Report on the FCC and IC Testing of the Siemens AG
Radar level transmitter
Model: SITRANS LR500 Series
In accordance with FCC 47 CFR Part 15 C and ISED RSS-211

Product Service

Add value.
Inspire trust.

Prepared for: Siemens AG
76181 Karlsruhe
Germany

COMMERCIAL-IN-CONFIDENCE

FCC ID: LYH-LR500
IC: 267AA-LR500

Date: 2024-05-06
Document Number: TR-713295509-02 | Revision 4

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Project Management	Alex Fink	2024-05-06	SIGN-ID 913059
Authorised Signatory	Matthias Stumpe	2024-05-06	SIGN-ID 913087

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD Product Service document control rules.

Engineering Statement:
This measurement shown in this report were made in accordance with the procedures described on test pages.
All reporded testing was carried out on a sample equipment to demonstrate limited compilance with with FCC 47 CFR Part 15 C and ISED RSS-211.
The sample tested was found to comply with the requirements defined in the applied rules.

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Testing	Martin Steindl	2024-05-02	SIGN-ID 912009

Laboratory Accreditation	Laboratory recognition	Industry Canada test site registration
DAkkS Reg. No. D-PL-11321-11-03 DAkkS Reg. No. D-PL-11321-11-04	Registration No. BNetzA-CAB-16/21-15	3050A-2

Executive Statement:
A sample of this product was tested and found to be compliant with FCC 47 CFR Part 15 C:2021 and ISED RSS-211:2015.

Trade Register Munich
HRB 85742
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Information pursuant to Section 2(1)
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Product Service

Content

1 Report Summary

1.1 Modification Report

Alternations and additions of this report will be issued to the holders of each copy in the form of a complete document.

Revision	*Description of changes*	*Date of Issue*
0	First Issue	2024-03-18
1	Changed “Annex: Photographs” to “Annex A: Photographs” Added “Annex B: Antenna Diagrams”	2024-04-23
2	Measurements according to RSS-211 5.3 (b) added to chapter 2.3	2024-05-02
3	Operating frequency added in section 1.2 TLRP emission within the 75-85 GHz range removed from section 2.3 and added to section 2.5	2024-05-03
4	Added note “TLPR was tested in a container for TLPR test setup	2024-05-06

Table 1: Report of Modifications

1.2 Introduction

Applicant	Siemens AG 76181 Karlsruhe Germany
Manufacturer	Siemens Canada Limited 1954 Technology Drive Peterborough, Ontario, K9J 6X7 Canada
Model Number(s)	SITRANS LR500 Series
Serial Number(s)	MS-90 MS-91 MS-92 MS-93
Hardware Version(s)	1.00.00
Software Version(s)	1.00.00
Operating Frequency	75 to 85 GHz
Number of Samples Tested	1
Test Specification(s) / Issue / Date	FCC 47 CFR Part 15 C:2021 and ISED RSS-211, Issue :2015
Test Plan/Issue/Date	---
Order Number	9707622186
Date	2023-03-02
Date of Receipt of EUT	2023-11-30
Start of Test	2024-01-08
Finish of Test	2024-03-06
Name of Engineer(s)	Martin Steindl
Related Document(s)	ANSI C63.10:2013 KDB 890966 D01 V01 R01 ISED RSS-GEN, Issue 5, Amd.1 & Amd.2:2021

1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 15 C and ISED RSS-211 shown below.

Section	*Specification Clause*	*Test Description*	*Result*
2.1	§15.256 (f)(1)(2)	Fundamental Bandwidth	Pass
2.2	15.256 (g)	Fundamental Emission	Pass
2.3	15.256 (h)	Unwanted Emissions	Pass
2.4	15.215 (c)	Frequency Stability	Pass
---	15.207	Conducted Disturbance at Mains Terminal	Not applicable – DC power supply

Table 2: Results according to FCC 47 CFR Part 15 C

Section	*Specification Clause*	*Test Description*	*Result*
2.1	5.1	Fundamental Bandwidth	Pass
---	5.2 (a)	Maximum half-power beamwidth	Not performed[1]
2.2	5.2 (b)	Fundamental Emission	Pass
---	5.2 (c)	Side Lobe Gain	Not performed[1]
2.3	5.3	Unwanted Emissions	Pass
2.4	5.4	Frequency Stability	Pass

Table 3: Results according to ISED RSS-211

[1] Not ordered by applicant. See Annex B for antenna diagrams provided by applicant.

1.4 Product Information

1.4.1 Technical Description

The SITRANS LR500 Series (LR510, LR530, LR550, LR580) is a continuous level measurement instrument providing 2-wire, 4-20 mA level measurement using microwave radar technology. SITRANS LR500 Series is intended for use in process industries for the determination of material level in open air, tanks and other process vessels. The principle used is Frequency Modulated Continuous Wave (FMCW). A microwave frequency whose frequency varies with time is generated by the internal RF circuits. This signal is directed through an antenna towards the surface of the material to be measured. The signal reflected by the surface is received by the same antenna and processed. The time of flight of the radar wave is calculated by comparing the transmitted and received frequencies.

1.5 Test Configuration

The EUT was supplied by a 24 V DC power supply. SITRANS LR500 Series continuously transmitting.

1.6 EUT Modifications Record

The table below details modifications made to the EUT during the test program.
The modifications incorporated during each test are recorded on the appropriate test pages.

Modification State	Description of Modification fitted to EUT	Modification Fitted By	Date Modification Fitted
0	As supplied by the customer attached with LR510 antenna, SN: MS-90	Not Applicable	Not Applicable

Table 4

Modification State	Description of Modification fitted to EUT	Modification Fitted By	Date Modification Fitted
0	As supplied by the customer attached with LR530 antenna, SN: MS-91	Not Applicable	Not Applicable

Table 5

Modification State	Description of Modification fitted to EUT	Modification Fitted By	Date Modification Fitted
0	As supplied by the customer attached with LR550 antenna, SN: MS-92	Not Applicable	Not Applicable

Table 6

Modification State	Description of Modification fitted to EUT	Modification Fitted By	Date Modification Fitted
0	As supplied by the customer attached with LR580 antenna, SN: MS-93	Not Applicable	Not Applicable

Table 7

1.7 Test Location

TÜV SÜD Product Service conducted the following tests at our Straubing test laboratory:

Test Name	Name of Engineer(s)
Fundamental Bandwidth	Martin Steindl
Fundamental Emission	Martin Steindl
Unwanted Emissions	Martin Steindl
Frequency Stability	Martin Steindl

Office Address:
Äußere Frühlingstraße 45
94315 Straubing
Germany

2 Test Details

2.1 Fundamental Bandwidth

2.1.1 Specification Reference

FCC 47 CFR Part 15 C, Clauses 15.215(c), 15.256(f)(1)(2)
ISED RSS-211, Clause 5.1(a)
ISED RSS-Gen, Clause 6.7
KDB 890966 D01 V01 R01, Clause D

2.1.2 Equipment under Test and Modification State

SITRANS LR500 Series; S/N: MS-92 - Modification state 0

2.1.3 Date of Test

08-01-2024

2.1.4 Environmental Conditions

Ambient Temperature	21 °C
Relative Humidity	32 %

2.1.5 Specification Limits

FCC Part 15, Subpart C, §15.256 (f)(1)(2)
(1) The minimum fundamental emission bandwidth shall be 50 MHz for LPR operation under the provisions of this section.
(2) LPR devices operating under this section must confine their fundamental emission bandwidth within the 5.925-7.250 GHz, 24.05-29.00 GHz, and 75-85 GHz bands under all conditions of operation.

RSS-211: 5.1
(a)The minimum fundamental emission bandwidth shall be 50 MHz.

2.1.6 Test Method

The test was performed according to ANSI C63.10, clauses 6.9
See section 2.3 of this test report for details.

Analyzer settings:

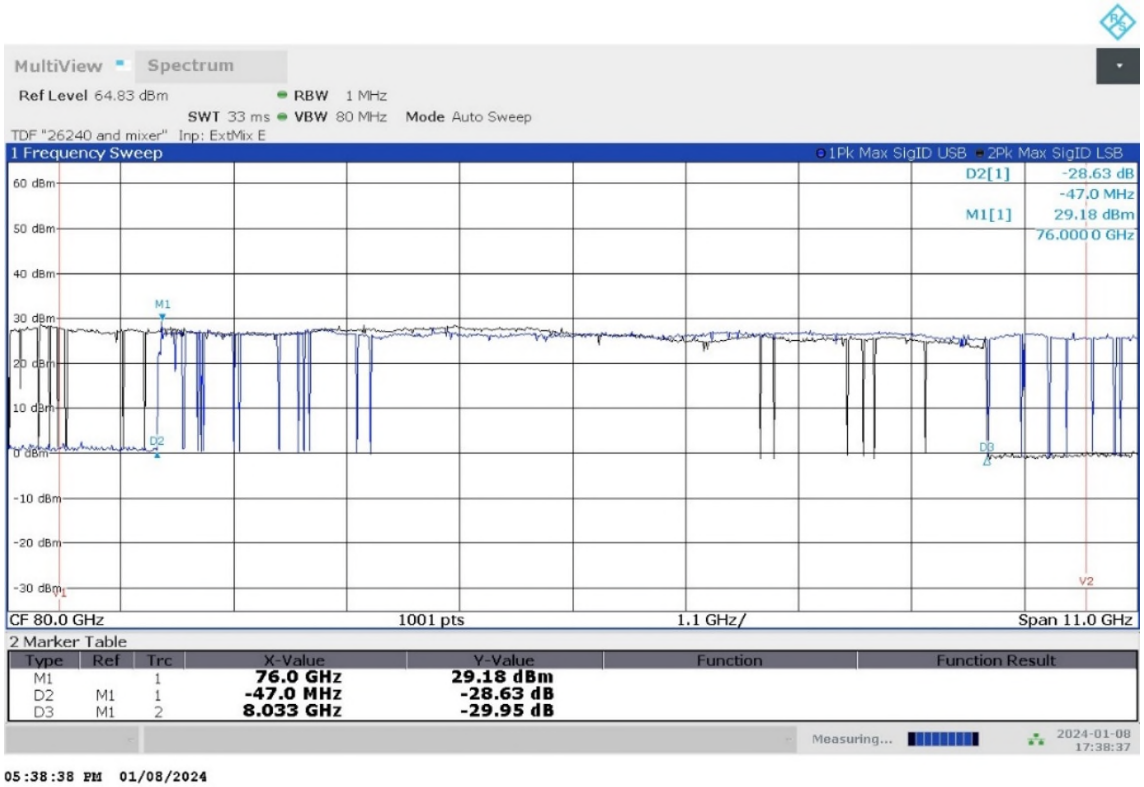
- Resolution Bandwidth (RBW): 1 MHz
- Video Bandwidth (VBW): 80 MHz
- Span: 11 GHz
- Trace: Maxhold
- Sweeps: allow the trace to stabilize
- Detector: Peak

Mixer is used as up-converter. Due to FMCW radars slow sweeping, upper (USB) and lower sideband (LSB) signals were measured. Afterwards occupied bandwidth markers were set manually for the overlap.
See Signal Analyzer plot for details.

2.1.7 Test Results

Center frequency	*10 dB Bandwidth*
80040 MHz	8080 MHz

Table 8: 10 dB bandwidth



2.1.8 Test Location and Test Equipment

The test was carried out in semi anechoic room No. 11

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Signal and Spectrum Analyzer	Rohde & Schwarz	FSW43	54396	12	2024-04-30
Waveguide Mixer	Rohde & Schwarz	FS-Z90	25850	36	2026-05-31
Horn Antenna	Flann	26240-20	37898	---	---
Semi anechoic room	Frankonia	Cabin No. 11	42961	36	2024-09-30
EMC measurement software	Rohde & Schwarz	EMC32 Emission - V10.60.20	42986	---	---

2.2 Fundamental Emissions

2.2.1 Specification Reference

FCC 47 CFR Part 15 C, Clause 15.256(g)
ISED RSS-211, Clause 5.2(b)
KDB 890966 D01 V01 R01, Clause F

2.2.2 Equipment under Test and Modification State

SITRANS LR500 Series; S/N: MS-90 - Modification state 0
SITRANS LR500 Series; S/N: MS-91 - Modification state 0
SITRANS LR500 Series; S/N: MS-92 - Modification state 0
SITRANS LR500 Series; S/N: MS-93 - Modification state 0

2.2.3 Date of Test

2024-02-23 and 2024-03-06

2.2.4 Environmental Conditions

Ambient Temperature	21 °C
Relative Humidity	41 %

2.2.5 Specification Limits

FCC Part 15, Subpart C, §15.256 (g)
(3) The EIRP limits for LPR operations in the bands authorized by this rule section are provided in Table 1. The emission limits in Table below are based on boresight measurements (i.e., measurements performed within the main beam of an LPR antenna).

RSS-211: 5.2
(b) For average emission limits, LPR devices shall not exceed the limits provided in Table 1 measured in a 1 MHz measurement bandwidth with an average detector. For peak emission limits, LPR devices shall not exceed the limits provided in Table below measured in a 50 MHz measurement bandwidth with a peak detector.

Frequency band of operation (GHz)	*Average emission limit (EIRP in dBm / 1 MHz)*	*Peak emission limit (EIRP in dBm / 50 MHz)*
5.65 – 8.50	-33	7
24.05 – 29.00	-14	26
75 – 85	-3	34

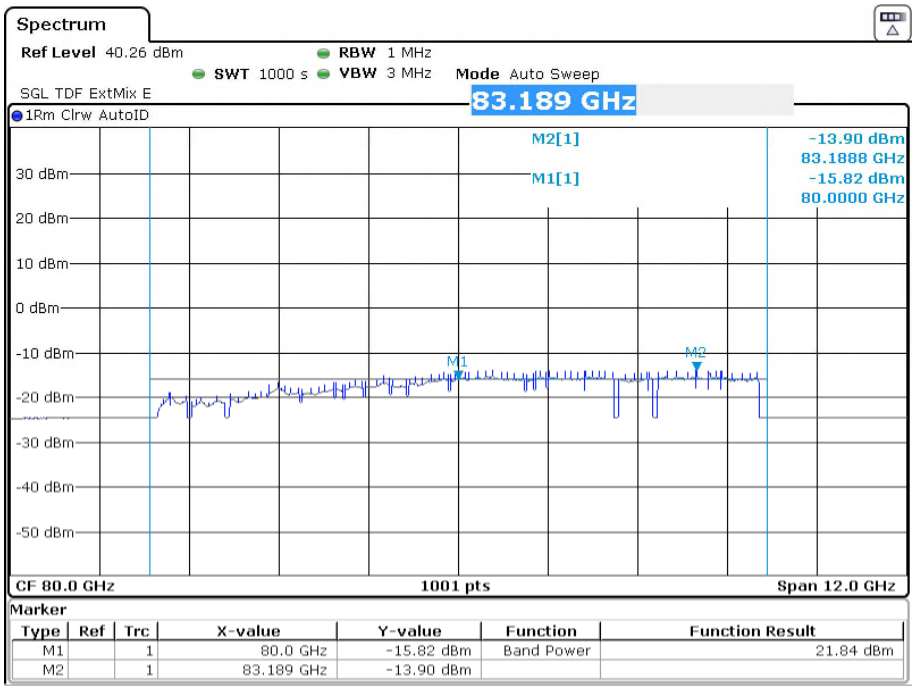
2.2.6 Test Method

KDB 890966 D01 V01 R01, Clause F

2.2.7 Test Results

Antenna	*EIRP*	*Emission Frequency*	*Limit*	*Test result*
LR510	-13.90 dBm (Average)	83.1888 GHz	-3.0 dBm	Pass
LR510	29.00 dBm (Peak)	83.0930 GHz	34 dBm	Pass

Table 9: Average Power



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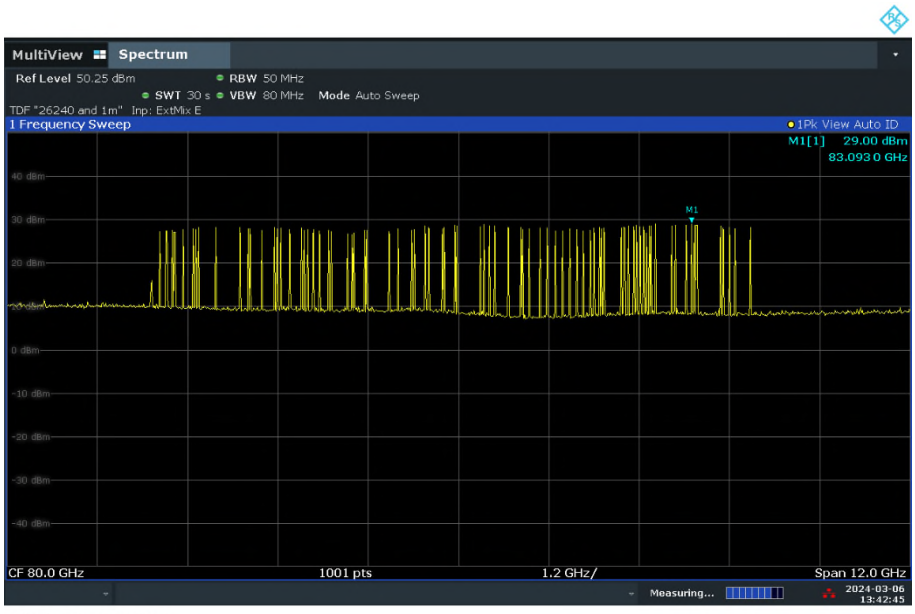

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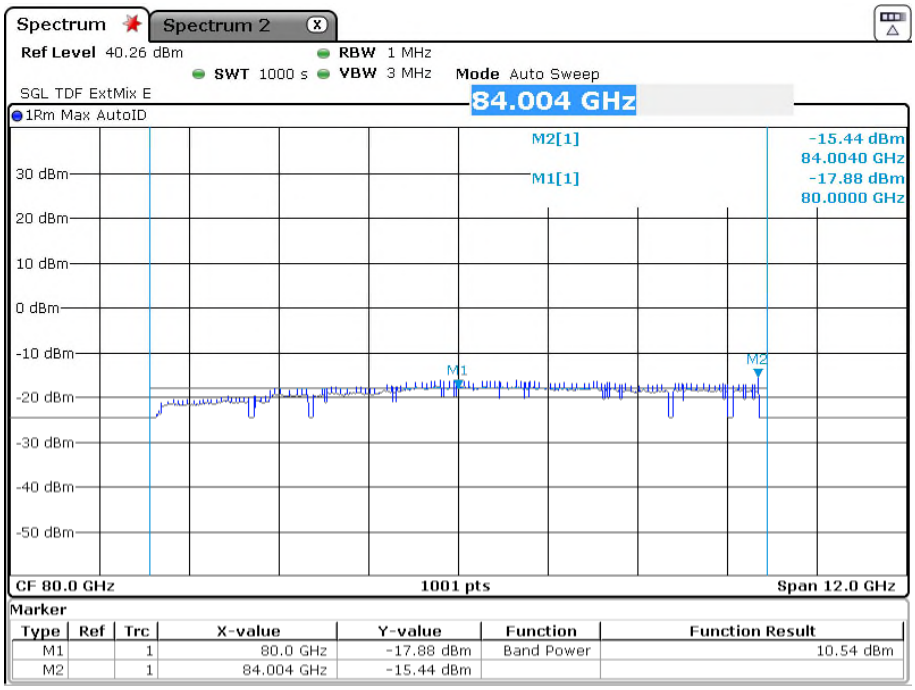
Antenna	*EIRP*	*Emission Frequency*	*Limit*	*Test result*
LR530	-15.44 dBm (Average)	84.0040 GHz	-3.0 dBm	Pass
LR530	33.67 dBm (Peak)	82.9490 GHz	34 dBm	Pass

Table 10: Average Power



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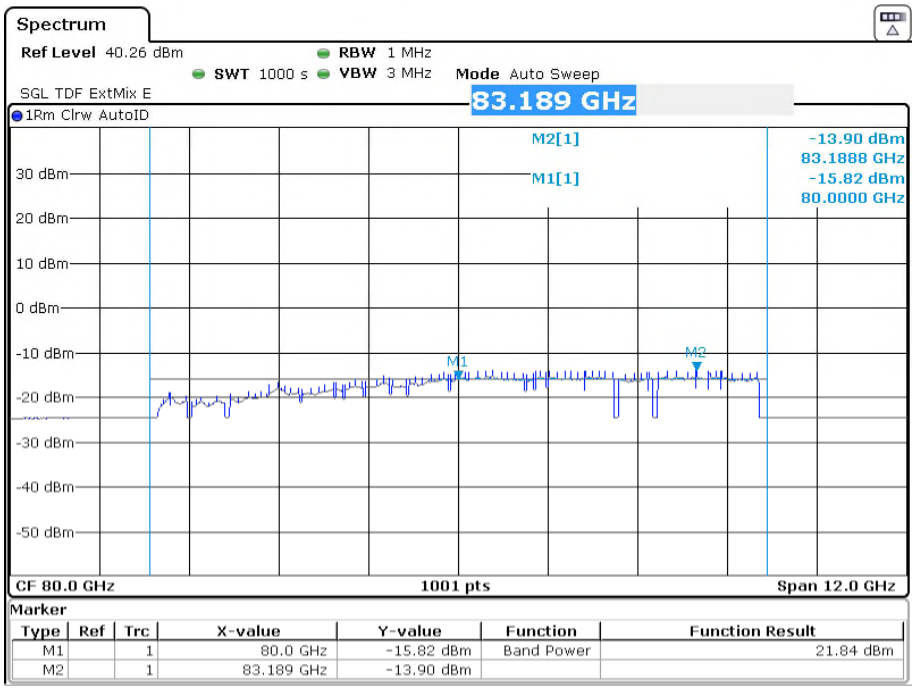
Antenna	*EIRP*	*Emission Frequency*	*Limit*	*Test result*
LR550	-13.90 dBm (Average)	83.1888 GHz	-3.0 dBm	Pass
LR550	33.89 dBm (Peak)	75.9720 GHz	34 dBm	Pass

Table 11: Average Power



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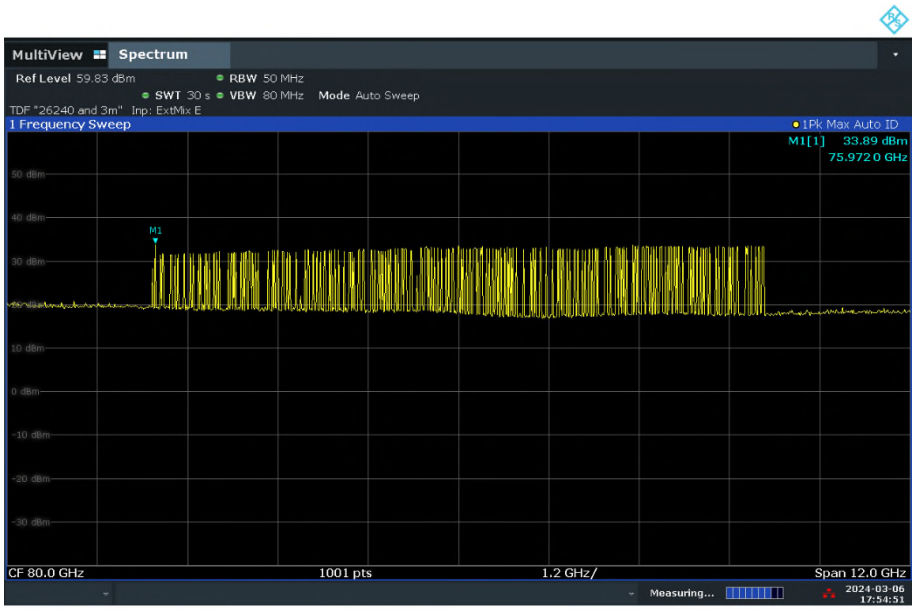

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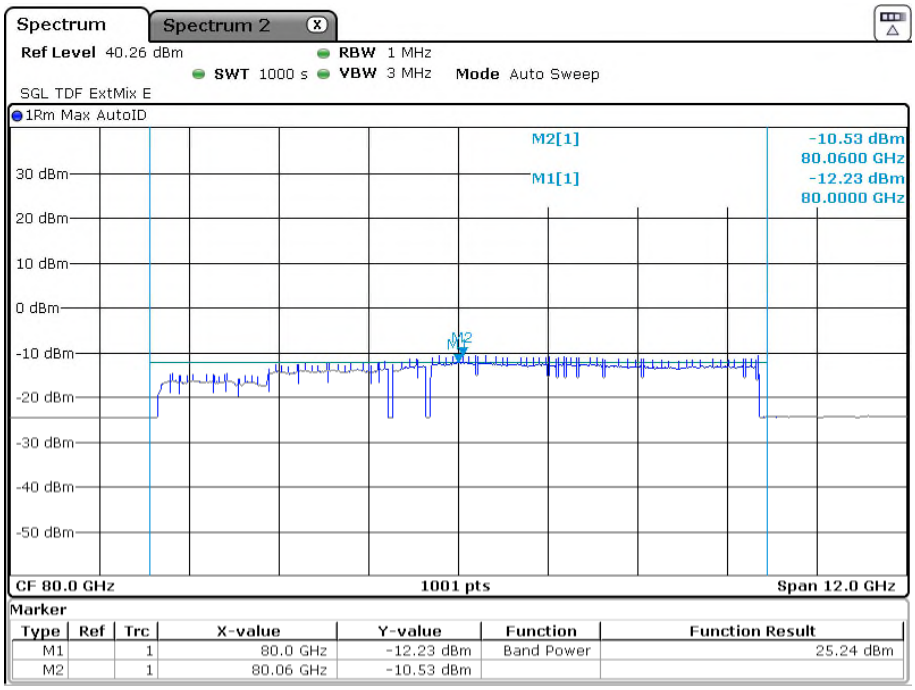
Antenna	*EIRP*	*Emission Frequency*	*Limit*	*Test result*
LR580	-10.53 dBm (Average)	83.0600 GHz	-3.0 dBm	Pass
LR580	31.36 dBm (Peak)	82.9850 GHz	34 dBm	Pass

Table 12: Average Power



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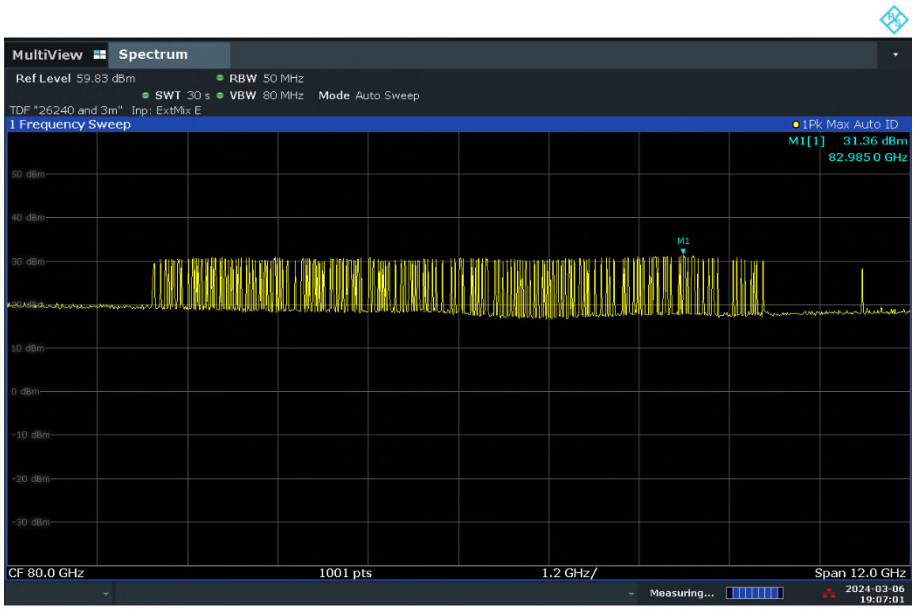

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2.2.8 Test Location and Test Equipment

The test was carried out in semi anechoic room No. 11

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Signal and Spectrum Analyzer	Rohde & Schwarz	FSW43	54396	12	2024-04-30
Waveguide Mixer	Rohde & Schwarz	FS-Z90	25850	36	2026-05-31
Horn Antenna	Flann	26240-20	37898	---	---
Semi anechoic room	Frankonia	Cabin No. 11	42961	36	2024-09-30
EMC measurement software	Rohde & Schwarz	EMC32 Emission - V10.60.20	42986	---	---

2.3 Unwanted Emissions

2.3.1 Specification Reference

FCC 47 CFR Part 15 C, Clauses 15.205, and 15.209
ISED RSS-Gen, Clauses 8.9 and 8.10
KDB 890966 D01 V01 R01, Clause G

2.3.2 Equipment under Test and Modification State

SITRANS LR500 Series; S/N: MS-90 - Modification state 0
SITRANS LR500 Series; S/N: MS-91 - Modification state 0
SITRANS LR500 Series; S/N: MS-92 - Modification state 0
SITRANS LR500 Series; S/N: MS-93 - Modification state 0

2.3.3 Date of Test

2024-01-12 to 2024-01-25

2.3.4 Environmental Conditions

Ambient Temperature	22 °C
Relative Humidity	34 %

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2.3.5 Specification Limits

General radiated emission limits:					
Frequency Range (MHz)	*Test distance (m)*	*Field strength*		*Field strength*	
		(µA/m)	*(dBµA/m)*	*(µV/m)*	*(dBµV/m)*
0.009 – 0.49	300	6.37 / *f*	20*lg(6.37 / *f*)	2400 / *f*	20*lg(2400 / *f*)
0.49 – 1.705	30	63.7 / *f*	20*lg(63.7 / *f*)	24000 / *f*	20*lg(24000 / *f*)
1.705 - 30	30	0.08	20*lg(0.08 / *f*)	30	20*lg(30 / *f*)
30 – 88	3	---	---	100	40
88 – 216	3	--	---	150	43.5
126 – 960	3	--	---	200	46
above 960	3	--	---	500	54
Note 1: *f* in kHz					

Table 13 General radiated emission limits

At frequencies at or above 30 MHz, measurements may be performed at distance other than what is specified, provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements.

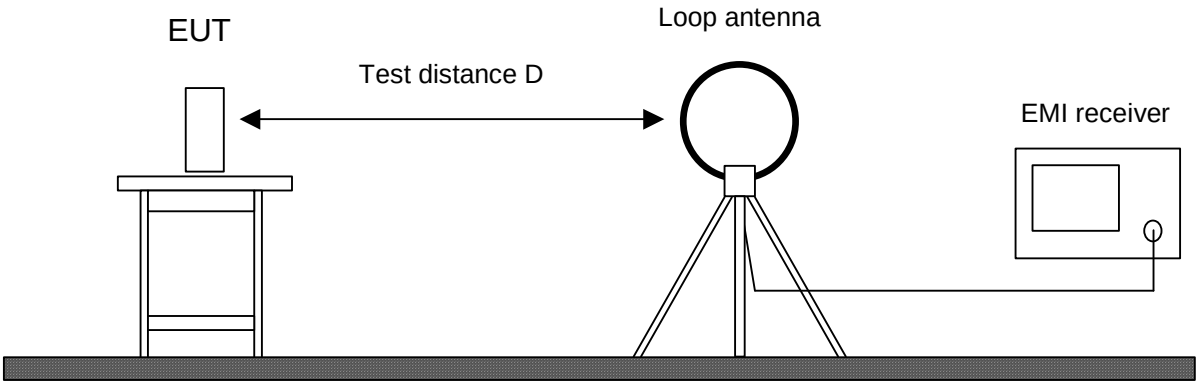
At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempts should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

2.3.6 Test Method

The test was performed according to ANSI C63.10, sections 11.11 and 11.12
TLPR was tested in a container.

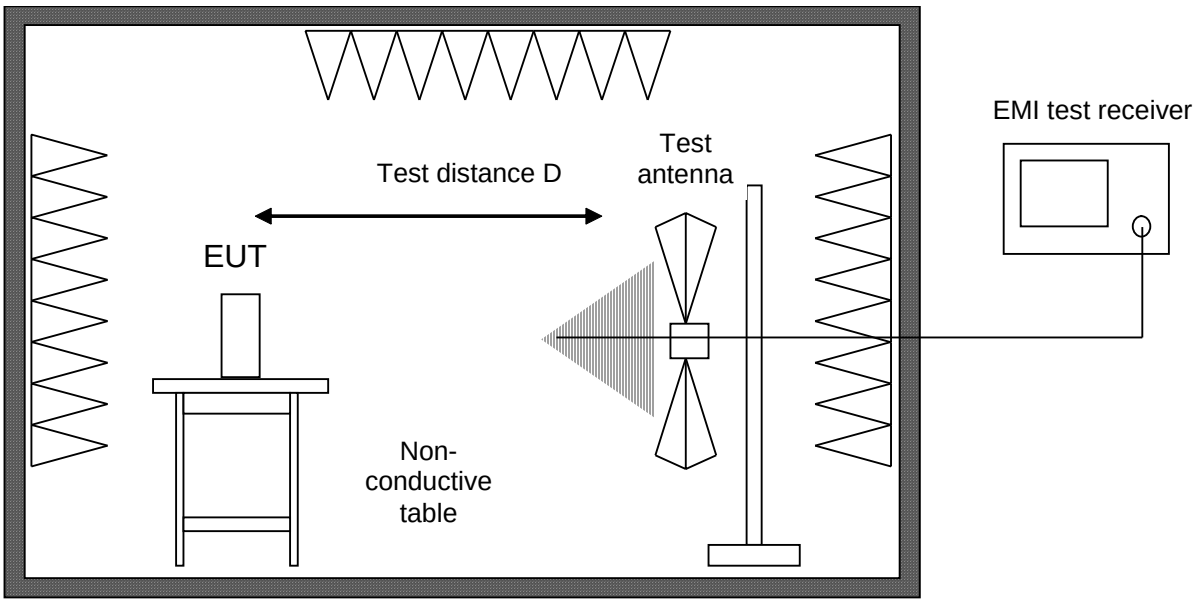
Prescans are performed in six positions of the EUT to get the full spectrum of emission caused by the EUT with the measuring antenna raised and lowered from 1 m to 4 m with vertical and horizontal polarisation to find the combination of table position, antenna height and antenna polarisation for the maximum emission levels.
Data reduction is applied to these results to select those levels having less margin than 10 dB or exceeding the limit using subranges and limited number of maximums.
Further maximisation for adjusting the maximum position is following.
Equipment and cables are placed and moved within the range of position likely to find their maximum emissions.

2.3.6.1 Frequency range 9 kHz – 30 MHz



The EUT was placed on a non-conductive table, 0.8 m above the ground.
Radiated emissions in the frequency 9 kHz – 30 MHz is measured within a semi-anechoic room with an active loop antenna with the measurement detector set to peak. In addition in the frequency range 9 kHz to 490 kHz also an average detector was used. The measurement bandwidth of the receiver was set to 300 Hz in the frequency range 9 kHz to 150 kHz and 10 kHz in the frequency range 150 kHz to 30 MHz. Prescans were performed in six positions of the EUT.
For final measurements the detector was set to CISPR quasi-peak and in addition to CISPR average in the frequency range 9 kHz to 490 kHz with a resolution bandwidth 200 Hz in the frequency range 9 kHz to 150 kHz and 9 kHz in the frequency range 150 kHz to 30 MHz. Final tests were performed immediately after a final frequency and zoom (for drifting disturbances) and maximum adjustment.

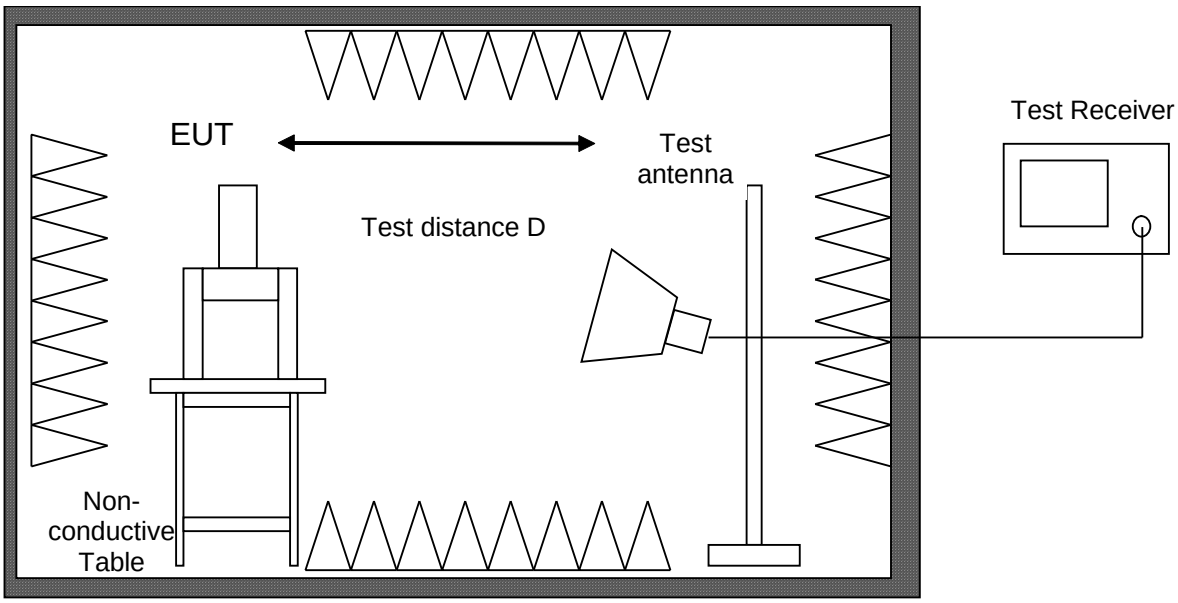
2.3.6.2 Frequency range 30 MHz – 1 GHz



Alternate test site (semi anechoic room)

The EUT was placed on a non-conductive table, 0.8 m above the ground plane
Radiated emissions in the frequency range 30 MHz – 1 GHz is measured within a semi-anechoic room with groundplane complying with the NSA requirements of ANSI C63.4. for alternative test sites. A linear polarised logarithmic periodic antenna combined with a 4:1 broadband dipole (“Trilog broadband antenna”) is used.
For prescan tests the test receiver is set to peak-detector with a bandwidth of 120 kHz.
With the measurement bandwidth of the test receiver set to 120 kHz CISPR quasi-peak detector is selected for final measurements following immediately after a final frequency zoom (for drifting disturbances) and maximum adjustment.

2.3.6.3 Frequency range above 1 GHz



Fully anechoic room

The EUT was placed on a non-conductive table, 1.5 m above the ground plane
Radiated emission tests above 1 GHz are performed in a fully anechoic room with the S_{VSWR} requirements of ANSI C63.4. Measurements are performed both in the horizontal and vertical planes of polarisation using a test receiver with the detector function set to peak and average and the resolution bandwidth set to 1 MHz. Testing above 1 GHz is performed with horn antennas with the EUT in boresight of the antenna.
For prescan tests the test receiver is set to peak- and average-detector with a bandwidth of 1 MHz. With the measurement bandwidth of the test receiver set to 1 MHz and peak- and CISPR average-detector is selected for final measurements following immediately after a final frequency zoom (for drifting disturbances) and maximum adjustment.

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2.3.7 Test Results

Frequency range	*Limit applied*	*Test distance*
9 kHz to 1GHz and 18 GHz to 40 GHz	§15.209	3 m
1 GHz to 18 GHz	§15.209	1 m
40 GHz to 60 GHz	§15.209	0.5 m
60 GHz to 110 GHz	§15.209	0.25 m
110 GHz to 170 GHz	§15.209	5 cm
170 GHz to 220 GHz	§15.209	3 cm

Table 14

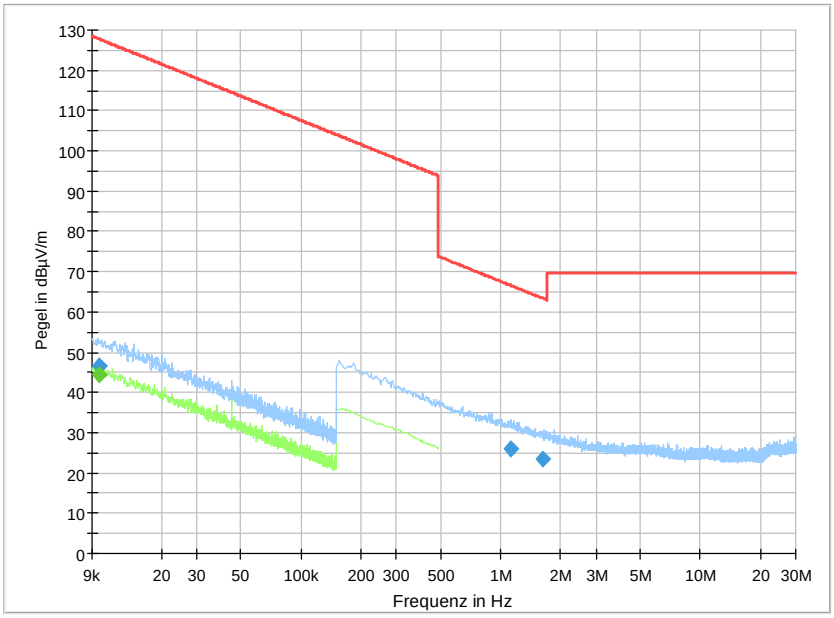
Sample calculation:

Final Value (dBµV/m) = Reading Value (dBµV) + (Cable attenuation (dB) + Antenna Transducer (dB(1/m)))

Additional correction of limit in the frequency range 9 – 490 kHz (300 m to 3 m): +80.0 dB
Additional correction of limit in the frequency range 490 kHz – 30 MHz (30 m to 3 m): +40.0 dB
Additional correction of limit in the frequency ranges above 1 GHz (3 m to 1 m): +9.54 dB

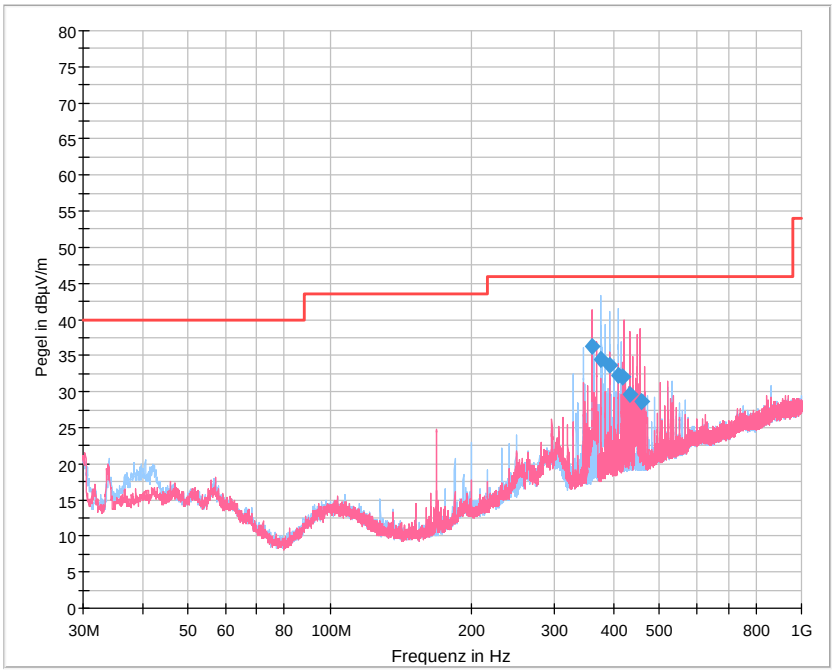
2.3.7.1 Test Results for SITRANS LR500 Series with LR510 Antenna

Frequency range 9 kHz – 220 GHz:



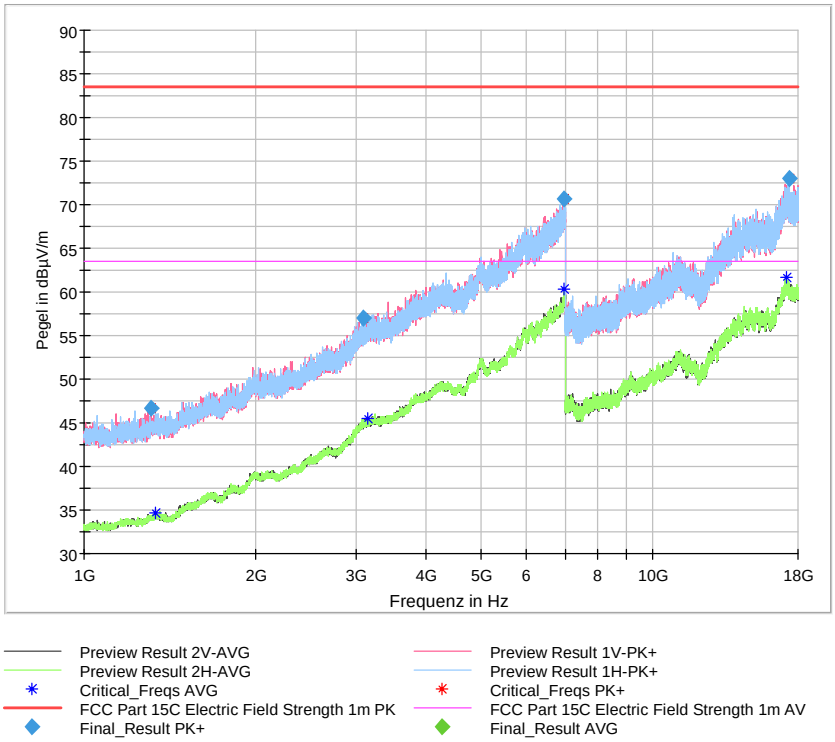
Final Results:

Frequenz MHz	*QuasiPeak dBµV/m*	*CAverage dBµV/m*	*Limit dBµV/m*	*Margin dB*	*Messzeit ms*	*Bandbreite kHz*	*Höhe cm*	*Pol*	*Azimut deg*	*Korr. dB/m*
0.009750	46.58	---	127.82	81.24	1000.0	0.200	100.0	H	50.0	20.3
0.009750	---	44.43	---	---	1000.0	0.200	100.0	H	50.0	20.3
1.120000	25.94	---	66.62	40.68	1000.0	9.000	100.0	H	-166.0	19.3
1.635250	23.54	---	63.33	39.80	1000.0	9.000	100.0	H	-117.0	19.3



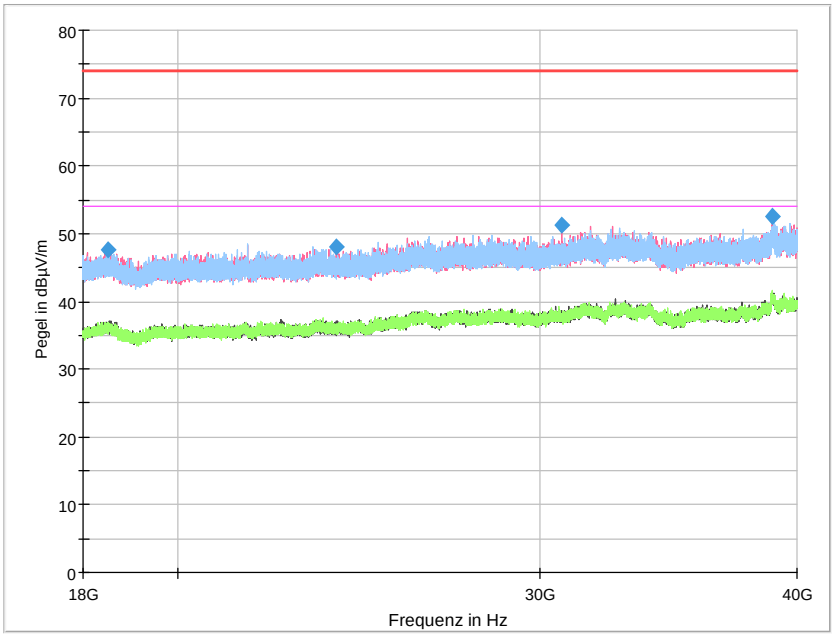
Final Results:

Frequenz MHz	*Qua-siPeak dBµV/m*	*Limit dBµV/m*	*Mar-gin dB*	*Messzeit ms*	*Band-breite kHz*	*Höhe cm*	*Pol*	*Azi-mut deg*	*Korr. dB/m*
360.000000	36.30	46.02	9.72	1000.0	120.000	120.0	V	156.0	17.8
376.170000	34.46	46.02	11.56	1000.0	120.000	160.0	H	-10.0	18.1
391.770000	33.68	46.02	12.34	1000.0	120.000	156.0	H	75.0	18.6
407.760000	32.22	46.02	13.80	1000.0	120.000	243.0	H	-114.0	19.0
418.950000	31.96	46.02	14.06	1000.0	120.000	310.0	V	82.0	19.3
433.320000	29.58	46.02	16.44	1000.0	120.000	299.0	V	135.0	19.5
456.600000	28.69	46.02	17.33	1000.0	120.000	250.0	V	117.0	19.5



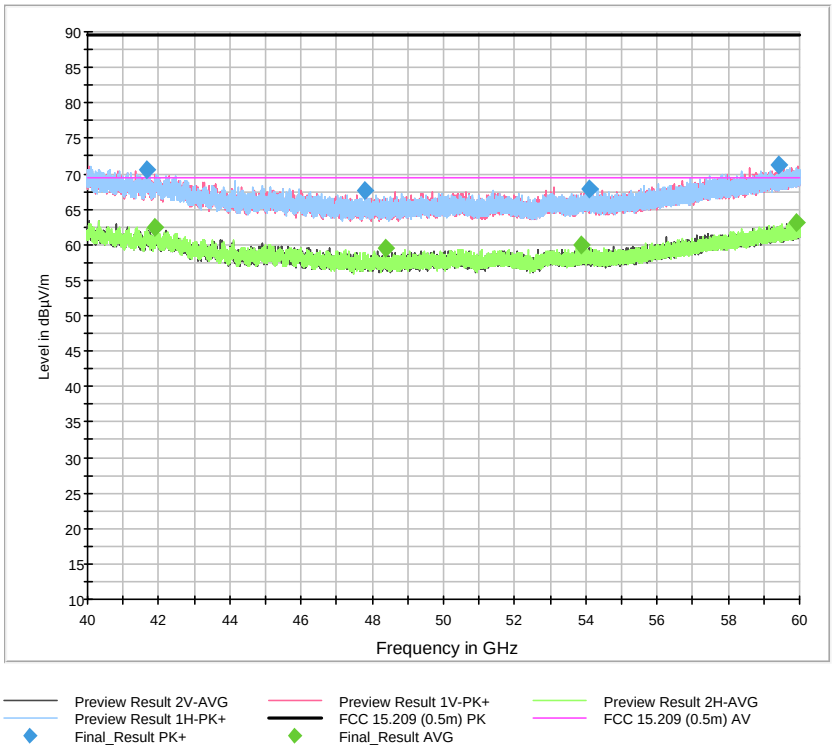
Final Results:

Frequenz MHz	*Max-Peak dBµV/m*	*Aver-age dBµV/m*	*Limit dBµV/m*	*Mar-gin dB*	*Messzeit ms*	*Band-breite kHz*	*Höhe cm*	*Pol*	*Azi-mut deg*	*Korr. dB/m*
1311.000000	46.67	---	83.50	36.83	1000.0	1000.000	150.0	V	90.0	29.6
1335.000000	---	34.73	63.50	28.77	1000.0	1000.000	250.0	V	150.0	29.7
3099.500000	56.97	---	83.50	26.53	1000.0	1000.000	250.0	V	-30.0	38.4
3147.000000	---	45.53	63.50	17.97	1000.0	1000.000	200.0	V	150.0	38.7
6985.000000	70.75	---	83.50	12.75	1000.0	1000.000	150.0	H	-150.0	45.1
6993.000000	---	60.27	63.50	3.23	1000.0	1000.000	250.0	V	90.0	45.2
17133.000000	---	61.62	63.50	1.88	1000.0	1000.000	100.0	H	-90.0	57.8
17408.500000	73.07	---	83.50	10.43	1000.0	1000.000	200.0	V	-90.0	57.2



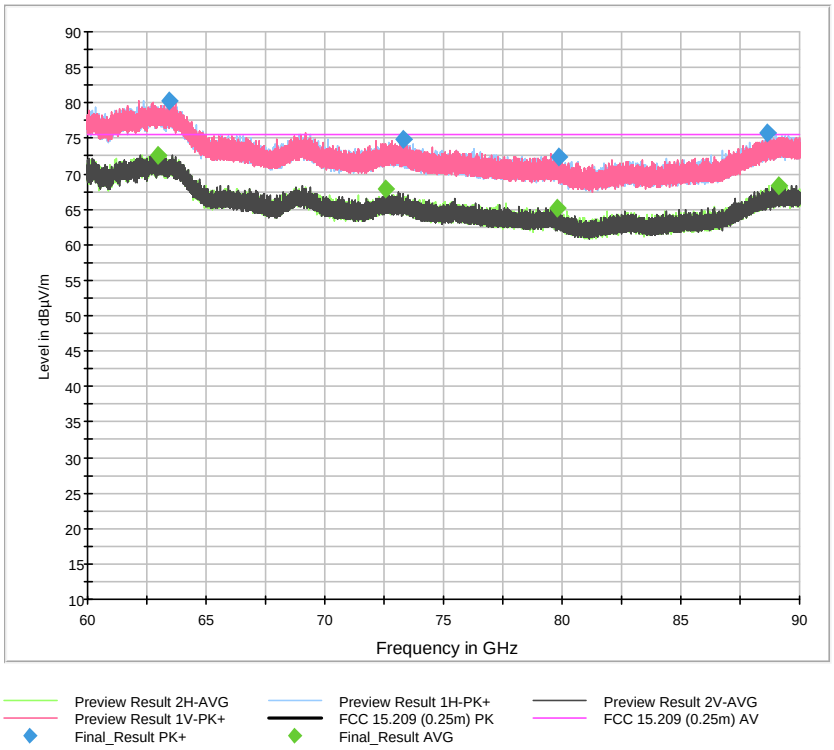
Final Results:

Frequenz MHz	*Max-Peak dBµV/m*	*Limit dBµV/m*	*Mar-gin dB*	*Messzeit ms*	*Band-breite kHz*	*Höhe cm*	*Pol*	*Azi-mut deg*	*Korr. dB/m*
18499.125000	47.63	73.98	26.35	1000.0	1000.000	300.0	H	90.0	11.8
23904.937500	48.08	73.98	25.90	1000.0	1000.000	100.0	V	90.0	14.4
30720.125000	51.21	73.98	22.77	1000.0	1000.000	100.0	V	-90.0	15.2
38925.437500	52.45	73.98	21.53	1000.0	1000.000	100.0	V	-150.0	16.4



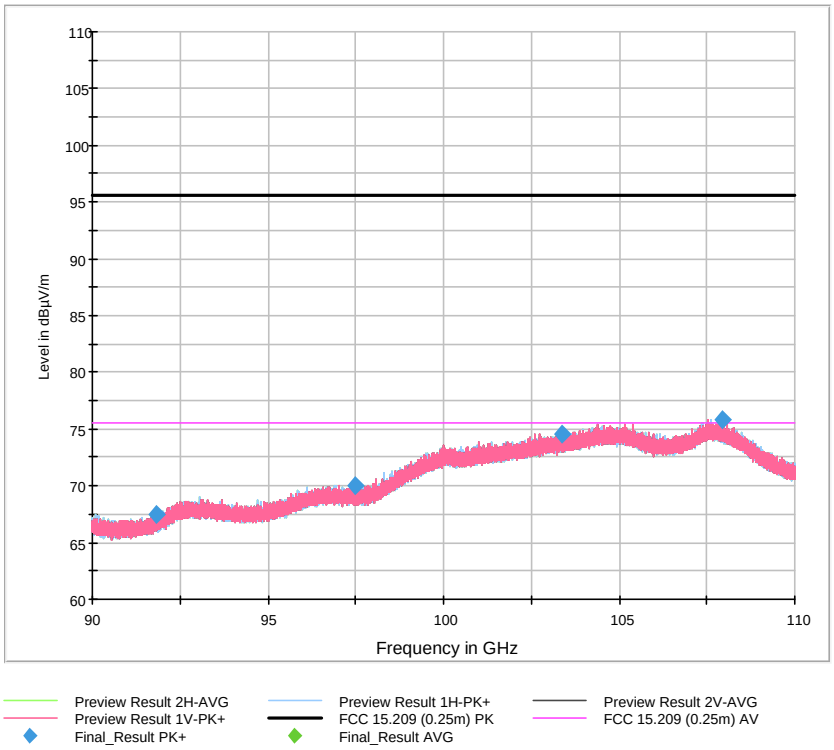
Final Results:

Frequency MHz	*Max-Peak dBµV/m*	*Aver-age dBµV/m*	*Limit dBµV/m*	*Mar-gin dB*	*Meas. Time ms*	*Band-width kHz*	*Height cm*	*Pol*	*Azi-muth deg*	*Corr. dB/m*
41676.500000	70.53	---	89.50	18.97	700.0	1000.000	150.0	H	134.0	44
41912.500000	---	62.47	69.50	7.03	700.0	1000.000	150.0	V	0.0	44
47772.500000	67.61	---	89.50	21.89	700.0	1000.000	150.0	V	83.0	44
48383.000000	---	59.50	69.50	10.00	700.0	1000.000	150.0	V	345.0	44
53858.000000	---	59.90	69.50	9.60	700.0	1000.000	150.0	H	328.0	44
54120.500000	67.93	---	89.50	21.57	700.0	1000.000	150.0	H	220.0	44
59427.000000	71.16	---	89.50	18.34	700.0	1000.000	150.0	V	178.0	44
59907.500000	---	63.11	69.50	6.39	700.0	1000.000	150.0	V	0.0	44



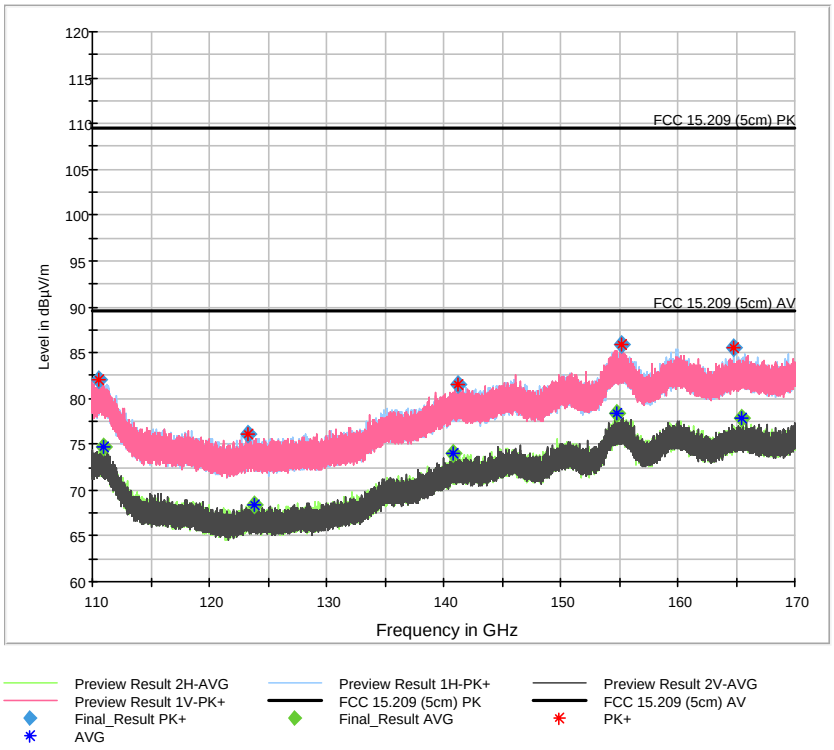
Final Results:

Frequency MHz	*Max-Peak dBµV/m*	*Aver-age dBµV/m*	*Limit dBµV/m*	*Mar-gin dB*	*Meas. Time ms*	*Band-width kHz*	*Height cm*	*Pol*	*Azi-muth deg*	*Corr. dB*
62972.500000	---	72.65	75.60	2.95	700.0	1000.000	150.0	H	19.0	47.8
63461.000000	80.37	---	95.60	15.23	700.0	1000.000	150.0	H	202.0	47.8
72546.500000	---	67.77	75.60	7.83	700.0	1000.000	150.0	H	144.0	47.9
73341.500000	74.82	---	95.60	20.78	700.0	1000.000	150.0	H	104.0	47.9
79803.500000	---	65.17	75.60	10.43	700.0	1000.000	150.0	H	123.0	47.9
79832.000000	72.46	---	95.60	23.14	700.0	1000.000	150.0	H	163.0	47.9
88669.000000	75.72	---	95.60	19.88	700.0	1000.000	150.0	V	276.0	48.0
89143.000000	---	68.39	75.60	7.21	700.0	1000.000	150.0	H	66.0	48.0



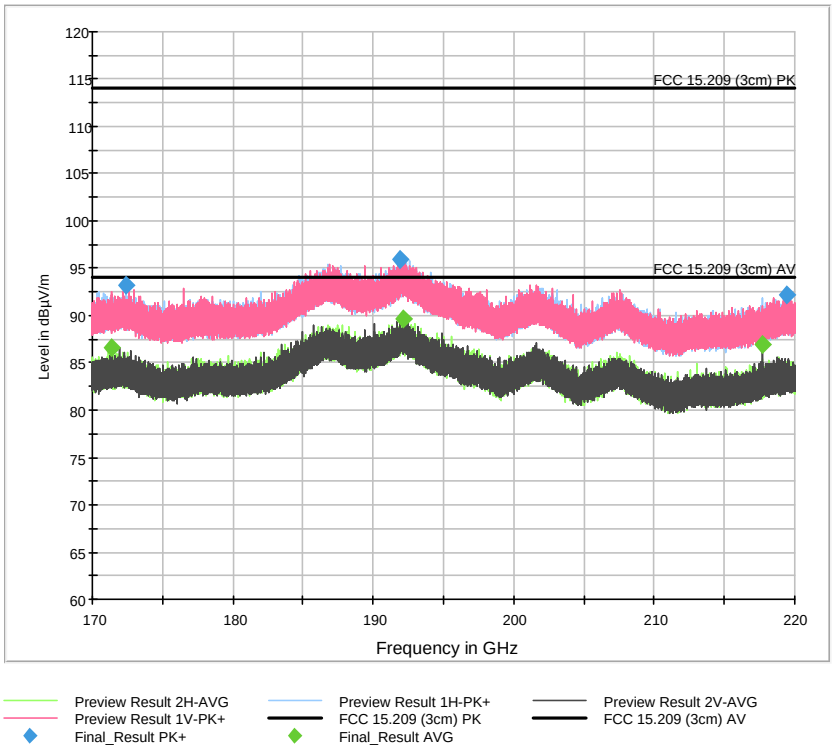
Final Results:

Frequency MHz	*Max-Peak dBµV/m*	*Aver-age dBµV/m*	*Limit dBµV/m*	*Mar-gin dB*	*Meas. Time ms*	*Band-width kHz*	*Height cm*	*Pol*	*Azi-muth deg*	*Corr. dB/m*
91812.500000	67.52	---	95.60	28.08	700.0	1000.000	150.0	V	183.0	50
97491.500000	70.04	---	95.60	25.56	700.0	1000.000	150.0	H	273.0	50
103393.500000	74.61	---	95.60	20.99	700.0	1000.000	150.0	V	286.0	50
107923.000000	75.37	---	95.60	20.23	700.0	1000.000	150.0	H	301.0	50
91812.500000	---	67.52	75.60	8.08	700.0	1000.000	150.0	V	183.0	50
97491.500000	---	70.04	75.60	5.56	700.0	1000.000	150.0	H	273.0	50
103393.500000	---	74.61	75.60	0.99	700.0	1000.000	150.0	V	286.0	50
107923.000000	---	75.37	75.60	0.23	700.0	1000.000	150.0	H	301.0	50



Final Results:

Frequency *MHz*	*MaxPeak* *dBµV/m*	*Average* *dBµV/m*	*Limit* *dBµV/m*	*Margin* *dB*	*Meas. Time* *ms*	*Bandwidth* *kHz*	*Height* *cm*	*Pol*	*Azimuth* *deg*	*Corr.* *dB*
110580.000000	82.04	---	109.56	27.52	700.0	1000.000	150.0	V	254.0	47.1
110936.500000	---	74.67	89.56	14.89	700.0	1000.000	150.0	H	73.0	47.1
123293.000000	76.10	---	109.56	33.46	700.0	1000.000	150.0	H	154.0	48.0
123904.000000	---	68.43	89.56	21.13	700.0	1000.000	150.0	H	351.0	48.1
140811.000000	---	73.98	89.56	15.58	700.0	1000.000	150.0	H	38.0	49.2
141260.500000	81.47	---	109.56	28.09	700.0	1000.000	150.0	H	138.0	49.2
154774.500000	---	78.38	89.56	11.18	700.0	1000.000	150.0	V	6.0	50.0
155204.500000	85.84	---	109.56	23.72	700.0	1000.000	150.0	V	155.0	50.0
164781.500000	85.62	---	109.56	23.94	700.0	1000.000	150.0	H	272.0	50.6
165467.000000	---	77.86	89.56	11.70	700.0	1000.000	150.0	H	118.0	50.6

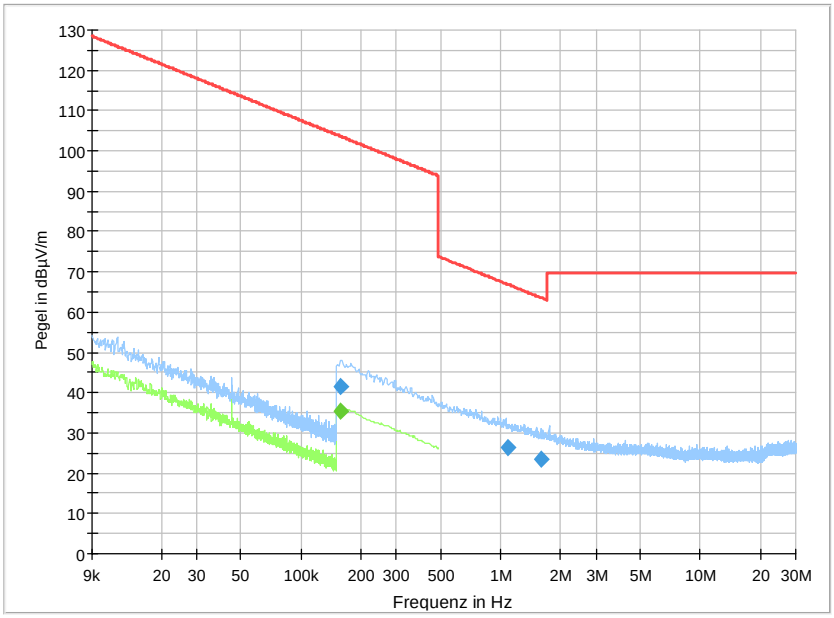


Final Results:

Frequency MHz	*Max-Peak dBµV/m*	*Aver-age dBµV/m*	*Limit dBµV/m*	*Mar-gin dB*	*Meas. Time ms*	*Band-width kHz*	*Height cm*	*Pol*	*Azi-muth deg*	*Corr. dB/m*
171370.500000	---	86.62	94.02	7.40	700.0	1000.000	150.0	V	292.0	55
172411.000000	93.14	---	114.02	20.88	700.0	1000.000	150.0	H	181.0	55
191910.500000	95.99	---	114.02	18.03	700.0	1000.000	150.0	H	120.0	55
192128.000000	---	89.62	94.02	4.40	700.0	1000.000	150.0	V	37.0	55
217668.000000	---	86.91	94.02	7.11	700.0	1000.000	150.0	V	6.0	55
219446.500000	92.15	---	114.02	21.87	700.0	1000.000	150.0	V	244.0	55

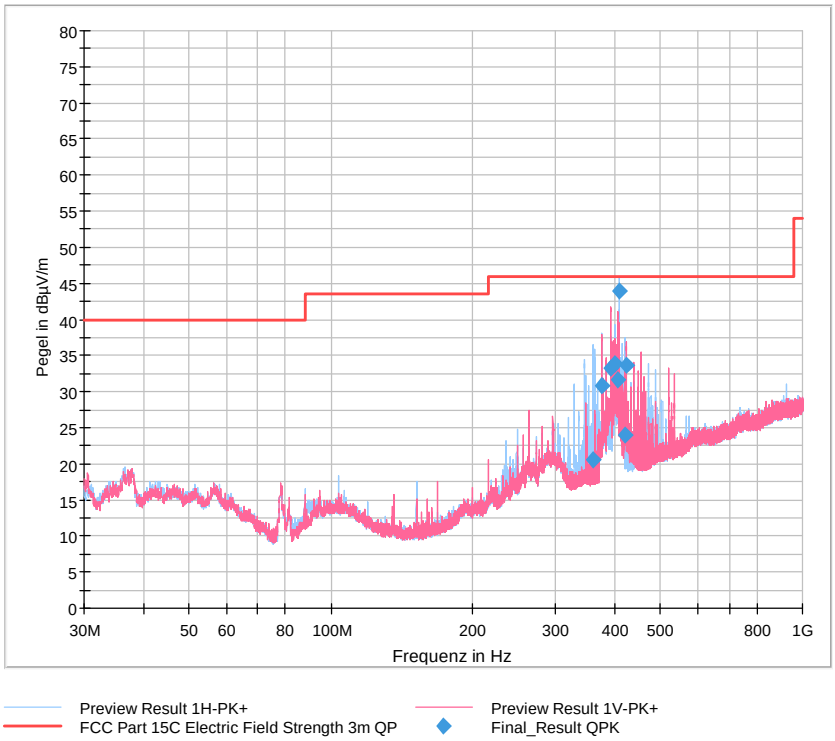
2.3.7.2 Test Results for SITRANS LR500 Series with LR530 Antenna

Frequency range 9 kHz – 220 GHz:



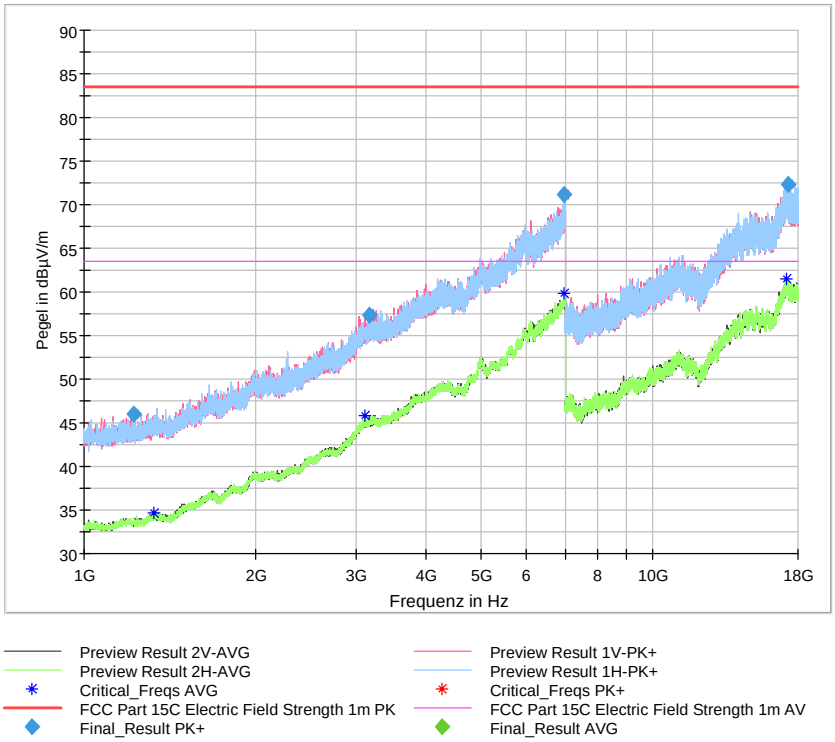
Final Results:

Frequenz MHz	*Qua-siPeak dBµV/m*	*CAver-age dBµV/m*	*Limit dBµV/m*	*Mar-gin dB*	*Messzeit ms*	*Band-breite kHz*	*Höhe cm*	*Pol*	*Azi-mut deg*	*Korr. dB/m*
0.159000	41.57	---	103.58	62.01	1000.0	9.000	100.0	H	71.0	19.5
0.159000	---	35.43	---	---	1000.0	9.000	100.0	H	71.0	19.5
1.079500	26.36	---	66.94	40.58	1000.0	9.000	100.0	H	6.0	19.3
1.608250	23.54	---	63.48	39.94	1000.0	9.000	100.0	H	0.0	19.3



Final Results:

Frequenz *MHz*	*Qua-siPeak* *dBµV/m*	*Limit* *dBµV/m*	*Margin* *dB*	*Messzeit* *ms*	*Band-breite* *kHz*	*Höhe* *cm*	*Pol*	*Azimut* *deg*	*Korr.* *dB/m*
359.760000	20.58	46.02	25.44	1000.0	120.000	323.0	H	-165.0	17.8
376.200000	30.80	46.02	15.22	1000.0	120.000	306.0	H	-147.0	18.1
391.770000	33.35	46.02	12.67	1000.0	120.000	350.0	V	180.0	18.6
399.870000	33.81	46.02	12.21	1000.0	120.000	100.0	H	-167.0	18.8
405.810000	31.56	46.02	14.46	1000.0	120.000	154.0	V	148.0	18.9
408.000000	43.85	46.02	2.17	1000.0	120.000	160.0	H	60.0	19.0
419.790000	23.95	46.02	22.07	1000.0	120.000	170.0	H	-99.0	19.3
424.110000	33.68	46.02	12.34	1000.0	120.000	280.0	V	170.0	19.4



Final Results:

Frequenz MHz	*Max-Peak dBµV/m*	*Aver-age dBµV/m*	*Limit dBµV/m*	*Mar-gin dB*	*Messzeit ms*	*Band-breite kHz*	*Höhe cm*	*Pol*	*Azi-mut deg*	*Korr. dB/m*
1221.500000	46.07	---	83.50	37.43	1000.0	1000.000	200.0	H	150.0	29.1
1324.500000	---	34.69	63.50	28.81	1000.0	1000.000	150.0	H	150.0	29.7
3112.000000	---	45.84	63.50	17.66	1000.0	1000.000	200.0	V	-90.0	38.5
3173.500000	57.36	---	83.50	26.14	1000.0	1000.000	150.0	H	-30.0	38.7
6984.000000	---	59.88	63.50	3.62	1000.0	1000.000	200.0	V	-90.0	45.1
6993.000000	71.12	---	83.50	12.38	1000.0	1000.000	150.0	H	-90.0	45.2
17123.500000	---	61.43	63.50	2.07	1000.0	1000.000	200.0	H	150.0	57.8
17231.000000	72.41	---	83.50	11.09	1000.0	1000.000	100.0	V	30.0	57.6