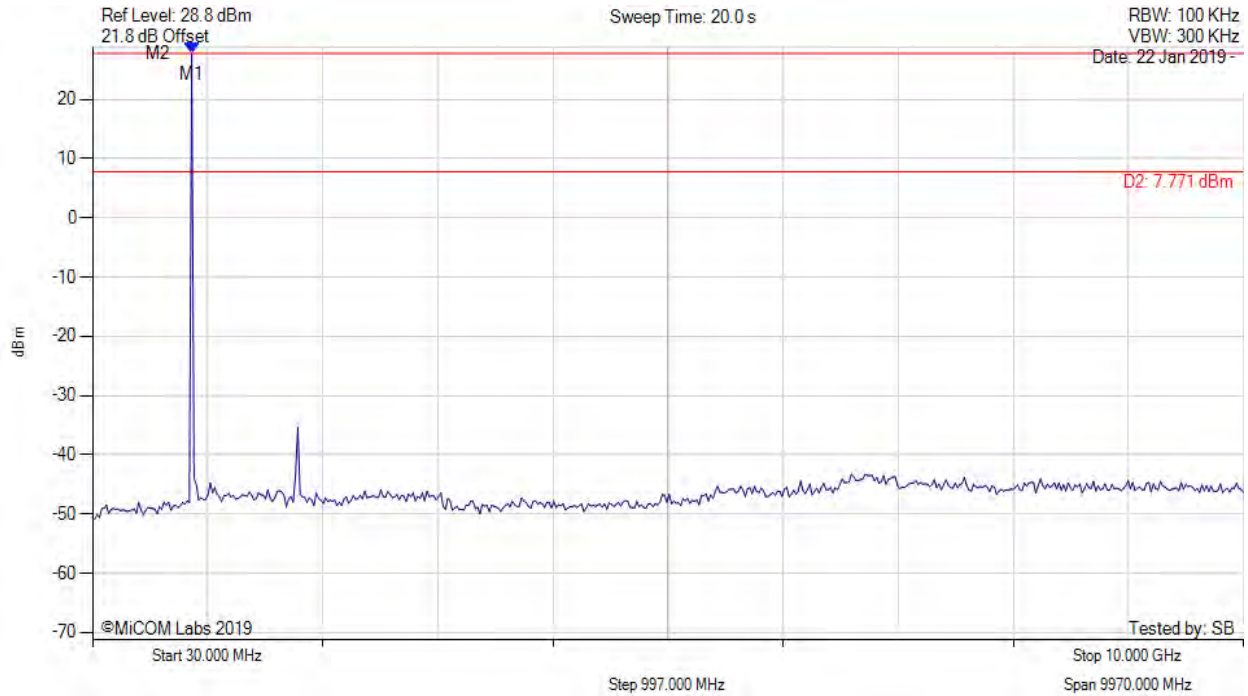
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UNWANTED EMISSIONS PEAK

Variant: Mode 5, Channel: 902.40 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|-------------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 889.138 MHz : 27.771 dBm M2 : 889.138 MHz : 27.771 dBm | Limit: 7.77 dBm Margin: 20.00 dB |

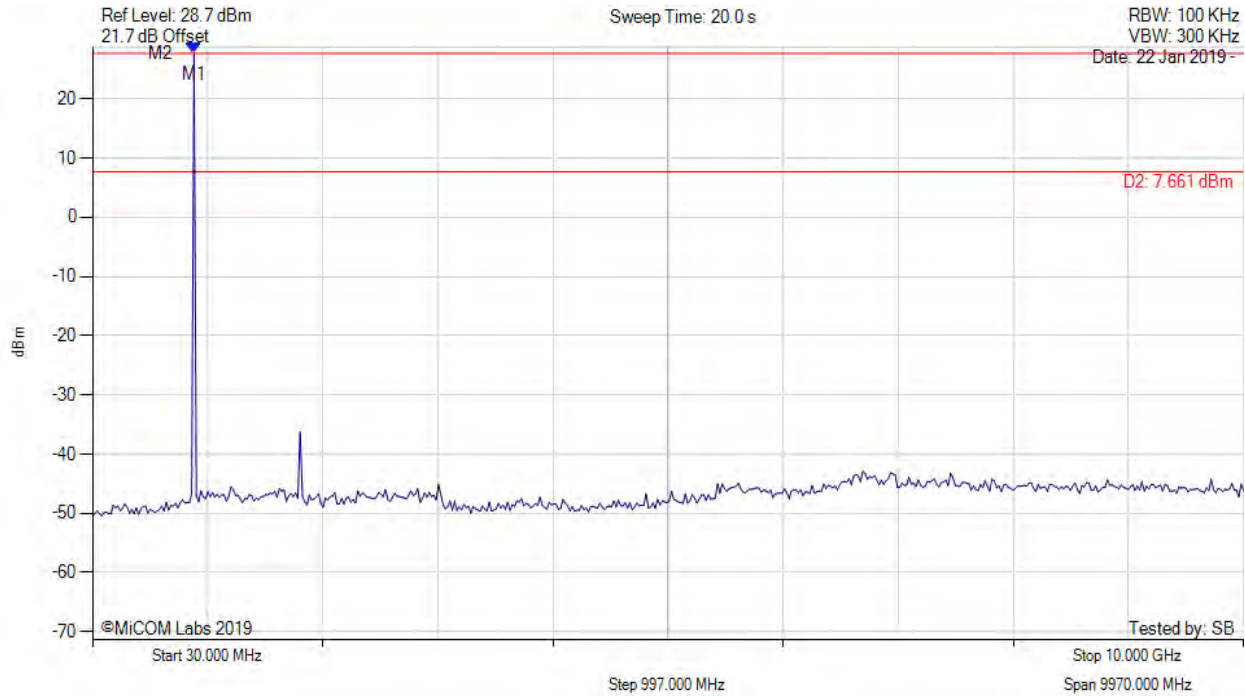
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UNWANTED EMISSIONS PEAK

Variant: Mode 5, Channel: 915.20 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|-------------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 909.118 MHz : 27.661 dBm M2 : 909.118 MHz : 27.661 dBm | Limit: 7.66 dBm Margin: 20.00 dB |

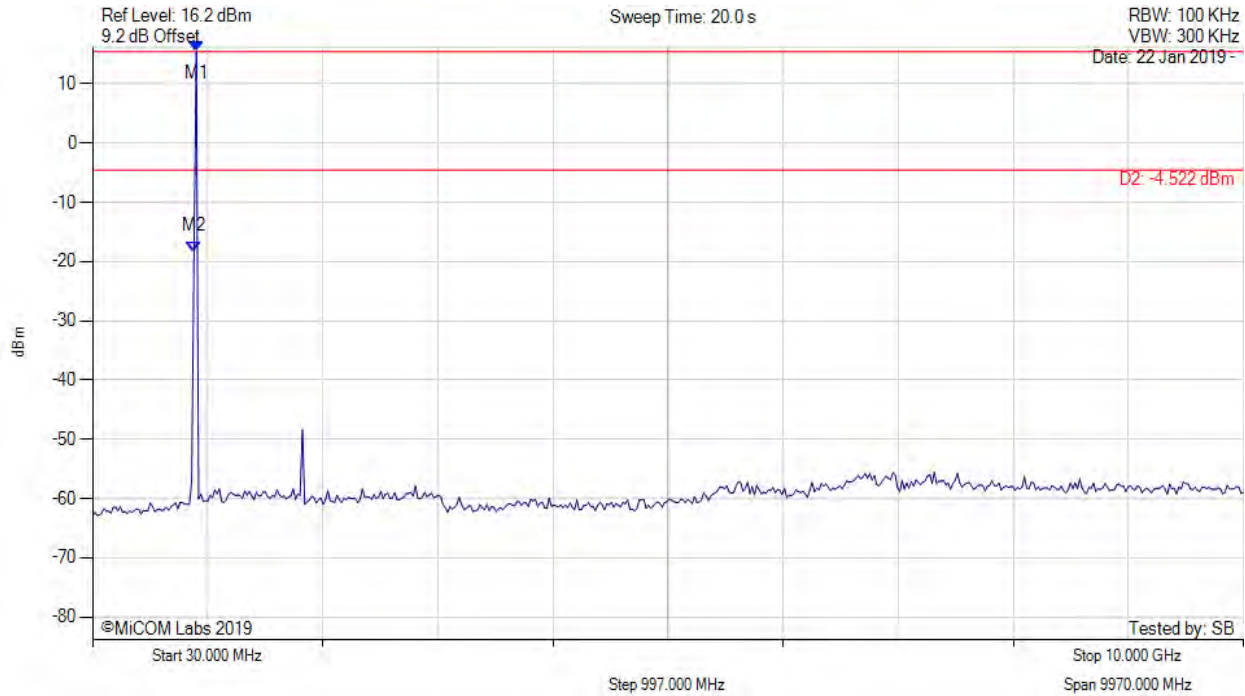
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UNWANTED EMISSIONS PEAK

Variant: Mode 5, Channel: 927.60 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---------------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 929.098 MHz : 15.478 dBm M2 : 909.118 MHz : -18.311 dBm | Limit: -4.52 dBm Margin: -13.79 dB |

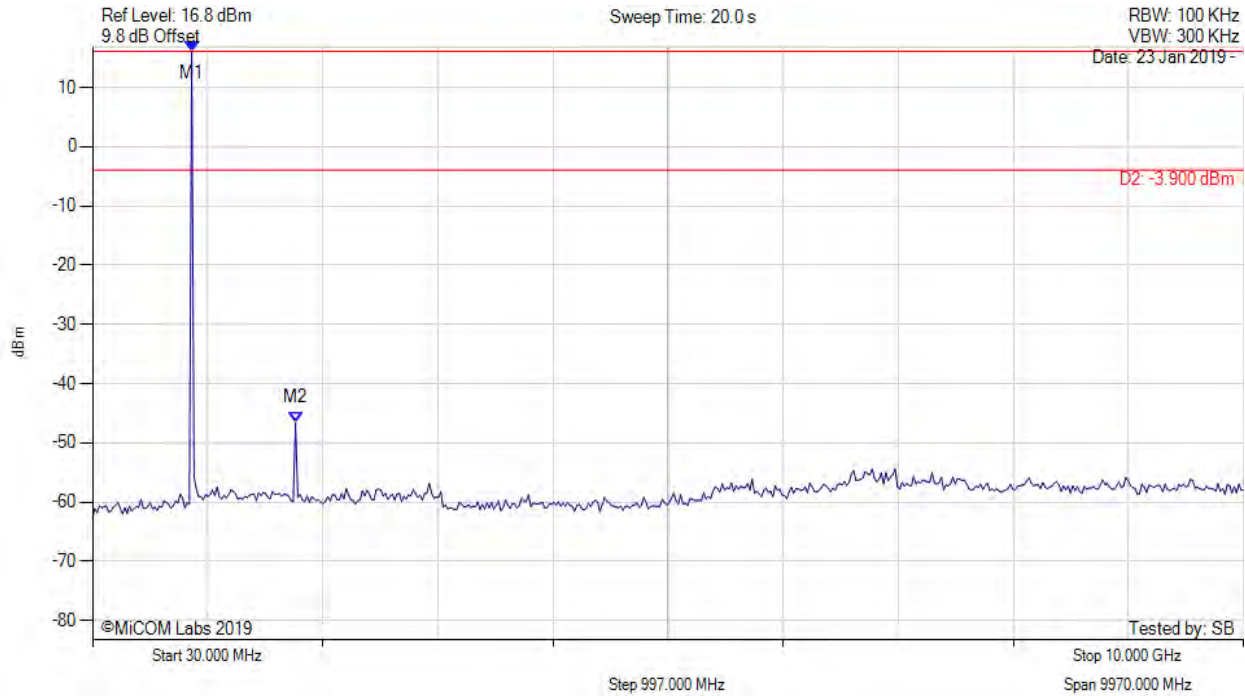
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UNWANTED EMISSIONS PEAK

Variant: Mode 2, Channel: 902.20 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|---------------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 889.138 MHz : 16.100 dBm M2 : 1788.236 MHz : -46.592 dBm | Limit: -3.90 dBm Margin: -42.69 dB |

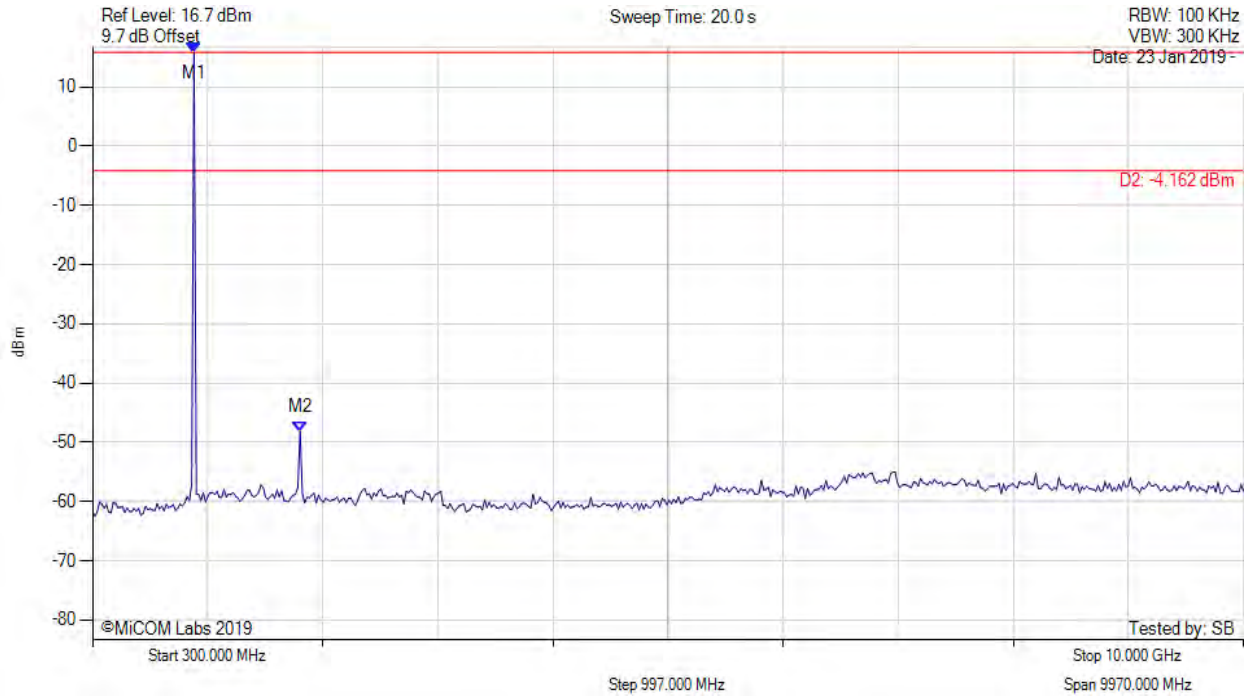
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UNWANTED EMISSIONS PEAK

Variant: Mode 2, Channel: 915.20 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|---------------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 909.118 MHz : 15.838 dBm M2 : 1828.196 MHz : -48.229 dBm | Limit: -4.16 dBm Margin: -44.07 dB |

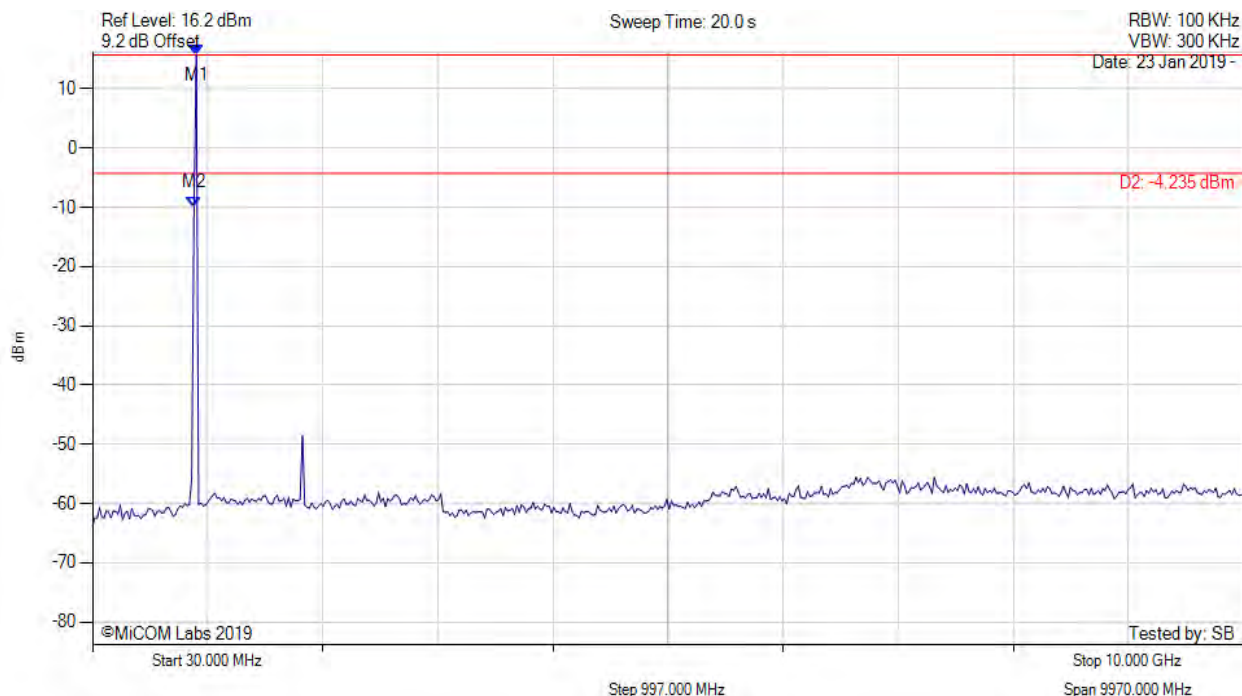
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UNWANTED EMISSIONS PEAK

Variant: Mode 2, Channel: 927.60 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|--------------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 929.098 MHz : 15.765 dBm M2 : 909.118 MHz : -10.072 dBm | Limit: -4.24 dBm Margin: -5.83 dB |

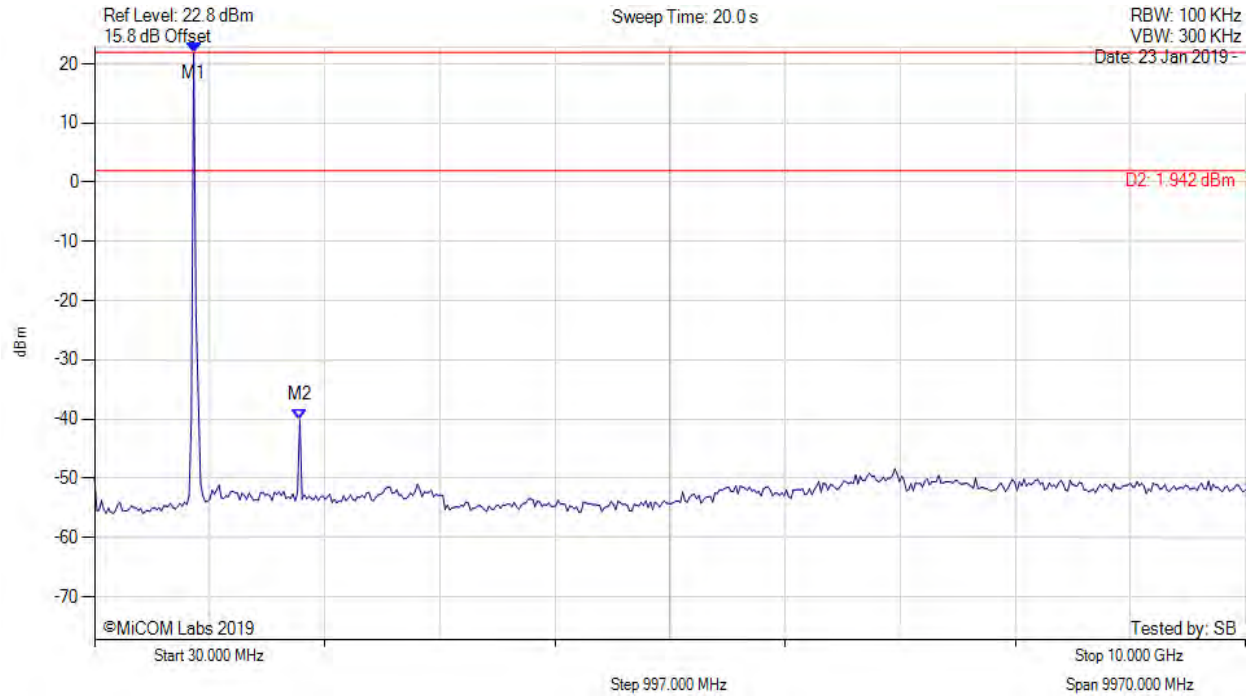
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UNWANTED EMISSIONS PEAK

Variant: Mode 3, Channel: 903.00 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|--------------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 889.138 MHz : 21.942 dBm M2 : 1808.216 MHz : -40.167 dBm | Limit: 1.94 dBm Margin: -42.11 dB |

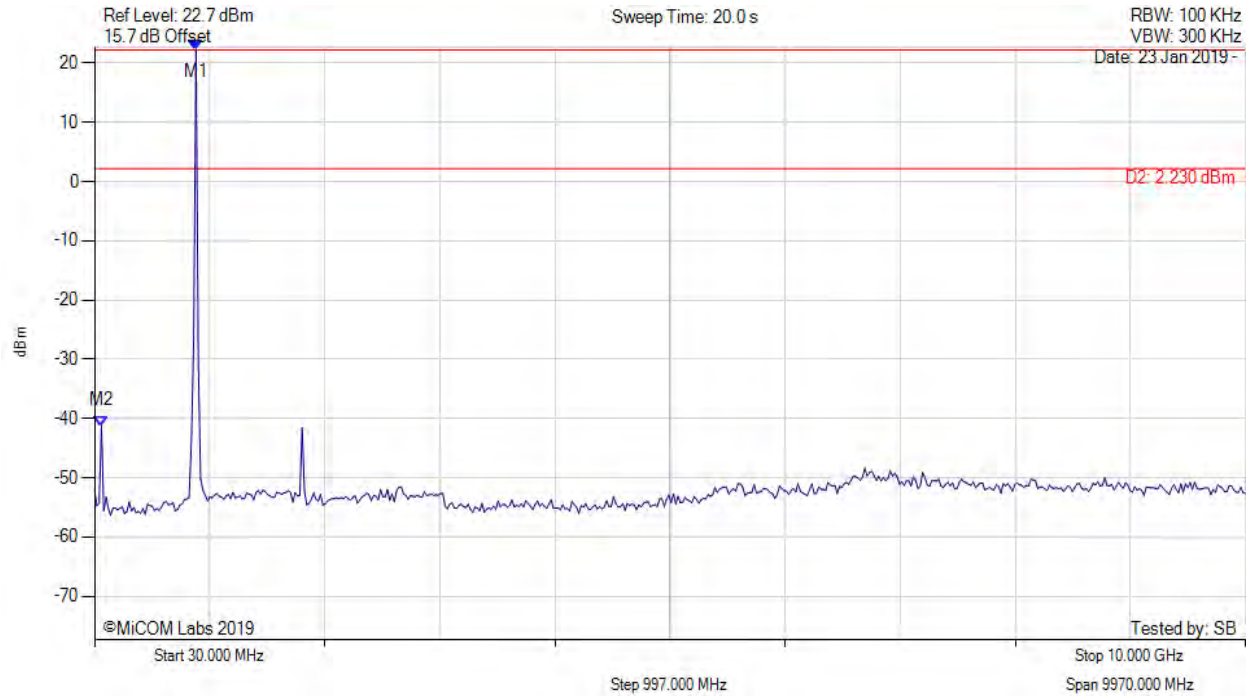
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UNWANTED EMISSIONS PEAK

Variant: Mode 3, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|--------------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 909.118 MHz : 22.230 dBm M2 : 89.940 MHz : -41.243 dBm | Limit: 2.23 dBm Margin: -43.47 dB |

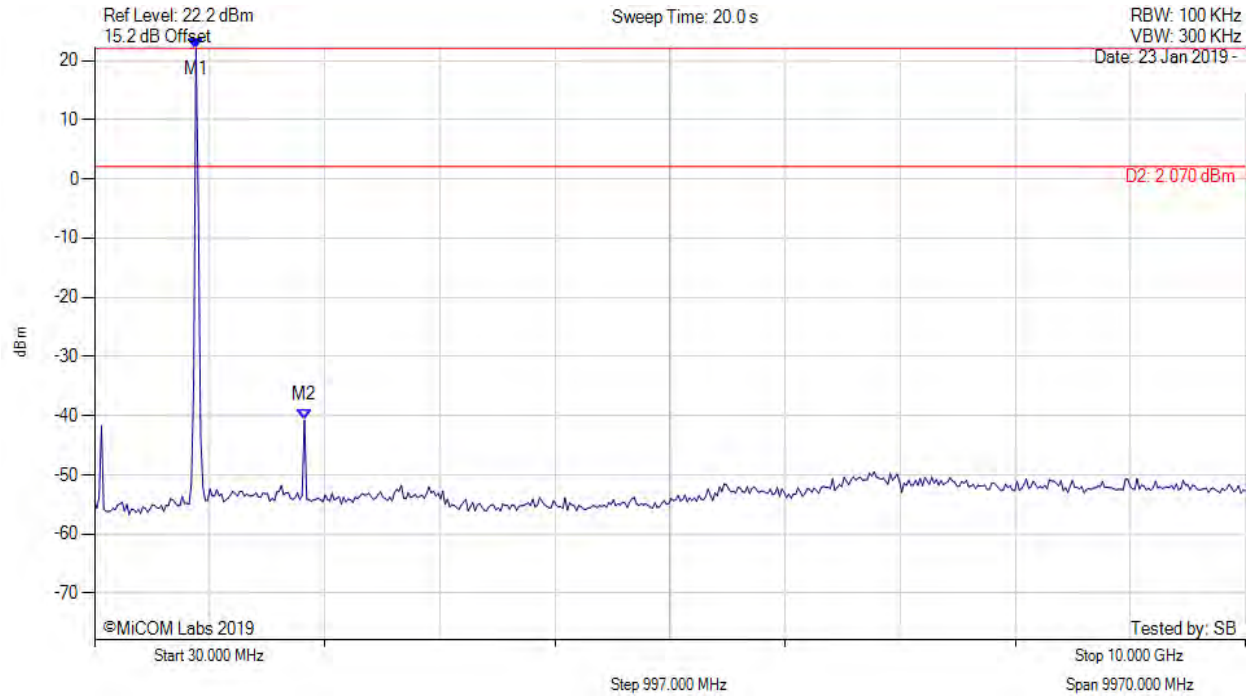
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UNWANTED EMISSIONS PEAK

Variant: Mode 3, Channel: 926.80 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|--------------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 909.118 MHz : 22.070 dBm M2 : 1848.176 MHz : -40.746 dBm | Limit: 2.07 dBm Margin: -42.82 dB |

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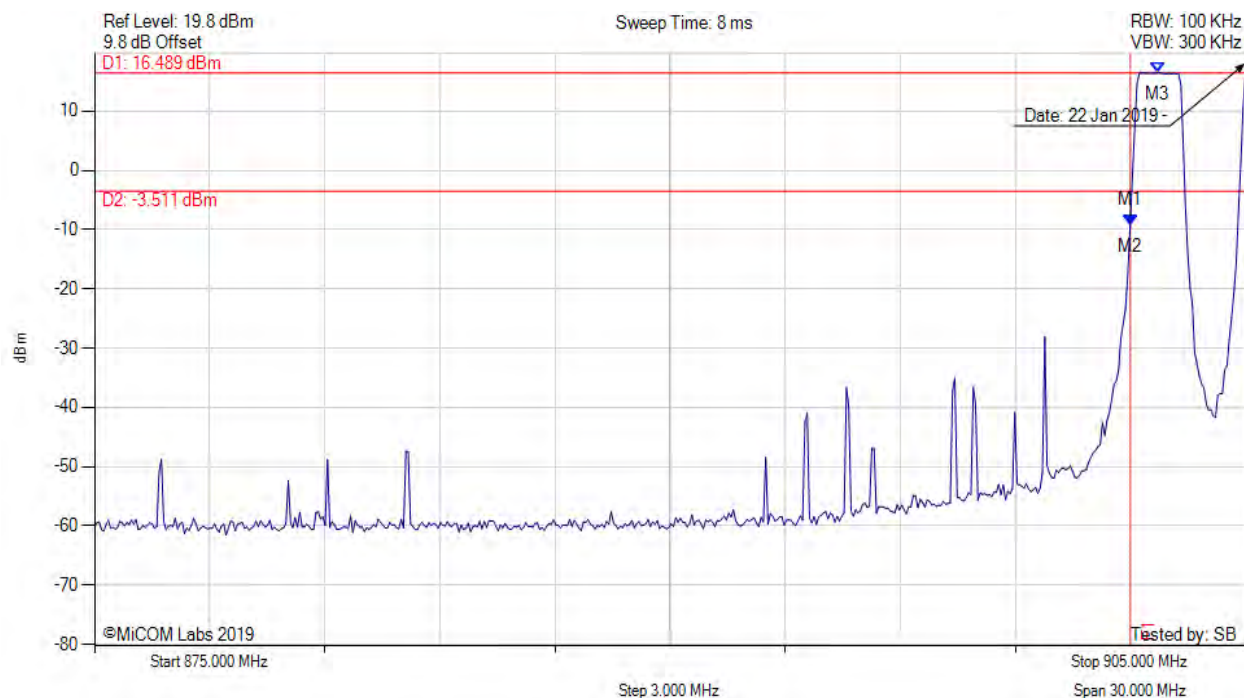
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A.4.1.2. Conducted Band-Edge Emissions



CONDUCTED LOW BAND-EDGE EMISSIONS (HOPPING) PEAK

Variant: Mode 1, Channel: 902.20 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 902.000 MHz : -9.236 dBm M2 : 901.994 MHz : -9.236 dBm M3 : 902.715 MHz : 16.489 dBm | Channel Frequency: 902.20 MHz |

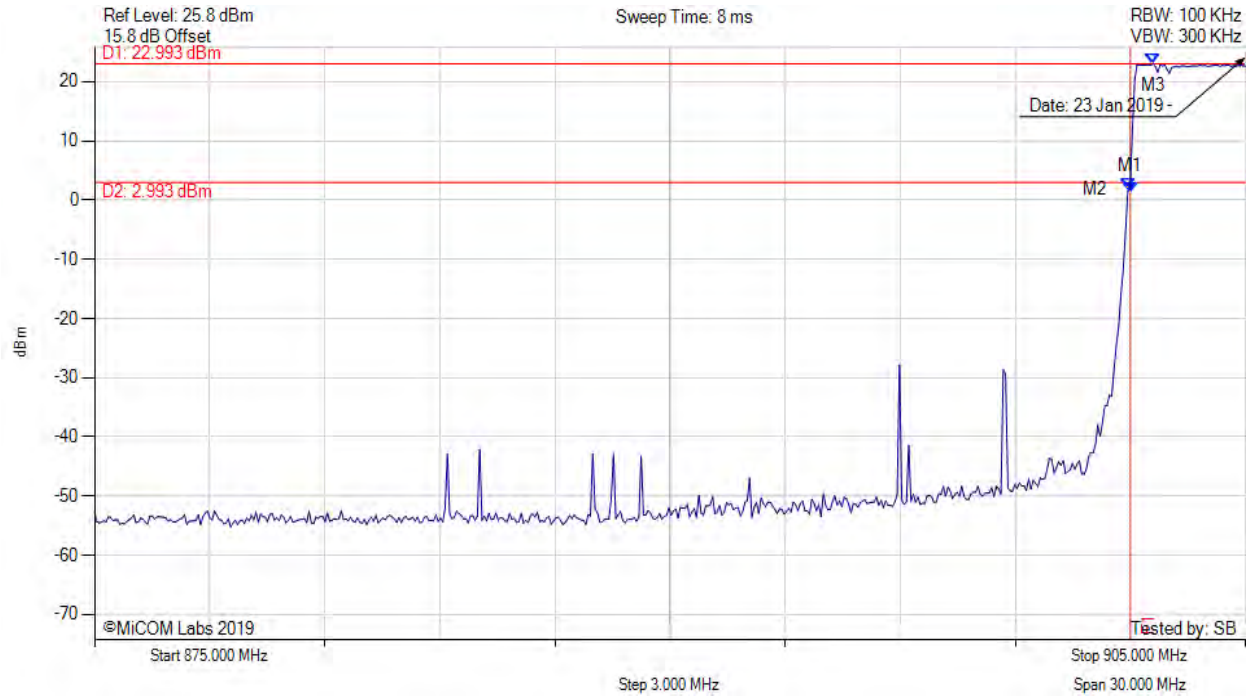
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CONDUCTED LOW BAND-EDGE EMISSIONS (HOPPING) PEAK

Variant: Mode 2, Channel: 902.20 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 902.000 MHz : 1.350 dBm M2 : 901.934 MHz : 1.901 dBm M3 : 902.595 MHz : 22.993 dBm | Channel Frequency: 902.20 MHz |

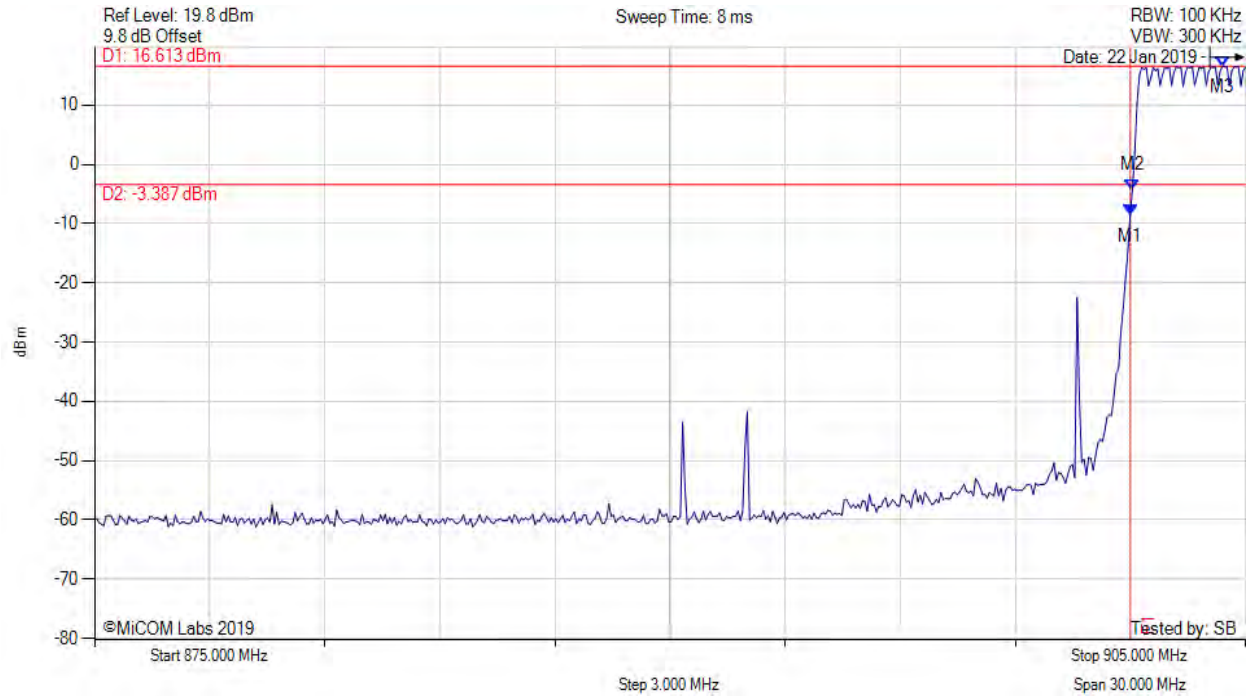
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CONDUCTED LOW BAND-EDGE EMISSIONS (HOPPING) PEAK

Variant: Mode 4, Channel: 902.20 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 902.000 MHz : -8.508 dBm M2 : 902.054 MHz : -4.239 dBm M3 : 904.399 MHz : 16.613 dBm | Channel Frequency: 902.20 MHz |

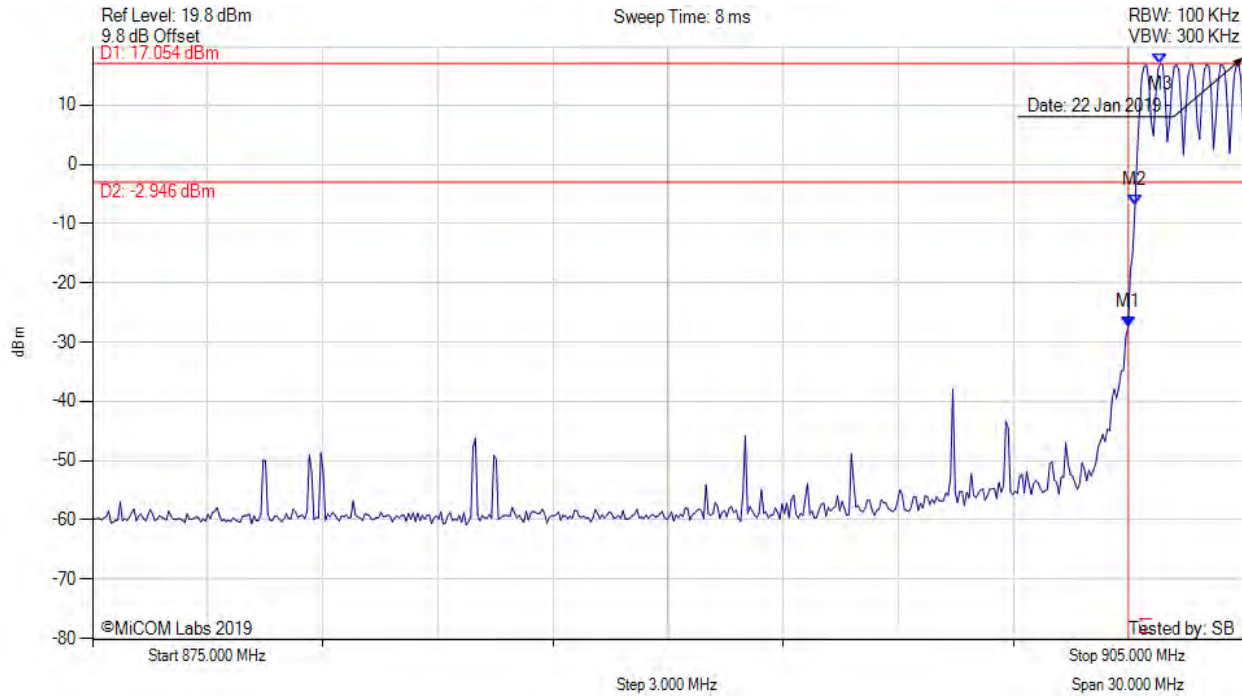
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CONDUCTED LOW BAND-EDGE EMISSIONS (HOPPING) PEAK

Variant: Mode 5, Channel: 902.40 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 902.000 MHz : -27.350 dBm M2 : 902.174 MHz : -6.972 dBm M3 : 902.836 MHz : 17.054 dBm | Channel Frequency: 902.40 MHz |

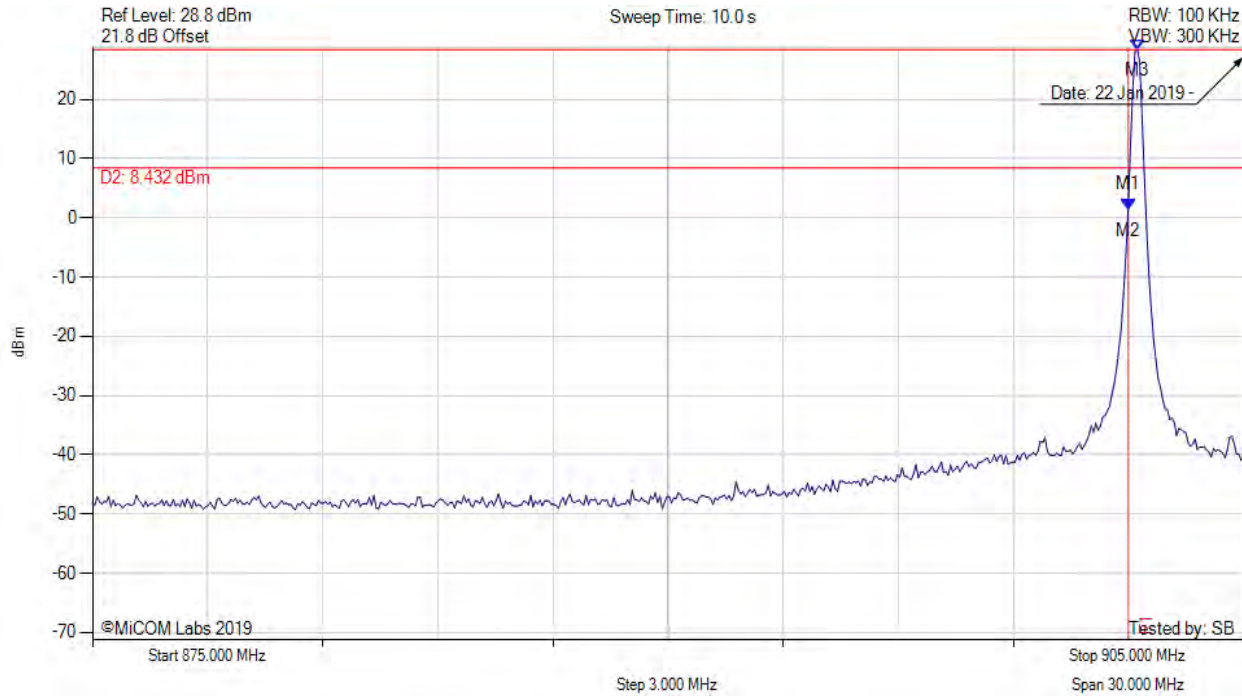
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CONDUCTED LOW BAND-EDGE EMISSIONS (STATIC) PEAK

Variant: Mode 1, Channel: 902.20 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 902.000 MHz : 1.410 dBm M2 : 901.994 MHz : 1.410 dBm M3 : 902.234 MHz : 28.432 dBm | Channel Frequency: 902.20 MHz |

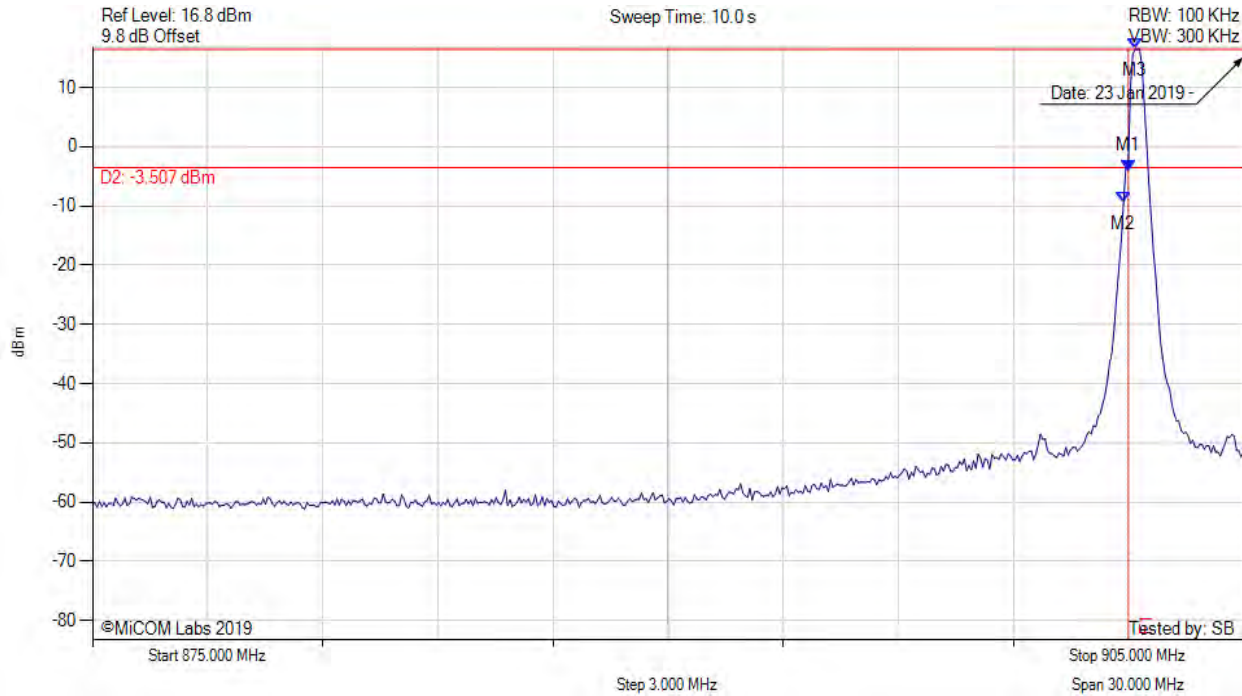
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CONDUCTED LOW BAND-EDGE EMISSIONS (STATIC) PEAK

Variant: Mode 2, Channel: 902.20 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 902.000 MHz : -3.942 dBm M2 : 901.874 MHz : -9.496 dBm M3 : 902.174 MHz : 16.493 dBm | Channel Frequency: 902.20 MHz |

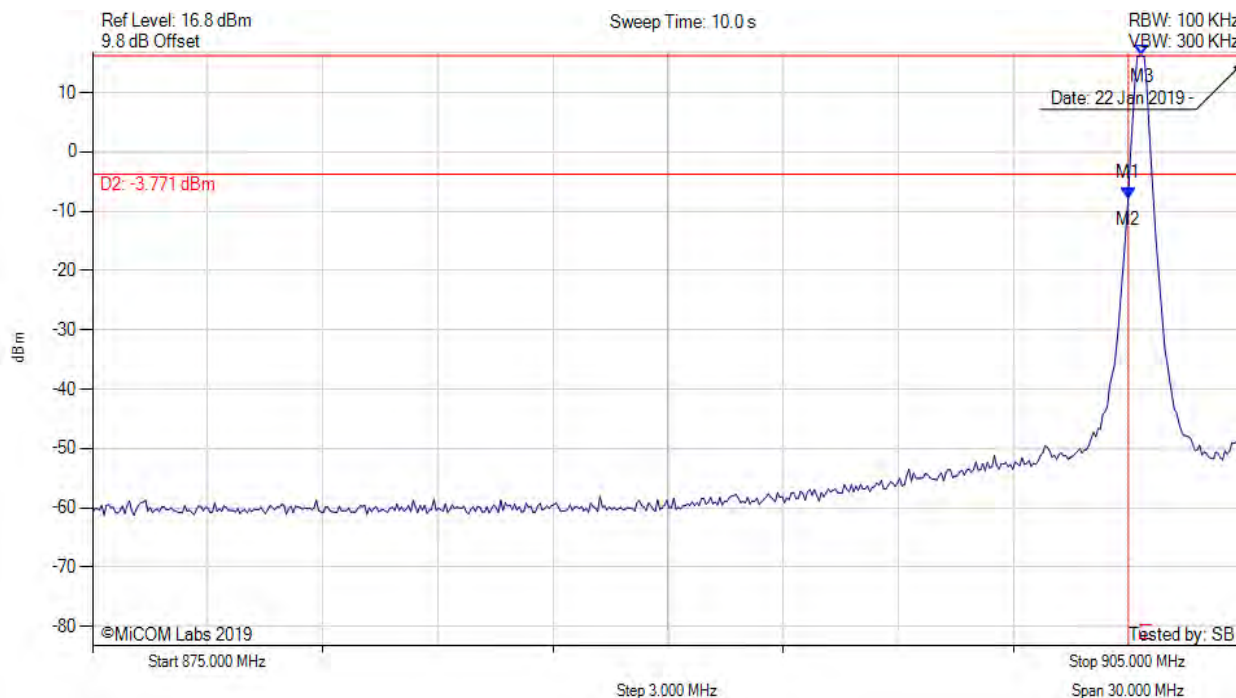
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CONDUCTED LOW BAND-EDGE EMISSIONS (STATIC) PEAK

Variant: Mode 4, Channel: 902.30 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 902.000 MHz : -7.816 dBm M2 : 901.994 MHz : -7.816 dBm M3 : 902.355 MHz : 16.229 dBm | Channel Frequency: 902.30 MHz |

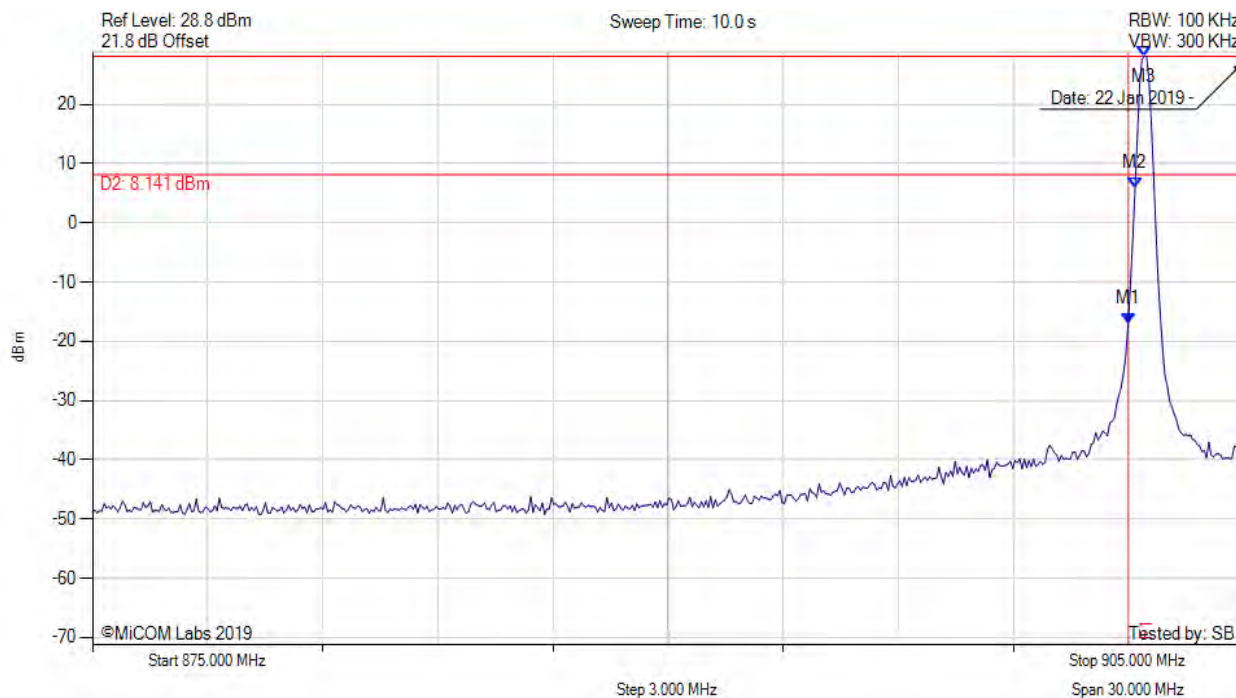
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CONDUCTED LOW BAND-EDGE EMISSIONS (STATIC) PEAK

Variant: Mode 5, Channel: 902.40 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 902.000 MHz : -17.022 dBm M2 : 902.174 MHz : 5.800 dBm M3 : 902.415 MHz : 28.141 dBm | Channel Frequency: 902.40 MHz |

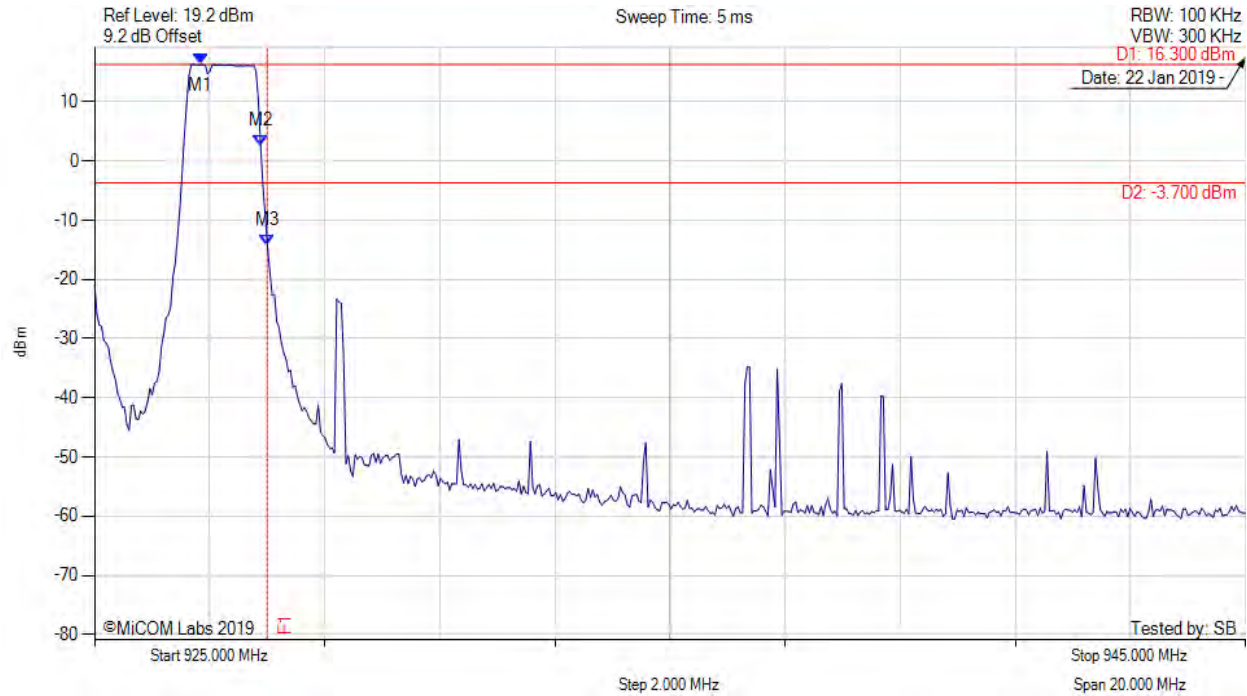
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CONDUCTED UPPER BAND-EDGE EMISSIONS (HOPPING) PEAK

Variant: Mode 1, Channel: 927.75 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 926.844 MHz : 16.300 dBm M2 : 927.886 MHz : 2.658 dBm M3 : 928.000 MHz : -14.265 dBm | Channel Frequency: 927.75 MHz |

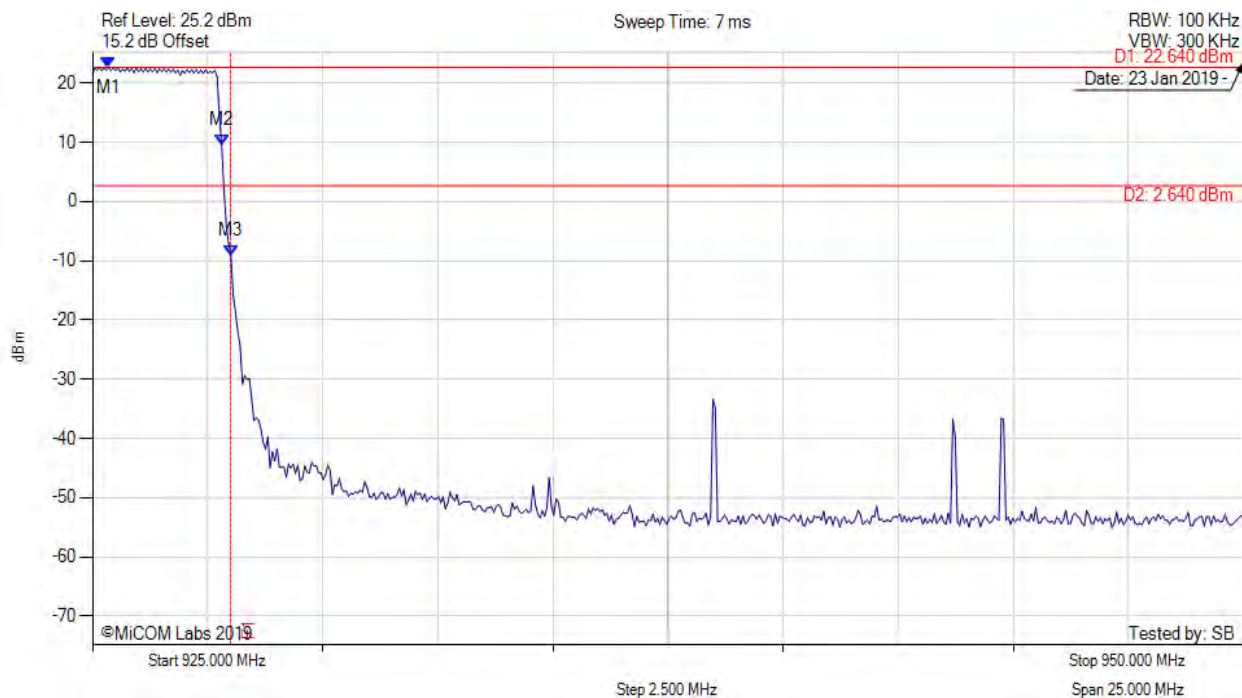
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CONDUCTED UPPER BAND-EDGE EMISSIONS (HOPPING) PEAK

Variant: Mode 2, Channel: 927.60 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 925.351 MHz : 22.640 dBm M2 : 927.806 MHz : 9.528 dBm M3 : 928.000 MHz : -9.191 dBm | Channel Frequency: 927.60 MHz |

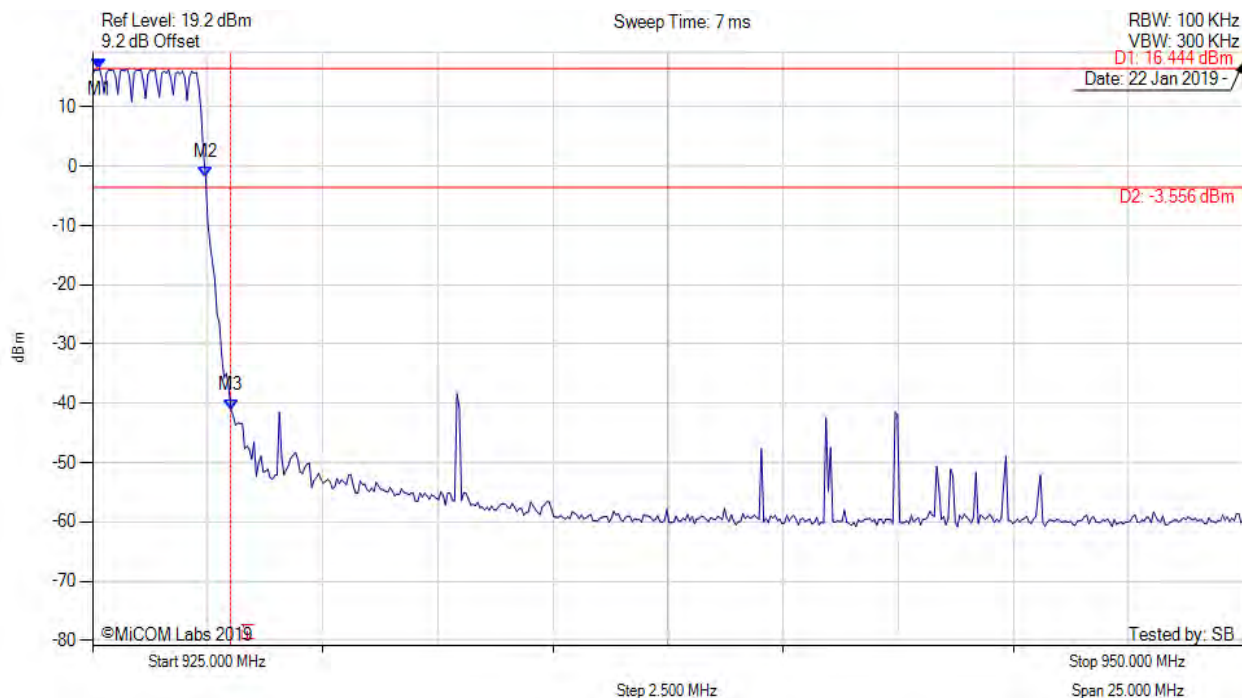
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CONDUCTED UPPER BAND-EDGE EMISSIONS (HOPPING) PEAK

Variant: Mode 4, Channel: 927.60 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 925.150 MHz : 16.444 dBm M2 : 927.455 MHz : -1.892 dBm M3 : 928.000 MHz : -41.033 dBm | Channel Frequency: 927.60 MHz |

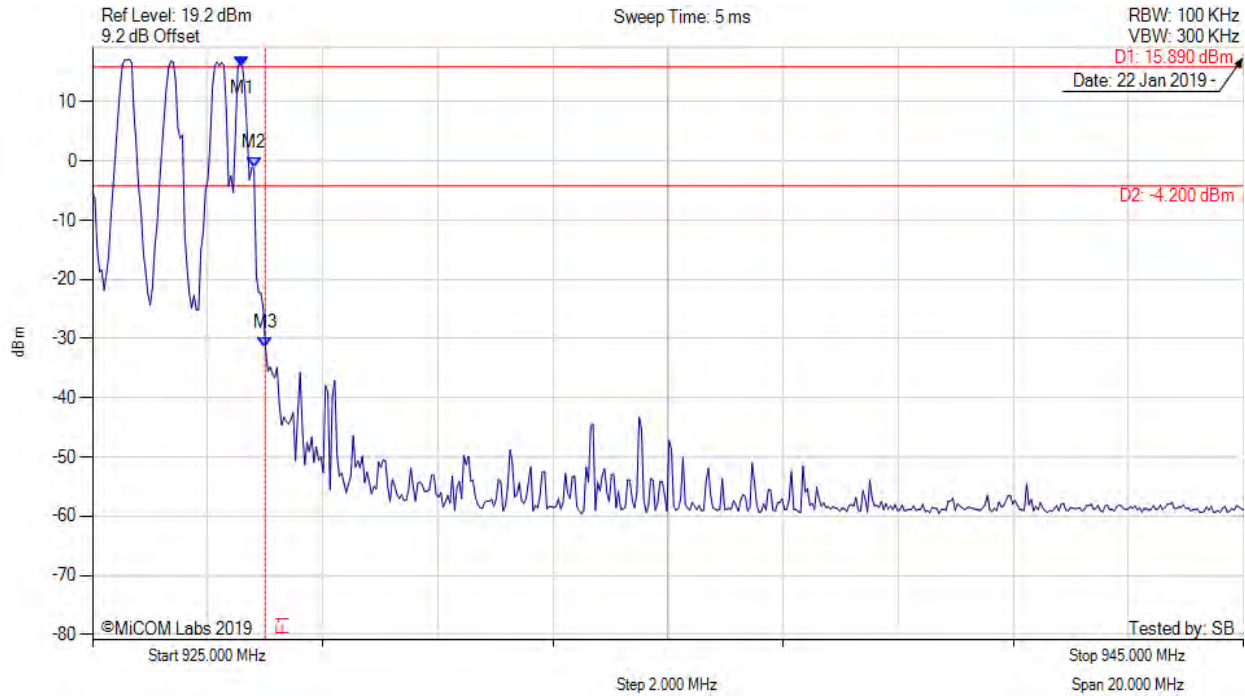
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CONDUCTED UPPER BAND-EDGE EMISSIONS (HOPPING) PEAK

Variant: Mode 5, Channel: 927.60 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 927.600 MHz : 15.891 dBm M2 : 927.806 MHz : -1.225 dBm M3 : 928.000 MHz : -31.487 dBm | Channel Frequency: 927.60 MHz |

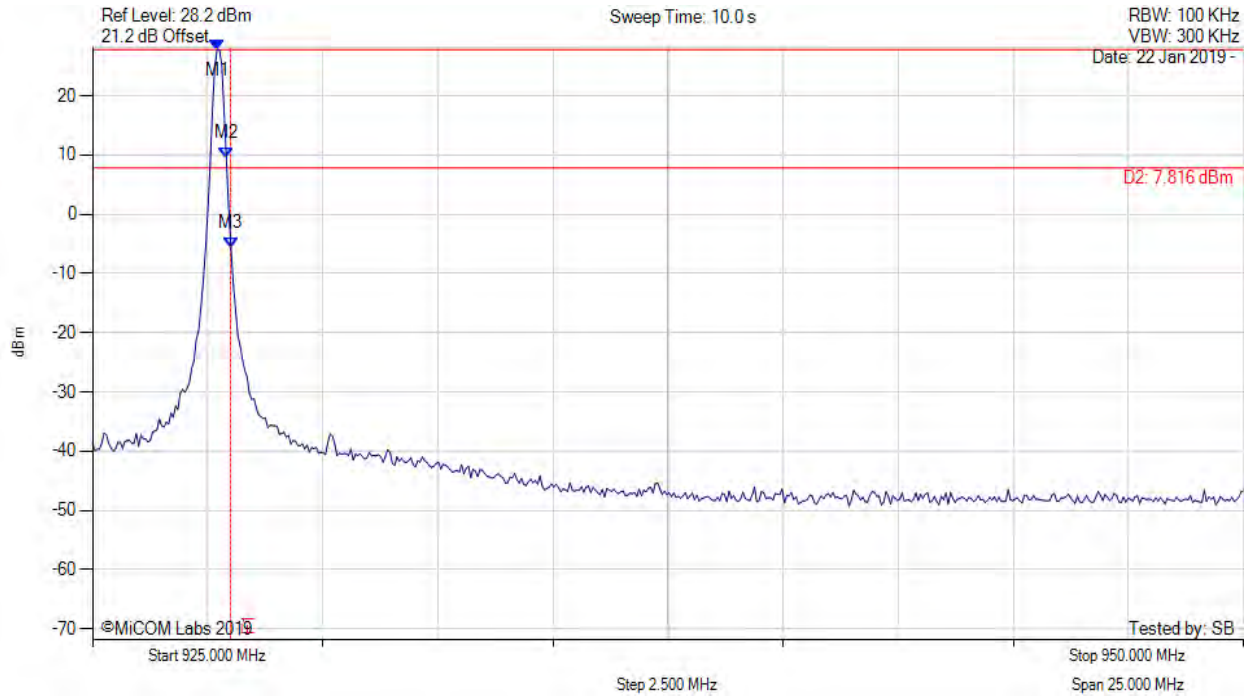
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CONDUCTED UPPER BAND-EDGE EMISSIONS (STATIC) PEAK

Variant: Mode 1, Channel: 927.75 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 927.705 MHz : 27.816 dBm M2 : 927.906 MHz : 9.471 dBm M3 : 928.000 MHz : -5.715 dBm | Channel Frequency: 927.75 MHz |

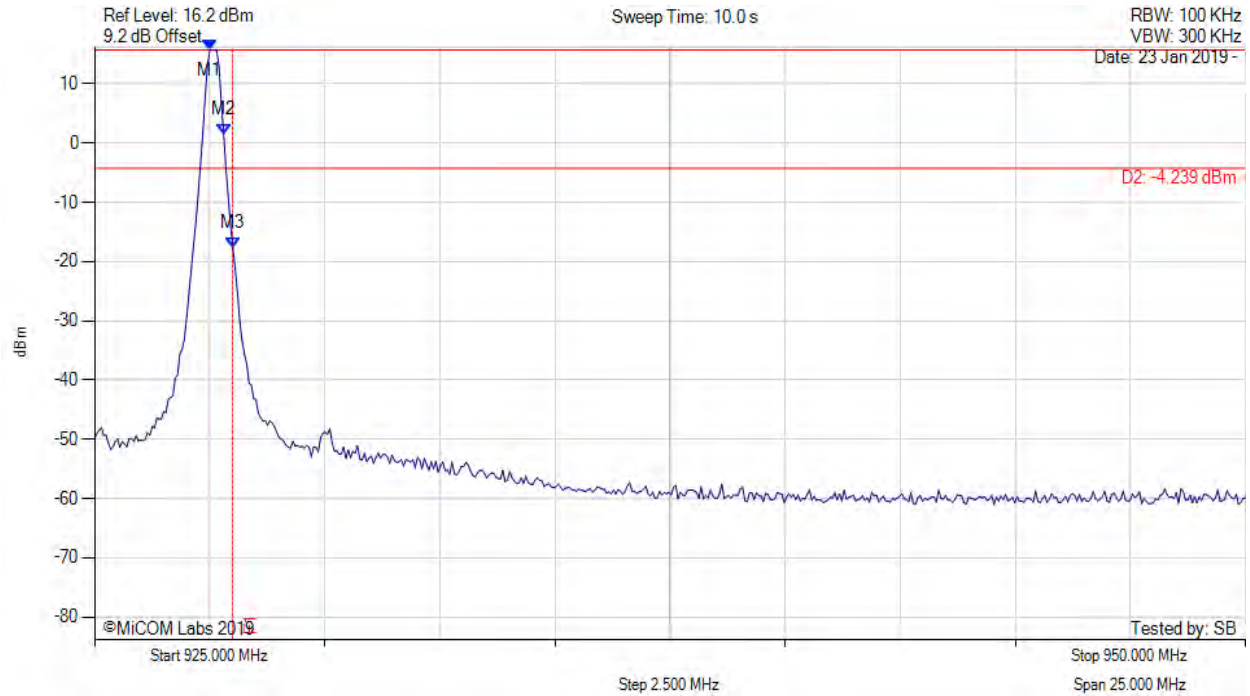
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CONDUCTED UPPER BAND-EDGE EMISSIONS (STATIC) PEAK

Variant: Mode 2, Channel: 927.60 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 927.505 MHz : 15.761 dBm M2 : 927.806 MHz : 1.415 dBm M3 : 928.000 MHz : -17.721 dBm | Channel Frequency: 927.60 MHz |

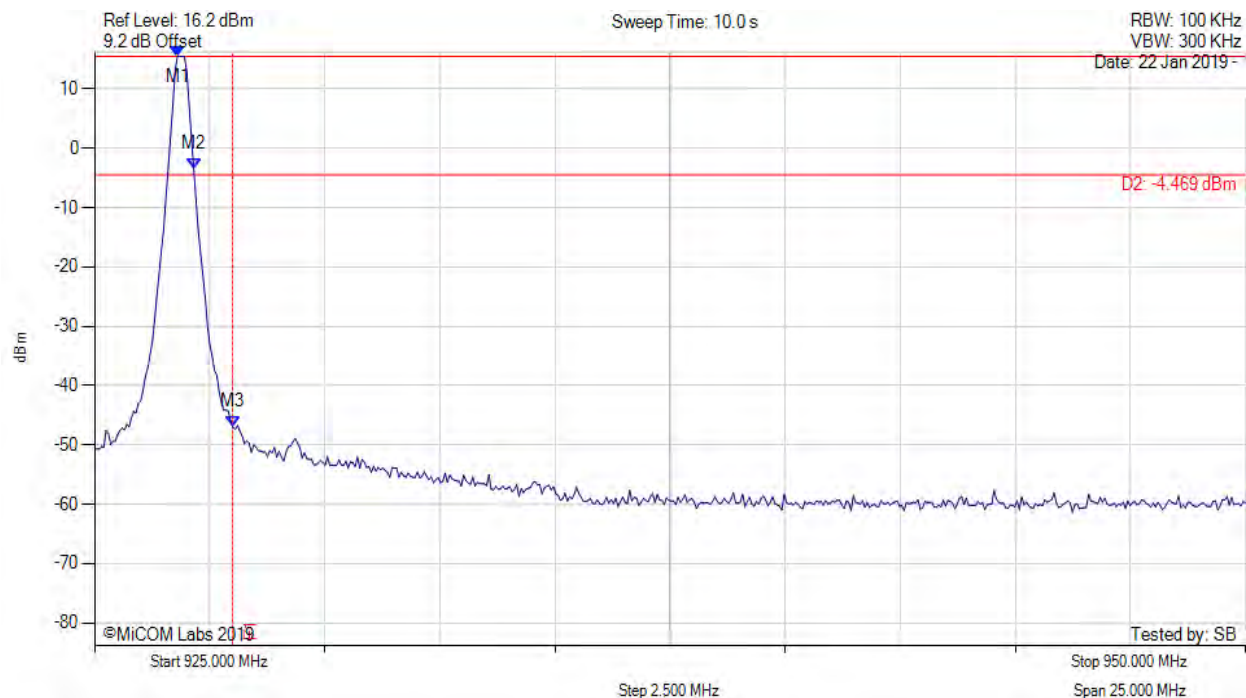
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CONDUCTED UPPER BAND-EDGE EMISSIONS (STATIC) PEAK

Variant: Mode 4, Channel: 926.90 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 926.804 MHz : 15.531 dBm M2 : 927.154 MHz : -3.403 dBm M3 : 928.000 MHz : -47.031 dBm | Channel Frequency: 926.90 MHz |

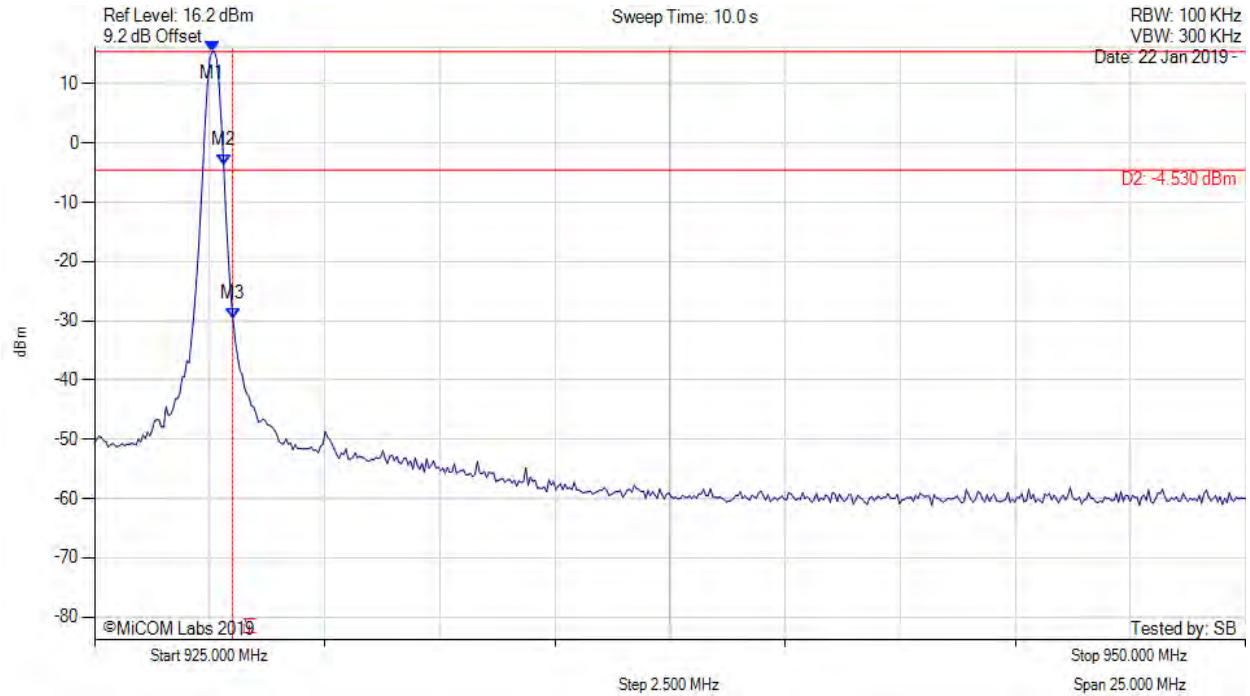
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CONDUCTED UPPER BAND-EDGE EMISSIONS (STATIC) PEAK

Variant: Mode 5, Channel: 927.60 MHz, Chain a, Temp: 20, Voltage: 7.0Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 927.555 MHz : 15.470 dBm M2 : 927.806 MHz : -3.702 dBm M3 : 928.000 MHz : -29.681 dBm | Channel Frequency: 927.60 MHz |

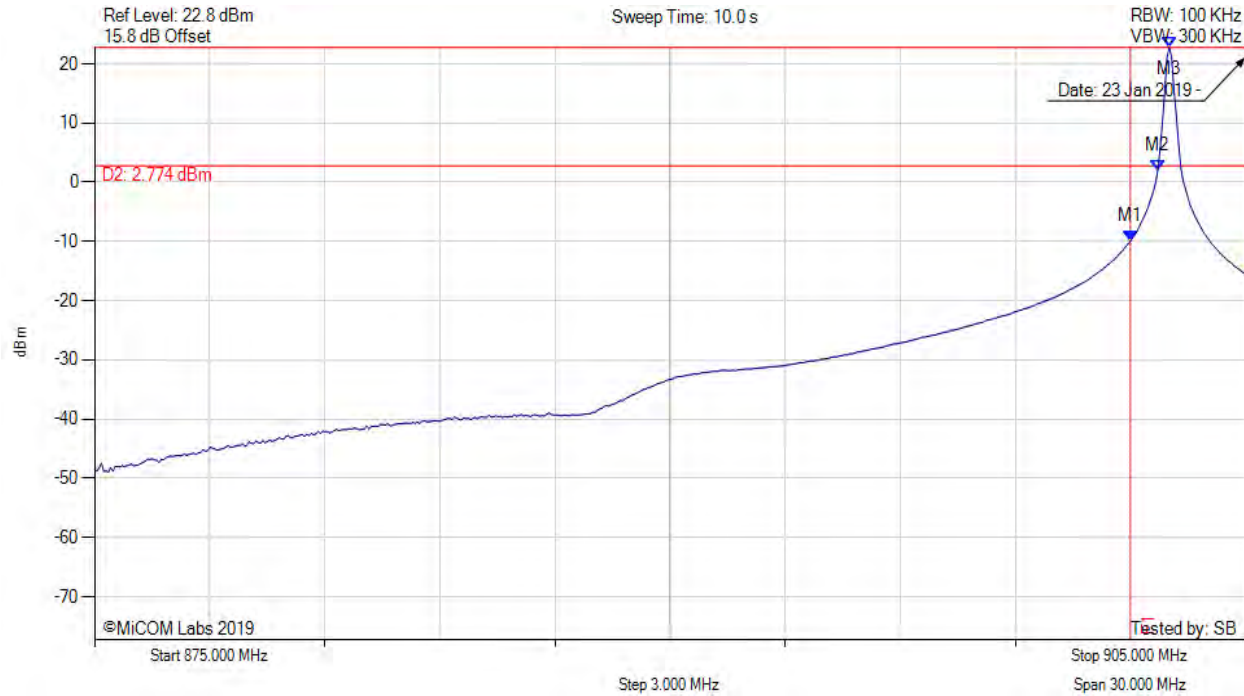
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CONDUCTED LOW BAND-EDGE EMISSIONS (STATIC) PEAK

Variant: Mode 3, Channel: 903.00 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 902.000 MHz : -10.031 dBm M2 : 902.715 MHz : 2.027 dBm M3 : 903.016 MHz : 22.774 dBm | Channel Frequency: 903.00 MHz |

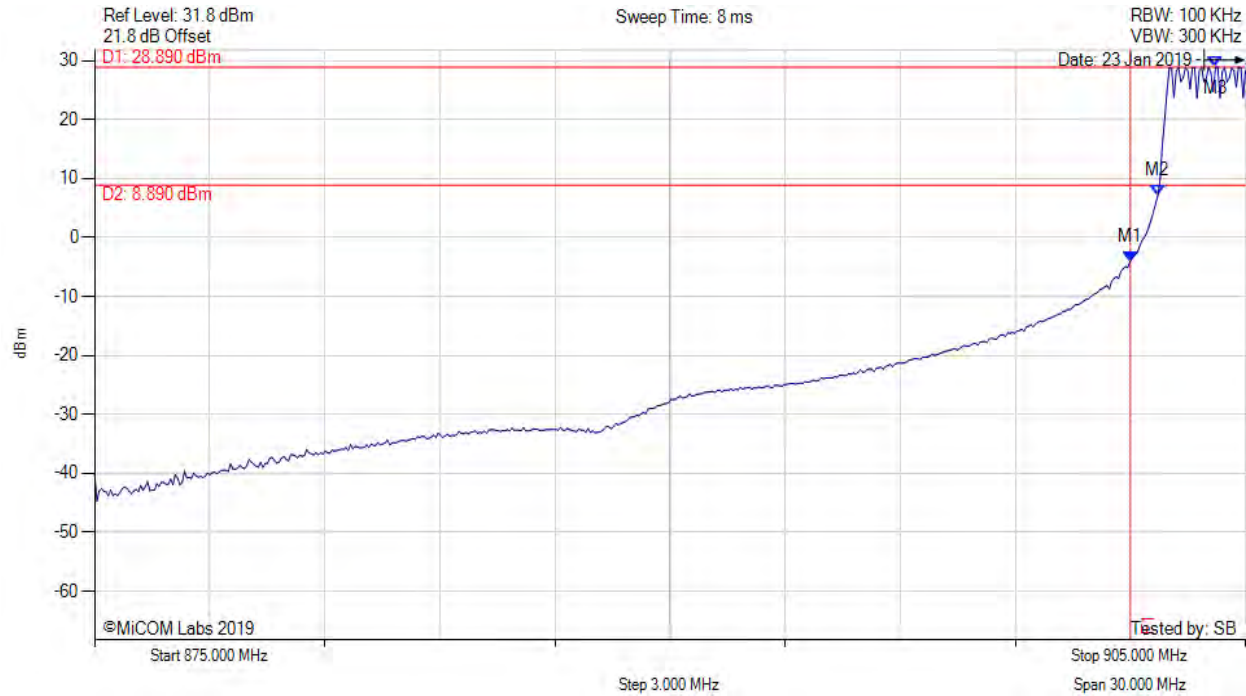
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CONDUCTED LOW BAND-EDGE EMISSIONS (HOPPING) PEAK

Variant: Mode 3, Channel: 903.00 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 902.000 MHz : -4.077 dBm M2 : 902.715 MHz : 7.088 dBm M3 : 904.218 MHz : 28.890 dBm | Channel Frequency: 903.00 MHz |

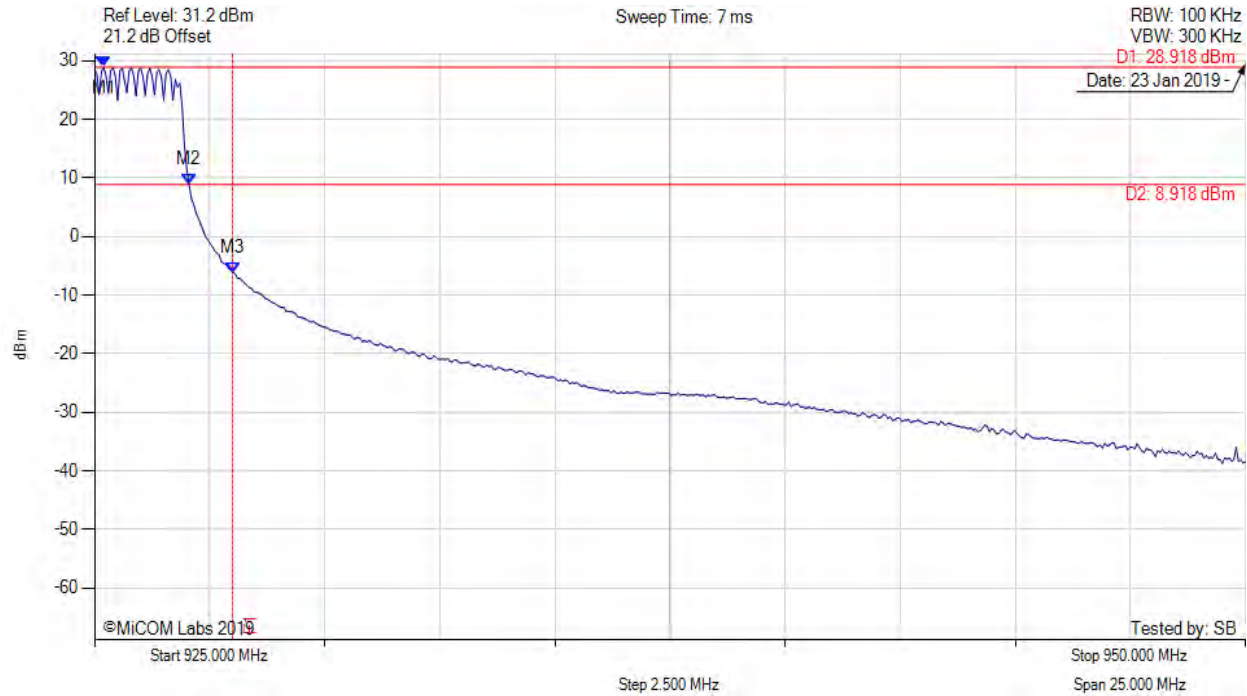
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CONDUCTED UPPER BAND-EDGE EMISSIONS (HOPPING) PEAK

Variant: Mode 3, Channel: 926.80 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 925.200 MHz : 28.918 dBm M2 : 927.054 MHz : 8.922 dBm M3 : 928.000 MHz : -6.115 dBm | Channel Frequency: 926.80 MHz |

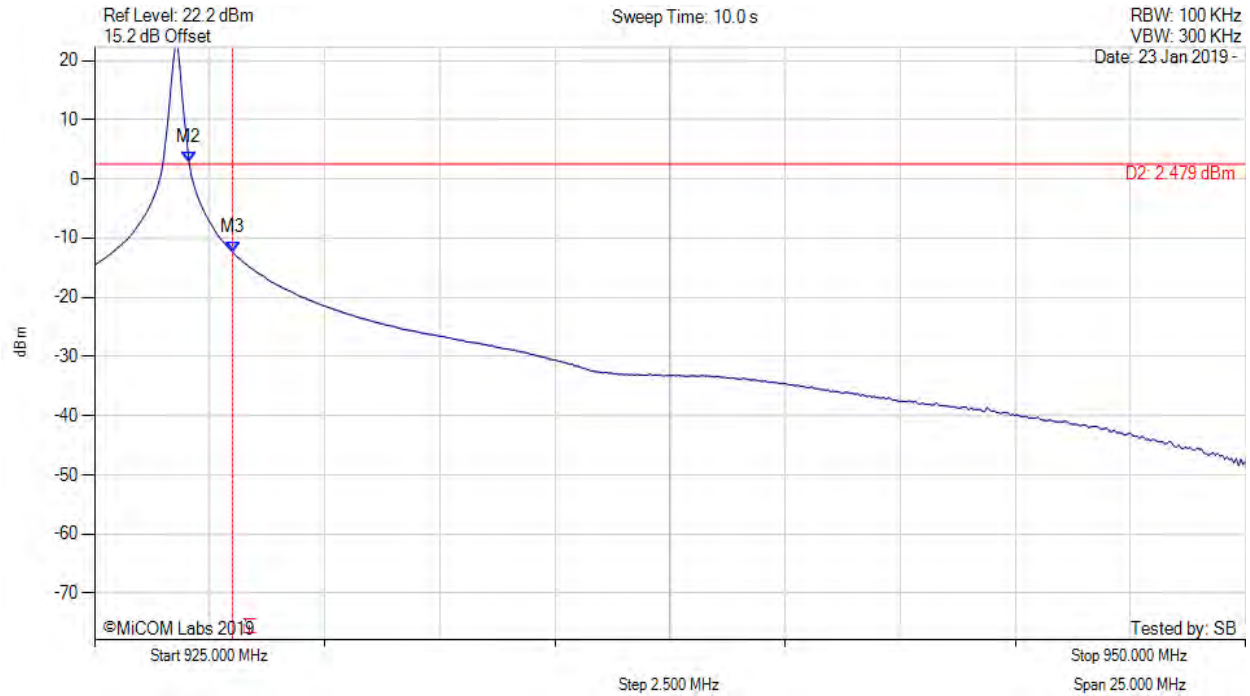
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CONDUCTED UPPER BAND-EDGE EMISSIONS (STATIC) PEAK

Variant: Mode 3, Channel: 926.80 MHz, Chain a, Temp: 20, Voltage: 3.7Vdc



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|-------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 926.754 MHz : 22.479 dBm M2 : 927.054 MHz : 2.709 dBm M3 : 928.000 MHz : -12.366 dBm | Channel Frequency: 926.80 MHz |

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