

# Appendix-B LTE NB-IoT Band 71

## Effective (Isotropic) Radiated Power Output Data for NB

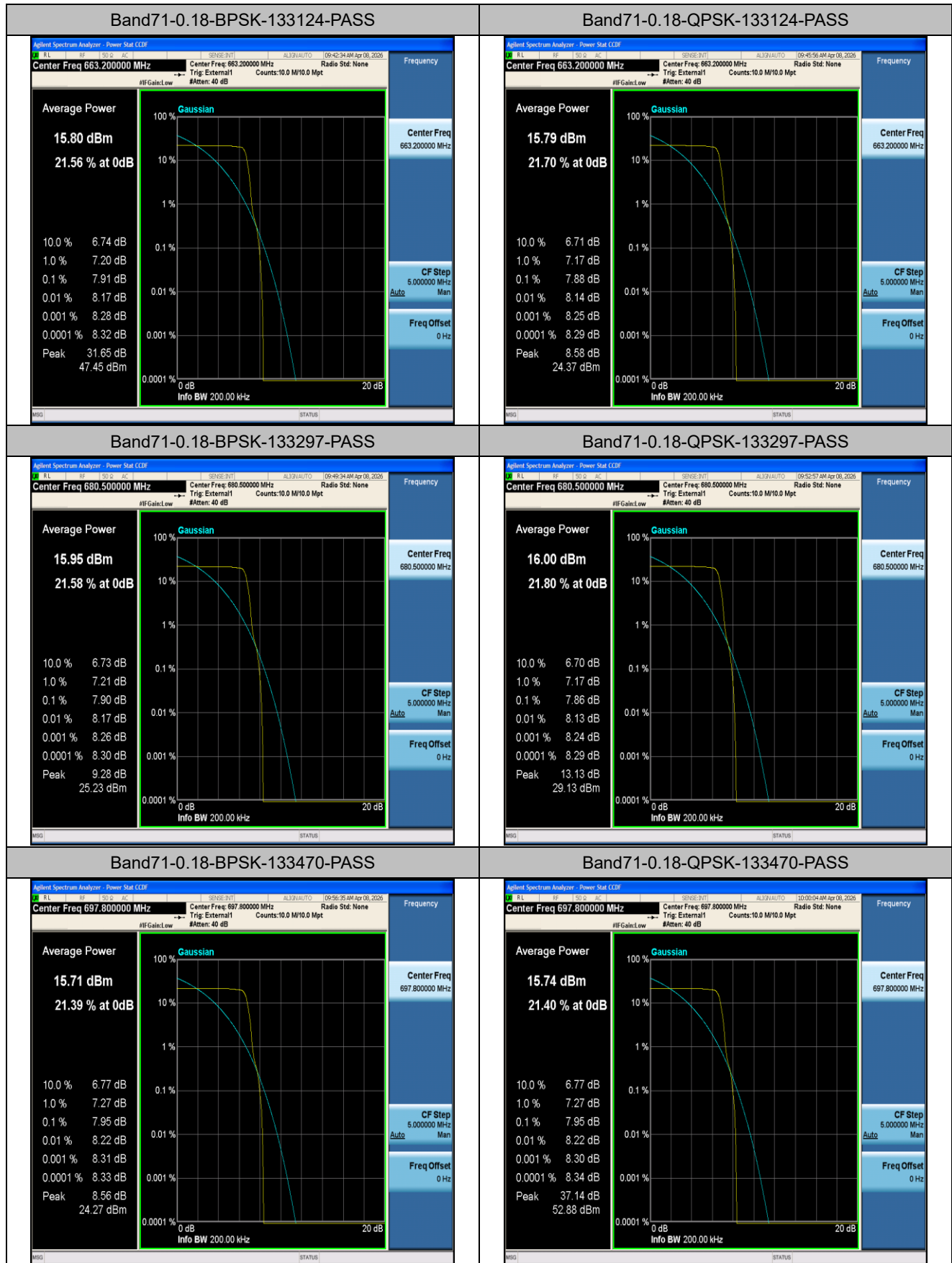
### Test Result

| Band   | OpMode      | SCS     | BW   | Modulation | Channel | Tones | Result (dBm) | ERP (dBm) | Limit (dBm) | Verdict |
|--------|-------------|---------|------|------------|---------|-------|--------------|-----------|-------------|---------|
| Band71 | Stand-Alone | 3.75kHz | 0.18 | BPSK       | 133124  | 1@0   | 20.5         | 24.55     | 34.77       | PASS    |
| Band71 | Stand-Alone | 3.75kHz | 0.18 | QPSK       | 133124  | 1@0   | 20.41        | 24.46     | 34.77       | PASS    |
| Band71 | Stand-Alone | 3.75kHz | 0.18 | BPSK       | 133124  | 1@47  | 20.3         | 24.35     | 34.77       | PASS    |
| Band71 | Stand-Alone | 3.75kHz | 0.18 | QPSK       | 133124  | 1@47  | 20.3         | 24.35     | 34.77       | PASS    |
| Band71 | Stand-Alone | 3.75kHz | 0.18 | BPSK       | 133297  | 1@0   | 20.75        | 24.8      | 34.77       | PASS    |
| Band71 | Stand-Alone | 3.75kHz | 0.18 | QPSK       | 133297  | 1@0   | 20.64        | 24.69     | 34.77       | PASS    |
| Band71 | Stand-Alone | 3.75kHz | 0.18 | BPSK       | 133297  | 1@47  | 20.62        | 24.67     | 34.77       | PASS    |
| Band71 | Stand-Alone | 3.75kHz | 0.18 | QPSK       | 133297  | 1@47  | 20.66        | 24.71     | 34.77       | PASS    |
| Band71 | Stand-Alone | 3.75kHz | 0.18 | BPSK       | 133470  | 1@0   | 20.68        | 24.73     | 34.77       | PASS    |
| Band71 | Stand-Alone | 3.75kHz | 0.18 | QPSK       | 133470  | 1@0   | 20.57        | 24.62     | 34.77       | PASS    |
| Band71 | Stand-Alone | 3.75kHz | 0.18 | BPSK       | 133470  | 1@47  | 20.55        | 24.6      | 34.77       | PASS    |
| Band71 | Stand-Alone | 3.75kHz | 0.18 | QPSK       | 133470  | 1@47  | 20.55        | 24.6      | 34.77       | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | BPSK       | 133124  | 1@0   | 21.3         | 25.35     | 34.77       | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | QPSK       | 133124  | 1@0   | 21.32        | 25.37     | 34.77       | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | BPSK       | 133124  | 1@11  | 21.29        | 25.34     | 34.77       | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | QPSK       | 133124  | 1@11  | 21.32        | 25.37     | 34.77       | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | BPSK       | 133297  | 1@0   | 21.71        | 25.76     | 34.77       | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | QPSK       | 133297  | 1@0   | 21.67        | 25.72     | 34.77       | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | BPSK       | 133297  | 1@11  | 21.68        | 25.73     | 34.77       | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | QPSK       | 133297  | 1@11  | 21.68        | 25.73     | 34.77       | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | BPSK       | 133470  | 1@0   | 21.62        | 25.67     | 34.77       | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | QPSK       | 133470  | 1@0   | 21.57        | 25.62     | 34.77       | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | BPSK       | 133470  | 1@11  | 21.55        | 25.6      | 34.77       | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | QPSK       | 133470  | 1@11  | 21.55        | 25.6      | 34.77       | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | QPSK       | 133124  | 3@3   | 22.33        | 26.38     | 34.77       | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | QPSK       | 133297  | 3@3   | 22.68        | 26.73     | 34.77       | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | QPSK       | 133470  | 3@3   | 22.49        | 26.54     | 34.77       | PASS    |

**Peak-to-Average Ratio(CCDF) for NB****Test Result**

| Band   | OpMode      | SCS   | BW   | Modulation | Channel | Tones | Result (dB) | Limit (dB) | Verdict |
|--------|-------------|-------|------|------------|---------|-------|-------------|------------|---------|
| Band71 | Stand-Alone | 15kHz | 0.18 | BPSK       | 133124  | 12@0  | 7.91        | <=13       | PASS    |
| Band71 | Stand-Alone | 15kHz | 0.18 | QPSK       | 133124  | 12@0  | 7.88        | <=13       | PASS    |
| Band71 | Stand-Alone | 15kHz | 0.18 | BPSK       | 133297  | 12@0  | 7.9         | <=13       | PASS    |
| Band71 | Stand-Alone | 15kHz | 0.18 | QPSK       | 133297  | 12@0  | 7.86        | <=13       | PASS    |
| Band71 | Stand-Alone | 15kHz | 0.18 | BPSK       | 133470  | 12@0  | 7.95        | <=13       | PASS    |
| Band71 | Stand-Alone | 15kHz | 0.18 | QPSK       | 133470  | 12@0  | 7.95        | <=13       | PASS    |

# Test Graphs

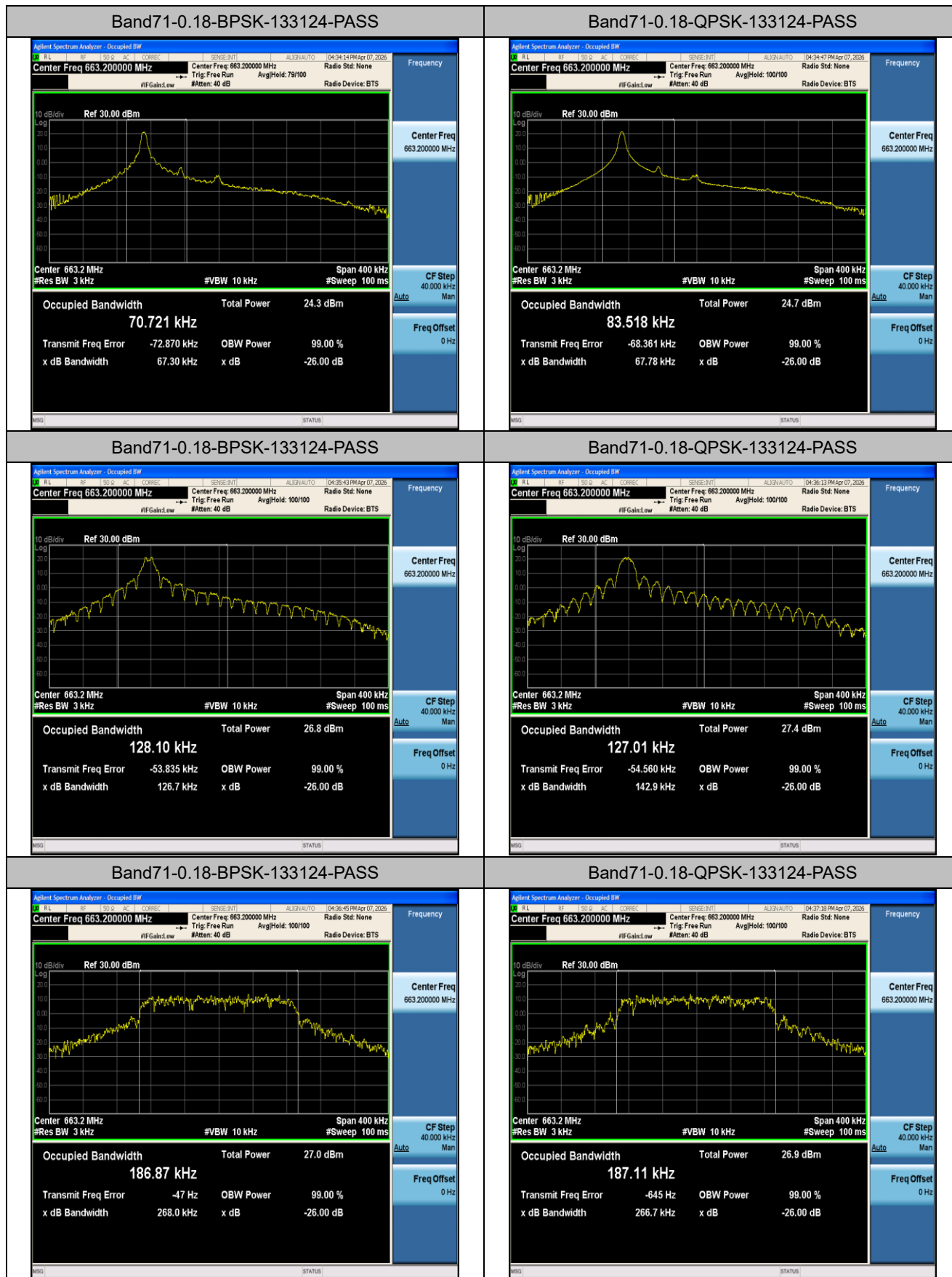


## Emission Bandwidth for NB

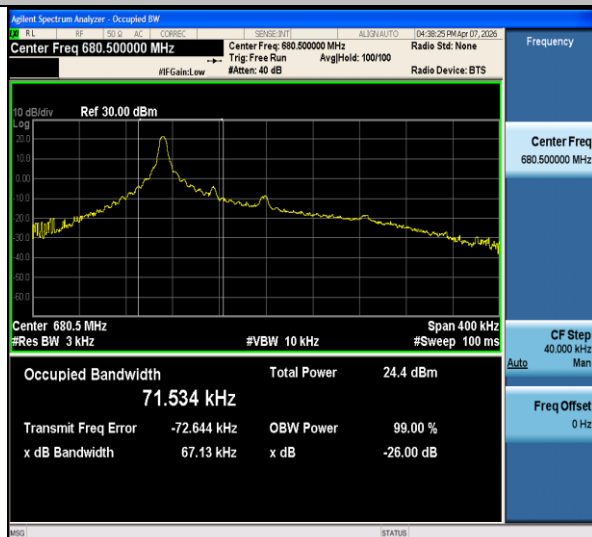
### Test Result

| Band   | OpMode      | SCS     | BW   | Modulation | Channel | Tones | OBW(MHz) | EBW(MHz) | Verdict |
|--------|-------------|---------|------|------------|---------|-------|----------|----------|---------|
| Band71 | Stand-Alone | 3.75kHz | 0.18 | BPSK       | 133124  | 1@0   | 0.17407  | 0.1840   | PASS    |
| Band71 | Stand-Alone | 3.75kHz | 0.18 | QPSK       | 133124  | 1@0   | 0.08352  | 0.0678   | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | BPSK       | 133124  | 1@0   | 0.12810  | 0.1267   | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | QPSK       | 133124  | 1@0   | 0.12701  | 0.1429   | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | BPSK       | 133124  | 12@0  | 0.18687  | 0.2680   | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | QPSK       | 133124  | 12@0  | 0.18711  | 0.2667   | PASS    |
| Band71 | Stand-Alone | 3.75kHz | 0.18 | BPSK       | 133297  | 1@0   | 0.07153  | 0.0671   | PASS    |
| Band71 | Stand-Alone | 3.75kHz | 0.18 | QPSK       | 133297  | 1@0   | 0.08292  | 0.0674   | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | BPSK       | 133297  | 1@0   | 0.12726  | 0.1212   | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | QPSK       | 133297  | 1@0   | 0.12837  | 0.1311   | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | BPSK       | 133297  | 12@0  | 0.18599  | 0.2605   | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | QPSK       | 133297  | 12@0  | 0.19960  | 0.2776   | PASS    |
| Band71 | Stand-Alone | 3.75kHz | 0.18 | BPSK       | 133470  | 1@0   | 0.07211  | 0.0677   | PASS    |
| Band71 | Stand-Alone | 3.75kHz | 0.18 | QPSK       | 133470  | 1@0   | 0.08497  | 0.0674   | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | BPSK       | 133470  | 1@0   | 0.13069  | 0.1265   | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | QPSK       | 133470  | 1@0   | 0.12491  | 0.1268   | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | BPSK       | 133470  | 12@0  | 0.18793  | 0.2769   | PASS    |
| Band71 | Stand-Alone | 15kHz   | 0.18 | QPSK       | 133470  | 12@0  | 0.19855  | 0.2893   | PASS    |

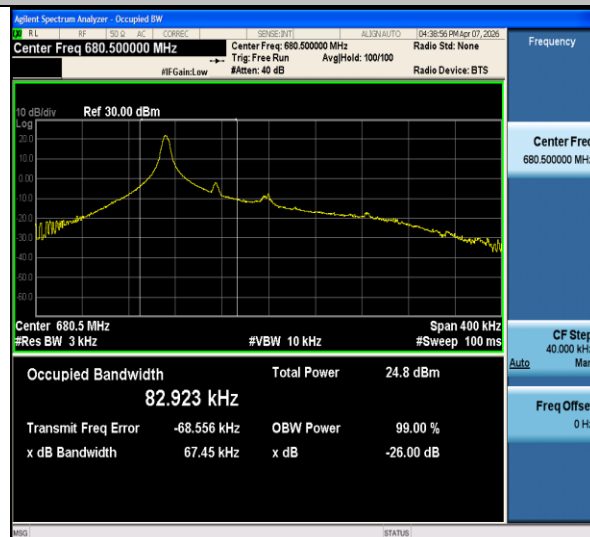
## Test Graphs



Band71-0.18-BPSK-133297-PASS



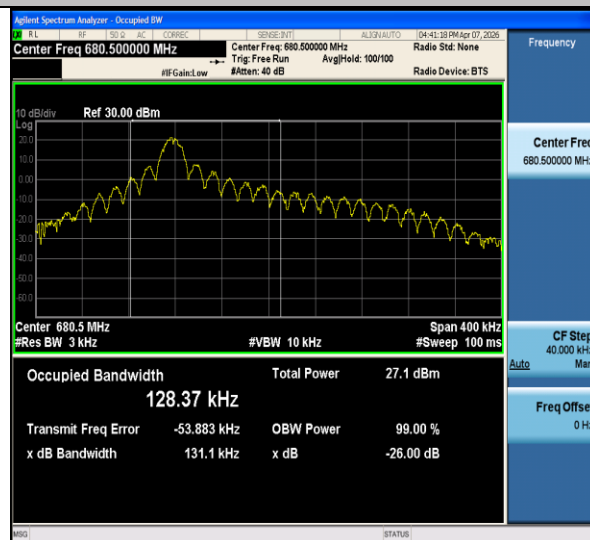
Band71-0.18-QPSK-133297-PASS



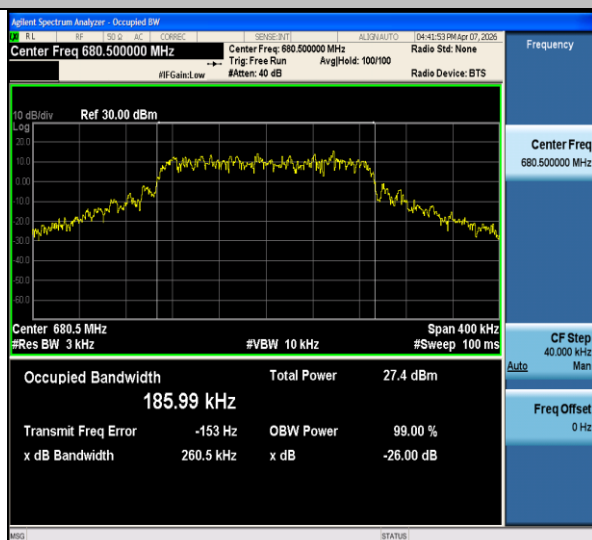
Band71-0.18-BPSK-133297-PASS



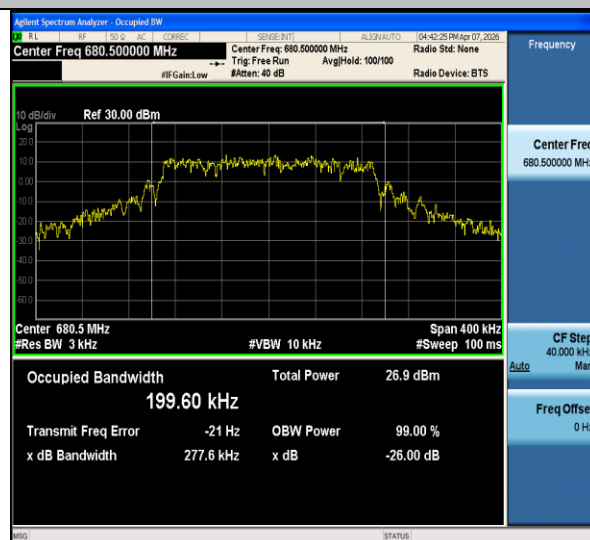
Band71-0.18-QPSK-133297-PASS



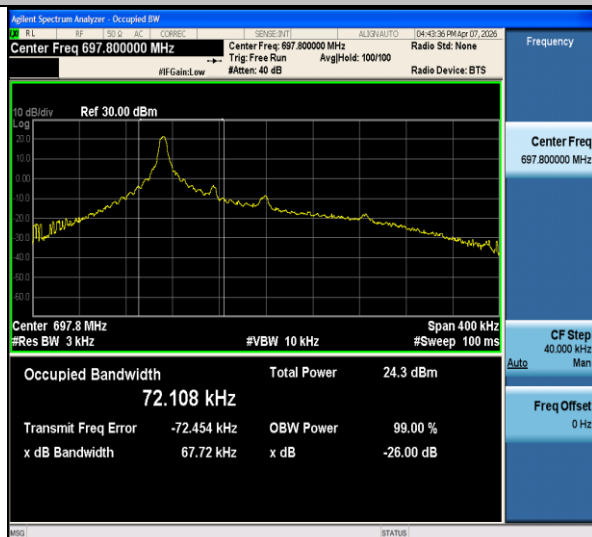
Band71-0.18-BPSK-133297-PASS



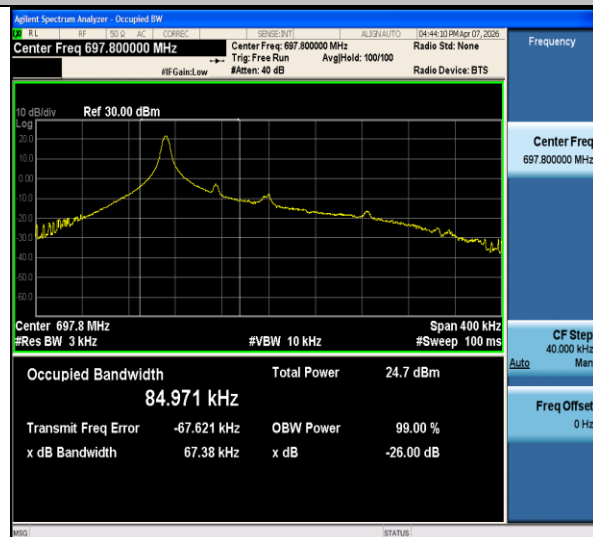
Band71-0.18-QPSK-133297-PASS



Band71-0.18-BPSK-133470-PASS



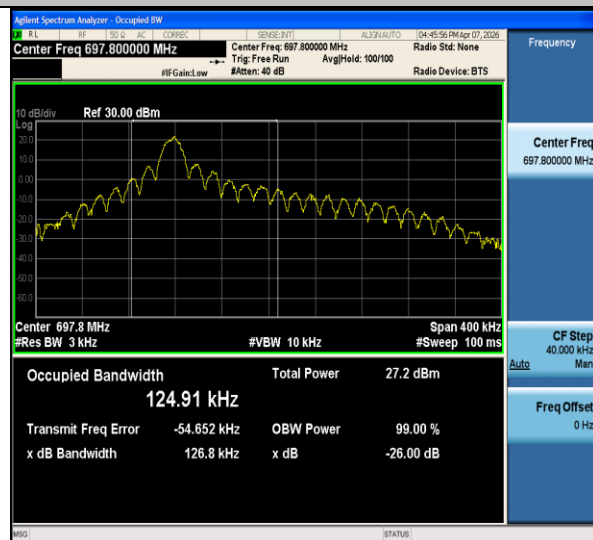
Band71-0.18-QPSK-133470-PASS



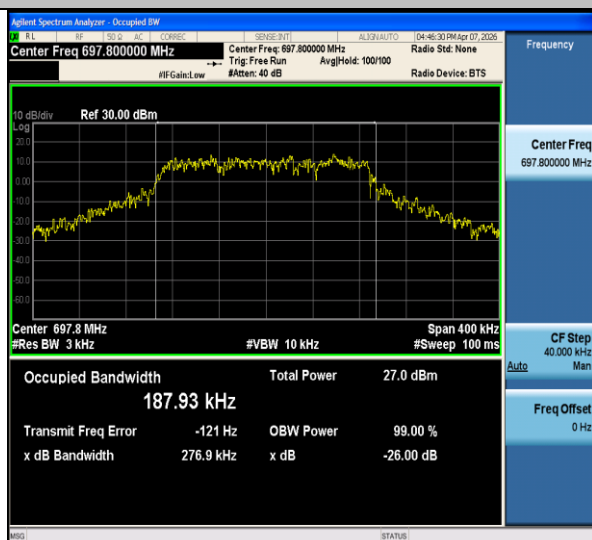
Band71-0.18-BPSK-133470-PASS



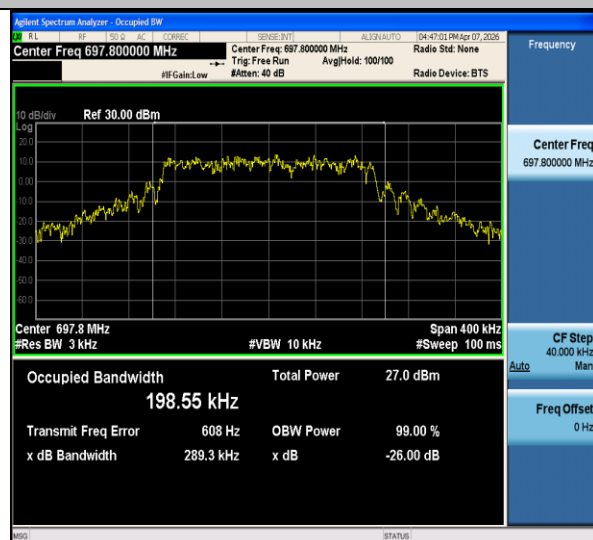
Band71-0.18-QPSK-133470-PASS



Band71-0.18-BPSK-133470-PASS

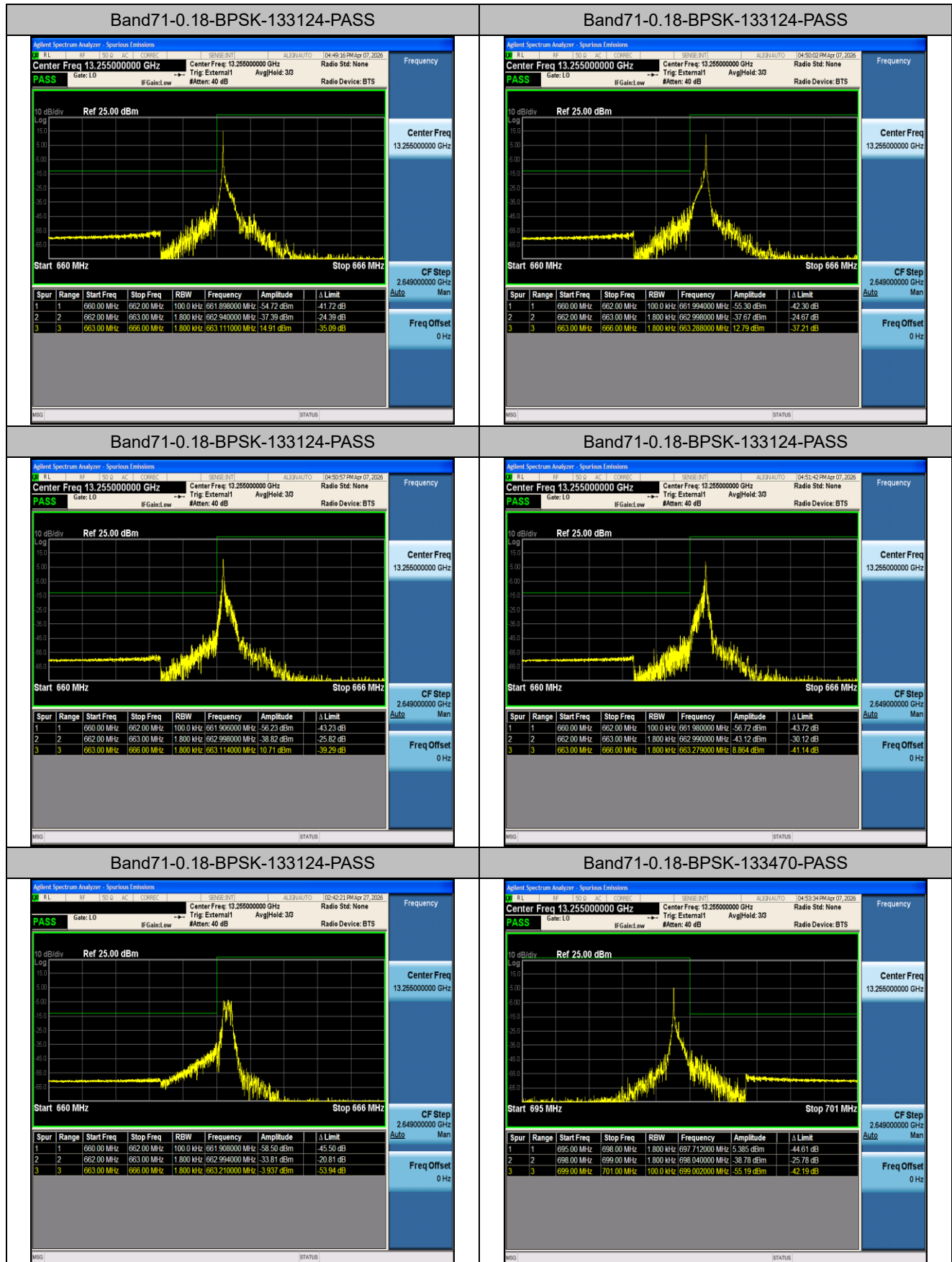


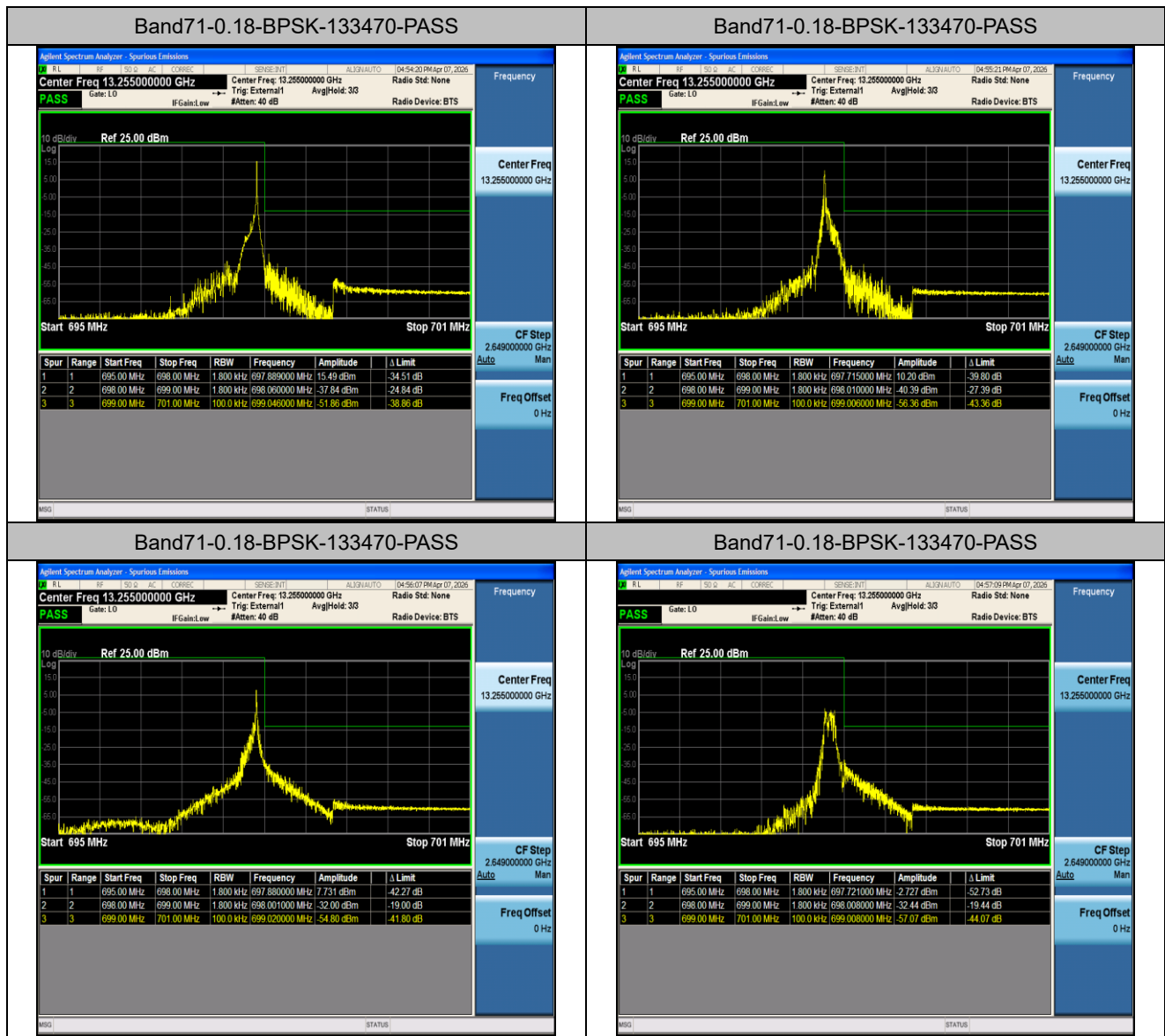
Band71-0.18-QPSK-133470-PASS



## Band Edge for NB

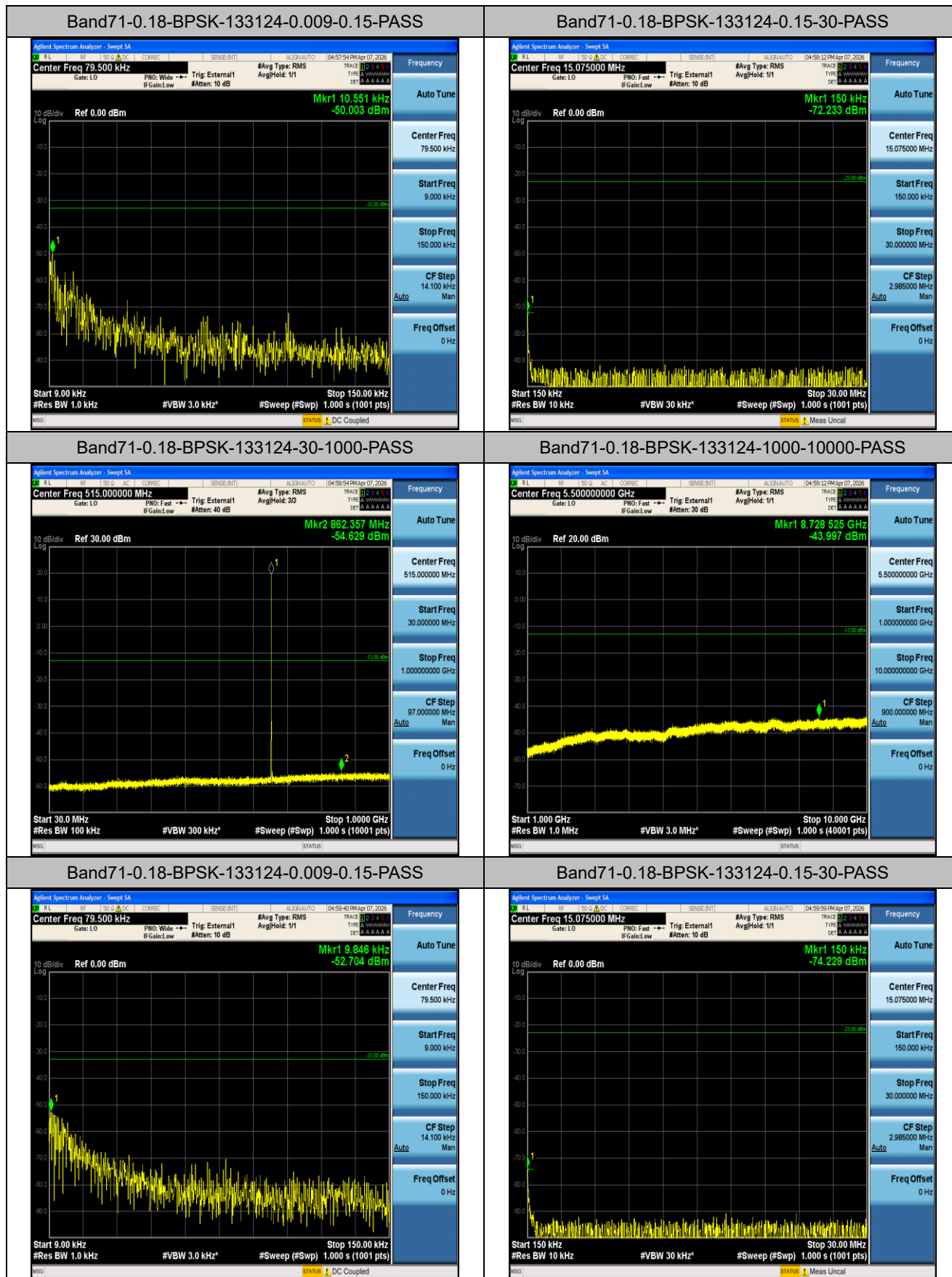
## Test Graphs



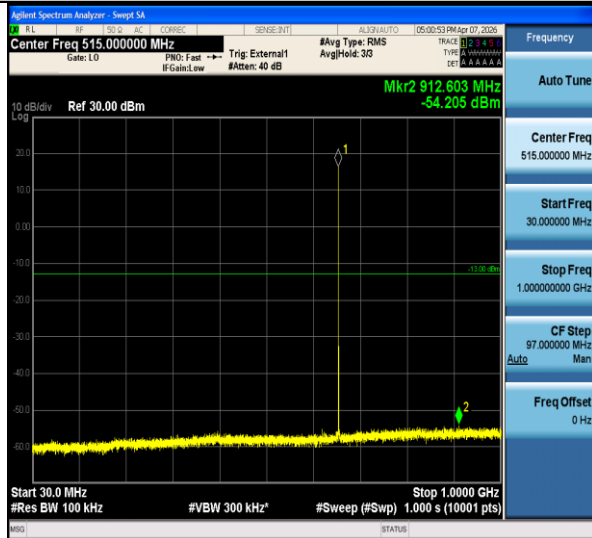


# Conducted Spurious Emission for NB

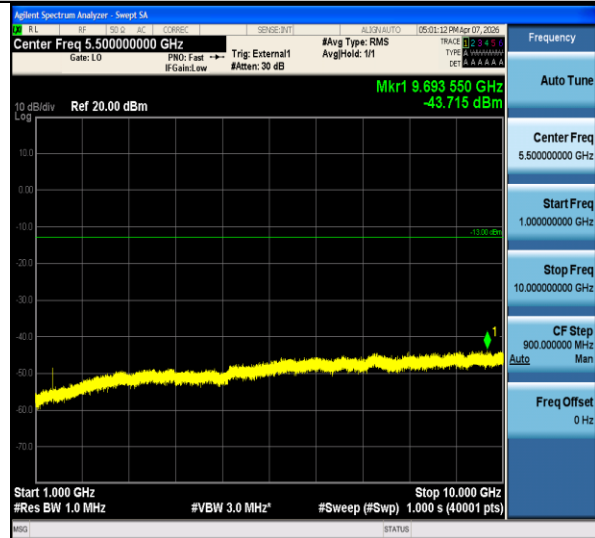
## Test Graphs



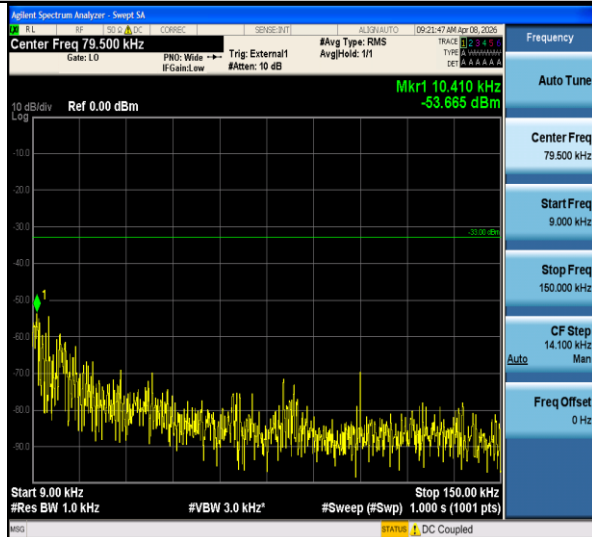
Band71-0.18-BPSK-133124-30-1000-PASS



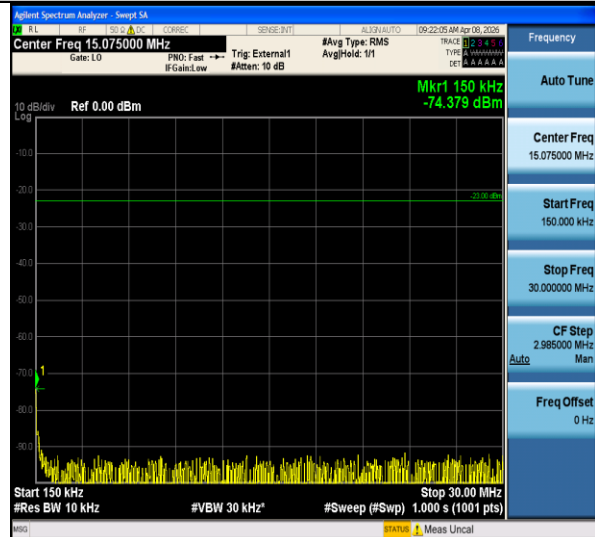
Band71-0.18-BPSK-133124-1000-10000-PASS



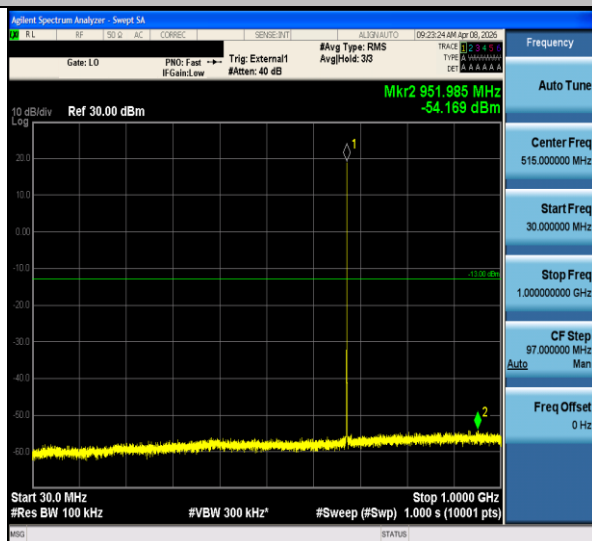
Band71-0.18-BPSK-133297-0.009-0.15-PASS



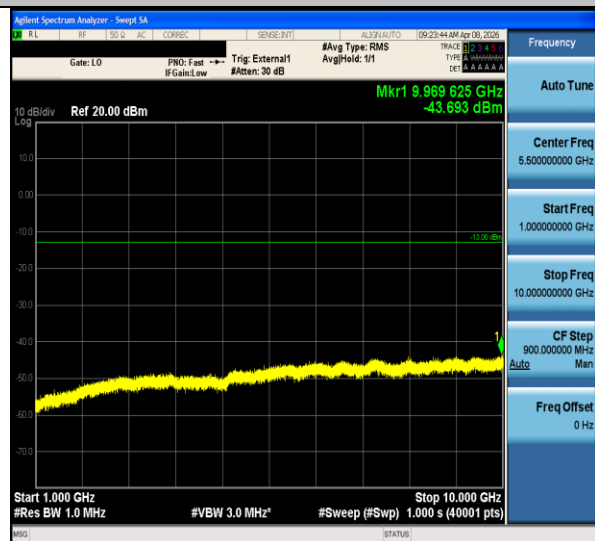
Band71-0.18-BPSK-133297-0.15-30-PASS



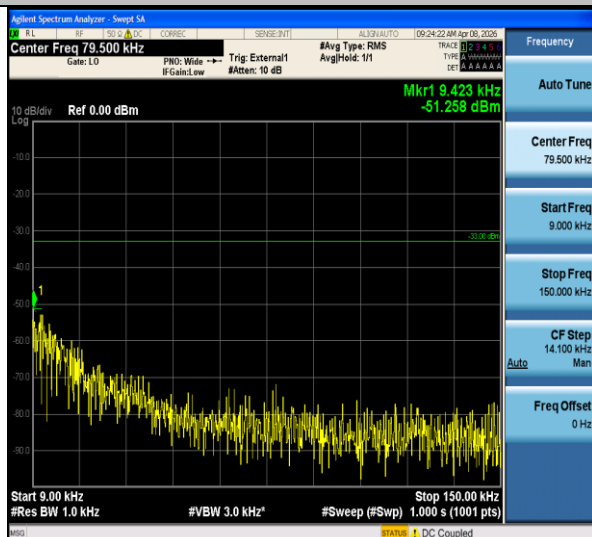
Band71-0.18-BPSK-133297-30-1000-PASS



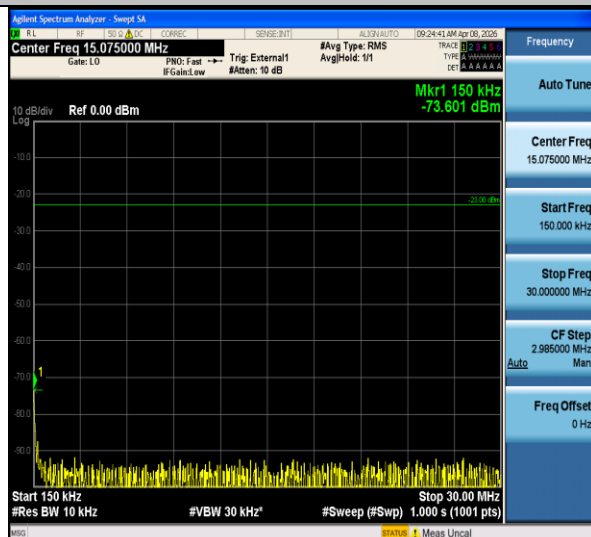
Band71-0.18-BPSK-133297-1000-10000-PASS



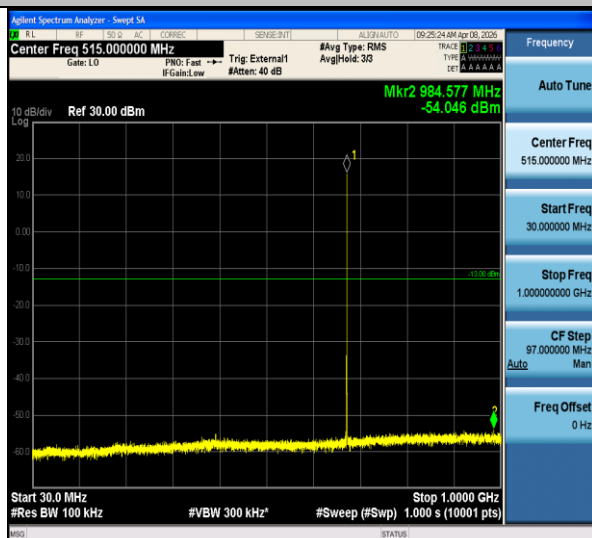
Band71-0.18-BPSK-133297-0.009-0.15-PASS



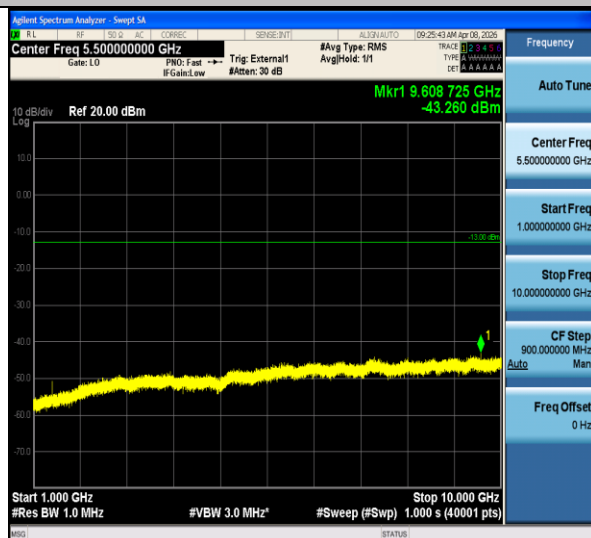
Band71-0.18-BPSK-133297-0.15-30-PASS



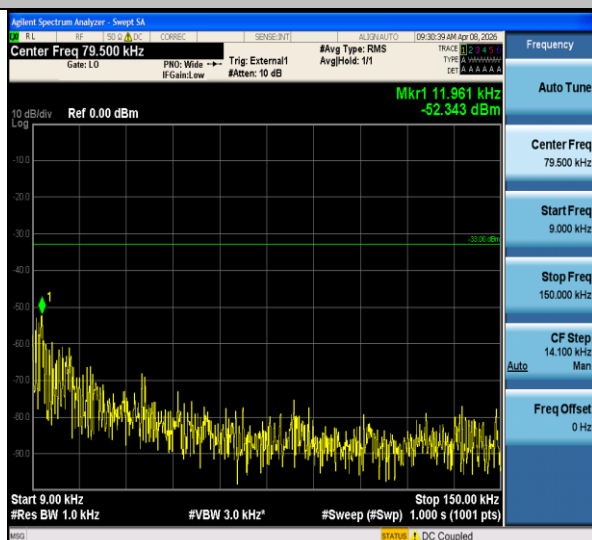
Band71-0.18-BPSK-133297-30-1000-PASS



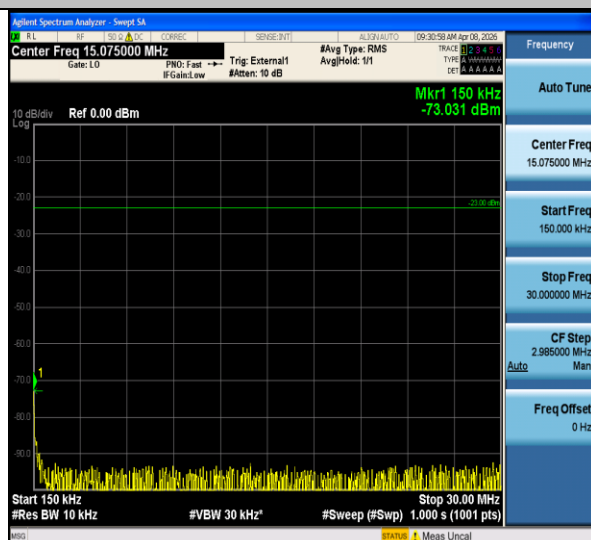
Band71-0.18-BPSK-133297-1000-10000-PASS



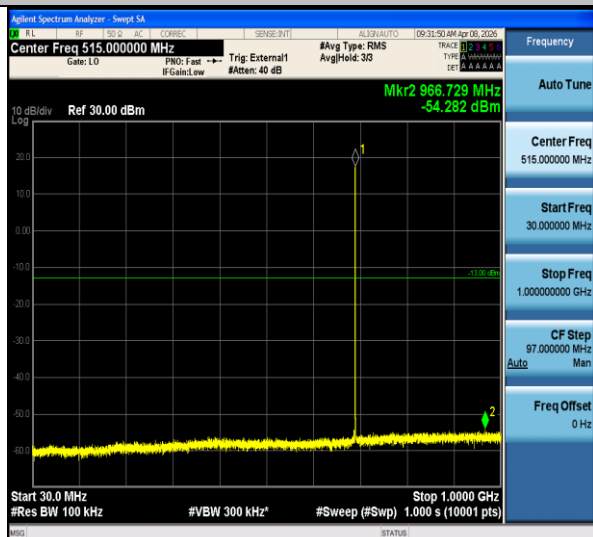
Band71-0.18-BPSK-133470-0.009-0.15-PASS



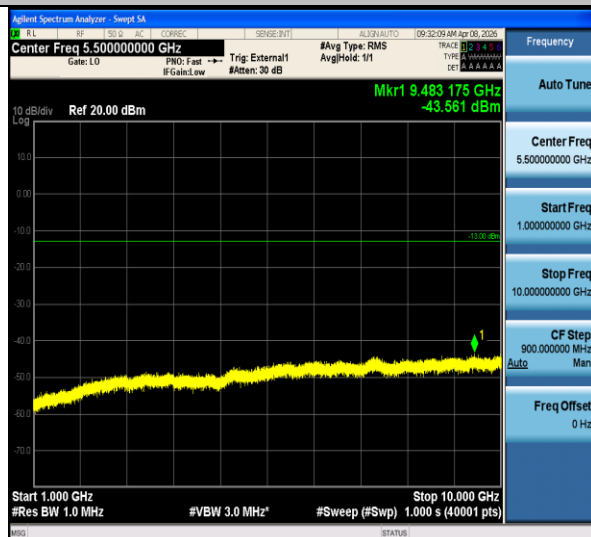
Band71-0.18-BPSK-133470-0.15-30-PASS



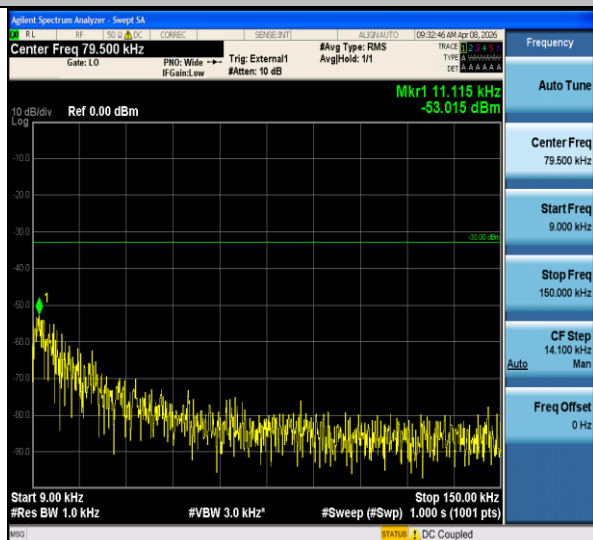
Band71-0.18-BPSK-133470-30-1000-PASS



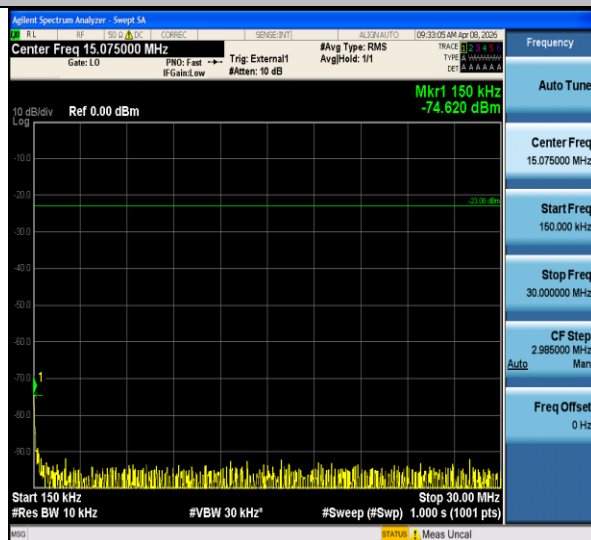
Band71-0.18-BPSK-133470-1000-10000-PASS



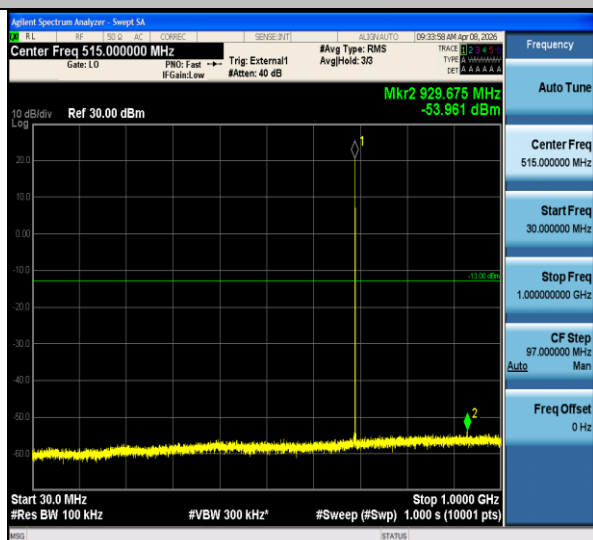
Band71-0.18-BPSK-133470-0.009-0.15-PASS



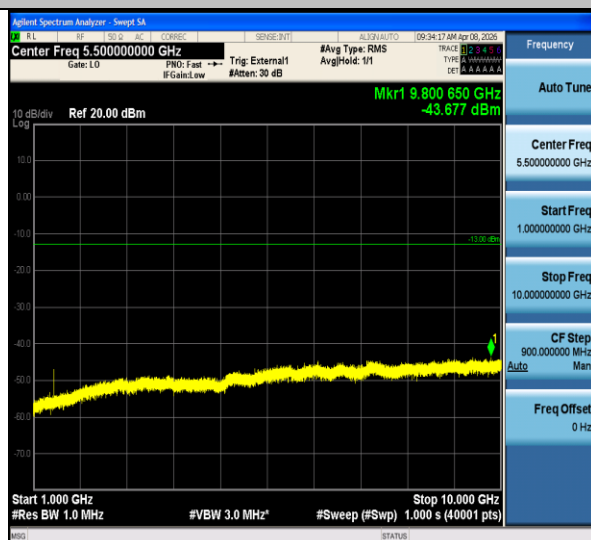
Band71-0.18-BPSK-133470-0.15-30-PASS



Band71-0.18-BPSK-133470-30-1000-PASS



Band71-0.18-BPSK-133470-1000-10000-PASS



## Frequency Stability for NB

### Test Result

| Voltage |             |       |           |            |         |       |               |                  |                |                 |         |
|---------|-------------|-------|-----------|------------|---------|-------|---------------|------------------|----------------|-----------------|---------|
| Band    | OpMode      | SCS   | Bandwidth | Modulation | Channel | Tones | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Verdict |
| Band71  | Stand-Alone | 15kHz | 0.18      | BPSK       | 133297  | 12@0  | VN            | NT               | 1.80           | 0.002645        | PASS    |
| Band71  | Stand-Alone | 15kHz | 0.18      | BPSK       | 133297  | 12@0  | VL            | NT               | 0.70           | 0.001029        | PASS    |
| Band71  | Stand-Alone | 15kHz | 0.18      | BPSK       | 133297  | 12@0  | VH            | NT               | 0.70           | 0.001029        | PASS    |

| Temperature |             |       |           |            |         |       |               |                  |                |                 |         |
|-------------|-------------|-------|-----------|------------|---------|-------|---------------|------------------|----------------|-----------------|---------|
| Band        | OpMode      | SCS   | Bandwidth | Modulation | Channel | Tones | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Verdict |
| Band71      | Stand-Alone | 15kHz | 0.18      | BPSK       | 133297  | 12@0  | NV            | -30              | 1.70           | 0.002498        | PASS    |
| Band71      | Stand-Alone | 15kHz | 0.18      | BPSK       | 133297  | 12@0  | NV            | -20              | 2.30           | 0.003380        | PASS    |
| Band71      | Stand-Alone | 15kHz | 0.18      | BPSK       | 133297  | 12@0  | NV            | -10              | 1.80           | 0.002645        | PASS    |
| Band71      | Stand-Alone | 15kHz | 0.18      | BPSK       | 133297  | 12@0  | NV            | 0                | 1.80           | 0.002645        | PASS    |
| Band71      | Stand-Alone | 15kHz | 0.18      | BPSK       | 133297  | 12@0  | NV            | 10               | 0.00           | 0.000000        | PASS    |
| Band71      | Stand-Alone | 15kHz | 0.18      | BPSK       | 133297  | 12@0  | NV            | 20               | 0.50           | 0.000735        | PASS    |
| Band71      | Stand-Alone | 15kHz | 0.18      | BPSK       | 133297  | 12@0  | NV            | 30               | 0.80           | 0.001176        | PASS    |
| Band71      | Stand-Alone | 15kHz | 0.18      | BPSK       | 133297  | 12@0  | NV            | 40               | 1.10           | 0.001616        | PASS    |
| Band71      | Stand-Alone | 15kHz | 0.18      | BPSK       | 133297  | 12@0  | NV            | 50               | 0.50           | 0.000735        | PASS    |

~The End~