



**EN 300 328 V2.2.2
AS/NZS 4268:2017 A1**

TEST REPORT

For

Wifi Module

MODEL NUMBER: SI07B

REPORT NUMBER: 4790081439-11

ISSUE DATE: December 22, 2021

Prepared for

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Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	12/22/2021	Initial Issue	

Summary of Test Results			
Clause	Test Item	Limit/ Requirements	Results
4.3.2.2	RF Output Power	20dBm	Pass
4.3.2.3	Power Spectral Density	10dBm/MHz	Pass
4.3.2.4	Duty cycle, Tx-Sequence, Tx-Gap	The Duty Cycle $\leq$ the maximum value declared by the manufacturer. Tx-Sequence $\leq$ 10ms Tx-gap $\leq$ 3.5ms	N/A (Note 2)
4.3.2.5	Medium Utilization (MU) factor	Less than 10 %	N/A (Note 2)
4.3.2.6	Adaptivity	Refer to ETSI EN 300 328 V2.2.2 Clause 4.3.2.6.2.2 & 4.3.2.6.2.3 & 4.3.2.6.2.4	Pass
4.3.2.7	Occupied Channel Bandwidth	Within the band given in table 1	Pass
4.3.2.8	Transmitter unwanted emission in the OOB domain	Refer to ETSI EN 300 328 V2.2.2 Figure 3	Pass
4.3.2.9	Transmitter unwanted emissions in the spurious domain	Refer to ETSI EN 300 328 V2.2.2 Table 12	Pass
4.3.2.10	Receiver Spurious Emissions	Refer to ETSI EN 300 328 V2.2.2 Table 13	Pass
4.3.2.11	Receiver Blocking	Refer to ETSI EN 300 328 V2.2.2 Clause 4.3.2.11.4	Pass
4.3.2.12	Geo-location capability	Refer to ETSI EN 300 328 V2.2.2 Clause 4.3.2.12.3	Not Support

Note:

1. N/A means not applicable.
2. These requirements do not apply for equipment with a declared RF Output power level of less than 10 dBm e.i.r.p. or for equipment when operating in a mode where the RF Output power is less than 10 dBm e.i.r.p.
3. This requirement does not apply to adaptive non-FHSS equipment unless operating in a non-adaptive mode.
4. This test report is only published to and used by the applicant, and it is not for evidence purpose in China.
5. The measurement result for the sample received is <Pass> according to < EN 300 328 V2.2.2 and AS/NZS 4268:2017 A1 > when <Accuracy Method> decision rule is applied.

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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name: Guangzhou Shirui Electronics Co., Ltd.
Address: 192 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District, Guangzhou, Guangdong, China

Manufacturer Information

Company Name: Guangzhou Shirui Electronics Co., Ltd.
Address: 192 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District, Guangzhou, Guangdong, China

EUT Information

EUT Name: Wifi Module
Model: SI07B
Sample Received Date: August 31, 2021
Sample Status: Normal
Sample ID: 4175726
Date of Tested: September 1, 2021 ~ December 22, 2021

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
ETSI EN 300 328 V2.2.2 (2019-07)	PASS
AS/NZS 4268:2017 A1	PASS

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2. TEST METHODOLOGY

All tests were performed in accordance with the procedures documented in ETSI EN 300 328 V2.2.2 (2019-07) and AS/NZS 4268:2017 A1.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	A2LA (Certificate No.: 4102.01) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA. FCC (FCC Designation No.: CN1187) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules ISED (Company No.: 21320) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with Industry Canada. The Company Number is 21320. VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20019 and R-20004 Shielding Room B, the VCCI registration No. is C-20012 and T-20011
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Note: All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Case	Description	Limit	Uncertainties
5.3.2.2.1.1	RF Output Power	± 1.5 dB	1.15
5.3.2.2.1.2	Duty Cycle	± 5 %	0.03
.....	Tx Sequence	± 5 %	0.03
.....	Tx Gap	± 5 %	0.03
5.3.2.2.1.3	Medium Utilisation	± 5 %	0.10
5.3.3.2.1	Power Spectral Density	± 3 dB	1.21
5.3.4.2.1	Accumulated Dwell Time	± 5 %	0.05
.....	Minimum Frequency Occupation Time	± 5 %	0.15
5.3.5.2.1	Hopping Frequency Separation	-	0.24
5.3.8.2.1	Occupied Channel Bandwidth	± 5 %	1.71
5.3.9..2.1	Out-of-band emissions	± 3 dB	1.39
5.3.10.2.1	Transmitter unwanted emissions in the spurious domain		
.....	30 MHz to 1 GHz	± 3 dB	0.64
.....	1 GHz to 12.75GHz	± 3 dB	1.68
5.3.11.2.1	Receiver Spurious emission		
.....	30 MHz to 1 GHz	± 3 dB	0.64
.....	1 GHz to 12.75GHz	± 3 dB	1.68

Test Item	Uncertainty
Radiation Emission	4.62dB (30 MHz ~ 1 GHz)
	3.50dB (1 GHz ~ 18 GHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	



5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name	Wifi Module
Model	SI07B
Radio Technology	WLAN (IEEE 802.11b/g/n HT20/n HT40)
Operation frequency	IEEE 802.11b: 2412 MHz ~ 2472 MHz IEEE 802.11g: 2412 MHz ~ 2472 MHz IEEE 802.11n HT20: 2412 MHz ~ 2472 MHz IEEE 802.11n HT40: 2422 MHz ~ 2462 MHz IEEE 802.11ax HE20: 2412MHz ~ 2462MHz IEEE 802.11ax HE40: 2422MHz ~ 2452MHz
Modulation	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT40: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ax HE20: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM) IEEE 802.11ax HE40: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
Power Supply	DC 5 V

5.2. RECEIVER CATEGORY

EUT belong to	Receiver category	Relevant receiver clauses
☒	1	Adaptive equipment with a maximum RF output power greater than 10 dBm e.i.r.p.
☐	2	Non-adaptive equipment with a Medium Utilization (MU) factor greater than 1 % and less than or equal to 10 % or adaptive equipment with a maximum RF output power of 10 dBm e.i.r.p.
☐	3	Non-adaptive equipment with a maximum Medium Utilization (MU) factor of 1 % or adaptive equipment with a maximum RF output power of 0 dBm e.i.r.p.



5.3. MAXIMUM AVERAGE EIRP

IEEE Std. 802.11	Frequency (MHz)	Channel Number	Maximum Conducted AVG Output Power (dBm)
b	2412 ~ 2462	1-11[11]	16.81
g	2412 ~ 2462	1-11[11]	14.17
n HT20	2412 ~ 2462	1-11[11]	14.16
n HT40	2422 ~ 2452	3-9[7]	17.89
ax HE20	2412 ~ 2462	1-11[11]	14.21
ax HE40	2422 ~ 2452	3-9[7]	18.00

5.4. CHANNEL LIST

Channel List for 802.11b/g/n/ax (20 MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	4	2427	7	2442	10	2457
2	2417	5	2432	8	2447	11	2462
3	2422	6	2437	9	2452	/	/

Channel List for 802.11n/ax (40 MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
3	2422	5	2432	7	2442	9	2452
4	2427	6	2437	8	2447	/	/

5.5. TEST CHANNEL CONFIGURATION

IEEE Std. 802.11	Test Channel Number	Frequency
b	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel)	2412 MHz, 2437 MHz, 2462 MHz
g	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel)	2412 MHz, 2437 MHz, 2462 MHz
n HT20	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel)	2412 MHz, 2437 MHz, 2462 MHz
n HT40	CH 3(Low Channel), CH 6(MID Channel), CH 9(High Channel)	2422 MHz, 2437 MHz, 2452 MHz
ax HE20	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel)	2412 MHz, 2437 MHz, 2462 MHz
ax HE40	CH 3(Low Channel), CH 6(MID Channel), CH 9(High Channel)	2422 MHz, 2437 MHz, 2452 MHz



5.6. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
1	2412-2462	PCB	3.75

Test Mode	Transmit and Receive Mode	Description
IEEE 802.11b	☒ 1TX, 1RX	ANT 0 can be used as transmitting/receiving antenna.
IEEE 802.11g	☒ 1TX, 1RX	ANT 0 can be used as transmitting/receiving antenna.
IEEE 802.11n HT20	☒ 1TX, 1RX	ANT 0 can be used as transmitting/receiving antenna.
IEEE 802.11n HT40	☒ 1TX, 1RX	ANT 0 can be used as transmitting/receiving antenna.
IEEE 802.11ax HE20	☒ 1TX, 1RX	ANT 0 can be used as transmitting/receiving antenna.
IEEE 802.11ax HE40	☒ 1TX, 1RX	ANT 0 can be used as transmitting/receiving antenna.

Note: The value of the antenna gain was declared by customer.

5.7. THE WORSE CASE POWER SETTING PARAMETER

The Worst Case Power Setting Parameter under 2400 ~ 2483.5MHz Band							
Test Software		SecureCRT					
IEEE Std. 802.11	Transmit Antenna Number	Test Channel					
		NCB: 20MHz			NCB: 40MHz		
		CH 1	CH 6	CH 11	CH 3	CH 6	CH 9
b	1	5	5	5	/		
g	1	6	6	6			
n HT20	1	6	6	6			
n HT40	1	/			8	8	8
ax HE20	1	6	6	6	/		
ax HE40	1	/			8	8	8



5.8. EUT CONFIGURATION

The EUT was tested in the following configuration(s):

Controlled in test mode using a software application on the EUT supplied by customer. The application was used to enable a continuous transmission and to select the mode, test channels, bandwidth, data rates as required.

Worst-case data rates as provided by the client were:

802.11b mode: 1 Mbps
802.11g mode: 6 Mbps
802.11n HT20 mode: MCS0
802.11n HT40 mode: MCS0
802.11ax HE20 mode: MCS0
802.11ax HE40 mode: MCS0

The measured additional path loss was included in any path loss calculations for all RF cable used during tested.

5.9. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	Remarks
1	Laptop	Lenovo	XIAOXIN 5000	/
2	Main Board	/	/	/
3	Serial to USB Board	/	/	/
3	AC Power Adapter	/	/	

I/O CABLES

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	USB	/	Unshielded	1.0	/

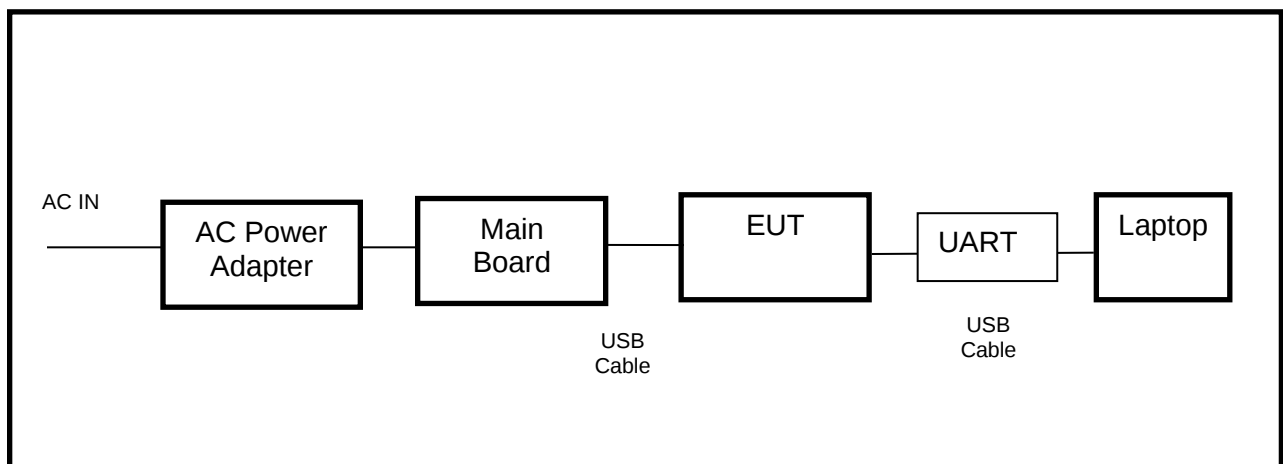
ACCESSORIES

Item	Accessory	Brand Name	Model Name	Description
/	/	/	/	/

TEST SETUP

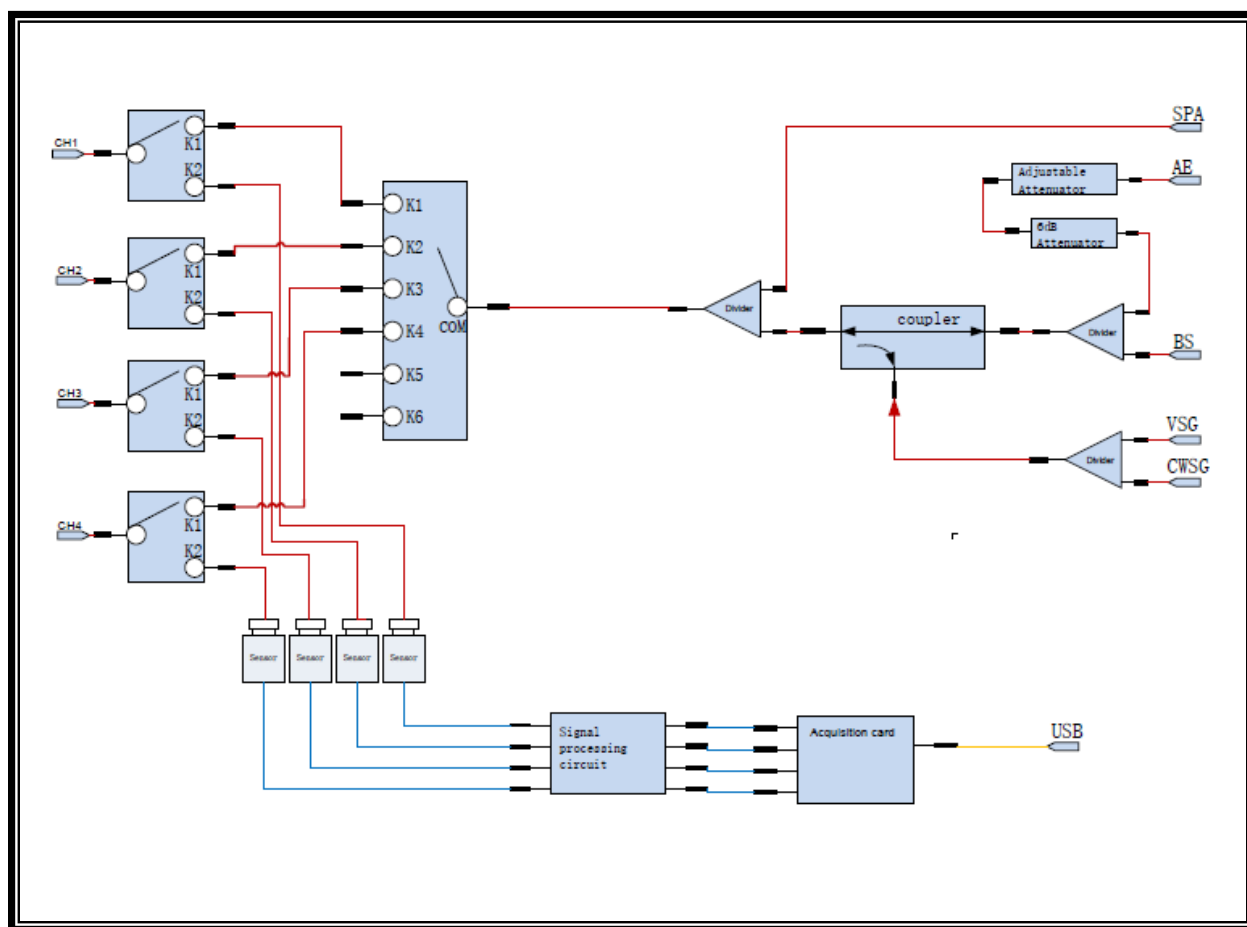
The EUT can work in engineering mode with a software through a Laptop.

SETUP DIAGRAM FOR TESTS



5.10. TEST SYSTEM CONFIGURATION

Tonsend SRD Test System



5.11. DESCRIPTION OF THE EQUIPMENT UNDER TESTED

(INFORMATION AS REQUIRED BY EN 300 328 V2.2.2, CLAUSE 5.4.1)

a)	Modulation Type	
	☐ FHSS	
	☒ non-FHSS	
b)	FHSS Equipment Description	
	The Number of Hopping Frequencies	The Maximum / The Minimum /
	The (average) dwell time	/
c)	Adaptive / Non-adaptive Equipment	
	☐ Non-adaptive Equipment	
	☒ Adaptive Equipment Without the Possibility to Switch to A Non-adaptive Mode	
	☐ Adaptive Equipment Which can also operate in A Non-adaptive Mode	
d)	Adaptive Equipment Description	
	The maximum Channel Occupancy Time implemented by the equipment /	
	☒ The equipment has implemented an LBT mechanism	
	☐ The equipment has implemented a DAA mechanism	
	☐ The equipment can operate in more than one adaptive mode	
e)	The different transmit operating modes	
	☒ Operating mode 1 (single antenna) ☒ Operating mode 2: Smart Antenna Systems - Multiple Antennas without beam forming ☐ Operating mode 3: Smart Antenna Systems - Multiple Antennas with beam forming	☐ Equipment with only one antenna
		☒ Equipment with two diversity antennas but only one antenna active at any moment in time
		☐ Smart Antenna Systems with two or more antennas, but operating in a (legacy) mode where only one antenna is used (e.g. IEEE 802.11™ legacy mode in smart antenna systems)
		☐ Single spatial stream/Standard throughput/(e.g. IEEE 802.11™ legacy mode)
		☒ High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 1
		☒ High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 2
		☐ Single spatial stream/Standard throughput (e.g. IEEE 802.11™ legacy mode)
		☐ High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 1
		☐ High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 2
f)	In case of Smart Antenna Systems	
	The number of Receive chains	1
	The number of Transmit chains	1
	In case of beam forming, the maximum (additional) beam forming gain:	/
g)	Operating Frequency Range(s) of the equipment	
	Operating Frequency Range 1	2412 MHz to 2472 MHz for 802.11b/g/n HT20
	Operating Frequency Range 2	2422 MHz to 2462 MHz for 802 n HT40
h)	Nominal Channel Bandwidth(s)	
	Occupied Channel Bandwidth 1	19.128 MHz
	Occupied Channel Bandwidth 2	37.982 MHz



i)	Type of Equipment					
	☒ Stand-Alone					
	☐ Plug-in radio Equipment					
	☐ Combined Equipment					
j)	The extreme operating conditions that apply to the equipment					
	Operating temperature range		0 °C to 40 °C			
k)	The intended combination(s) of the radio equipment power settings and one or more antenna assemblies and their corresponding e.i.r.p levels					
	Antenna Type	☐ Integral Antenna	Antenna Gain			
		☒ Dedicated Antennas (equipment with antenna connector)	☒ Single power level with corresponding antenna(s)	Gain	ANT1	3.75 dBi
			☐ Multiple power settings and corresponding antenna(s)			
					Power Level 1	
					Power Level 2	
					Power Level 3	
l)	The nominal voltages of the stand-alone radio equipment or the nominal voltages of the combined (host) equipment or test jig in case of plug-in devices:					
	Details provided are for the	☒ Testing of stand-alone equipment				
		☐ Combined equipment				
		☐ Test jig				
	Supply Voltage	☐ AC mains	State AC voltage			
		☒ DC	State DC voltage	☐ Internal Power Supply		
				☐ External Power Supply or AC/DC adapter		
				☐ Battery		
				☒ Other	DC 5 V	
m)	The equipment type					
	☐ Bluetooth®					
	☒ IEEE 802.11™ [i.3]					
	☐ Proprietary					
n)	Geo-location capability supported by the equipment		☐ Yes			
			☐ The geographical location determined by the equipment as defined in clause 4.3.1.13.2 or clause 4.3.2.12.2 is not accessible to the user.			
			☒ No			



6. MEASURING INSTRUMENT AND SOFTWARE USED

Last time calibration information:

Tonsend RF Test System					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
Wideband Radio Communication Tester	R&S	CMW500	155523	Nov.20,2020	Nov.19,2021
PXA Signal Analyzer	Keysight	N9030A	MY55410512	Nov.20,2020	Nov.19,2021
MXG Vector Signal Generator	Keysight	N5182B	MY56200284	Nov.20,2020	Nov.19,2021
MXG Vector Signal Generator	Keysight	N5172B	MY56200301	Nov.20,2020	Nov.19,2021
Software					
Description	Manufacturer	Name		Version	
Tonsend SRD Test System	Tonsend	JS1120-3 RF Test System		2.6.77.0518	

RSE Test System					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
Spectrum Analyzer	R&S	FSV40	101117	Nov.20,2020	Nov.19,2021
Trilog broadband antenna	Schwarzbeck	VULB9163	01061	Feb.28,2020	Feb.28,2023
Horn Antenna	ETS-Lindgren	3117	00213191	Feb.28,2020	Feb.28,2023
Preamplifier	TDK	PA-02-001-3000	TRS-305-00067	Nov.12,2020	Nov.11,2021
Preamplifier	TDK	PA-02-0118	TRS-305-00067	Nov.20,2020	Nov.19,2021
High Gain Horn Antenna	Schwarzbeck	BBHA-9170	697	July 20, 2021	July 19, 2024
Preamplifier	TDK	PA-02-2	TRS-307-00002	Nov.12,2020	Nov.11,2021
Band Reject Filter	Wainwright	WRCJV8-2350-2400-2483.5-2533.5-40SS	4	Nov.12,2020	Nov.11,2021
Highpass Filter	Wainwright	WHKX10-2700-3000-1800-40SS	24	Nov.12,2020	Nov.11,2021
Software					
Description	Manufacturer	Name		Version	
For TDK RSE Test System	TDK	TDK Emission lab		V10.81	



This time calibration information:

Tonsend RF Test System					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
PXA Signal Analyzer	Keysight	N9030A	MY55410512	Oct.30, 2021	Oct.29, 2022
MXG Vector Signal Generator	Keysight	N5182B	MY56200284	Oct.30, 2021	Oct.29, 2022
MXG Vector Signal Generator	Keysight	N5172B	MY56200301	Oct.30, 2021	Oct.29, 2022
DC power supply	Keysight	E3642A	MY55159130	Oct.30, 2021	Oct.29, 2022
Temperature & Humidity Chamber	SANMOOD	SG-80-CC-2	2088	Nov.20,2020	Nov.19,2022
Software					
Description	Manufacturer	Name		Version	
Tonsend SRD Test System	Tonsend	JS1120-3 RF Test System		2.6.77.0518	

RSE Test System					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
Spectrum Analyzer	R&S	FSV40	101117	Oct.31, 2021	Oct.30, 2022
Trilog broadband antenna	Schwarzbeck	VULB9163	01061	Feb.28,2020	Feb.28,2023
Horn Antenna	ETS-Lindgren	3117	00213191	Feb.28,2020	Feb.28,2023
Preamplifier	TDK	PA-02-001-3000	TRS-305-00067	Oct.30, 2021	Oct.29, 2022
Preamplifier	TDK	PA-02-0118	TRS-305-00066	Jun.23,2021	Jun.23,2022
High Gain Horn Antenna	Schwarzbeck	BBHA-9170	697	July 20, 2021	July 19, 2024
Preamplifier	TDK	PA-02-2	TRS-307-00002	Oct.31, 2021	Oct.30, 2022
Preamplifier	TDK	PA-02-3	TRS-308-00002	Oct.31, 2021	Oct.30, 2022
Band Reject Filter	Wainwright	WRCJV8-2350-2400-2483.5-2533.5-40SS	4	Oct.31, 2021	Oct.30, 2022
Highpass Filter	Wainwright	WHKX10-2700-3000-1800-40SS	24	Oct.31, 2021	Oct.30, 2022
Software					
Description	Manufacturer	Name		Version	
For TDK RSE Test System	TDK	TDK Emission lab		V10.81	



7. TEST PROCEDURES AND RESULTS

7.1. NORMAL AND EXTREME CONDITIONS

LIMITS

None; for reporting purposes only.

RESULTS

	Normal Test Conditions	Extreme Test Conditions
Relative Humidity	45% ~ 55%	/
Atmospheric Pressure	100 kPa ~ 102 kPa	/
Temperature	T_{nom} (Normal Temperature): 22°C ~ 28°C	LT (Low Temperature): 0 °C
		HT (High Temperature): 40 °C
Supply Voltage	V_{nom} (Normal Voltage): DC 5 V	/
		/



7.1. OCCUPIED CHANNEL BANDWIDTH

LIMITS

OCCUPIED CHANNEL BANDWIDTH		
Condition		Limit
All types of equipment		Each hopping frequency shall be within the 2400 to 2483.5 MHz band
Additional requirement	For non-adaptive non-FHSS equipment with e.i.r.p. greater than 10 dBm	Each hopping frequency shall be equal to or less than 20 MHz

TEST PROCEDURE

Refer to ETSI EN 300 328 V2.2.2 (2019-07) clause 5.4.7

Measurement	
☒ Conducted measurement	☐ Radiated measurement

Connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The center frequency of the channel under test
Frequency Span	2 × Nominal Channel Bandwidth
Detector	RMS
RBW	~ 1 % of the span without going below 1 %
VBW	3 × RBW
Trace	Max hold
Sweep Time	1s

TEST ENVIRONMENT

Temperature	27.1 °C	Relative Humidity	60.9 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

RESULTS

Please refer to appendix C.



7.2. RF OUTPUT POWER

LIMIT

RF OUTPUT POWER	
Condition	Limit
☐ Non-adaptive non-FHSS Equipment	For non-adaptive non-FHSS equipment, where the manufacturer has declared an RF output power of less than 20 dBm e.i.r.p., the RF output power shall be equal to or less than that declared value.
☒ Adaptive non-FHSS Equipment	non-FHSS equipment shall be equal to or less than 20 dBm.

TEST PROCEDURE

Refer to ETSI EN 300 328 V2.2.2 (2019-07) Clause 5.4.2

The power sensor was used for power measurement, and it use a fast power sensor with a minimum sensitivity of -40 dBm and capable of minimum 1 MS/s.

The test software was used to control the power detector and the sampling unit.

For adaptive equipment, the measurement duration shall be long enough to ensure a minimum number of bursts (at least 10) are captured.

Measurement	
☒ Conducted measurement	☐ Radiated measurement

CALCULATIONS

Add the (stated) antenna assembly gain G in dBi of the individual antenna.

- In case of smart antenna systems operating in mode with beamforming (see clause 5.3.2.2.4), add the additional beamforming gain Y in dB.
- If more than one antenna assembly is intended for this power setting, the maximum overall antenna gain (G or G + Y) shall be used.
- The RF Output Power (P_{out}) shall be calculated using the formula below:

$$P_{out} = A + G + Y$$

TEST ENVIRONMENT

Temperature	27.1 °C	Relative Humidity	60.9 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

RESULTS

Please refer to appendix A.

7.3. POWER SPECTRAL DENSITY

LIMIT

Power Spectral Density	
Condition	Limit
All types of non-FHSS equipment	10 dBm/MHz

TEST PROCEDURE

Refer to ETSI EN 300 328 V2.2.2 (2019-07) Clause 5.4.3

R&S EMC32 software is used to control the spectrum analyzer to use the following settings:

Start Frequency	2400MHz
Stop Frequency	2483.5MHz
Detector	RMS
Sweep Point	> 8 350; for spectrum analysers not supporting this number of sweep points, the frequency band may be segmented
RBW	10KHz
VBW	30KHz
Trace Mode	Max Hold
Sweep Time	For non-continuous transmissions: $2 \times \text{Channel Occupancy Time} \times \text{number of sweep points}$ For non-adaptive equipment use the maximum TX-sequence time in the formula above instead of the Channel Occupancy Time For continuous transmissions: 10 s; the sweep time may be increased further until a value where the sweep time has no further impact anymore on the RMS value of the signal

The test software acquires the trace data and calculate the Spectral Density in 1MHz.

TEST ENVIRONMENT

Temperature	27.1 °C	Relative Humidity	60.9 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

RESULTS

Please refer to appendix B.

LIMITS

The diagram illustrates the frequency allocation and spurious emission limits for a system. The horizontal axis represents frequency in MHz, with key points marked at 2 400 MHz - 2BW, 2 400 MHz - BW, 2 400 MHz, 2 483,5 MHz, 2 483,5 MHz + BW, and 2 483,5 MHz + 2BW. The vertical axis represents power in dBm/MHz e.i.r.p.

The diagram is divided into five domains by vertical dashed lines:

- Spurious Domain:** The region to the left of 2 400 MHz - 2BW and to the right of 2 483,5 MHz + 2BW.
- Out Of Band Domain (OOB):** The region between 2 400 MHz - 2BW and 2 400 MHz - BW, and between 2 483,5 MHz + BW and 2 483,5 MHz + 2BW.
- Allocated Band:** The region between 2 400 MHz - BW and 2 483,5 MHz.
- Out Of Band Domain (OOB):** The region between 2 483,5 MHz and 2 483,5 MHz + BW.
- Spurious Domain:** The region to the right of 2 483,5 MHz + 2BW.

Three curves are shown:

- A:** A blue step function representing the occupied channel bandwidth. It is at -10 dBm/MHz e.i.r.p. from 2 400 MHz - BW to 2 483,5 MHz and at -20 dBm/MHz e.i.r.p. elsewhere.
- B:** A blue step function representing the spurious emission limits. It is at -10 dBm/MHz e.i.r.p. from 2 400 MHz - BW to 2 483,5 MHz and at -20 dBm/MHz e.i.r.p. elsewhere.
- C:** A blue step function representing the spurious domain limits. It is at -10 dBm/MHz e.i.r.p. from 2 400 MHz - 2BW to 2 483,5 MHz + 2BW and at -20 dBm/MHz e.i.r.p. elsewhere.

Legend:

- A: -10 dBm/MHz e.i.r.p.
- B: -20 dBm/MHz e.i.r.p.
- C: Spurious Domain limits

Equation: $BW = \text{Occupied Channel Bandwidth in MHz or } 1 \text{ MHz whichever is greater}$

TEST PROCEDURE

Measurement	
☒ Conducted measurement	☐ Radiated measurement

Span	Zero Span
Filter Mode	Channel Filter
Trace Mode	Max Hold
Trigger Mode	Video
Detector	RMS
Sweep Points	Sweep time [μs] / (1 μs) with a maximum of 30 000
RBW / VBW	1MHz / 3MHz
Measurement Mode	Time Domain Power
Sweep Time	> 120 % of the duration of the longest burst detected during the measurement of the RF Output Power



TEST ENVIRONMENT

Temperature	27.1 °C	Relative Humidity	60.9 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

RESULTS

Please refer to appendix D.

7.5. ADAPTIVITY

LIMITS

Requirement	Operational Mode		
	Adaptive non-FHSS using DAA	Adaptive non-FHSS using LBT	
		Frame Based Equipment	Load Based Equipment
Minimum Clear Channel Assessment (CCA) Time	/	18 us (see note 1)	18 us (see note 1)
Minimum Marked Unavailable Time	1s	/	/
Maximum Channel Occupancy (COT) Time	40 ms	1ms to 10 ms	13ms
Minimum Idle Period	5% of COT (see note 2)	5% of COT	/
Extended CCA check	/	/	18μs ~160μs
Detection Threshold Level	-70 dBm/MHz + 10 × log10 (100 mW / P _{out}) (see note 3)		
Short Control Signalling Transmissions	Shall have a maximum TxOn / (TxOn + TxOff) ratio of 10 % within any observation period of 50 ms (see note 4)		

Note 1: The CCA time used by the equipment shall be declared by the supplier.

Note 2: The minimum idle period is 100μs.

Note 3: For a 20 dBm e.i.r.p. transmitter the detection threshold level shall be equal to or less than -70 dBm/MHz at the input to the receiver assuming a 0 dBi (receive) antenna assembly.

Note 4: Adaptive equipment may or may not have Short Control Signaling Transmissions.

Unwanted Signal Parameters				
Equipment Type (LBT/ non-LBT)	Wanted Signal Mean Power from Companion Device	Unwanted Signal Frequency [MHz]	Unwanted Signal Power [dBm]	Type Interfering Signal
Adaptive non- FHSS using LBT	Sufficient to maintain the link (see note 2)	2395 or 2488.5 (see note 1)	-35 (see note 3)	Band limited noise signal with a 100 % duty cycle & CW
Adaptive non- FHSS using DAA	-30 dBm			

NOTE 1: The highest frequency shall be used for testing operating channels within the range 2400 MHz to 2 442 MHz, while the lowest frequency shall be used for testing operating channels within the range 2 442 MHz to 2 483,5 MHz. See clause 5.4.6.1.

NOTE 2: A typical conducted value which can be used in most cases is -50 dBm/MHz.

NOTE 3: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density in front of the UUT antenna.

TEST PROCEDURE

Refer to ETSI EN 300 328 V2.2.2 (2019-07) Clause 5.4.6.2

Measurement	
☒ Conducted measurement	☐ Radiated measurement

UUT operational Mode		
☐ Non-FHSS equipment using DAA	☐ Non-FHSS equipment using LBT Frame Based Equipment	☒ Non-FHSS equipment using LBT Load Based Equipment

The analyser shall be set as follows:

Centre Frequency	Equal to the centre frequency of the operating channel
Span	0Hz
Detector	RMS
Sweep Time	> maximum Channel Occupancy Time
RBW	≥ Occupied Channel Bandwidth (if the analyser does not support this setting, the highest available setting shall be used)
VBW	3 × RBW (if the analyser does not support this setting, the highest available setting shall be used)
Trigger Mode	Video
Trace Mode	Clear Write



TEST ENVIRONMENT

Temperature	26.2 °C	Relative Humidity	55.9 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

RESULTS

Please refer to appendix H.

7.6. TRANSMITTER UNWANTED EMISSIONS IN THE SPURIOUS DOMAIN

LIMITS

The transmitter unwanted emissions in the spurious domain shall not exceed the values given in table 12.

In case of equipment with antenna connectors, these limits apply to emissions at the antenna port (conducted). For emissions radiated by the cabinet or emissions radiated by integral antenna equipment (without antenna connectors), these limits are e.r.p. for emissions up to 1 GHz and as e.i.r.p. for emissions above 1 GHz.

Table 12: Transmitter limits for spurious emissions

Frequency range	Maximum power	Bandwidth
30 MHz to 47 MHz	-36 dBm	100 kHz
47 MHz to 74 MHz	-54 dBm	100 kHz
74 MHz to 87,5 MHz	-36 dBm	100 kHz
87,5 MHz to 118 MHz	-54 dBm	100 kHz
118 MHz to 174 MHz	-36 dBm	100 kHz
174 MHz to 230 MHz	-54 dBm	100 kHz
230 MHz to 470 MHz	-36 dBm	100 kHz
470 MHz to 694 MHz	-54 dBm	100 kHz
694 MHz to 1 GHz	-36 dBm	100 kHz
1 GHz to 12,75 GHz	-30 dBm	1 MHz

TEST PROCEDURE

Refer to Refer to ETSI EN 300 328 V2.2.2 (2019-07) clause 5.4.9

Measurement	
☒ Conducted measurement	☒ Radiated measurement

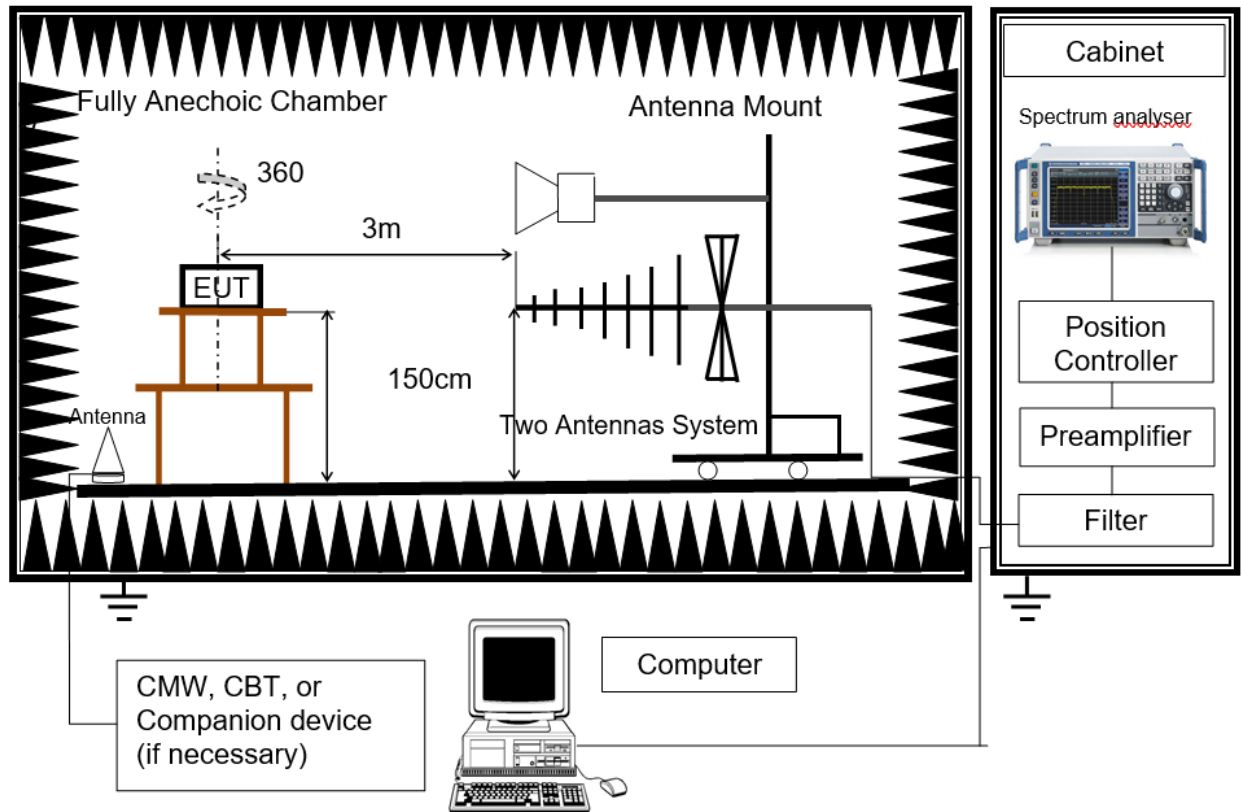
Spectrum analyser settings for pre-scan:

RBW	100 kHz (< 1 GHz) / 1 MHz (> 1 GHz)
VBW	300 kHz (< 1 GHz) / 3 MHz (> 1 GHz)
Detector Mode	Peak
Filter type	3 dB (Gaussian)
Trace Mode	Max hold
Sweep Points	$\geq 19\,400$ (< 1 GHz); $\geq 23\,500$ (> 1 GHz); for spectrum analysers not supporting this high number of sweep points, the frequency band may be segmented.
Sweep Time	For non continuous transmissions (duty cycle less than 100 %), the sweep time shall be sufficiently long, such that for each 100 kHz frequency step, the measurement time is greater than two transmissions of the UUT, on any channel. For FHSS equipment operating in a normal operating (hopping not disabled) mode, the sweep time shall be further increased to capture multiple transmissions on any of the hopping frequencies. The above sweep time setting may result in long measuring times in case of FHSS equipment. To avoid such long measuring times, an FFT analyser may be used.

Spectrum analyser settings for the emissions identified during the pre-scan:

Measurement Mode	Time Domain Power
Centre Frequency	Frequency of the emission identified during the pre-scan
RBW	100 kHz (< 1 GHz) / 1 MHz (> 1 GHz)
VBW	300 kHz (< 1 GHz) / 3 MHz (> 1 GHz)
Frequency Span	Zero Span
Sweep Mode	Single Sweep
Detector Mode	RMS
Trace Mode	Max hold
Trigger Mode	Video (burst signals) or Manual (continuous signals)
Sweep Points	Sweep time [μ s] / (1 μ s) with a maximum of 30 000
Sweep Time	> 120 % of the duration of the longest burst detected during the measurement of the RF Output Power

TEST SETUP



TEST ENVIRONMENT

For Conducted measurement:

Temperature	27.1 °C	Relative Humidity	60.9 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

For Radiated measurement:

Temperature	24.5 °C	Relative Humidity	66 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

RESULTS

Please refer to appendix E.

7.7. RECEIVER SPURIOUS EMISSIONS

LIMITS

The spurious emissions of the receiver shall not exceed the values given in table 13.
In case of non-FHSS equipment with antenna connectors, these limits apply to emissions at the antenna port (conducted). For emissions radiated by the cabinet or for emissions radiated by integral antenna equipment (without antenna connectors), these limits are e.r.p. for emissions up to 1 GHz and e.i.r.p. for emissions above 1 GHz.

Table 13: Spurious emission limits for receivers

Frequency range	Maximum power	Bandwidth
30 MHz to 1 GHz	-57 dBm	100 kHz
1 GHz to 12,75 GHz	-47 dBm	1 MHz

TEST PROCEDURE

Please refer to ETSI EN 300 328 V2.2.2 (2019-07) Clause 5.4.10

Measurement	
☒ Conducted measurement	☒ Radiated measurement

Please refer to ETSI EN 300 328 V2.2.2 (2019-07) Clause 5.4.10

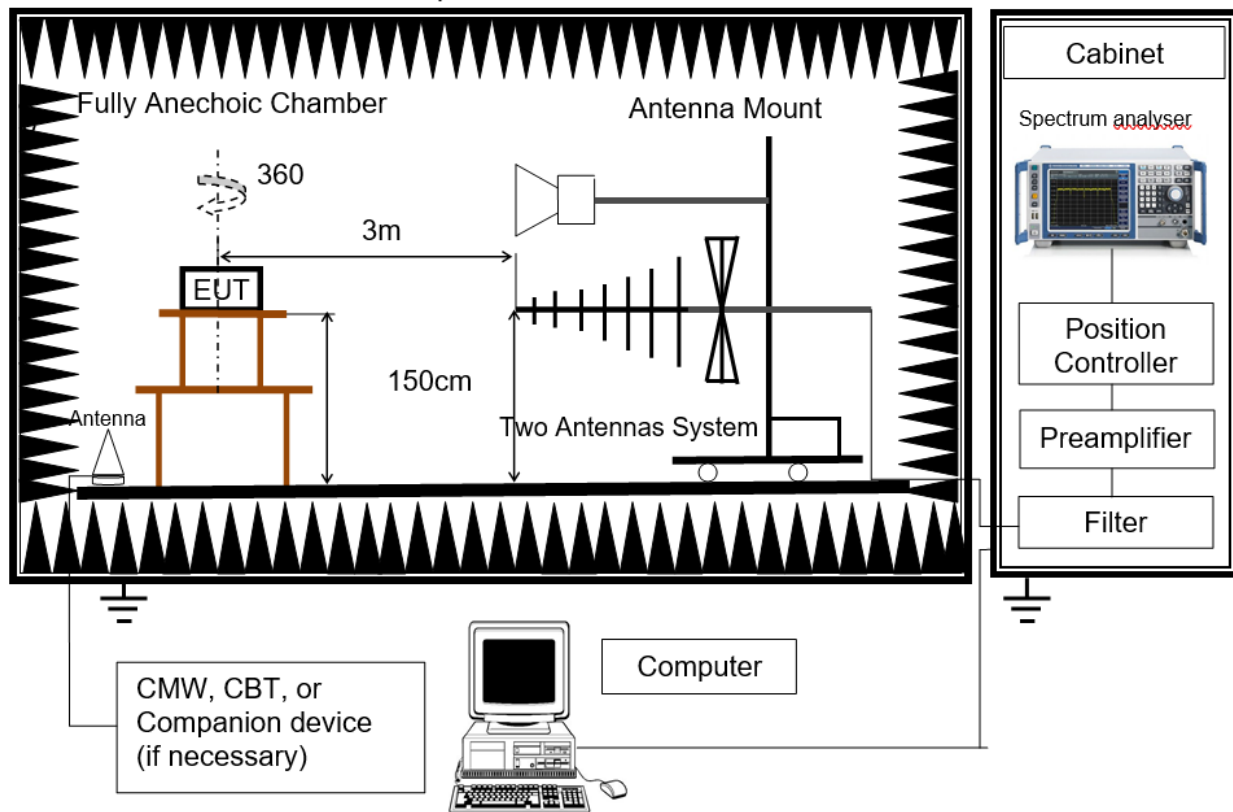
Spectrum analyser settings for pre-scan:

RBW	100 kHz (< 1 GHz) / 1 MHz (> 1 GHz)
VBW	300 kHz (< 1 GHz) / 3 MHz (> 1 GHz)
Detector Mode	Peak
Filter type	3 dB (Gaussian)
Trace Mode	Max hold
Sweep Points	$\geq 19\,400$ (< 1 GHz); $\geq 23\,500$ (> 1 GHz); for spectrum analysers not supporting this high number of sweep points, the frequency band may be segmented.
Sweep Time	Auto

Spectrum analyser settings for the emissions identified during the pre-scan:

Measurement Mode	Time Domain Power
Centre Frequency	Frequency of the emission identified during the pre-scan
RBW	100 kHz (< 1 GHz) / 1 MHz (> 1 GHz)
VBW	300 kHz (< 1 GHz) / 3 MHz (> 1 GHz)
Frequency Span	Zero Span
Sweep Mode	Single Sweep
Detector Mode	RMS
Trace Mode	Max hold
Trigger Mode	Video (burst signals) or Manual (continuous signals)
Sweep Points	$\geq 30\,000$
Sweep Time	30 ms

TEST SETUP



**TEST ENVIRONMENT**

For Conducted measurement:

Temperature	27.1 °C	Relative Humidity	60.9 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

For Radiated measurement:

Temperature	24.5 °C	Relative Humidity	66 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

RESULTS

Please refer to appendix F.

7.8. RECEIVER BLOCKING

LIMITS

Performance Criteria

For equipment that supports a PER or FER test to be performed, the minimum performance criterion shall be a PER or FER less than or equal to 10 %.

For equipment that does not support a PER or a FER test to be performed, the minimum performance criterion shall be no loss of the wireless transmission function needed for the intended use of the equipment.

While maintaining the minimum performance criteria as defined in clause 4.3.2.11.3, the blocking levels at specified frequency offsets shall be equal to or greater than the limits defined for the applicable receiver category provided in table 14, table 15 or table 16.

☒ Receiver Category 1

Table 14: Receiver Blocking parameters for Receiver Category 1 equipment

Wanted signal mean power from companion device (dBm) (see notes 1 and 4)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 4)	Type of blocking signal
(-133 dBm + 10 × log ₁₀ (OCBW)) or -68 dBm whichever is less (see note 2)	2 380 2 504	-34	CW
(-139 dBm + 10 × log ₁₀ (OCBW)) or -74 dBm whichever is less (see note 3)	2 300 2 330 2 360 2 524 2 584 2 674		
NOTE 1: OCBW is in Hz.			
NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to P _{min} + 26 dB where P _{min} is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.			
NOTE 3: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to P _{min} + 20 dB where P _{min} is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.			
NOTE 4: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.			

☐ Receiver Category 2

Table 15: Receiver Blocking parameters receiver Category 2 equipment

Wanted signal mean power from companion device (dBm) (see notes 1 and 3)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 3)	Type of blocking signal
(-139 dBm + $10 \times \log_{10}(\text{OCBW}) + 10 \text{ dB}$) or (-74 dBm + 10 dB) whichever is less (see note 2)	2 380 2 504 2 300 2 584	-34	CW
NOTE 1: OCBW is in Hz. NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to $P_{\min} + 26 \text{ dB}$ where $P_{\min}$ is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal. NOTE 3: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.			

☐ Receiver Category 3

Table 16: Receiver Blocking parameters receiver Category 3 equipment

Wanted signal mean power from companion device (dBm) (see notes 1 and 3)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 3)	Type of blocking signal
(-139 dBm + $10 \times \log_{10}(\text{OCBW}) + 20 \text{ dB}$) or (-74 dBm + 20 dB) whichever is less (see note 2)	2 380 2 504 2 300 2 584	-34	CW
NOTE 1: OCBW is in Hz. NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to $P_{\min} + 30 \text{ dB}$ where $P_{\min}$ is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal. NOTE 3: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.			

TEST PROCEDURE

Please refer to ETSI EN 300 328 V2.2.2 (2019-07) Clause 5.4.11

Measurement	
☒ Conducted measurement	☐ Radiated measurement

Step 1:

- For non-FHSS equipment, the UUT shall be set to the lowest operating channel on which the blocking test has to be performed (see clause 5.4.11.1).

Step 2:

- The blocking signal generator is set to the first frequency as defined in the appropriate table corresponding to the receiver category and type of equipment.

Step 3:

- With the blocking signal generator switched off, a communication link is established between the UUT and the associated companion device using the test setup shown in figure 6.
- Unless the option provided in note 2 of the applicable table referred to in clause 5.4.11.2.1 is used, the level of the wanted signal shall be set to the value provided in the table corresponding to the receiver category and type of equipment. The test procedure defined in clause 5.4.2, and more in particular clause 5.4.2.2.1.2, can be used to measure the (conducted) level of the wanted signal however no correction shall be made for antenna gain of the companion device (step 6 in clause 5.4.2.2.1.2 shall be ignored). This level may be measured directly at the output of the companion device and a correction is made for the coupling loss into the UUT. The actual level for the wanted signal shall be recorded in the test report.
- When the option provided in note 2 of the applicable table referred to in clause 5.4.11.2.1 is used, the attenuation of the variable attenuator shall be increased in 1 dB steps to a value at which the minimum performance criteria as specified in clause 4.3.1.12.3 or clause 4.3.2.11.3 is still met. The resulting level for the wanted signal at the input of the UUT is Pmin. This signal level (Pmin) is increased by the value provided in note 2 of the applicable table corresponding to the receiver category and type of equipment.

Step 4:

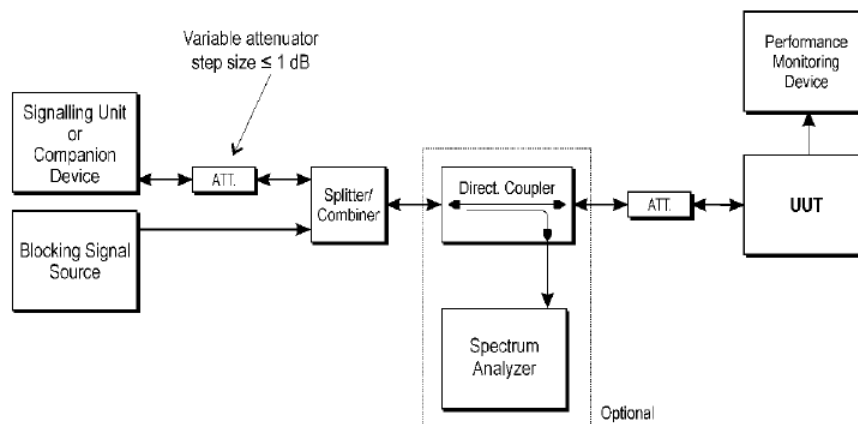
- The blocking signal at the UUT is set to the level provided in the table corresponding to the receiver category and type of equipment.
- If the performance criteria as specified in clause 4.3.1.12.3 or clause 4.3.2.11.3 are met then proceed to step 6.

Step 5:

- If the performance criteria as specified in clause 4.3.1.12.3 or clause 4.3.2.11.3 is not met, step 3 and step 4 shall be repeated after that the frequency of the blocking signal set in step 2 has been increased with a value equal to the Occupied Channel Bandwidth except:
 - For the blocking frequency 2 380 MHz, where this frequency offset shall be less than or equal to 10 MHz. If this frequency offset is more than 7 MHz, the level of the wanted signal shall be increased by 3 dB.
 - For the blocking frequency 2 503,5 MHz, where this frequency offset shall be less than or equal to 10 MHz. If this frequency offset is more than 7 MHz, the level of the wanted signal shall be decreased by 3 dB.
- If the performance criteria as specified in clause 4.3.1.12.3 or clause 4.3.2.11.3 is still not met, step 3 and step 4 shall be repeated after that the frequency of the blocking signal set in step 2 has been decreased with a value equal to the Occupied Channel Bandwidth except:

- For the blocking frequency 2 380 MHz, where this frequency offset shall be less than or equal to 10 MHz. If this frequency offset is more than 7 MHz, the level of the wanted signal shall be decreased by 3 dB.
 - For the blocking frequency 2 503,5 MHz, where this frequency offset shall be less than or equal to 10 MHz. If this frequency offset is more than 7 MHz, the level of the wanted signal shall be increased by 3 dB.
 - If the performance criteria as specified in clause 4.3.1.12.3 or clause 4.3.2.11.3 is still not met, the UUT fails to comply with the Receiver Blocking requirement and step 6 and step 7 are no longer required.
 - It shall be recorded in the test report whether the shift of blocking frequencies as described in the present step was used.
- Step 6:
- Repeat step 4 and step 5 for each remaining combination of frequency and level for the blocking signal as provided in the table corresponding to the receiver category and type of equipment.
- Step 7:
- For non-FHSS equipment, repeat step 2 to step 6 with the UUT operating at the highest operating channel on which the blocking test has to be performed (see clause 5.4.11.1).
- Step 8:
- It shall be assessed and recorded in the test report whether the UUT complies with the Receiver Blocking requirement.

TEST SETUP



TEST ENVIRONMENT

Temperature	24.5 °C	Relative Humidity	56.8 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

RESULTS

Please refer to appendix G.



7.9. GEO-LOCATION CAPABILITY

REQUIREMENTS

Geo-location capability is a feature of the equipment to determine its geographical location with the purpose to configure itself according to the regulatory requirements applicable at the geographical location where it operates.

The geo-location capability may be present in the equipment or in an external device (temporary) associated with the equipment operating at the same geographical location during the initial power up of the equipment. The geographical location may also be available in equipment already installed and operating at the same geographical location.

GEO-LOCATION CAPABILITY FUNCTION DESCRIBE FOR EUT

Not Support.

CONCLUSION

N/A



8. Appendix

8.1. Appendix A: RF Output Power

8.1.1. Test Result

Test Condition	Test Mode	Antenna	Channel	EIRP[dBm]	Limit[dBm]	Verdict
NTNV	11B	Ant1	2412	16.65	20	PASS
			2442	16.81	20	PASS
			2472	16.01	20	PASS
	11G	Ant1	2412	14.13	20	PASS
			2442	14.17	20	PASS
			2472	13.65	20	PASS
	11N20SISO	Ant1	2412	14.11	20	PASS
			2442	14.16	20	PASS
			2472	13.70	20	PASS
	11N40SISO	Ant1	2422	17.67	20	PASS
			2442	17.89	20	PASS
			2462	17.71	20	PASS
	11AX20SISO	Ant1	2412	14.11	20	PASS
			2442	14.21	20	PASS
			2472	13.71	20	PASS
	11AX40SISO	Ant1	2422	17.75	20	PASS
			2442	18.00	20	PASS
			2462	17.84	20	PASS

Test Condition	Test Mode	Antenna	Channel	EIRP[dBm]	Limit[dBm]	Verdict
LTVN	11B	Ant1	2412	16.25	20	PASS
			2442	16.52	20	PASS
			2472	15.68	20	PASS
	11G	Ant1	2412	13.79	20	PASS
			2442	13.83	20	PASS
			2472	13.21	20	PASS
	11N20SISO	Ant1	2412	13.71	20	PASS
			2442	13.71	20	PASS
			2472	13.45	20	PASS
	11N40SISO	Ant1	2422	17.22	20	PASS
			2442	17.47	20	PASS
			2462	17.36	20	PASS
	11AX20SISO	Ant1	2412	13.86	20	PASS
			2442	13.80	20	PASS
			2472	13.41	20	PASS
	11AX40SISO	Ant1	2422	17.49	20	PASS
			2442	17.65	20	PASS
			2462	17.43	20	PASS



Test Condition	Test Mode	Antenna	Channel	EIRP[dBm]	Limit[dBm]	Verdict
HTNV	11B	Ant1	2412	16.21	20	PASS
			2442	16.52	20	PASS
			2472	15.74	20	PASS
	11G	Ant1	2412	13.69	20	PASS
			2442	13.74	20	PASS
			2472	13.31	20	PASS
	11N20SISO	Ant1	2412	13.70	20	PASS
			2442	13.81	20	PASS
			2472	13.25	20	PASS
	11N40SISO	Ant1	2422	17.30	20	PASS
			2442	17.61	20	PASS
			2462	17.29	20	PASS
	11AX20SISO	Ant1	2412	13.81	20	PASS
			2442	13.85	20	PASS
			2472	13.43	20	PASS
	11AX40SISO	Ant1	2422	17.39	20	PASS
			2442	17.75	20	PASS
			2462	17.45	20	PASS

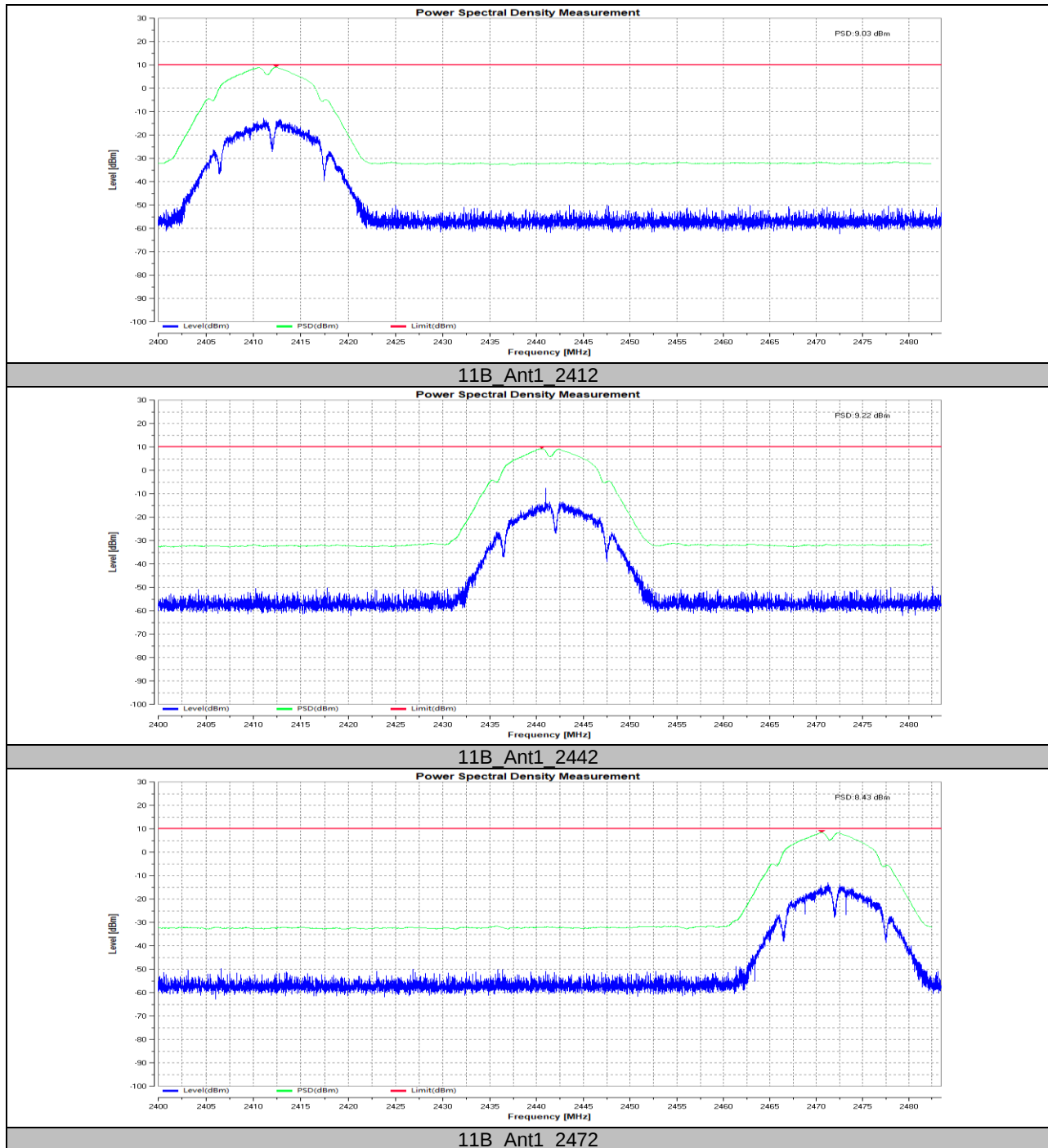


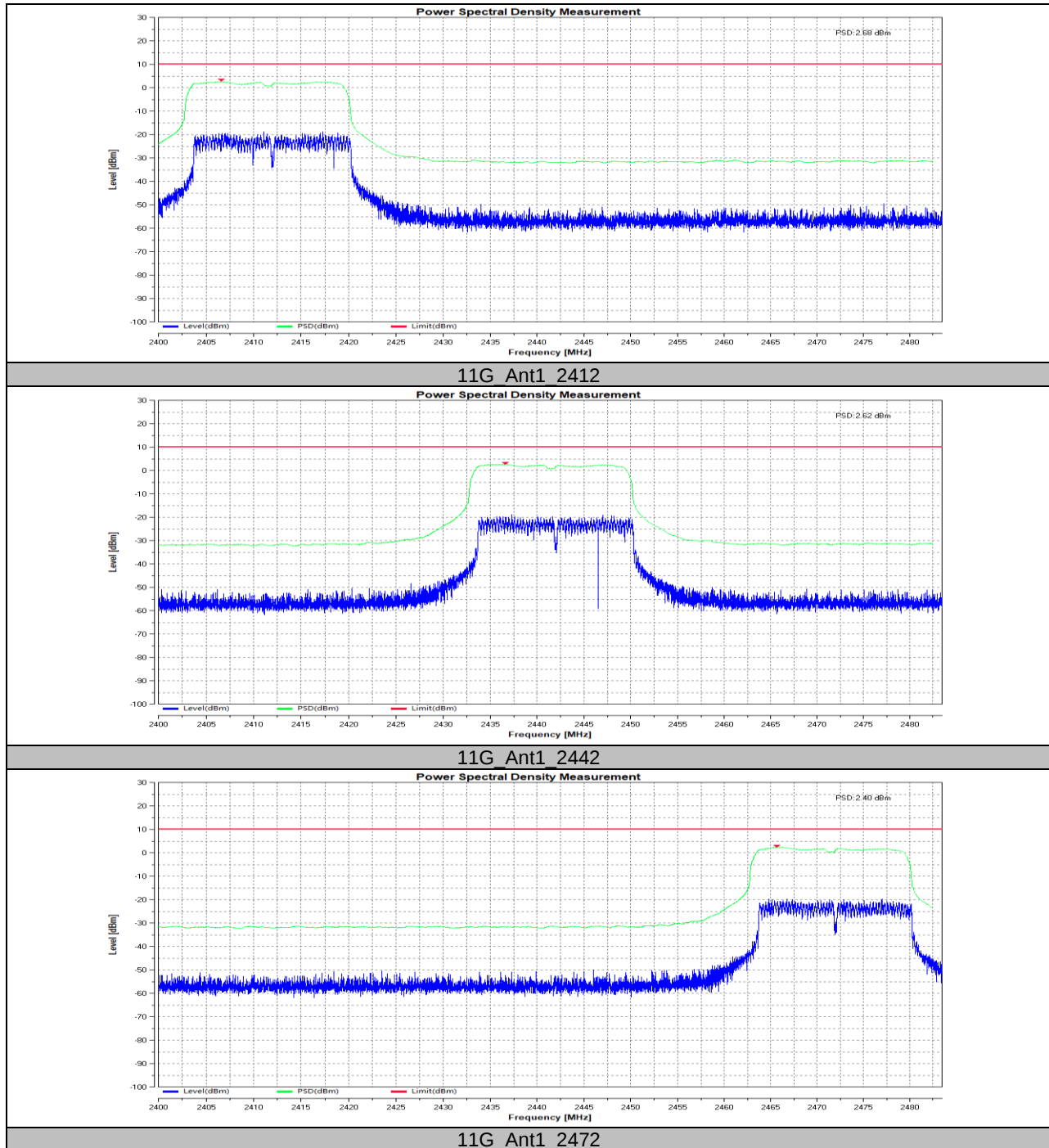
8.2. Appendix B: Power Spectral Density

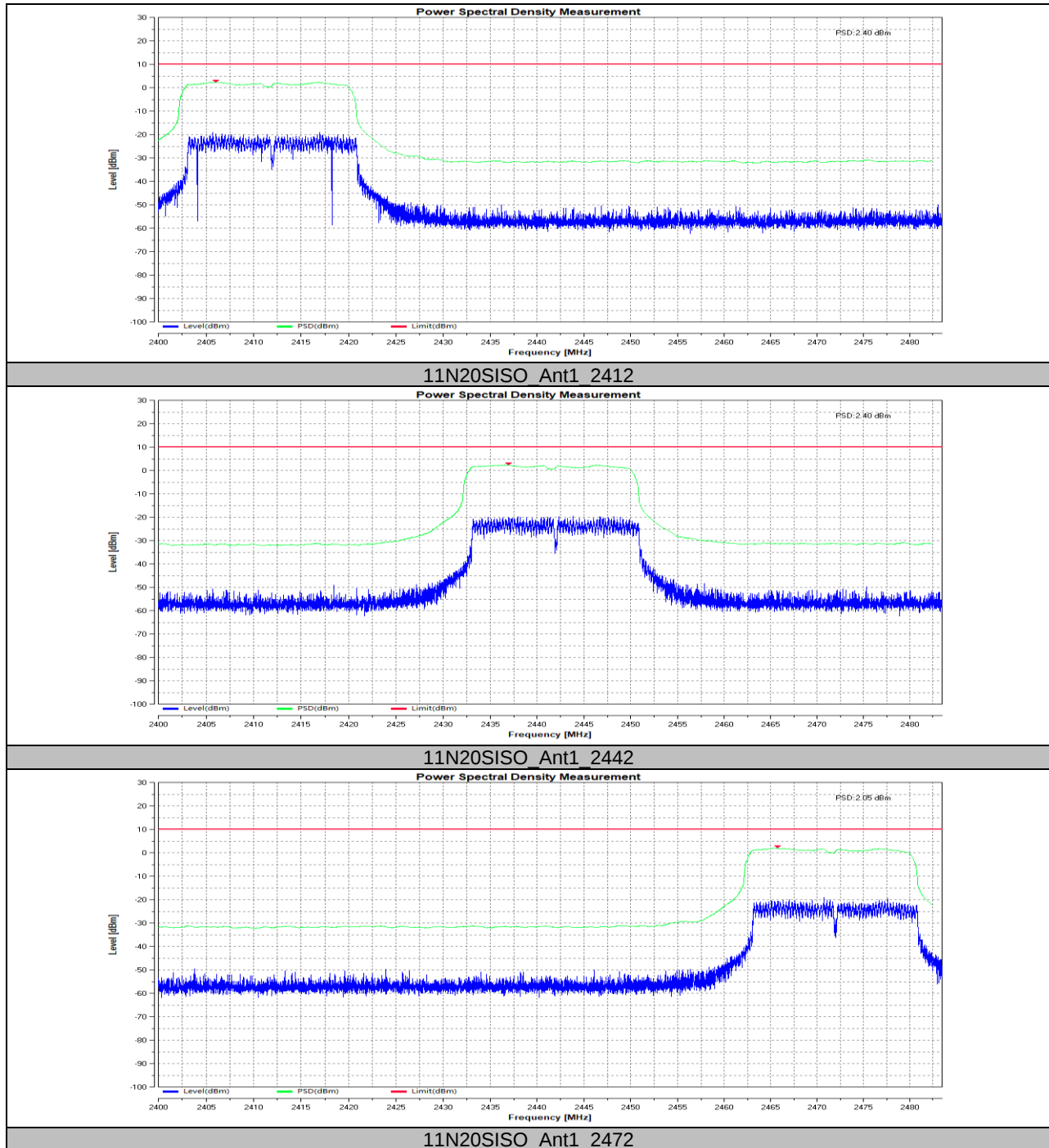
8.2.1. Test Result

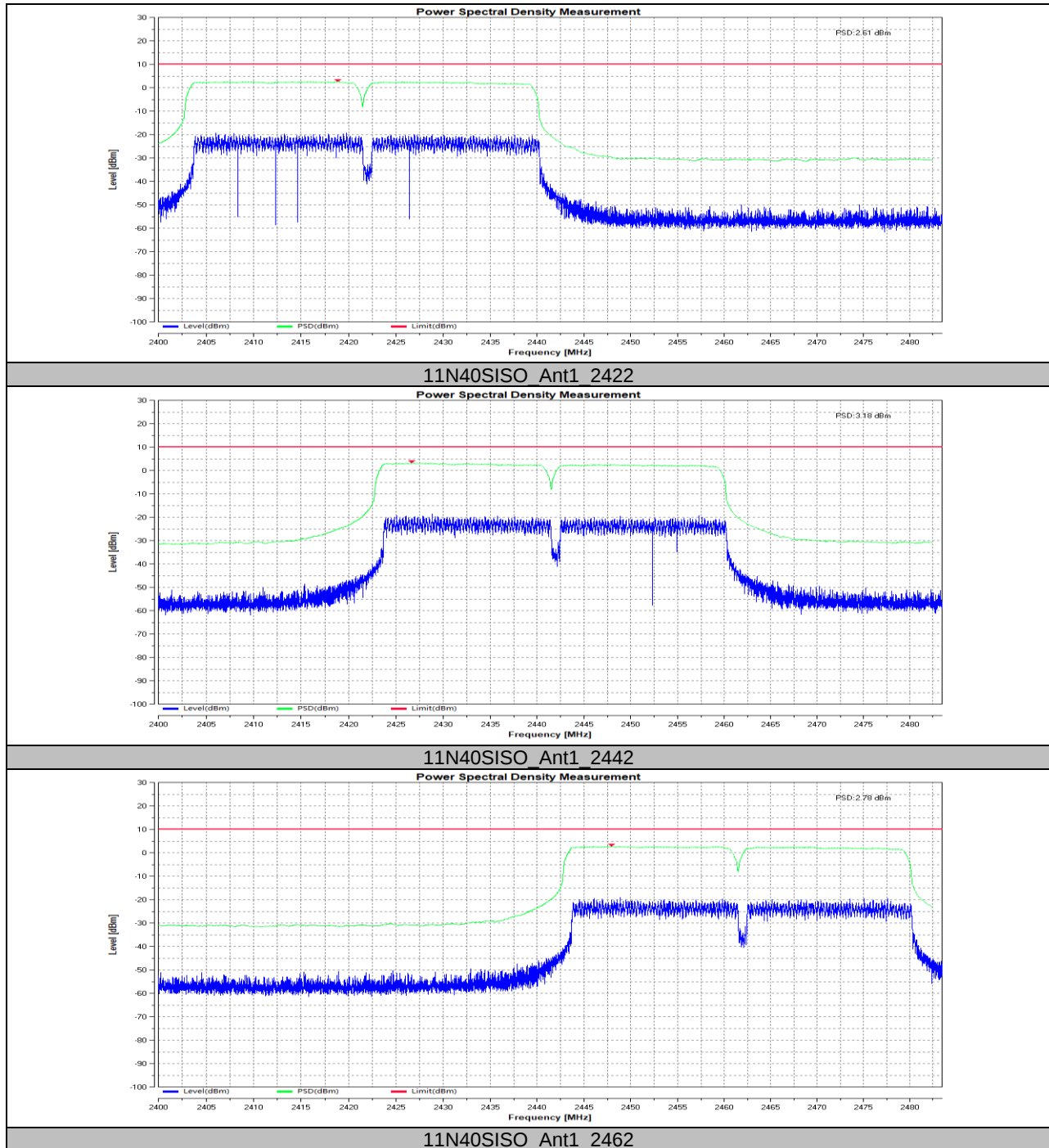
Test Mode	Antenna	Channel	PSD[dBm/MHz]	Limit[dBm/MHz]	Verdict
11B	Ant1	2412	9.03	10	PASS
		2442	9.22	10	PASS
		2472	8.43	10	PASS
11G	Ant1	2412	2.68	10	PASS
		2442	2.62	10	PASS
		2472	2.40	10	PASS
11N20SISO	Ant1	2412	2.40	10	PASS
		2442	2.40	10	PASS
		2472	2.05	10	PASS
11N40SISO	Ant1	2422	2.61	10	PASS
		2442	3.18	10	PASS
		2462	2.78	10	PASS
11AX20SISO	Ant1	2412	1.86	10	PASS
		2442	2.24	10	PASS
		2472	1.75	10	PASS
11AX40SISO	Ant1	2422	2.39	10	PASS
		2442	3.06	10	PASS
		2462	2.65	10	PASS

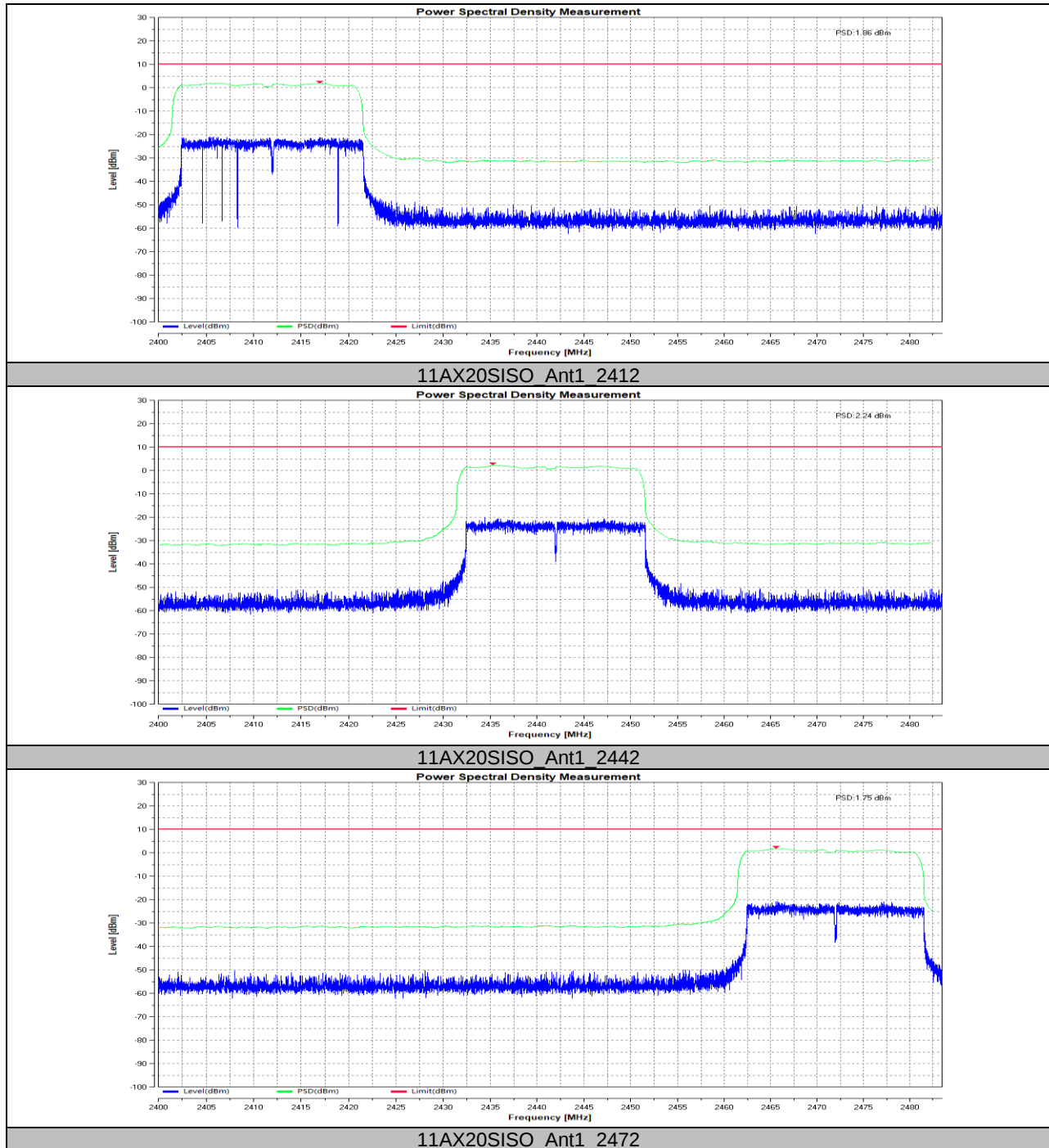
8.2.2. Test Graphs

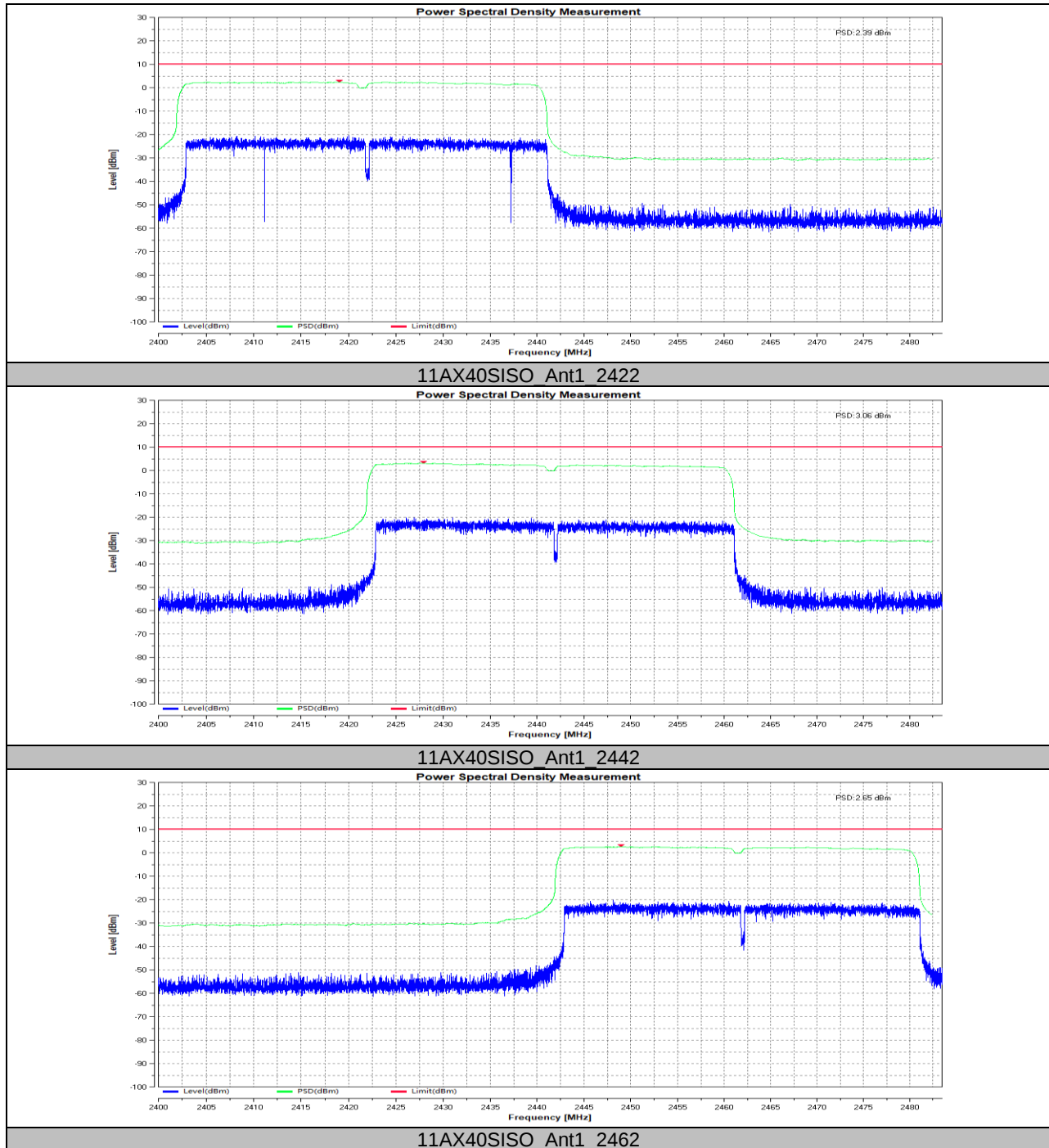














8.3. Appendix C: Occupied Channel Bandwidth

8.3.1. Test Result

Test Mode	Antenna	Channel	OCB[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	12.568	2405.6832	2418.2512	2400 to 2483.5	PASS
		2472	12.637	2465.6249	2478.2619	2400 to 2483.5	PASS
11G	Ant1	2412	16.661	2403.6482	2420.3092	2400 to 2483.5	PASS
		2472	16.653	2463.6421	2480.2951	2400 to 2483.5	PASS
11N20SISO	Ant1	2412	17.912	2403.0204	2420.9324	2400 to 2483.5	PASS
		2472	17.906	2463.0134	2480.9194	2400 to 2483.5	PASS
11N40SISO	Ant1	2422	36.488	2403.7086	2440.1966	2400 to 2483.5	PASS
		2462	36.490	2443.6997	2480.1897	2400 to 2483.5	PASS
11AX20SISO	Ant1	2412	19.128	2402.4139	2421.5419	2400 to 2483.5	PASS
		2472	19.126	2462.4064	2481.5324	2400 to 2483.5	PASS
11AX40SISO	Ant1	2422	37.973	2402.9614	2440.9344	2400 to 2483.5	PASS
		2462	37.982	2442.9509	2480.9329	2400 to 2483.5	PASS

8.3.2. Test Graphs











8.4. Appendix D: Transmitter Unwanted Emissions In The Out-Of-Band Domain

8.4.1. Test Result

Test Mode	Antenna	Channel	Freq. [MHz]	Level[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	2374.932	-36.89	-20.00	PASS
			2375.364	-37.78	-20.00	PASS
			2375.932	-37.96	-20.00	PASS
			2376.932	-38.52	-20.00	PASS
			2377.932	-37.46	-20.00	PASS
			2378.932	-37.71	-20.00	PASS
			2379.932	-37.71	-20.00	PASS
			2380.932	-37.93	-20.00	PASS
			2381.932	-36.80	-20.00	PASS
			2382.932	-37.06	-20.00	PASS
			2383.932	-37.14	-20.00	PASS
			2384.932	-38.21	-20.00	PASS
			2385.932	-38.08	-20.00	PASS
			2386.932	-37.80	-20.00	PASS
			2387.5	-38.09	-10.00	PASS
			2387.932	-37.43	-10.00	PASS
			2388.5	-38.29	-10.00	PASS
			2389.5	-36.40	-10.00	PASS
			2390.5	-37.52	-10.00	PASS
			2391.5	-38.32	-10.00	PASS
			2392.5	-37.73	-10.00	PASS
			2393.5	-36.26	-10.00	PASS
			2394.5	-35.61	-10.00	PASS
			2395.5	-35.65	-10.00	PASS
			2396.5	-35.09	-10.00	PASS
			2397.5	-34.05	-10.00	PASS
			2398.5	-33.28	-10.00	PASS
			2399.5	-32.97	-10.00	PASS
			2484	-37.27	-10.00	PASS
			2485	-36.64	-10.00	PASS
			2486	-37.59	-10.00	PASS
			2487	-37.96	-10.00	PASS
			2488	-36.90	-10.00	PASS
			2489	-37.85	-10.00	PASS
			2490	-36.65	-10.00	PASS
			2491	-36.86	-10.00	PASS
			2492	-37.71	-10.00	PASS
			2493	-38.75	-10.00	PASS
			2494	-36.90	-10.00	PASS
			2495	-37.55	-10.00	PASS
			2495.568	-37.04	-10.00	PASS
			2496	-38.47	-10.00	PASS
			2496.568	-37.30	-20.00	PASS
			2497.568	-37.86	-20.00	PASS
			2498.568	-37.43	-20.00	PASS
			2499.568	-37.64	-20.00	PASS
			2500.568	-37.44	-20.00	PASS
			2501.568	-37.52	-20.00	PASS
			2502.568	-38.02	-20.00	PASS



			2503.568	-37.25	-20.00	PASS
			2504.568	-37.42	-20.00	PASS
			2505.568	-38.41	-20.00	PASS
			2506.568	-37.64	-20.00	PASS
			2507.568	-37.34	-20.00	PASS
			2508.136	-37.02	-20.00	PASS
			2508.568	-36.65	-20.00	PASS
		2472	2374.863	-38.44	-20.00	PASS
			2375.226	-38.60	-20.00	PASS
			2375.863	-37.85	-20.00	PASS
			2376.863	-38.08	-20.00	PASS
			2377.863	-37.56	-20.00	PASS
			2378.863	-38.51	-20.00	PASS
			2379.863	-37.96	-20.00	PASS
			2380.863	-38.02	-20.00	PASS
			2381.863	-38.11	-20.00	PASS
			2382.863	-38.17	-20.00	PASS
			2383.863	-37.70	-20.00	PASS
			2384.863	-38.28	-20.00	PASS
			2385.863	-37.18	-20.00	PASS
			2386.863	-36.83	-20.00	PASS
			2387.5	-38.53	-10.00	PASS
			2387.863	-38.47	-10.00	PASS
			2388.5	-37.96	-10.00	PASS
			2389.5	-38.03	-10.00	PASS
			2390.5	-37.83	-10.00	PASS
			2391.5	-37.51	-10.00	PASS
			2392.5	-37.95	-10.00	PASS
			2393.5	-37.97	-10.00	PASS
			2394.5	-36.77	-10.00	PASS
			2395.5	-38.68	-10.00	PASS
			2396.5	-37.75	-10.00	PASS
			2397.5	-37.95	-10.00	PASS
			2398.5	-38.30	-10.00	PASS
			2399.5	-37.22	-10.00	PASS
			2484	-33.88	-10.00	PASS
			2485	-32.76	-10.00	PASS
			2486	-33.09	-10.00	PASS
			2487	-34.21	-10.00	PASS
			2488	-34.94	-10.00	PASS
			2489	-36.63	-10.00	PASS
			2490	-36.32	-10.00	PASS
			2491	-37.94	-10.00	PASS
			2492	-37.66	-10.00	PASS
			2493	-37.88	-10.00	PASS
			2494	-37.64	-10.00	PASS
			2495	-36.77	-10.00	PASS
			2495.637	-37.12	-10.00	PASS
			2496	-36.80	-10.00	PASS
			2496.637	-38.28	-20.00	PASS
			2497.637	-37.95	-20.00	PASS
			2498.637	-36.73	-20.00	PASS
			2499.637	-37.85	-20.00	PASS
			2500.637	-37.73	-20.00	PASS
			2501.637	-38.19	-20.00	PASS
			2502.637	-38.17	-20.00	PASS
			2503.637	-37.91	-20.00	PASS
			2504.637	-38.61	-20.00	PASS
			2505.637	-36.69	-20.00	PASS
			2506.637	-37.50	-20.00	PASS



			2507.637	-36.81	-20.00	PASS
			2508.274	-38.17	-20.00	PASS
			2508.637	-38.06	-20.00	PASS
			2366.839	-38.08	-20.00	PASS
			2367.178	-36.95	-20.00	PASS
11G	Ant1	2412	2367.839	-37.65	-20.00	PASS
			2368.839	-36.96	-20.00	PASS
			2369.839	-36.40	-20.00	PASS
			2370.839	-37.06	-20.00	PASS
			2371.839	-36.83	-20.00	PASS
			2372.839	-36.53	-20.00	PASS
			2373.839	-37.49	-20.00	PASS
			2374.839	-36.93	-20.00	PASS
			2375.839	-36.97	-20.00	PASS
			2376.839	-34.13	-20.00	PASS
			2377.839	-36.19	-20.00	PASS
			2378.839	-34.53	-20.00	PASS
			2379.839	-34.65	-20.00	PASS
			2380.839	-34.89	-20.00	PASS
			2381.839	-33.22	-20.00	PASS
			2382.839	-34.41	-20.00	PASS
			2383.5	-33.20	-10.00	PASS
			2383.839	-32.70	-10.00	PASS
			2384.5	-30.43	-10.00	PASS
			2385.5	-32.69	-10.00	PASS
			2386.5	-31.46	-10.00	PASS
			2387.5	-31.08	-10.00	PASS
			2388.5	-30.78	-10.00	PASS
			2389.5	-30.45	-10.00	PASS
			2390.5	-29.14	-10.00	PASS
			2391.5	-29.92	-10.00	PASS
			2392.5	-28.47	-10.00	PASS
			2393.5	-23.77	-10.00	PASS
			2394.5	-19.36	-10.00	PASS
			2395.5	-16.27	-10.00	PASS
			2396.5	-15.56	-10.00	PASS
			2397.5	-14.56	-10.00	PASS
			2398.5	-12.43	-10.00	PASS
			2399.5	-10.17	-10.00	PASS
			2484	-36.79	-10.00	PASS
			2485	-37.19	-10.00	PASS
			2486	-37.47	-10.00	PASS
			2487	-36.94	-10.00	PASS
			2488	-37.49	-10.00	PASS
			2489	-37.93	-10.00	PASS
			2490	-36.93	-10.00	PASS
			2491	-36.99	-10.00	PASS
			2492	-36.43	-10.00	PASS
			2493	-37.62	-10.00	PASS
			2494	-37.66	-10.00	PASS
			2495	-36.66	-10.00	PASS
			2496	-37.23	-10.00	PASS
			2497	-37.47	-10.00	PASS
			2498	-37.53	-10.00	PASS
			2499	-37.02	-10.00	PASS
			2499.661	-37.25	-10.00	PASS
			2500	-37.52	-10.00	PASS
			2500.661	-37.55	-20.00	PASS
			2501.661	-36.33	-20.00	PASS
			2502.661	-37.40	-20.00	PASS



			2503.661	-37.26	-20.00	PASS
			2504.661	-37.83	-20.00	PASS
			2505.661	-36.71	-20.00	PASS
			2506.661	-38.01	-20.00	PASS
			2507.661	-37.29	-20.00	PASS
			2508.661	-36.84	-20.00	PASS
			2509.661	-37.81	-20.00	PASS
			2510.661	-38.01	-20.00	PASS
			2511.661	-36.76	-20.00	PASS
			2512.661	-36.74	-20.00	PASS
			2513.661	-37.14	-20.00	PASS
			2514.661	-37.56	-20.00	PASS
			2515.661	-37.24	-20.00	PASS
			2516.322	-37.44	-20.00	PASS
			2516.661	-37.05	-20.00	PASS
		2472	2366.847	-36.74	-20.00	PASS
			2367.194	-38.60	-20.00	PASS
			2367.847	-38.08	-20.00	PASS
			2368.847	-37.47	-20.00	PASS
			2369.847	-36.90	-20.00	PASS
			2370.847	-37.75	-20.00	PASS
			2371.847	-38.28	-20.00	PASS
			2372.847	-38.04	-20.00	PASS
			2373.847	-36.69	-20.00	PASS
			2374.847	-38.04	-20.00	PASS
			2375.847	-38.37	-20.00	PASS
			2376.847	-37.34	-20.00	PASS
			2377.847	-37.38	-20.00	PASS
			2378.847	-37.51	-20.00	PASS
			2379.847	-37.59	-20.00	PASS
			2380.847	-38.40	-20.00	PASS
			2381.847	-37.76	-20.00	PASS
			2382.847	-38.01	-20.00	PASS
			2383.5	-38.08	-10.00	PASS
			2383.847	-38.00	-10.00	PASS
			2384.5	-38.29	-10.00	PASS
			2385.5	-38.02	-10.00	PASS
			2386.5	-37.80	-10.00	PASS
			2387.5	-37.27	-10.00	PASS
			2388.5	-38.03	-10.00	PASS
			2389.5	-37.87	-10.00	PASS
			2390.5	-38.28	-10.00	PASS
			2391.5	-37.27	-10.00	PASS
			2392.5	-37.39	-10.00	PASS
			2393.5	-38.19	-10.00	PASS
			2394.5	-38.60	-10.00	PASS
			2395.5	-37.70	-10.00	PASS
			2396.5	-36.56	-10.00	PASS
			2397.5	-36.93	-10.00	PASS
			2398.5	-37.23	-10.00	PASS
			2399.5	-37.91	-10.00	PASS
			2484	-12.01	-10.00	PASS
			2485	-14.89	-10.00	PASS
			2486	-15.90	-10.00	PASS
			2487	-17.76	-10.00	PASS
			2488	-18.91	-10.00	PASS
			2489	-21.27	-10.00	PASS
			2490	-24.25	-10.00	PASS
			2491	-25.26	-10.00	PASS
			2492	-24.95	-10.00	PASS



			2493	-26.85	-10.00	PASS
			2494	-27.23	-10.00	PASS
			2495	-27.48	-10.00	PASS
			2496	-27.95	-10.00	PASS
			2497	-29.31	-10.00	PASS
			2498	-29.96	-10.00	PASS
			2499	-30.40	-10.00	PASS
			2499.653	-31.48	-10.00	PASS
			2500	-30.33	-10.00	PASS
			2500.653	-30.43	-20.00	PASS
			2501.653	-31.20	-20.00	PASS
			2502.653	-32.25	-20.00	PASS
			2503.653	-31.73	-20.00	PASS
			2504.653	-33.13	-20.00	PASS
			2505.653	-32.54	-20.00	PASS
			2506.653	-32.68	-20.00	PASS
			2507.653	-34.66	-20.00	PASS
			2508.653	-34.66	-20.00	PASS
			2509.653	-33.72	-20.00	PASS
			2510.653	-34.28	-20.00	PASS
			2511.653	-34.94	-20.00	PASS
			2512.653	-35.74	-20.00	PASS
			2513.653	-35.66	-20.00	PASS
			2514.653	-36.38	-20.00	PASS
			2515.653	-36.76	-20.00	PASS
11N20SISO	Ant1	2412	2516.306	-35.72	-20.00	PASS
			2516.653	-36.73	-20.00	PASS
			2364.588	-38.55	-20.00	PASS
			2364.676	-38.05	-20.00	PASS
			2365.588	-35.93	-20.00	PASS
			2366.588	-37.06	-20.00	PASS
			2367.588	-37.91	-20.00	PASS
			2368.588	-38.16	-20.00	PASS
			2369.588	-38.29	-20.00	PASS
			2370.588	-37.29	-20.00	PASS
			2371.588	-37.62	-20.00	PASS
			2372.588	-37.64	-20.00	PASS
			2373.588	-36.63	-20.00	PASS
			2374.588	-36.75	-20.00	PASS
			2375.588	-36.98	-20.00	PASS
			2376.588	-36.52	-20.00	PASS
			2377.588	-36.59	-20.00	PASS
			2378.588	-36.34	-20.00	PASS
			2379.588	-36.89	-20.00	PASS
			2380.588	-36.85	-20.00	PASS
			2381.588	-34.71	-20.00	PASS
			2382.5	-36.29	-10.00	PASS
			2382.588	-35.09	-10.00	PASS
			2383.5	-32.71	-10.00	PASS
			2384.5	-32.81	-10.00	PASS
			2385.5	-33.61	-10.00	PASS
			2386.5	-32.94	-10.00	PASS
			2387.5	-32.56	-10.00	PASS
			2388.5	-31.07	-10.00	PASS
			2389.5	-30.81	-10.00	PASS
			2390.5	-30.50	-10.00	PASS
			2391.5	-30.13	-10.00	PASS
			2392.5	-28.71	-10.00	PASS
			2393.5	-22.61	-10.00	PASS
			2394.5	-20.38	-10.00	PASS



			2395.5	-18.67	-10.00	PASS
			2396.5	-16.50	-10.00	PASS
			2397.5	-16.26	-10.00	PASS
			2398.5	-14.76	-10.00	PASS
			2399.5	-12.03	-10.00	PASS
			2484	-36.72	-10.00	PASS
			2485	-37.87	-10.00	PASS
			2486	-38.08	-10.00	PASS
			2487	-37.90	-10.00	PASS
			2488	-36.82	-10.00	PASS
			2489	-38.36	-10.00	PASS
			2490	-37.91	-10.00	PASS
			2491	-36.08	-10.00	PASS
			2492	-37.54	-10.00	PASS
			2493	-37.07	-10.00	PASS
			2494	-38.20	-10.00	PASS
			2495	-38.31	-10.00	PASS
			2496	-38.07	-10.00	PASS
			2497	-37.78	-10.00	PASS
			2498	-37.52	-10.00	PASS
			2499	-38.10	-10.00	PASS
			2500	-37.79	-10.00	PASS
			2500.912	-37.43	-10.00	PASS
			2501	-37.60	-10.00	PASS
			2501.912	-35.72	-20.00	PASS
			2502.912	-37.72	-20.00	PASS
			2503.912	-36.71	-20.00	PASS
			2504.912	-37.92	-20.00	PASS
			2505.912	-36.33	-20.00	PASS
			2506.912	-37.95	-20.00	PASS
			2507.912	-37.99	-20.00	PASS
			2508.912	-37.41	-20.00	PASS
			2509.912	-37.94	-20.00	PASS
			2510.912	-37.23	-20.00	PASS
			2511.912	-37.30	-20.00	PASS
			2512.912	-37.76	-20.00	PASS
			2513.912	-37.71	-20.00	PASS
			2514.912	-37.51	-20.00	PASS
			2515.912	-36.79	-20.00	PASS
			2516.912	-36.73	-20.00	PASS
			2517.912	-37.69	-20.00	PASS
			2518.824	-37.16	-20.00	PASS
			2518.912	-37.48	-20.00	PASS
		2472	2364.594	-37.99	-20.00	PASS
			2364.688	-37.78	-20.00	PASS
			2365.594	-37.87	-20.00	PASS
			2366.594	-37.92	-20.00	PASS
			2367.594	-37.97	-20.00	PASS
			2368.594	-37.75	-20.00	PASS
			2369.594	-37.91	-20.00	PASS
			2370.594	-38.11	-20.00	PASS
			2371.594	-37.73	-20.00	PASS
			2372.594	-37.70	-20.00	PASS
			2373.594	-37.79	-20.00	PASS
			2374.594	-37.94	-20.00	PASS
			2375.594	-37.46	-20.00	PASS
			2376.594	-36.30	-20.00	PASS
			2377.594	-37.85	-20.00	PASS
			2378.594	-37.54	-20.00	PASS
			2379.594	-37.47	-20.00	PASS



			2380.594	-38.05	-20.00	PASS
			2381.594	-37.40	-20.00	PASS
			2382.5	-38.12	-10.00	PASS
			2382.594	-36.43	-10.00	PASS
			2383.5	-38.13	-10.00	PASS
			2384.5	-36.63	-10.00	PASS
			2385.5	-38.26	-10.00	PASS
			2386.5	-37.61	-10.00	PASS
			2387.5	-38.09	-10.00	PASS
			2388.5	-38.36	-10.00	PASS
			2389.5	-38.57	-10.00	PASS
			2390.5	-37.40	-10.00	PASS
			2391.5	-38.22	-10.00	PASS
			2392.5	-37.53	-10.00	PASS
			2393.5	-37.68	-10.00	PASS
			2394.5	-38.08	-10.00	PASS
			2395.5	-38.35	-10.00	PASS
			2396.5	-37.87	-10.00	PASS
			2397.5	-38.46	-10.00	PASS
			2398.5	-38.13	-10.00	PASS
			2399.5	-37.82	-10.00	PASS
			2484	-11.42	-10.00	PASS
			2485	-14.70	-10.00	PASS
			2486	-16.93	-10.00	PASS
			2487	-17.67	-10.00	PASS
			2488	-18.58	-10.00	PASS
			2489	-20.35	-10.00	PASS
			2490	-23.70	-10.00	PASS
			2491	-25.30	-10.00	PASS
			2492	-25.68	-10.00	PASS
			2493	-26.69	-10.00	PASS
			2494	-27.65	-10.00	PASS
			2495	-27.50	-10.00	PASS
			2496	-28.64	-10.00	PASS
			2497	-28.97	-10.00	PASS
			2498	-29.46	-10.00	PASS
			2499	-30.65	-10.00	PASS
			2500	-30.79	-10.00	PASS
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			2501	-30.68	-10.00	PASS
			2501.906	-32.38	-20.00	PASS
			2502.906	-32.20	-20.00	PASS
			2503.906	-32.17	-20.00	PASS
			2504.906	-32.61	-20.00	PASS
			2505.906	-34.37	-20.00	PASS
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			2507.906	-34.19	-20.00	PASS
			2508.906	-35.05	-20.00	PASS
			2509.906	-35.51	-20.00	PASS
			2510.906	-35.60	-20.00	PASS
			2511.906	-35.69	-20.00	PASS
			2512.906	-35.76	-20.00	PASS
			2513.906	-36.61	-20.00	PASS
			2514.906	-36.29	-20.00	PASS
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			2517.906	-36.15	-20.00	PASS
			2518.812	-37.61	-20.00	PASS
			2518.906	-37.04	-20.00	PASS
11N40SISO	Ant1	2422	2327.524	-38.02	-20.00	PASS



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			2329.012	-38.09	-20.00	PASS
			2330.012	-37.06	-20.00	PASS
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			2334.012	-38.45	-20.00	PASS
			2335.012	-36.71	-20.00	PASS
			2336.012	-38.44	-20.00	PASS
			2337.012	-37.91	-20.00	PASS
			2338.012	-38.08	-20.00	PASS
			2339.012	-38.18	-20.00	PASS
			2340.012	-37.52	-20.00	PASS
			2341.012	-37.54	-20.00	PASS
			2342.012	-38.44	-20.00	PASS
			2343.012	-38.33	-20.00	PASS
			2344.012	-38.69	-20.00	PASS
			2345.012	-38.32	-20.00	PASS
			2346.012	-37.40	-20.00	PASS
			2347.012	-37.53	-20.00	PASS
			2348.012	-38.43	-20.00	PASS
			2349.012	-38.02	-20.00	PASS
			2350.012	-37.11	-20.00	PASS
			2351.012	-36.78	-20.00	PASS
			2352.012	-37.76	-20.00	PASS
			2353.012	-36.08	-20.00	PASS
			2354.012	-37.42	-20.00	PASS
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			2357.012	-37.60	-20.00	PASS
			2358.012	-37.38	-20.00	PASS
			2359.012	-37.75	-20.00	PASS
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			2364.012	-37.58	-10.00	PASS
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			2366.5	-37.12	-10.00	PASS
			2367.5	-37.28	-10.00	PASS
			2368.5	-38.24	-10.00	PASS
			2369.5	-38.01	-10.00	PASS
			2370.5	-37.27	-10.00	PASS
			2371.5	-36.91	-10.00	PASS
			2372.5	-36.22	-10.00	PASS
			2373.5	-36.27	-10.00	PASS
			2374.5	-32.86	-10.00	PASS
			2375.5	-34.75	-10.00	PASS
			2376.5	-34.99	-10.00	PASS
			2377.5	-34.03	-10.00	PASS
			2378.5	-34.22	-10.00	PASS
			2379.5	-32.07	-10.00	PASS
			2380.5	-32.50	-10.00	PASS
			2381.5	-32.03	-10.00	PASS
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			2384.5	-30.95	-10.00	PASS
			2385.5	-28.08	-10.00	PASS
			2386.5	-29.20	-10.00	PASS



			2387.5	-30.16	-10.00	PASS
			2388.5	-28.02	-10.00	PASS
			2389.5	-26.98	-10.00	PASS
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			2391.5	-25.81	-10.00	PASS
			2392.5	-24.64	-10.00	PASS
			2393.5	-23.71	-10.00	PASS
			2394.5	-21.41	-10.00	PASS
			2395.5	-19.65	-10.00	PASS
			2396.5	-18.12	-10.00	PASS
			2397.5	-16.07	-10.00	PASS
			2398.5	-14.23	-10.00	PASS
			2399.5	-12.16	-10.00	PASS
			2484	-37.06	-10.00	PASS
			2485	-37.87	-10.00	PASS
			2486	-37.10	-10.00	PASS
			2487	-37.47	-10.00	PASS
			2488	-36.53	-10.00	PASS
			2489	-36.95	-10.00	PASS
			2490	-37.36	-10.00	PASS
			2491	-37.72	-10.00	PASS
			2492	-37.57	-10.00	PASS
			2493	-37.68	-10.00	PASS
			2494	-36.95	-10.00	PASS
			2495	-36.71	-10.00	PASS
			2496	-37.35	-10.00	PASS
			2497	-36.55	-10.00	PASS
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			2513	-37.68	-10.00	PASS
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			2515	-37.53	-10.00	PASS
			2516	-37.26	-10.00	PASS
			2517	-36.92	-10.00	PASS
			2518	-37.32	-10.00	PASS
			2519	-37.24	-10.00	PASS
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			2520.488	-37.40	-20.00	PASS
			2521.488	-37.57	-20.00	PASS
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			2527.488	-38.19	-20.00	PASS
			2528.488	-38.17	-20.00	PASS
			2529.488	-36.97	-20.00	PASS



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			2531.488	-37.34	-20.00	PASS
			2532.488	-36.51	-20.00	PASS
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			2536.488	-37.91	-20.00	PASS
			2537.488	-37.64	-20.00	PASS
			2538.488	-37.00	-20.00	PASS
			2539.488	-36.64	-20.00	PASS
			2540.488	-38.07	-20.00	PASS
			2541.488	-36.93	-20.00	PASS
			2542.488	-36.70	-20.00	PASS
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			2544.488	-37.44	-20.00	PASS
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			2335.01	-37.47	-20.00	PASS
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			2340.01	-37.70	-20.00	PASS
			2341.01	-37.97	-20.00	PASS
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			2347.01	-37.81	-20.00	PASS
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			2349.01	-36.57	-20.00	PASS
			2350.01	-37.80	-20.00	PASS
			2351.01	-36.39	-20.00	PASS
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			2357.01	-36.63	-20.00	PASS
			2358.01	-38.11	-20.00	PASS
			2359.01	-37.29	-20.00	PASS



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			2361.01	-37.86	-20.00	PASS
			2362.01	-37.80	-20.00	PASS
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			2364.5	-37.91	-10.00	PASS
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			2366.5	-38.36	-10.00	PASS
			2367.5	-37.89	-10.00	PASS
			2368.5	-37.84	-10.00	PASS
			2369.5	-37.61	-10.00	PASS
			2370.5	-36.73	-10.00	PASS
			2371.5	-37.20	-10.00	PASS
			2372.5	-37.96	-10.00	PASS
			2373.5	-37.27	-10.00	PASS
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			2377.5	-37.85	-10.00	PASS
			2378.5	-37.44	-10.00	PASS
			2379.5	-37.46	-10.00	PASS
			2380.5	-37.24	-10.00	PASS
			2381.5	-37.86	-10.00	PASS
			2382.5	-37.56	-10.00	PASS
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			2486	-16.23	-10.00	PASS
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			2489	-20.92	-10.00	PASS
			2490	-22.22	-10.00	PASS
			2491	-23.72	-10.00	PASS
			2492	-24.02	-10.00	PASS
			2493	-25.92	-10.00	PASS
			2494	-27.82	-10.00	PASS
			2495	-27.51	-10.00	PASS
			2496	-24.48	-10.00	PASS
			2497	-27.24	-10.00	PASS
			2498	-27.06	-10.00	PASS
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			2502	-28.83	-10.00	PASS



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			2504	-29.85	-10.00	PASS
			2505	-30.95	-10.00	PASS
			2506	-32.22	-10.00	PASS
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			2514	-37.29	-10.00	PASS
			2515	-37.04	-10.00	PASS
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			2517	-36.55	-10.00	PASS
			2518	-37.78	-10.00	PASS
			2519	-36.50	-10.00	PASS
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			2531.49	-37.83	-20.00	PASS
			2532.49	-37.73	-20.00	PASS
			2533.49	-37.24	-20.00	PASS
			2534.49	-36.25	-20.00	PASS
			2535.49	-37.43	-20.00	PASS
			2536.49	-36.63	-20.00	PASS
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			2549.49	-36.52	-20.00	PASS
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			2553.49	-36.92	-20.00	PASS
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11AX20SISO	Ant1	2412	2362.244	-37.32	-20.00	PASS
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			2364.372	-38.42	-20.00	PASS
			2365.372	-37.17	-20.00	PASS



			2366.372	-37.95	-20.00	PASS
			2367.372	-37.99	-20.00	PASS
			2368.372	-38.43	-20.00	PASS
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			2371.372	-37.26	-20.00	PASS
			2372.372	-36.55	-20.00	PASS
			2373.372	-35.46	-20.00	PASS
			2374.372	-37.39	-20.00	PASS
			2375.372	-37.73	-20.00	PASS
			2376.372	-37.17	-20.00	PASS
			2377.372	-36.39	-20.00	PASS
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			2379.372	-37.07	-20.00	PASS
			2380.372	-35.33	-20.00	PASS
			2381.372	-34.58	-10.00	PASS
			2381.5	-33.67	-10.00	PASS
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			2383.5	-34.53	-10.00	PASS
			2384.5	-32.66	-10.00	PASS
			2385.5	-33.85	-10.00	PASS
			2386.5	-32.11	-10.00	PASS
			2387.5	-31.67	-10.00	PASS
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			2390.5	-31.37	-10.00	PASS
			2391.5	-30.53	-10.00	PASS
			2392.5	-27.17	-10.00	PASS
			2393.5	-22.81	-10.00	PASS
			2394.5	-19.90	-10.00	PASS
			2395.5	-18.87	-10.00	PASS
			2396.5	-16.56	-10.00	PASS
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			2484	-37.61	-10.00	PASS
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			2486	-37.31	-10.00	PASS
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			2489	-36.83	-10.00	PASS
			2490	-37.28	-10.00	PASS
			2491	-38.35	-10.00	PASS
			2492	-37.72	-10.00	PASS
			2493	-37.22	-10.00	PASS
			2494	-38.16	-10.00	PASS
			2495	-36.53	-10.00	PASS
			2496	-36.67	-10.00	PASS
			2497	-37.12	-10.00	PASS
			2498	-37.61	-10.00	PASS
			2499	-37.04	-10.00	PASS
			2500	-37.95	-10.00	PASS
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			2502	-37.76	-10.00	PASS
			2502.128	-37.46	-10.00	PASS
			2503.128	-37.06	-20.00	PASS
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			2505.128	-37.98	-20.00	PASS
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			2507.128	-37.34	-20.00	PASS



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			2516.128	-37.54	-20.00	PASS
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			2373.374	-38.32	-20.00	PASS
			2374.374	-37.51	-20.00	PASS
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			2379.374	-37.98	-20.00	PASS
			2380.374	-37.93	-20.00	PASS
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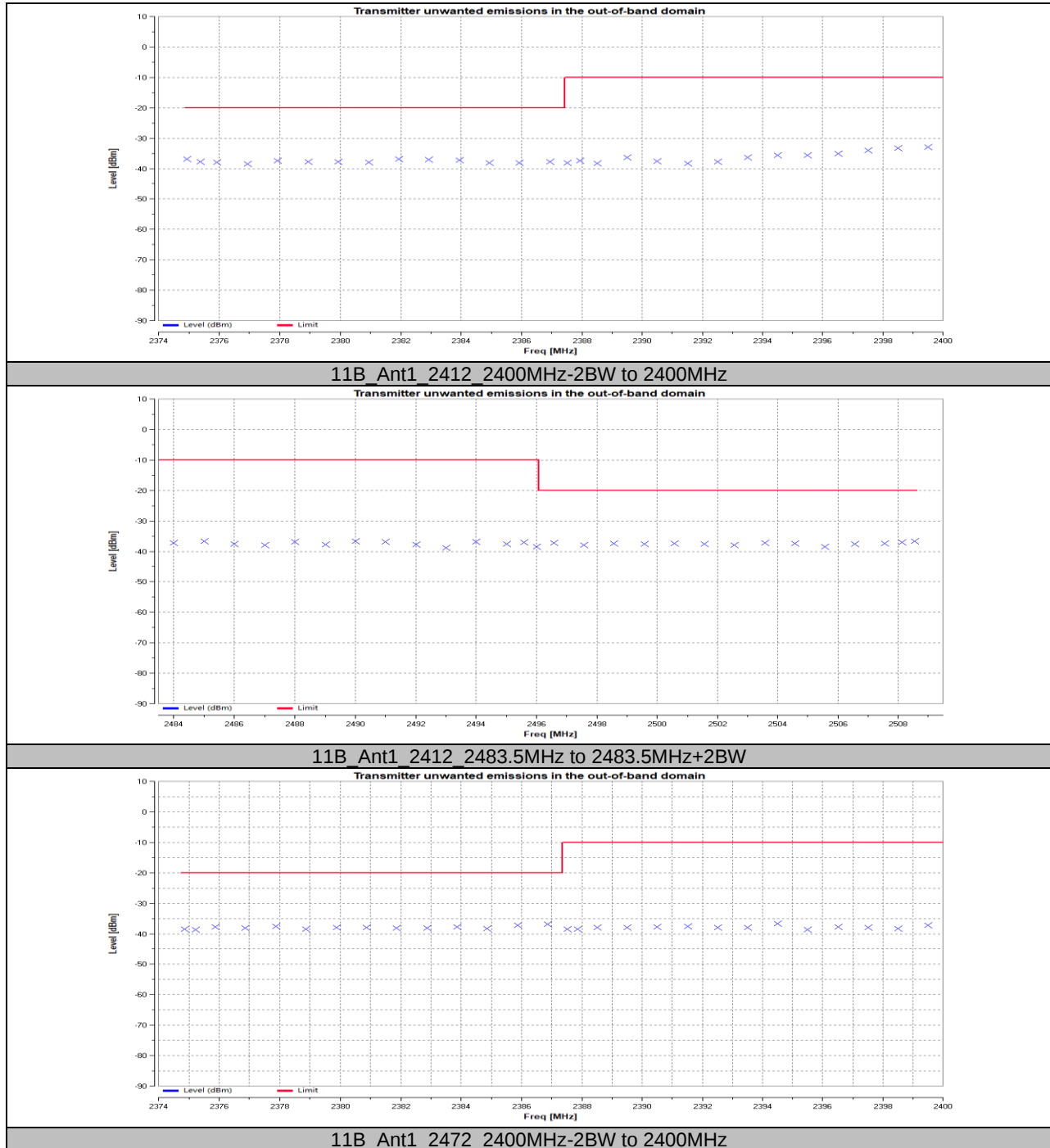


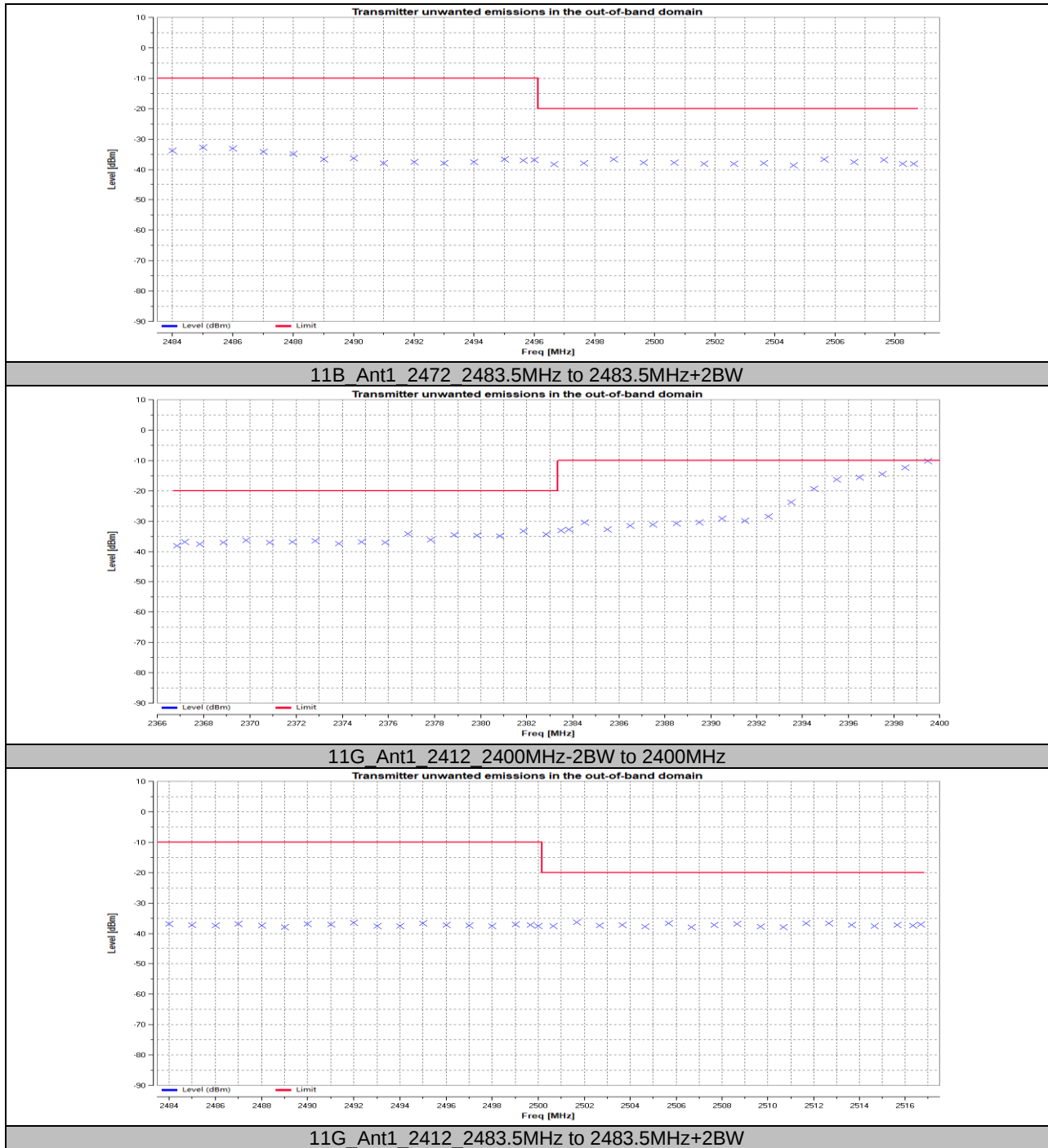
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			2399.5	-37.87	-10.00	PASS
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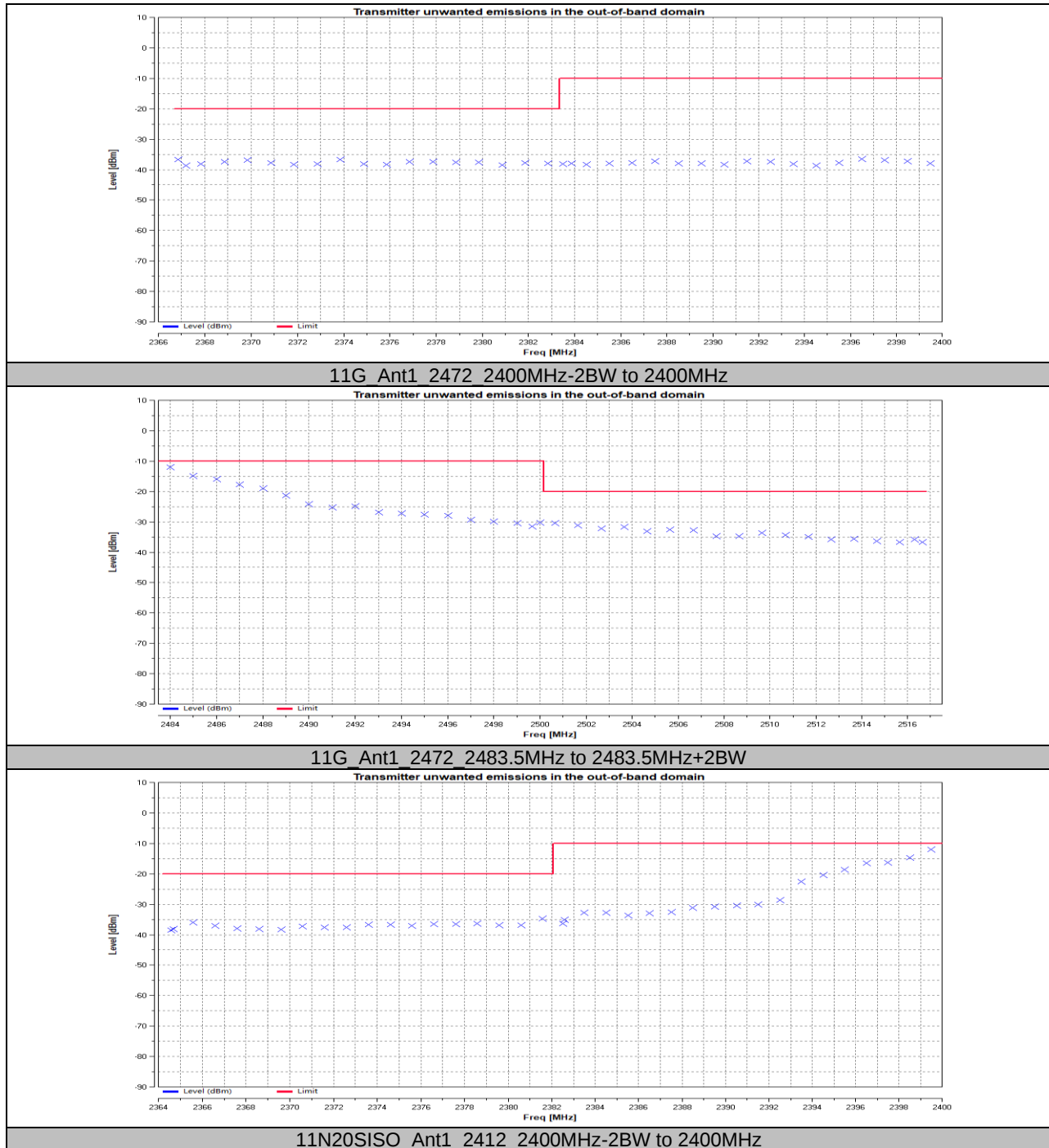


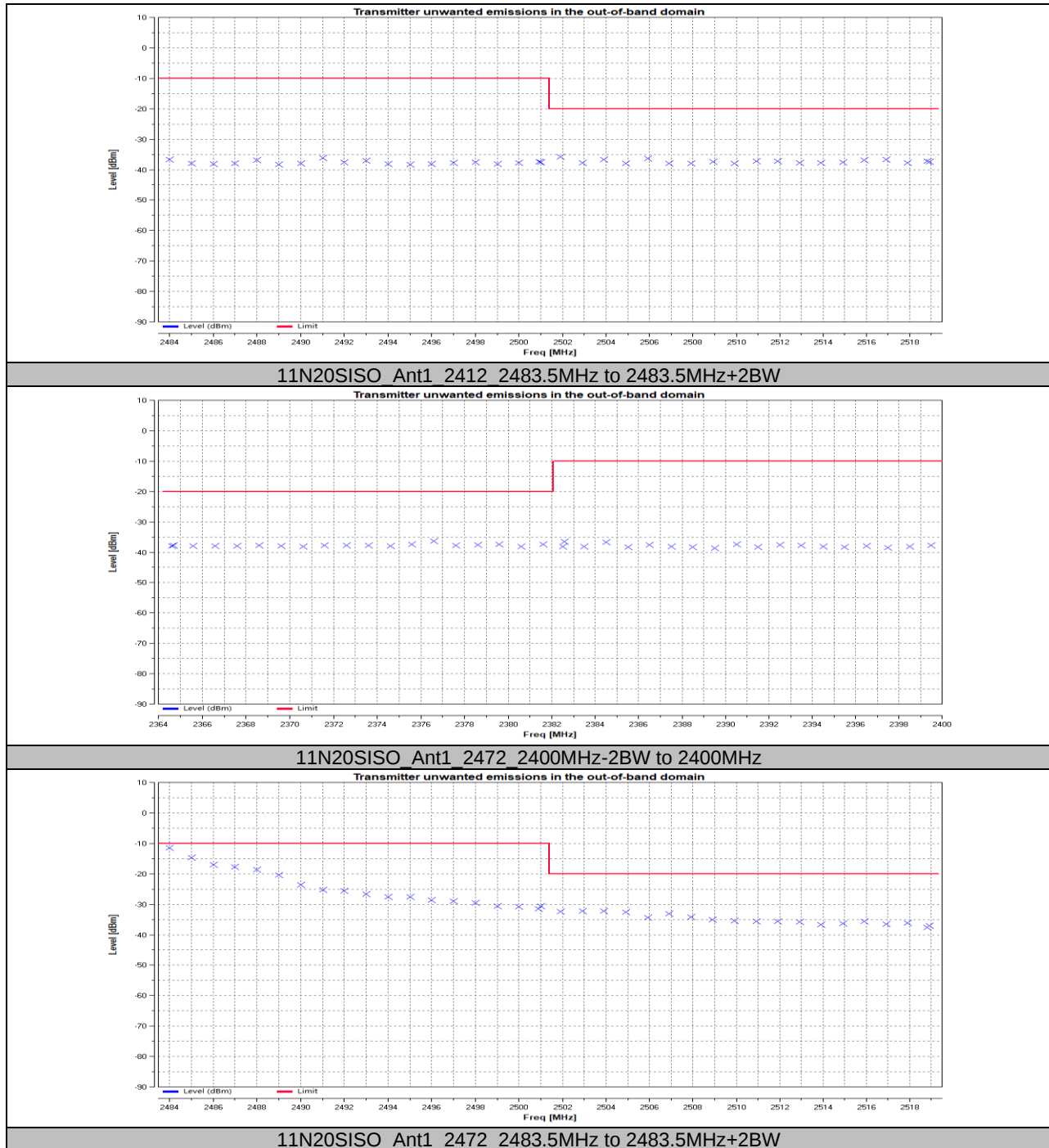
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			2533.982	-37.70	-20.00	PASS
			2534.982	-37.82	-20.00	PASS
			2535.982	-37.53	-20.00	PASS
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			2546.982	-37.78	-20.00	PASS
			2547.982	-37.22	-20.00	PASS
			2548.982	-36.57	-20.00	PASS
			2549.982	-37.60	-20.00	PASS
			2550.982	-36.31	-20.00	PASS
			2551.982	-37.75	-20.00	PASS
			2552.982	-37.38	-20.00	PASS
			2553.982	-37.35	-20.00	PASS
			2554.982	-37.30	-20.00	PASS
			2555.982	-37.73	-20.00	PASS
			2556.982	-36.94	-20.00	PASS
			2557.982	-37.11	-20.00	PASS
			2558.964	-38.01	-20.00	PASS
			2558.982	-36.68	-20.00	PASS

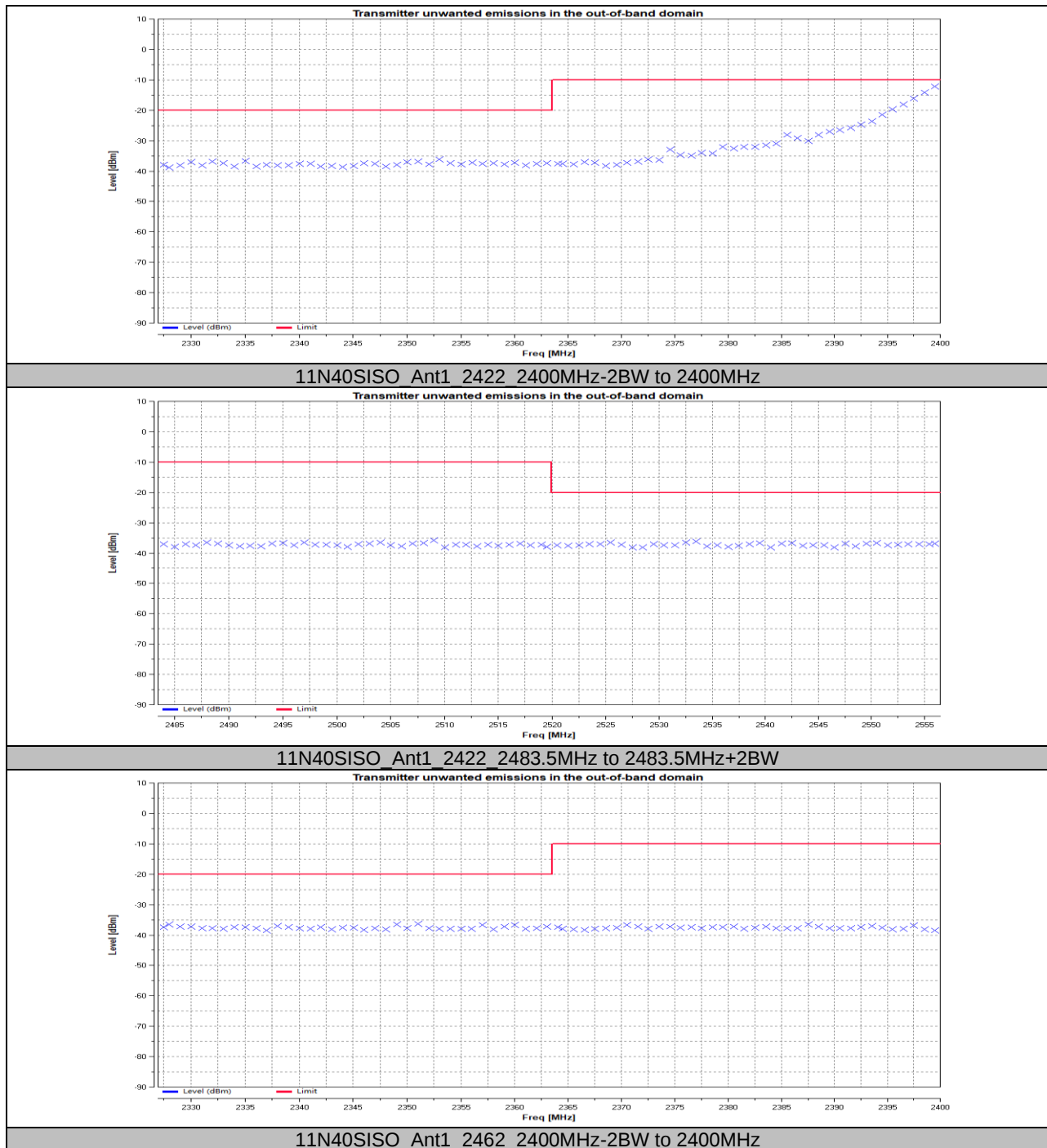
8.4.2. Test Graphs

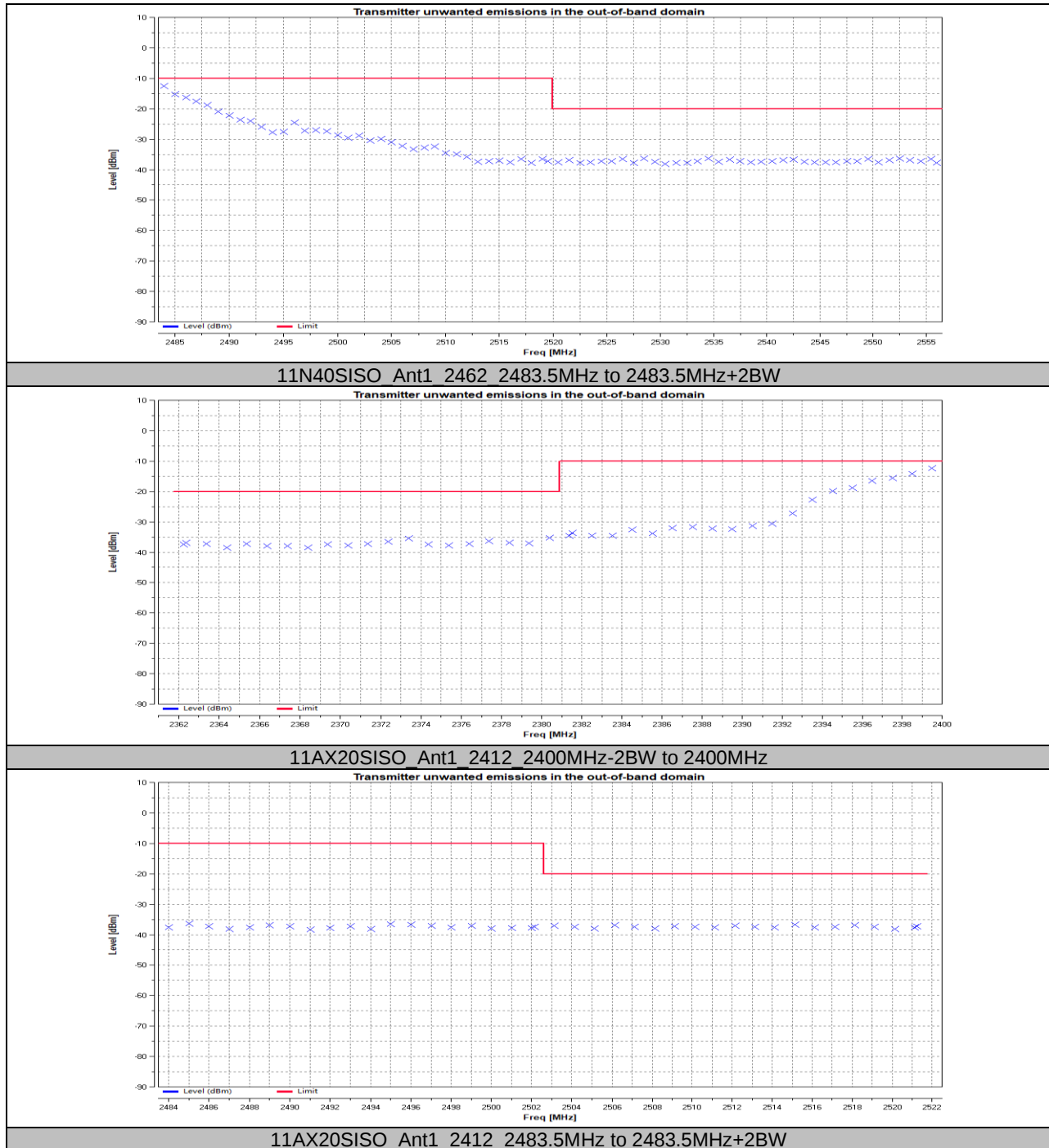


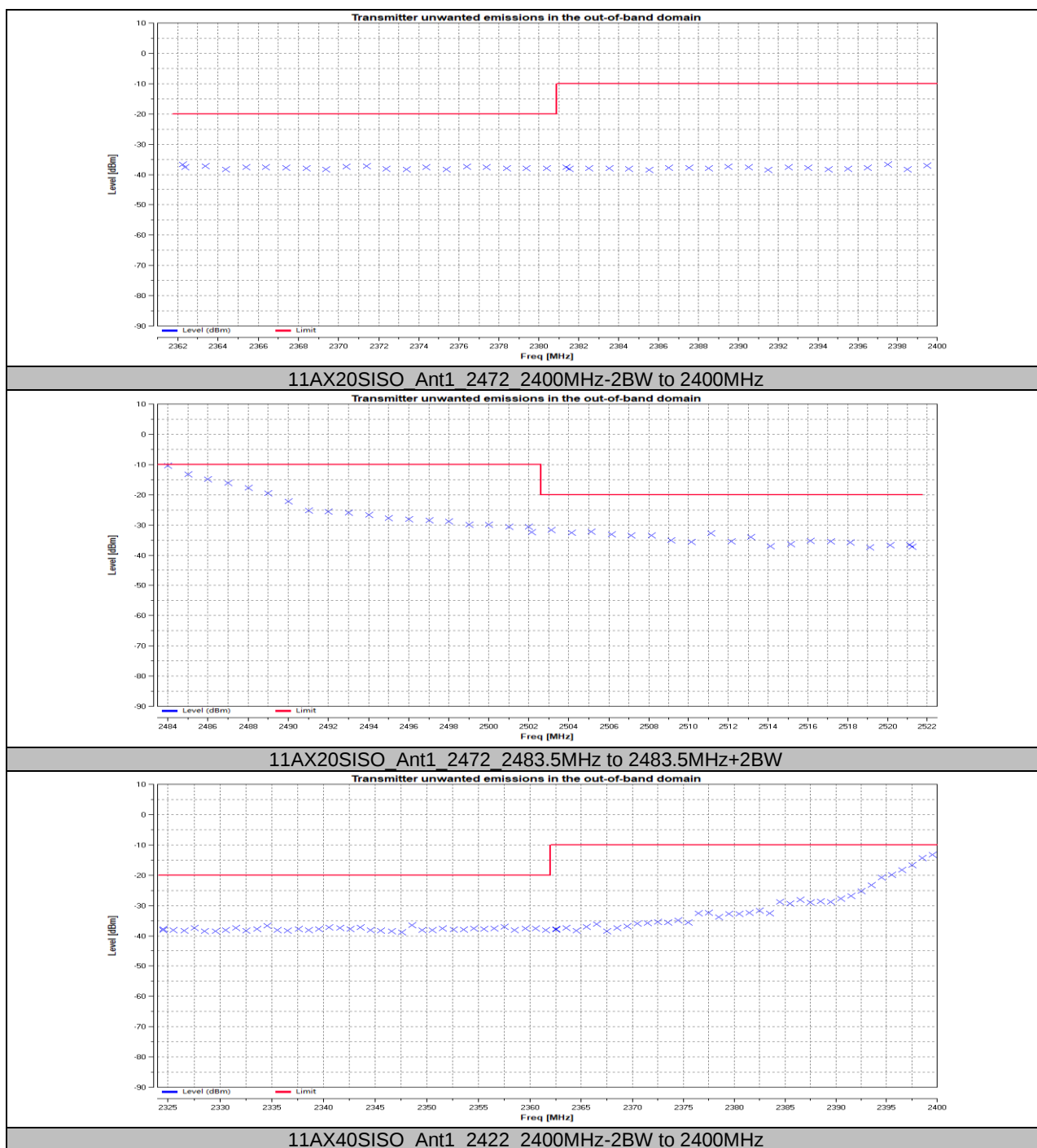


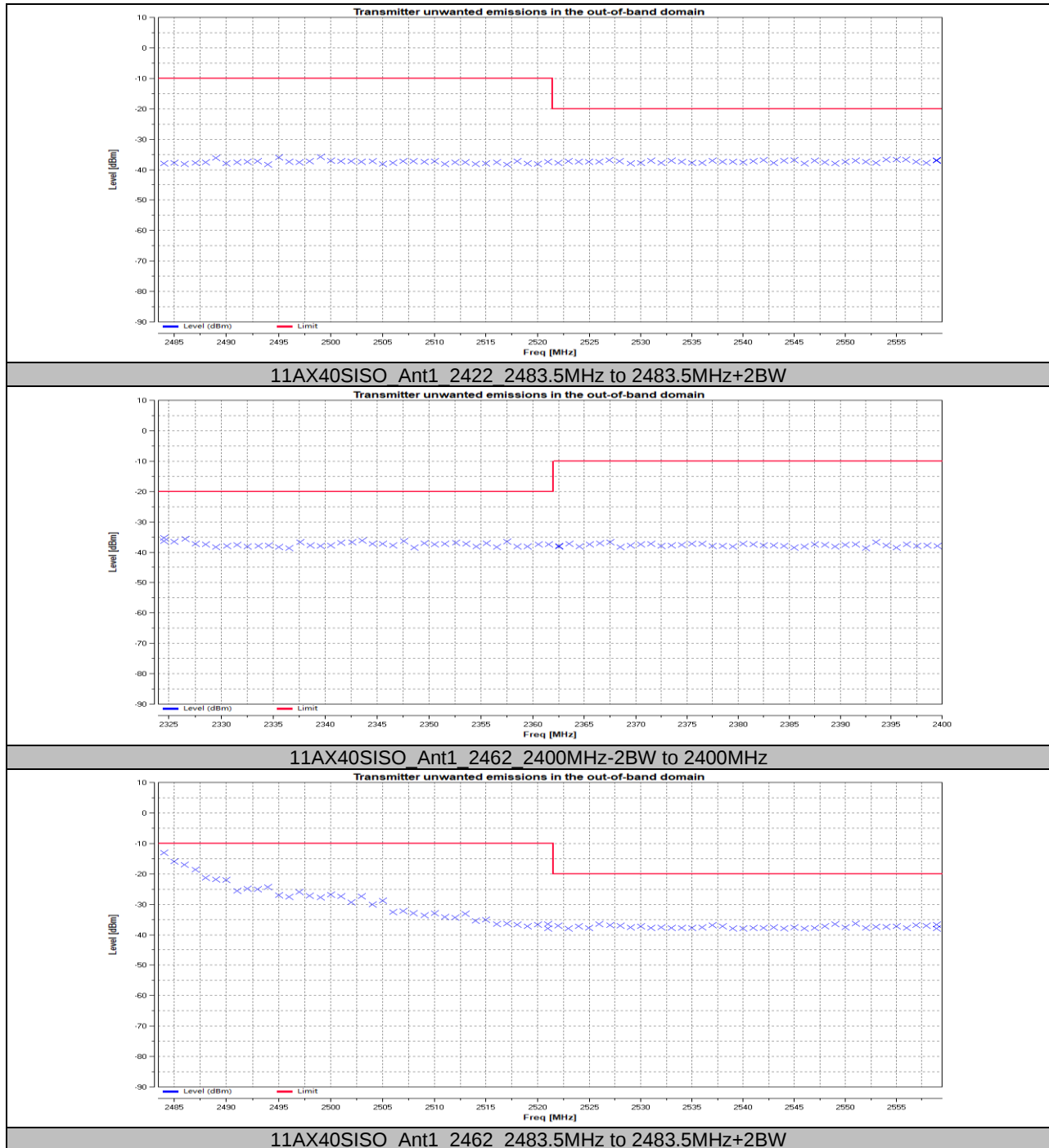












8.5. Appendix E: Transmitter Unwanted Emissions In The Spurious Domain

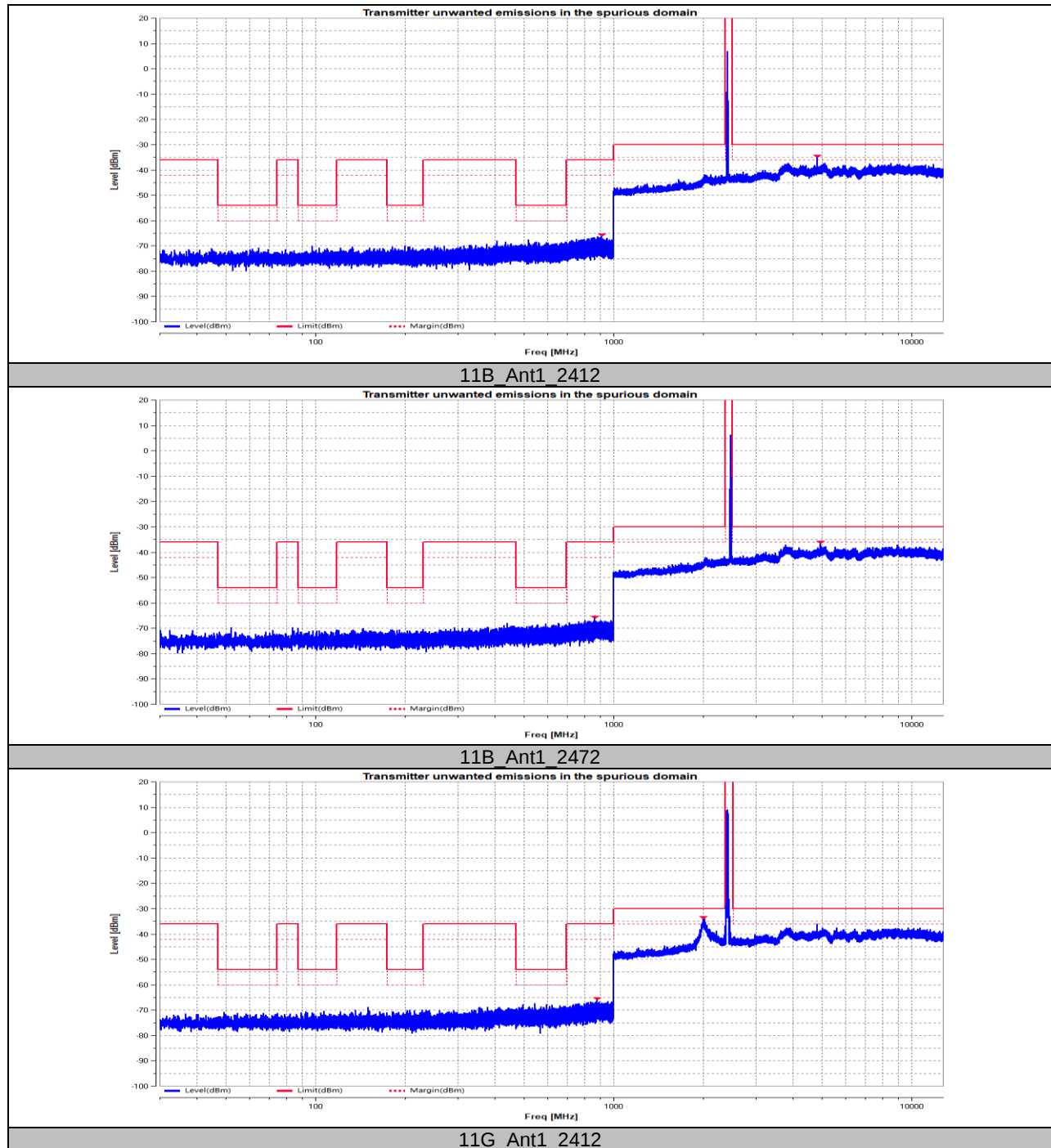
8.5.1. Conducted Test Result-Pre-scan

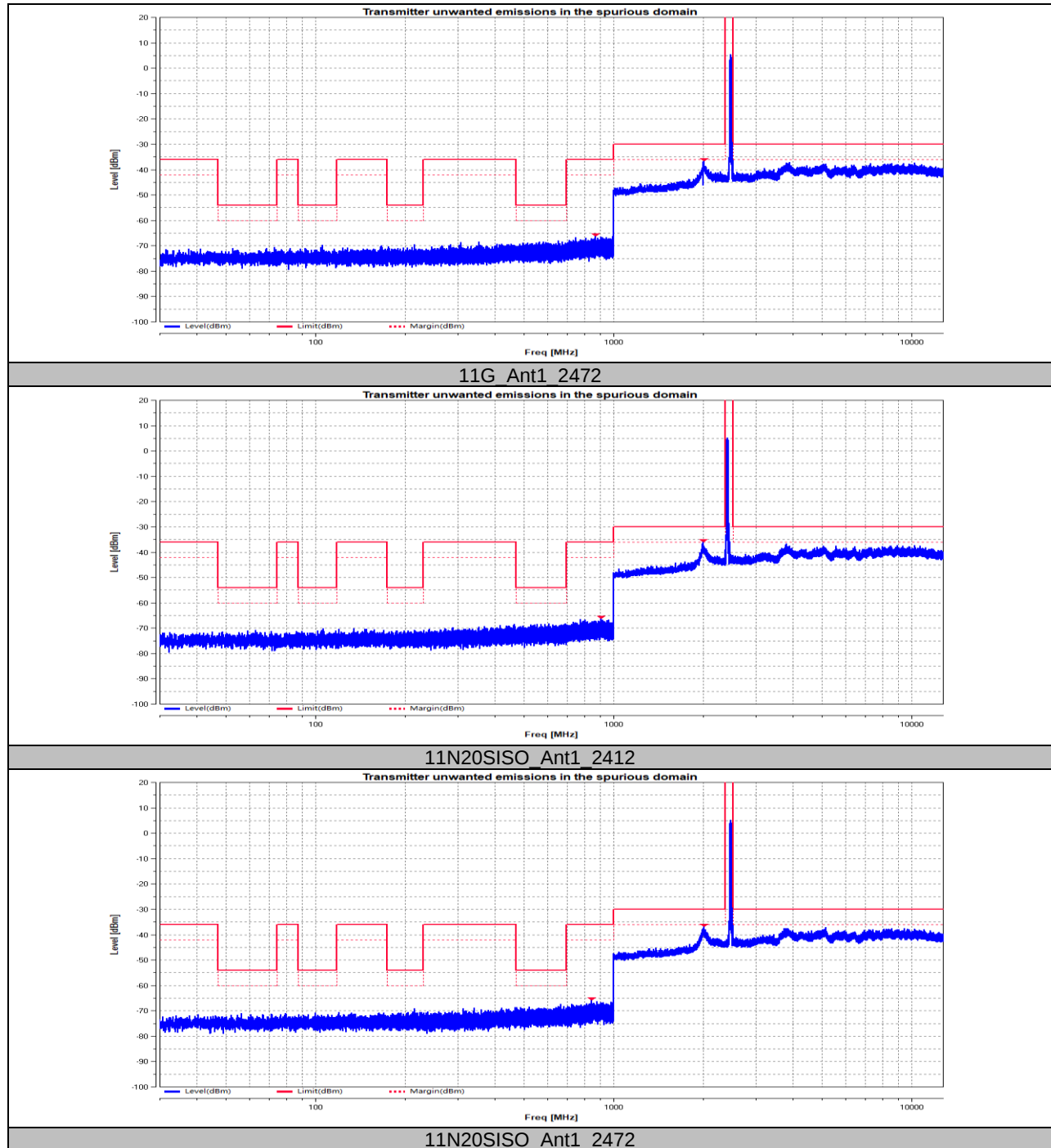
Test Mode	Antenna	Channel	Freq. [MHz]	Level[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	4823.97	-35.16	-30	See table below
		2472	865.29	-66.29	-36	PASS
			4943.82	-36.75	-30	PASS
11G	Ant1	2412	1996.82	-34.11	-30	See table below
			2033.25	-35.49	-30	See table below
		2472	870.66	-66.39	-36	PASS
			2005.83	-36.72	-30	PASS
11N20SISO	Ant1	2412	1992.52	-35.98	-30	See table below
		2472	844.92	-65.96	-36	PASS
			2004.27	-36.99	-30	PASS
11N40SISO	Ant1	2422	2011.32	-33.48	-30	See table below
		2462	2009.36	-33.9	-30	See table below
11AX20SISO	Ant1	2412	865.84	-64.71	-36	PASS
			2000.74	-36.9	-30	PASS
		2472	793.84	-66.33	-36	PASS
			3831.84	-36.8	-30	PASS
11AX40SISO	Ant1	2422	1965.49	-35.81	-30	See table below
			2006.23	-32.99	-30	See table below
		2462	1978.02	-35.46	-30	See table below
			2004.66	-32.94	-30	See table below
			2046.96	-35.35	-30	See table below

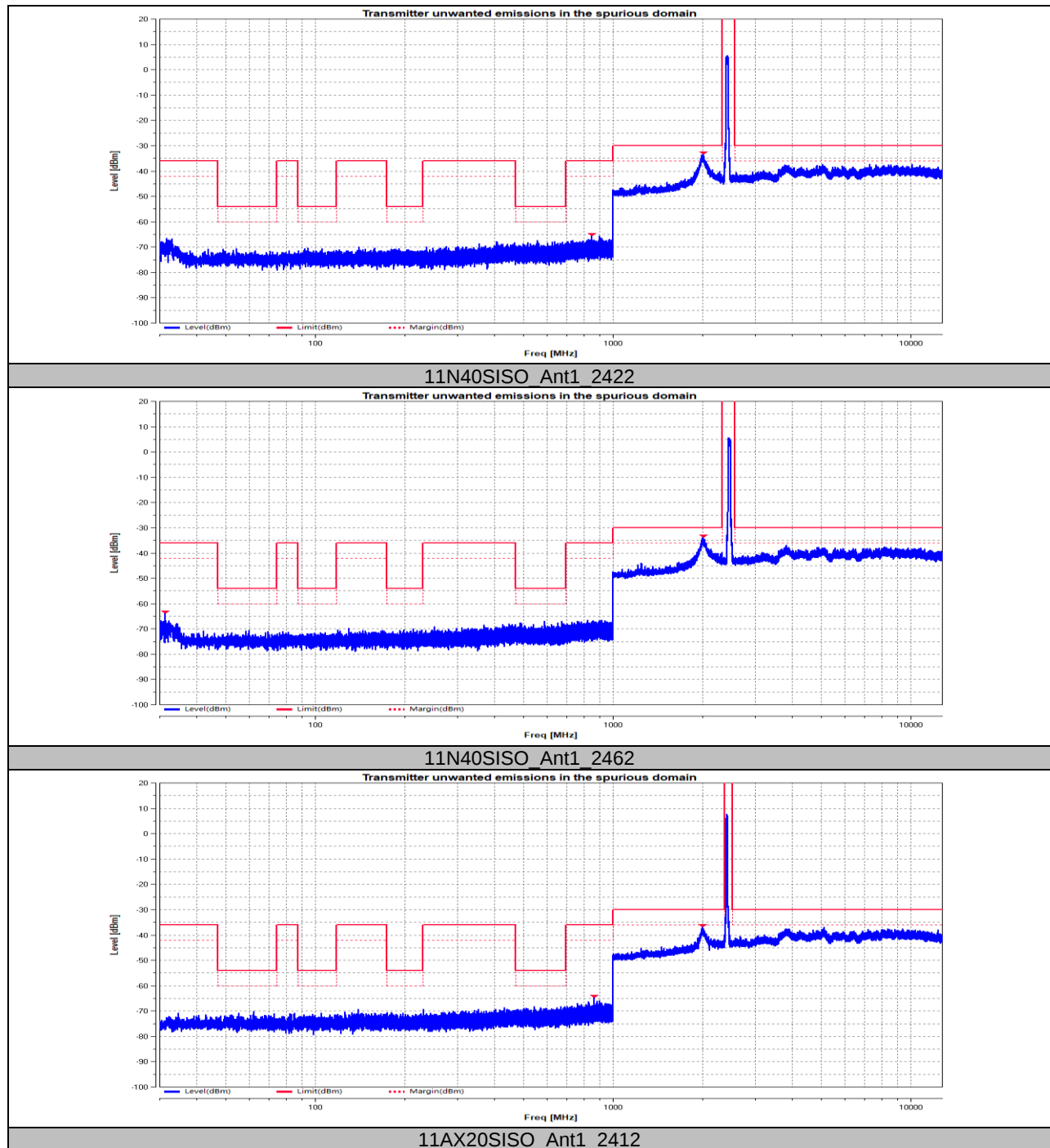
**8.5.2. Conducted Test Result- Emissions identified during the pre-scan**

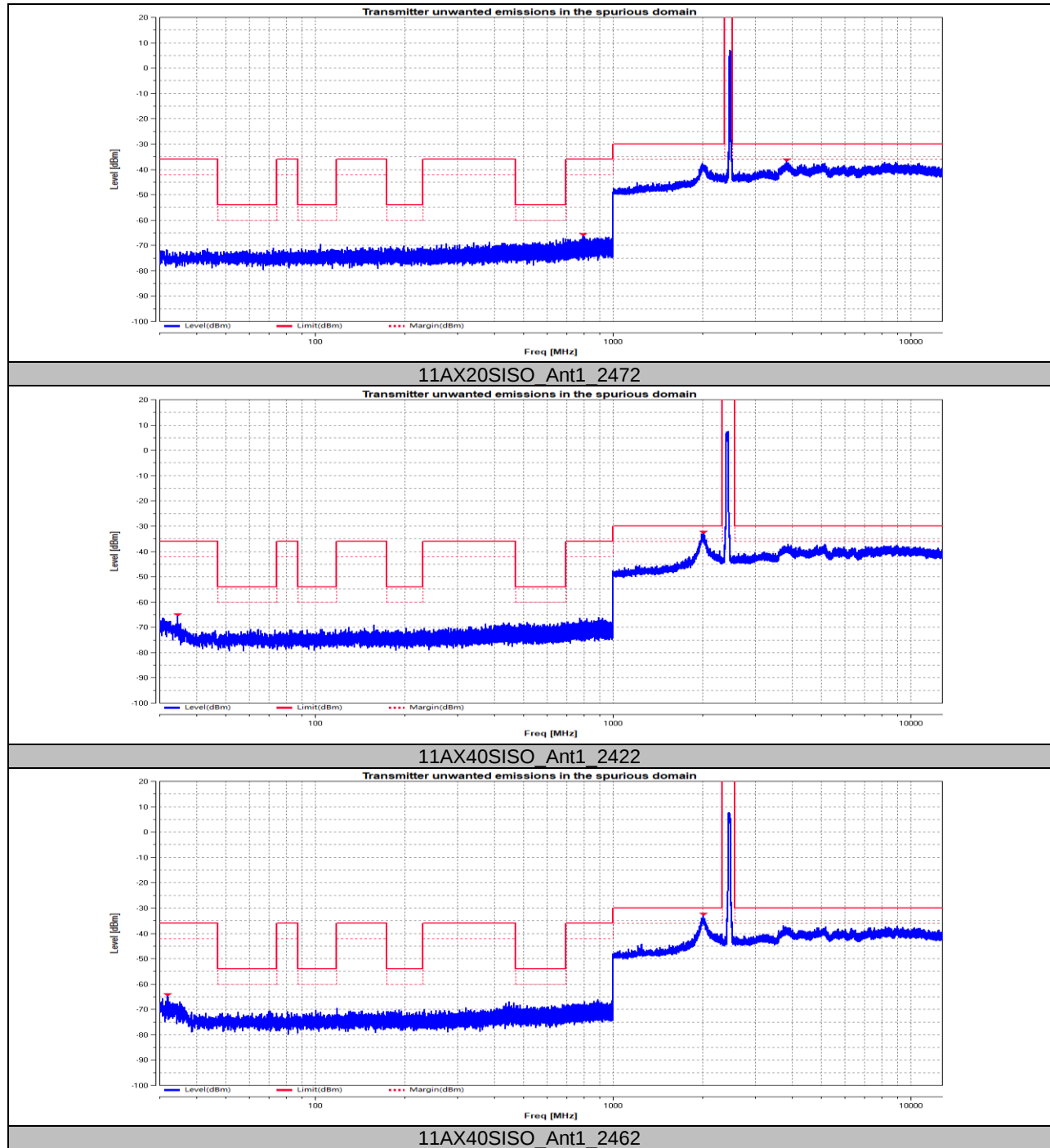
Test Mode	Antenna	Channel	Freq. [MHz]	Level[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	4823.97	-39.83	-30	PASS
11G	Ant1	2412	1996.82	-46.89	-30	PASS
			2033.25	-48.04	-30	PASS
11N20SISO	Ant1	2412	1992.52	-50.04	-30	PASS
11N40SISO	Ant1	2422	2011.32	-45.43	-30	PASS
		2462	2009.36	-45.63	-30	PASS
11AX40SISO	Ant1	2422	1965.49	-48.45	-30	PASS
			2006.23	-44.95	-30	PASS
		2462	1978.02	-47.37	-30	PASS
			2004.66	-45.78	-30	PASS
			2046.96	-47.66	-30	PASS

8.5.3. Conducted Test Graphs-Pre-scan

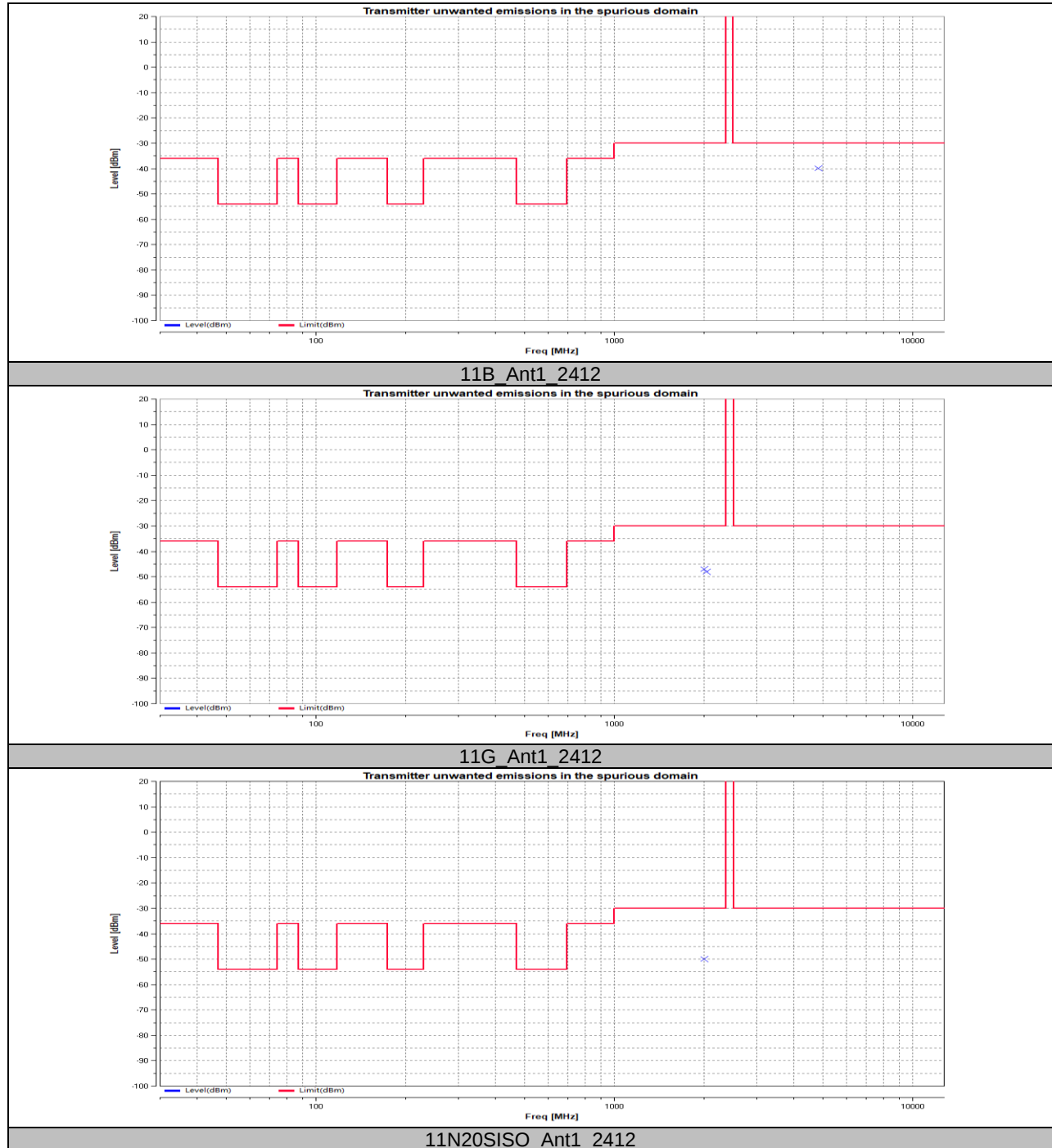


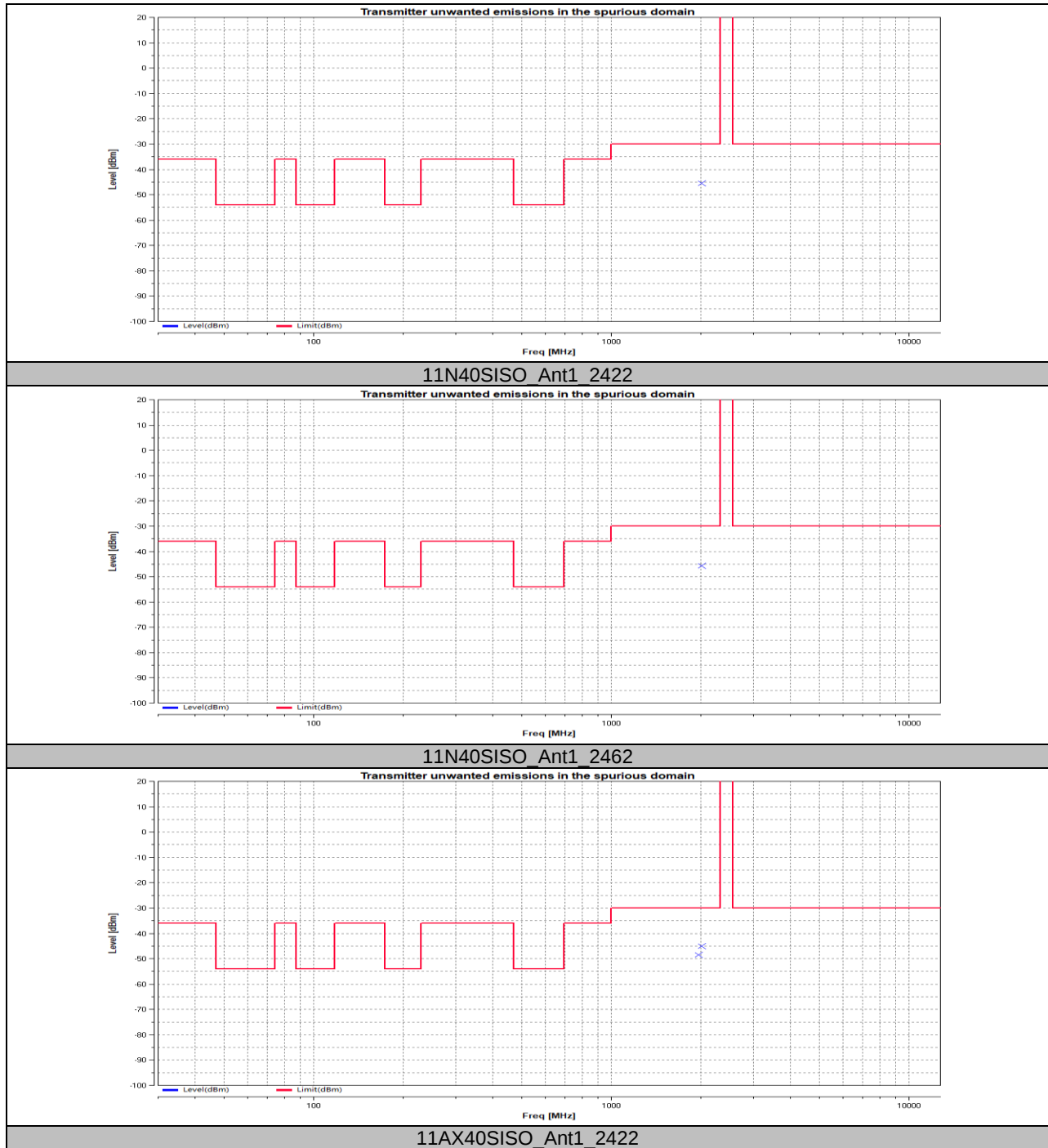


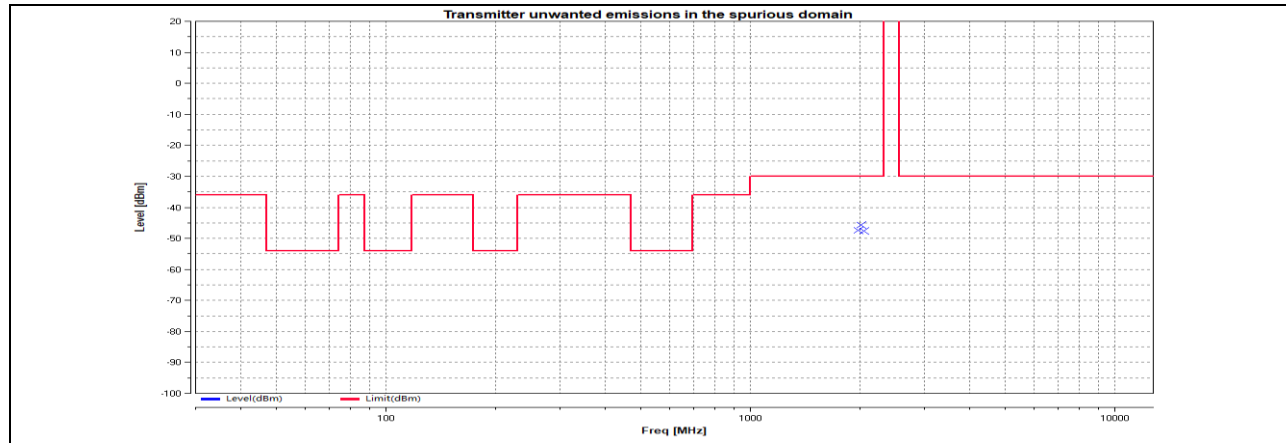




8.5.4. Conducted Test Graphs- Emissions identified during the pre-scan

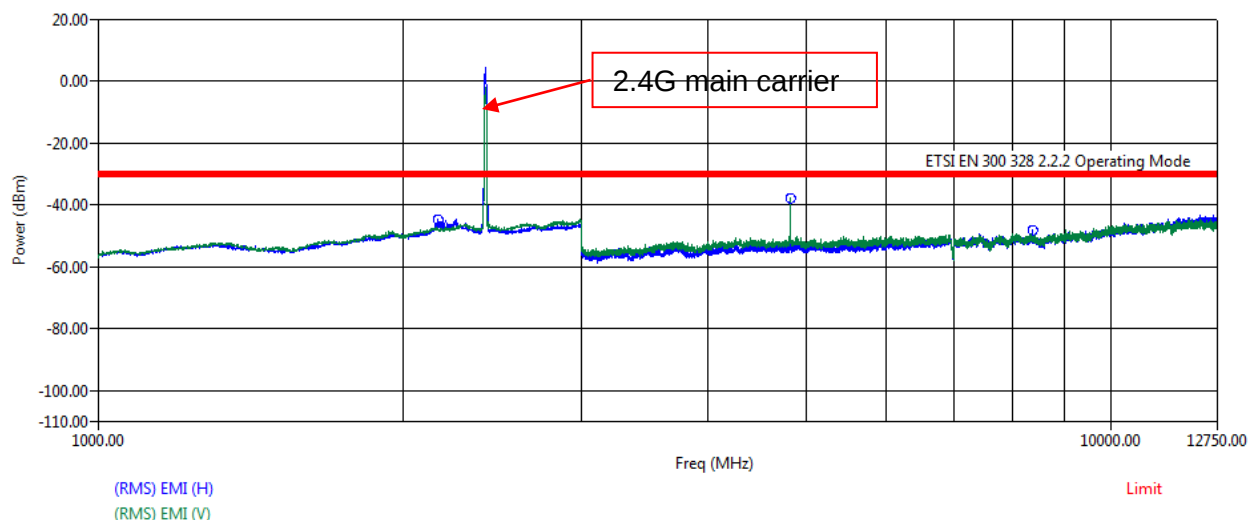






8.5.5. Radiated Test Result

Transmitter unwanted emissions in the spurious domain above 1 GHz			
Measurement Method	Radiated	Polar:	Horizontal/Vertical
Test Mode:	802.11b	Test Channel:	CH 1



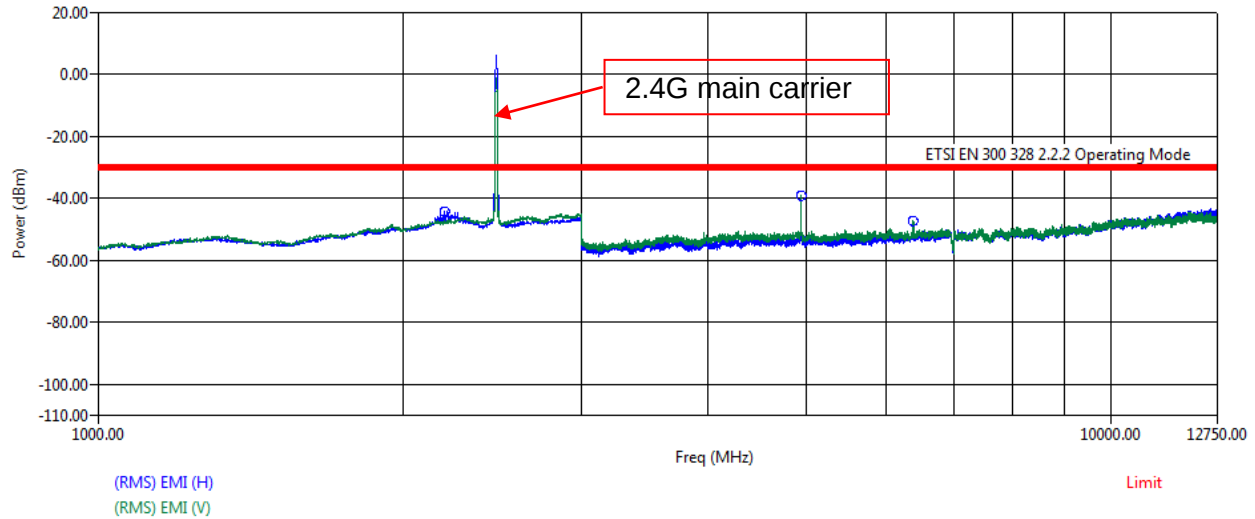
Freq (MHz)	(RMS) Trace (H) (dBuV)	ERP Factor (H) (dB)	Transducer (H) (dB)	Cable (H) (dB)	Preamp (H) (dB)	(RMS) EMI (H) (dBm)	Limit (dBm)	(RMS) Margin (H) (dB)
2165.00	11.69	-63.15	0.00	6.75	0.00	-44.70	-30.00	-14.70
4824.00	53.39	-60.72	0.00	10.28	43.31	-40.37	-30.00	-10.37
8361.00	41.45	-61.54	0.00	14.00	41.88	-47.97	-30.00	-17.97

Freq (MHz)	(RMS) Trace (V) (dBuV)	ERP Factor (V) (dB)	Transducer (V) (dB)	Cable (V) (dB)	Preamp (V) (dB)	(RMS) EMI (V) (dBm)	Limit (dBm)	(RMS) Margin (V) (dB)
2165.00	7.84	-62.10	0.00	6.75	0.00	-47.50	-30.00	-17.50
4824.00	53.96	-58.68	0.00	10.28	43.31	-37.76	-30.00	-7.76
8361.00	37.37	-61.10	0.00	14.00	41.88	-51.61	-30.00	-21.61

Note: EMI=Trace + Cable(Loss) + ERP Factor + Transducer
Margin=EMI – Limit

Note: 2.4G main carrier was recorded in the plot.

Transmitter unwanted emissions in the spurious domain above 1 GHz			
Measurement Method	Radiated	Polar:	Horizontal/Vertical
Test Mode:	802.11b	Test Channel:	CH 13



Freq (MHz)	(RMS) Trace (H) (dBuV)	ERP Factor (H) (dB)	Transducer (H) (dB)	Cable (H) (dB)	Preampl (H) (dB)	(RMS) EMI (H) (dBm)	Limit (dBm)	(RMS) Margin (H) (dB)
2200.00	12.05	-62.87	0.00	6.83	0.00	-43.99	-30.00	-13.99
4944.00	52.87	-60.55	0.00	10.49	43.30	-40.49	-30.00	-10.49
6383.50	36.99	-59.69	0.00	12.04	42.52	-53.19	-30.00	-23.19

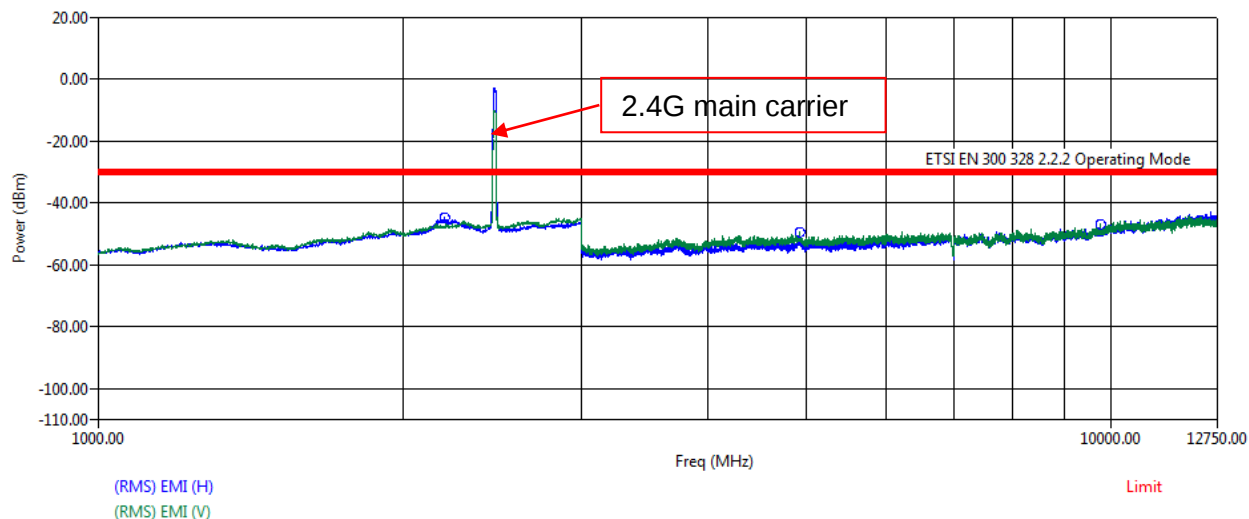
Freq (MHz)	(RMS) Trace (V) (dBuV)	ERP Factor (V) (dB)	Transducer (V) (dB)	Cable (V) (dB)	Preampl (V) (dB)	(RMS) EMI (V) (dBm)	Limit (dBm)	(RMS) Margin (V) (dB)
2200.00	7.52	-62.11	0.00	6.83	0.00	-47.76	-30.00	-17.76
4944.00	53.15	-59.22	0.00	10.49	43.30	-38.88	-30.00	-8.88
6383.50	42.09	-58.94	0.00	12.04	42.52	-47.33	-30.00	-17.33

Note: EMI=Trace + Cable(Loss) + ERP Factor + Transducer
Margin=EMI – Limit

Note: 2.4G main carrier was recorded in the plot.

Note: Both the two antennas had been tested, only the worst data was recorded in the report.

Transmitter unwanted emissions in the spurious domain above 1 GHz			
Measurement Method	Radiated	Polar:	Horizontal/Vertical
Test Mode:	802.11g	Test Channel:	CH 1



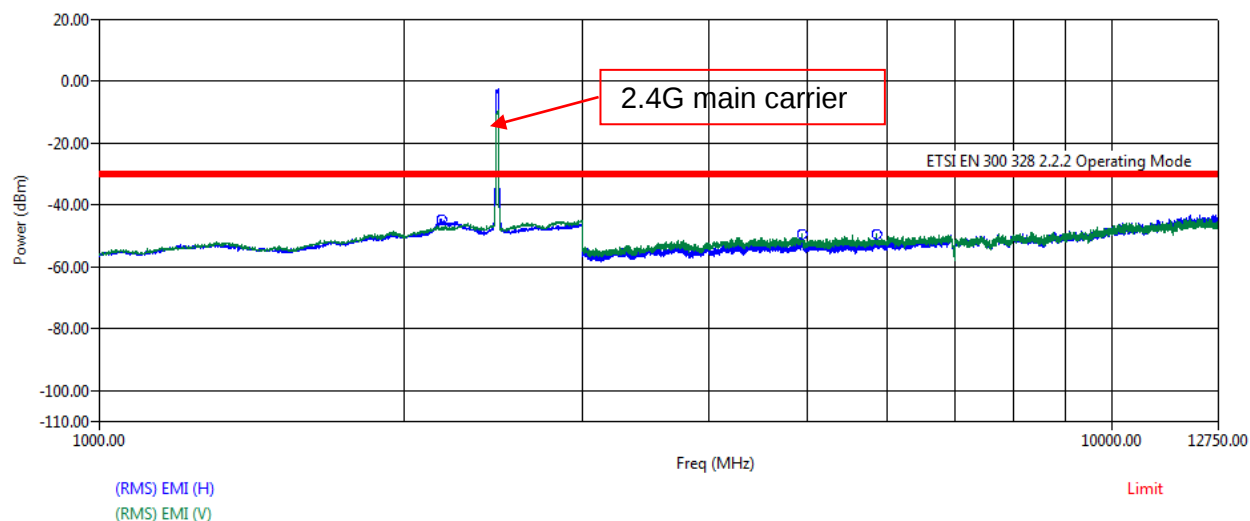
Freq (MHz)	(RMS) Trace (H) (dBuV)	ERP Factor (H) (dB)	Transducer (H) (dB)	Cable (H) (dB)	Preamp (H) (dB)	(RMS) EMI (H) (dBm)	Limit (dBm)	(RMS) Margin (H) (dB)
2198.50	11.41	-62.88	0.00	6.83	0.00	-44.64	-30.00	-14.64
4923.50	41.85	-60.45	0.00	10.53	43.31	-51.38	-30.00	-21.38
9761.50	37.82	-60.06	0.00	14.93	42.16	-49.47	-30.00	-19.47

Freq (MHz)	(RMS) Trace (V) (dBuV)	ERP Factor (V) (dB)	Transducer (V) (dB)	Cable (V) (dB)	Preamp (V) (dB)	(RMS) EMI (V) (dBm)	Limit (dBm)	(RMS) Margin (V) (dB)
2198.50	7.55	-62.11	0.00	6.83	0.00	-47.73	-30.00	-17.73
4923.50	42.29	-58.93	0.00	10.53	43.31	-49.41	-30.00	-19.41
9761.50	40.21	-59.70	0.00	14.93	42.16	-46.73	-30.00	-16.73

Note: EMI=Trace + Cable(Loss) + ERP Factor + Transducer
Margin=EMI – Limit

Note: 2.4G main carrier was recorded in the plot.

Transmitter unwanted emissions in the spurious domain above 1 GHz			
Measurement Method	Radiated	Polar:	Horizontal/Vertical
Test Mode:	802.11g	Test Channel:	CH 13



Freq (MHz)	(RMS) Trace (H) (dBuV)	ERP Factor (H) (dB)	Transducer (H) (dB)	Cable (H) (dB)	Preampl (H) (dB)	(RMS) EMI (H) (dBm)	Limit (dBm)	(RMS) Margin (H) (dB)
2179.00	11.76	-63.04	0.00	6.78	0.00	-44.49	-30.00	-14.49
4943.50	40.85	-60.55	0.00	10.49	43.30	-52.51	-30.00	-22.51
5861.50	38.45	-60.12	0.00	11.61	42.79	-52.86	-30.00	-22.86

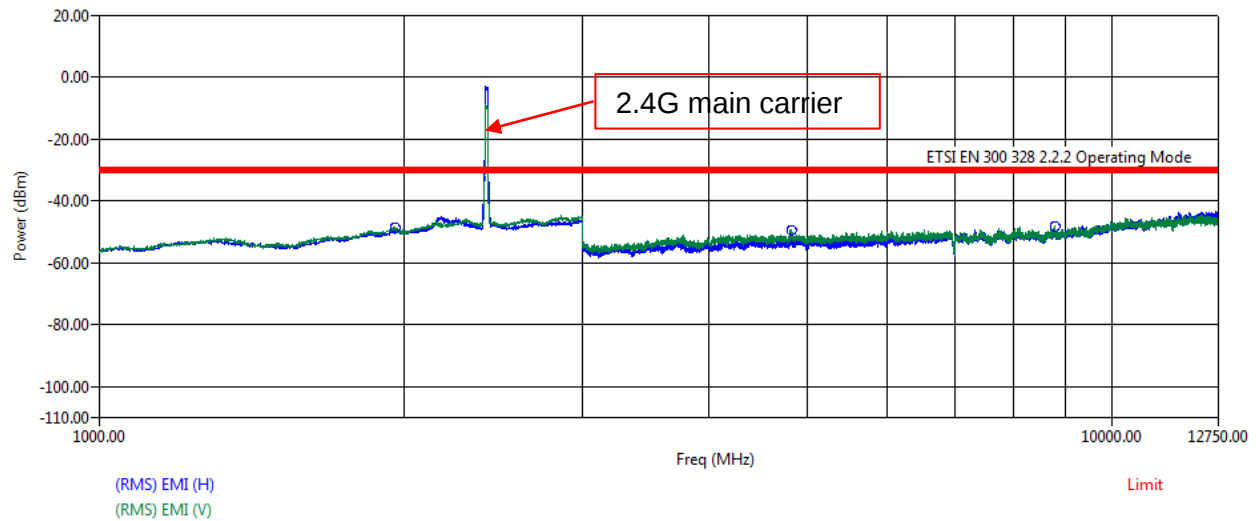
Freq (MHz)	(RMS) Trace (V) (dBuV)	ERP Factor (V) (dB)	Transducer (V) (dB)	Cable (V) (dB)	Preampl (V) (dB)	(RMS) EMI (V) (dBm)	Limit (dBm)	(RMS) Margin (V) (dB)
2179.00	8.09	-62.11	0.00	6.78	0.00	-47.23	-30.00	-17.23
4943.50	42.52	-59.21	0.00	10.49	43.30	-49.50	-30.00	-19.50
5861.50	40.97	-58.92	0.00	11.61	42.79	-49.14	-30.00	-19.14

Note: EMI=Trace + Cable(Loss) + ERP Factor + Transducer
Margin=EMI – Limit

Note: 2.4G main carrier was recorded in the plot.

Note: Both the two antennas had been tested, only the worst data was recorded in the report.

Transmitter unwanted emissions in the spurious domain above 1 GHz			
Measurement Method	Radiated	Polar:	Horizontal/Vertical
Test Mode:	802.11n HT20	Test Channel:	CH 1



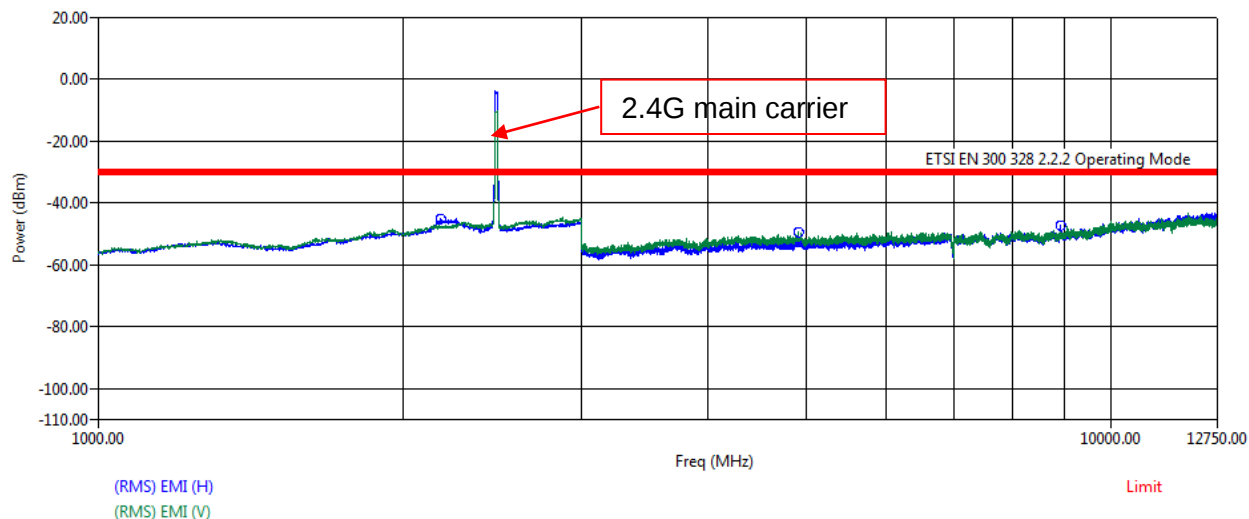
Freq (MHz)	(RMS) Trace (H) (dBuV)	ERP Factor (H) (dB)	Transducer (H) (dB)	Cable (H) (dB)	Preampl (H) (dB)	(RMS) EMI (H) (dBm)	Limit (dBm)	(RMS) Margin (H) (dB)
1956.50	6.97	-63.92	0.00	6.46	0.00	-50.49	-30.00	-20.49
4823.50	40.82	-60.73	0.00	10.27	43.31	-52.95	-30.00	-22.95
8787.50	38.53	-62.26	0.00	14.56	41.97	-51.15	-30.00	-21.15

Freq (MHz)	(RMS) Trace (V) (dBuV)	ERP Factor (V) (dB)	Transducer (V) (dB)	Cable (V) (dB)	Preampl (V) (dB)	(RMS) EMI (V) (dBm)	Limit (dBm)	(RMS) Margin (V) (dB)
1956.50	8.15	-63.03	0.00	6.46	0.00	-48.42	-30.00	-18.42
4823.50	42.43	-58.69	0.00	10.27	43.31	-49.30	-30.00	-19.30
8787.50	41.28	-62.00	0.00	14.56	41.97	-48.13	-30.00	-18.13

Note: EMI=Trace + Cable(Loss) + ERP Factor + Transducer
Margin=EMI – Limit

Note: 2.4G main carrier was recorded in the plot.

Transmitter unwanted emissions in the spurious domain above 1 GHz			
Measurement Method	Radiated	Polar:	Horizontal/Vertical
Test Mode:	802.11n HT20	Test Channel:	CH 13



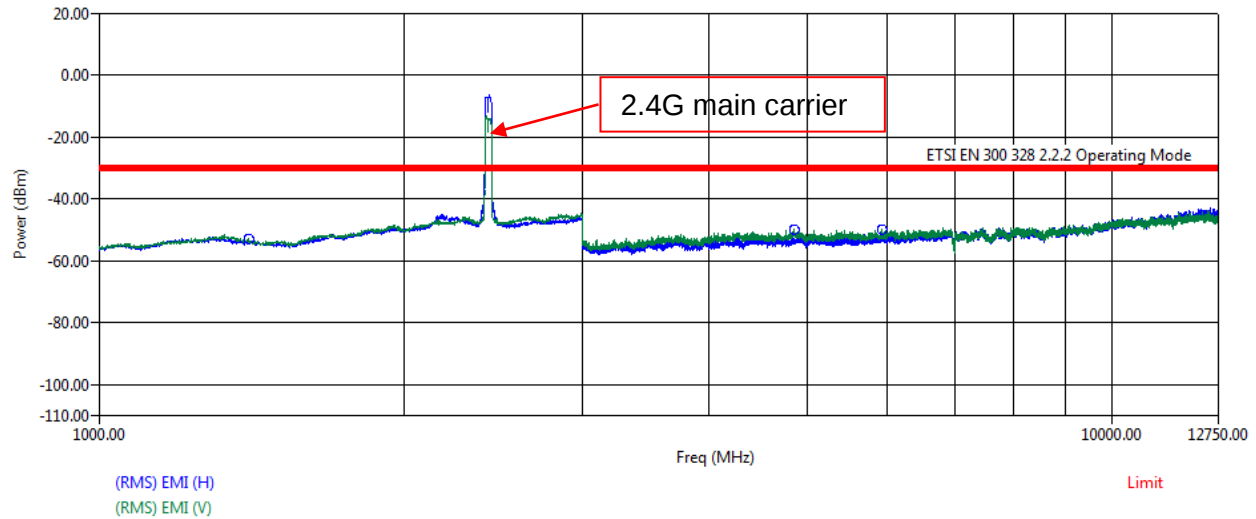
Freq (MHz)	(RMS) Trace (H) (dBuV)	ERP Factor (H) (dB)	Transducer (H) (dB)	Cable (H) (dB)	Preampl (H) (dB)	(RMS) EMI (H) (dBm)	Limit (dBm)	(RMS) Margin (H) (dB)
2180.00	11.43	-63.03	0.00	6.79	0.00	-44.81	-30.00	-14.81
4914.50	38.93	-60.41	0.00	10.55	43.31	-54.24	-30.00	-24.24
8930.50	42.49	-61.93	0.00	14.19	42.00	-47.25	-30.00	-17.25

Freq (MHz)	(RMS) Trace (V) (dBuV)	ERP Factor (V) (dB)	Transducer (V) (dB)	Cable (V) (dB)	Preampl (V) (dB)	(RMS) EMI (V) (dBm)	Limit (dBm)	(RMS) Margin (V) (dB)
2180.00	7.25	-62.11	0.00	6.79	0.00	-48.07	-30.00	-18.07
4914.50	42.09	-58.80	0.00	10.55	43.31	-49.47	-30.00	-19.47
8930.50	38.69	-61.86	0.00	14.19	42.00	-50.98	-30.00	-20.98

Note: EMI=Trace + Cable(Loss) + ERP Factor + Transducer
Margin=EMI – Limit

Note: 2.4G main carrier was recorded in the plot.

Transmitter unwanted emissions in the spurious domain above 1 GHz			
Measurement Method	Radiated	Polar:	Horizontal/Vertical
Test Mode:	802.11n HT40	Test Channel:	CH 3



Freq (MHz)	(RMS) Trace (H) (dBuV)	ERP Factor (H) (dB)	Transducer (H) (dB)	Cable (H) (dB)	Preamp (H) (dB)	(RMS) EMI (H) (dBm)	Limit (dBm)	(RMS) Margin (H) (dB)
1402.50	6.54	-66.08	0.00	5.46	0.00	-54.08	-30.00	-24.08
4859.50	39.86	-60.29	0.00	10.42	43.31	-53.32	-30.00	-23.32
5919.50	38.02	-60.19	0.00	11.65	42.76	-53.28	-30.00	-23.28

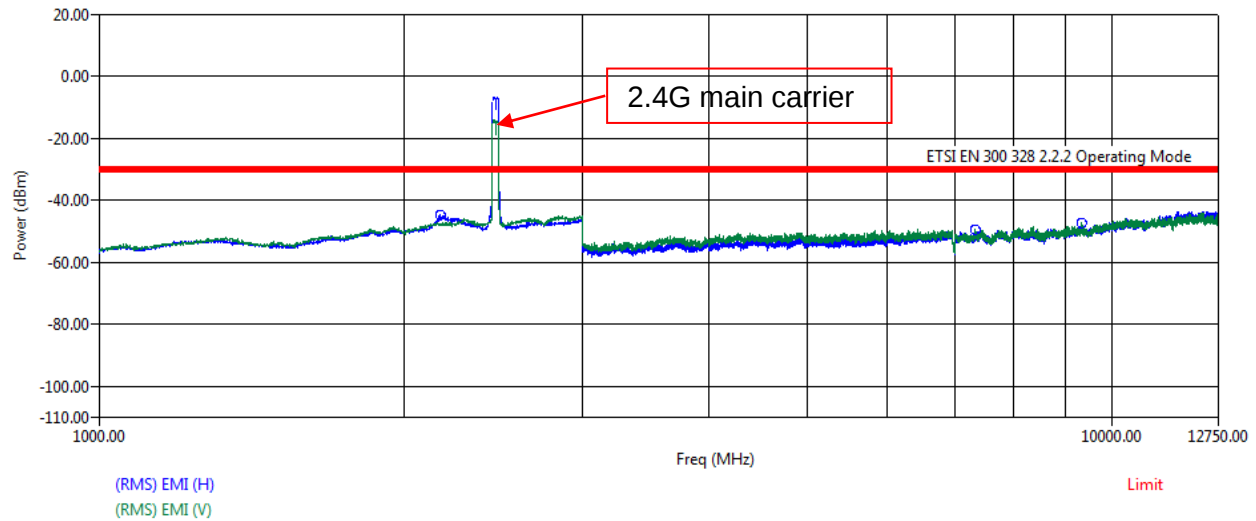
Freq (MHz)	(RMS) Trace (V) (dBuV)	ERP Factor (V) (dB)	Transducer (V) (dB)	Cable (V) (dB)	Preamp (V) (dB)	(RMS) EMI (V) (dBm)	Limit (dBm)	(RMS) Margin (V) (dB)
1402.50	7.58	-65.79	0.00	5.46	0.00	-52.75	-30.00	-22.75
4859.50	41.38	-58.28	0.00	10.42	43.31	-49.79	-30.00	-19.79
5919.50	40.63	-59.21	0.00	11.65	42.76	-49.69	-30.00	-19.69

Note: EMI=Trace + Cable(Loss) + ERP Factor + Transducer
Margin=EMI – Limit

Note: 2.4G main carrier was recorded in the plot.



Transmitter unwanted emissions in the spurious domain above 1 GHz			
Measurement Method	Radiated	Polar:	Horizontal/Vertical
Test Mode:	802.11n H40	Test Channel:	CH 11



Freq (MHz)	(RMS) Trace (H) (dBuV)	ERP Factor (H) (dB)	Transducer (H) (dB)	Cable (H) (dB)	Preamp (H) (dB)	(RMS) EMI (H) (dBm)	Limit (dBm)	(RMS) Margin (H) (dB)
2167.50	11.70	-63.13	0.00	6.76	0.00	-44.67	-30.00	-14.67
7337.00	40.48	-62.66	0.00	12.82	42.08	-51.44	-30.00	-21.44
9342.50	39.90	-61.59	0.00	14.59	42.08	-49.18	-30.00	-19.18

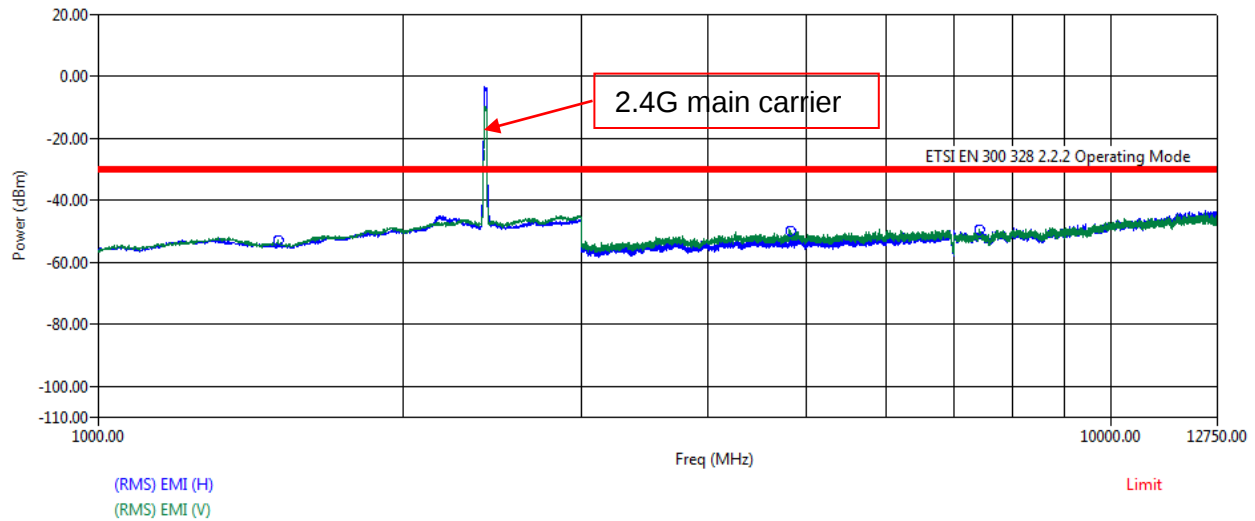
Freq (MHz)	(RMS) Trace (V) (dBuV)	ERP Factor (V) (dB)	Transducer (V) (dB)	Cable (V) (dB)	Preamp (V) (dB)	(RMS) EMI (V) (dBm)	Limit (dBm)	(RMS) Margin (V) (dB)
2167.50	7.57	-62.10	0.00	6.76	0.00	-47.78	-30.00	-17.78
7337.00	42.64	-62.50	0.00	12.82	42.08	-49.12	-30.00	-19.12
9342.50	41.93	-61.53	0.00	14.59	42.08	-47.09	-30.00	-17.09

Note: EMI=Trace + Cable(Loss) + ERP Factor + Transducer
Margin=EMI – Limit

Note: 2.4G main carrier was recorded in the plot.



Transmitter unwanted emissions in the spurious domain above 1 GHz			
Measurement Method	Radiated	Polar:	Horizontal/Vertical
Test Mode:	802.11ax HE20	Test Channel:	CH 1



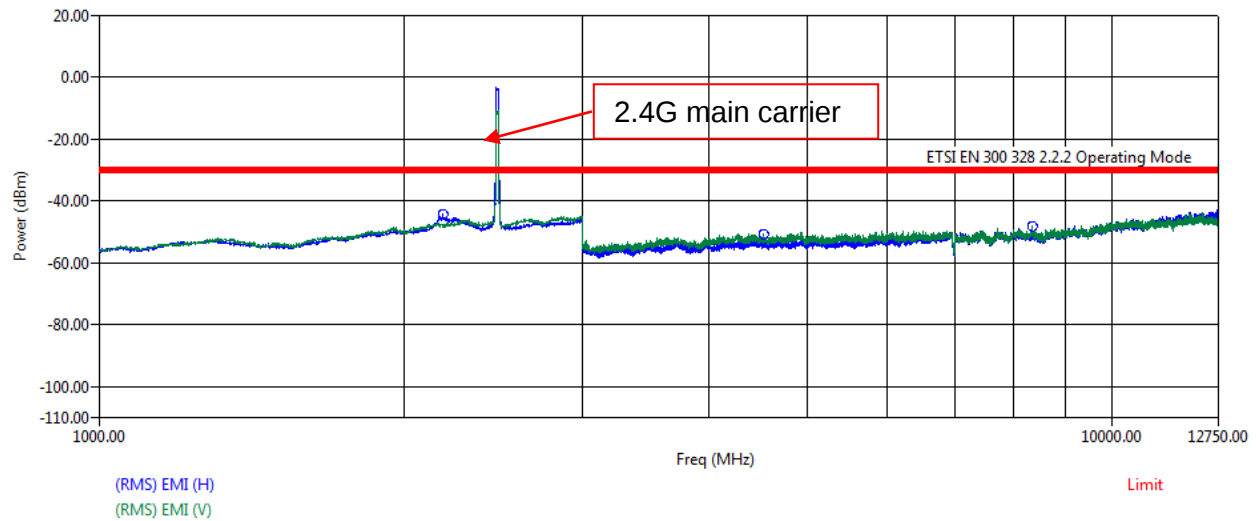
Freq (MHz)	(RMS) Trace (H) (dBuV)	ERP Factor (H) (dB)	Transducer (H) (dB)	Cable (H) (dB)	Preamp (H) (dB)	(RMS) EMI (H) (dBm)	Limit (dBm)	(RMS) Margin (H) (dB)
1503.50	6.26	-67.26	0.00	5.59	0.00	-55.42	-30.00	-25.42
4822.00	40.82	-60.75	0.00	10.27	43.31	-52.98	-30.00	-22.98
7422.50	40.11	-62.51	0.00	13.17	42.04	-51.27	-30.00	-21.27

Freq (MHz)	(RMS) Trace (V) (dBuV)	ERP Factor (V) (dB)	Transducer (V) (dB)	Cable (V) (dB)	Preamp (V) (dB)	(RMS) EMI (V) (dBm)	Limit (dBm)	(RMS) Margin (V) (dB)
1503.50	7.85	-66.33	0.00	5.59	0.00	-52.89	-30.00	-22.89
4822.00	42.17	-58.72	0.00	10.27	43.31	-49.60	-30.00	-19.60
7422.50	42.12	-62.34	0.00	13.17	42.04	-49.10	-30.00	-19.10

Note: EMI=Trace + Cable(Loss) + ERP Factor + Transducer
Margin=EMI – Limit

Note: 2.4G main carrier was recorded in the plot.

Transmitter unwanted emissions in the spurious domain above 1 GHz			
Measurement Method	Radiated	Polar:	Horizontal/Vertical
Test Mode:	802.11ax HE20	Test Channel:	CH 13



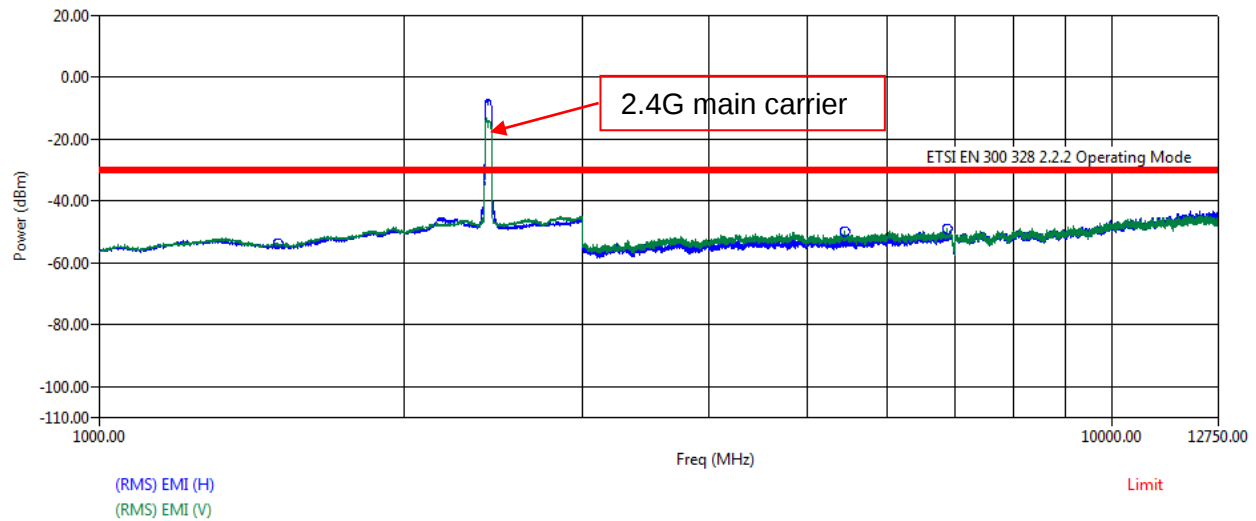
Freq (MHz)	(RMS) Trace (H) (dBuV)	ERP Factor (H) (dB)	Transducer (H) (dB)	Cable (H) (dB)	Preamp (H) (dB)	(RMS) EMI (H) (dBm)	Limit (dBm)	(RMS) Margin (H) (dB)
2181.00	12.31	-63.02	0.00	6.79	0.00	-43.92	-30.00	-13.92
4533.00	40.22	-61.00	0.00	10.10	43.34	-54.02	-30.00	-24.02
8348.50	38.25	-61.70	0.00	14.05	41.88	-51.28	-30.00	-21.28

Freq (MHz)	(RMS) Trace (V) (dBuV)	ERP Factor (V) (dB)	Transducer (V) (dB)	Cable (V) (dB)	Preamp (V) (dB)	(RMS) EMI (V) (dBm)	Limit (dBm)	(RMS) Margin (V) (dB)
2181.00	7.50	-62.11	0.00	6.79	0.00	-47.82	-30.00	-17.82
4533.00	42.11	-59.54	0.00	10.10	43.34	-50.68	-30.00	-20.68
8348.50	41.01	-61.24	0.00	14.05	41.88	-48.05	-30.00	-18.05

Note: EMI=Trace + Cable(Loss) + ERP Factor + Transducer
Margin=EMI – Limit

Note: 2.4G main carrier was recorded in the plot.

Transmitter unwanted emissions in the spurious domain above 1 GHz			
Measurement Method	Radiated	Polar:	Horizontal/Vertical
Test Mode:	802.11ax HE40	Test Channel:	CH 3



Freq (MHz)	(RMS) Trace (H) (dBuV)	ERP Factor (H) (dB)	Transducer (H) (dB)	Cable (H) (dB)	Preamp (H) (dB)	(RMS) EMI (H) (dBm)	Limit (dBm)	(RMS) Margin (H) (dB)
1500.00	6.58	-67.26	0.00	5.58	0.00	-55.10	-30.00	-25.10
5447.00	38.49	-60.42	0.00	10.78	43.03	-54.18	-30.00	-24.18
6882.00	36.46	-58.70	0.00	12.25	42.28	-52.27	-30.00	-22.27

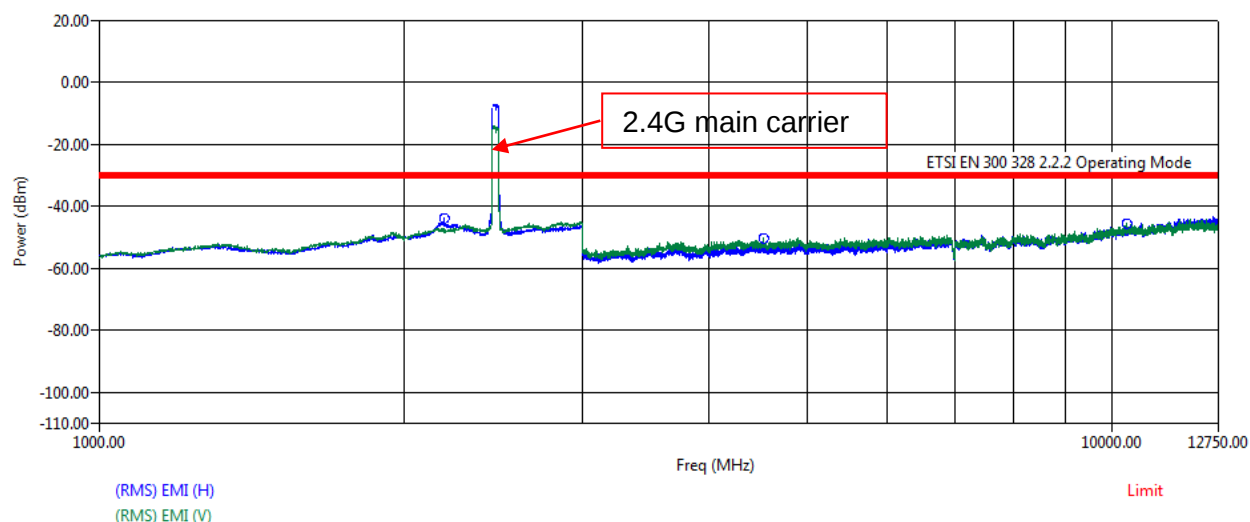
Freq (MHz)	(RMS) Trace (V) (dBuV)	ERP Factor (V) (dB)	Transducer (V) (dB)	Cable (V) (dB)	Preamp (V) (dB)	(RMS) EMI (V) (dBm)	Limit (dBm)	(RMS) Margin (V) (dB)
1500.00	7.29	-66.28	0.00	5.58	0.00	-53.41	-30.00	-23.41
5447.00	41.27	-58.82	0.00	10.78	43.03	-49.80	-30.00	-19.80
6882.00	39.40	-58.05	0.00	12.25	42.28	-48.69	-30.00	-18.69

Note: EMI=Trace + Cable(Loss) + ERP Factor + Transducer
Margin=EMI – Limit

Note: 2.4G main carrier was recorded in the plot.



Transmitter unwanted emissions in the spurious domain above 1 GHz			
Measurement Method	Radiated	Polar:	Horizontal/Vertical
Test Mode:	802.11ax HE40	Test Channel:	CH 11



Freq (MHz)	(RMS) Trace (H) (dBuV)	ERP Factor (H) (dB)	Transducer (H) (dB)	Cable (H) (dB)	Preamp (H) (dB)	(RMS) EMI (H) (dBm)	Limit (dBm)	(RMS) Margin (H) (dB)
2188.00	12.40	-62.97	0.00	6.80	0.00	-43.77	-30.00	-13.77
4528.50	39.38	-61.02	0.00	10.09	43.34	-54.89	-30.00	-24.89
10334.50	38.43	-59.88	0.00	15.91	42.20	-47.75	-30.00	-17.75

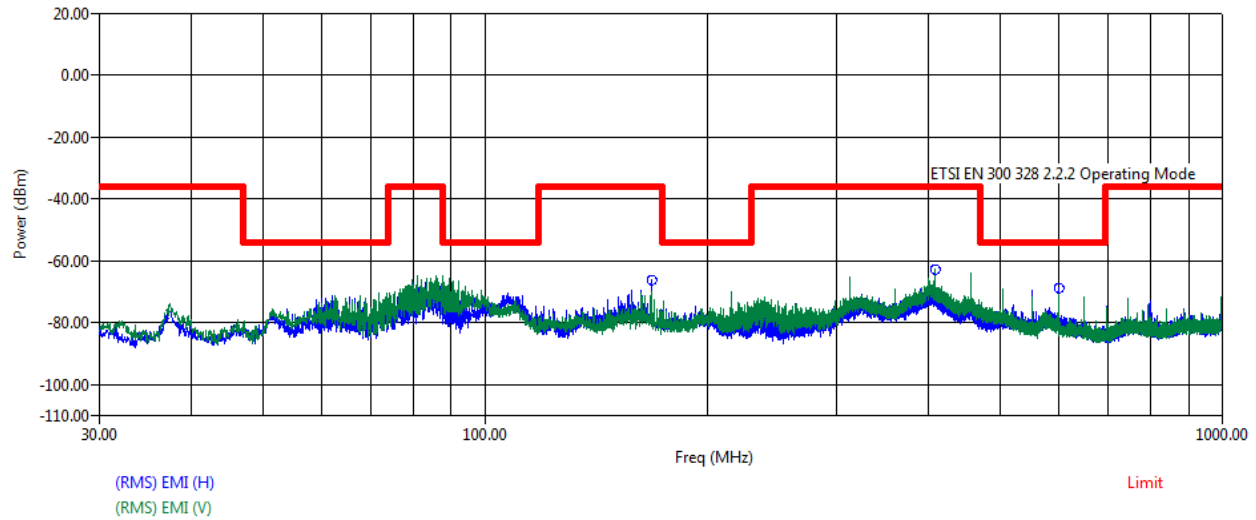
Freq (MHz)	(RMS) Trace (V) (dBuV)	ERP Factor (V) (dB)	Transducer (V) (dB)	Cable (V) (dB)	Preamp (V) (dB)	(RMS) EMI (V) (dBm)	Limit (dBm)	(RMS) Margin (V) (dB)
2188.00	6.98	-62.11	0.00	6.80	0.00	-48.32	-30.00	-18.32
4528.50	42.48	-59.56	0.00	10.09	43.34	-50.32	-30.00	-20.32
10334.50	40.37	-59.38	0.00	15.91	42.20	-45.30	-30.00	-15.30

Note: EMI=Trace + Cable(Loss) + ERP Factor + Transducer
Margin=EMI – Limit

Note: 2.4G main carrier was recorded in the plot.



Transmitter unwanted emissions in the spurious domain below 1 GHz worst case			
Measurement Method	Radiated	Polar:	Horizontal/Vertical
Test Mode:	802.11b	Test Channel:	CH 1

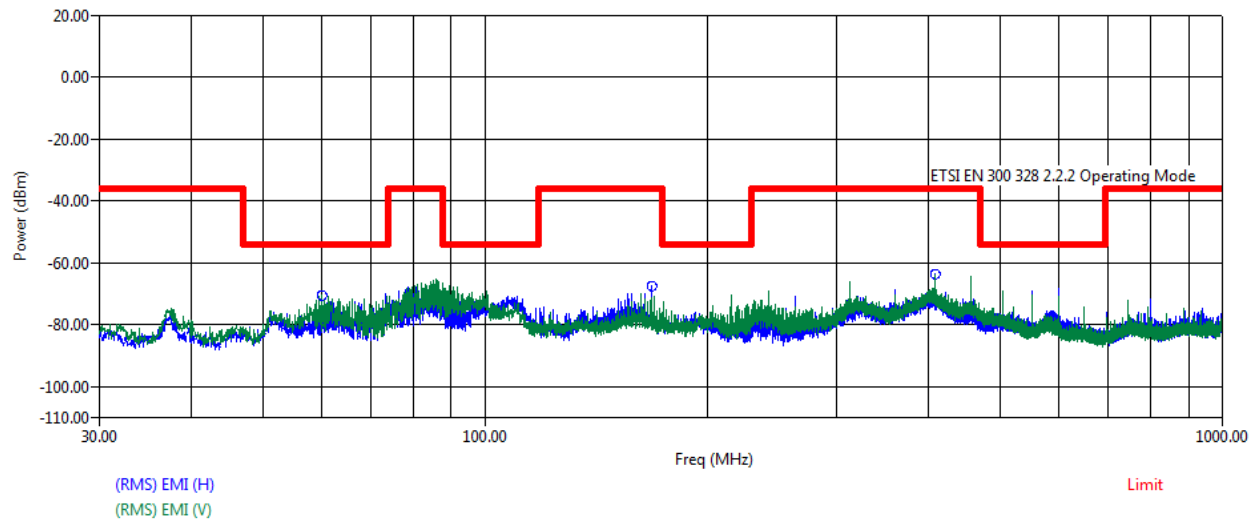


Freq (MHz)	(RMS) Trace (H) (dBuV)	ERP Factor (H) (dB)	Transducer (H) (dB)	Cable (H) (dB)	Preamp (H) (dB)	(RMS) EMI (H) (dBm)	Limit (dBm)	(RMS) Margin (H) (dB)
168.00	62.61	-87.93	0.00	1.74	42.58	-66.16	-36.00	-30.16
408.00	58.80	-82.48	0.00	2.70	42.73	-63.71	-36.00	-27.71
600.00	50.39	-79.79	0.00	3.31	42.68	-68.77	-54.00	-14.77

Freq (MHz)	(RMS) Trace (V) (dBuV)	ERP Factor (V) (dB)	Transducer (V) (dB)	Cable (V) (dB)	Preamp (V) (dB)	(RMS) EMI (V) (dBm)	Limit (dBm)	(RMS) Margin (V) (dB)
168.00	55.30	-86.63	0.00	1.74	42.58	-72.16	-36.00	-36.16
408.00	59.26	-81.81	0.00	2.70	42.73	-62.57	-36.00	-26.57
600.00	48.65	-80.10	0.00	3.31	42.68	-70.83	-54.00	-16.83

Note: EMI=Trace + Cable(Loss) + ERP Factor + Transducer
Margin=EMI – Limit

Transmitter unwanted emissions in the spurious domain below 1 GHz worst case			
Measurement Method	Radiated	Polar:	Horizontal/Vertical
Test Mode:	802.11b	Test Channel:	CH 13



Freq (MHz)	(RMS) Trace (H) (dBuV)	ERP Factor (H) (dB)	Transducer (H) (dB)	Cable (H) (dB)	Preampl (H) (dB)	(RMS) EMI (H) (dBm)	Limit (dBm)	(RMS) Margin (H) (dB)
59.95	50.87	-84.26	0.00	0.97	42.62	-75.05	-54.00	-21.05
168.00	61.38	-87.93	0.00	1.74	42.58	-67.38	-36.00	-31.38
408.00	58.98	-82.48	0.00	2.70	42.73	-63.52	-36.00	-27.52

Freq (MHz)	(RMS) Trace (V) (dBuV)	ERP Factor (V) (dB)	Transducer (V) (dB)	Cable (V) (dB)	Preampl (V) (dB)	(RMS) EMI (V) (dBm)	Limit (dBm)	(RMS) Margin (V) (dB)
59.95	52.76	-81.31	0.00	0.97	42.62	-70.19	-54.00	-16.19
168.00	55.53	-86.63	0.00	1.74	42.58	-71.94	-36.00	-35.94
408.00	58.07	-81.81	0.00	2.70	42.73	-63.77	-36.00	-27.77

Note: EMI=Trace + Cable(Loss) + ERP Factor + Transducer
Margin=EMI – Limit

Note All the modes had been tested, but only the worst data was recorded in the report.

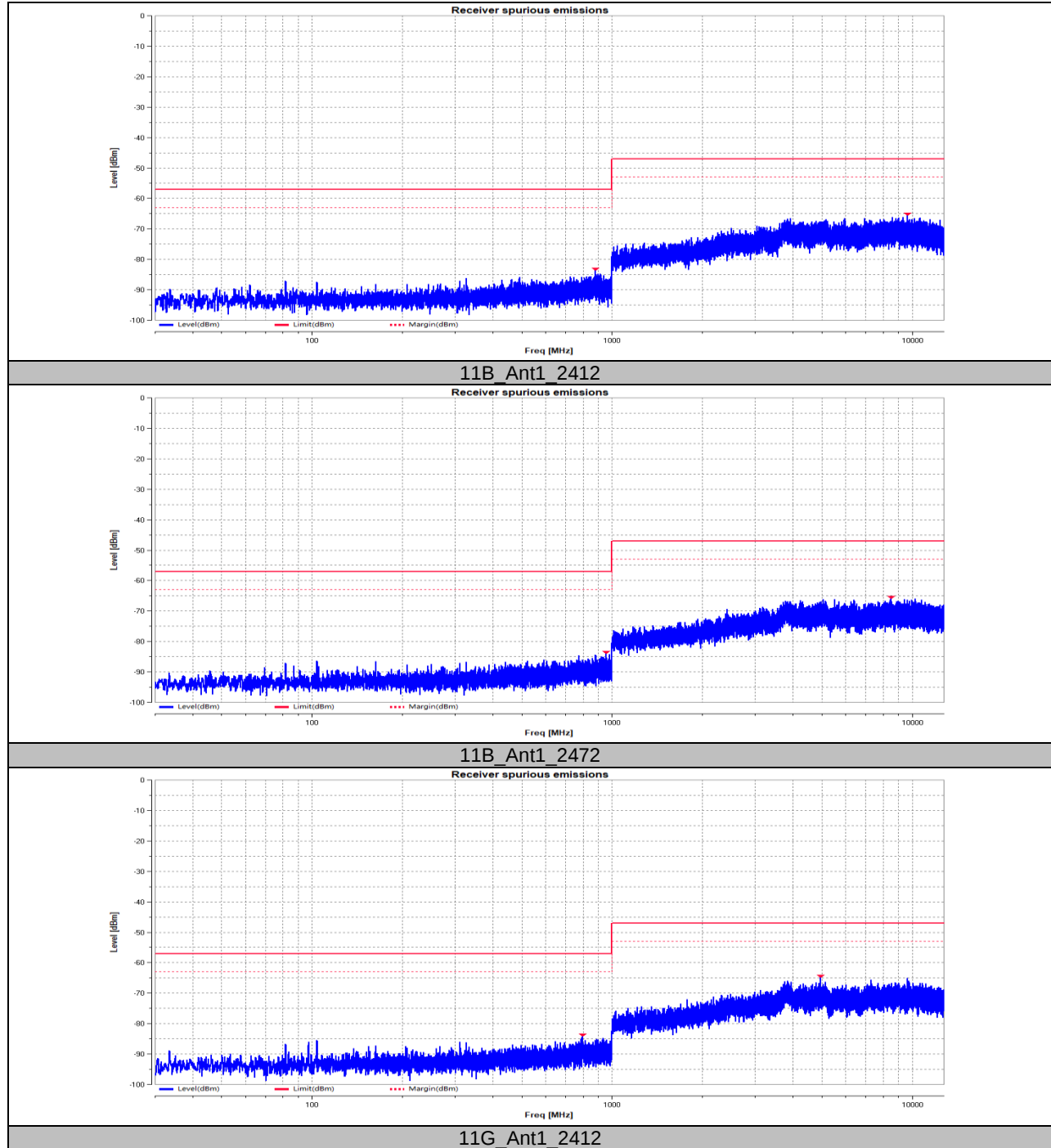


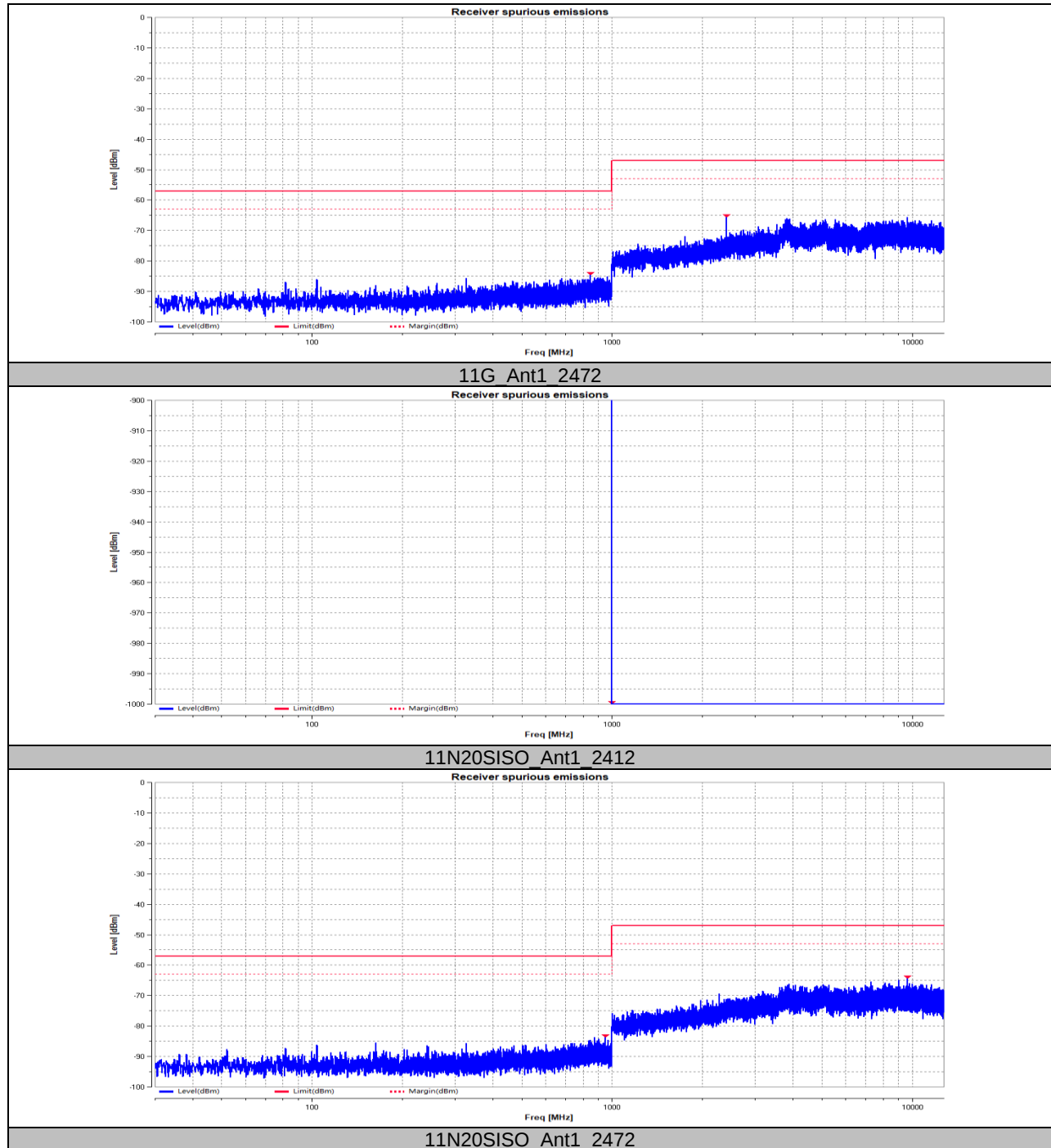
8.6. Appendix F: Receiver Spurious Emissions

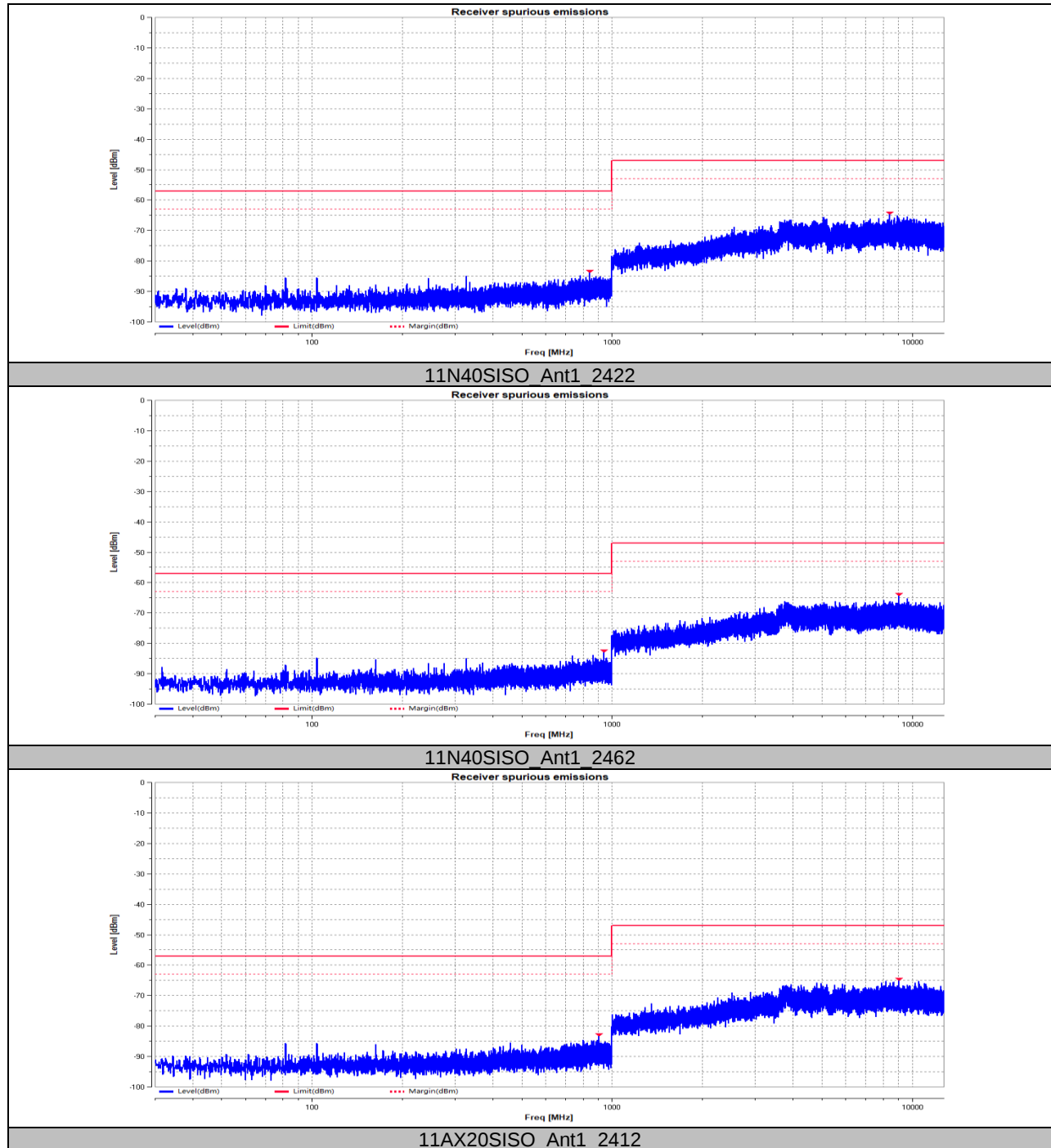
8.6.1. Test Result-Pre-scan

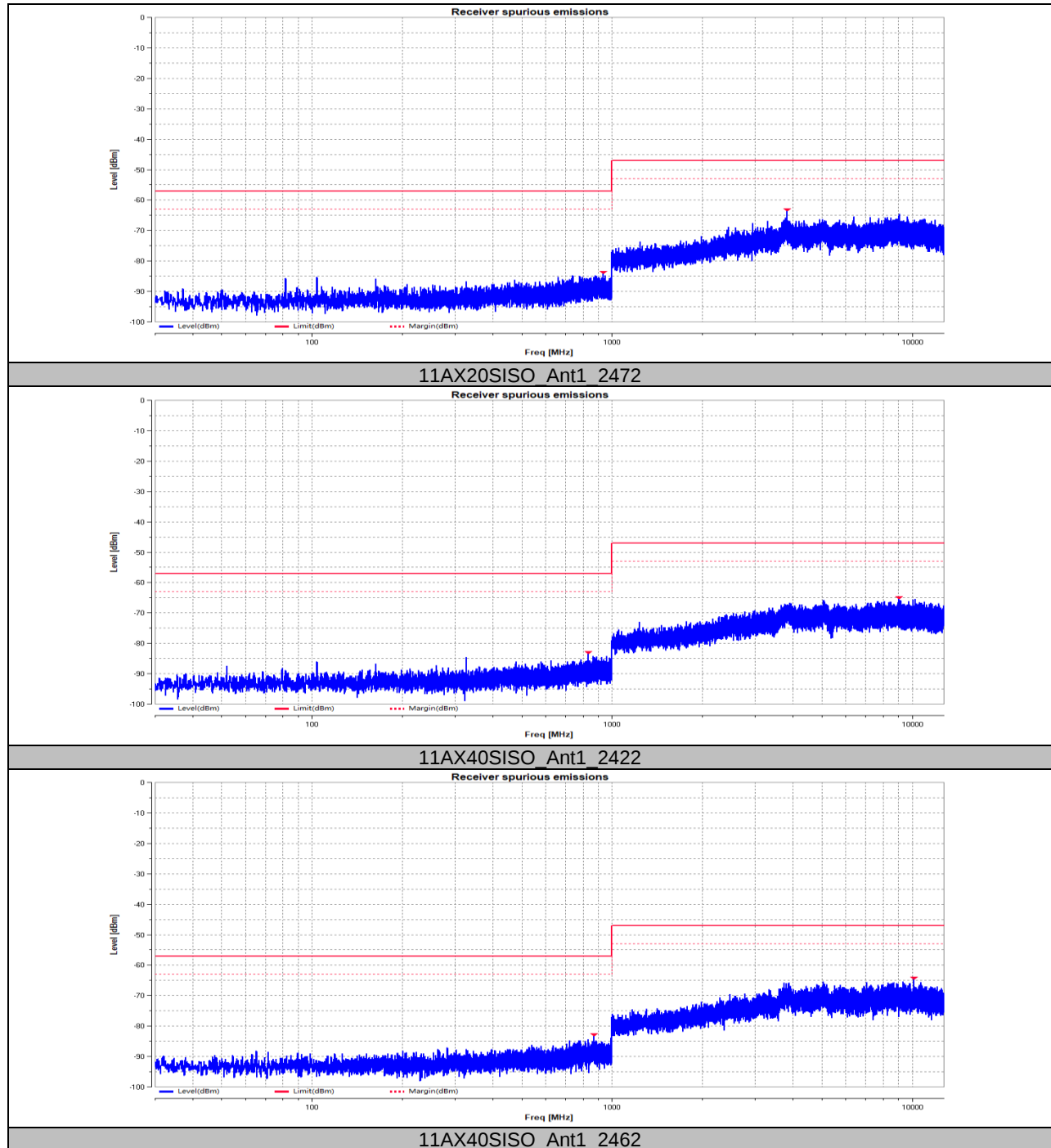
Test Mode	Antenna	Channel	Freq. [MHz]	Level[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	882.24	-83.76	-57.00	PASS
			9647.61	-65.66	-47.00	PASS
		2472	955.38	-84	-57.00	PASS
			8515.3	-66.01	-47.00	PASS
11G	Ant1	2412	797.95	-84.23	-57.00	PASS
			4953.88	-64.96	-47.00	PASS
		2472	849.07	-84.56	-57.00	PASS
			2401.38	-65.6	-47.00	PASS
11N20SISO	Ant1	2412	740.62	-84.26	-57.00	PASS
			1000	-1000	-57.00	PASS
		2472	951.69	-83.78	-57.00	PASS
			9648	-64.36	-47.00	PASS
11N40SISO	Ant1	2422	842.67	-83.96	-57.00	PASS
			8426.39	-64.71	-47.00	PASS
		2462	941.02	-83.03	-57.00	PASS
			9058.15	-64.36	-47.00	PASS
11AX20SISO	Ant1	2412	905.13	-83.42	-57.00	PASS
			9036.22	-65.13	-47.00	PASS
		2472	935.5	-84.33	-57.00	PASS
			3836.06	-63.61	-47.00	PASS
11AX40SISO	Ant1	2422	834.42	-83.63	-57.00	PASS
			9055.41	-65.43	-47.00	PASS
		2462	871.67	-83.33	-57.00	PASS
			10160.69	-64.84	-47.00	PASS

8.6.2. Test Graphs-Pre-scan





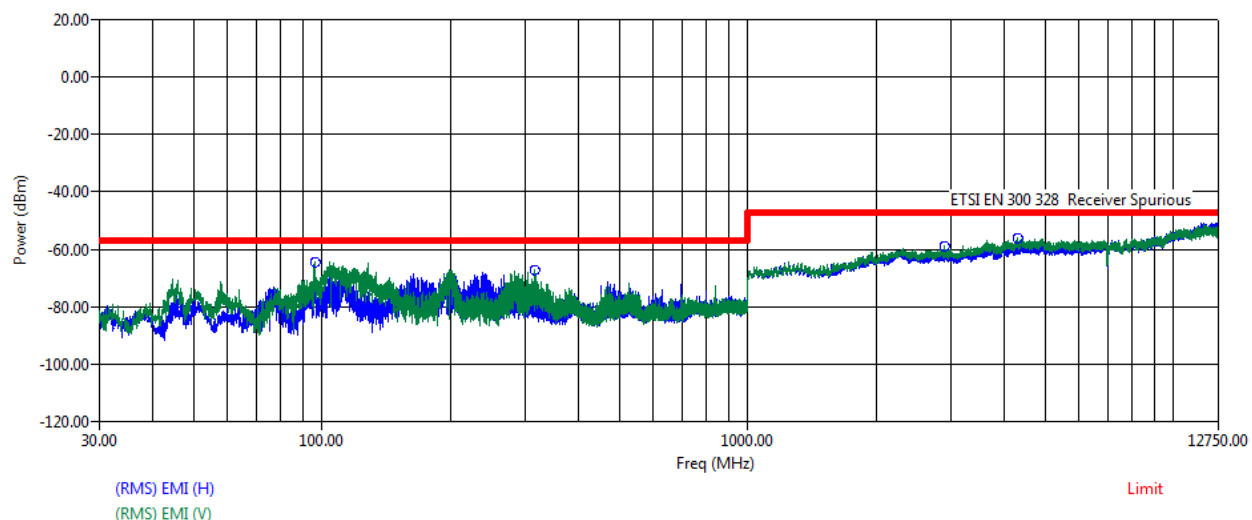






8.6.3. Radiated Test Result

Receiver spurious emissions above 1 GHz worst case			
Measurement Method	Radiated	Polar:	Horizontal/Vertical
Test Mode:	802.11b	Test Channel:	CH 1



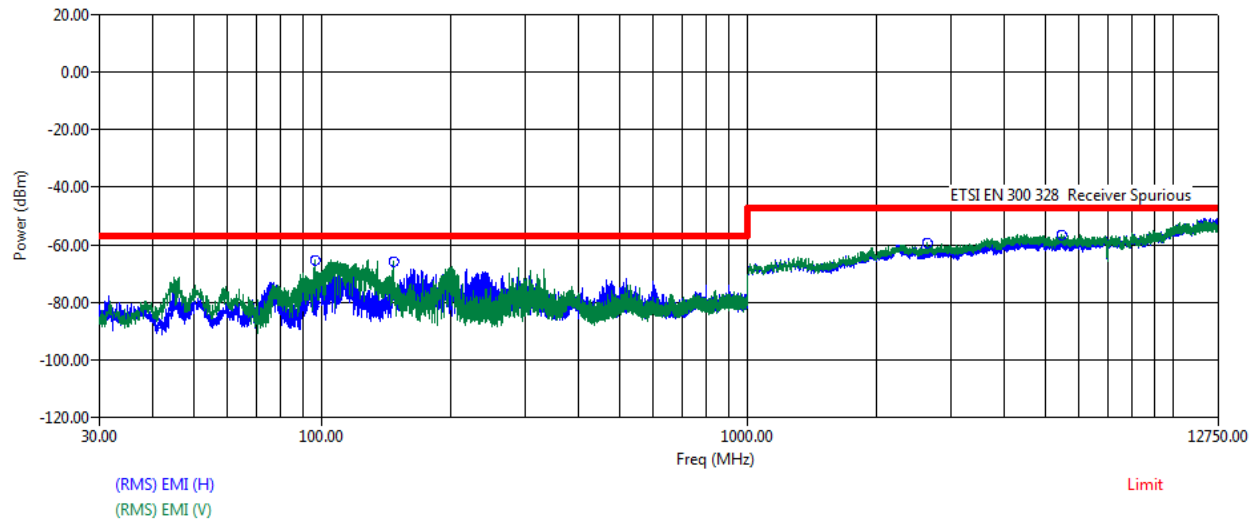
Freq (MHz)	(RMS) Trace (H) (dBuV)	ERP Factor (H) (dB)	Transducer (H) (dB)	Cable (H) (dB)	Preamp (H) (dB)	(RMS) EMI (H) (dBm)	Limit (dBm)	(RMS) Margin (H) (dB)
96.00	52.68	-84.73	0.00	1.27	42.75	-73.53	-57.00	-16.53
316.45	46.41	-84.57	0.00	2.37	42.65	-78.43	-57.00	-21.43
2902.50	40.36	-63.41	0.00	7.37	48.47	-64.15	-47.00	-17.15
4306.00	39.20	-61.25	0.00	9.21	48.36	-61.20	-47.00	-14.20

Freq (MHz)	(RMS) Trace (V) (dBuV)	ERP Factor (V) (dB)	Transducer (V) (dB)	Cable (V) (dB)	Preamp (V) (dB)	(RMS) EMI (V) (dBm)	Limit (dBm)	(RMS) Margin (V) (dB)
96.00	61.70	-84.41	0.00	1.27	42.75	-64.19	-57.00	-7.19
316.45	56.79	-83.51	0.00	2.37	42.65	-66.99	-57.00	-9.99
2902.50	44.40	-62.04	0.00	7.37	48.47	-58.74	-47.00	-11.74
4306.00	42.28	-58.95	0.00	9.21	48.36	-55.82	-47.00	-8.82

Note: EMI=Trace + Cable(Loss) + ERP Factor + Transducer
Margin=EMI - Limit



Receiver spurious emissions above 1 GHz worst case			
Measurement Method	Radiated	Polar:	Horizontal/Vertical
Test Mode:	802.11b	Test Channel:	CH 13



Freq (MHz)	(RMS) Trace (H) (dBuV)	ERP Factor (H) (dB)	Transducer (H) (dB)	Cable (H) (dB)	Preamp (H) (dB)	(RMS) EMI (H) (dBm)	Limit (dBm)	(RMS) Margin (H) (dB)
95.95	53.18	-84.76	0.00	1.27	42.74	-73.06	-57.00	-16.06
146.65	51.95	-89.13	0.00	1.58	42.63	-78.23	-57.00	-21.23
2642.50	41.29	-63.49	0.00	6.94	48.37	-63.63	-47.00	-16.63
5470.50	38.39	-60.57	0.00	10.01	48.20	-60.38	-47.00	-13.38

Freq (MHz)	(RMS) Trace (V) (dBuV)	ERP Factor (V) (dB)	Transducer (V) (dB)	Cable (V) (dB)	Preamp (V) (dB)	(RMS) EMI (V) (dBm)	Limit (dBm)	(RMS) Margin (V) (dB)
95.95	60.59	-84.43	0.00	1.27	42.74	-65.32	-57.00	-8.32
146.65	63.43	-87.97	0.00	1.58	42.63	-65.59	-57.00	-8.59
2642.50	44.00	-61.85	0.00	6.94	48.37	-59.29	-47.00	-12.29
5470.50	40.92	-59.09	0.00	10.01	48.20	-56.36	-47.00	-9.36

Note: EMI=Trace + Cable(Loss) + ERP Factor + Transducer
Margin=EMI - Limit

Note All the modes had been tested, but only the worst data was recorded in the report.

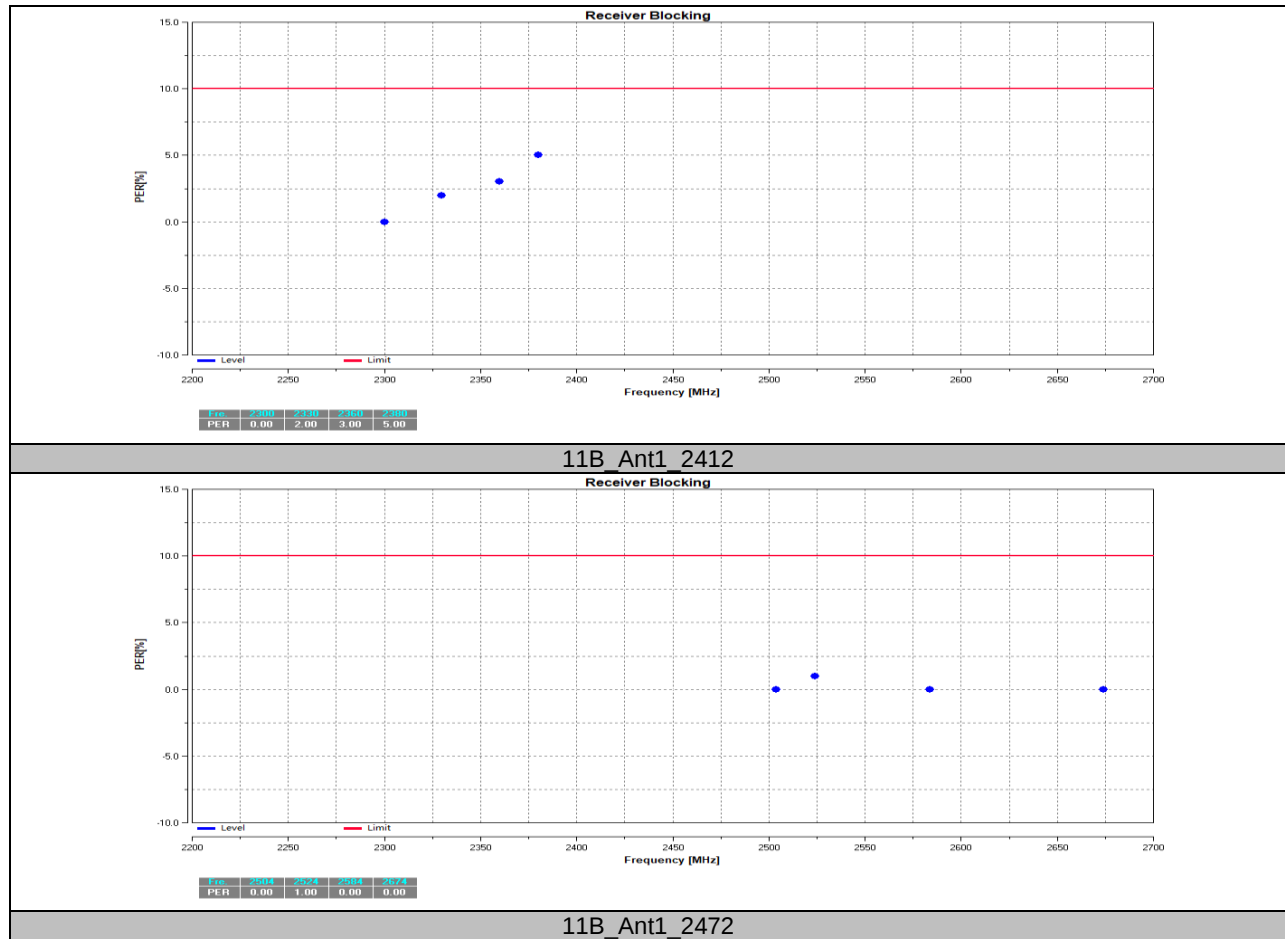
8.7. Appendix G: Receiver Blocking

8.7.1. Test Result

Test Mode	Antenna	Channel	Wanted signal [dBm]	Freq. [MHz]	CW [dBm]	PER [%]	Limit [%]	Verdict
11B	Ant1	2412	-70.85	2300	-30.85	0.00	≤10	PASS
			-70.85	2330	-30.85	2.00	≤10	PASS
			-70.85	2360	-30.85	3.00	≤10	PASS
			-64.85	2380	-30.85	5.00	≤10	PASS
		2472	-64.85	2504	-30.85	0.00	≤10	PASS
			-70.85	2524	-30.85	1.00	≤10	PASS
			-70.85	2584	-30.85	0.00	≤10	PASS
			-70.85	2674	-30.85	0.00	≤10	PASS



8.7.2. Test Graphs



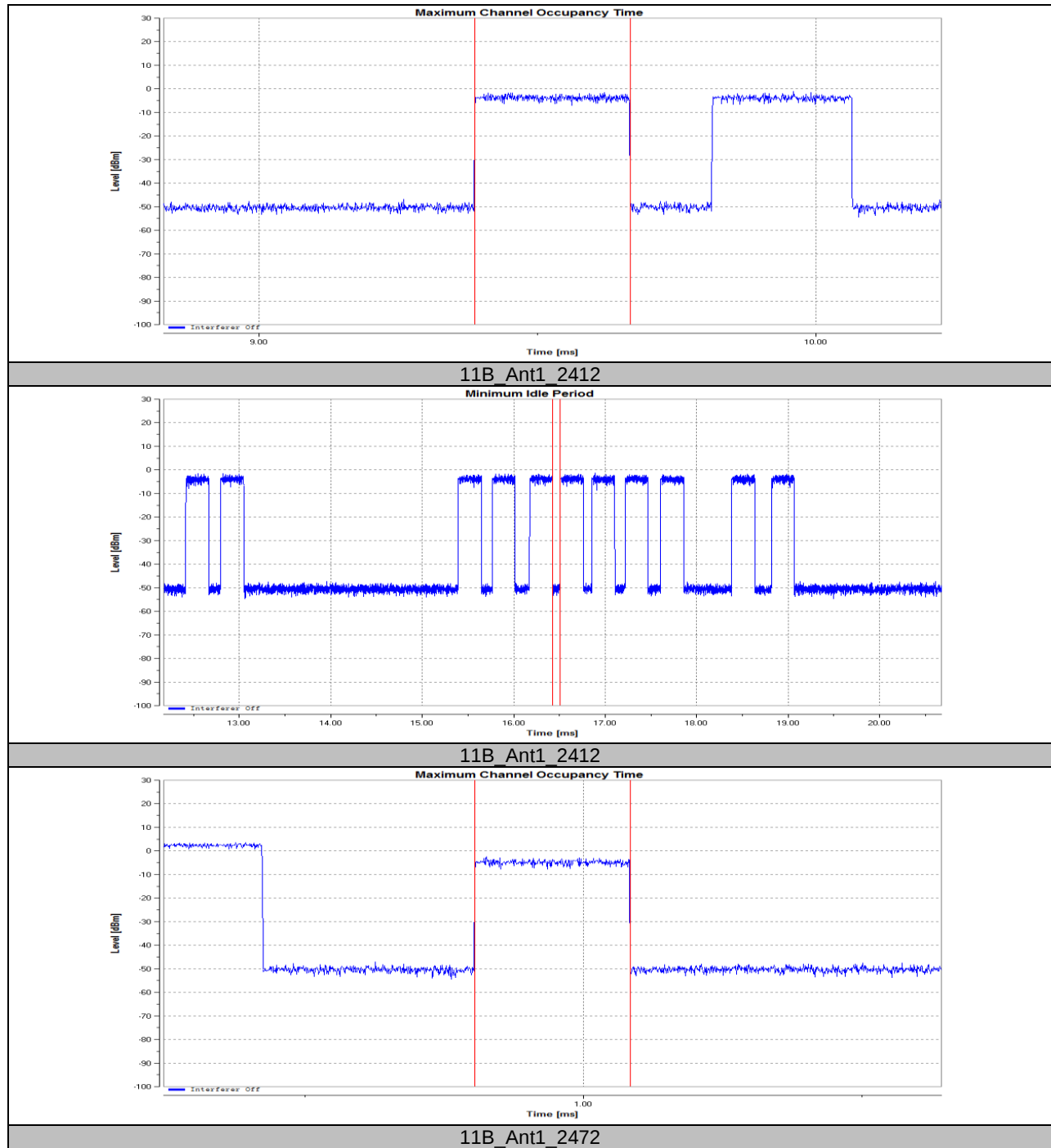
8.8. Appendix H: Adaptivity

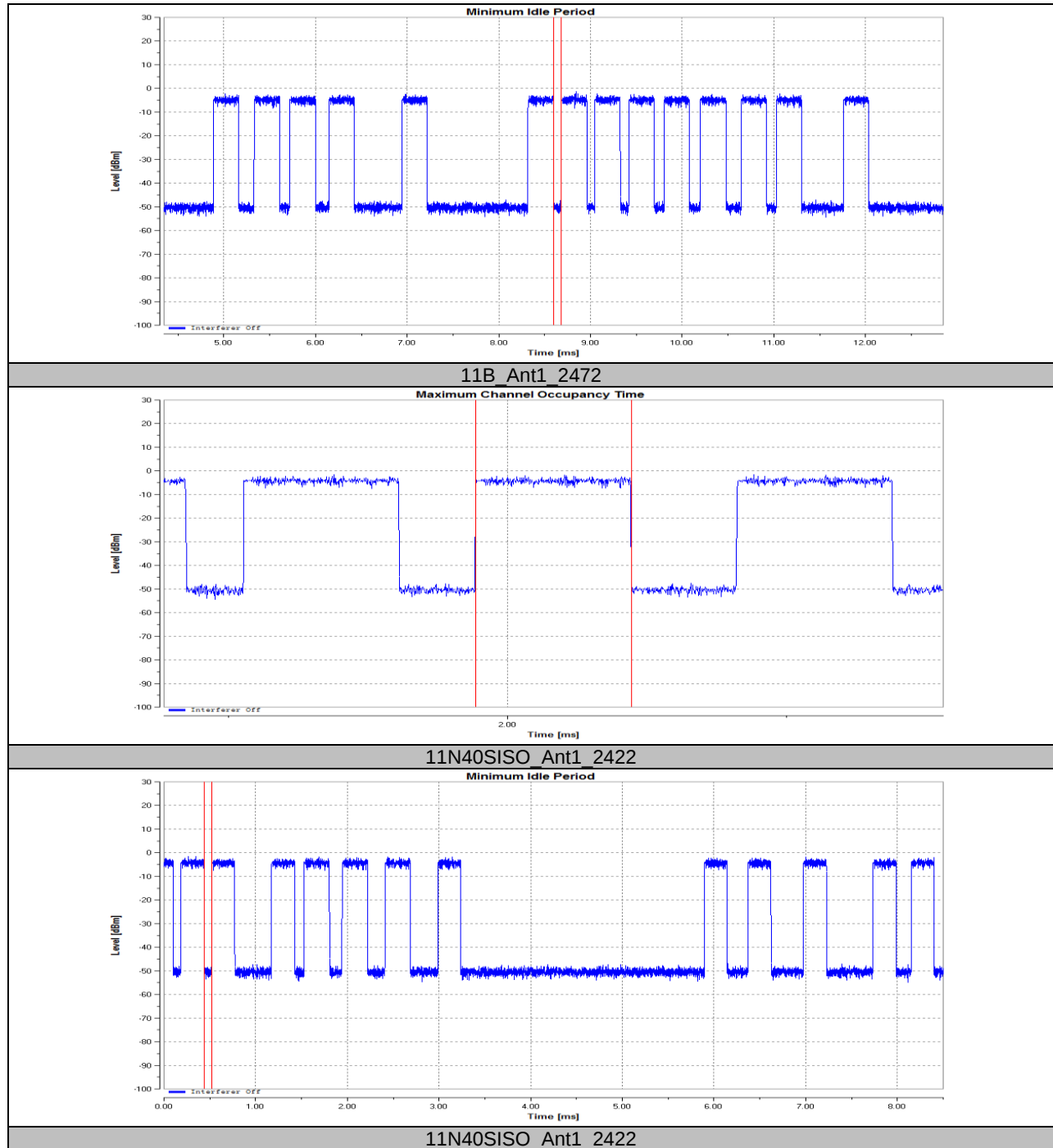
8.8.1. Test Result

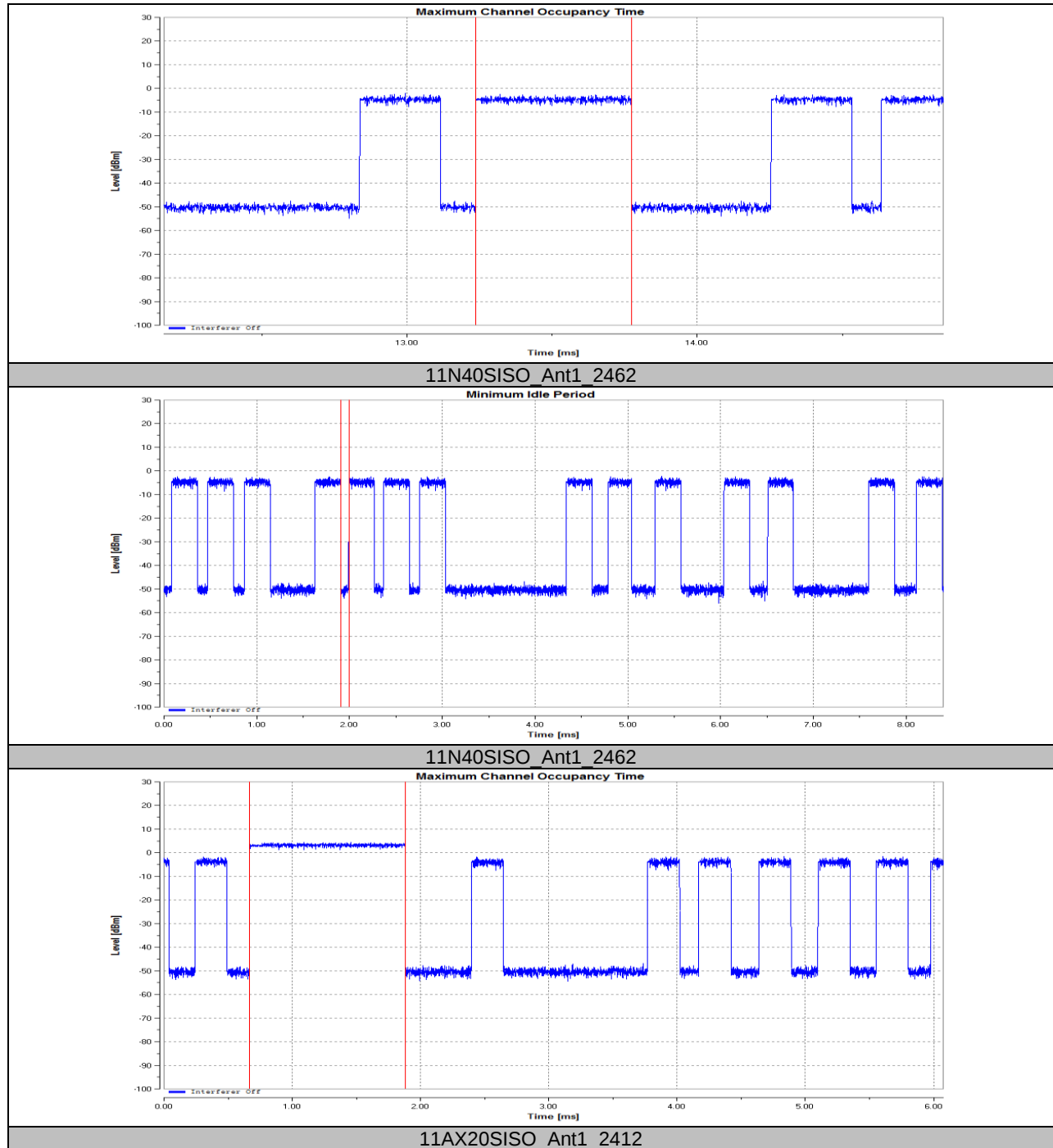
Test Mode	Antenna	Channel	Max.COT [ms]	Limit[ms]	Min.Idle Time[ms]	Limit[ms]	Verdict
11B	Ant1	2412	0.279	13	0.085	0.018	PASS
		2472	0.279	13	0.085	0.018	PASS
11N40SISO	Ant1	2422	0.279	13	0.085	0.018	PASS
		2462	0.537	13	0.084	0.018	PASS
11AX20SISO	Ant1	2412	1.215	13	0.094	0.018	PASS
		2472	0.279	13	0.111	0.018	PASS
11AX40SISO	Ant1	2422	1.394	13	0.085	0.018	PASS
		2462	0.366	13	0.084	0.018	PASS

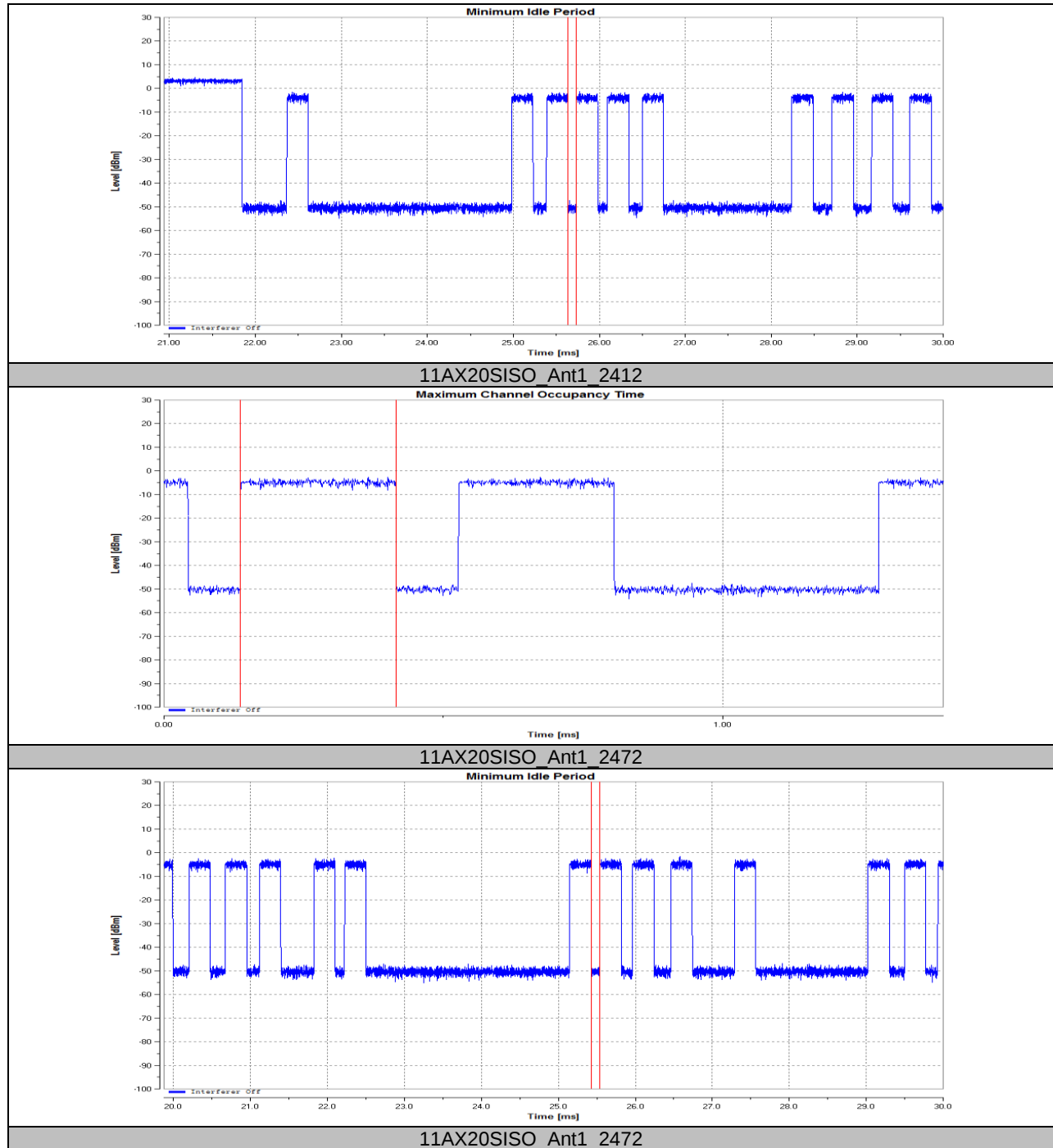
Test Mode	Antenna	Channel	Add Signal Type	Add Signal Time[ms]	Add Signal Level[dbm]	Max. Short Time [%]	Limit [%]	Verdict
11B	Ant1	2412	AWGN	3000	-63.57	0.00	10	PASS
			CW	65998	-31.82	0.00	10	PASS
		2472	AWGN	3000	-62.80	0.00	10	PASS
			CW	65998	-31.82	0.00	10	PASS
11N40SISO	Ant1	2422	AWGN	3000	-63.65	0.00	10	PASS
			CW	65998	-31.82	0.00	10	PASS
		2462	AWGN	3000	-63.75	0.00	10	PASS
			CW	65998	-31.82	0.00	10	PASS
11AX20SISO	Ant1	2412	AWGN	3000	-60.02	0.00	10	PASS
			CW	65998	-31.82	0.00	10	PASS
		2472	AWGN	3000	-59.42	0.00	10	PASS
			CW	65998	-31.82	0.00	10	PASS
11AX40SISO	Ant1	2422	AWGN	3000	-63.60	0.00	10	PASS
			CW	65998	-31.82	0.00	10	PASS
		2462	AWGN	3000	-63.87	0.00	10	PASS
			CW	65998	-31.82	0.00	10	PASS

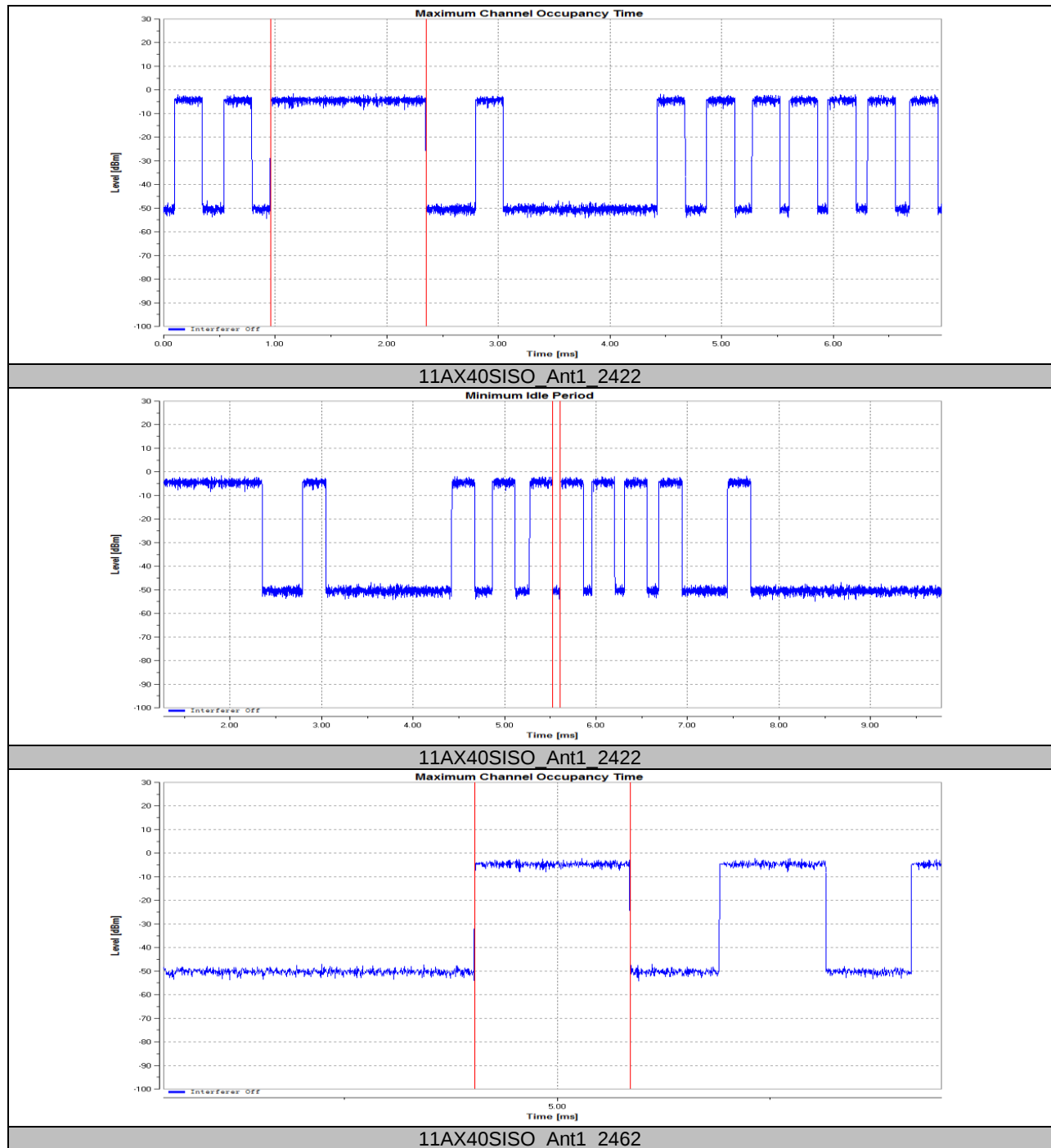
8.8.2. Test Graphs

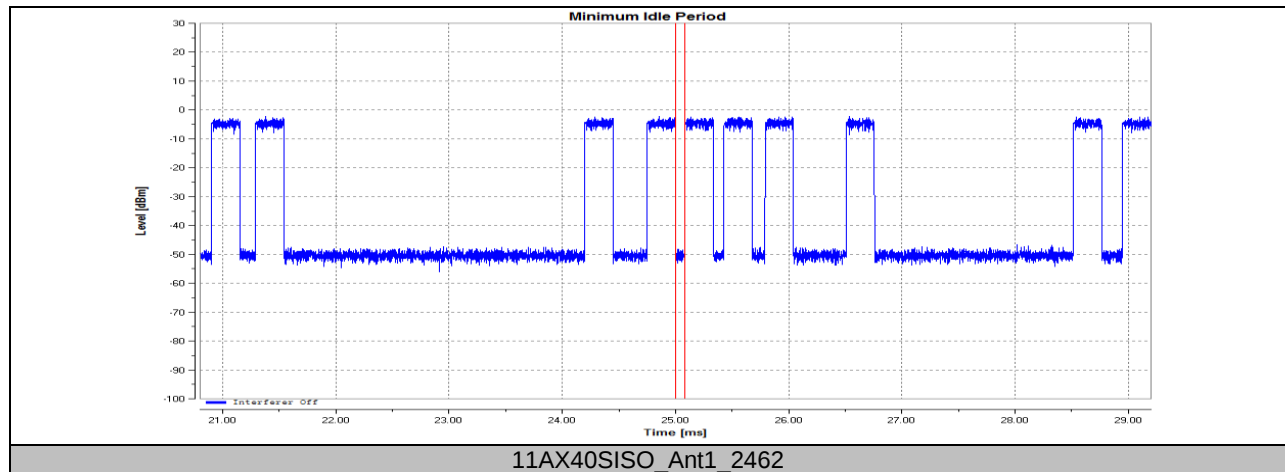






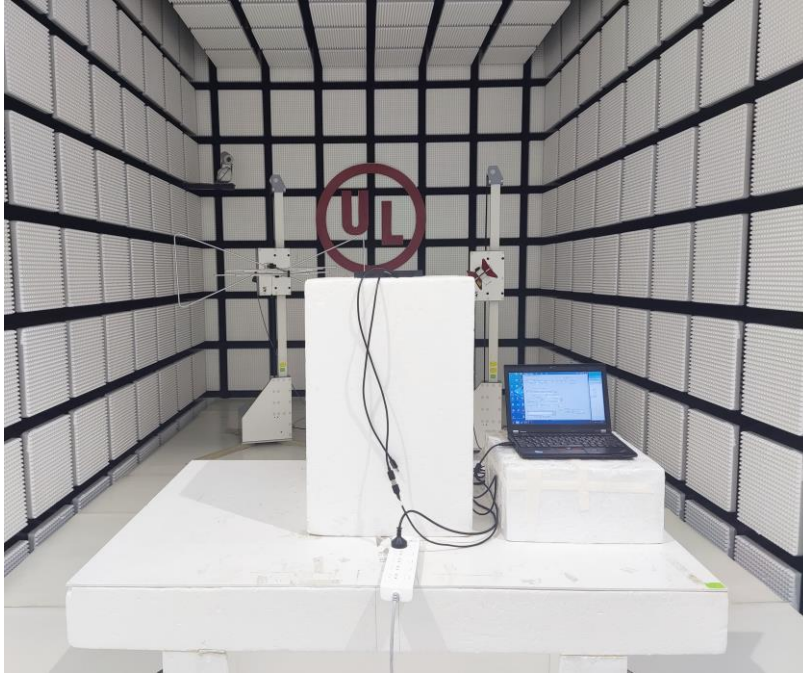






Note All the modes had been tested, but only the worst data was recorded in the report.

RADIATED SPURIOUS EMISSIONS TEST PHOTOS



END OF REPORT