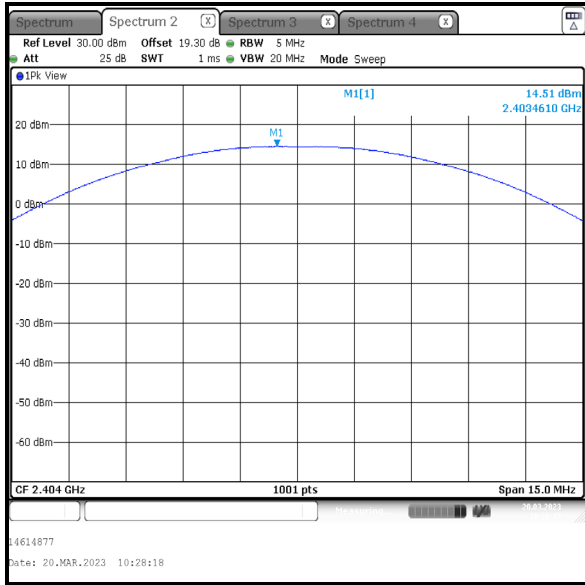
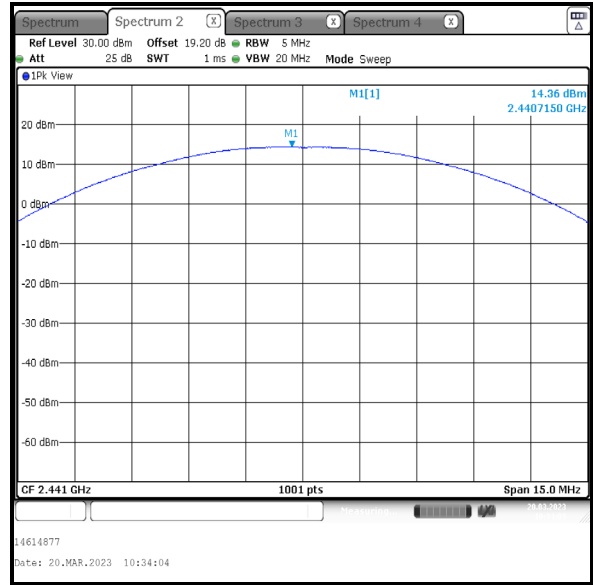


Transmitter Maximum Peak Output Power (continued)

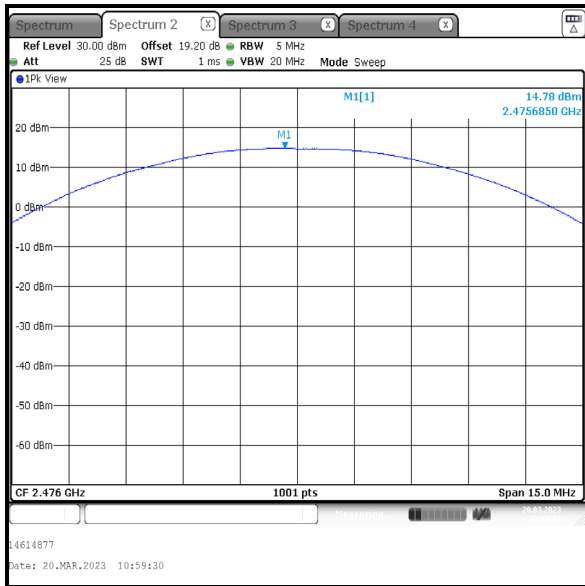
Results: 8DH5 / Beamforming / Core 1



Bottom Channel



Middle Channel



Top Channel

4.4 Transmitter Power Spectral Density

Test Summary:

Test Engineer:	Raghavendra Katti	Test Dates:	17 March 2023 & 20 March 2023
Test Sample Serial Number:	NNYGG3YVCT		

FCC Reference:	Part 15.247(e)
ISED Canada Reference:	RSS-247 5.2(b)
Test Method Used:	FCC KDB 558074 Section 8.4 referencing ANSI C63.10 Section 11.10.2

Environmental Conditions:

Temperature (°C):	23
Relative Humidity (%):	40 to 44

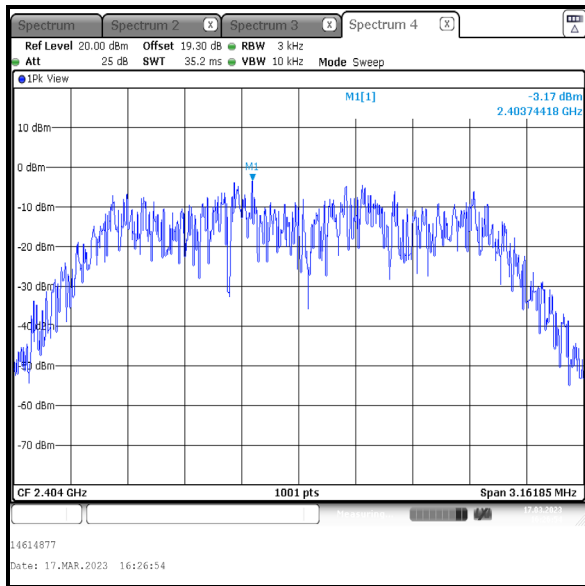
Note(s):

1. Transmitter Power Spectral Density tests were performed using a signal analyser in accordance with ANSI C63.10 Section 11.10.2.
2. The signal analyser resolution bandwidth was set to 3 kHz and video bandwidth 10 kHz. A Peak detector was used, sweep time was set to auto and the trace mode was Max Hold. The span was set to 1.5 times the measured DTS bandwidth. A marker was placed at the peak of the signal and the results recorded in the table below.
3. The signal analyser was connected to the RF port on the EUT using suitable attenuation and RF cable. An RF level offset was entered on the signal analyser to compensate for the loss of the attenuator and RF cable.

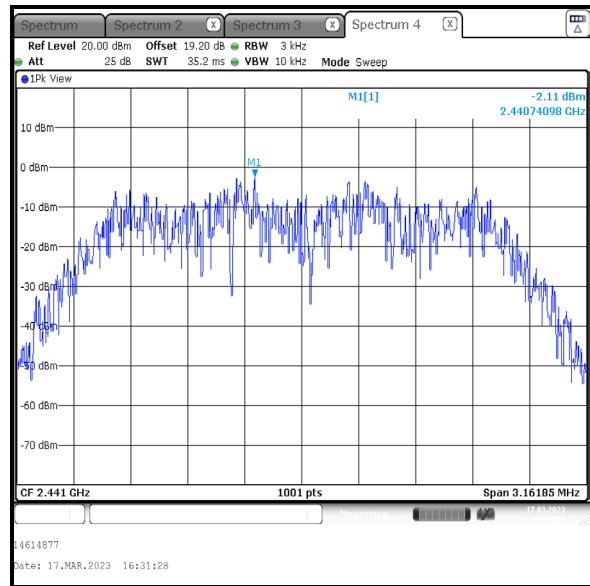
Transmitter Power Spectral Density (continued)

Results: 4DH5 / SISO / Core 1

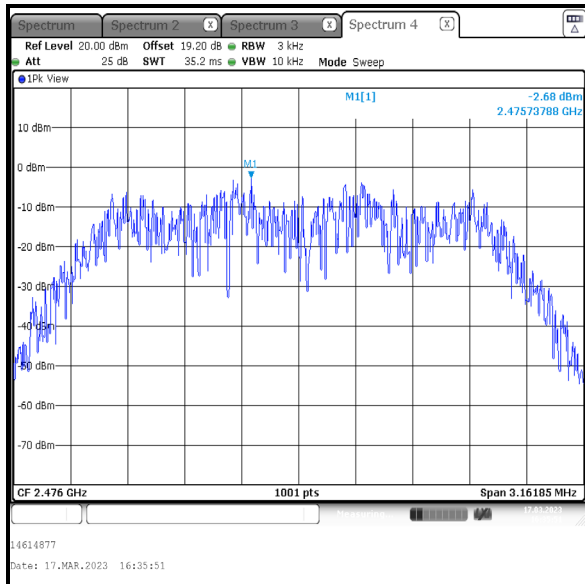
Channel	PSD (dBm / 3 kHz)	Limit (dBm / 3 kHz)	Margin (dB)	Result
Bottom	-3.2	8.0	11.2	Complied
Middle	-2.1	8.0	10.1	Complied
Top	-2.7	8.0	10.7	Complied



Bottom Channel



Middle Channel

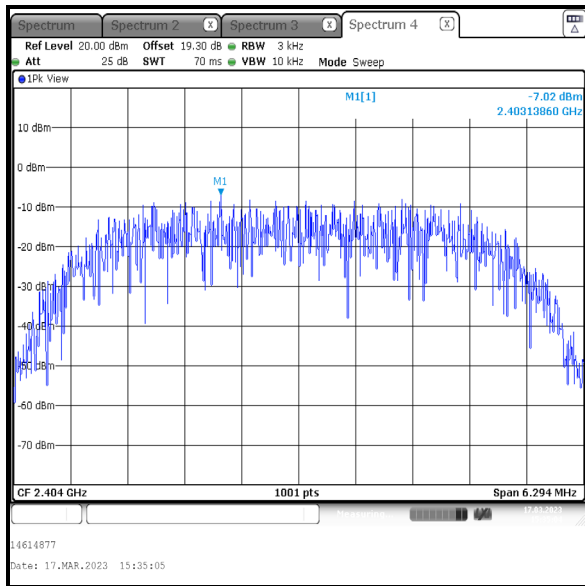


Top Channel

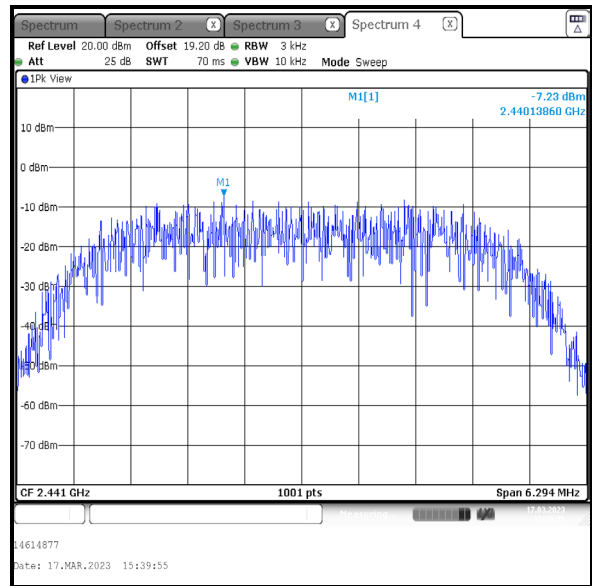
Transmitter Power Spectral Density (continued)

Results: 8DH5 / SISO / Core 1

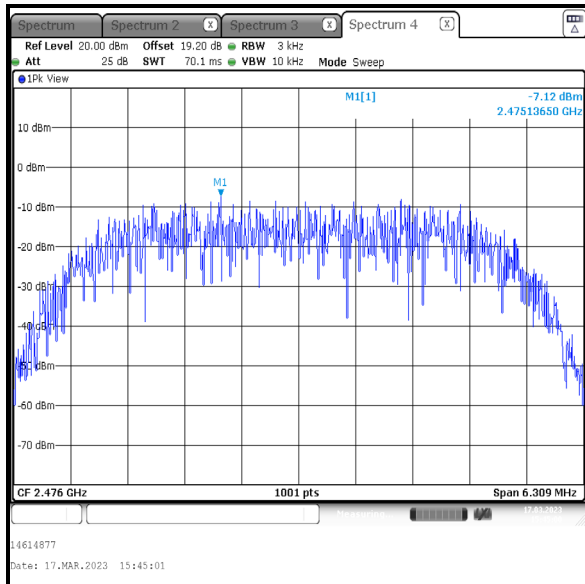
Channel	PSD (dBm / 3 kHz)	Limit (dBm / 3 kHz)	Margin (dB)	Result
Bottom	-7.0	8.0	15.0	Complied
Middle	-7.2	8.0	15.2	Complied
Top	-7.1	8.0	15.1	Complied



Bottom Channel



Middle Channel



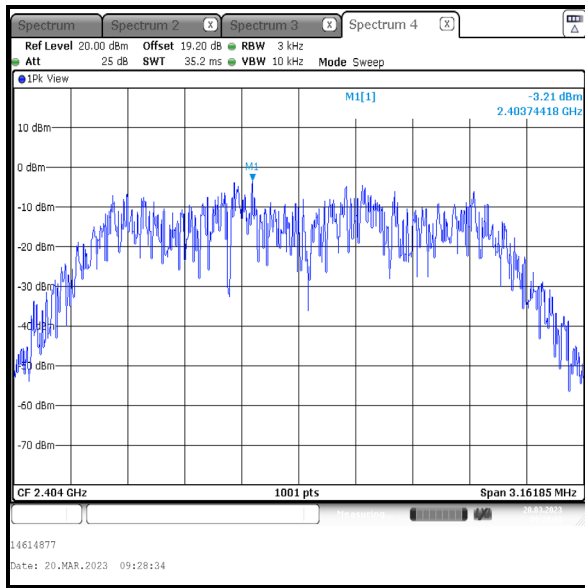
Top Channel

Transmitter Power Spectral Density (continued)

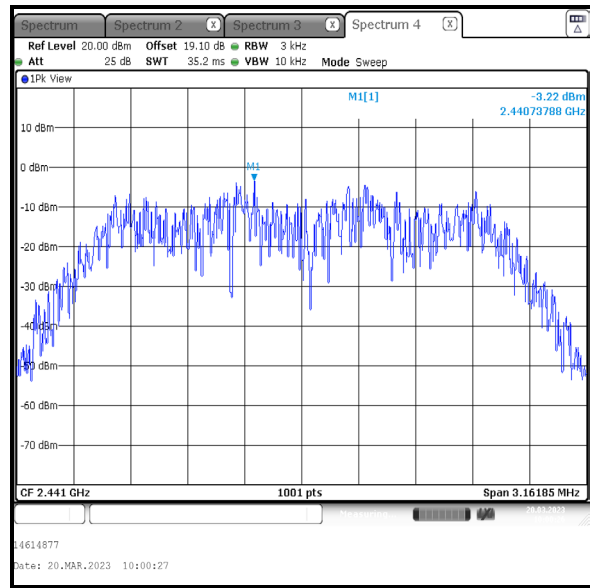
Results: 4DH5 / Beamforming

Channel	PSD Core 0 (dBm / 3 kHz)	PSD Core 1 (dBm / 3 kHz)	Combined PSD (dBm / 3 kHz)	Limit (dBm / 3 kHz)	Margin (dB)	Result
Bottom	-3.2	-4.0	-0.6	8.0	8.6	Complied
Middle	-3.2	-2.8	0.0	8.0	8.0	Complied
Top	-2.8	-2.8	0.2	8.0	7.8	Complied

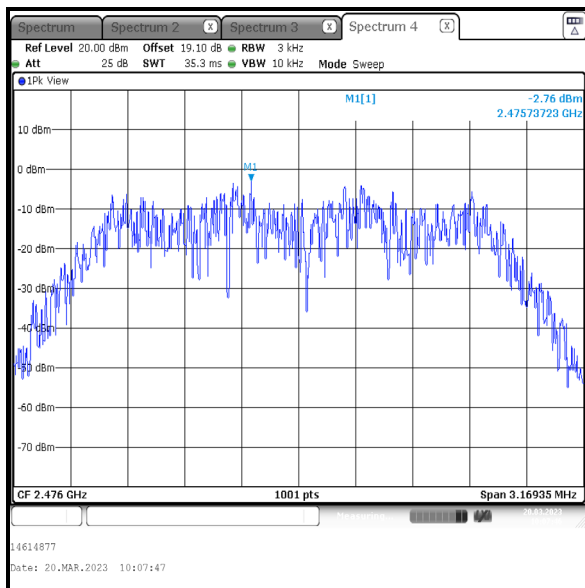
Results: Core 0



Bottom Channel



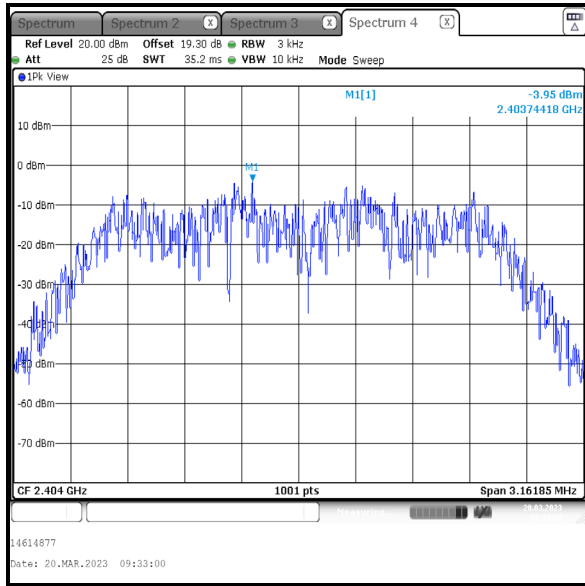
Middle Channel



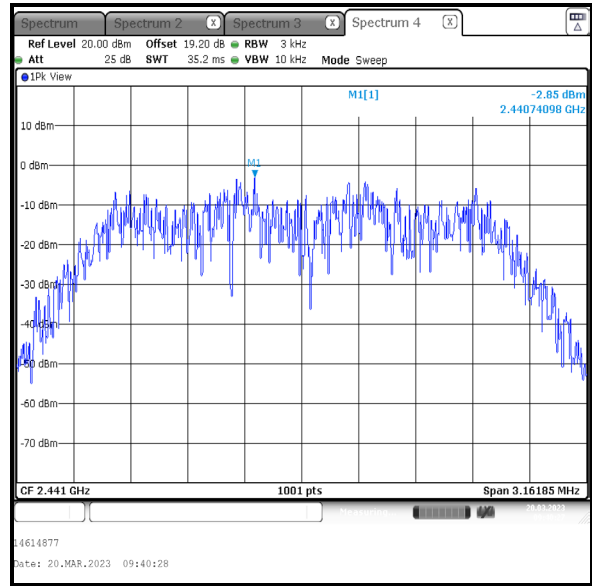
Top Channel

Transmitter Power Spectral Density (continued)

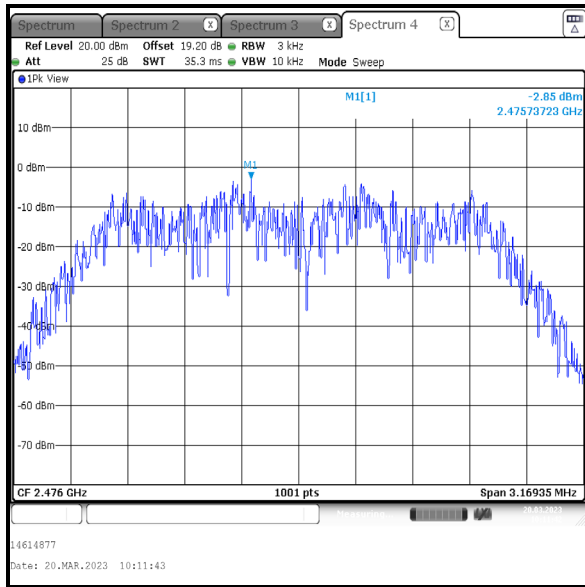
Results: 4DH5 / Beamforming / Core 1



Bottom Channel



Middle Channel



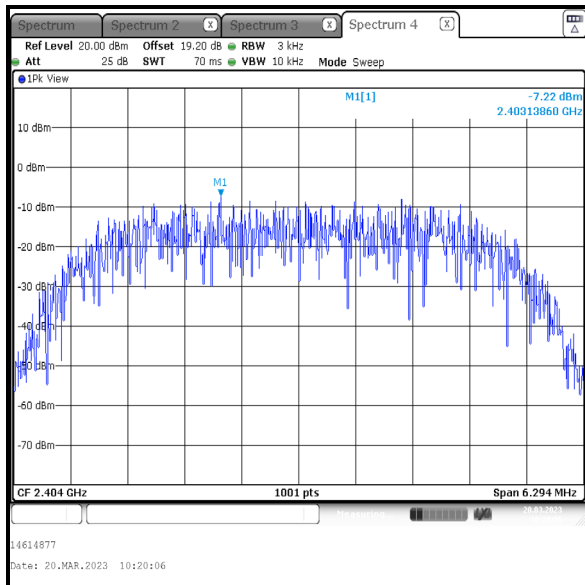
Top Channel

Transmitter Power Spectral Density (continued)

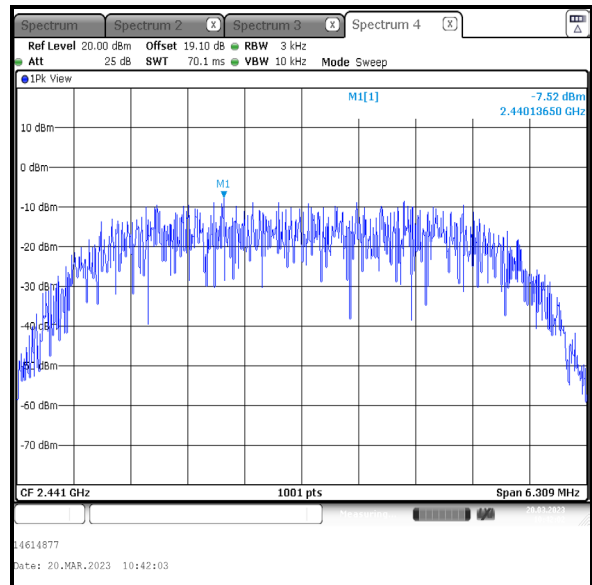
Results: 8DH5 / Beamforming

Channel	PSD Core 0 (dBm / 3 kHz)	PSD Core 1 (dBm / 3 kHz)	Combined PSD (dBm / 3 kHz)	Limit (dBm / 3 kHz)	Margin (dB)	Result
Bottom	-7.2	-7.6	-4.4	8.0	12.4	Complied
Middle	-7.5	-7.7	-4.6	8.0	12.6	Complied
Top	-7.0	-7.2	-4.1	8.0	12.1	Complied

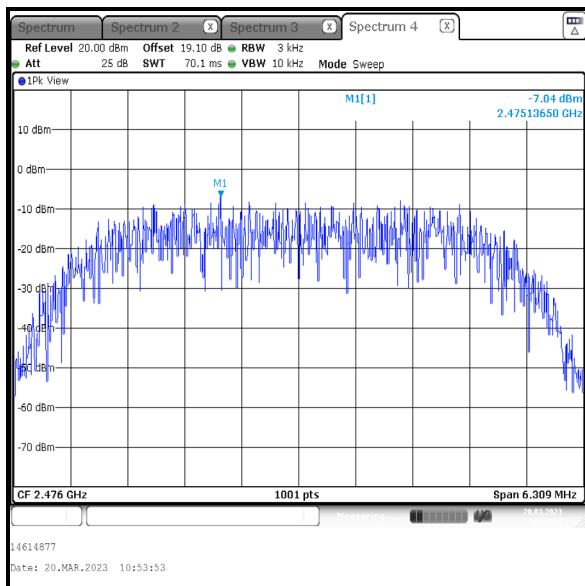
Results: Core 0



Bottom Channel



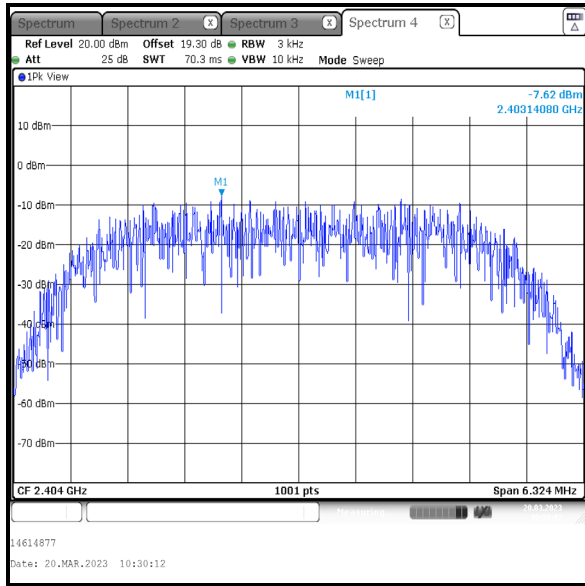
Middle Channel



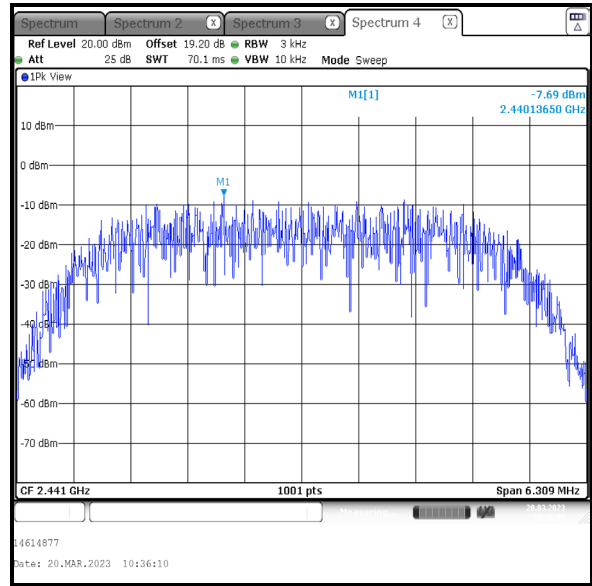
Top Channel

Transmitter Power Spectral Density (continued)

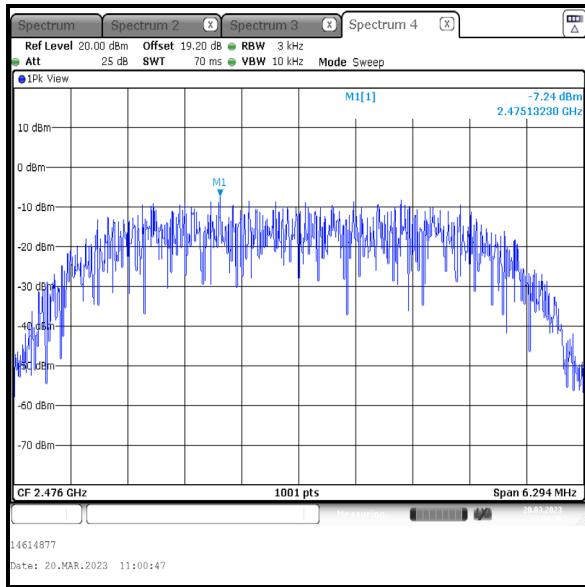
Results: 8DH5 / Beamforming / Core 1



Bottom Channel



Middle Channel



Top Channel

5 Radiated Test Results

5.1 Transmitter Radiated Emissions <1 GHz

Test Summary:

Test Engineers:	John Ferdinand & Andrew Harding	Test Dates:	07 February 2023 & 08 February 2023
Test Sample Serial Number:	PCV91RX367		

FCC Reference:	Parts 15.247(d) & 15.209(a)
ISED Canada Reference:	RSS-Gen 6.13 & 8.9 / RSS-247 5.5
Test Method Used:	ANSI C63.10 Sections 6.3, 6.4 and 6.5
Frequency Range	9 kHz to 1000 MHz

Environmental Conditions:

Temperature (°C):	19 to 22
Relative Humidity (%):	32 to 38

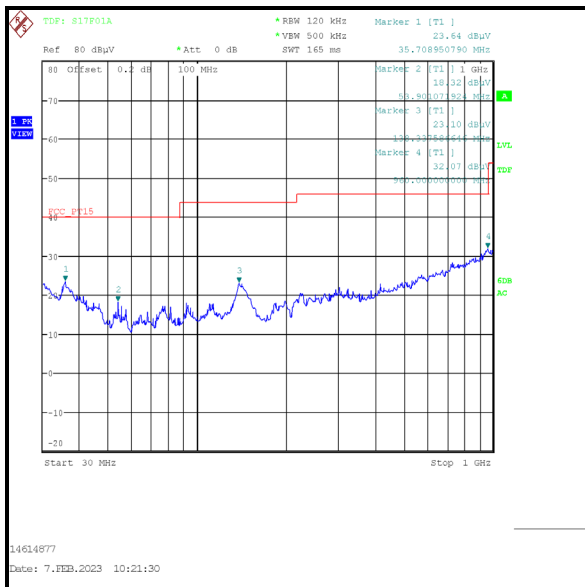
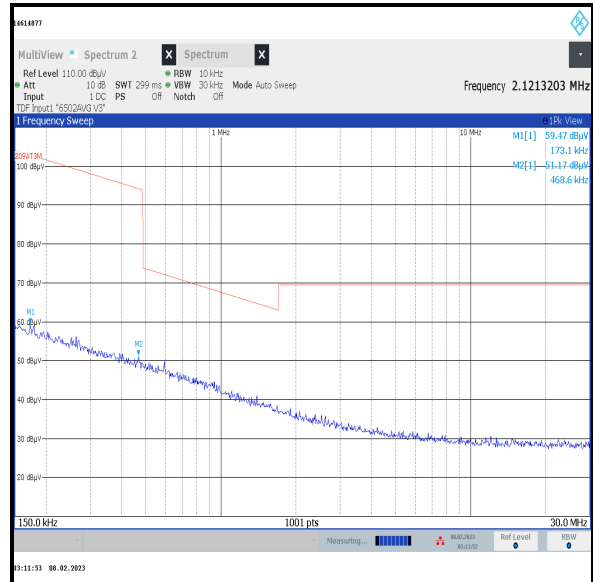
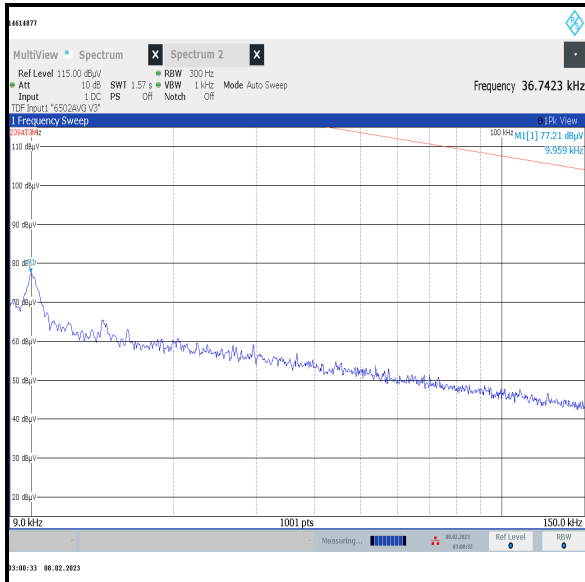
Note(s):

1. The final measured value, for the given emission, in the table below incorporates the calibrated antenna factor and cable loss.
2. The preliminary scans showed similar emission levels below 1 GHz, for each channel of operation. Therefore final radiated emissions measurements were performed with the EUT set to the middle channel only.
3. All emissions shown on the pre-scans were investigated and found to be ambient, or > 20 dB below the appropriate limit or below the noise floor of the measurement system. Therefore the highest peak noise floor reading of the measuring receiver was recorded in the table below.
4. Measurements below 30 MHz were performed in a semi-anechoic chamber (Asset Number K0001) at 3 metres. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. The limit was extrapolated to 3 metres in accordance with ANSI C63.10 clause 6.4.3 using the method described in clause 6.4.4.2. ANSI C63.10 clause 5.2 states an alternative test site that can demonstrate equivalence to an open area test site may be used for measurements below 30 MHz. Therefore, measurements were performed in a semi-anechoic chamber. The correlation data between semi-anechoic chamber and an open field test site is available upon request.
5. Measurements between 30 MHz to 1 GHz were performed in a semi-anechoic chamber (Asset Number K0017) at a distance of 3 metres. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement antenna over the range 1 metre to 4 metres.
6. Pre-scans were performed and markers placed on the highest measured levels. The test receiver was configured as follows: For 9 kHz to 150 kHz, the resolution bandwidth was set to 300 Hz and video bandwidth 1 kHz. A peak detector was used and trace mode was Max Hold. For 150 kHz to 30 MHz, the resolution bandwidth was set to 10 kHz and video bandwidth 30 kHz, trace mode was Max Hold. For 30 MHz to 1 GHz, the resolution bandwidth was set to 120 kHz and video bandwidth 500 kHz. A peak detector was used, sweep time was set to auto and trace mode was Max Hold.

Transmitter Radiated Emissions (continued)

Results: Peak / Middle Channel / 8DH5 / Beamforming / Core 0 + Core 1

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
960.000	Horizontal	32.1	46.0	13.9	Complied



5.2 Transmitter Radiated Emissions >1 GHz

Test Summary:

Test Engineers:	John Ferdinand & Andrew Harding	Test Dates:	06 February 2023 & 07 February 2023
Test Sample Serial Number:	PCV91RX367		

FCC Reference:	Parts 15.247(d) & 15.209(a)
ISED Canada Reference:	RSS-Gen 6.13 & 8.9 / RSS-247 5.5
Test Method Used:	FCC KDB 558074 Sections 8.1 c)3), 8.5 & 8.6 referencing ANSI C63.10 Sections 6.3, 6.6, 11.11 & 11.12
Frequency Range	1 GHz to 25 GHz

Environmental Conditions:

Temperature (°C):	20 to 22
Relative Humidity (%):	32 to 36

Note(s):

1. The final measured value, for the given emission, in the table below incorporates the calibrated antenna factor and cable loss.
2. All emissions shown on the pre-scans were investigated and found to be ambient, or > 20 dB below the appropriate limit or below the noise floor of the measurement system. Therefore the highest peak noise floor reading of the measuring receiver was recorded in the table below.
3. The emission shown on the 1 GHz to 3 GHz plot at approximately 2441 MHz is the EUT fundamental.
4. Pre-scans above 1 GHz were performed in a fully anechoic chamber (Asset Number K0001) at a distance of 3 metres. The EUT was placed at a height of 1.5 metres above the test chamber floor in the centre of the chamber turntable. All measurement antennas were placed at a fixed height of 1.5 metres above the test chamber floor, in line with the EUT.
5. Pre-scans were performed and a marker placed on the highest measured level of the appropriate plot. The test receiver resolution bandwidth was set to 1 MHz and video bandwidth 3 MHz. The sweep time was set to auto. Peak and average measurements were performed with their own appropriate detectors during the pre-scan measurements.

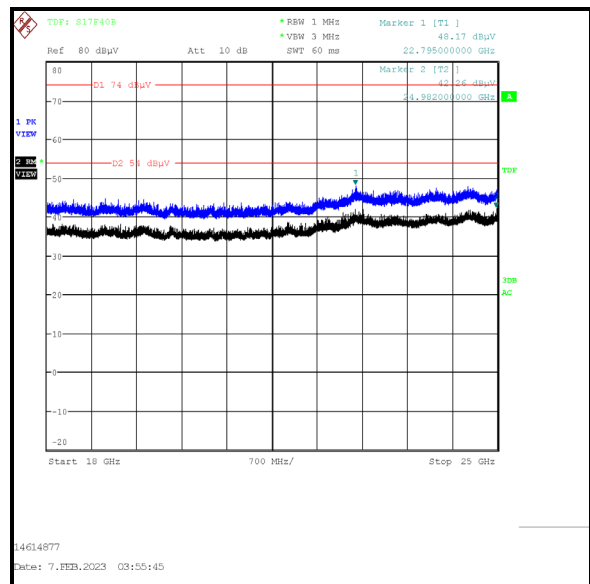
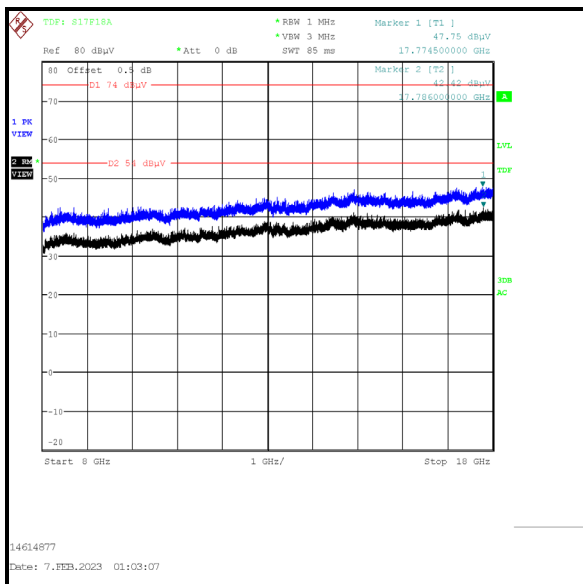
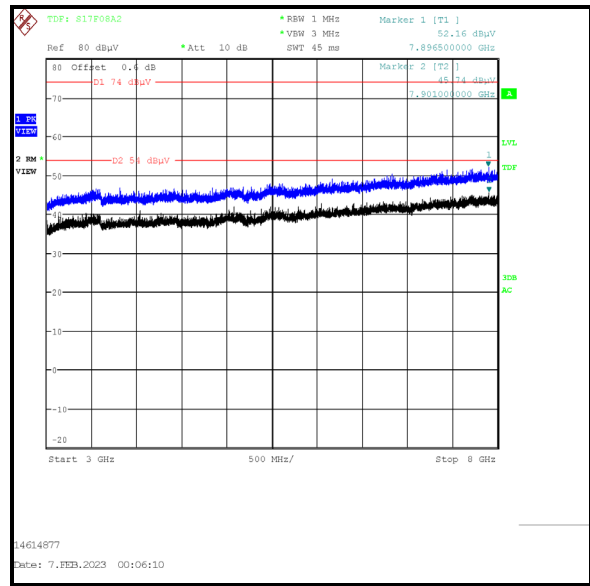
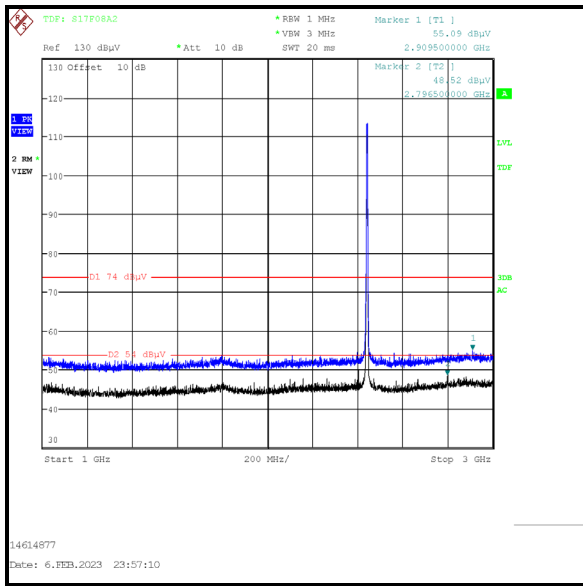
Results: Middle Channel / 8DH5 / Beamforming / Core 0 + Core 1

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2909.500	Horizontal	55.1	74.0	18.9	Complied

Results: Middle Channel / 8DH5 / Beamforming / Core 0 + Core 1

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2796.500	Horizontal	48.5	54.0	5.5	Complied

Transmitter Radiated Emissions (continued)



5.3 Transmitter Band Edge Radiated Emissions

Test Summary:

Test Engineers:	John Ferdinand & Andrew Harding	Test Dates:	05 January 2023 to 11 April 2023
Test Sample Serial Number:	PCV91RX367		

FCC Reference:	Parts 15.247(d) & 15.209(a)
ISED Canada Reference:	RSS-Gen 6.13 / RSS-247 5.5
Test Method Used:	KDB 558074 Section 8.7 referencing ANSI C63.10 Sections 11.11, 11.12 & 11.13

Environmental Conditions:

Temperature (°C):	23 to 24
Relative Humidity (%):	36 to 47

Note(s):

1. The final measured value, for the given emission, in the table below incorporates the calibrated antenna factor and cable loss.
2. As the lower band edge is adjacent to a non-restricted band, only peak measurements are required. In accordance with ANSI C63.10 Section 11.11.1, the test method in Section 11.11.3 was followed: the test receiver resolution bandwidth was set to 100 kHz and video bandwidth 300 kHz. A peak detector was used, sweep time was set to auto and trace mode was Max Hold. The test receiver was left to sweep for a sufficient length of time in order to maximise the carrier level and out-of-band emissions. A marker and corresponding reference level line were placed on the peak of the carrier. As the maximum peak conducted output power was measured using a peak detector in accordance with ANSI C63.10 Section 11.9.1.1 an out-of-band limit line was placed 20 dB (ANSI C63.10 Section 11.11.1(a)) below the peak level. A marker was placed on the band edge spot frequencies. Marker frequency and levels were recorded.
3. As the upper band edge is adjacent to a restricted band, both peak and average measurements were recorded by placing a marker at the edge of the band. For peak measurements the test receiver resolution bandwidth was set to 1 MHz and the video bandwidth 3 MHz. A peak detector was used, sweep time was set to auto and trace mode was Max Hold. For average measurements the test receiver resolution bandwidth was set to 1 MHz and the video bandwidth 3 MHz. An RMS detector was used, sweep time was set to auto and trace mode was trace averaging over 300 sweeps. A marker was placed on the band edge spot frequencies and a second marker placed on the highest emission level in the adjacent restricted band of operation (where a higher level emission was present). Marker frequencies and levels were recorded.
4. There is a restricted band 10 MHz below the lower band edge. The test receiver was set up as follows: the RBW set to 1 MHz, the VBW set to 3 MHz, with the sweep time set to auto couple. Peak and average measurements were performed with peak and RMS detectors respectively. Markers were placed on the highest point on each trace.
5. * -20 dBc limit.

Transmitter Band Edge Radiated Emissions (continued)**Results: 4DH5 / SISO / Core 0**

Frequency (MHz)	Antenna Polarity	Peak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2399.900	Horizontal	47.1	86.3*	39.2	Complied
2400.0	Horizontal	45.8	86.3*	40.5	Complied
2483.5	Horizontal	53.5	74.0	20.5	Complied
2484.702	Horizontal	55.1	74.0	18.9	Complied

Frequency (MHz)	Antenna Polarity	Average Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	43.2	54.0	10.8	Complied

Results: 2310 MHz to 2390 MHz Restricted Band / Peak

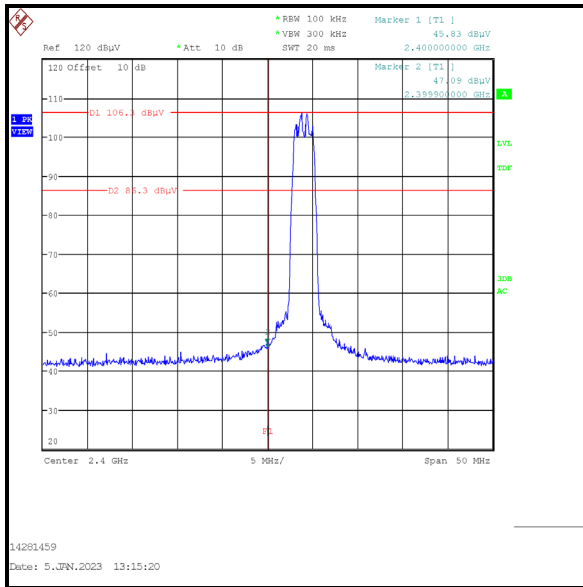
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2371.923	Horizontal	53.9	74.0	20.1	Complied

Results: 2310 MHz to 2390 MHz Restricted Band / Average

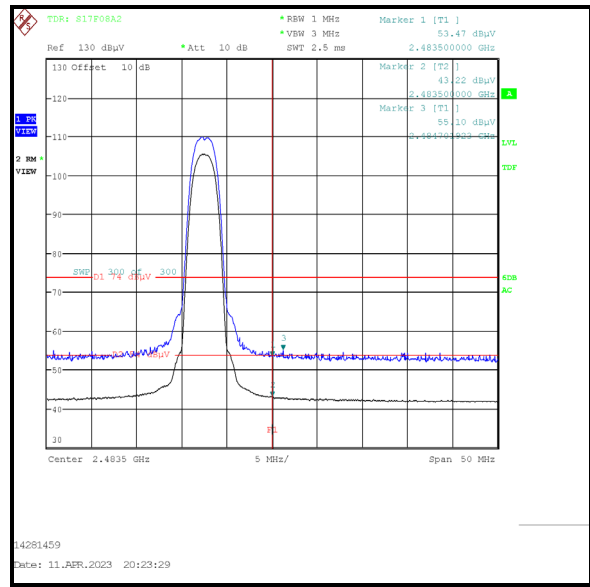
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2390.000	Horizontal	41.9	54.0	12.1	Complied

Transmitter Band Edge Radiated Emissions (continued)

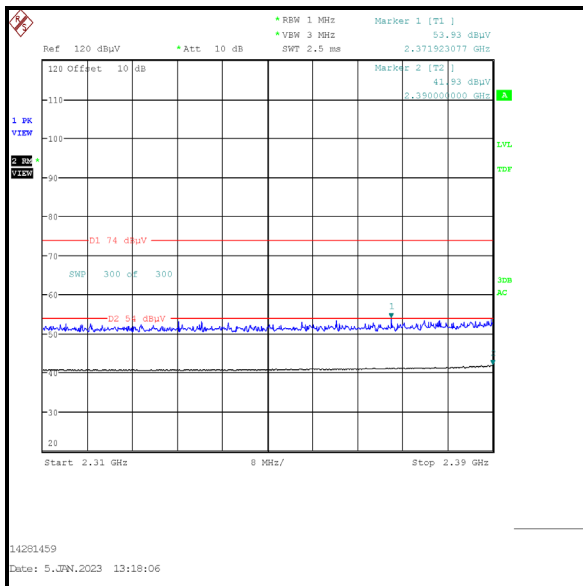
Results: 4DH5 / SISO / Core 0



Lower Band Edge



Upper Band Edge



2310 MHz to 2390 MHz Restricted Band

Transmitter Band Edge Radiated Emissions (continued)**Results: 8DH5 / SISO / Core 0**

Frequency (MHz)	Antenna Polarity	Peak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2400.0	Horizontal	53.4	83.0*	29.6	Complied
2483.5	Horizontal	54.0	74.0	20.0	Complied
2483.821	Horizontal	55.6	74.0	18.4	Complied

Frequency (MHz)	Antenna Polarity	Average Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	43.4	54.0	10.6	Complied

Results: 2310 MHz to 2390 MHz Restricted Band / Peak

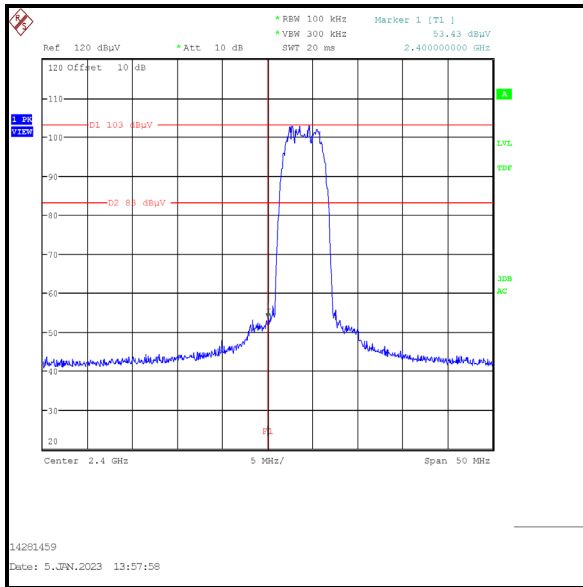
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2386.410	Horizontal	54.7	74.0	19.3	Complied

Results: 2310 MHz to 2390 MHz Restricted Band / Average

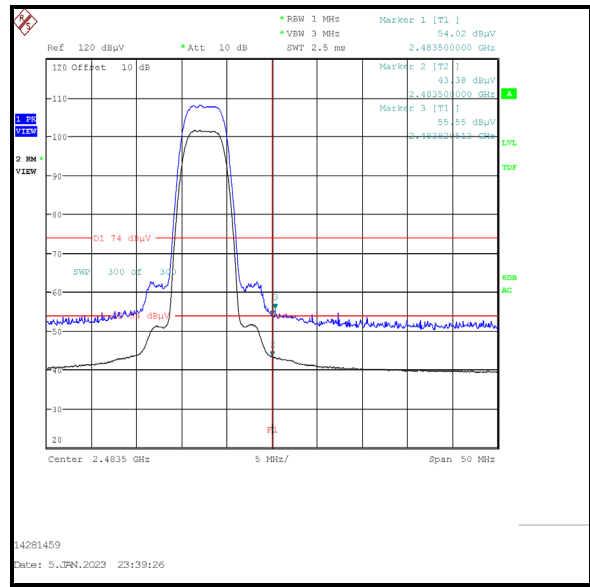
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2389.872	Horizontal	43.0	54.0	11.0	Complied

Transmitter Band Edge Radiated Emissions (continued)

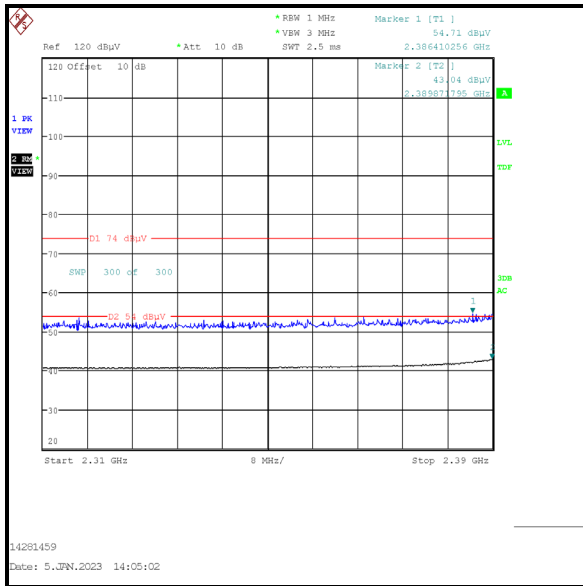
Results: 8DH5 / SISO / Core 0



Lower Band Edge



Upper Band Edge



2310 MHz to 2390 MHz Restricted Band

Transmitter Band Edge Radiated Emissions (continued)**Results: 4DH5 / SISO / Core 1**

Frequency (MHz)	Antenna Polarity	Peak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2399.350	Horizontal	47.7	86.1*	38.4	Complied
2400.0	Horizontal	47.5	86.1*	38.6	Complied
2483.5	Horizontal	53.7	74.0	20.3	Complied
2485.744	Horizontal	54.7	74.0	19.3	Complied

Frequency (MHz)	Antenna Polarity	Average Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	43.4	54.0	10.6	Complied

Results: 2310 MHz to 2390 MHz Restricted Band / Peak

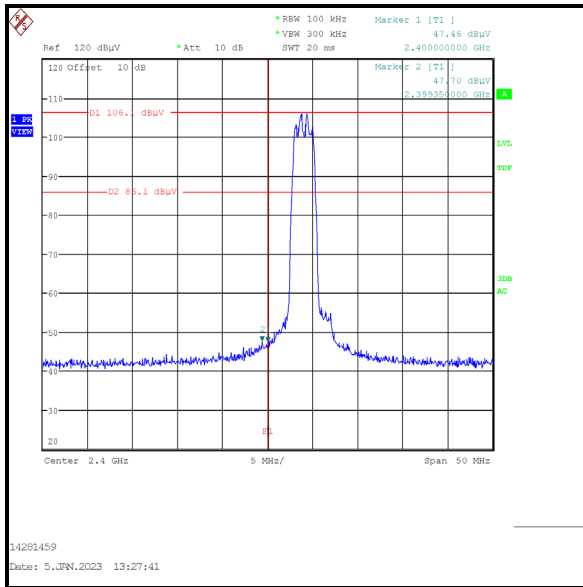
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2375.897	Horizontal	53.5	74.0	20.5	Complied

Results: 2310 MHz to 2390 MHz Restricted Band / Average

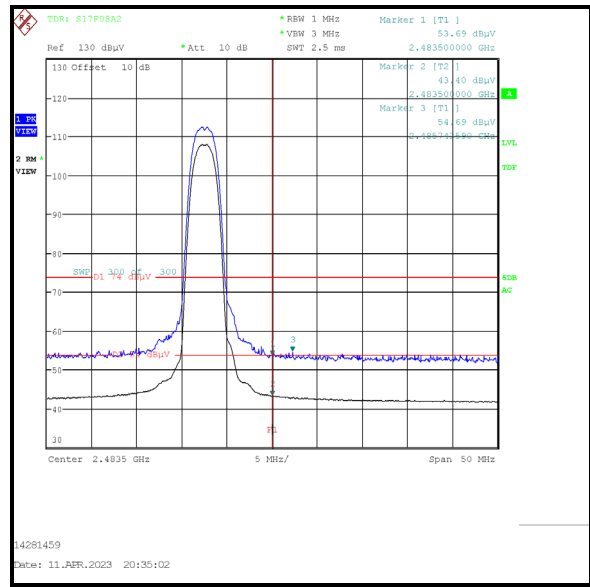
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2388.590	Horizontal	42.2	54.0	11.8	Complied

Transmitter Band Edge Radiated Emissions (continued)

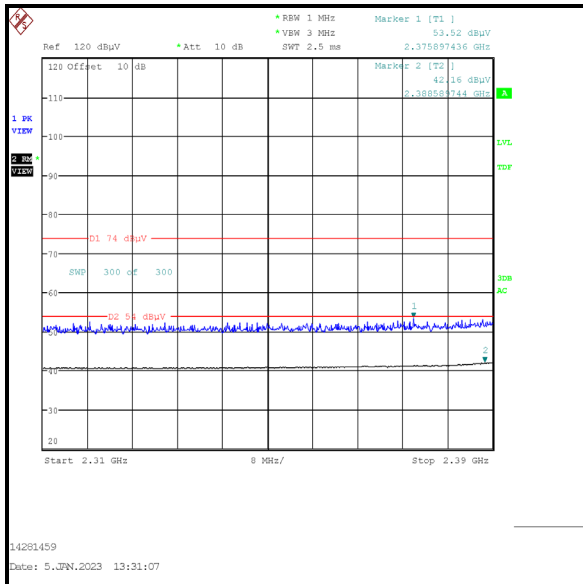
Results: 4DH5 / SISO / Core 1



Lower Band Edge



Upper Band Edge



2310 MHz to 2390 MHz Restricted Band

Transmitter Band Edge Radiated Emissions (continued)**Results: 8DH5 / SISO / Core 1**

Frequency (MHz)	Antenna Polarity	Peak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2400.0	Horizontal	51.7	82.5*	30.8	Complied
2483.5	Horizontal	55.7	74.0	28.3	Complied
2485.824	Horizontal	57.1	74.0	16.9	Complied

Frequency (MHz)	Antenna Polarity	Average Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	44.8	54.0	9.2	Complied

Results: 2310 MHz to 2390 MHz Restricted Band / Peak

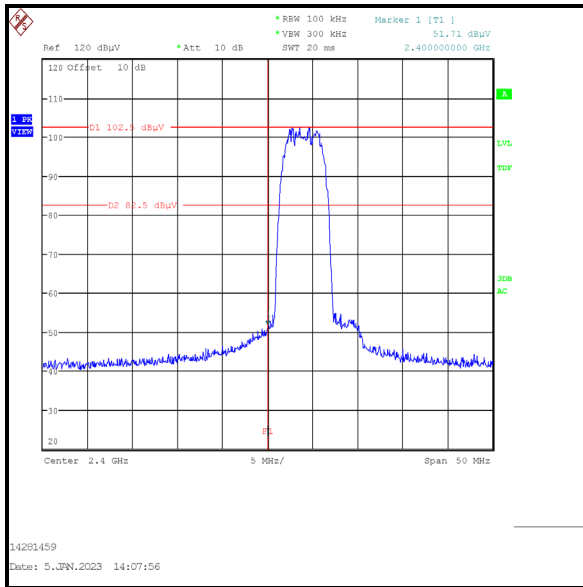
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2388.590	Horizontal	54.9	74.0	19.1	Complied

Results: 2310 MHz to 2390 MHz Restricted Band / Average

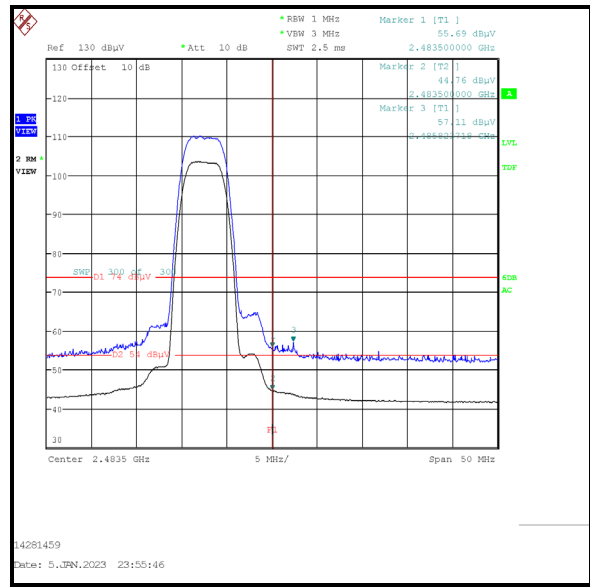
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2390.000	Horizontal	43.4	54.0	10.6	Complied

Transmitter Band Edge Radiated Emissions (continued)

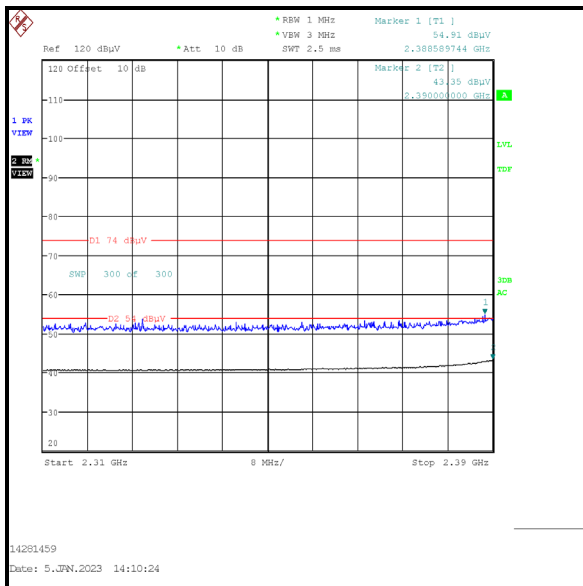
Results: 8DH5 / SISO / Core 1



Lower Band Edge



Upper Band Edge



2310 MHz to 2390 MHz Restricted Band

Transmitter Band Edge Radiated Emissions (continued)**Results: 4DH5 / Beamforming / Core 0 + Core 1**

Frequency (MHz)	Antenna Polarity	Peak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2399.950	Horizontal	48.5	88.4*	39.9	Complied
2400.0	Horizontal	47.3	88.4*	41.1	Complied
2483.5	Horizontal	53.3	74.0	20.7	Complied
2495.103	Horizontal	55.1	74.0	18.9	Complied

Frequency (MHz)	Antenna Polarity	Average Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	43.1	54.0	10.9	Complied

Results: 2310 MHz to 2390 MHz Restricted Band / Peak

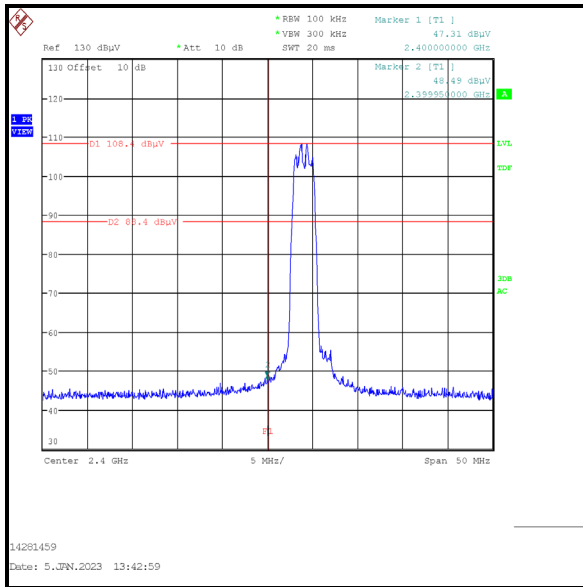
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2389.487	Horizontal	53.3	74.0	20.7	Complied

Results: 2310 MHz to 2390 MHz Restricted Band / Average

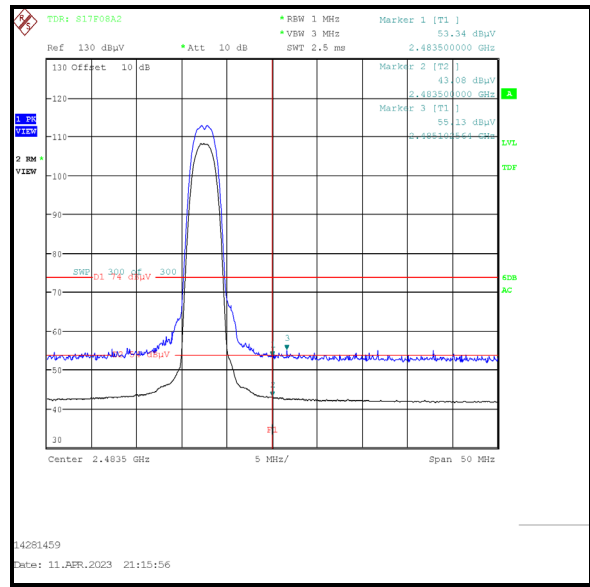
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2390.000	Horizontal	42.1	54.0	11.9	Complied

Transmitter Band Edge Radiated Emissions (continued)

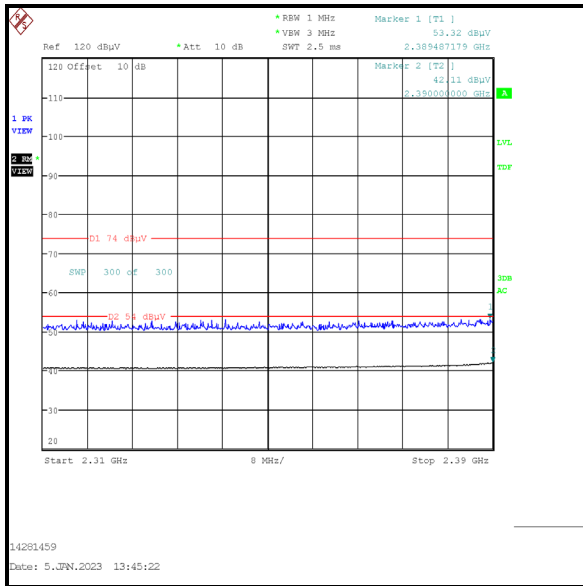
Results: 4DH5 / Beamforming / Core 0 + Core 1



Lower Band Edge



Upper Band Edge



2310 MHz to 2390 MHz Restricted Band

Transmitter Band Edge Radiated Emissions (continued)**Results: 8DH5 / Beamforming / Core 0 + Core 1**

Frequency (MHz)	Antenna Polarity	Peak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2399.900	Horizontal	51.6	85.0*	33.4	Complied
2400.0	Horizontal	51.5	85.0*	33.5	Complied
2483.5	Horizontal	54.8	74.0	19.2	Complied
2485.663	Horizontal	55.7	74.0	18.3	Complied

Frequency (MHz)	Antenna Polarity	Average Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	44.3	54.0	9.7	Complied

Results: 2310 MHz to 2390 MHz Restricted Band / Peak

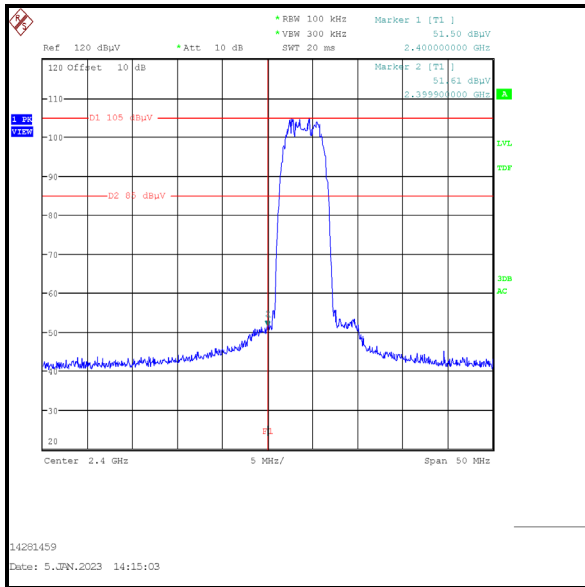
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2375.897	Horizontal	54.8	74.0	19.2	Complied

Results: 2310 MHz to 2390 MHz Restricted Band / Average

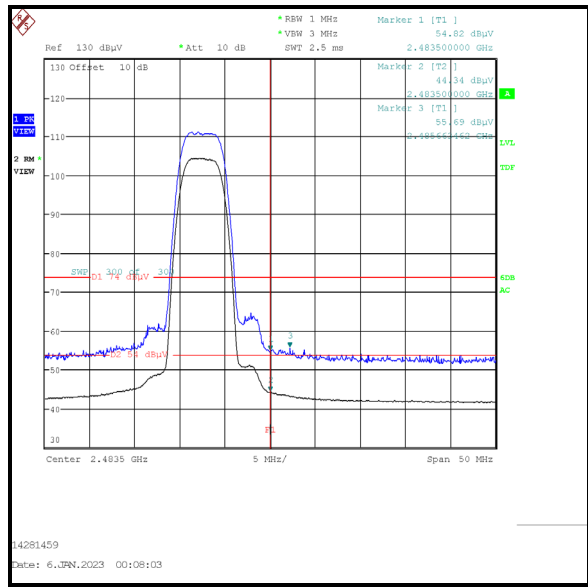
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2390.000	Horizontal	43.2	54.0	10.8	Complied

Transmitter Band Edge Radiated Emissions (continued)

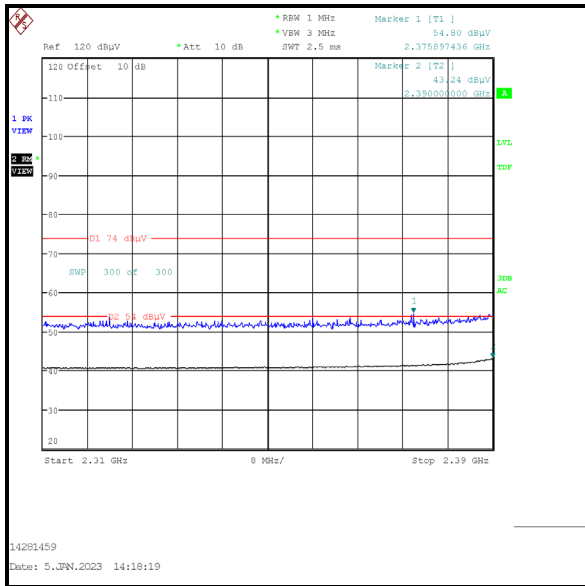
Results: 8DH5 / Beamforming / Core 0 + Core 1



Lower Band Edge



Upper Band Edge



2310 MHz to 2390 MHz Restricted Band

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