Test report no.: *Prüfbericht-Nr.:*	**CN23WJS4 001**	**Order No.:** *Auftragsnr.:*	**168377368**	**Page 1 of 20** *Seite 1 von 20*
Client reference no.: *Kunden-Referenz-Nr.:*	N/A	**Order date:** *Auftragsdatum:*	2022-06-15	
Client: *Auftraggeber:*	**Siemens AG** Frauenauracher Str. 80, Erlangen, Germany			
Test item: *Prüfgegenstand:*	SINAMICS Smart Adapter			
Identification / Type no.: *Bezeichnung / Typ-Nr.:*	6SL4950-0AJ00-0AA0			
Order content: *Auftrags-Inhalt:*	Test Report			
Test specification *Prüfgrundlage:*	CFR47 FCC Part 15: Subpart C Section 15.247			
Date of sample receipt: *Wareneingangsdatum:*	2023-05-20	Please refer to Photo Document		
Test sample no: *Prüfmuster-Nr.:*	A003334773-001~003			
Testing period: *Prüfzeitraum:*	2022-09-21 - 2022-09-28			
Place of testing: *Ort der Prüfung:*	Refer to section 2.1			
Testing laboratory: *Prüflaboratorium:*	TÜV Rheinland (Shenzhen) Co., Ltd.			
Test result*: *Prüfergebnis*:*	Pass			

tested by: *geprüft von:*	x Bell Hu Signed by: Bell Hu	**authorized by:** *genehmigt von:*	X Signed by: Lin Lin
Date: 2023-10-07 *Datum:*		**Issue date:** 2023-10-07 *Ausstellungsdatum:*	
Position / *Stellung:*	Expert/Sachverständige(r)	**Position** / *Stellung:*	Expert/Sachverständige(r)

Other: FCC ID: 2BCUK-SMARTADAPTER
Sonstiges:

Condition of the test item at delivery: Test item complete and undamaged
Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt

* Legend:	P(ass) = passed a.m. test specification(s)	F(ail) = failed a.m. test specification(s)	N/A = not applicable	N/T = not tested
* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet

vos

Remarks
Anmerkungen

1	The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request. *Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben.* *Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden.*
2	As contractually agreed, this document has been signed digitally only. TUV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TUV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged. *Wie vertraglich vereinbart, wurde dieses Dokument nur digital unterzeichnet. Der TÜV Rheinland hat nicht überprüft, welche rechtlichen oder sonstigen diesbezüglichen Anforderungen für dieses Dokument gelten. Diese Überprüfung liegt in der Verantwortung des Benutzers dieses Dokuments. Auf Verlangen des Kunden kann der TÜV Rheinland die Gültigkeit der digitalen Signatur durch ein gesondertes Dokument bestätigen. Diese Anfrage ist an unseren Vertrieb zu richten. Eine Umweltgebühr für einen solchen zusätzlichen Service wird erhoben.*
3	Test clauses with remark of * are subcontracted to qualified subcontractors and descripted under the respective test clause in the report. Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report. *Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt.*
4	The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019. *Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnisen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezueglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019.*

Test Summary

5.1.1 ANTENNA REQUIREMENT
RESULT: *Pass*

5.1.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER
RESULT: *Pass*

5.1.3 CONDUCTED POWER SPECTRAL DENSITY
RESULT: *Pass*

5.1.4 6DB BANDWIDTH
RESULT: *Pass*

5.1.5 99% BANDWIDTH
RESULT: *Pass*

5.1.6 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHZ BANDWIDTH
RESULT: *Pass*

5.1.7 RADIATED SPURIOUS EMISSION
RESULT: *Pass*

Contents

1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Test Results of Wi-Fi 802.11 b/g/n

Appendix B: Photographs of the Test Set-up

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

362 Huanguan Road Middle Longhua District, Shenzhen 518110 People's Republic of China

FCC Registration No.: 694916

ISED wireless device testing laboratory: 25069

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radio Spectrum Testing (SRD-Tonscend)				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Cal. until**
EXA Signal Analyzer, Multi-touch	Keysight	N9010B	MY60241175	2023-10-10
MXG X-Series RF Vector Signal Generator	Keysight	N5182B	MY61250137	2023-10-10
EXG X-Series Microwave Analog Signal Generator	Keysight	N5173B	MY61250141	2023-10-10
DC power supply	Keysight	E3642A	MY61276100	2023-10-10
Power Control Unit	Tonscend	JS0806-4ADC	N/A	2023-10-10
Automation Control Unit	Tonscend	JS0806-2	21C8060396	2023-10-10
Test Software	Tonscend	JS1120-3	N/A	N/A
Control PC	Lenovo	TianYi510S-071MB	YLX23JMF	N/A
Shielding Room 8#	Albatross	SR8	APC17151-SR8	2024-06-22
Unwanted Emission Testing (TS9975)				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Cal. until**
EMI Test Receiver	R&S	ESR 7	102021	2023-08-02
Signal Analyzer	R&S	FSV 40	101439	2023-08-01
System Controller Interface	R&S	SCI-100	S10010038	N/A
Filterbank	R&S	Wlan	100759	2023-08-01
OSP	R&S	OSP 120	102040	N/A
Pre-amplifier	R&S	SCU08F1	08320031	2023-08-02
Amplifier	R&S	SCU-18F	180070	2023-08-02
Amplifier	R&S	SCU40A	100475	2023-08-02
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	2024-08-06
Double-Ridged	ETS-LINDGREN	3117	00218717	2024-08-06

Antenna (1 -18 GHz)				
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	2024-08-27
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	2023-08-06
Test software	R&S	EMC32 (V10.60.10)	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NV9P2	N/A
3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	2024-06-22
EMI Test Receiver	R&S	ESR 7	102021	2023-08-02

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basics using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Parameter	Uncertainty (k=2)
RF output power, conducted	± 0.99 dB
Occupied Channel Bandwidth	± 2.08 %
RF power density, conducted	± 0.99 dB
Unwanted Emissions, conducted	± 0.89 dB
Radiated Emission of Transmitter, valid up to 26.5 GHz	±4.17 dB
Radiated Emission of Receiver, valid up to 26.5 GHz	±4.17 dB

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) Co., Ltd. file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at 362 Huanguan Road Middle Longhua District, Shenzhen 518110 People's Republic of China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUT is a SINAMICS Smart Adapter, which supports 2.4GHz Wi-Fi 802.11 b/g/n and 5GHz Wi-Fi 802.11a/n wireless technology.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment:	SINAMICS Smart Adapter
Type Designation:	6SL4950-0AJ00-0AA0
FCC ID:	2BCUK-SMARTADAPTER
Operating Voltage:	DC 24V
Testing Voltage:	DC 24V from DC Source
Technical Specification of Wi-Fi 802.11 b/g/n	
Operating Frequency:	2412 - 2462 MHz for 802.11b/g/n(HT20)
Type of Modulation:	DSSS(DBPSK/DQPSK/CCK) OFDM(BPSK/QPSK/16QAM/64QAM)
Data Rate:	1/2/5.5/11 Mbps for 802.11b 6/9/12/18/24/36/48/54 Mbps for 802.11g MCS0 ~ MCS7 Mbps for 802.11n(HT20) (All data rates considered, only the Worst-cases reported)
Channel Number:	11 channels for 802.11b/g/n(HT20)
Channel Separation:	5 MHz
Antenna Type:	Integral Antenna
Antenna Number:	1
Antenna Gain :	1.2 dBi Max
Technical Specification of Wi-Fi 802.11 a/n	
Operating Frequency:	5180-5240MHz
Type of Modulation:	OFDM(BPSK/QPSK/16QAM/64QAM)
Data Rate:	6/9/12/18/24/36/48/54 Mbps for 802.11a MCS0 ~ MCS7 Mbps for 802.11n(HT20) (All data rates considered, only the Worst-cases reported)
Channel Number:	5180-5240MHz, 4CHs, 802.11 a/n20
Channel Separation:	20 MHz
Antenna Type:	Integral Antenna
Antenna Number:	1
Antenna Gain:	1.6 dBi Max

Table 3: RF Channel and Frequency of Wi-Fi 802.11 b/g/n

802.11 b/g/n(HT20)			
RF Channel	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**
01	**2412**	07	2442
02	2417	08	2447
03	2422	**09**	2452
04	2427	10	2457
05	2432	**11**	**2462**
06	**2437**	/	/

Test frequencies are lowest channel: 2412 MHz, middle channel: 2437 MHz and highest channel: 2462 MHz for 802.11b/g/n(HT20)

3.3 Independent Operation Modes

The basic operation modes are:

A. On, Wi-Fi 802.11 b/g/n wireless transmitting mode

1) Low Channel
2) Middle Channel
3) High Channel

B. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Application Form
- ID Label and Location Info
- User Manual
- Operation Description

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All tests were performed according to the procedures in ANSI C63.10: 2013.

According to clause 3.1, all tests were performed on model 6SL4950-0AJ00-0AA0 in this report.

4.3 Special Accessories and Auxiliary Equipment

Table 4: Auxiliary Equipment Used during Test

Description	Manufacturer	Model	S/N	Rating
DC power Supply	Topward	3303D	809332	0-30 Volts, 0-3 Amps
Laptop	Lenovo	T480	PF-16A6N8	N/A

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

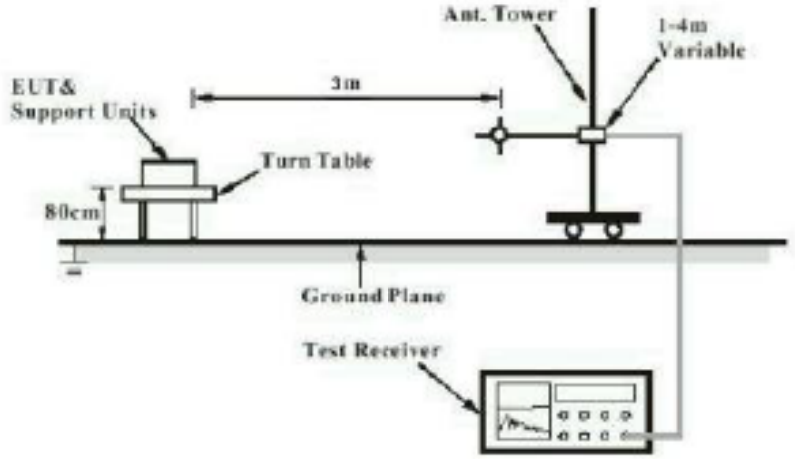


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

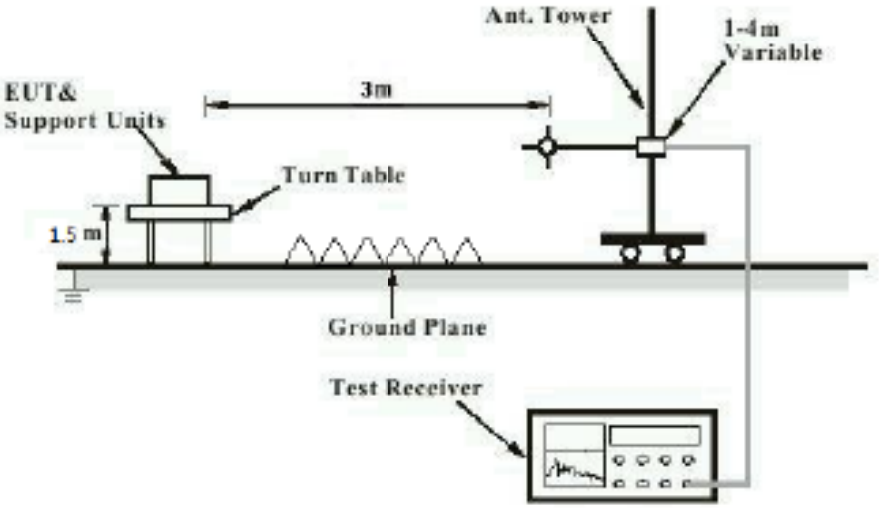
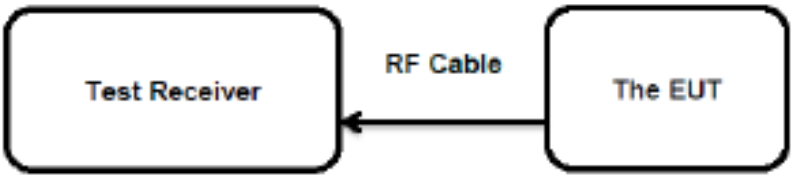


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT: **Pass**

Test Specification
Test standard : FCC Part 15.247(b)(4) and Part 15.203

The EUT has an Integral Antenna, the maximum uncorrelated antenna gain of antenna is 1.2 dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement.

Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

5.1.2 Maximum Peak Conducted Output Power

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(b)(3)
Basic standard	:	ANSI C63.10: 2013
Limits	:	1.0 Watts
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-09-21 to 2022-09-28
Input voltage	:	DC 24V by DC source
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	24.8 ℃
Relative humidity	:	55 %
Atmospheric pressure	:	101 kPa

For details, refer to following test result.

Table 5: Test Result of Maximum Peak Conducted Output Power, Wi-Fi 802.11 b/g/n

Test Mode	Data Rate	Test Channel (MHz)	Measured Peak Power		Limit (W)
			(dBm)	(W)	
802.11b	1 Mbps	2412	17.87	0.0612	< 1.0
		2437	17.65	0.0582	
		2462	17.51	0.0564	
802.11g	6 Mbps	2412	20.90	0.1230	
		2437	20.45	0.1109	
		2462	20.28	0.1067	
802.11n (HT20)	MCS0	2412	19.72	0.0938	
		2437	19.44	0.0879	
		2462	19.59	0.0910	
Maximum Measured Value			20.90	0.1230	
Max. e.i.r.p.=20.90dBm+1.2dBi=22.10dBm, which is less than 36dBm=4W.					

Note:

1) The cable loss is taken into account in results.
2) Antenna gain(G): 1.2dBi
   e.i.r.p.=$P_{(Peak\ power)}$+ G, which is far below the 4 W

5.1.3 Conducted Power Spectral Density

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(e)
Basic standard	:	ANSI C63.10: 2013
Limits	:	< 8 dBm / 3kHz
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-09-28
Input voltage	:	DC 24V by DC source
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	24.8 ℃
Relative humidity	:	55 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.4 6dB Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(a)(2)
Basic standard	:	ANSI C63.10: 2013
Limits	:	> 500 KHz
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-09-28
Input voltage	:	DC 24V by DC source
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	24.8 ℃
Relative humidity	:	55 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.5 99% Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(a)
Basic standard	:	ANSI C63.10: 2013
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-09-28
Input voltage	:	DC 24V by DC source
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	24.8 ℃
Relative humidity	:	55 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.6 Conducted Spurious Emissions Measured in 100 kHz Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(d)
Basic standard	:	ANSI C63.10: 2013
Limits	:	20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2022-09-28
Input voltage	:	DC 24V by DC source
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	24.8 ℃
Relative humidity	:	55 %
Atmospheric pressure	:	101 kPa

Test results of 100kHz Bandwidth of Frequency Band Edge by Conducted method refer to test plots, and compliance is achieved as well.

For the measurement records, refer to the appendix A.

5.1.7 Radiated Spurious Emission

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(d) & FCC Part 15.205
Basic standard	:	ANSI C63.10: 2013
Limits	:	Refer to 15.209(a) of FCC part 15.247(d)
Kind of test site	:	3m Semi-anechoic Chamber

Test Setup

Date of testing	:	2022-09-27 to 2022-09-28
Input voltage	:	DC 24V by DC source
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	Refer to test result
Relative humidity	:	Refer to test result
Atmospheric pressure	:	101 kPa

Remark:
Testing was carried out within frequency range 9kHz to the tenth harmonics. Only the worst case spurious emissions configuration of the each mode were reported.

For the measurement records, refer to the appendix A.

6 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix B.

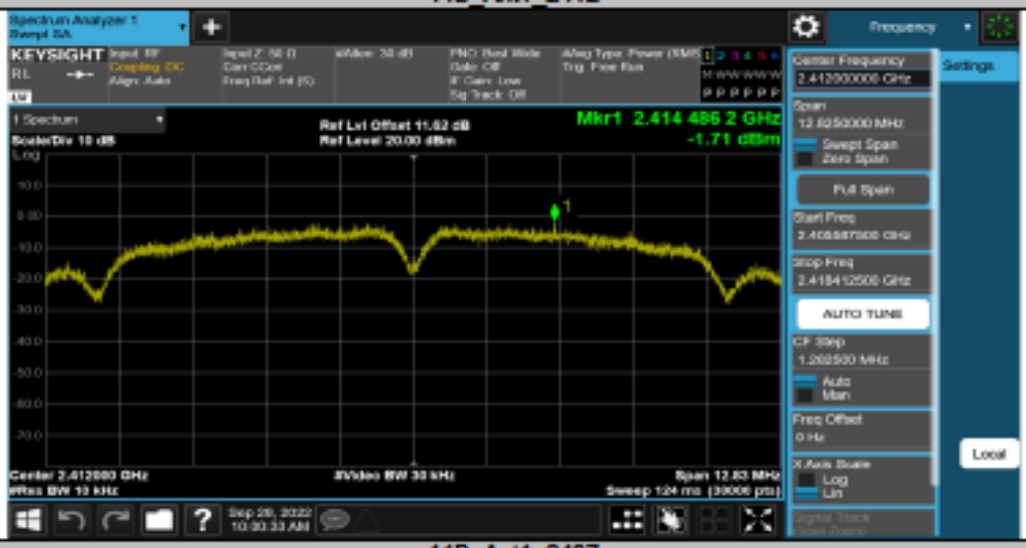
7 List of Tables

Appendix A: Test Results of Wi-Fi 802.11 b/g/n

Appendix A.1: Test Results of Conducted Power Spectral Density

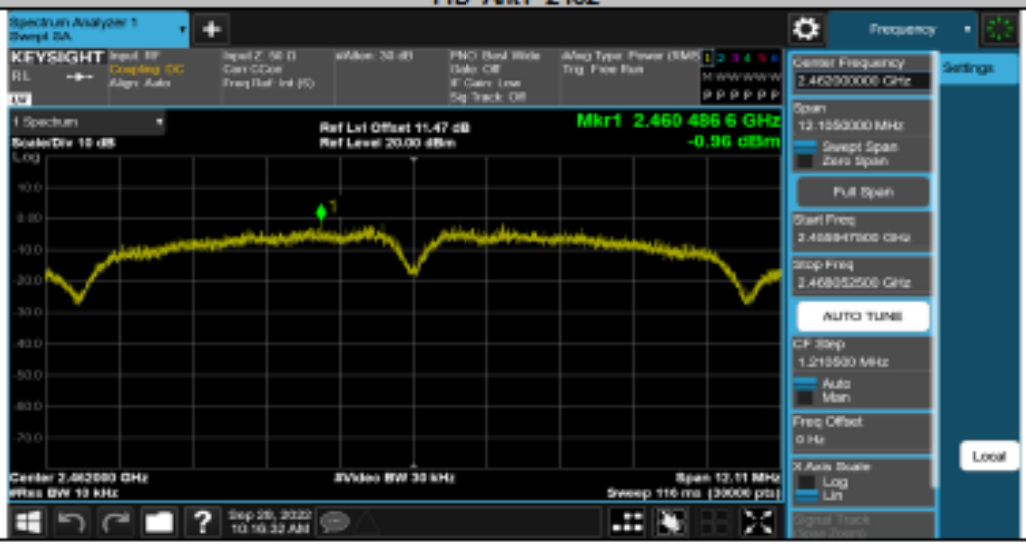
TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-1.71	≤8.00	PASS
		2437	-1.28	≤8.00	PASS
		2462	-0.96	≤8.00	PASS
11G	Ant1	2412	-5.89	≤8.00	PASS
		2437	-6.54	≤8.00	PASS
		2462	-6.49	≤8.00	PASS
11N20SISO	Ant1	2412	-6.64	≤8.00	PASS
		2437	-6.96	≤8.00	PASS
		2462	-6.23	≤8.00	PASS

11B_Ant1_2412

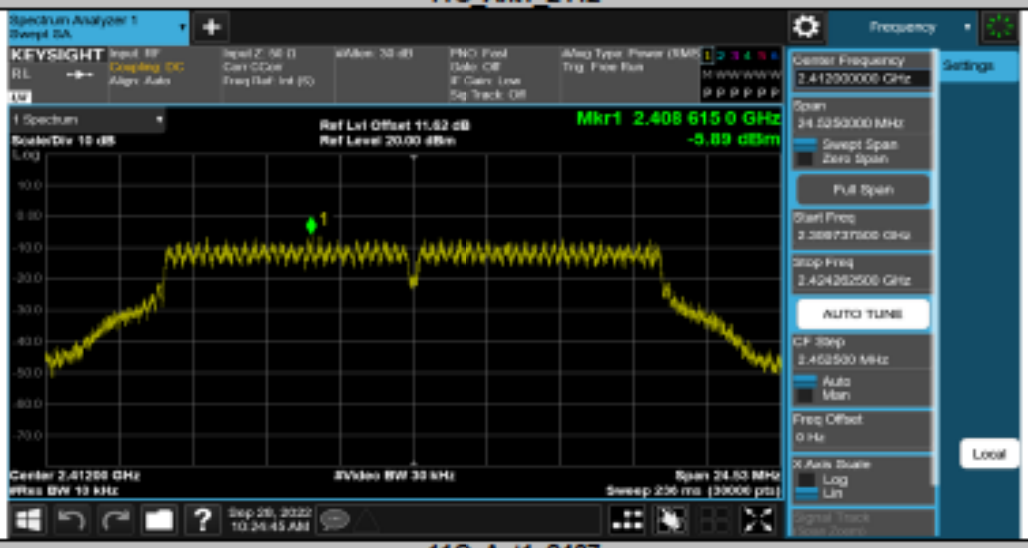


11B_Ant1_2437

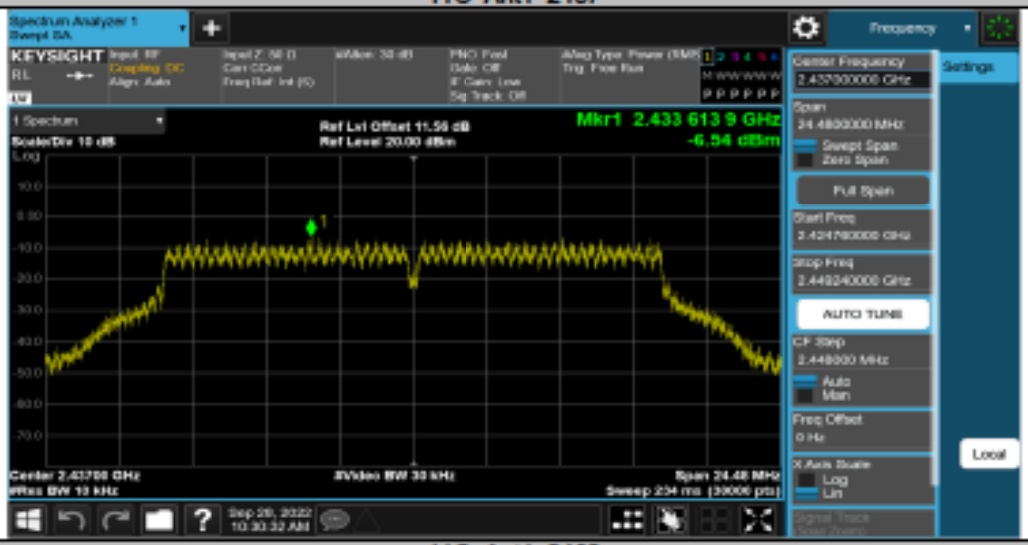
11B_Ant1_2462



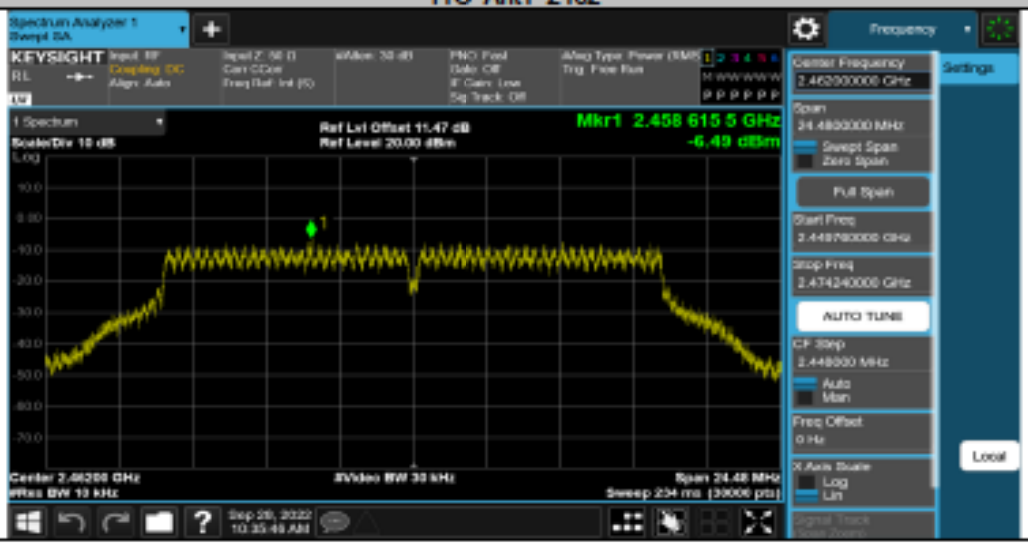
11G_Ant1_2412



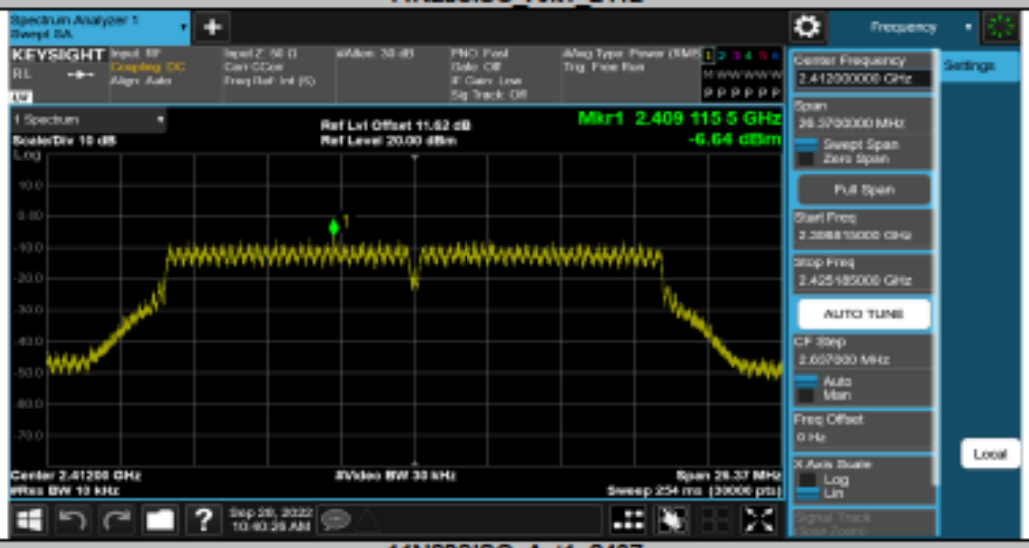
11G_Ant1_2437



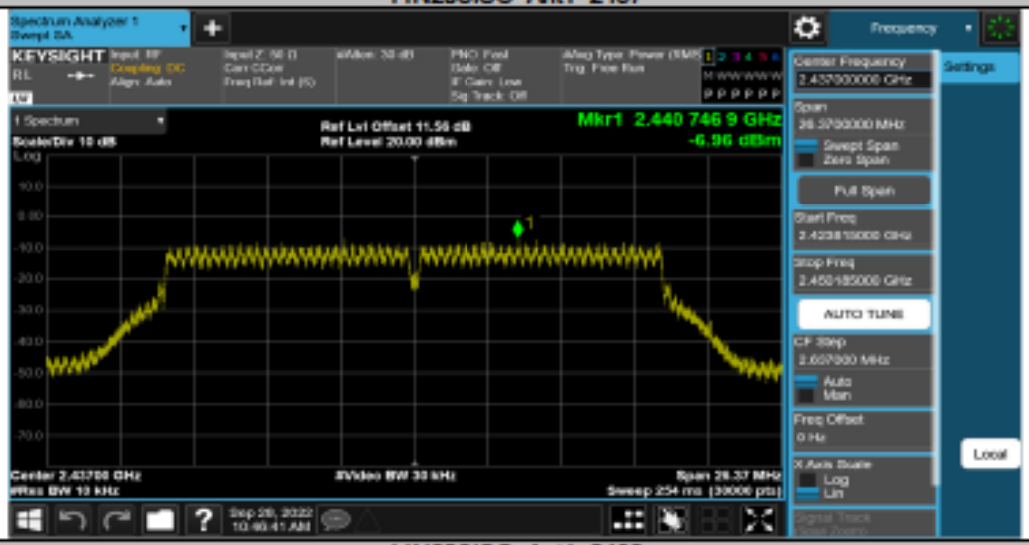
11G_Ant1_2462



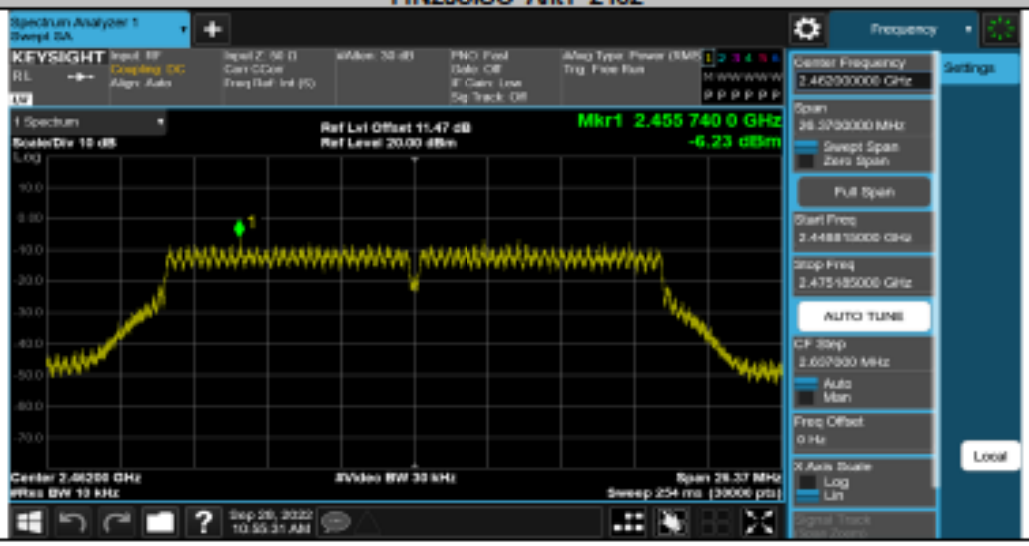
11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



Appendix A.2: Test Results of 6dB Bandwidth

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.550	2407.470	2416.020	0.5	PASS
		2437	9.060	2432.470	2441.530	0.5	PASS
		2462	8.070	2457.980	2466.050	0.5	PASS
11G	Ant1	2412	16.350	2403.810	2420.160	0.5	PASS
		2437	16.320	2428.840	2445.160	0.5	PASS
		2462	16.320	2453.840	2470.160	0.5	PASS
11N20SISO	Ant1	2412	17.580	2403.210	2420.790	0.5	PASS
		2437	17.580	2428.210	2445.790	0.5	PASS
		2462	17.580	2453.210	2470.790	0.5	PASS

11B_Ant1_2412

11B_Ant1_2437

11B_Ant1_2462

11G_Ant1_2412

11G_Ant1_2437

11G_Ant1_2462

11N20SISO_Ant1_2412

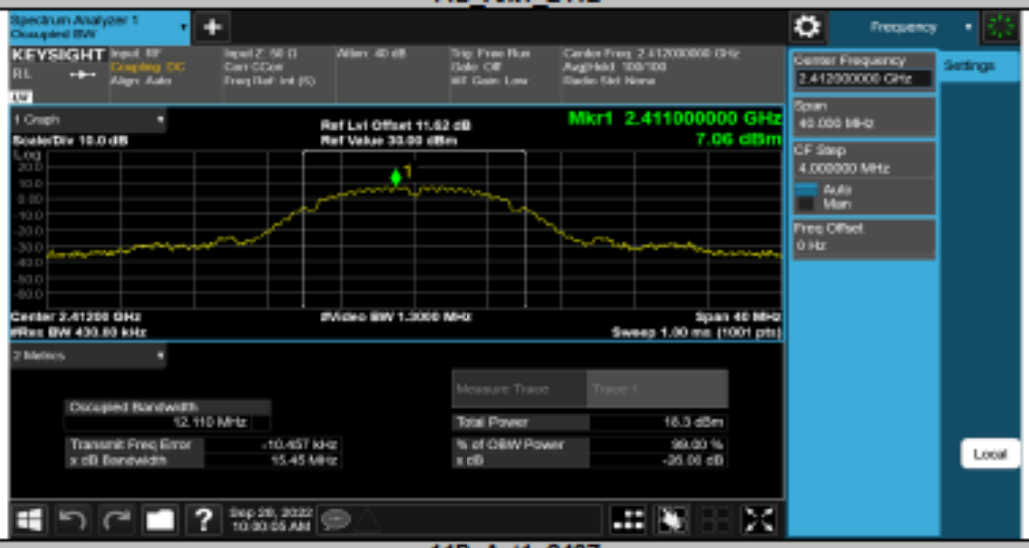
11N20SISO_Ant1_2437

11N20SISO_Ant1_2462

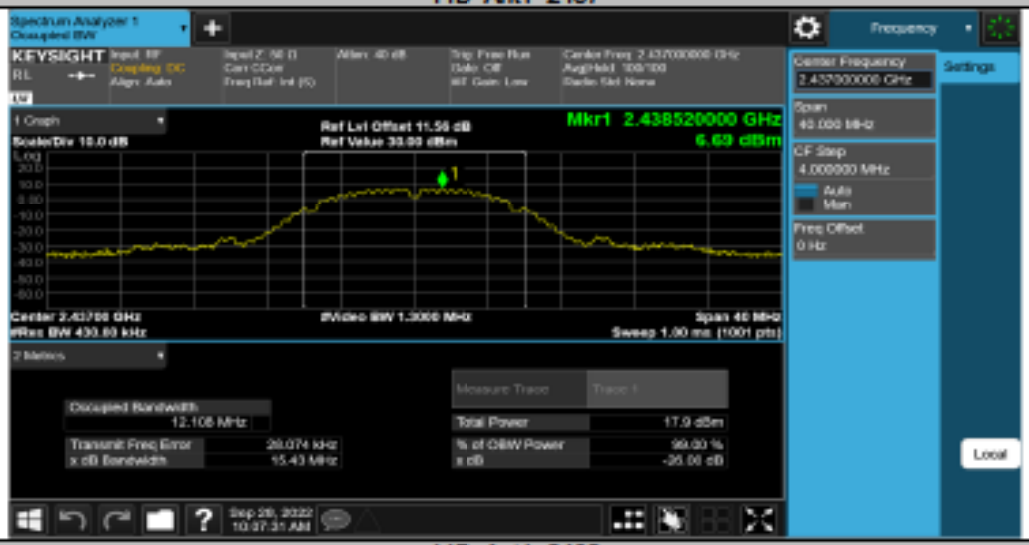
Appendix A.3: Test Results of 99% Bandwidth

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	12.110	2405.9345	2418.0445	—	Pass
		2437	12.108	2430.9741	2443.0821	—	Pass
		2462	12.130	2455.9360	2468.0660	—	Pass
11G	Ant1	2412	17.378	2403.2802	2420.6582	—	Pass
		2437	17.444	2428.2639	2445.7079	—	Pass
		2462	17.421	2453.2338	2470.6548	—	Pass
11N20SISO	Ant1	2412	18.330	2402.7942	2421.1242	—	Pass
		2437	18.351	2427.8432	2446.1942	—	Pass
		2462	18.408	2452.8205	2471.2285	—	Pass

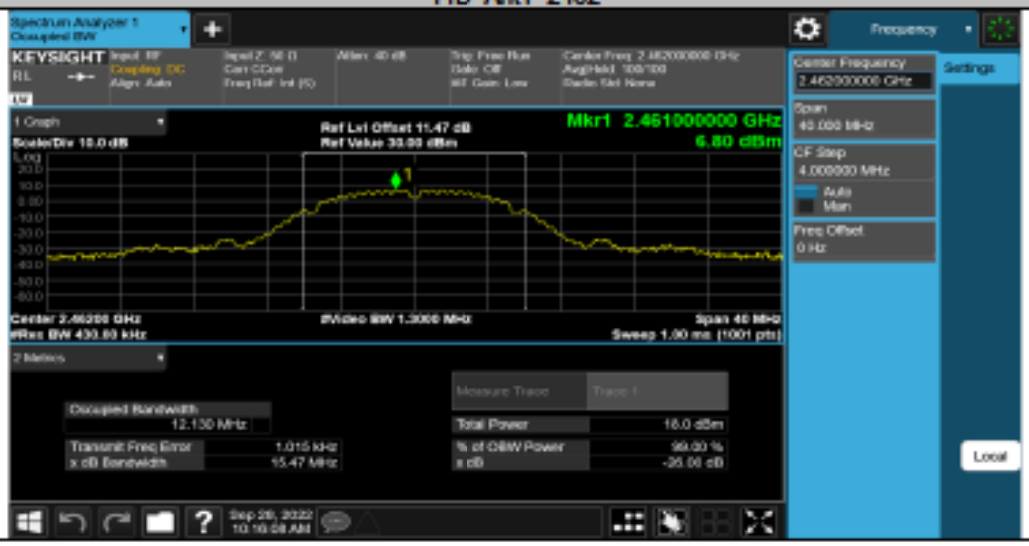
11B_Ant1_2412



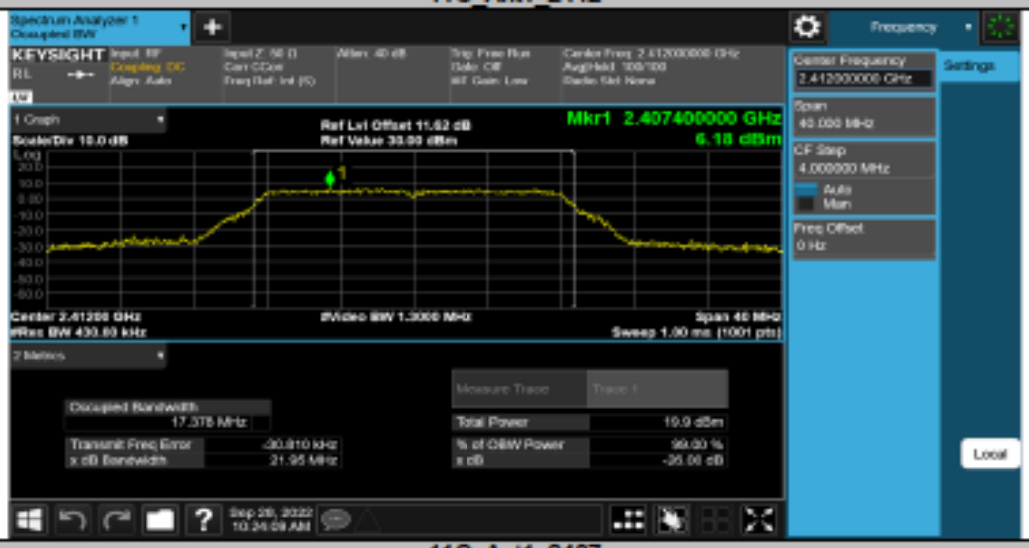
11B_Ant1_2437



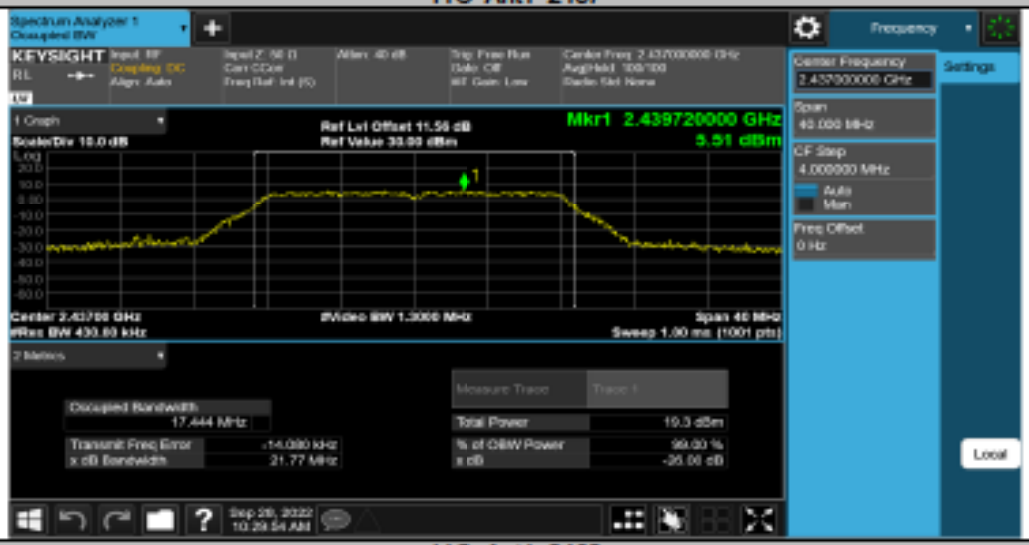
11B_Ant1_2462



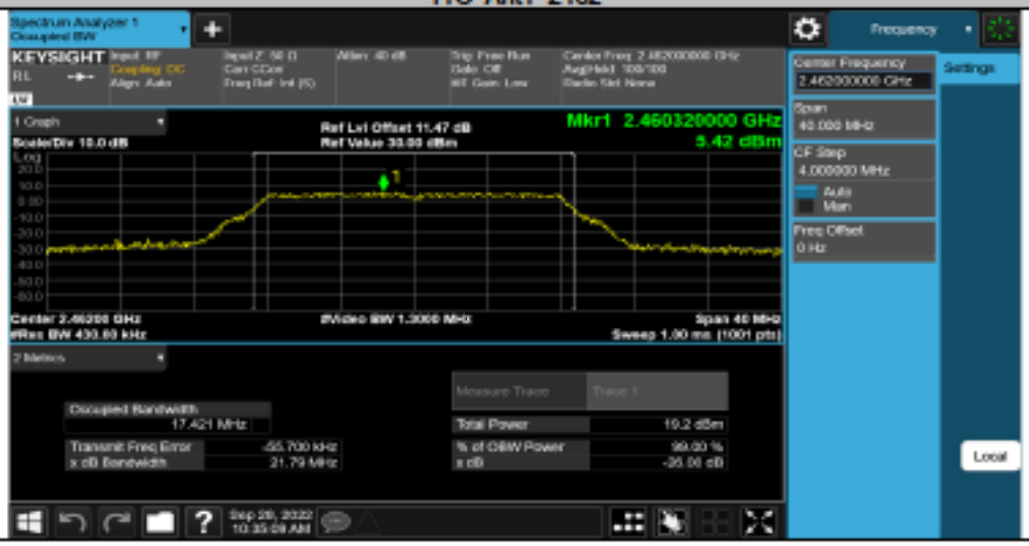
11G_Ant1_2412



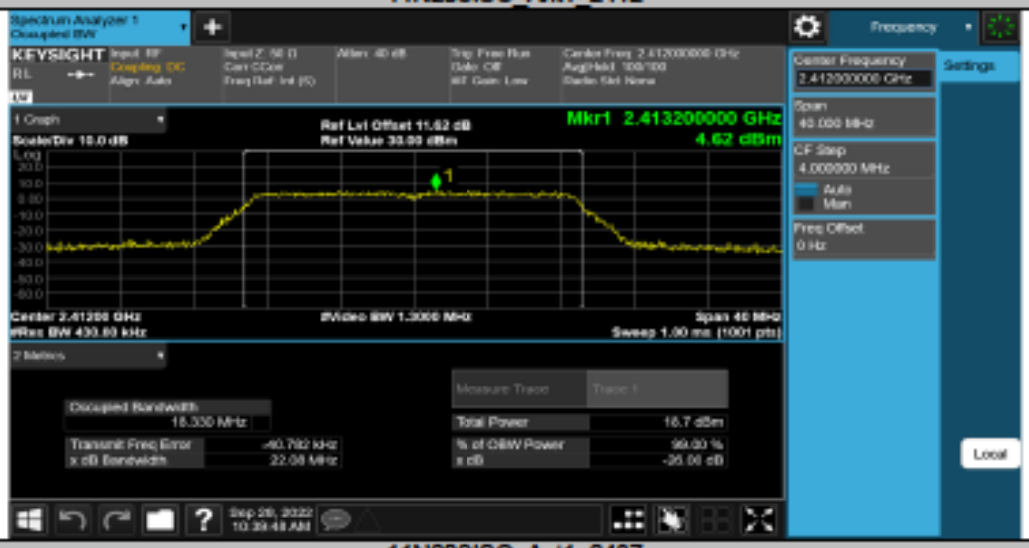
11G_Ant1_2437



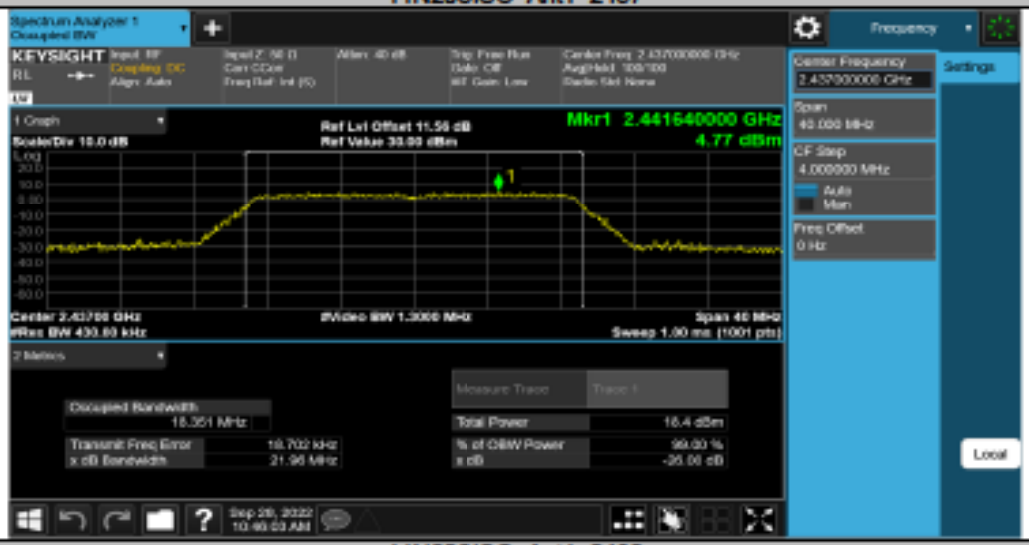
11G_Ant1_2462



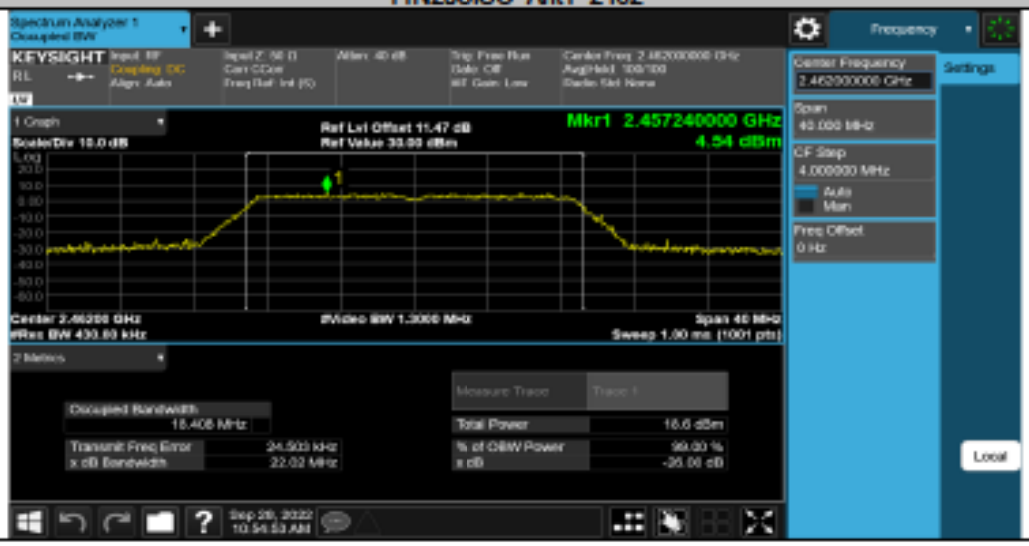
11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



Appendix A.4: Test Results of Conducted Spurious Emissions Measured in 100 kHz Bandwidth

Conducted Spurious Emission

TestMode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	6.23	6.23	---	PASS
			30~1000	6.23	-58.6	≤-13.77	PASS
			1000~26500	6.23	-48.9	≤-13.77	PASS
		2437	Reference	4.68	4.68	---	PASS
			30~1000	4.68	-58.79	≤-15.32	PASS
			1000~26500	4.68	-49.84	≤-15.32	PASS
		2462	Reference	5.54	5.54	---	PASS
			30~1000	5.54	-58.55	≤-14.46	PASS
			1000~26500	5.54	-49.41	≤-14.46	PASS
11G	Ant1	2412	Reference	-0.56	-0.56	---	PASS
			30~1000	-0.56	-58.22	≤-20.56	PASS
			1000~26500	-0.56	-49.56	≤-20.56	PASS
		2437	Reference	2.60	2.60	---	PASS
			30~1000	2.60	-58.85	≤-17.4	PASS
			1000~26500	2.60	-49.62	≤-17.4	PASS
		2462	Reference	1.72	1.72	---	PASS
			30~1000	1.72	-58.65	≤-18.28	PASS
			1000~26500	1.72	-50.38	≤-18.28	PASS
11N20SISO	Ant1	2412	Reference	-0.02	-0.02	---	PASS
			30~1000	-0.02	-58.99	≤-20.02	PASS
			1000~26500	-0.02	-46.67	≤-20.02	PASS
		2437	Reference	1.05	1.05	---	PASS
			30~1000	1.05	-58.76	≤-18.95	PASS
			1000~26500	1.05	-49.96	≤-18.95	PASS
		2462	Reference	-1.45	-1.45	---	PASS
			30~1000	-1.45	-58.96	≤-21.45	PASS
			1000~26500	-1.45	-48.85	≤-21.45	PASS

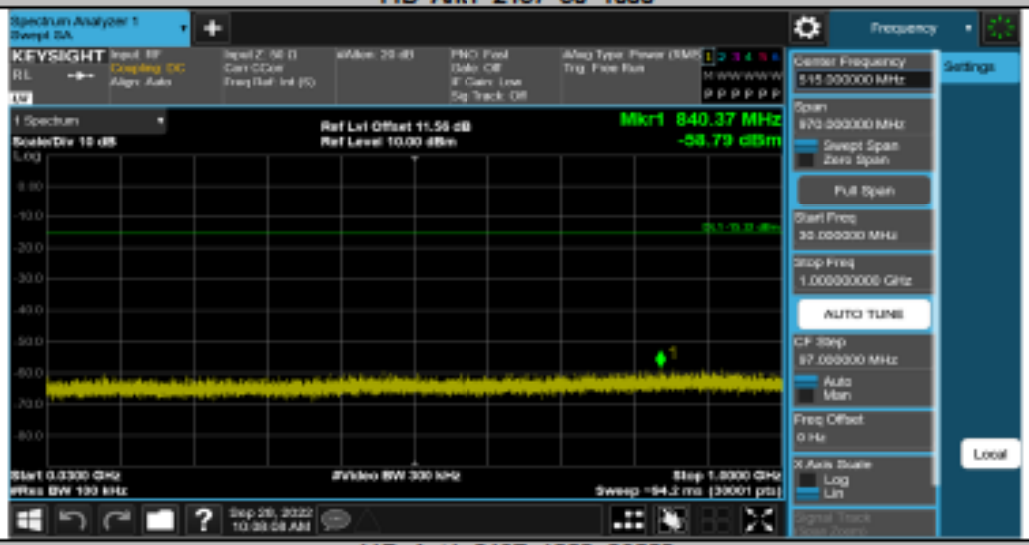
11B_Ant1_2412_0~Reference

11B_Ant1_2412_30~1000

11B_Ant1_2412_1000~26500

11B_Ant1_2437_0~Reference

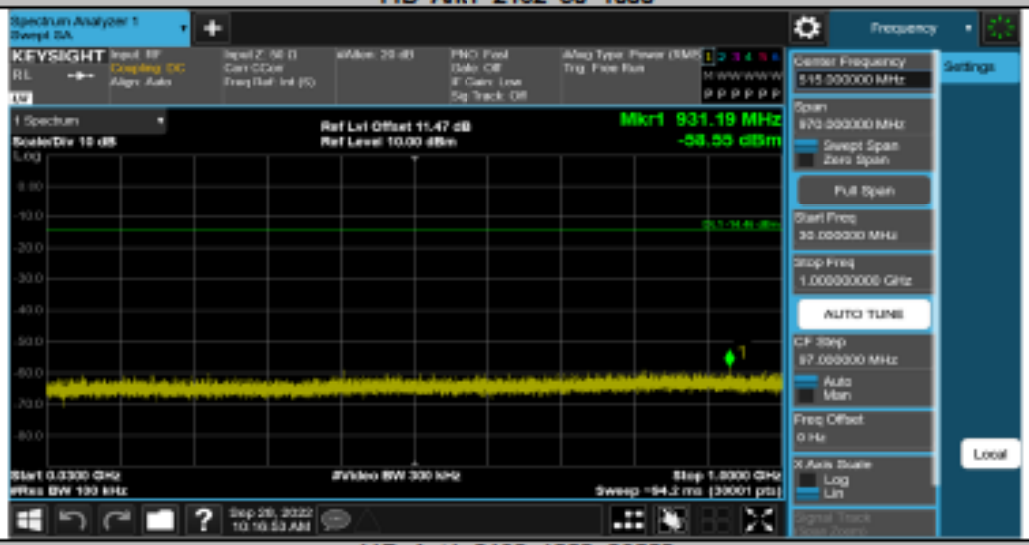
11B_Ant1_2437_30~1000



11B_Ant1_2437_1000~26500

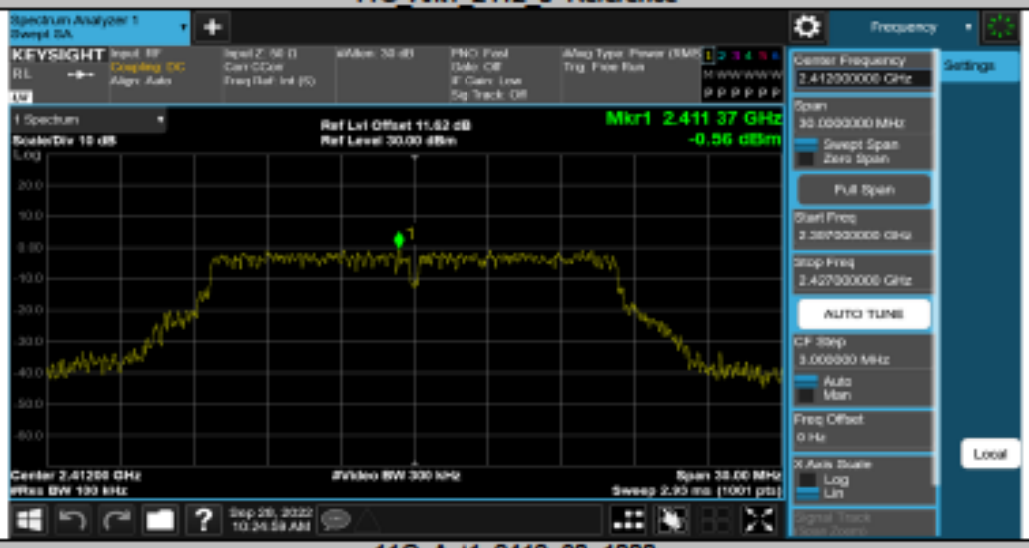
11B_Ant1_2462_0~Reference

11B_Ant1_2462_30~1000

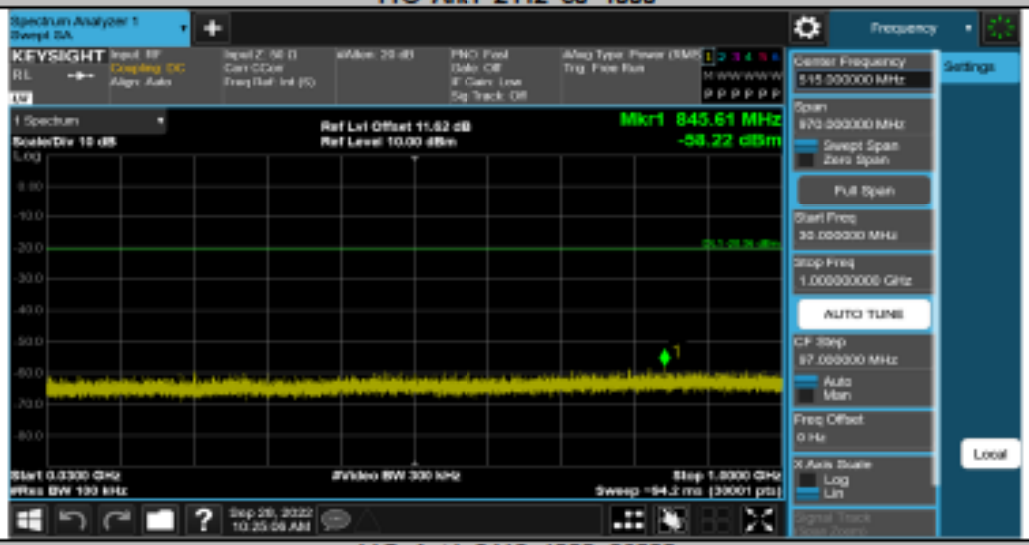


11B_Ant1_2462_1000~26500

11G_Ant1_2412_0~Reference

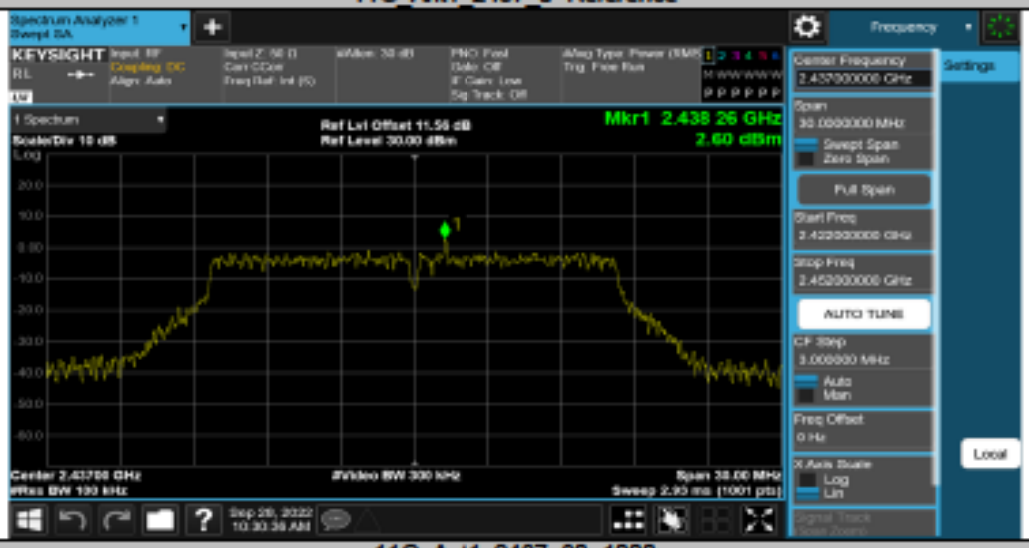


11G_Ant1_2412_30~1000



11G_Ant1_2412_1000~26500

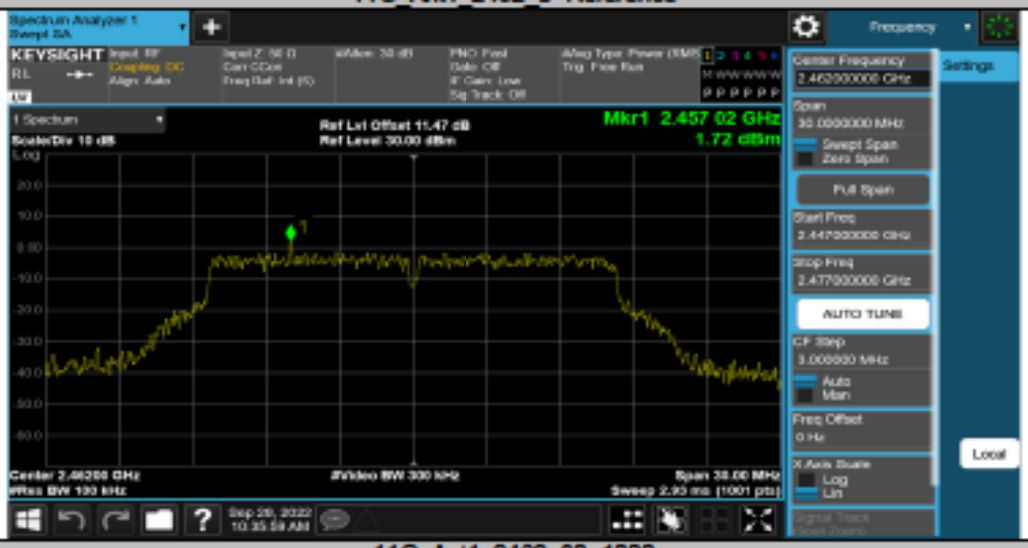
11G_Ant1_2437_0~Reference



11G_Ant1_2437_30~1000

11G_Ant1_2437_1000~26500

11G_Ant1_2462_0~Reference

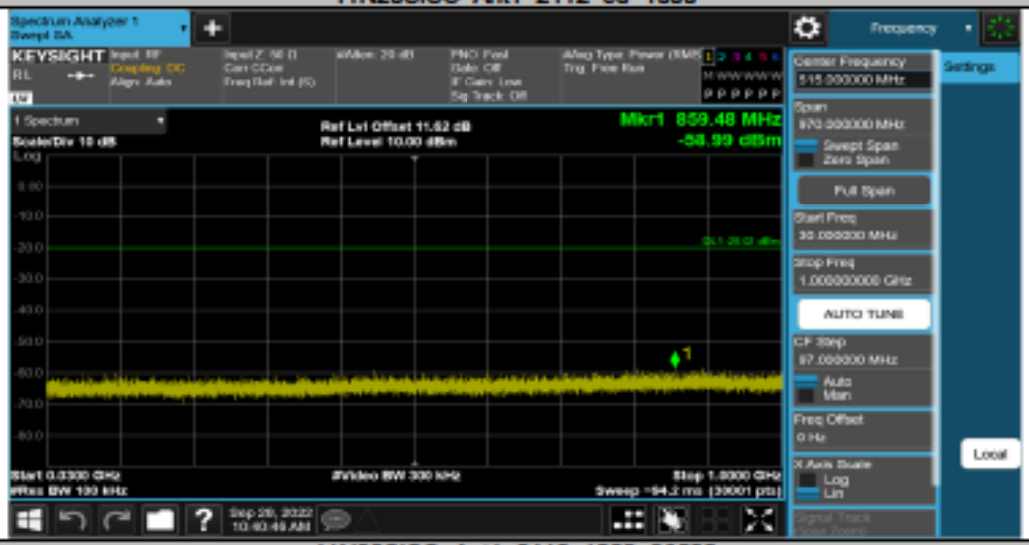


11G_Ant1_2462_30~1000

11G_Ant1_2462_1000~26500

11N20SISO_Ant1_2412_0~Reference

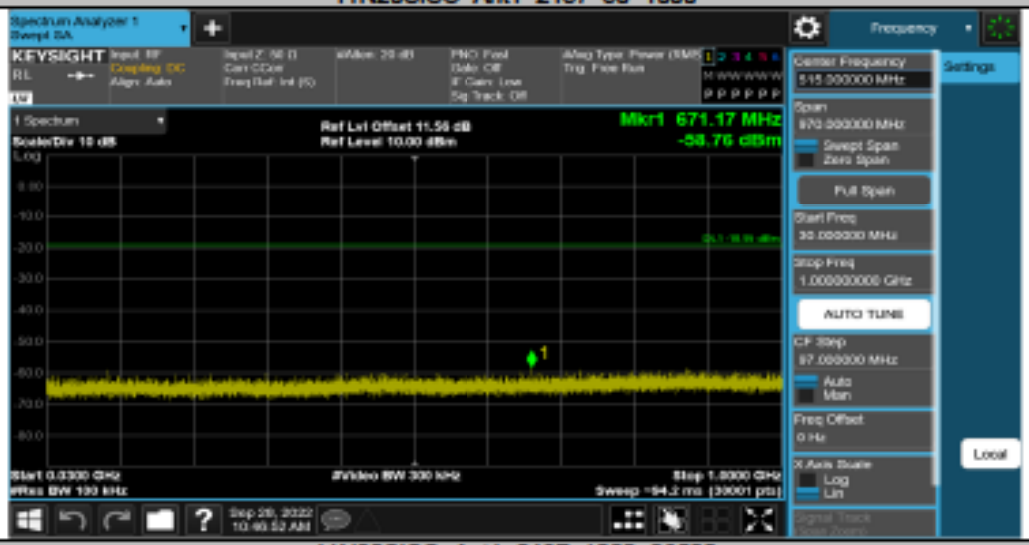
11N20SISO_Ant1_2412_30~1000



11N20SISO_Ant1_2412_1000~26500

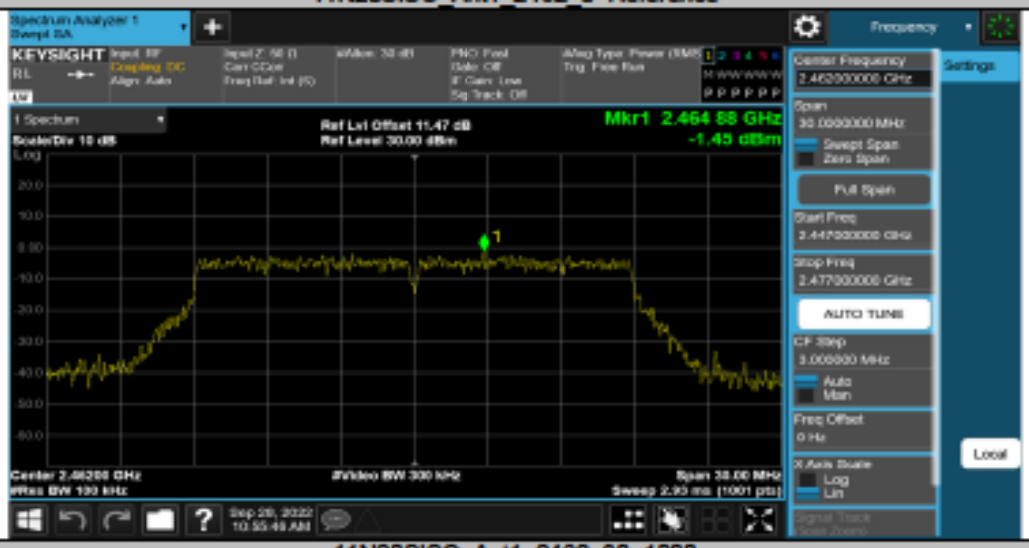
11N20SISO_Ant1_2437_0~Reference

11N20SISO_Ant1_2437_30~1000

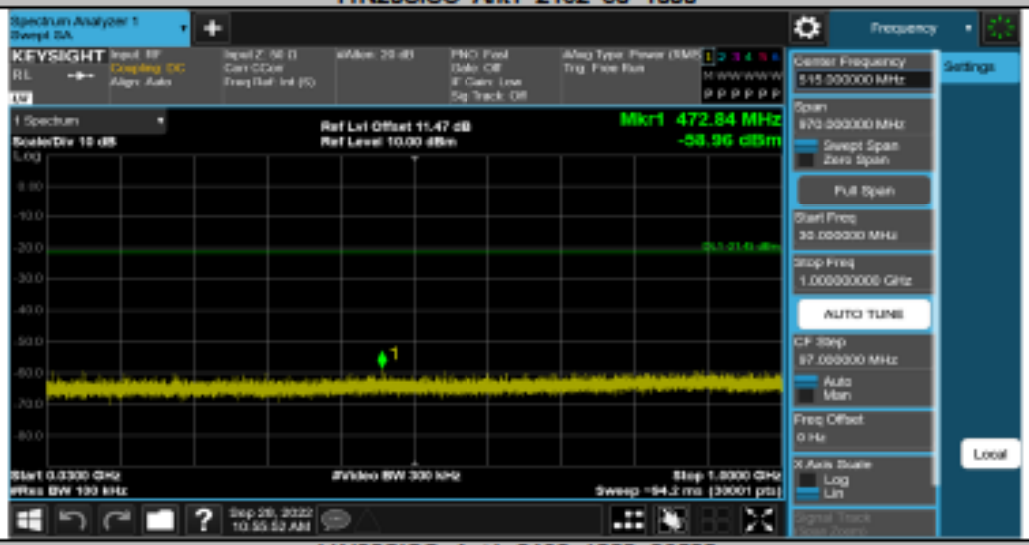


11N20SISO_Ant1_2437_1000~26500

11N20SISO_Ant1_2462_0~Reference



11N20SISO_Ant1_2462_30~1000



11N20SISO_Ant1_2462_1000~26500

Band Edge

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	6.50	-32.62	≤-13.5	PASS
		High	2462	6.60	-46.86	≤-13.4	PASS
11G	Ant1	Low	2412	2.80	-30.01	≤-17.2	PASS
		High	2462	1.95	-42.08	≤-18.05	PASS
11N20SISO	Ant1	Low	2412	1.83	-32.63	≤-18.17	PASS
		High	2462	1.40	-40.9	≤-18.6	PASS

11B_Ant1_Low_2412

11B_Ant1_High_2462

11G_Ant1_Low_2412

11G_Ant1_High_2462

11N20SISO_Ant1_Low_2412

11N20SISO_Ant1_High_2462

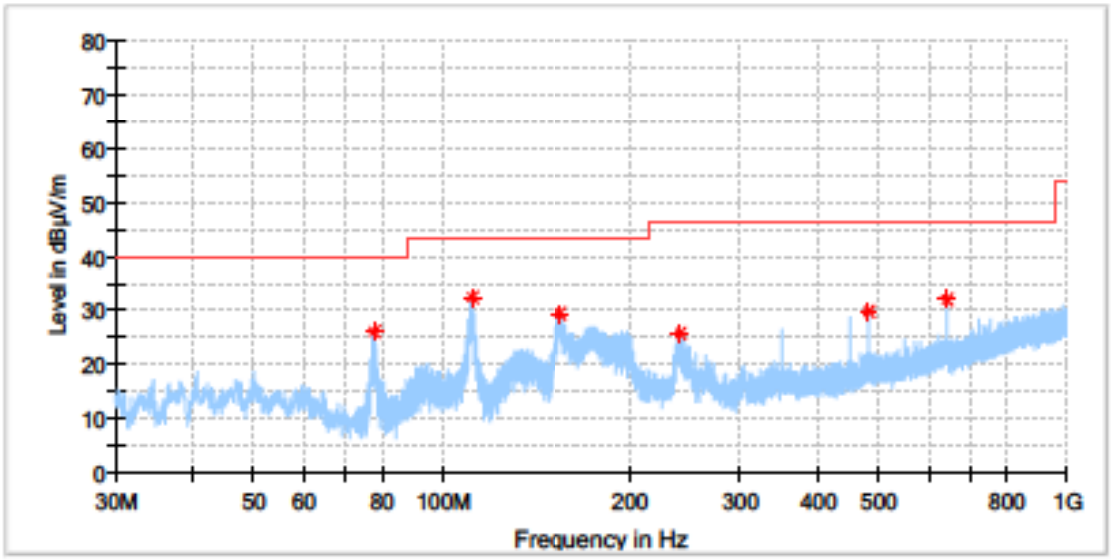
Appendix A.5: Test Results of Radiated Spurious Emissions

Note: 1. Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and above 18GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported. 2. This testing was carried out on different modulations, but only the worst case was presented in this report.

30MHz - 1GHz (Worst case)

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11b_Ch6
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

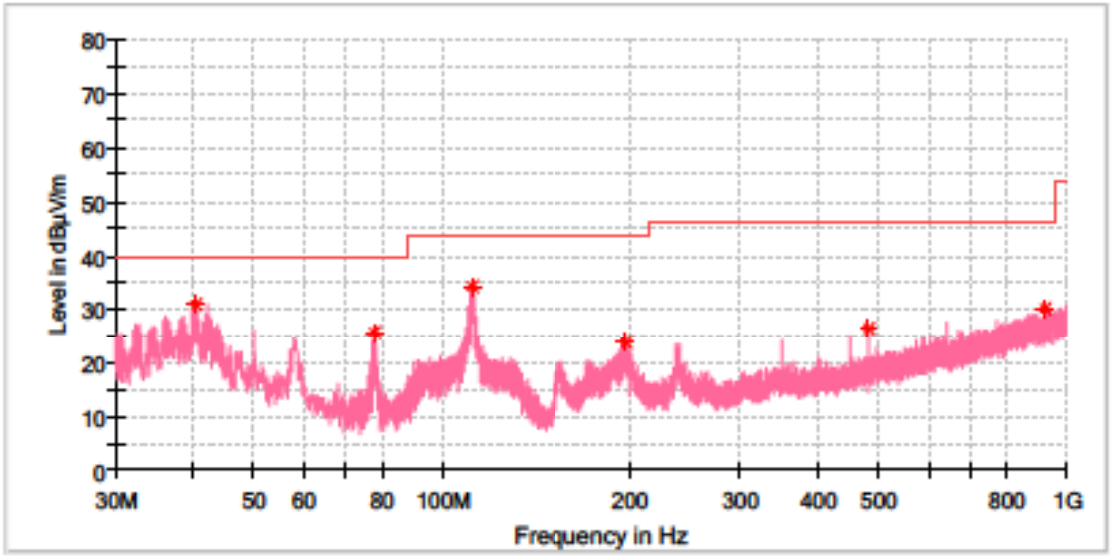
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
77.675500	25.99	40.00	14.01	100.0	H	255.0	-23.4
111.528500	32.52	43.50	10.98	100.0	H	237.0	-19.3
154.208500	29.38	43.50	14.12	100.0	H	237.0	-22.0
240.102000	25.75	46.00	20.25	100.0	H	230.0	-17.7
480.060000	29.93	46.00	16.07	100.0	H	301.0	-12.2
640.081500	32.11	46.00	13.89	100.0	H	288.0	-9.3

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11b_Ch6
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
40.330500	30.82	40.00	9.18	100.0	V	74.0	-20.0
77.675500	25.63	40.00	14.37	100.0	V	295.0	-23.4
111.237500	34.37	43.50	9.13	100.0	V	340.0	-19.2
197.470500	23.79	43.50	19.71	100.0	V	308.0	-19.0
480.080000	26.51	46.00	19.49	100.0	V	231.0	-12.2
921.915000	30.05	46.00	15.95	100.0	V	215.0	-4.8

Final Result

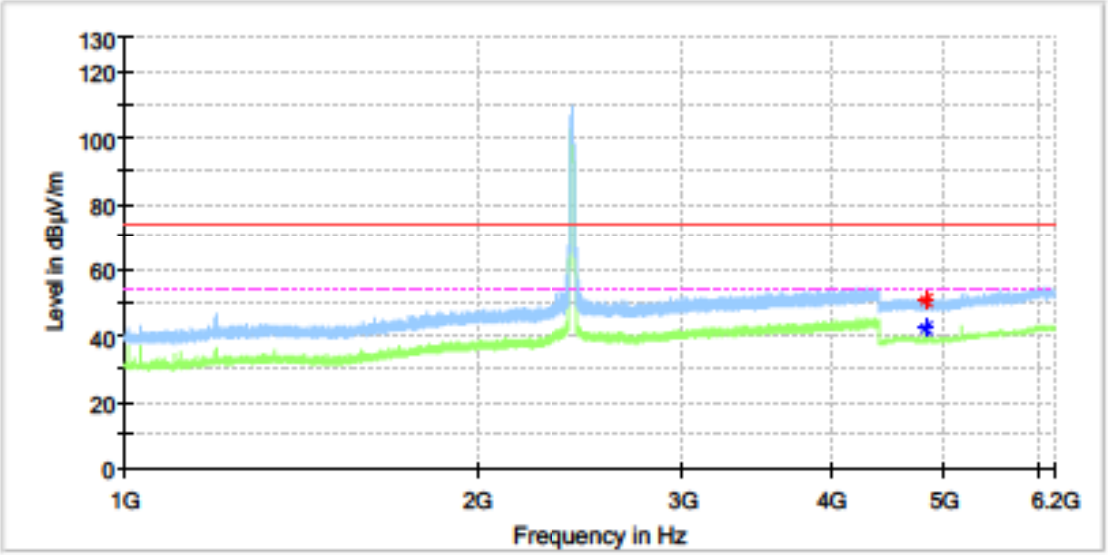
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

Above 1GHz

Note: The highest waveform in the figure is Wi-Fi Fundamental.

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11b_Ch1
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

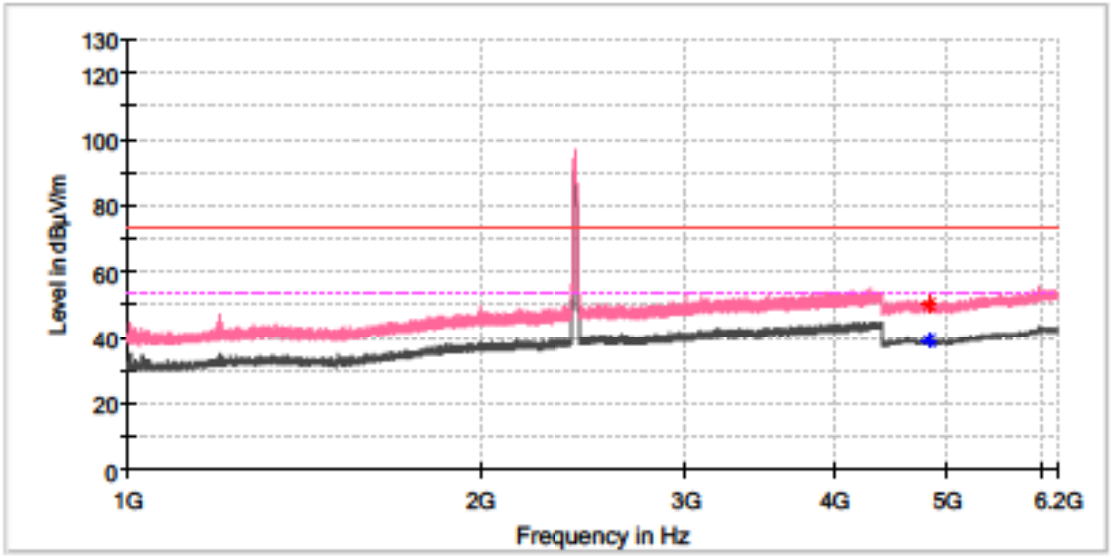
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4824.000000	—	42.27	54.00	11.73	100.0	H	95.0	11.8
4825.500000	50.94	—	74.00	23.06	100.0	H	159.0	11.8

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11b_Ch1
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

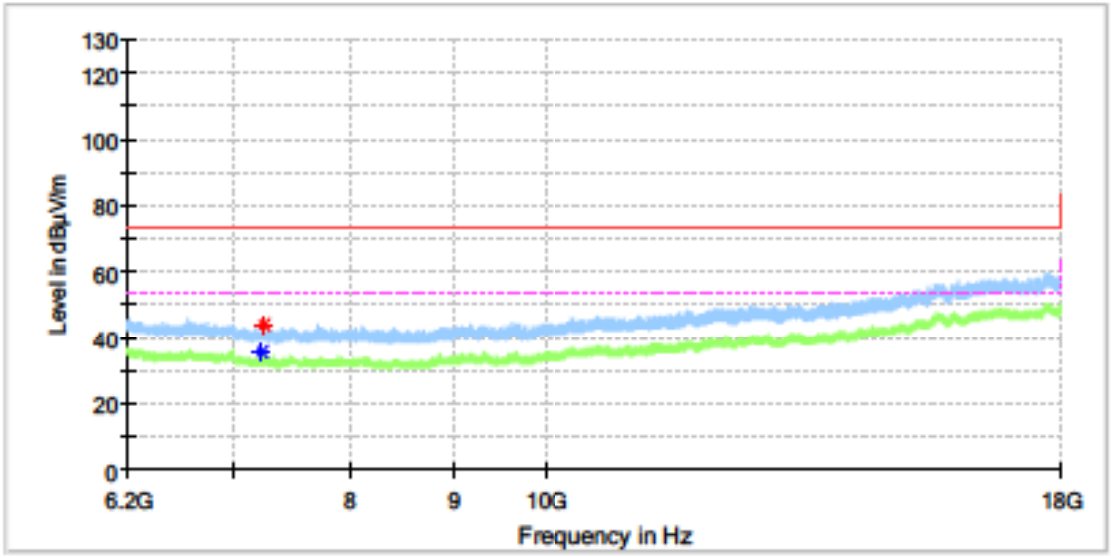
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4824.000000	50.11	—	74.00	23.89	100.0	V	309.0	11.8
4824.000000	—	39.25	54.00	14.75	100.0	V	309.0	11.8

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11b_Ch1
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

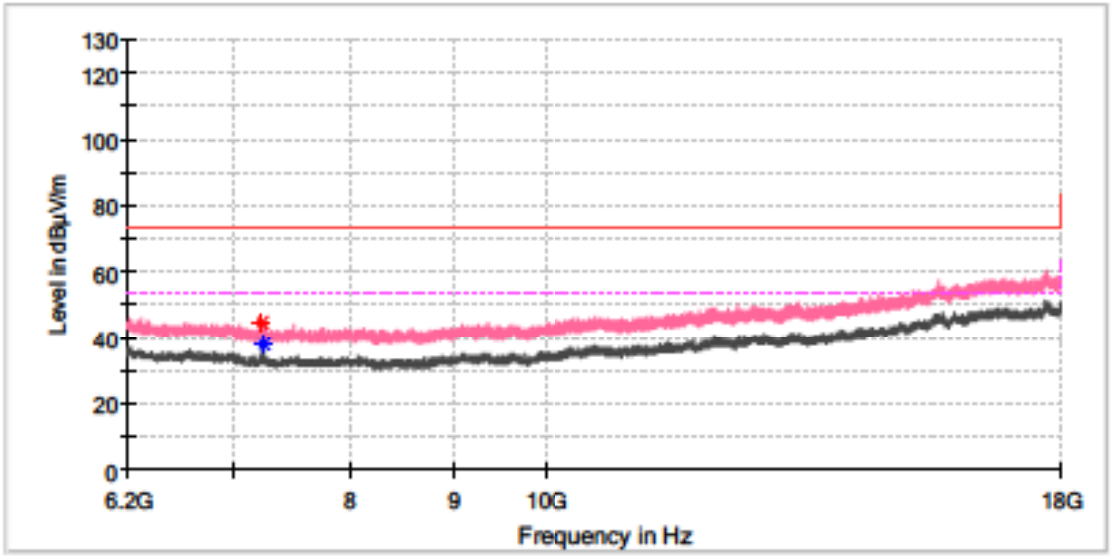
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7234.958333	—	35.94	54.00	18.06	100.0	H	124.0	8.6
7236.925000	44.14	—	74.00	29.86	100.0	H	320.0	8.6

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11b_Ch1
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

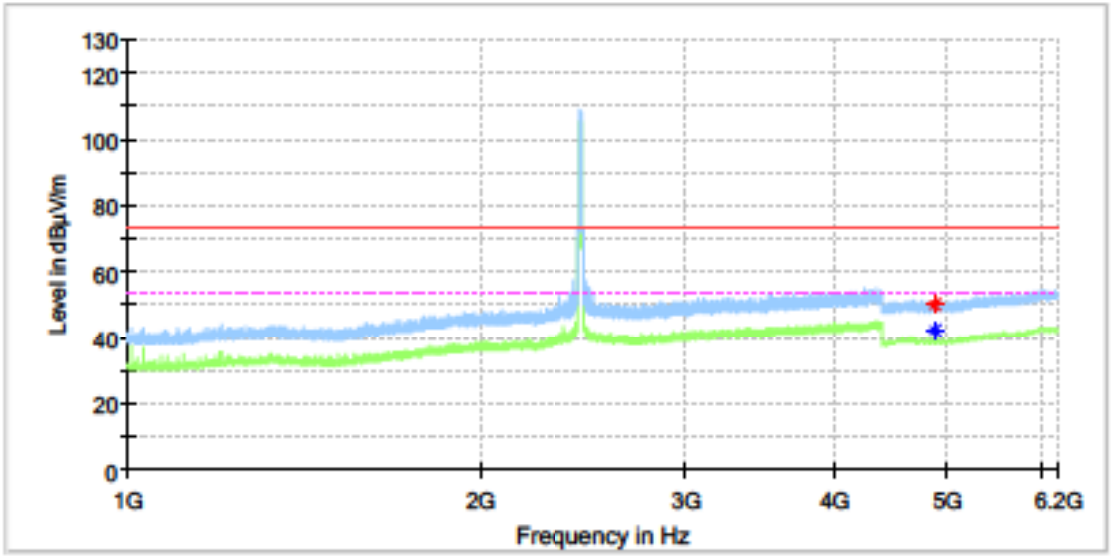
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7234.958333	44.52	—	74.00	29.48	100.0	V	0.0	8.6
7236.925000	—	37.85	54.00	16.15	100.0	V	286.0	8.6

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11b_Ch6
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

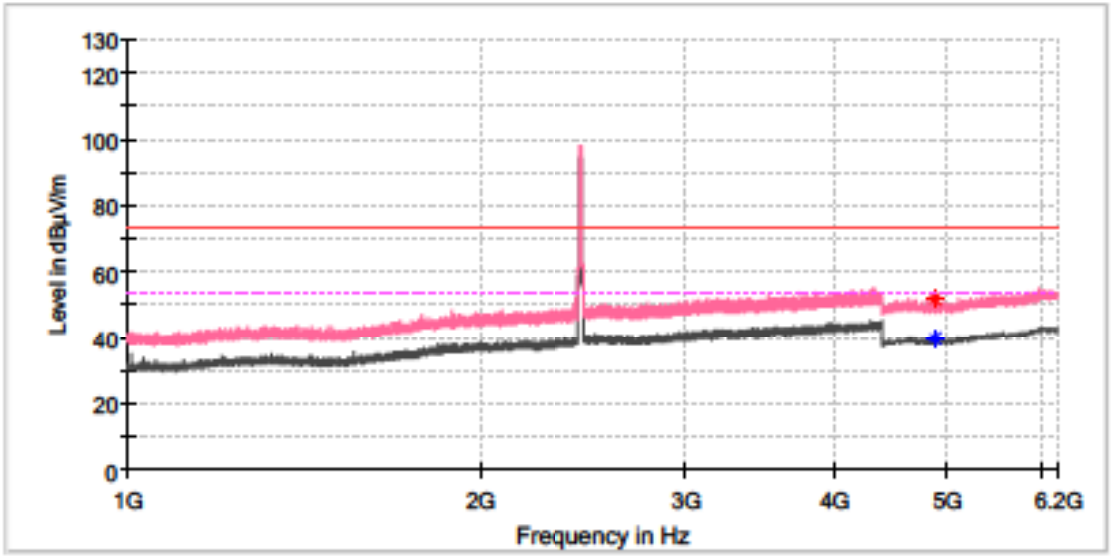
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4874.000000	—	42.06	54.00	11.94	100.0	H	87.0	11.8
4876.500000	50.16	—	74.00	23.84	100.0	H	73.0	11.8

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11b_Ch6
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

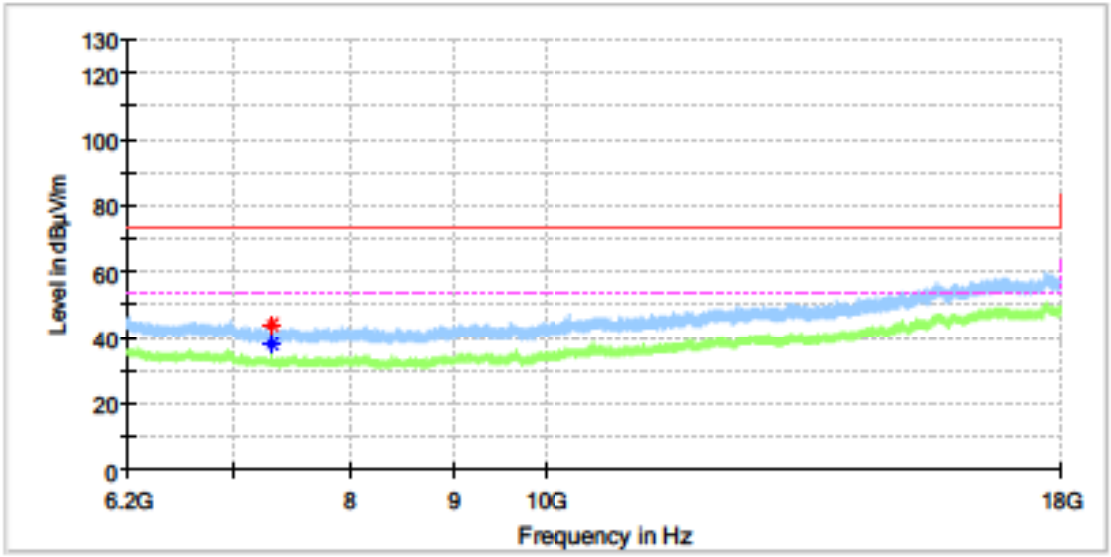
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4874.000000	—	40.15	54.00	13.85	100.0	V	23.0	11.8
4880.000000	51.70	—	74.00	22.30	100.0	V	131.0	11.8

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11b_Ch6
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

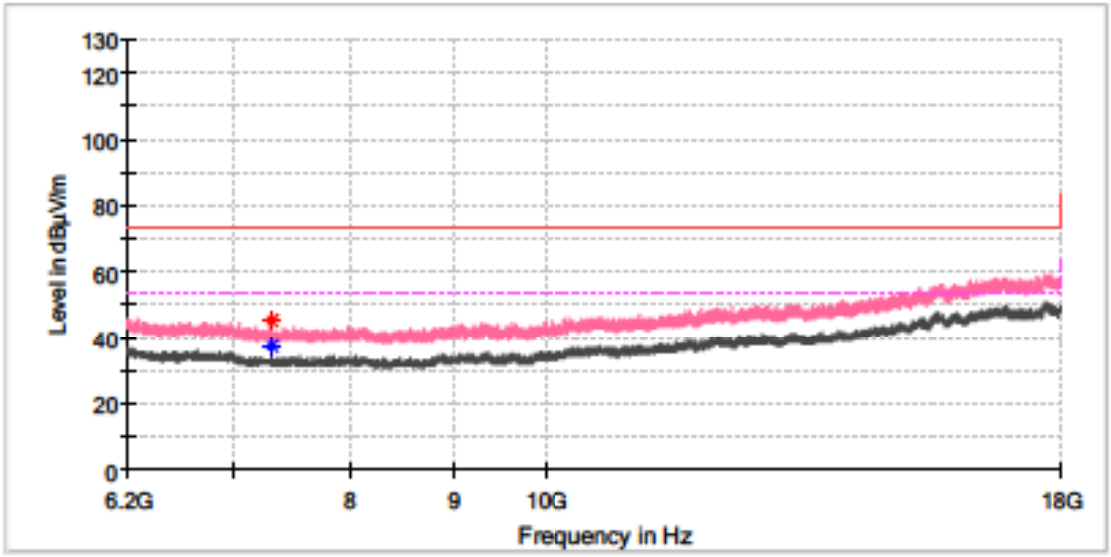
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7309.691667	—	38.03	54.00	15.97	100.0	H	127.0	8.2
7310.675000	44.37	—	74.00	29.63	100.0	H	0.0	8.2

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11b_Ch6
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

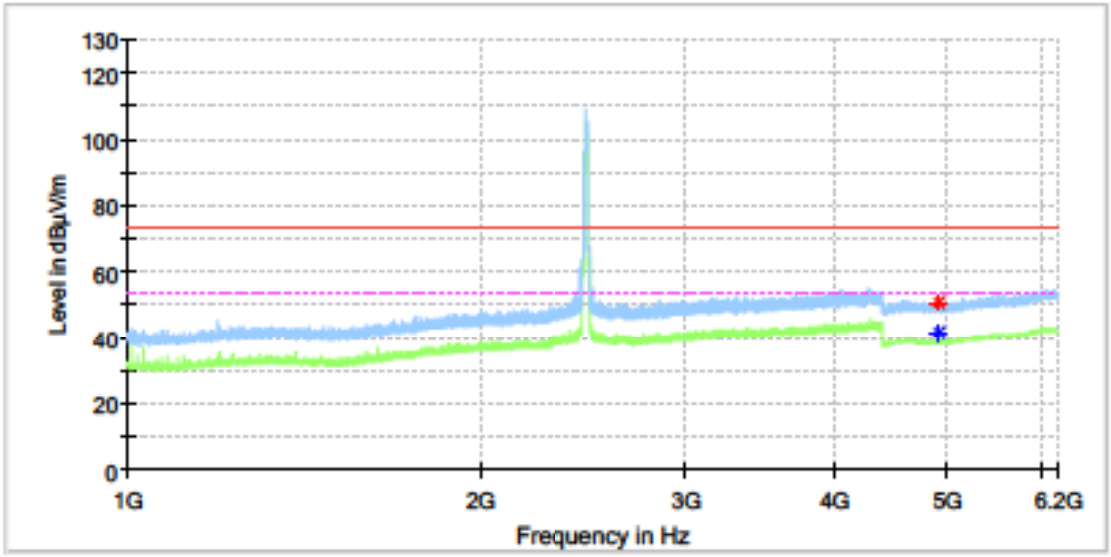
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7311.166667	45.25	—	74.00	28.75	100.0	V	167.0	8.2
7312.150000	—	37.79	54.00	16.21	100.0	V	167.0	8.2

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11b_Ch11
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

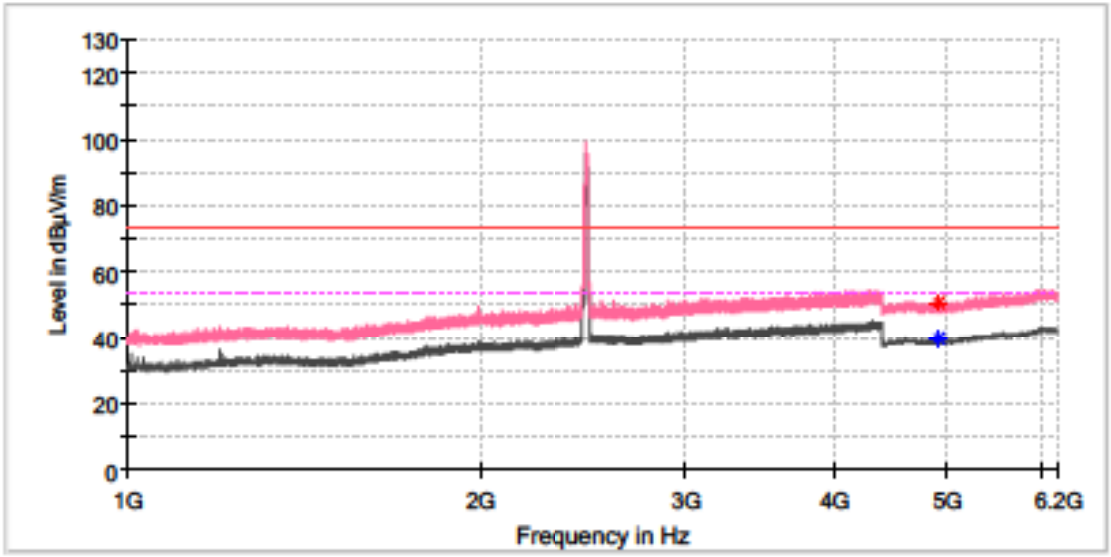
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4914.500000	50.78	—	74.00	23.22	100.0	H	329.0	11.8
4924.000000	—	41.43	54.00	12.57	100.0	H	171.0	11.8

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11b_Ch11
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

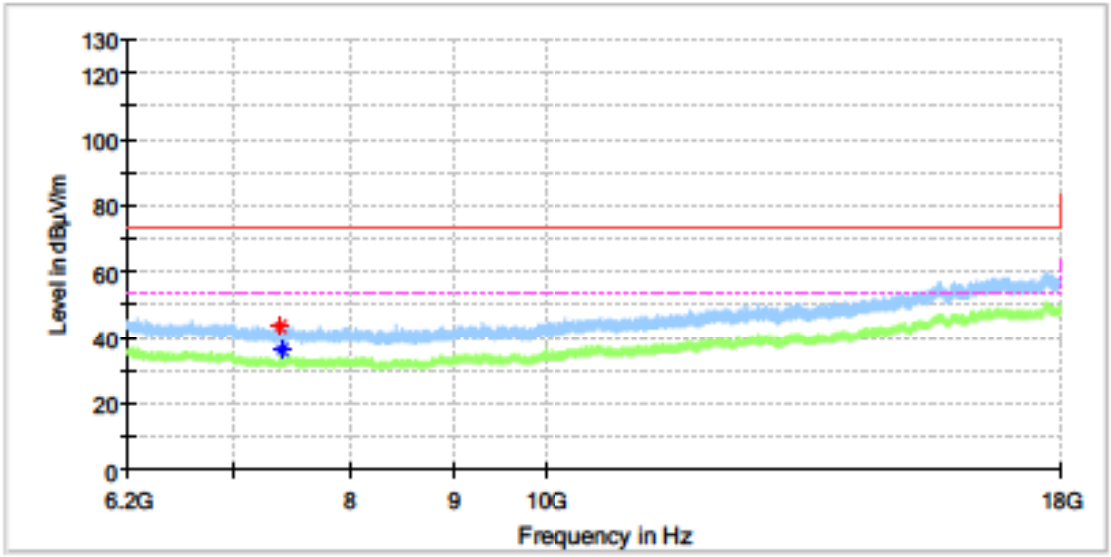
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4909.000000	50.55	—	74.00	23.45	100.0	V	197.0	11.8
4924.000000	—	39.73	54.00	14.27	100.0	V	233.0	11.8

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11b_Ch11
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

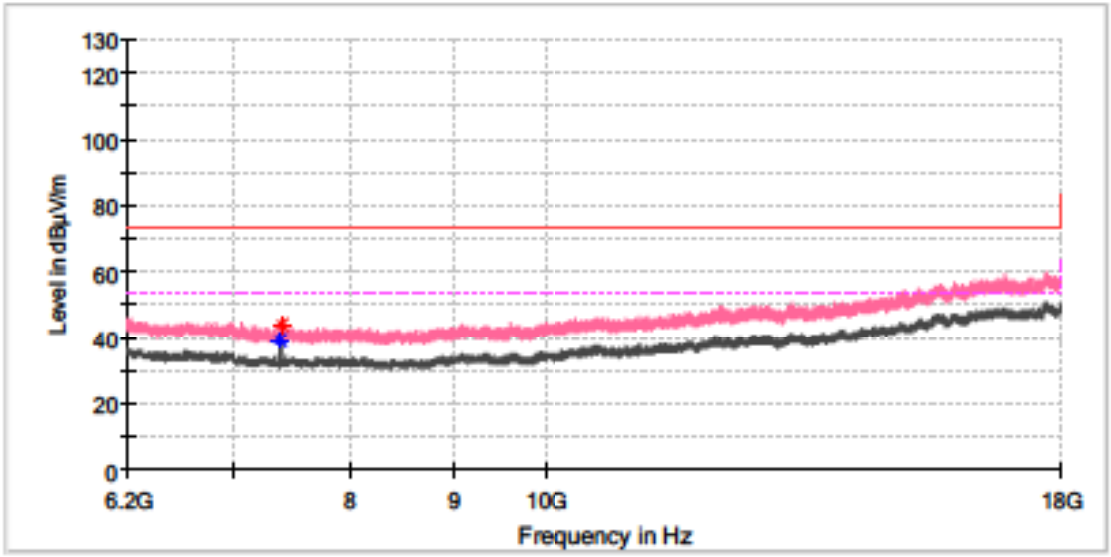
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7383.933333	43.40	—	74.00	30.60	100.0	H	39.0	8.2
7386.883333	—	35.98	54.00	18.02	100.0	H	14.0	8.2

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11b_Ch11
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

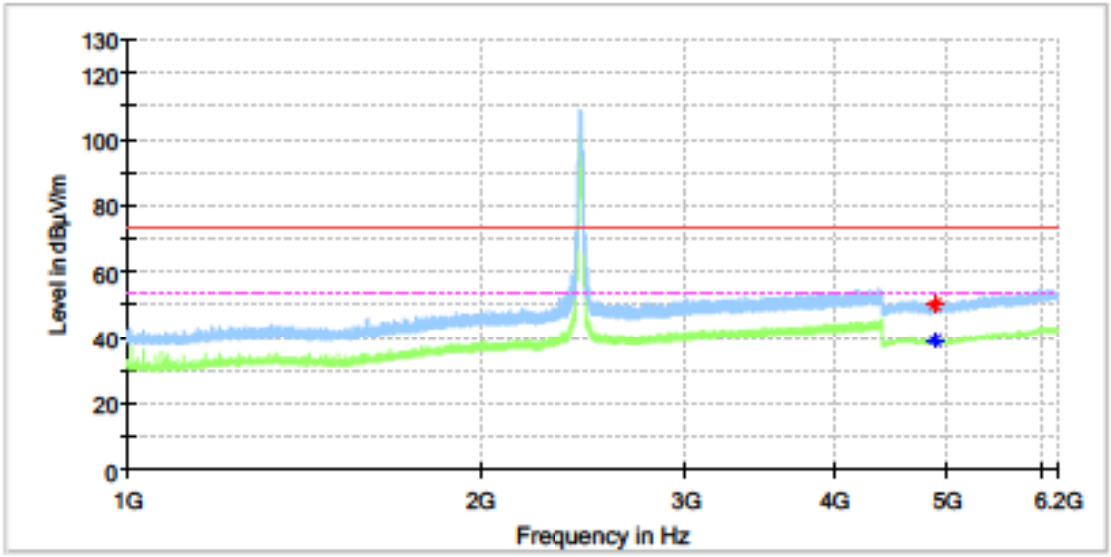
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7385.408333	—	39.45	54.00	14.55	100.0	V	305.0	8.2
7387.375000	44.12	—	74.00	29.88	100.0	V	305.0	8.2

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11g_Ch6
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

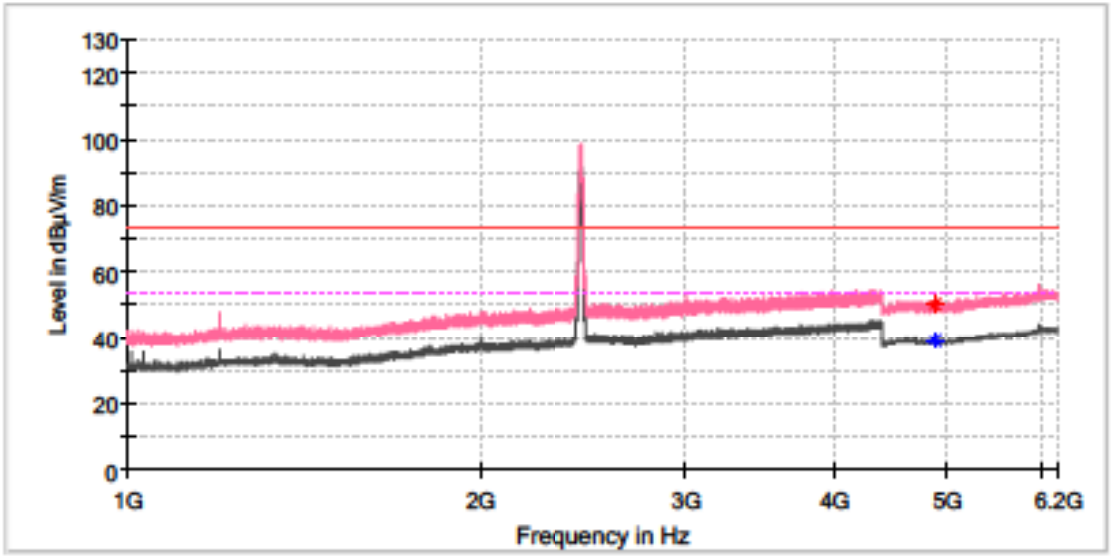
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4872.000000	50.41	—	74.00	23.59	100.0	H	73.0	11.8
4874.000000	—	39.06	54.00	14.94	100.0	H	104.0	11.8

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11g_Ch6
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

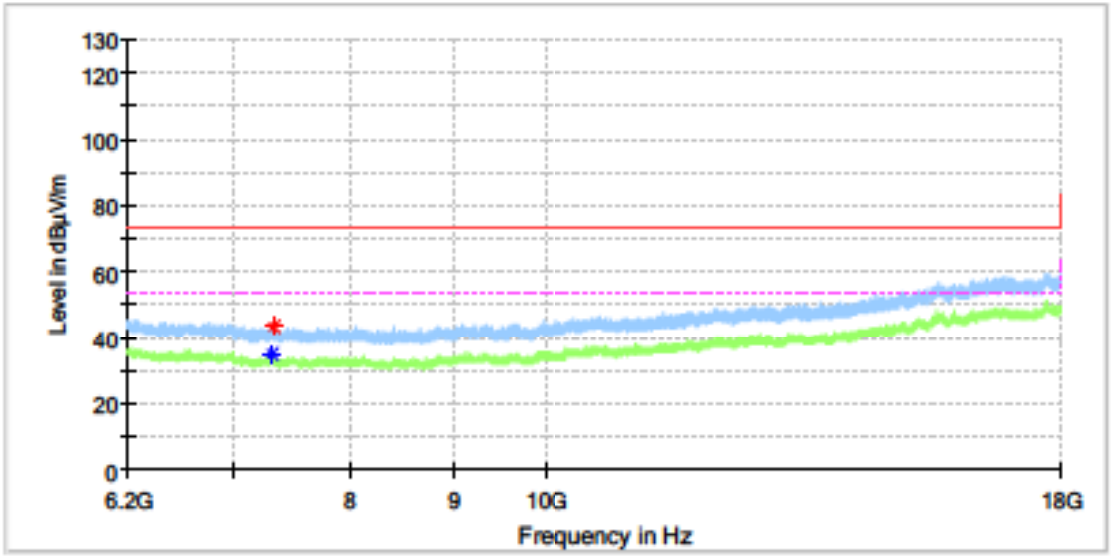
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4869.500000	50.39	—	74.00	23.61	100.0	V	53.0	11.8
4871.500000	—	39.27	54.00	14.73	100.0	V	53.0	11.8

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11g_Ch6
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

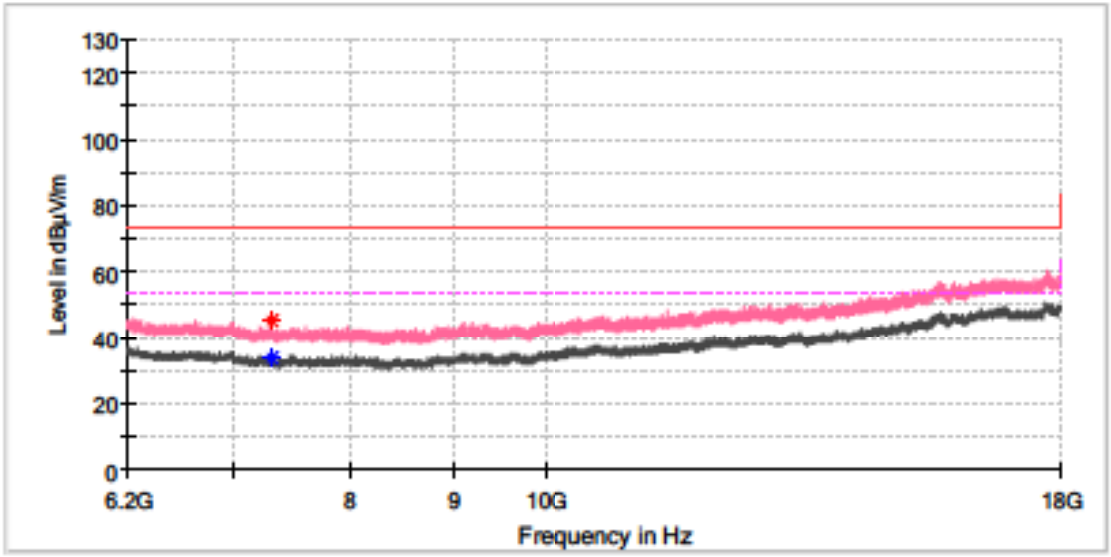
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7314.116667	—	35.23	54.00	18.77	100.0	H	156.0	8.2
7318.541667	43.65	—	74.00	30.35	100.0	H	247.0	8.2

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11g_Ch6
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

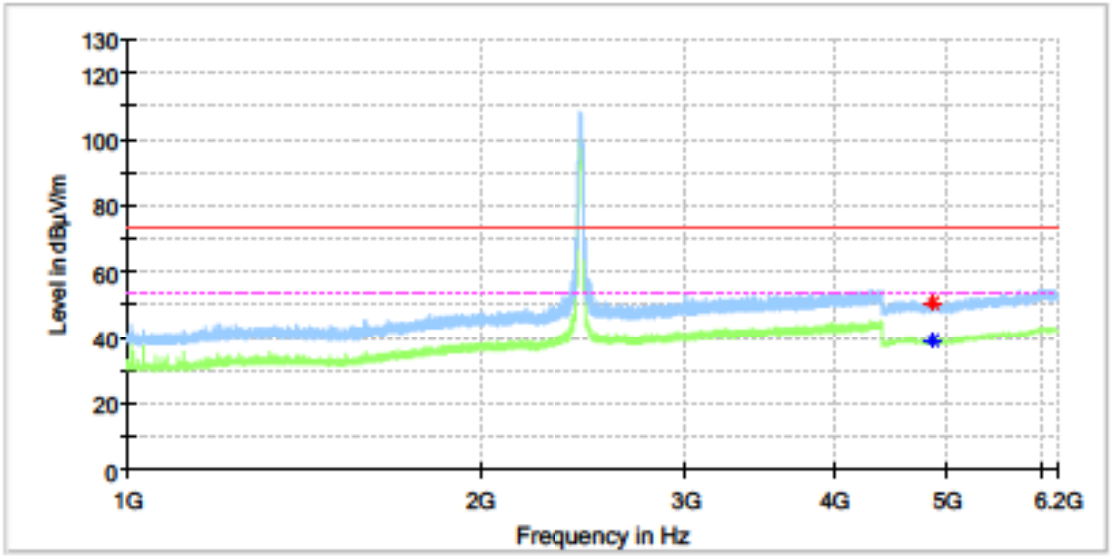
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7310.183333	—	34.15	54.00	19.85	100.0	V	0.0	8.2
7312.150000	45.41	—	74.00	28.59	100.0	V	304.0	8.2

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11n20_Ch6
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

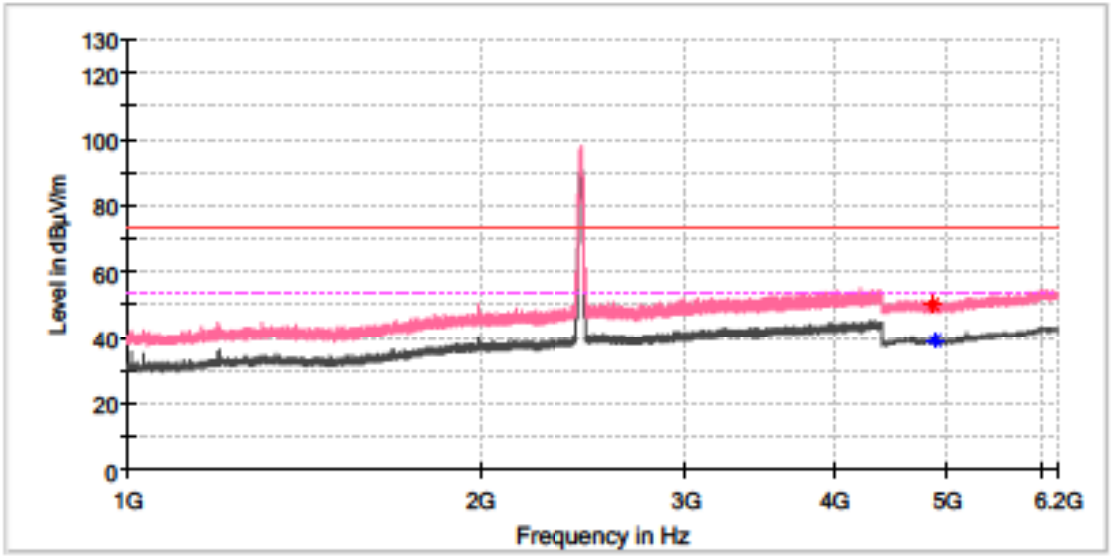
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4857.000000	—	39.18	54.00	14.82	100.0	H	13.0	11.8
4858.500000	50.56	—	74.00	23.44	100.0	H	57.0	11.8

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11n20_Ch6
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

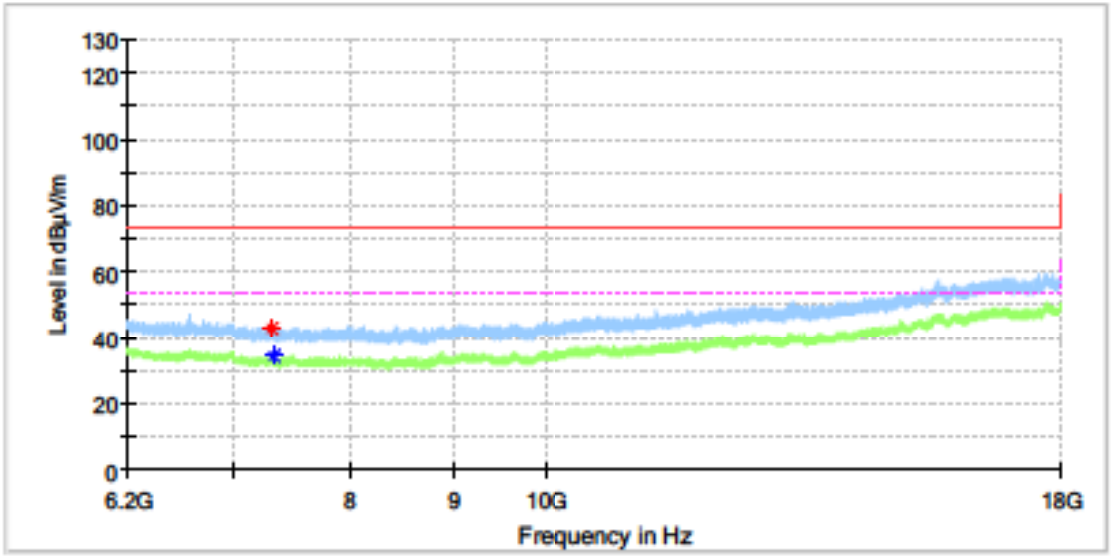
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4867.000000	50.48	—	74.00	23.52	100.0	V	113.0	11.8
4872.000000	—	39.06	54.00	14.94	100.0	V	321.0	11.8

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11n20_Ch6
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

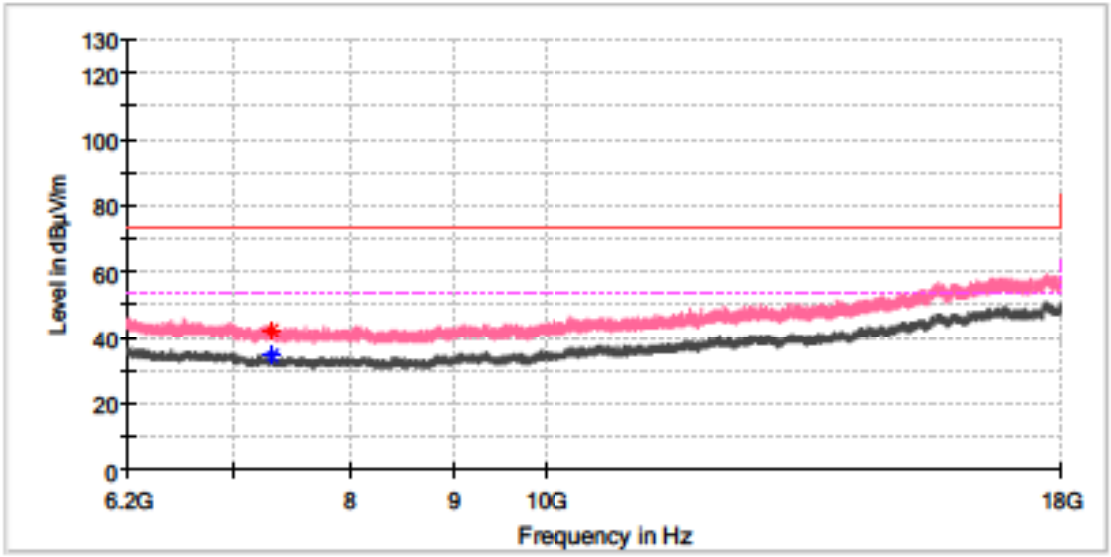
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7309.691667	42.99	—	74.00	31.01	100.0	H	351.0	8.2
7319.033333	—	34.35	54.00	19.65	100.0	H	23.0	8.2

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11n20_Ch6
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7310.675000	42.61	—	74.00	31.39	100.0	V	84.0	8.2
7317.066667	—	34.24	54.00	19.76	100.0	V	70.0	8.2

Final_Result

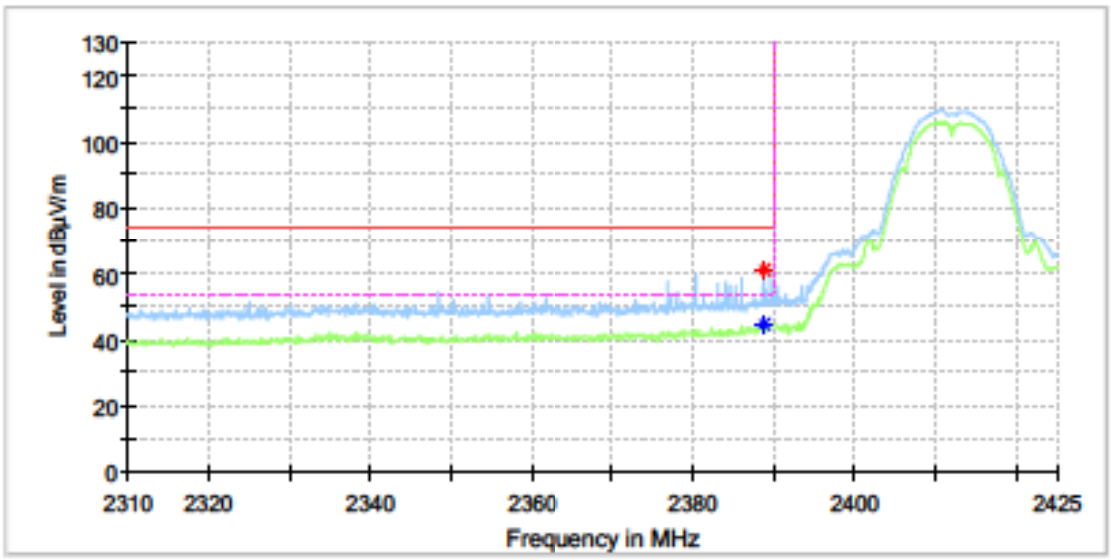
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

Appendix A.6: Test Results of Radiated Emissions in Restricted Bands

Wi-Fi 802.11 b mode, 1 Mbps

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11b_Ch1
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

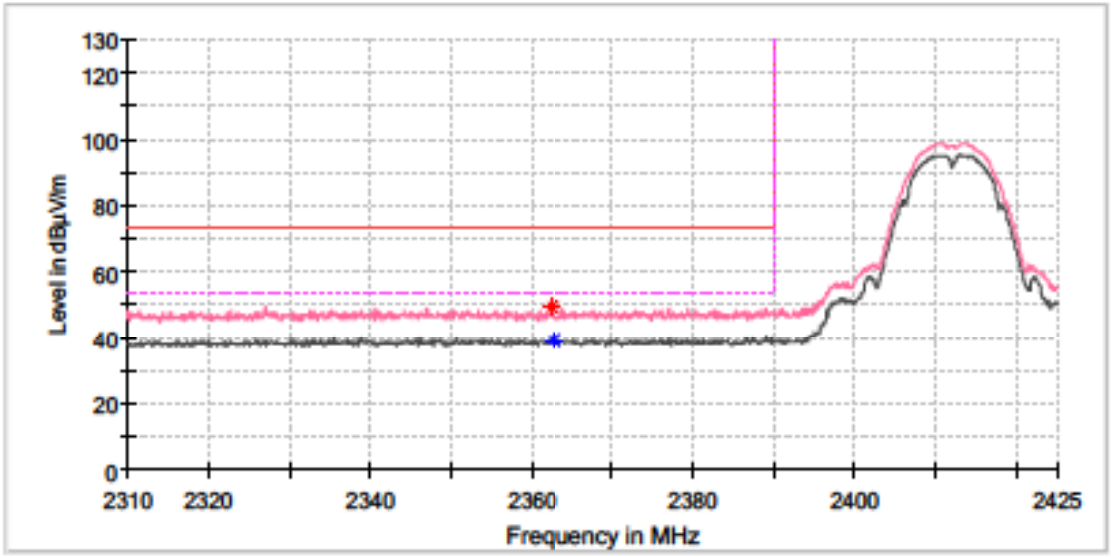
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2388.700000	—	44.71	54.00	9.29	100.0	H	250.0	7.0
2388.800000	61.15	—	74.00	12.85	100.0	H	260.0	7.0

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11b_Ch1
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

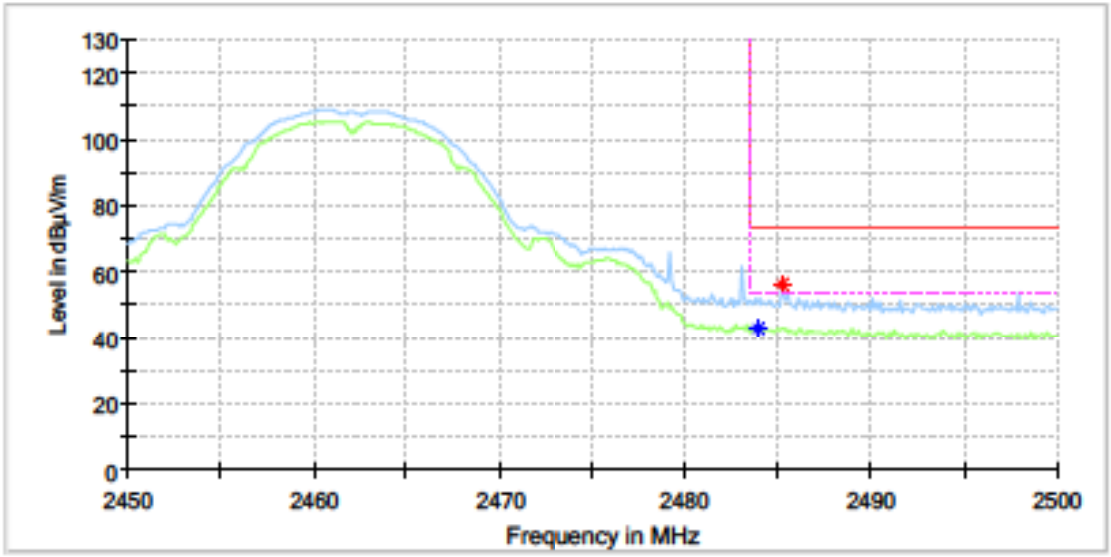
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2362.600000	49.82	—	74.00	24.18	100.0	V	188.0	6.9
2362.700000	—	39.29	54.00	14.71	100.0	V	202.0	6.9

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11b_Ch11
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

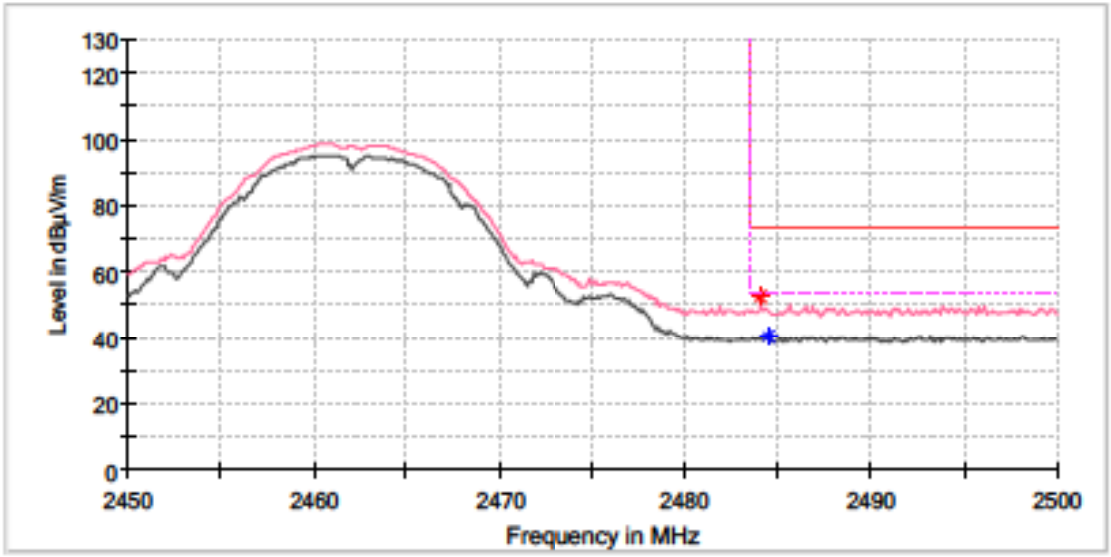
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.900000	—	43.21	54.00	10.79	100.0	H	212.0	7.4
2485.200000	56.42	—	74.00	17.58	100.0	H	191.0	7.4

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11b_Ch11
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2484.100000	52.39	—	74.00	21.61	100.0	V	344.0	7.4
2484.500000	—	40.28	54.00	13.72	100.0	V	193.0	7.4

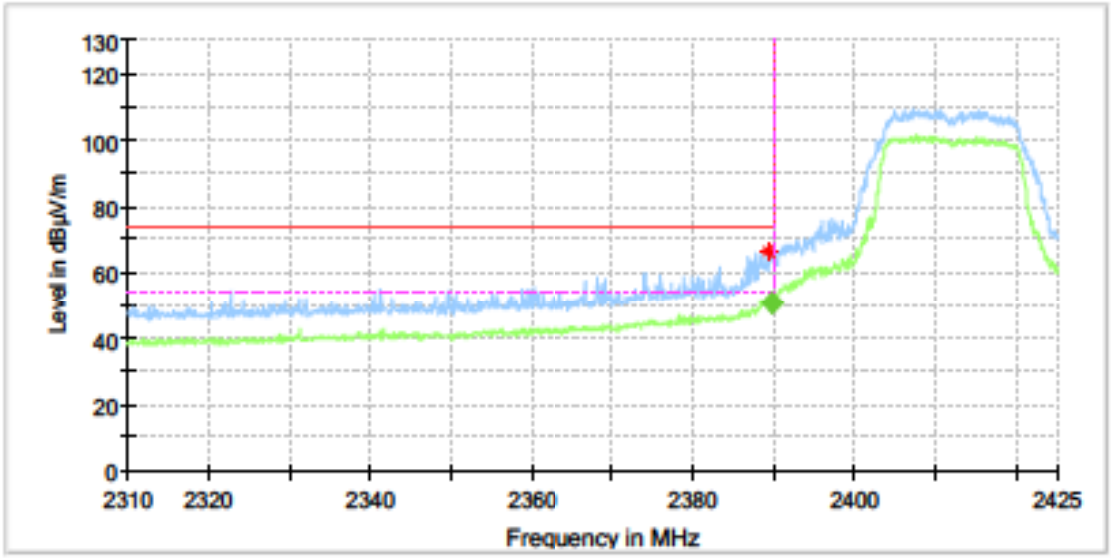
Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

Wi-Fi 802.11 g mode, 6 Mbps

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11g_Ch1
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

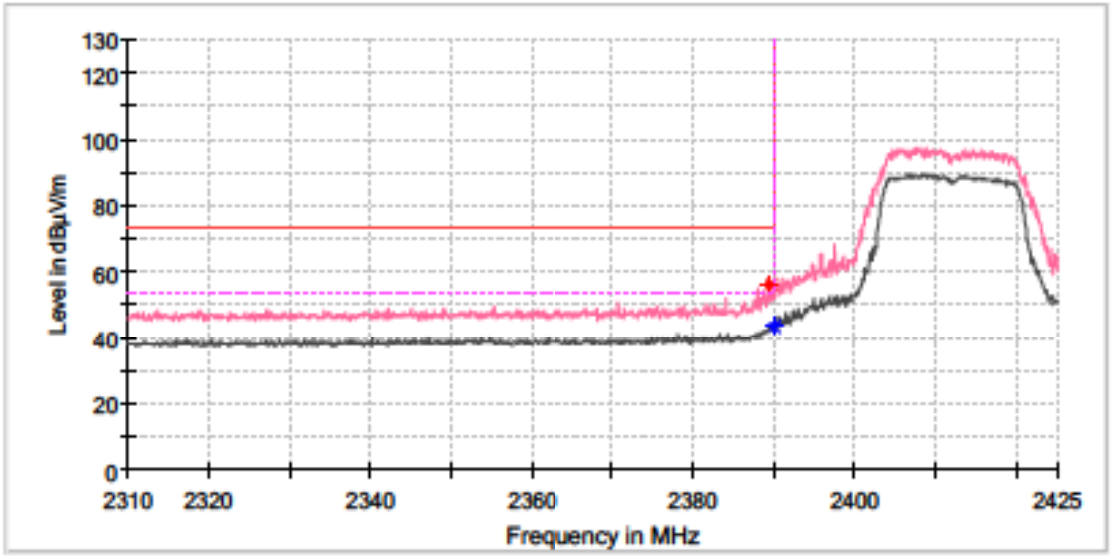
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2389.200000	66.58	—	74.00	7.42	100.0	H	213.0	7.0

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2389.847700	50.95	54.00	3.05	105.0	H	208.0	7.0

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11g_Ch1
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

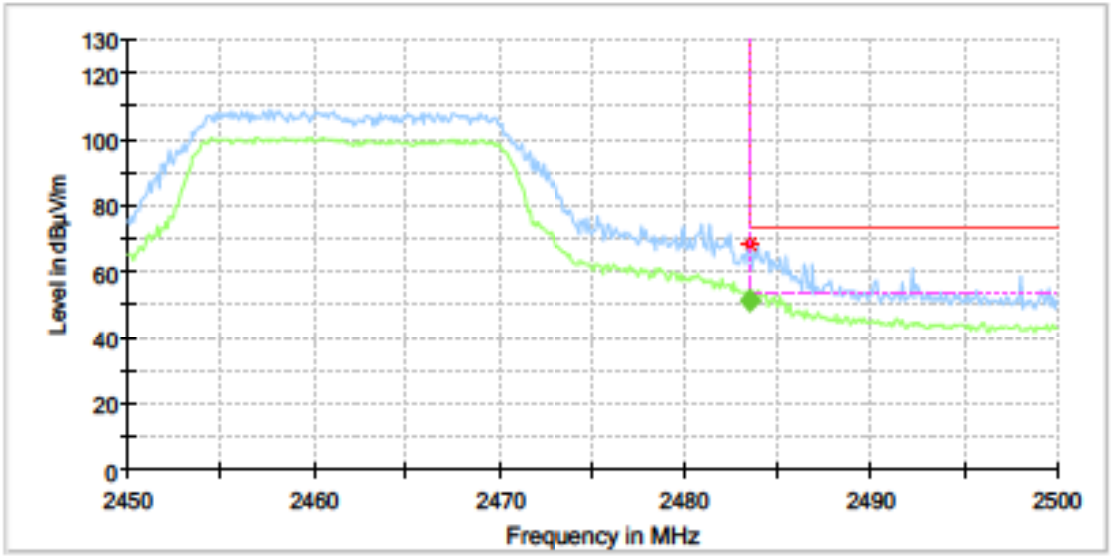
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2389.500000	56.01	—	74.00	17.99	100.0	V	172.0	7.0
2390.000000	—	43.77	54.00	10.23	100.0	V	187.0	7.0

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11g_Ch11
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

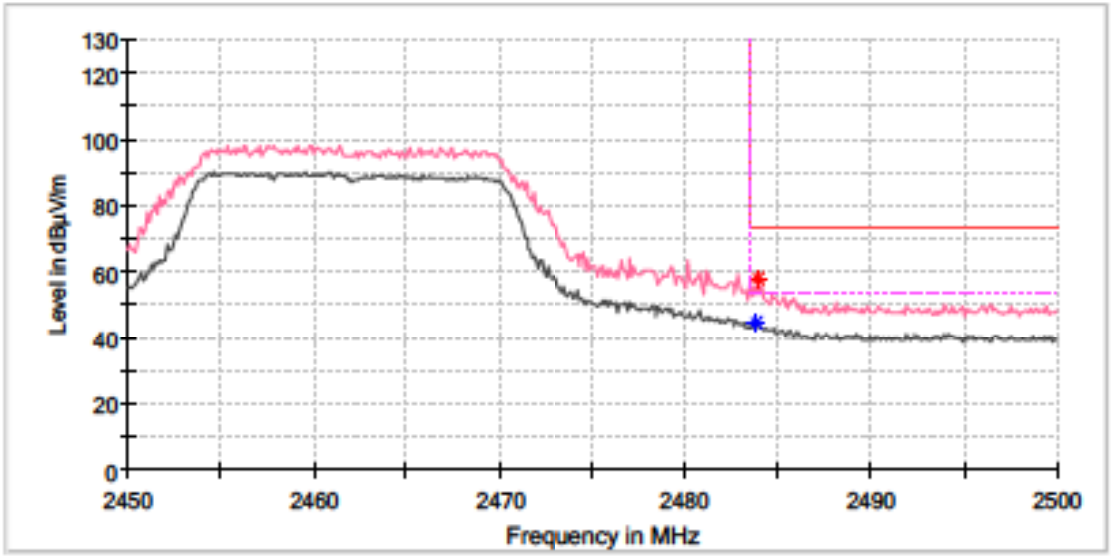
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.500000	68.52	—	74.00	5.48	100.0	H	212.0	7.4

Final Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.522750	51.41	54.00	2.59	100.0	H	289.0	7.4

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11g_Ch11
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.800000	—	44.78	54.00	9.22	100.0	V	141.0	7.4
2483.900000	58.35	—	74.00	15.65	100.0	V	183.0	7.4

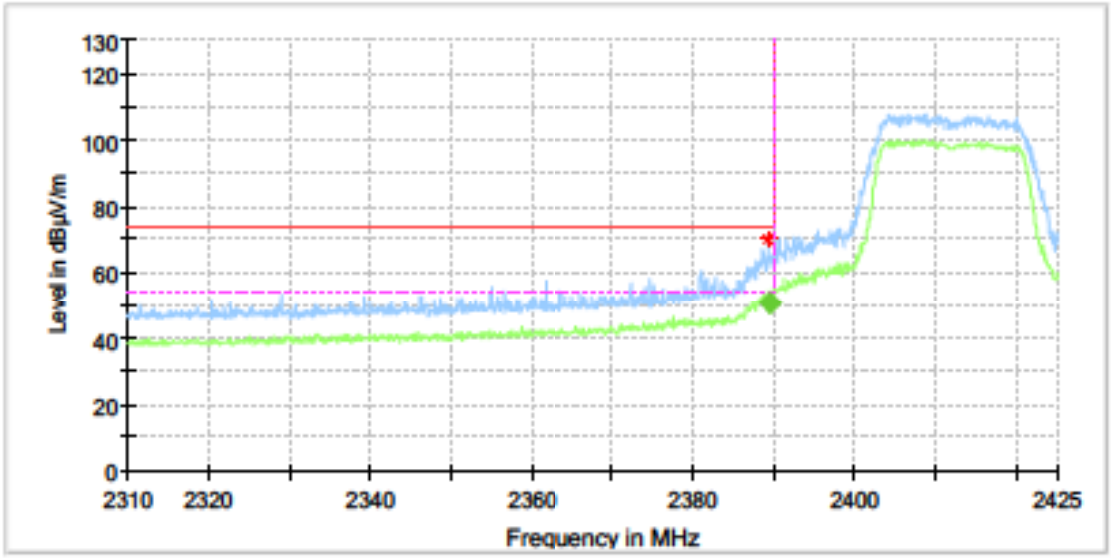
Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

Wi-Fi 802.11 n(HT20) mode, MCS0

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11n20_Ch1
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

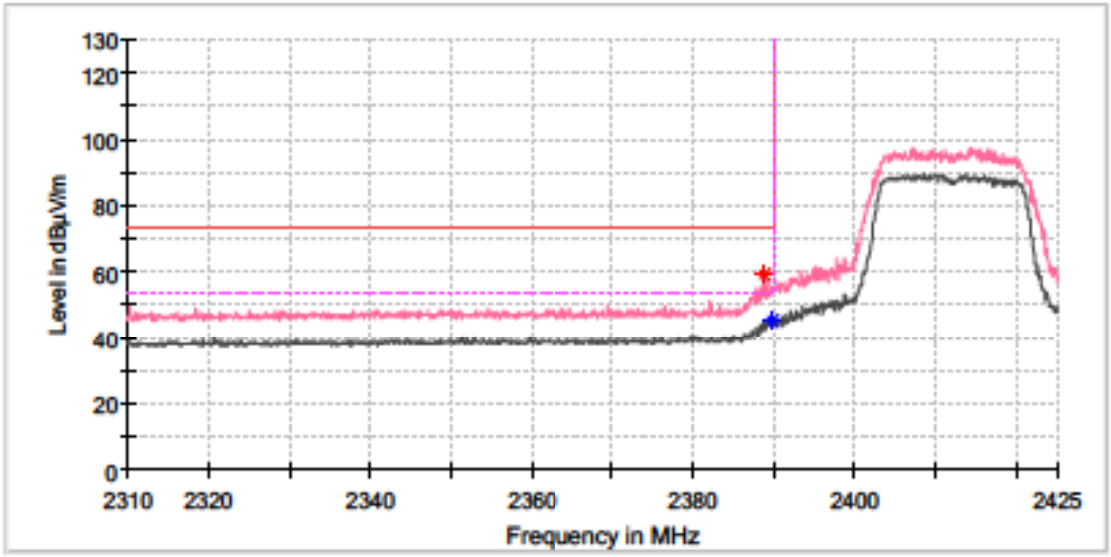
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2389.300000	70.42	—	74.00	3.58	100.0	H	202.0	7.0

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2389.477300	50.82	54.00	3.18	105.0	H	201.0	7.0

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11n20_Ch1
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

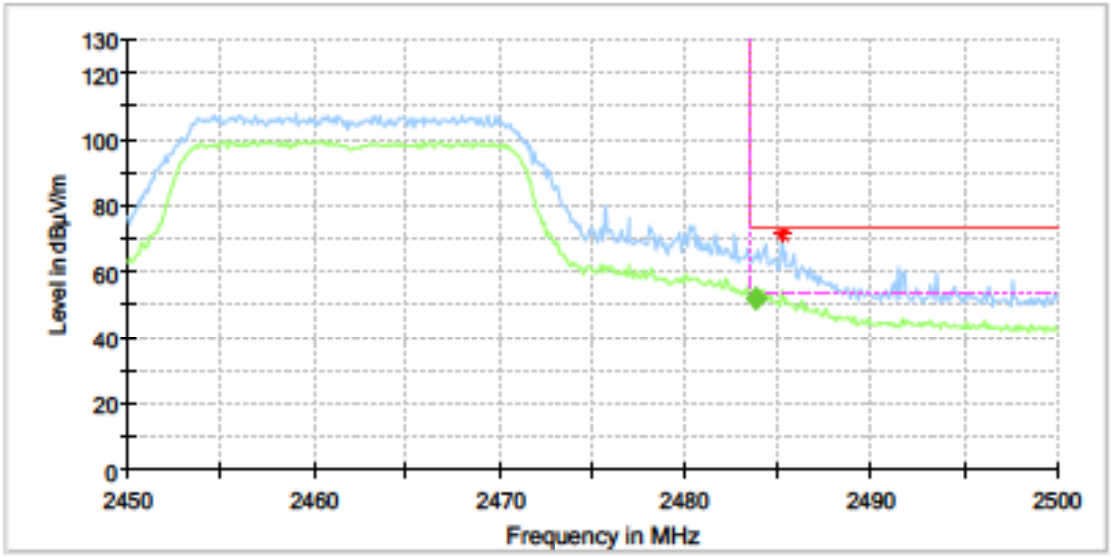
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2388.700000	59.12	—	74.00	14.88	100.0	V	184.0	7.0
2389.900000	—	45.54	54.00	8.46	100.0	V	200.0	7.0

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11n20_Ch11
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

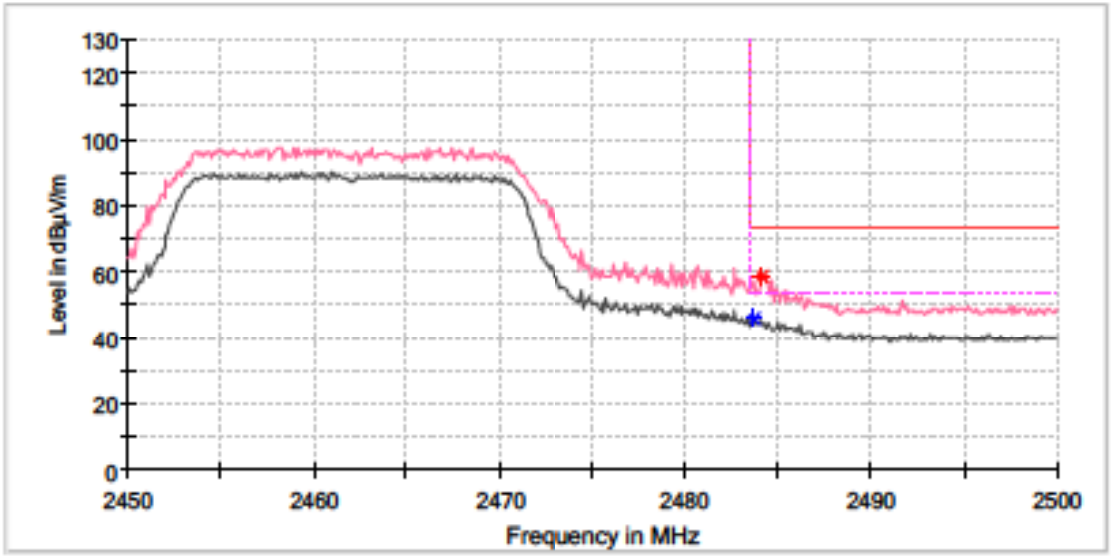
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2485.200000	71.14	—	74.00	2.86	100.0	H	213.0	7.4

Final Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.804150	51.84	54.00	2.16	100.0	H	208.0	7.4

EUT Information

EUT Name:	SINAMICS Smart Adapter
Model:	6SL4950-0AJ00-0AA0
Test Mode:	WIFI 2.4G_11n20_Ch11
Order No/Sample No:	168377368/A003334773-003
Test Voltage:	DC 24V From DC Source
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

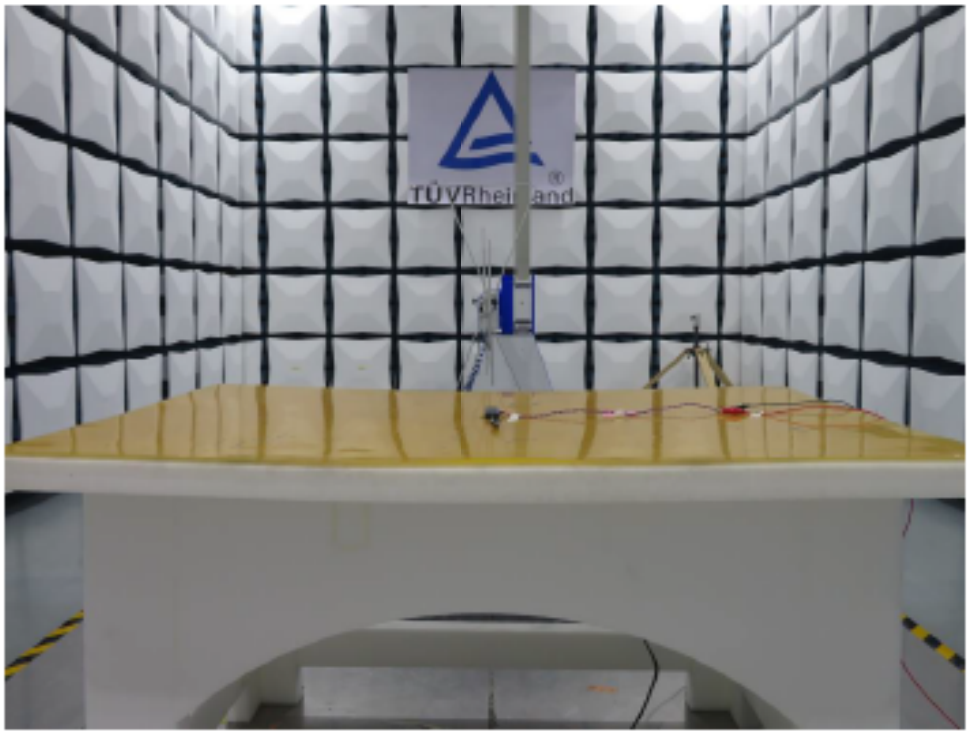
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.700000	—	45.83	54.00	8.17	100.0	V	187.0	7.4
2484.200000	58.79	—	74.00	15.21	100.0	V	201.0	7.4

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
—	—	—	—	—		—	—

Appendix B: Photographs of the Test Set-Up

Photograph 1: Set-up photo for Radiated Spurious Emission, 30MHz - 1GHz



Photograph 2: Set-up photo for Radiated Spurious Emission, 1GHz - 18GHz