

TEST REPORT

Test report no.: 1-2152-25-01-10_TR1-R01



Testing laboratory

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Accredited Testing Laboratory:

The testing laboratory (area of testing) is accredited according to DIN EN ISO/IEC 17025 (2018-03) by the Deutsche Akkreditierungsstelle GmbH (DAkkS).

The accreditation is valid for the scope of testing procedures as stated in the accreditation certificate with the registration number:

D-PL-12047-01-00.

ISED Testing Laboratory Recognized Listing Number: DE0001

FCC designation number: DE0002

Applicant

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Manufacturer

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Test standard/s

FCC - Title 47 CFR Part 15

FCC - Title 47 of the Code of Federal Regulations; Chapter I; Part 15 - Radio frequency devices

RSS - 248 Issue 3

Radio Local Area Network (RLAN) Devices Operating in the 5925-7125 MHz Band

RSS - Gen Issue 5 incl.
Amendment 1 & 2

Spectrum Management and Telecommunications Radio Standards Specification
- General Requirements for Compliance of Radio Apparatus

For further applied test standards please refer to section 3 of this test report.

Test Item

Kind of test item:

Video Transmitters

Model name:

Falkon X2

FCC ID:

2BTDD-AX210NG

ISED certification number:

31632-AX210NG

Frequency:

5925 to 6425 MHz, 6425 to 6525 MHz, 6525 to 6875 MHz, 6875 to 7125 MHz

Technology tested:

WLAN

Antenna:

Two integrated PCB antennas

Power supply:

10.8 V DC by battery pack

Temperature range:

-5°C to +45°C

This test report is electronically signed and valid without handwritten signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

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2 General information

2.1 Notes and disclaimer

The test results of this test report relate exclusively to the test item specified in this test report. cetecom advanced GmbH does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item.

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2.2 Application details

Date of receipt of order:	2026-02-02
Date of receipt of test item:	2020-00-00
Start of test:*	2026-04-30
End of test:*	2026-07-22
Person(s) present during the test:	-/-

*Date of each measurement, if not shown in the plot, can be requested. Dates are stored in the measurement software.

2.3 Test laboratories sub-contracted

None

3 Test standard/s, references and accreditations

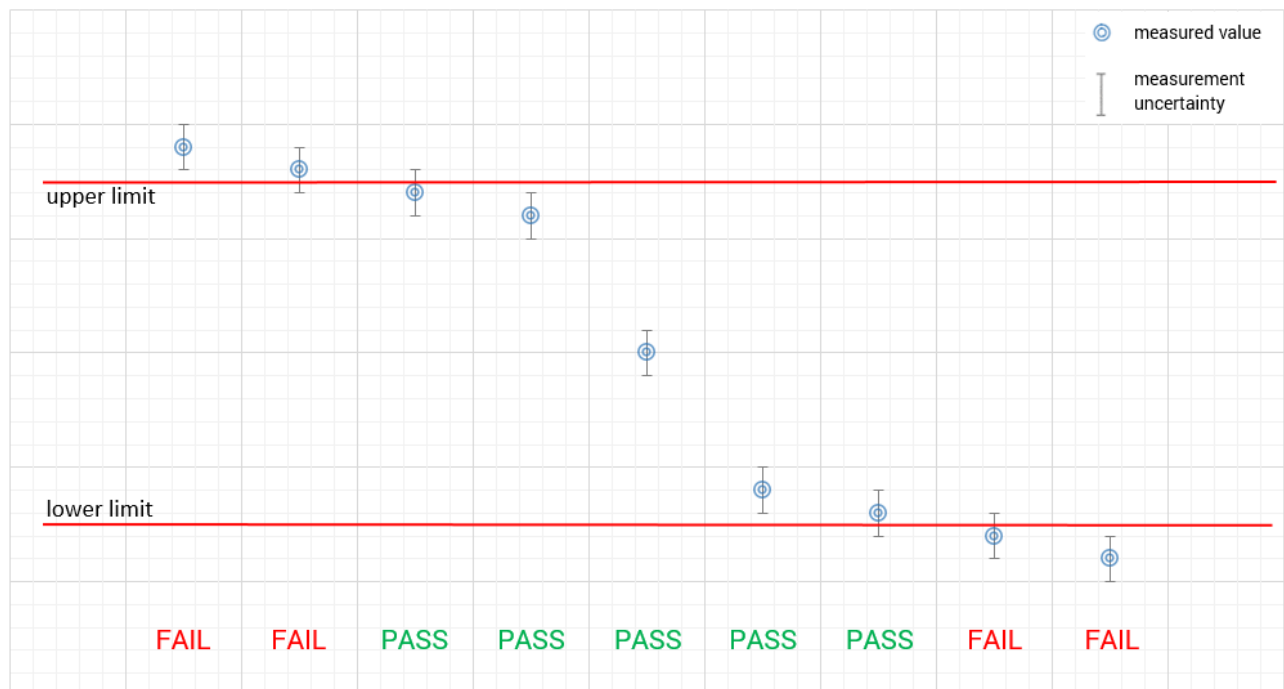
Test standard	Date	Description
FCC - Title 47 CFR Part 15	-/-	FCC - Title 47 of the Code of Federal Regulations; Chapter I; Part 15 - Radio frequency devices
RSS - 248 Issue 3	October 2024	Radio Local Area Network (RLAN) Devices Operating in the 5925-7125 MHz Band
RSS - Gen Issue 5 incl. Amendment 1 & 2	February 2021	Spectrum Management and Telecommunications Radio Standards Specification - General Requirements for Compliance of Radio Apparatus
Guidance	Version	Description
KDB 789033 D02	v02r01	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E
KDB 987594 D01	V03r01	U-NII 6 GHz General Requirements
KDB 987594 D02	V03	U-NII 6 GHz EMC Measurement
ANSI C63.10-2020	-/-	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
ANSI/USEMCSC C63.10a-2024 Amendment 1	2024-08-08	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices Amendment 1
ANSI/USEMCSC C63.10a-2024 Amendment 1 Errata	2024-11-18	Errata to American National Standard for Procedures for Compliance Testing of Unlicensed Wireless Devices Amendment 1 Correction Sheet
KDB 662911 D01	v02r01	Emissions Testing of Transmitters with Multiple Outputs in the Same Band

4 Reporting statements of conformity – decision rule

Only the measured values related to their corresponding limits will be used to decide whether the equipment under test meets the requirements of the test standards listed in chapter 3.

The measurement uncertainty is mentioned in this test report, see chapter 9, but is not taken into account - neither to the limits nor to the measurement results. Measurement results with a smaller margin to the corresponding limits than the measurement uncertainty have a potential risk of more than 5% that the decision might be wrong."

measured value, measurement uncertainty, verdict



5 Test environment

Temperature	:	T_{nom} T_{max} T_{min}	+22 °C during room temperature tests No tests under extreme temperature conditions required. No tests under extreme temperature conditions required.
Relative humidity content	:		42 %
Barometric pressure	:		1018 hpa
Power supply	:	V_{nom} V_{max} V_{min}	10.8 V DC by battery pack No tests under extreme voltage conditions required. No tests under extreme voltage conditions required.

6 Test item

6.1 General description

Kind of test item	:	Video Transmitters
Model name	:	Falkon X2
HMN	:	-/-
PMN	:	Intel Wi-Fi 6E AX210
HVIN	:	AX210NGW
FVIN	:	-/-
S/N serial number	:	Rad. HAIFKX20326011790 Cond. HAIFKX20126011730
Hardware status	:	2.0.0-2
Software status	:	DRTU_08119_23.130.0
Firmware status	:	-/-
Frequency band	:	5925 to 6425 MHz, 6425 to 6525 MHz, 6525 to 6875 MHz, 6875 to 7125 MHz
Type of radio transmission	:	OFDMA
Use of frequency spectrum	:	
Type of modulation	:	BPSK, QPSK, 16 – QAM, 64 – QAM, 256 – QAM, 1024 – QAM
Antenna	:	Two integrated PCB antennas
Power supply	:	10.8 V DC by battery pack
Temperature range	:	-5°C to +45°C

6.2 Additional information

The content of the following annexes is defined in the QA. It may be that not all of the listed annexes are necessary for this report, thus some values in between may be missing.

Test setup and EUT photos are included in test report:

1-2152-25-01-01_TR1-A101-R01
1-2152-25-01-01_TR1-A102-R01
1-2152-25-01-01_TR1-A103-R01

7 Description of the test setup

Typically, the calibrations of the test apparatus are commissioned to and performed by an accredited calibration laboratory. The calibration intervals are determined in accordance with the DIN EN ISO/IEC 17025. In addition to the external calibrations, the laboratory executes comparison measurements with other calibrated test systems or effective verifications. Weekly chamber inspections and range calibrations are performed. Where possible, RF generating and signaling equipment as well as measuring receivers and analyzers are connected to an external high-precision 10 MHz reference (GPS-based or rubidium frequency standard).

In order to simplify the identification of the equipment used at some special tests, some items of test equipment and ancillaries can be provided with an identifier or number in the equipment list below (Lab/Item).

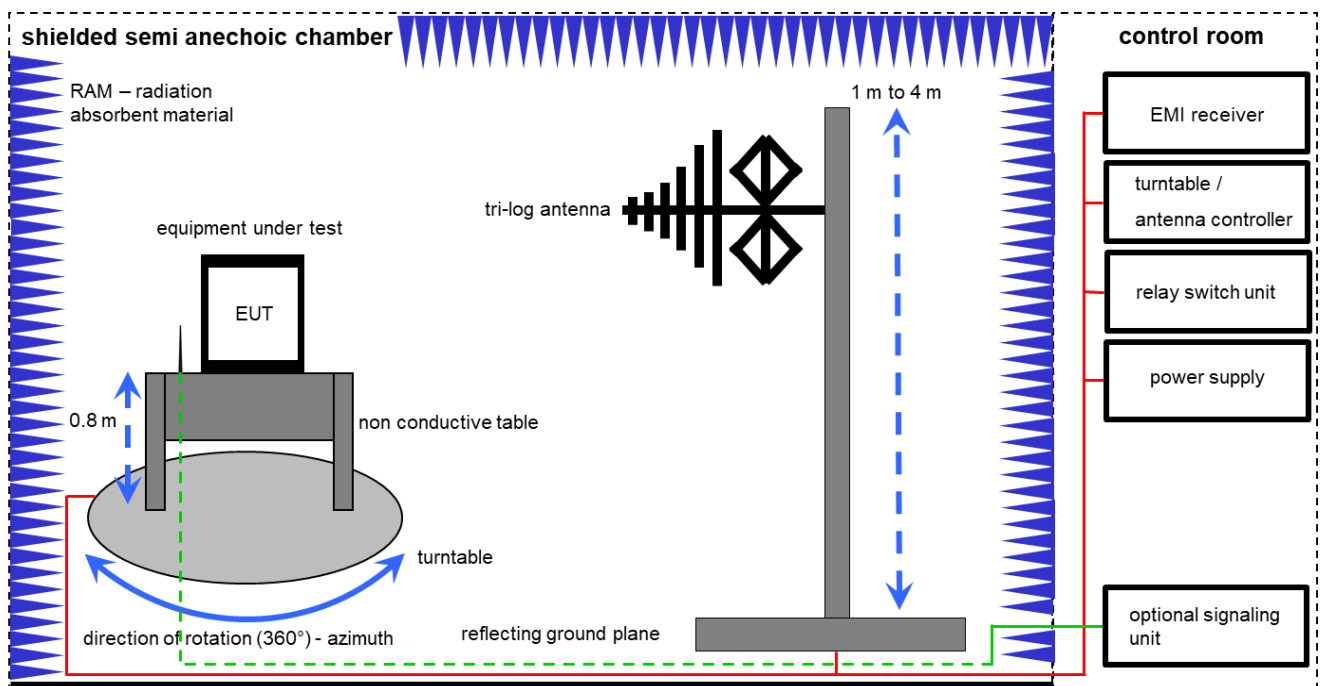
Each block diagram listed can contain several test setup configurations. All devices belonging to a test setup are identified with the same letter syntax. For example: Column Setup and all devices with an A.

Agenda: Kind of Calibration

k/cal	calibration / calibrated	EK	limited calibration
Ne/cnn	not required (k, ev, izw, zw not required)	zw	cyclical maintenance (external cyclical maintenance)
Ev/chk	periodic self verification	izw	internal cyclical maintenance
Ve	long-term stability recognized	g	blocked for accredited testing
vlkl!	Attention: extended calibration interval	*)	next calibration ordered / currently in progress
NK!	Attention: not calibrated		
cpu	check prior usage		

7.1 Shielded semi anechoic chamber

The radiated measurements are performed in vertical and horizontal plane in the frequency range from 30 MHz to 1 GHz in semi-anechoic chambers. The EUT is positioned on a non-conductive support with a height of 0.80 m above a conductive ground plane that covers the whole chamber. The receiving antennas are conform to specifications ANSI C63. These antennas can be moved over the height range between 1.0 m and 4.0 m in order to search for maximum field strength emitted from EUT. The measurement distances between EUT and receiving antennas are indicated in the test setups for the various frequency ranges. For each measurement, the EUT is rotated in all three axes until the maximum field strength is received. The wanted and unwanted emissions are received by spectrum analyzers where the detector modes and resolution bandwidths over various frequency ranges are set according to requirement ANSI C63.



Measurement distance: tri-log antenna 10 meter; EMC32 software version: 10.59.00

$$FS = UR + CL + AF$$

(FS-field strength; UR-voltage at the receiver; CL-loss of the cable; AF-antenna factor)

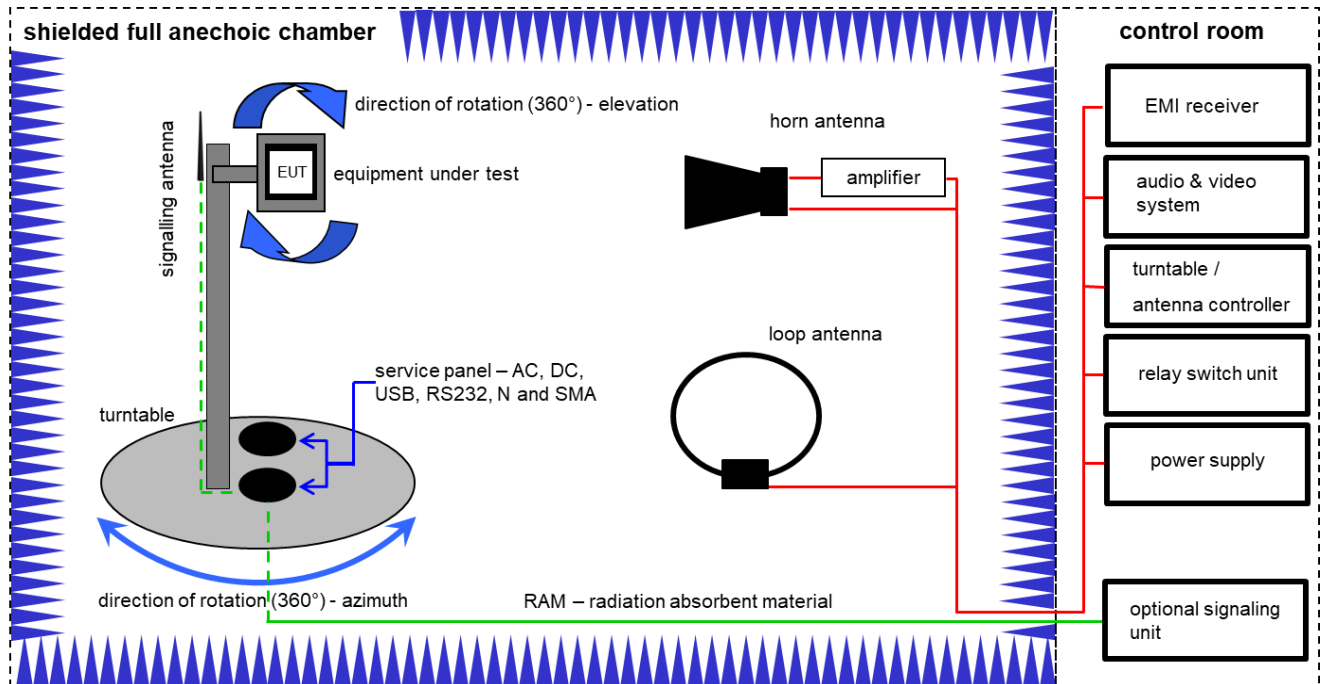
Example calculation:

$$FS [dB\mu V/m] = 12.35 [dB\mu V] + 1.90 [dB] + 16.80 [dB/m] = 31.05 [dB\mu V/m] \quad (35.69 \mu V/m) @ \text{distance}$$

Equipment table:

No.	Setup	Equipment	Type	Manufacturer	Serial No.	INV. No.	Kind of Calibration	Last Calibration	Next Calibration
1	A	Switch-Unit	Switch-Unit 3488A	Hewlett Packard	2719A14505	50160	cpu	-/-	-/-
2	A	Antenna Tower	Antenna Tower 2175	ETS-Lindgren GmbH Taufkirchen	64762	50279	cnn	-/-	-/-
3	A	Positioning Controller	Positioning Controller 2090	ETS-Lindgren GmbH Taufkirchen	64672	50280	cnn	-/-	-/-
4	A	TRILOG Broadband Antenna	TRILOG Broadband Antenna VULB9163	Schwarzbeck Mess-Elektronik OHG Schönaun	1029	50403	cal	07.11.2025	30.11.2027
5	A	EMI Test Receiver	EMI Test Receiver ESR3 9kHz-3.6GHz	Rohde & Schwarz Messgerätebau GmbH Memmingen	102587	50417	cal	08.12.2025	31.12.2026

7.2 Shielded fully anechoic chamber



Measurement distance: horn antenna 3 meter; loop antenna 3 meter

FS = UR + CA + AF

(FS-field strength; UR-voltage at the receiver; CA-loss of the signal path; AF-antenna factor)

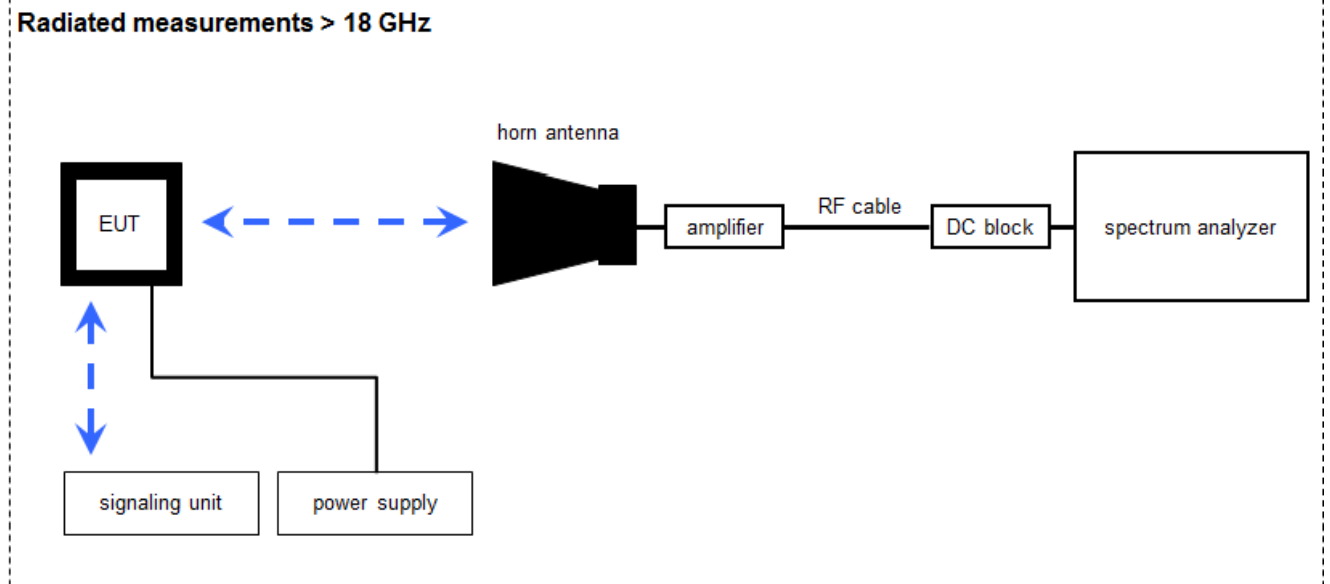
Example calculation:

FS [dB μ V/m] = 40.0 [dB μ V] + (-35.8) [dB] + 32.9 [dB/m] = 37.1 [dB μ V/m] (71.61 μ V/m) @ distance

Equipment table:

No.	Setup	Equipment	Type	Manufacturer	Serial No.	INV. No.	Kind of Calibration	Last Calibration	Next Calibration
1	A, B, C	Double-Ridged Waveguide Horn Antenna	Double-Ridged Waveguide Horn Antenna 3115	EMCO Elektronik GmbH Gilching	8812-3089	40344	cal	09.07.2024	31.07.2026
2	A, B	Highpass Filter	Highpass Filter WHK1.1/15G-10SS	Wainwright Instruments GmbH Andechs	37	40362	cnn	-/-	-/-
3	A, B	Highpass Filter	Highpass Filter WHKX7.0/18G-8SS	Wainwright Instruments GmbH Andechs	18	40364	cpu	-/-	-/-
4	A, B	Broadband Amplifier 0.5-18 GHz	Broadband Amplifier 0.5-18 GHz CBLU5184540	MEC Import: CERNEX	22050	40374	cpu	-/-	-/-
5	A, B, C	4U RF Switch Platform	4U RF Switch Platform L4491A	Agilent Technologies Deutschland GmbH Böblingen	MY50000032	40376	cnn	-/-	-/-
6	A, B, C	NEXIO EMV-Software	NEXIO EMV-Software BAT EMC V2022.0.32.0	MEC Import: Nexio	-/-	40383	cnn	-/-	-/-
7	A, B, C	Anechoic chamber	Anechoic chamber	MEC Import: TDK	-/-	40385	cnn	-/-	-/-
8	A, B, C	Signal- and Spectrum Analyzer	Signal- and Spectrum Analyzer FSW26	Rohde & Schwarz Messgerätebau GmbH Memmingen	104533	41044	cal	30.12.2025	30.12.2026
9	C	Active Loop Antenna	Active Loop Antenna 6502	EMCO Elektronik GmbH Gilching	2210	50044	cal	07.07.2025	31.07.2027

7.3 Radiated measurements > 18 GHz



Measurement distance: horn antenna 50 cm

FS = UR + CA + AF

(FS-field strength; UR-voltage at the receiver; CA-loss signal path & distance correction; AF-antenna factor)

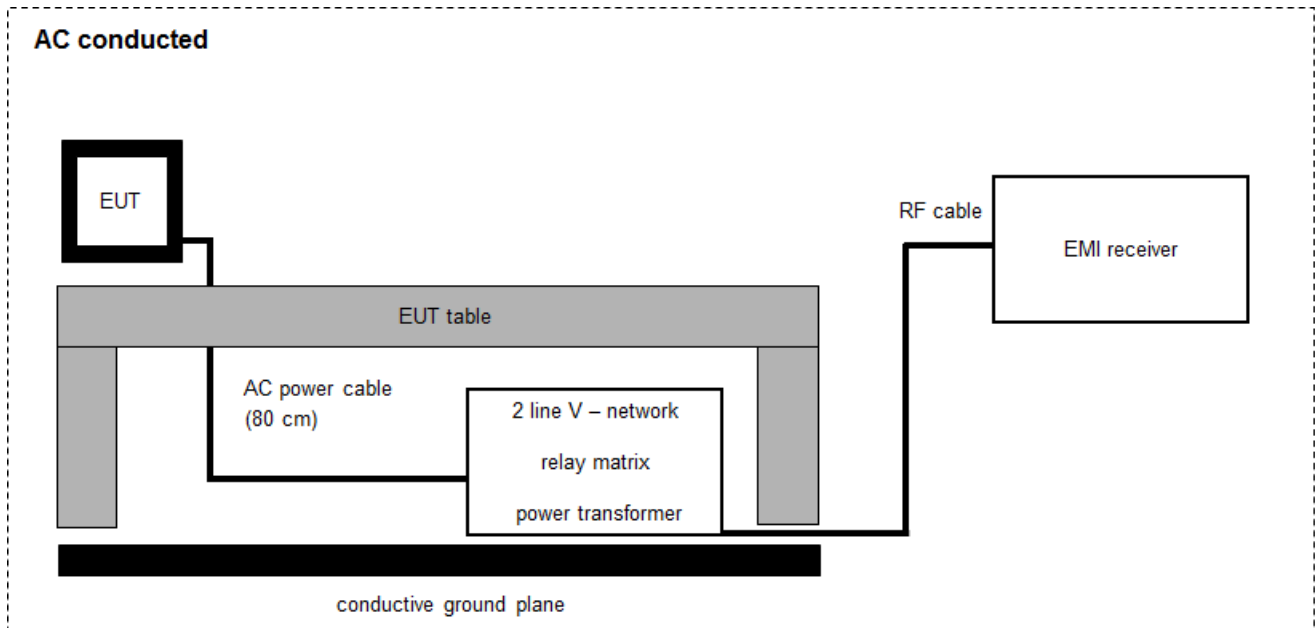
Example calculation:

FS [dBμV/m] = 40.0 [dBμV] + (-60.1) [dB] + 36.74 [dB/m] = 16.64 [dBμV/m] (6.79 μV/m) @ distance

Equipment table:

No.	Setup	Equipment	Type	Manufacturer	Serial No.	INV. No.	Kind of Calibration	Last Calibration	Next Calibration
1	A	Horn Antenna 18,0-40,0 GHz	Horn Antenna 18,0-40,0 GHz LHAF180	MEC Import: Microw.Devel	39180-103-021	40170	cal	16.01.2026	31.01.2028
2	A	Low Noise Amplifier, Broadband 18-50 GHz	Low Noise Amplifier, Broadband 18-50 GHz BZT-18005000-550835-SL2525-SL	MEC Import: B&Z Technologies	27887-27889	40789	cpu	-/-	-/-
3	A	Signal- and Spectrum Analyzer	Signal- and Spectrum Analyzer FSW50	Rohde & Schwarz Messgerätebau GmbH Memmingen	101332	40010	cal	28.01.2026	31.01.2027

7.4 AC conducted



Result = UR + CF + VC

(UR-voltage at the receiver; CR-loss of the cable and filter; VC-correction factor of the ISN)

Example calculation:

Result [dBμV] = 37.62 [dBμV] + 9.90 [dB] + 0.23 [dB] = 47.75 [dBμV] (244.06 μV)

Equipment table:

No.	Setup	Equipment	Type	Manufacturer	Serial No.	INV. No.	Kind of Calibration	Last Calibration	Next Calibration
1	A	EMI Test Receiver	EMI Test Receiver ESR3 9kHz-3.6GHz	Rohde & Schwarz Messgerätebau GmbH Memmingen	102981	40332	cal	05.12.2025	31.12.2026
2	A	Two-Line V-Network (LISN)	Two-Line V-Network (LISN) ESH3-Z5	Rohde & Schwarz Messgerätebau GmbH Memmingen	892475/017	50005	cal	09.12.2025	31.12.2027
3	A	Artificial Mains Network	Artificial Mains Network ESH2-Z5	Rohde & Schwarz Messgerätebau GmbH Memmingen	892602/0024	50147	cal	11.12.2024	31.12.2026
4	A	Impedance Stabilization Network	Impedance Stabilization Network ISN ST08C	Schaffner Deutschland GmbH Karlsruhe	22583	50239	cal	20.09.2024	30.09.2026

8 Sequence of testing

8.1 Sequence of testing radiated spurious 9 kHz to 30 MHz

Setup

- The equipment is set up to simulate normal operation mode as described in the user manual or defined by the manufacturer.
- If the EUT is a tabletop system, it is placed on a table with 0.8 m height.
- If the EUT is a floor standing device, it is placed directly on the turn table.
- Auxiliary equipment and cables are positioned to simulate normal operation conditions as described in ANSI C 63.10.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- Measurement distance is 3 m (see ANSI C 63.10) – see test details.
- EUT is set into operation.

Premeasurement*

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna height is 1 m.
- At each turntable position the analyzer sweeps with positive-peak detector to find the maximum of all emissions.

Final measurement

- Identified emissions during the pre-measurement are maximized by the software by rotating the turntable from 0° to 360°.
- Loop antenna is rotated about its vertical axis for maximum response at each azimuth about the EUT. (For certain applications, the loop antenna plane may also need to be positioned horizontally at the specified distance from the EUT)
- The final measurement is done in the position (turntable and elevation) causing the highest emissions with quasi-peak (as described in ANSI C 63.10).
- Final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. A plot with the graph of the premeasurement and the limit is stored.

*)Note: The sequence will be repeated three times with different EUT orientations.

8.2 Sequence of testing radiated spurious 30 MHz to 1 GHz

Setup

- The equipment is set up to simulate normal operation mode as described in the user manual or defined by the manufacturer.
- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables are positioned to simulate normal operation conditions as described in ANSI C 63.10.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- Measurement distance is 10 m or 3 m (see ANSI C 63.10) – see test details.
- EUT is set into operation.

Premeasurement

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna is polarized vertical and horizontal.
- The antenna height changes from 1 m to 3 m.
- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

Final measurement

- The final measurement is performed for at least six highest peaks according to the requirements of the ANSI C63.4.
- Based on antenna and turntable positions at which the peak values are measured the software maximize the peaks by changing turntable position $\pm 45^\circ$ and antenna height between 1 and 4 m.
- The final measurement is done with quasi-peak detector (as described in ANSI C 63.10).
- Final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit are recorded. A plot with the graph of the premeasurement with marked maximum final results and the limit is stored.

8.3 Sequence of testing radiated spurious 1 GHz to 18 GHz

Setup

- The equipment is set up to simulate normal operation mode as described in the user manual or defined by the manufacturer.
- If the EUT is a tabletop system, a 2-axis positioner with 1.5 m height is used.
- If the EUT is a floor standing device, it is placed directly on the turn table.
- Auxiliary equipment and cables are positioned to simulate normal operation conditions as described in ANSI C 63.10.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- Measurement distance is 3 m (see ANSI C 63.10) – see test details.
- EUT is set into operation.

Premeasurement

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna is polarized vertical and horizontal.
- The antenna height is 1.5 m.
- At each turntable position and antenna polarization the analyzer sweeps with positive peak detector to find the maximum of all emissions.

Final measurement

- The final measurement is performed for at least six highest peaks according to the requirements of the ANSI C63.4.
- Based on antenna and turntable positions at which the peak values are measured the software maximizes the peaks by rotating the turntable from 0° to 360°. This measurement is repeated for different EUT-table positions (0° to 150° in 30°-steps) and for both antenna polarizations.
- The final measurement is done in the position (turntable, EUT-table and antenna polarization) causing the highest emissions with Peak and RMS detector (as described in ANSI C 63.10).
- Final levels, frequency, measuring time, bandwidth, turntable position, EUT-table position, antenna polarization, correction factor, margin to the limit and limit are recorded. A plot with the graph of the premeasurement with marked maximum final results and the limit is stored.

8.4 Sequence of testing radiated spurious above 18 GHz

Setup

- The equipment is set up to simulate normal operation mode as described in the user manual or defined by the manufacturer.
- Auxiliary equipment and cables are positioned to simulate normal operation conditions as described in ANSI C 63.10.
- The AC power port of the EUT (if available) is connected to a power outlet.
- The measurement distance is as appropriate (e.g. 0.5 m).
- The EUT is set into operation.

Premeasurement

- The test antenna is handheld and moved carefully over the EUT to cover the EUT's whole sphere and different polarizations of the antenna.

Final measurement

- The final measurement is performed at the position and antenna orientation causing the highest emissions with Peak and RMS detector (as described in ANSI C 63.10).
- Final levels, frequency, measuring time, bandwidth, correction factor, margin to the limit and limit are recorded. A plot with the graph of the premeasurement and the limit is stored.

9 Measurement uncertainty

Measurement uncertainty		
Test case	Uncertainty	
Antenna gain	± 3 dB	
Power spectral density	± 1.56 dB	
DTS bandwidth	± 100 kHz (depends on the used RBW)	
Occupied bandwidth	± 100 kHz (depends on the used RBW)	
Maximum output power conducted	± 1.56 dB	
Detailed spurious emissions @ the band edge - conducted	± 1.56 dB	
Band edge compliance radiated	± 3 dB	
Spurious emissions conducted	> 3.6 GHz	± 1.56 dB
	> 7 GHz	± 1.56 dB
	> 18 GHz	± 2.31 dB
	≥ 40 GHz	± 2.97 dB
Spurious emissions radiated below 30 MHz	± 3 dB	
Spurious emissions radiated 30 MHz to 1 GHz	± 3 dB	
Spurious emissions radiated 1 GHz to 12.75 GHz	± 3.7 dB	
Spurious emissions radiated above 12.75 GHz	± 4.5 dB	
Spurious emissions conducted below 30 MHz (AC conducted)	± 2.6 dB	

10 Summary of measurement results

☐	No deviations from the technical specifications were ascertained
☐	There were deviations from the technical specifications ascertained
☒	This test report is only a partial test report. The content and verdict of the performed test cases are listed below.

TC Identifier	Description	Verdict	Date	Remark
RF-Testing	CFR Title 47 Part 15 RSS 248, Issue 3	See table	2026-07-30	Reduced tests due to pre- certified module

Test specification clause	Test case	C	NC	NA	NP	Remark
-/-	Output power verification (cond.)	-/-				Declared
-/-	Antenna gain	-/-				Declared
Part 15	Duty cycle	-/-				-/-
§15.407 RSS - 248	Maximum output power (conducted & radiated)	☐	☐	☐	☒	-/-
§15.407 RSS - 248	Power spectral density	☐	☐	☐	☒	-/-
§15.407 RSS - 248	Spectrum bandwidth 26dB bandwidth	☐	☐	☐	☒	-/-
§15.407 RSS - 248	Spectrum bandwidth 99% bandwidth	-/-				-/-
§15.407 RSS - 248	Band edge compliance radiated	☒	☐	☐	☐	-/-
§15.407 RSS - 248	TX spurious emissions radiated	☒	☐	☐	☐	-/-
§15.407 RSS - 248	Spurious emissions conducted emissions< 30 MHz	☐	☐	☐	☒	-/-
§15.407 RSS - 248	Contention-based protocol	☐	☐	☐	☒	-/-
§15.407 RSS - 248	Geolocation requirements	☐	☐	☒	☐	-/-
§15.407 RSS - 248	Automated frequency coordination system access	☐	☐	☒	☐	-/-

Notes:

C:	Compliant	NC:	Not compliant	NA:	Not applicable	NP:	Not performed
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11 Additional comments

Reference documents: Gain antennen WiFi Falkon X2.xlsx

EUT selection:

- ☐ Only one device available
- ☐ Devices selected by the customer
- ☒ Devices selected by the laboratory (Randomly)

Equipment class:

- ☐ low-power client devices
- ☐ low-power indoor access points
- ☐ standard client devices
- ☐ indoor subordinate devices
- ☒ Low power dual client
- ☐ very low-power devices
- ☐ fixed client devices
- ☐ standard-power access points

Test mode:

- ☐ No test mode available.
Iperf is used to transmit data to a companion device
- ☒ Special software is used.
EUT is transmitting pseudo random data by itself

Antennas and transmit operating modes:

- ☐ Operating mode 1 (single antenna)
 - Equipment with 1 antenna,
 - Equipment with 2 diversity antennas operating in switched diversity mode by which at any moment in time only 1 antenna is used,
 - Smart antenna system with 2 or more transmit/receive chains, but operating in a mode where only 1 transmit/receive chain is used)
- ☒ Operating mode 2 (multiple antennas, no beamforming)
 - Equipment operating in this mode contains a smart antenna system using two or more transmit/receive chains simultaneously but without beamforming.
- ☐ Operating mode 3 (multiple antennas, with beamforming)
 - Equipment operating in this mode contains a smart antenna system using two or more transmit/receive chains simultaneously with beamforming.
In addition to the antenna assembly gain (G), the beamforming gain (Y) may have to be taken into account when performing the measurements.

Special test descriptions: None

Configuration descriptions: The device has two Chains A and B and supports SISO and MIMO for all modes. Based on the module reports and the power settings from the module reports, testing was done in worst case modes, where the modes are spectrally identical and the power settings are the same.

Power vs. Modulation vs. Band				
Band	U-NII-5	U-NII-6	U-NII-7	U-NII-8
Channels	low /mid / high	low /mid / high	low /mid / high	low /mid / high
All modes	Default (Set by Intel module test GUI)	Default (Set by Intel module test GUI)	Default (Set by Intel module test GUI)	Default (Set by Intel module test GUI)

Provided channels:

Channels with 20 MHz channel bandwidth:

U-NII-5 (5925 MHz to 6425 MHz) channel number & center frequency								
channel	1	5	9	13	17	21	25	29
f _c / MHz	5955	5975	5995	6015	6035	6055	6075	6095
channel	33	37	41	45	49	53	57	61
f _c / MHz	6115	6135	6155	6175	6195	6215	6235	6255
channel	65	69	73	77	81	85	89	93
f _c / MHz	6275	6295	6315	6335	6355	6375	6395	6415

U-NII-6 (6425 MHz to 6525 MHz) channel number & center frequency					
channel	97	101	105	109	113
f _c / MHz	6435	6455	6475	6495	6515

U-NII-7 (6525 MHz to 6875 MHz) channel number & center frequency								
channel	117	121	125	129	133	137	141	145
f _c / MHz	6535	6555	6575	6595	6615	6635	6655	6675
channel	149	153	157	161	165	169	173	177
f _c / MHz	6695	6715	6735	6755	6775	6795	6815	6835
channel	181	185						
f _c / MHz	6855	6875 (Straddle)						

U-NII-8 (6875 MHz to 7125 MHz) channel number & center frequency						
channel	189	193	197	201	205	209
f _c / MHz	6895	6915	6935	6955	6975	6995
channel	213	217	221	225	229	233
f _c / MHz	7015	7035	7055	7075	7095	7115

Channels with 40 MHz channel bandwidth:

U-NII-5 (5925 MHz to 6425 MHz) channel number & center frequency						
channel	3	11	19	27	35	43
f _c / MHz	5965					
channel	51	59	67	75	83	91
f _c / MHz	6205					6405

U-NII-6 (6425 MHz to 6525 MHz) channel number & center frequency			
channel	99	107	115
f _c / MHz	6445	6485	6525*

U-NII-7 (6525 MHz to 6875 MHz) channel number & center frequency								
channel	123	131	139	147	155	163	171	179
f _c / MHz	6565			6685				6845

U-NII-8 (6875 MHz to 7125 MHz) channel number & center frequency						
channel	187	195	203	211	219	227
f _c / MHz		6925		7005		7085

* overlapping channel

Channels with 80 MHz channel bandwidth:

U-NII-5 (5925 MHz to 6425 MHz) channel number & center frequency						
channel	7	23	39	55	71	87
f _c / MHz	5985			6225		6385

U-NII-6 (6425 MHz to 6525 MHz) channel number & center frequency		
channel	103	119
f _c / MHz	6465	6545

U-NII-7 (6525 MHz to 6875 MHz) channel number & center frequency				
channel	135	151	167	183
f _c / MHz	6625	6705	6785	

U-NII-8 (6875 MHz to 7125 MHz) channel number & center frequency		
channel	199	215
f _c / MHz	6945	7025

Channels with 160 MHz channel bandwidth:

U-NII-5 (5925 MHz to 6425 MHz) channel number & center frequency			
channel	15	47	79
f _c / MHz	6025	6185	6345

U-NII-6 (6425 MHz to 6525 MHz) channel number & center frequency	
channel	111
f _c / MHz	6505

U-NII-7 (6525 MHz to 6875 MHz) channel number & center frequency		
channel	143	175
f _c / MHz	6665	6825*

U-NII-8 (6875 MHz to 7125 MHz) channel number & center frequency	
channel	207
f _c / MHz	6985

Note: The channels used for the tests were marked in bold in the list.

12 Measurement results

12.1 Identify worst case data rate

Measurement:

All modes of the module will be measured with an average power meter to identify the maximum transmission power on mid channel. In the case that only one or two channels are available, only these will be measured.

In further tests only the identified worst case modulation scheme or bandwidth will be measured.

Measurement parameters:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	3 MHz
Video bandwidth:	3 MHz
Trace mode:	Max hold
Used test setup:	See chapter 6.4 – A
Measurement uncertainty:	See chapter 9

Results:

OFDM – mode	Modulation scheme / bandwidth							
	U-NII-5		U-NII-6		U-NII-7		U-NII-8	
	lowest channel	highest channel	lowest channel	highest channel	lowest channel	highest channel	lowest channel	highest channel
a – mode	6Mbit/s	6Mbit/s	6Mbit/s	6Mbit/s	6Mbit/s	6Mbit/s	6Mbit/s	6Mbit/s
n HT20 – mode	MCS	MCS	MCS	MCS	MCS	MCS	MCS	MCS
ac VHT20 – mode	MNSS0	MNSS0	MNSS0	MNSS0	MNSS0	MNSS0	MNSS0	MNSS0
ax HE20 – mode	HE0	HE0	HE0	HE0	HE0	HE0	HE0	HE0
n HT40 – mode	MCS	MCS	MCS	MCS	MCS	MCS	MCS	MCS
ac VHT40 – mode	MNSS0	MNSS0	MNSS0	MNSS0	MNSS0	MNSS0	MNSS0	MNSS0
ax HE40 – mode	HE0	HE0	HE0	HE0	HE0	HE0	HE0	HE0
ac VHT80 – mode	MCS	MCS	MCS	MCS	MCS	MCS	MCS	MCS
ax HE80 – mode	MCS	MCS	MCS	MCS	MCS	MCS	MCS	MCS
ac VHT160 – mode	MCS		MCS					
ax HE160 – mode	MCS		MCS					

12.2 Antenna gain

Limits:

Antenna Gain
6 dBi / > 6 dBi output power and power density reduction required

Results:

U-NII-5/6/7/8	Antenna gain
Gain / dBi (declared), Chain A	4.0
Gain / dBi (declared), Chain B	4.6

12.3 Duty cycle

Set automatically to > 98% by the Intel module test GUI software.

12.4 Band edge compliance radiated

Description:

Measurement of the radiated band edge compliance. The EUT is turned in the position that results in the maximum level at the band edge. Then a sweep over the corresponding restricted band is performed. The EUT is set to the lowest channel for the lower restricted band and to the highest channel for the upper restricted band. Measurement distance is 3m.

Measurement:

Measurement parameter	
Detector:	Peak / RMS
Sweep time:	Auto
Resolution bandwidth:	1 MHz
Video bandwidth:	$\geq 3 \times \text{RBW}$
Span:	See plots!
Trace mode:	Max Hold
Test setup:	See sub clause 7.2 – A
Measurement uncertainty:	See chapter 9

Limits:

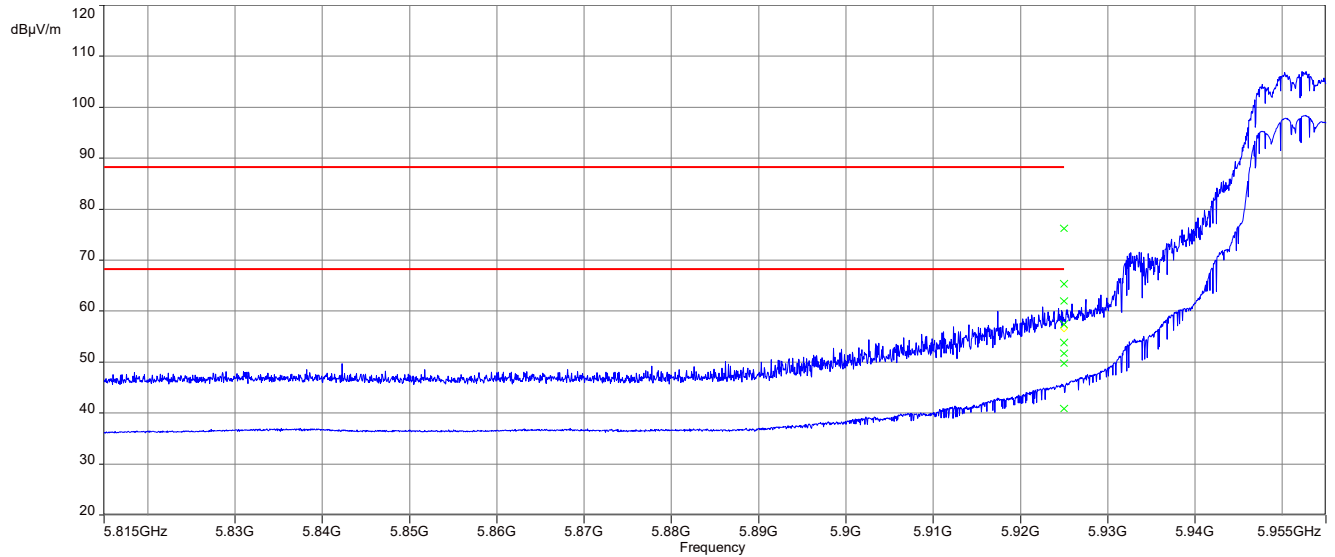
Band Edge Compliance Radiated	
FCC	ISED
For transmitters operating within the 5.925-7.125 GHz band: Any emissions outside of the 5.925-7.125 GHz band must not exceed an e.i.r.p. of -27 dBm/MHz.	Any emissions outside of the 5925-7125 MHz frequency band shall not exceed -27 dBm/MHz e.i.r.p. spectral density
88.2 dBµV/m@3m (peak) 68.2 dBµV/m@3m (average) (-27 dBm/MHz)	

Results:

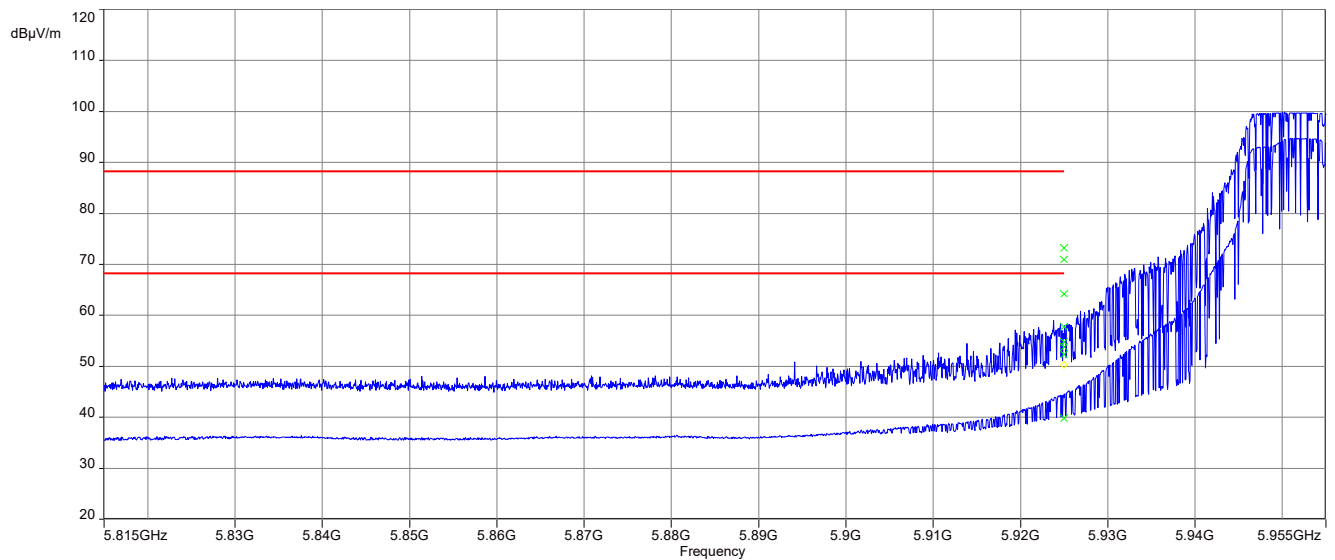
Scenario	Band Edge Compliance Radiated [dBµV/m]
Band edge / a-mode / Chain A+B / Channel 1	76.2 dBµV/m (peak) 57.4 dBµV/m (average)
Band edge / nHT20-mode / Chain A+B / Channel 1	73.3 dBµV/m (peak) 57.8 dBµV/m (average)
Band edge / nHT40-mode / Chain A+B / Channel 3	84.1 dBµV/m (peak) 65.6 dBµV/m (average)
Band edge / axHE20-mode / Chain A+B / Channel 1	76.8 dBµV/m (peak) 60.4 dBµV/m (average)
Band edge / axHE40-mode / Chain A+B / Channel 3	83.2 dBµV/m (peak) 65.2 dBµV/m (average)
Band edge / axHE80-mode / Chain A+B / Channel 7	85.7 dBµV/m (peak) 65.5 dBµV/m (average)
Band edge / axHE160-mode / Chain A+B / Channel 15	79.6 dBµV/m (peak) 63.0 dBµV/m (average)
Band edge / a-mode / Chain A+B / Channel 229	47.2 dBµV/m (peak) 35.7 dBµV/m (average)
Band edge / nHT20-mode / Chain A+B / Channel 229	49.8 dBµV/m (peak) 38.4 dBµV/m (average)
Band edge / nHT40-mode / Chain A+B / Channel 227	66.6 dBµV/m (peak) 53.0 dBµV/m (average)
Band edge / axHE20-mode / Chain A+B / Channel 229	50.0 dBµV/m (peak) 38.1 dBµV/m (average)
Band edge / axHE40-mode / Chain A+B / Channel 227	59.0 dBµV/m (peak) 45.0 dBµV/m (average)
Band edge / axHE80-mode / Chain A+B / Channel 215	55.4 dBµV/m (peak) 40.9 dBµV/m (average)
Band edge / axHE160-mode / Chain A+B / Channel 207	66.0 dBµV/m (peak) 52.9 dBµV/m (average)

Plots:

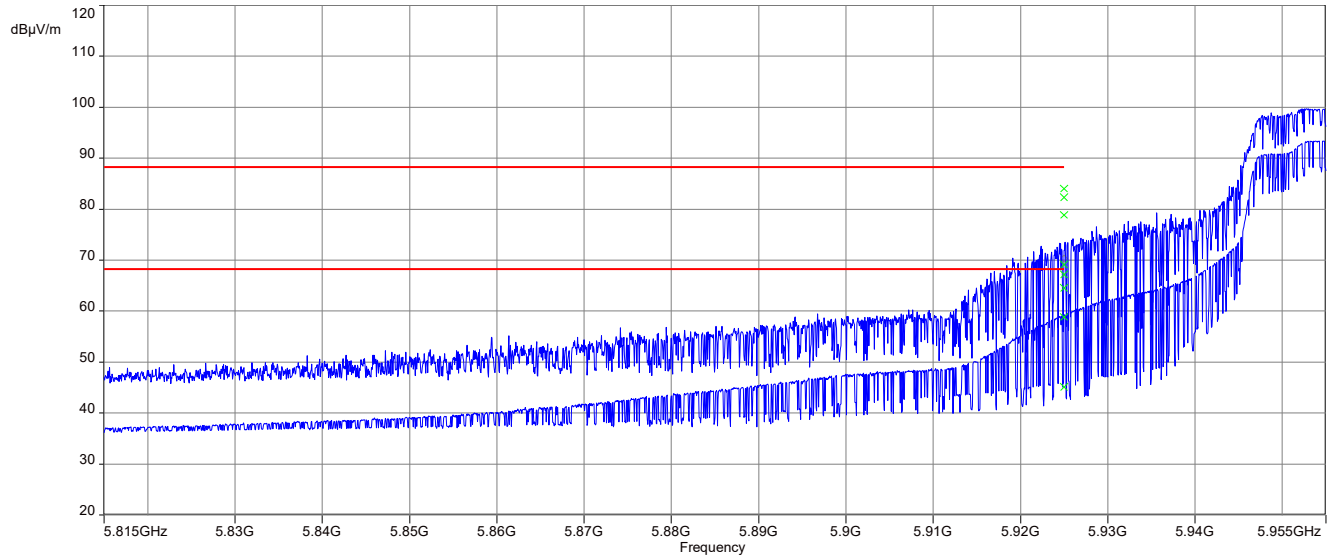
Plot 1: Band edge / a-mode / Chain A+B / Channel 1



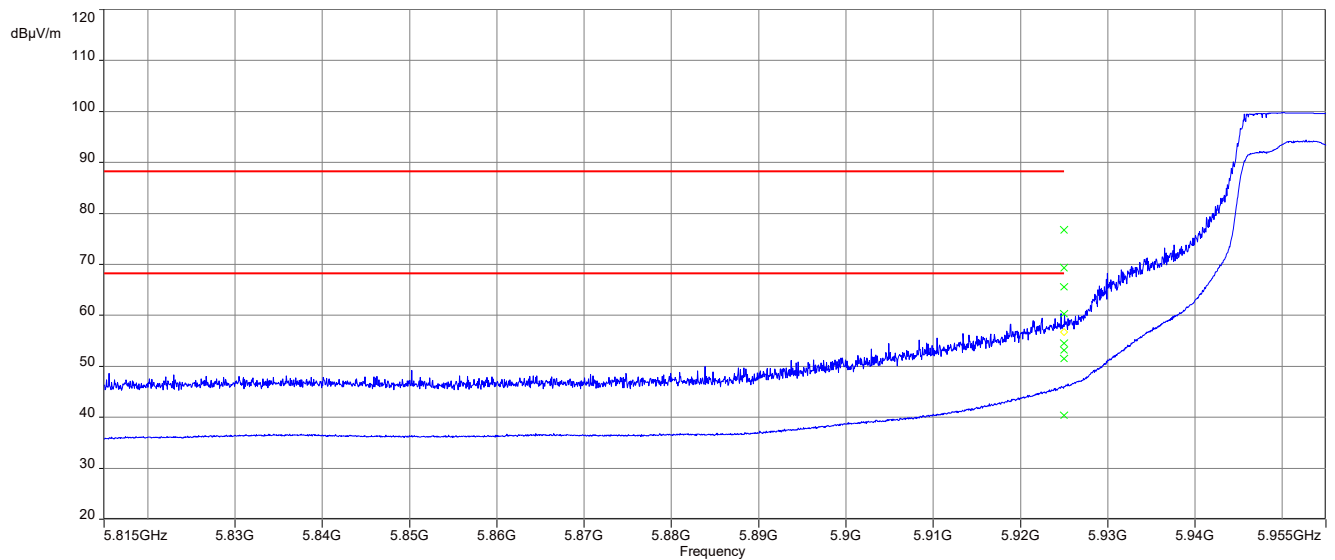
Plot 2: Band edge / nHT20-mode / Chain A+B / Channel 1



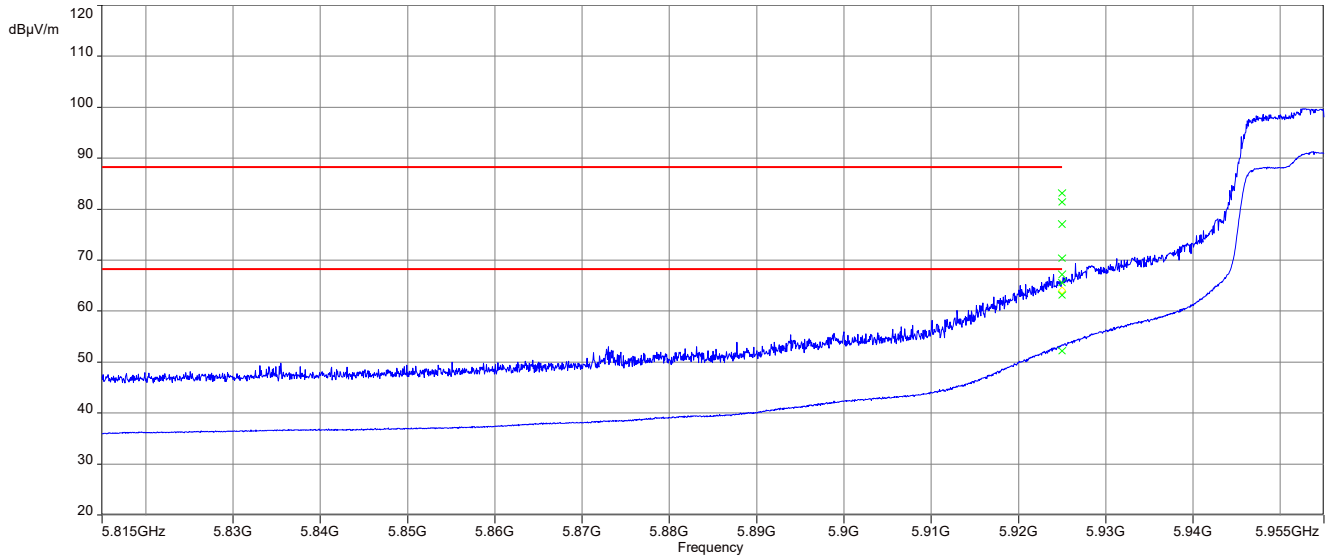
Plot 3: Band edge / nHT40-mode / Chain A+B / Channel 3



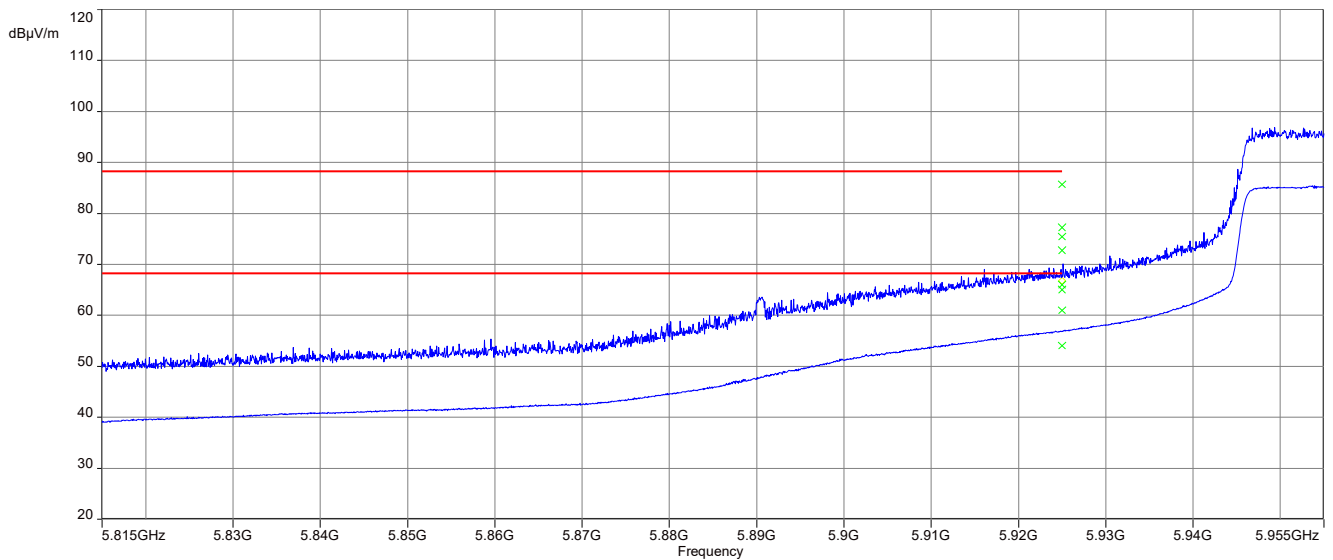
Plot 4: Band edge / axHE20-mode / Chain A+B / Channel 1



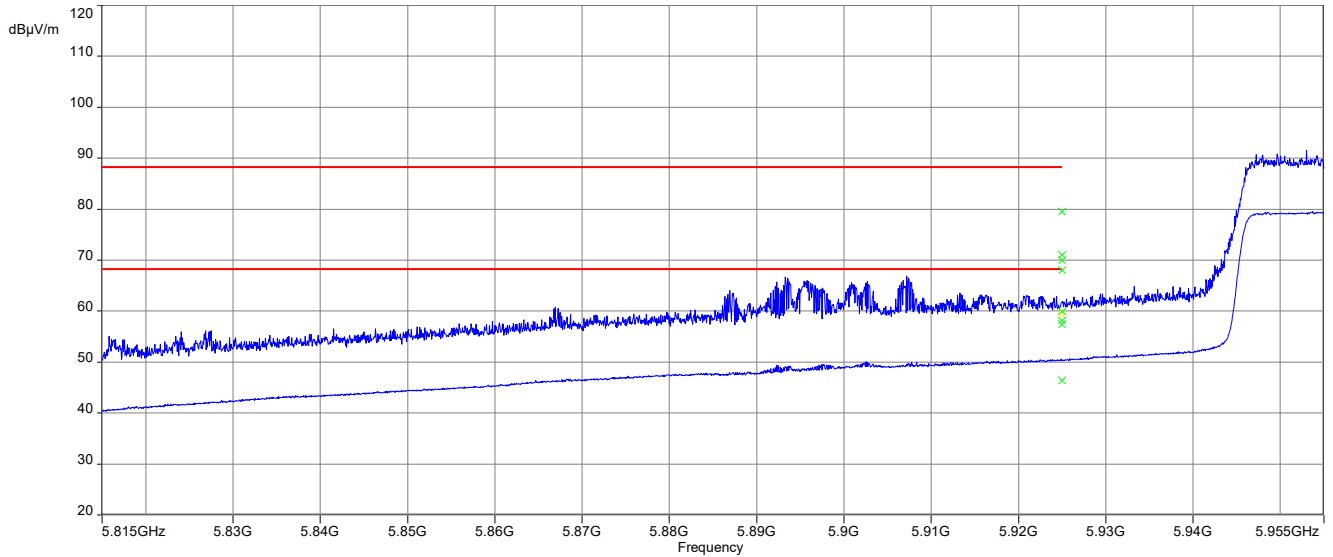
Plot 5: Band edge / axHE40-mode / Chain A+B / Channel 3



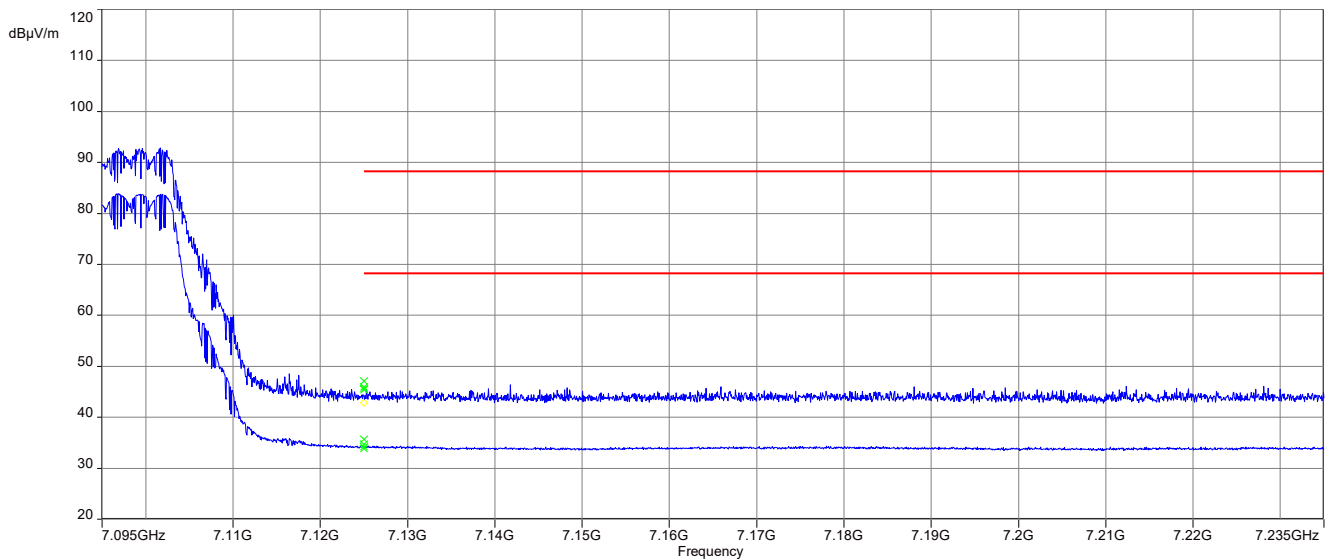
Plot 6: Band edge / axHE80-mode / Chain A+B / Channel 7



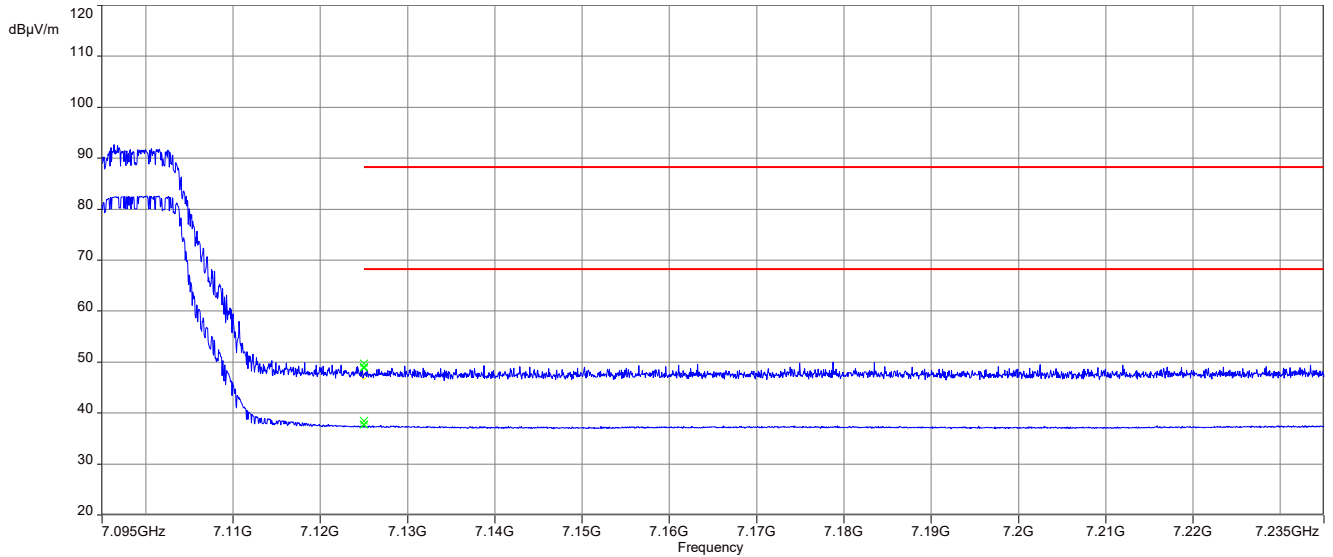
Plot 7: Band edge / axHE160-mode / Chain A+B / Channel 15



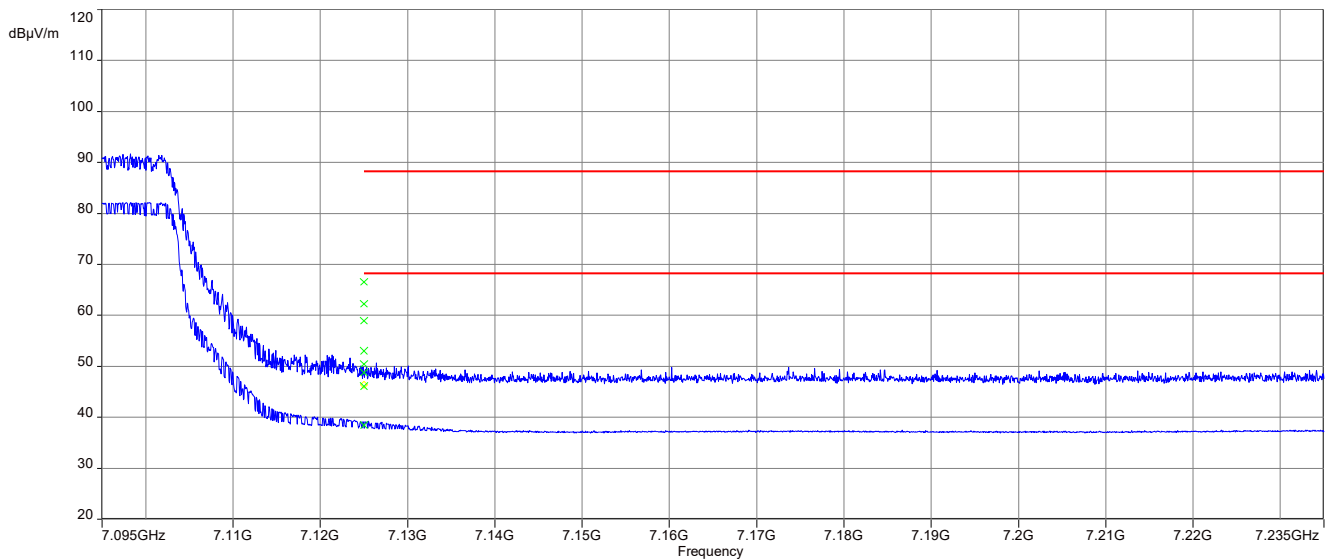
Plot 8: Band edge / a-mode / Chain A+B / Channel 229



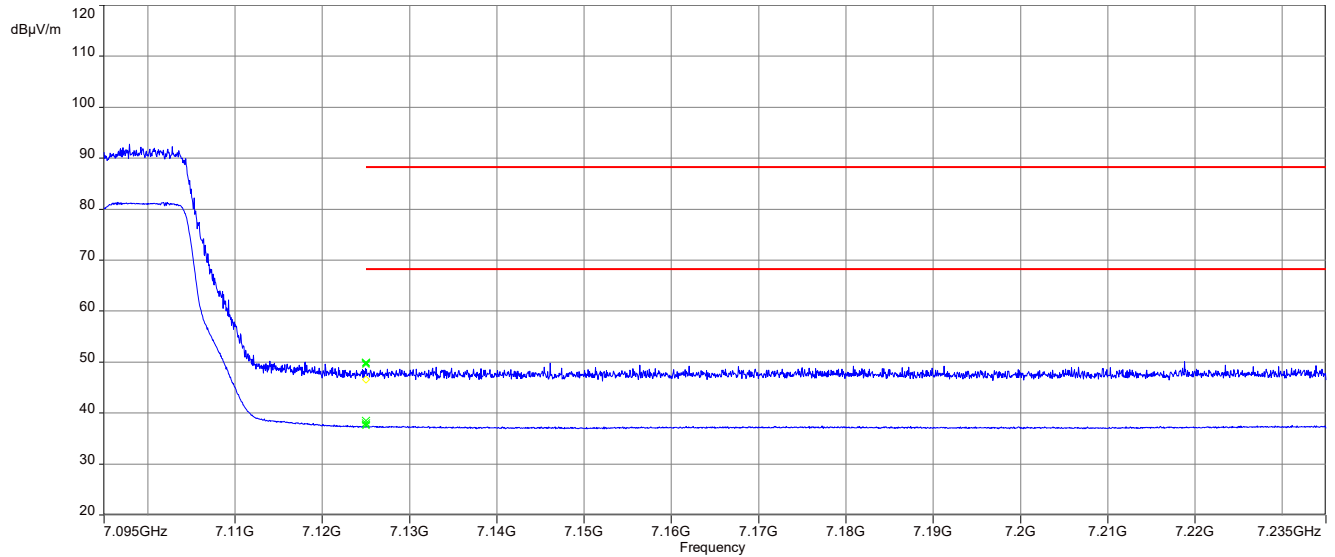
Plot 9: Band edge / nHT20-mode / Chain A+B / Channel 229



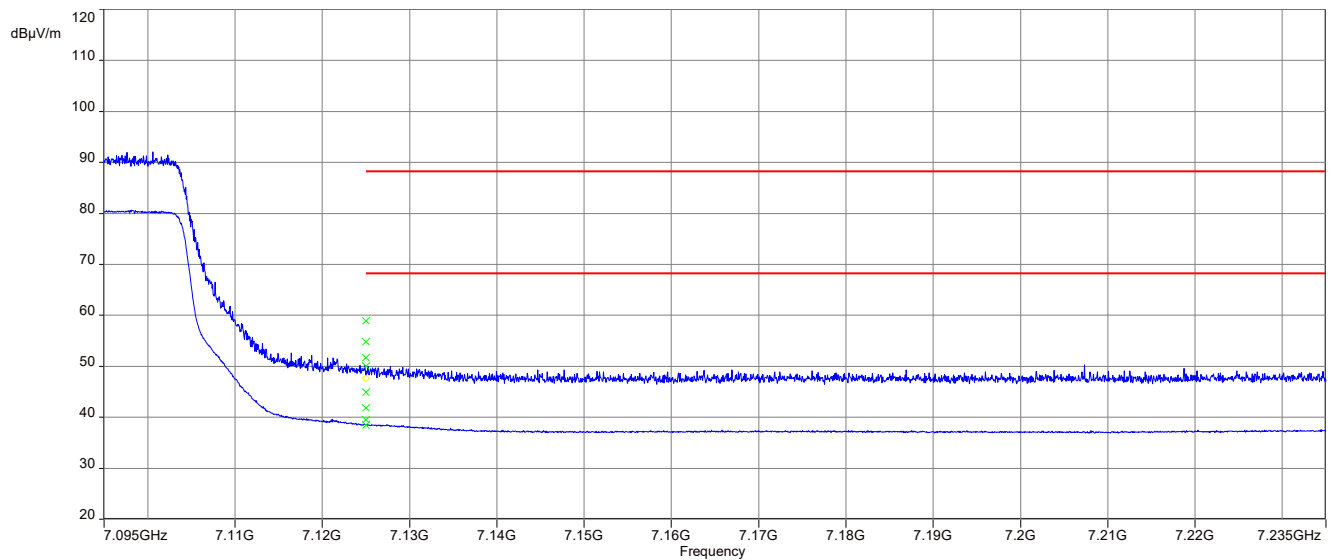
Plot 10: Band edge / nHT40-mode / Chain A+B / Channel 227



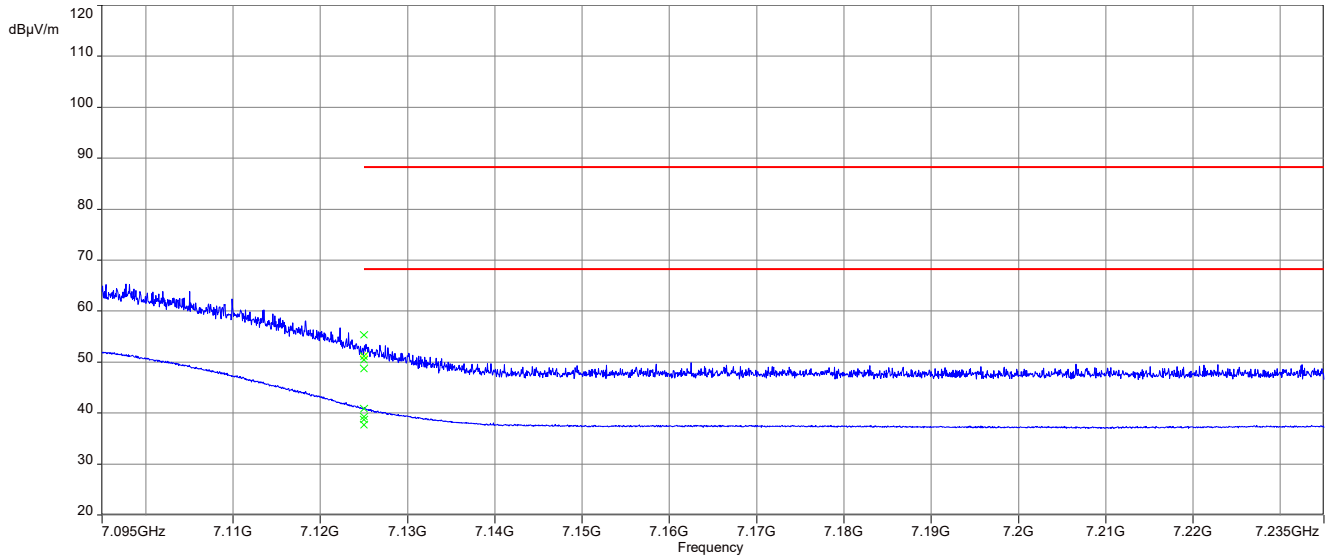
Plot 11: Band edge / axHE20-mode / Chain A+B / Channel 229



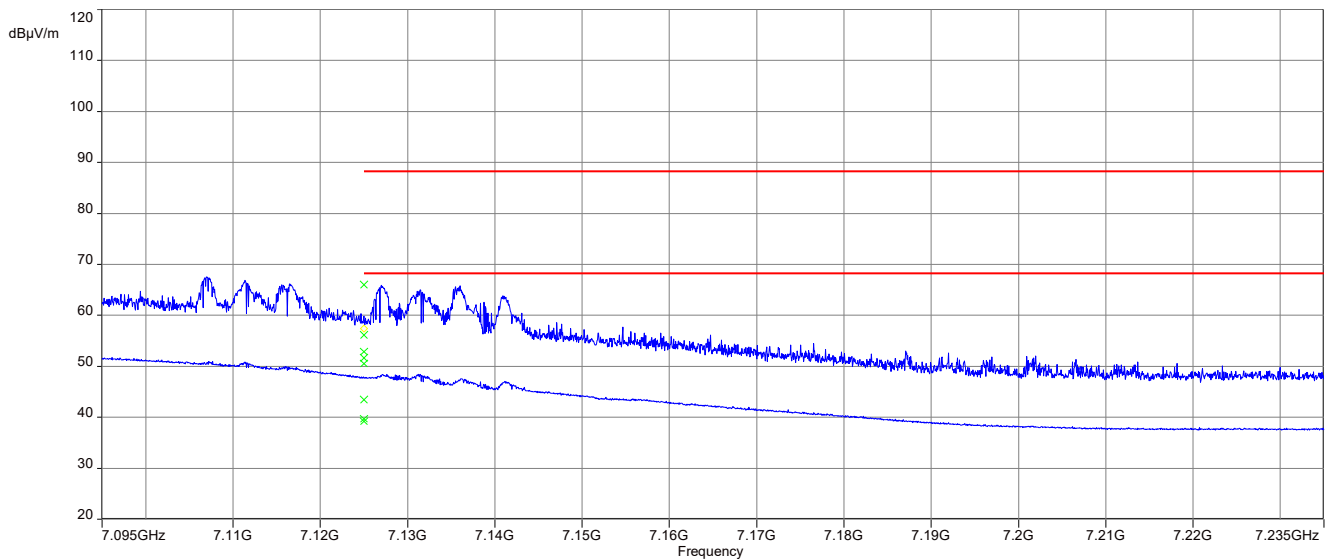
Plot 12: Band edge / axHE40-mode / Chain A+B / Channel 227



Plot 13: Band edge / axHE80-mode / Chain A+B / Channel 215



Plot 14: Band edge / axHE160-mode / Chain A+B / Channel 207



12.5 Spurious emissions radiated below 30 MHz

Description:

Measurement of the radiated spurious emissions in transmit mode below 30 MHz. The limits are re-calculated to a measurement distance of 3 m with 40 dB/decade according CFR Part 2.

Measurement:

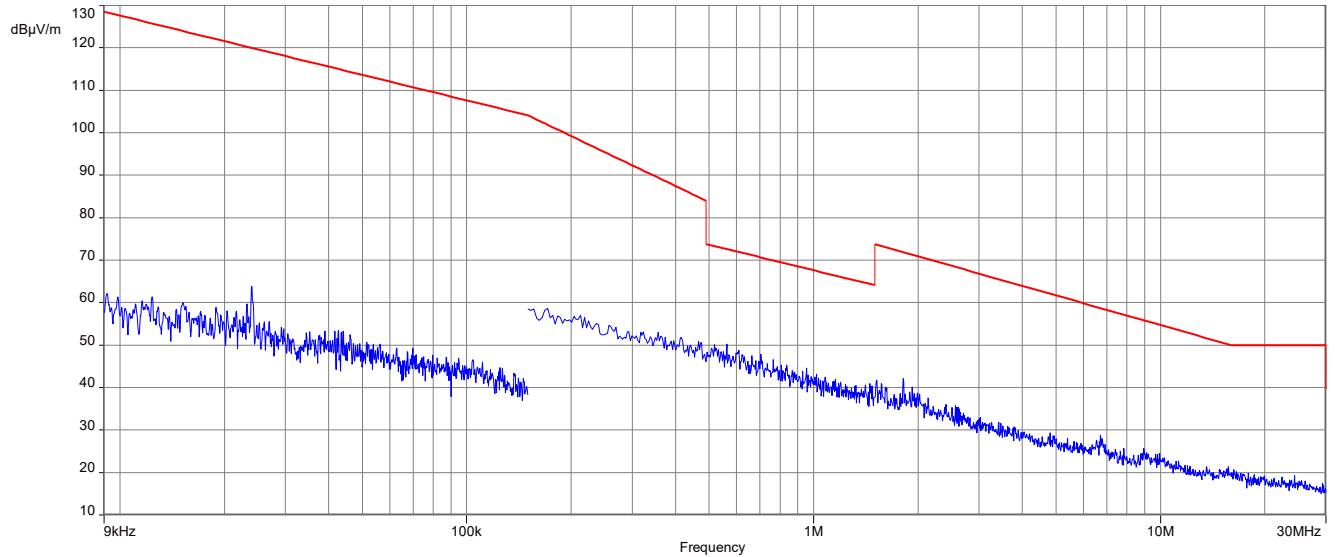
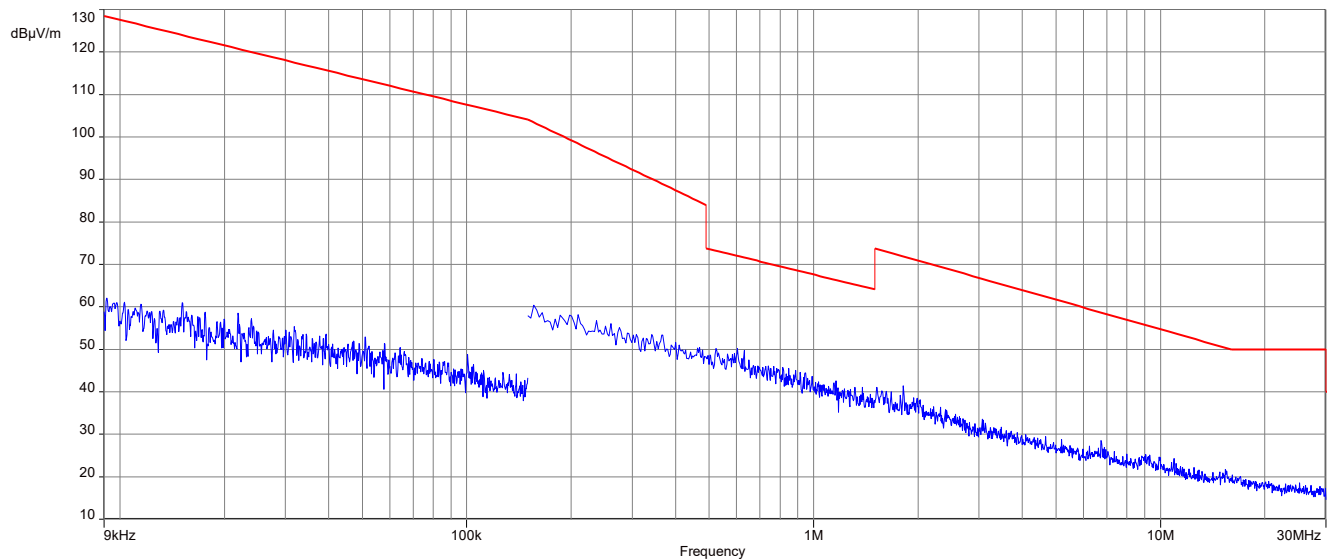
Measurement parameter	
Detector:	Peak / Quasi Peak
Sweep time:	Auto
Video bandwidth:	F < 150 kHz: 200 Hz F > 150 kHz: 9 kHz
Resolution bandwidth:	F < 150 kHz: 1 kHz F > 150 kHz: 100 kHz
Span:	9 kHz to 30 MHz
Trace mode:	Max Hold
Test setup:	See sub clause 7.2 – C
Measurement uncertainty:	See chapter 9

Limits:

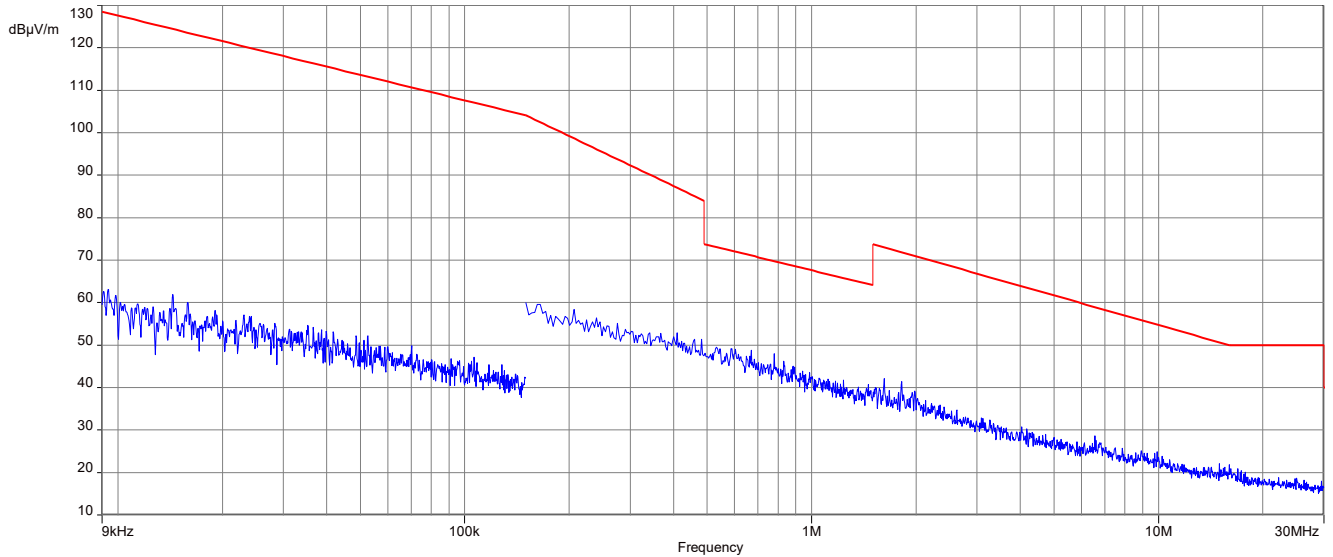
Spurious Emissions Radiated < 30 MHz		
Frequency (MHz)	Field Strength (μV/m)	Measurement distance
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30

Results:

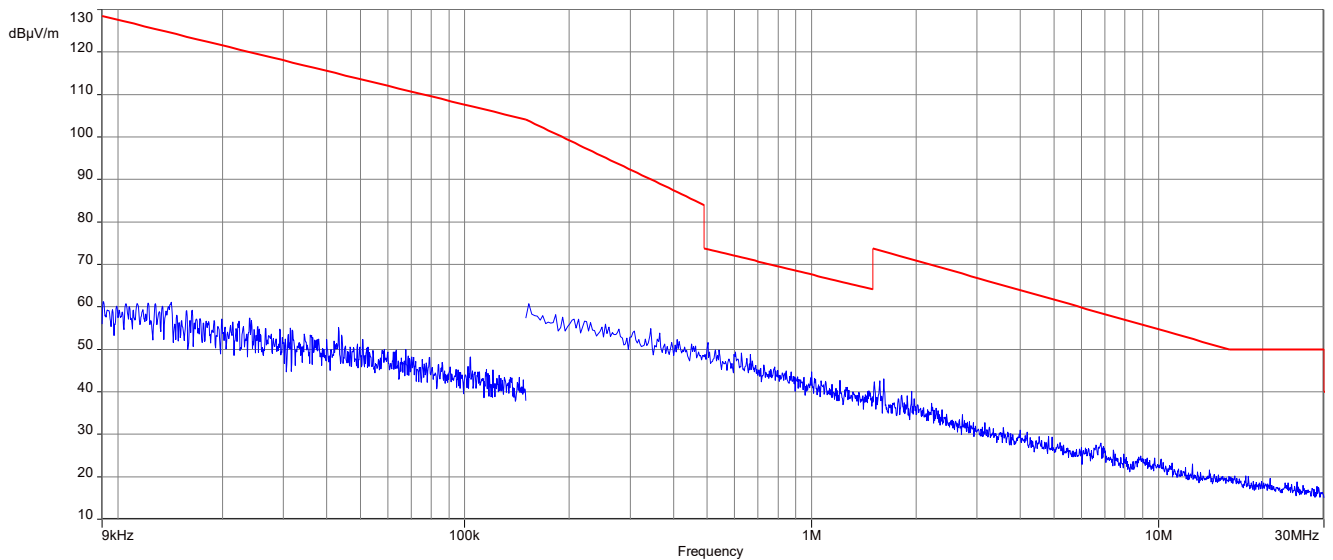
Spurious Emissions Radiated < 30 MHz [dBμV/m]		
F [MHz]	Detector	Level [dBμV/m]
All detected emissions are more than 20 dB below the limit.		

Plots:**Plot 1:** 9 kHz to 30 MHz, U-NII-5, valid for all bandwidths, modes and channels**Plot 2:** 9 kHz to 30 MHz, U-NII-6, valid for all bandwidths, modes and channels

Plot 3: 9 kHz to 30 MHz, U-NII-7, valid for all bandwidths, modes and channels



Plot 4: 9 kHz to 30 MHz, U-NII-8, valid for all bandwidths, modes and channels



12.6 Spurious emissions radiated 30 MHz to 1 GHz

Measurement:

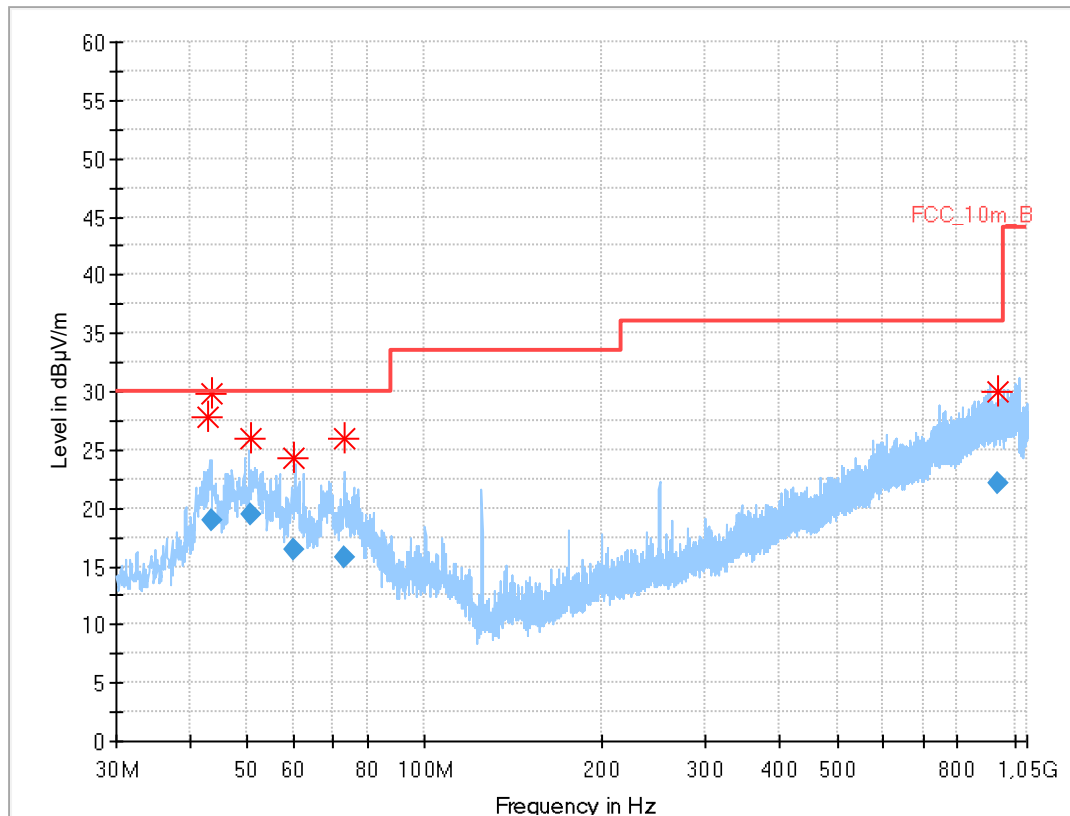
Measurement parameter	
Detector:	Quasi Peak
Sweep time:	Auto
Resolution bandwidth:	120 kHz
Video bandwidth:	500 kHz
Span:	30 MHz to 1 GHz
Test setup:	See sub clause 7.1 – A
Measurement uncertainty:	See chapter 9

Limits:

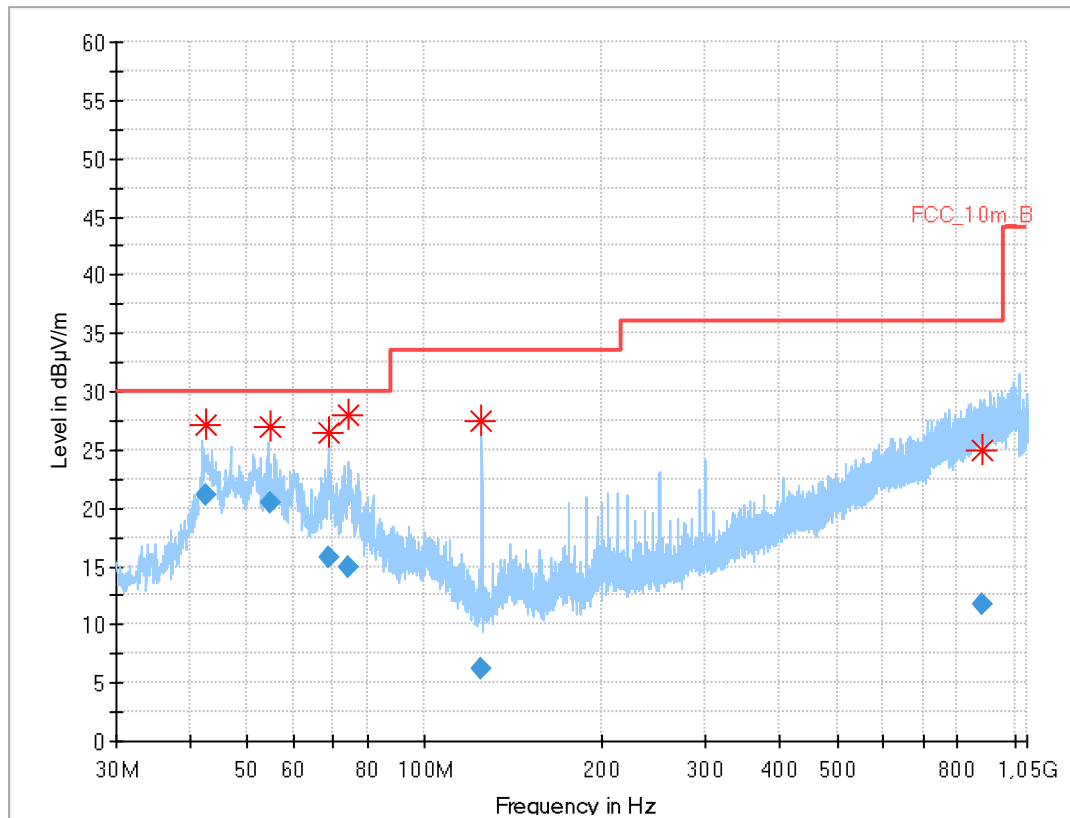
TX Spurious Emissions Radiated		
§15.209 / RSS-248		
Frequency (MHz)	Field Strength (dB μ V/m)	Measurement distance
30 - 88	30.0	10
88 – 216	33.5	10
216 – 960	36.0	10
Above 960	54.0	3
FCC		ISED
For transmitters operating within the 5.925-7.125 GHz band: Any emissions outside of the 5.925-7.125 GHz band must not exceed an e.i.r.p. of -27 dBm/MHz.		Any emissions outside of the 5925-7125 MHz frequency band shall not exceed -27 dBm/MHz e.i.r.p. spectral density
88.2 dB μ V/m@3m (peak) 68.2 dB μ V/m@3m (average) (-27 dBm/MHz)		

Plots:

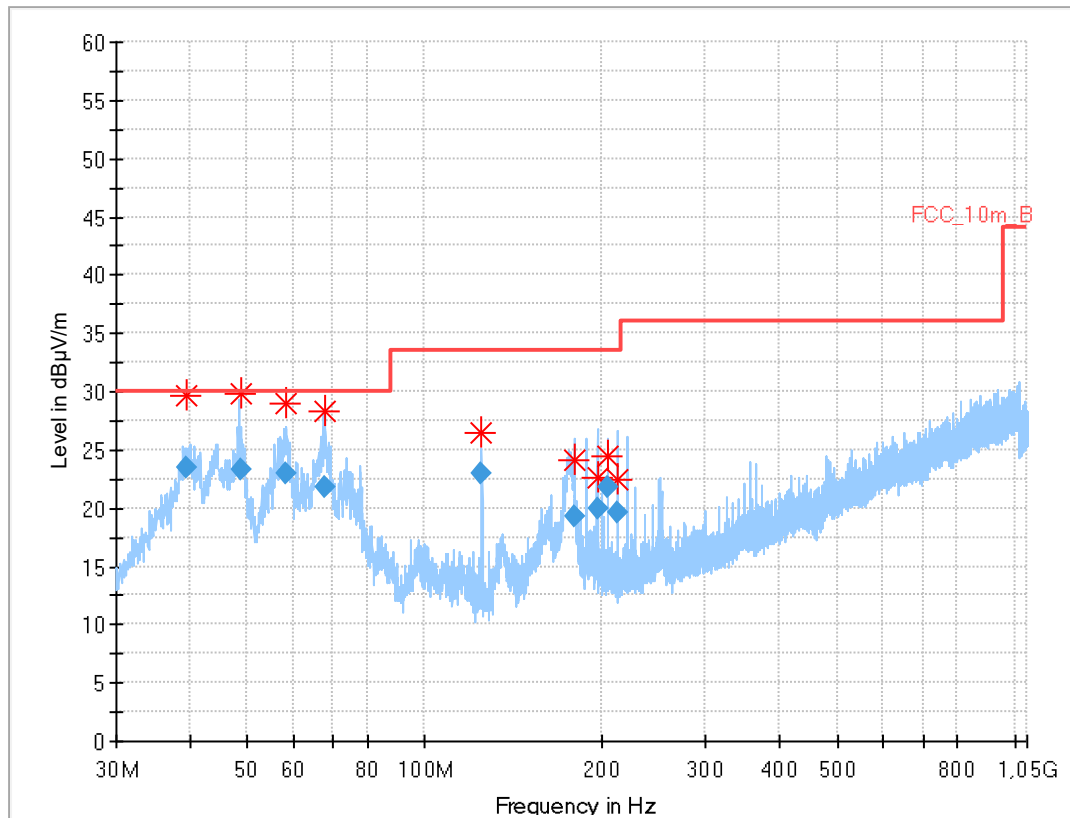
Plot 1: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-5; valid for all channels and modes

**Results:**

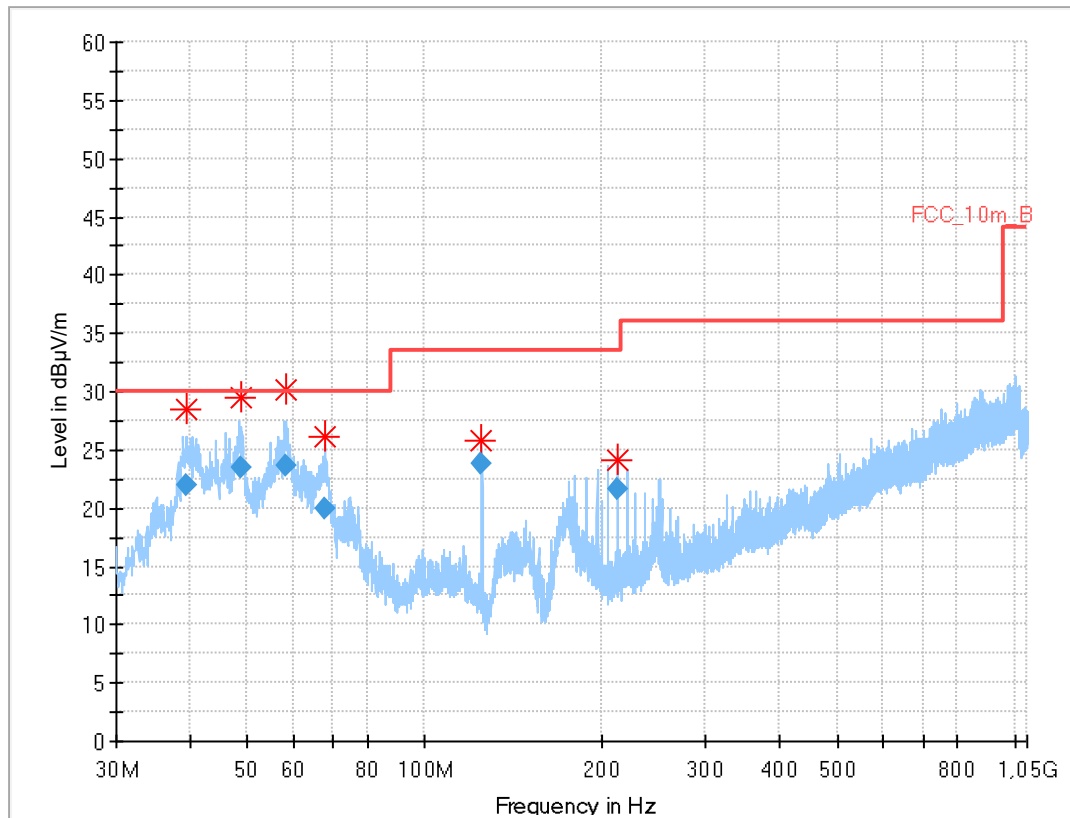
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
---	21.45	30.00	8.55	1000.0	120.000	212.0	V	186.0	14.0
43.543680	18.97	30.00	11.03	1000.0	120.000	388.0	V	184.0	14.1
50.857200	19.47	30.00	10.53	1000.0	120.000	255.0	V	137.0	14.5
60.164640	16.39	30.00	13.61	1000.0	120.000	203.0	V	100.0	13.6
73.206720	15.78	30.00	14.22	1000.0	120.000	361.0	V	188.0	8.8
933.328560	22.20	36.00	13.80	1000.0	120.000	318.0	H	110.0	24.8

Plot 2: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-1; middle channel**Results:**

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
42.557280	21.04	30.00	8.96	1000.0	120.000	200.0	V	186.0	14.0
54.646560	20.47	30.00	9.53	1000.0	120.000	142.0	V	29.0	14.5
68.902200	15.80	30.00	14.20	1000.0	120.000	341.0	V	296.0	10.4
74.429520	14.93	30.00	15.07	1000.0	120.000	383.0	V	338.0	8.4
125.005560	6.28	33.50	27.22	1000.0	120.000	115.0	V	48.0	9.7
878.107560	11.71	36.00	24.29	1000.0	120.000	400.0	V	-8.0	24.5

Plot 3: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-1; highest channel**Results:**

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
39.599760	23.40	30.00	6.60	1000.0	120.000	100.0	V	135.0	13.5
48.650520	23.29	30.00	6.71	1000.0	120.000	200.0	V	161.0	14.4
58.102920	23.00	30.00	7.00	1000.0	120.000	244.0	V	127.0	14.4
67.677240	21.86	30.00	8.14	1000.0	120.000	400.0	V	94.0	10.7
125.006520	22.94	33.50	10.56	1000.0	120.000	120.0	V	183.0	9.7
180.011520	19.33	33.50	14.17	1000.0	120.000	200.0	V	278.0	10.5
195.997320	19.93	33.50	13.57	1000.0	120.000	104.0	V	270.0	12.0
203.995200	21.82	33.50	11.68	1000.0	120.000	100.0	V	0.0	11.8
211.984800	19.65	33.50	13.85	1000.0	120.000	105.0	V	333.0	12.0

Plot 4: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel**Results:**

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
39.504000	22.01	30.00	7.99	1000.0	120.000	132.0	V	184.0	13.5
48.730440	23.49	30.00	6.51	1000.0	120.000	103.0	V	315.0	14.4
58.181040	23.71	30.00	6.29	1000.0	120.000	265.0	V	118.0	14.4
67.848600	19.98	30.00	10.02	1000.0	120.000	196.0	V	256.0	10.7
125.016240	23.72	33.50	9.78	1000.0	120.000	200.0	V	315.0	9.7
211.997880	21.68	33.50	11.82	1000.0	120.000	107.0	V	-2.0	12.0

12.7 Spurious emissions radiated 1 GHz to 40 GHz

Measurement:

Measurement parameter	
Detector:	Peak / AVG
Sweep time:	Auto
Resolution bandwidth:	1 MHz
Video bandwidth:	3 MHz
Span:	1 GHz to 40 GHz
Test setup:	See sub clause 7.2 – B See sub clause 7.3 – A
Measurement uncertainty:	See chapter 9

Limits:

TX Spurious Emissions Radiated		
§15.209 / RSS-248		
Frequency (MHz)	Field Strength (dBμV/m)	Measurement distance
Above 960	54.0	3
FCC		ISED
For transmitters operating within the 5.925-7.125 GHz band: Any emissions outside of the 5.925-7.125 GHz band must not exceed an e.i.r.p. of -27 dBm/MHz.		Any emissions outside of the 5925-7125 MHz frequency band shall not exceed -27 dBm/MHz e.i.r.p. spectral density
88.2 dBμV/m@3m (peak) 68.2 dBμV/m@3m (average) (-27 dBm/MHz)		

Results: 20 MHz channel bandwidth

TX Spurious Emissions Radiated [dB μ V/m] / dBm								
U-NII-5 (5925 MHz to 6425 MHz)								
Lowest channel			Middle channel			Highest channel		
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]
-/-	Peak	-/-	-/-	Peak	-/-	-/-	Peak	-/-
	AVG	-/-		AVG	-/-		AVG	-/-

TX Spurious Emissions Radiated [dB μ V/m] / dBm								
U-NII-6 (6425 MHz to 6525 MHz)								
Lowest channel			Middle channel			Highest channel		
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]
-/-	Peak	-/-	-/-	Peak	-/-	-/-	Peak	-/-
	AVG	-/-		AVG	-/-		AVG	-/-

TX Spurious Emissions Radiated [dB μ V/m] / dBm								
U-NII-7 (6525 MHz to 6875 MHz)								
Lowest channel			Middle channel			Highest channel		
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]
-/-	Peak	-/-	-/-	Peak	-/-	-/-	Peak	-/-
	AVG	-/-		AVG	-/-		AVG	-/-

TX Spurious Emissions Radiated [dB μ V/m] / dBm								
U-NII-8 (6875 MHz to 7125 MHz)								
Lowest channel			Middle channel			Highest channel		
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]
-/-	Peak	-/-	-/-	Peak	-/-	-/-	Peak	-/-
	AVG	-/-		AVG	-/-		AVG	-/-

Results: 40 MHz channel bandwidth

TX Spurious Emissions Radiated [dB μ V/m] / dBm								
U-NII-5 (5925 MHz to 6425 MHz)								
Lowest channel			Middle channel			Highest channel		
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]
-/-	Peak	-/-	-/-	Peak	-/-	-/-	Peak	-/-
	AVG	-/-		AVG	-/-		AVG	-/-

TX Spurious Emissions Radiated [dB μ V/m] / dBm					
U-NII-6 (6425 MHz to 6525 MHz)					
Lowest channel			Middle channel		
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]
-/-	Peak	-/-	-/-	Peak	-/-
	AVG	-/-		AVG	-/-

TX Spurious Emissions Radiated [dB μ V/m] / dBm								
U-NII-7 (6525 MHz to 6875 MHz)								
Lowest channel			Middle channel			Highest channel		
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]
-/-	Peak	-/-	-/-	Peak	-/-	-/-	Peak	-/-
	AVG	-/-		AVG	-/-		AVG	-/-

TX Spurious Emissions Radiated [dB μ V/m] / dBm								
U-NII-8 (6875 MHz to 7125 MHz)								
Lowest channel			Middle channel			Highest channel		
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]
-/-	Peak	-/-	-/-	Peak	-/-	-/-	Peak	-/-
	AVG	-/-		AVG	-/-		AVG	-/-

Results: 80 MHz channel bandwidth

TX Spurious Emissions Radiated [dB μ V/m] / dBm								
U-NII-5 (5925 MHz to 6425 MHz)								
Lowest channel			Middle channel			Highest channel		
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]
-/-	Peak	-/-	-/-	Peak	-/-	-/-	Peak	-/-
	AVG	-/-		AVG	-/-		AVG	-/-

TX Spurious Emissions Radiated [dB μ V/m] / dBm		
U-NII-6 (6425 MHz to 6525 MHz)		
Lowest channel		
F [MHz]	Detector	Level [dB μ V/m]
-/-	Peak	-/-
-/-	AVG	-/-

TX Spurious Emissions Radiated [dB μ V/m] / dBm								
U-NII-7 (6525 MHz to 6875 MHz)								
Lowest channel			Middle channel			Highest channel		
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]
-/-	Peak	-/-	-/-	Peak	-/-	-/-	Peak	-/-
	AVG	-/-		AVG	-/-		AVG	-/-

TX Spurious Emissions Radiated [dB μ V/m] / dBm					
U-NII-8 (6875 MHz to 7125 MHz)					
Middle channel			Highest channel		
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]
-/-	Peak	-/-	-/-	Peak	-/-
	AVG	-/-		AVG	-/-

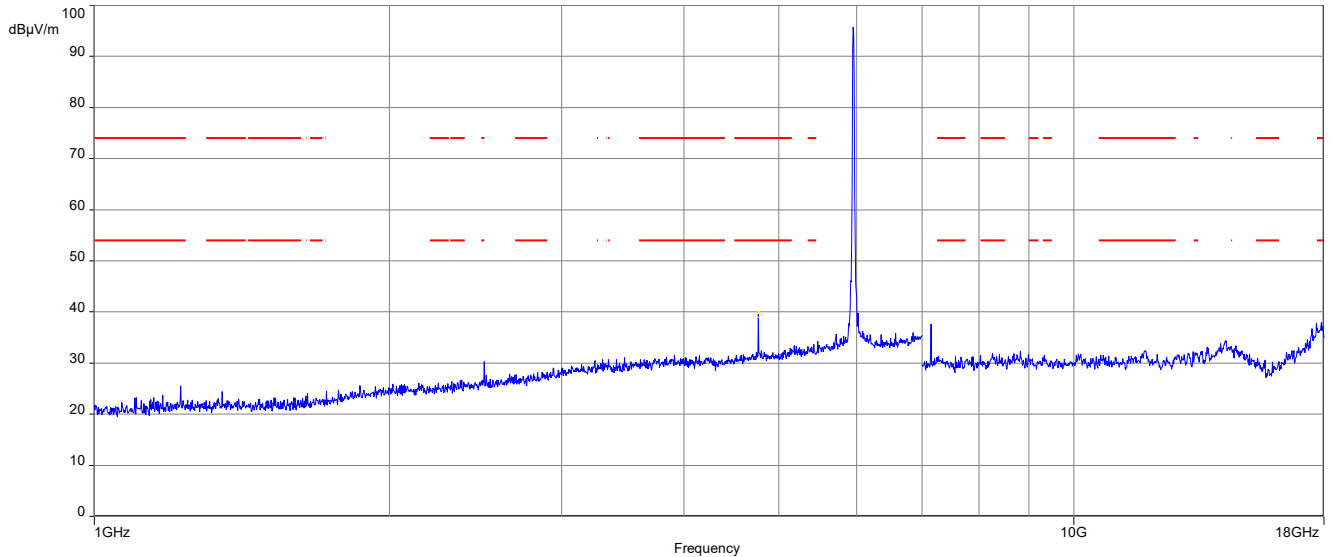
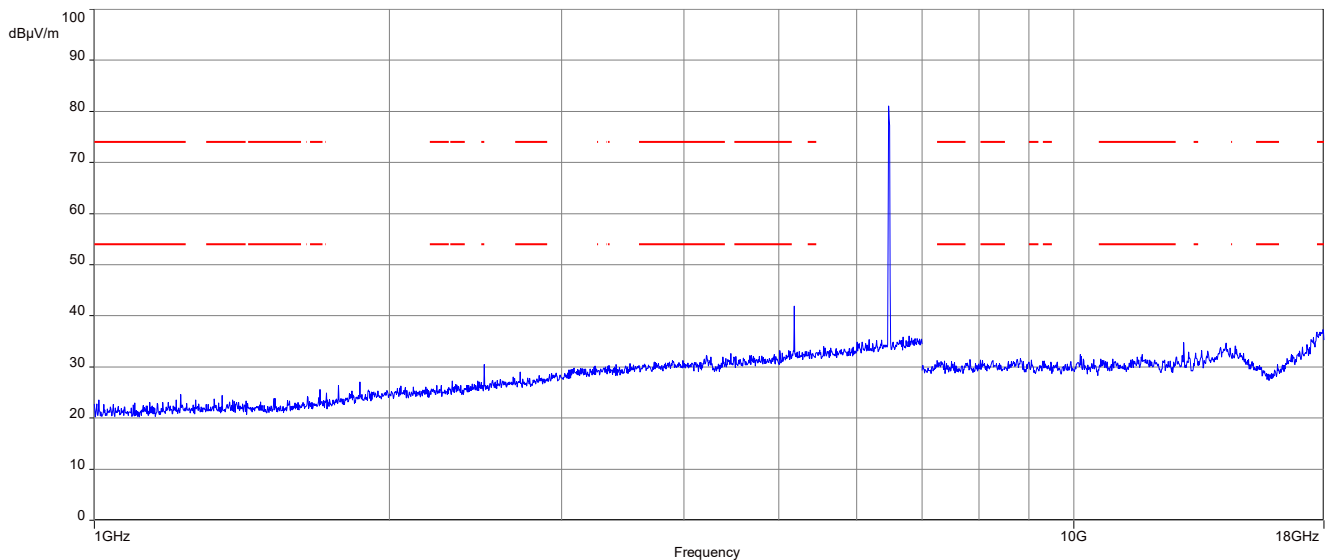
Results: 160 MHz channel bandwidth

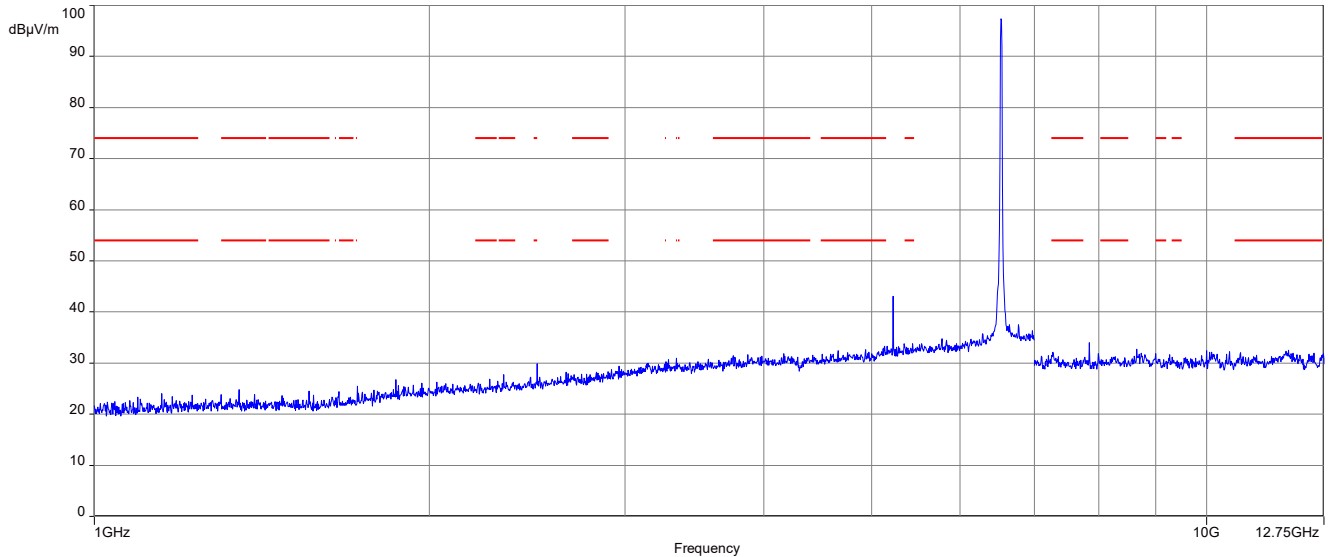
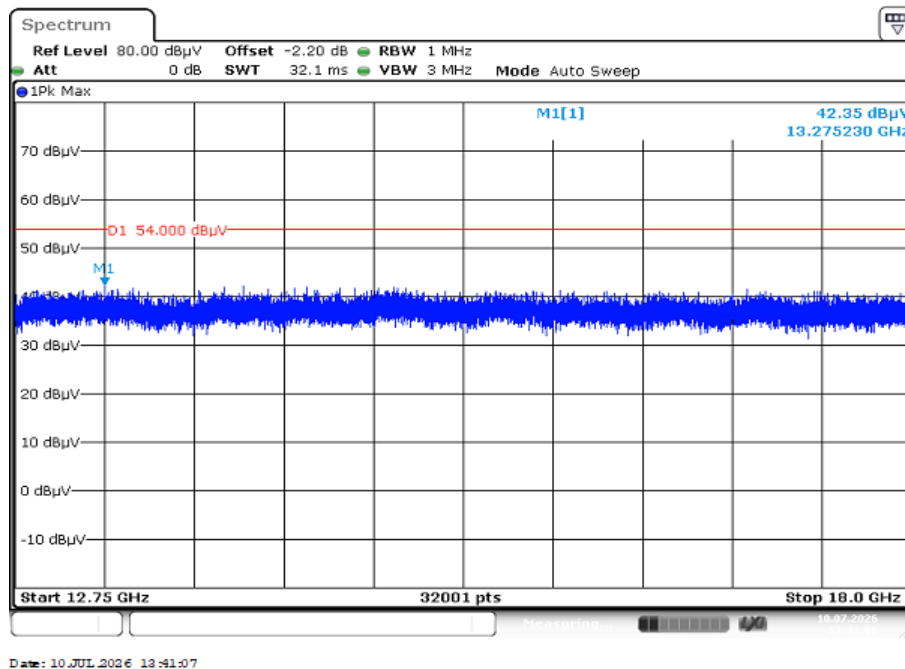
TX Spurious Emissions Radiated [dB μ V/m] / dBm								
U-NII-5 (5925 MHz to 6425 MHz)								
Lowest channel			Middle channel			Highest channel		
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]
-/-	Peak	-/-	-/-	Peak	-/-	-/-	Peak	-/-
	AVG	-/-		AVG	-/-		AVG	-/-

TX Spurious Emissions Radiated [dB μ V/m] / dBm		
U-NII-6 (6425 MHz to 6525 MHz)		
Middle channel		
F [MHz]	Detector	Level [dB μ V/m]
-/-	Peak	-/-
-/-	AVG	-/-

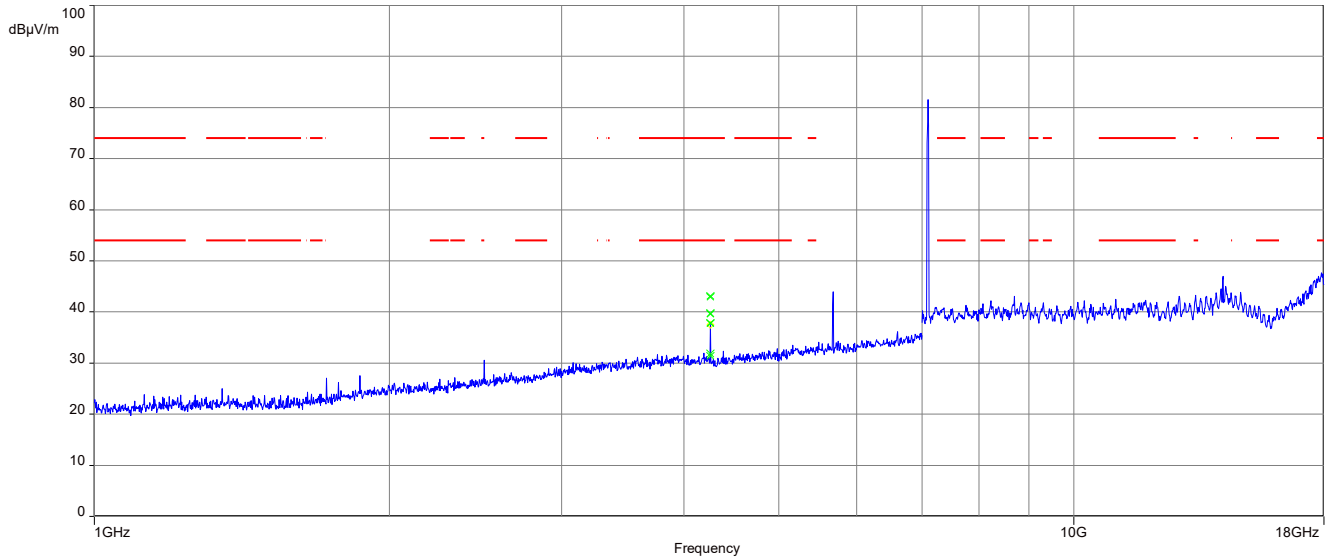
TX Spurious Emissions Radiated [dB μ V/m] / dBm		
U-NII-7 (6525 MHz to 6875 MHz)		
Middle channel		
F [MHz]	Detector	Level [dB μ V/m]
-/-	Peak	-/-
-/-	AVG	-/-

TX Spurious Emissions Radiated [dB μ V/m] / dBm		
U-NII-8 (6875 MHz to 7125 MHz)		
Middle channel		
F [MHz]	Detector	Level [dB μ V/m]
-/-	Peak	-/-
-/-	AVG	-/-

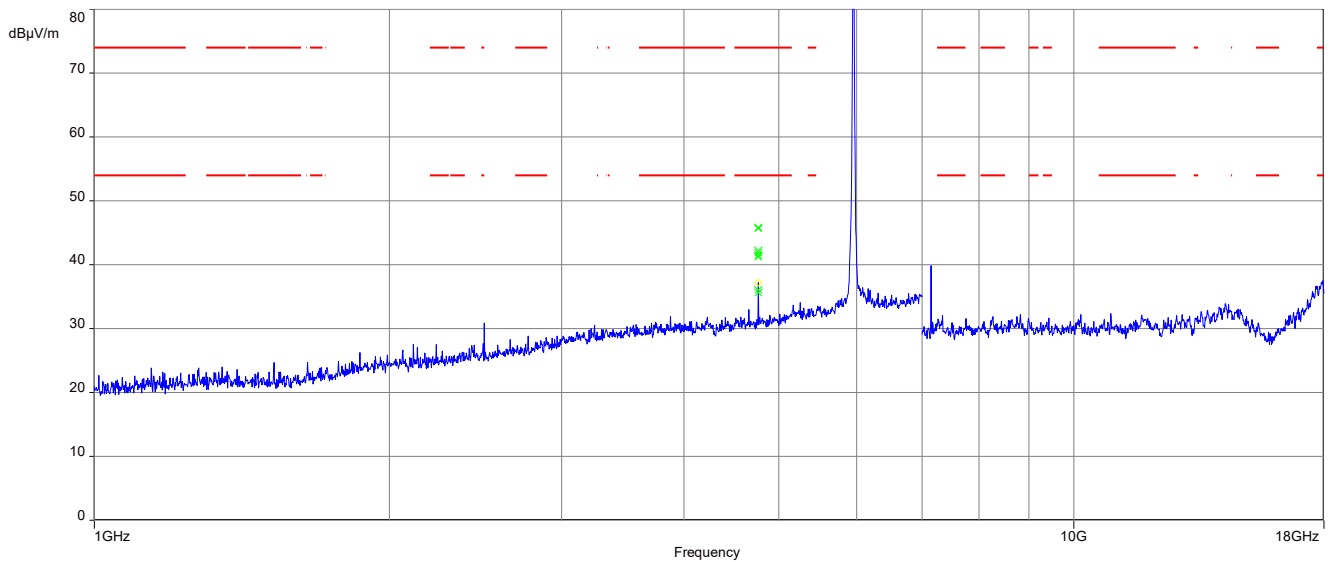
Plots:**Plot 1:** 1 GHz to 18 GHz; vertical & horizontal polarization; MIMO A+B, a-mode, channel 1**Plot 2:** 1 GHz to 18 GHz; vertical & horizontal polarization; MIMO A+B, a-mode, channel 105

Plot 3: 1 GHz to 12.75 GHz; vertical & horizontal polarization; MIMO A+B, a-mode, channel 117**Plot 4:** 12.75 GHz to 18 GHz; vertical & horizontal polarization; MIMO A+B, a-mode, channel 117

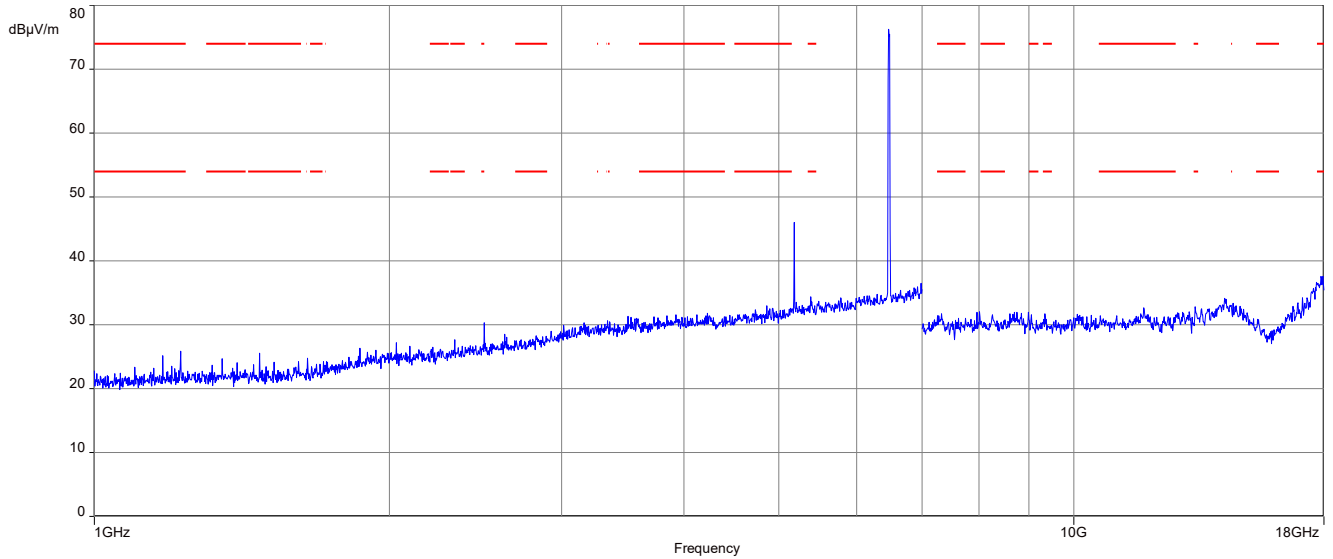
Plot 5: 1 GHz to 18 GHz; vertical & horizontal polarization; MIMO A+B, a-mode, channel 225



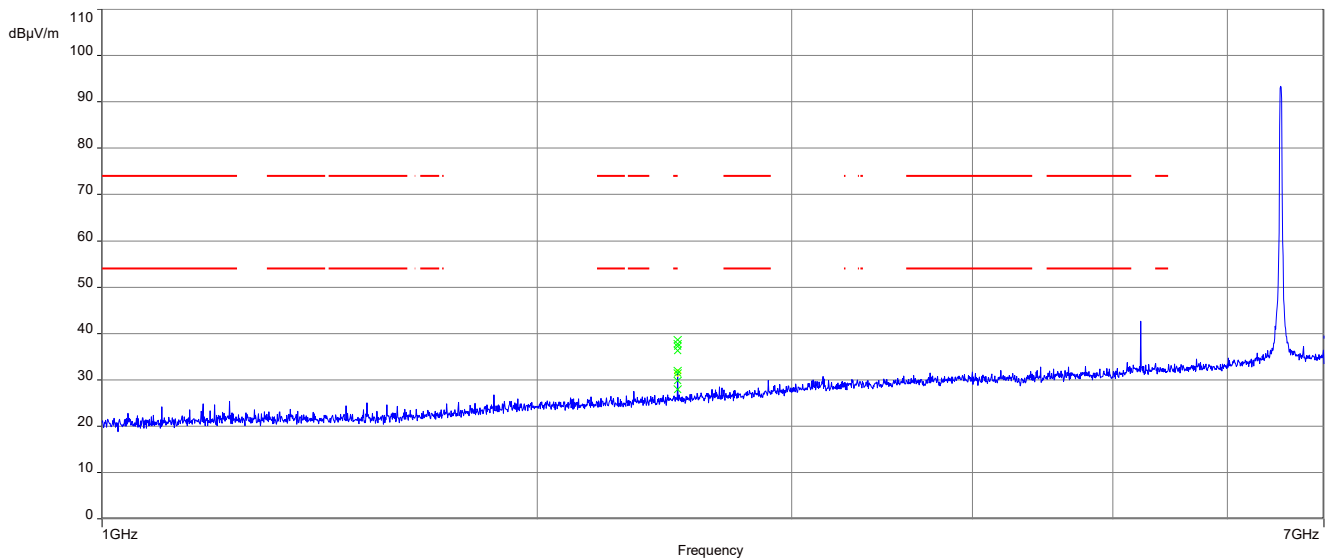
Plot 6: 1 GHz to 18 GHz; vertical & horizontal polarization; MIMO A+B, axHE20-mode, channel 1

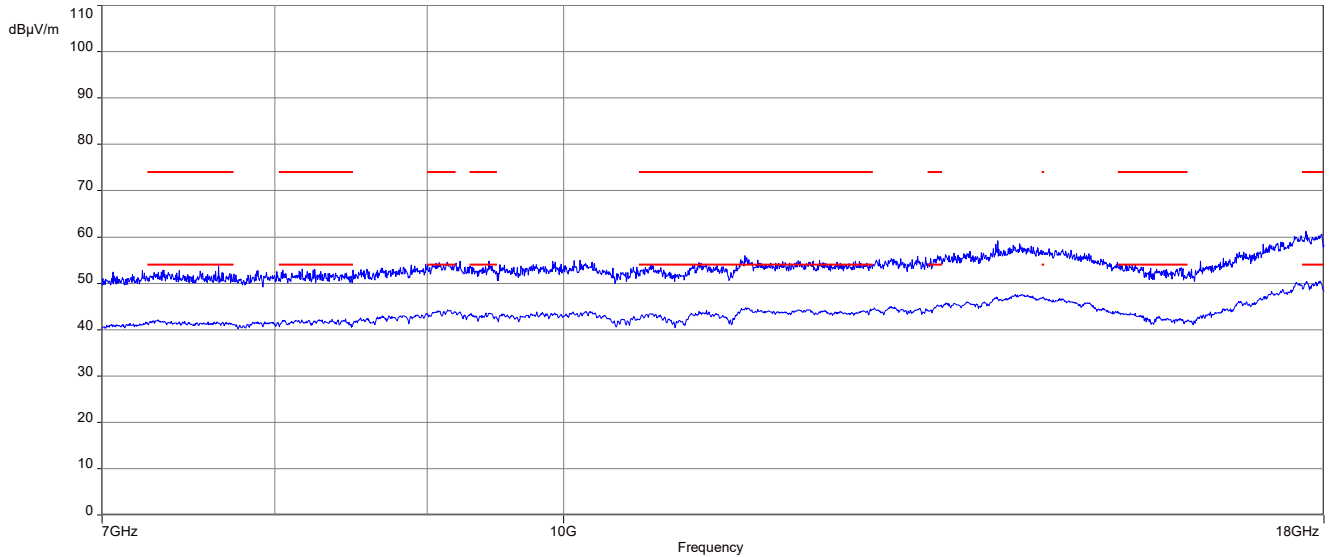
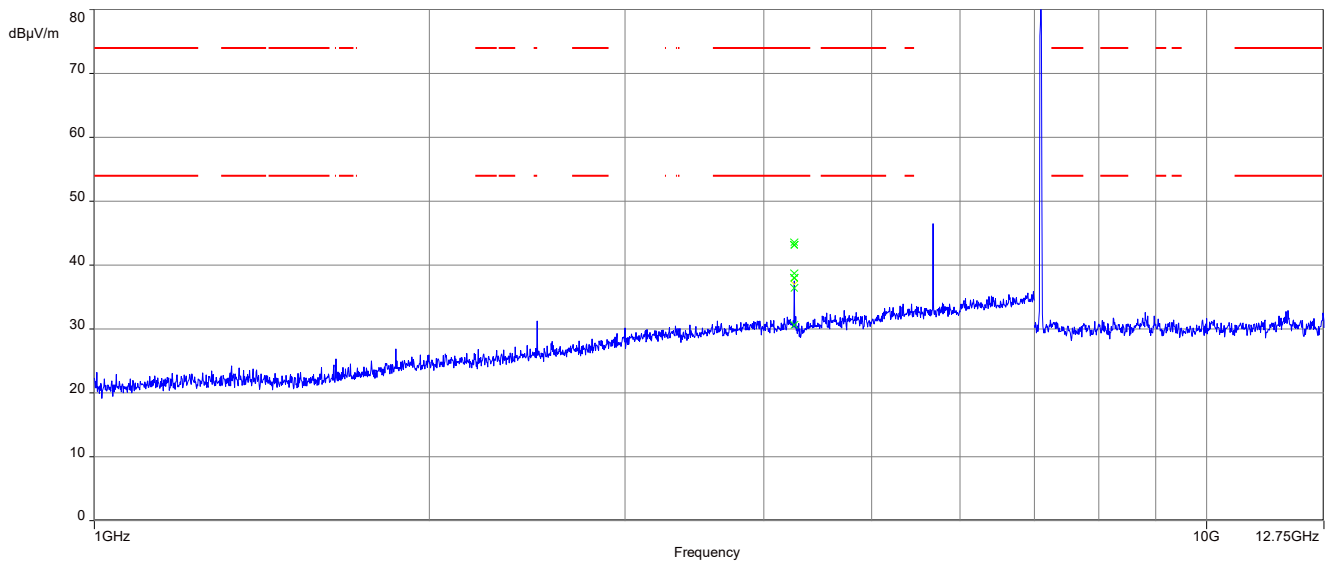


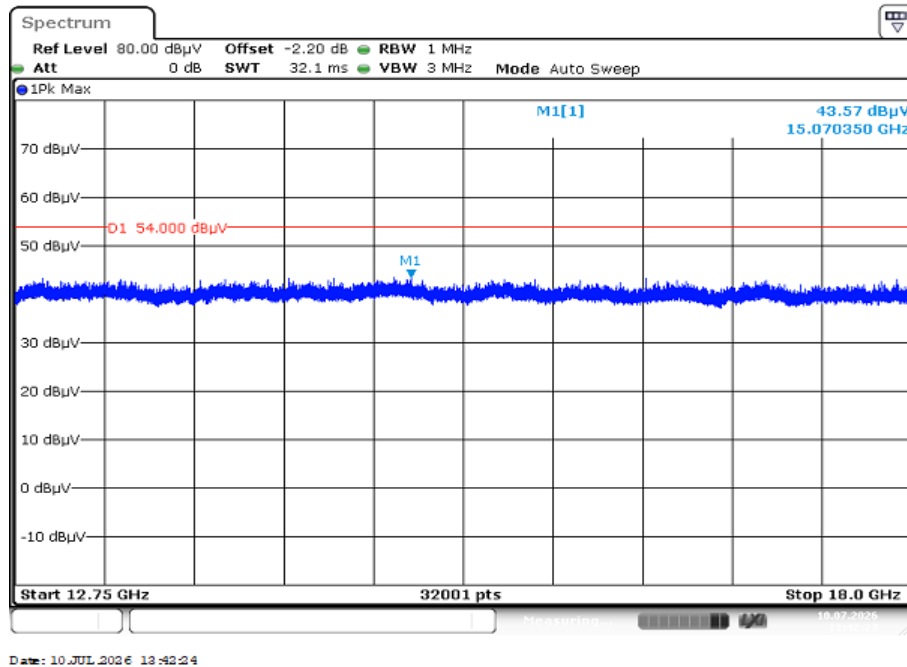
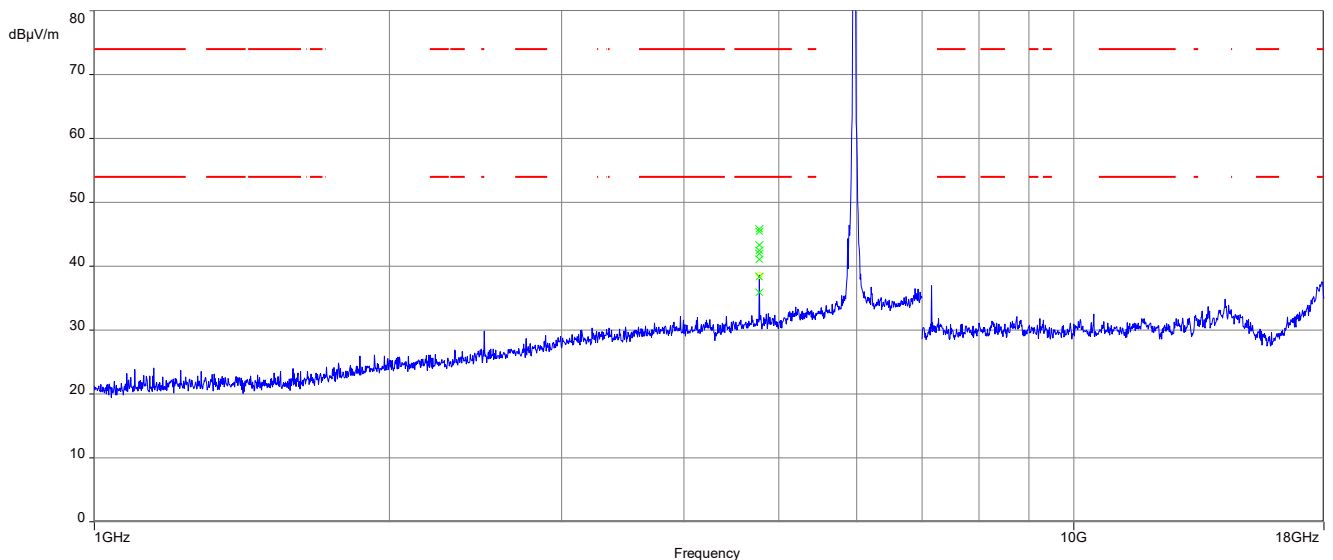
Plot 7: 1 GHz to 18 GHz; vertical & horizontal polarization; MIMO A+B, axHE20-mode, channel 105



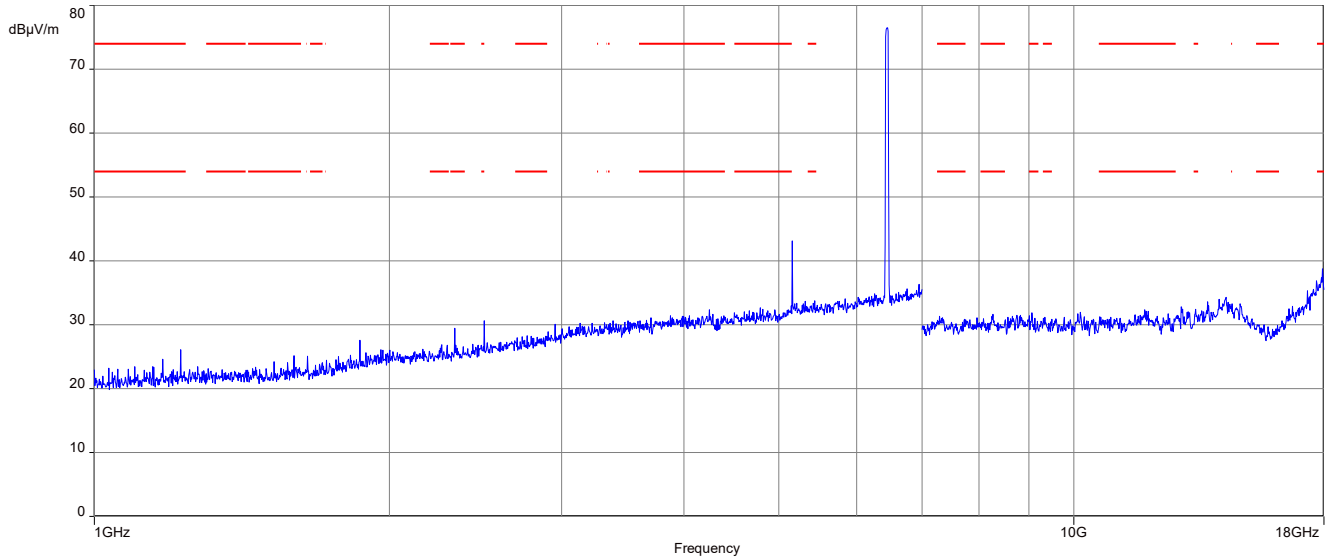
Plot 8: 1 GHz to 7 GHz; vertical & horizontal polarization; MIMO A+B, axHE20-mode, channel 117



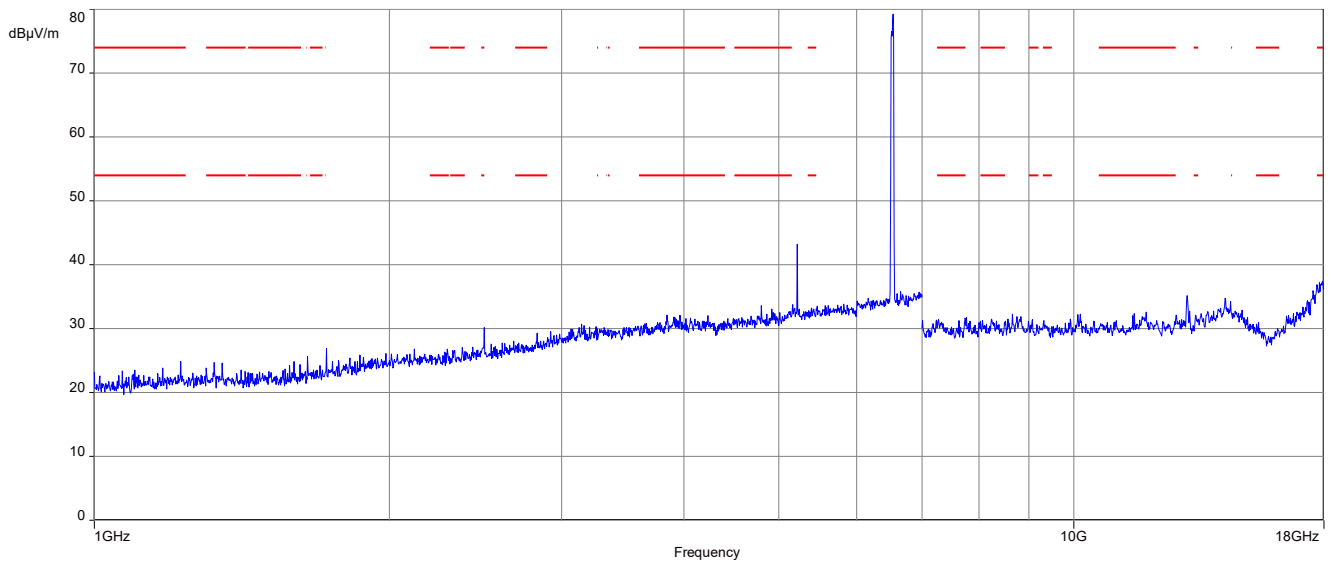
Plot 9: 7 GHz to 18 GHz; vertical & horizontal polarization; MIMO A+B, axHE20-mode, channel 117**Plot 10:** 1 GHz to 12.75 GHz; vertical & horizontal polarization; MIMO A+B, axHE20-mode, channel 229

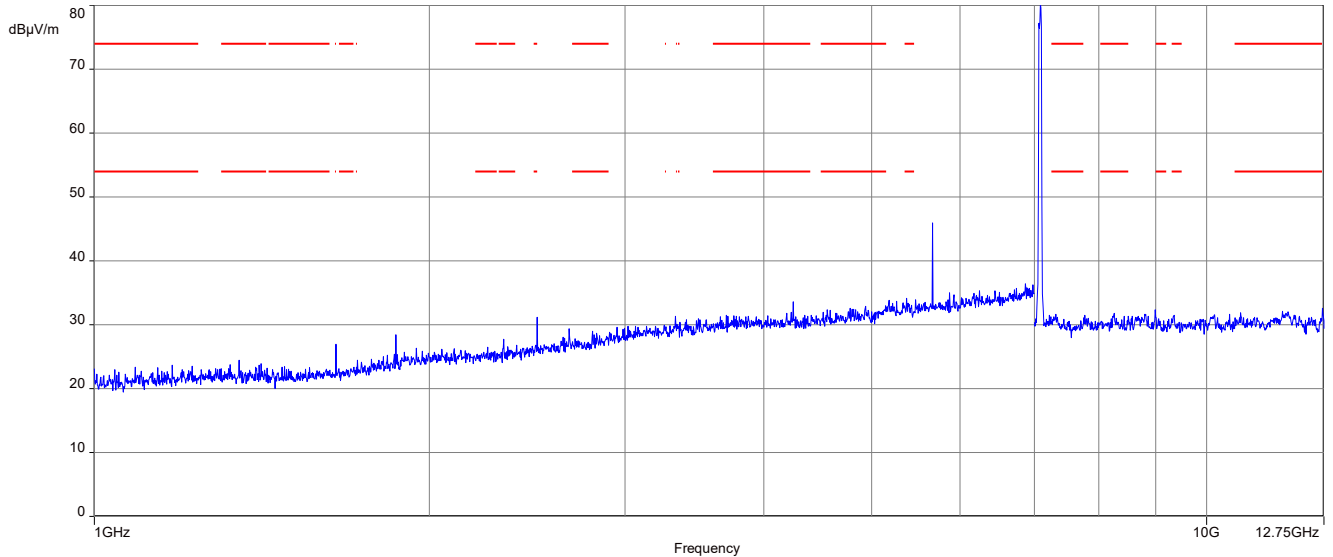
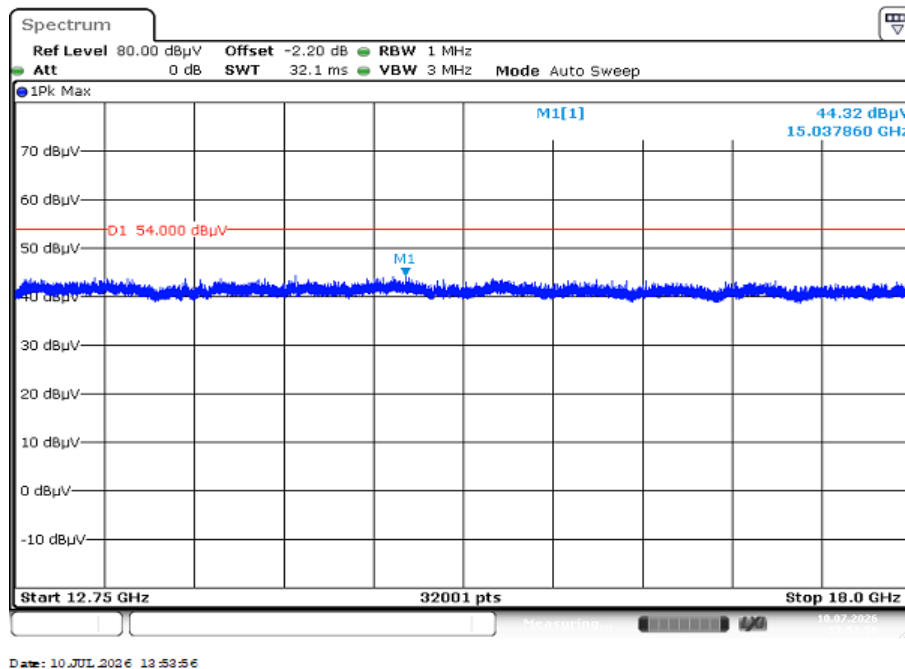
Plot 11: 12.75 GHz to 18 GHz; vertical & horizontal polarization; MIMO A+B, axHE20-mode, channel 229**Plot 12:** 1 GHz to 18 GHz; vertical & horizontal polarization; MIMO A+B, axH40-mode, channel 3

Plot 13: 1 GHz to 18 GHz; vertical & horizontal polarization; MIMO A+B, axHE40-mode, channel 99

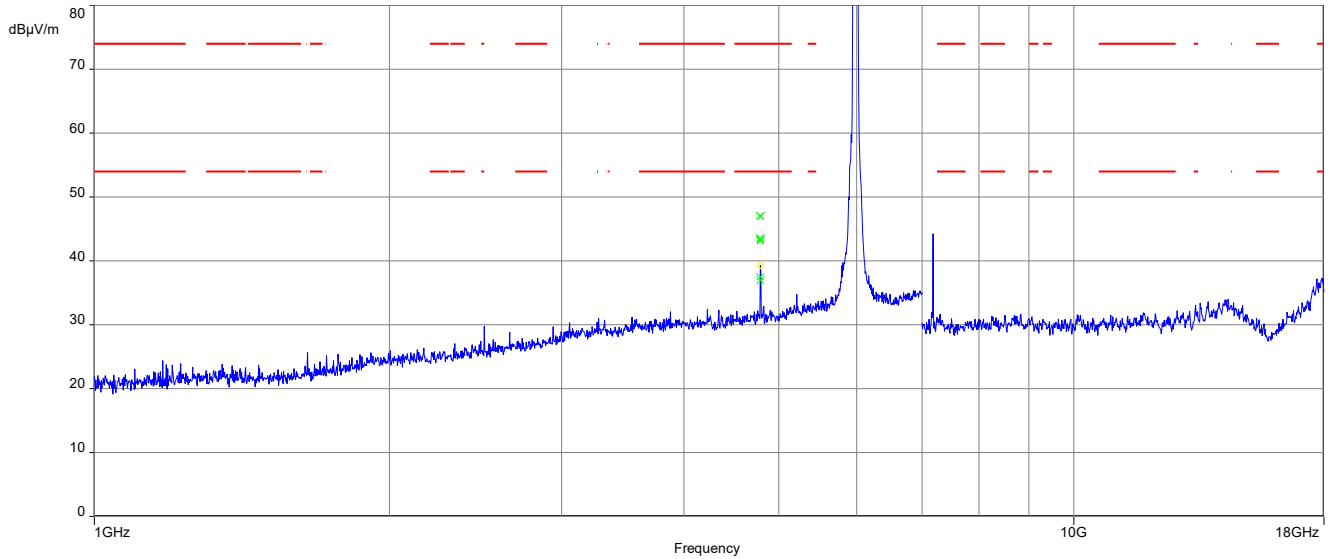


Plot 14: 1 GHz to 18 GHz; vertical & horizontal polarization; MIMO A+B, axHE40-mode, channel 115

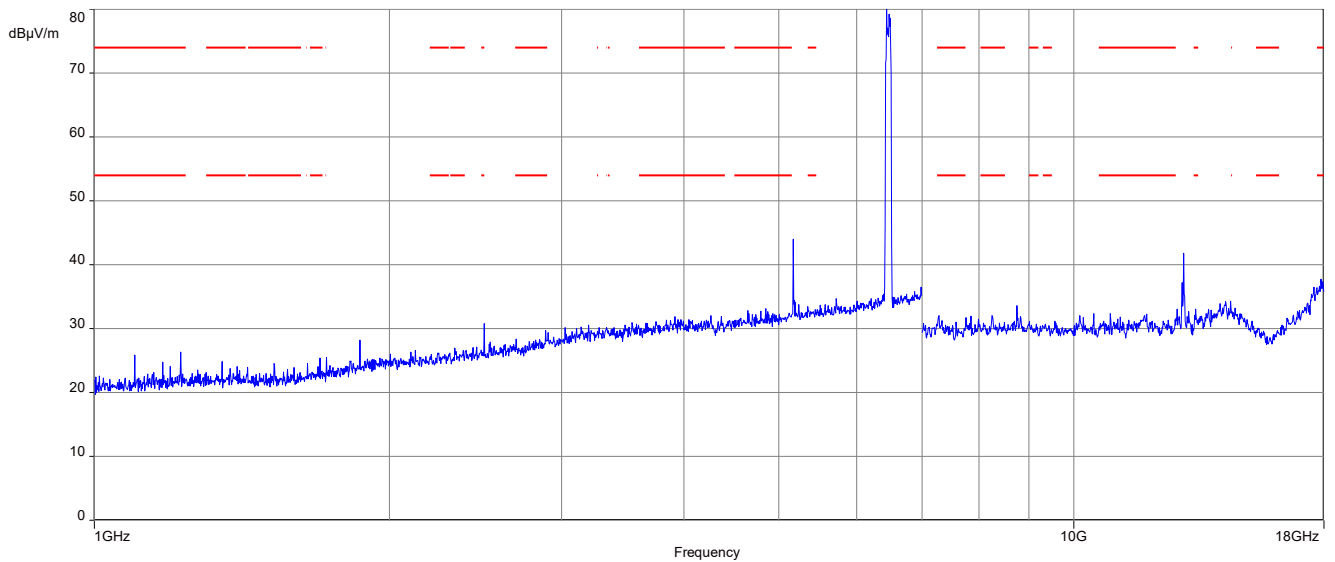


Plot 15: 1 GHz to 12.75 GHz; vertical & horizontal polarization; MIMO A+B, axHE40-mode, channel 227**Plot 16:** 12.75 GHz to 18 GHz; vertical & horizontal polarization; MIMO A+B, axHE40-mode, channel 227

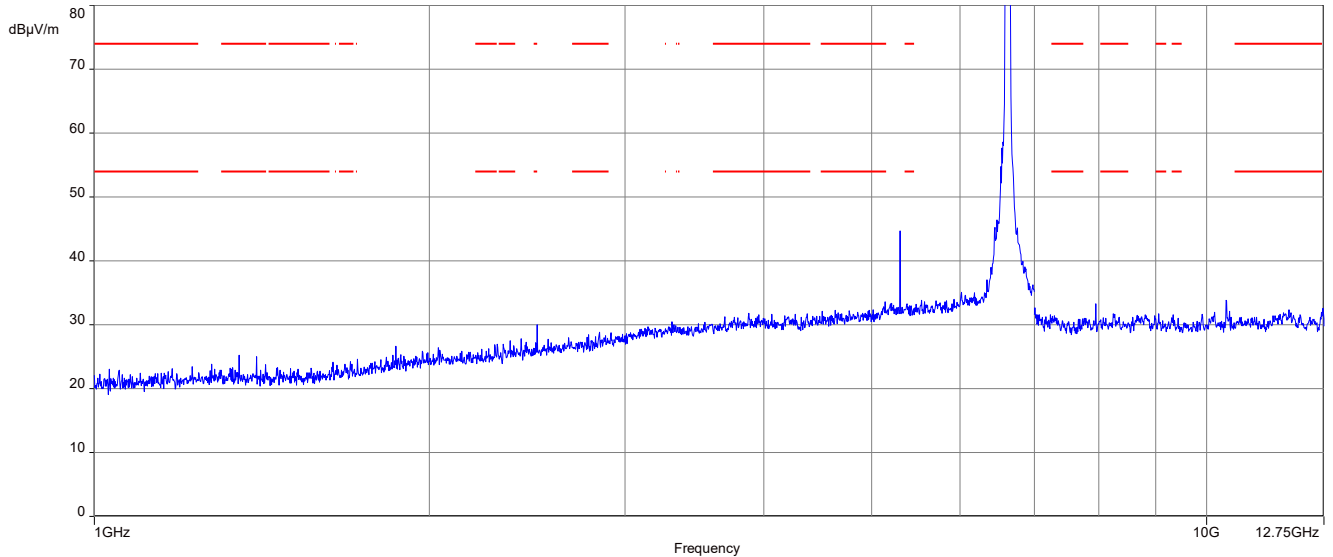
Plot 17: 1 GHz to 18 GHz; vertical & horizontal polarization; MIMO A+B, axHE80-mode, channel 7



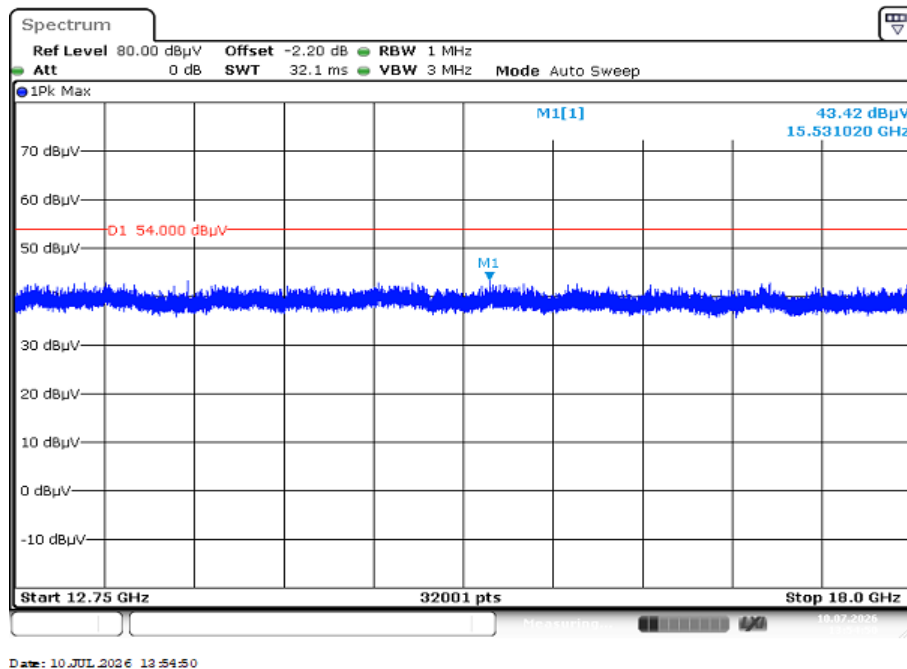
Plot 18: 1 GHz to 18 GHz; vertical & horizontal polarization; MIMO A+B, axHE80-mode, channel 103

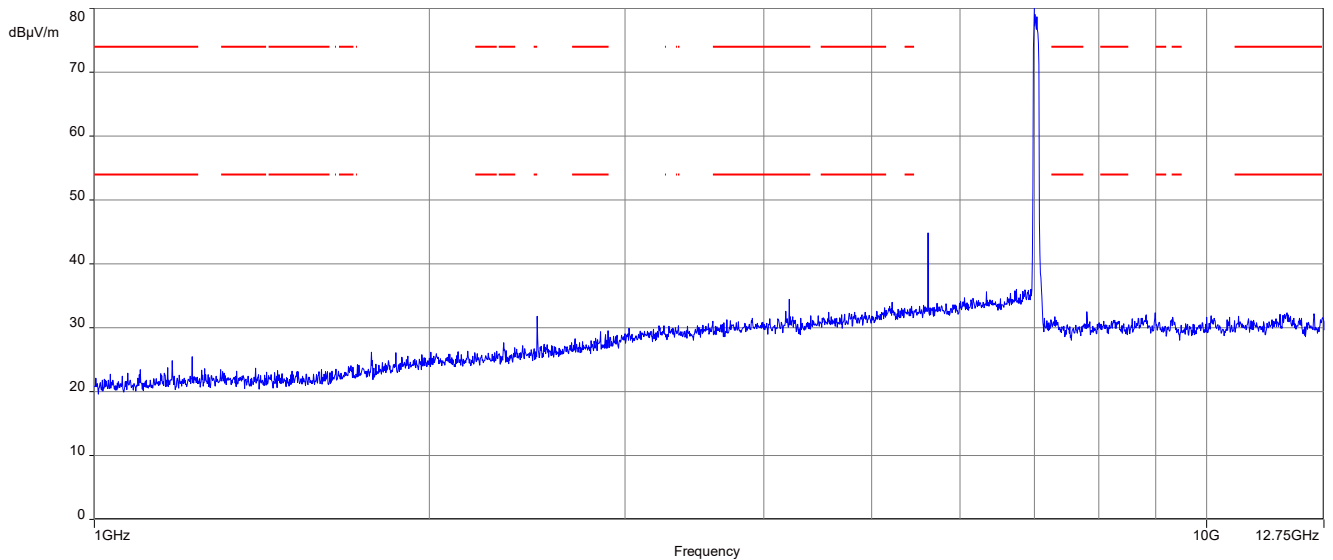
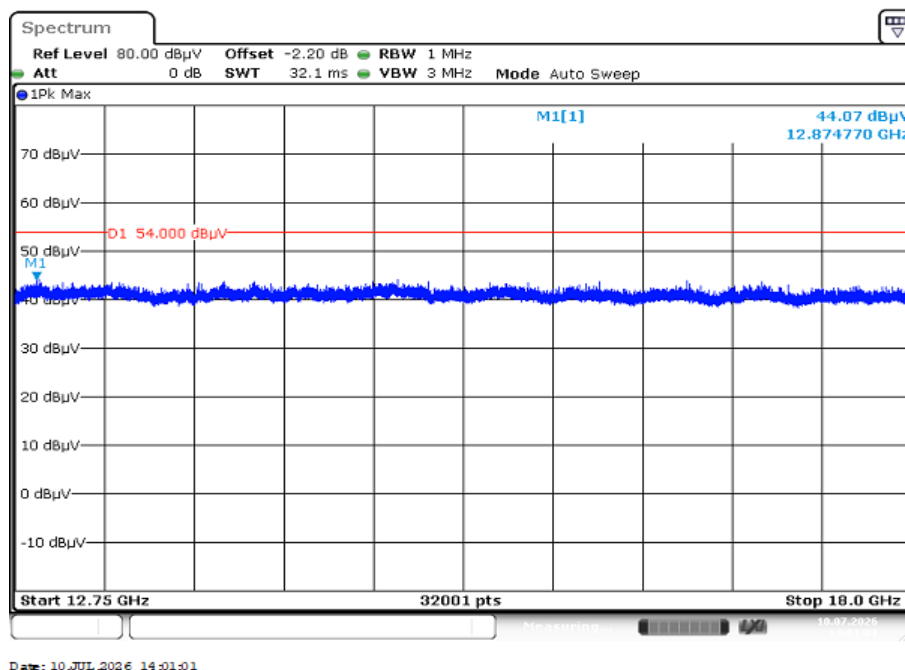


Plot 19: 1 GHz to 12.75 GHz; vertical & horizontal polarization; MIMO A+B, axHE80-mode, channel 135

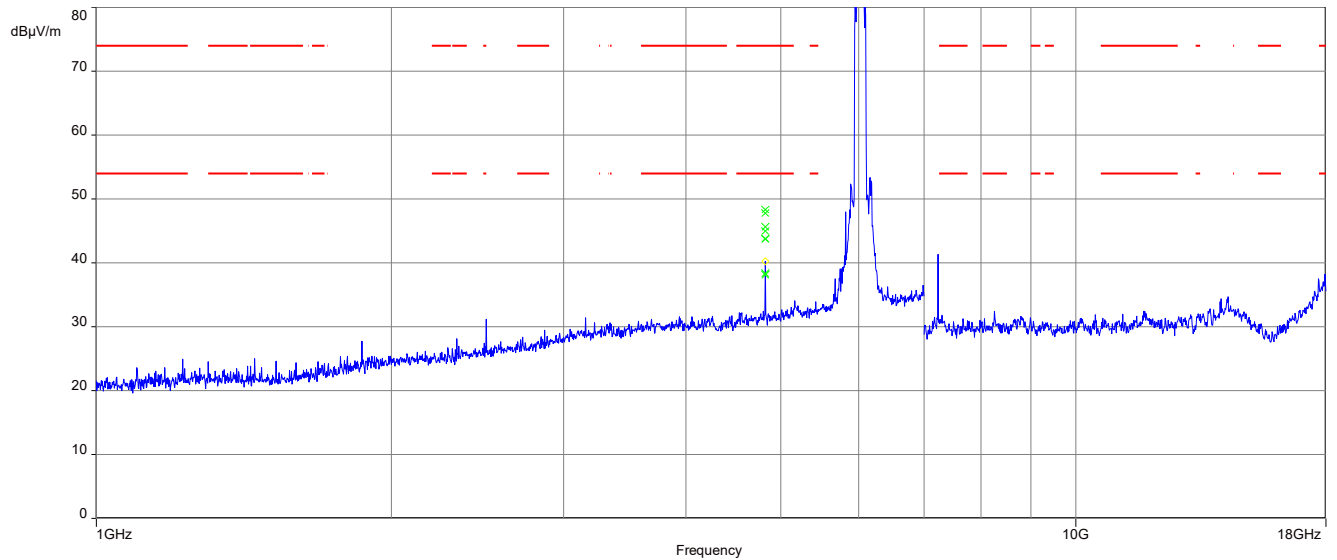


Plot 20: 12.75 GHz to 18 GHz; vertical & horizontal polarization; MIMO A+B, axHE80-mode, channel 135

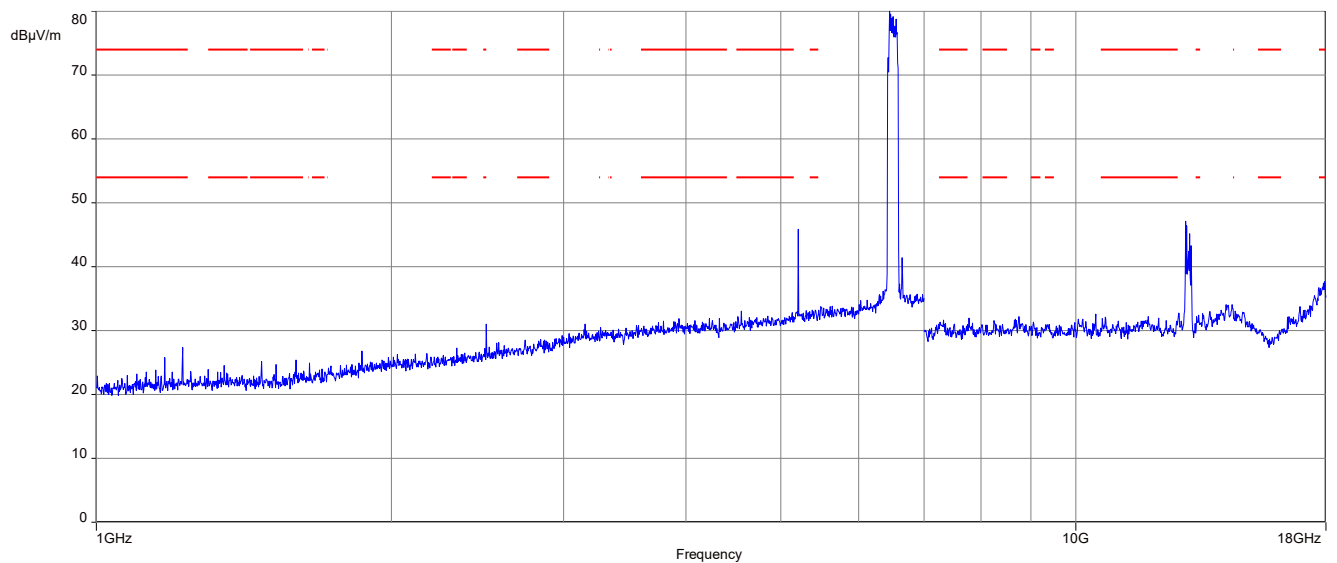


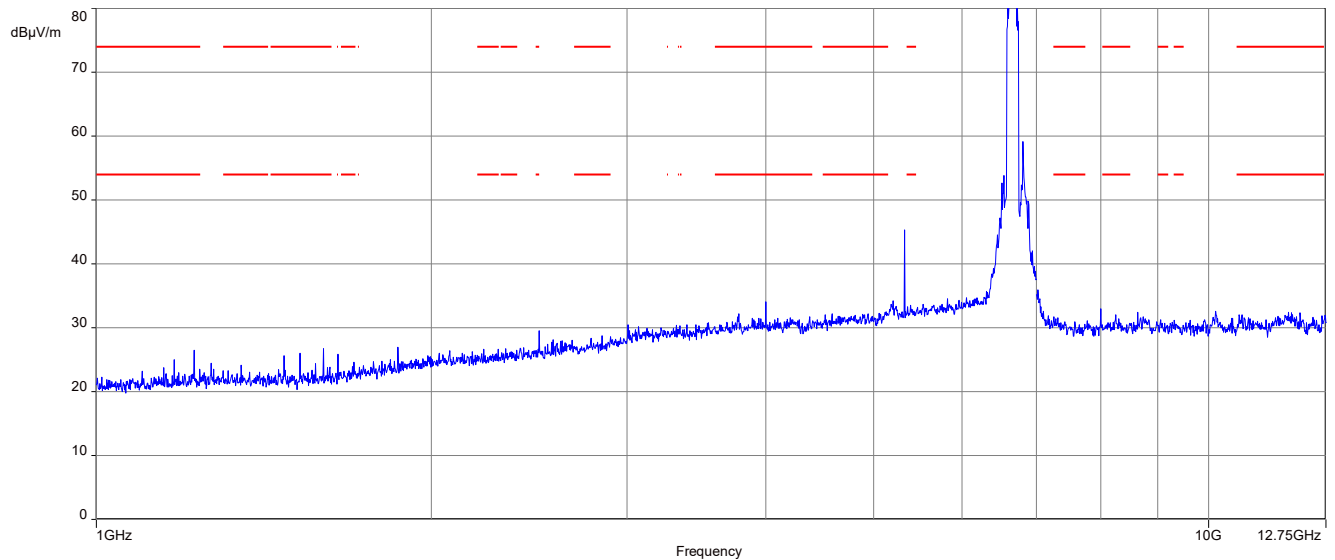
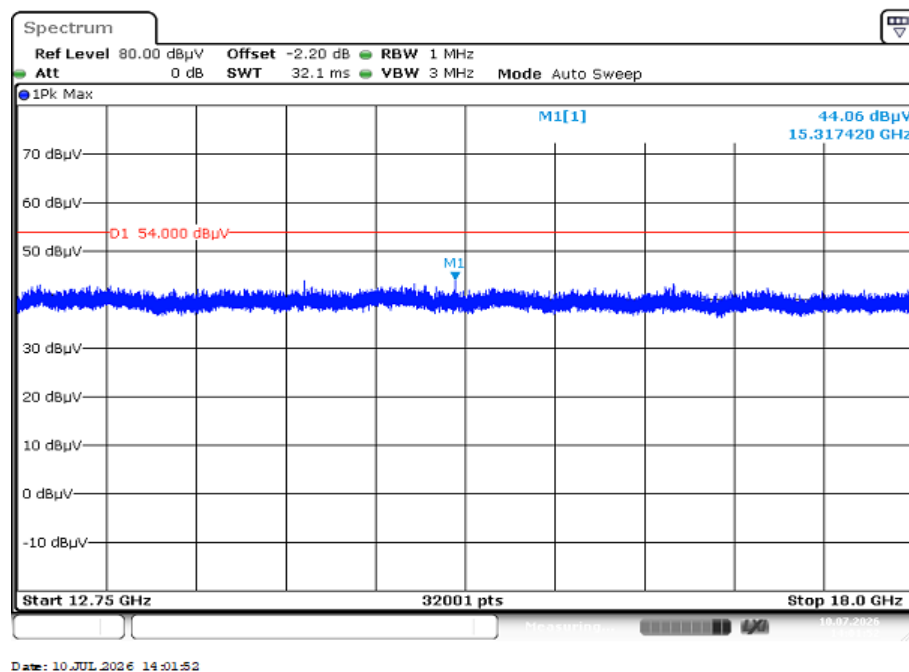
Plot 21: 1 GHz to 12.75 GHz; vertical & horizontal polarization; MIMO A+B, axHE80-mode, channel 215**Plot 22:** 12.75 GHz to 18 GHz; vertical & horizontal polarization; MIMO A+B, axHE80-mode, channel 215

Plot 23: 1 GHz to 18 GHz; vertical & horizontal polarization; MIMO A+B, axHE160-mode, channel 15

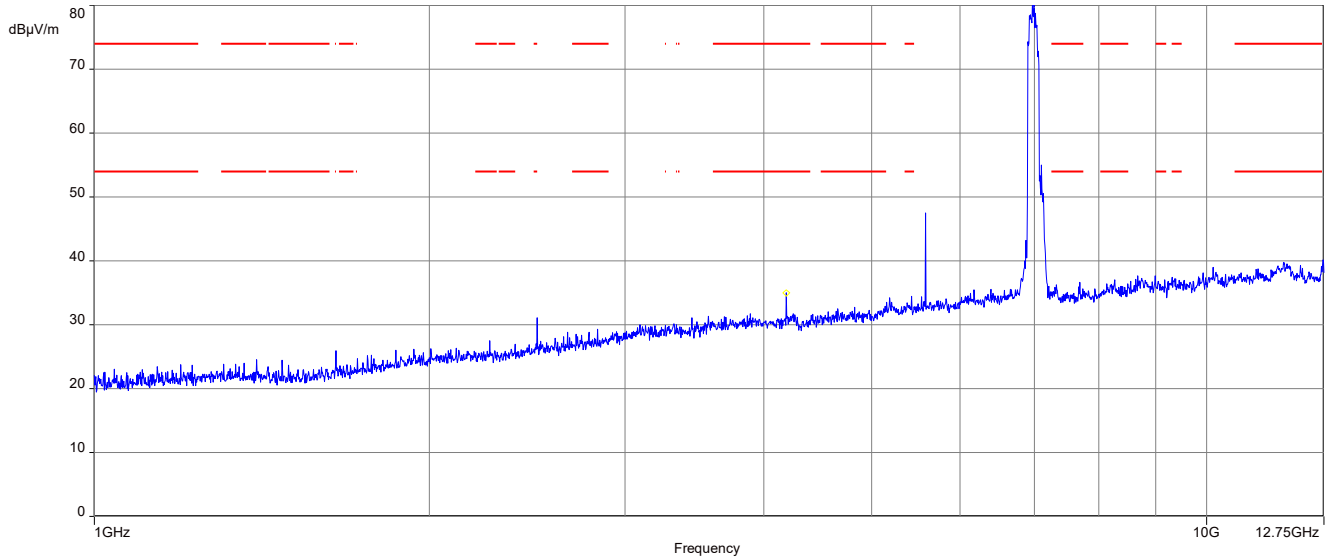
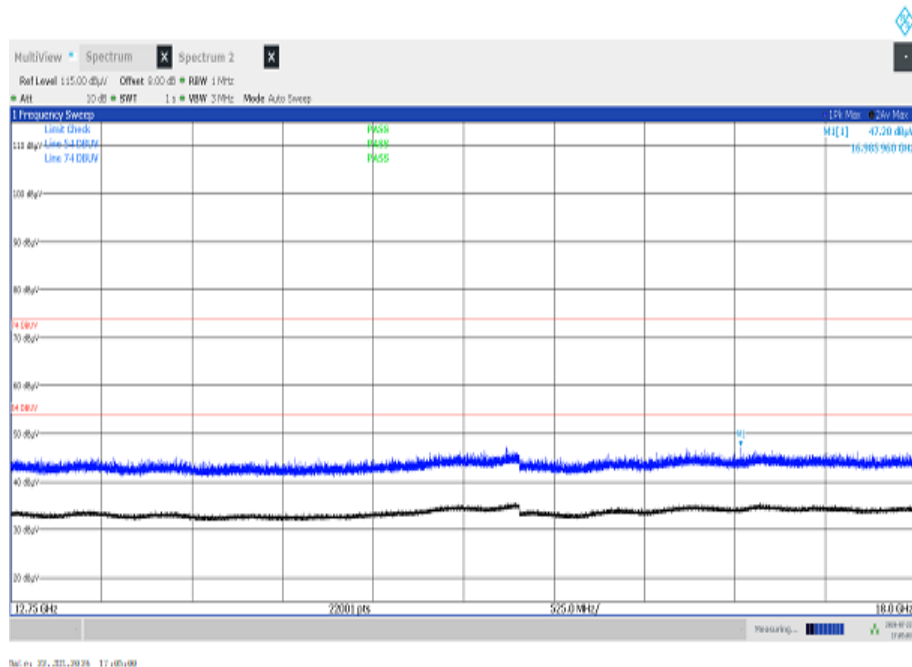


Plot 24: 1 GHz to 18 GHz; vertical & horizontal polarization; MIMO A+B, axHE160-mode, channel 111

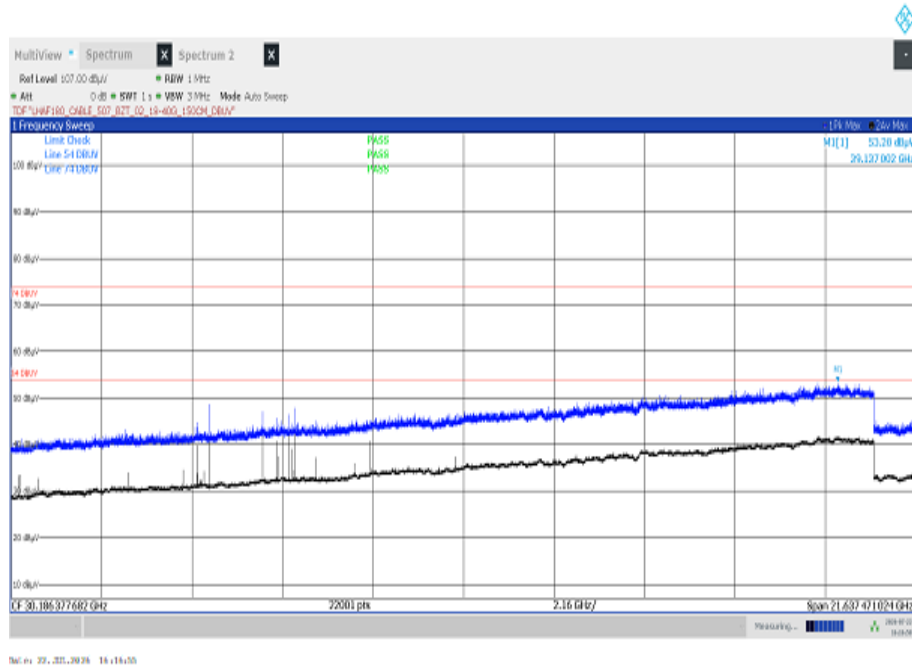


Plot 25: 1 GHz to 12.75 GHz; vertical & horizontal polarization; MIMO A+B, axHE160-mode, channel 143**Plot 26:** 12.75 GHz to 18 GHz; vertical & horizontal polarization; MIMO A+B, axHE160-mode, channel 143

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Plot 27: 1 GHz to 12.75 GHz; vertical & horizontal polarization; MIMO A+B, axHE160-mode, channel 207**Plot 28:** 12.75 GHz to 18 GHz; vertical & horizontal polarization; MIMO A+B, axHE160-mode, channel 207

Plot 29: 18 GHz to 40 GHz; vertical & horizontal polarization; max hold for all channels and modes



12.8 Spurious emissions conducted < 30 MHz

Description:

Measurement of the conducted spurious emissions in transmit mode below 30 MHz. The EUT is set to middle channel. If critical peaks are found the lowest channel and the highest channel will be measured too. Both power lines, phase and neutral line, are measured. Found peaks are re-measured with average and quasi peak detection to show compliance to the limits.

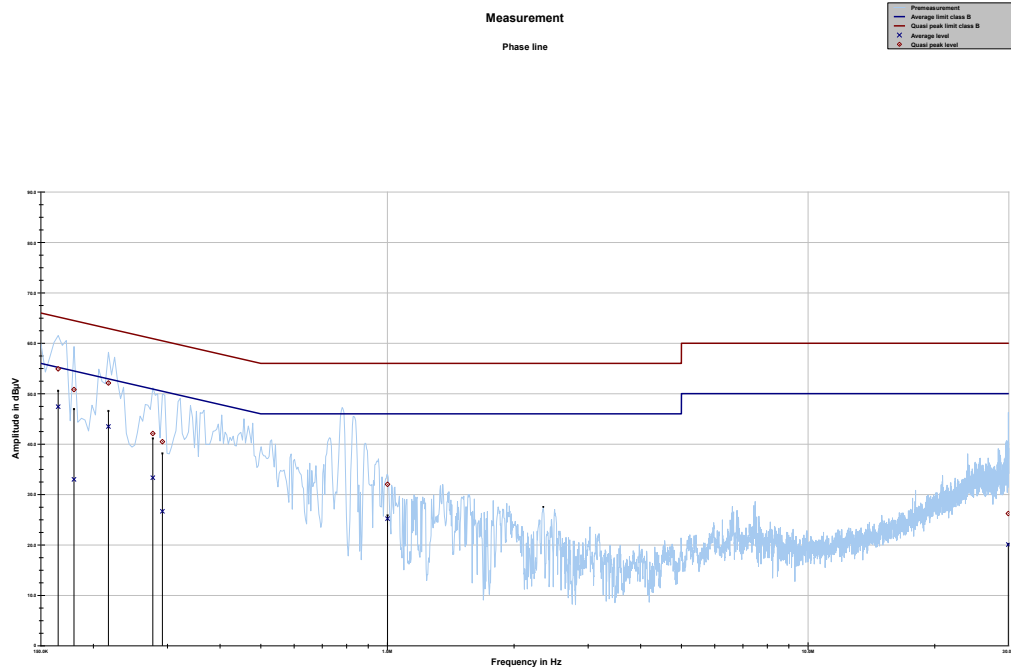
Measurement:

Measurement parameter	
Detector:	Peak - Quasi Peak / Average
Sweep time:	Auto
Video bandwidth:	9 kHz
Resolution bandwidth:	100 kHz
Span:	150 kHz to 30 MHz
Trace mode:	Max Hold
Test setup:	See sub clause 7.4 – A
Measurement uncertainty:	See chapter 9

Limits:

Spurious Emissions Conducted < 30 MHz		
Frequency (MHz)	Quasi-Peak (dB μ V/m)	Average (dB μ V/m)
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30.0	60	50

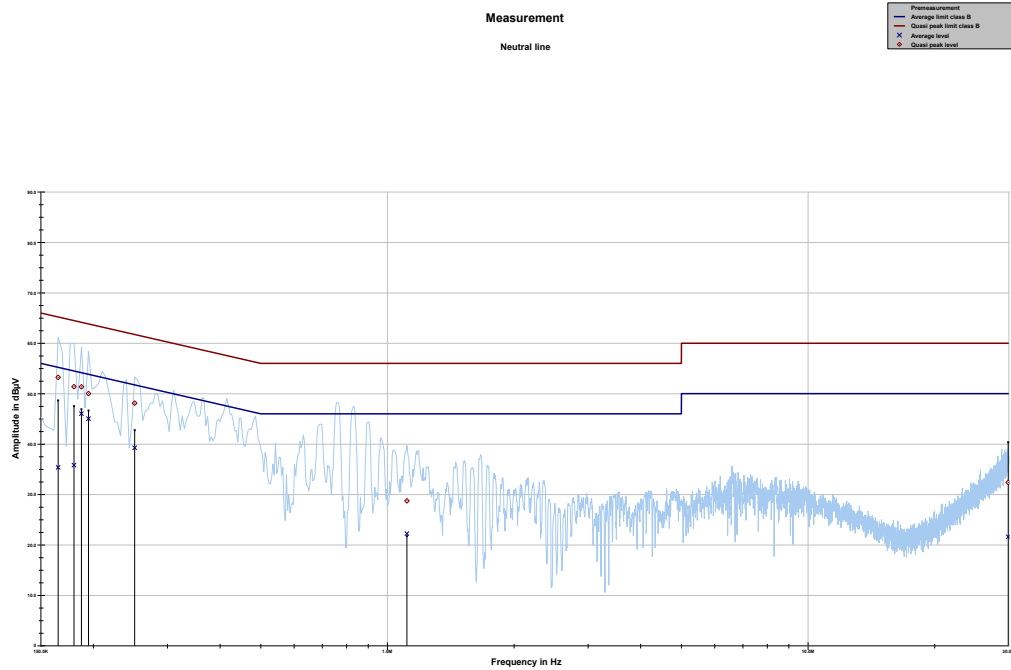
*Decreases with the logarithm of the frequency

Plots:**Plot 1: 150 kHz to 30 MHz, phase line (240 VAC)**

Project ID: 2152_01_09

Final results:

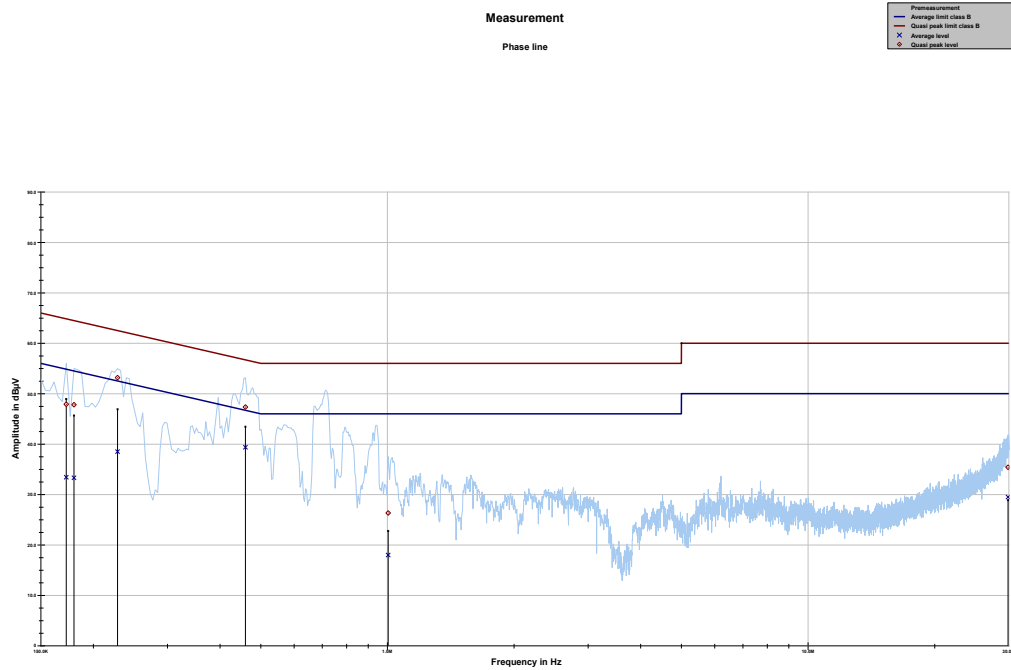
Frequency	Quasi peak level	Margin quasi peak	Limit QP	Average level	Margin average	Limit AV
MHz	dBμV	dB	dBμV	dBμV	dB	dBμV
0.164925	54.91	10.30	65.212	47.41	8.16	55.574
0.179850	50.82	13.67	64.493	33.00	22.14	55.147
0.217163	52.11	10.82	62.927	43.50	10.59	54.081
0.276863	42.10	18.81	60.909	33.33	19.05	52.375
0.291787	40.48	19.99	60.473	26.68	25.27	51.949
1.000725	32.03	23.97	56.000	25.21	20.79	46.000
29.932838	26.22	33.78	60.000	20.08	29.92	50.000

Plot 2: 150 kHz to 30 MHz, neutral line (240 VAC)

Project ID: 2152_01_09

Final results:

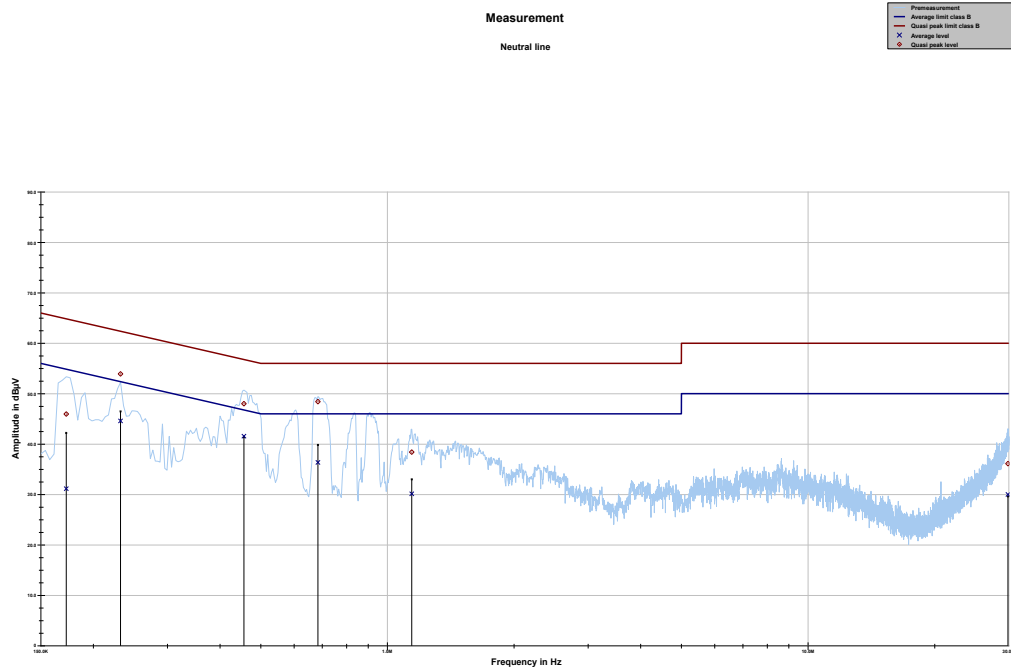
Frequency	Quasi peak level	Margin quasi peak	Limit QP	Average level	Margin Average	Limit AV
MHz	dBμV	dB	dBμV	dBμV	dB	dBμV
0.164925	53.24	11.97	65.212	35.39	20.18	55.574
0.179850	51.39	13.10	64.493	35.83	19.32	55.147
0.187312	51.35	12.81	64.155	46.04	8.89	54.934
0.194775	50.02	13.81	63.830	45.04	9.68	54.721
0.250744	48.12	13.62	61.732	39.26	13.86	53.122
1.112663	28.74	27.26	56.000	22.25	23.75	46.000
29.910450	32.38	27.62	60.000	21.60	28.40	50.000

Plot 3: 150 kHz to 30 MHz, phase line (120 VAC)

Project ID: 2152_01_11

Final results:

Frequency	Quasi peak level	Margin quasi peak	Limit QP	Average level	Margin average	Limit AV
MHz	dBμV	dB	dBμV	dBμV	dB	dBμV
0.172387	47.90	16.94	64.845	33.43	21.93	55.360
0.179850	47.81	16.68	64.493	33.31	21.84	55.147
0.228356	53.18	9.33	62.509	38.50	15.26	53.761
0.459694	47.34	9.36	56.698	39.36	7.79	47.152
1.004456	26.34	29.66	56.000	17.99	28.01	46.000
29.888063	35.41	24.59	60.000	29.50	20.50	50.000

Plot 4: 150 kHz to 30 MHz, neutral line (120 VAC)**Final results:**

Frequency	Quasi peak level	Margin quasi peak	Limit QP	Average level	Margin average	Limit AV
MHz	dBμV	dB	dBμV	dBμV	dB	dBμV
0.172387	45.96	18.89	64.845	31.16	24.20	55.360
0.232088	53.92	8.46	62.375	44.59	9.06	53.655
0.455962	48.02	8.75	56.766	41.57	5.69	47.258
0.683569	48.41	7.59	56.000	36.36	9.64	46.000
1.142513	38.41	17.59	56.000	30.13	15.87	46.000
29.876869	36.13	23.87	60.000	30.01	19.99	50.000

13 Glossary

AVG	Average
C	Compliant
C/N₀	Carrier to noise-density ratio, expressed in dB-Hz
CAC	Channel availability check
CW	Clean wave
DC	Duty cycle
DFS	Dynamic frequency selection
DSSS	Dynamic sequence spread spectrum
DUT	Device under test
EN	European Standard
ETSI	European Telecommunications Standards Institute
EMC	Electromagnetic Compatibility
EUT	Equipment under test
FCC	Federal Communications Commission
FCC ID	Combination of Grantee Code and Equipment Product Code
FHSS	Frequency hopping spread spectrum
FVIN	Firmware version identification number
GNSS	Global Navigation Satellite System
GUE	GNSS User Equipment
HMN	Host marketing name
HVIN	Hardware version identification number
HW	Hardware
ISED	Innovation, Science and Economic Development Canada
Inv. No.	Inventory number
MC	Modulated carrier
NA	Not applicable
NC	Not compliant
NOP	Non occupancy period
NP	Not performed
OBW	Occupied bandwidth
OC	Operating channel
OCW	Operating channel bandwidth
OFDM	Orthogonal frequency division multiplexing
OOB	Out of band
OP	Occupancy period
PER	Packet error rate
PMN	Product marketing name
PP	Positive peak
QP	Quasi peak
RLAN	Radio local area network
S/N or SN	Serial number
SW	Software
UUT	Unit under test
WLAN	Wireless local area network

14 Document history

Version	Applied changes	Date of release
R01	Initial release	2026-07-30

END OF TEST REPORT