

9.5 MAXIMUM PEAK CONDUCTED OUTPUT POWER

9.5.1 Applicable Standard

According to FCC Part 15.247(b)(1), RSS-247 Clause 5.4(b), 558074 D01 15.247 Meas Guidance V05r02

9.5.2 Conformance Limit

The maxFor frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

9.5.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 1

9.5.4 Test Procedure

■ According to FCC Part15.247(b)(1) and RSS-247 Clause 5.4(b)

As an alternative to a peak power measurement, compliance with the limit can be based on a measurement of the maximum conducted output power.

Use the following spectrum analyzer settings:

Set Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel(about 10MHz)

Set RBW > the 20 dB bandwidth of the emission being measured(about 3MHz)

Set VBW \geq RBW

Set Sweep = auto

Set Detector function = peak

Set Trace = max hold

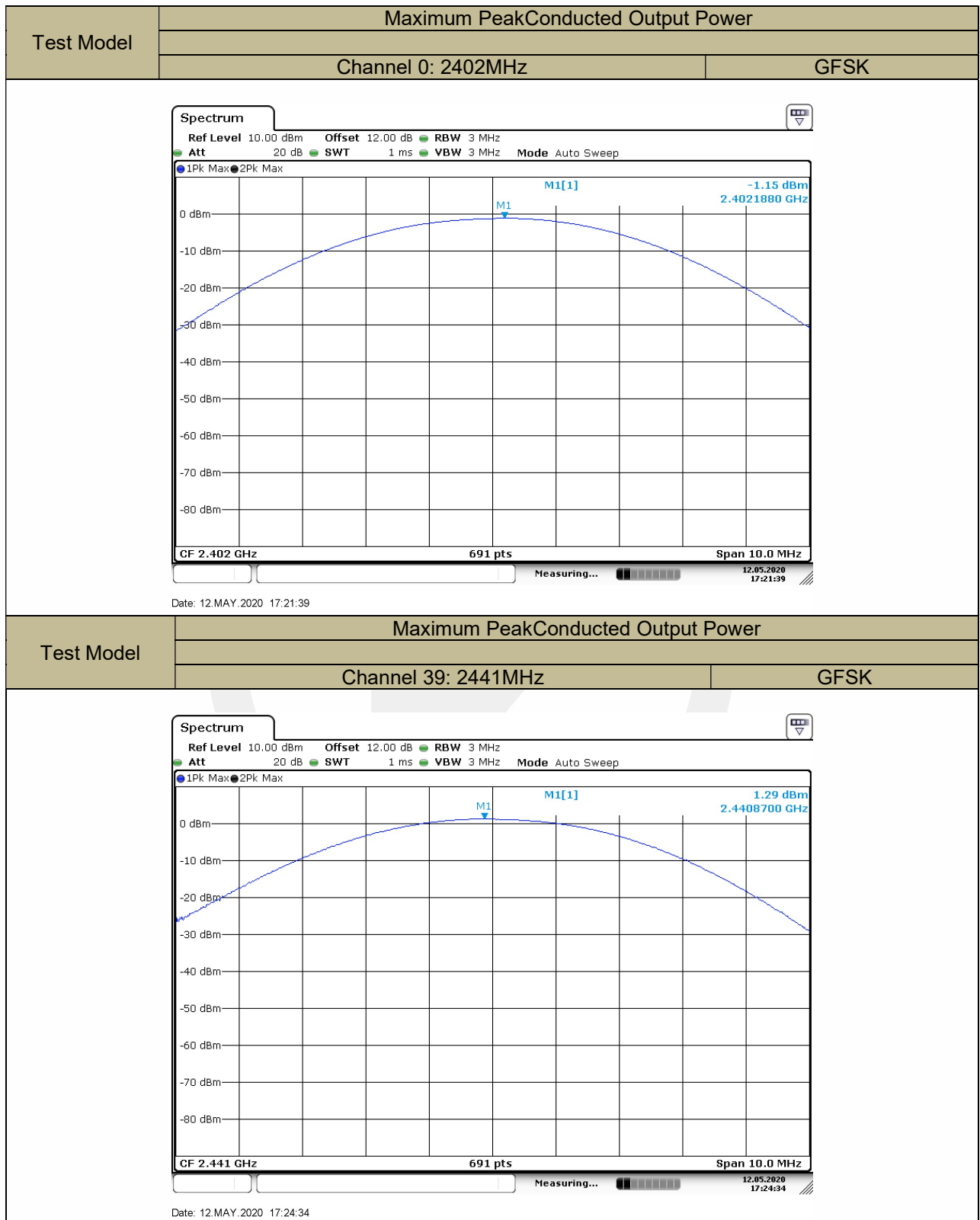
Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emissionto determine the peak amplitude level.

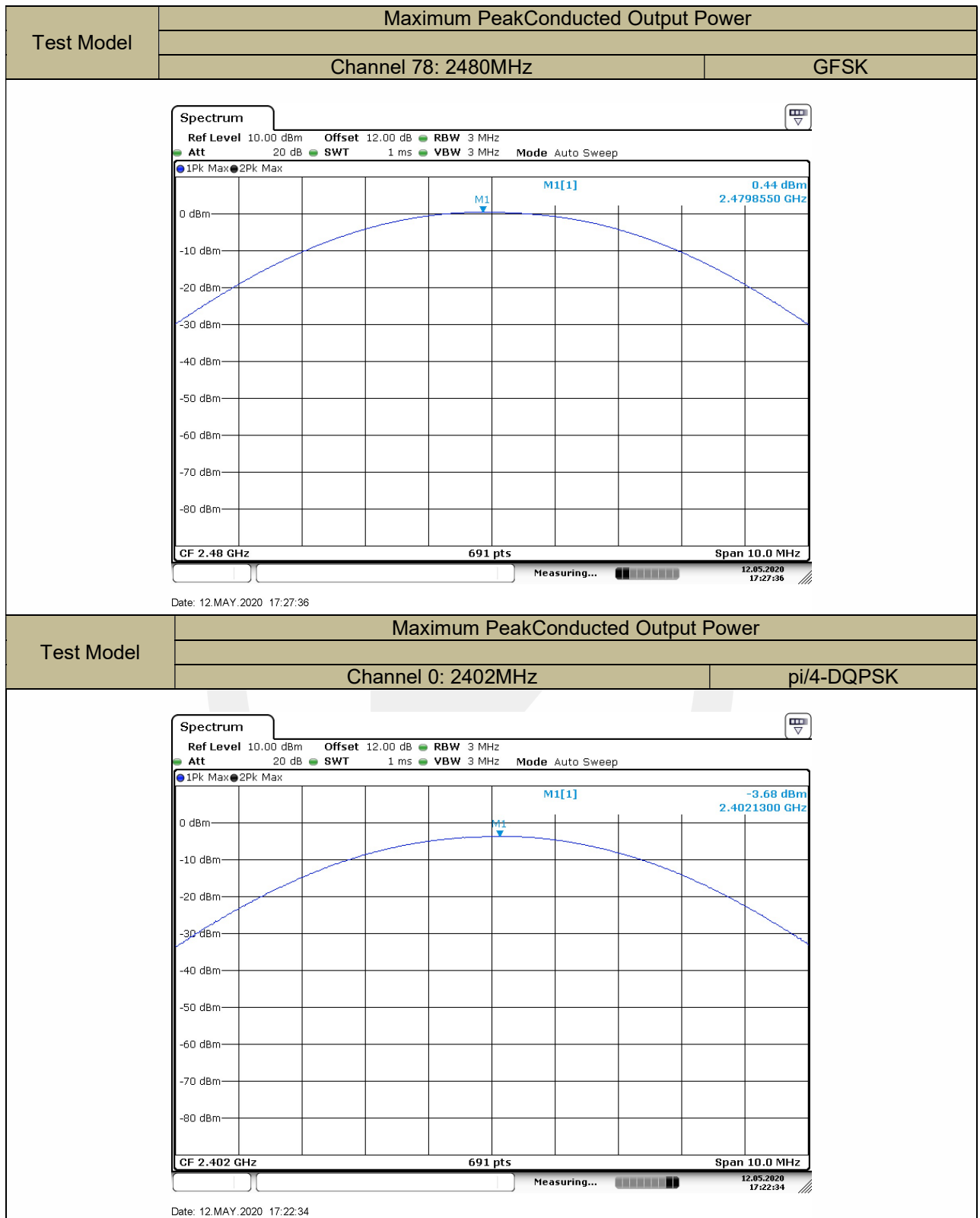
Test Results

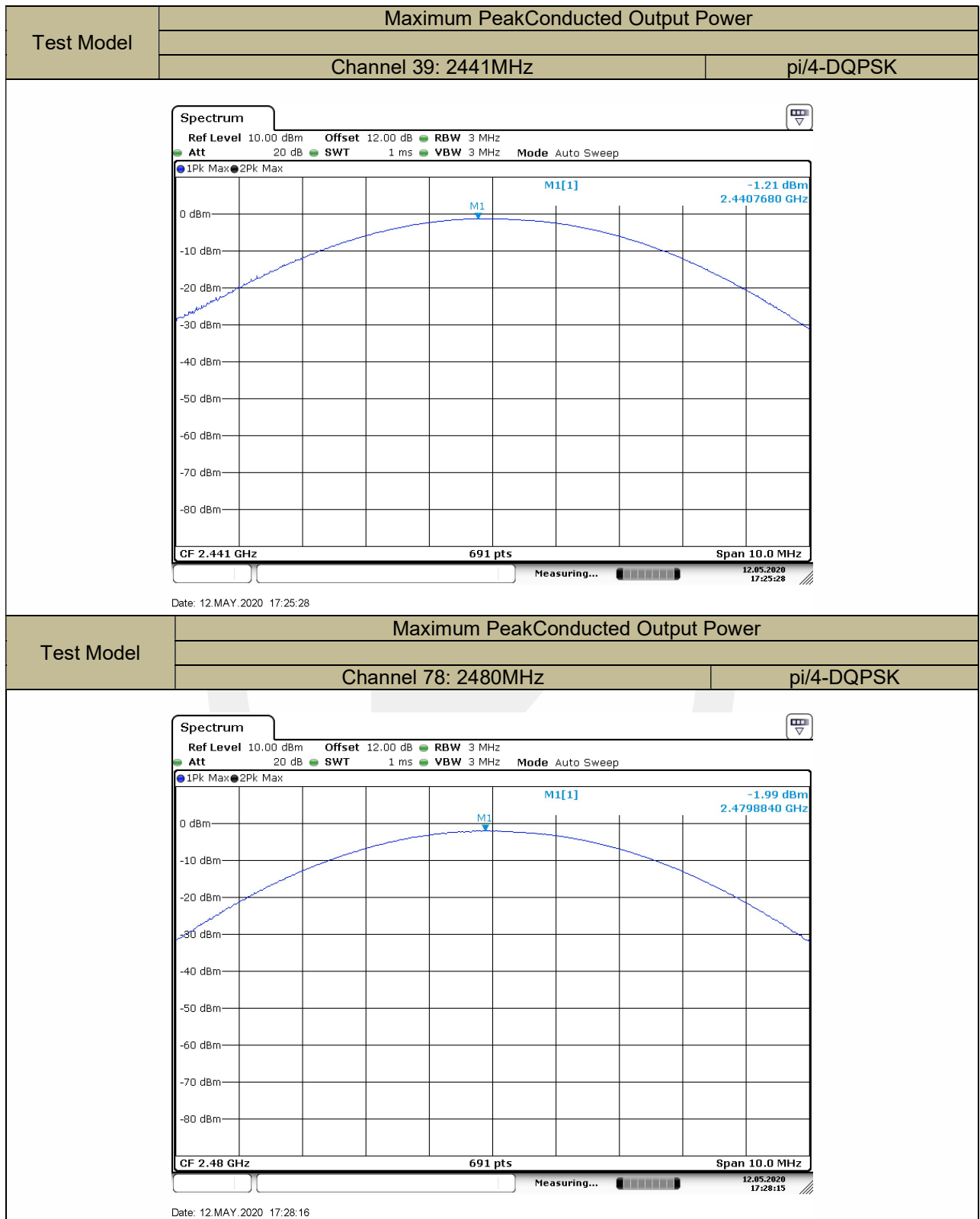
Temperature: 25°C
Humidity: 45 %

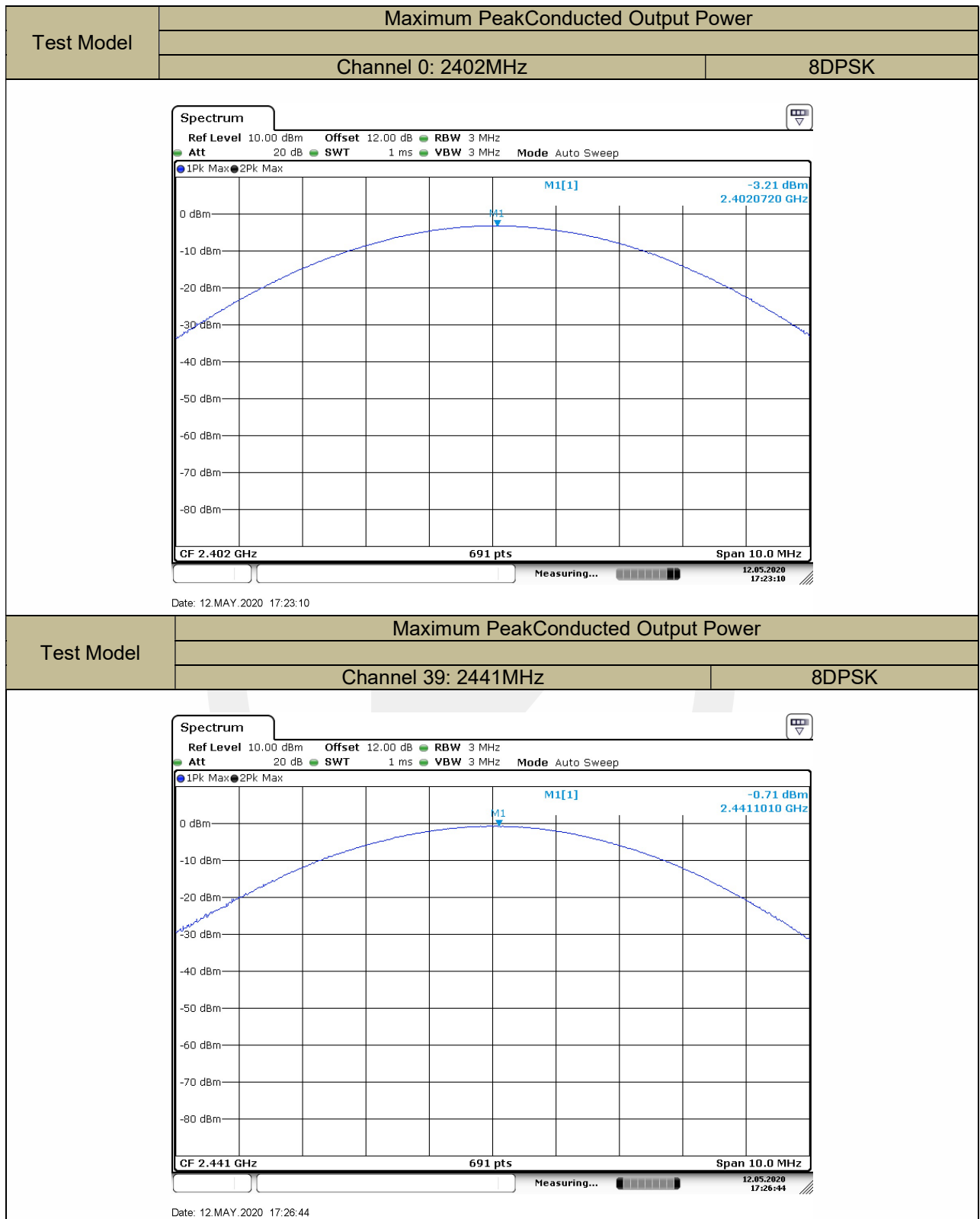
Test Date: May 12, 2020
Test By: XW

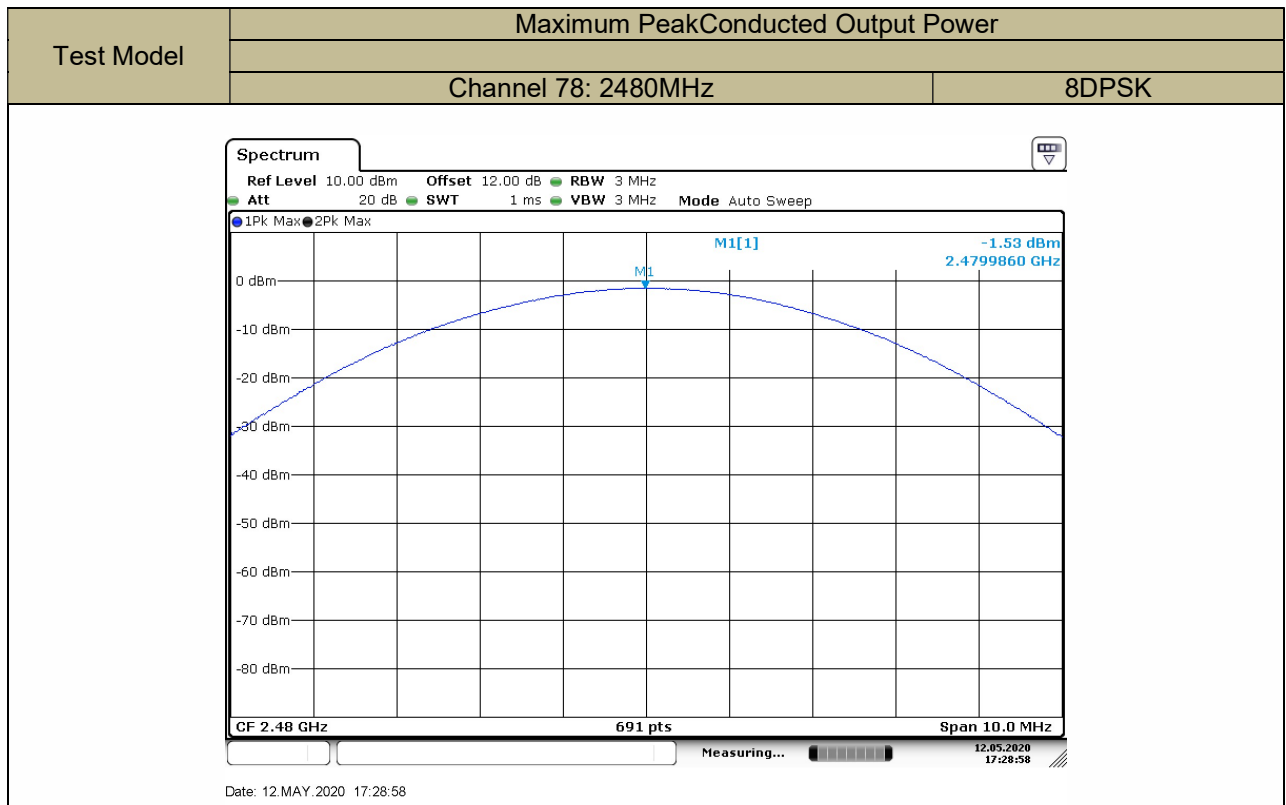
| Operation Mode | Channel Number | Channel Frequency (MHz) | MeasurementLevel (dBm) | Limit (dBm) | Verdict |
|----------------|----------------|-------------------------|------------------------|-------------|---------|
| GFSK | 0 | 2402 | -1.15 | 21 | PASS |
| | 39 | 2441 | 1.29 | 21 | PASS |
| | 78 | 2480 | 0.44 | 21 | PASS |
| pi/4-DQPSK | 0 | 2402 | -3.68 | 21 | PASS |
| | 39 | 2441 | -1.21 | 21 | PASS |
| | 78 | 2480 | -1.99 | 21 | PASS |
| 8DPSK | 0 | 2402 | -3.21 | 21 | PASS |
| | 39 | 2441 | -0.71 | 21 | PASS |
| | 78 | 2480 | -1.53 | 21 | PASS |
| Note:N/A | | | | | |











9.6 CONDUCTED SUPRIIOUS EMISSION

9.6.1 Applicable Standard

According to FCC Part 15.247(d), RSS-247 Clause 5.5, 558074 D01 15.247 Meas Guidance V05r02

9.6.2 Conformance Limit

According to FCC Part 15.247(d) and RSS-247 Clause 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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, provided the transmitter demonstrates compliance with the peak conducted power limits.

9.6.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 1

9.6.4 Test Procedure

The transmitter output (antenna port) was connected to the spectrum analyzer

■ Reference level measurement

Establish a reference level by using the following procedure:

Set instrument center frequency to DSS channel center frequency.

Set Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel.

Set the RBW = 100 kHz. Set the VBW $\geq 3 \times$ RBW.

Set Detector = peak. Set Sweep time = auto couple.

Set Trace mode = max hold. Allow trace to fully stabilize.

Use the peak marker function to determine the maximum Maximumconducetedlevel.

Note that the channel found to contain the maximum conduceted level can be used to establish the reference level.

■ Band-edge Compliance of RF Conducted Emissions

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the emission operating on the channel closest to the band-edge, as well as any modulation products which fall outside of the authorized band of operation

Set RBW $\geq 1\%$ of the span=100kHzSet VBW \geq RBW

Set Sweep = autoSetDetector function = peakSetTrace = max hold

Allow the trace to stabilize. Set the marker on the emission at the bandedge, or on the highest modulation product outside of the band, if this level is greater than that at the bandedge. Enable the marker-delta function, then use the marker-to-peak function to move the marker to the peak of the in-band emission. The marker-delta value now displayed must comply with the limit specified in this Section.

Now, using the same instrument settings, enable the hopping function of the EUT. Allow the trace to stabilize. Follow the same procedure listed above to determine if any spurious emissions caused by the hopping function also comply with the specified limit.

■ ConducetedSpurious RF Conducted Emission

Use the following spectrum analyzer settings:

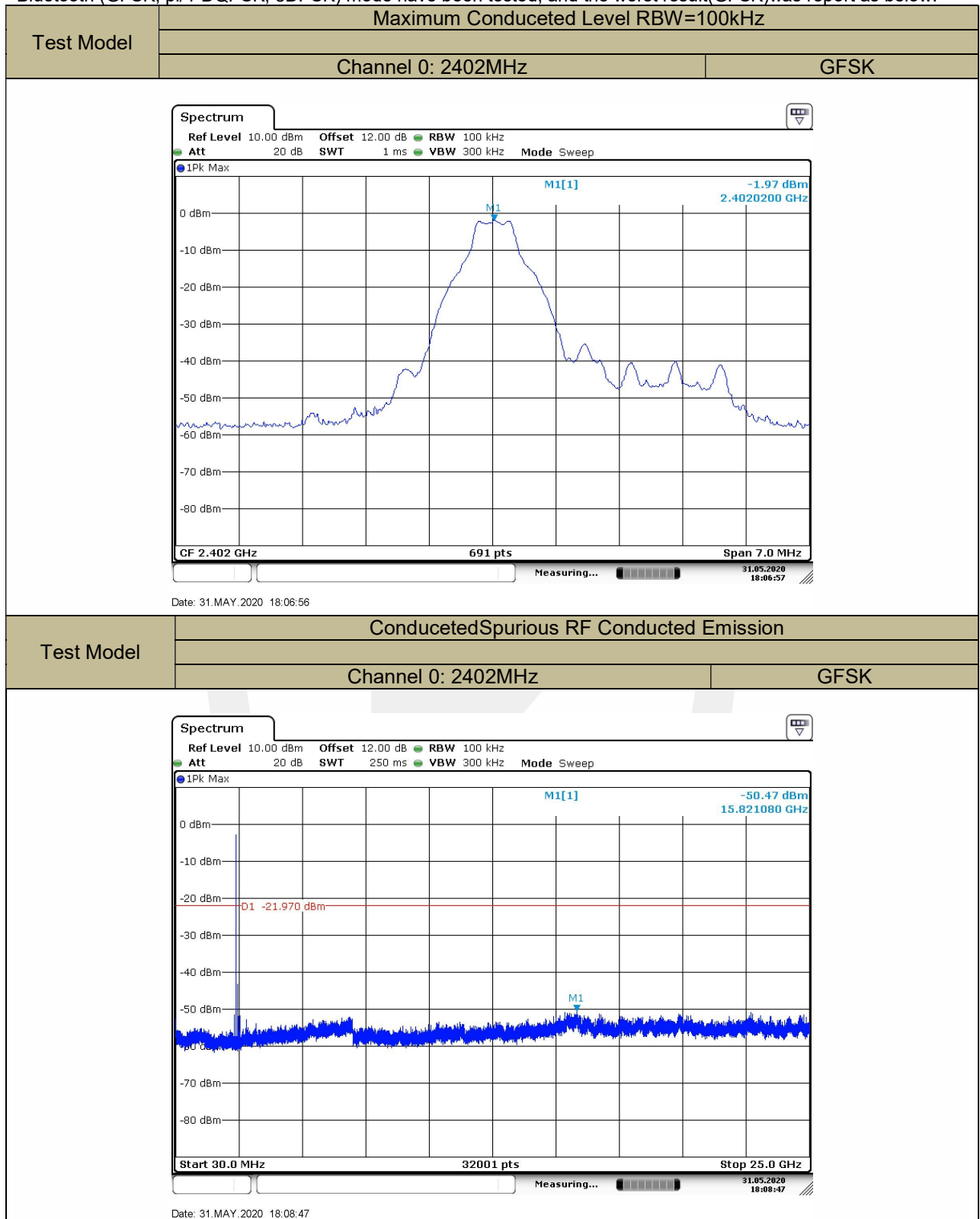
Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic.(30MHz to 25GHz).Set RBW = 100 kHzSetVBW \geq RBW

Set Sweep = autoSetDetector function = peakSetTrace = max hold

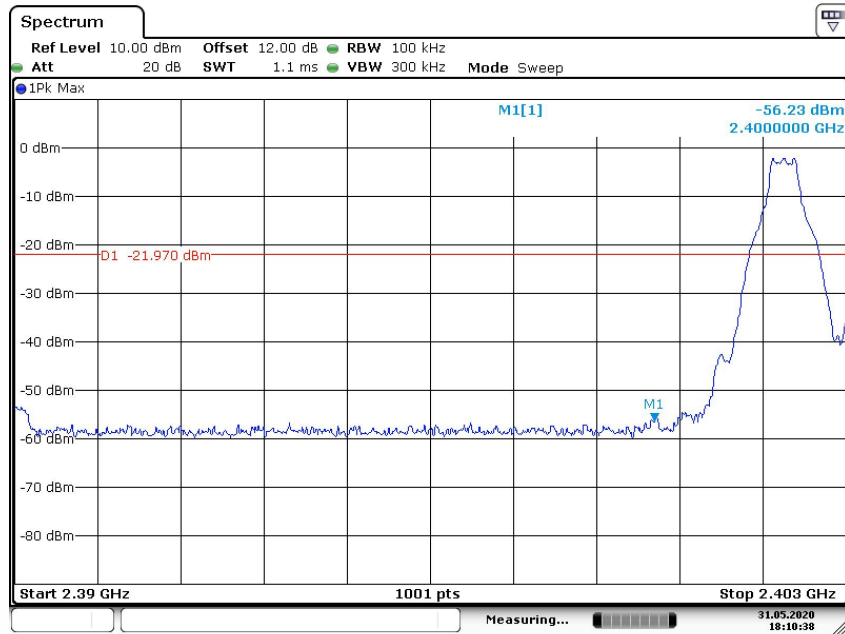
Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded. The level displayed must comply with the limit specified in this Section.

9.6.5 Test Results

Bluetooth (GFSK, pi/4-DQPSK, 8DPSK) mode have been tested, and the worst result(GFSK)was report as below:

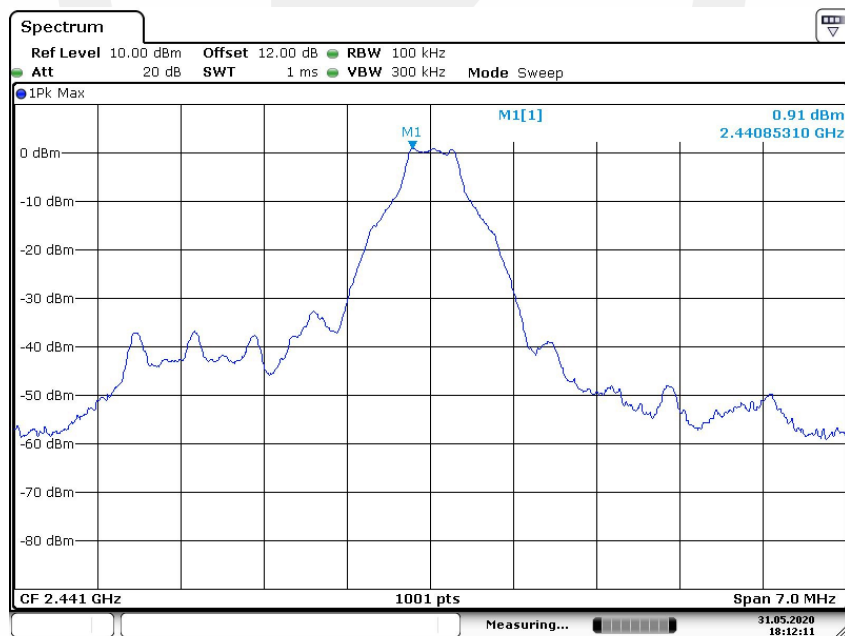


| | | |
|------------|-------------------------------|------|
| Test Model | Band-edge Conducted Emissions | |
| | | |
| | Channel 0: 2402MHz | GFSK |



Date: 31.MAY.2020 18:10:38

| | | |
|------------|-----------------------------------|------|
| Test Model | Maximum Conduced Level RBW=100kHz | |
| | | |
| | Channel 39: 2441MHz | GFSK |



Date: 31.MAY.2020 18:12:11

