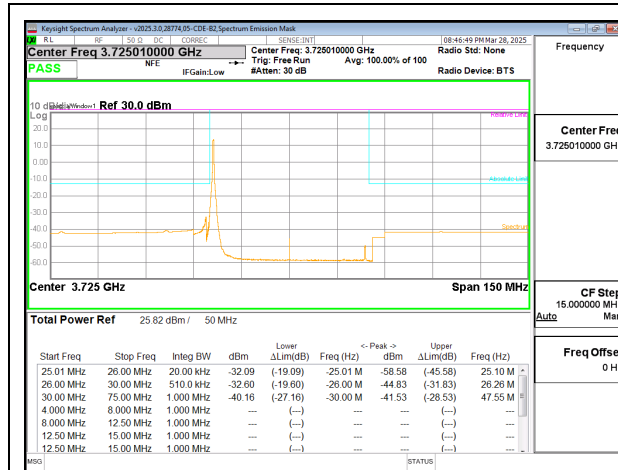
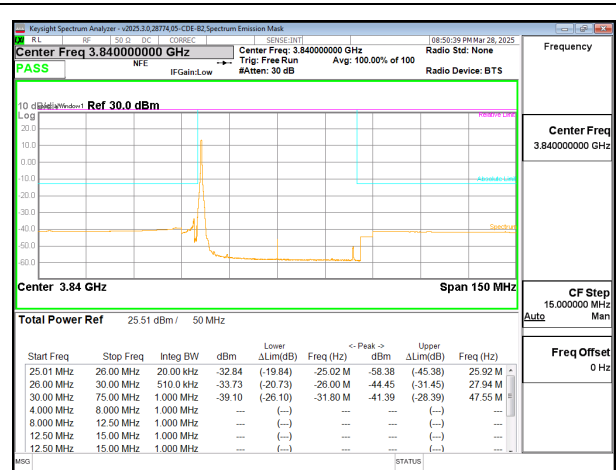




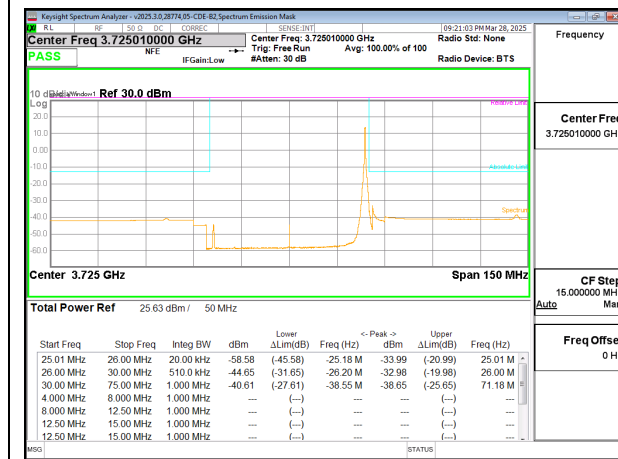




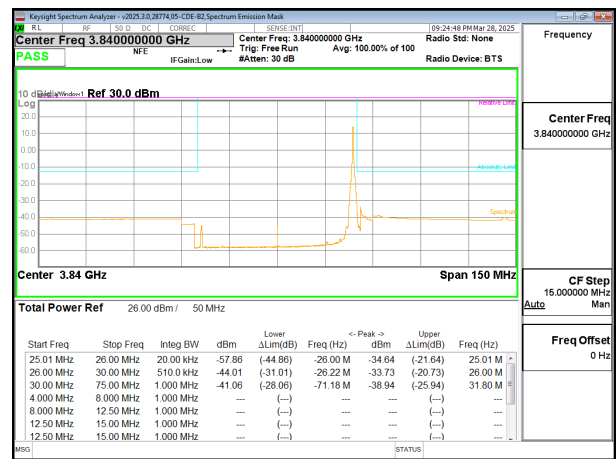
5G NR n77 50MHz BPSK Low Channel RB1-0



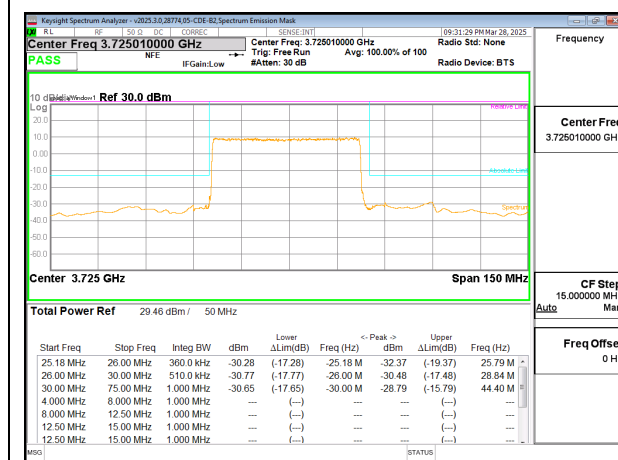
5G NR n77 50MHz BPSK Middle Channel RB1-0



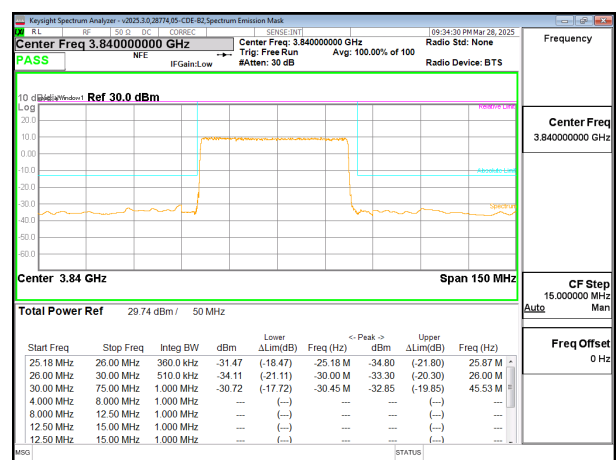
5G NR n77 50MHz BPSK Low Channel RB1-132



5G NR n77 50MHz BPSK Middle Channel RB1-132



5G NR n77 50MHz BPSK Low Channel RB128-0



5G NR n77 50MHz BPSK Middle Channel RB128-0

















9.3. OUT OF BAND EMISSIONS

LIMITS

FCC: §27.53

Emission limits

(n) 3.45 GHz Service. The following emission limits apply to stations transmitting in the 3450-3550 MHz band:

(2) For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

FCC: §27.53

Emission limits

(l) 3.7 GHz Service. The following emission limits apply to stations transmitting in the 3700-3980 MHz band:

(2) For mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

TEST PROCEDURE

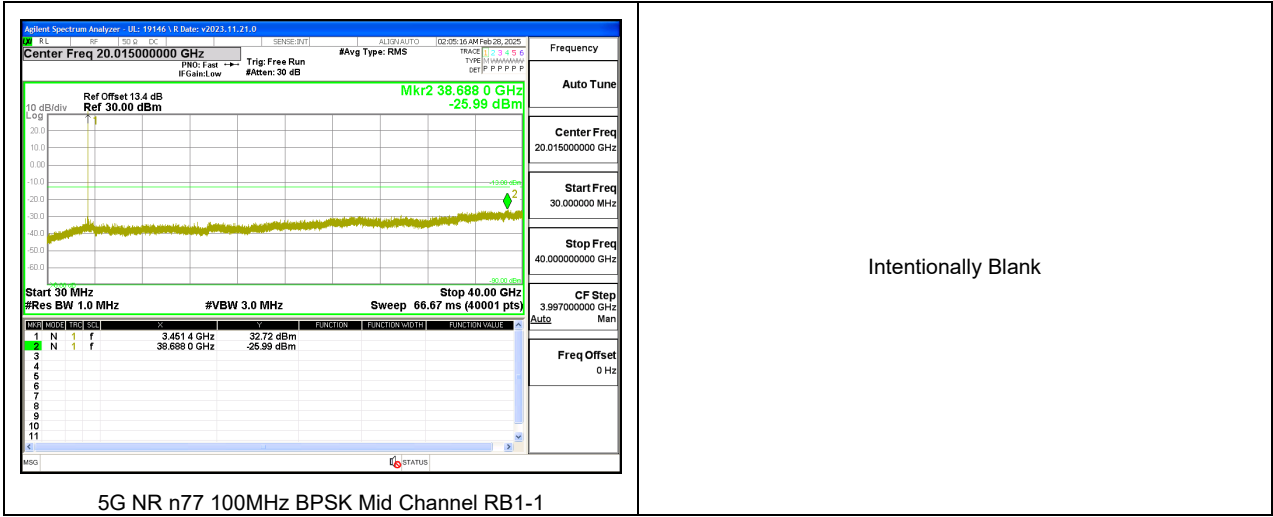
The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

For each out of band emissions measurement:

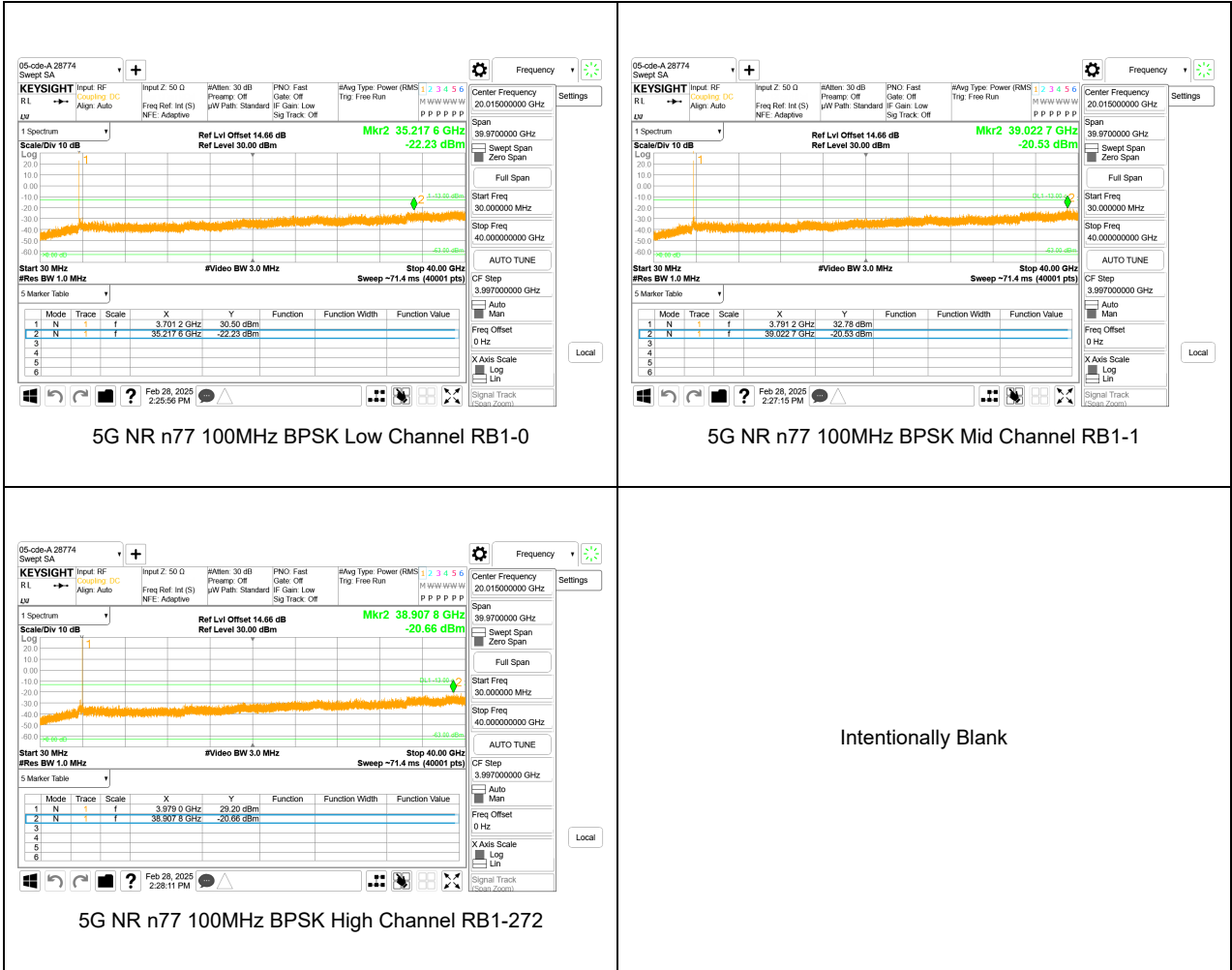
- Set display line at -13 dBm, -25dBm and -40dBm according to the band Limit
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.
(NOTE: Worst case set RBW/VBW to 1MHz/3MHz)

RESULTS

9.3.1. 5G NR n77 (FCC Part 27 3450-3550MHz)



9.3.2. 5G NR n77 (FCC Part 27 3700-3980MHz)



9.4. FREQUENCY STABILITY

LIMITS

FCC: §27.54

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

TEST PROCEDURE

Use base station simulator with Frequency Error measurement capability.

- Temp. = -30°C to +50°C
- Voltage = (85% - 115%)

Low voltage, 3.23VDC, Normal, 3.80VDC and High voltage, 4.37VDC.
End Voltage, 2.85VDC.

Frequency Stability vs Temperature:

The EUT is placed inside a temperature chamber. The temperature is set to 20°C and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until +50°C is reached.

Frequency Stability vs Voltage:

The peak frequency error is recorded (worst-case).

RESULTS

See the following pages.

9.4.1. 5G NR n77 (BPSK 100MHz BANDWIDTH, FCC Part 27 3450-3550MHz)

Test Engineer ID:	32546	Test Date:	2025-03-25
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Band	77	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		3450	3550		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)			
Temperature	Voltage					
Normal (20°C)	Normal	3451.0888	3547.7481			
Extreme (50°C)		3451.0888	3547.7481	-17.6	-0.005	Yes
Extreme (40°C)		3451.0888	3547.7481	-14.8	-0.004	Yes
Extreme (30°C)		3451.0888	3547.7481	-15.8	-0.005	Yes
Extreme (10°C)		3451.0888	3547.7481	-15.7	-0.004	Yes
Extreme (0°C)		3451.0888	3547.7481	-14.2	-0.004	Yes
Extreme (-10°C)		3451.0888	3547.7481	-13.9	-0.004	Yes
Extreme (-20°C)		3451.0888	3547.7481	-15.5	-0.004	Yes
Extreme (-30°C)		3451.0888	3547.7481	-13.7	-0.004	Yes
20°C	15%	3451.0888	3547.7481	-14.7	-0.004	Yes
	-15%	3451.0888	3547.7481	-15.1	-0.004	Yes
	End Point Voltage	3451.0888	3547.7481	-14.0	-0.004	Yes

9.4.2. 5G NR n77 (BPSK 100MHz BANDWIDTH, FCC Part 27 3700-3980MHz)

Test Engineer ID:	32546	Test Date:	2025-03-25
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Band	77	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		3700	3980		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)			
Temperature	Voltage					
Normal (20°C)	Normal	3701.0897	3977.7789			
Extreme (50°C)		3701.0897	3977.7789	11.6	0.003	Yes
Extreme (40°C)		3701.0897	3977.7788	-13.9	-0.004	Yes
Extreme (30°C)		3701.0897	3977.7788	-13.2	-0.003	Yes
Extreme (10°C)		3701.0897	3977.7788	-14.3	-0.004	Yes
Extreme (0°C)		3701.0897	3977.7788	-15.0	-0.004	Yes
Extreme (-10°C)		3701.0897	3977.7788	-18.7	-0.005	Yes
Extreme (-20°C)		3701.0897	3977.7788	-19.3	-0.005	Yes
Extreme (-30°C)		3701.0897	3977.7788	-17.5	-0.005	Yes
20°C	15%	3701.0897	3977.7788	-18.2	-0.005	Yes
	-15%	3701.0897	3977.7788	-15.5	-0.004	Yes
	End Point Voltage	3701.0897	3977.7789	16.2	0.004	Yes