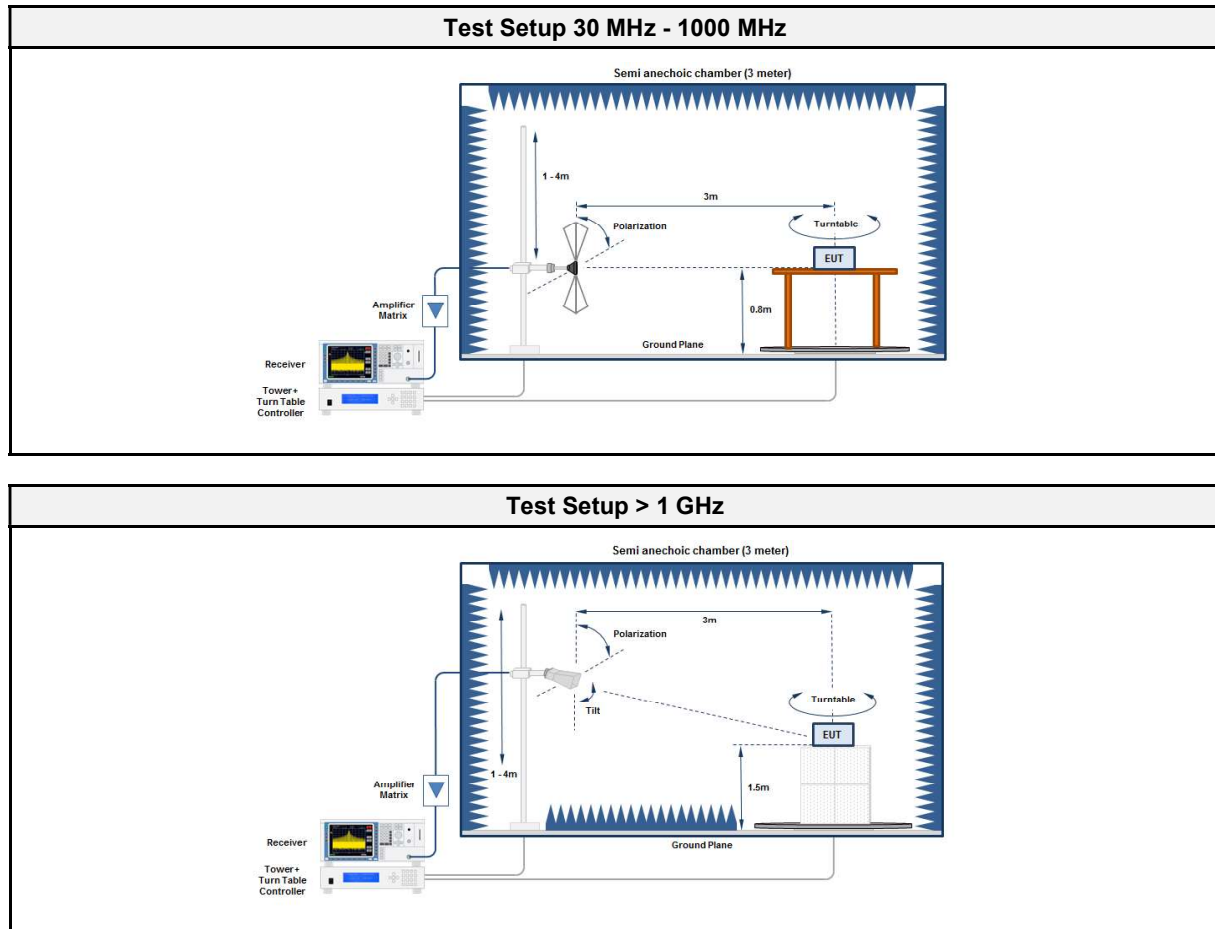


3.7.4 Setup



3.7.5 Procedure

Test Procedure 30 MHz - 1000 MHz
1. EUT is placed on a non conducting support at the center of a turn table 0.8 m above the ground 2. EUT set to test mode 3. The receiver is set to peak detection with max hold 4. The EUT is rotated through 360° and the height of the antenna is varied from 1 m to 4 m 5. All significant emissions are measured again using the corresponding final detector
Test Procedure > 1 GHz
1. EUT is placed on a non conducting support at the center of a turn table 1.5 m above the ground 2. EUT set to test mode 3. The receiver is set to peak detection with max hold 4. The EUT is rotated through 360° and the height of the antenna is varied from 1 m to 4 m 5. All significant emissions are measured again using the corresponding final detector

3.7.6 Results

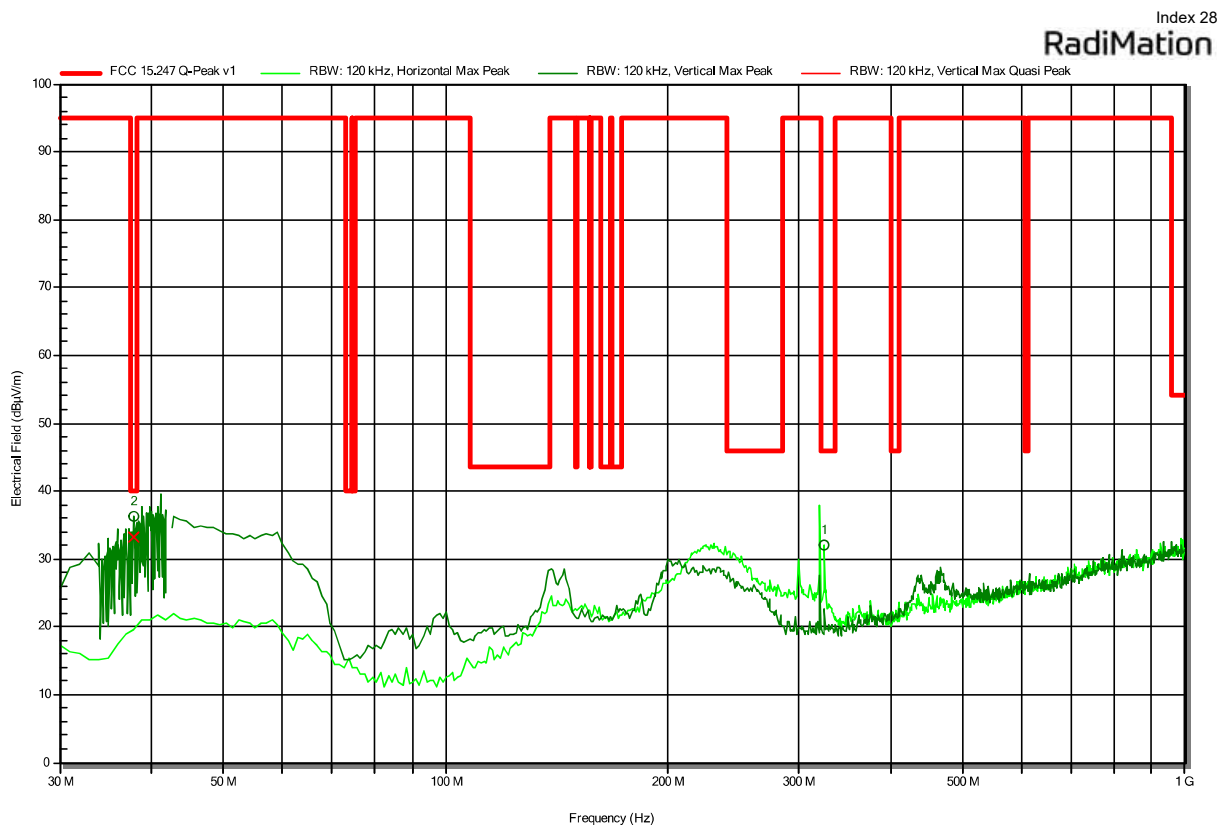
Test Results ANT-1						
Channel [MHz]	Emission [MHz]	Level [dBμV/m]	Det.	Pol.	Limit [dBμV/m]	Margin [dB]
2405	37.76	33.3	qpk	ver	40	-6.75
2405	324.88	32.1	pk	hor	46	-13.87
2405	4810.8	43.56	pk	ver	74	-30.44
2405	4810.8	37.35	avg	ver	54	-16.65
2440	37.76	32.8	qpk	ver	40	-7.16
2440	4879.0667	47.19	pk	ver	74	-26.81
2440	4879.0667	41.01	avg	ver	54	-12.99
2440	7318.5333	39.75	pk	ver	74	-34.25
2440	7318.5333	32.62	avg	ver	54	-21.38
2475	37.76	33	qpk	ver	40	-7.05
2475	324.88	27.4	pk	hor	46	-18.55
2475	4951.0667	48.27	pk	ver	74	-25.73
2475	4951.0667	41.57	avg	ver	54	-12.43
2475	7426.5333	41.51	pk	ver	74	-32.49
2475	7426.5333	34.43	avg	ver	54	-19.57

Test Results ANT-2						
Channel [MHz]	Emission [MHz]	Level [dBμV/m]	Det.	Pol.	Limit [dBμV/m]	Margin [dB]
2405	37.76	33.1	qpk	ver	40	-6.87
2405	324.88	27.3	pk	hor	46	-18.65
2405	4810.9333	44.42	pk	ver	74	-29.58
2405	4810.9333	37.31	avg	ver	54	-16.69
2440	37.76	30.1	qpk	ver	40	-9.88
2440	243.4	35	pk	hor	46	-10.95
2440	4878.9333	47.74	pk	ver	74	-26.26
2440	4878.9333	40.08	avg	ver	54	-13.92
2440	7321.8667	40.14	pk	ver	74	-33.86
2440	7321.8667	32.38	avg	ver	54	-21.62
2475	37.76	33.1	qpk	ver	40	-6.92
2475	247.28	34.9	pk	hor	46	-11.1
2475	4948.9333	46.47	pk	ver	74	-27.53
2475	4948.9333	41.18	avg	ver	54	-12.82

ANNEX A Transmitter spurious emissions Antenna-1

Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2403-2495
 Applicant: Jungheinrich AG
 Model Description: UWB-Location-System
 Model: 52445054, Anchor
 Test Sample ID: 48554
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Ibraimov
 Measurement software: RadiMation, version 2023.2.6
 Test Conditions: Tnom: 25 °Celsius, Vnom: 55 V DC
 Antenna: Schwarzbeck VULB 9168
 Measurement distance: 3 m
 Mode: Tx; 802.15.4_2405 MHz_Tx
 Test Date: 2024-06-14



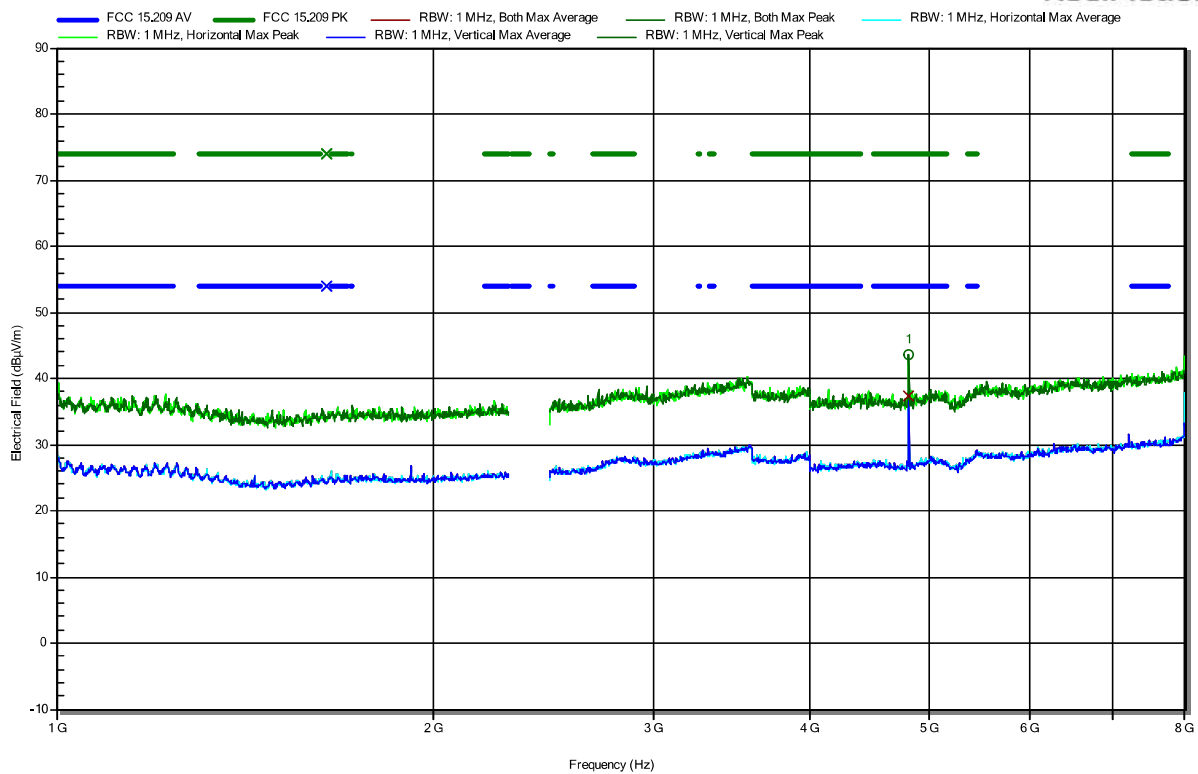
Peak Number	Frequency (MHz)	Peak (dBµV/m)	Peak Limit (dBµV/m)	Peak Difference (dB)	Peak Status	Polarization
1	324.88	32.1	46	-13.87	Pass	Horizontal
Peak Number	Frequency (MHz)	Quasi-Peak (dBµV/m)	Quasi-Peak Limit (dBµV/m)	Quasi-Peak Difference (dB)	Quasi-Peak Status	Polarization
2	37.76	33.3	40	-6.75	Pass	Vertical

Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2403-2495
 Applicant: Jungheinrich AG
 Model Description: UWB-Location-System
 Model: 52445054, Anchor
 Test Sample ID: 48554
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Ibraimov
 Measurement software: RadiMation, version 2020.1.8
 Test Conditions: Tnom: 25 °Celsius, Vnom: 55 V DC
 Antenna: Schwarzbeck BBHA 9120B
 Measurement distance: 3 m
 Mode: Tx; 802.15.4_2405 MHz_Tx
 Test Date: 2024-06-13

Index 17

RadiMation



Peak Number	Frequency (MHz)	Peak (dBμV/m)	Peak Limit (dBμV/m)	Peak Difference (dB)	Peak Status	Polarization
1	4810.8	43.56	74	-30.44	Pass	Vertical

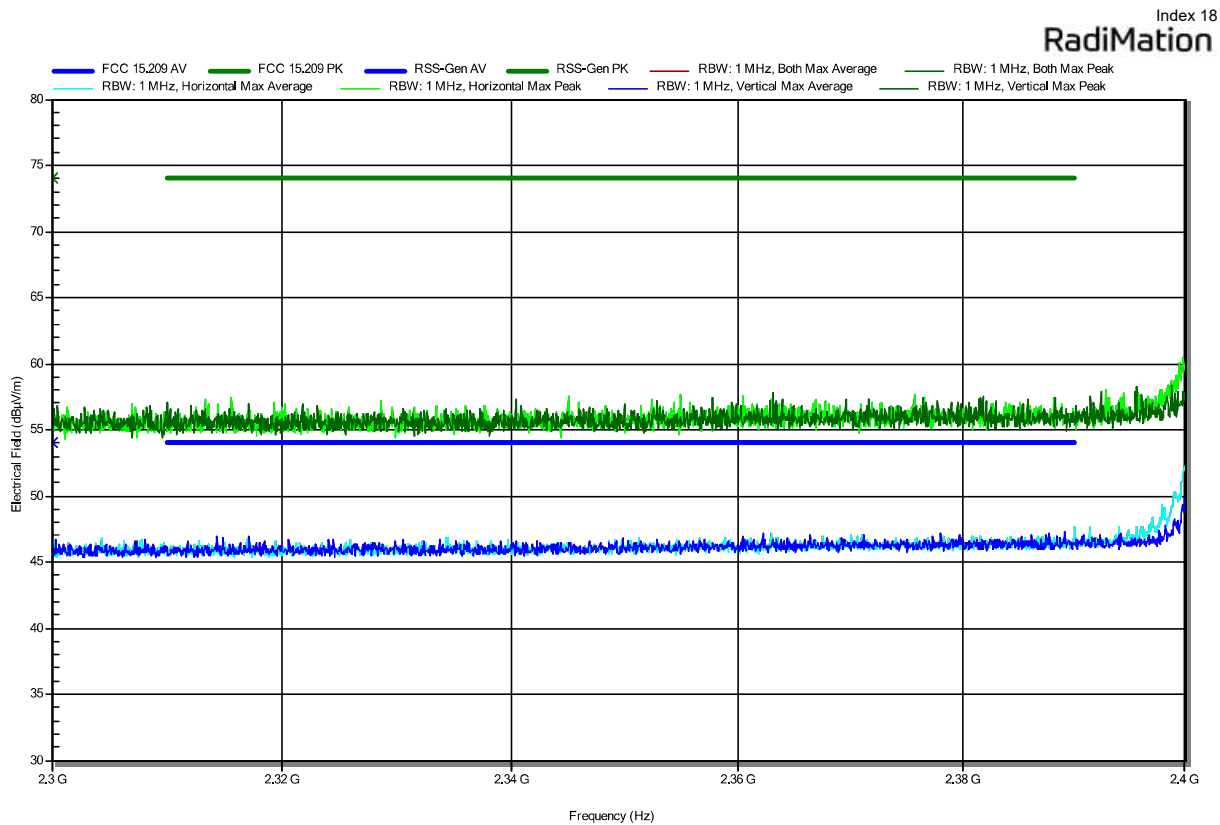
Peak Number	Frequency (MHz)	Average (dBμV/m)	Average Limit (dBμV/m)	Average Difference (dB)	Average Status	Polarization
1	4810.8	37.35	54	-16.65	Pass	Vertical

Test Report No.: G0M-2403-2495-TFC247ZB-RFR2a-V01

Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

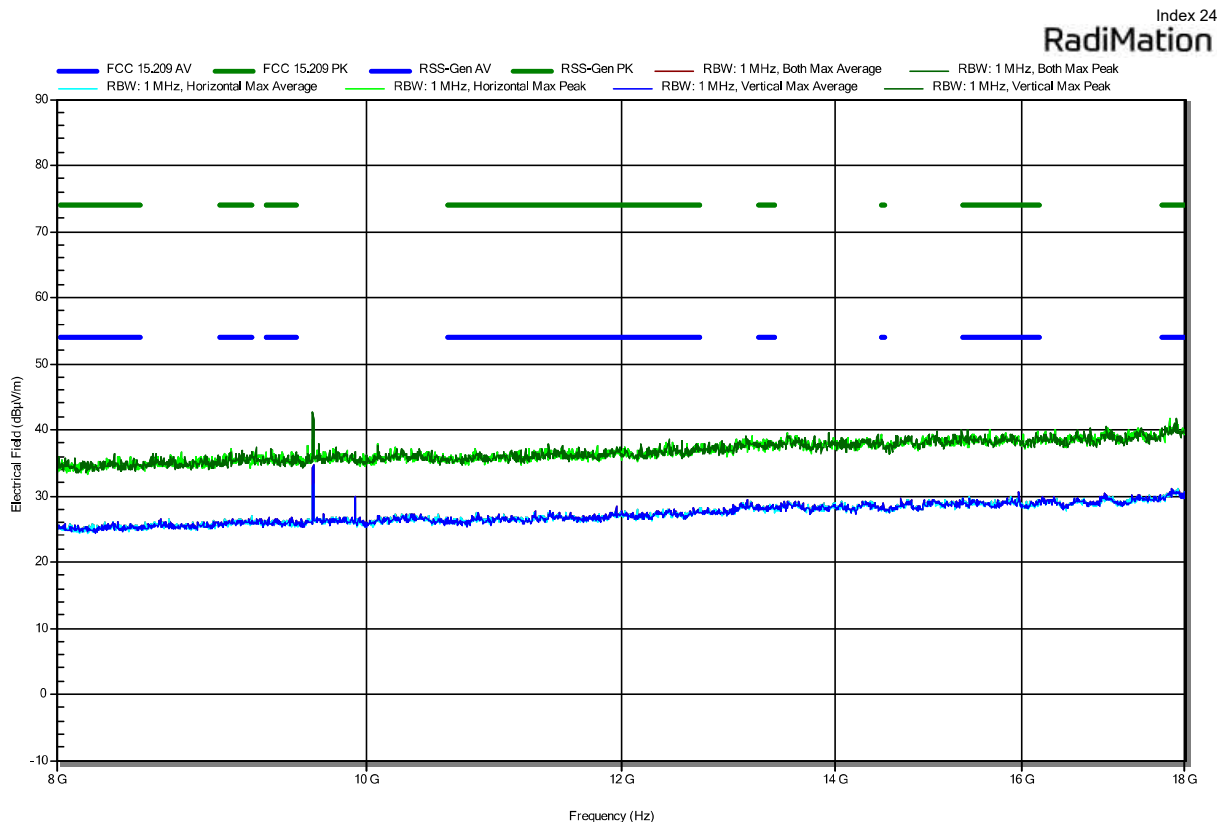
Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2403-2495
 Applicant: Jungheinrich AG
 Model Description: UWB-Location-System
 Model: 52445054, Anchor
 Test Sample ID: 48554
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Ibraimov
 Measurement software: RadiMation, version 2020.1.8
 Test Conditions: Tnom: 25 °Celsius, Vnom: 55 V DC
 Antenna: Schwarzbeck BBHA 9120B
 Measurement distance: 3 m
 Mode: Tx; 802.15.4_2405 MHz_Tx
 Test Date: 2024-06-13
 Note: lower bandedge



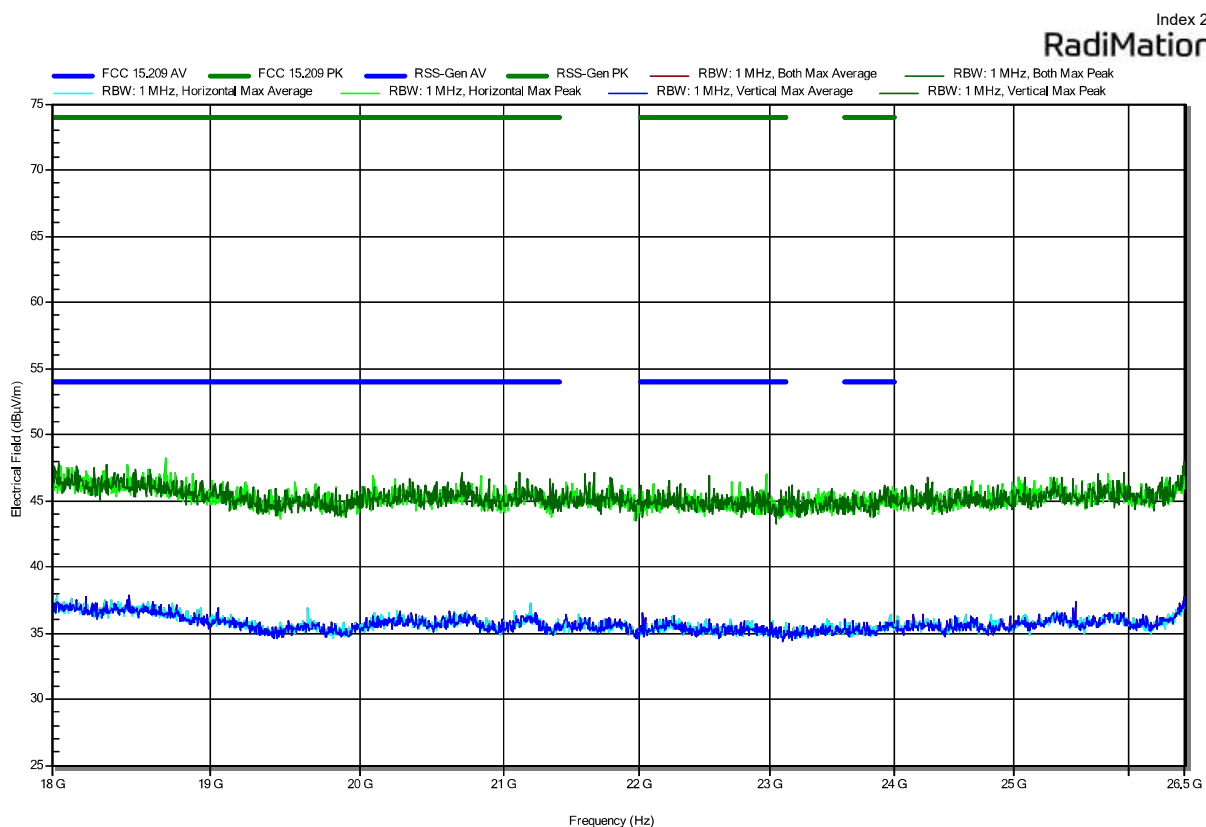
Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2403-2495
 Applicant: Jungheinrich AG
 Model Description: UWB-Location-System
 Model: 52445054, Anchor
 Test Sample ID: 48554
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Ibraimov
 Measurement software: RadiMation, version 2020.1.8
 Test Conditions: Tnom: 25 °Celsius, Vnom: 55 V DC
 Antenna: Schwarzbeck HWRD 650
 Measurement distance: 3 m
 Mode: Tx; 802.15.4_2405 MHz_Tx
 Test Date: 2024-06-13
 Note:



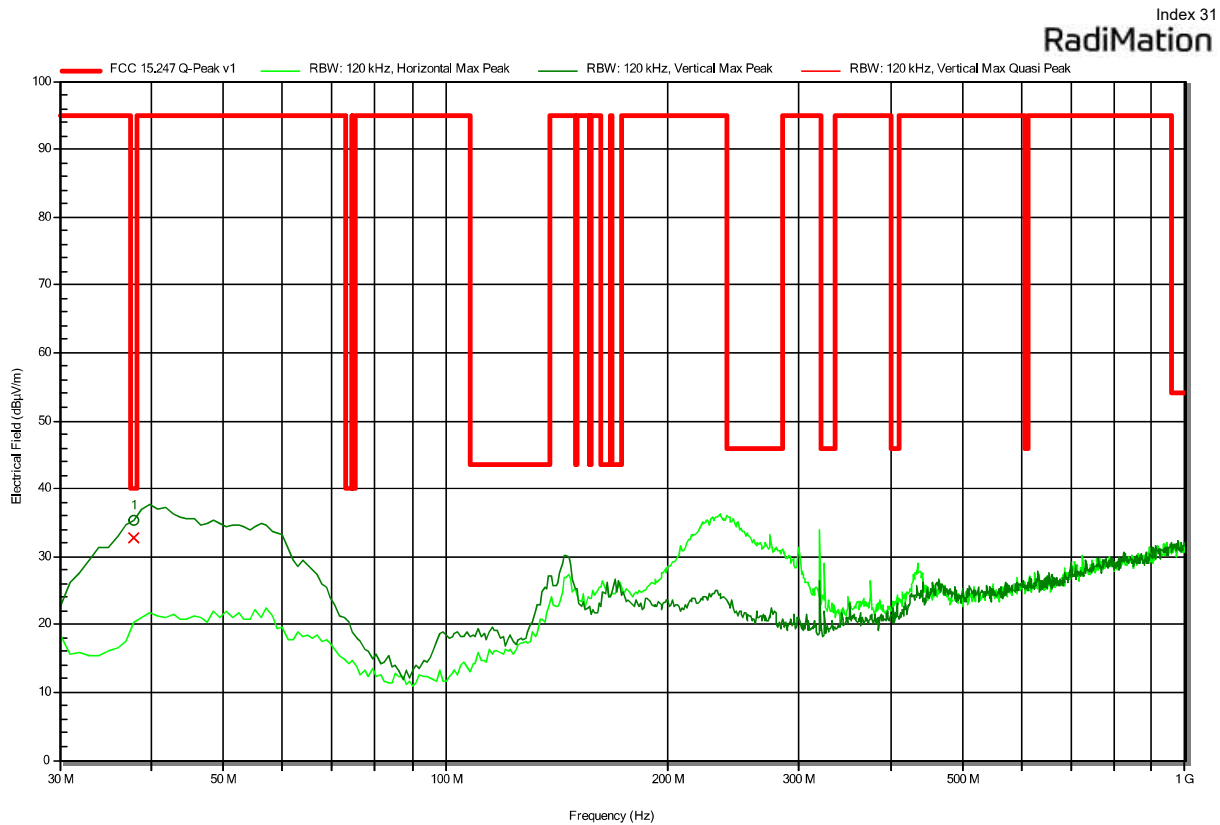
Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2403-2495
 Applicant: Jungheinrich AG
 Model Description: UWB-Location-System
 Model: 52445054, Anchor
 Test Sample ID: 48554
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Ibraimov
 Measurement software: RadiMation, version 2020.1.8
 Test Conditions: Tnom: 25 °Celsius, Vnom: 55 V DC
 Antenna: Amplifier Research AT4560
 Measurement distance: 3 m
 Mode: Tx; 802.15.4_2405 MHz_Tx
 Test Date: 2024-06-13



Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2403-2495
 Applicant: Jungheinrich AG
 Model Description: UWB-Location-System
 Model: 52445054, Anchor
 Test Sample ID: 48554
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Ibraimov
 Measurement software: RadiMation, version 2023.2.6
 Test Conditions: Tnom: 25 °Celsius, Vnom: 55 V DC
 Antenna: Schwarzbeck VULB 9168
 Measurement distance: 3 m
 Mode: Tx; 802.15.4_2440 MHz_Tx
 Test Date: 2024-06-14



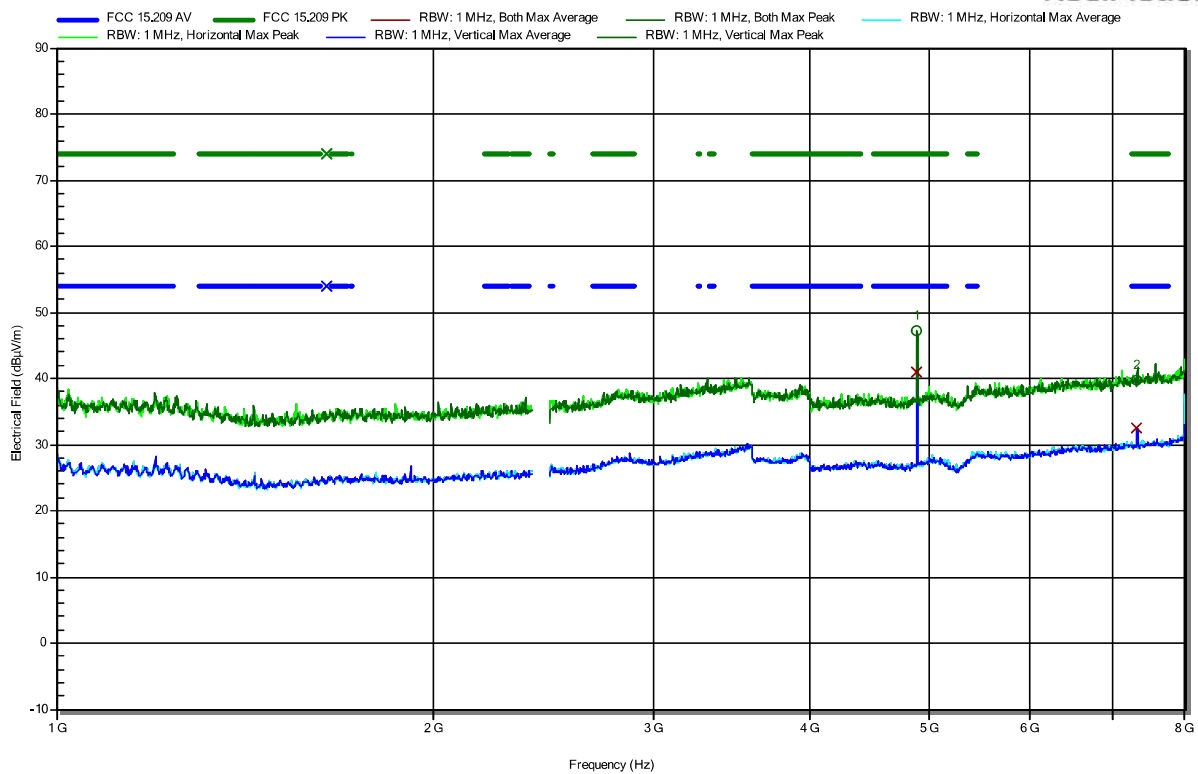
Peak Number	Frequency (MHz)	Quasi-Peak (dBµV/m)	Quasi-Peak Limit (dBµV/m)	Quasi-Peak Difference (dB)	Quasi-Peak Status	Polarization
1	37.76	32.8	40	-7.16	Pass	Vertical

Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2403-2495
 Applicant: Jungheinrich AG
 Model Description: UWB-Location-System
 Model: 52445054, Anchor
 Test Sample ID: 48554
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Ibrahimov
 Measurement software: RadiMation, version 2020.1.8
 Test Conditions: Tnom: 25 °Celsius, Vnom: 55 V DC
 Antenna: Schwarzbeck BBHA 9120B
 Measurement distance: 3 m
 Mode: Tx; 802.15.4_2440 MHz_Tx
 Test Date: 2024-06-13

Index 19

RadiMation



Peak Number	Frequency (MHz)	Peak (dBµV/m)	Peak Limit (dBµV/m)	Peak Difference (dB)	Peak Status	Polarization
1	4879.0667	47.19	74	-26.81	Pass	Vertical
2	7318.5333	39.75	74	-34.25	Pass	Vertical

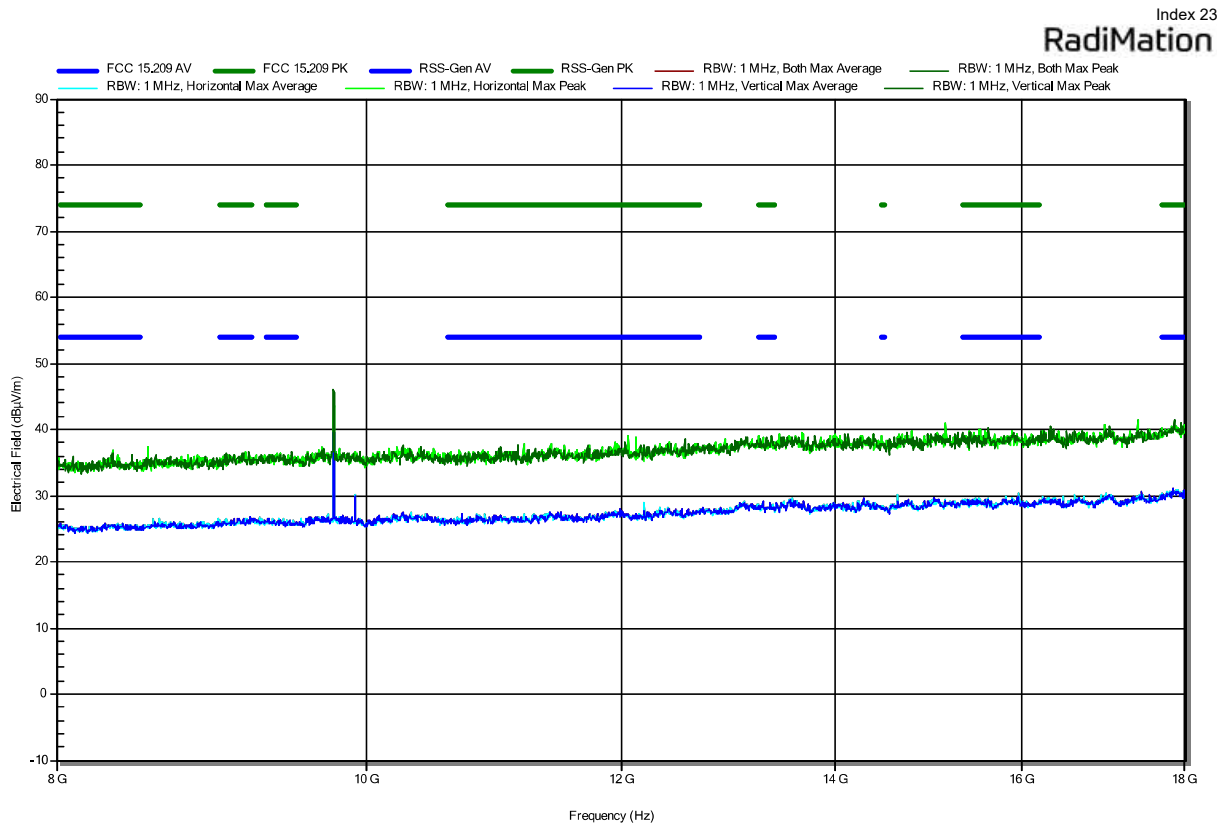
Peak Number	Frequency (MHz)	Average (dBµV/m)	Average Limit (dBµV/m)	Average Difference (dB)	Average Status	Polarization
1	4879.0667	41.01	54	-12.99	Pass	Vertical
2	7318.5333	32.62	54	-21.38	Pass	Vertical

Test Report No.: G0M-2403-2495-TFC247ZB-RFR2a-V01

Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

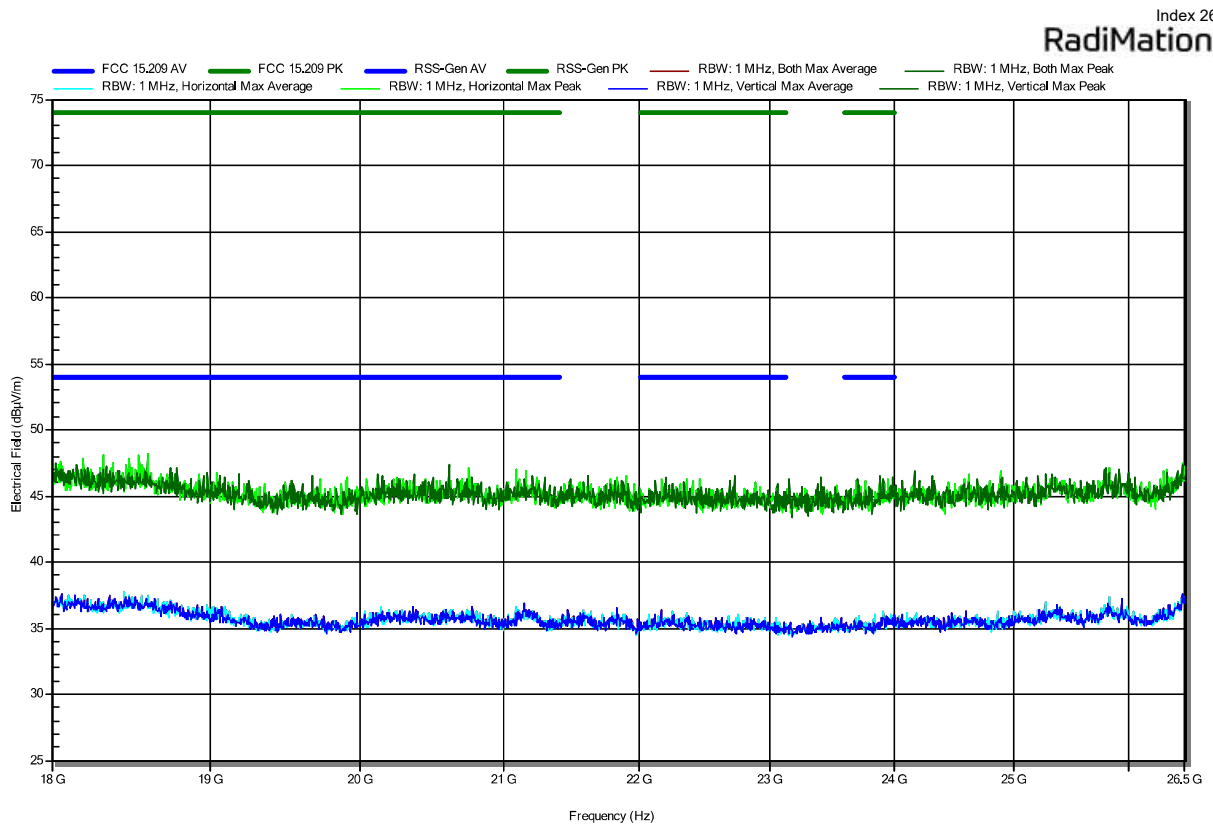
Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2403-2495
 Applicant: Jungheinrich AG
 Model Description: UWB-Location-System
 Model: 52445054, Anchor
 Test Sample ID: 48554
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Ibraimov
 Measurement software: RadiMation, version 2020.1.8
 Test Conditions: Tnom: 25 °Celsius, Vnom: 55 V DC
 Antenna: Schwarzbeck HWRD 650
 Measurement distance: 3 m
 Mode: Tx; 802.15.4_2440 MHz_Tx
 Test Date: 2024-06-13



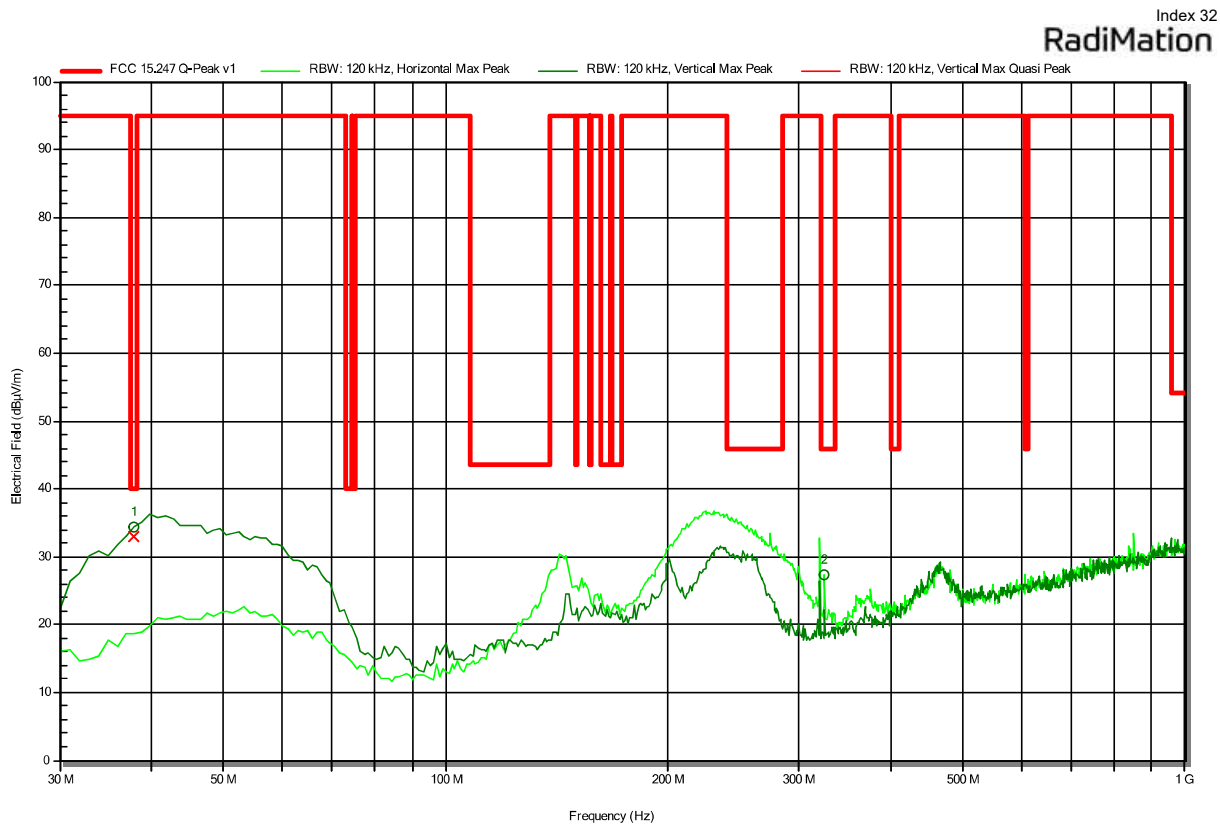
Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2403-2495
 Applicant: Jungheinrich AG
 Model Description: UWB-Location-System
 Model: 52445054, Anchor
 Test Sample ID: 48554
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Ibraimov
 Measurement software: RadiMation, version 2020.1.8
 Test Conditions: Tnom: 25 °Celsius, Vnom: 55 V DC
 Antenna: Amplifier Research AT4560
 Measurement distance: 3 m
 Mode: Tx; 802.15.4_2440 MHz_Tx
 Test Date: 2024-06-13
 Note:



Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2403-2495
 Applicant: Jungheinrich AG
 Model Description: UWB-Location-System
 Model: 52445054, Anchor
 Test Sample ID: 48554
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Ibraimov
 Measurement software: RadiMation, version 2023.2.6
 Test Conditions: Tnom: 25 °Celsius, Vnom: 55 V DC
 Antenna: Schwarzbeck VULB 9168
 Measurement distance: 3 m
 Mode: Tx; 802.15.4_2475 MHz_Tx
 Test Date: 2024-06-14
 Note:

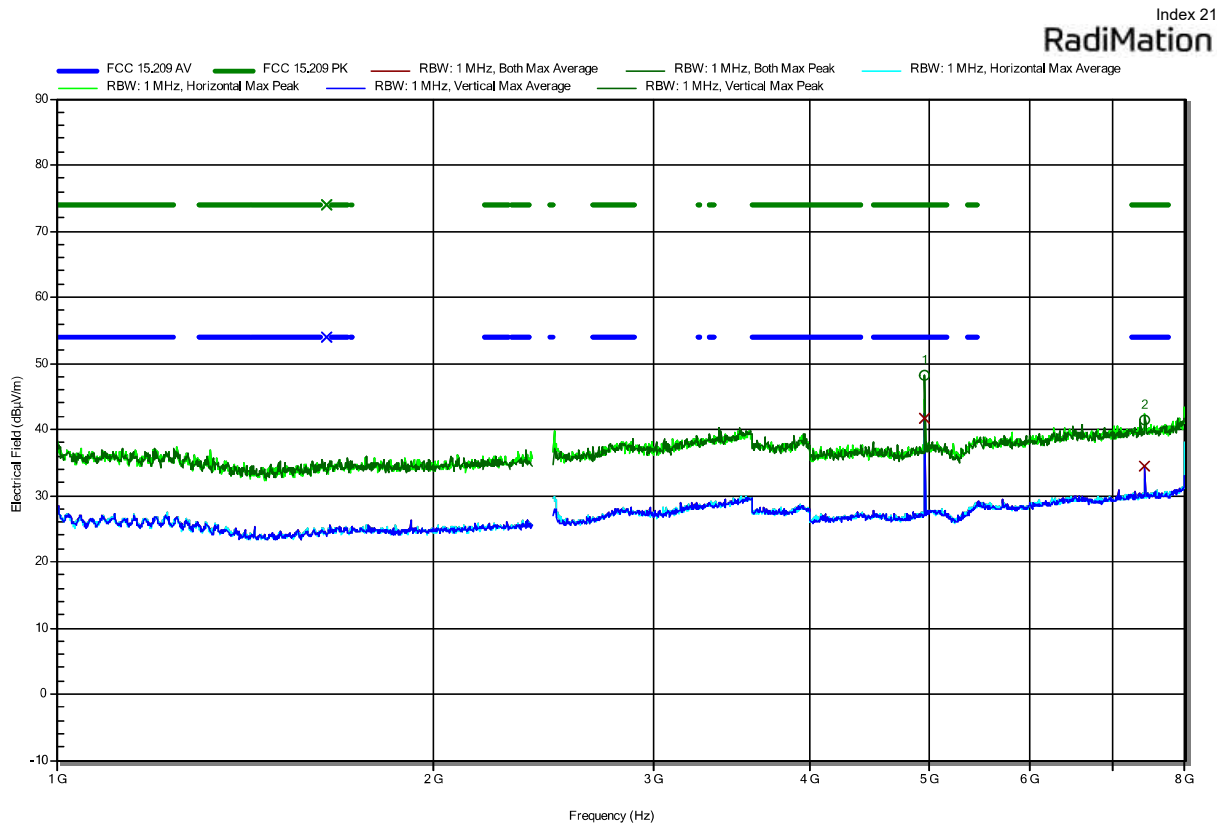


Peak Number	Frequency (MHz)	Peak (dBµV/m)	Peak Limit (dBµV/m)	Peak Difference (dB)	Peak Status	Polarization
2	324.88	27.4	46	-18.55	Pass	Horizontal

Peak Number	Frequency (MHz)	Quasi-Peak (dBµV/m)	Quasi-Peak Limit (dBµV/m)	Quasi-Peak Difference (dB)	Quasi-Peak Status	Polarization
1	37.76	33	40	-7.05	Pass	Vertical

Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2403-2495
 Applicant: Jungheinrich AG
 Model Description: UWB-Location-System
 Model: 52445054, Anchor
 Test Sample ID: 48554
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Ibrahimov
 Measurement software: RadiMation, version 2020.1.8
 Test Conditions: Tnom: 25 °Celsius, Vnom: 55 V DC
 Antenna: Schwarzbeck BBHA 9120B
 Measurement distance: 3 m
 Mode: Tx; 802.15.4_2475 MHz_Tx
 Test Date: 2024-06-13

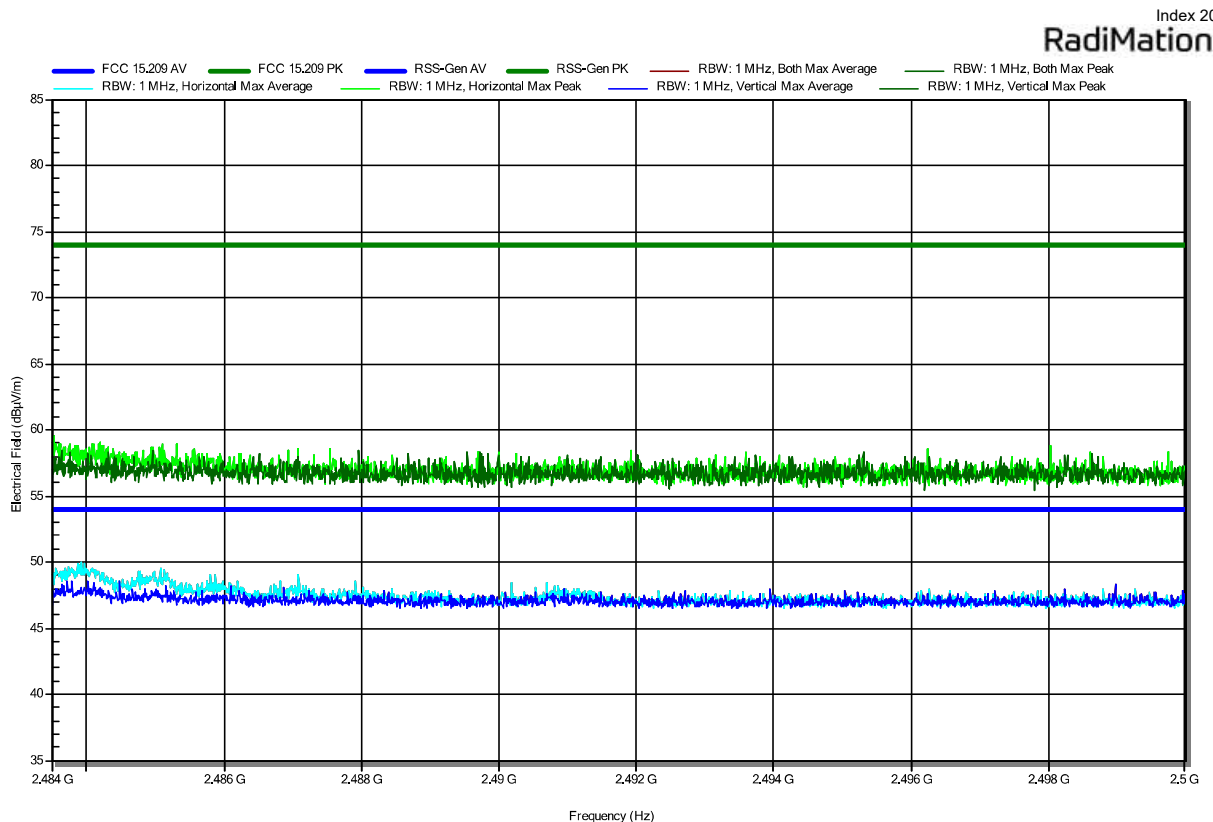


Peak Number	Frequency (MHz)	Peak (dBµV/m)	Peak Limit (dBµV/m)	Peak Difference (dB)	Peak Status	Polarization
1	4951.0667	48.27	74	-25.73	Pass	Vertical
2	7426.5333	41.51	74	-32.49	Pass	Vertical

Peak Number	Frequency (MHz)	Average (dBµV/m)	Average Limit (dBµV/m)	Average Difference (dB)	Average Status	Polarization
1	4951.0667	41.57	54	-12.43	Pass	Vertical
2	7426.5333	34.43	54	-19.57	Pass	Vertical

Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2403-2495
 Applicant: Jungheinrich AG
 Model Description: UWB-Location-System
 Model: 52445054, Anchor
 Test Sample ID: 48554
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Ibraimov
 Measurement software: RadiMation, version 2020.1.8
 Test Conditions: Tnom: 25 °Celsius, Vnom: 55 V DC
 Antenna: Schwarzbeck BBHA 9120B
 Measurement distance: 3 m
 Mode: Tx; 802.15.4_2475 MHz_Tx
 Test Date: 2024-06-13
 Note: upper bandedge

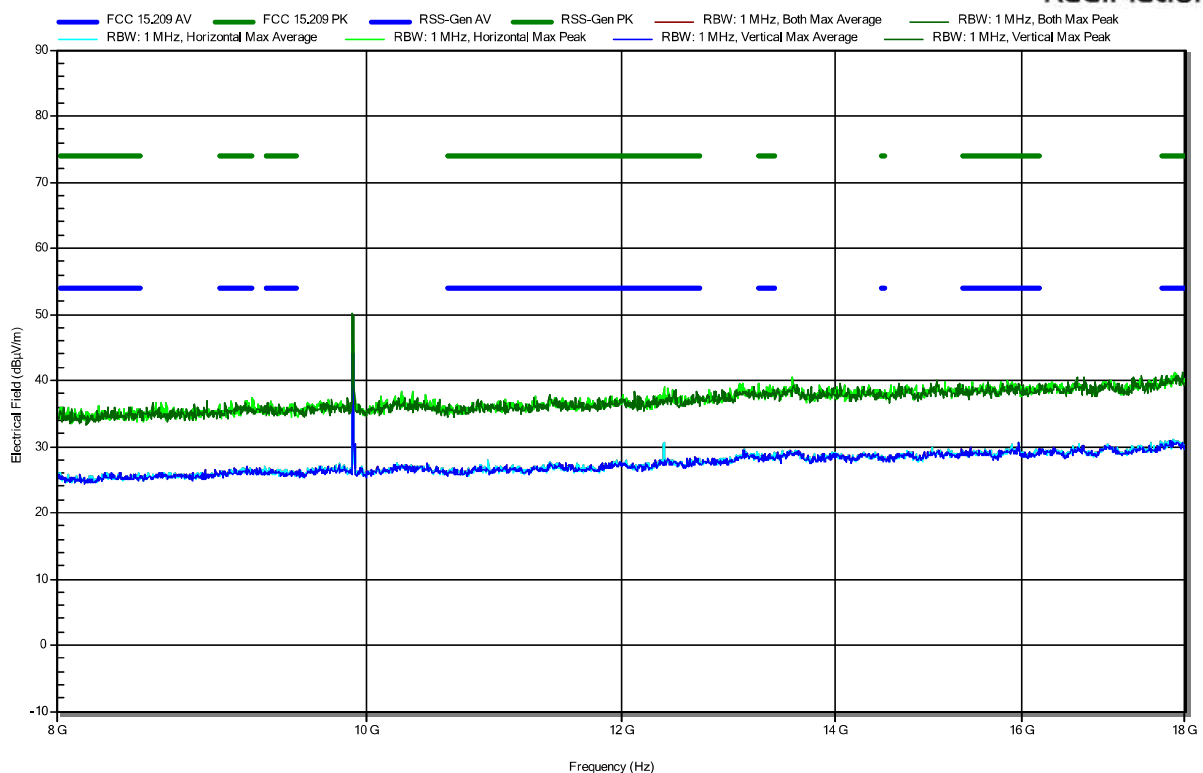


Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2403-2495
 Applicant: Jungheinrich AG
 Model Description: UWB-Location-System
 Model: 52445054, Anchor
 Test Sample ID: 48554
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Ibraimov
 Measurement software: RadiMation, version 2020.1.8
 Test Conditions: Tnom: 25 °Celsius, Vnom: 55 V DC
 Antenna: Schwarzbeck HWRD 650
 Measurement distance: 3 m
 Mode: Tx; 802.15.4_2475 MHz_Tx
 Test Date: 2024-06-13

Index 22

RadiMation



Radiated Spurious Emissions according to 47 CFR Part 15.247

Project Number: G0M-2403-2495
 Applicant: Jungheinrich AG
 Model Description: UWB-Location-System
 Model: 52445054, Anchor
 Test Sample ID: 48554
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Ibraimov
 Measurement software: RadiMation, version 2020.1.8
 Test Conditions: Tnom: 25 °Celsius, Vnom: 55 V DC
 Antenna: Amplifier Research AT4560
 Measurement distance: 3 m
 Mode: Tx; 802.15.4_2475 MHz_Tx
 Test Date: 2024-06-13

