Figure 136 - Core0 (C) 2440 MHz (CH19) 6 dB Bandwidth

Figure 137 - Core0 (C) 2480 MHz (CH39) 99% Bandwidth

Figure 138 - Core0 (C) 2480 MHz (CH39) 6 dB Bandwidth

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Specification Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPa GFSK (LE 2M)	Duty Cycle (%):	-
Antenna Configuration:	SISO	DCCF (dB):	-
Active Ports(s):	C (Core0)	Antenna Gain (dBi):	-

Test Frequency (MHz)	6 dB Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2402	-	-	1.184	-	1.184	≥500.0
2440	-	-	1.184	-	1.184	≥500.0
2480	-	-	1.184	-	1.184	≥500.0

Table 102 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2402	-	-	2.048	-	2.048	-
2440	-	-	2.056	-	2.056	-
2480	-	-	2.056	-	2.056	-

Table 103 - 99% Bandwidth Results

Figure 139 - Core0 (C) 2402 MHz (CH0) 99% Bandwidth

Figure 140 - Core0 (C) 2402 MHz (CH0) 6 dB Bandwidth

Figure 141 - Core0 (C) 2440 MHz (CH19) 99% Bandwidth

Figure 142 - Core0 (C) 2440 MHz (CH19) 6 dB Bandwidth

Figure 143 - Core0 (C) 2480 MHz (CH39) 99% Bandwidth

Figure 144 - Core0 (C) 2480 MHz (CH39) 6 dB Bandwidth

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Specification Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPa GFSK (LE 1M)	Duty Cycle (%):	-
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Ports(s):	B+C (Core1 + Core0)	Antenna Gain (dBi):	-

Test Frequency (MHz)	6 dB Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2402	-	0.684	0.700	-	0.684	≥500.0
2440	-	0.688	0.700	-	0.688	≥500.0
2480	-	0.692	0.716	-	0.692	≥500.0

Table 104 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2402	-	1.040	1.032	-	1.032	-
2440	-	1.036	1.036	-	1.036	-
2480	-	1.040	1.036	-	1.036	-

Table 105 - 99% Bandwidth Results

Figure 145 - Core1 (B) 2402 MHz (CH0) 99% Bandwidth

Figure 146 - Core1 (B) 2402 MHz (CH0) 6 dB Bandwidth

Figure 147 - Core0 (C) 2402 MHz (CH0) 99% Bandwidth

Figure 148 - Core0 (C) 2402 MHz (CH0) 6 dB Bandwidth

Figure 149 - Core1 (B) 2440 MHz (CH19) 99% Bandwidth

Figure 150 - Core1 (B) 2440 MHz (CH19) 6 dB Bandwidth

Figure 151 - Core0 (C) 2440 MHz (CH19) 99% Bandwidth

Figure 152 - Core0 (C) 2440 MHz (CH19) 6 dB Bandwidth

Figure 153 - Core1 (B) 2480 MHz (CH39) 99% Bandwidth

Figure 154 - Core1 (B) 2480 MHz (CH39) 6 dB Bandwidth

Figure 155 - Core0 (C) 2480 MHz (CH39) 99% Bandwidth

Figure 156 - Core0 (C) 2480 MHz (CH39) 6 dB Bandwidth

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Specification Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	iPa GFSK (LE 2M)	Duty Cycle (%):	-
Antenna Configuration:	Beamforming	DCCF (dB):	-
Active Ports(s):	B+C (Core1 + Core0)	Antenna Gain (dBi):	-

Test Frequency (MHz)	6 dB Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2402	-	1.184	1.184	-	1.184	≥500.0
2440	-	1.184	1.184	-	1.184	≥500.0
2480	-	1.184	1.184	-	1.184	≥500.0

Table 106 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)					Limit (kHz)
	A	B	C	D	Minimum	
2402	-	2.048	2.048	-	2.048	-
2440	-	2.048	2.048	-	2.048	-
2480	-	2.056	2.056	-	2.056	-

Table 107 - 99% Bandwidth Results

Figure 157 - Core1 (B) 2402 MHz (CH0) 99% Bandwidth

Figure 158 - Core1 (B) 2402 MHz (CH0) 6 dB Bandwidth

Figure 159 - Core0 (C) 2402 MHz (CH0) 99% Bandwidth

Figure 160 - Core0 (C) 2402 MHz (CH0) 6 dB Bandwidth

Figure 161 - Core1 (B) 2440 MHz (CH19) 99% Bandwidth

Figure 162 - Core1 (B) 2440 MHz (CH19) 6 dB Bandwidth

Figure 163 - Core0 (C) 2440 MHz (CH19) 99% Bandwidth

Figure 164 - Core0 (C) 2440 MHz (CH19) 6 dB Bandwidth

Figure 165 - Core1 (B) 2480 MHz (CH39) 99% Bandwidth

Figure 166 - Core1 (B) 2480 MHz (CH39) 6 dB Bandwidth

Figure 167 - Core0 (C) 2480 MHz (CH39) 99% Bandwidth

Figure 168 - Core0 (C) 2480 MHz (CH39) 6 dB Bandwidth

FCC 47 CFR Part 15, Limit Clause 15.247(a)(2) and ISED RSS-247, Clause 5.2(a)

The minimum 6 dB Bandwidth shall be at least 500 kHz.

2.3.7 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	17-May-2021
Multimeter	Iso-tech	IDM101	2424	12	14-Dec-2021
Hygrometer	Rotronic	I-1000	3220	12	16-Oct-2021
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	17-May-2021
Climatic Chamber	Aralab	FitoTerm 300E45	4823	12	19-Mar-2021
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 108

O/P Mon – Output Monitored using calibrated equipment

2.4 Authorised Band Edges

2.4.1 Specification Reference

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

2.4.2 Equipment Under Test and Modification State

A2438, S/N: C02DM00Q087X - Modification State 0

2.4.3 Date of Test

09-October-2020 to 09-January-2021

2.4.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 6.10.4.

Authorised band edge measurements were performed with the device operating in SISO and Beamforming configurations across the various modes supported by the device.

2.4.5 Environmental Conditions

Ambient Temperature	20.5 - 23.0 °C
Relative Humidity	30.1 - 43.0 %

2.4.6 Test Results

2.4 GHz Bluetooth - DTS

LE1M

iPA

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	0	2402	2400.0	-58.05

Table 109 - Authorised Band Edge Results

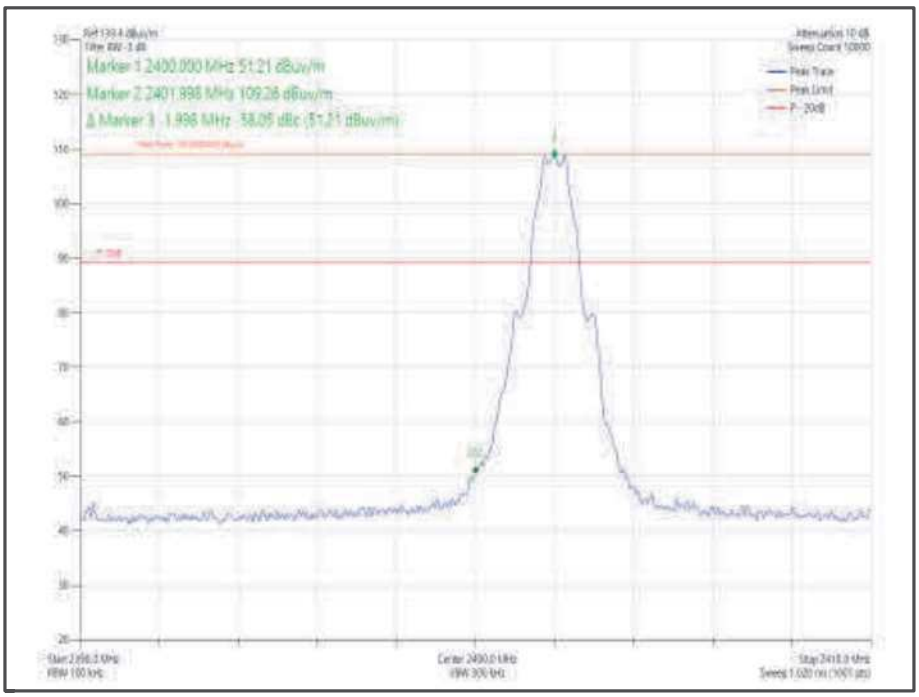

Figure 169 – Core 0, GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	2	2402	2400.0	-56.27

Table 110 - Authorised Band Edge Results

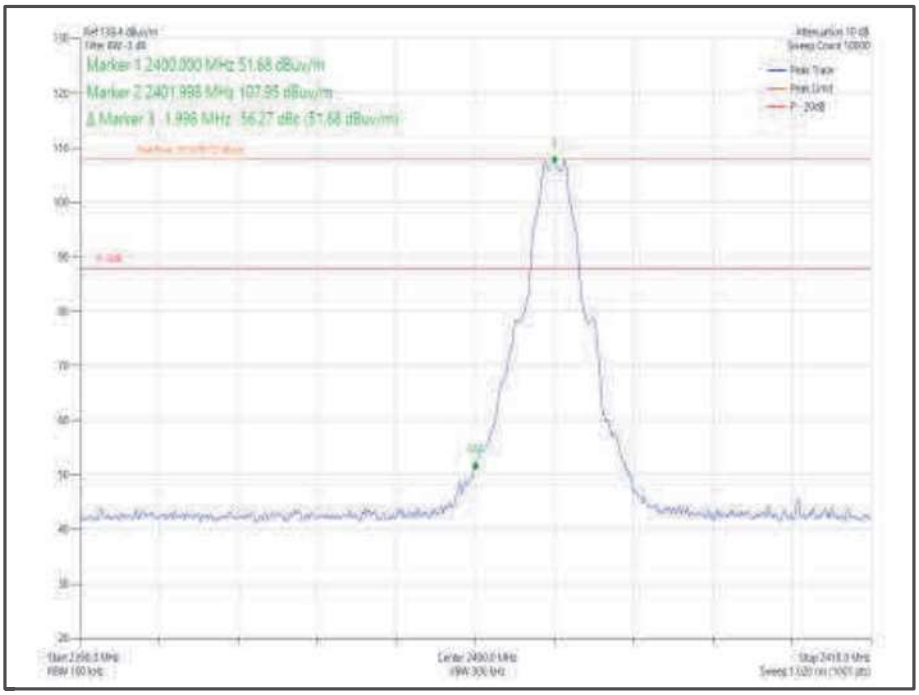

Figure 170 – Core 2, GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	0-1	2402	2400.0	-57.17

Table 111 - Authorised Band Edge Results

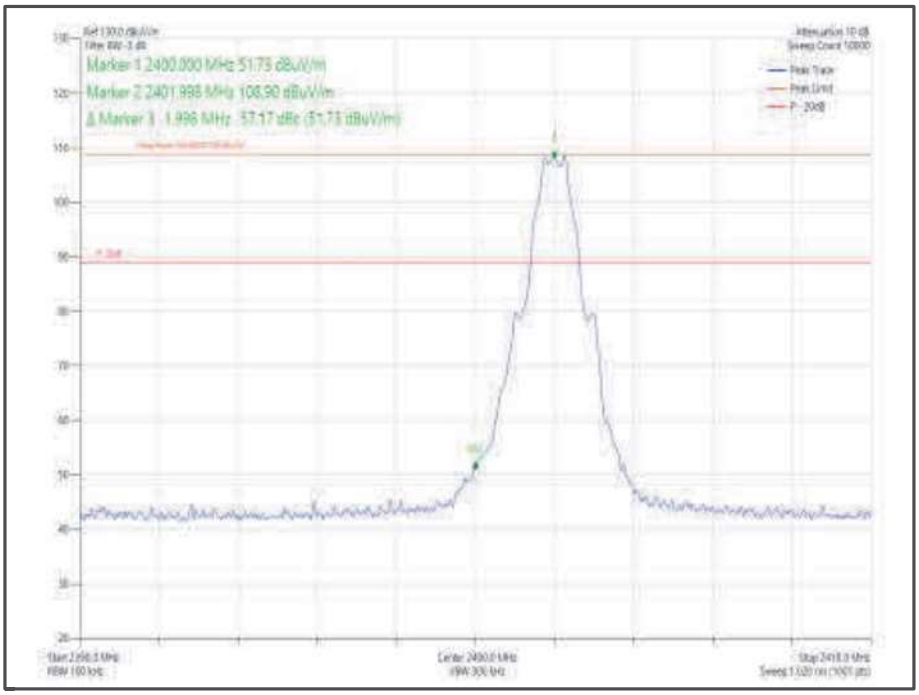

Figure 171 – Core 0-1, GFSK/DH1 - 2402 MHz – Band Edge Frequency 2400.0 MHz

ePA

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	0	2402	2400.0	-66.31

Table 112 - Authorised Band Edge Results

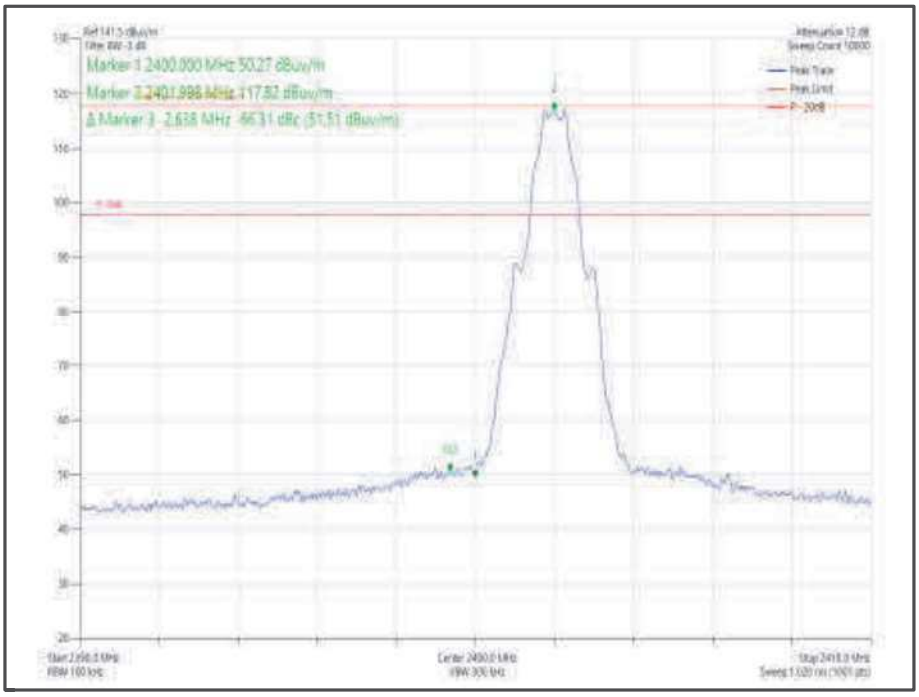

Figure 172 – Core 0, GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	0-1	2402	2400.0	-67.27

Table 113 - Authorised Band Edge Results

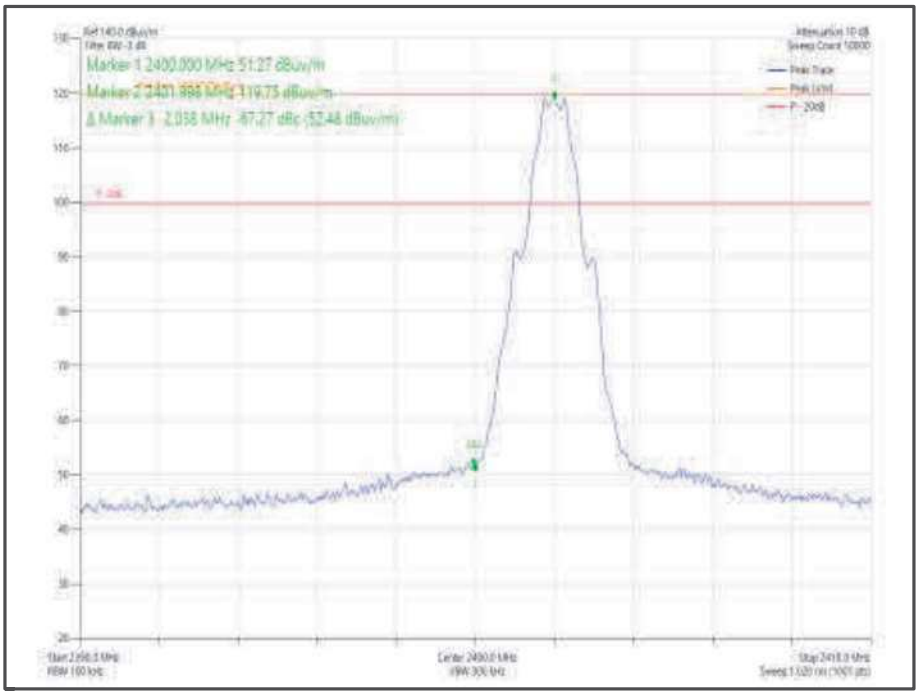

Figure 173 – Core 0-1, GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz

LE2M

iPA

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	0	2402	2400.0	-34.26

Table 114 - Authorised Band Edge Results

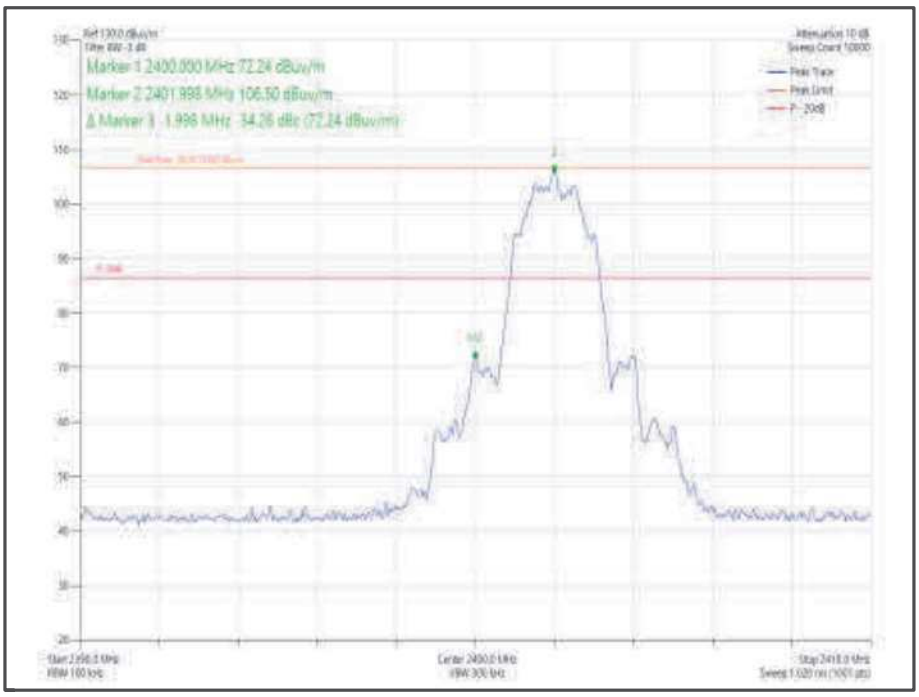

Figure 174 – Core 0, GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	2	2402	2400.0	-33.06

Table 115 - Authorised Band Edge Results

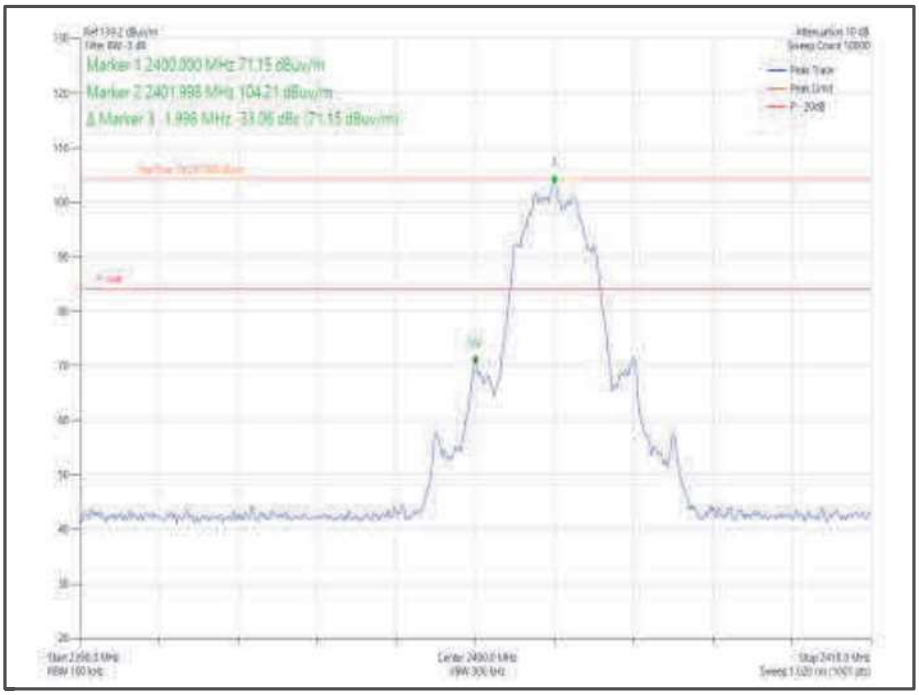

Figure 175 – Core 2, GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	0-1	2402	2400.0	-34.01

Table 116 - Authorised Band Edge Results

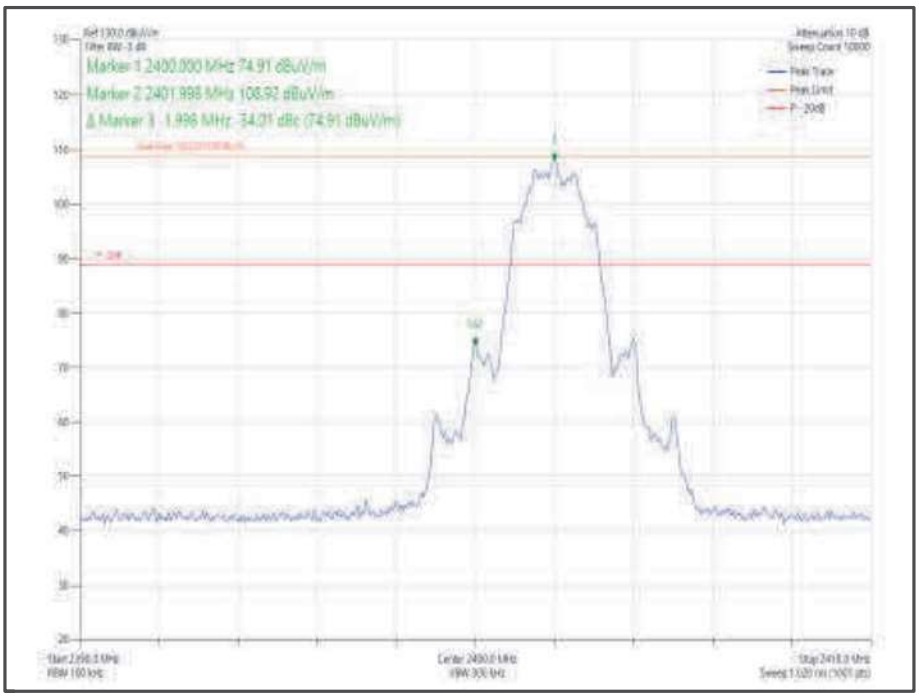

Figure 176 – Core 0-1, GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz

ePA

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	0	2402	2400.0	-42.09

Table 117 - Authorised Band Edge Results

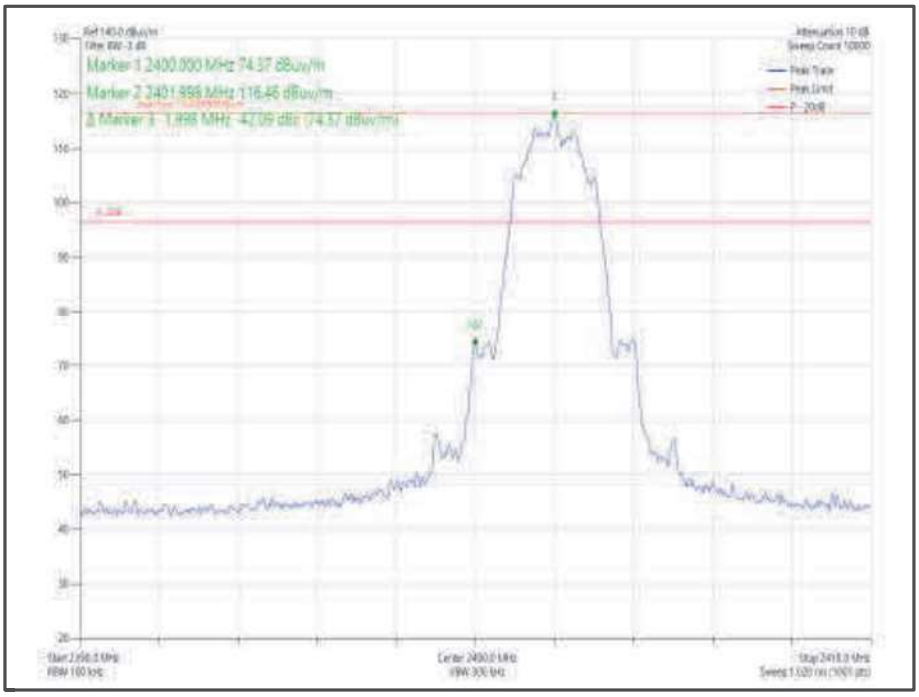

Figure 177 – Core 0, GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
GFSK	DH1	0-1	2402	2400.0	-43.21

Table 118 - Authorised Band Edge Results

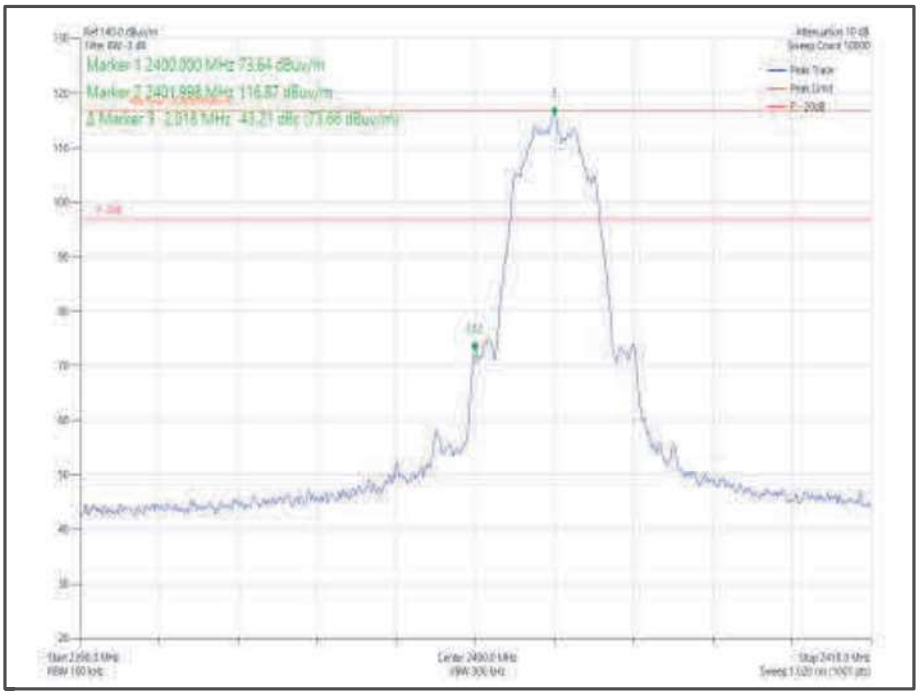

Figure 178 – Core 0-1, GFSK/DH1- 2402 MHz – Band Edge Frequency 2400.0 MHz

HDR4

iPA

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
π/4 DQPSK	HDR4	0	2404	2400.0	-59.72

Table 119 - Authorised Band Edge Results

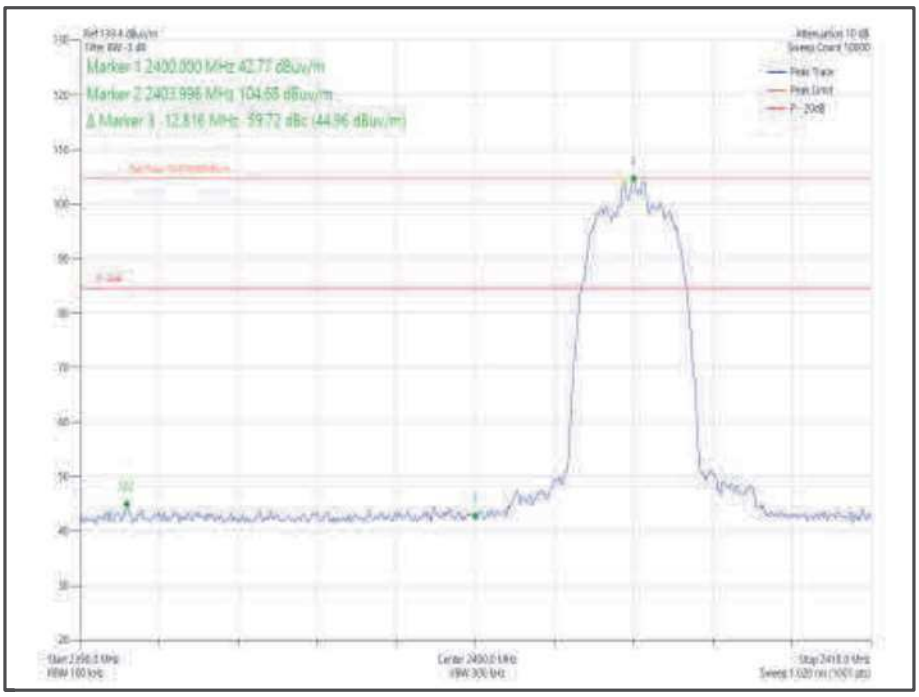

Figure 179 - Core 0, π/4 DQPSK /HDR4 - 2404 MHz – Band Edge Frequency 2400.0 MHz

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
π/4 DQPSK	HDR4	2	2404	2400.0	-57.26

Table 120 - Authorised Band Edge Results

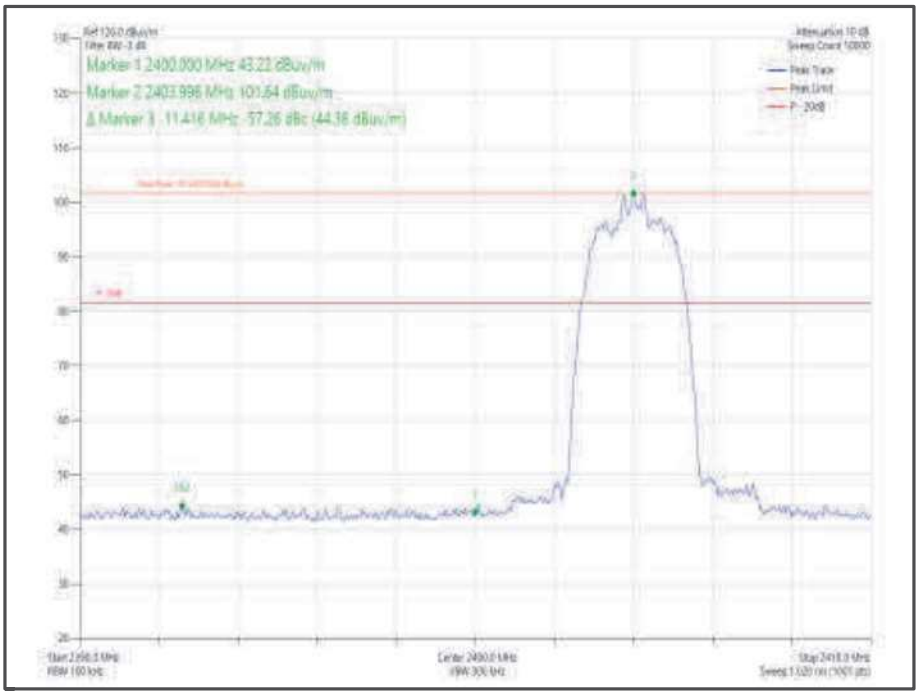

Figure 180 - Core 2, π/4 DQPSK /HDR4- 2404 MHz – Band Edge Frequency 2400.0 MHz

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
π/4 DQPSK	HDR4	0-1	2404	2400.0	-56.85

Table 121 - Authorised Band Edge Results

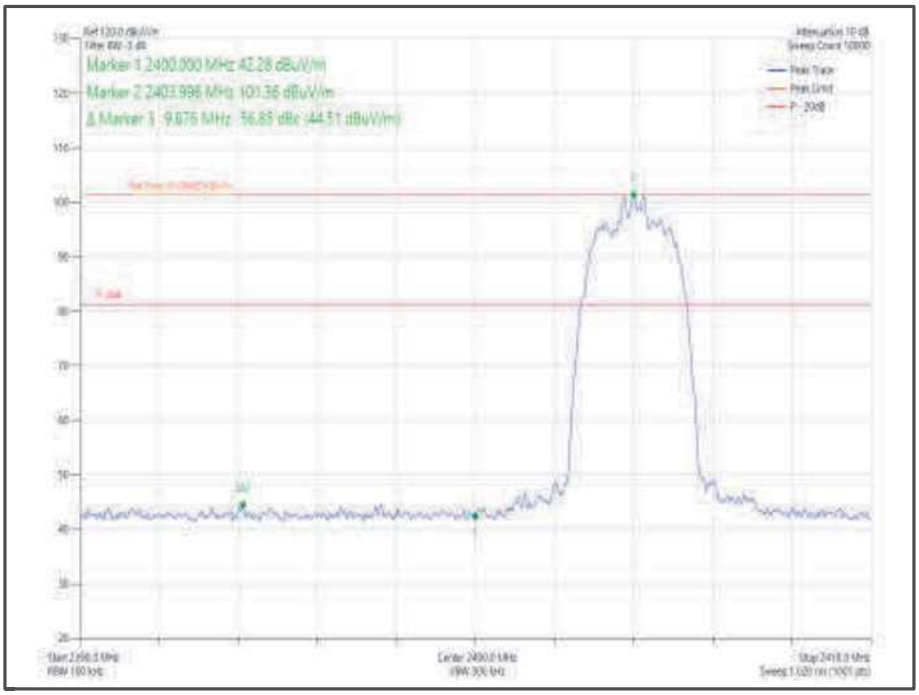

Figure 181 - Core 0-1, π/4 DQPSK /HDR4 - 2404 MHz – Band Edge Frequency 2400.0 MHz

ePA

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
π/4 DQPSK	HDR4	0	2404	2400.0	-65.79

Table 122 - Authorised Band Edge Results

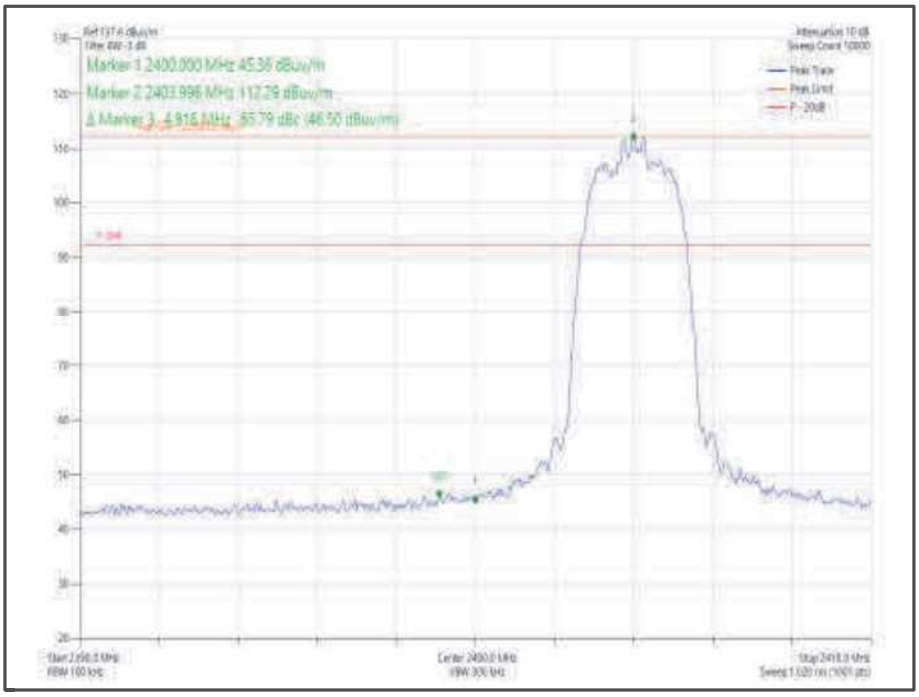

Figure 182 - Core 0, π/4 DQPSK /HDR4 - 2404 MHz – Band Edge Frequency 2400.0 MHz

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
π/4 DQPSK	HDR4	0-1	2404	2400.0	-54.52

Table 123 - Authorised Band Edge Results

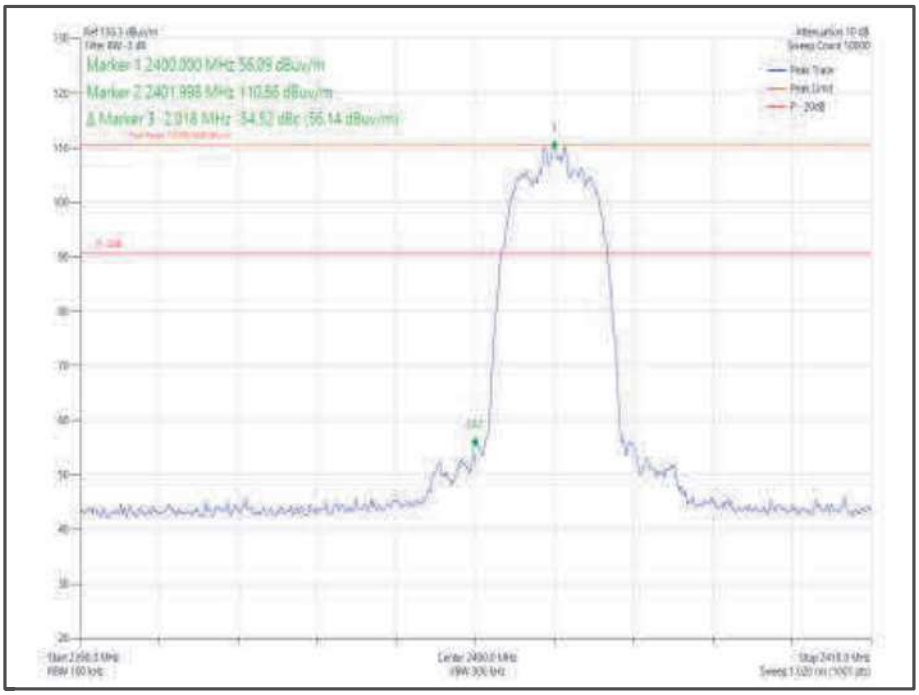

Figure 183 - Core 0-1, π/4 DQPSK /HDR4- 2404 MHz – Band Edge Frequency 2400.0 MHz

HDR8

iPA

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
π/4 DQPSK	HDR8	0	2404	2400.0	-59.75

Table 124 - Authorised Band Edge Results

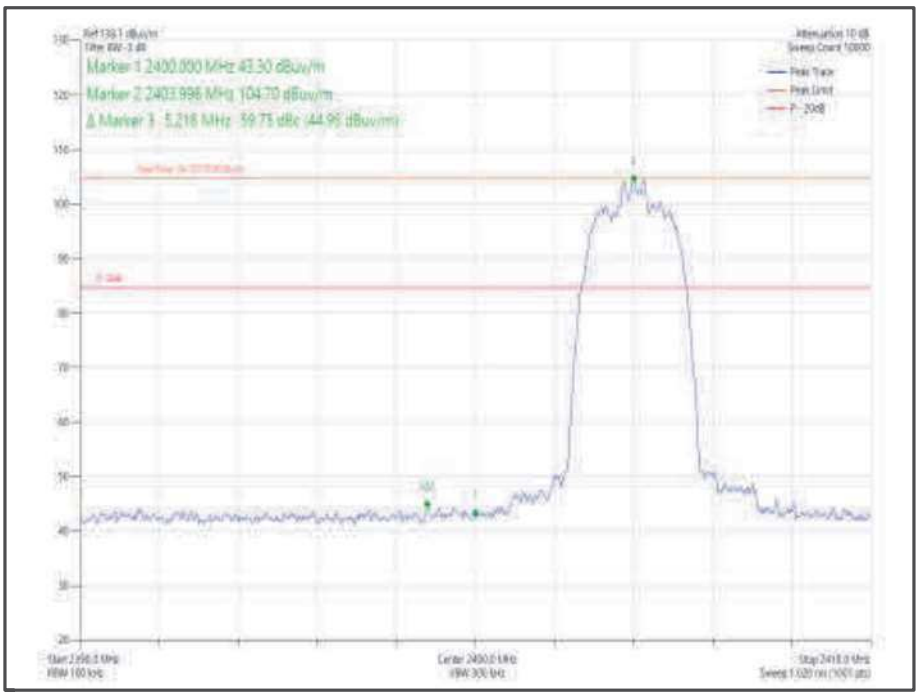

Figure 184 - Core 0, π/4 DQPSK/HDR8 - 2404 MHz – Band Edge Frequency 2400.0 MHz

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
π/4 DQPSK	HDR8	2	2404	2400.0	-55.87

Table 125 - Authorised Band Edge Results

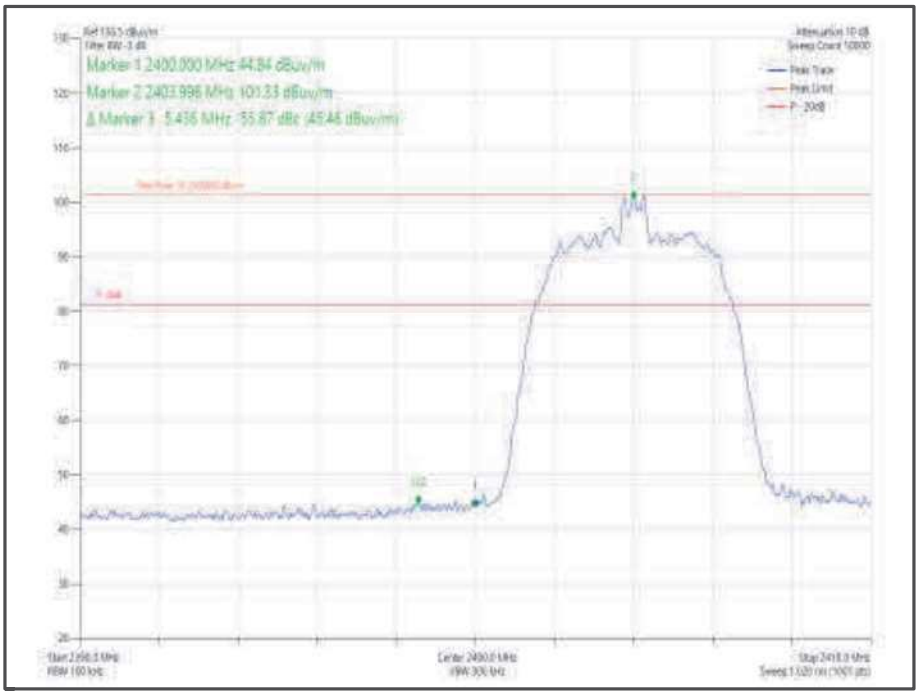

Figure 185 - Core 2 - π/4 DQPSK/HDR8 - 2404 MHz – Band Edge Frequency 2400.0 MHz

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
π/4 DQPSK	HDR8	0-1	2404	2400.0	-55.43

Table 126 - Authorised Band Edge Results

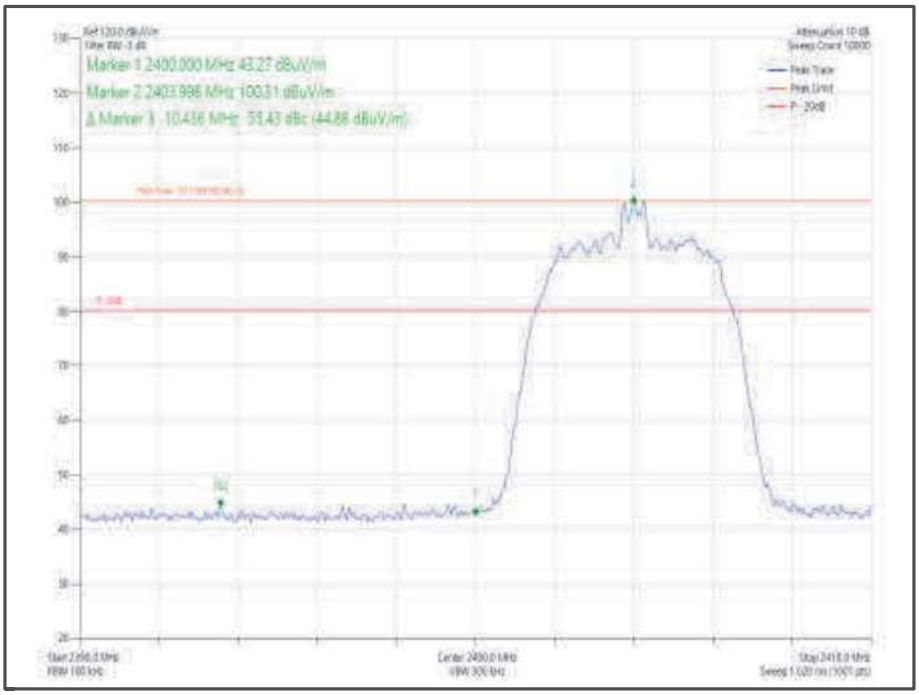

Figure 186 - Core 0-1 - π/4 DQPSK/HDR8 - 2404 MHz – Band Edge Frequency 2400.0 MHz

ePA

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
π/4 DQPSK	HDR8	0	2404	2400.0	-63.54

Table 127 - Authorised Band Edge Results

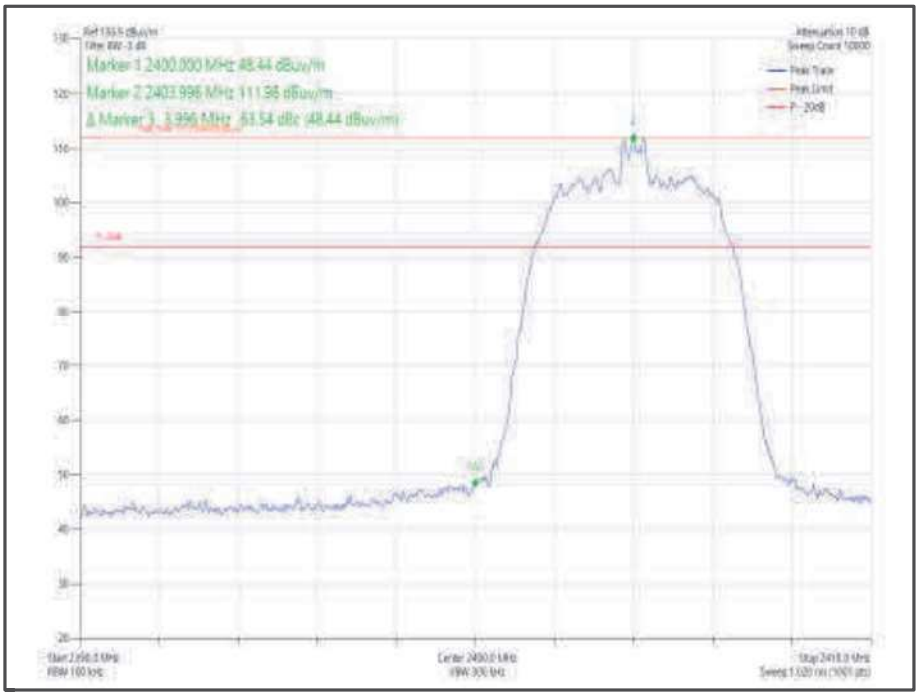

Figure 187 - Core 0, π/4 DQPSK/HDR8 - 2404 MHz – Band Edge Frequency 2400.0 MHz

Modulation	Packet Type	Core	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
π/4 DQPSK	HDR8	0-1	2404	2400.0	-60.52

Table 128 - Authorised Band Edge Results

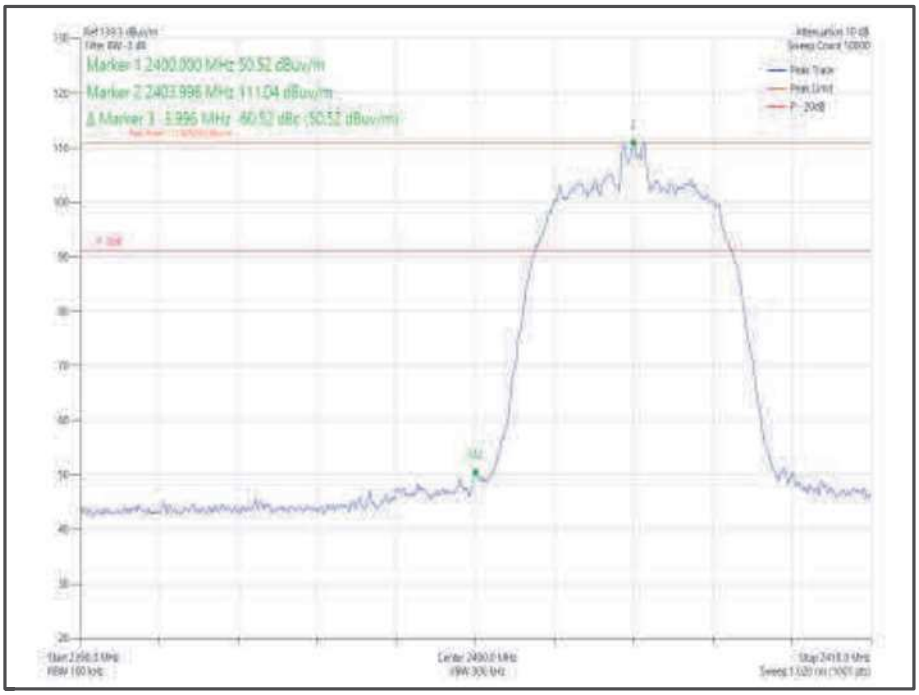

Figure 188 - Core 0-1, π/4 DQPSK/HDR8 - 2404 MHz – Band Edge Frequency 2400.0 MHz

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

20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. If the transmitter complies with the conducted power limits, based on the use of RMS averaging over a time interval, the attenuation required shall be 30 dB below the fundamental instead of 20 dB.

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.

2.4.7 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
True RMS Multimeter	Fluke	179	4007	12	29-Oct-2021
EMI Test Receiver	Rohde & Schwarz	ESW44	5084	12	04-Feb-2021
EmX Emissions Software	TUV SUD	V2.1.0	5125	-	Software
Screened Room (11)	Rainford	Rainford	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
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 129

TU - Traceability Unscheduled

2.5 Restricted Band Edges

2.5.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.205
ISED RSS-GEN, Clause 8.10

2.5.2 Equipment Under Test and Modification State

A2438, S/N: C02DM00Q087X - Modification State 0

2.5.3 Date of Test

09-November-2020 to 09-January-2021

2.5.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 6.10.5 and 11.12.1.

Plots for average measurements were taken in accordance with ANSI C63.10, clause 11.12.2.5.2.

2.5.5 Environmental Conditions

Ambient Temperature	20.5 - 23.0 °C
Relative Humidity	30.1 - 43.0 %

2.5.6 Test Results

2.4 GHz Bluetooth - DTS

LE1M

iPA

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	Core 0	2390.0	53.00	40.85
GFSK/DH1	2480	Core 0	2483.5	53.31	41.52

Table 130 - Restricted Band Edge Results

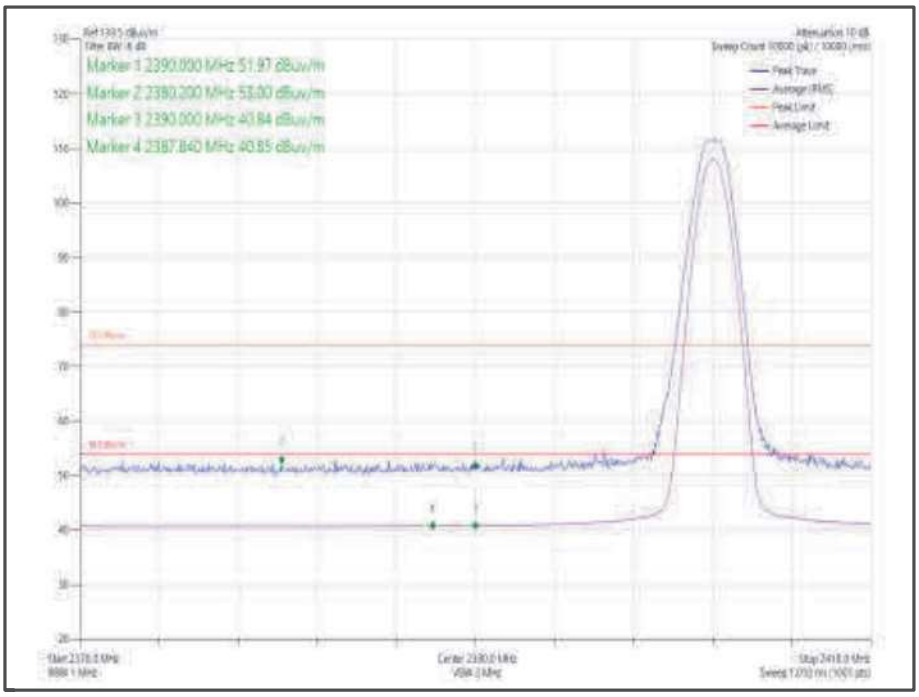

Figure 189 – Core 0, GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

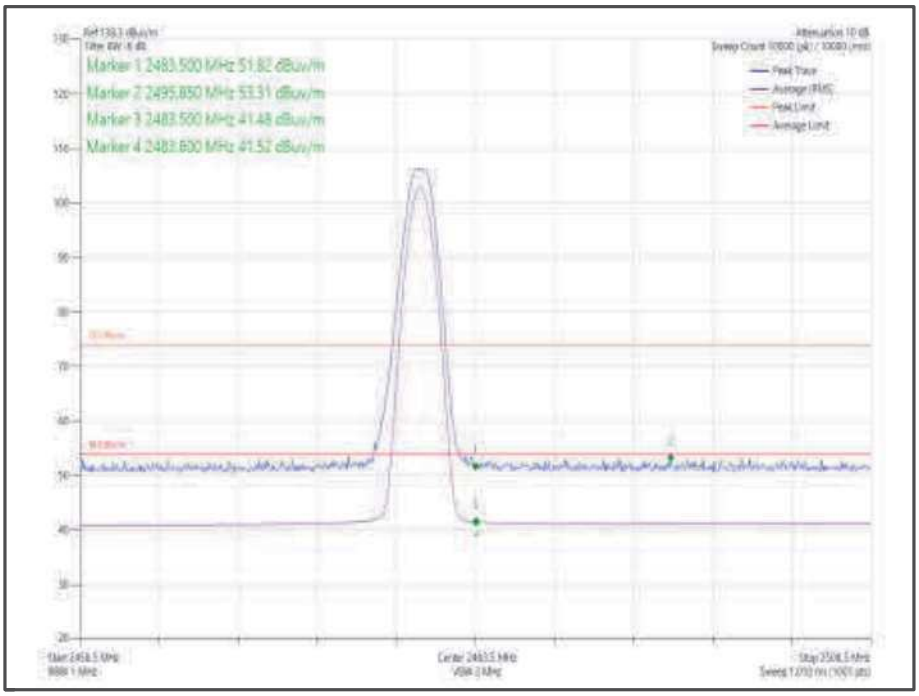

Figure 190 – Core 0, GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	Core 2	2390.0	53.26	40.92
GFSK/DH1	2480	Core 2	2483.5	53.90	41.76

Table 131 - Restricted Band Edge Results

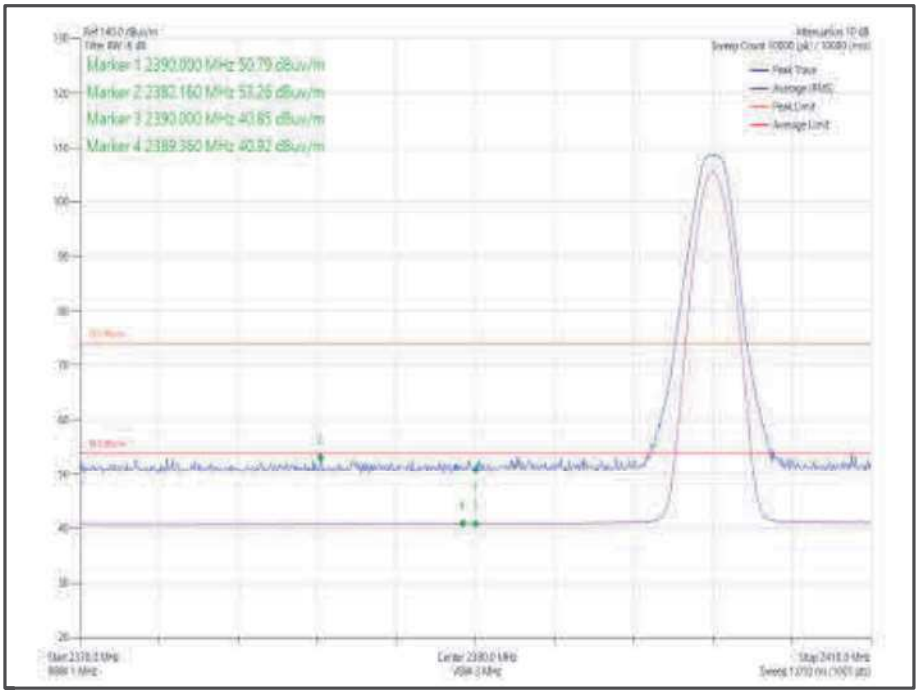

Figure 191 – Core 2, GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

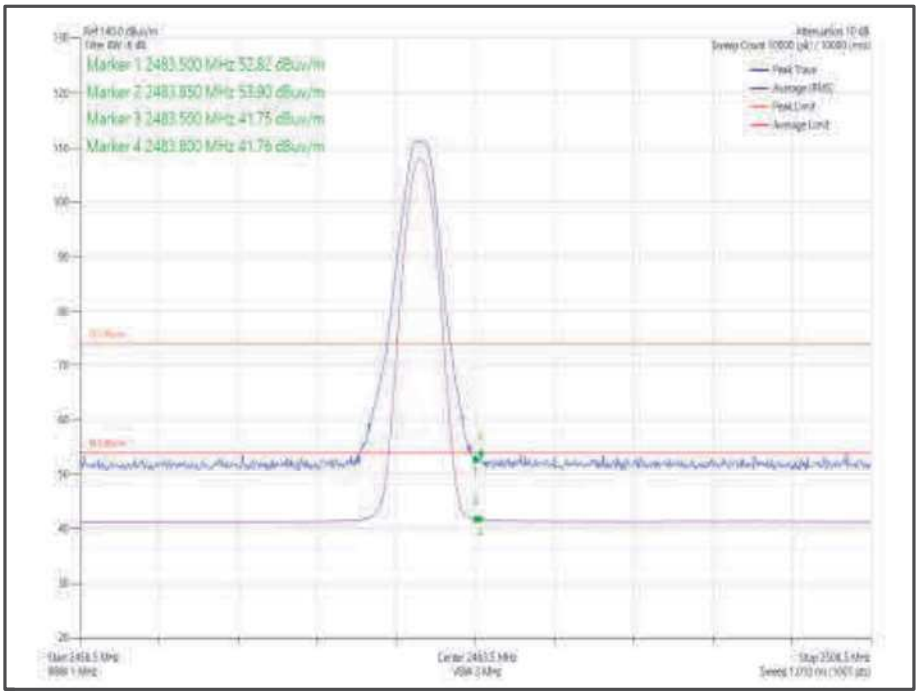

Figure 192 – Core 2, GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	Core 0-1	2390.0	53.50	40.89
GFSK/DH1	2480	Core 0-1	2483.5	53.60	41.78

Table 132 - Restricted Band Edge Results

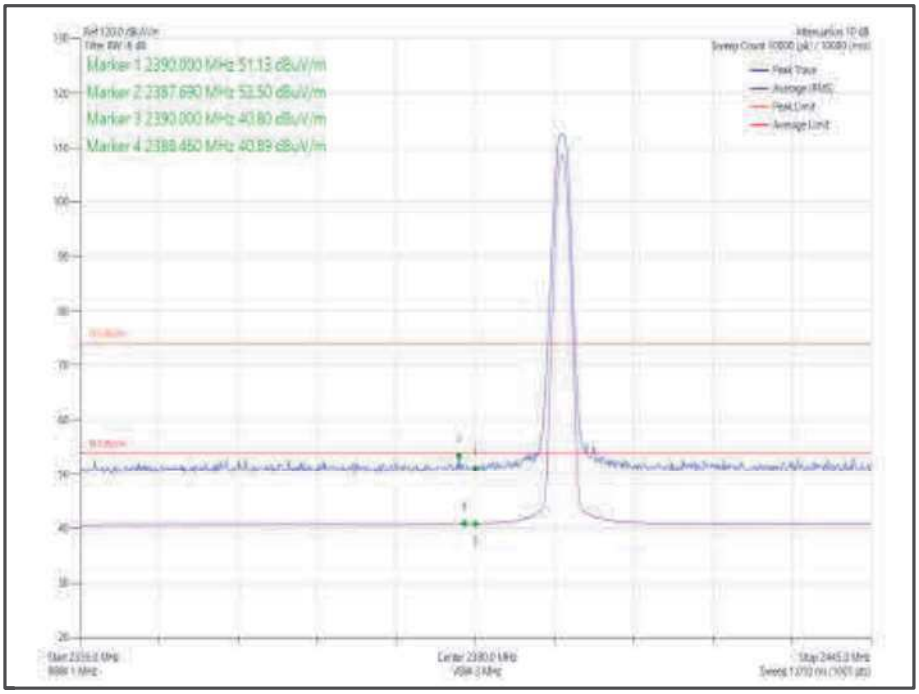

Figure 193 – Core 0-1, GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

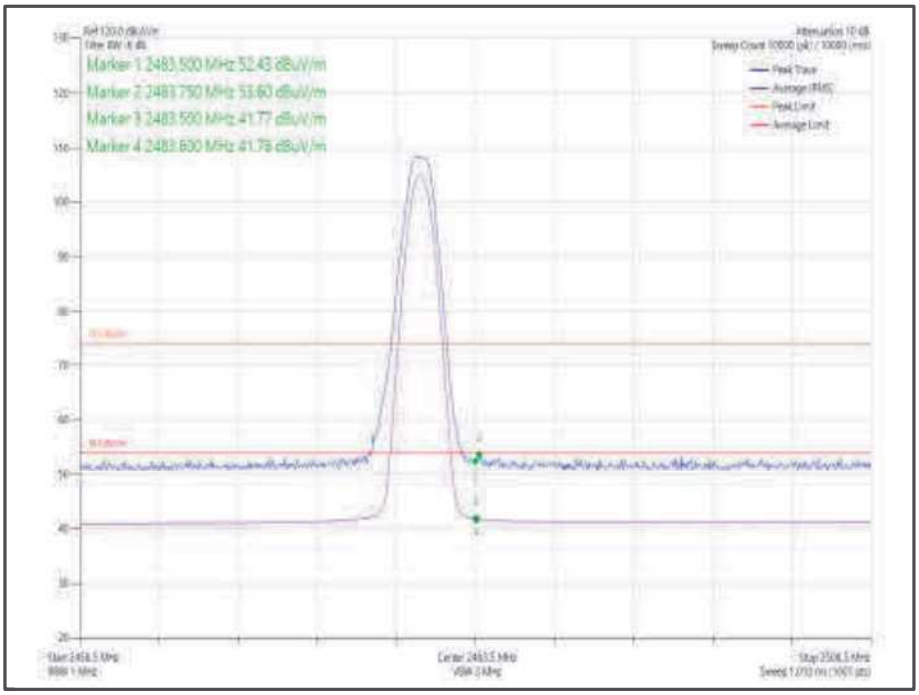

Figure 194 – Core 0-1, GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

ePA

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	Core 0	2390.0	53.60	41.98
GFSK/DH1	2480	Core 0	2483.5	55.51	43.37

Table 133 - Restricted Band Edge Results

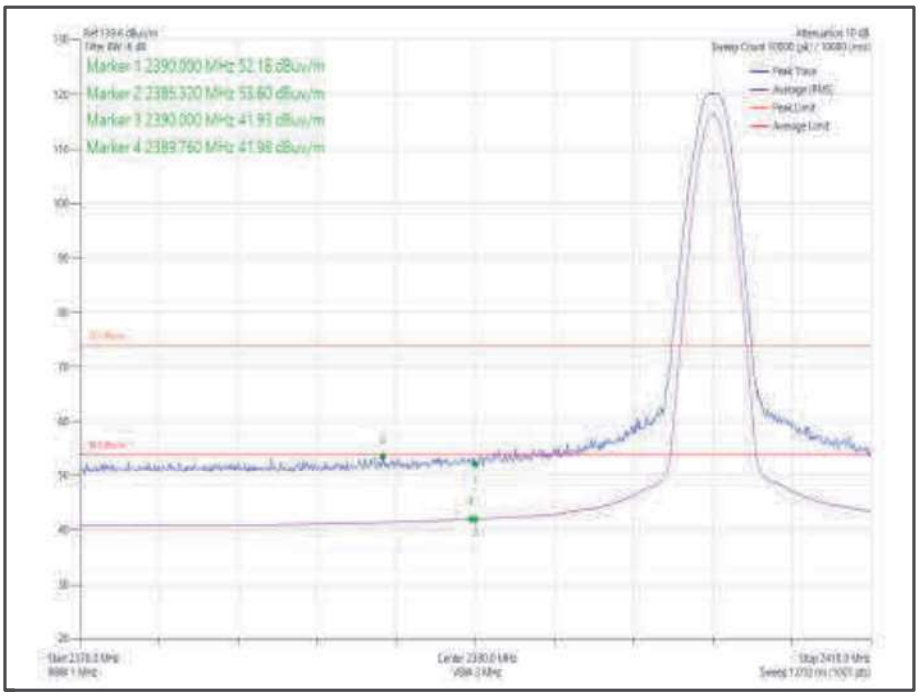

Figure 195 – Core 0, GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

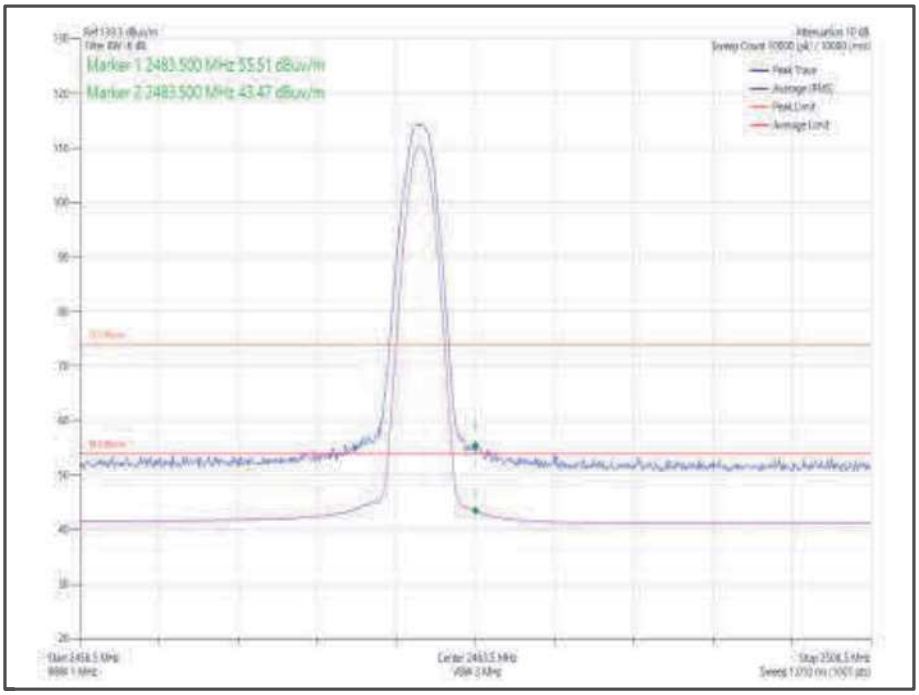

Figure 196 – Core 0, GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	Core 0-1	2390.0	53.71	41.78
GFSK/DH1	2480	Core 0-1	2483.5	58.32	45.83

Table 134 - Restricted Band Edge Results

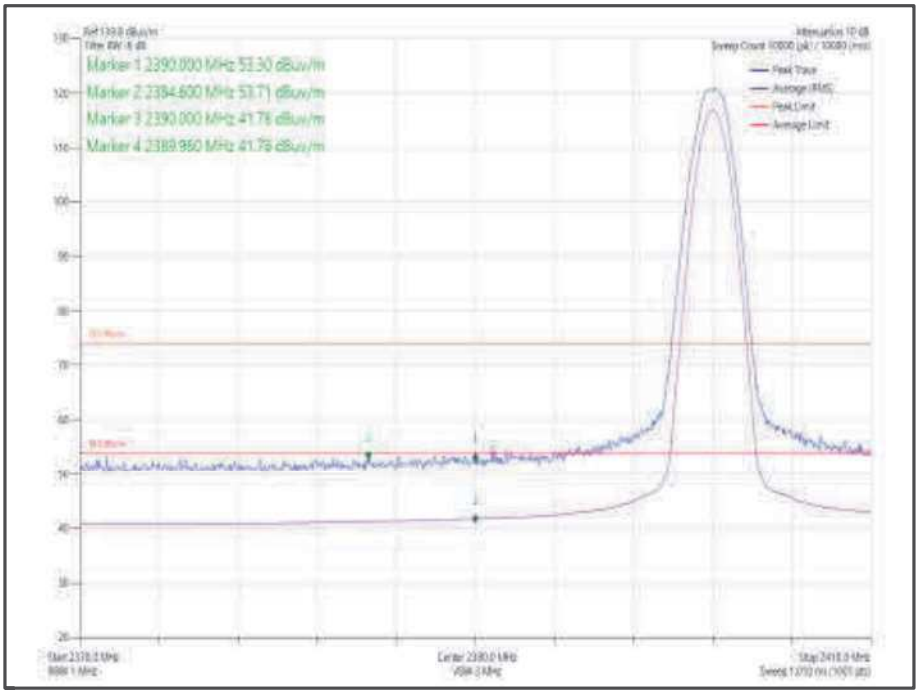

Figure 197 – Core 0-1, GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

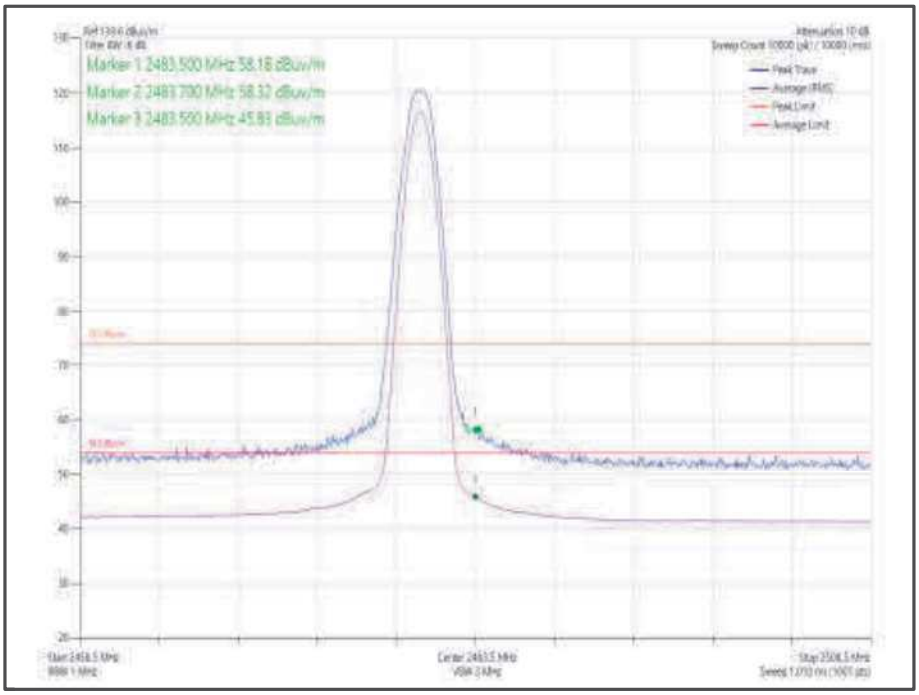

Figure 198 – Core 0-1, GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

LE2M

iPA

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	Core 0	2390.0	52.97	40.77
GFSK/DH1	2480	Core 0	2483.5	55.76	43.53

Table 135 - Restricted Band Edge Results

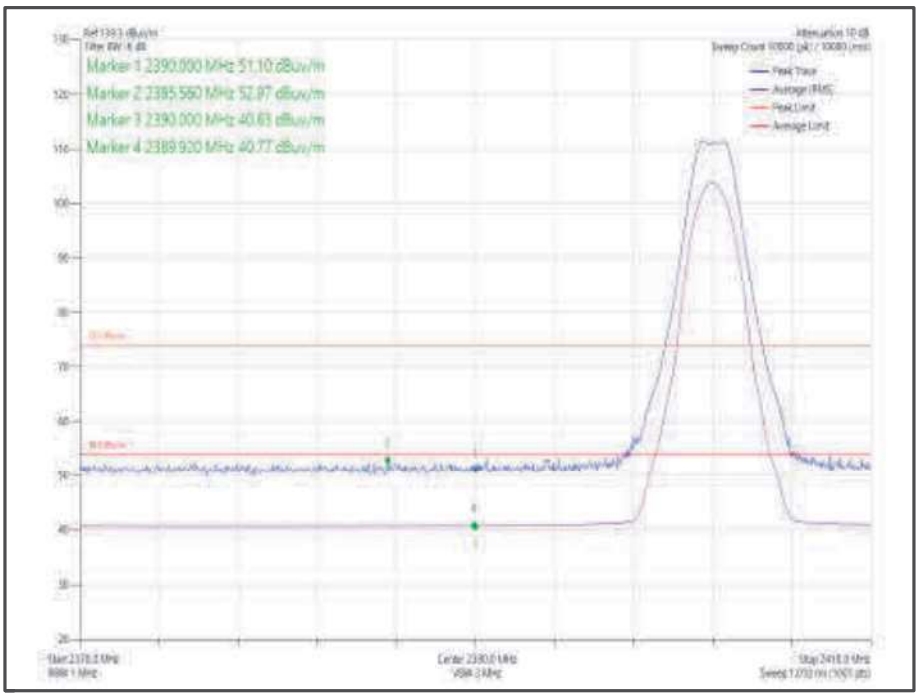

Figure 199 – Core 0, GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

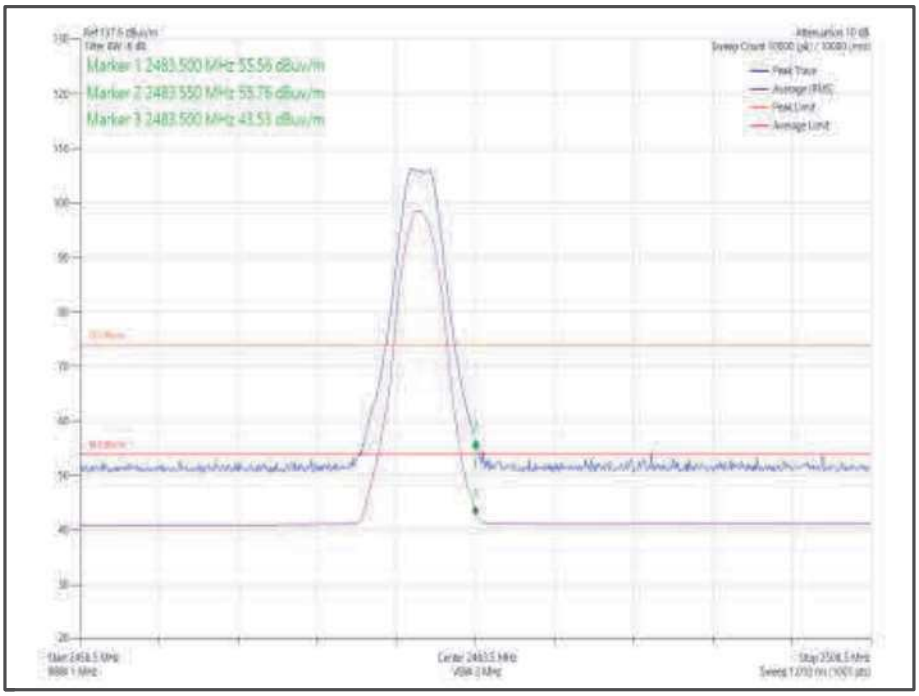

Figure 200 – Core 0, GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	Core 2	2390.0	53.38	40.93
GFSK/DH1	2480	Core 2	2483.5	62.96	49.98

Table 136 - Restricted Band Edge Results

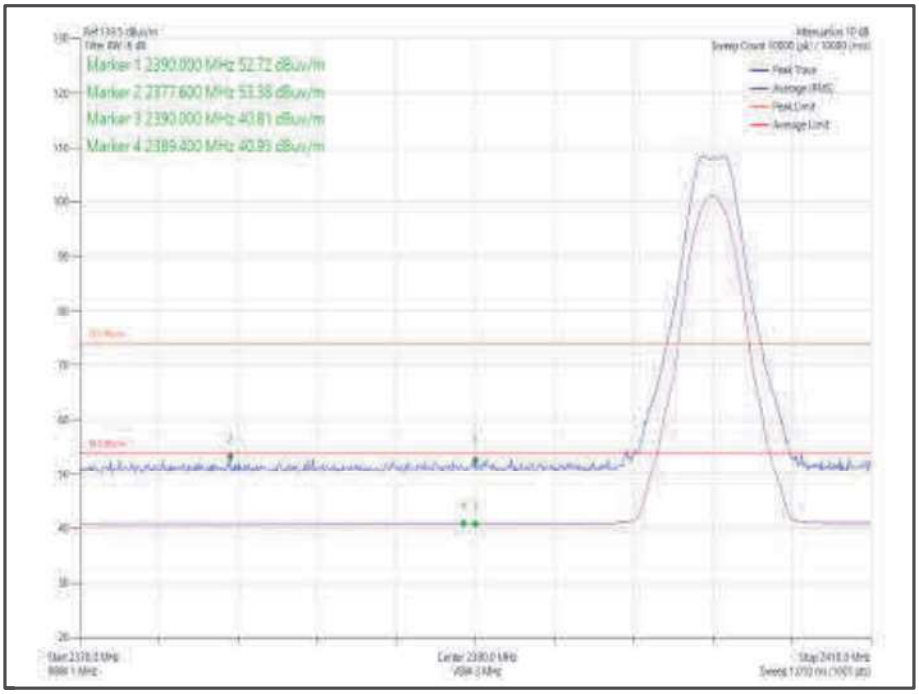

Figure 201 – Core 2, GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

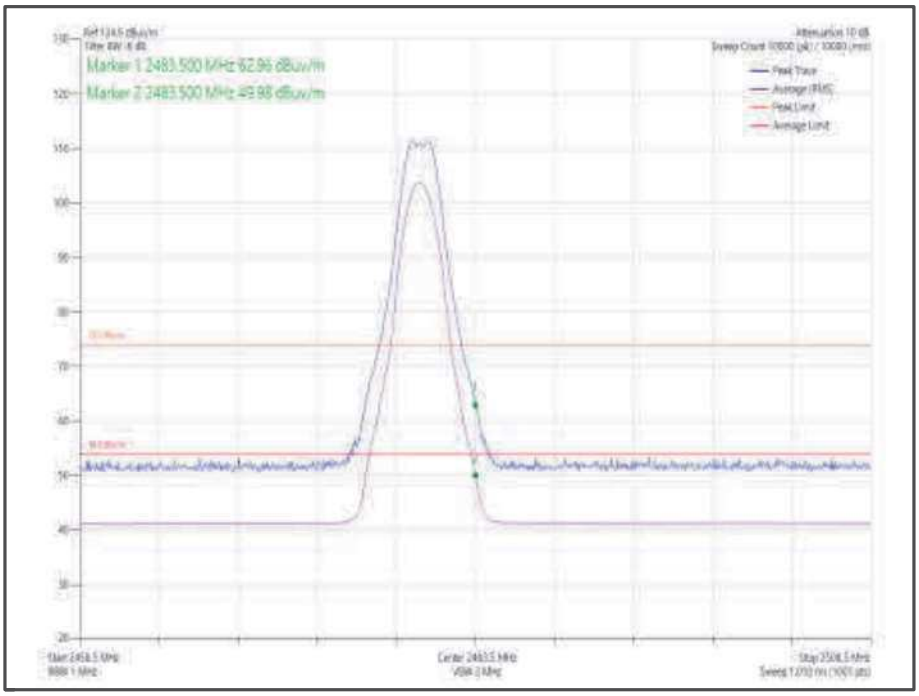

Figure 202 – Core 2, GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	Core 0-1	2390.0	53.18	40.85
GFSK/DH1	2480	Core 0-1	2483.5	59.38	46.15

Table 137 - Restricted Band Edge Results

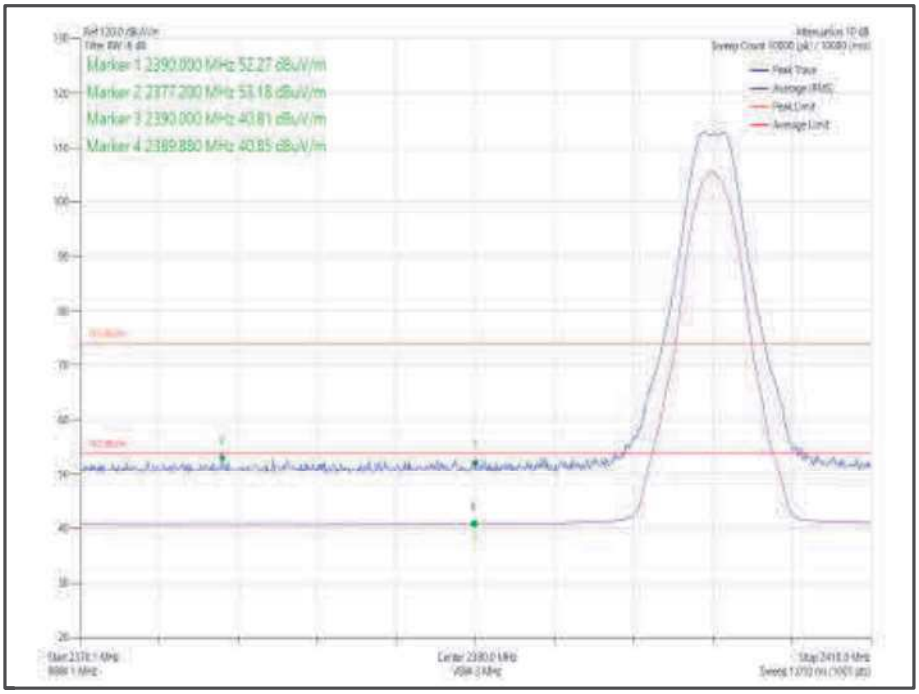

Figure 203 – Core 0-1, GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

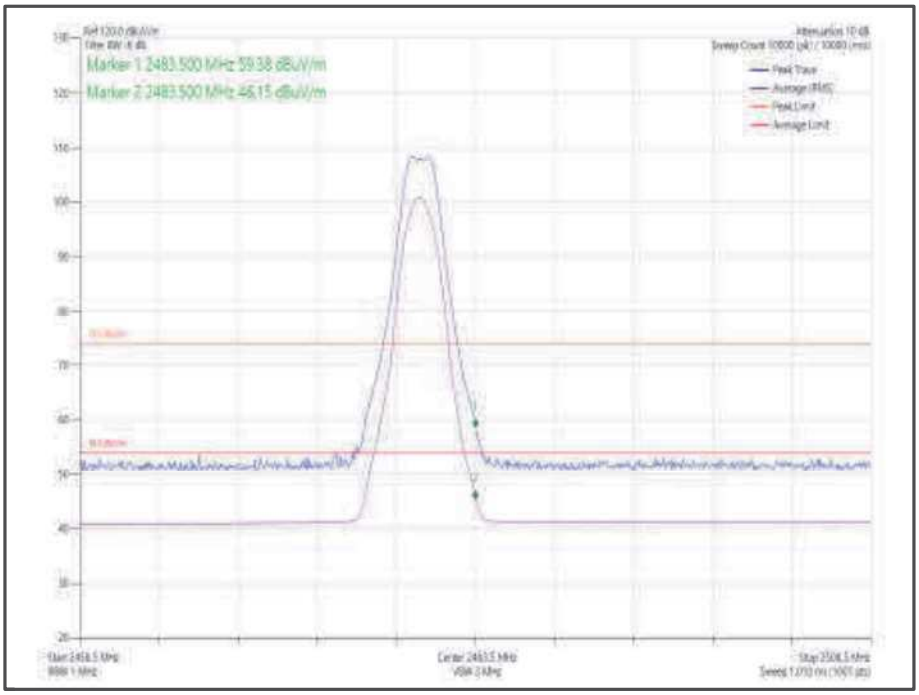

Figure 204 – Core 0-1, GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

ePA

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	Core 0	2390.0	55.16	41.45
GFSK/DH1	2480	Core 0	2483.5	56.06	42.95

Table 138 - Restricted Band Edge Results

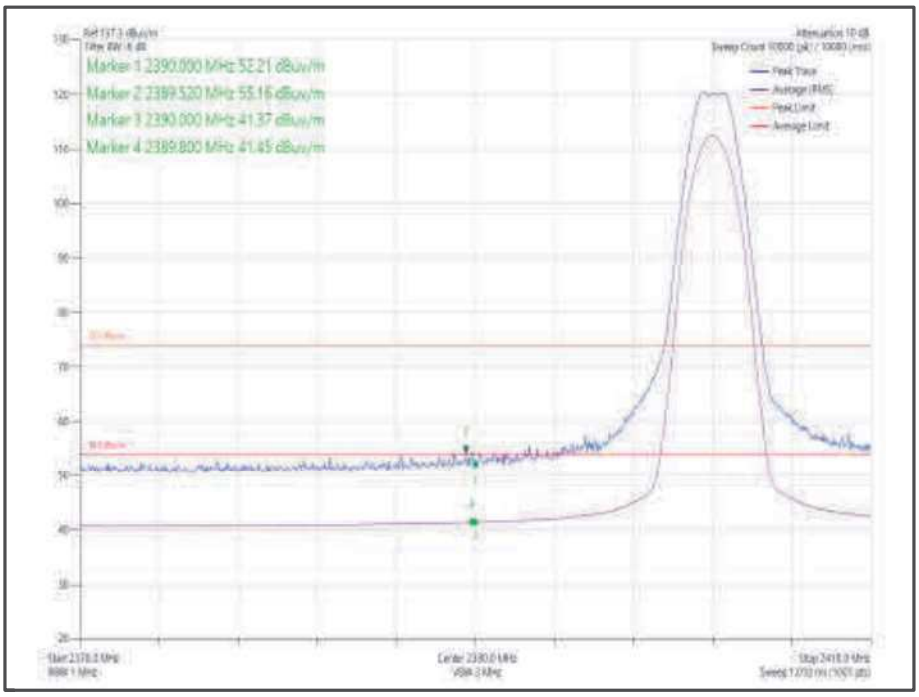

Figure 205 – Core 0, GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

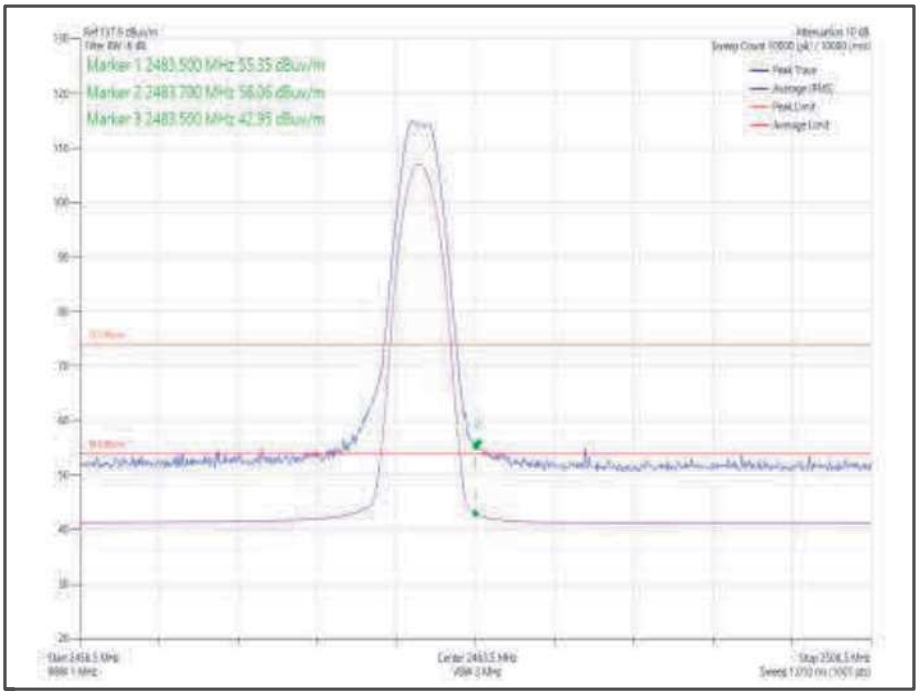

Figure 206 – Core 0, GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

Modulation	Tx Frequency (MHz)	Core	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
GFSK/DH1	2402	Core 0-1	2390.0	54.26	41.56
GFSK/DH1	2480	Core 0-1	2483.5	60.82	45.98

Table 139 - Restricted Band Edge Results

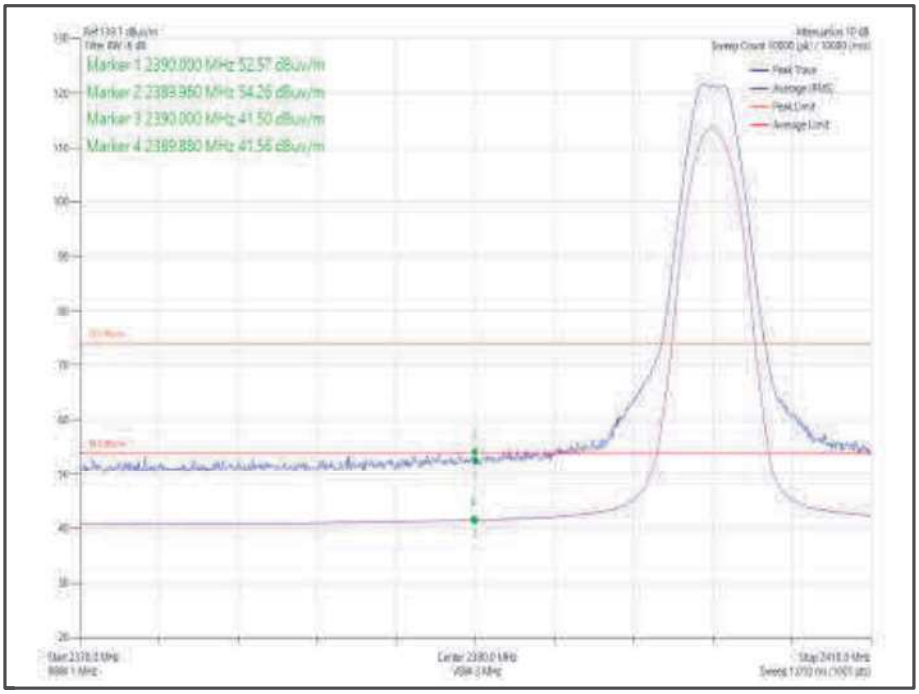

Figure 207 – Core 0-1, GFSK/DH1 - 2402 MHz - Band Edge Frequency 2390.0 MHz

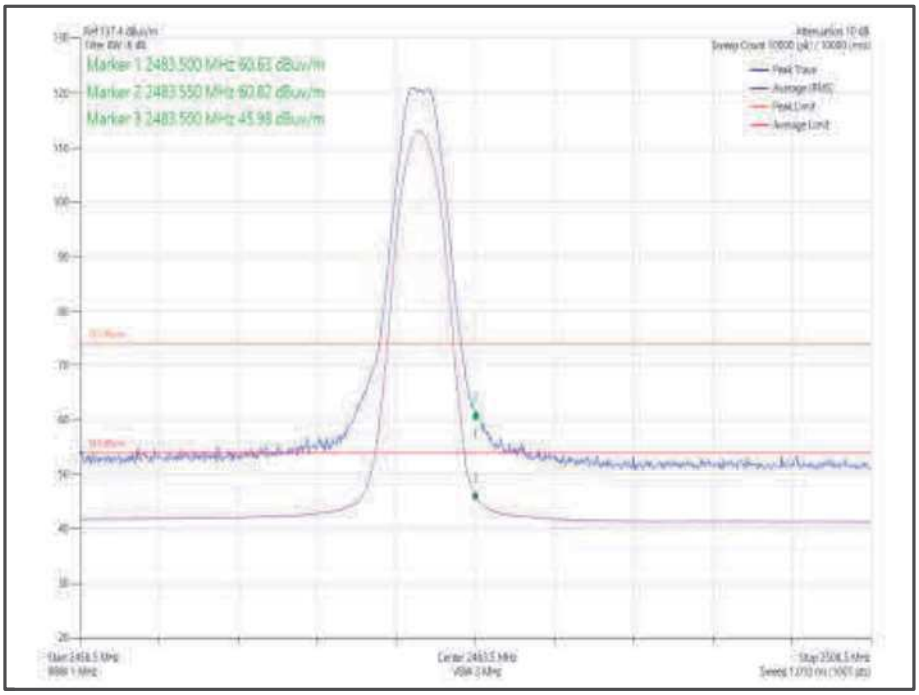

Figure 208 – Core 0-1, GFSK/DH1 - 2480 MHz - Band Edge Frequency 2483.5 MHz

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	Core 0	HDR4	2404	2390.0	54.84	42.41
Static	π/4 DQPSK	Core 0	HDR4	2478	2483.5	53.86	41.25

Table 140 - Restricted Band Edge Results

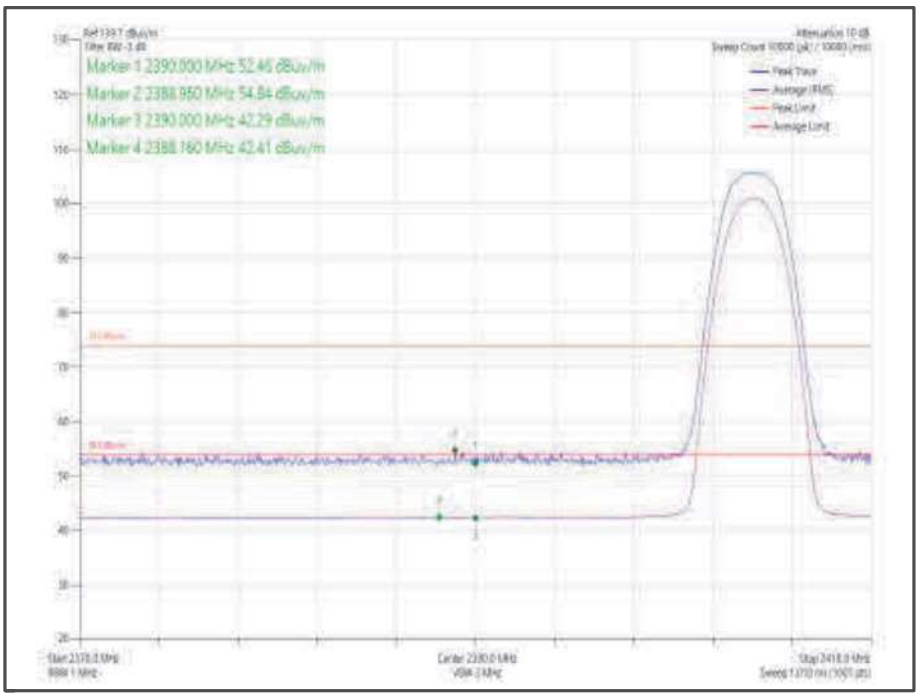

Figure 209 - Static – Core 0, Π/4 DQPSK/HDR4 - 2404 MHz - Band Edge Frequency 2390.0 MHz

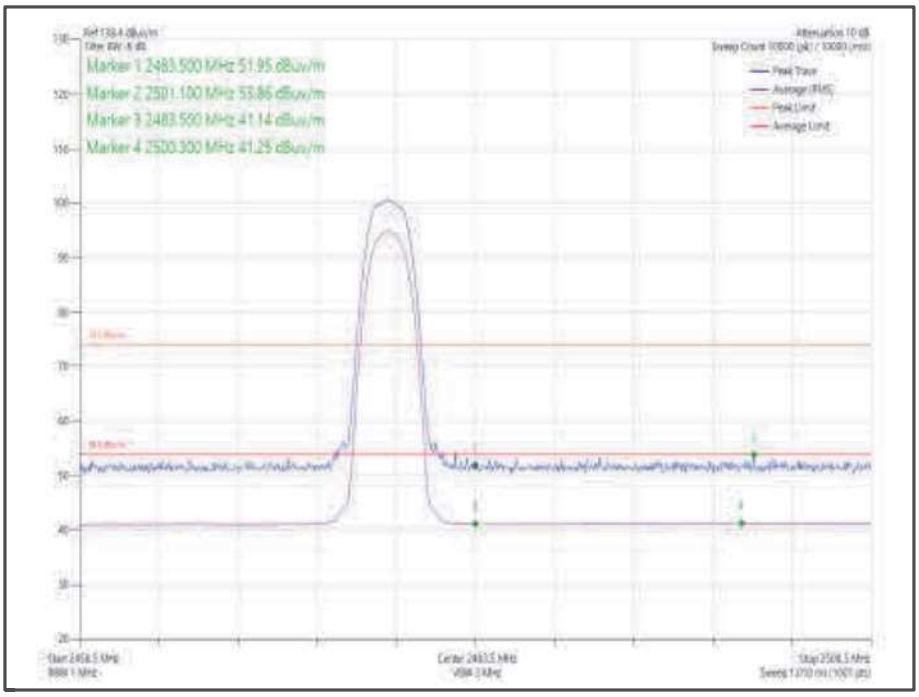

Figure 210 - Static - Core 0, Π/4 DQPSK/HDR4 - 2478 MHz - Band Edge Frequency 2483.5 MHz

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	Π/4 DQPSK	Core 2	HDR4	2404	2390.0	54.82	42.41
Static	Π/4 DQPSK	Core 2	HDR4	2478	2483.5	53.55	41.67

Table 141 - Restricted Band Edge Results

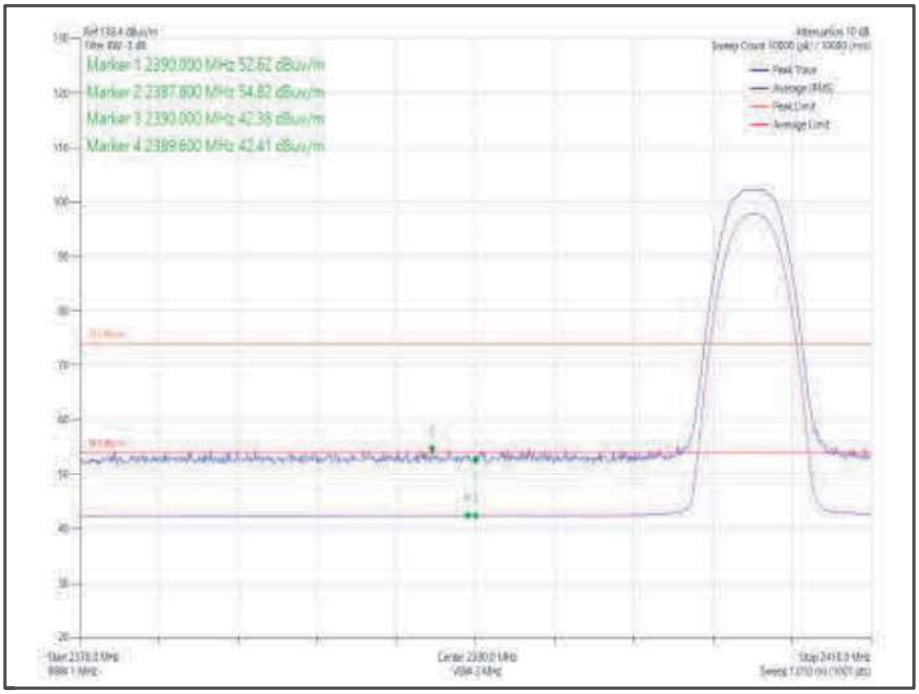

Figure 211 - Static - Core 2, Π/4 DQPSK/HDR4 - 2404 MHz - Band Edge Frequency 2390.0 MHz

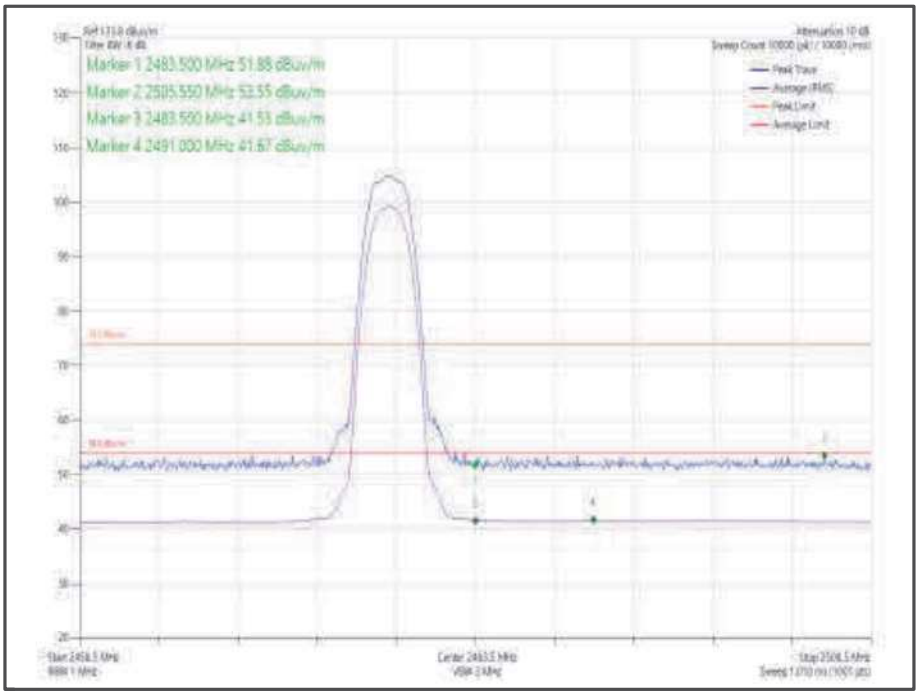

Figure 212 - Static - Core 2, Π/4 DQPSK/HDR4 - 2478 MHz - Band Edge Frequency 2483.5 MHz

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	Π/4 DQPSK	Core 0-1	HDR4	2404	2390.0	54.43	42.45
Static	Π/4 DQPSK	Core 0-1	HDR4	2478	2483.5	53.65	41.51

Table 142 - Restricted Band Edge Results

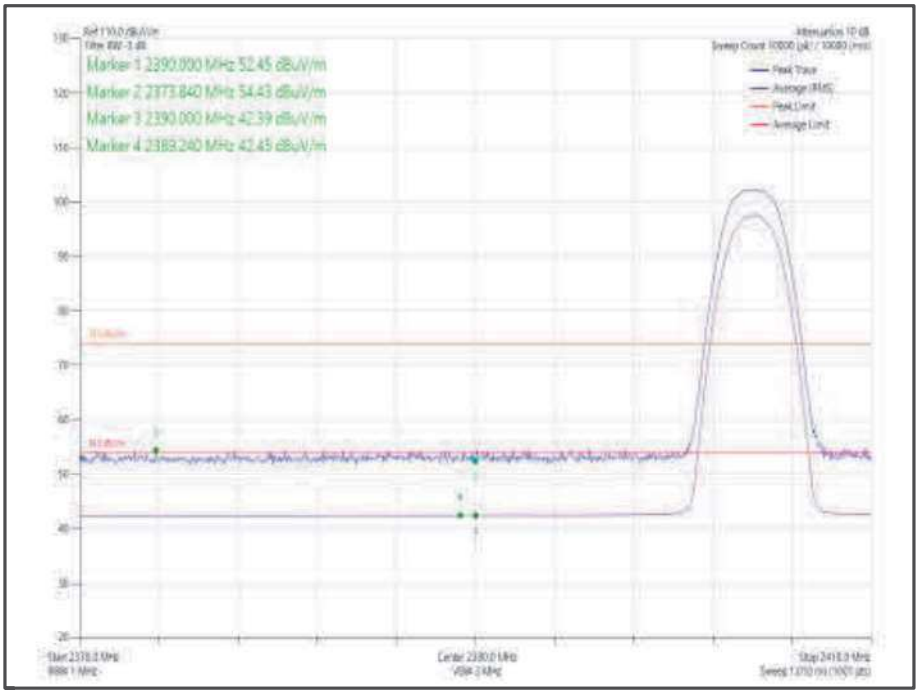

Figure 213 - Static - Core 0-1, Π/4 DQPSK/HDR4 - 2404 MHz - Band Edge Frequency 2390.0 MHz

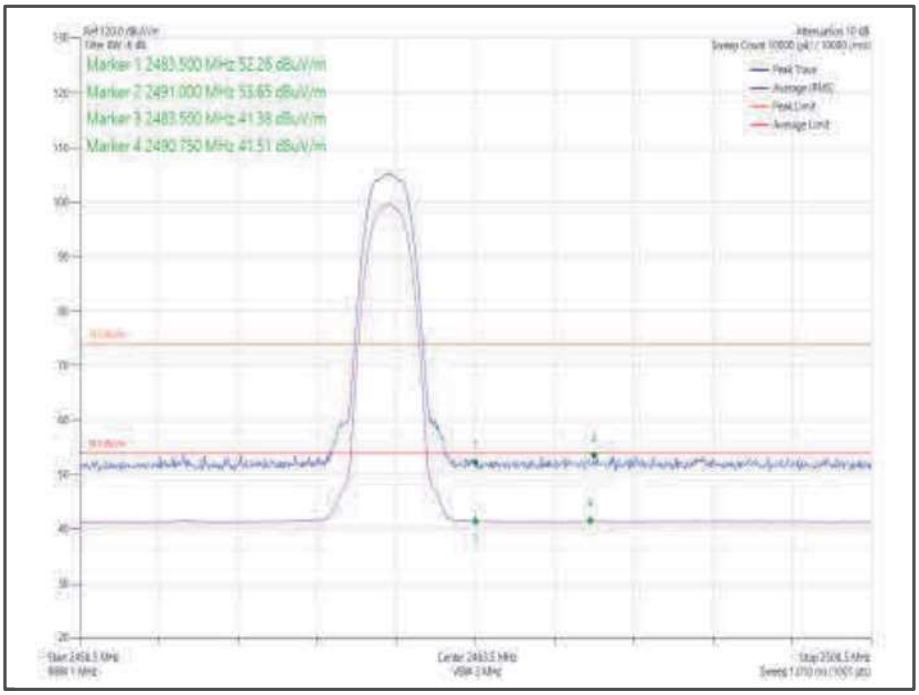

Figure 214 - Static - Core 0-1, Π/4 DQPSK/HDR4 - 2478 MHz - Band Edge Frequency 2483.5 MHz

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	Core 0	HDR4	2404	2390.0	56.50	43.04
Static	Π/4 DQPSK	Core 0	HDR4	2478	2483.5	54.71	41.57

Table 143 - Restricted Band Edge Results

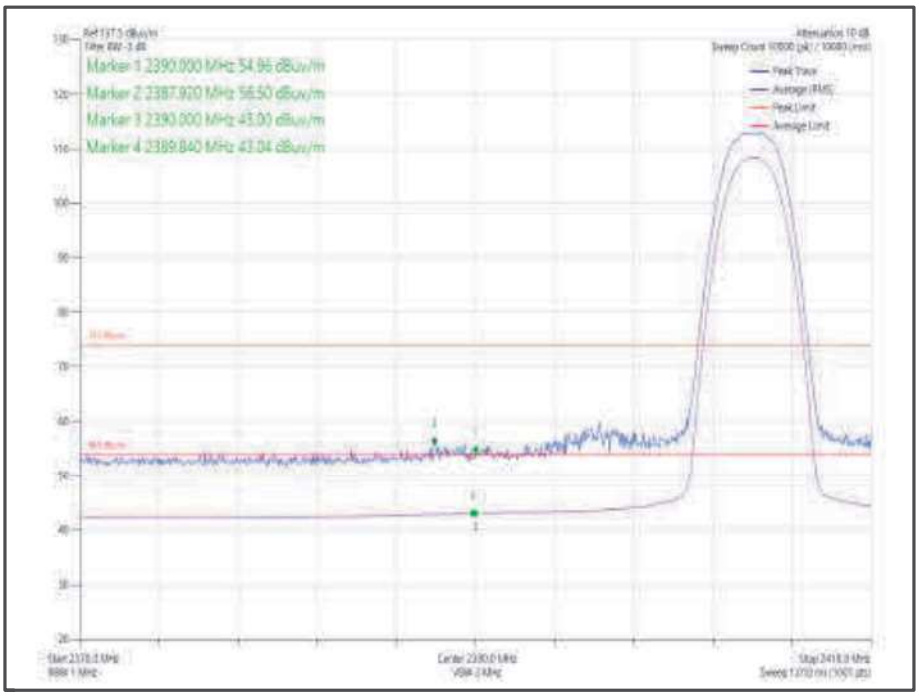

Figure 215 - Static – Core 0, Π/4 DQPSK/HDR4 - 2404 MHz - Band Edge Frequency 2390.0 MHz

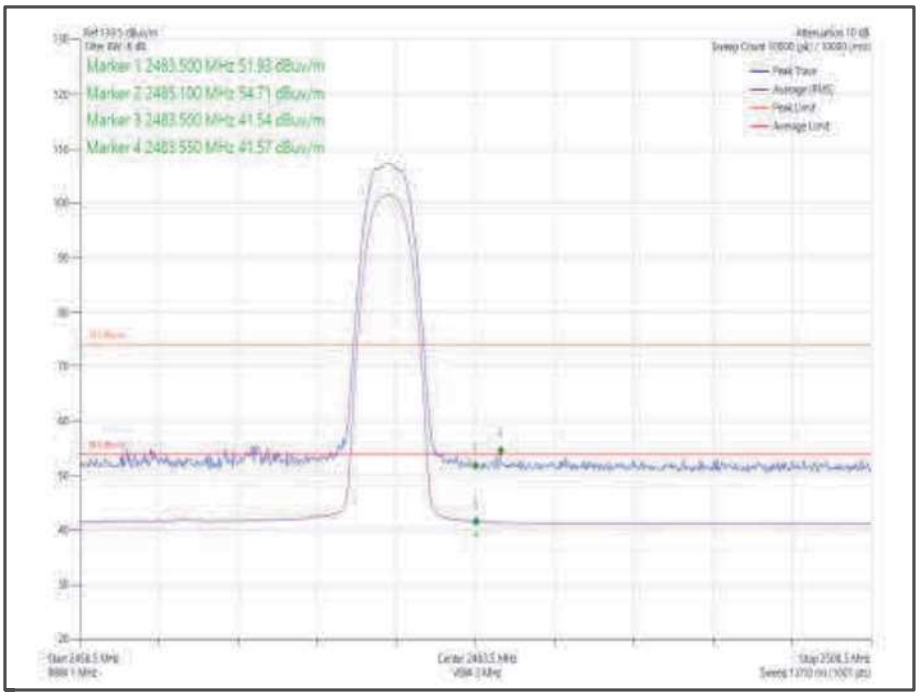

Figure 216 - Static - Core 0, Π/4 DQPSK/HDR4 - 2478 MHz - Band Edge Frequency 2483.5 MHz

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	Π/4 DQPSK	Core 0-1	HDR4	2404	2390.0	56.20	43.01
Static	Π/4 DQPSK	Core 0-1	HDR4	2478	2483.5	56.45	42.03

Table 144 - Restricted Band Edge Results

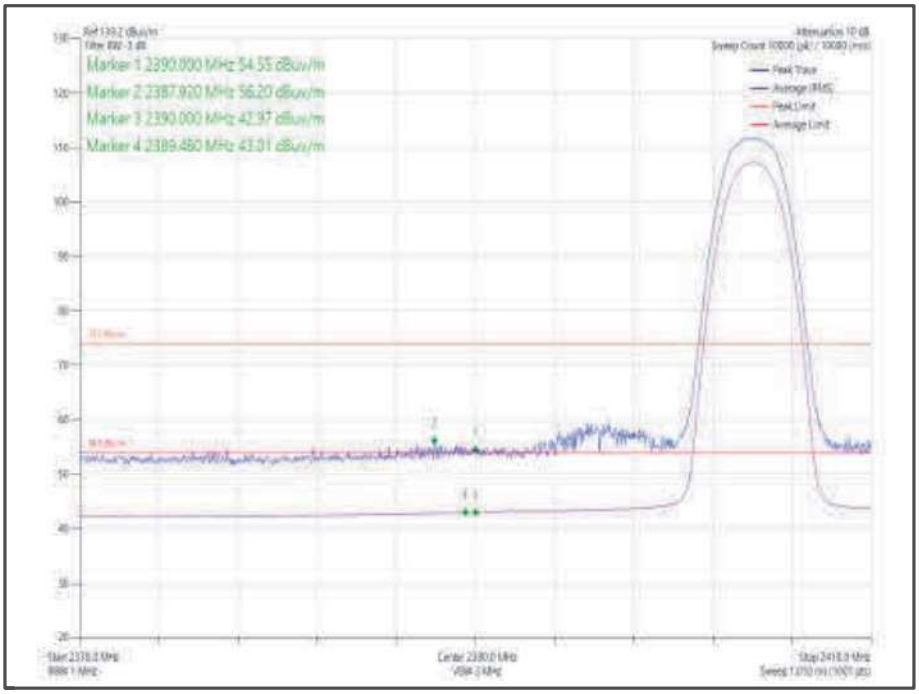

Figure 217 - Static - Core 0-1, Π/4 DQPSK/HDR4 - 2404 MHz - Band Edge Frequency 2390.0 MHz

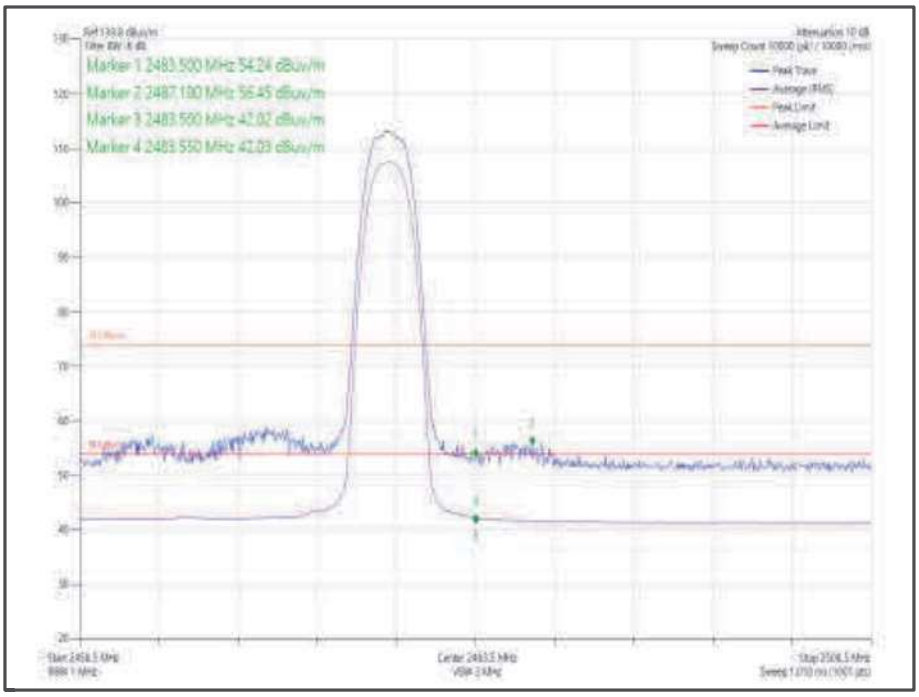

Figure 218 - Static - Core 0-1, Π/4 DQPSK/HDR4 - 2478 MHz - Band Edge Frequency 2483.5 MHz

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	Core 0	HDR8	2404	2390.0	54.60	42.42
Static	Π/4 DQPSK	Core 0	HDR8	2478	2483.5	54.55	42.32

Table 145 - Restricted Band Edge Results

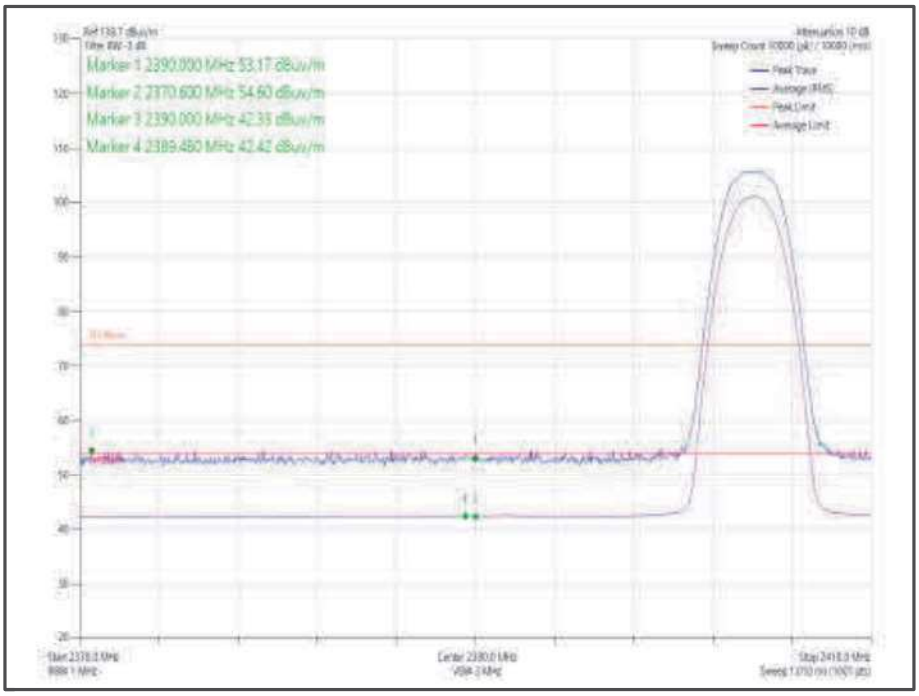

Figure 219- Static - Core 0, Π/4 DQPSK/HDR8 - 2404 MHz - Band Edge Frequency 2390.0 MHz

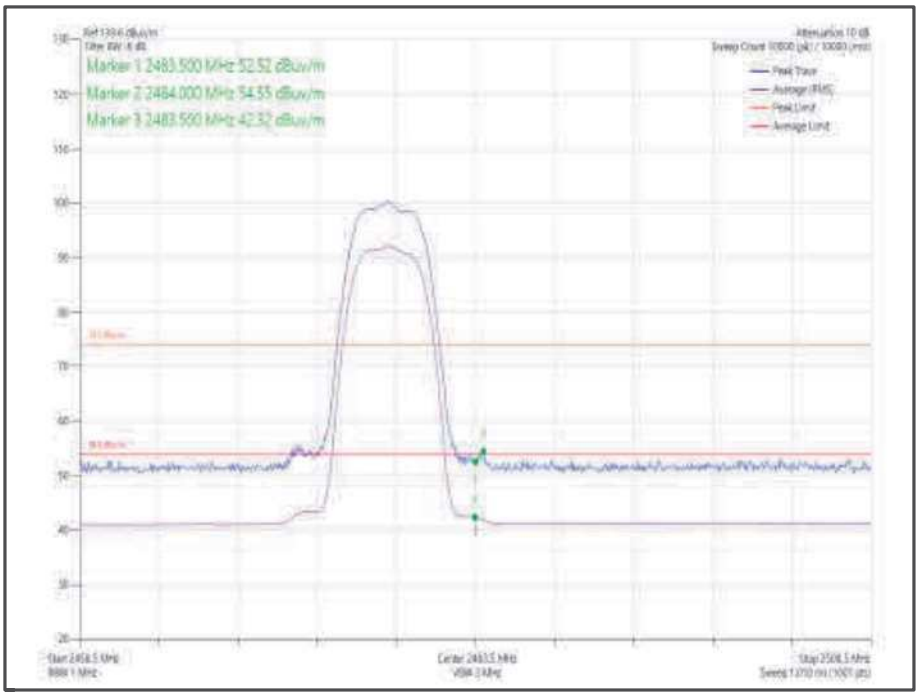

Figure 220 - Static - Core 0, Π/4 DQPSK/HDR8 - 2478 MHz - Band Edge Frequency 2483.5 MHz

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	Π/4 DQPSK	Core 2	HDR8	2404	2390.0	54.34	42.42
Static	Π/4 DQPSK	Core 2	HDR	2478	2483.5	58.96	46.06

Table 146 - Restricted Band Edge Results

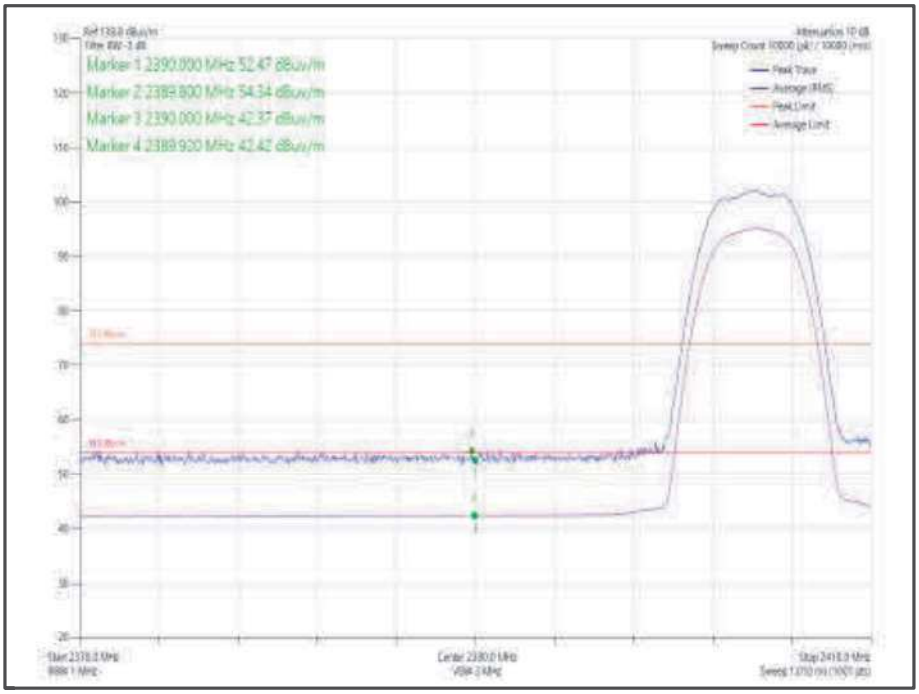

Figure 221 - Static - Core 2, Π/4 DQPSK/HDR8 - 2404 MHz - Band Edge Frequency 2390.0 MHz

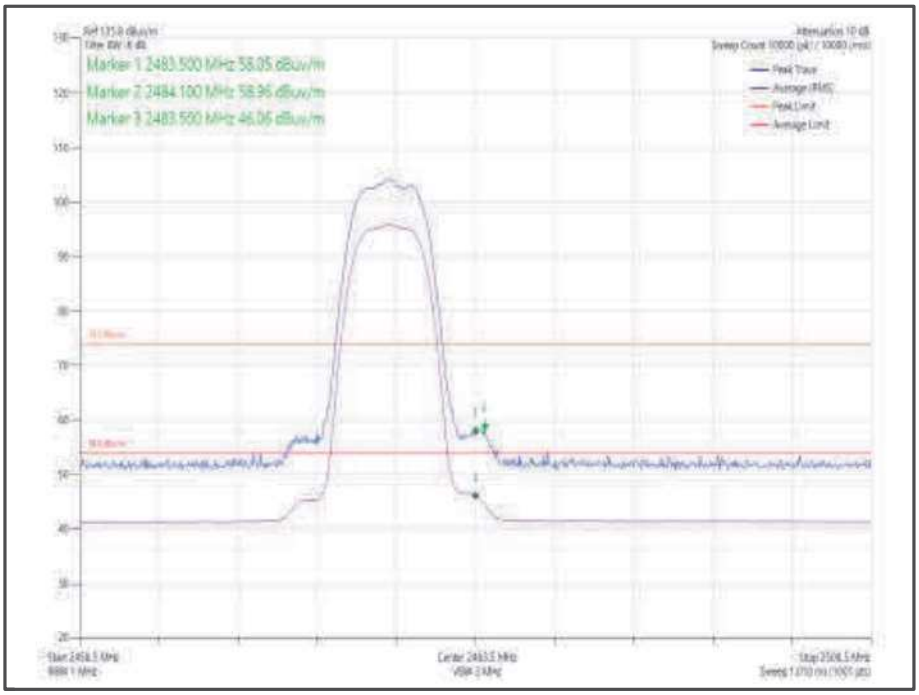

Figure 222 - Static - Core 2, Π/4 DQPSK/HDR8 - 2478 MHz - Band Edge Frequency 2483.5 MHz

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	Π/4 DQPSK	Core 0-1	HDR8	2404	2390.0	54.99	42.31
Static	Π/4 DQPSK	Core 0-1	HDR8	2478	2483.5	53.79	42.26

Table 147 - Restricted Band Edge Results

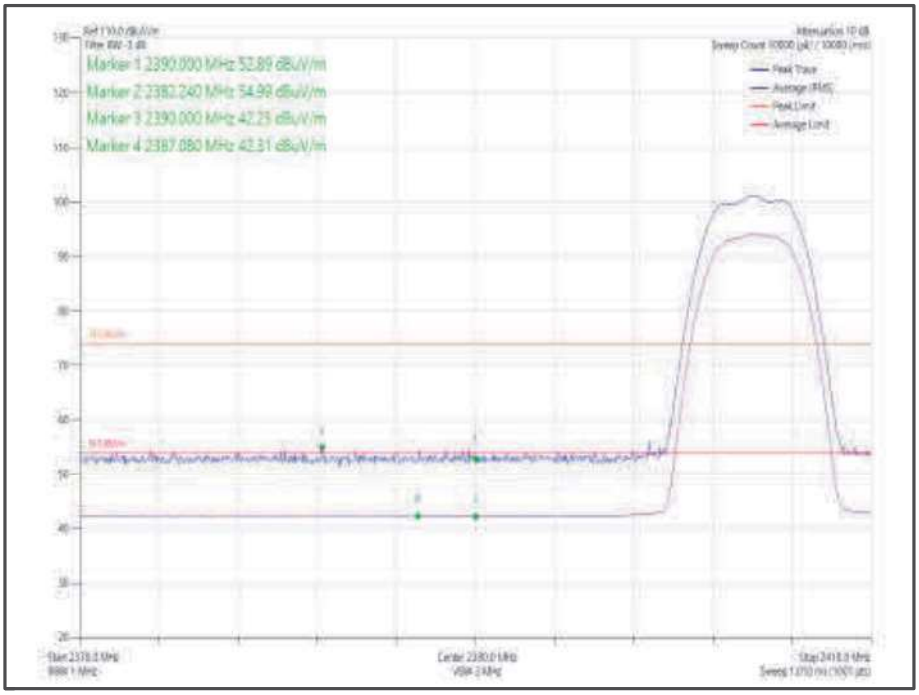

Figure 223- Static - Core 0-1, Π/4 DQPSK/HDR8 - 2404 MHz - Band Edge Frequency 2390.0 MHz

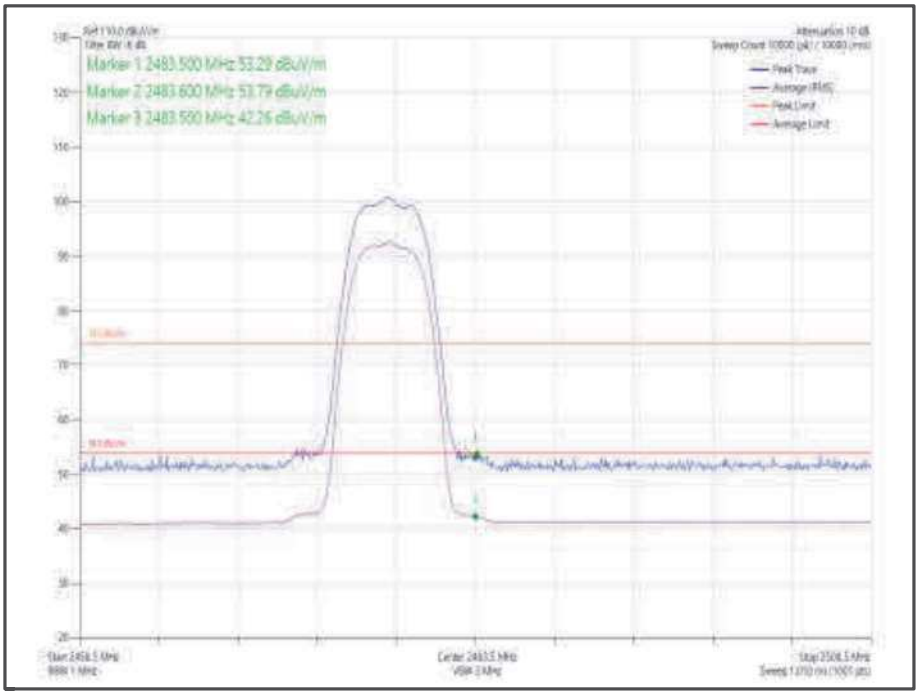

Figure 224 - Static - Core 0-1, Π/4 DQPSK/HDR8 - 2478 MHz - Band Edge Frequency 2483.5 MHz

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	Core 0	HDR8	2404	2390.0	56.90	43.09
Static	Π/4 DQPSK	Core 0	HDR8	2478	2483.5	54.15	42.22

Table 148 - Restricted Band Edge Results

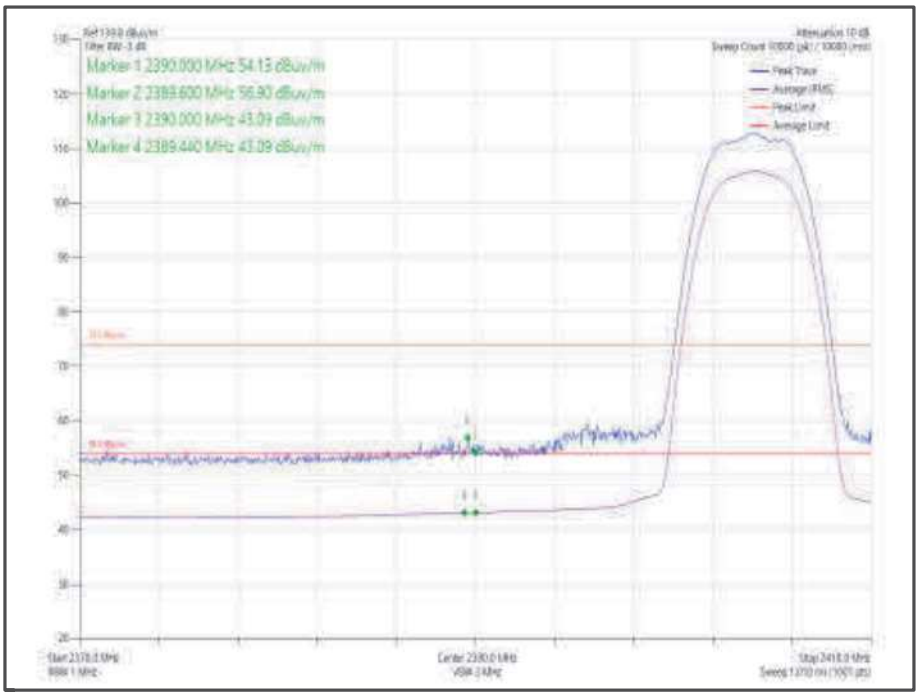

Figure 225- Static - Core 0, Π/4 DQPSK/HDR8 - 2404 MHz - Band Edge Frequency 2390.0 MHz

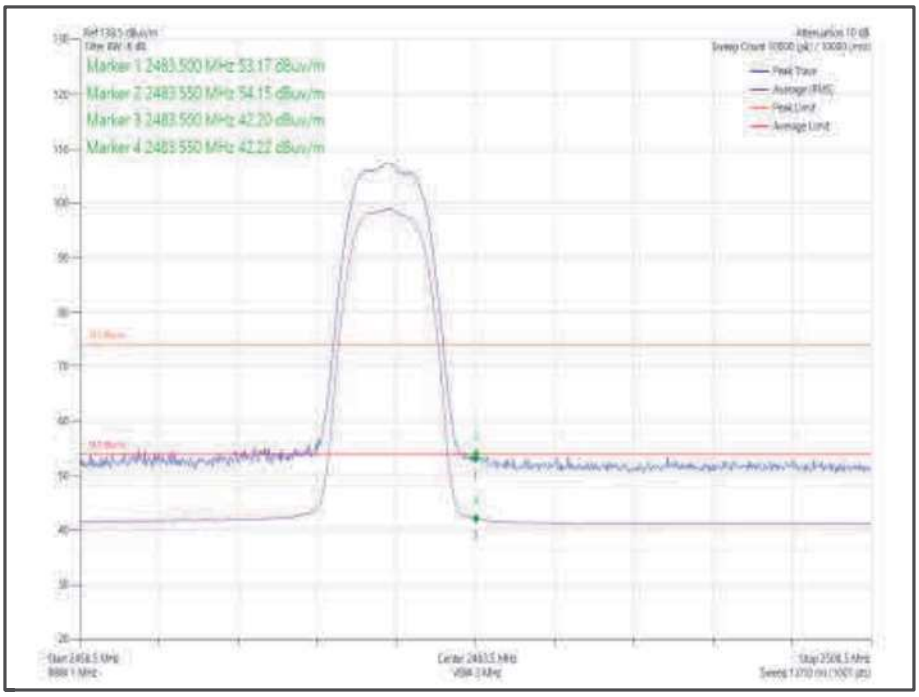

Figure 226 - Static - Core 0, Π/4 DQPSK/HDR8 - 2478 MHz - Band Edge Frequency 2483.5 MHz

Mode	Modulation	Core	Packet Type	Tx Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	Π/4 DQPSK	Core 0-1	HDR8	2404	2390.0	56.60	43.07
Static	Π/4 DQPSK	Core 0-1	HDR8	2478	2483.5	56.17	43.36

Table 149 - Restricted Band Edge Results

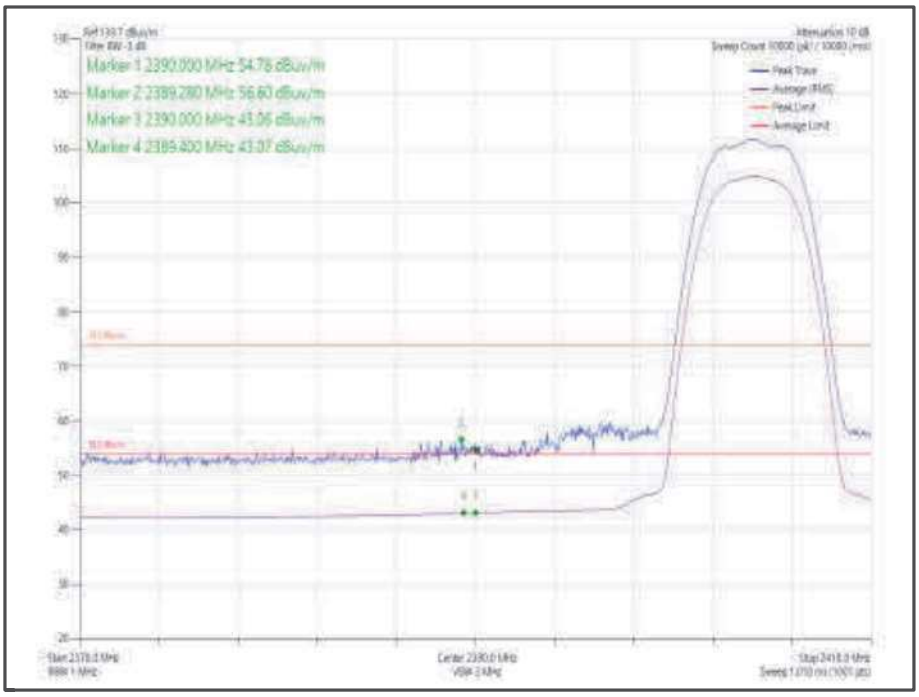

Figure 227- Static - Core 0, Π/4 DQPSK/HDR8 - 2404 MHz - Band Edge Frequency 2390.0 MHz

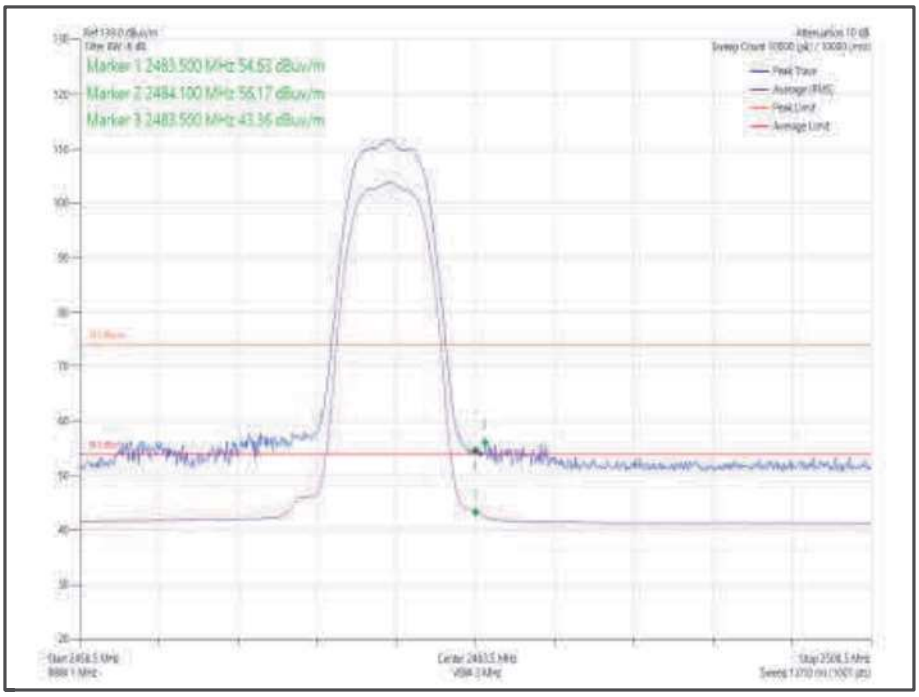

Figure 228 - Static - Core 0, Π/4 DQPSK/HDR8 - 2478 MHz - Band Edge Frequency 2483.5 MHz

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

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 150

*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.

2.5.7 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
True RMS Multimeter	Fluke	179	4007	12	29-Oct-2021
EMI Test Receiver	Rohde & Schwarz	ESW44	5084	12	04-Feb-2021
EmX Emissions Software	TUV SUD	V2.1.0	5125	-	Software
Screened Room (11)	Rainford	Rainford	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
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 151

TU - Traceability Unscheduled

2.6 Spurious Radiated Emissions

2.6.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (d) and 15.205
ISED RSS-247, Clause 3.3
ISED RSS-GEN, Clause 6.13

2.6.2 Equipment Under Test and Modification State

A2438, S/N: C02DM00Q087X - Modification State 0

2.6.3 Date of Test

19-December-2020 to 04-January-2021

2.6.4 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.

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 results are within 10 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).

2.6.5 Example Test Setup Diagram

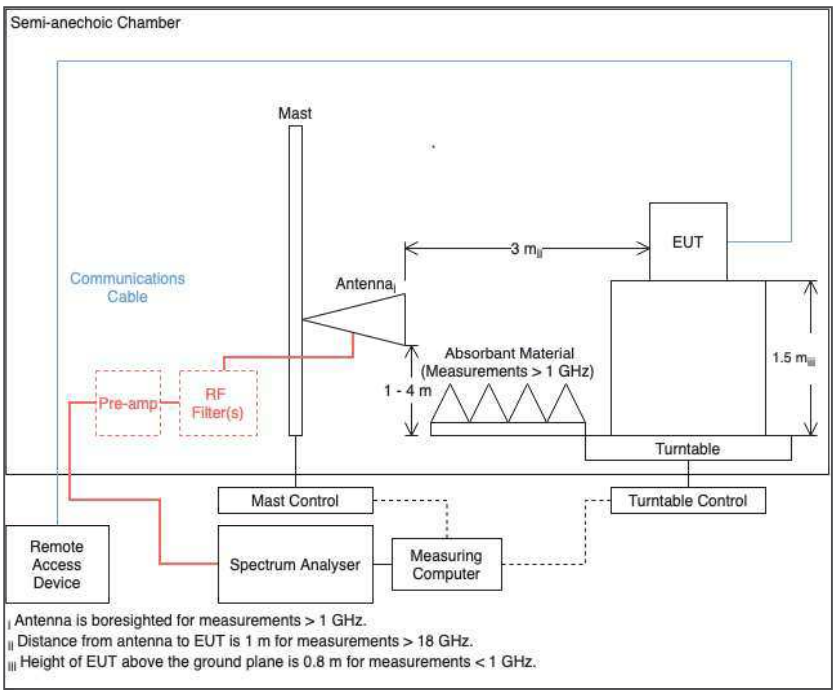

Figure 229

2.6.6 Environmental Conditions

Ambient Temperature	20.2 - 24.2 °C
Relative Humidity	40.8 - 51.2 %

2.6.7 Test Results

2.4 GHz Bluetooth - DTS

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 152 - 2402 MHz (CH0), LE1M, ePA, Core 0, 1 GHz to 26 GHz

*No emissions found within 10 dB of the limit.

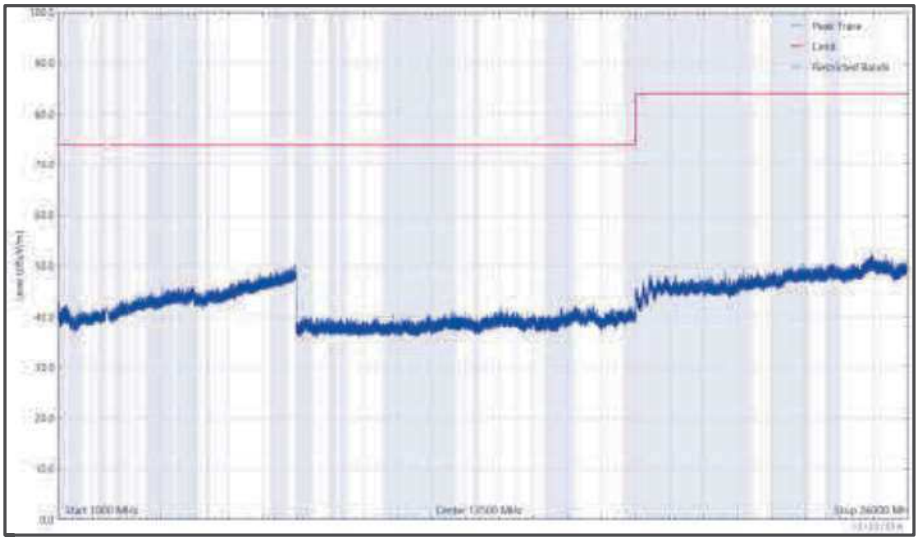

Figure 230 - 2402 MHz (CH0), LE1M, ePA, Core 0, 1 GHz to 26 GHz, Horizontal (Peak)

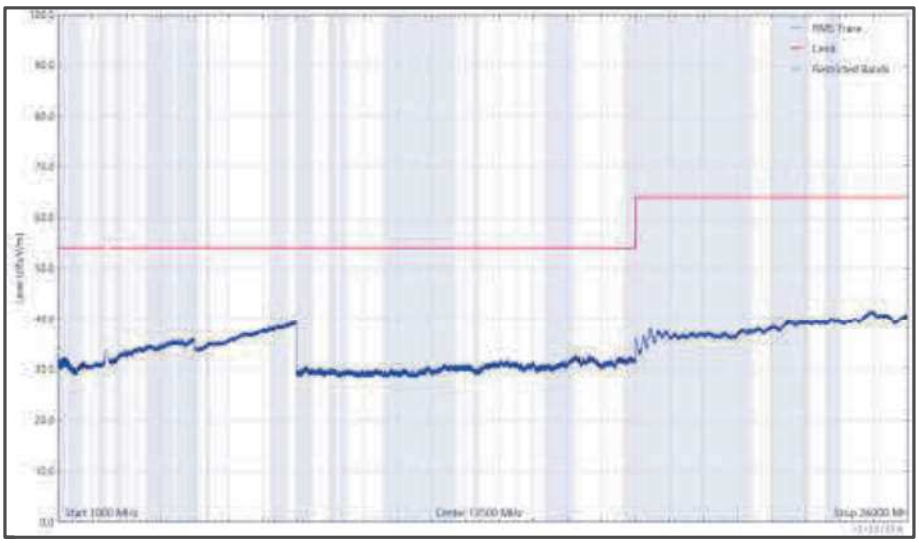

Figure 231 - 2402 MHz (CH0), LE1M, ePA, Core 0, 1 GHz to 26 GHz, Horizontal (rms)

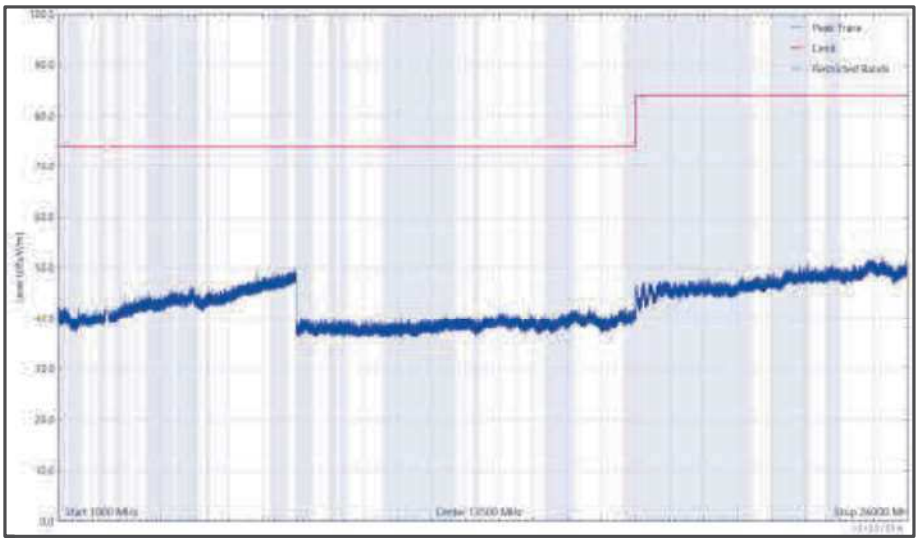

Figure 232 - 2402 MHz (CH0), LE1M, ePA, Core 0, 1 GHz to 26 GHz, Vertical (Peak)

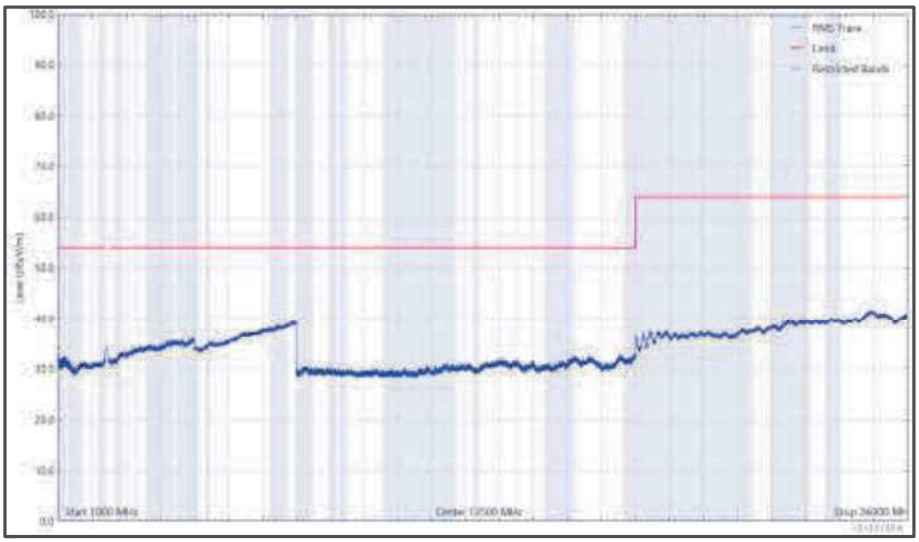

Figure 233 - 2402 MHz (CH0), LE1M, ePA, Core 0, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
274.859	26.6	46.0	-19.4	Q-Peak	14	104	Horizontal

Table 153 - 2440 MHz (CH17), LE1M, ePA, Core 0, 30 MHz to 26 GHz

No other emissions found within 10 dB of the limit.

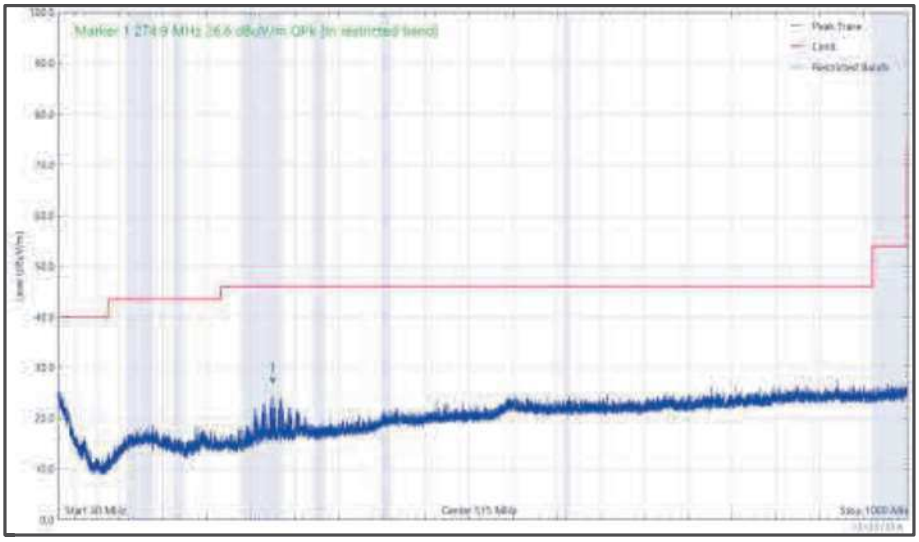

Figure 234 - 2440 MHz (CH17), LE1M, ePA, Core 0, 30 MHz to 1 GHz, Horizontal (Peak)

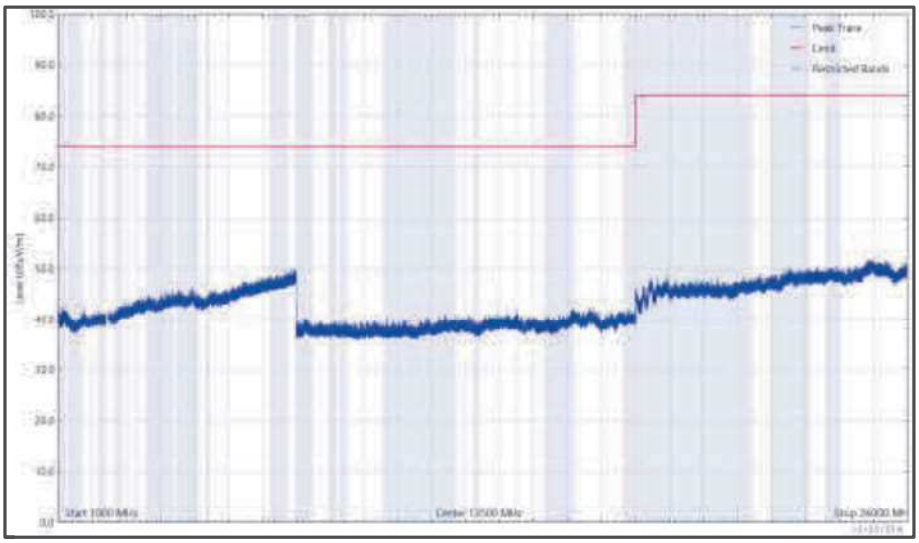

Figure 235 - 2440 MHz (CH17), LE1M, ePA, Core 0, 1 GHz to 26 GHz, Horizontal (Peak)

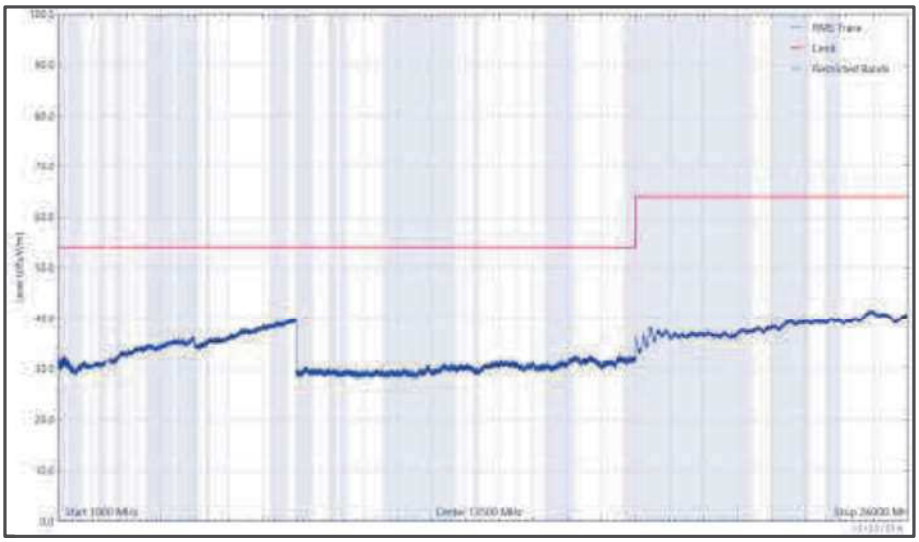

Figure 236 - 2440 MHz (CH17), LE1M, ePA, Core 0, 1 GHz to 26 GHz, Horizontal (rms)

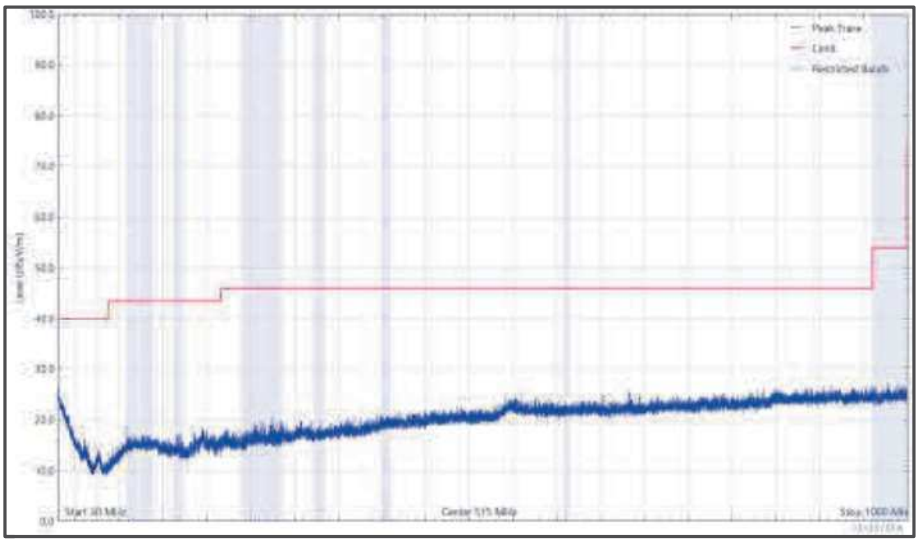

Figure 237 - 2440 MHz (CH17), LE1M, ePA, Core 0, 30 MHz to 1 GHz, Vertical (Peak)

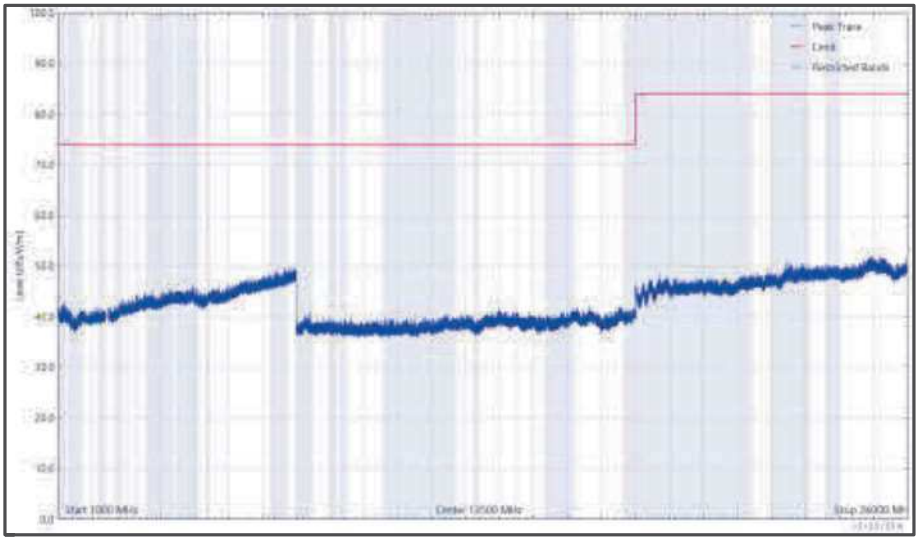

Figure 238 - 2440 MHz (CH17), LE1M, ePA, Core 0, 1 GHz to 26 GHz, Vertical (Peak)

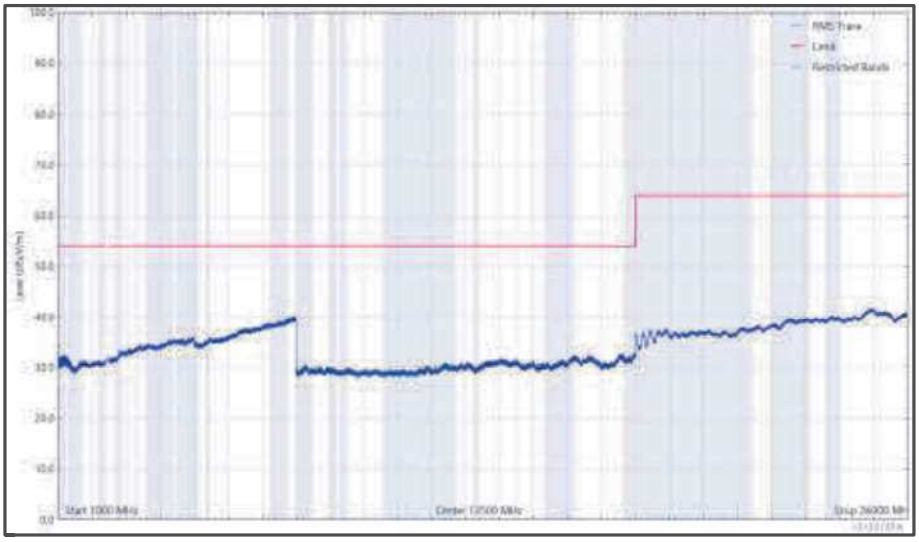

Figure 239 - 2440 MHz (CH17), LE1M, ePA, Core 0, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 154 - 2480 MHz (CH39), LE1M, ePA, Core 0, 1 GHz to 26 GHz

*No emissions found within 10 dB of the limit.

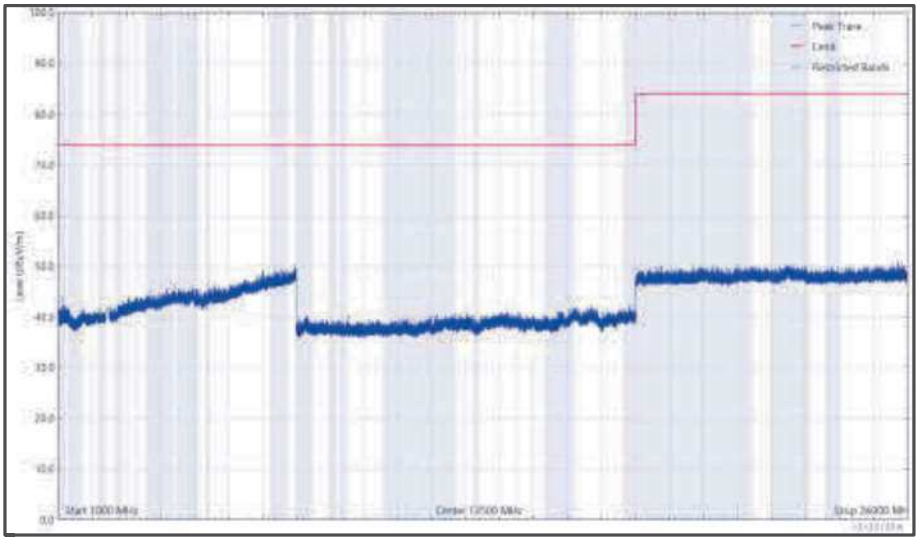

Figure 240 - 2480 MHz (CH39), LE1M, ePA, Core 0, 1 GHz to 26 GHz, Horizontal (Peak)

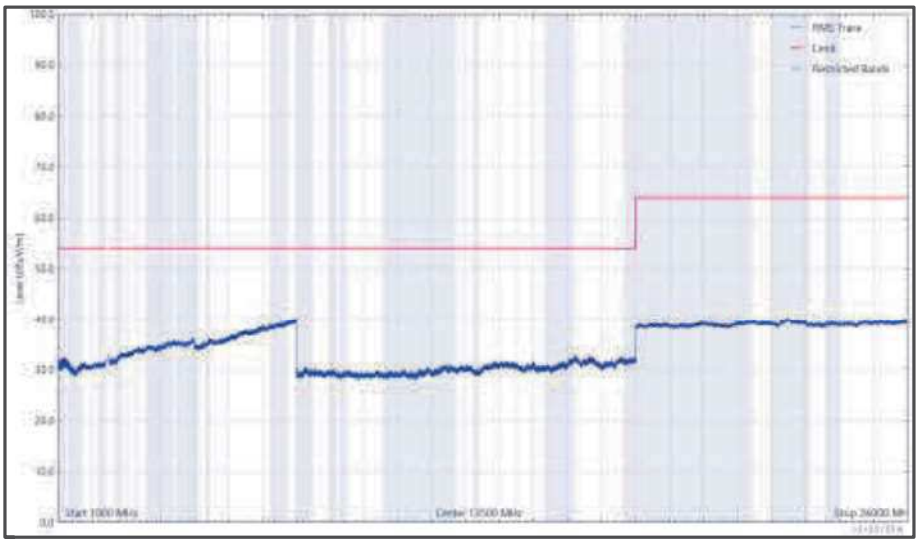

Figure 241 - 2480 MHz (CH39), LE1M, ePA, Core 0, 1 GHz to 26 GHz, Horizontal (rms)

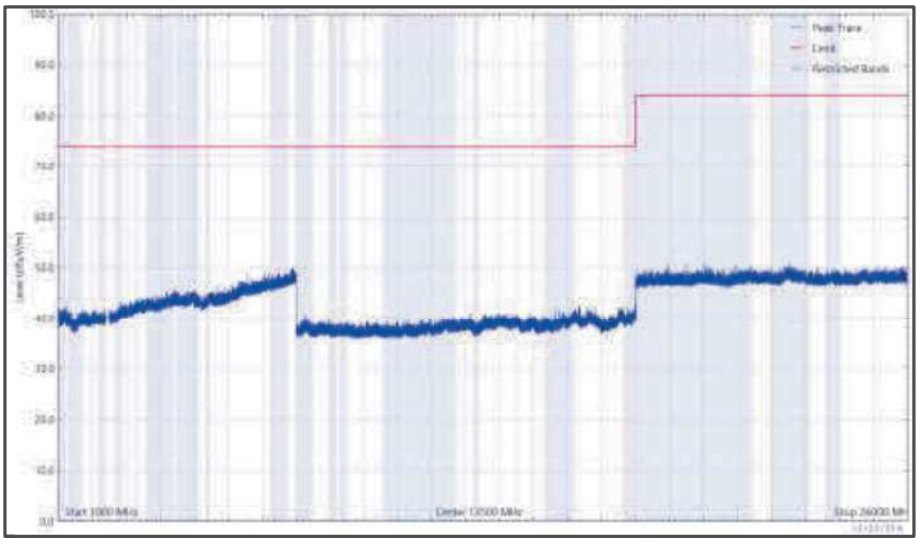

Figure 242 - 2480 MHz (CH39), LE1M, ePA, Core 0, 1 GHz to 26 GHz, Vertical (Peak)

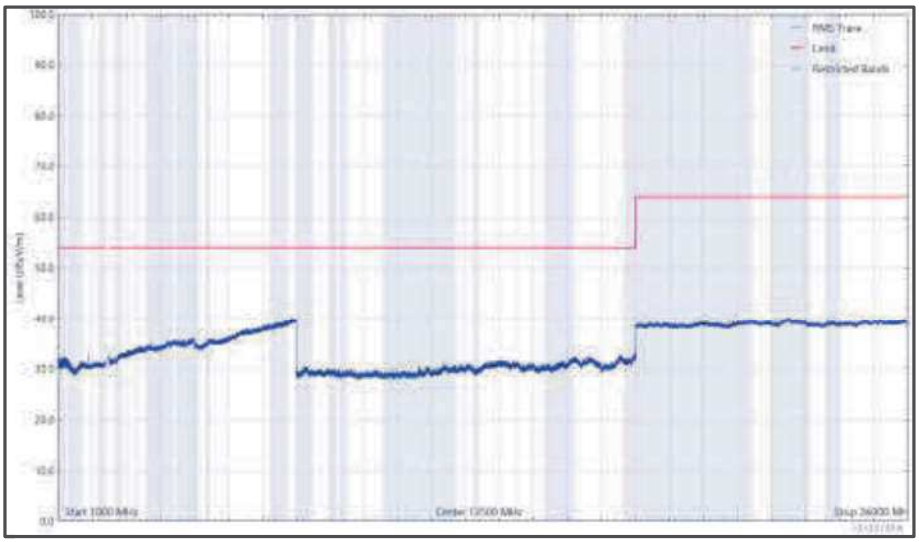

Figure 243 - 2480 MHz (CH39), LE1M, ePA, Core 0, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 155 - 2402 MHz (CH0), LE1M, ePA, Core 1, 1 GHz to 26 GHz

*No emissions found within 10 dB of the limit.

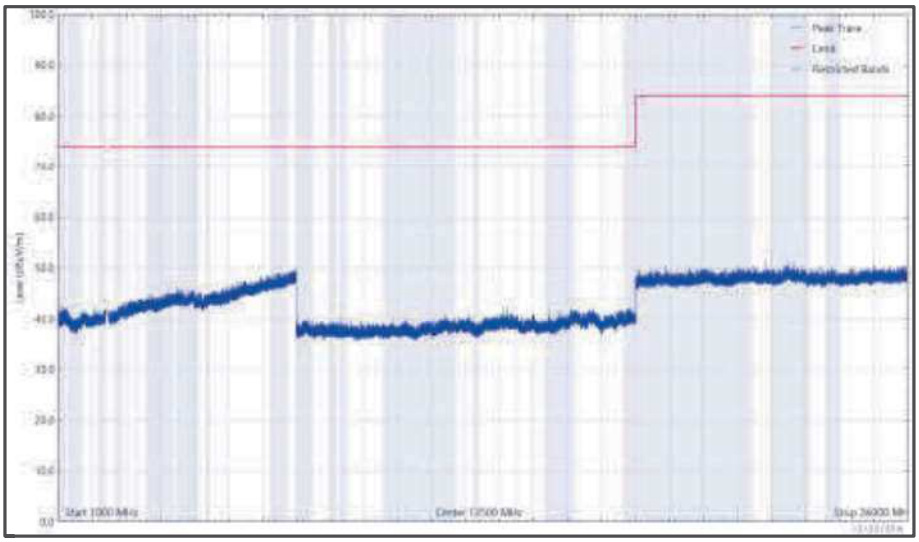

Figure 244 - 2402 MHz (CH0), LE1M, ePA, Core 1, 1 GHz to 26 GHz, Horizontal (Peak)

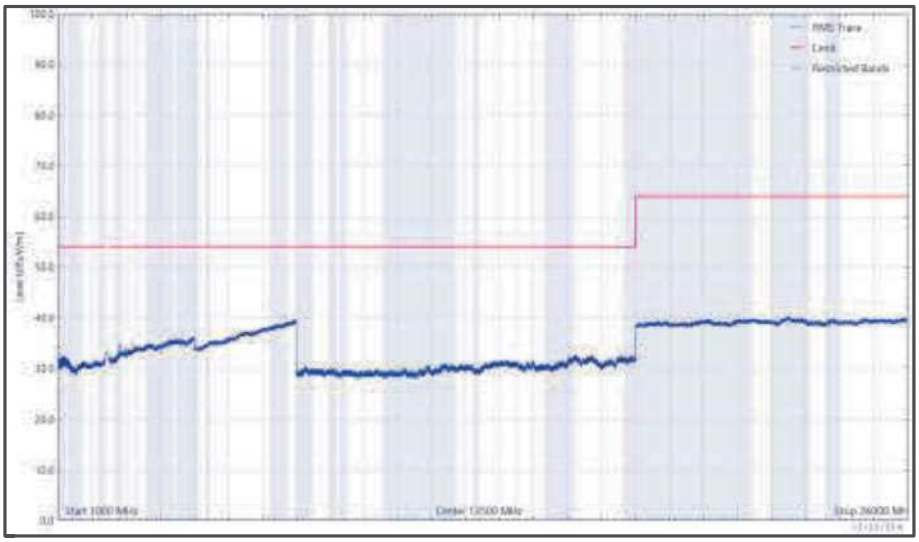

Figure 245 - 2402 MHz (CH0), LE1M, ePA, Core 1, 1 GHz to 26 GHz, Horizontal (rms)

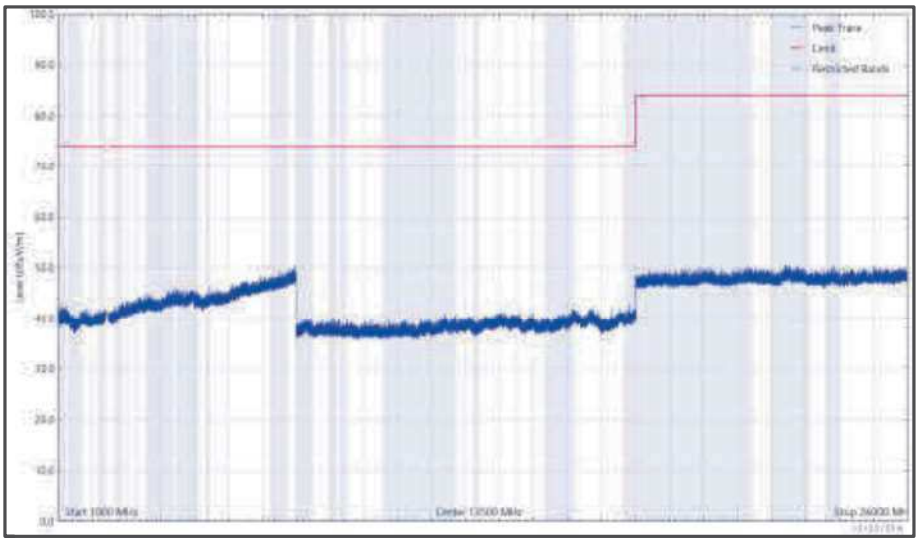

Figure 246 - 2402 MHz (CH0), LE1M, ePA, Core 1, 1 GHz to 26 GHz, Vertical (Peak)

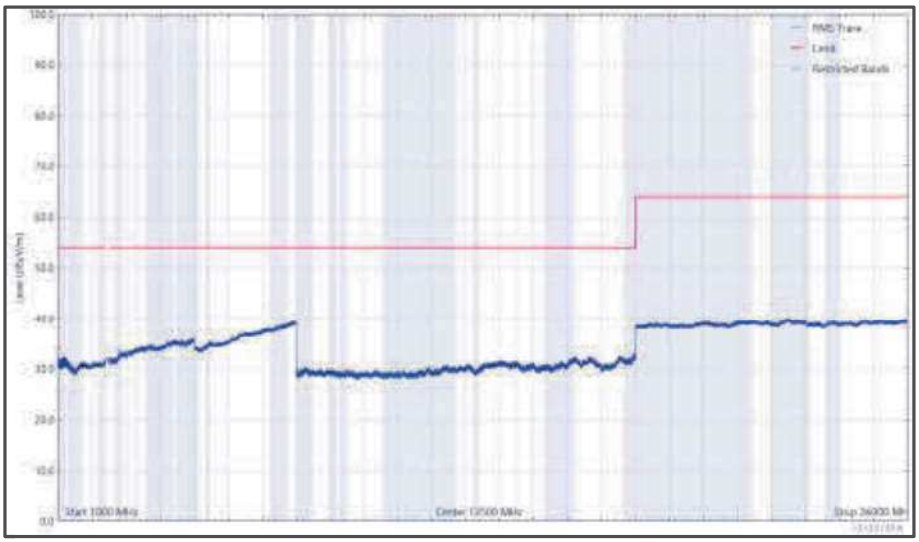

Figure 247 - 2402 MHz (CH0), LE1M, ePA, Core 1, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2846.822	33.4	54.0	-20.6	RMS	359	183	Horizontal

Table 156 - 2440 MHz (CH17), LE1M, ePA, Core 1, 30 MHz to 26 GHz

No other emissions found within 10 dB of the limit.

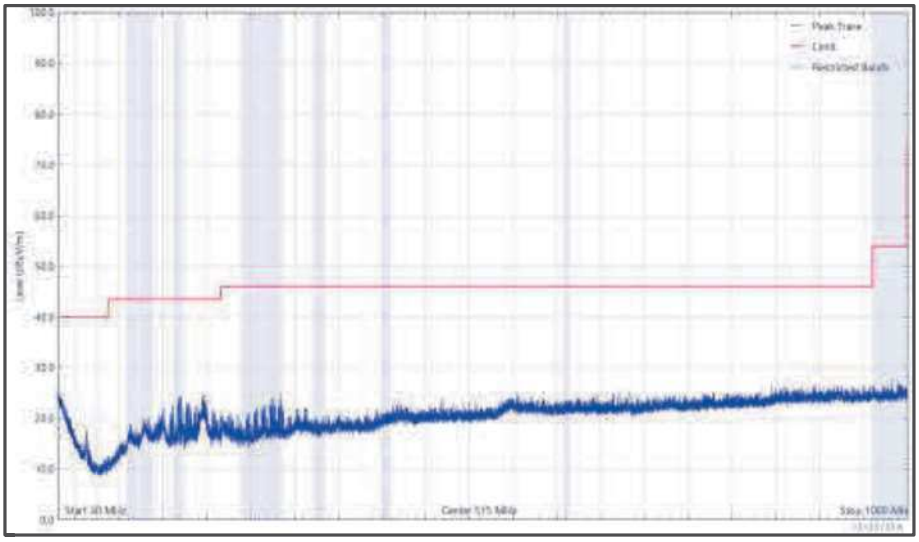

Figure 248 - 2440 MHz (CH17), LE1M, ePA, Core 1, 30 MHz to 1 GHz, Horizontal (Peak)

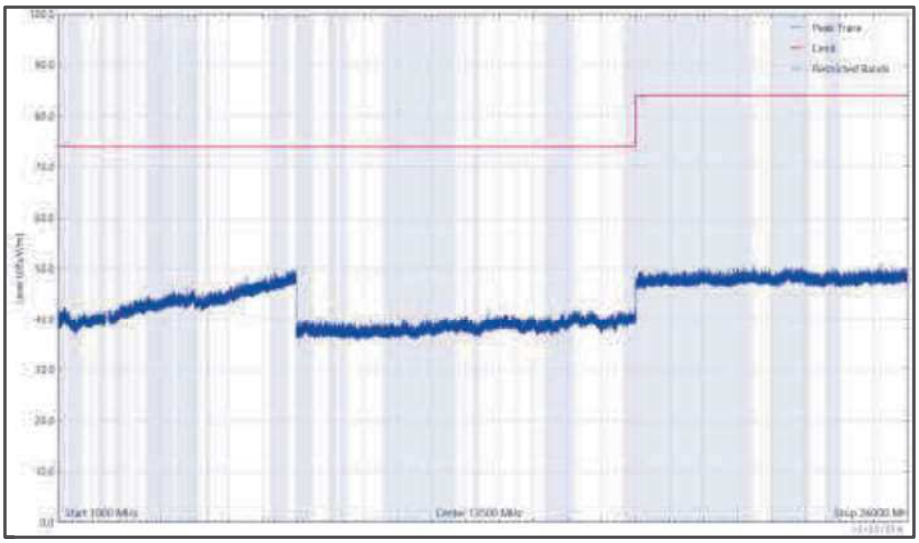

Figure 249 - 2440 MHz (CH17), LE1M, ePA, Core 1, 1 GHz to 26 GHz, Horizontal (Peak)

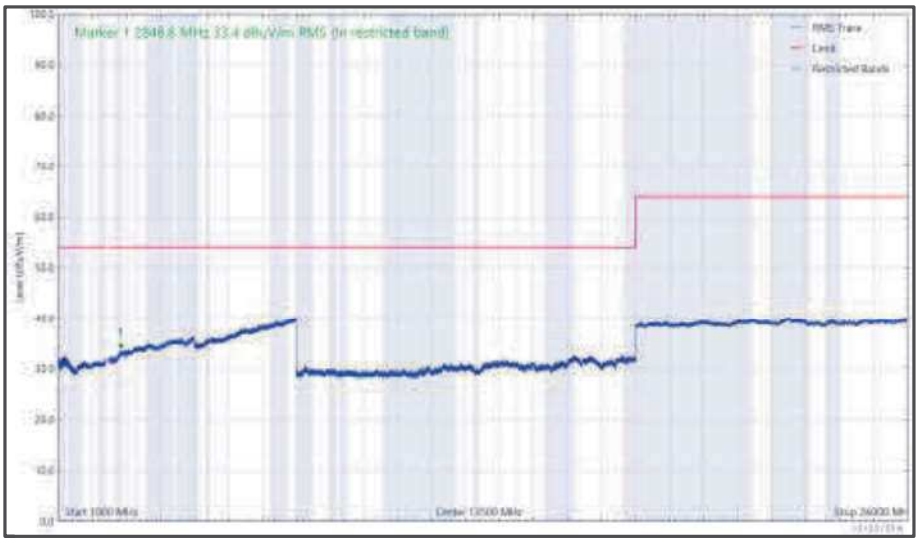

Figure 250 - 2440 MHz (CH17), LE1M, ePA, Core 1, 1 GHz to 26 GHz, Horizontal (rms)

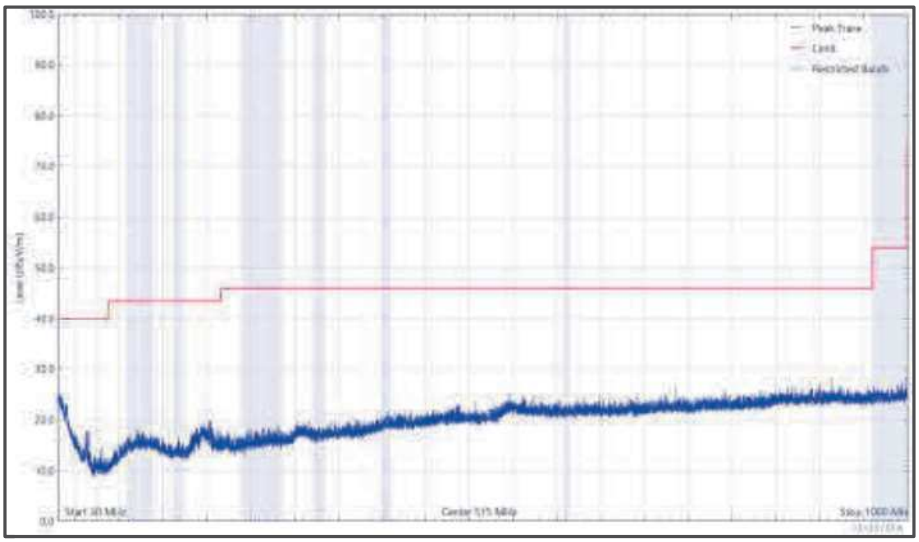

Figure 251 - 2440 MHz (CH17), LE1M, ePA, Core 1, 30 MHz to 1 GHz, Vertical (Peak)

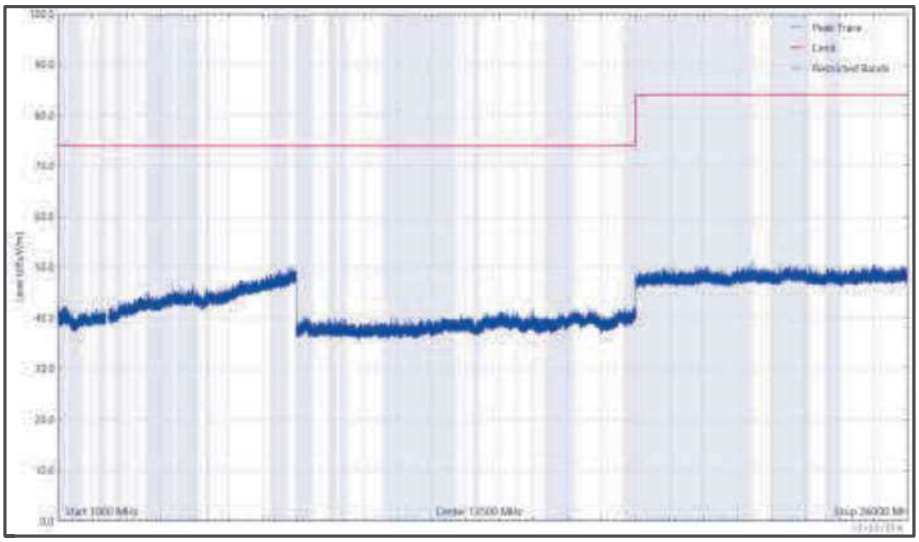

Figure 252 - 2440 MHz (CH17), LE1M, ePA, Core 1, 1 GHz to 26 GHz, Vertical (Peak)

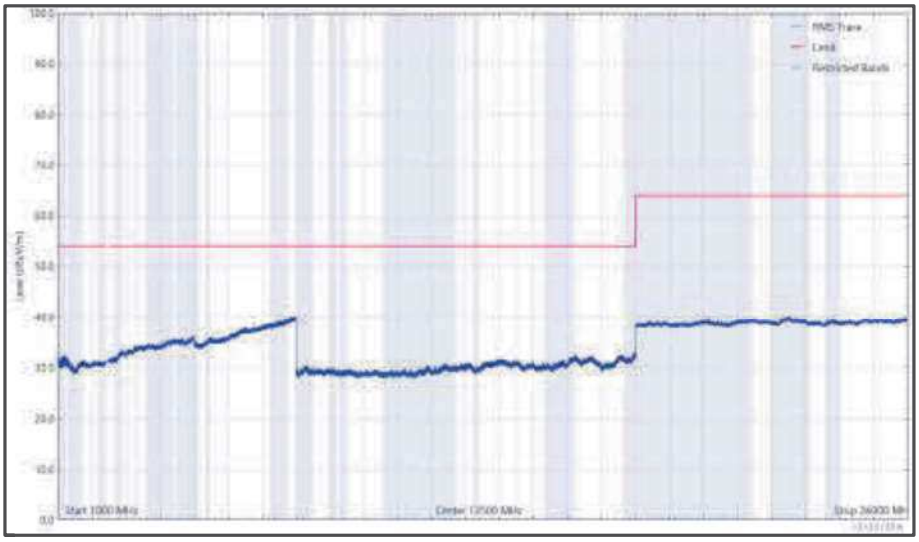

Figure 253 - 2440 MHz (CH17), LE1M, ePA, Core 1, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 157 - 2480 MHz (CH39), LE1M, ePA, Core 1, 1 GHz to 26 GHz

*No emissions found within 10 dB of the limit.

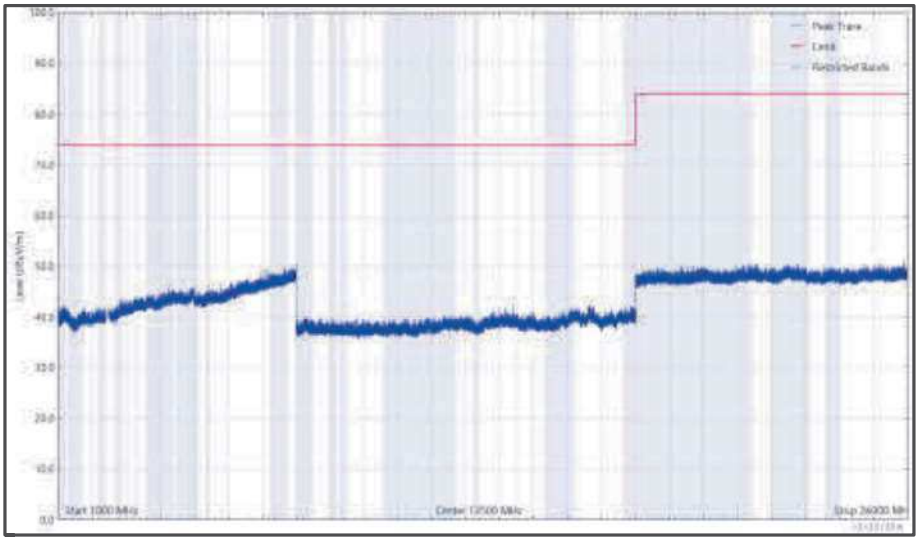

Figure 254 - 2480 MHz (CH39), LE1M, ePA, Core 1, 1 GHz to 26 GHz, Horizontal (Peak)

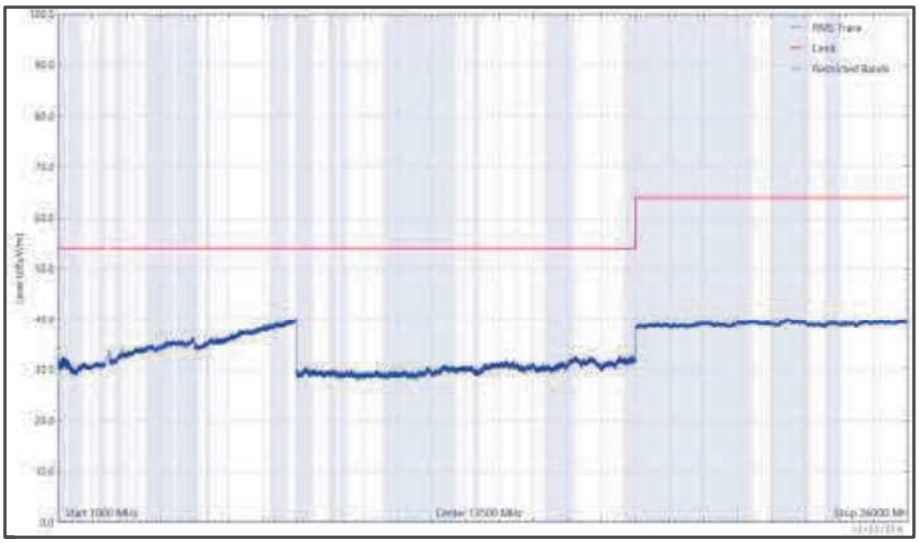

Figure 255 - 2480 MHz (CH39), LE1M, ePA, Core 1, 1 GHz to 26 GHz, Horizontal (rms)

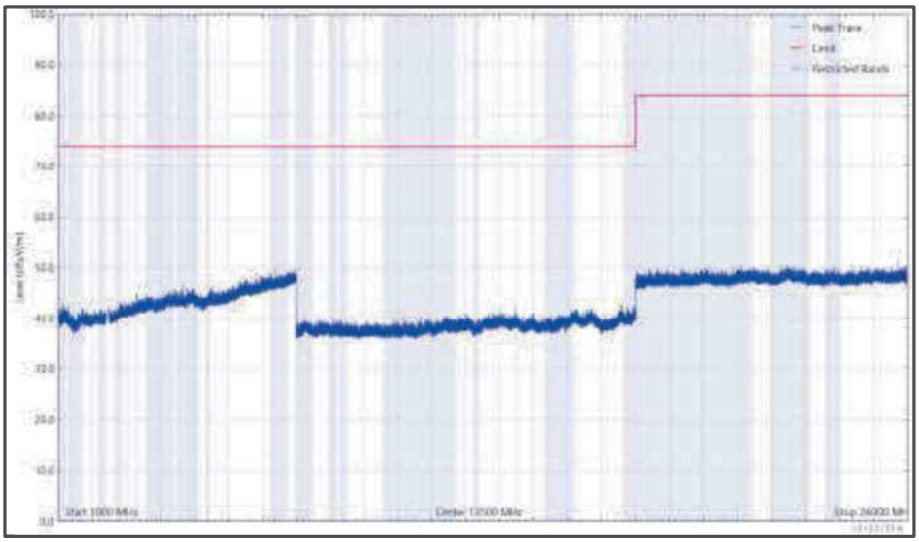

Figure 256 - 2480 MHz (CH39), LE1M, ePA, Core 1, 1 GHz to 26 GHz, Vertical (Peak)

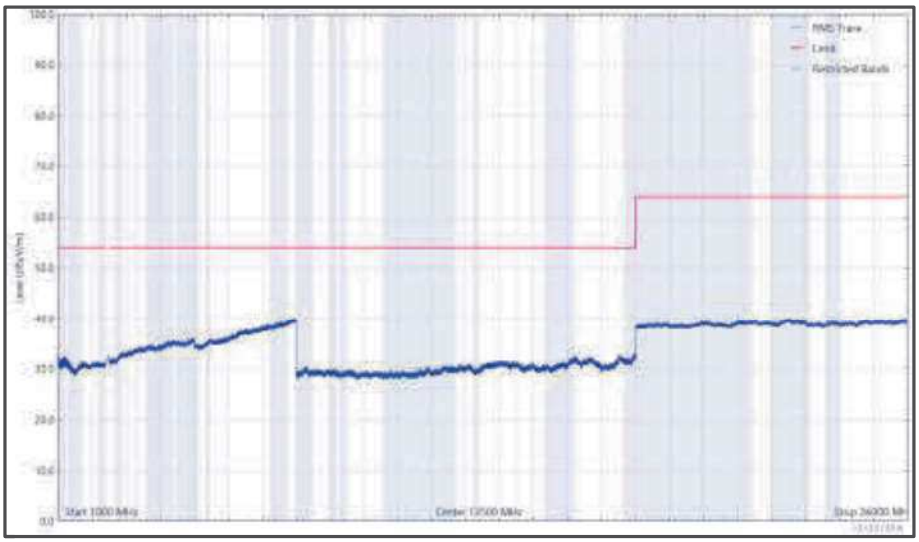

Figure 257 - 2480 MHz (CH39), LE1M, ePA, Core 1, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 158 - 2402 MHz (CH0), LE1M, iPA, Core 0, 1 GHz to 26 GHz

*No emissions found within 10 dB of the limit.

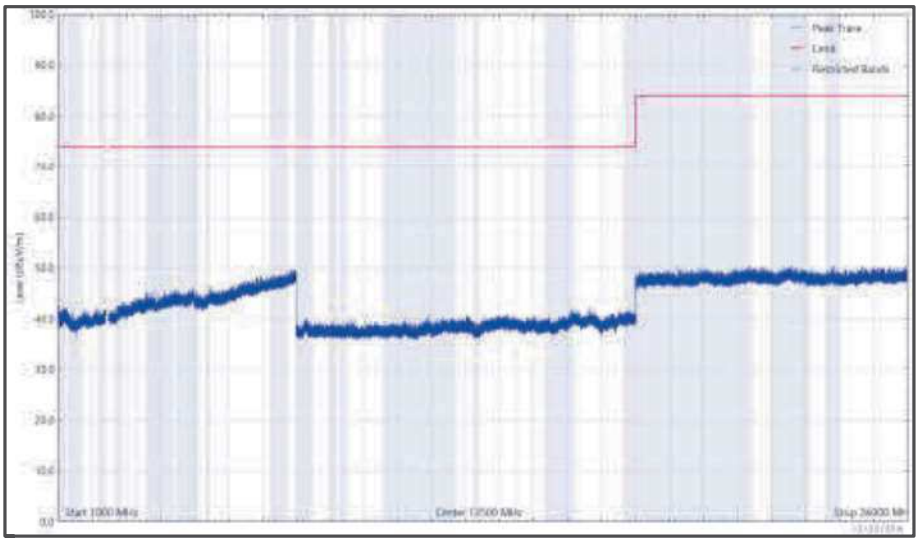

Figure 258 - 2402 MHz (CH0), LE1M, iPA, Core 0, 1 GHz to 26 GHz, Horizontal (Peak)

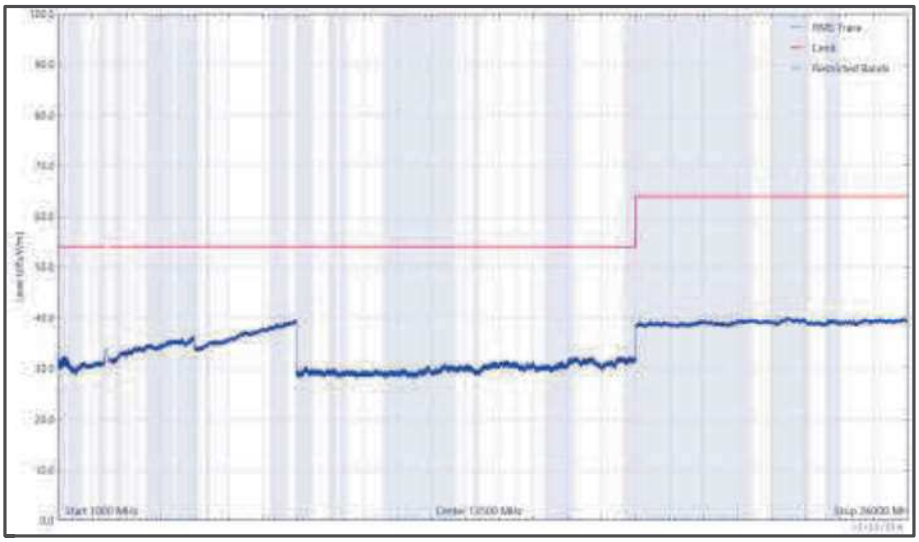

Figure 259 - 2402 MHz (CH0), LE1M, iPA, Core 0, 1 GHz to 26 GHz, Horizontal (rms)

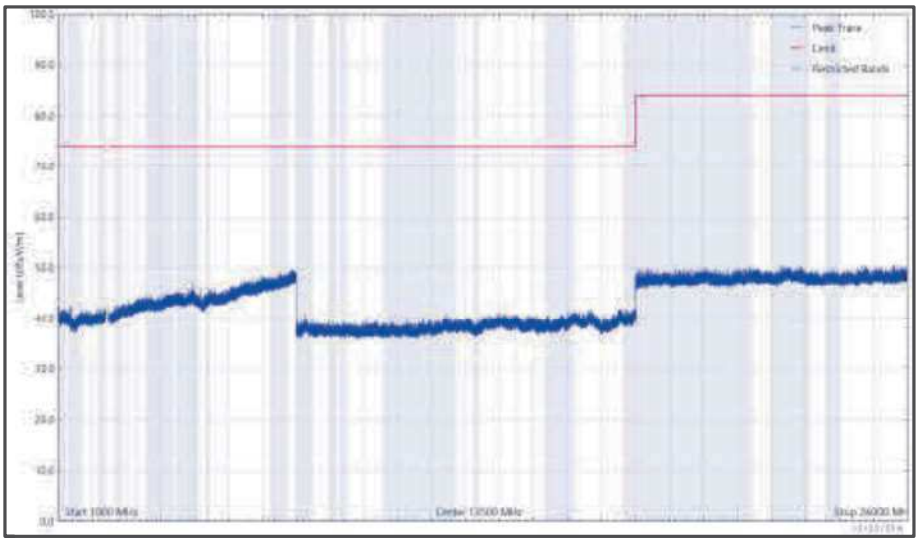

Figure 260 - 2402 MHz (CH0), LE1M, iPA, Core 0, 1 GHz to 26 GHz, Vertical (Peak)

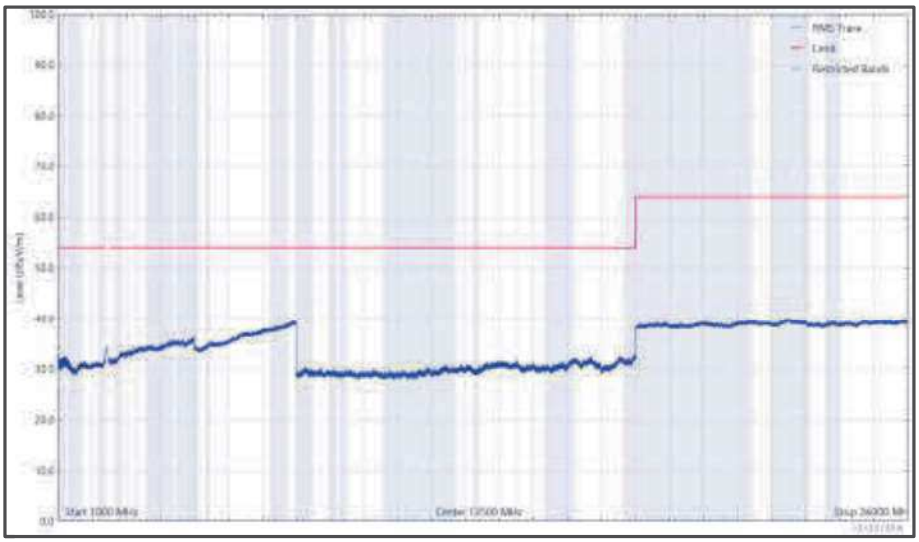

Figure 261 - 2402 MHz (CH0), LE1M, iPA, Core 0, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 159 - 2440 MHz (CH17), LE1M, iPA, Core 0, 30 MHz to 26 GHz

*No emissions found within 10 dB of the limit.

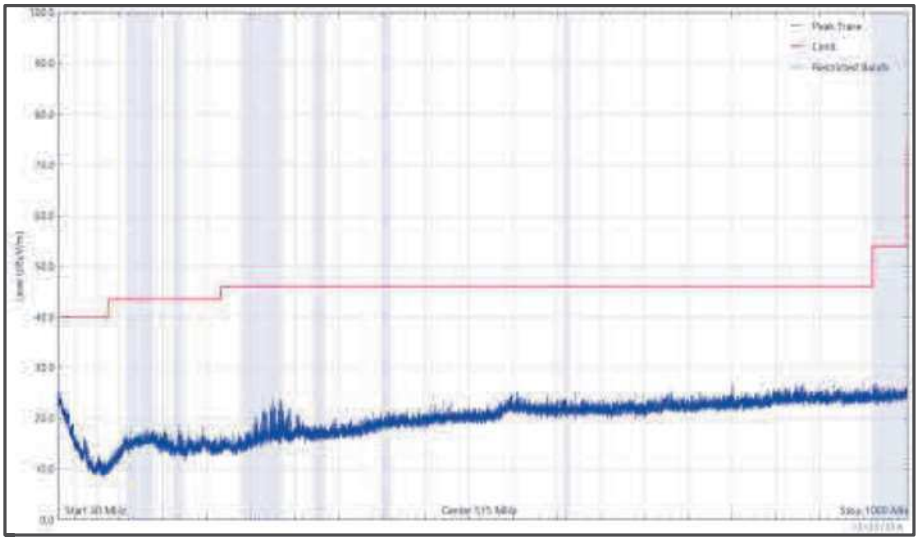

Figure 262 - 2440 MHz (CH17), LE1M, iPA, Core 0, 30 MHz to 1 GHz, Horizontal (Peak)

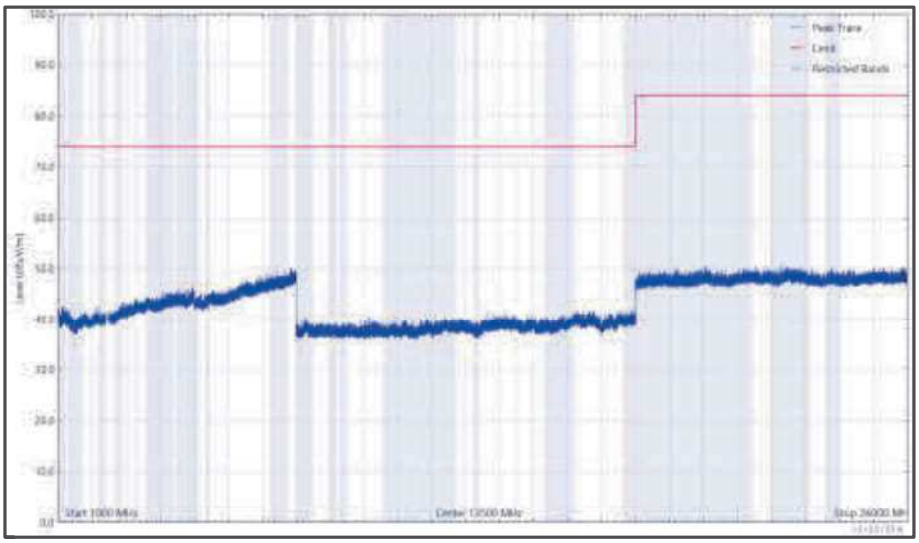

Figure 263 - 2440 MHz (CH17), LE1M, iPA, Core 0, 1 GHz to 26 GHz, Horizontal (Peak)

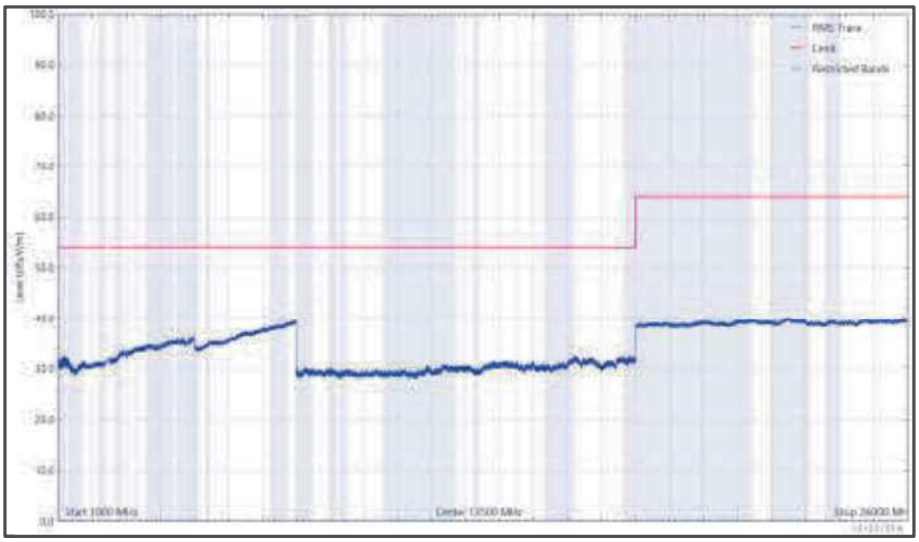

Figure 264 - 2440 MHz (CH17), LE1M, iPA, Core 0, 1 GHz to 26 GHz, Horizontal (rms)

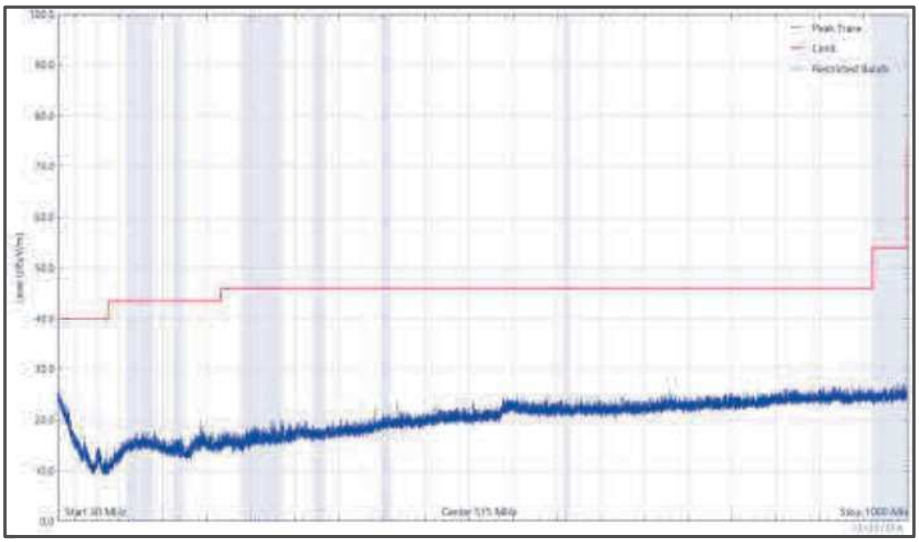

Figure 265 - 2440 MHz (CH17), LE1M, iPA, Core 0, 30 MHz to 1 GHz, Vertical (Peak)

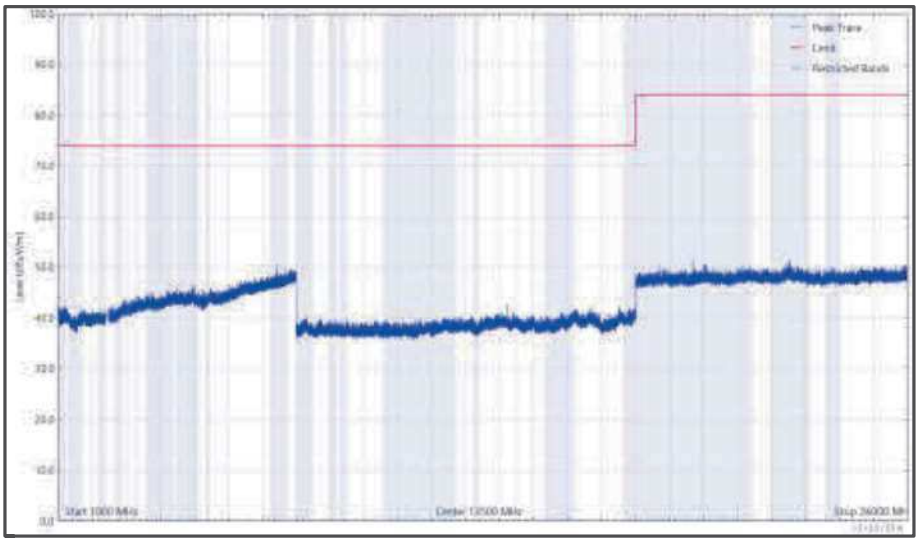

Figure 266 - 2440 MHz (CH17), LE1M, iPA, Core 0, 1 GHz to 26 GHz, Vertical (Peak)

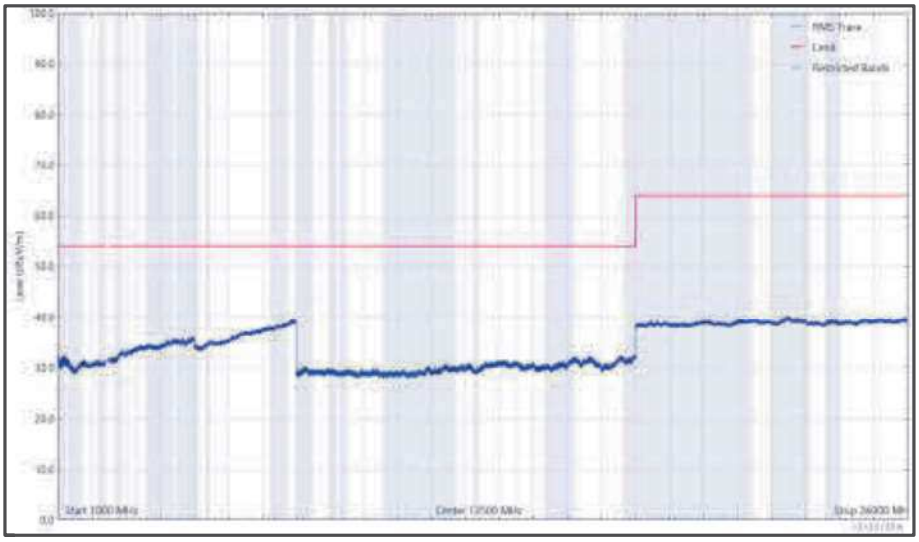

Figure 267 - 2440 MHz (CH17), LE1M, iPA, Core 0, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 160 - 2480 MHz (CH39), LE1M, iPA, Core 0, 1 GHz to 26 GHz

*No emissions found within 10 dB of the limit.

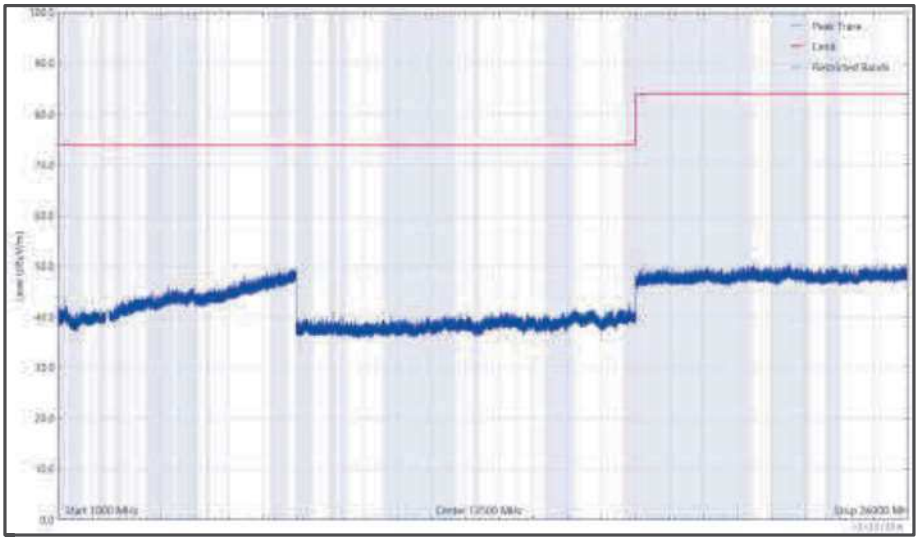

Figure 268 - 2480 MHz (CH39), LE1M, iPA, Core 0, 1 GHz to 26 GHz, Horizontal (Peak)

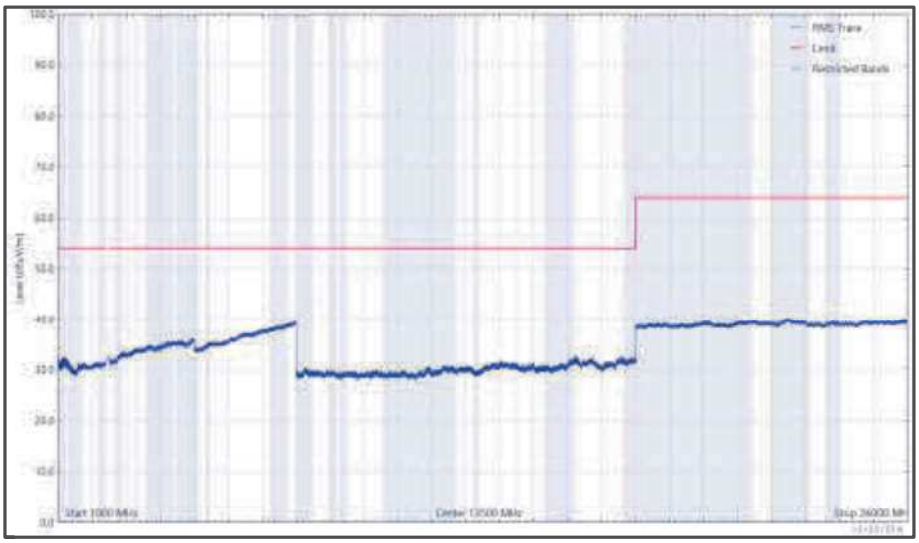

Figure 269 - 2480 MHz (CH39), LE1M, iPA, Core 0, 1 GHz to 26 GHz, Horizontal (rms)

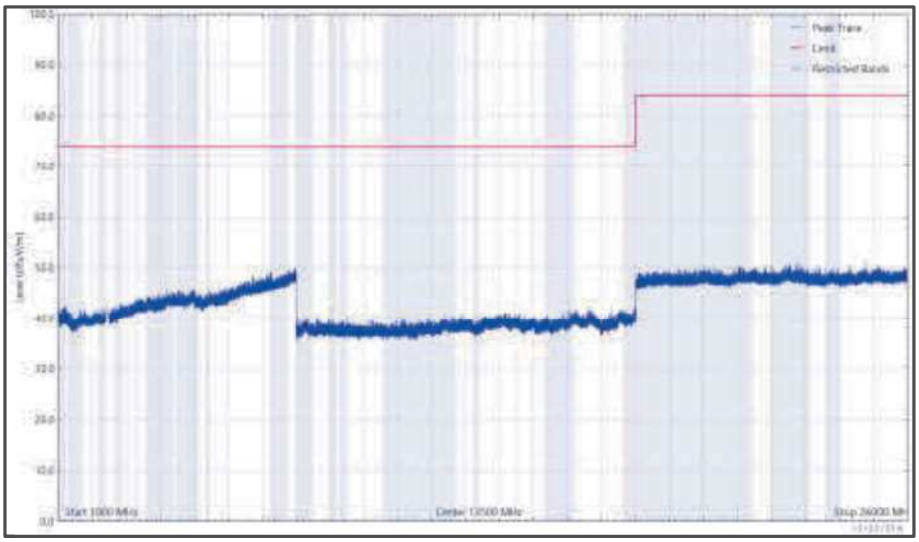

Figure 270 - 2480 MHz (CH39), LE1M, iPA, Core 0, 1 GHz to 26 GHz, Vertical (Peak)

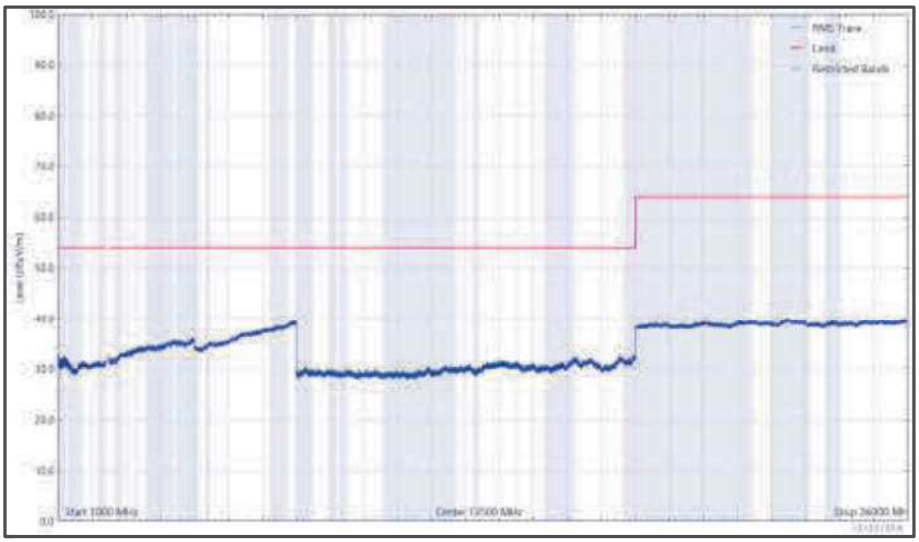

Figure 271 - 2480 MHz (CH39), LE1M, iPA, Core 0, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2802.118	32.8	54.0	-21.2	RMS	0	106	Vertical
2802.208	33.5	54.0	-20.5	RMS	333	106	Horizontal

Table 161 - 2402 MHz (CH0), LE1M, iPA, Core 1, 1 GHz to 26 GHz

No other emissions found within 10 dB of the limit.

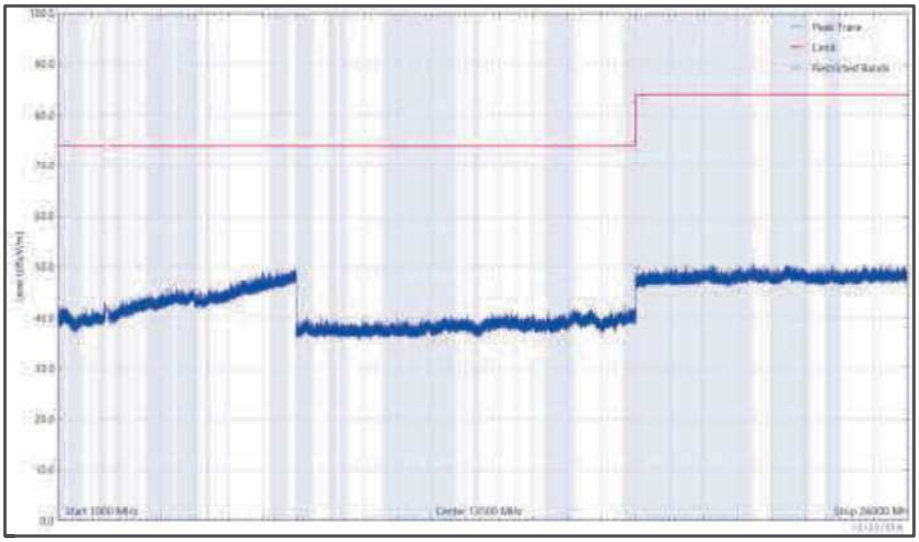

Figure 272 - 2402 MHz (CH0), LE1M, iPA, Core 1, 1 GHz to 26 GHz, Horizontal (Peak)

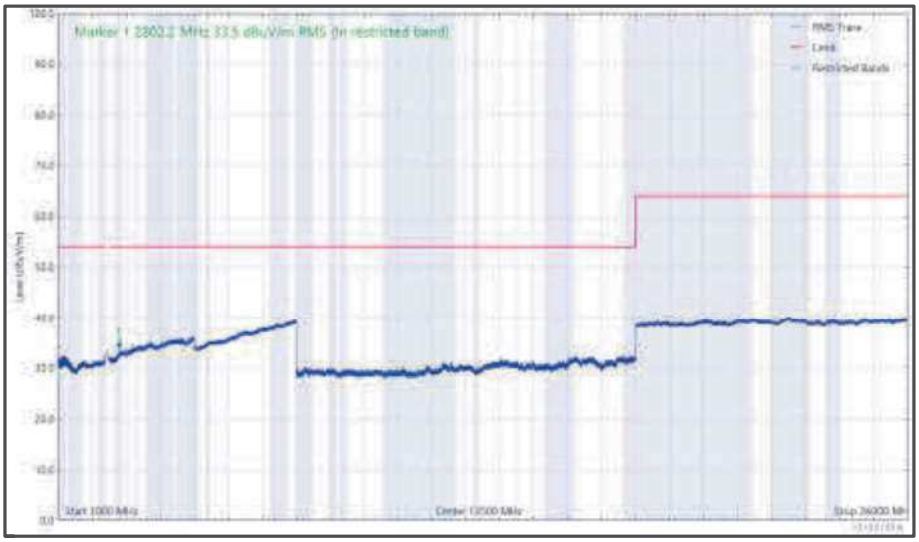

Figure 273 - 2402 MHz (CH0), LE1M, iPA, Core 1, 1 GHz to 26 GHz, Horizontal (rms)

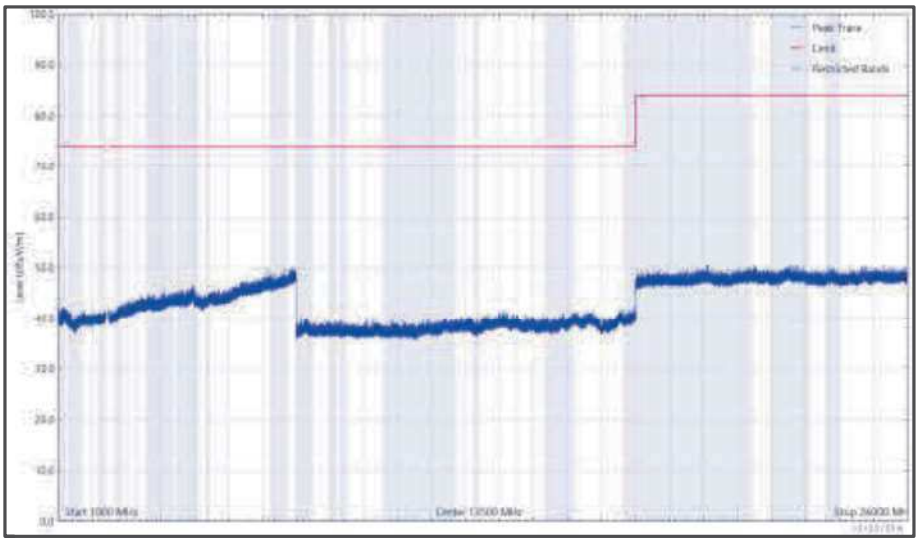

Figure 274 - 2402 MHz (CH0), LE1M, iPA, Core 1, 1 GHz to 26 GHz, Vertical (Peak)

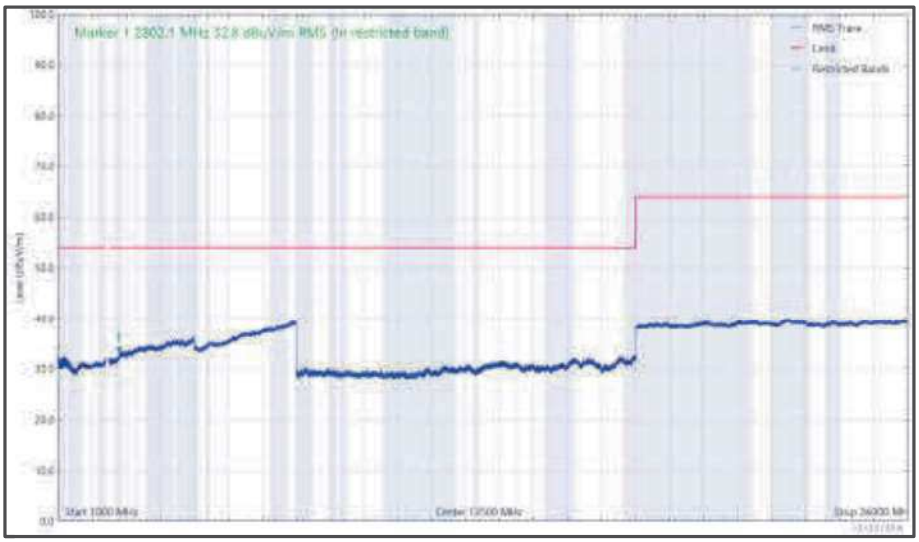

Figure 275 - 2402 MHz (CH0), LE1M, iPA, Core 1, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2846.567	32.9	54.0	-21.2	RMS	94	110	Horizontal

Table 162 - 2440 MHz (CH17), LE1M, iPA, Core 1, 30 MHz to 26 GHz

No other emissions found within 10 dB of the limit.

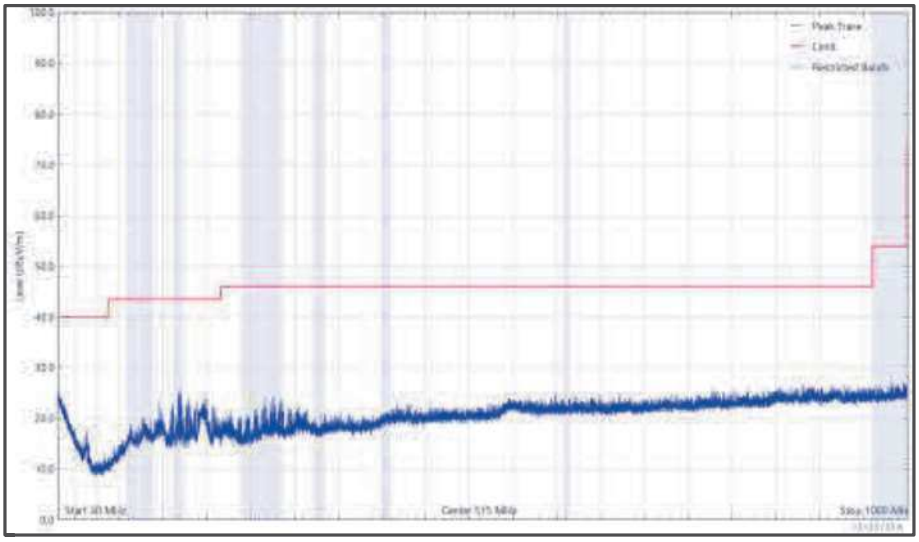

Figure 276 - 2440 MHz (CH17), LE1M, iPA, Core 1, 30 MHz to 1 GHz, Horizontal (Peak)

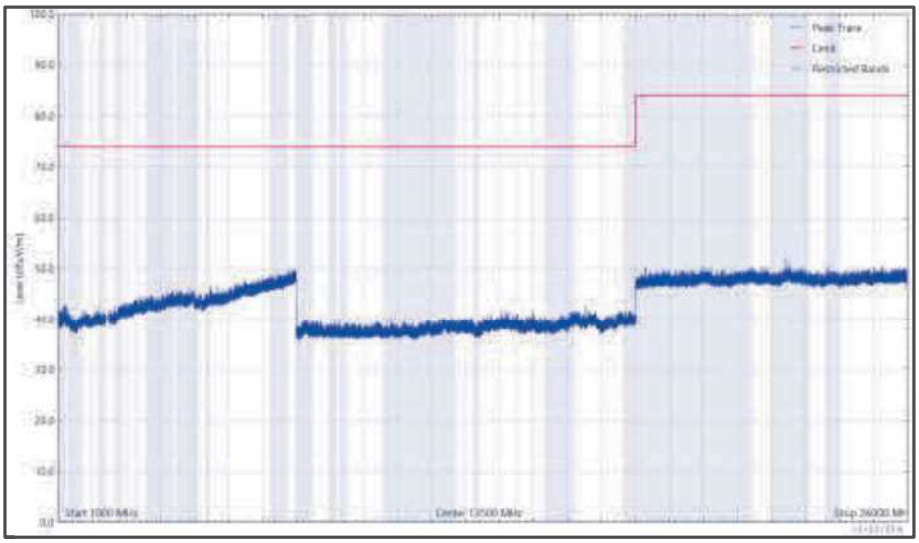

Figure 277 - 2440 MHz (CH17), LE1M, iPA, Core 1, 1 GHz to 26 GHz, Horizontal (Peak)

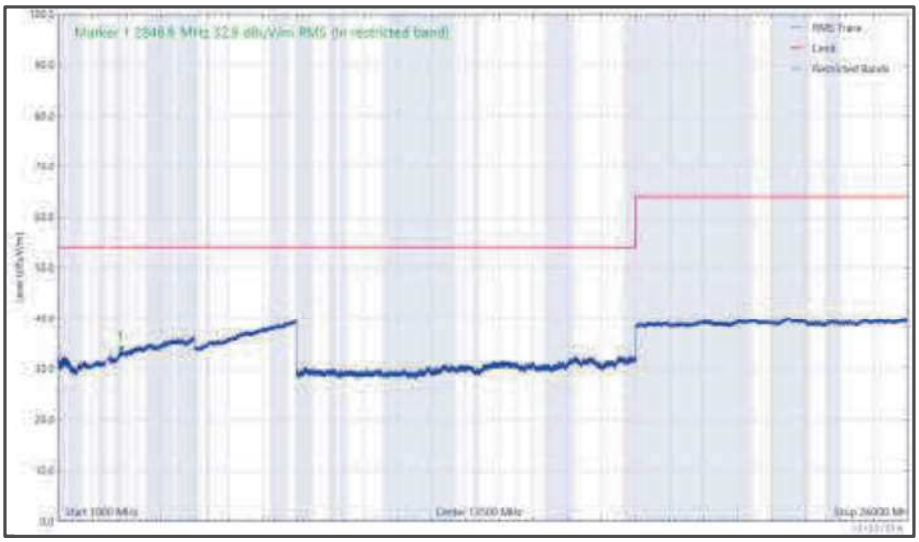

Figure 278 - 2440 MHz (CH17), LE1M, iPA, Core 1, 1 GHz to 26 GHz, Horizontal (rms)

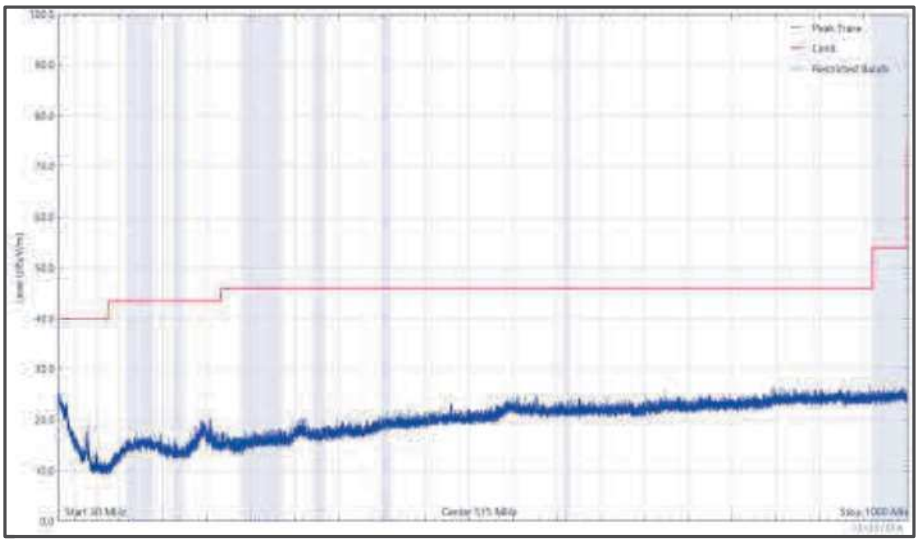

Figure 279 - 2440 MHz (CH17), LE1M, iPA, Core 1, 30 MHz to 1 GHz, Vertical (Peak)

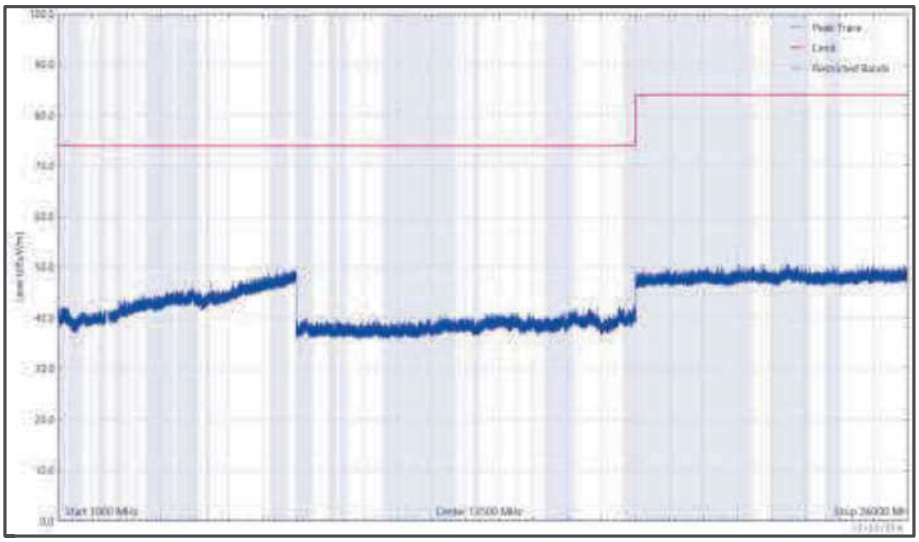

Figure 280 - 2440 MHz (CH17), LE1M, iPA, Core 1, 1 GHz to 26 GHz, Vertical (Peak)

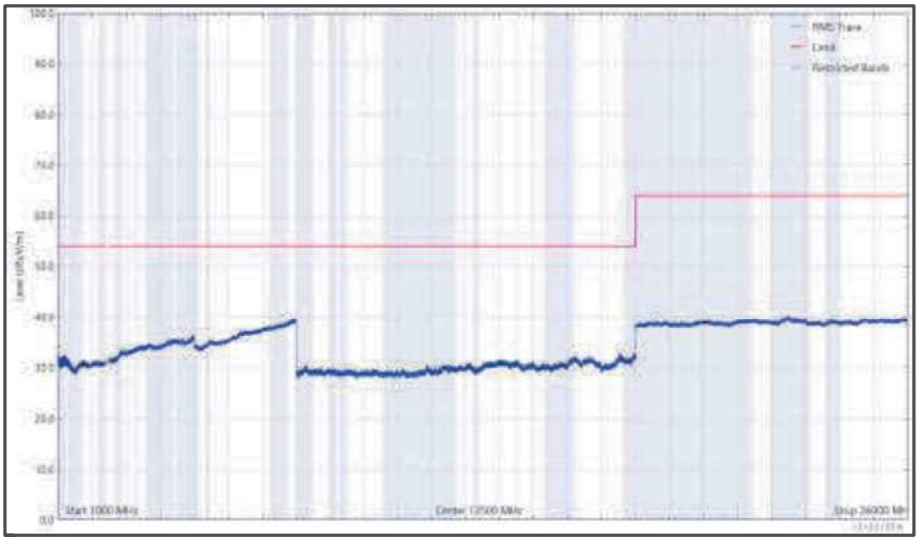

Figure 281 - 2440 MHz (CH17), LE1M, iPA, Core 1, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 163 - 2480 MHz (CH39), LE1M, iPA, Core 1, 1 GHz to 26 GHz

*No emissions found within 10 dB of the limit.

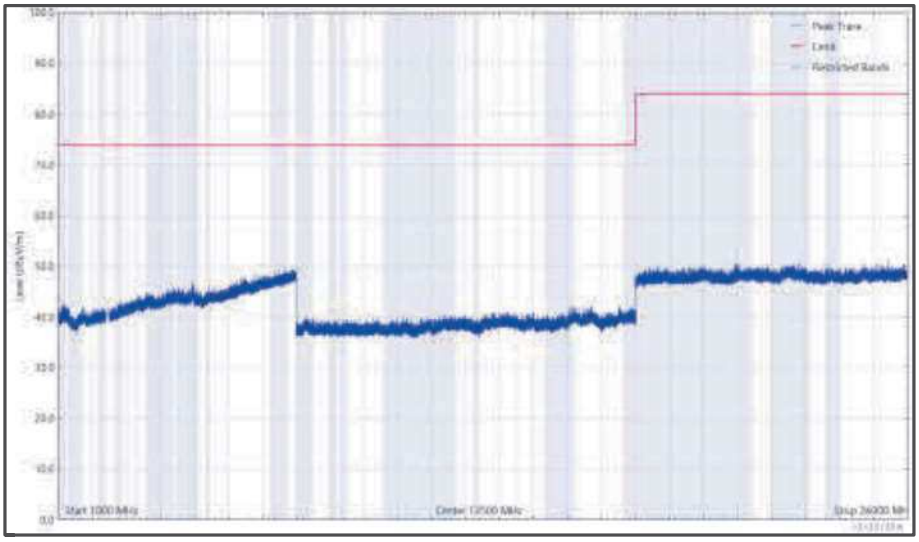

Figure 282 - 2480 MHz (CH39), LE1M, iPA, Core 1, 1 GHz to 26 GHz, Horizontal (Peak)

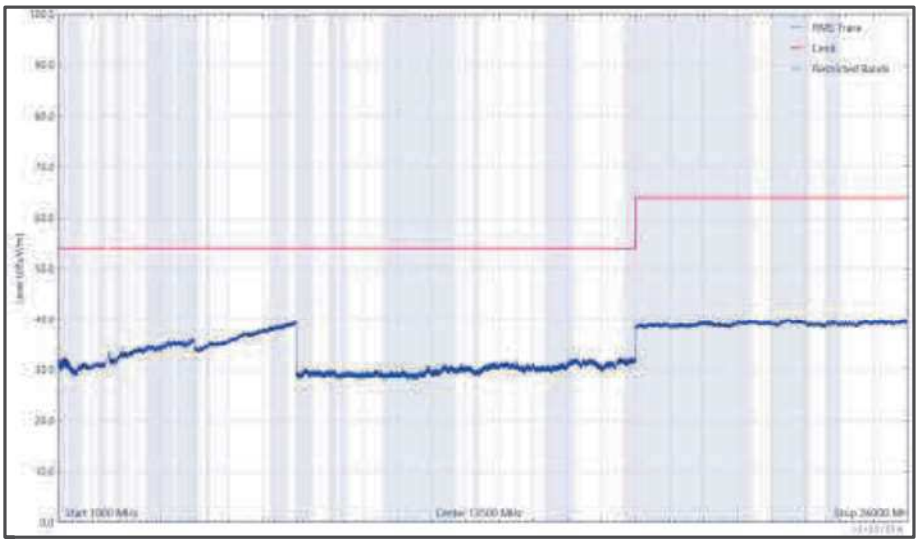

Figure 283 - 2480 MHz (CH39), LE1M, iPA, Core 1, 1 GHz to 26 GHz, Horizontal (rms)

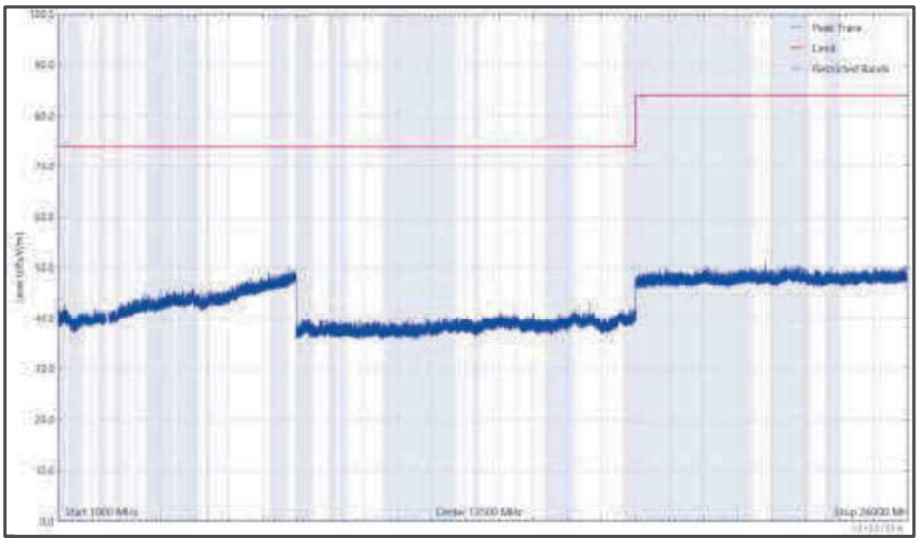

Figure 284 - 2480 MHz (CH39), LE1M, iPA, Core 1, 1 GHz to 26 GHz, Vertical (Peak)

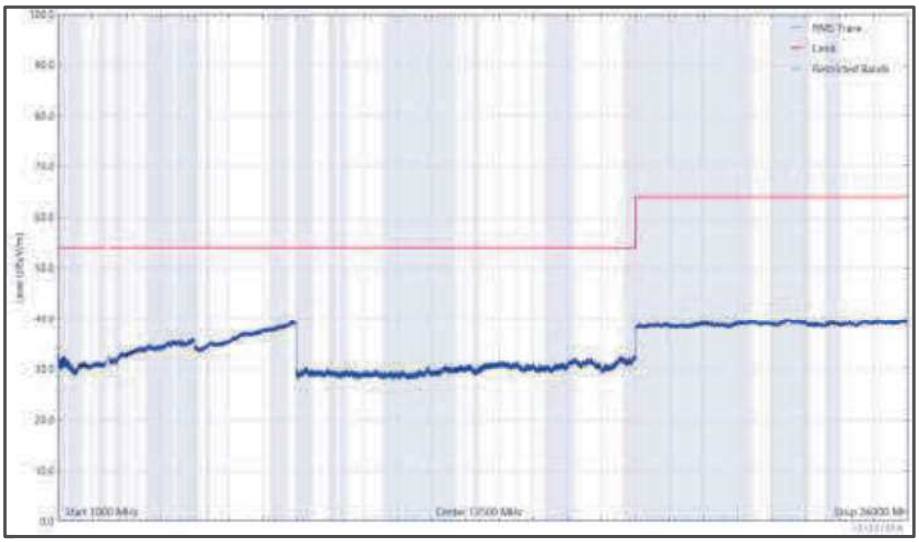

Figure 285 - 2480 MHz (CH39), LE1M, iPA, Core 1, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2802.388	34.6	54.0	-19.4	RMS	354	101	Horizontal

Table 164 - 2402 MHz (CH0), LE1M, iPA, Core 2, 1 GHz to 26 GHz

No other emissions found within 10 dB of the limit.

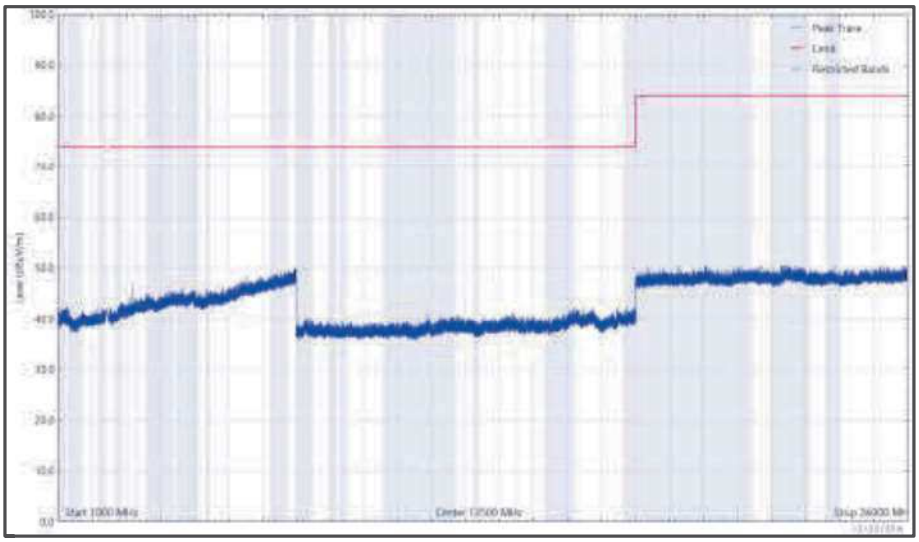

Figure 286 - 2402 MHz (CH0), LE1M, iPA, Core 2, 1 GHz to 26 GHz, Horizontal (Peak)

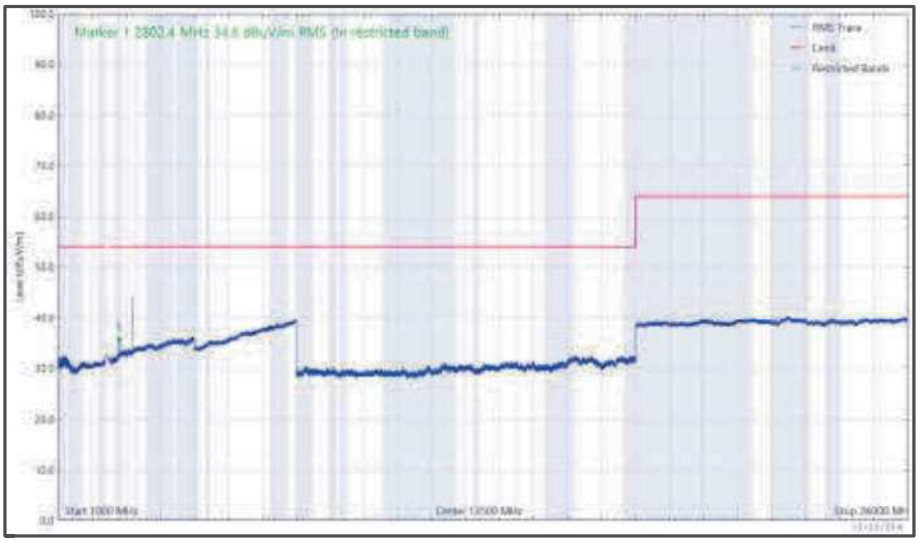

Figure 287 - 2402 MHz (CH0), LE1M, iPA, Core 2, 1 GHz to 26 GHz, Horizontal (rms)

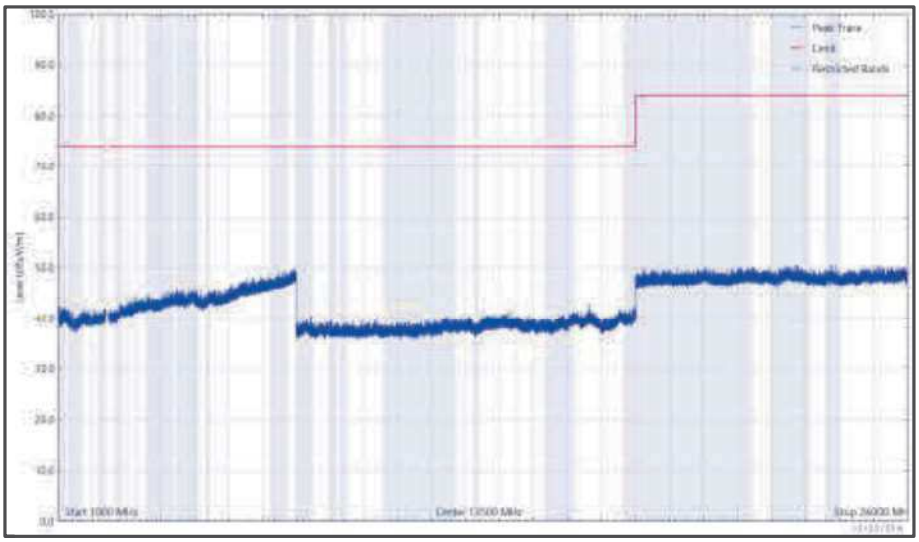

Figure 288 - 2402 MHz (CH0), LE1M, iPA, Core 2, 1 GHz to 26 GHz, Vertical (Peak)

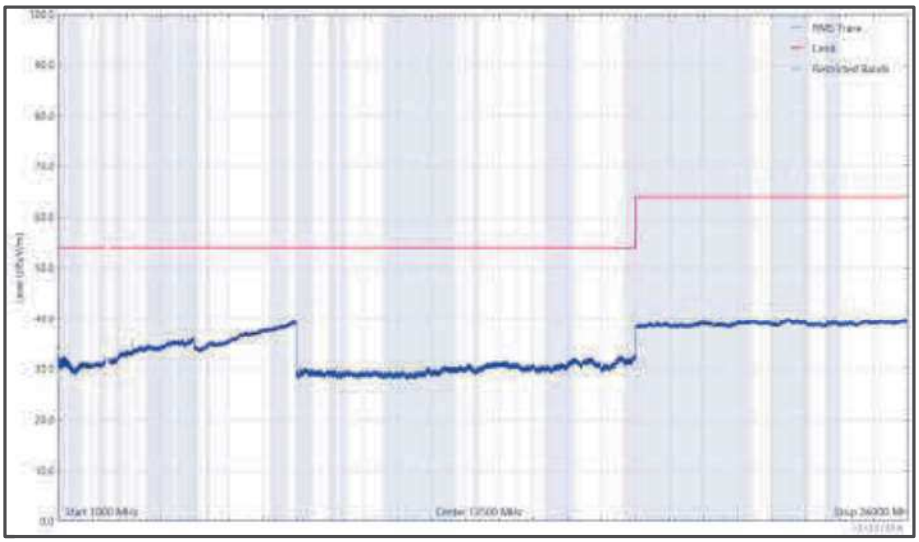

Figure 289 - 2402 MHz (CH0), LE1M, iPA, Core 2, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
2846.697	33.3	54.0	-20.7	RMS	0	105	Horizontal

Table 165 - 2440 MHz (CH17), LE1M, iPA, Core 2, 30 MHz to 26 GHz

No other emissions found within 10 dB of the limit.

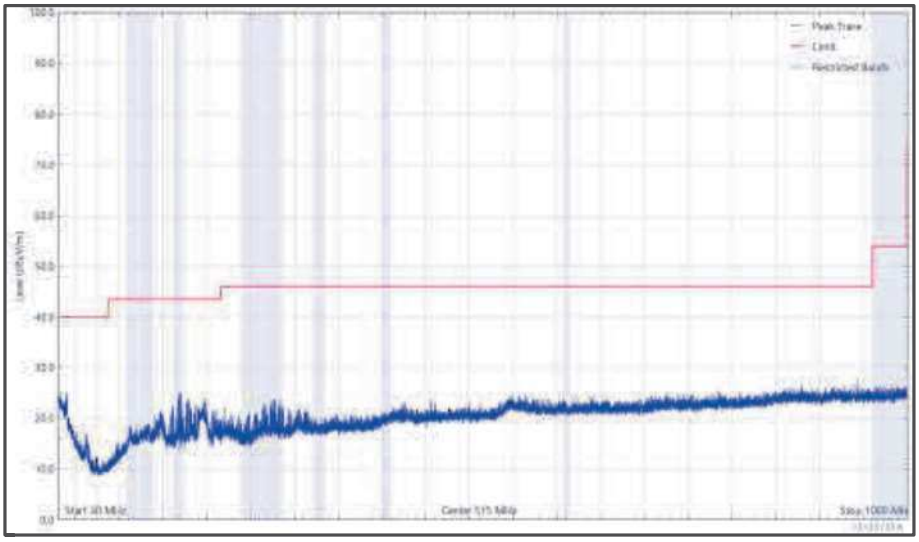

Figure 290 - 2440 MHz (CH17), LE1M, iPA, Core 2, 30 MHz to 1 GHz, Horizontal (Peak)

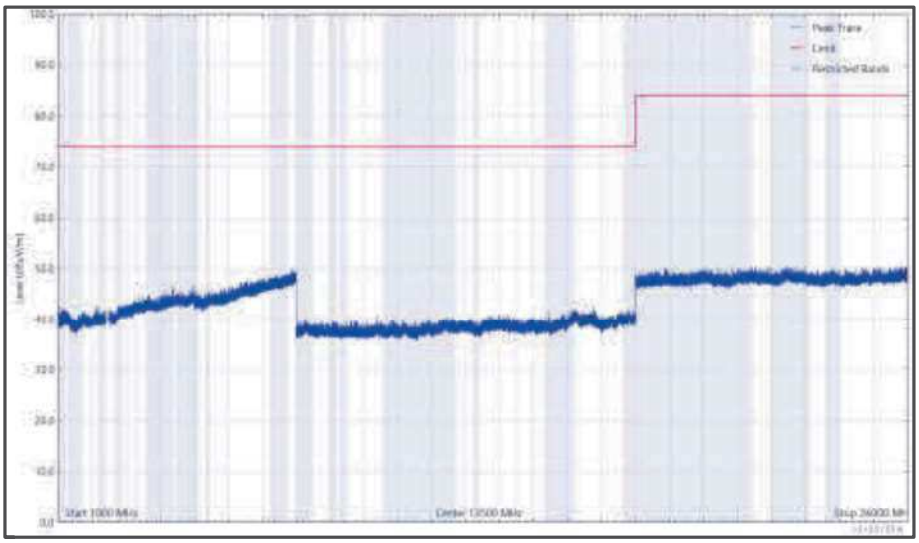

Figure 291 - 2440 MHz (CH17), LE1M, iPA, Core 2, 1 GHz to 26 GHz, Horizontal (Peak)

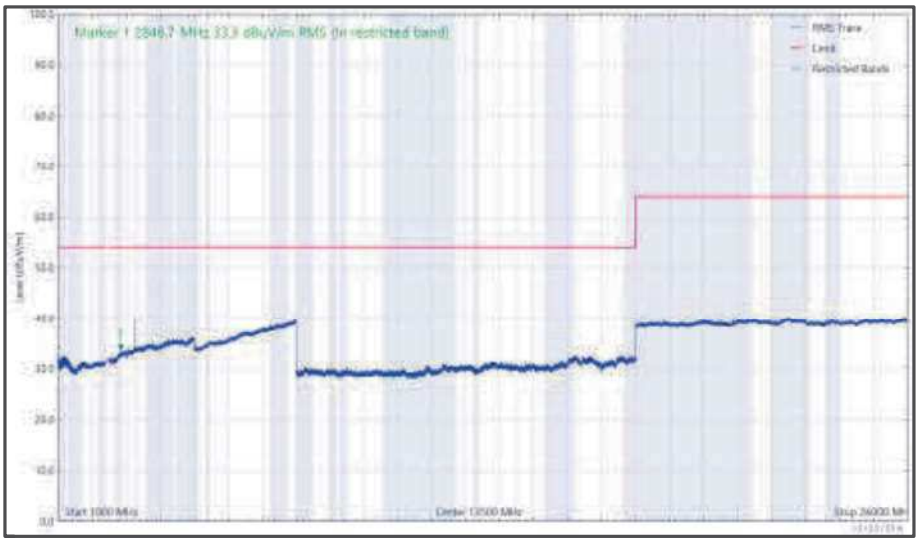

Figure 292 - 2440 MHz (CH17), LE1M, iPA, Core 2, 1 GHz to 26 GHz, Horizontal (rms)

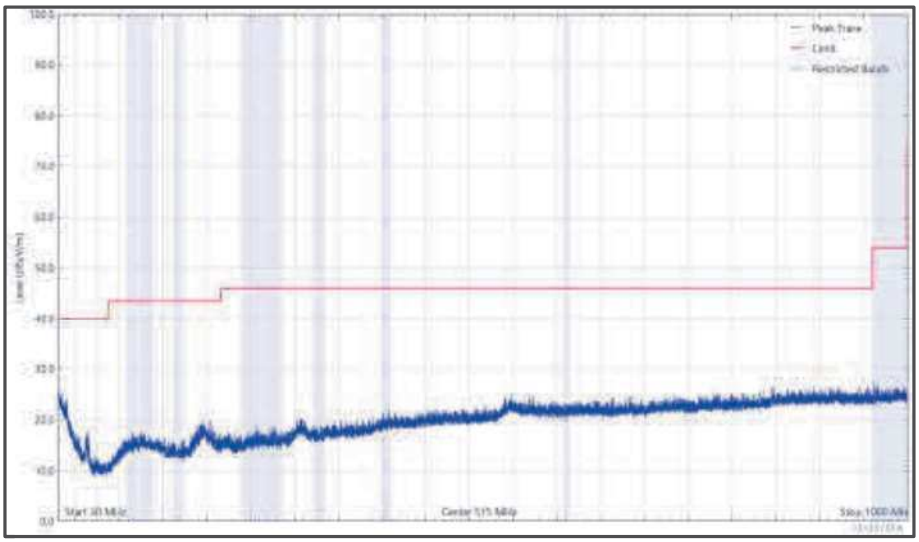

Figure 293 - 2440 MHz (CH17), LE1M, iPA, Core 2, 30 MHz to 1 GHz, Vertical (Peak)

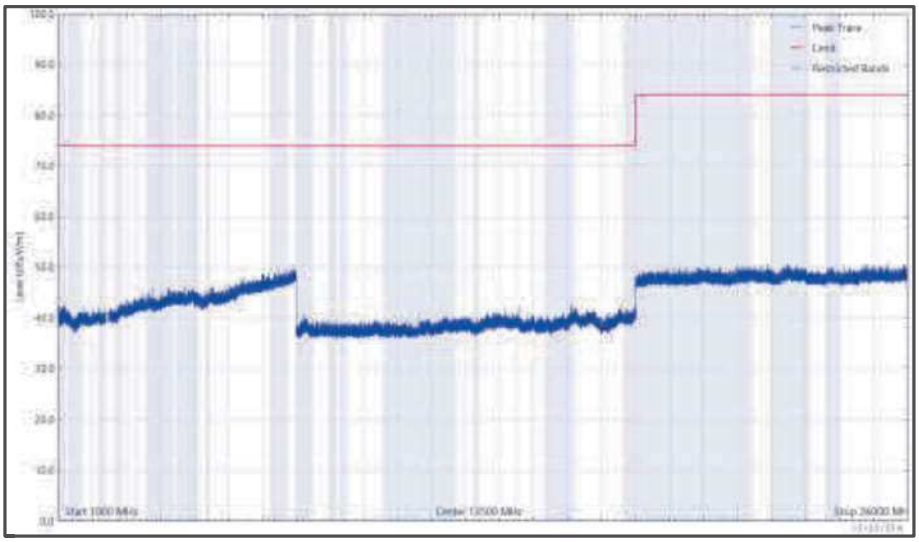

Figure 294 - 2440 MHz (CH17), LE1M, iPA, Core 2, 1 GHz to 26 GHz, Vertical (Peak)

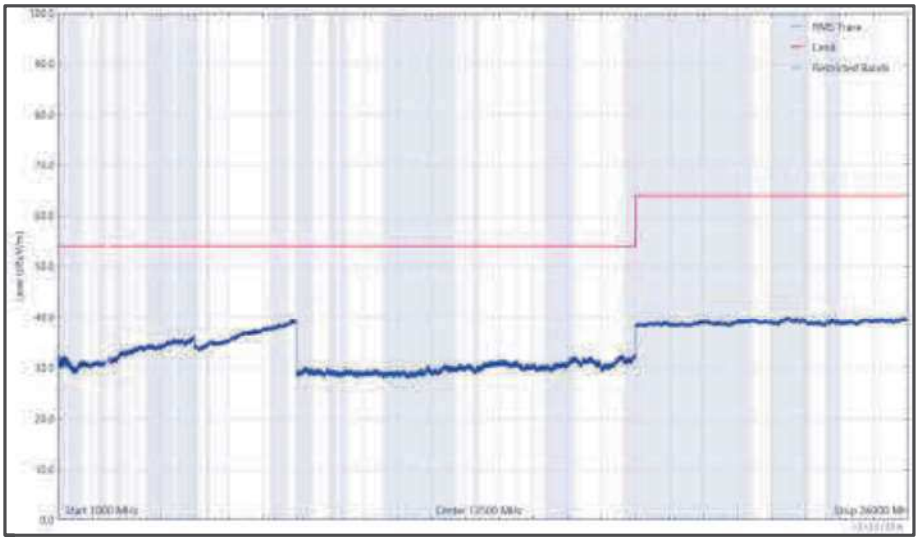

Figure 295 - 2440 MHz (CH17), LE1M, iPA, Core 2, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 166 - 2480 MHz (CH39), LE1M, iPA, Core 2, 1 GHz to 26 GHz

*No emissions found within 10 dB of the limit.

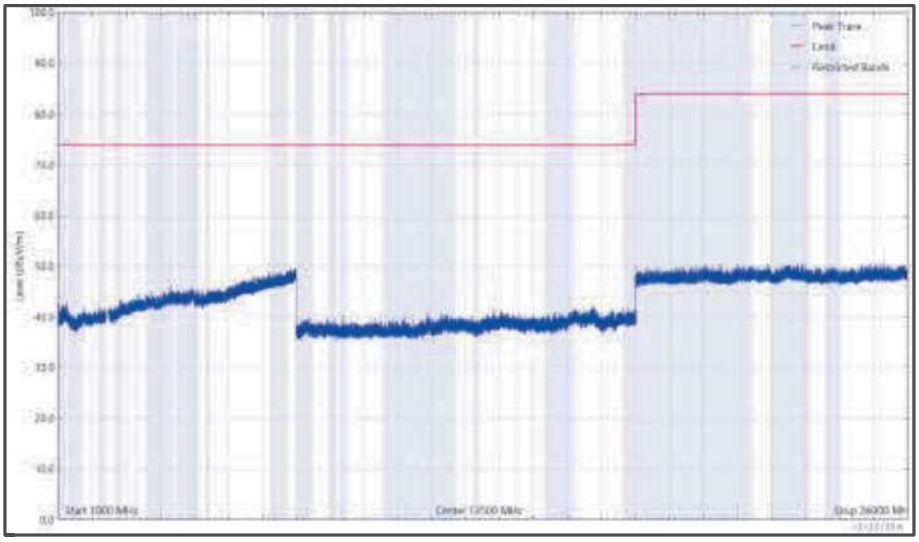

Figure 296 - 2480 MHz (CH39), LE1M, iPA, Core 2, 1 GHz to 26 GHz, Horizontal (Peak)

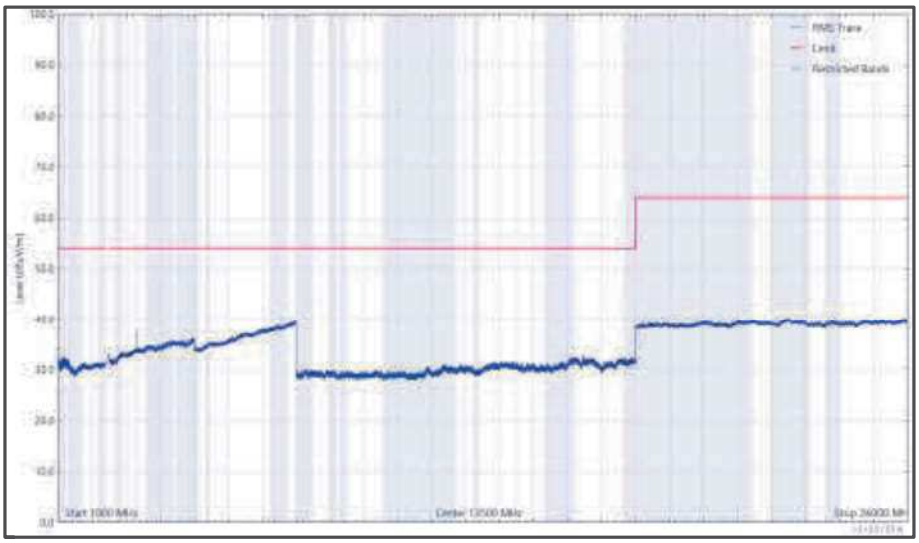

Figure 297 - 2480 MHz (CH39), LE1M, iPA, Core 2, 1 GHz to 26 GHz, Horizontal (rms)

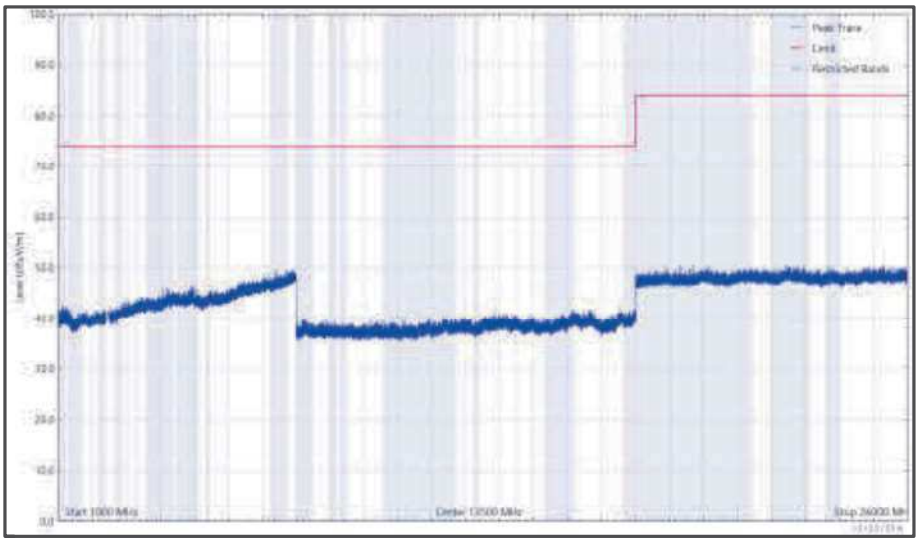

Figure 298 - 2480 MHz (CH39), LE1M, iPA, Core 2, 1 GHz to 26 GHz, Vertical (Peak)

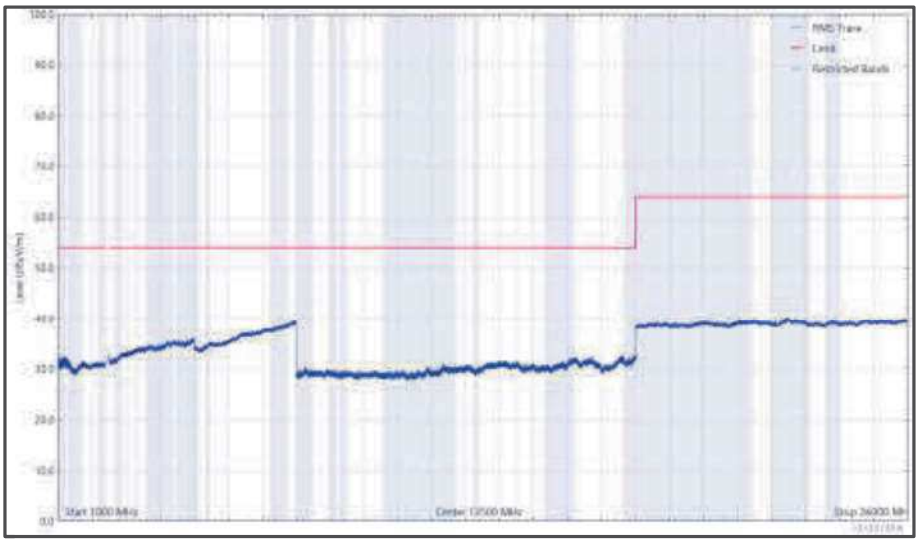

Figure 299 - 2480 MHz (CH39), LE1M, iPA, Core 2, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 167 - 2404 MHz (CH2), HDR4, ePA, Core 0, 1 GHz to 26 GHz

*No emissions found within 10 dB of the limit.

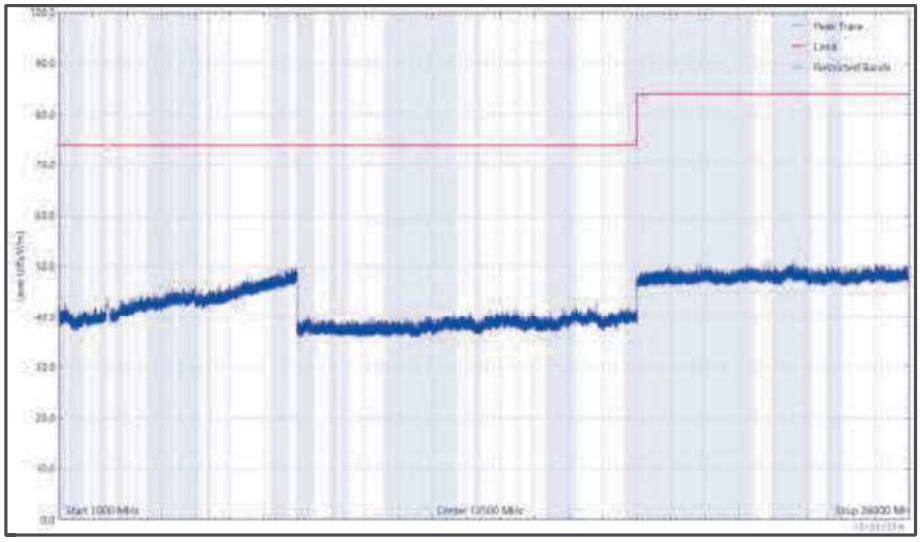

Figure 300 - 2404 MHz (CH2), HDR4, ePA, Core 0, 1 GHz to 26 GHz, Horizontal (Peak)

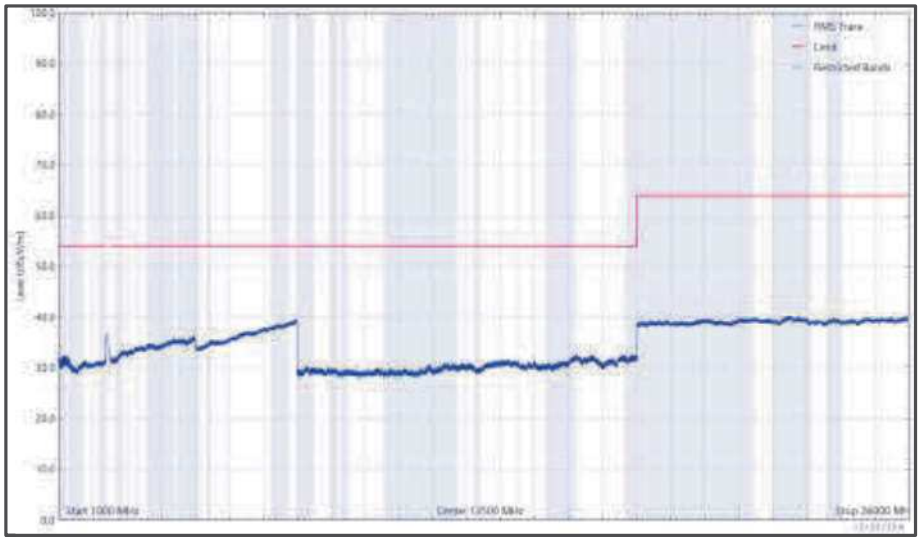

Figure 301 - 2404 MHz (CH2), HDR4, ePA, Core 0, 1 GHz to 26 GHz, Horizontal (rms)

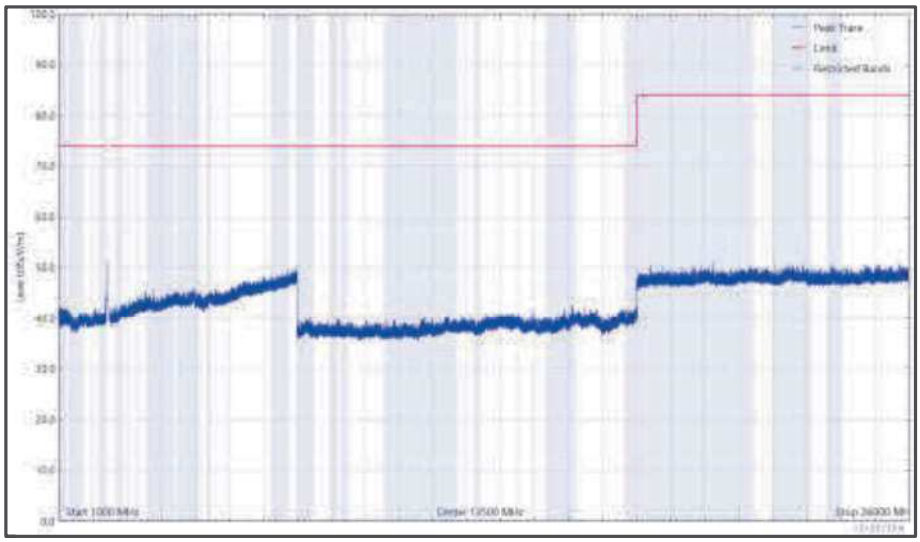

Figure 302 - 2404 MHz (CH2), HDR4, ePA, Core 0, 1 GHz to 26 GHz, Vertical (Peak)

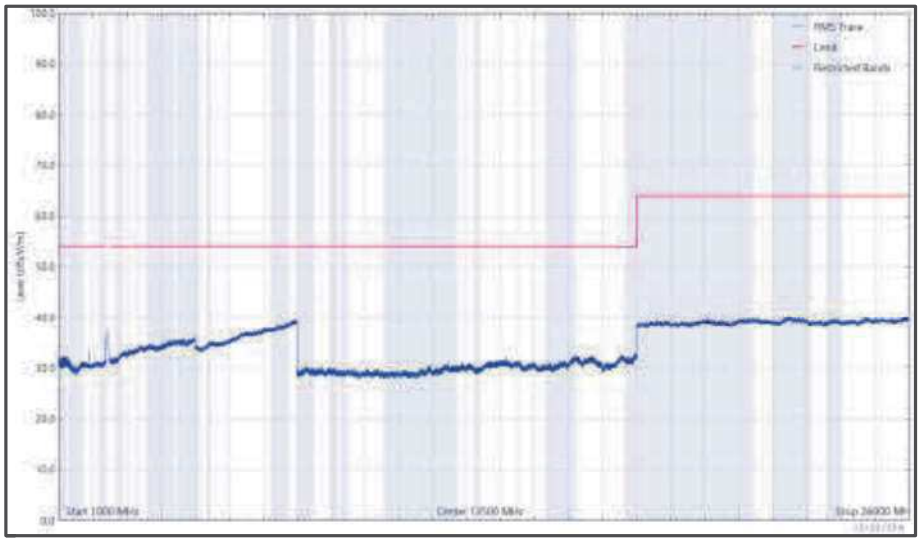

Figure 303 - 2404 MHz (CH2), HDR4, ePA, Core 0, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 168 - 2441 MHz (CH39), HDR4, ePA, Core 0, 30 MHz to 26 GHz

*No emissions found within 10 dB of the limit.

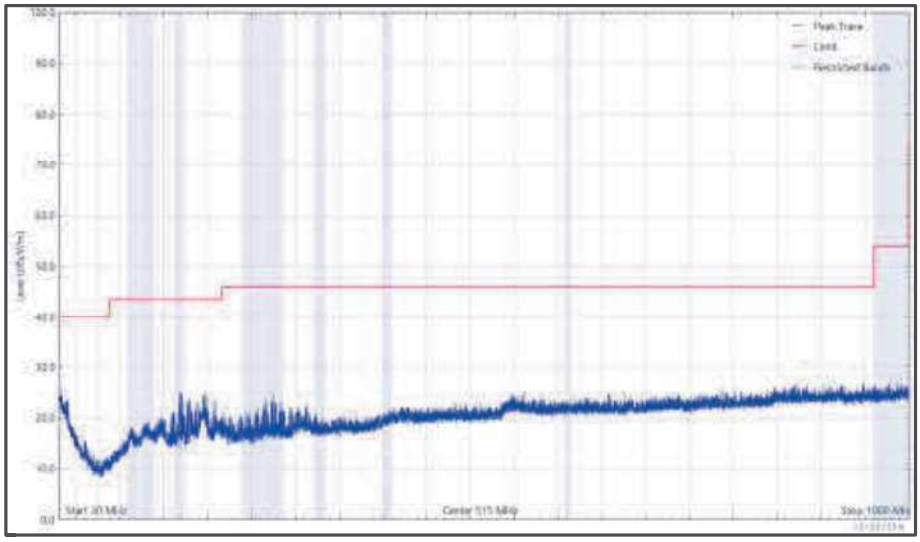

Figure 304 - 2441 MHz (CH39), HDR4, ePA, Core 0, 30 MHz to 1 GHz, Horizontal (Peak)

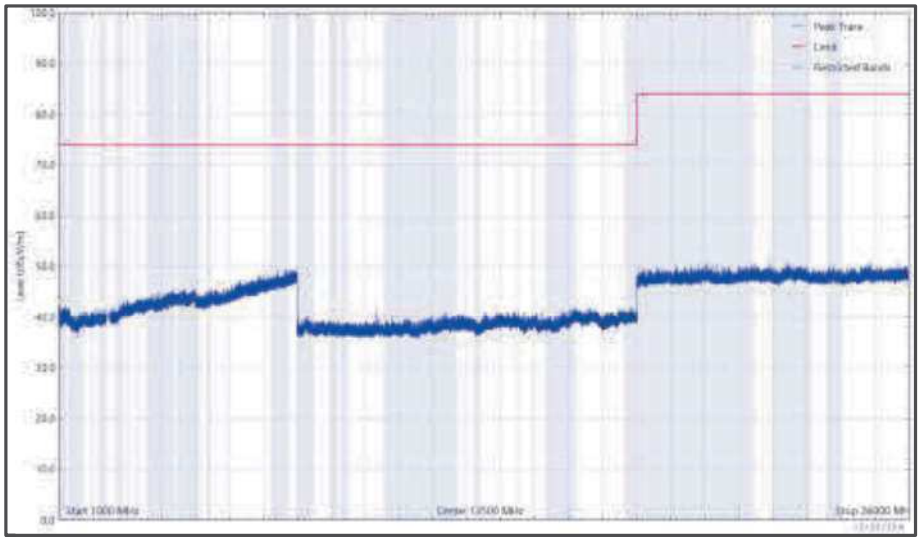

Figure 305 - 2441 MHz (CH39), HDR4, ePA, Core 0, 1 GHz to 26 GHz, Horizontal (Peak)

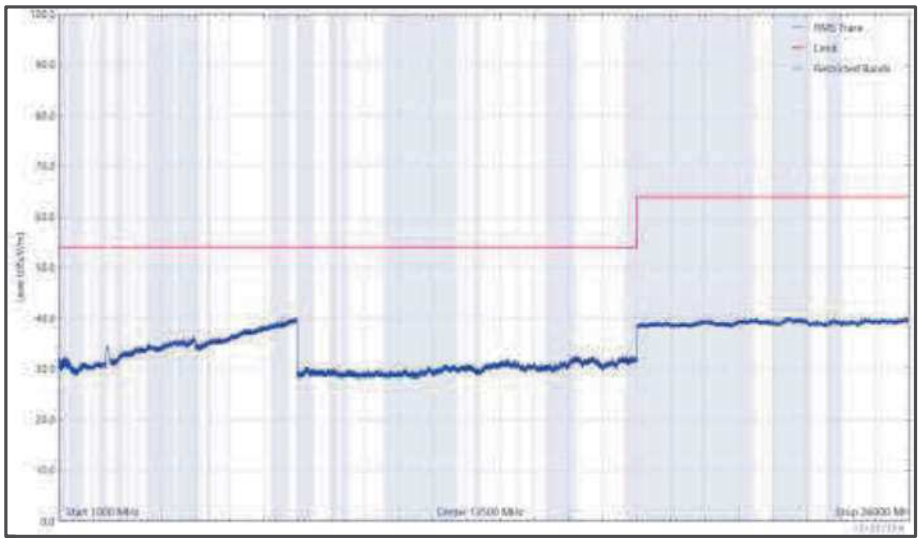

Figure 306 - 2441 MHz (CH39), HDR4, ePA, Core 0, 1 GHz to 26 GHz, Horizontal (rms)

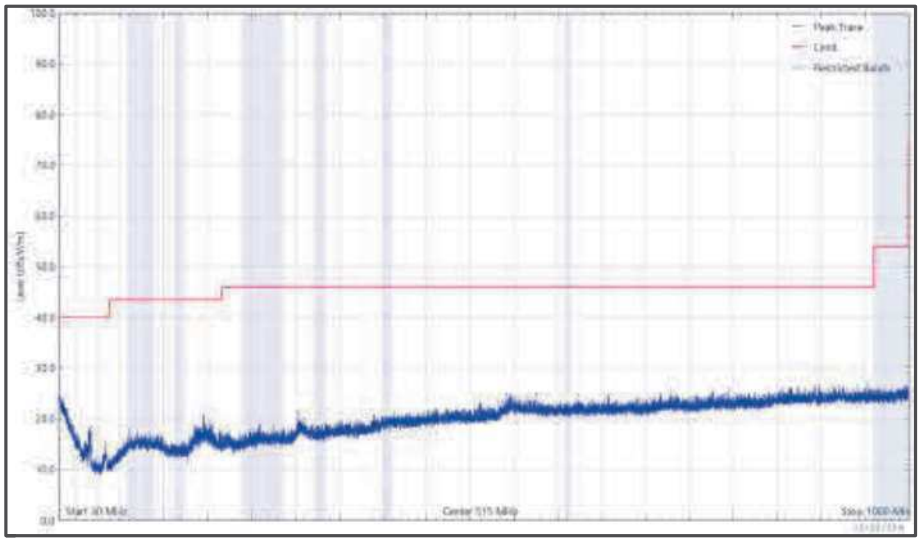

Figure 307 - 2441 MHz (CH39), HDR4, ePA, Core 0, 30 MHz to 1 GHz, Vertical (Peak)

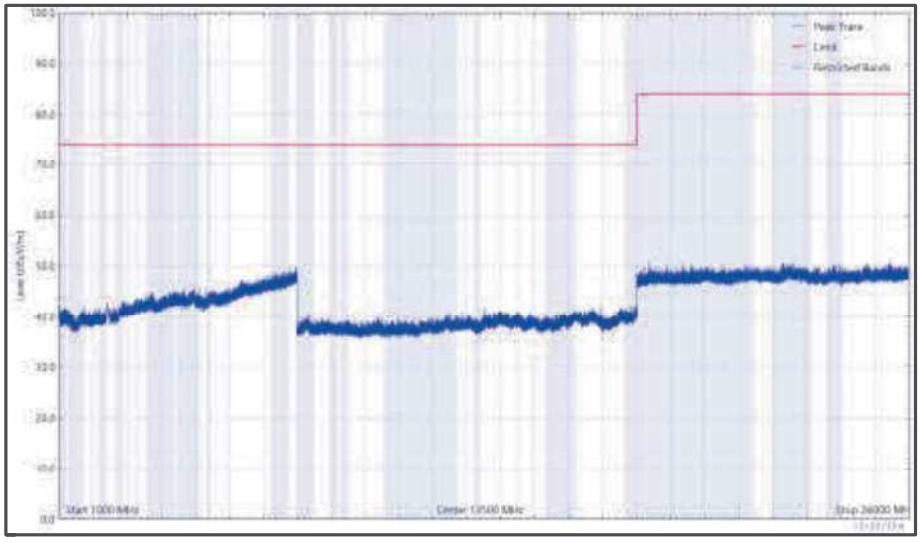

Figure 308 - 2441 MHz (CH39), HDR4, ePA, Core 0, 1 GHz to 26 GHz, Vertical (Peak)

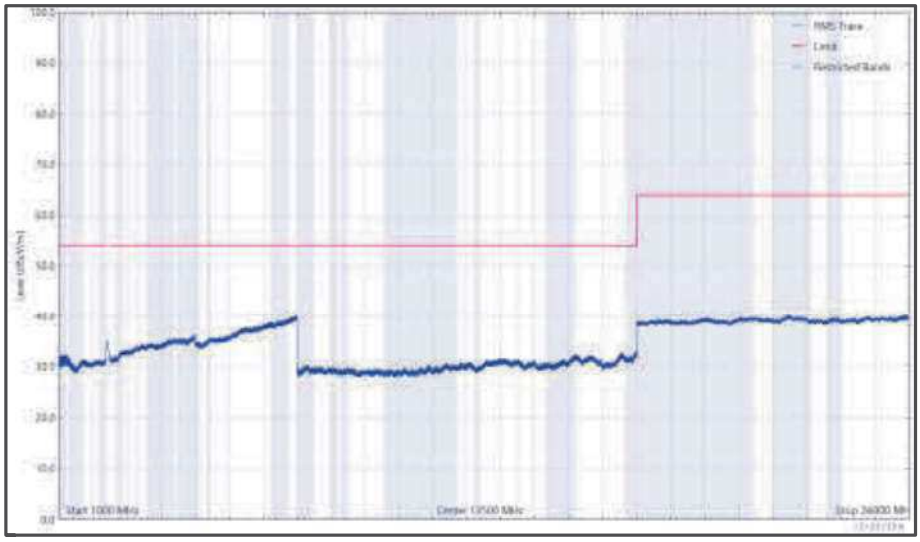

Figure 309 - 2441 MHz (CH39), HDR4, ePA, Core 0, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 169 - 2478 MHz (CH76), HDR4, ePA, Core 0, 1 GHz to 26 GHz

*No emissions found within 10 dB of the limit.

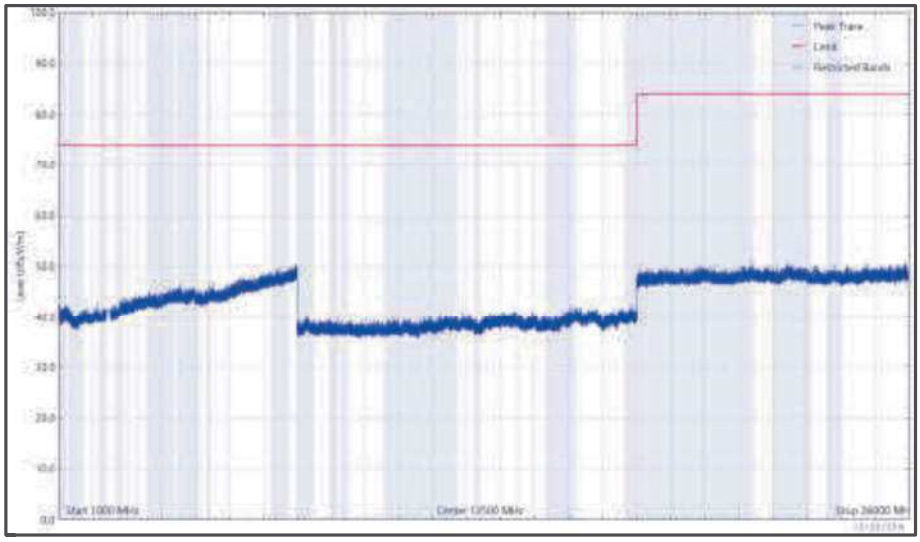

Figure 310 - 2478 MHz (CH76), HDR4, ePA, Core 0, 1 GHz to 26 GHz, Horizontal (Peak)

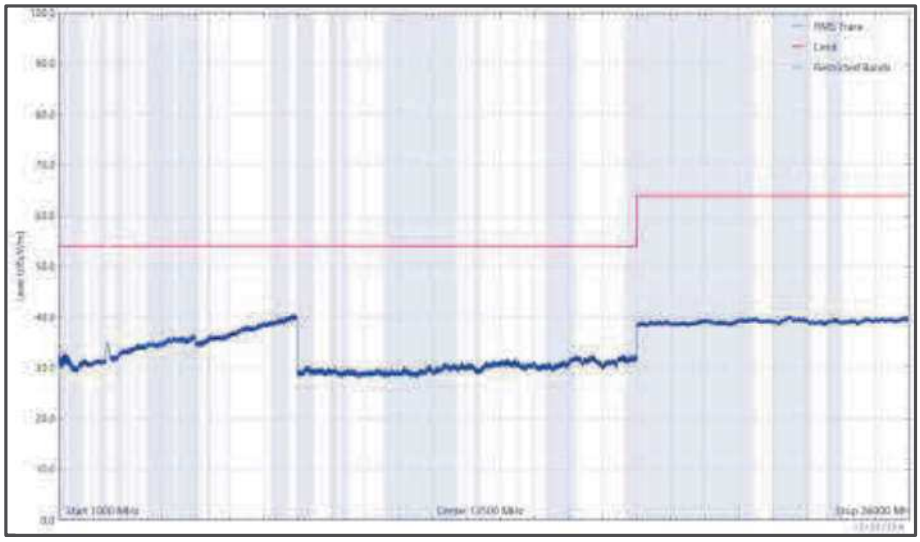

Figure 311 - 2478 MHz (CH76), HDR4, ePA, Core 0, 1 GHz to 26 GHz, Horizontal (rms)

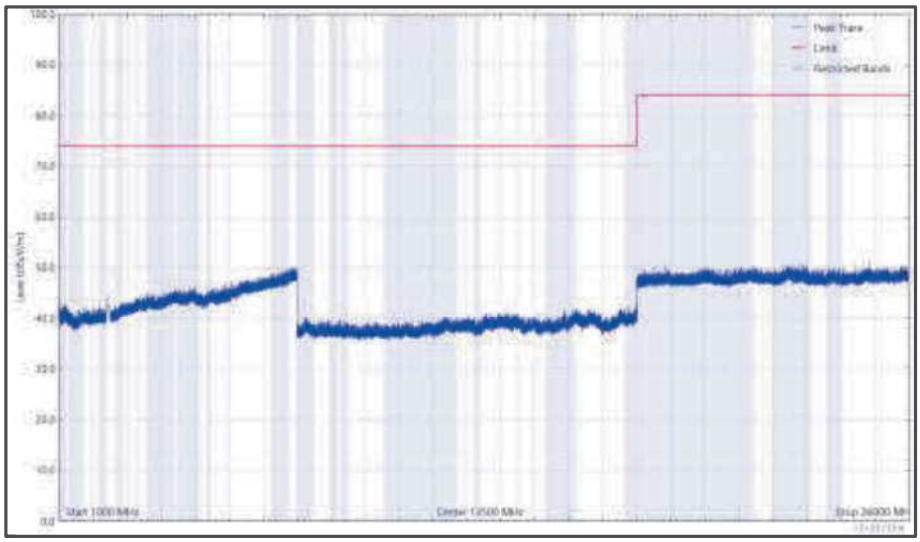

Figure 312 - 2478 MHz (CH76), HDR4, ePA, Core 0, 1 GHz to 26 GHz, Vertical (Peak)

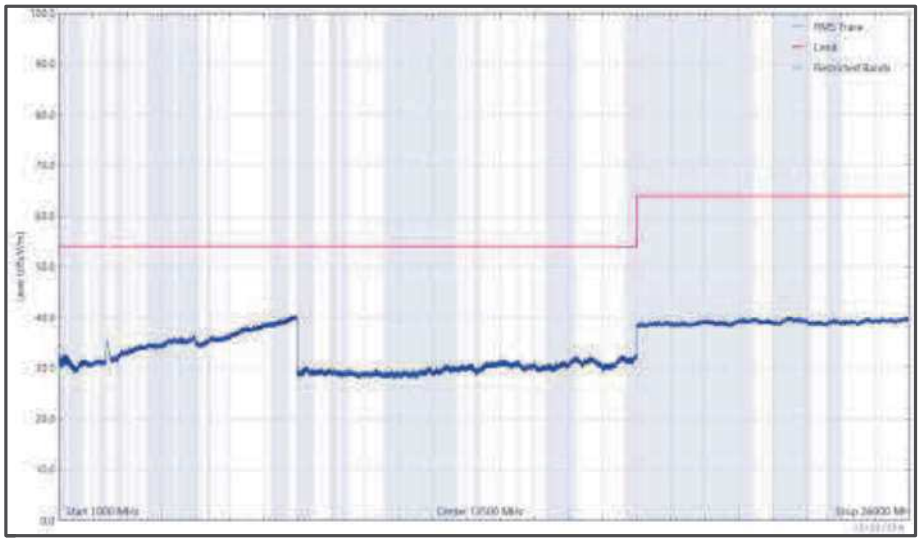

Figure 313 - 2478 MHz (CH76), HDR4, ePA, Core 0, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 170 - 2404 MHz (CH2), HDR4, ePA, Core 1, 1 GHz to 26 GHz

*No emissions found within 10 dB of the limit.

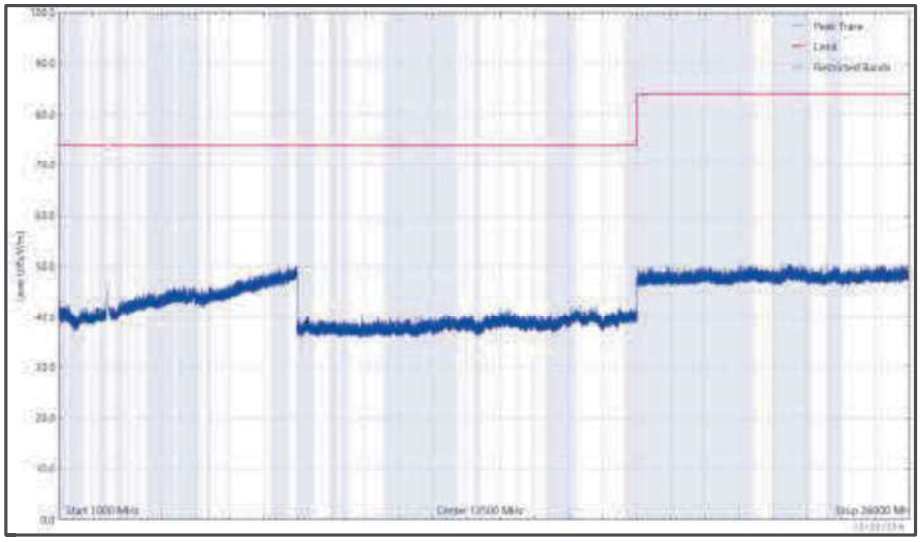

Figure 314 - 2404 MHz (CH2), HDR4, ePA, Core 1, 1 GHz to 26 GHz, Horizontal (Peak)

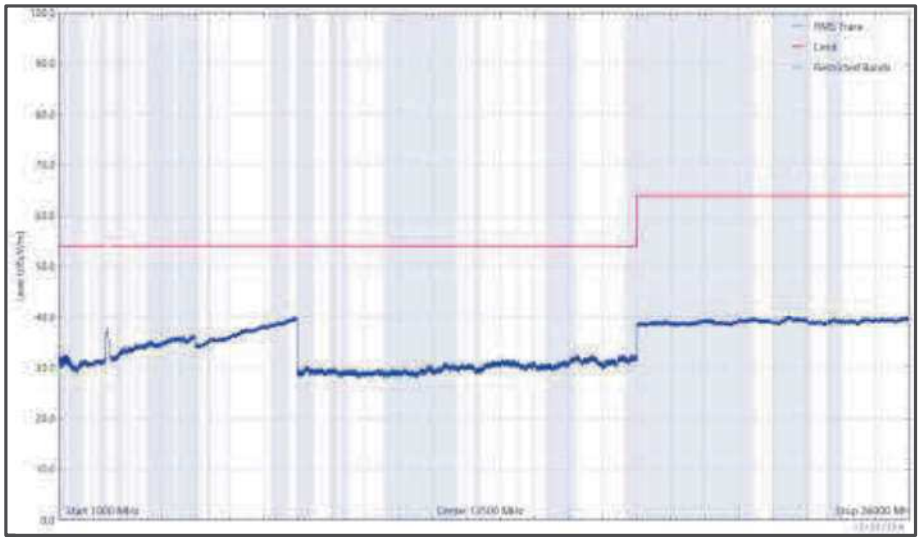

Figure 315 - 2404 MHz (CH2), HDR4, ePA, Core 1, 1 GHz to 26 GHz, Horizontal (rms)

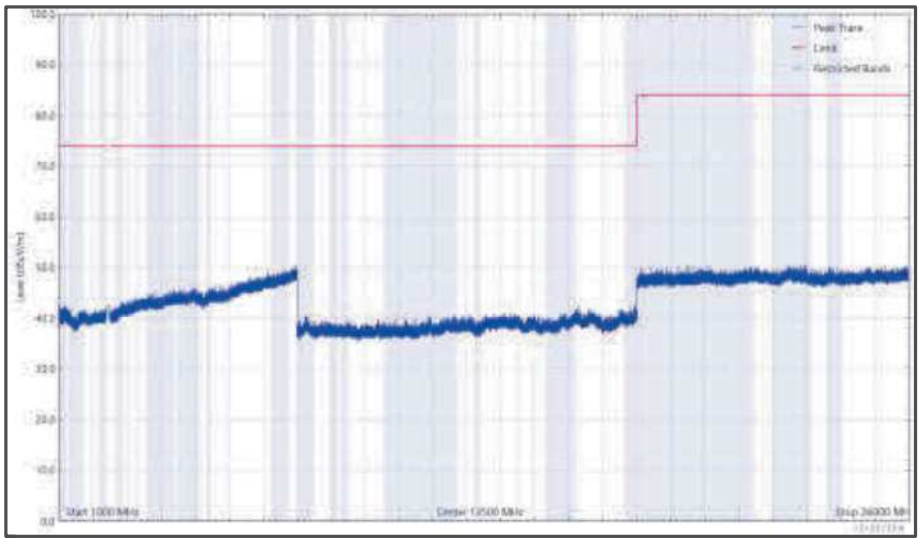

Figure 316 - 2404 MHz (CH2), HDR4, ePA, Core 1, 1 GHz to 26 GHz, Vertical (Peak)

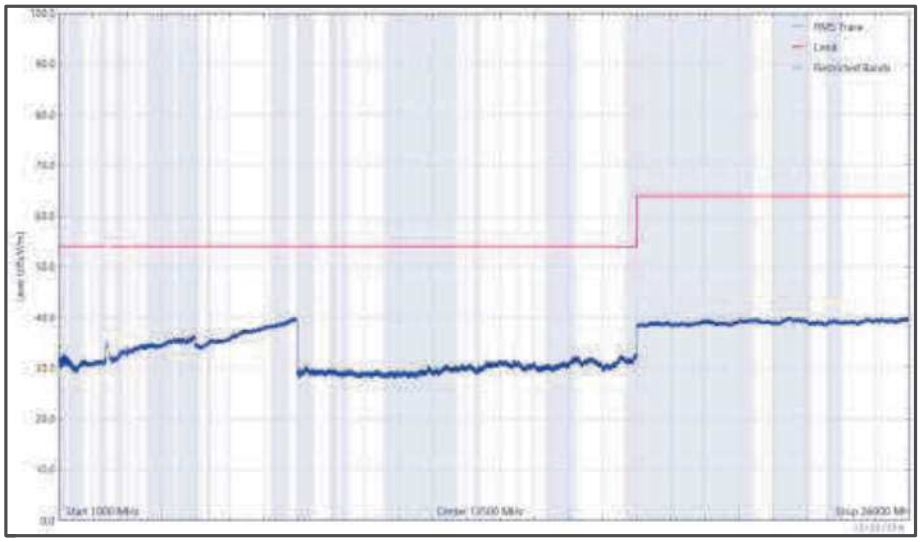

Figure 317 - 2404 MHz (CH2), HDR4, ePA, Core 1, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 171 - 2441 MHz (CH39), HDR4, ePA, Core 1, 30 MHz to 26 GHz

*No emissions found within 10 dB of the limit.

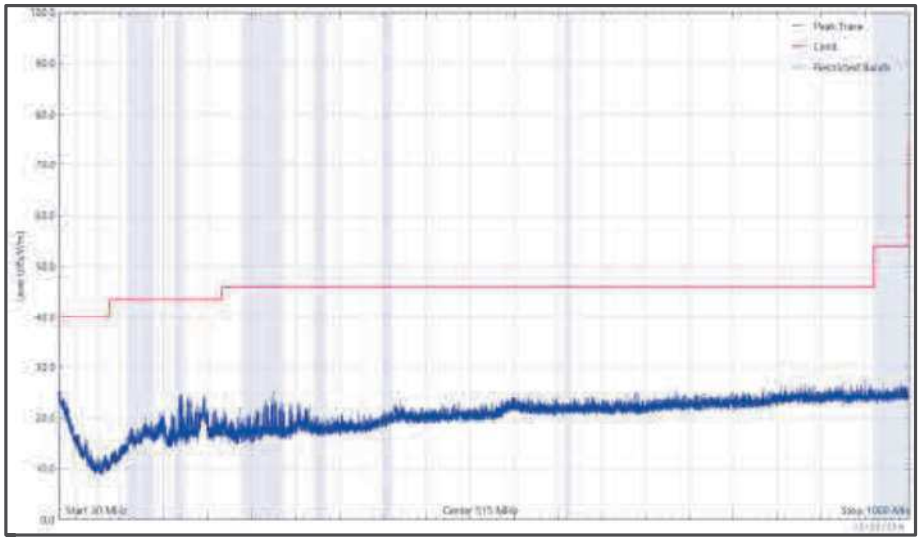

Figure 318 - 2441 MHz (CH39), HDR4, ePA, Core 1, 30 MHz to 1 GHz, Horizontal (Peak)

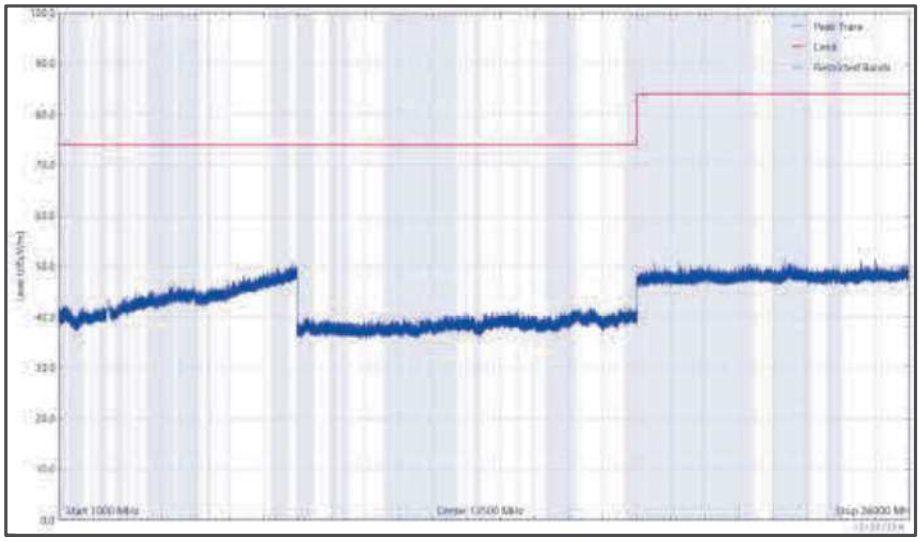

Figure 319 - 2441 MHz (CH39), HDR4, ePA, Core 1, 1 GHz to 26 GHz, Horizontal (Peak)

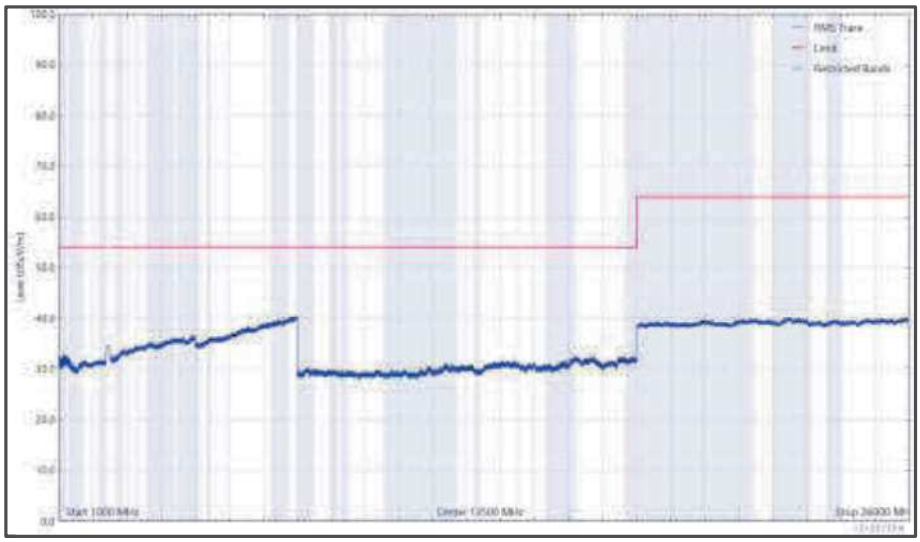

Figure 320 - 2441 MHz (CH39), HDR4, ePA, Core 1, 1 GHz to 26 GHz, Horizontal (rms)

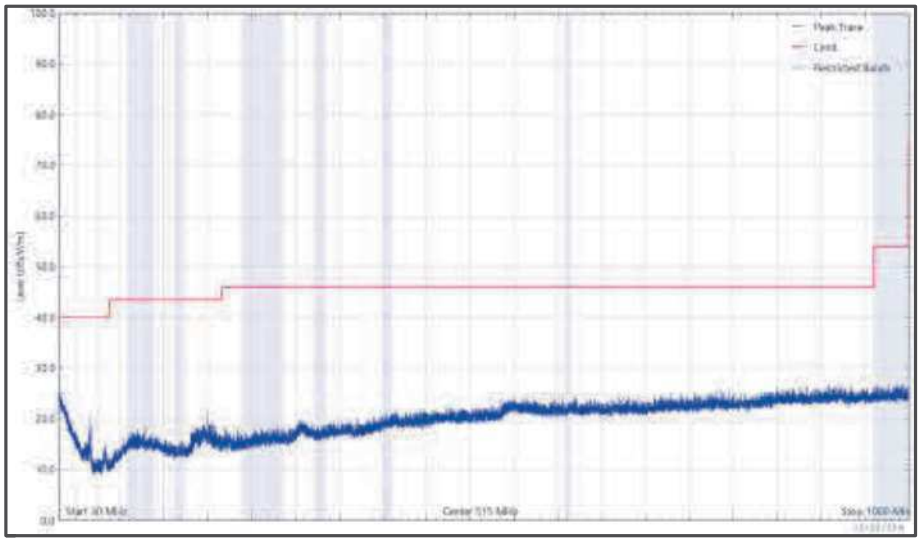

Figure 321 - 2441 MHz (CH39), HDR4, ePA, Core 1, 30 MHz to 1 GHz, Vertical (Peak)

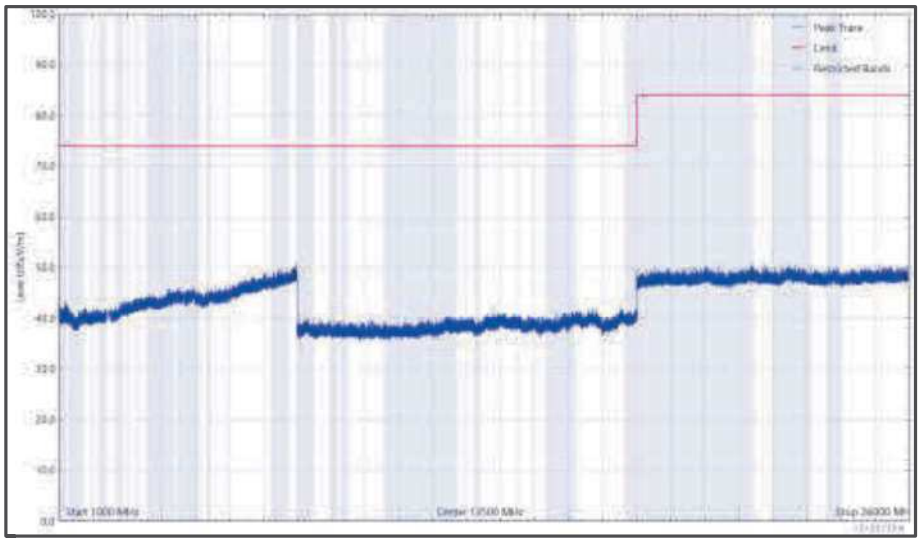

Figure 322 - 2441 MHz (CH39), HDR4, ePA, Core 1, 1 GHz to 26 GHz, Vertical (Peak)

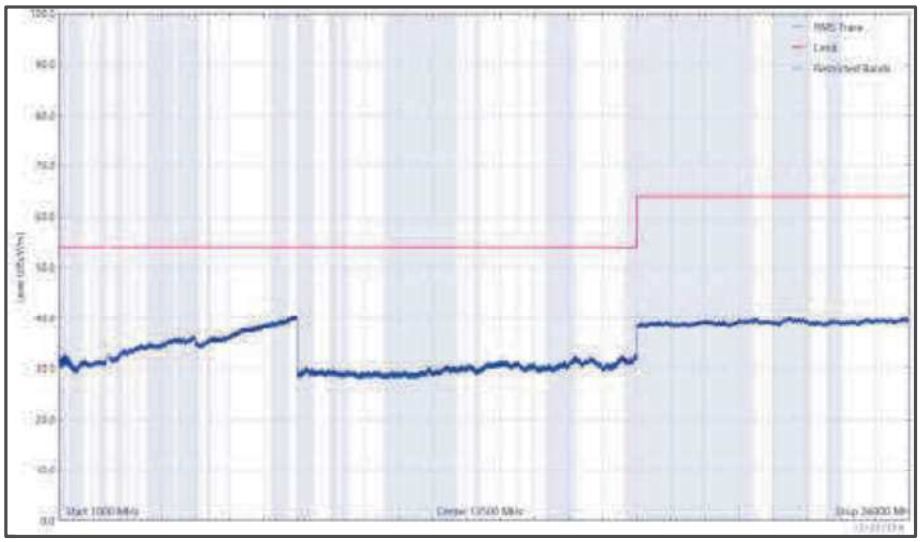

Figure 323 - 2441 MHz (CH39), HDR4, ePA, Core 1, 1 GHz to 26 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuv/m)	Limit (dBuv/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 172 - 2478 MHz (CH76), HDR4, ePA, Core 1, 1 GHz to 26 GHz

*No emissions found within 10 dB of the limit.

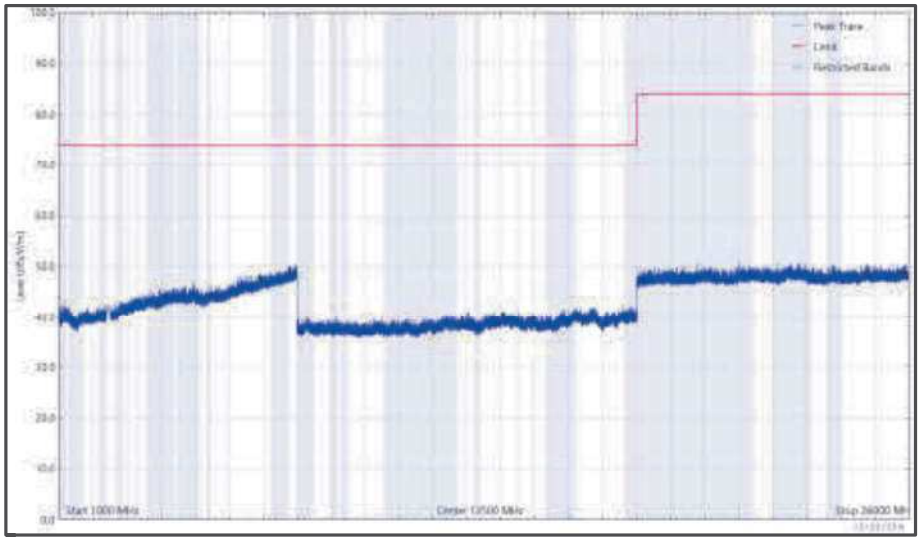

Figure 324 - 2478 MHz (CH76), HDR4, ePA, Core 1, 1 GHz to 26 GHz, Horizontal (Peak)

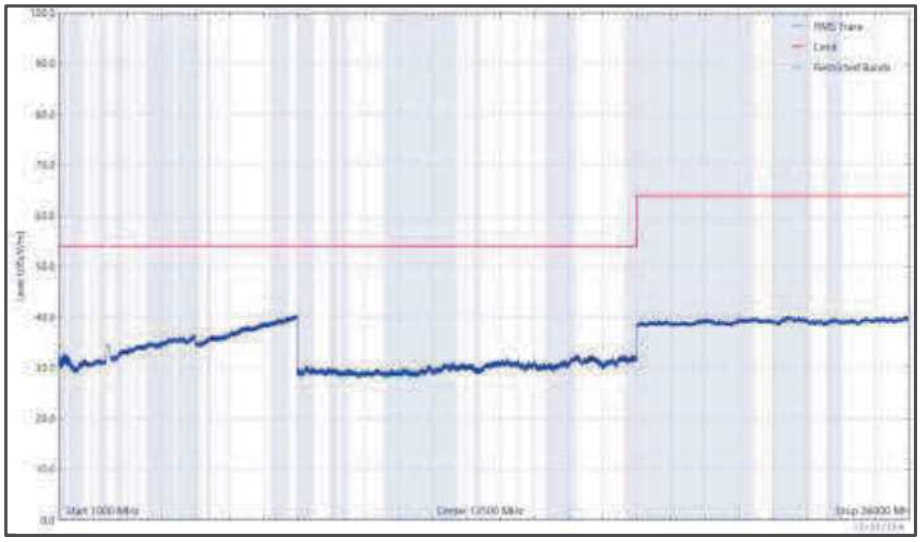

Figure 325 - 2478 MHz (CH76), HDR4, ePA, Core 1, 1 GHz to 26 GHz, Horizontal (rms)

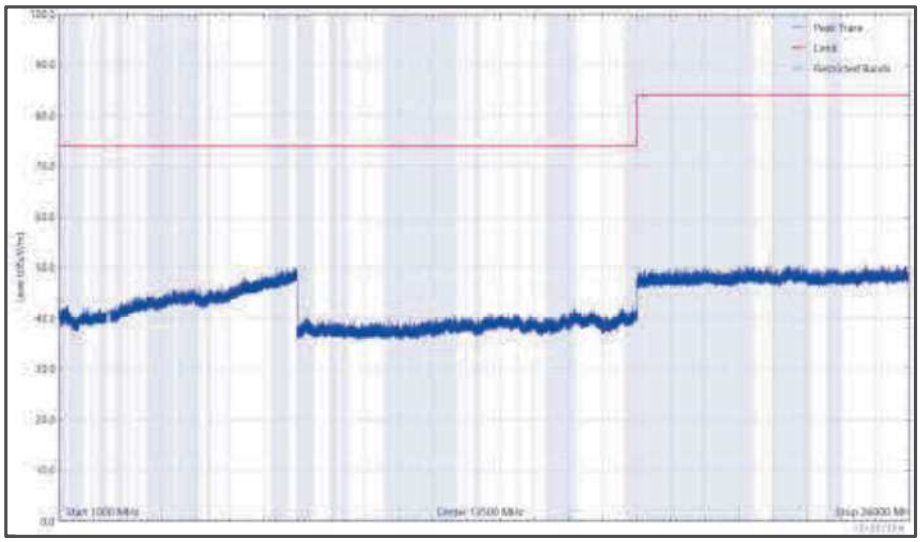

Figure 326 - 2478 MHz (CH76), HDR4, ePA, Core 1, 1 GHz to 26 GHz, Vertical (Peak)

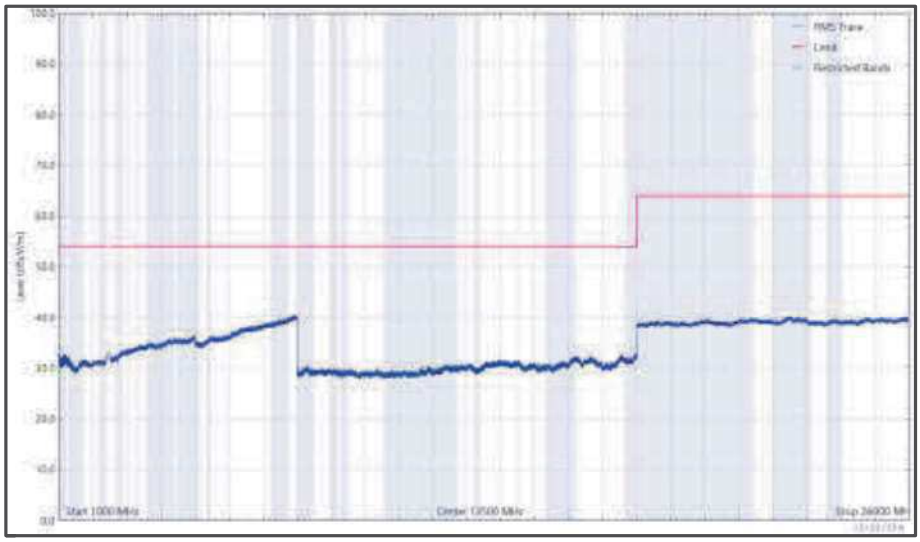

Figure 327 - 2478 MHz (CH76), HDR4, ePA, Core 1, 1 GHz to 26 GHz, Vertical (rms)

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)

ISEDC 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.

2.6.8 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
Antenna 18-40GHz (Double Ridge Guide)	Link Microtek Ltd	AM180HA-K-TU2	230	24	27-Jul-2022
18GHz - 40GHz Pre-Amplifier	Phase One	PSO4-0087	1534	12	18-Feb-2021
Antenna with permanent attenuator (Bilog)	Chase	CBL6143	2904	24	30-Sep-2021
True RMS Multimeter	Fluke	179	4007	12	29-Oct-2021
Cable 1503 2M 2.92(P)m 2.92(P)m	Rhophase	KPS-1503A-2000-KPS	4293	12	16-Nov-2021
Band Reject Filter - 2.425 GHz	Wainwright	WRCGV14-2390-2400-2450-2460-50SS	5066	12	12-Oct-2021
Band Reject Filter - 2.4585 GHz	Wainwright	WRCGV14-2423.5-2433.5-2483.5-2493.5-50SS	5068	12	12-Oct-2021
EMI Test Receiver	Rohde & Schwarz	ESW44	5084	12	04-Feb-2021
Cable (18 GHz)	Rosenberger	LU7-071-1000	5102	12	12-Oct-2021
Cable (18 GHz)	Rosenberger	LU7-071-1000	5103	12	12-Oct-2021
Cable (18 GHz)	Rosenberger	LU7-071-1000	5104	12	10-Dec-2021
EmX Emissions Software	TUV SUD	V2.1.0	5125	-	Software
Horn Antenna (1-10GHz)	Schwarzbeck	BBHA 9120 B	5215	12	10-Mar-2021
DRG Horn Antenna (7.5-18GHz)	Schwarzbeck	HWRD750	5216	12	10-Mar-2021
Horn Antenna (15-40GHz)	Schwarzbeck	BBHA 9170	5217	12	14-Oct-2021
Pre Amp 1 - 26.5 GHz	Agilent Technologies	8449B	5445	12	06-May-2021
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB-40	5475	12	17-Mar-2021
1m K-Type Cable	Junkosha	MWX241-01000KMSKMS/A	5512	12	03-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
2m K Type Cable	Junkosha	MWX241-02000KMSKMS/A	5524	12	03-Apr-2021
3 GHz High pass Filter	Wainwright	WHKX12-2580-3000-18000-80SS	5547	12	05-May-2021
1200 MHz Low Pass Filter (02)	Mini-Circuits	VLF-1200+	5560	12	23-May-2021
8 - 18 GHz Amplifier	Wright Technologies	APS06-0061	5595	12	25-Aug-2021

Table 173

3 Measurement Uncertainty

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

Test Name	Measurement Uncertainty
Maximum Conducted Output Power	± 3.2 dB
Power Spectral Density	± 3.2 dB
Emission Bandwidth	± 144.25 kHz
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

Table 174

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.