Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	0-1	2390.0	54.66	42.29
GFSK/DH1	2480	0-1	2483.5	55.11	43.16

Table 83 - Restricted Band Edge Results

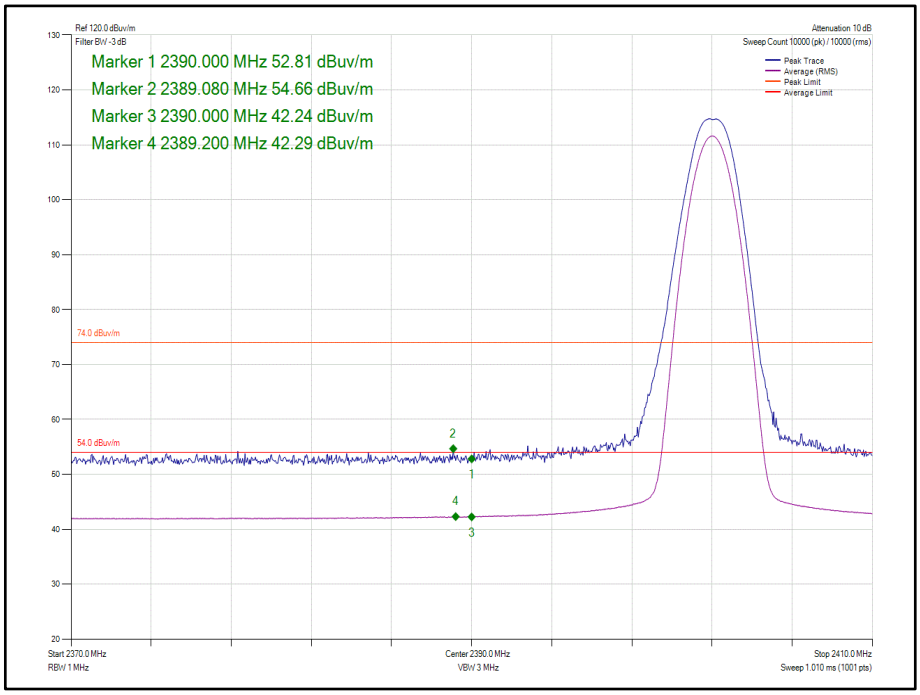

Figure 101 – Core 0-1 GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

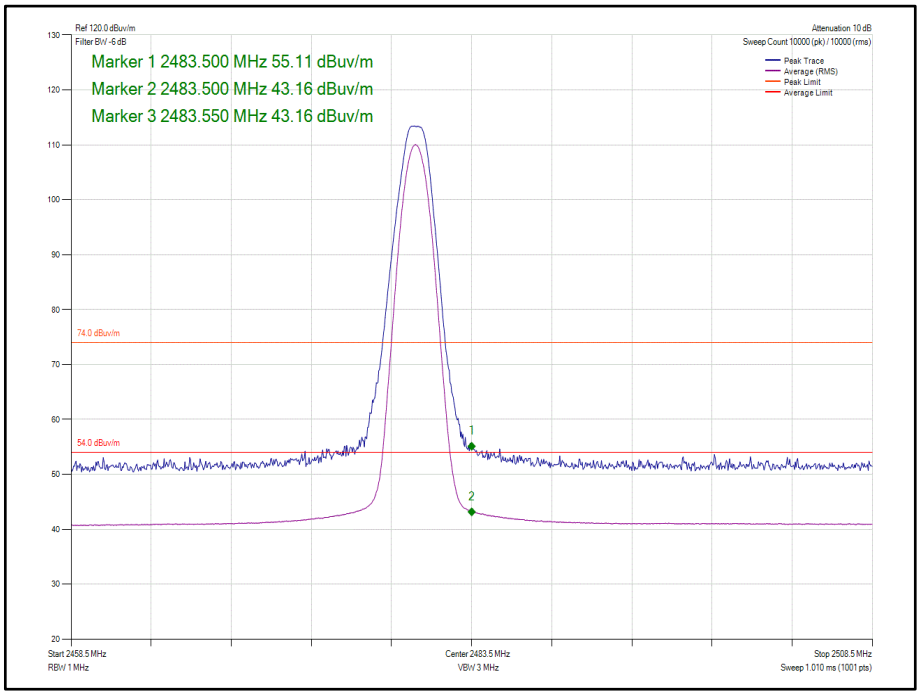

Figure 102 – Core 0-1 GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

ePA

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	0	2390.0	54.99	41.92
GFSK/DH1	2480	0	2483.5	53.79	42.09

Table 84 - Restricted Band Edge Results

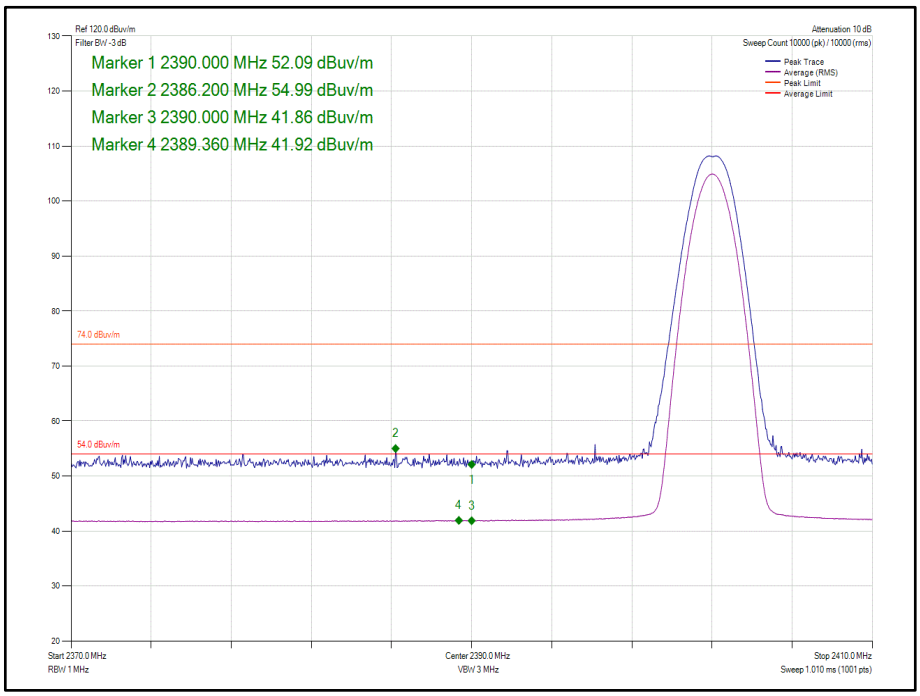

Figure 103 – Core 0 - GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

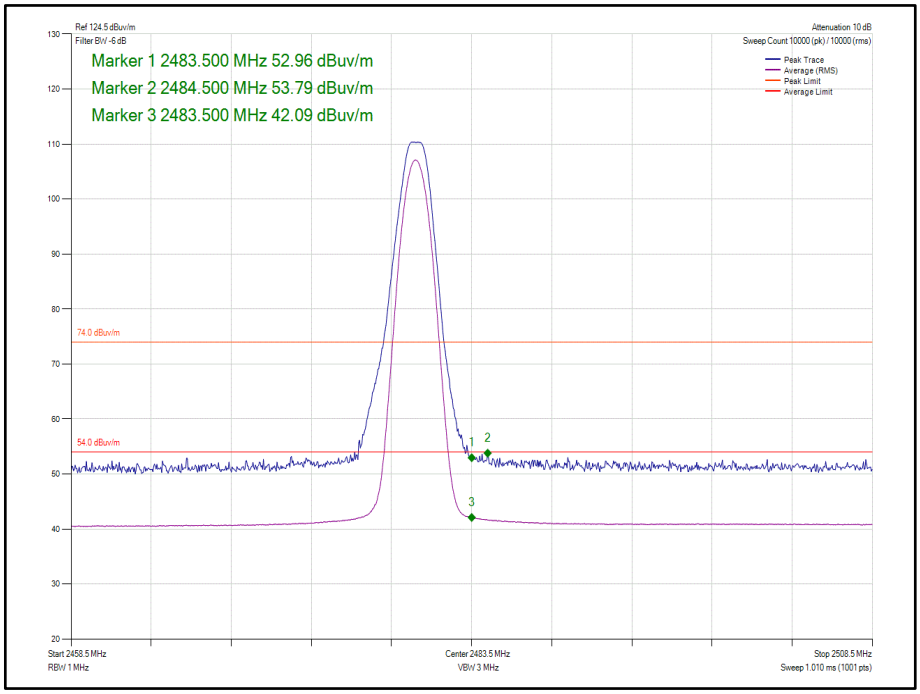

Figure 104 – Core 0 - GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	1	2390.0	54.04	42.04
GFSK/DH1	2480	1	2483.5	55.35	42.61

Table 85 - Restricted Band Edge Results

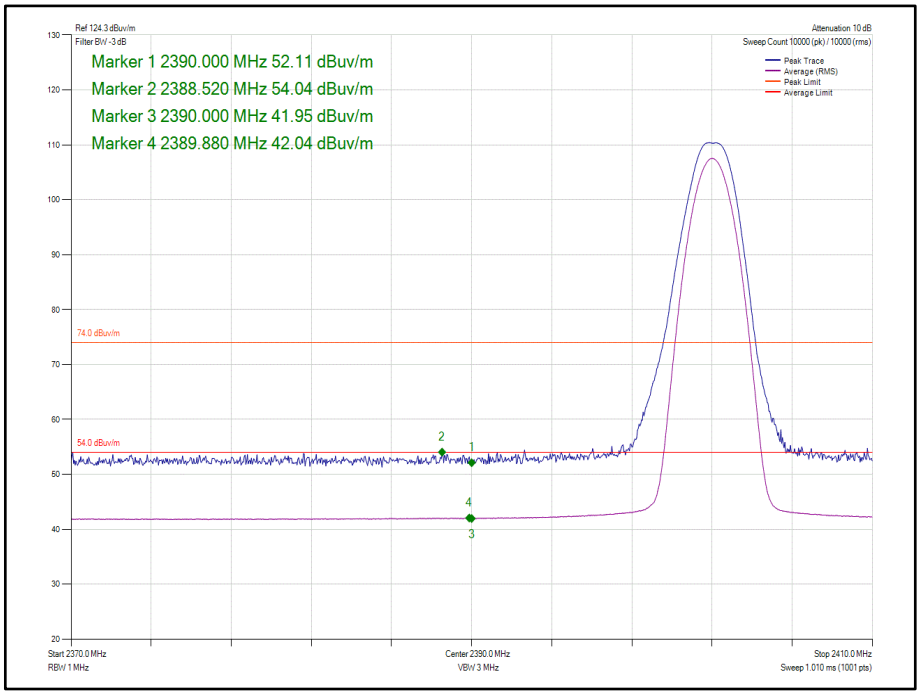

Figure 105 – Core 1 - GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

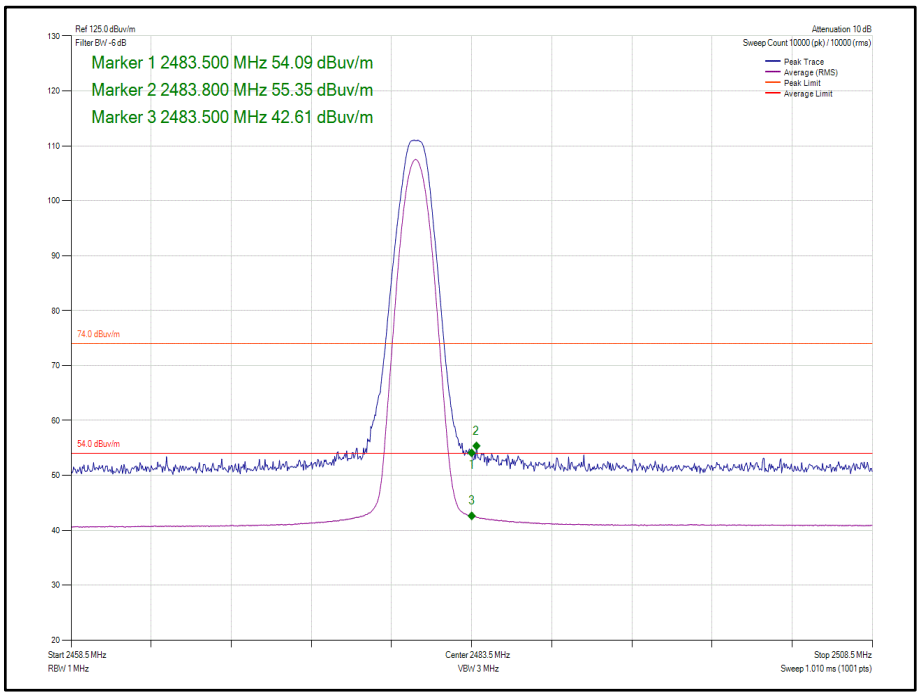

Figure 106 – Core 1 - GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	0-1	2390.0	54.44	42.27
GFSK/DH1	2480	0-1	2483.5	55.11	43.16

Table 86 - Restricted Band Edge Results

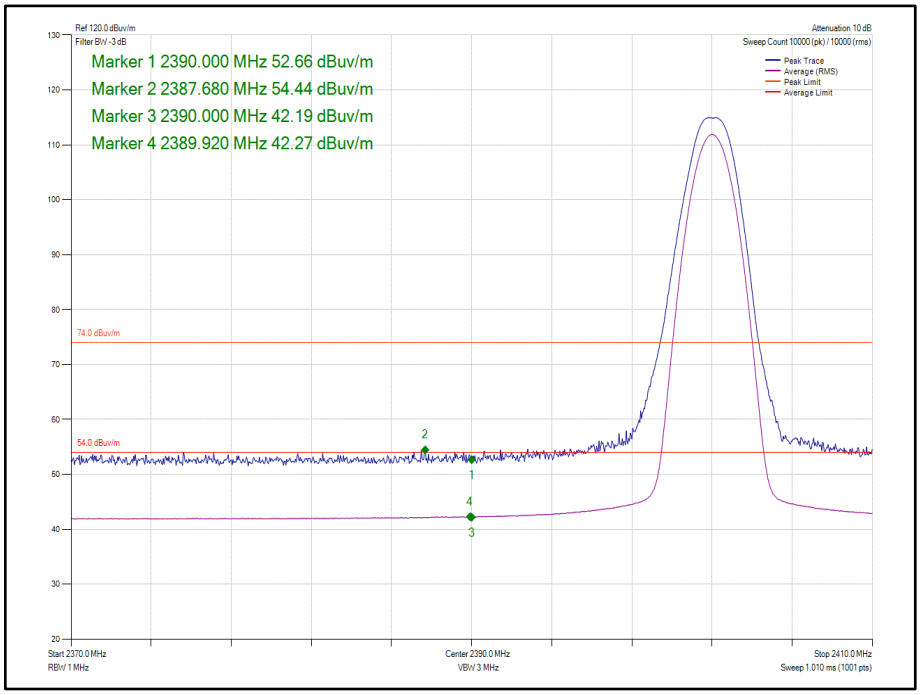

Figure 107 – Core 0-1 GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

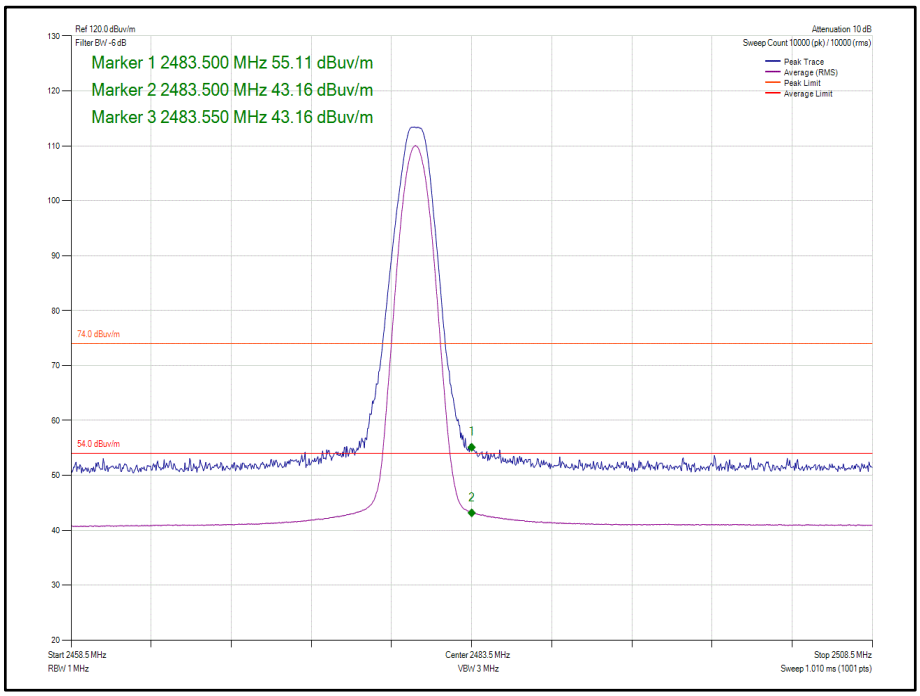

Figure 108 – Core 0-1 GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

LE2M

iPA

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	0	2390.0	53.80	41.89
GFSK/DH1	2480	0	2483.5	63.69	50.51

Table 87 - Restricted Band Edge Results

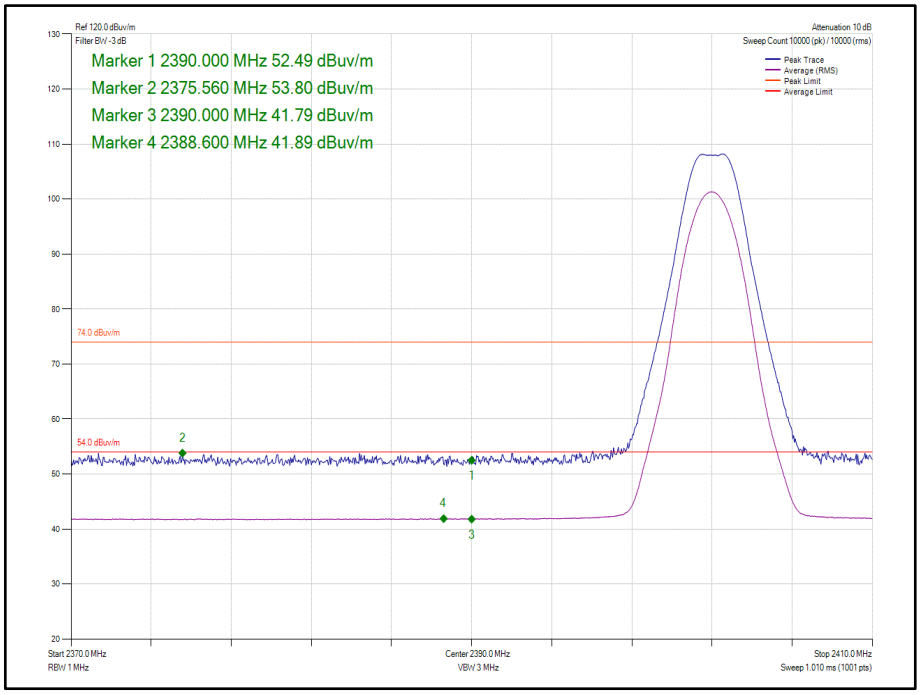

Figure 109 – Core 0 - GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

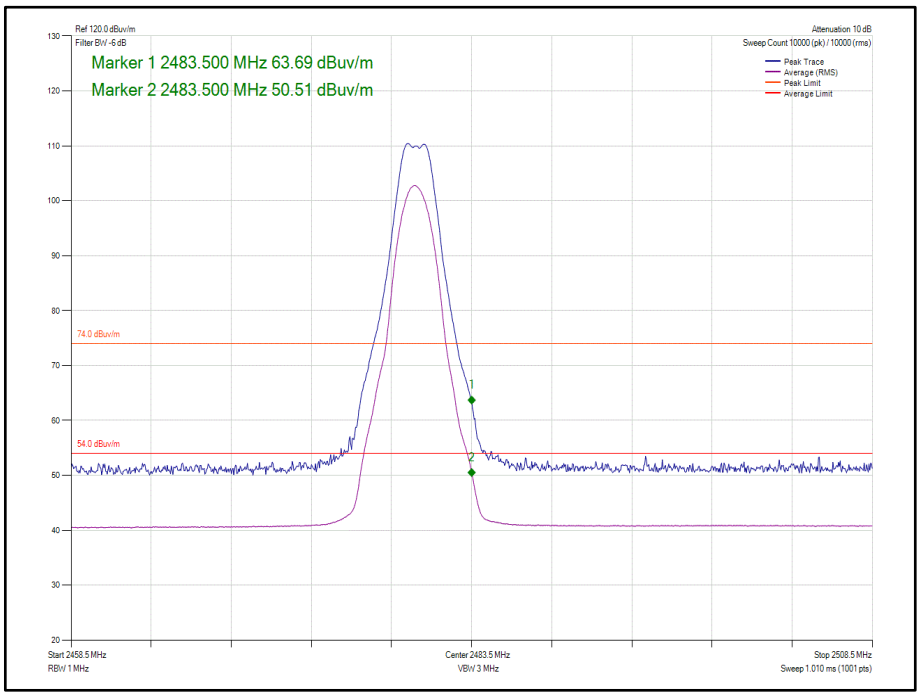

Figure 110 – Core 0 - GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	1	2390.0	54.01	41.94
GFSK/DH1	2480	1	2483.5	62.15	50.59

Table 88 - Restricted Band Edge Results

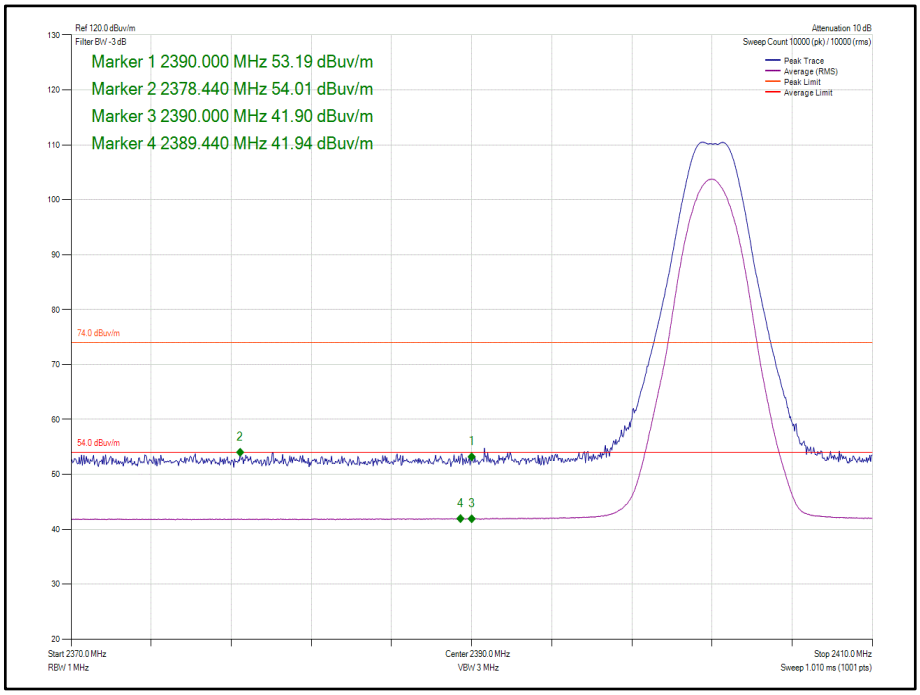

Figure 111 – Core 1 - GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

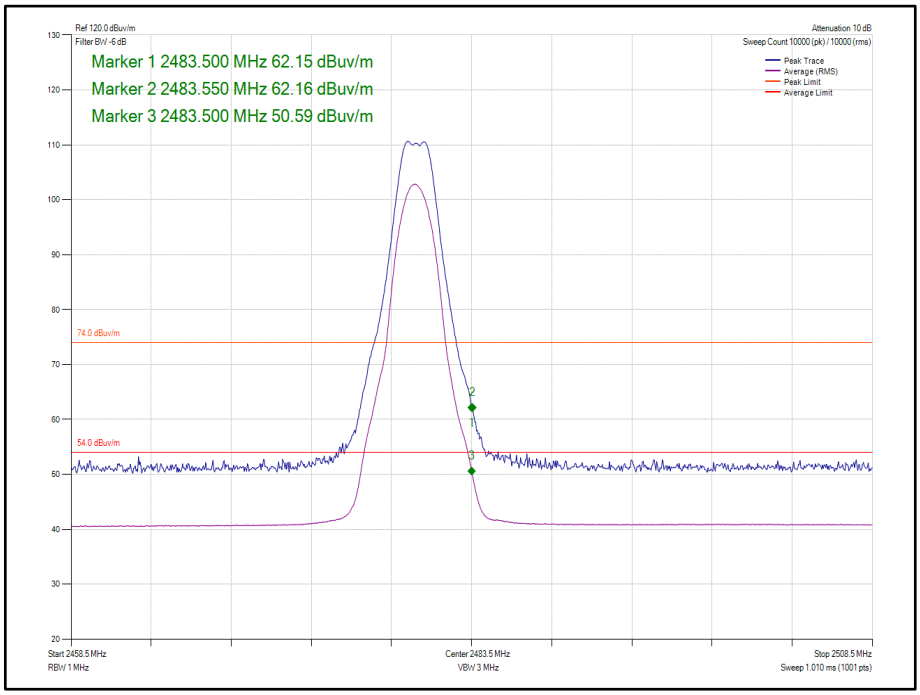

Figure 112 – Core 1 - GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	0-1	2390.0	54.49	42.13
GFSK/DH1	2480	0-1	2483.5	57.25	44.75

Table 89 - Restricted Band Edge Results

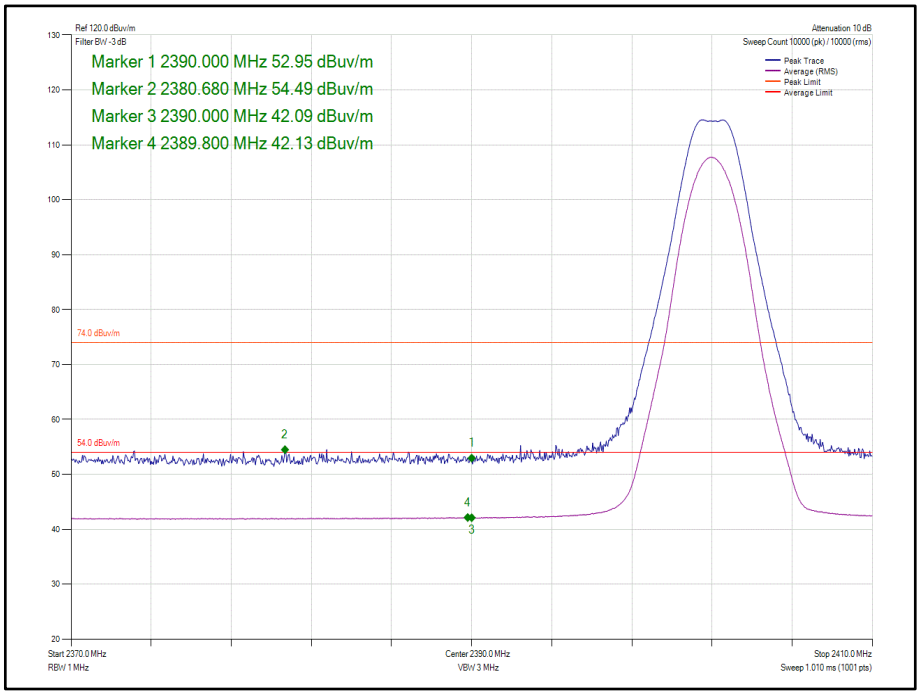

Figure 113 – Core 0-1 - GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

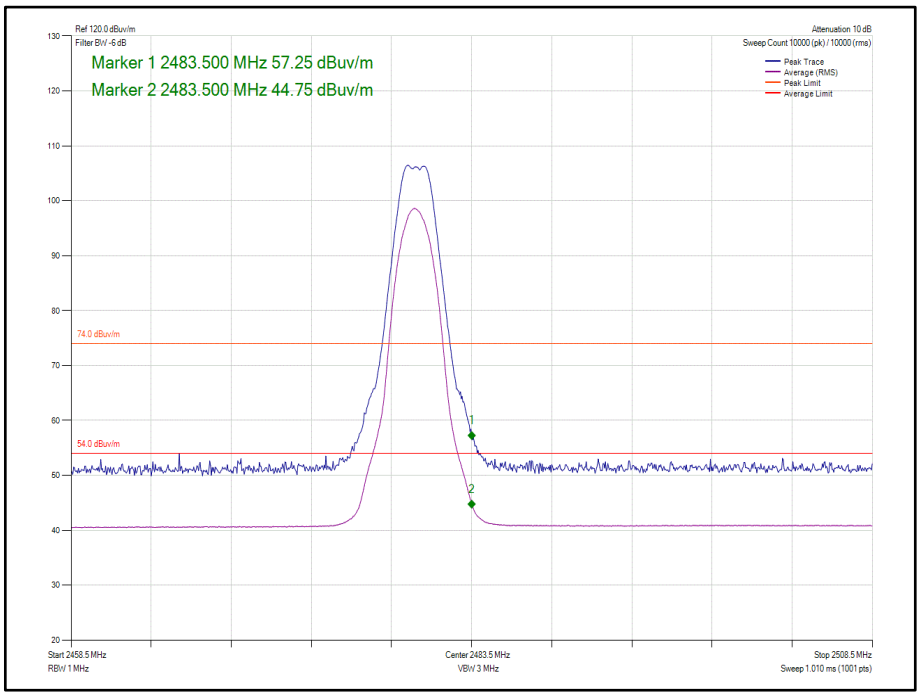

Figure 114 – Core 0-1 - GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

ePA

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	0	2390.0	54.01	41.86
GFSK/DH1	2480	0	2483.5	62.80	50.36

Table 90 - Restricted Band Edge Results

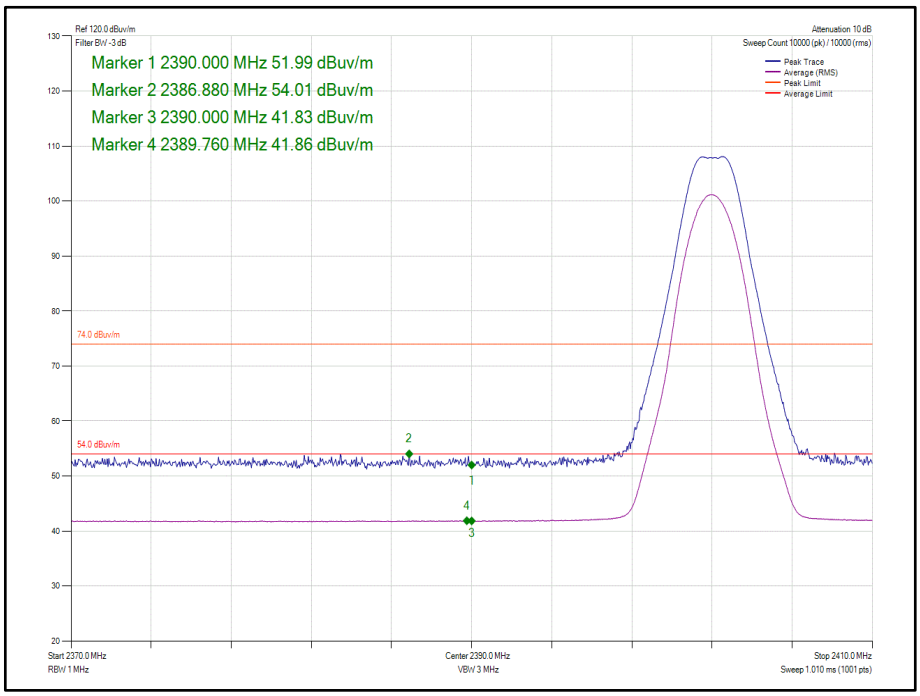

Figure 115 – Core 0 - GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

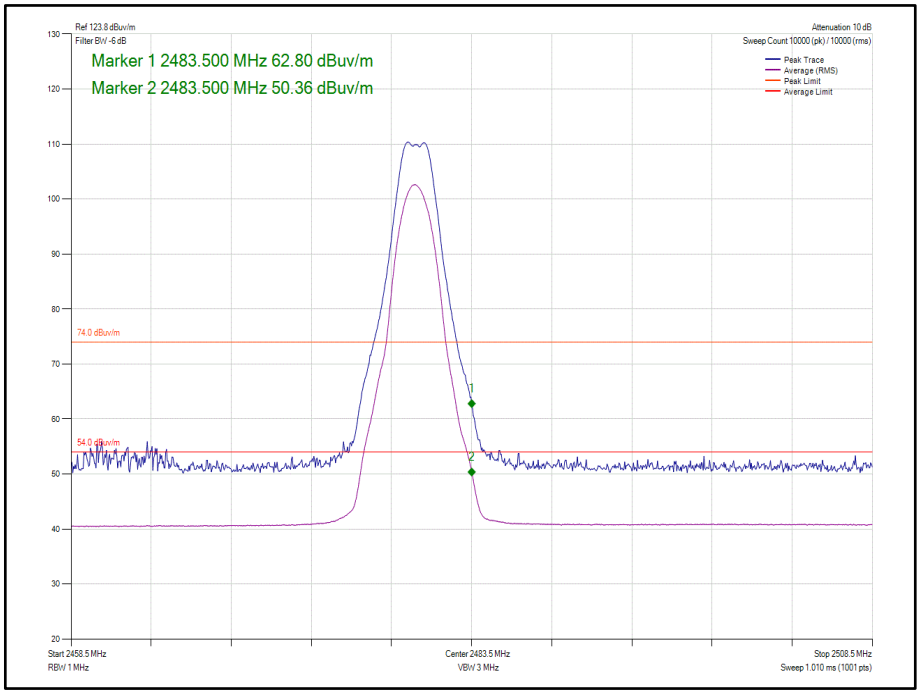

Figure 116 – Core 0 - GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	1	2390.0	54.09	42.02
GFSK/DH1	2480	1	2483.5	62.86	51.02

Table 91 - Restricted Band Edge Results

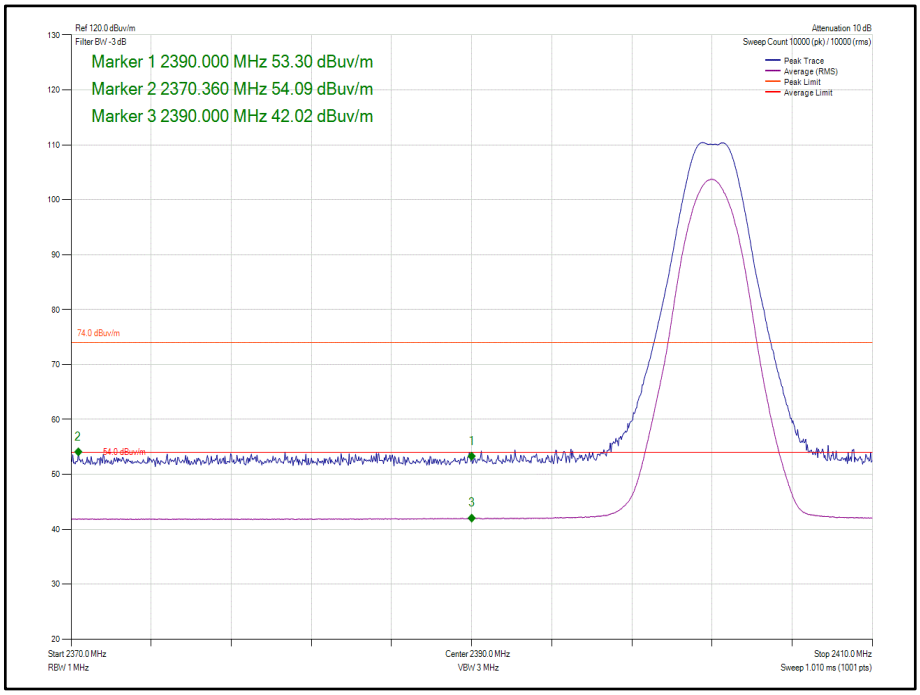

Figure 117 – Core 1 - GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

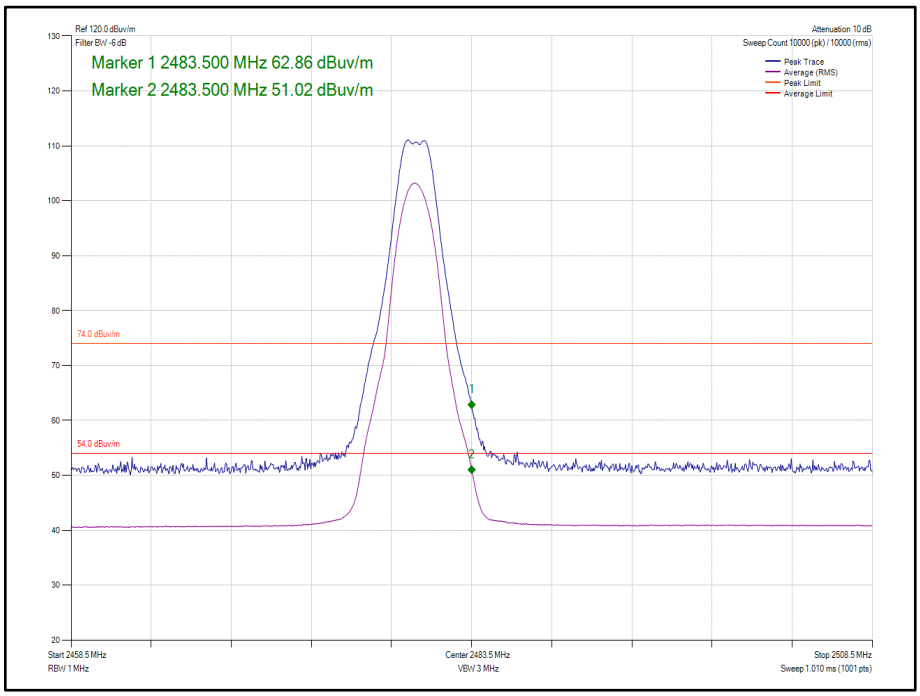

Figure 118 – Core 1 - GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	0-1	2390.0	54.92	42.07
GFSK/DH1	2480	0-1	2483.5	63.43	50.57

Table 92 - Restricted Band Edge Results

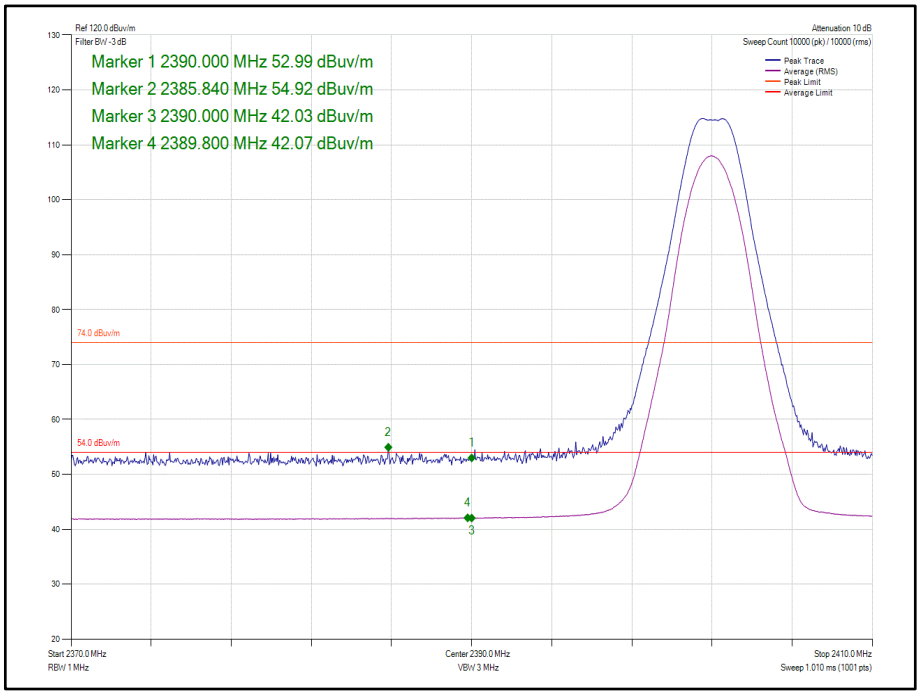

Figure 119 – Core 0-1 - GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

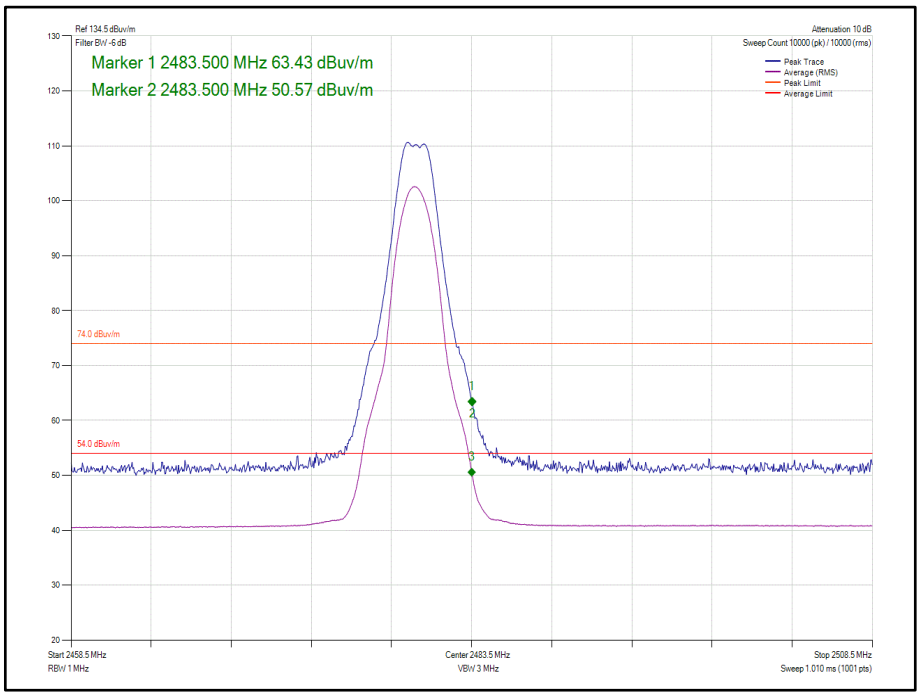

Figure 120 – Core 0-1 - GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

HDR4

iPA

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	π/4 DQPSK	0	HDR4	2404	2390.0	53.98	41.92
Static	π/4 DQPSK	0	HDR4	2478	2483.5	53.28	41.08

Table 93 - Restricted Band Edge Results

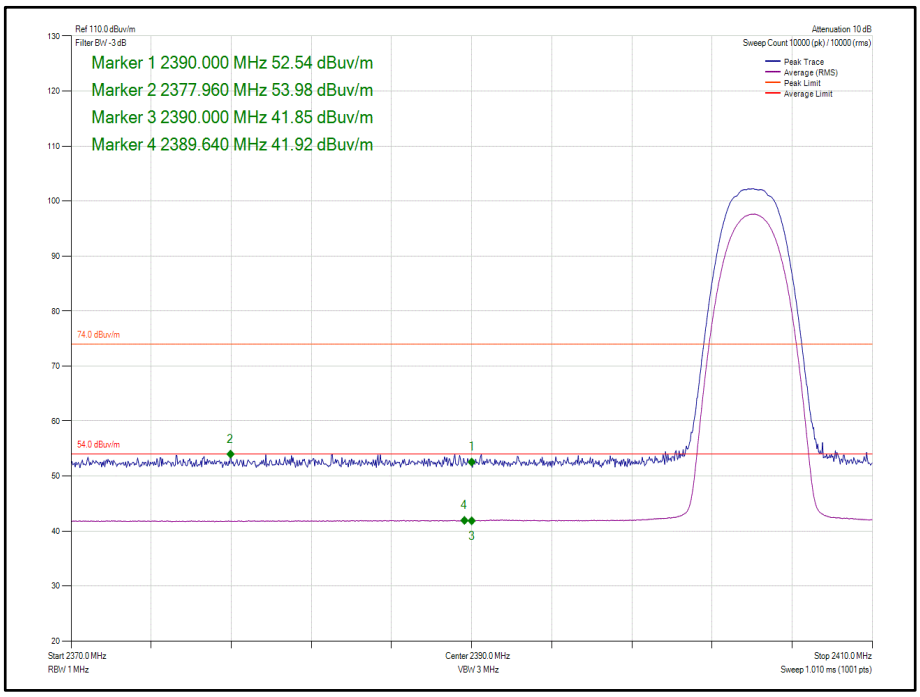

Figure 121 - Core 0 - Static - π/4 DQPSK /HDR4 - 2404 MHz - Band Edge Frequency 2390.0 MHz

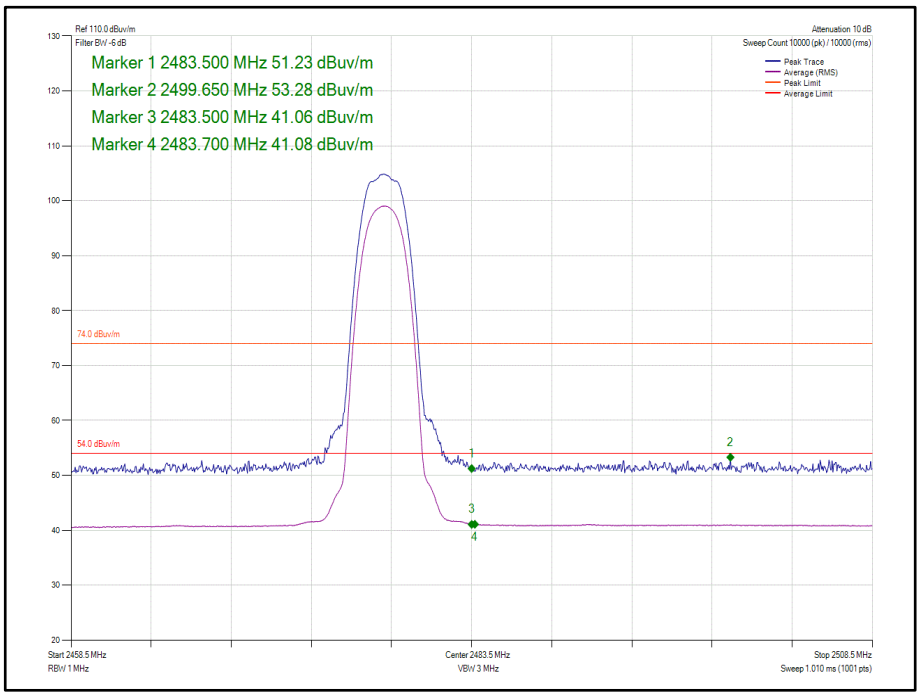

Figure 122 - Core 0 - Static - π/4 DQPSK /HDR4 - 2478 MHz - Band Edge Frequency 2483.5 MHz

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	π/4 DQPSK	1	HDR4	2404	2390.0	54.27	42.06
Static	π/4 DQPSK	1	HDR4	2478	2483.5	53.29	41.12

Table 94 - Restricted Band Edge Results

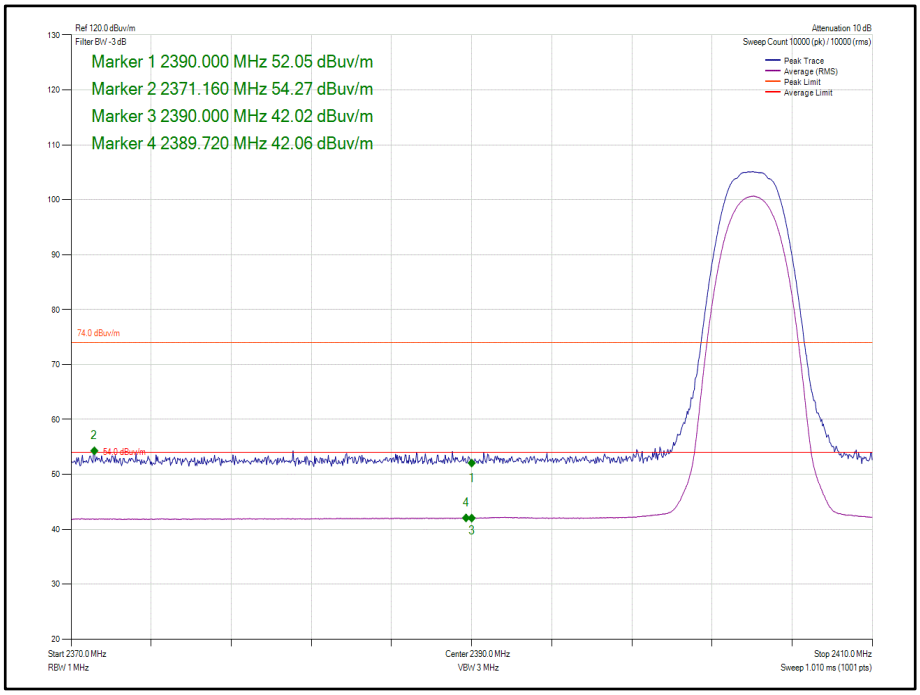

Figure 123 - Core 1 - Static - π/4 DQPSK /HDR4 - 2404 MHz - Band Edge Frequency 2390.0 MHz

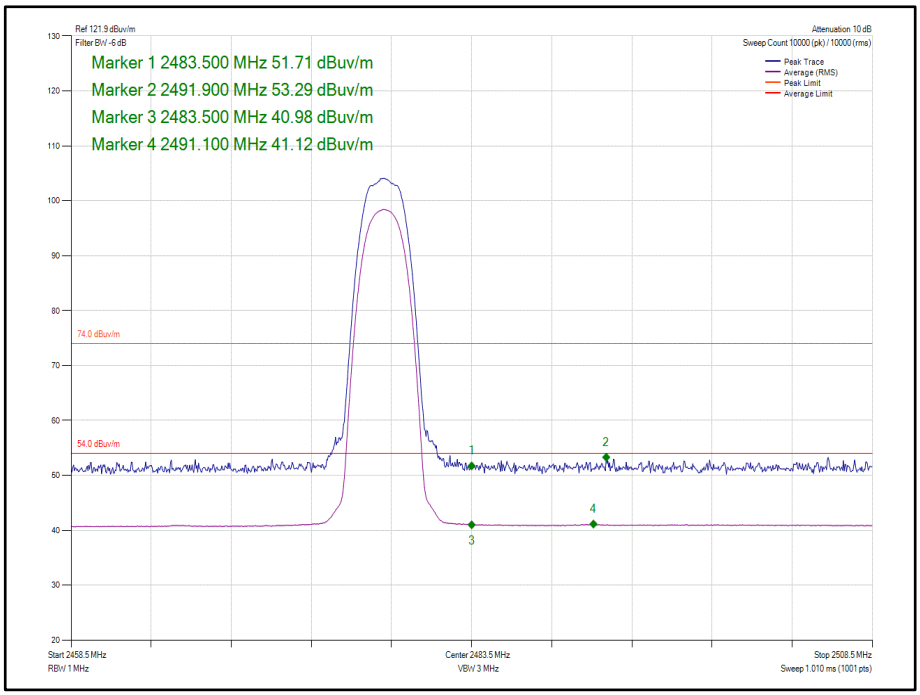

Figure 124 - Core 1 - Static - π/4 DQPSK /HDR4 - 2478 MHz - Band Edge Frequency 2483.5 MHz

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	π/4 DQPSK	0-1	HDR4	2404	2390.0	54.41	42.14
Static	π/4 DQPSK	0-1	HDR4	2478	2483.5	53.11	41.23

Table 95 - Restricted Band Edge Results

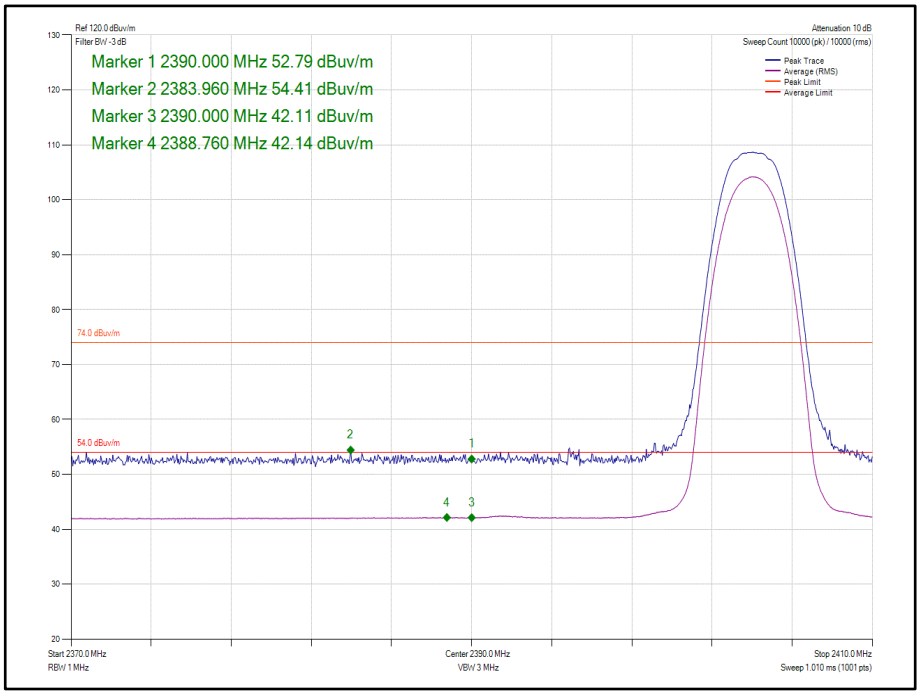

Figure 125 - Core 0-1 - Static - π/4 DQPSK /HDR4 - 2404 MHz - Band Edge Frequency 2390.0 MHz

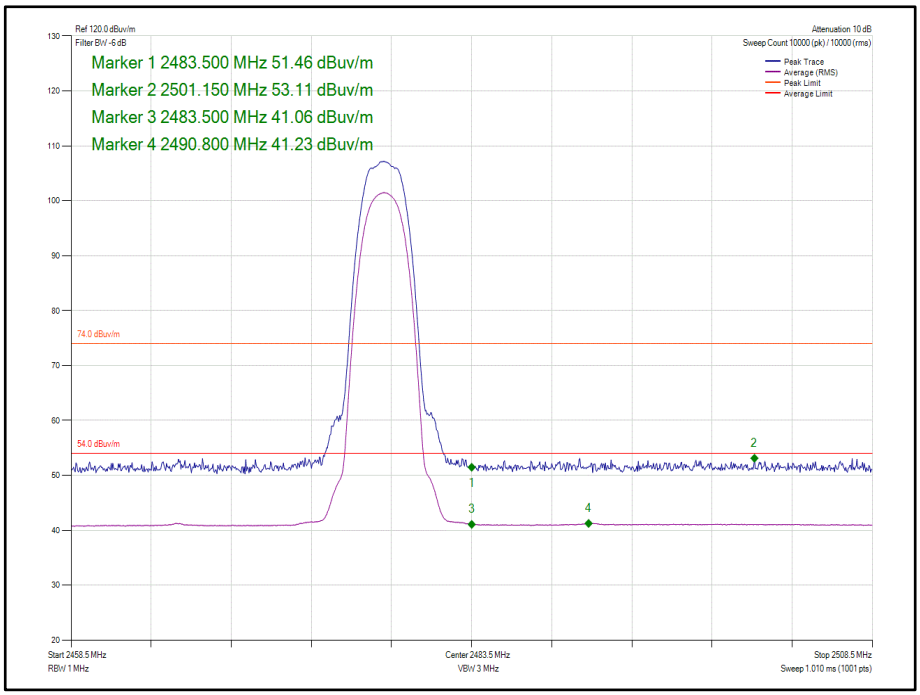

Figure 126 - Core 0-1 - Static - π/4 DQPSK /HDR4 - 2478 MHz - Band Edge Frequency 2483.5 MHz

ePA

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	π/4 DQPSK	0	HDR4	2404	2390.0	55.29	42.33
Static	π/4 DQPSK	0	HDR4	2478	2483.5	56.23	42.42

Table 96 - Restricted Band Edge Results

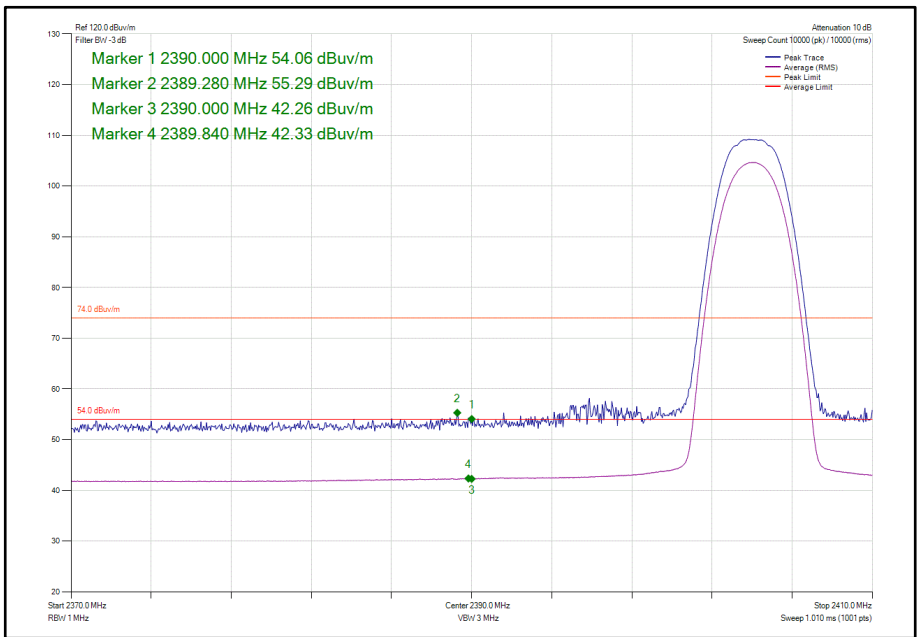

Figure 127 - Core 0 - Static - π/4 DQPSK /HDR4 - 2404 MHz - Band Edge Frequency 2390.0 MHz

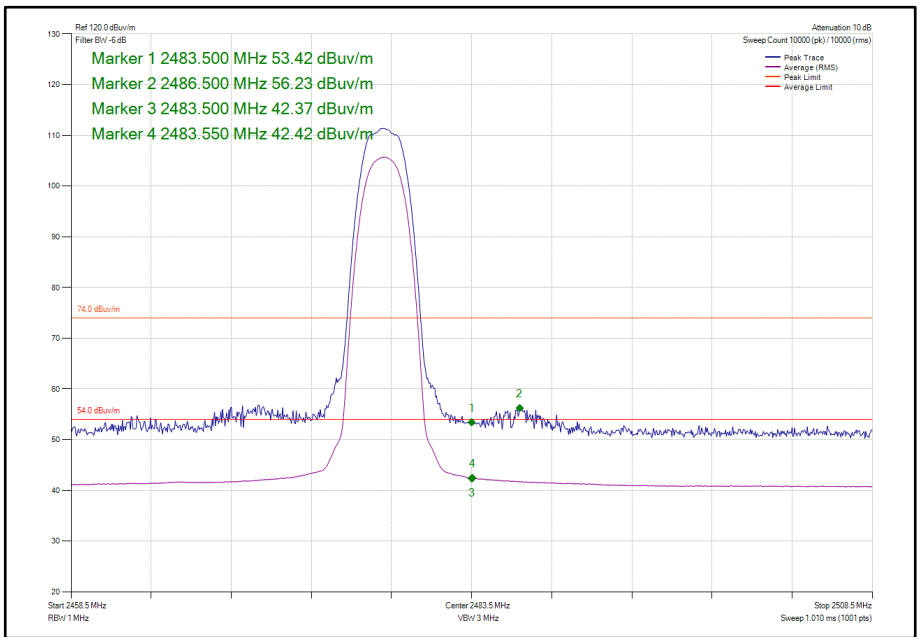

Figure 128 - Core 0 - Static - π/4 DQPSK /HDR4 - 2478 MHz - Band Edge Frequency 2483.5 MHz

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	π/4 DQPSK	1	HDR4	2404	2390.0	54.95	42.48
Static	π/4 DQPSK	1	HDR4	2478	2483.5	57.09	43.28

Table 97 - Restricted Band Edge Results

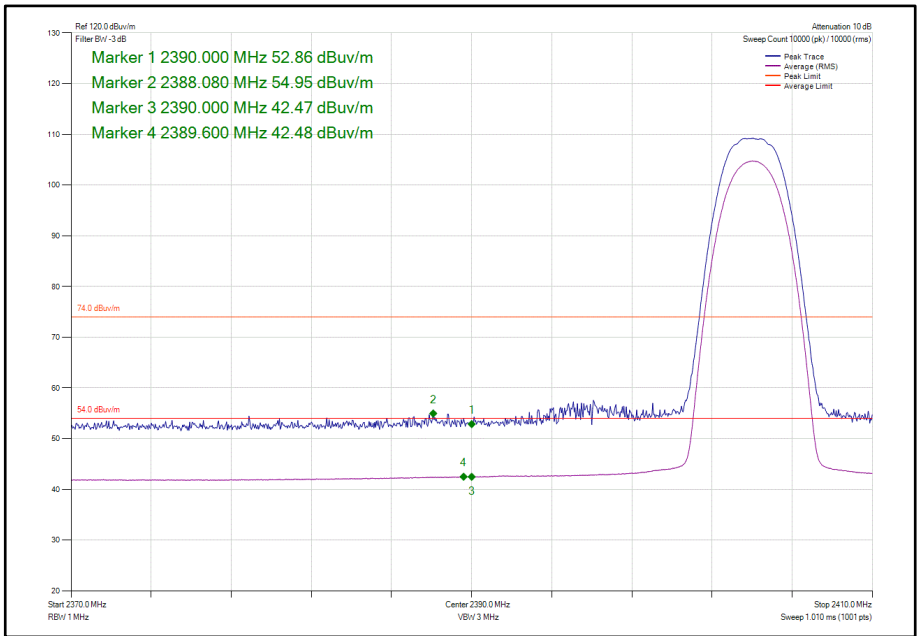

Figure 129 - Core 1 - Static - π/4 DQPSK /HDR4 - 2404 MHz - Band Edge Frequency 2390.0 MHz

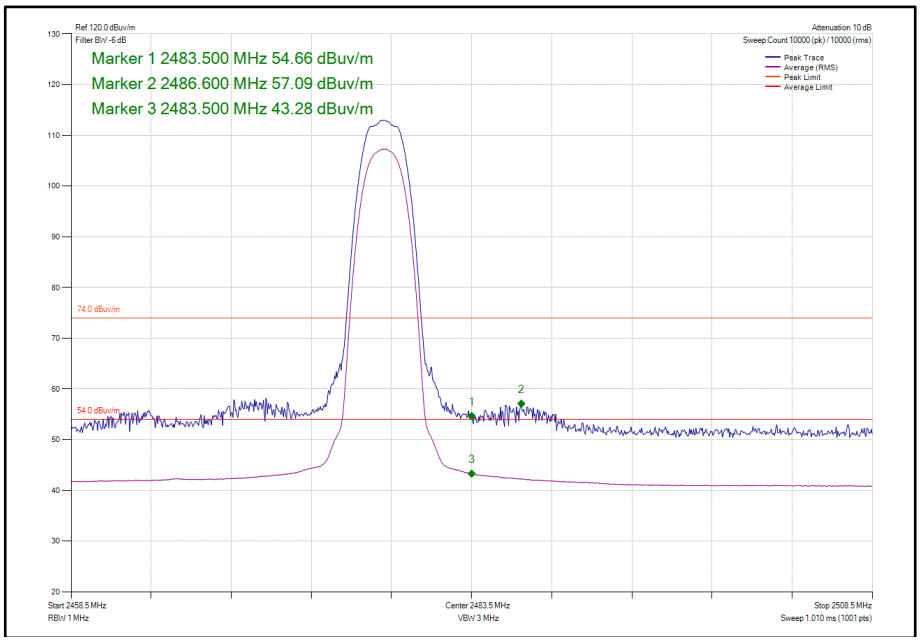

Figure 130 - Core 1 - Static - π/4 DQPSK /HDR4 - 2478 MHz - Band Edge Frequency 2483.5 MHz

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	π/4 DQPSK	0-1	HDR4	2404	2390.0	54.07	42.36
Static	π/4 DQPSK	0-1	HDR4	2478	2483.5	58.07	42.03

Table 98 - Restricted Band Edge Results

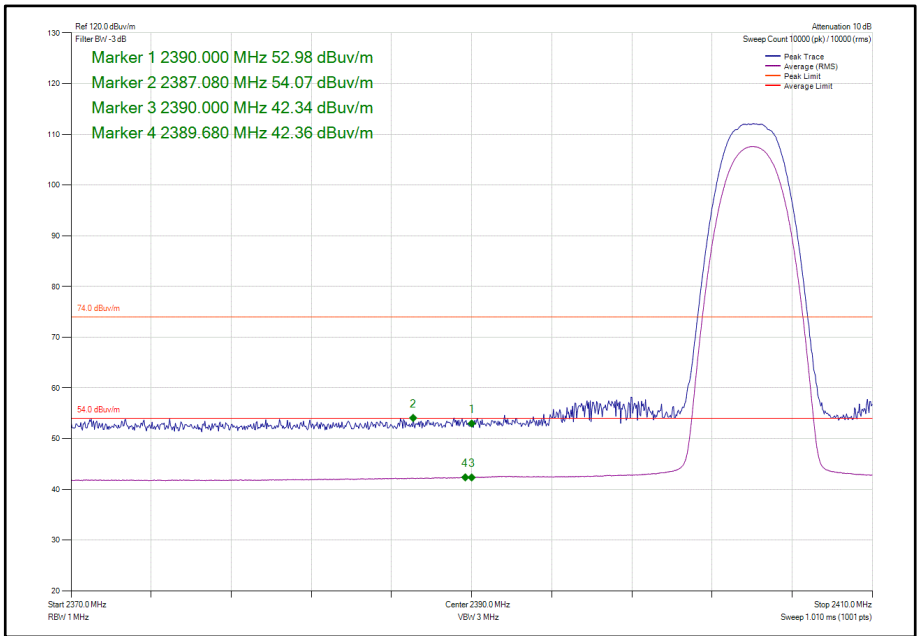

Figure 131 - Core 0-1 - Static - π/4 DQPSK /HDR4 - 2404 MHz - Band Edge Frequency 2390.0 MHz

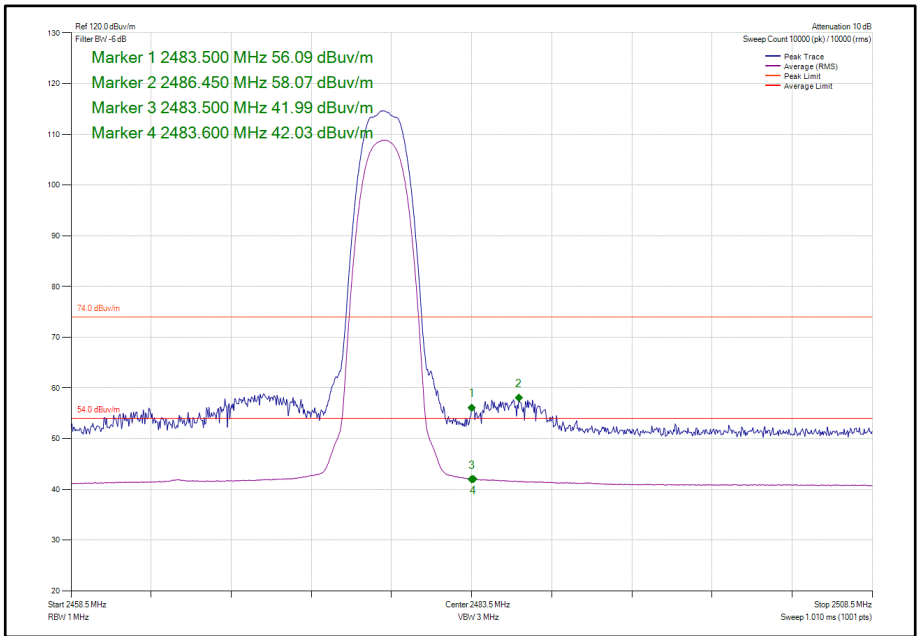

Figure 132 - Core 0-1 - Static - π/4 DQPSK /HDR4 - 2478 MHz - Band Edge Frequency 2483.5 MHz

HDR8

iPA

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	π/4 DQPSK	0	HDR8	2404	2390.0	54.85	42.19
Static	π/4 DQPSK	0	HDR8	2478	2483.5	57.44	45.64

Table 99 - Restricted Band Edge Results

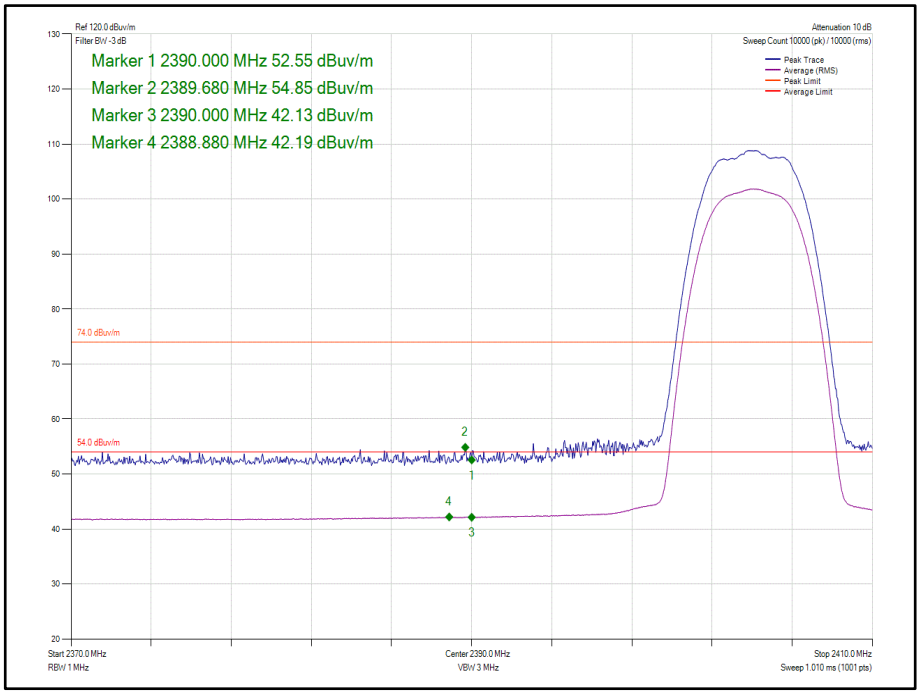

Figure 133 - Core 0 - Static - π/4 DQPSK /HDR8 - 2404 MHz - Band Edge Frequency 2390.0 MHz

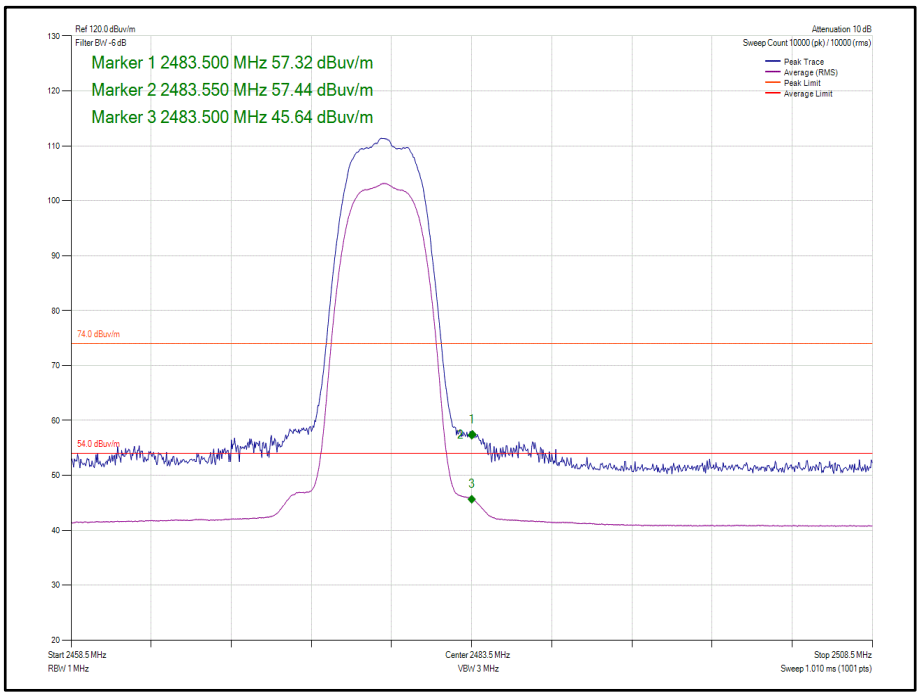

Figure 134 - Core 0 - Static - π/4 DQPSK /HDR8 - 2478 MHz - Band Edge Frequency 2483.5 MHz

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	π/4 DQPSK	1	HDR8	2404	2390.0	54.42	42.07
Static	π/4 DQPSK	1	HDR8	2478	2483.5	55.87	43.21

Table 100 - Restricted Band Edge Results

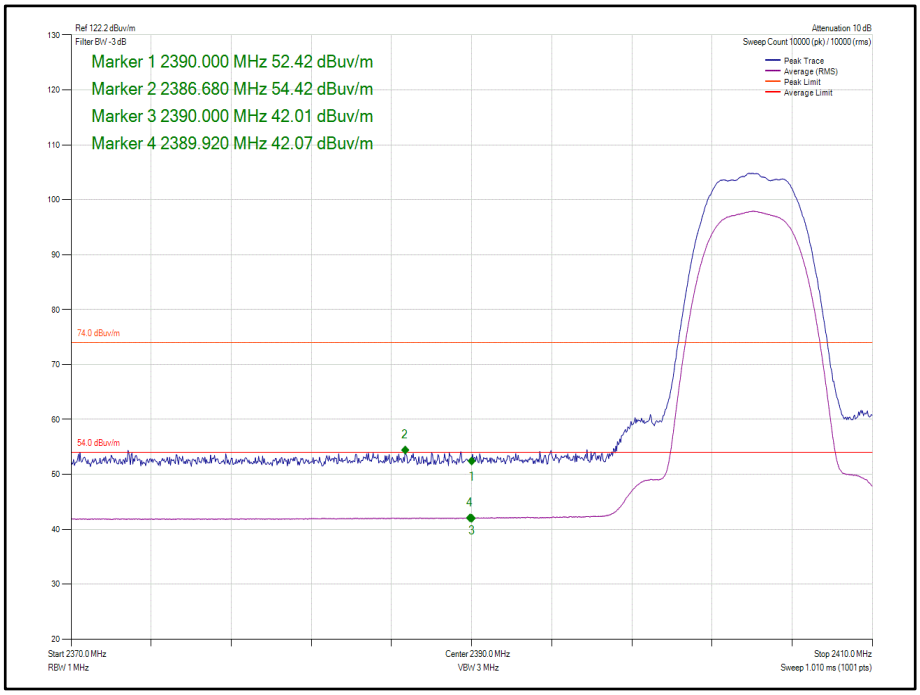

Figure 135- Core 1 - Static - π/4 DQPSK /HDR8 - 2404 MHz - Band Edge Frequency 2390.0 MHz

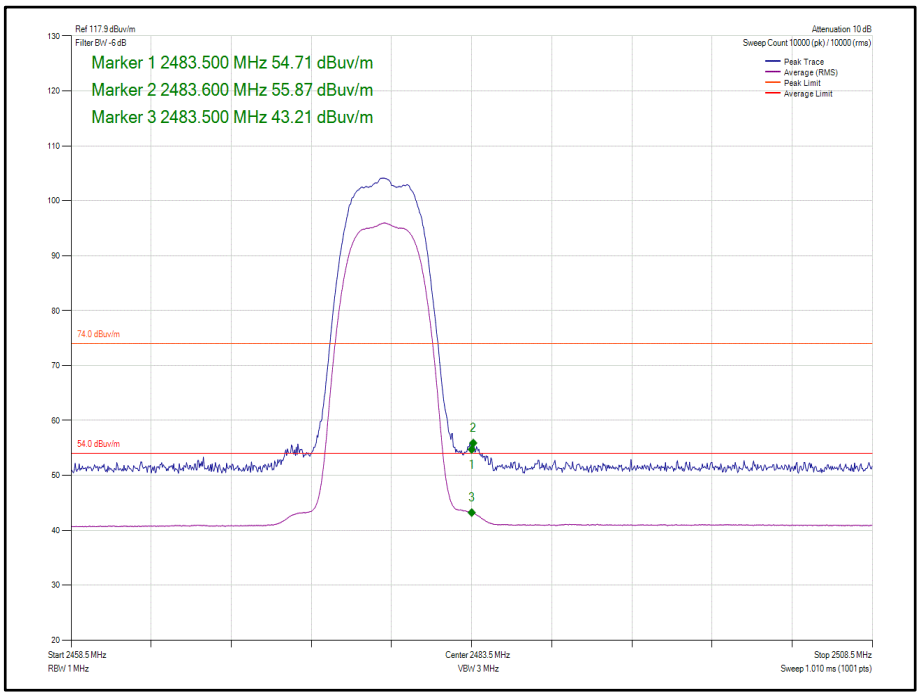

Figure 136 - Core 1 - Static - π/4 DQPSK /HDR8 - 2478 MHz - Band Edge Frequency 2483.5 MHz

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	π/4 DQPSK	0-1	HDR8	2404	2390.0	55.10	42.15
Static	π/4 DQPSK	0-1	HDR8	2478	2483.5	59.78	47.01

Table 101 - Restricted Band Edge Results

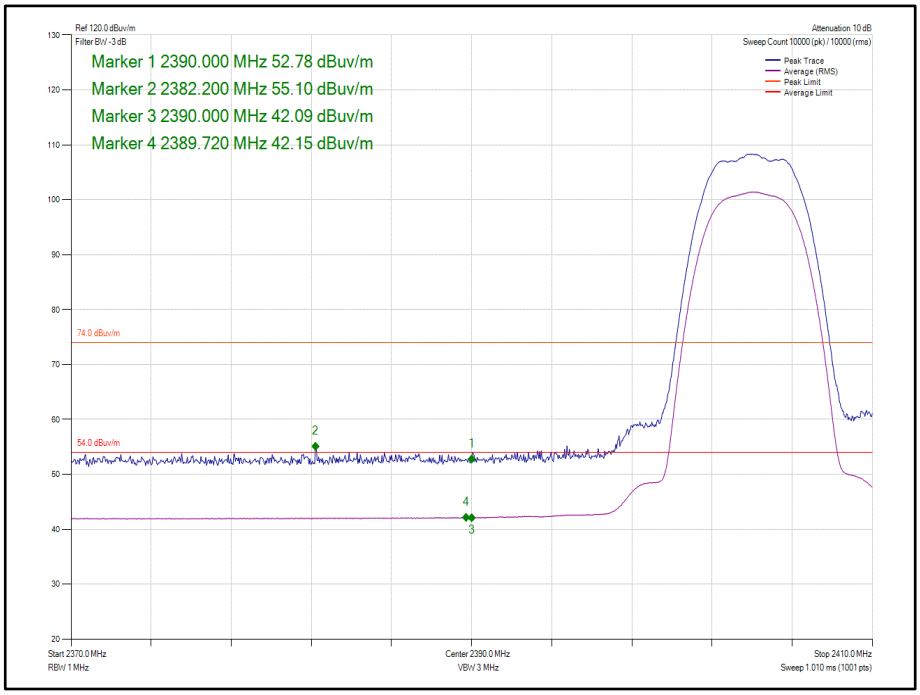

Figure 137- Core 0-1 - Static - π/4 DQPSK /HDR8 - 2404 MHz - Band Edge Frequency 2390.0 MHz

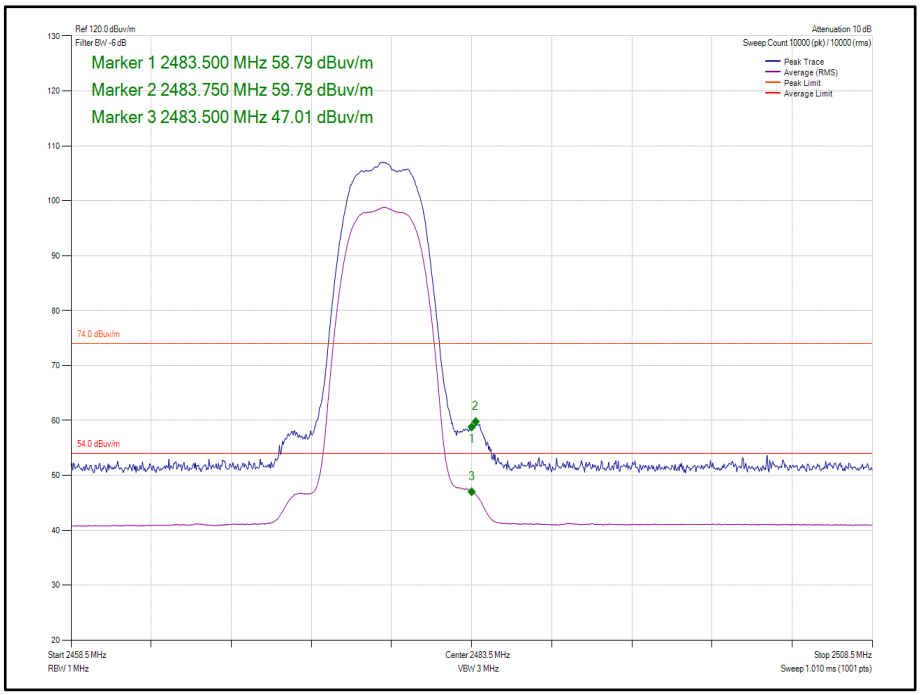

Figure 138 - Core 0-1 - Static - π/4 DQPSK /HDR8 - 2478 MHz - Band Edge Frequency 2483.5 MHz

ePA

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	π/4 DQPSK	0	HDR8	2404	2390.0	55.09	41.90
Static	π/4 DQPSK	0	HDR8	2478	2483.5	58.99	46.40

Table 102 - Restricted Band Edge Results

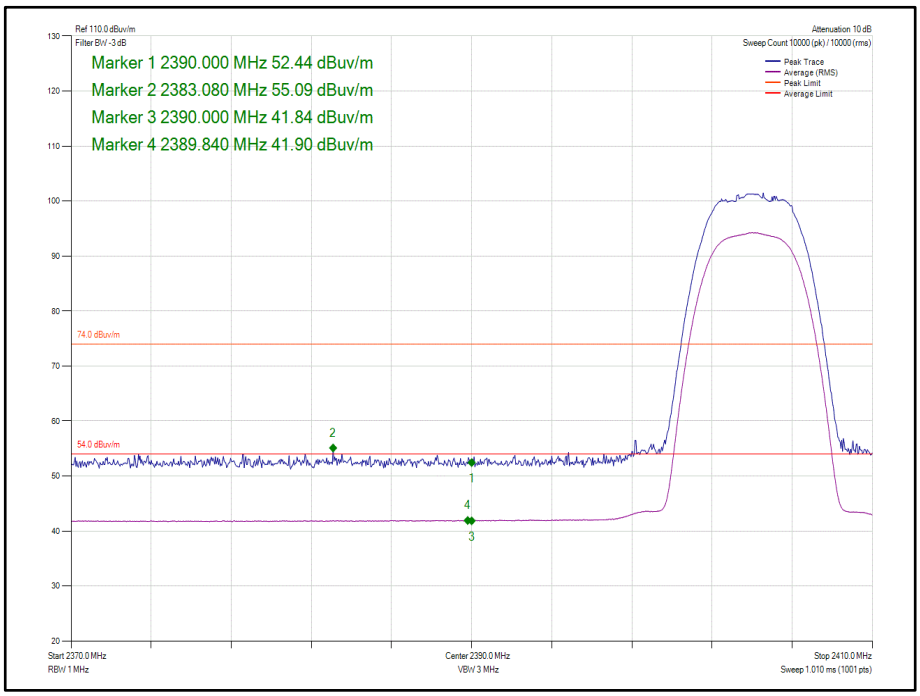

Figure 139- Core 0 - Static - π/4 DQPSK /HDR8 - 2404 MHz - Band Edge Frequency 2390.0 MHz

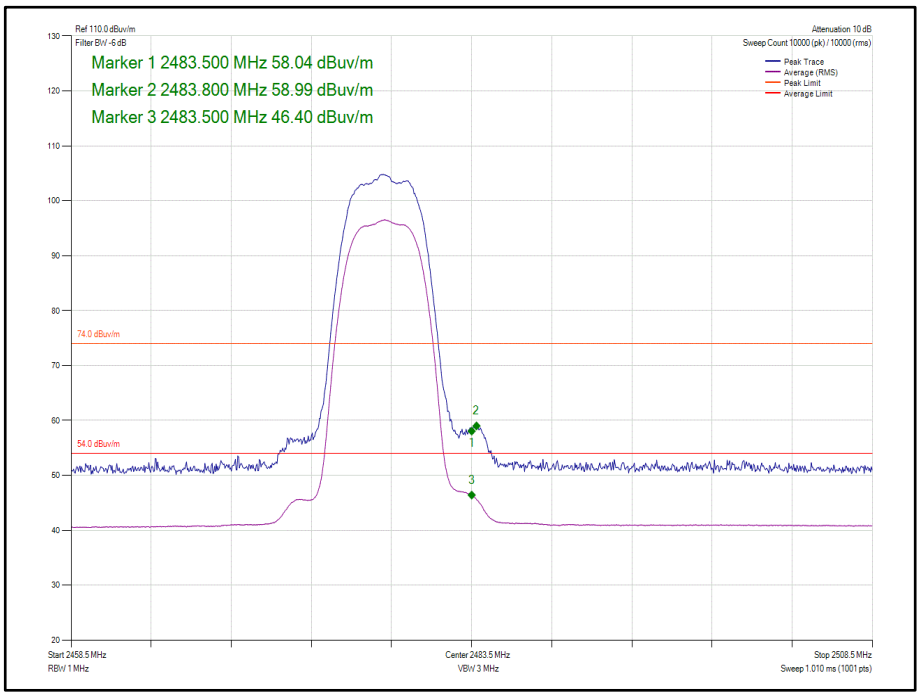

Figure 140 - Core 0 - Static - π/4 DQPSK /HDR8 - 2478 MHz - Band Edge Frequency 2483.5 MHz

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	π/4 DQPSK	1	HDR8	2404	2390.0	55.08	42.63
Static	π/4 DQPSK	1	HDR8	2478	2483.5	60.03	47.57

Table 103 - Restricted Band Edge Results

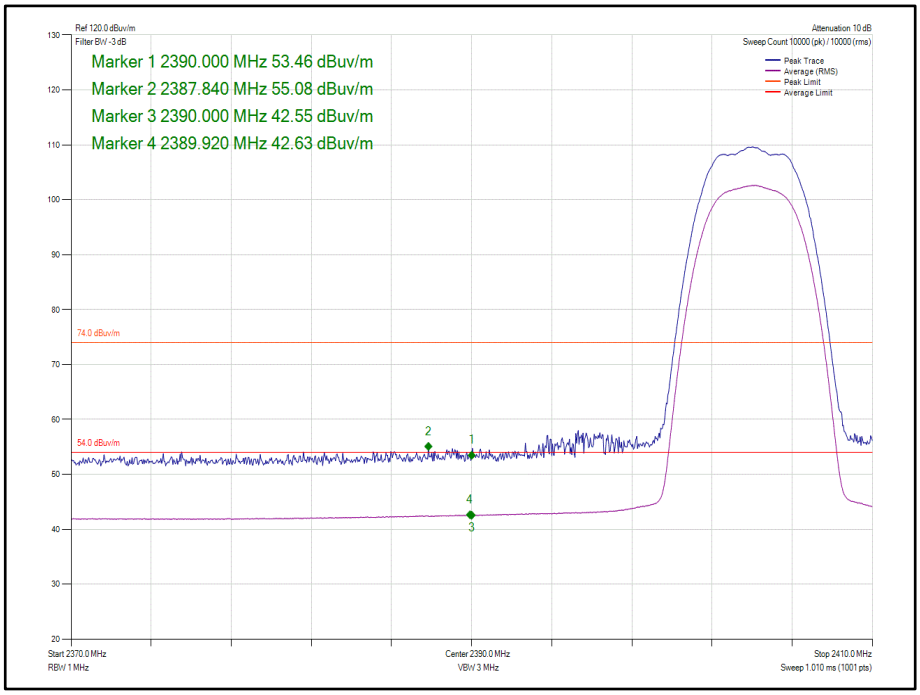

Figure 141- Core 1 - Static - π/4 DQPSK/HDR8 - 2404 MHz - Band Edge Frequency 2390.0 MHz

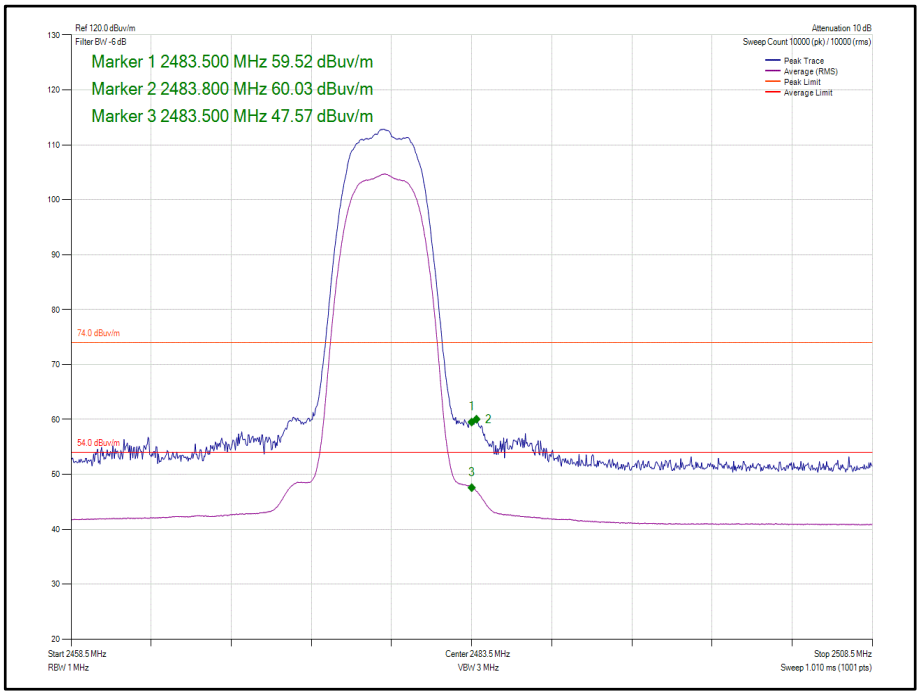

Figure 142 - Core 1 - Static - π/4 DQPSK/HDR8 - 2478 MHz - Band Edge Frequency 2483.5 MHz

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	π/4 DQPSK	0-1	HDR8	2404	2390.0	54.76	42.37
Static	π/4 DQPSK	0-1	HDR8	2478	2483.5	58.85	46.03

Table 104 - Restricted Band Edge Results

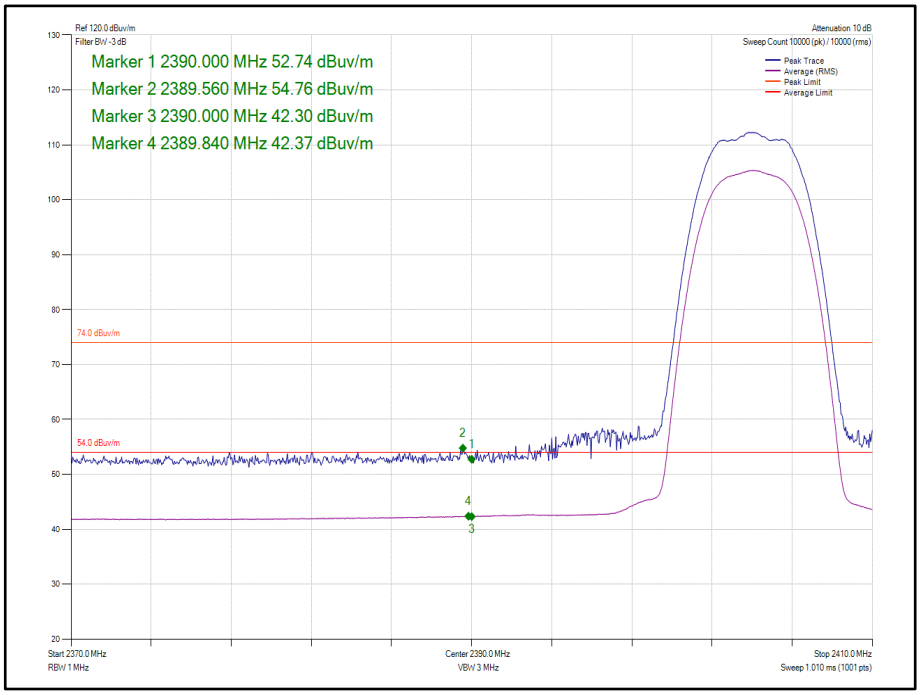

Figure 143- Core 0-1 - Static - π/4 DQPSK /HDR8 - 2404 MHz - Band Edge Frequency 2390.0 MHz

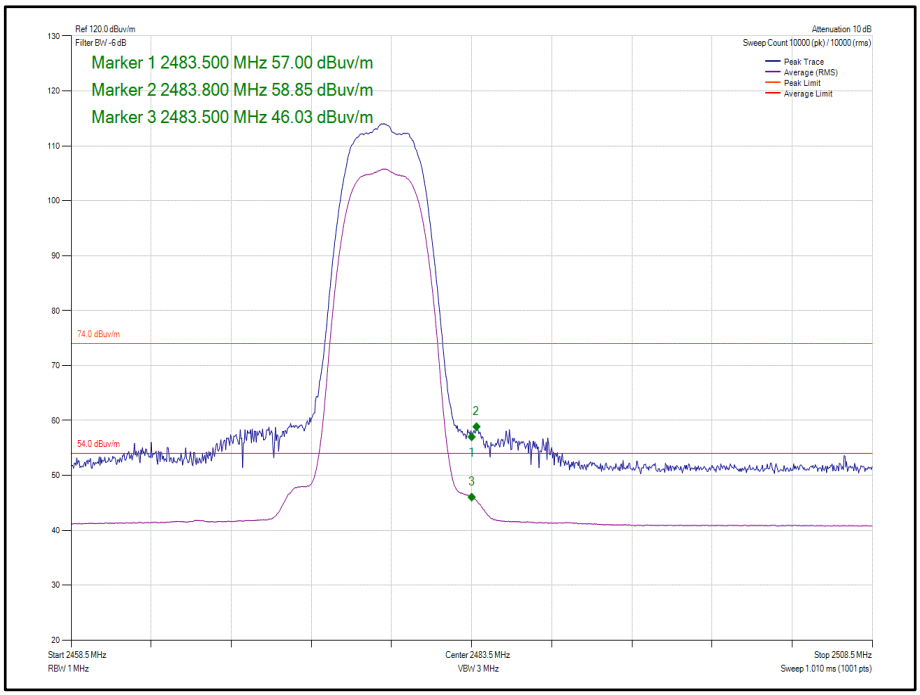

Figure 144 - Core 0-1 - Static - π/4 DQPSK /HDR8 - 2478 MHz - Band Edge Frequency 2483.5 MHz

FCC 47 CFR Part 15, Limit Clause 15.209

Frequency (MHz)	Field Strength (µV/m at 3 m)
30 to 88	100
88 to 216	150
216 to 960	200
Above 960	500

Table 105

ISED RSS-GEN, Limit Clause 8.9

Frequency (MHz)	Field Strength (µV/m at 3 m)
30 to 88	100
88 to 216	150
216 to 960	200
Above 960*	500

Table 106

*Unless otherwise specified, for all frequencies greater than 1 GHz, the radiated emission limits for licence-exempt radio apparatus stated in applicable RSSs (including RSS-Gen) are based on measurements using a linear average detector function having a minimum resolution bandwidth of 1 MHz. If an average limit is specified for the EUT, then the peak emission shall also be measured with instrumentation properly adjusted for such factors as pulse desensitization to ensure the peak emission is less than 20 dB above the average limit.

2.4.7 Test Location and Test Equipment Used

This test was carried out in RF Chamber 11.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Multimeter	Iso-tech	IDM101	2419	12	28-Nov-2020
EMI Test Receiver	Rohde & Schwarz	ESW44	5084	12	28-Nov-2020
EmX Emissions Software	TUV SUD	EmX	5125	-	Software
Screened Room (11)	Rainford	Rainforf	5136	36	01-Nov-2021
Mast	Maturo	TAM 4.0-P	5158	-	TU
Mast and Turntable Controller	Maturo	Maturo NCD	5159	-	TU
Turntable	Maturo	TT 15WF	5160	-	TU
Horn Antenna (1-10GHz)	Schwarzbeck	BBHA 9120 B	5215	12	10-Mar-2021
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB-40	5475	12	17-Mar-2021
Attenuator 5W 10dB DC-18GHz	Aaren	AT40A-4041-D18-10	5494	12	14-Apr-2021
2m SMA Cable	Junkosha	MWX221-02000AMSAMS/A	5518	12	01-Apr-2021
8m N Type Cable	Junkosha	MWX221-08000NMSNMS/B	5522	12	24-Mar-2021

Table 107

TU - Traceability Unscheduled

2.5 Spurious Radiated Emissions

2.5.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (d) and 15.205
ISED RSS-247, Clause 5.5
ISED RSS-GEN, Clause 6.13

2.5.2 Equipment Under Test and Modification State

A2338, S/N: C02CX02PQC36 - Modification State 0

2.5.3 Date of Test

23-August-2020 to 04-September-2020

2.5.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 6.3, 6.5 and 6.6.

The EUT was placed on the non-conducting platform in a manner typical of a normal installation. Ports on the EUT were terminated with loads as described in ANSI C63.4 clause 6.2.4. One port of each type was loaded with a suitable ancillary/accessory.

For frequencies > 1 GHz, plots for average measurements were taken in accordance with ANSI C63.10, clause 11.12.2.5.2.

The plots shown are the characterisation of the EUT. The limits on the plots represent the most stringent case for restricted bands, (74/54 dBuV/m) when compared to 20 dBc outside restricted bands. The limits shown have been used as a threshold to determine where further measurements are necessary. Where an emission is identifiable from the noise floor and the pre-scan result is within 20 dB of the limits shown on the plots, further investigation was carried out and reported in results tables.

The following conversion can be applied to convert from dBµV/m to µV/m:
10^(Field Strength in dBµV/m/20).

To determine the emission characteristic of the EUT above 18 GHz, the test antenna was swept over all faces of the EUT whilst observing a spectral display. The frequency of any emissions of interest was noted for formal measurement at the correct measurement distance of 1m. This procedure was repeated for all relevant transmit operating channels.

At a measurement distance of 1 meter the limit line was increased by 20*LOG(3/1) = 9.54 dB.

Representative noise floor plots are presented in the plot section of the report for one operating channel only.

Where formal measurements have been necessary, the results have been presented in the emissions table.

In the 30 MHz to 1 GHz range pre-scans were only performed on the main radio mid channel (2440 MHz).

2.5.5 Example Test Setup Diagram

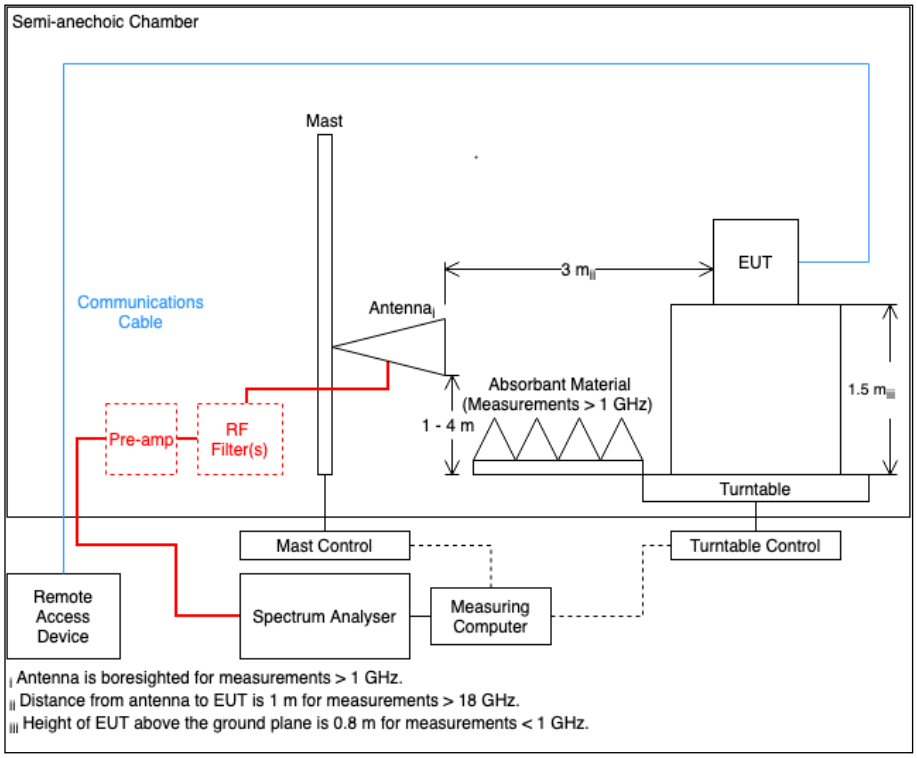

Figure 145

2.5.6 Environmental Conditions

Ambient Temperature	20.8 - 24.7 °C
Relative Humidity	51.1 - 67.2 %

2.5.7 Test Results

2.4 GHz Bluetooth Low Energy (DTS)

iPA

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
4804.161	40.1	54.0	-14.0	rms	349	296	Vertical

Table 108 - 2402 MHz (CH0), LE1M, iPA, Core 0, 1 GHz to 26 GHz

No other emissions found within 10 dB of the limit.

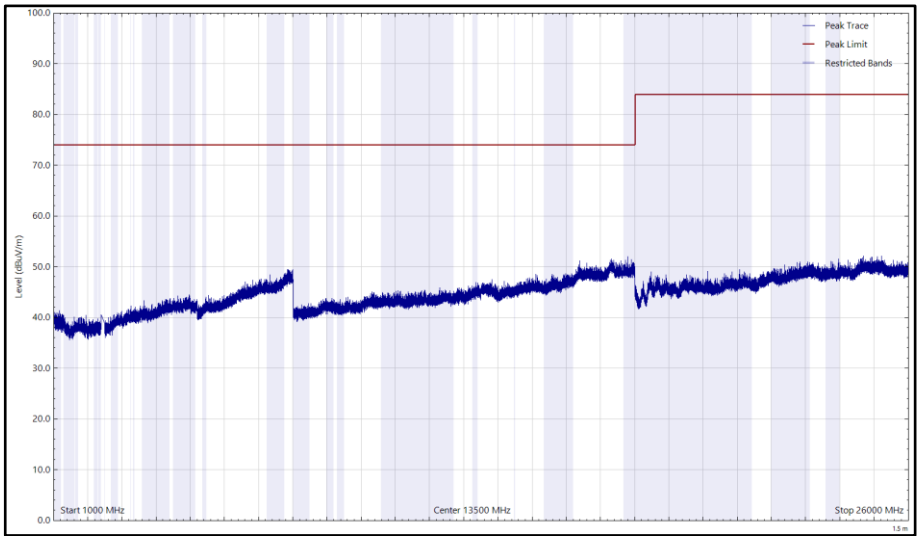

Figure 146 - 2402 MHz (CH0), LE1M, iPA, Core 0, 1 GHz to 26 GHz, Horizontal (Peak)

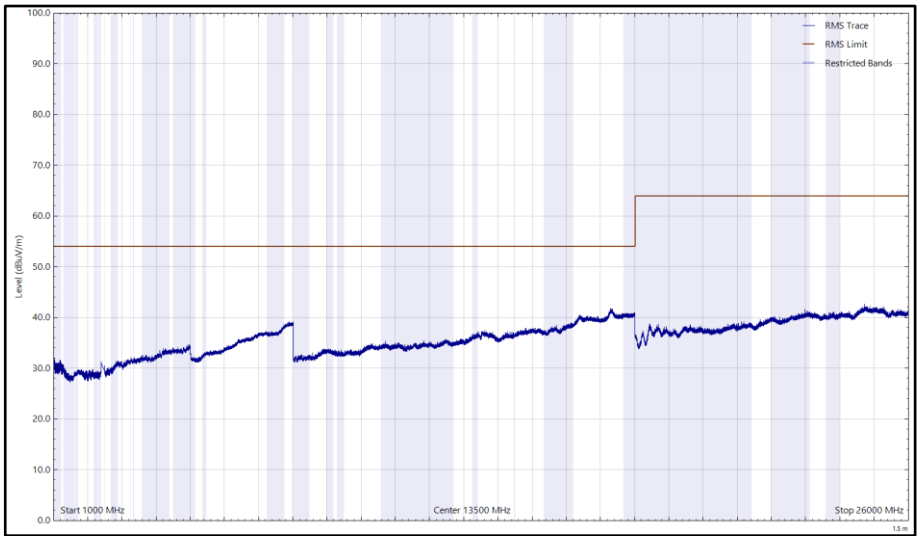

Figure 147 - 2402 MHz (CH0), LE1M, iPA, Core 0, 1 GHz to 26 GHz, Horizontal (rms)

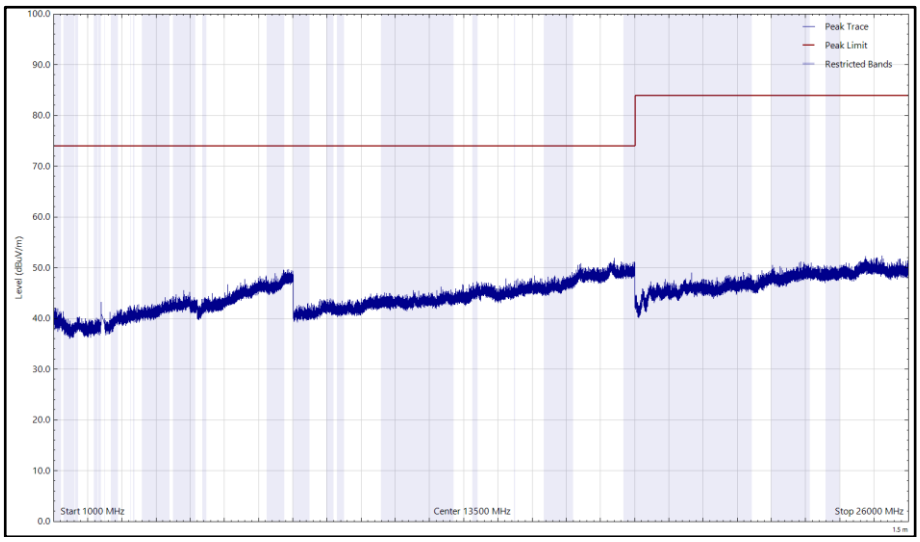

Figure 148 - 2402 MHz (CH0), LE1M, iPA, Core 0, 1 GHz to 26 GHz, Vertical (Peak)

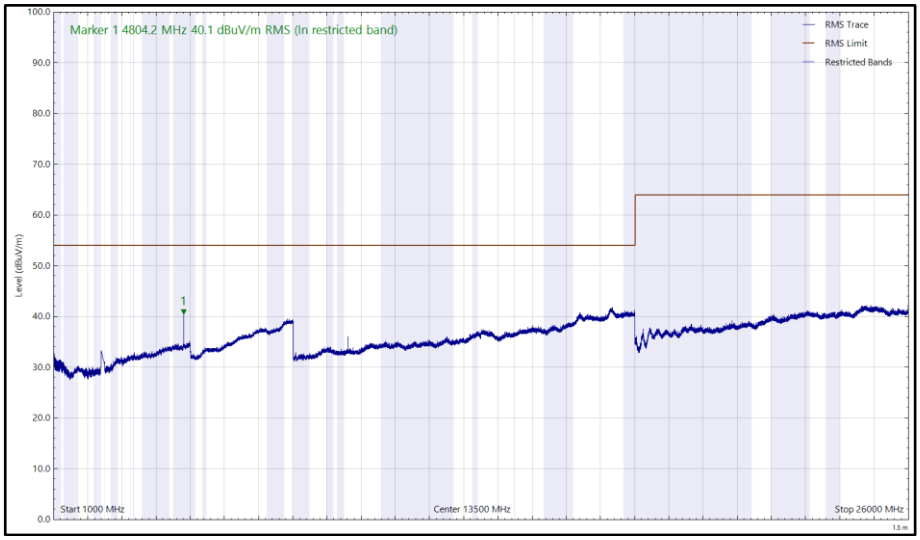

Figure 149 - 2402 MHz (CH0), LE1M, iPA, Core 0, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
70.388	21.2	40.0	-18.8	Q-Peak	126	100	Vertical
4879.645	47.3	74.0	-26.7	Peak	0	185	Vertical
4879.756	37.1	54.0	-16.9	rms	0	185	Vertical

Table 109 - 2440 MHz (CH17), LE1M, iPA, Core 0, 30 MHz to 26 GHz

No other emissions found within 10 dB of the limit.

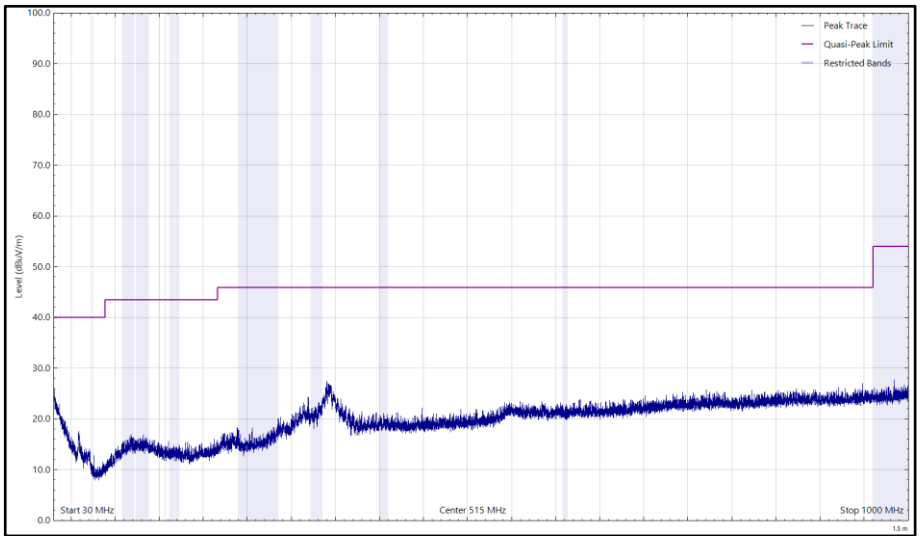

Figure 150 - 2440 MHz (CH17), LE1M, iPA, Core 0, 30 MHz to 1 GHz, Horizontal (Peak)

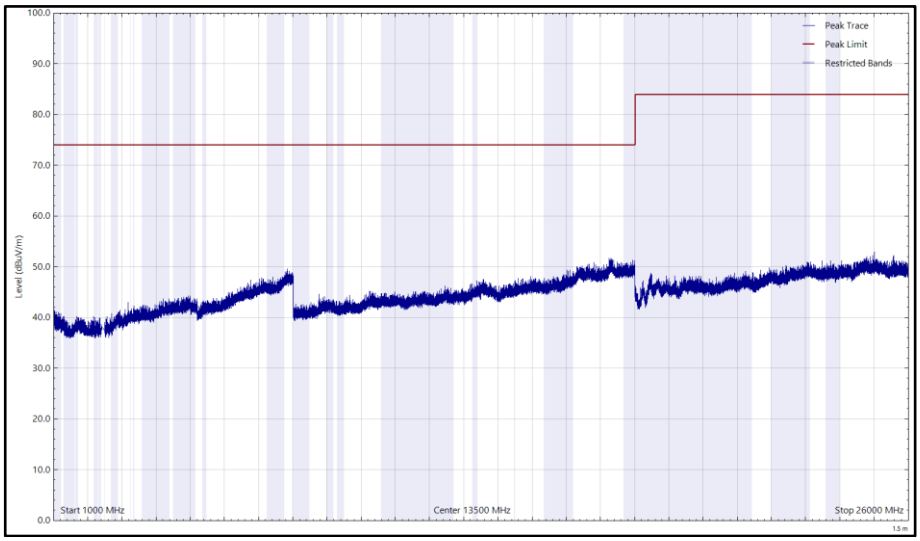

Figure 151 - 2440 MHz (CH17), LE1M, iPA, Core 0, 1 GHz to 26 GHz, Horizontal (Peak)

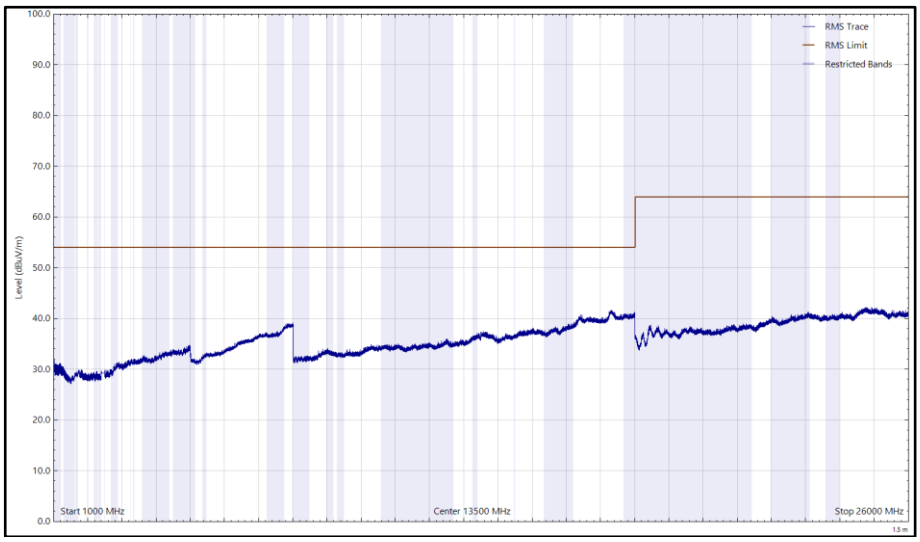

Figure 152 - 2440 MHz (CH17), LE1M, iPA, Core 0, 1 GHz to 26 GHz, Horizontal (rms)

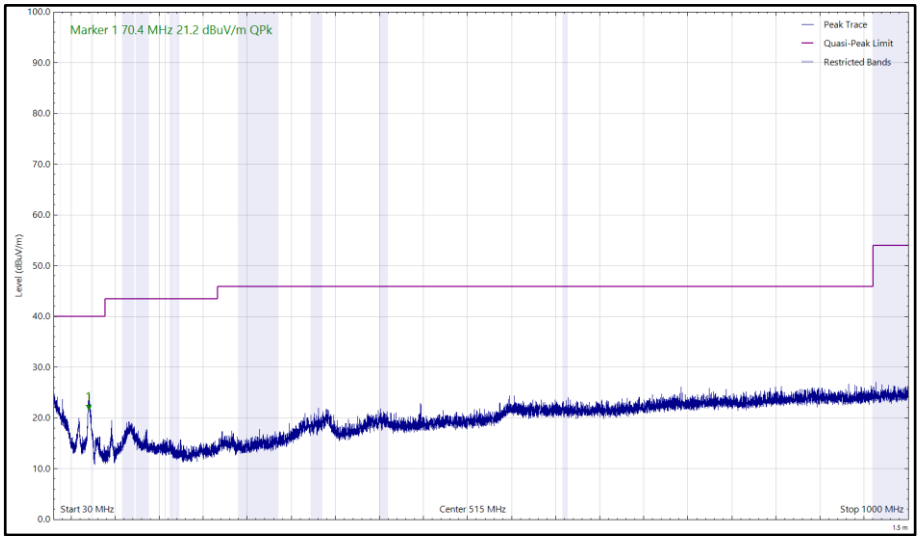

Figure 153 - 2440 MHz (CH17), LE1M, iPA, Core 0, 30 MHz to 1 GHz, Vertical (Peak)

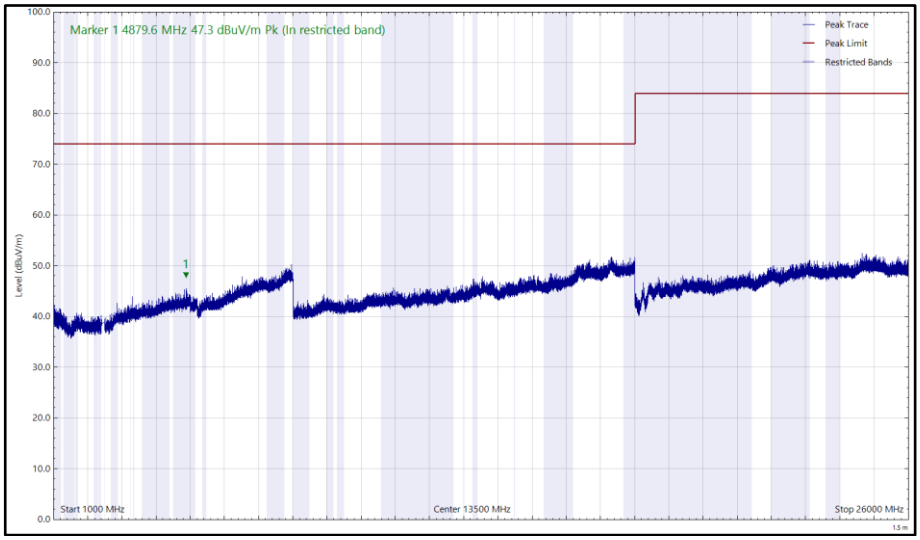

Figure 154 - 2440 MHz (CH17), LE1M, iPA, Core 0, 1 GHz to 26 GHz, Vertical (Peak)

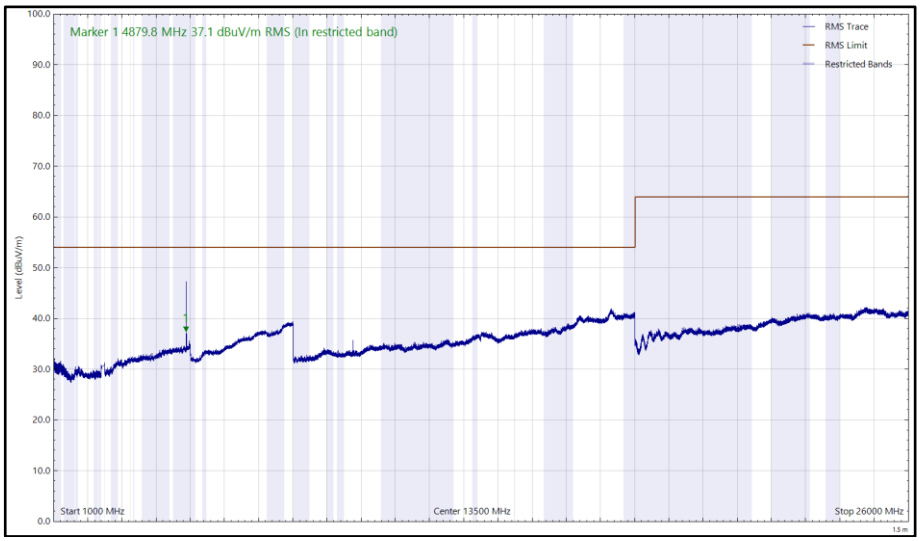

Figure 155 - 2440 MHz (CH17), LE1M, iPA, Core 0, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
4959.967	37.4	54.0	-16.6	rms	1	297	Vertical

Table 110 - 2480 MHz (CH39), LE1M, iPA, Core 0, 1 GHz to 26 GHz

No other emissions found within 10 dB of the limit.

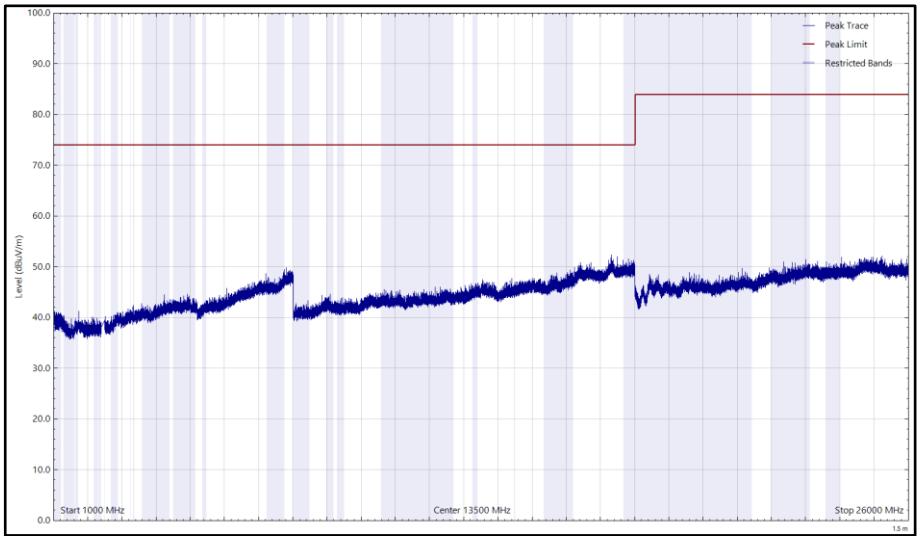

Figure 156 - 2480 MHz (CH39), LE1M, iPA, Core 0, 1 GHz to 26 GHz, Horizontal (Peak)

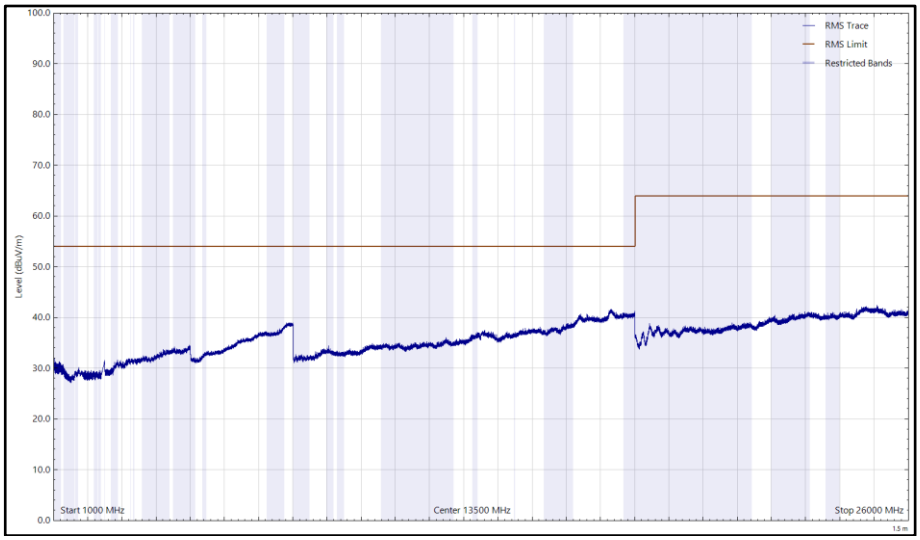

Figure 157 - 2480 MHz (CH39), LE1M, iPA, Core 0, 1 GHz to 26 GHz, Horizontal (rms)

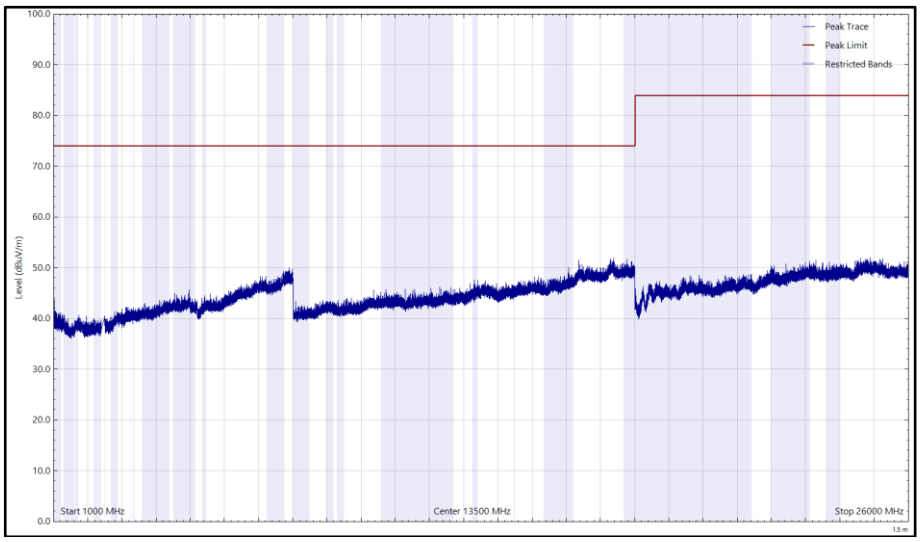

Figure 158 - 2480 MHz (CH39), LE1M, iPA, Core 0, 1 GHz to 26 GHz, Vertical (Peak)

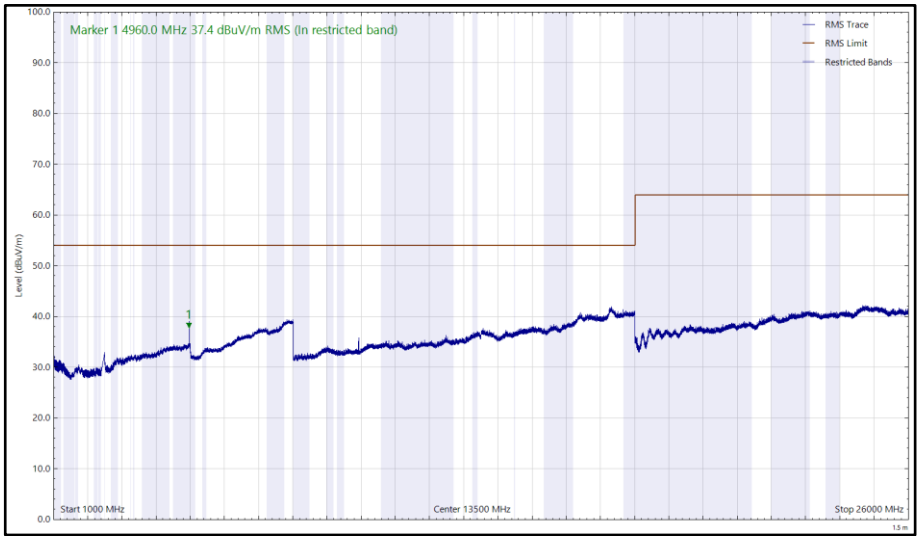

Figure 159 - 2480 MHz (CH39), LE1M, iPA, Core 0, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
4803.731	37.6	54.0	-16.4	rms	4	287	Vertical

Table 111 - 2402 MHz (CH0), LE1M, iPA, Core 1, 1 GHz to 26 GHz

No other emissions found within 10 dB of the limit.

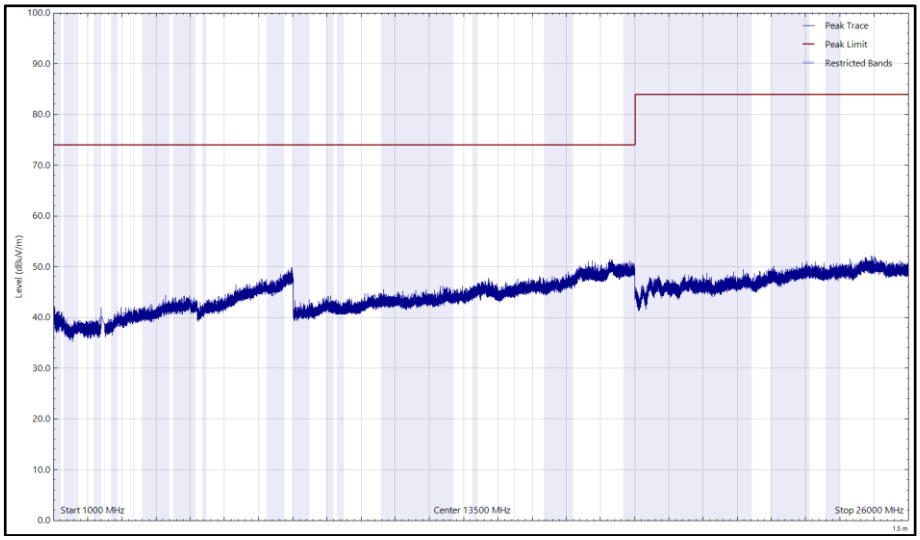

Figure 160 - 2402 MHz (CH0), LE1M, iPA, Core 1, 1 GHz to 26 GHz, Horizontal (Peak)

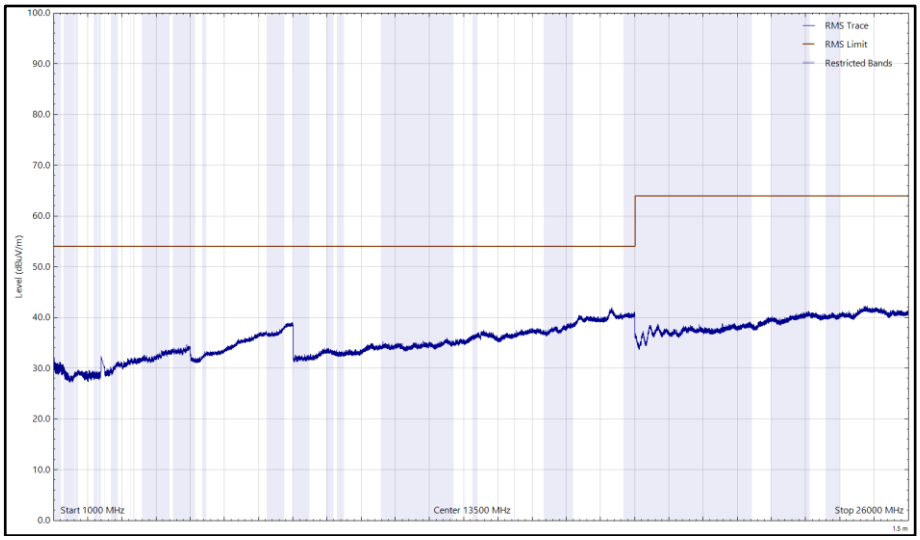

Figure 161 - 2402 MHz (CH0), LE1M, iPA, Core 1, 1 GHz to 26 GHz, Horizontal (rms)

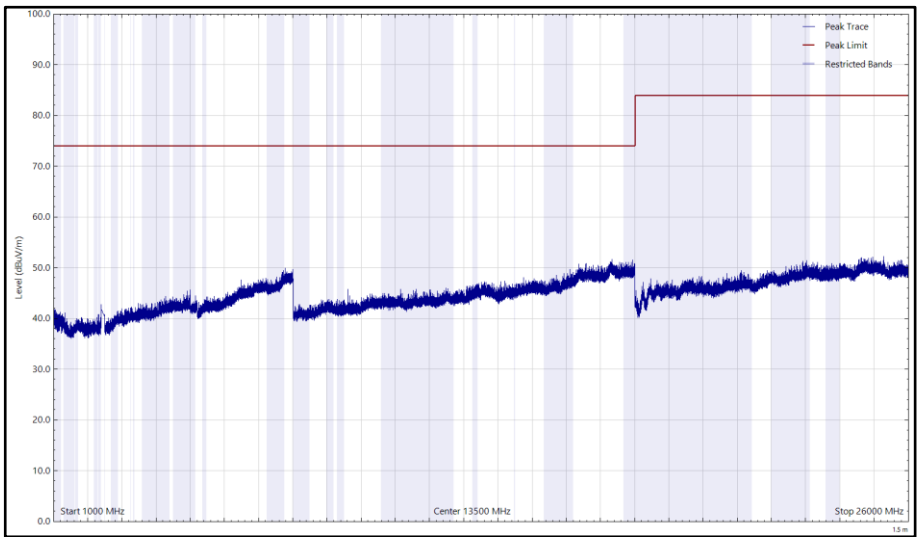

Figure 162 - 2402 MHz (CH0), LE1M, iPA, Core 1, 1 GHz to 26 GHz, Vertical (Peak)

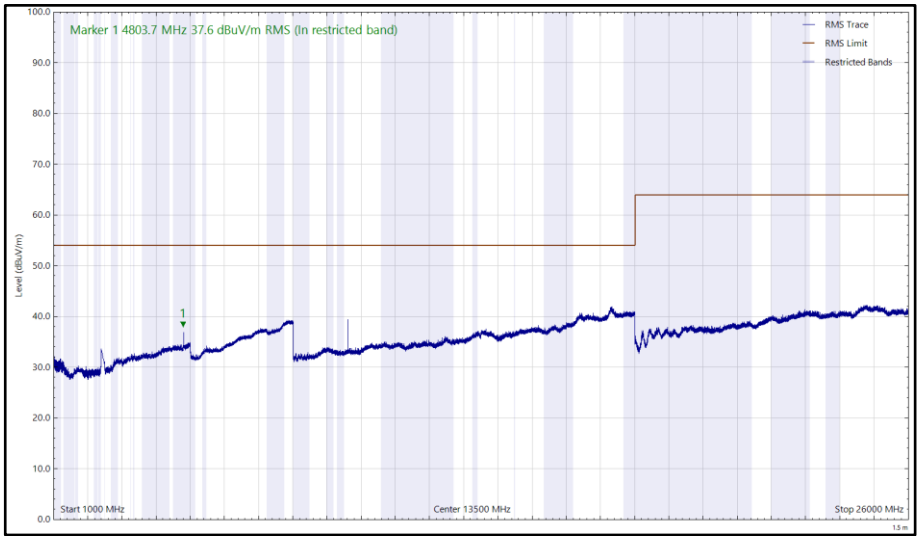

Figure 163 - 2402 MHz (CH0), LE1M, iPA, Core 1, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
70.331	20.0	40.0	-20.0	Q-Peak	155	100	Vertical
4879.819	38.5	54.0	-15.5	rms	3	397	Vertical
4880.628	48.2	74.0	-25.8	Peak	3	397	Vertical

Table 112 - 2440 MHz (CH17), LE1M, iPA, Core 1, 30 MHz to 26 GHz

No other emissions found within 10 dB of the limit.

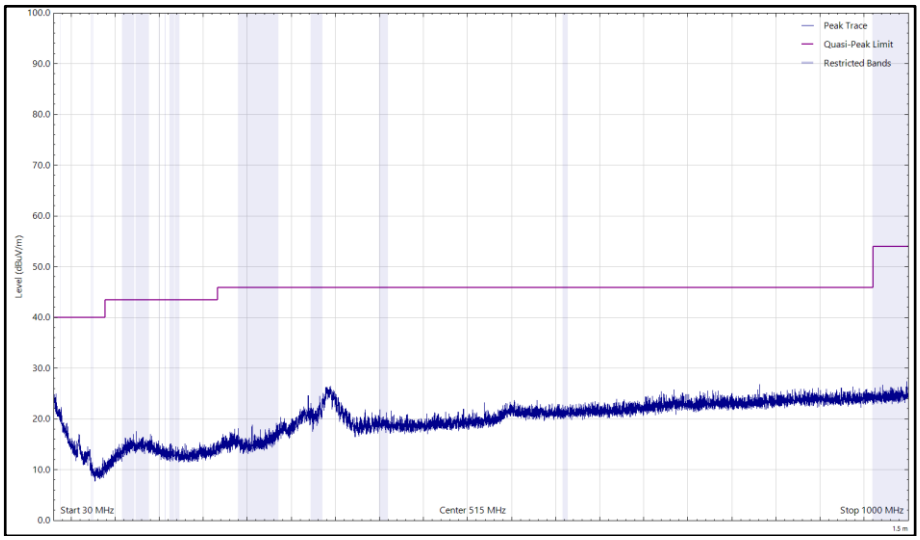

Figure 164 - 2440 MHz (CH17), LE1M, iPA, Core 1, 30 MHz to 1 GHz, Horizontal (Peak)

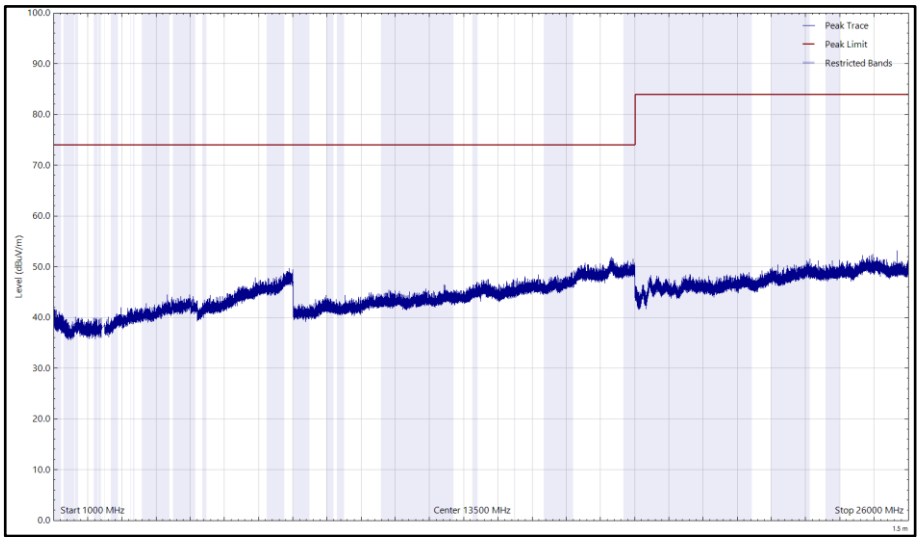

Figure 165 - 2440 MHz (CH17), LE1M, iPA, Core 1, 1 GHz to 26 GHz, Horizontal (Peak)

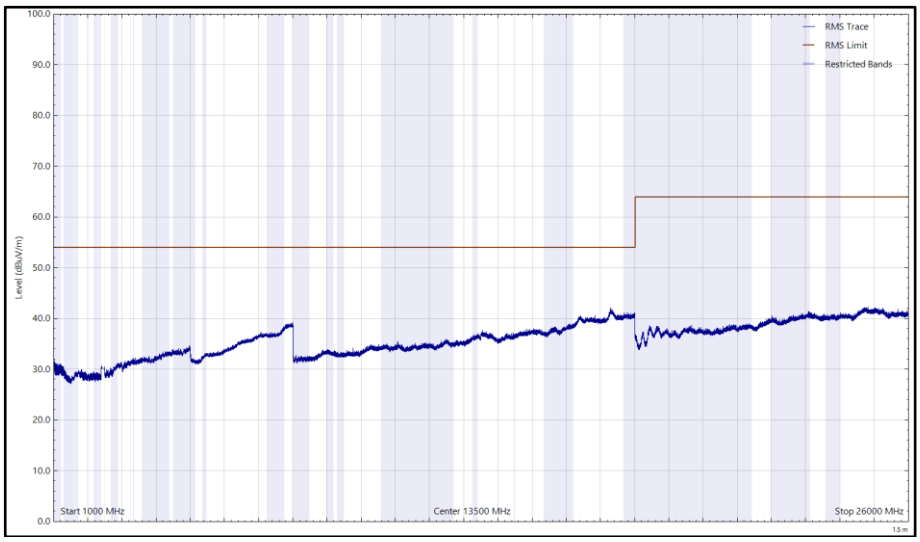

Figure 166 - 2440 MHz (CH17), LE1M, iPA, Core 1, 1 GHz to 26 GHz, Horizontal (rms)

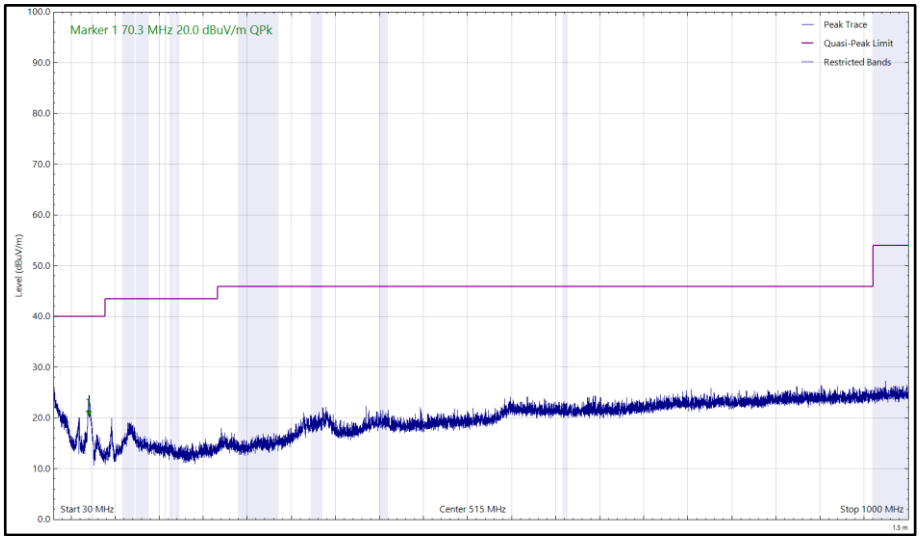

Figure 167 - 2440 MHz (CH17), LE1M, iPA, Core 1, 30 MHz to 1 GHz, Vertical (Peak)

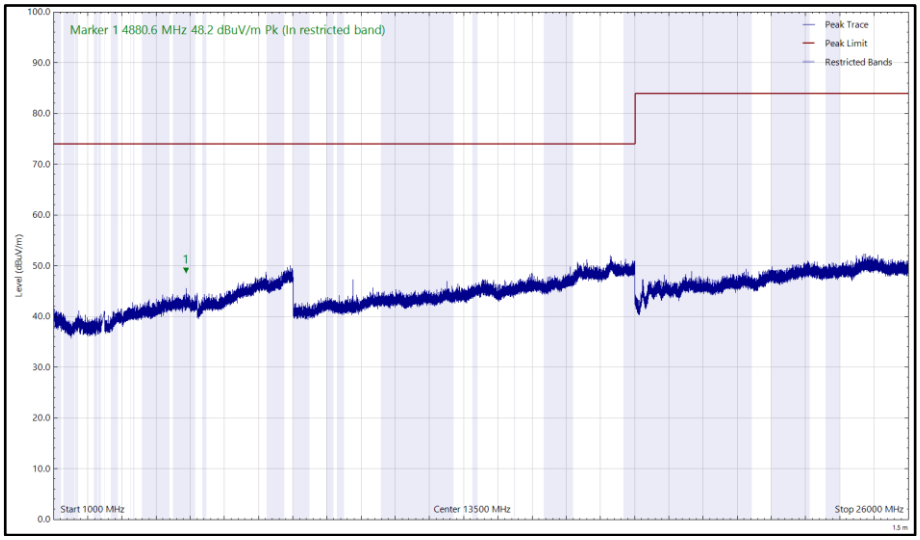

Figure 168 - 2440 MHz (CH17), LE1M, iPA, Core 1, 1 GHz to 26 GHz, Vertical (Peak)

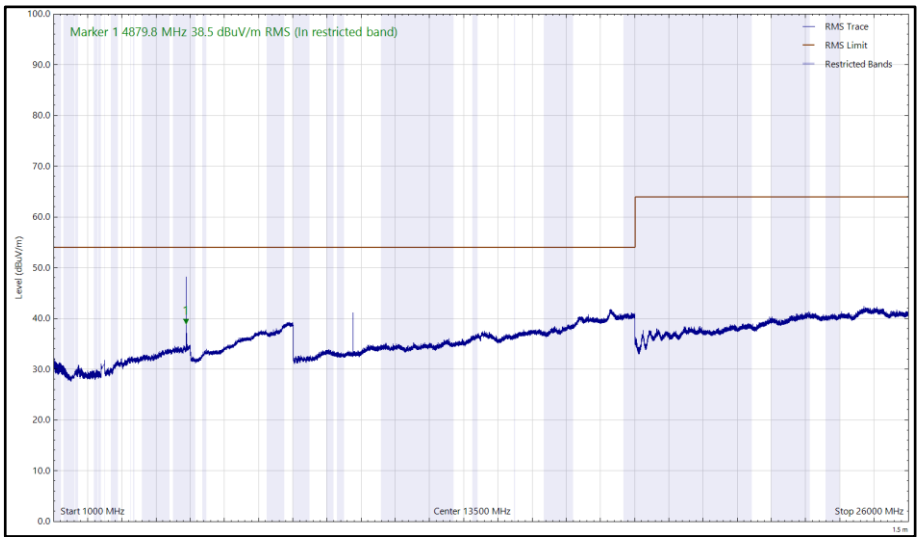

Figure 169 - 2440 MHz (CH17), LE1M, iPA, Core 1, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
4959.872	40.9	54.0	-13.1	rms	7	296	Vertical

Table 113 - 2480 MHz (CH39), LE1M, iPA, Core 1, 1 GHz to 26 GHz

No other emissions found within 10 dB of the limit.

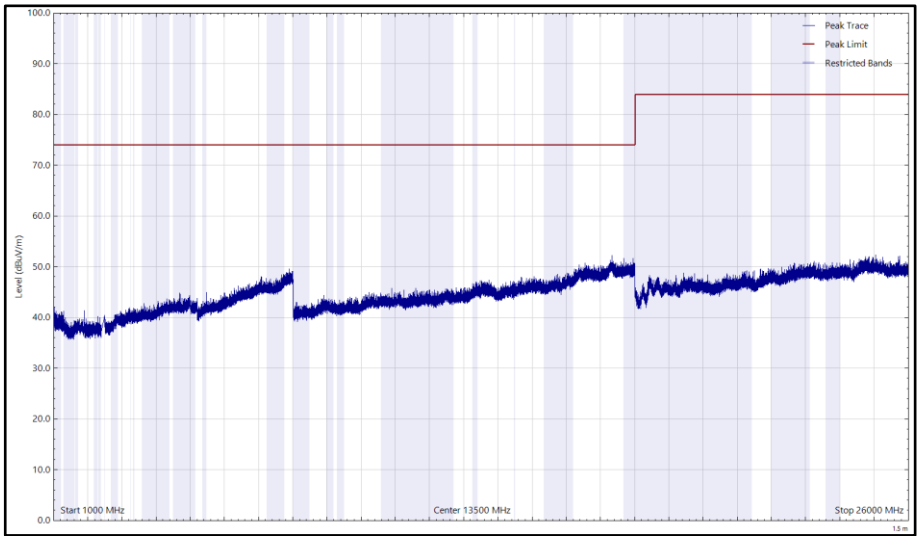

Figure 170 - 2480 MHz (CH39), LE1M, iPA, Core 1, 1 GHz to 26 GHz, Horizontal (Peak)

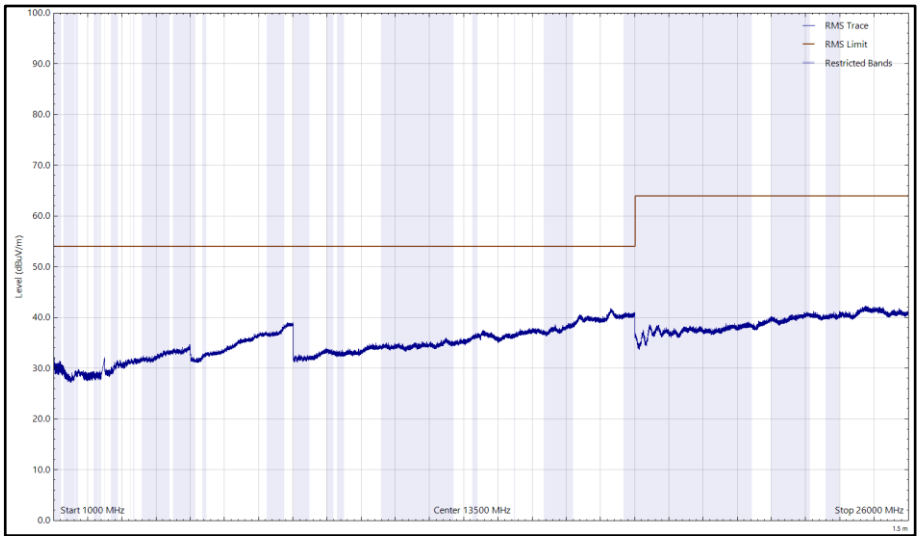

Figure 171 - 2480 MHz (CH39), LE1M, iPA, Core 1, 1 GHz to 26 GHz, Horizontal (rms)

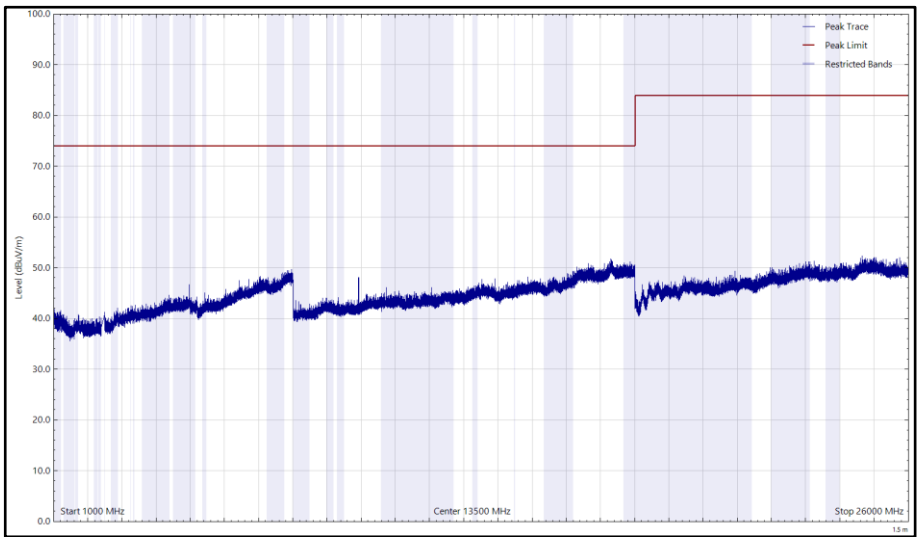

Figure 172 - 2480 MHz (CH39), LE1M, iPA, Core 1, 1 GHz to 26 GHz, Vertical (Peak)

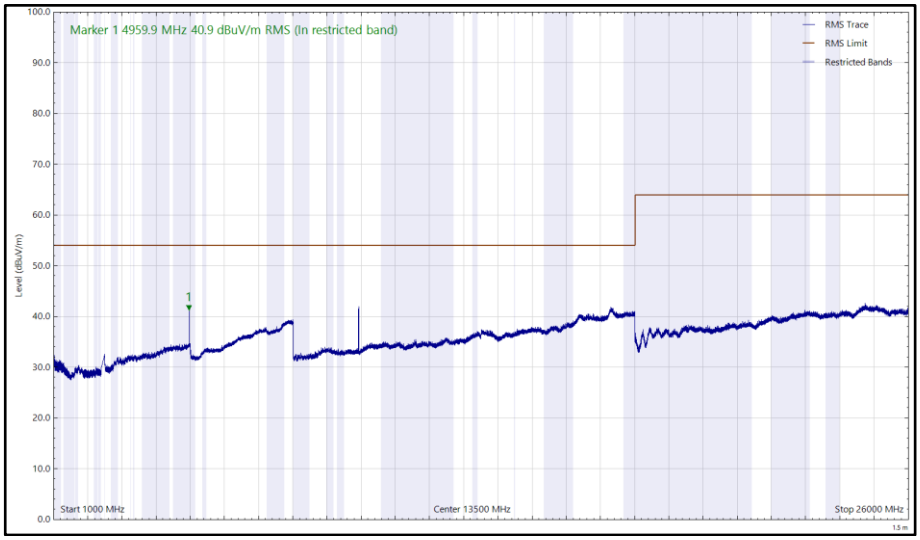

Figure 173 - 2480 MHz (CH39), LE1M, iPA, Core 1, 1 GHz to 26 GHz, Vertical (rms)

ePA

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
4803.822	39.6	54.0	-14.4	rms	351	283	Vertical

Table 114 - 2402 MHz (CH0), LE1M, ePA, Core 0, 1 GHz to 26 GHz

No other emissions found within 10 dB of the limit.

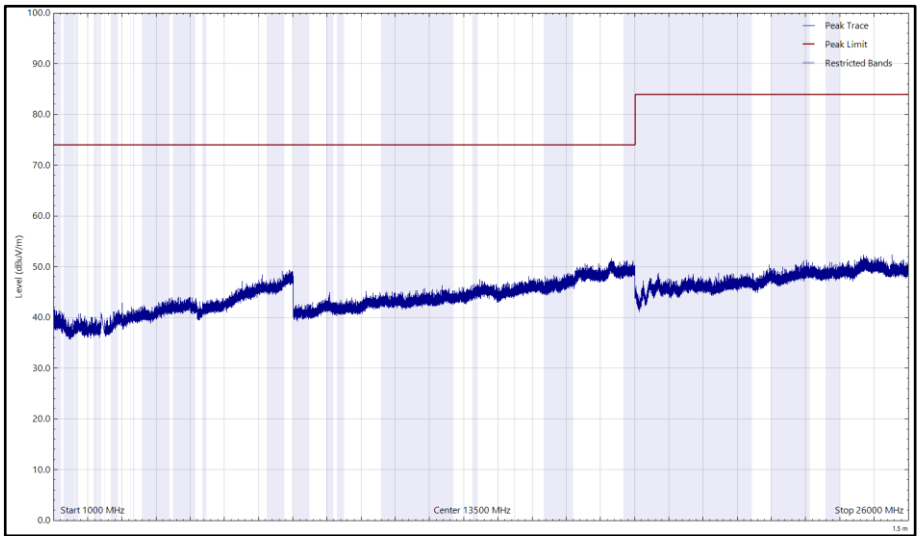

Figure 174 - 2402 MHz (CH0), LE1M, ePA, Core 0, 1 GHz to 26 GHz, Horizontal (Peak)

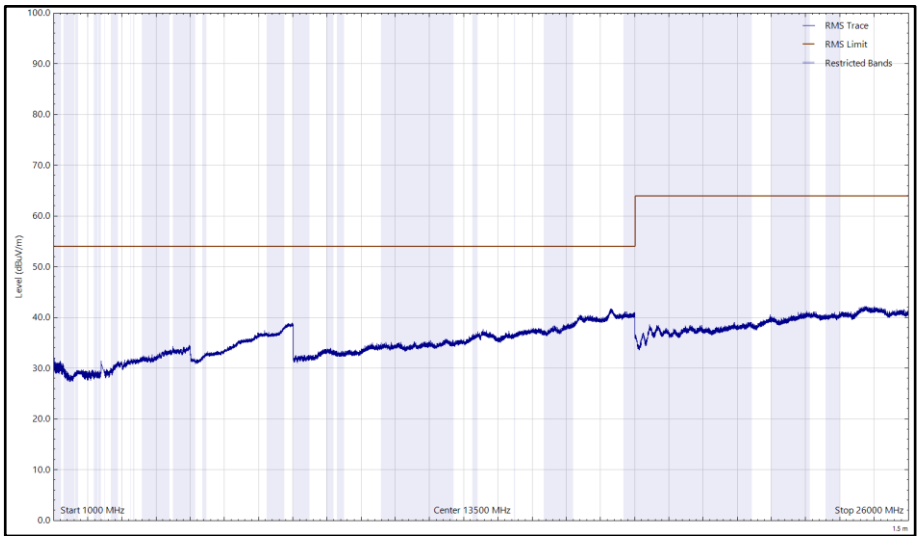

Figure 175 - 2402 MHz (CH0), LE1M, ePA, Core 0, 1 GHz to 26 GHz, Horizontal (rms)

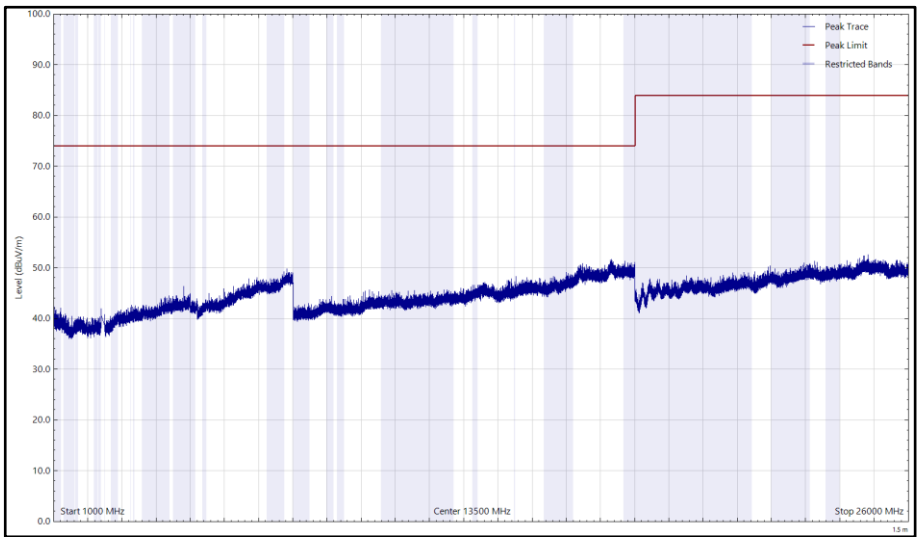

Figure 176 - 2402 MHz (CH0), LE1M, ePA, Core 0, 1 GHz to 26 GHz, Vertical (Peak)

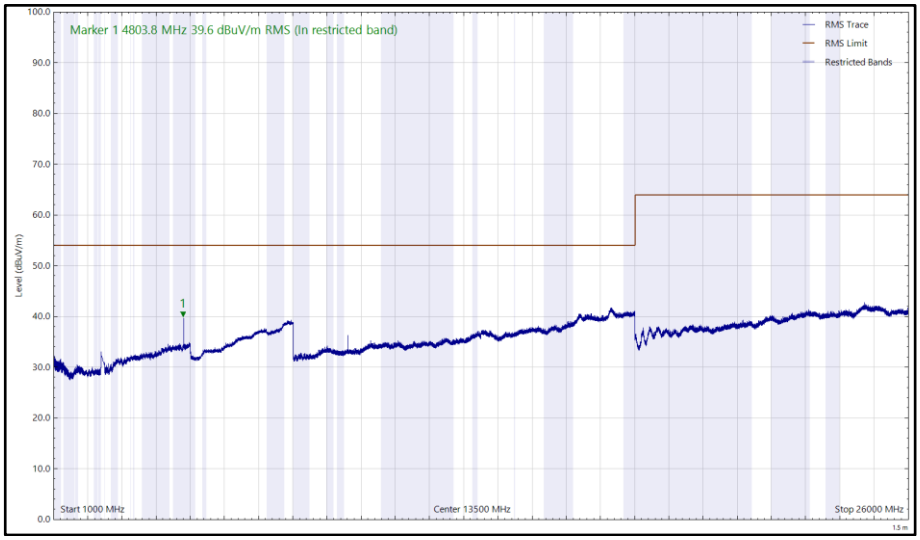

Figure 177 - 2402 MHz (CH0), LE1M, ePA, Core 0, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
70.533	20.3	40.0	-19.7	Q-Peak	117	107	Vertical
4879.311	47.8	74.0	-26.2	Peak	360	313	Vertical
4879.985	38.6	54.0	-15.4	rms	360	313	Vertical

Table 115 - 2440 MHz (CH17), LE1M, ePA, Core 0, 30 MHz to 26 GHz

No other emissions found within 10 dB of the limit.

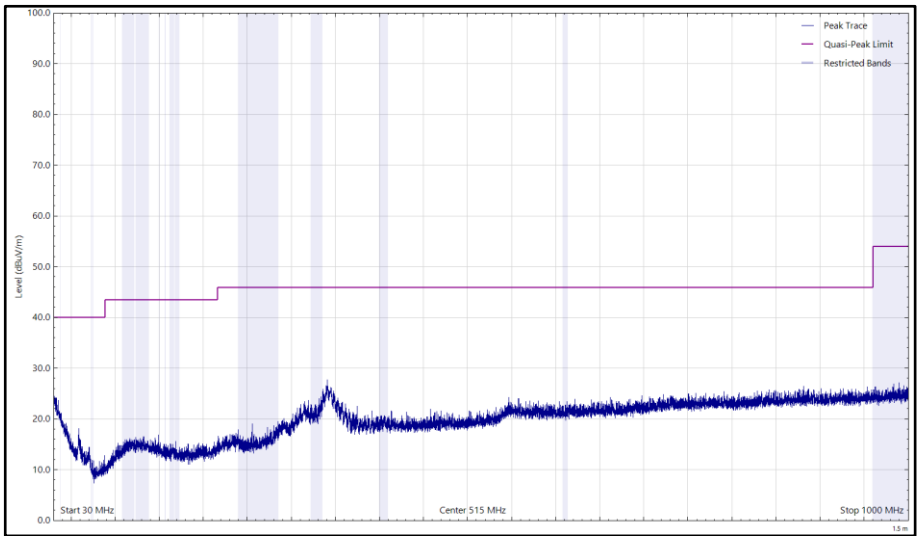

Figure 178 - 2440 MHz (CH17), LE1M, ePA, Core 0, 30 MHz to 1 GHz, Horizontal (Peak)

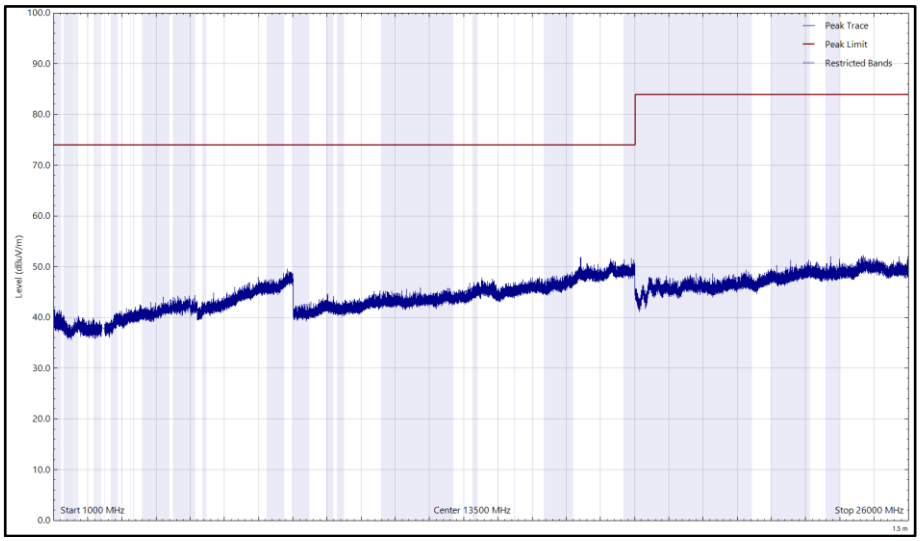

Figure 179 - 2440 MHz (CH17), LE1M, ePA, Core 0, 1 GHz to 26 GHz, Horizontal (Peak)

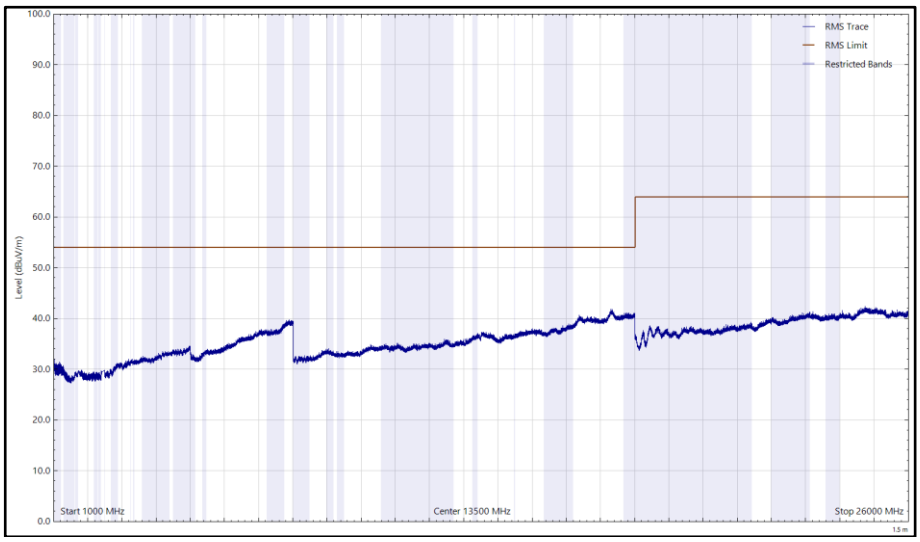

Figure 180 - 2440 MHz (CH17), LE1M, ePA, Core 0, 1 GHz to 26 GHz, Horizontal (rms)

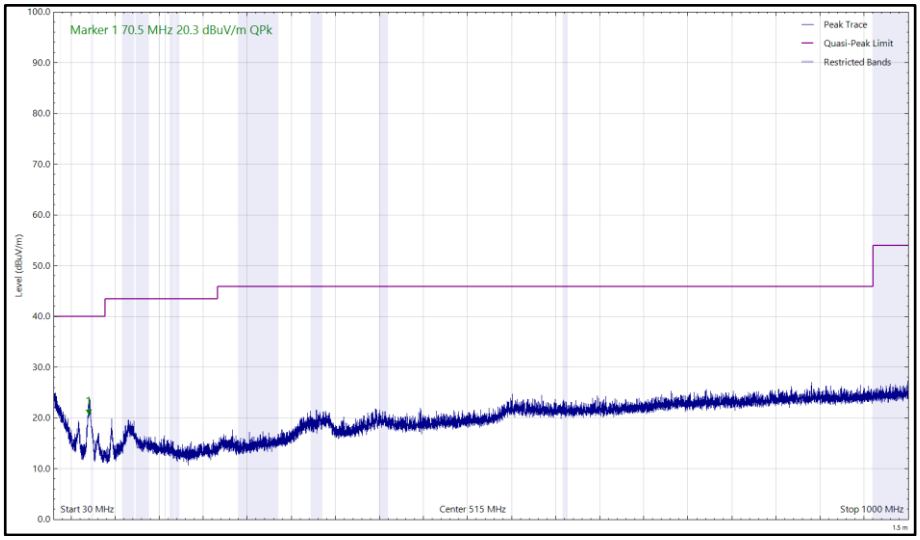

Figure 181 - 2440 MHz (CH17), LE1M, ePA, Core 0, 30 MHz to 1 GHz, Vertical (Peak)

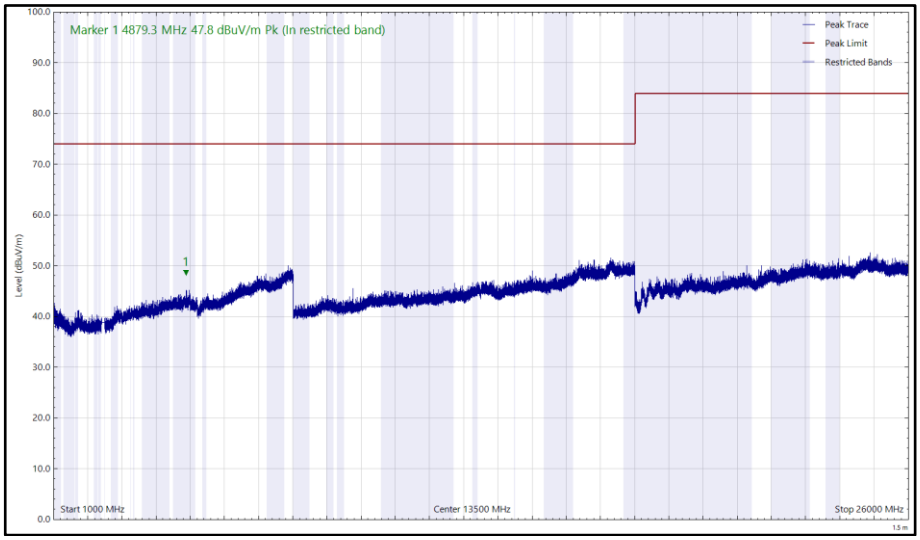

Figure 182 - 2440 MHz (CH17), LE1M, ePA, Core 0, 1 GHz to 26 GHz, Vertical (Peak)

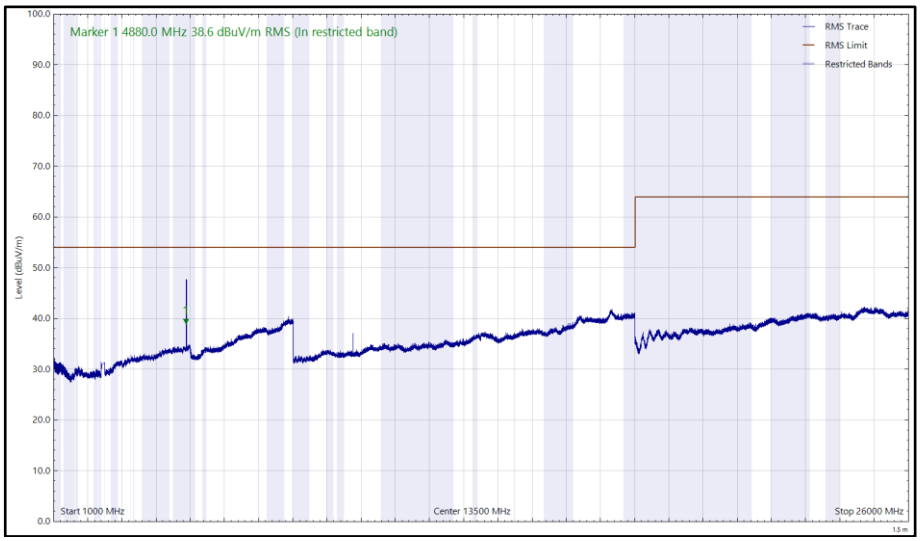

Figure 183 - 2440 MHz (CH17), LE1M, ePA, Core 0, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
4960.053	37.9	54.0	-16.1	rms	356	304	Vertical

Table 116 - 2480 MHz (CH39), LE1M, ePA, Core 0, 1 GHz to 26 GHz

No other emissions found within 10 dB of the limit.

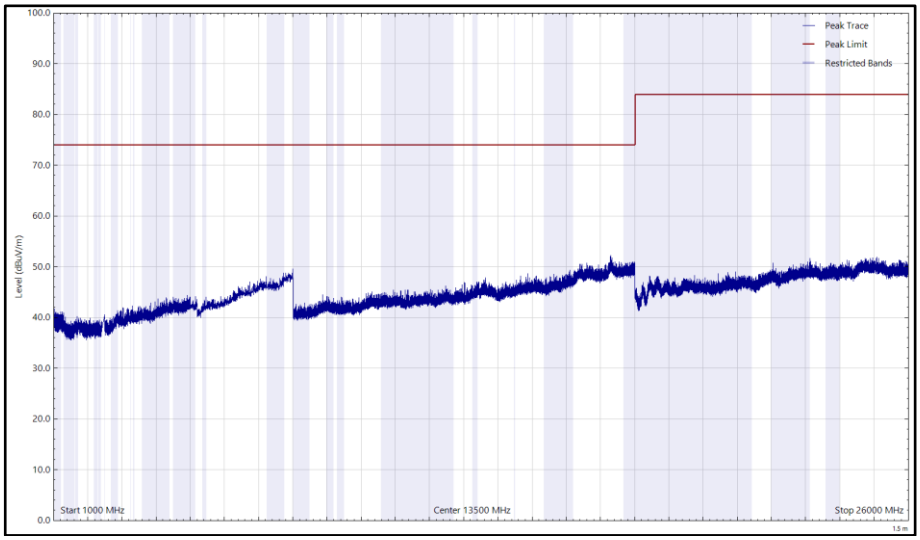

Figure 184 - 2480 MHz (CH39), LE1M, ePA, Core 0, 1 GHz to 26 GHz, Horizontal (Peak)

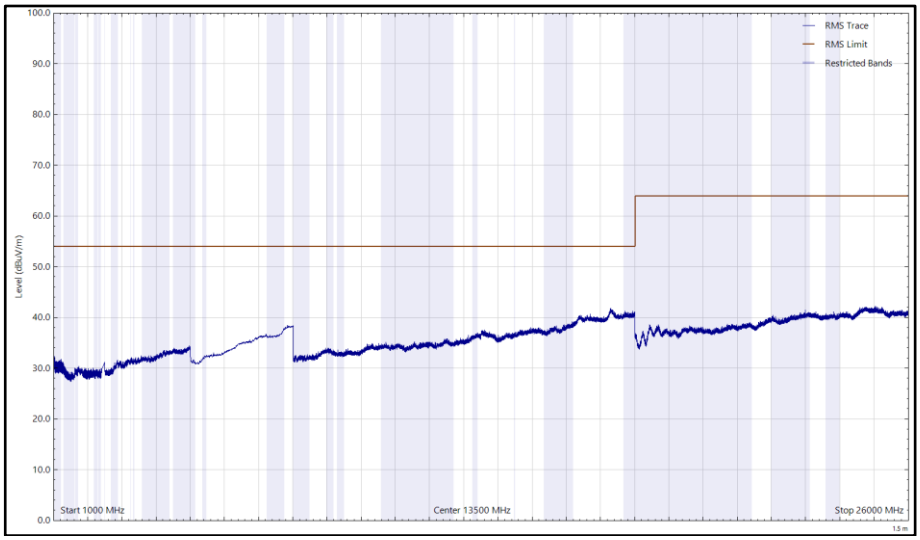

Figure 185 - 2480 MHz (CH39), LE1M, ePA, Core 0, 1 GHz to 26 GHz, Horizontal (rms)

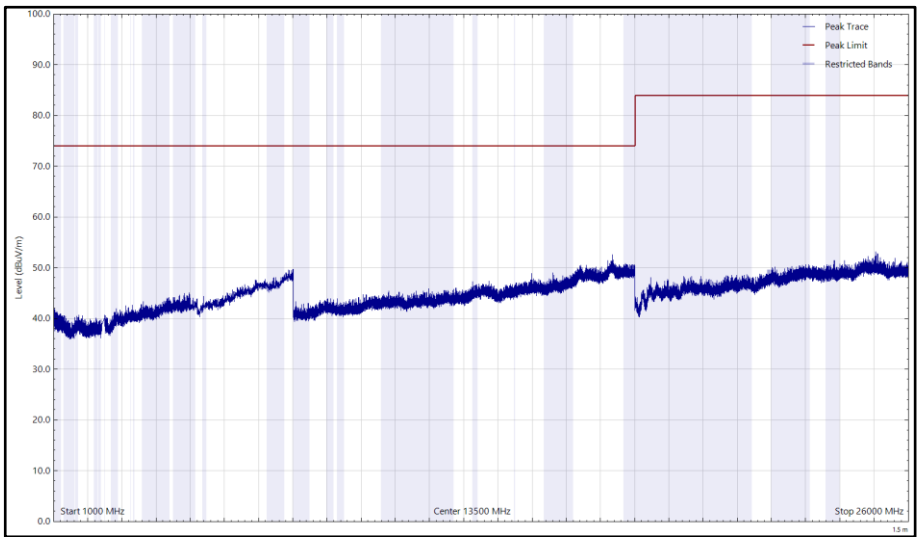

Figure 186 - 2480 MHz (CH39), LE1M, ePA, Core 0, 1 GHz to 26 GHz, Vertical (Peak)

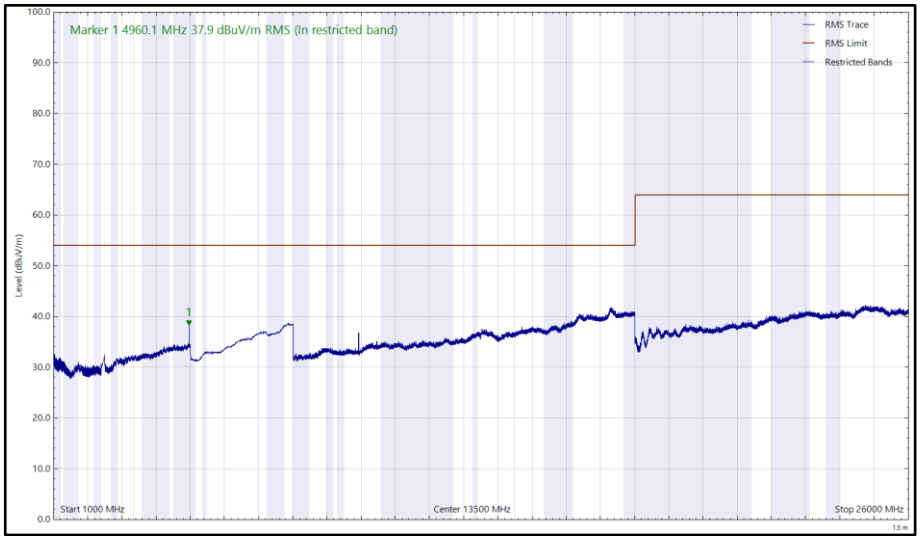

Figure 187 - 2480 MHz (CH39), LE1M, ePA, Core 0, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
4804.006	37.8	54.0	-16.2	rms	360	307	Vertical

Table 117 - 2402 MHz (CH0), LE1M, ePA, Core 1, 1 GHz to 26 GHz

No other emissions found within 10 dB of the limit.

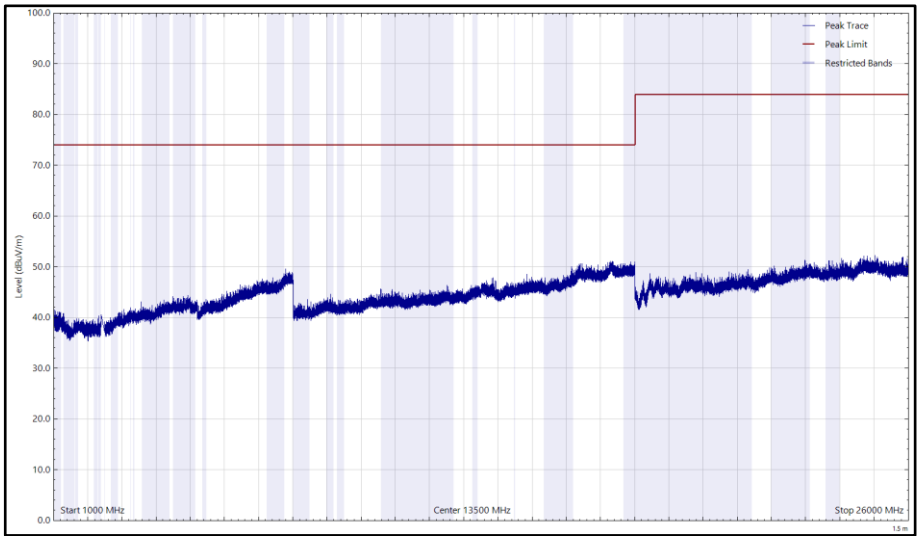

Figure 188 - 2402 MHz (CH0), LE1M, ePA, Core 1, 1 GHz to 26 GHz, Horizontal (Peak)

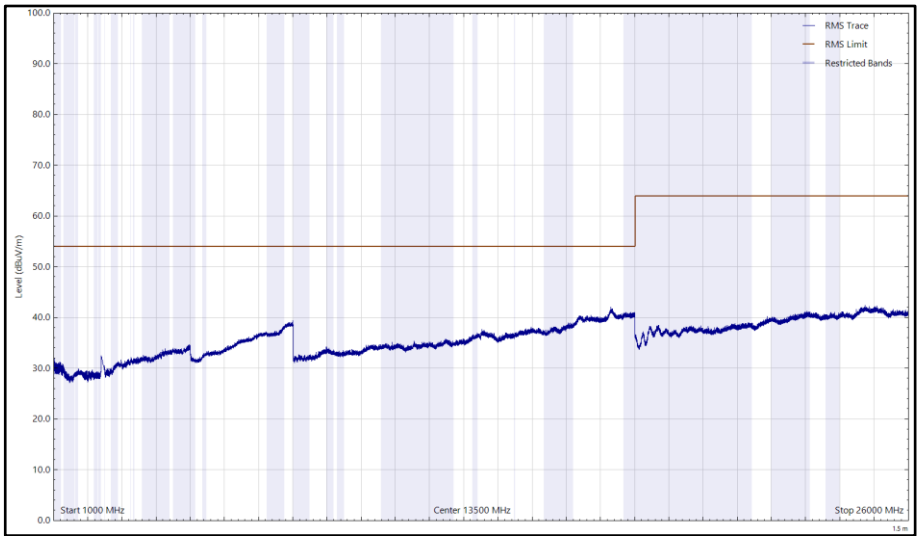

Figure 189 - 2402 MHz (CH0), LE1M, ePA, Core 1, 1 GHz to 26 GHz, Horizontal (rms)

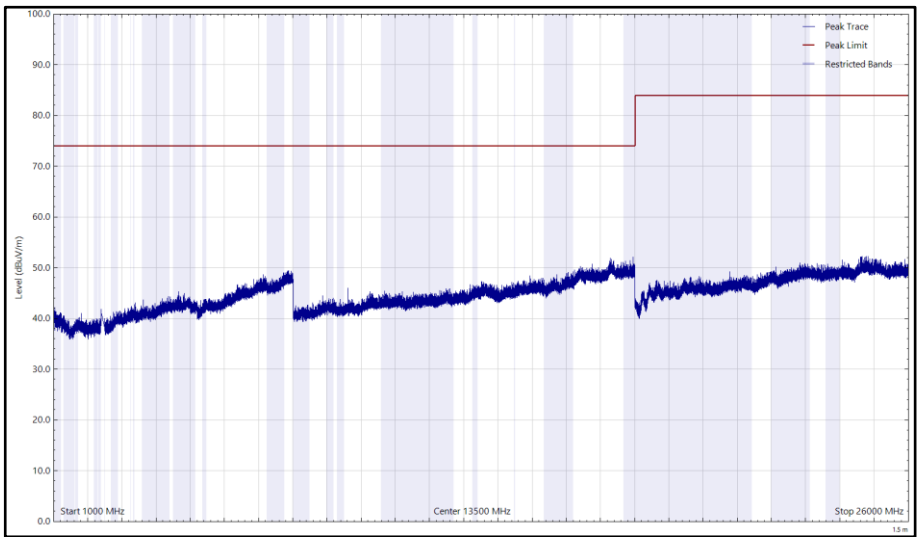

Figure 190 - 2402 MHz (CH0), LE1M, ePA, Core 1, 1 GHz to 26 GHz, Vertical (Peak)

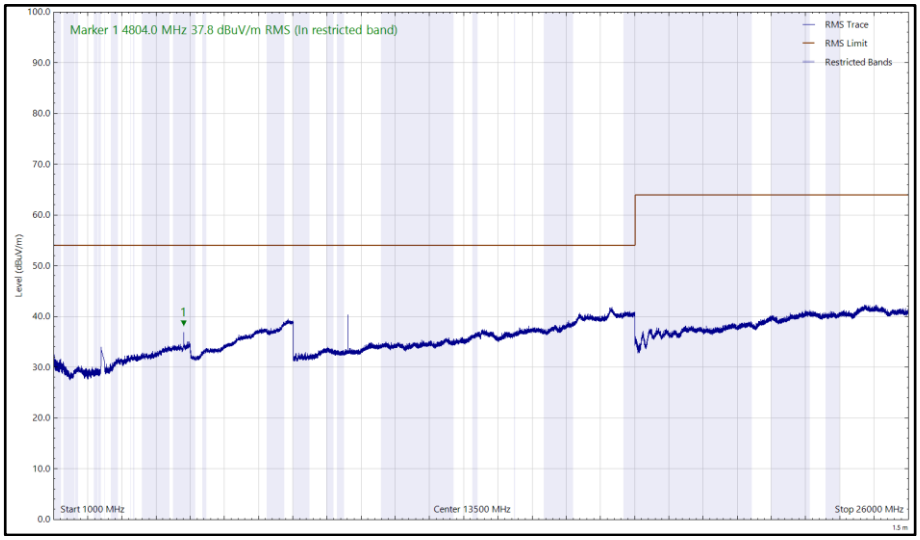

Figure 191 - 2402 MHz (CH0), LE1M, ePA, Core 1, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
70.131	20.7	40.0	-19.3	Q-Peak	136	100	Vertical
4879.655	48.6	74.0	-25.4	Peak	12	332	Vertical
4879.777	39.3	54.0	-14.7	rms	12	332	Vertical

Table 118 - 2440 MHz (CH17), LE1M, ePA, Core 1, 30 MHz to 26 GHz

No other emissions found within 10 dB of the limit.

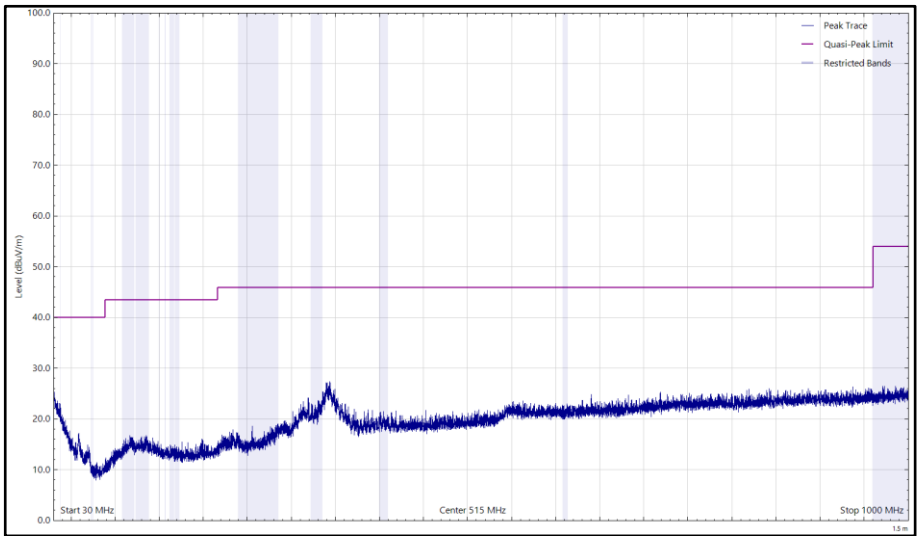

Figure 192 - 2440 MHz (CH17), LE1M, ePA, Core 1, 30 MHz to 1 GHz, Horizontal (Peak)

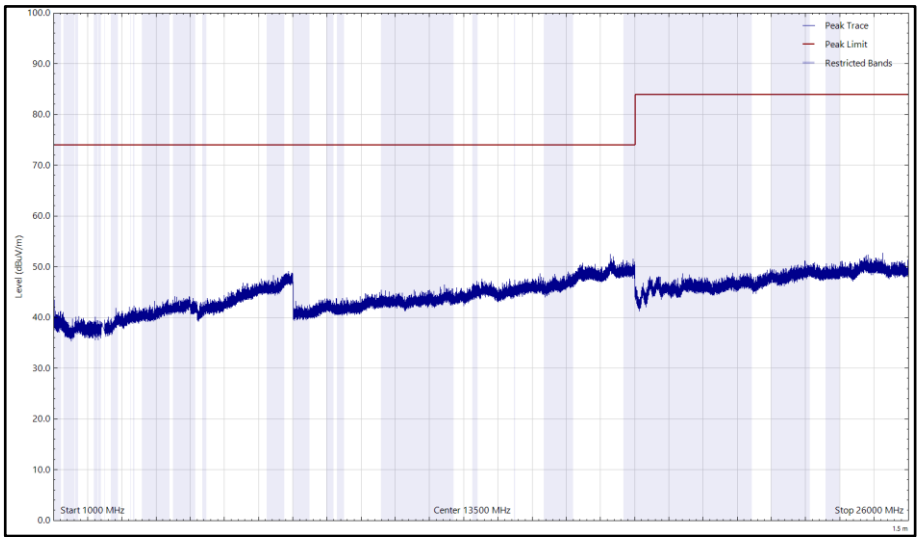

Figure 193 - 2440 MHz (CH17), LE1M, ePA, Core 1, 1 GHz to 26 GHz, Horizontal (Peak)

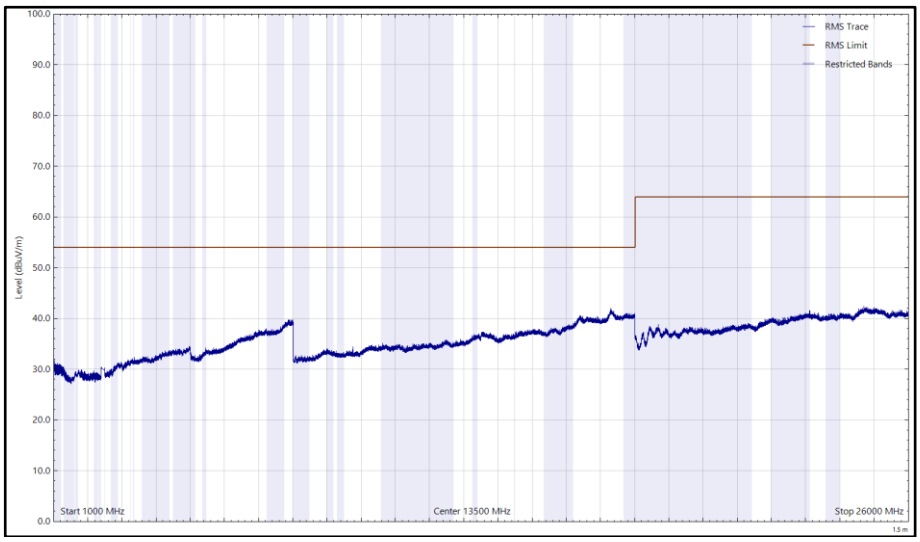

Figure 194 - 2440 MHz (CH17), LE1M, ePA, Core 1, 1 GHz to 26 GHz, Horizontal (rms)

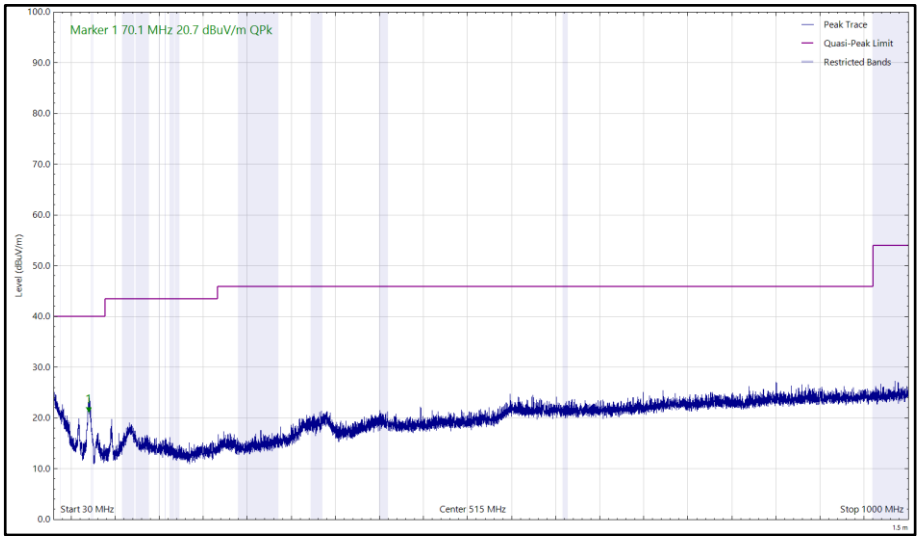

Figure 195 - 2440 MHz (CH17), LE1M, ePA, Core 1, 30 MHz to 1 GHz, Vertical (Peak)

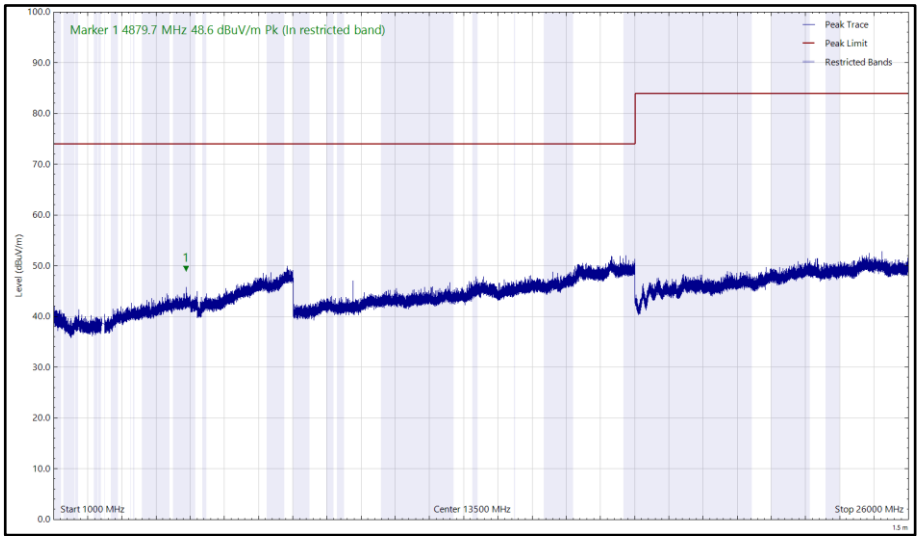

Figure 196 - 2440 MHz (CH17), LE1M, ePA, Core 1, 1 GHz to 26 GHz, Vertical (Peak)

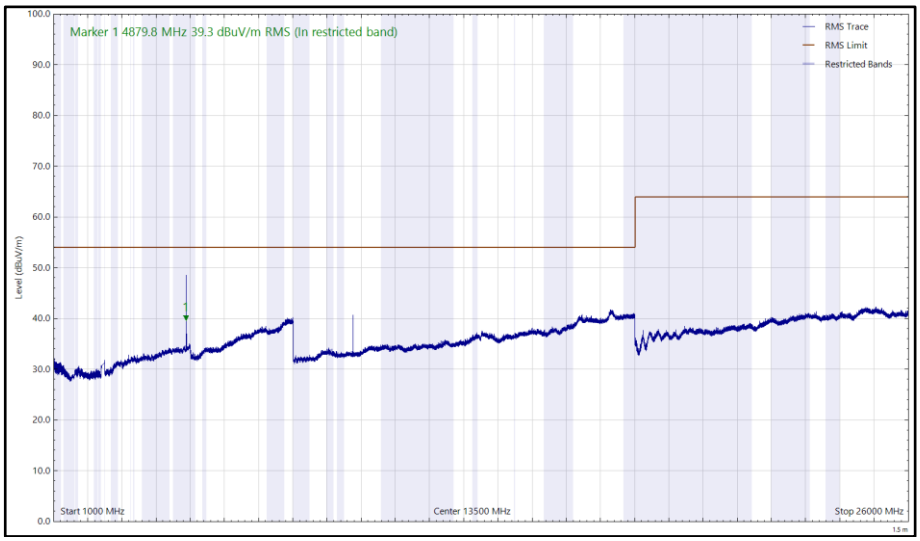

Figure 197 - 2440 MHz (CH17), LE1M, ePA, Core 1, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
4959.772	40.8	54.0	-13.2	rms	9	311	Vertical

Table 119 - 2480 MHz (CH39), LE1M, ePA, Core 1, 1 GHz to 26 GHz

No other emissions found within 10 dB of the limit.

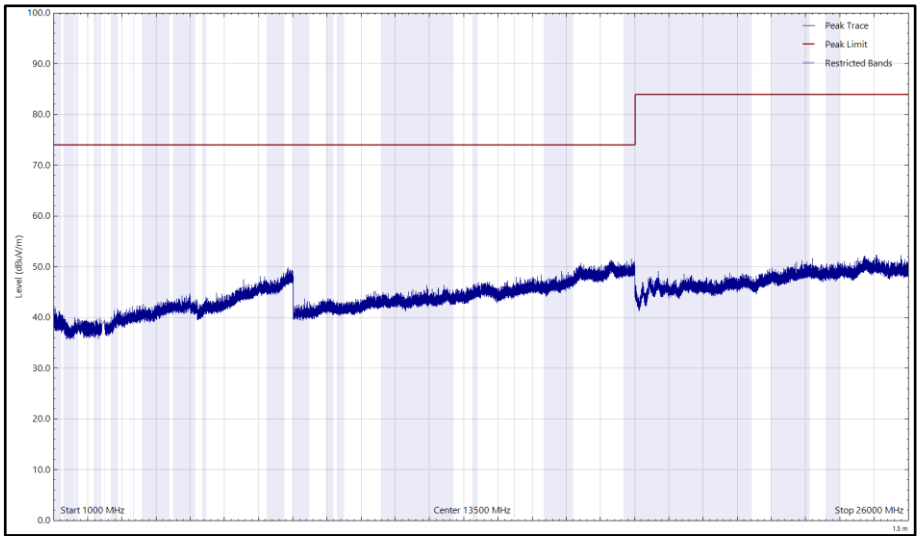

Figure 198 - 2480 MHz (CH39), LE1M, ePA, Core 1, 1 GHz to 26 GHz, Horizontal (Peak)

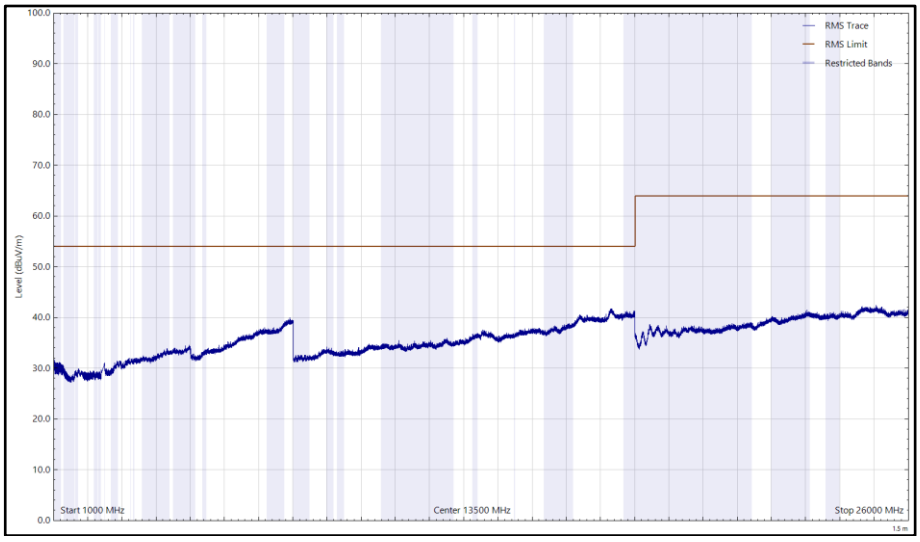

Figure 199 - 2480 MHz (CH39), LE1M, ePA, Core 1, 1 GHz to 26 GHz, Horizontal (rms)

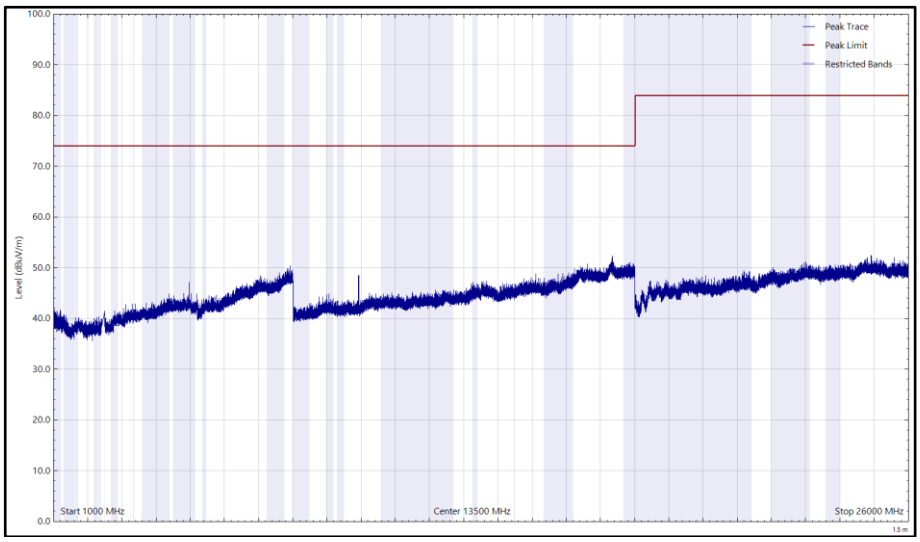

Figure 200 - 2480 MHz (CH39), LE1M, ePA, Core 1, 1 GHz to 26 GHz, Vertical (Peak)

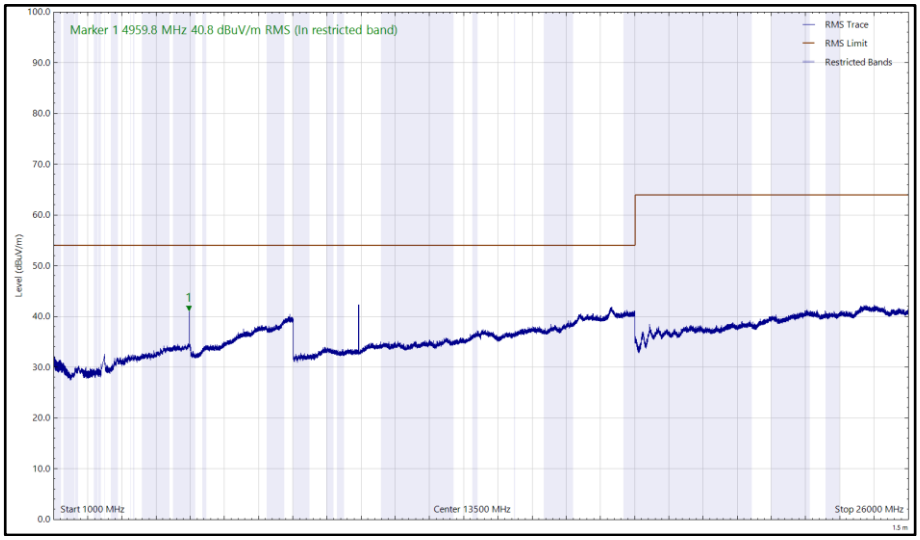

Figure 201 - 2480 MHz (CH39), LE1M, ePA, Core 1, 1 GHz to 26 GHz, Vertical (rms)

FCC 47 CFR Part 15, Limit Clause 15.247 (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)

ISED RSS-247, Limit Clause 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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 that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

2.5.8 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 5.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Screened Room (5)	Rainford	Rainford	1545	36	23-Jan-2021
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Multimeter	Iso-tech	IDM101	2417	12	11-Nov-2020
Antenna with permanent attenuator (Bilog)	Chase	CBL6143	2904	24	30-Sep-2021
Tilt Antenna Mast	Maturo Gmbh	TAM 4.0-P	4811	-	TU
Double Ridge Broadband Horn Antenna	Schwarzbeck	BBHA 9120 B	4848	12	10-Mar-2021
Cable (18 GHz)	Rosenberger	LU7-036-1000	5031	12	22-Jul-2021
Band Reject Filter - 2.425 GHz	Wainwright	WRCGV14-2390-2400-2450-2460-50SS	5067	12	01-Oct-2020
Band Reject Filter - 2.4585 GHz	Wainwright	WRCGV14-2423.5-2433.5-2483.5-2493.5-50SS	5069	12	01-Oct-2020
EmX Emissions Software	TUV SUD	EmX	5125	-	Software
DRG Horn Antenna (7.5-18GHz)	Schwarzbeck	HWRD750	5216	12	10-Mar-2021
Horn Antenna (15-40GHz)	Schwarzbeck	BBHA 9170	5217	12	12-Oct-2020
Preamplifier (30 dB 18-40GHz)	Schwarzbeck	BBV 9721	5218	12	12-Oct-2020
Preamplifier (30dB 1GHz to 18GHz)	Schwarzbeck	BBV 9718 C	5261	12	07-Apr-2021
Thermo-Hygro-Barometer	PCE Instruments	OCE-THB-40	5470	12	16-Mar-2021
1m -SMA Cable	Junkosha	MWX221-01000AMSAMS/A	5513	12	01-Apr-2021
1m -SMA Cable	Junkosha	MWX221-01000AMSAMS/A	5515	12	01-Apr-2021
2m SMA Cable	Junkosha	MWX221-02000AMSAMS/A	5517	12	01-Apr-2021
8m N-Type Cable	Junkosha	MWX221-08000NMSNMS/B	5520	12	24-Mar-2021
2 m K Type Cable	Junkosha	MWX241-02000KMSKMS/A	5523	12	03-Apr-2021
EMI Test Receiver	Rohde & Schwarz	ESW44	5527	12	06-Feb-2021
3 GHz High pass Filter	Wainwright	WHKX12-2580-3000-18000-80SS	5548	12	05-May-2021
8 - 18 GHz Amplifier	Wright Technologies	APS06-0061	5596	12	25-Aug-2021

Table 120

TU - Traceability Unscheduled

2.6 Power Spectral Density

2.6.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (e)
ISED RSS-247, Clause 5.2
ISED RSS-GEN, Clause 6.12

2.6.2 Equipment Under Test and Modification State

A2338, S/N: C02CX02JQC36 - Modification State 0

2.6.3 Date of Test

15-September-2020

2.6.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 11.10.5.

For beamforming configurations, MIMO output port summing was performed in accordance with KDB 662911 D01, E) 2) b).

2.6.5 Environmental Conditions

Ambient Temperature	21.5 - 25.2 °C
Relative Humidity	46.0 - 52.9 %

2.6.6 Test Results

2.4 GHz Bluetooth Low Energy (DTS)

iPA

Antenna Port Configuration: SISO

Modulation: π/4 DQPSK (HDR4)

Test Frequency (MHz)	RBW (kHz)	PSD (dBm)
		Core 1
2404	30.0	2.6
2441	30.0	2.2
2478	30.0	2.4

Table 121 - Maximum Power Spectral Density Results

Modulation: π/4 DQPSK (HDR8)

Test Frequency (MHz)	RBW (kHz)	PSD (dBm)
		Core 1
2404	30.0	4.3
2441	30.0	4.6
2478	30.0	4.3

Table 122 - Maximum Power Spectral Density Results

Modulation: GFSK (LE 1M)

Test Frequency (MHz)	RBW (kHz)	PSD (dBm)
		Core 1
2402	10.0	2.2
2440	10.0	2.0
2480	10.0	2.4

Table 123 - Maximum Power Spectral Density Results

Modulation: GFSK (LE 2M)

Test Frequency (MHz)	RBW (kHz)	PSD (dBm)
		Core 1
2402	10.0	0.5
2440	10.0	0.2
2480	10.0	0.5

Table 124 - Maximum Power Spectral Density Results

Antenna Port Configuration: Beamforming

Modulation: π/4 DQPSK (HDR4)

Test Frequency (MHz)	RBW (kHz)	PSD (dBm)		
		Core 1	Core 0	∑
2404	10.0	-2.2	-2.8	0.5
2441	10.0	-2.5	-2.9	0.3
2478	10.0	-2.3	-2.3	0.7

Table 125 - Maximum Power Spectral Density Results

Modulation: π/4 DQPSK (HDR8)

Test Frequency (MHz)	RBW (kHz)	PSD (dBm)		
		Core 1	Core 0	∑
2404	10.0	-2.7	-3.2	0.1
2441	10.0	-2.4	-2.8	0.4
2478	10.0	-2.8	-2.6	0.3

Table 126 - Maximum Power Spectral Density Results

Modulation: GFSK (LE 1M)

Test Frequency (MHz)	RBW (kHz)	PSD (dBm)		
		Core 1	Core 0	∑
2402	5.1	-0.4	-0.4	2.6
2440	5.1	-0.5	-0.5	2.5
2480	5.1	-0.7	-0.4	2.5

Table 127 - Maximum Power Spectral Density Results

Modulation: GFSK (LE 2M)

Test Frequency (MHz)	RBW (kHz)	PSD (dBm)		
		Core 1	Core 0	∑
2402	10.0	0.3	0.1	3.2
2440	10.0	-0.1	0.1	3.0
2480	10.0	0.3	0.5	3.4

Table 128 - Maximum Power Spectral Density Results

ePA

Antenna Port Configuration: SISO

Modulation: π/4 DQPSK (HDR4)

Test Frequency (MHz)	RBW (kHz)	PSD (dBm)
		Core 1
2404	10.0	4.4
2441	10.0	4.0
2478	10.0	4.3

Table 129 - Maximum Power Spectral Density Results

Modulation: π/4 DQPSK (HDR8)

Test Frequency (MHz)	RBW (kHz)	PSD (dBm)
		Core 1
2404	10.0	4.4
2441	10.0	4.1
2478	10.0	4.4

Table 130 - Maximum Power Spectral Density Results

Modulation: GFSK (LE 1M)

Test Frequency (MHz)	RBW (kHz)	PSD (dBm)
		Core 1
2402	5.1	3.1
2440	5.1	3.3
2480	5.1	3.0

Table 131 - Maximum Power Spectral Density Results

Modulation: GFSK (LE 2M)

Test Frequency (MHz)	RBW (kHz)	PSD (dBm)
		Core 1
2402	10.0	3.8
2440	10.0	3.9
2480	10.0	3.8

Table 132 - Maximum Power Spectral Density Results

Antenna Port Configuration: Beamforming

Modulation: π/4 DQPSK (HDR4)

Test Frequency (MHz)	RBW (kHz)	PSD (dBm)		
		Core 1	Core 0	∑
2404	10.0	1.0	1.1	4.1
2441	10.0	1.2	1.3	4.3
2478	10.0	1.4	1.4	4.4

Table 133 - Maximum Power Spectral Density Results

Modulation: π/4 DQPSK (HDR8)

Test Frequency (MHz)	RBW (kHz)	PSD (dBm)		
		Core 1	Core 0	∑
2404	10.0	1.1	1.3	4.2
2441	10.0	1.3	1.4	4.4
2478	10.0	1.4	1.5	4.5

Table 134 - Maximum Power Spectral Density Results

Modulation: GFSK (LE 1M)

Test Frequency (MHz)	RBW (kHz)	PSD (dBm)		
		Core 1	Core 0	∑
2402	5.1	1.1	1.1	4.1
2440	5.1	0.9	1.0	4.0
2480	5.1	1.0	1.1	4.1

Table 135 - Maximum Power Spectral Density Results

Modulation: GFSK (LE 2M)

Test Frequency (MHz)	RBW (kHz)	PSD (dBm)		
		Core 1	Core 0	∑
2402	5.1	-0.8	-0.8	2.2
2440	10.0	1.8	2.0	4.9
2480	10.0	1.9	2.0	5.0

Table 136 - Maximum Power Spectral Density Results

FCC 47 CFR Part 15, Limit Clause 15.247 (e)

The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

ISED RSS-247, Limit Clause 5.2(b)

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission

2.6.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 1.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Rubidium Standard	Rohde & Schwarz	XSRM	1316	6	08-Nov-2020
Multimeter	Iso-tech	IDM101	2424	12	12-Dec-2020
Hygrometer	Rotronic	I-1000	3220	12	25-Sep-2020
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	08-Nov-2020
AC Programmable Power Supply	iTech	IT7324	5225	-	O/P Mon
MXA Signal Analyser	Keysight Technologies	N9020B	5528	24	04-Mar-2022
Signal Commissioning Unit	TUV SUD	SCU001	5546	12	15-Apr-2021

Table 137

O/P Mon – Output Monitored using calibrated equipment

3 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

Test Name	Measurement Uncertainty
Emission Bandwidth	±23.51 kHz
Maximum Conducted Output Power	± 3.2 dB
Authorised Band Edges	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB
Restricted Band Edges	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB
Spurious Radiated Emissions	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB
Power Spectral Density	± 3.2 dB

Table 138

Measurement Uncertainty Decision Rule

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115: 2007, clause 4.4.3 and 4.5.1.