



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

Table 48 - 2475 MHz (CH25), Thread, iPA, Core 0, 1 GHz to 18 GHz

*No emissions found within 20 dB of the limit.

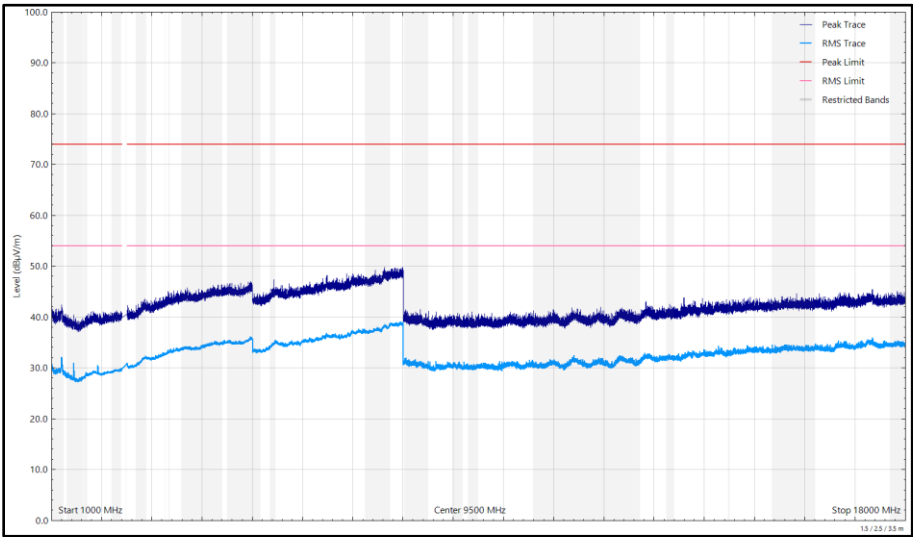


Figure 74 - 2475 MHz (CH25), Thread, iPA, Core 0, 1 GHz to 18 GHz, Horizontal

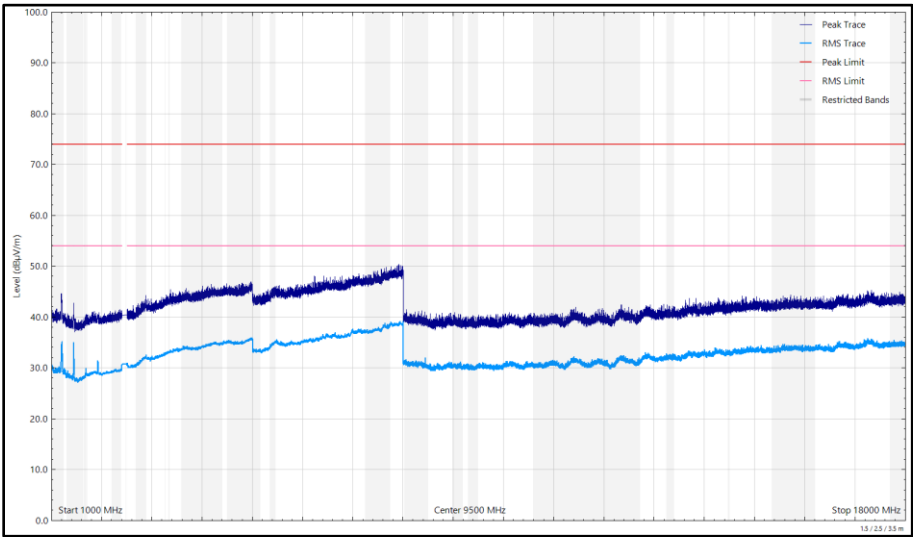


Figure 75 - 2475 MHz (CH25), Thread, iPA, Core 0, 1 GHz to 18 GHz, Vertical



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

Table 49 - 2405 MHz (CH11), Thread, iPA, Core 1, 1 GHz to 18 GHz

*No emissions found within 20 dB of the limit.

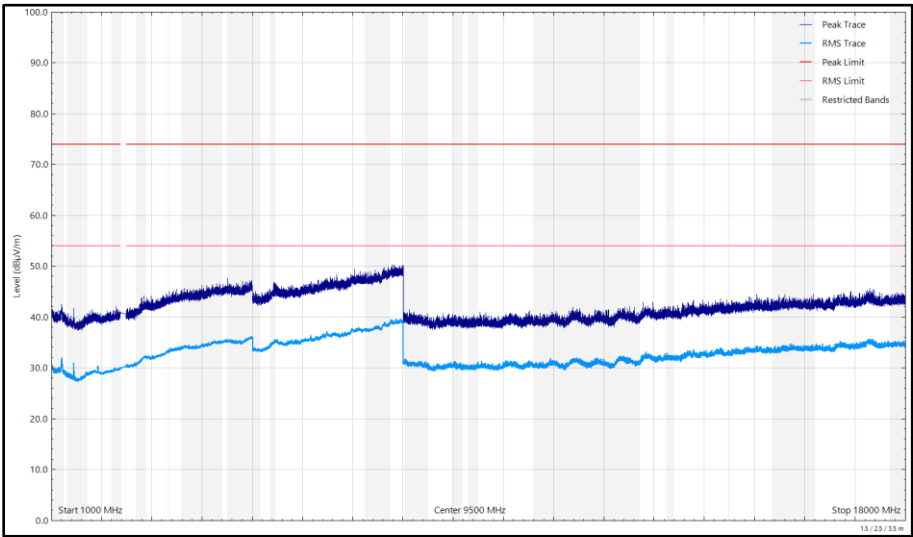


Figure 76 - 2405 MHz (CH11), Thread, iPA, Core 1, 1 GHz to 18 GHz, Horizontal

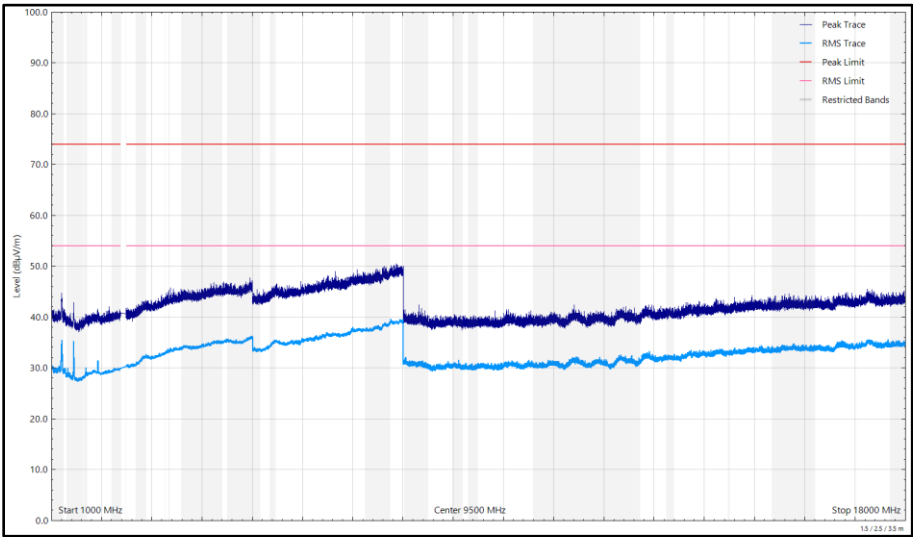


Figure 77 - 2405 MHz (CH11), Thread, iPA, Core 1, 1 GHz to 18 GHz, Vertical

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
37.535	20.45	40.00	-19.55	Q-Peak	235	394	Vertical
156.732	21.73	43.50	-21.77	Q-Peak	74	113	Horizontal
162.037	21.78	43.50	-21.72	Q-Peak	335	112	Vertical
280.015	22.81	46.00	-23.19	Q-Peak	86	110	Horizontal

Table 50 - 2440 MHz (CH18), Thread, iPA, Core 1, 30 MHz to 26 GHz

No other emissions found within 20 dB of the limit.

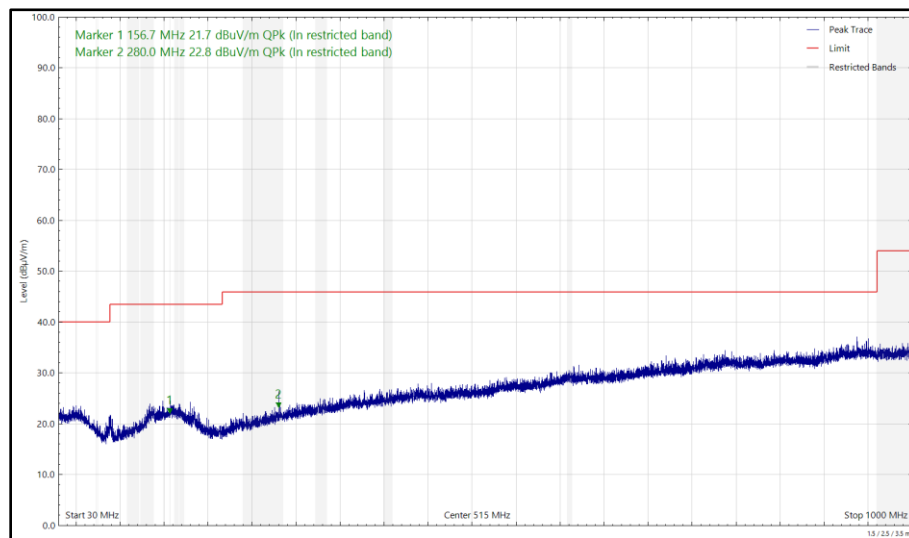


Figure 78 - 2440 MHz (CH18), Thread, iPA, Core 1, 30 MHz to 1 GHz, Horizontal (Peak)

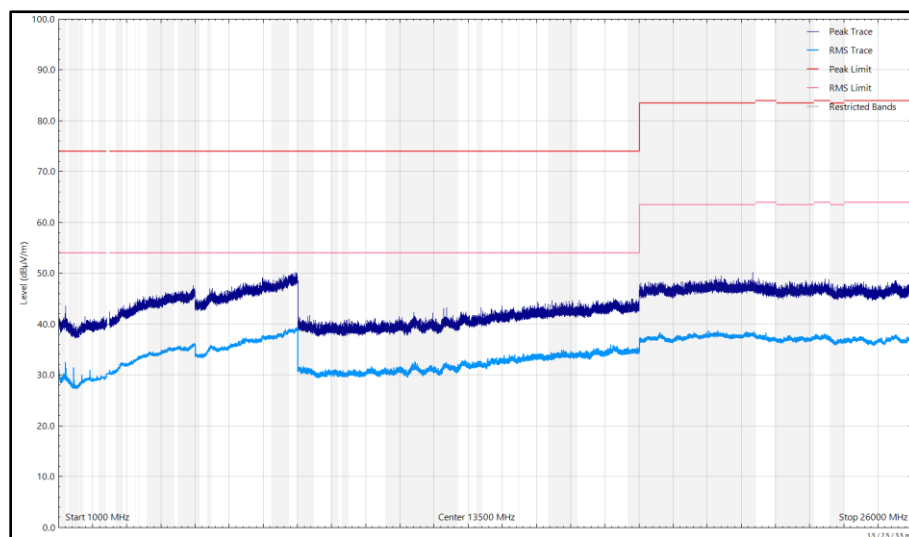


Figure 79 - 2440 MHz (CH18), Thread, iPA, Core 1, 1 GHz to 26 GHz, Horizontal

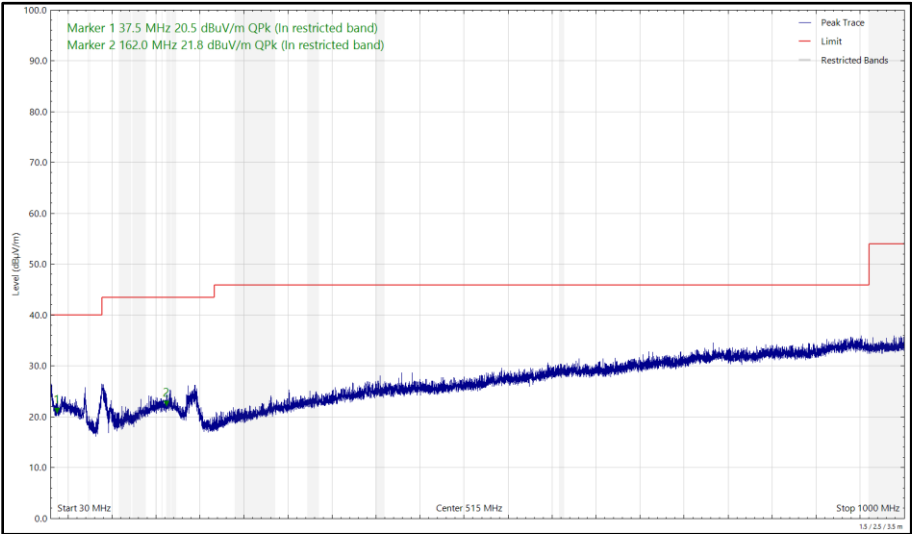


Figure 80 - 2440 MHz (CH18), Thread, iPA, Core 1, 30 MHz to 1 GHz, Vertical (Peak)

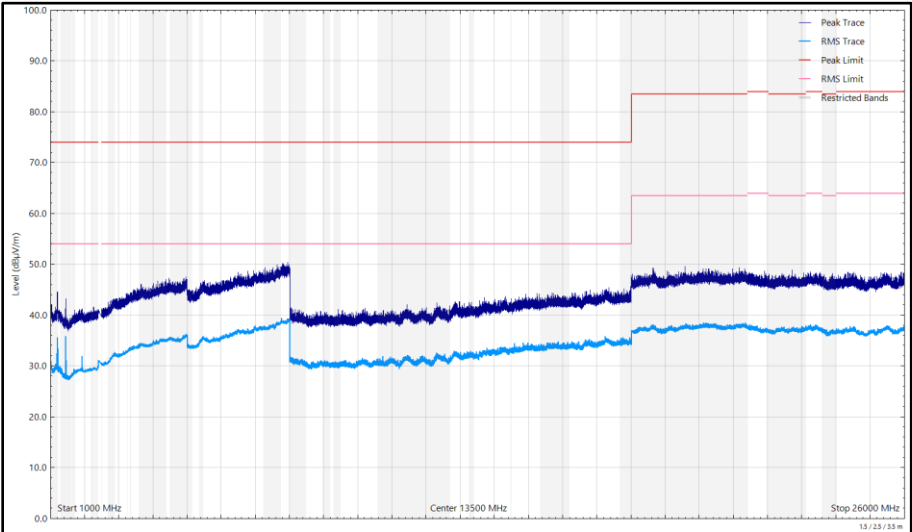


Figure 81 - 2440 MHz (CH18), Thread, iPA, Core 1, 1 GHz to 26 GHz, Vertical



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

Table 51 - 2475 MHz (CH25), Thread, iPA, Core 1, 1 GHz to 18 GHz

*No emissions found within 20 dB of the limit.

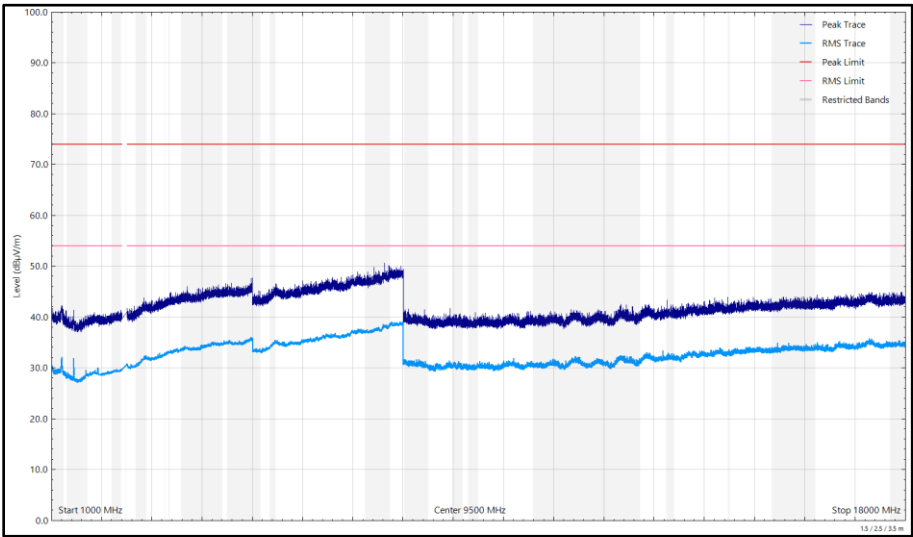


Figure 82 - 2475 MHz (CH25), Thread, iPA, Core 1, 1 GHz to 18 GHz, Horizontal

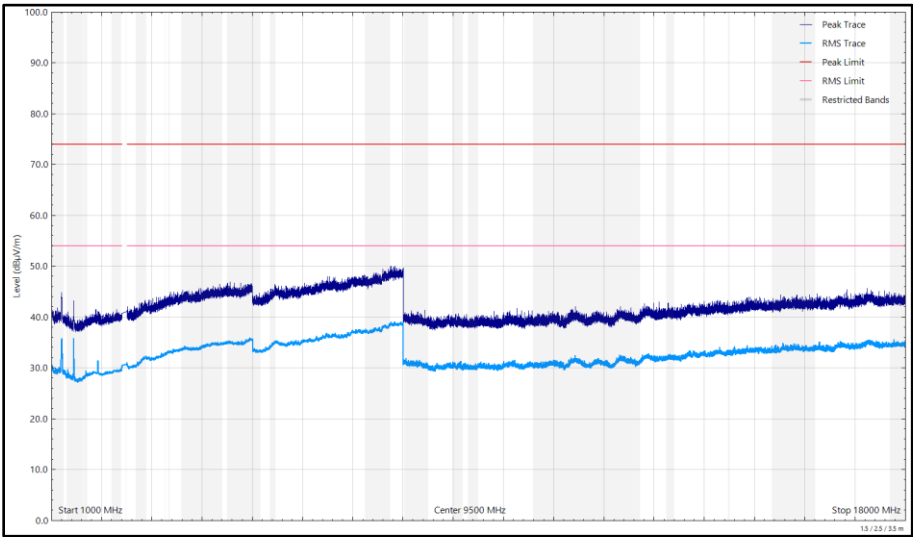


Figure 83 - 2475 MHz (CH25), Thread, iPA, Core 1, 1 GHz to 18 GHz, Vertical



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

Table 52 - 2405 MHz (CH11), Thread, iPA, Core 2, 1 GHz to 18 GHz

*No emissions found within 20 dB of the limit.

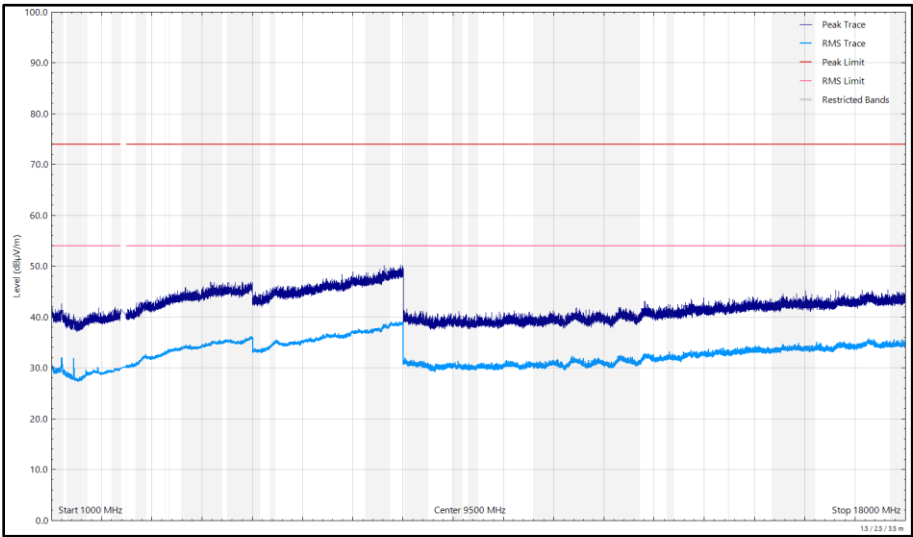


Figure 84 - 2405 MHz (CH11), Thread, iPA, Core 2, 1 GHz to 18 GHz, Horizontal

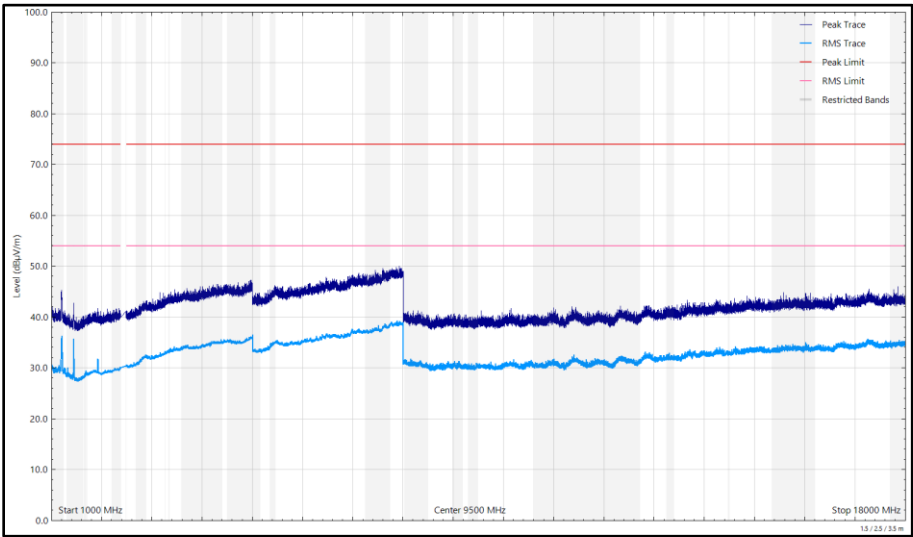


Figure 85 - 2405 MHz (CH11), Thread, iPA, Core 2, 1 GHz to 18 GHz, Vertical

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
37.656	20.52	40.00	-19.48	Q-Peak	350	375	Vertical
163.513	21.77	43.50	-21.73	Q-Peak	10	400	Horizontal
166.312	21.60	43.50	-21.90	Q-Peak	92	257	Vertical
284.500	21.00	46.00	-25.00	Q-Peak	224	103	Horizontal

Table 53 - 2440 MHz (CH18), Thread, iPA, Core 2, 30 MHz to 26 GHz

No other emissions found within 20 dB of the limit.

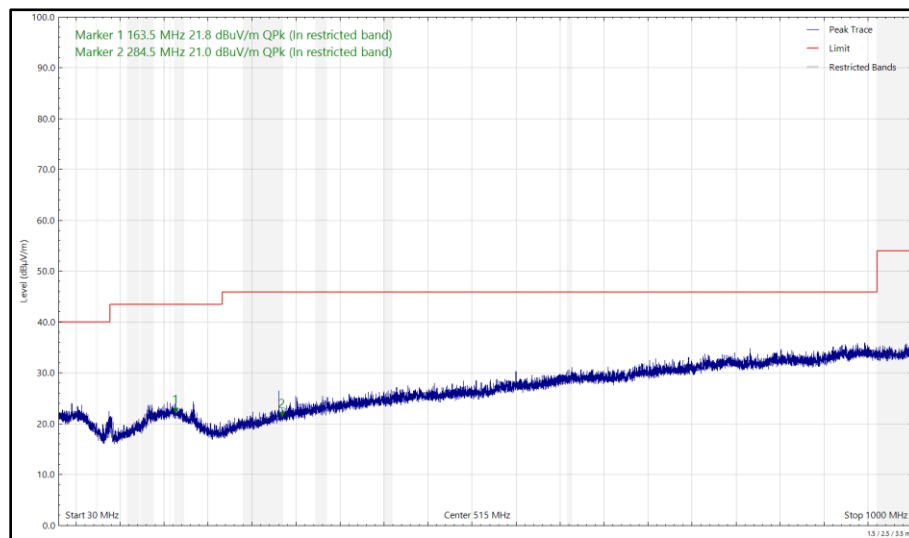


Figure 86 - 2440 MHz (CH18), Thread, iPA, Core 2, 30 MHz to 1 GHz, Horizontal (Peak)

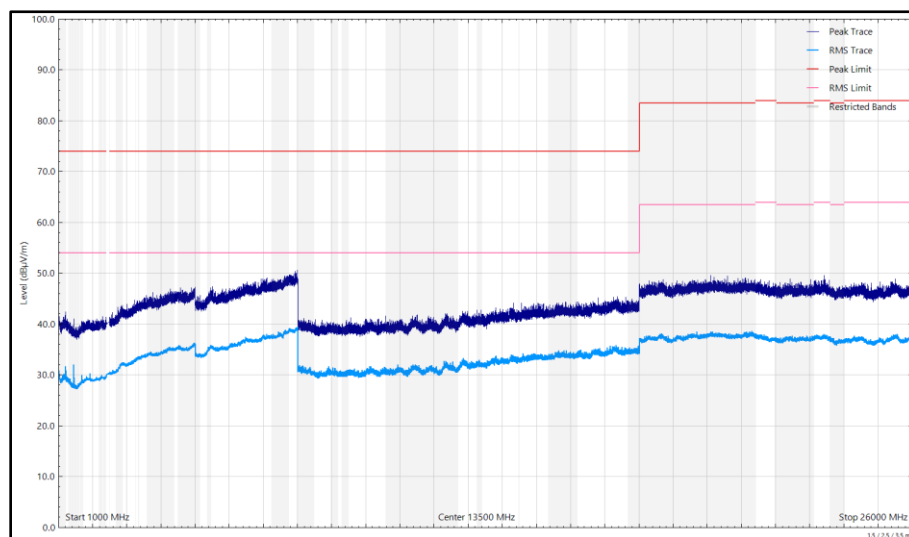


Figure 87 - 2440 MHz (CH18), Thread, iPA, Core 2, 1 GHz to 26 GHz, Horizontal

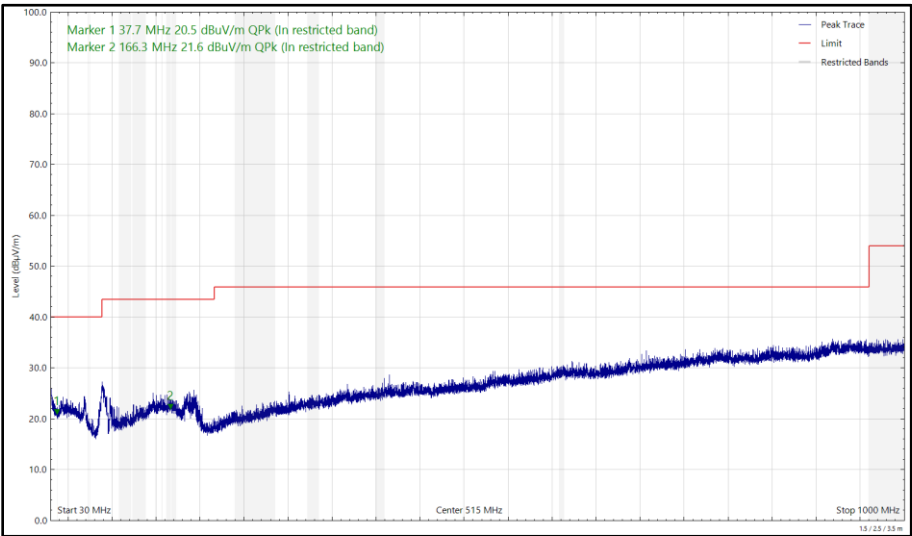


Figure 88 - 2440 MHz (CH18), Thread, iPA, Core 2, 30 MHz to 1 GHz, Vertical (Peak)

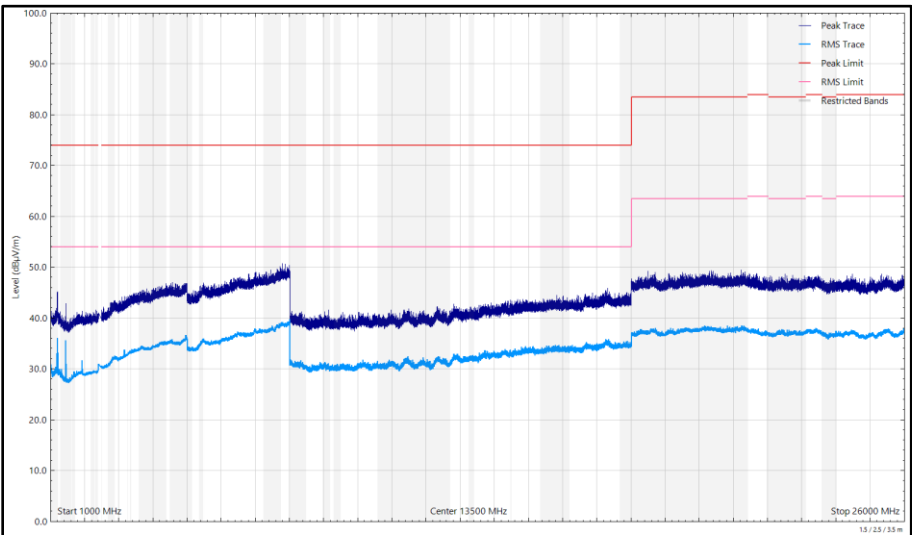


Figure 89 - 2440 MHz (CH18), Thread, iPA, Core 2, 1 GHz to 26 GHz, Vertical



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

Table 54 - 2475 MHz (CH25), Thread, iPA, Core 2, 1 GHz to 18 GHz

*No emissions found within 20 dB of the limit.

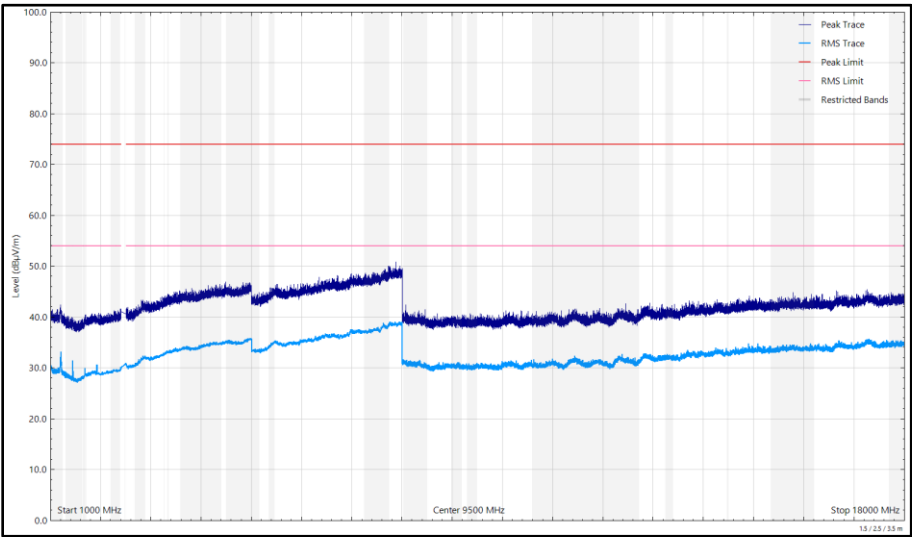


Figure 90 - 2475 MHz (CH25), Thread, iPA, Core 2, 1 GHz to 18 GHz, Horizontal

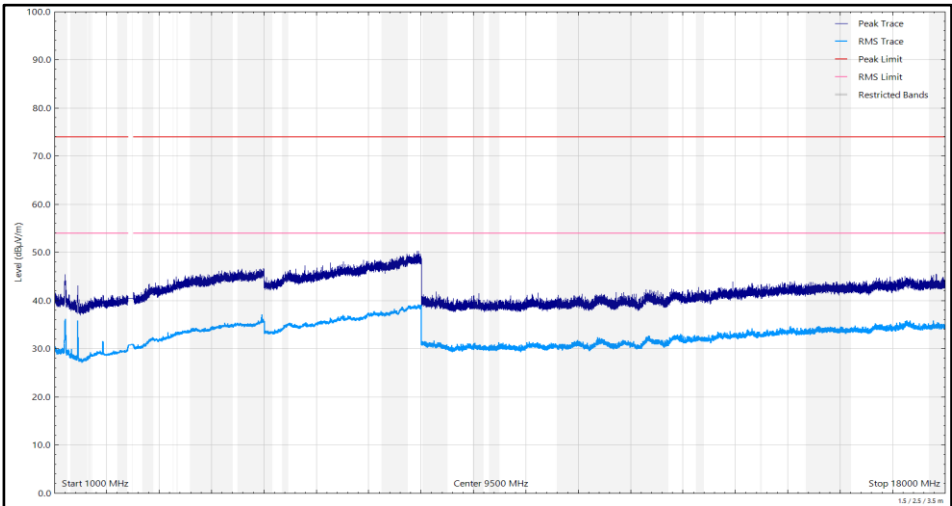


Figure 91 - 2475 MHz (CH25), Thread, iPA, Core 2, 1 GHz to 18 GHz, Vertical



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 6.6

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.

In addition, radiated emissions which fall in the restricted bands, as defined in RSS-GEN, clause 8.10, must also comply with the radiated emission limits specified in RSS-GEN clause 8.9.



2.5.8 Test Location and Test Equipment Used

This test was carried out in RF Chamber 15 and RF Chamber 16.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Emissions Software	TUV SUD	EmX V3.5.5	5125	-	TU
Test Receiver	Rohde & Schwarz	ESW44	5914	12	17-Jun-2026
Cable (K Type 2m)	Junkosha	MWX241-02000KMSKMS/B	5937	12	12-Jun-2026
DRG Horn Antenna (7.5-18GHz)	Schwarzbeck	HWRD750	5940	12	18-May-2026
1500W (300V 12A) AC Power Supply	iTech	IT7324	5956	-	TU
1500W (300V 12A) AC Power Supply	iTech	IT7324	5957	-	TU
5m Semi-Anechoic Chamber (Dual-Axis), Chamber 15	Albatross Projects	RF Chamber 15	5963	36	23-Apr-2028
Compact Antenna Mast	Maturo Gmbh	CAM4.0-P	5964	-	TU
Mast & Turntable Controller	Maturo Gmbh	FCU3.0	5966	-	TU
Tilt Antenna Mast	Maturo Gmbh	BAM4.5-P	5967	-	TU
Turntable	Maturo Gmbh	TT1.5SI	5968	-	TU
3m Semi-Anechoic Chamber, Chamber 16	Albatross Projects	RF Chamber 16	5972	36	07-May-2028
Mast & Turntable Controller	Maturo Gmbh	FCU3.0	5973	-	TU
Tilt Antenna Mast	Maturo Gmbh	BAM4.5-P	5974	-	TU
Turntable	Maturo Gmbh	TT1.5SI	5975	-	TU
Cable (SMA to SMA 1m)	Junkosha	MWX221-01000AMSAMS/A	5996	12	23-May-2026
Horn Antenna (1-10 GHz)	Schwarzbeck	BBHA9120B	6141	12	14-Sep-2026
SAC Switch Unit	TUV SUD	TUV_SSU_001	6144	12	05-Dec-2026
Digital Multimeter	Fluke	115	6145	12	06-Jun-2026
Digital Multimeter	Fluke	115	6146	12	05-Jun-2026
Double Ridge Active Horn Antenna (18-40 GHz)	Com-Power	AHA-840	6189	24	26-Sep-2026
8GHz Highpass Filter	Wainwright	WHKX 7150 8000 18000 50SS	6195	12	23-Apr-2026
Pre Amp 8 - 18 GHz	Wright Technologies	APS06 0061	6198	12	09-Jun-2026
Attenuator 4dB	Pasternack	PE7074-4	6204	24	13-Mar-2027
Cable (SMA to SMA 20cm)	TUV SUD	MH-FH 8-18	6214	12	23-Apr-2026
USB Spectrum Analyser	Signal Hound	SA124B	6297	-	TU
USB Spectrum Analyser	Signal Hound	SA124B	6383	-	TU
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9168	6456	24	13-Mar-2027



Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Humidity and Temperature Meter	R.S Components	1364	6486	12	01-Jul-2026
1m Cable	Junkosha	MWX241-01000AMSAMS/B	6740	12	27-Apr-2026
6.5m Cable	Junkosha	MWX221-06500AMSAMS/B	6744	12	27-Apr-2026
EMI Test Receiver	Rohde & Schwarz	ESW44	6805	12	24-Jul-2026
1M SMA Cable	Junkosha	MWX221-01000AMSAMS/B	6831	12	18-Aug-2026
8M SMA Cable	Junkosha	MWX221-08000AMSAMS/B	6833	12	18-Aug-2026
8M SMA Cable	Junkosha	MWX221-08000AMSAMS/B	6834	12	18-Aug-2026
Handheld Hygrometer	Fluke	971	6837	12	16-Sep-2026
Cable Assembly	SpecTech	PE300-60	6856	-	TU
Cable Assembly	SpecTech	PE300-60	6858	-	TU
Cable Assembly	SpecTech	PE300-60	6862	-	TU
Cable Assembly	SpecTech	PE300-60	6864	-	TU
Cable Assembly	SpecTech	PE300-60	6868	-	TU
RF Amplifier BROADBAND AMPL/SMA/RoHS	Mini-Circuits	ZX60-83LN12+	6976	12	05-Apr-2026
RF Amplifier BROADBAND AMPL/SMA/RoHS	Mini-Circuits	ZX60-83LN12+	6978	12	05-Apr-2026

Figure 92

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 6.3.1
ISED RSS-GEN, Clause 6.12

2.6.2 Equipment Under Test and Modification State

A3427, S/N: HQ7G4J7H4X - Modification State 0

2.6.3 Date of Test

04-December-2025

2.6.4 Test Method

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

2.6.5 Environmental Conditions

Ambient Temperature	17.3 °C
Relative Humidity	50.5 %



2.6.6 Test Results

Thread

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 6.3.1	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	-		

DUT Configuration			
Mode:	Thread iPA 2.00 MHz	Duty Cycle (%):	100.0
CustomFieldTitle:	Thread iPA	DCCF (dB):	0.00
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	4.60
Active Port(s):	A (Core 0)	Active Chain(s):	0

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2405	3.0	-14.26	-	-	-	-14.26	8.00	-22.26
2440	3.0	-13.62	-	-	-	-13.62	8.00	-21.62
2475	3.0	-14.56	-	-	-	-14.56	8.00	-22.56

Table 55 - Maximum Power Spectral Density Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 6.3.1	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	-		

DUT Configuration			
Mode:	Thread iPA 2.00 MHz	Duty Cycle (%):	100.0
CustomFieldTitle:	Thread iPA	DCCF (dB):	0.00
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	3.80
Active Port(s):	B (Core 1)	Active Chain(s):	1

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2405	3.0	-	-14.66	-	-	-14.66	8.00	-22.66
2440	3.0	-	-14.73	-	-	-14.73	8.00	-22.73
2475	3.0	-	-14.65	-	-	-14.65	8.00	-22.65

Table 56 - Maximum Power Spectral Density Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 6.3.1	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	-		

DUT Configuration			
Mode:	Thread iPA 2.00 MHz	Duty Cycle (%):	100.0
CustomFieldTitle:	Thread iPA	DCCF (dB):	0.00
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	4.50
Active Port(s):	C (Core 2)	Active Chain(s):	2

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2405	3.0	-	-	-12.08	-	-12.08	8.00	-20.08
2440	3.0	-	-	-12.47	-	-12.47	8.00	-20.47
2475	3.0	-	-	-12.75	-	-12.75	8.00	-20.75

Table 57 - Maximum Power Spectral Density Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 6.3.1	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	-		

DUT Configuration			
Mode:	Thread ePA 2.00 MHz	Duty Cycle (%):	100.0
CustomFieldTitle:	Thread ePA	DCCF (dB):	0.00
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	4.60
Active Port(s):	A (Core 0)	Active Chain(s):	0

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2405	3.0	-3.17	-	-	-	-3.17	8.00	-11.17
2440	3.0	-3.33	-	-	-	-3.33	8.00	-11.33
2475	3.0	-3.44	-	-	-	-3.44	8.00	-11.44

Table 58 - Maximum Power Spectral Density Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 6.3.1	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	-		

DUT Configuration			
Mode:	Thread ePA 2.00 MHz	Duty Cycle (%):	100.0
CustomFieldTitle:	Thread ePA	DCCF (dB):	0.00
Antenna Configuration:	SISO	Peak Antenna Gain (dBi):	3.80
Active Port(s):	B (Core 1)	Active Chain(s):	1

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2405	3.0	-	-3.32	-	-	-3.32	8.00	-11.32
2440	3.0	-	-3.64	-	-	-3.64	8.00	-11.64
2475	3.0	-	-3.96	-	-	-3.96	8.00	-11.96

Table 59 - 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 6.3.1

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 EMC Laboratory 2.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Multimeter	Iso-tech	IDM101	2421	12	11-Nov-2026
AC Programmable Power Supply	iTech	IT7324	5227	-	O/P Mon
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	5759	12	01-Feb-2026
MXA Signal Analyser	Keysight Technologies	N9020B	5919	24	31-Mar-2028
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6903	12	01-Feb-2026
SCU Cable Assembly	TUV SUD	SPECTRUM_SCU_CA	6904	12	01-Feb-2026
6dB Attenuator cable assembly for SCU.	TUV SUD	SPECTRUM_SCU_CA	7214	12	28-Nov-2026

Figure 93

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
Restricted Band Edges	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB
Emission Bandwidth	± 36.70 kHz
Maximum Conducted Output Power	Method PM: ± 0.65 dB Method SA: ± 1.05 dB
Authorised 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	± 1.00 dB

Table 60

Measurement Uncertainty Decision Rule – Accuracy Method

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115:2021, Clause 4.4.3 (Procedure 2). The measurement results are directly compared with the test limit to determine conformance with the requirements of the standard.

Risk: The uncertainty of measurement about the measured result is negligible with regard to the final pass/fail decision. The measurement result can be directly compared with the test limit to determine conformance with the requirement (compare IEC Guide 115). The level of risk to falsely accept and falsely reject items is further described in ILAC-G8.