FCC Test Report

Symetrica Inc
VeriFinder Radiation Detector, Model: SN23-N

In accordance with FCC 47 CFR Parts 15, 22, 24 and 27 (Simultaneous Transmission)

Prepared for: Symetrica Inc
63 Great Road
Suite 106
Maynald
MA 01754
United States

FCC ID: Contains FCC ID 2APOGVeriFinder0001 and 2APOGVeriFinder0002

COMMERCIAL-IN-CONFIDENCE

Document Number: 75941251-01 | Issue: 03

SIGNATURE			
NAME	**JOB TITLE**	**RESPONSIBLE FOR**	**ISSUE DATE**
Matthew Russell	Chief Engineer	Authorised Signatory	08 May 2025

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

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC 47 CFR Parts 15, 22, 24 and 27. The sample tested was found to comply with the requirements defined in the applied rules.

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Testing	Graeme Lawler	08 May 2025	

FCC Accreditation
492497/UK2010 Octagon House, Fareham Test Laboratory

EXECUTIVE SUMMARY

A sample of this product was tested and found to be compliant with FCC 47 CFR Parts 15, 22, 24 and 27: 2023 for the tests detailed in section 1.3.

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1 Report Summary

1.1 Report Modification Record

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

Issue	Description of Change	Date of Issue
1	First Issue	26 April 2018
2	This report was up-issued following a gap analysis from the 2017 rules to the 2023 rules. No changes were identified therefore compliance is demonstrated to the 2023 rules.	04 Sept 2024
3	FCC ID updated	08 May 2025

Table 1

1.2 Introduction

Applicant	Symetrica Inc
Manufacturer	Symetrica Inc
Model Number(s)	VeriFinder: SN23-N
Serial Number(s)	VeriFinder: 172001
Hardware Version(s)	05
Software Version(s)	2.25
Number of Samples Tested	1
Test Specification/Issue/Date	FCC 47 CFR Parts 15, 22, 24 and 27 (Simultaneous Transmission): 2023
Test Plan/Issue/Date	VeriFinder: Integrated Test Plan, Document Number 417-0313, Revision 15, 2018-04-23
Order Number Date	171787 18-December-2017
Date of Receipt of EUT	06-March-2018
Start of Test	11-March-2018
Finish of Test	13-March-2018
Name of Engineer(s)	Graeme Lawler
Related Document(s)	ANSI C63.10 2013

1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Parts 15 and 22 and 24 (Simultaneous Transmission) is shown below.

Section	Specification Clause	Test Description	Result	Comments/Base Standard
Configuration and Mode: Simultaneous transmission - Bluetooth and FDD IV				
2.1	15.247 (d), 15.205 and 27.53 (h)	Radiated Spurious Emissions (Simultaneous Transmission)	Pass	ANSI C63.26
Configuration and Mode: Simultaneous transmission - Bluetooth and FDD II				
2.1	15.247 (d), 15.205 and 24.238 (a)	Radiated Spurious Emissions (Simultaneous Transmission)	Pass	ANSI C63.26
Configuration and Mode: Simultaneous transmission - Bluetooth and FDD V				
2.1	15.247 (d), 15.205 and 22.917 (a)	Radiated Spurious Emissions (Simultaneous Transmission)	Pass	ANSI C63.26
Configuration and Mode: Simultaneous transmission - 2.4 GHz WLAN - FDD II				
2.1	15.247 (d), 15.205 and 24.238 (a)	Radiated Spurious Emissions (Simultaneous Transmission)	Pass	ANSI C63.26
Configuration and Mode: Simultaneous transmission - 2.4 GHz WLAN - FDD IV				
2.1	15.247 (d), 15.205 and 27.53 (h)	Radiated Spurious Emissions (Simultaneous Transmission)	Pass	ANSI C63.26
Configuration and Mode: Simultaneous transmission - 2.4 GHz WLAN - FDD V				
2.1	15.247 (d), 15.205 and 22.917 (a)	Radiated Spurious Emissions (Simultaneous Transmission)	Pass	ANSI C63.26
Configuration and Mode: Simultaneous transmission - Bluetooth and DSC 1900 MHz				
2.1	15.247 (d), 15.205 and 24.238 (a)	Radiated Spurious Emissions (Simultaneous Transmission)	Pass	ANSI C63.26
Configuration and Mode: Simultaneous transmission - Bluetooth and GSM 850 MHz				
2.1	15.247 (d), 15.205 and 22.917 (a)	Radiated Spurious Emissions (Simultaneous Transmission)	Pass	ANSI C63.26

Section	Specification Clause	Test Description	Result	Comments/Base Standard
Configuration and Mode: Simultaneous transmission - 2.4 GHz WLAN and GSM 850 MHz				
2.1	15.247 (d), 15.205 and 22.917 (a)	Radiated Spurious Emissions (Simultaneous Transmission)	Pass	ANSI C63.26
Configuration and Mode: Simultaneous transmission - 2.4 GHz WLAN and DSC 1900 MHz				
2.1	15.247 (d), 15.205 and 24.238 (a)	Radiated Spurious Emissions (Simultaneous Transmission)	Pass	ANSI C63.26

Table 2

1.4 Application Form

EQUIPMENT DESCRIPTION	
Model Name/Number	SN23-N
Part Number	410-0395
Hardware Version	05
Software Version	2.28
FCC ID (if applicable)	Contains FCC ID 2APOGVeriFinder0001 and 2APOGVeriFinder0002
Industry Canada ID (if applicable)	
Technical Description (Please provide a brief description of the intended use of the equipment)	The Verifinder is a handheld gamma and neutron radiation detector, the unit is powered either internally from a 7.2V Li-Ion battery or by an external 12V mains power supply.

INTENTIONAL RADIATORS									
Technology	Frequency Band (MHz)	Conducted Declared Output Power (dBm)	Antenna Gain (dBi)	Supported Bandwidth (s) (MHz)	Modulation Scheme(s)	ITU Emission Designator	Test Channels (MHz)		
							Bottom	Middle	Top
2G GSM	850	33	1.5				824		849
2G PCS	1900	30	4.5				1850		1910
3G BAND I	2100	24	3.9				1920		1980
3G BAND II	1900	24	4.5				1850		1910
3G BAND IV	1700	24	4.5				1710		1755
3G BAND V	850	24	1.5				824		849
3G BAND VI	800	24	1.5				830		840
BT Classic	2400	11.7	2				2402		2480
BT LE	2400	7	2						
802.11b	2400	17.3	2	20			2412		2462
802.11g		17.1	2	20					
802.11n (20MHz) SISO		16.1	2	20					
802.11n (40MHz) SISO		14.8	2	40					
802.11n MIMO		18.5	2	20					

UN-INTENTIONAL RADIATOR	
Highest frequency generated or used in the device or on which the device operates or tunes	2500 MHz
Lowest frequency generated or used in the device or on which the device operates or tunes	32 kHz
Class A Digital Device (Use in commercial, industrial or business environment) ☐ Class B Digital Device (Use in residential environment only) ☒	

Power Source			
AC	Single Phase	Three Phase	Nominal Voltage
	110-240		
External DC	Nominal Voltage		Maximum Current
	12.v		2.5A
Battery	Nominal Voltage		Battery Operating End Point Voltage
	7.2V		6V
Can EUT transmit whilst being charged?			Yes ☒ No ☐

EXTREME CONDITIONS					
Maximum temperature	50	°C	Minimum temperature	-20	°C

Ancillaries
Please list all ancillaries which will be used with the device.

ANTENNA CHARACTERISTICS				
☐	Antenna connector		State impedance	Ohm
☐	Temporary antenna connector		State impedance	Ohm
☒	Integral antenna	Type	Pulse Electronics w3538b0200 & Pulse Electronics W3525B100	
☐	External antenna	Type		

I hereby declare that the information supplied is correct and complete.

Name: Graham Chadwick

Position held: Engineer Date: 2018-01-17

1.5 Product Information

1.5.1 Technical Description

The VeriFinder is a handheld gamma and neutron radiation detector, the unit is powered either internally from a 7.2V Li-ion battery or by an external 12V mains power supply.

1.6 Deviations from the Standard

No deviations from the applicable test standard were made during testing.

1.7 EUT Modification Record

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

Modification State	Description of Modification still fitted to EUT	Modification Fitted By	Date Modification Fitted
Serial Number: 172001			
0	As supplied by the customer	Not Applicable	Not Applicable

Table 3

1.8 Test Location

TÜV SÜD Product Service conducted the following tests at our Fareham Test Laboratory.

Test Name	Name of Engineer(s)	Accreditation
Configuration and Mode: Simultaneous transmission - Bluetooth and FDD IV		
Radiated Spurious Emissions (Simultaneous Transmission)	Graeme Lawler	UKAS
Configuration and Mode: Simultaneous transmission - Bluetooth and FDD II		
Radiated Spurious Emissions (Simultaneous Transmission)	Graeme Lawler	UKAS
Configuration and Mode: Simultaneous transmission - Bluetooth and FDD V		
Radiated Spurious Emissions (Simultaneous Transmission)	Graeme Lawler	UKAS
Configuration and Mode: Simultaneous transmission - 2.4 GHz WLAN - FDD II		
Radiated Spurious Emissions (Simultaneous Transmission)	Graeme Lawler	UKAS
Configuration and Mode: Simultaneous transmission - 2.4 GHz WLAN - FDD IV		
Radiated Spurious Emissions (Simultaneous Transmission)	Graeme Lawler	UKAS
Configuration and Mode: Simultaneous transmission - 2.4 GHz WLAN - FDD V		
Radiated Spurious Emissions (Simultaneous Transmission)	Graeme Lawler	UKAS
Configuration and Mode: Simultaneous transmission - Bluetooth and DSC 1900 MHz		
Radiated Spurious Emissions (Simultaneous Transmission)	Graeme Lawler	UKAS

Test Name	Name of Engineer(s)	Accreditation
Configuration and Mode: Simultaneous transmission - Bluetooth and GSM 850 MHz		
Radiated Spurious Emissions (Simultaneous Transmission)	Graeme Lawler	UKAS
Configuration and Mode: Simultaneous transmission - 2.4 GHz WLAN and GSM 850 MHz		
Radiated Spurious Emissions (Simultaneous Transmission)	Graeme Lawler	UKAS
Configuration and Mode: Simultaneous transmission - 2.4 GHz WLAN and DSC 1900 MHz		
Radiated Spurious Emissions (Simultaneous Transmission)	Graeme Lawler	UKAS

Table 4

Office Address:

Octagon House
Concorde Way
Segensworth North
Fareham
Hampshire
PO15 5RL
United Kingdom

2 Test Details

2.1 Radiated Spurious Emissions (Simultaneous Transmission)

2.1.1 Specification Reference

FCC 47 CFR Part 15, Clauses 15.247 (d) and 15.205
FCC 47 CFR Part 22, Clause 22.917 (a)
FCC 47 CFR Part 24, Clause 24.238 (a)
FCC 47 CFR Part 27, Clause 27.53 (h)

2.1.2 Equipment Under Test and Modification State

SN23-N, S/N: 172001 - Modification State 0

2.1.3 Date of Test

11-March-2018 to 13-March-2018

2.1.4 Test Method

Testing was performed in accordance with ANSI C63.26, clause 5.5.

Pre-scans were performed using the direct field strength method. Any emissions found within 10 dB of the specification limit were formally measured using the substitution method.

The limit line on the pre-scan plots was calculated from equation c) in clause 5.2.7.

2.1.5 Environmental Conditions

Ambient Temperature	19.4 - 20.3 °C
Relative Humidity	33.0 - 35.0 %

2.1.6 Test Results

Simultaneous transmission - Bluetooth and FDD IV

The EUT was configured for simultaneous transmission in the following mode of operation:

Technology	Frequency Band (MHz)	Channel Frequency (MHz)
Bluetooth	2400 MHz to 2483.5 MHz	2441
WCDMA	FDD IV	1732.5

Table 5 - Modes of Operation

Frequency (MHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 6 - 30 MHz to 1 GHz Emissions Results

*No emissions were detected within 20 dB of the limit.

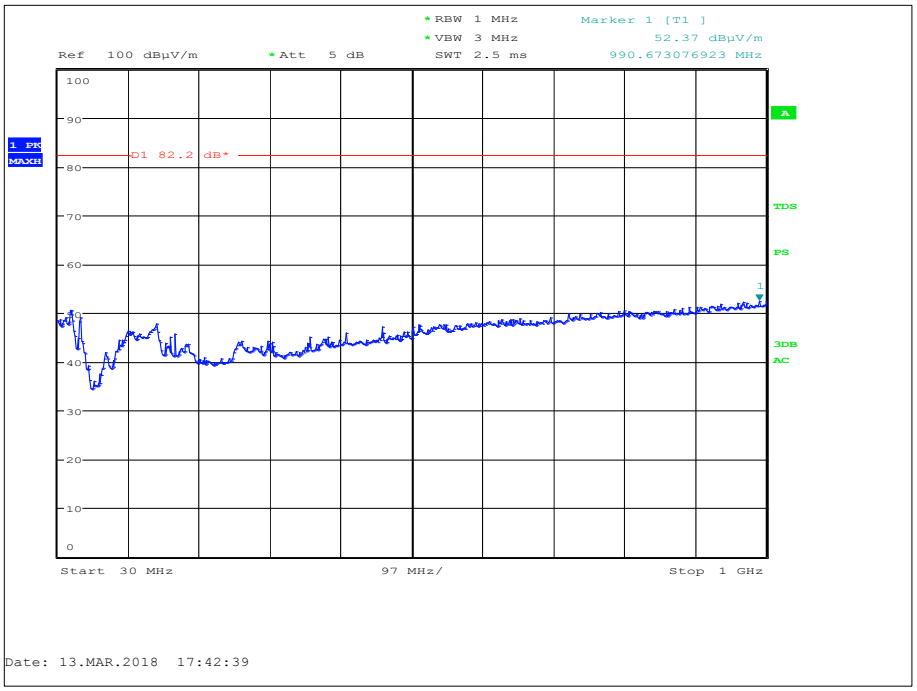

Figure 1 - 30 MHz to 1 GHz - Horizontal and Vertical

Frequency (GHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 7 - 1 GHz to 25 GHz Emissions Results

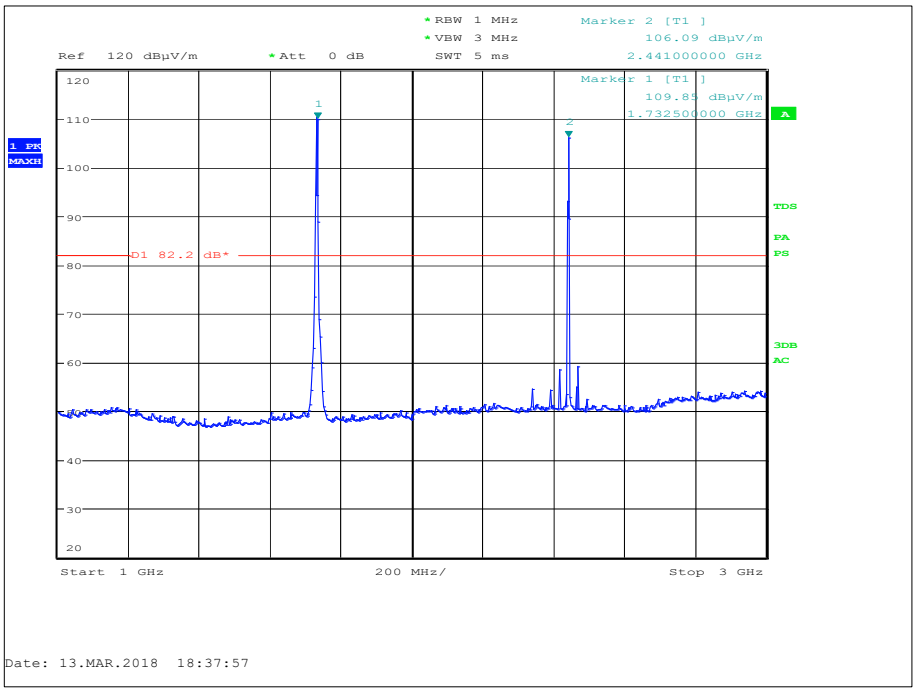

Figure 2 - 1 GHz to 3 GHz - Horizontal and Vertical

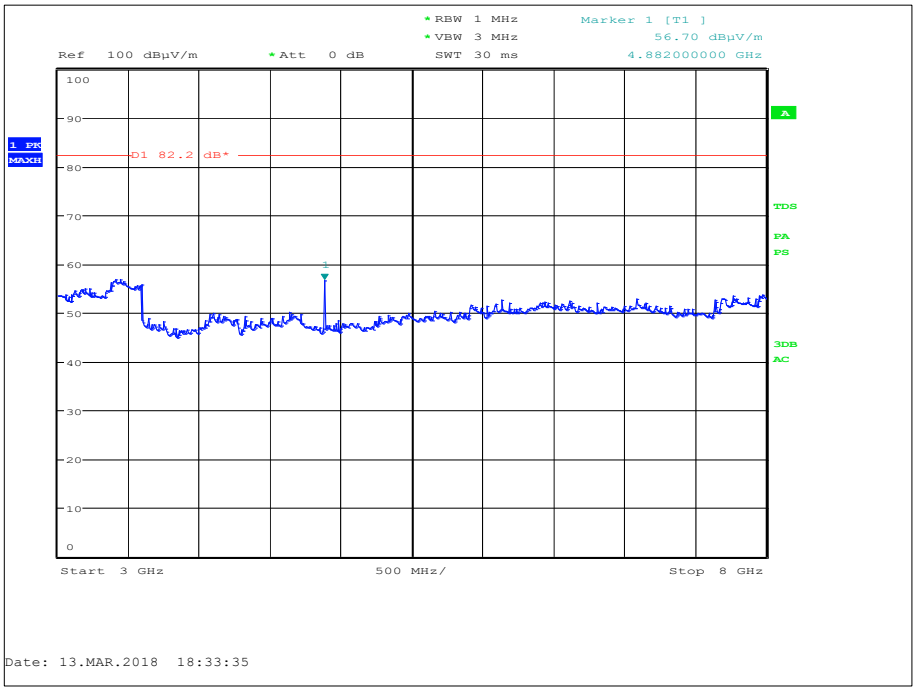

Figure 3 - 3 GHz to 8 GHz - Horizontal and Vertical

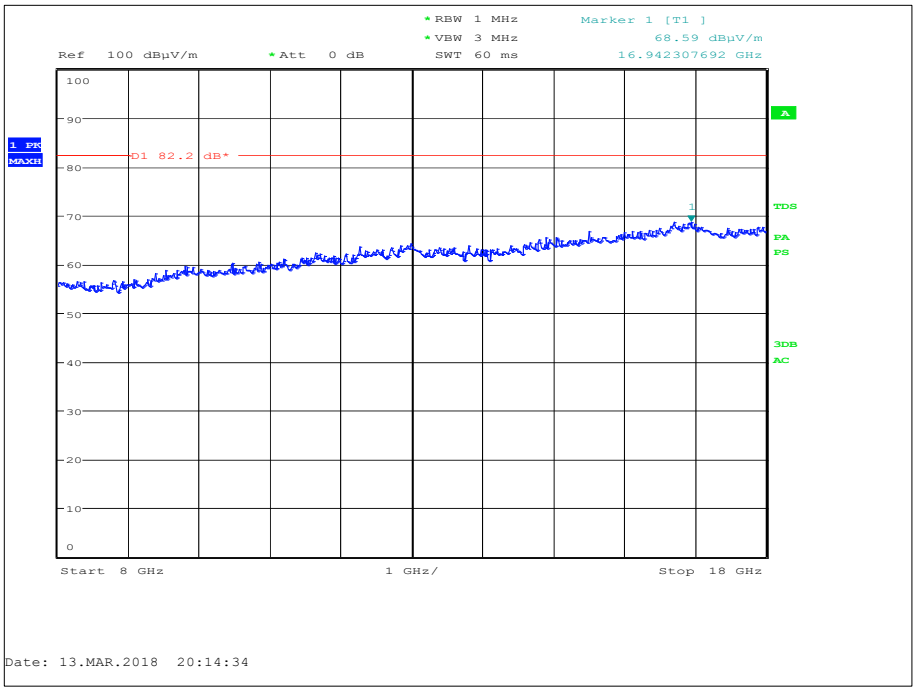

Figure 4 - 8 GHz to 18 GHz - Horizontal and Vertical

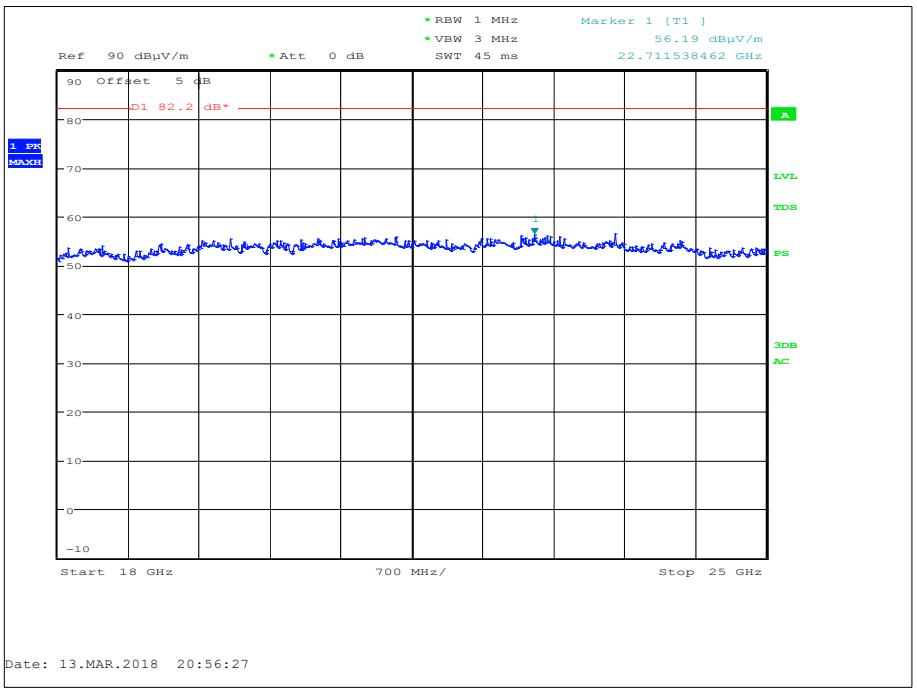

Figure 5 - 18 GHz to 25 GHz - Horizontal and Vertical

FCC 47 CFR Parts 15.247(d), 15.205, and 27.53 (h)

The least stringent limit from the applicable rule parts was used to determine compliance for Radiated Emissions testing of multiple transmission sources.

The least stringent applicable limit was:

Rule Part	Limit
Part 27.53 (h)	-13 dBm (EIRP) / 82 dBµV/m at 3m.

Table 8 - Limit Table

Simultaneous transmission - Bluetooth and FDD II

The EUT was configured for simultaneous transmission in the following mode of operation:

Technology	Frequency Band (MHz)	Channel Frequency (MHz)
Bluetooth	2400 MHz to 2483.5 MHz	2441 MHz
WCDMA	FDD II	1880 MHz

Table 9 - Modes of Operation

Frequency (MHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 10 - 30 MHz to 1 GHz Emissions Results

*No emissions were detected within 20 dB of the limit.

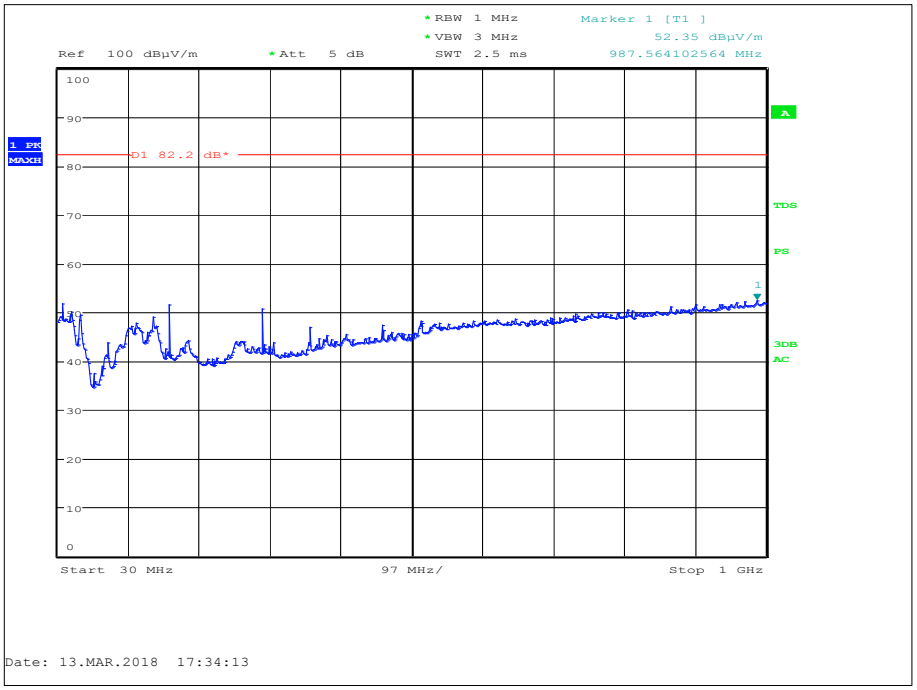

Figure 6 - 30 MHz to 1 GHz - Horizontal and Vertical

Frequency (GHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 11 - 1 GHz to 25 GHz Emissions Results

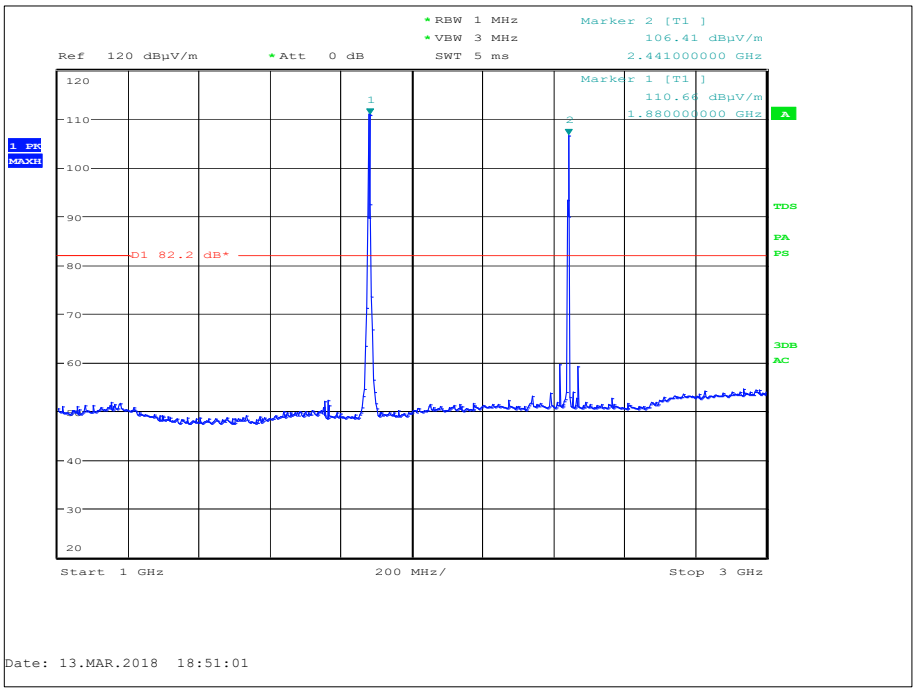

Figure 7 - 1 GHz to 3 GHz - Horizontal and Vertical

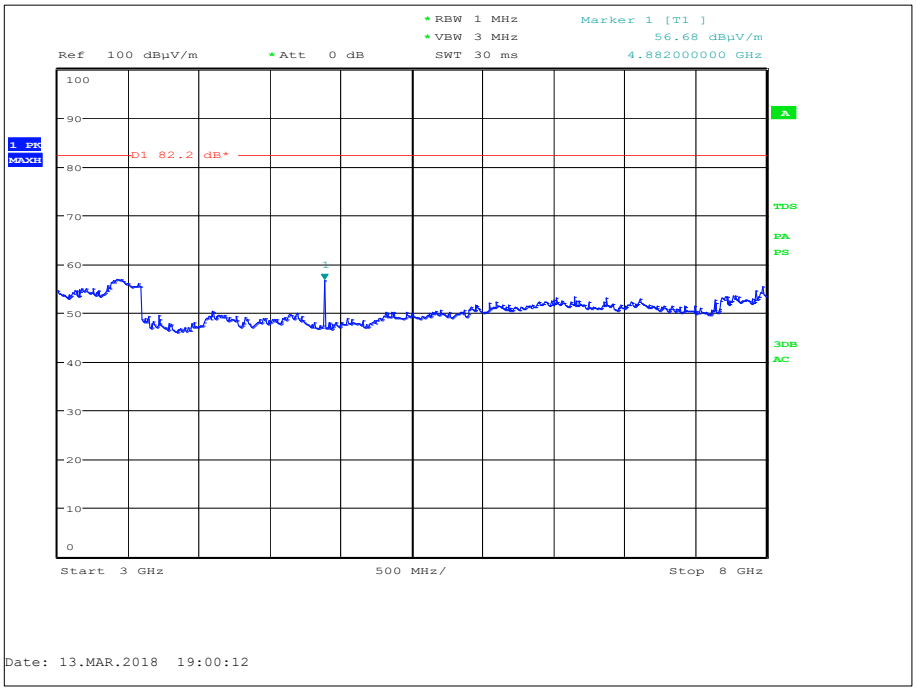

Figure 8 - 3 GHz to 8 GHz - Horizontal and Vertical

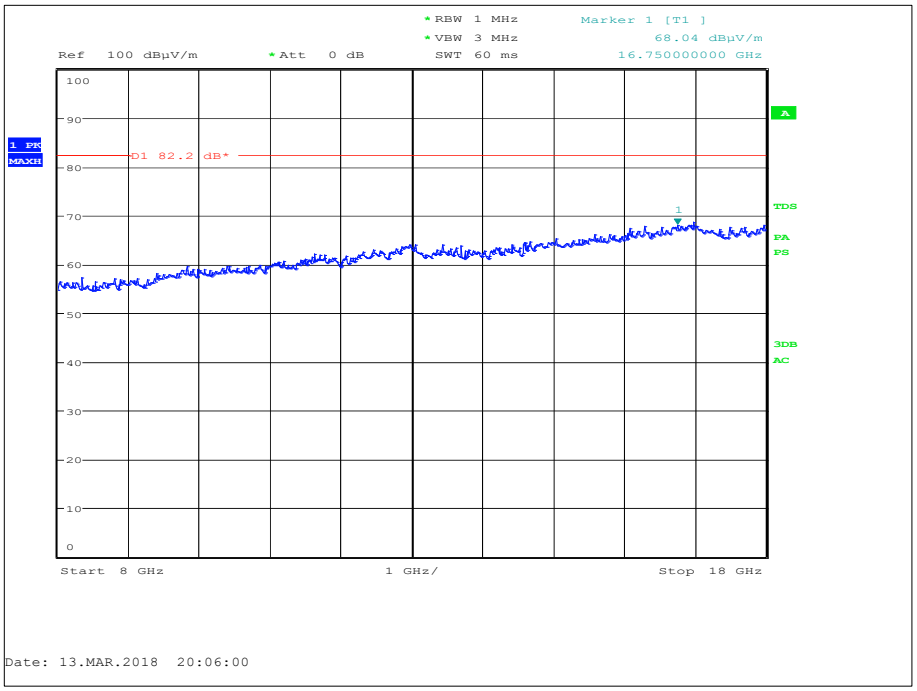

Figure 9 - 8 GHz to 18 GHz - Horizontal and Vertical

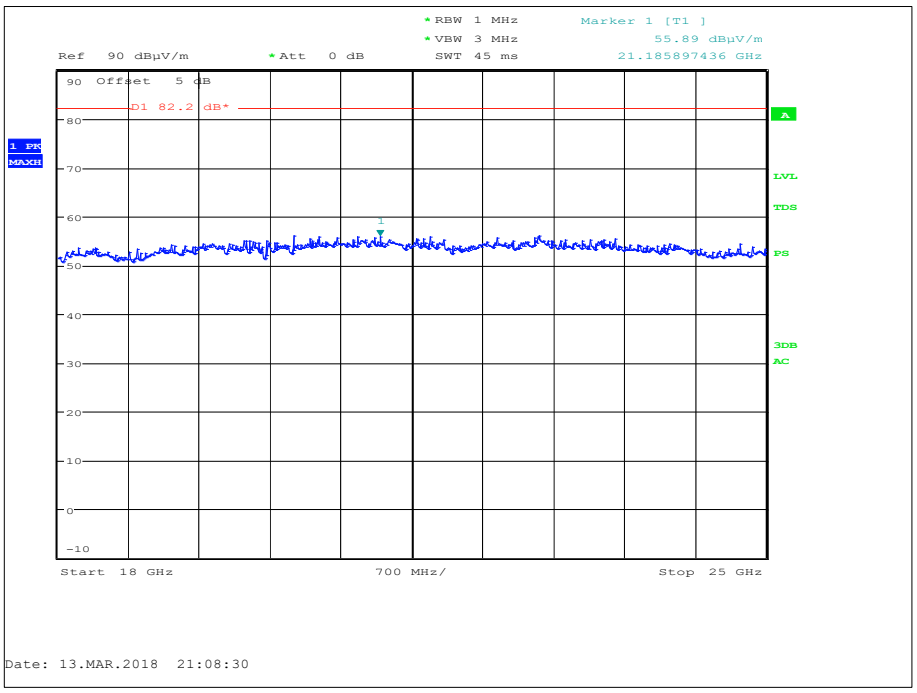

Figure 10 - 18 GHz to 25 GHz - Horizontal and Vertical

FCC 47 CFR Parts 15.247(d), 15.205, and 24.238(a)

The least stringent limit from the applicable rule parts was used to determine compliance for Radiated Emissions testing of multiple transmission sources.

The least stringent applicable limit was:

Rule Part	Limit
Part 24.238 (a)	-13 dBm (EIRP) / 82 dBµV/m at 3m.

Table 12 - Limit Table

Simultaneous transmission - Bluetooth and FDD V

The EUT was configured for simultaneous transmission in the following mode of operation:

Technology	Frequency Band (MHz)	Channel Frequency (MHz)
Bluetooth	2400 MHz to 2483.5 MHz	2441 MHz
WCDMA	FDD V	836.4 MHz

Table 13 - Modes of Operation

Frequency (MHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 14 - 30 MHz to 1 GHz Emissions Results

*No emissions were detected within 20 dB of the limit.

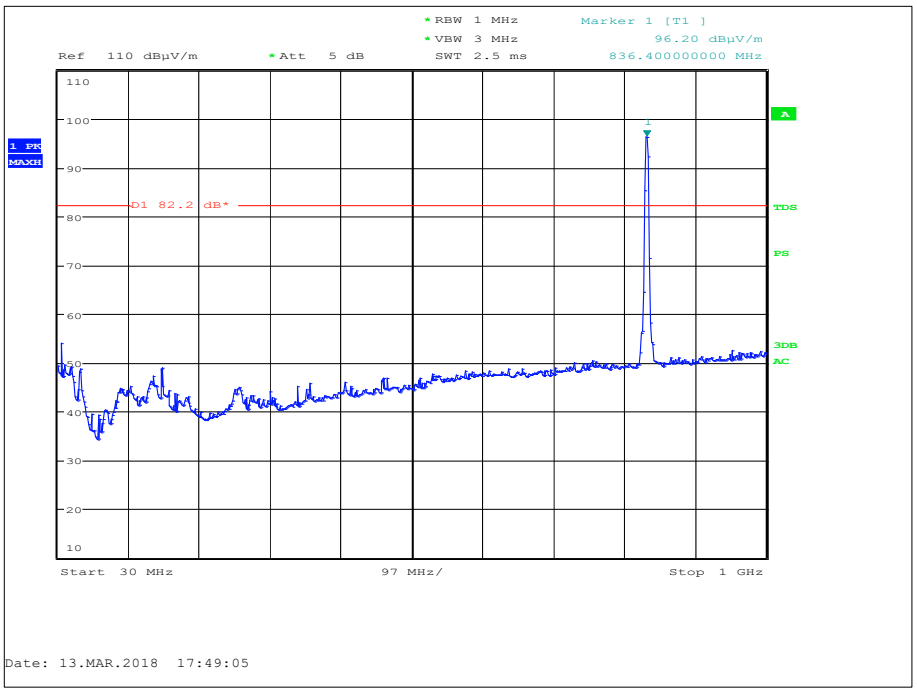

Figure 11 - 30 MHz to 1 GHz - Horizontal and Vertical

Frequency (GHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 15 - 1 GHz to 25 GHz Emissions Results

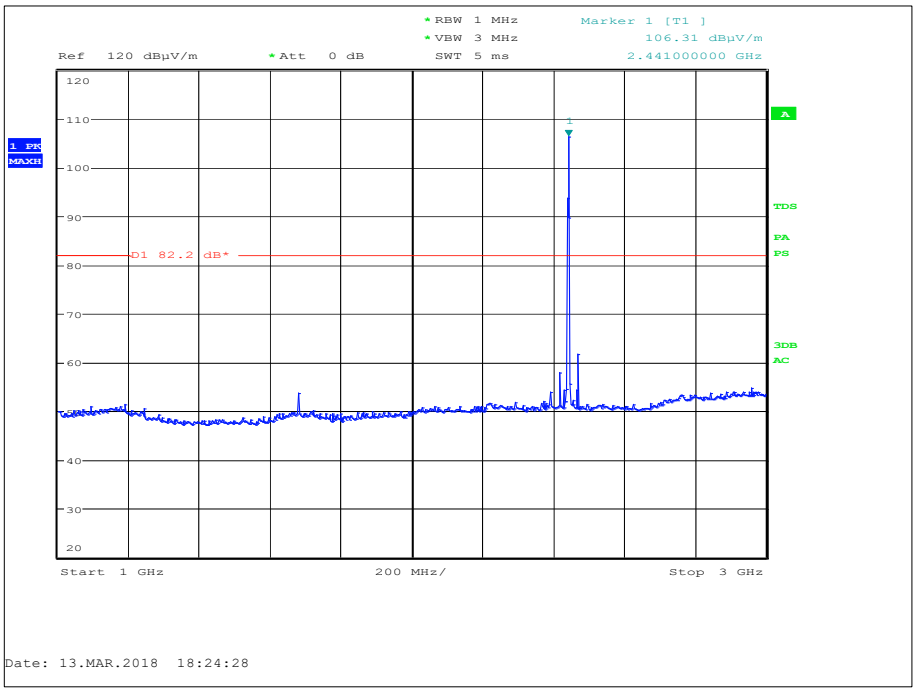

Figure 12 - 1 GHz to 3 GHz - Horizontal and Vertical

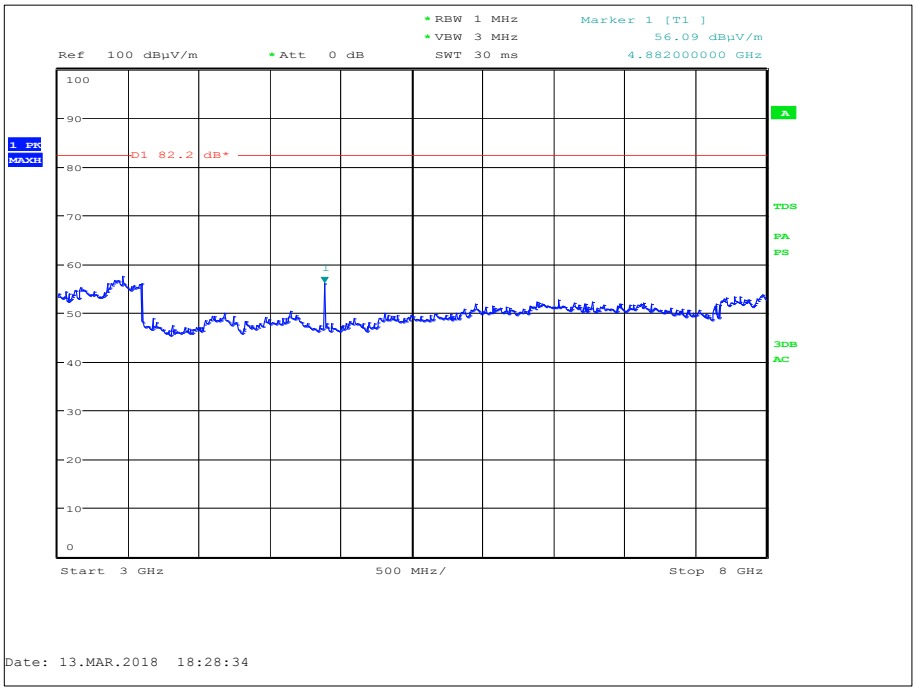

Figure 13 - 3 GHz to 8 GHz - Horizontal and Vertical

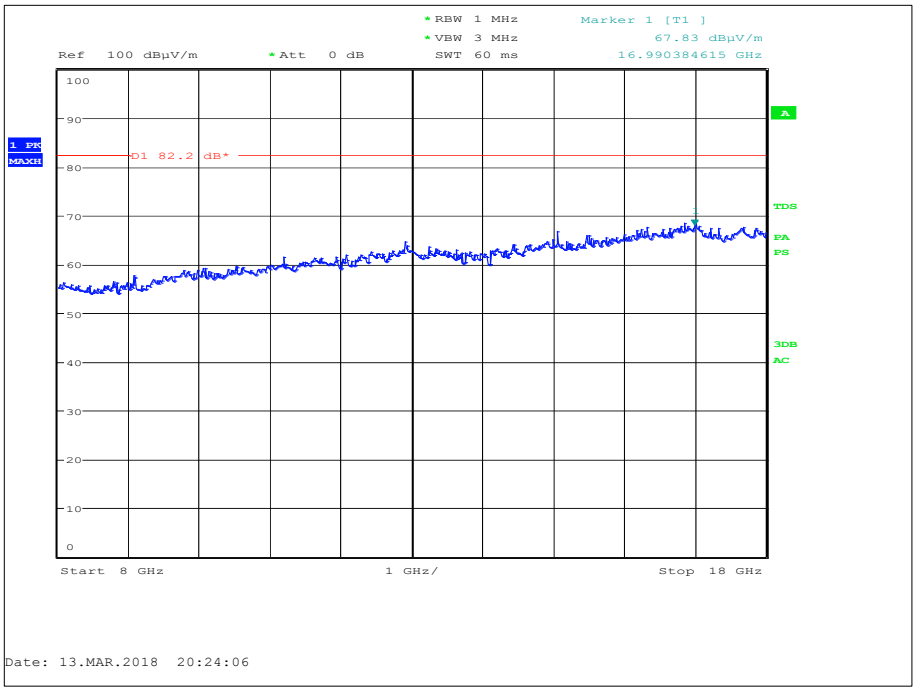

Figure 14 - 8 GHz to 18 GHz - Horizontal and Vertical

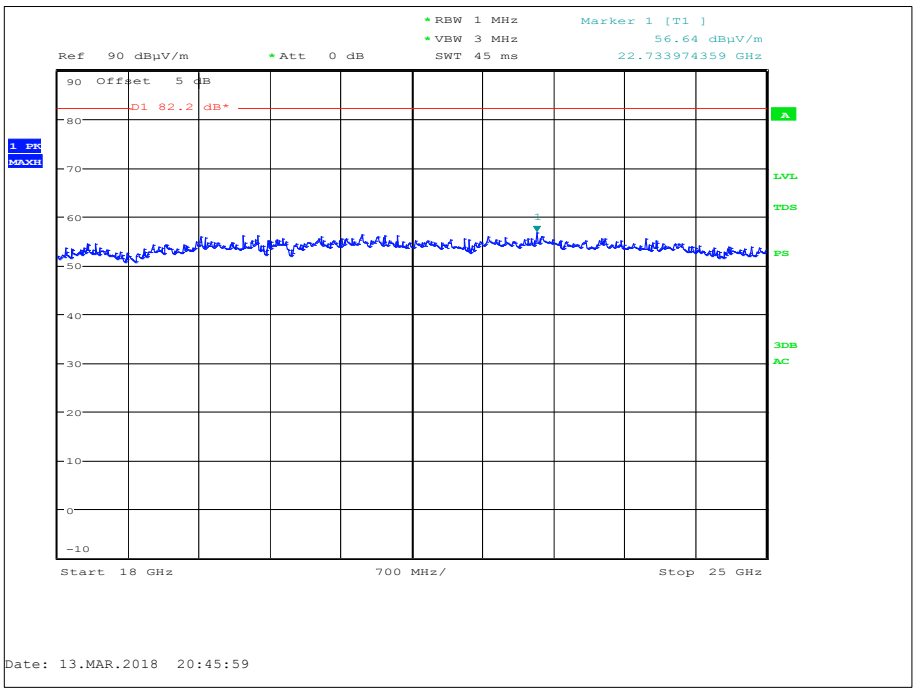

Figure 15 - 18 GHz to 25 GHz - Horizontal and Vertical

FCC 47 CFR Parts 15.247(d), 15.205, and 22.917(a)

The least stringent limit from the applicable rule parts was used to determine compliance for Radiated Emissions testing of multiple transmission sources.

The least stringent applicable limit was:

Rule Part	Limit
Part 22.917 (a)	-13 dBm (EIRP) / 82 dBµV/m at 3m.

Table 16 - Limit Table

Simultaneous transmission - 2.4 GHz WLAN - FDD II

The EUT was configured for simultaneous transmission in the following mode of operation:

Technology	Frequency Band (MHz)	Channel Frequency (MHz)
802.11b	2400 MHz to 2483.5 MHz	2437 MHz
WCDMA	FDD II	1880 MHz

Table 17 - Modes of Operation

Frequency (MHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 18 - 30 MHz to 1 GHz Emissions Results

*No emissions were detected within 20 dB of the limit.

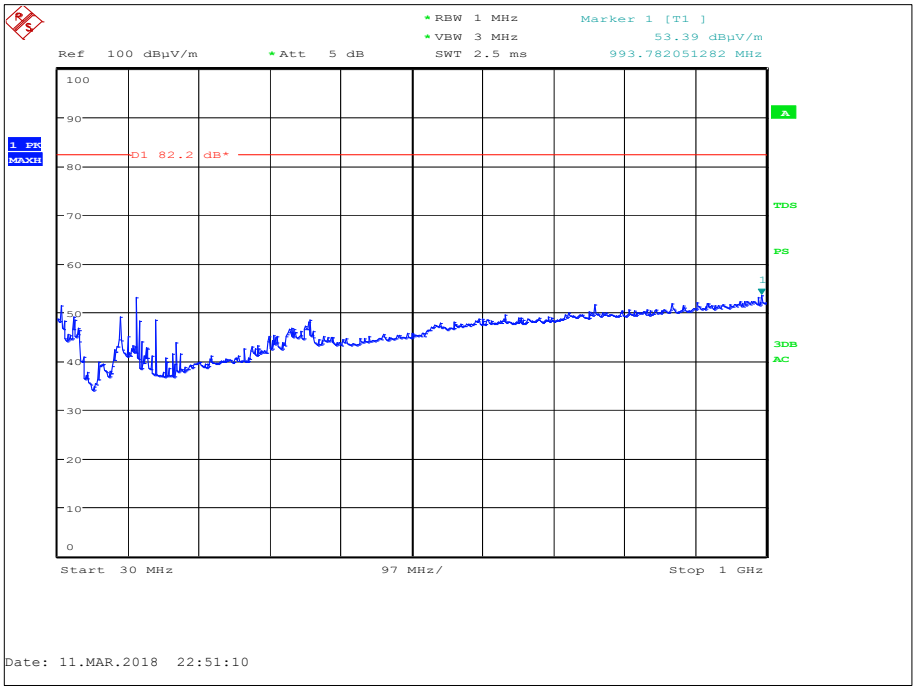

Figure 16 - 30 MHz to 1 GHz - Horizontal and Vertical

Frequency (GHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 19 - 1 GHz to e.g. 25 GHz Emissions Results

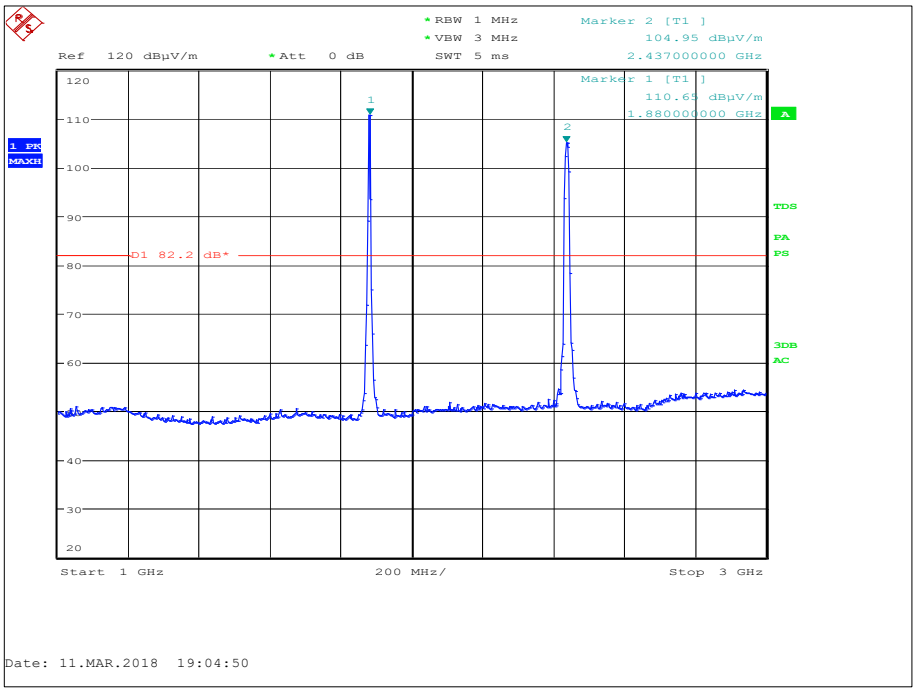

Figure 17 - 1 GHz to 3 GHz - Horizontal and Vertical

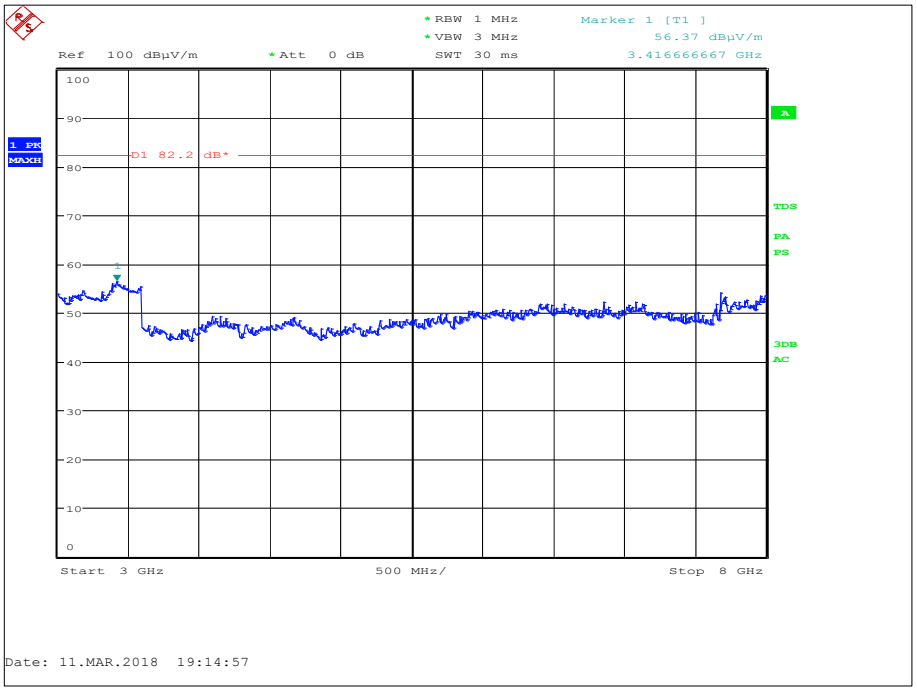

Figure 18 - 3 GHz to 8 GHz - Horizontal and Vertical

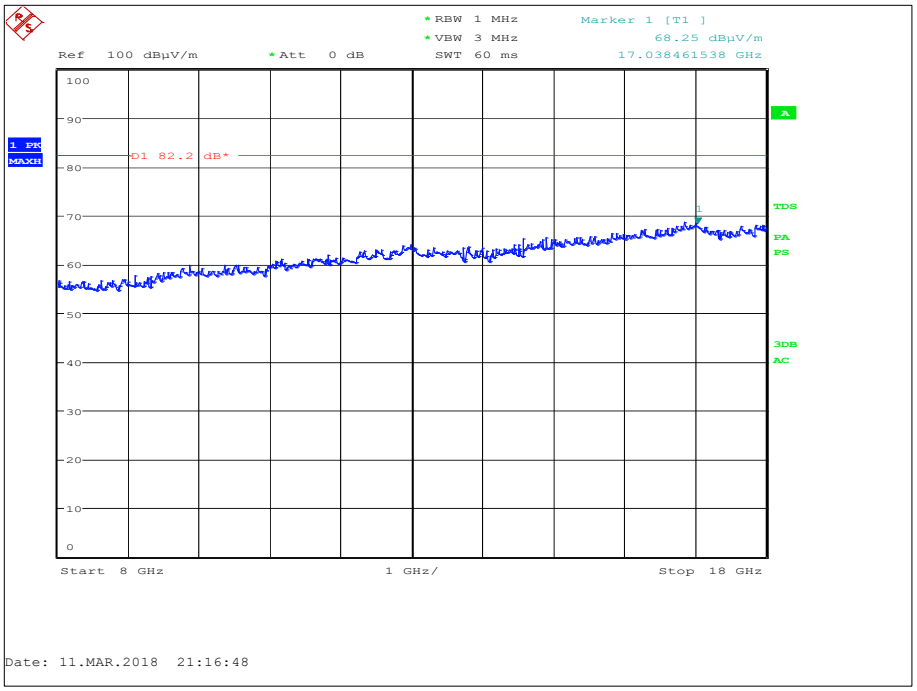

Figure 19 - 8 GHz to 18 GHz - Horizontal and Vertical

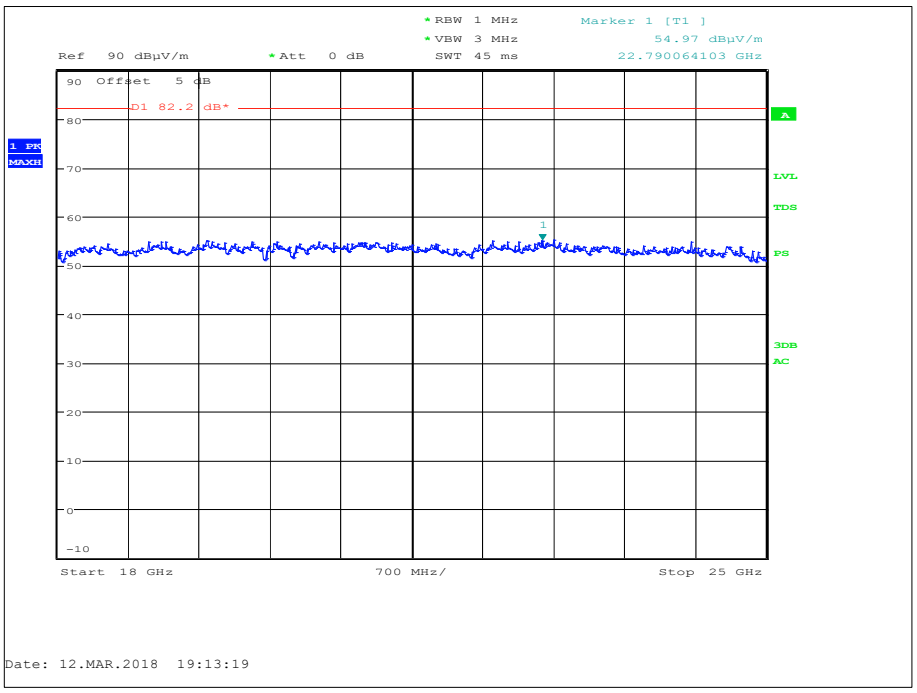

Figure 20 - 18 GHz to 25 GHz - Horizontal and Vertical

FCC 47 CFR Parts 15.247(d), 15.205, and 24.238(a)

The least stringent limit from the applicable rule parts was used to determine compliance for Radiated Emissions testing of multiple transmission sources.

The least stringent applicable limit was:

Rule Part	Limit
Part 24.238 (a)	-13 dBm (EIRP) / 82 dBµV/m at 3m.

Table 20 - Limit Table

Simultaneous transmission - 2.4 GHz WLAN - FDD IV

The EUT was configured for simultaneous transmission in the following mode of operation:

Technology	Frequency Band (MHz)	Channel Frequency (MHz)
802.11b	2400 MHz to 2483.5 MHz	2437 MHz
WCDMA	FDD IV	1732.5 MHz

Table 21 - Modes of Operation

Frequency (MHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 22 - 30 MHz to 1 GHz Emissions Results

*No emissions were detected within 20 dB of the limit.

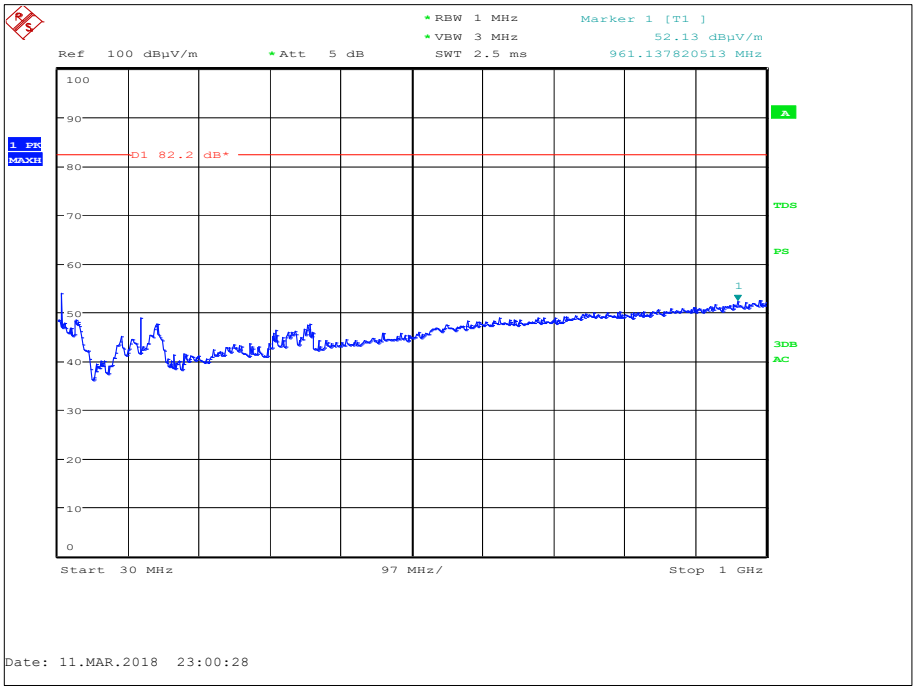

Figure 21 - 30 MHz to 1 GHz - Horizontal and Vertical

Frequency (GHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)w	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 23 - 1 GHz to 25 GHz Emissions Results

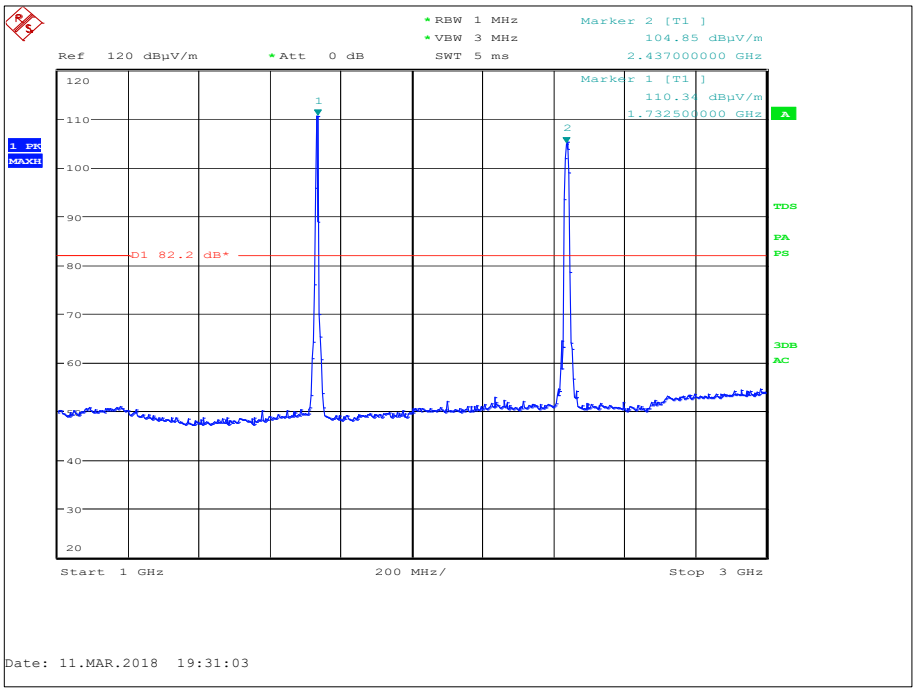

Figure 22 - 1 GHz to 3 GHz - Horizontal and Vertical

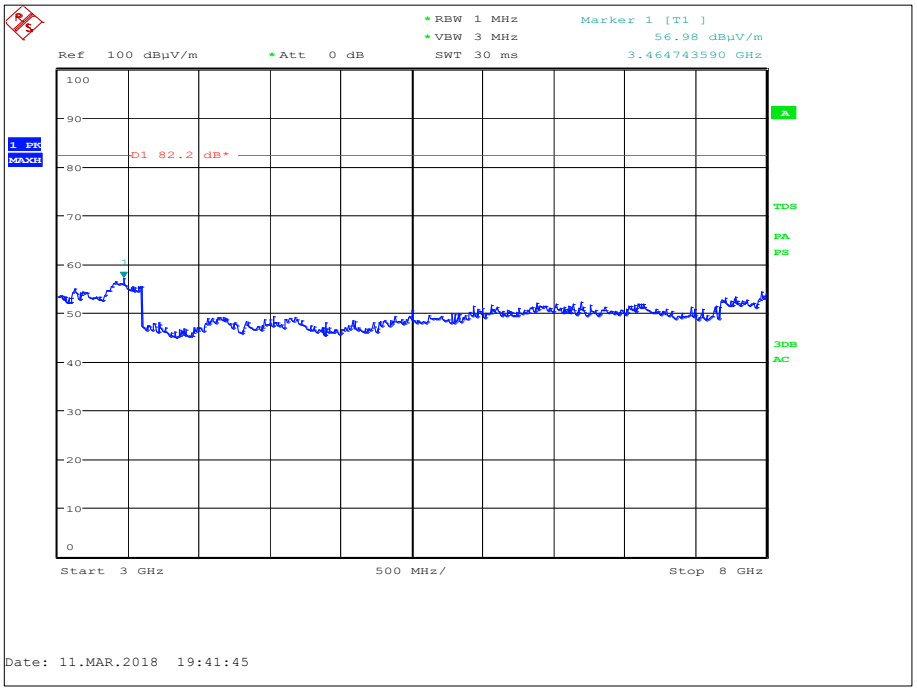

Figure 23 - 3 GHz to 8 GHz - Horizontal and Vertical

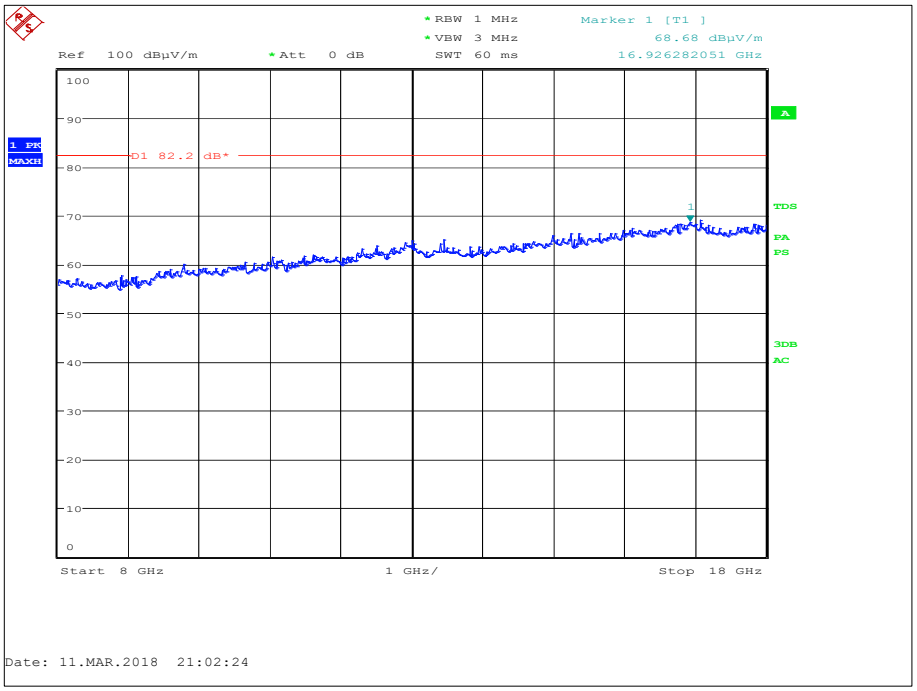

Figure 24 - 8 GHz to 18 GHz - Horizontal and Vertical

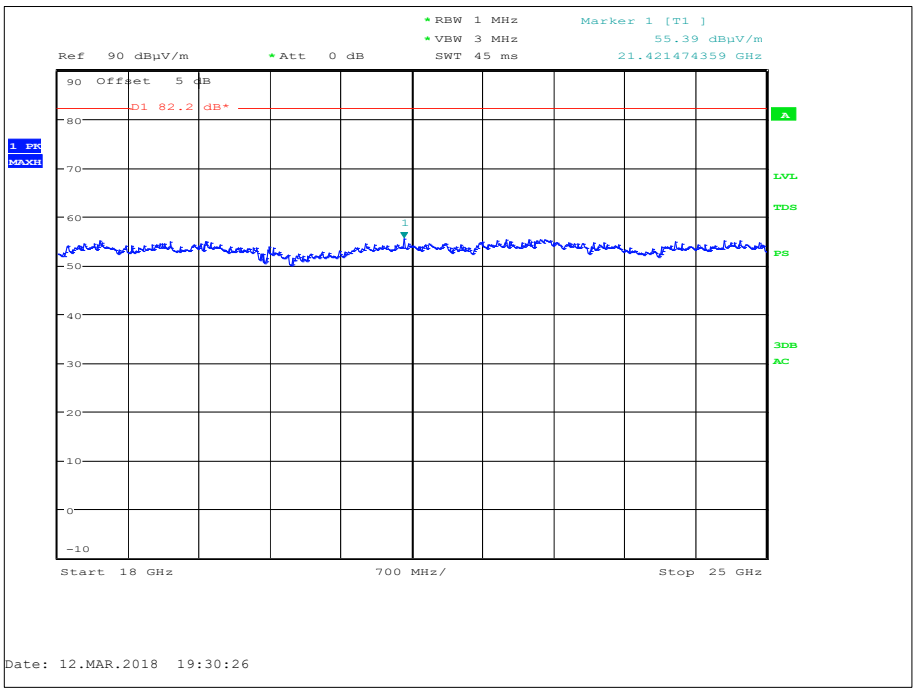

Figure 25 - 18 GHz to 25 GHz - Horizontal and Vertical

FCC 47 CFR Parts 15.247(d), 15.205, and 27.53 (h)

The least stringent limit from the applicable rule parts was used to determine compliance for Radiated Emissions testing of multiple transmission sources.

The least stringent applicable limit was:

Rule Part	Limit
Part 27.53 (h)	-13 dBm (EIRP) / 82 dBµV/m at 3m.

Table 24 - Limit Table

Simultaneous transmission - 2.4 GHz WLAN - FDD V

The EUT was configured for simultaneous transmission in the following mode of operation:

Technology	Frequency Band (MHz)	Channel Frequency (MHz)
802.11b	2400 MHz to 2483.5 MHz	2437 MHz
WCDMA	FDD V	836.4 MHz

Table 25 - Modes of Operation

Frequency (MHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 26 - 30 MHz to 1 GHz Emissions Results

*No emissions were detected within 20 dB of the limit.

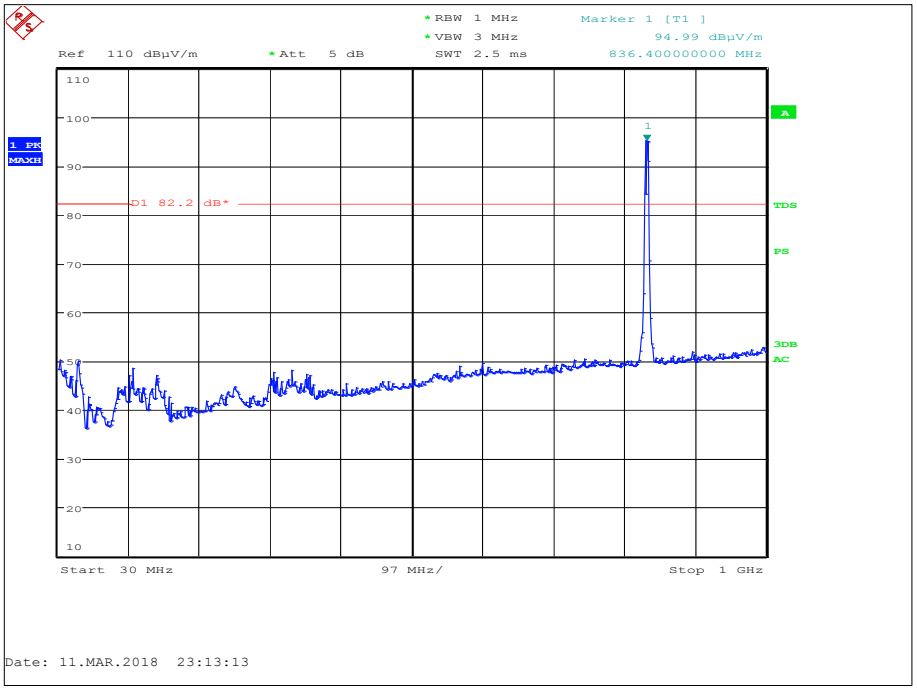

Figure 26 - 30 MHz to 1 GHz - Horizontal and Vertical

Frequency (GHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 27- 1 GHz to 25 GHz Emissions Results

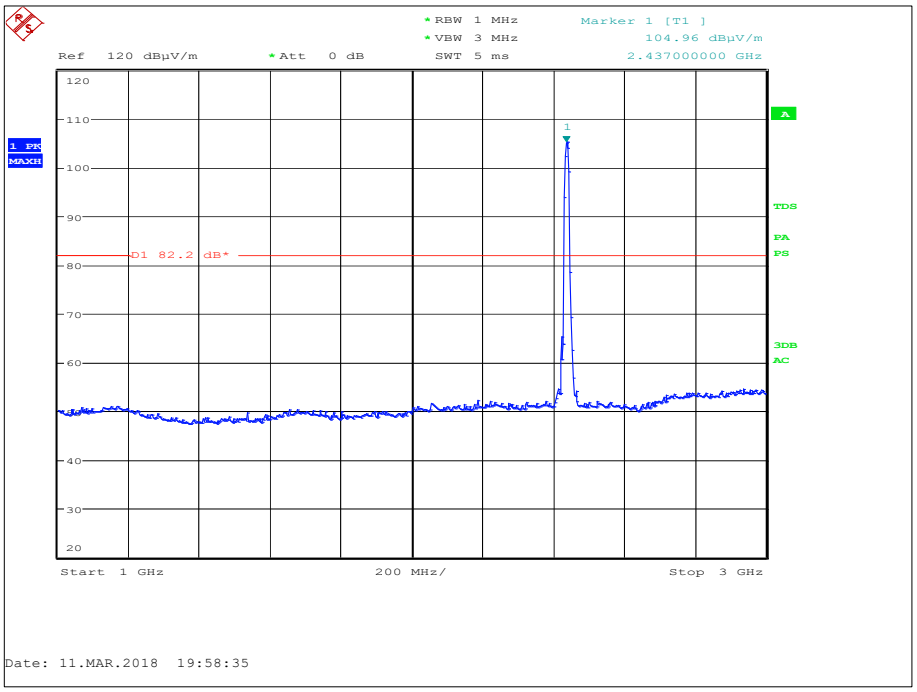

Figure 27 - 1 GHz to 3 GHz - Horizontal and Vertical

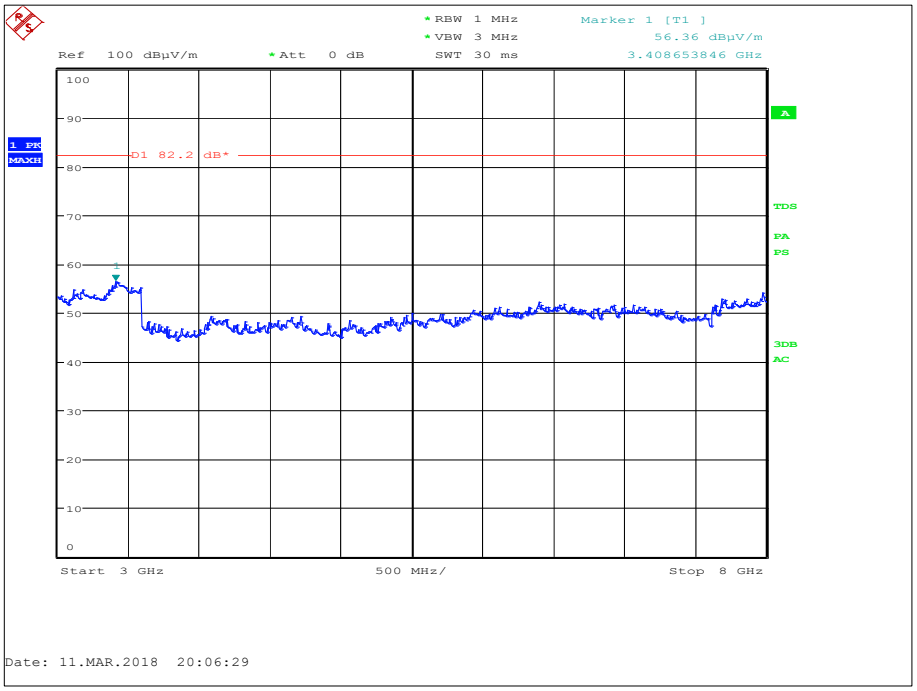

Figure 28 - 3 GHz to 8 GHz - Horizontal and Vertical

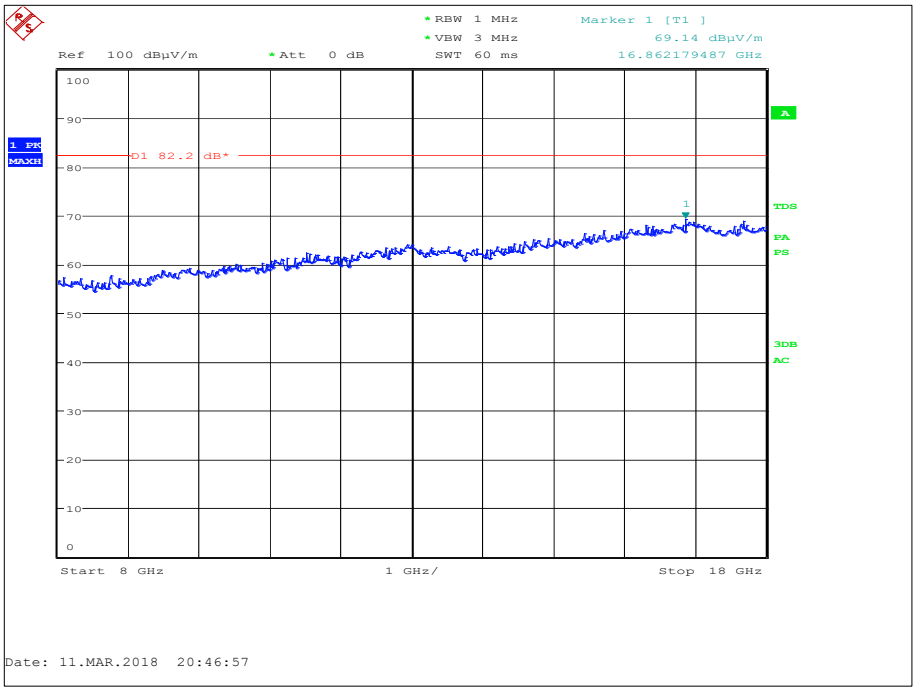

Figure 29 - 8 GHz to 18 GHz - Horizontal and Vertical

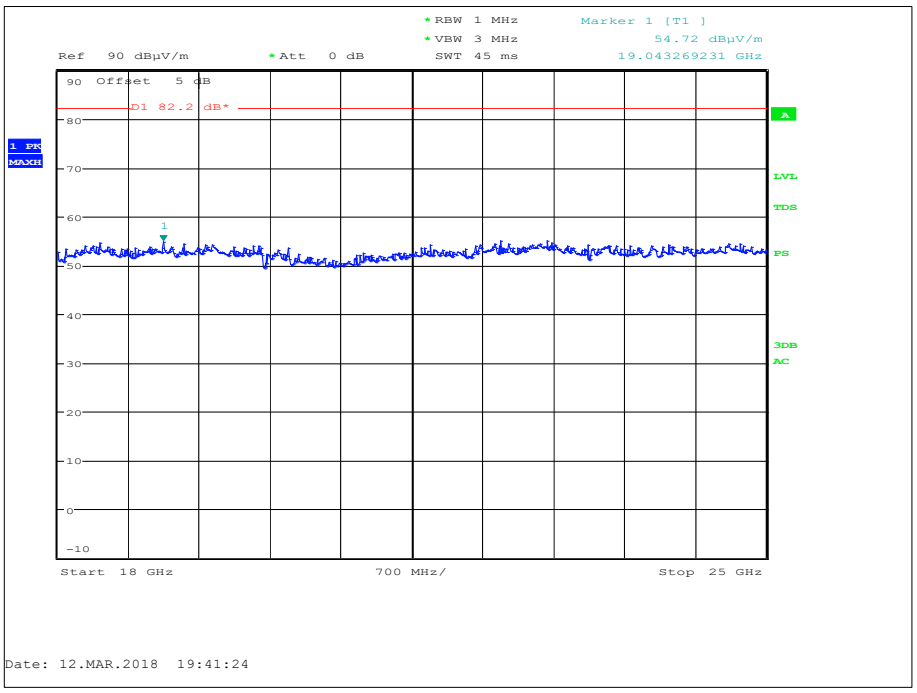

Figure 30 - 18 GHz to 25 GHz - Horizontal and Vertical

FCC 47 CFR Parts 15.247(d), 15.205, and 22.917(a)

The least stringent limit from the applicable rule parts was used to determine compliance for Radiated Emissions testing of multiple transmission sources.

The least stringent applicable limit was:

Rule Part	Limit
Part 22.917 (a)	-13 dBm (EIRP) / 82 dBµV/m at 3m.

Table 28 - Limit Table

Simultaneous transmission - Bluetooth and DSC 1900 MHz

The EUT was configured for simultaneous transmission in the following mode of operation:

Technology	Frequency Band (MHz)	Channel Frequency (MHz)
Bluetooth	2400 MHz to 2483.5 MHz	2441 MHz
GSM	1900	1880 MHz

Table 29 - Modes of Operation

Frequency (MHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 30 - 30 MHz to 1 GHz Emissions Results

*No emissions were detected within 20 dB of the limit.

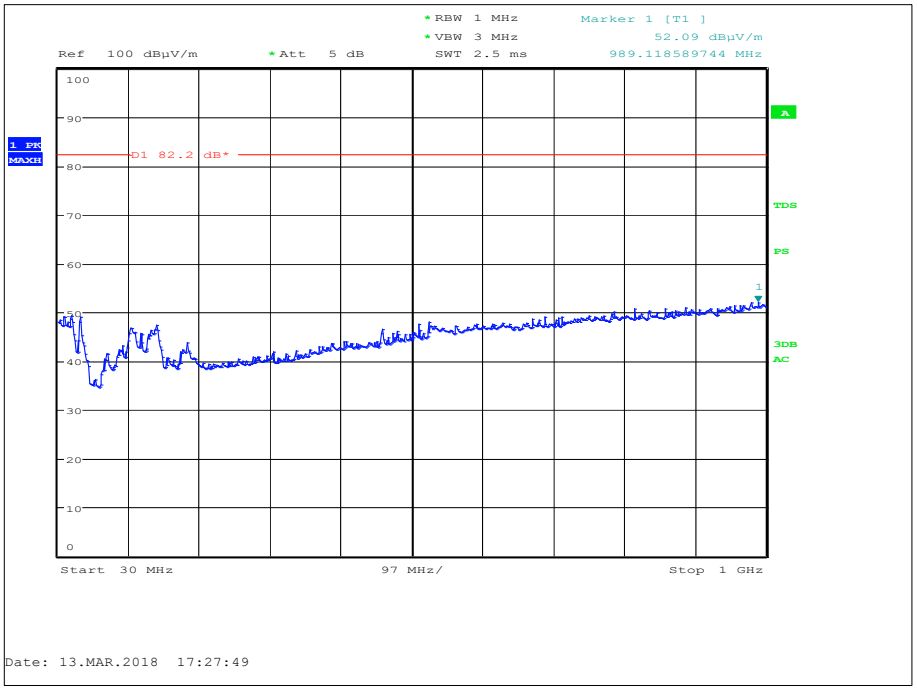

Figure 31 - 30 MHz to 1 GHz - Horizontal and Vertical

Frequency (GHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 31 - 1 GHz to 25 GHz Emissions Results

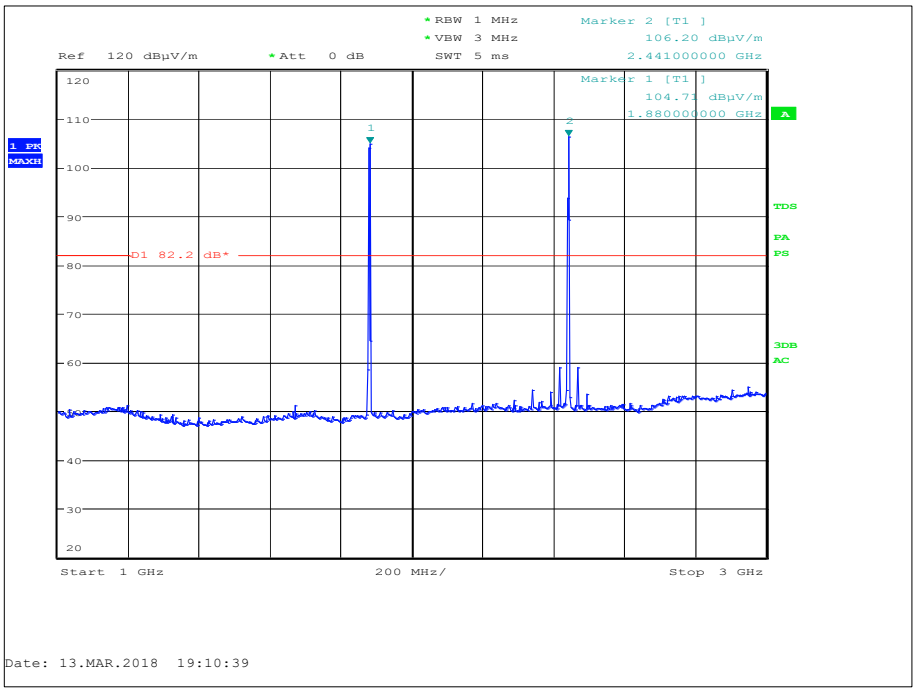

Figure 32 - 1 GHz to 3 GHz - Horizontal and Vertical

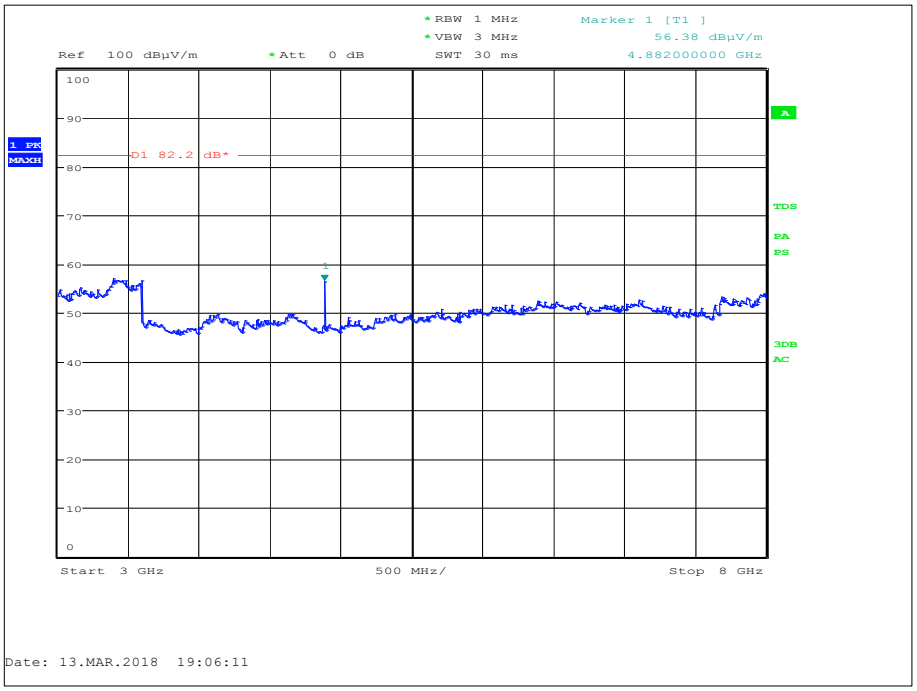

Figure 33 - 3 GHz to 8 GHz - Horizontal and Vertical

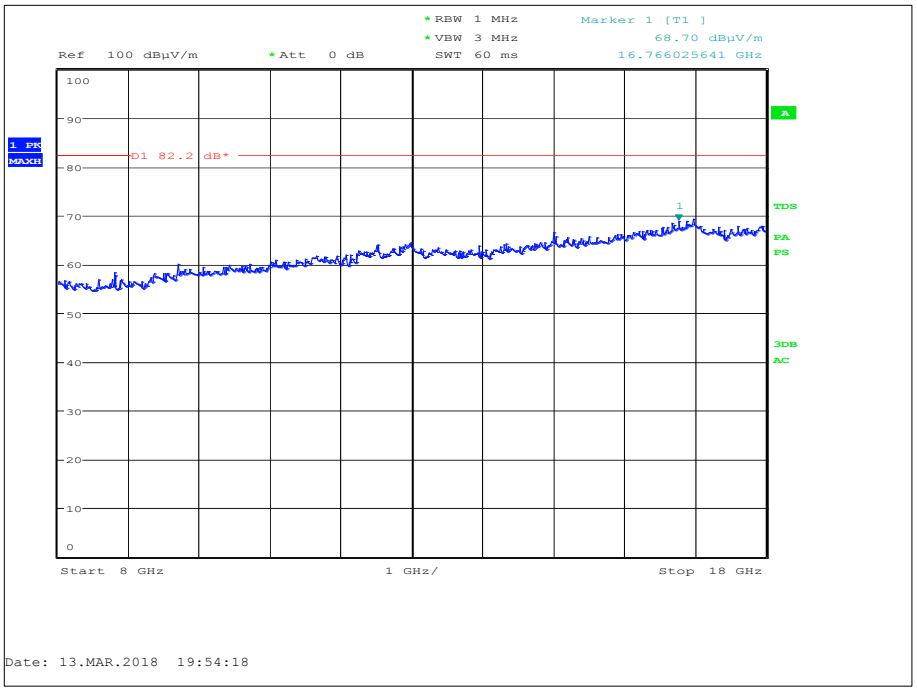

Figure 34 - 8 GHz to 18 GHz - Horizontal and Vertical

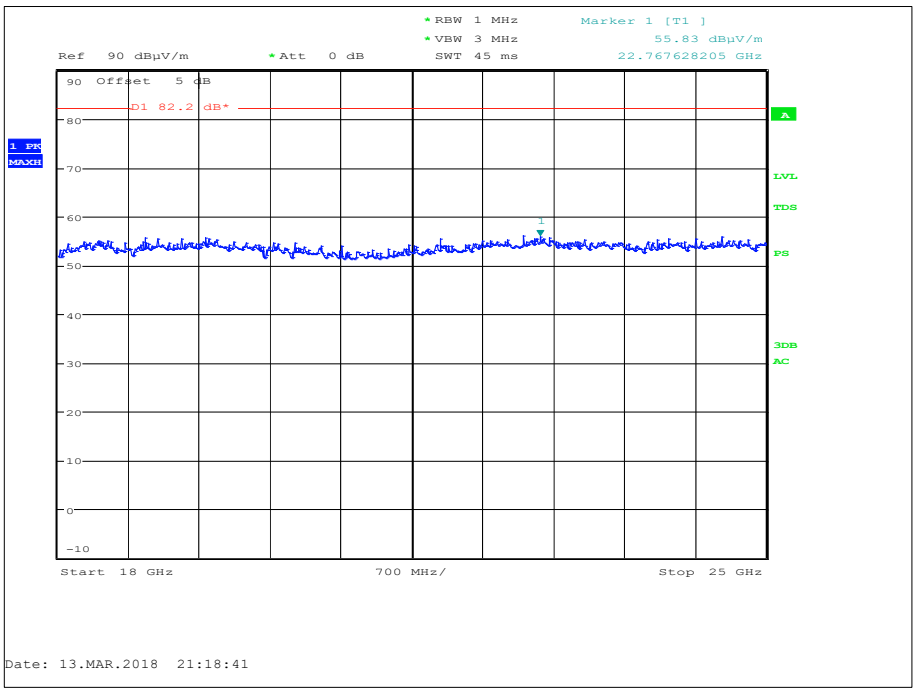

Figure 35 - 18 GHz to 25 GHz - Horizontal and Vertical

FCC 47 CFR Parts 15.247(d), 15.205, and 24.238(a)

The least stringent limit from the applicable rule parts was used to determine compliance for Radiated Emissions testing of multiple transmission sources.

The least stringent applicable limit was:

Rule Part	Limit
Part 24.238 (a)	-13 dBm (EIRP) / 82 dBµV/m at 3m.

Table 32 - Limit Table

Simultaneous transmission - Bluetooth and GSM 850 MHz

The EUT was configured for simultaneous transmission in the following mode of operation:

Technology	Frequency Band (MHz)	Channel Frequency (MHz)
Bluetooth	2400 MHz to 2483.5 MHz	2441 MHz
GSM	850	836.6 MHz

Table 33 - Modes of Operation

Frequency (MHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 34 - 30 MHz to 1 GHz Emissions Results

*No emissions were detected within 20 dB of the limit.

.

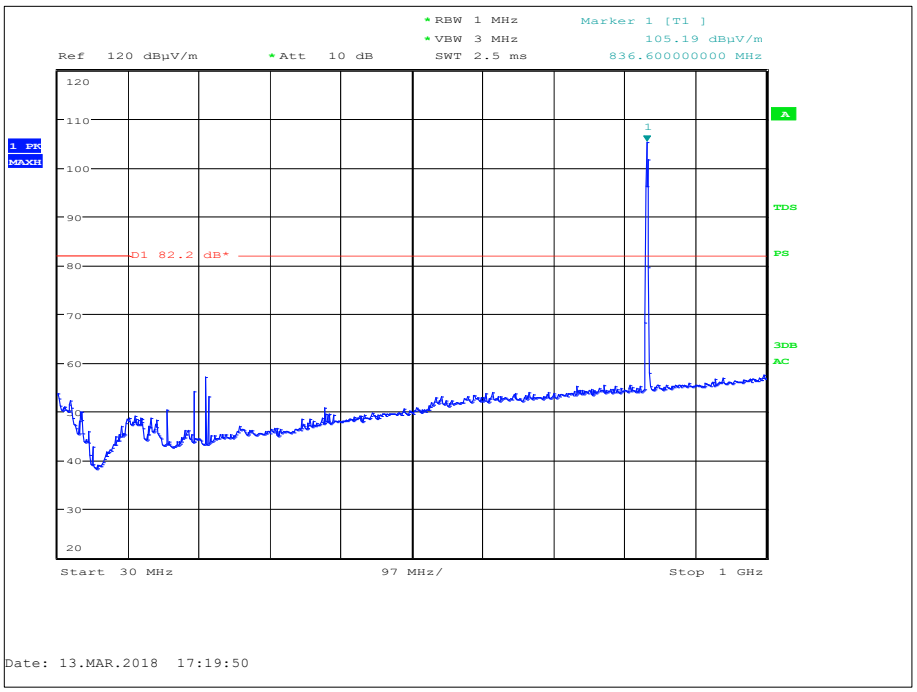

Figure 36 - 30 MHz to 1 GHz - Horizontal and Vertical

Frequency (GHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 35 - 1 GHz to 25 GHz Emissions Results

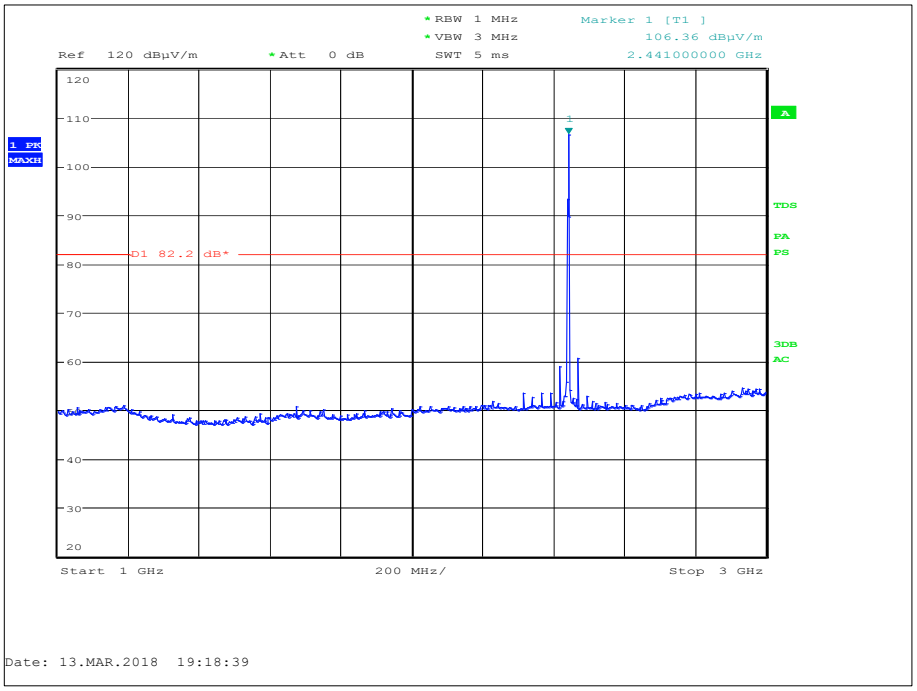

Figure 37 - 1 GHz to 3 GHz - Horizontal and Vertical

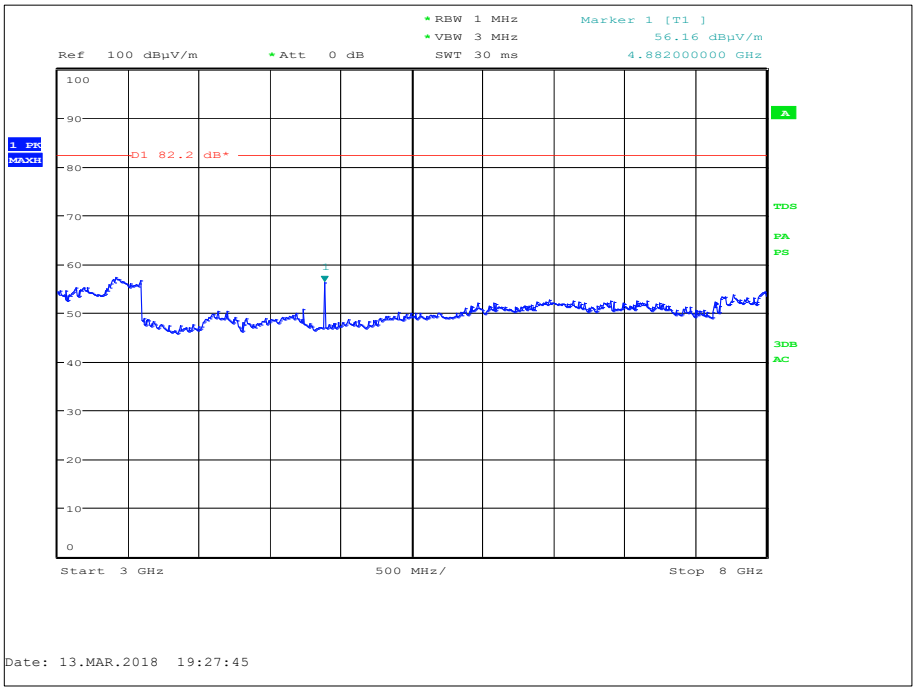

Figure 38 - 3 GHz to 8 GHz - Horizontal and Vertical

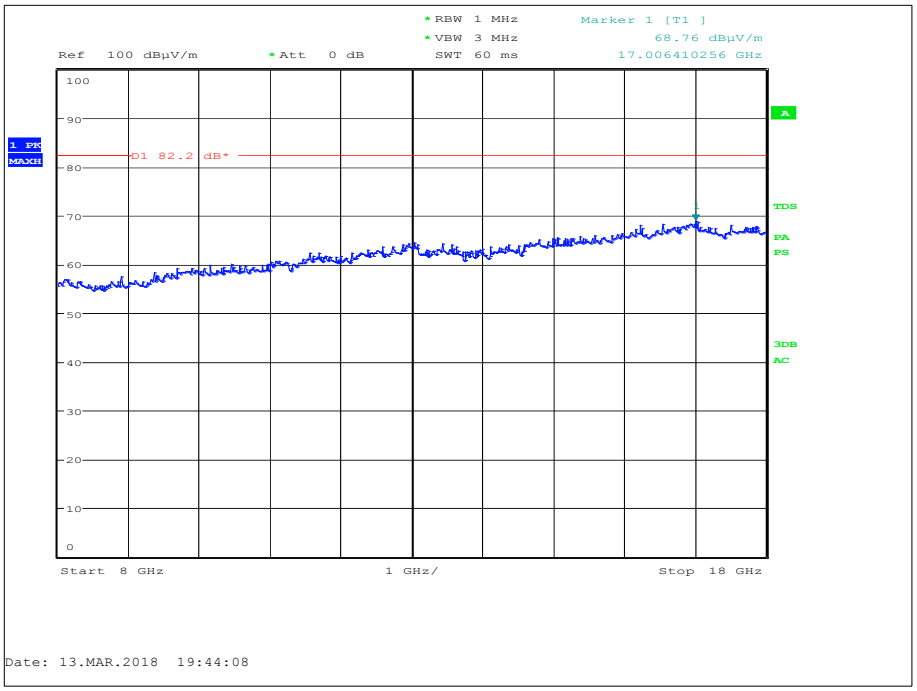

Figure 39 - 8 GHz to 18 GHz - Horizontal and Vertical

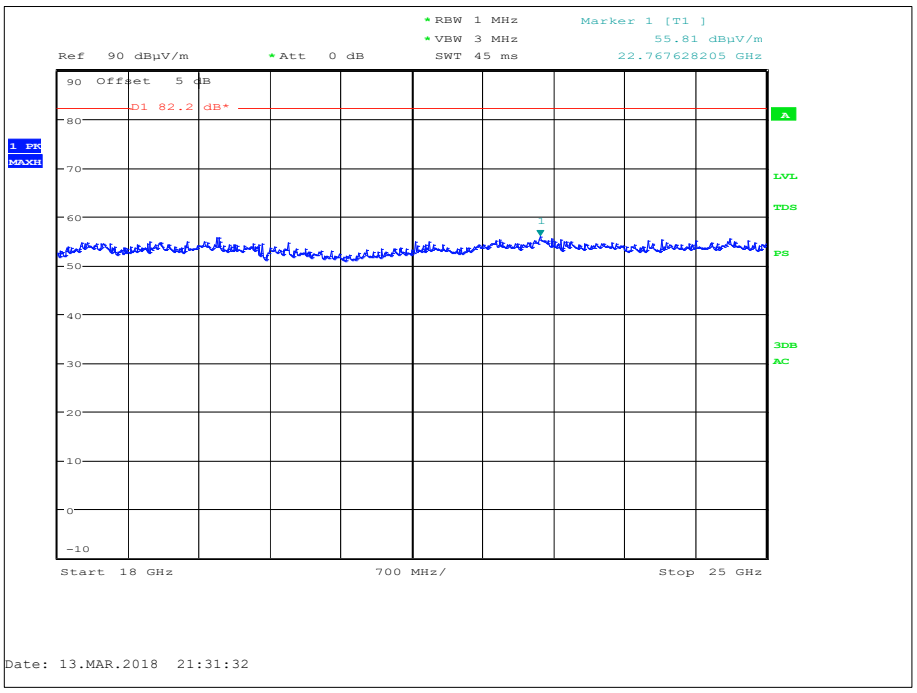

Figure 40 - 18 GHz to 25 GHz - Horizontal and Vertical

FCC 47 CFR Parts 15.247(d), 15.205, and 22.917(a)

The least stringent limit from the applicable rule parts was used to determine compliance for Radiated Emissions testing of multiple transmission sources.

The least stringent applicable limit was:

Rule Part	Limit
Part 22.917 (a)	-13 dBm (EIRP) / 82 dBµV/m at 3m.

Table 36 - Limit Table

Simultaneous transmission - 2.4 GHz WLAN and GSM 850 MHz

The EUT was configured for simultaneous transmission in the following mode of operation:

Technology	Frequency Band (MHz)	Channel Frequency (MHz)
802.11b	2400 MHz to 2483.5 MHz	2437 MHz
GSM	850	836.6

Table 37 - Modes of Operation

Frequency (MHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 38 - 30 MHz to 1 GHz Emissions Results

*No emissions were detected within 20 dB of the limit.

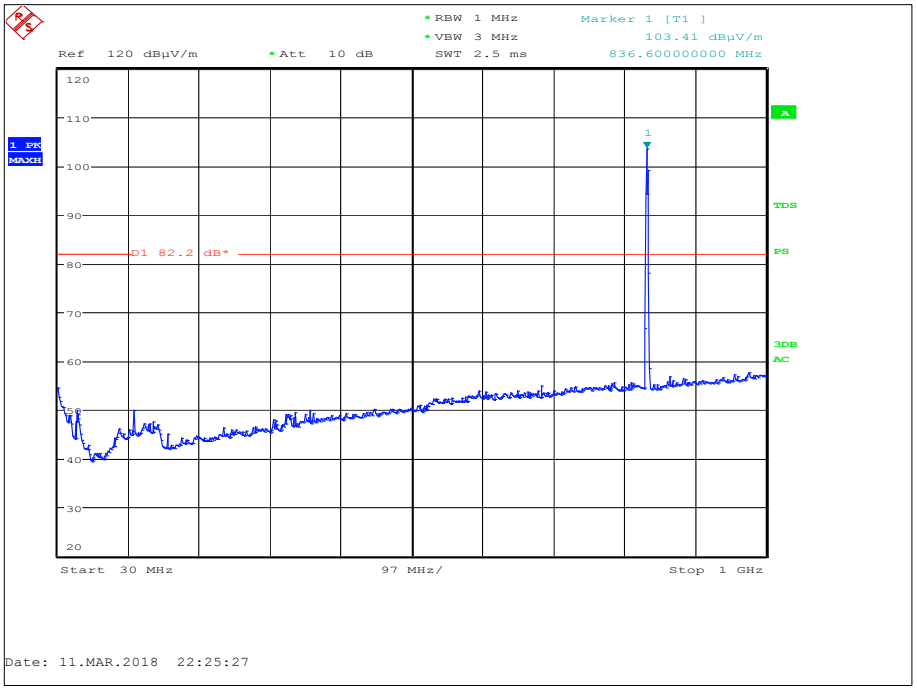

Figure 41 - 30 MHz to 1 GHz - Horizontal and Vertical

Frequency (GHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 39- 1 GHz to 25 GHz Emissions Results

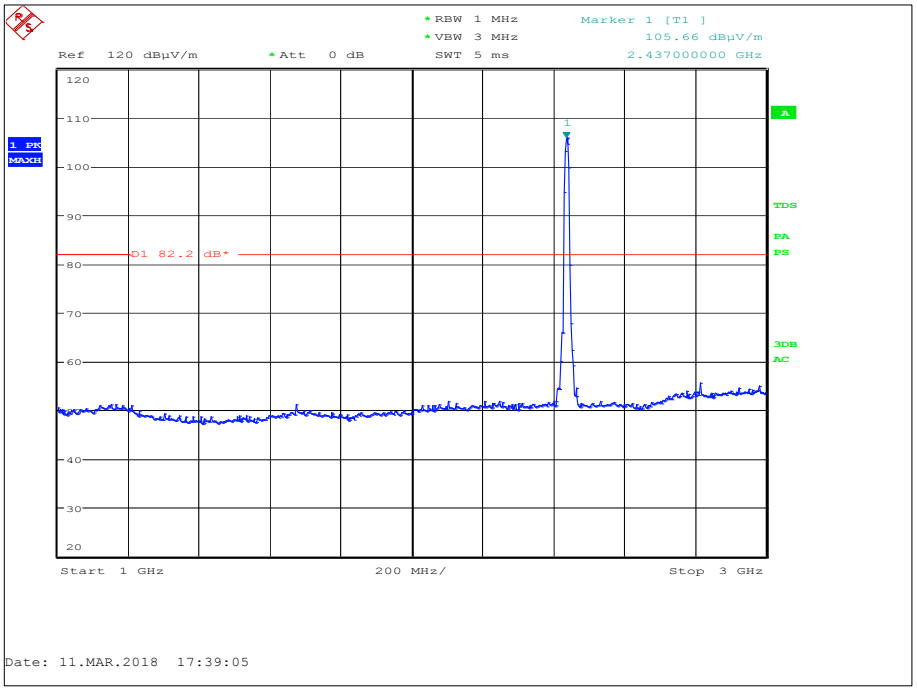

Figure 42 - 1 GHz to 3 GHz - Horizontal and Vertical

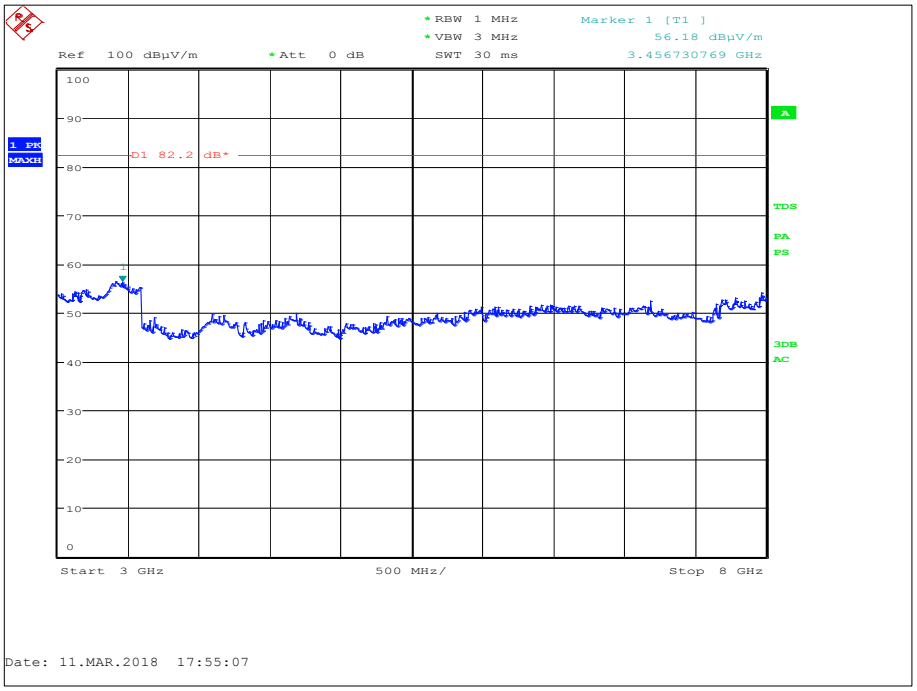

Figure 43 - 3 GHz to 8 GHz - Horizontal and Vertical

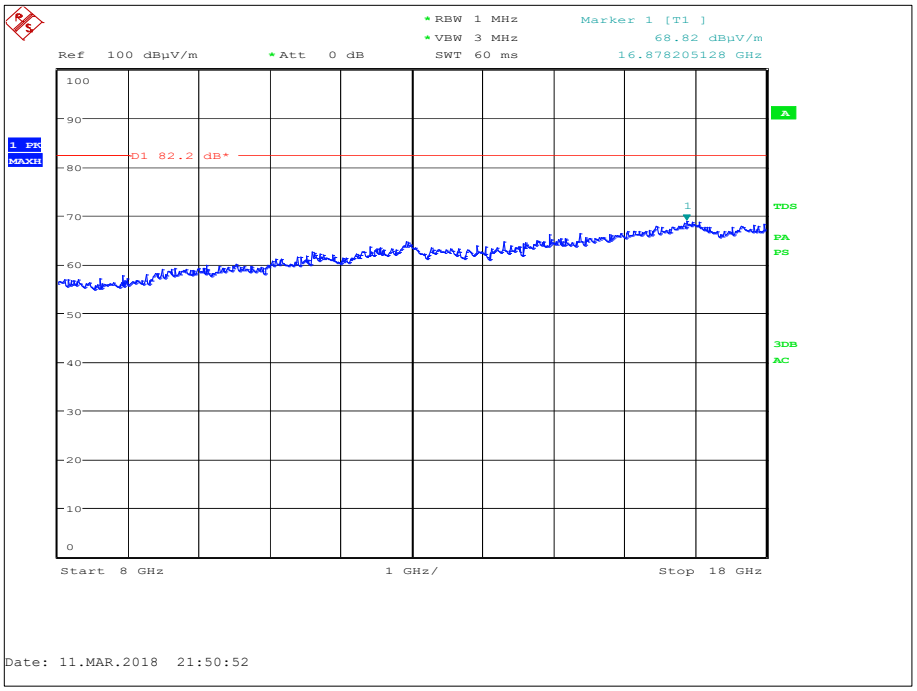

Figure 44 - 8 GHz to 18 GHz - Horizontal and Vertical

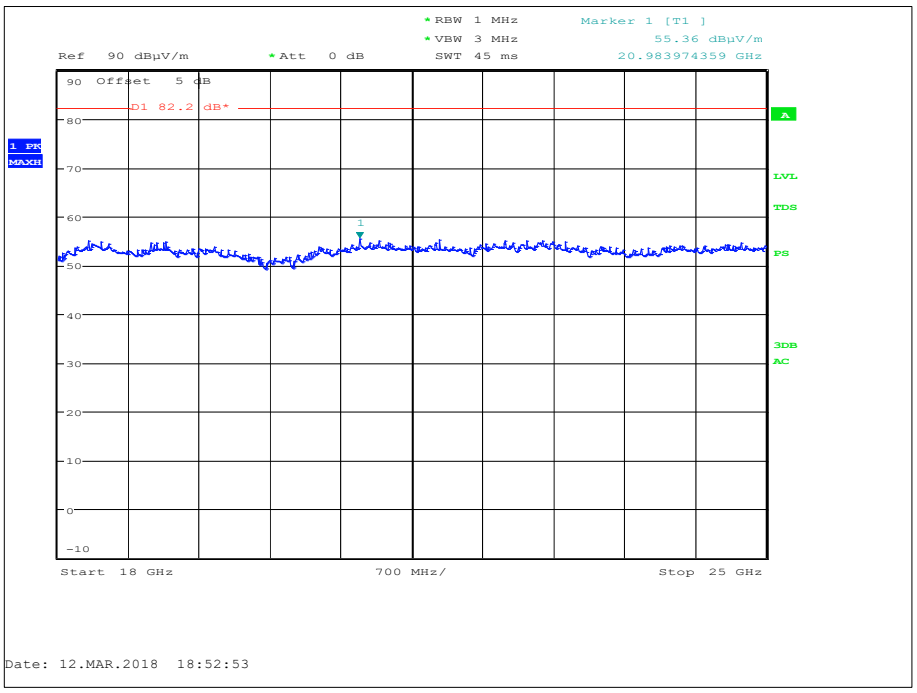

Figure 45 - 18 GHz to 25 GHz - Horizontal and Vertical

FCC 47 CFR Parts 15.247(d), 15.205, and 22.917(a)

The least stringent limit from the applicable rule parts was used to determine compliance for Radiated Emissions testing of multiple transmission sources.

The least stringent applicable limit was:

Rule Part	Limit
Part 22.917 (a)	-13 dBm (EIRP) / 82 dBµV/m at 3m.

Table 40 - Limit Table

Simultaneous transmission - 2.4 GHz WLAN and DSC 1900 MHz

The EUT was configured for simultaneous transmission in the following mode of operation:

Technology	Frequency Band (MHz)	Channel Frequency (MHz)
802.11b	2400 MHz to 2483.5 MHz	2437 MHz
GSM	1900	1880 MHz

Table 41 - Modes of Operation

Frequency (MHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 42 - 30 MHz to 1 GHz Emissions Results

*No emissions were detected within 20 dB of the limit.

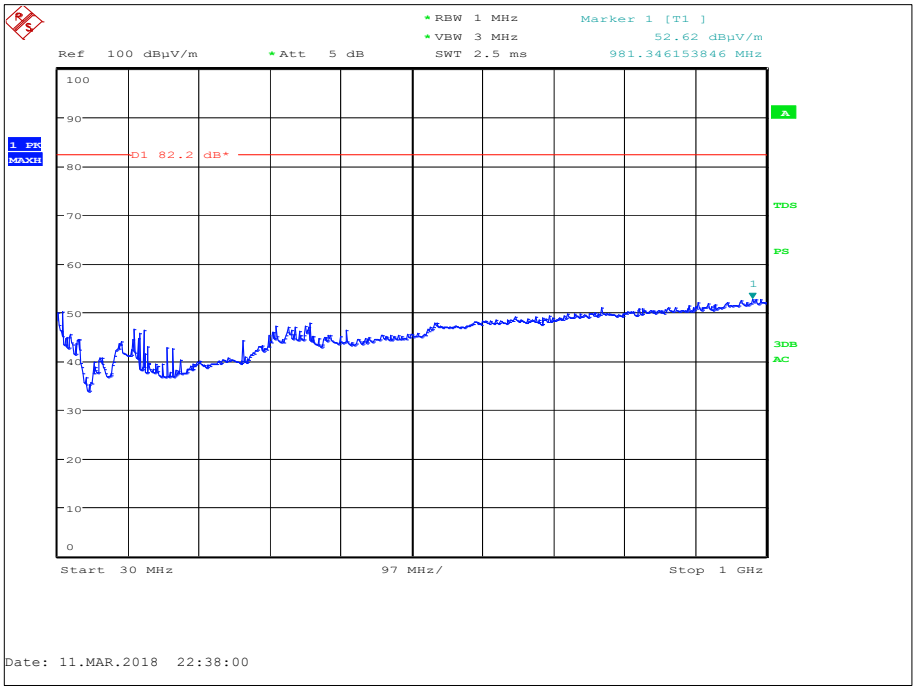

Figure 46 - 30 MHz to 1 GHz - Horizontal and Vertical

Frequency (GHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 43 - 1 GHz to 25 GHz Emissions Results

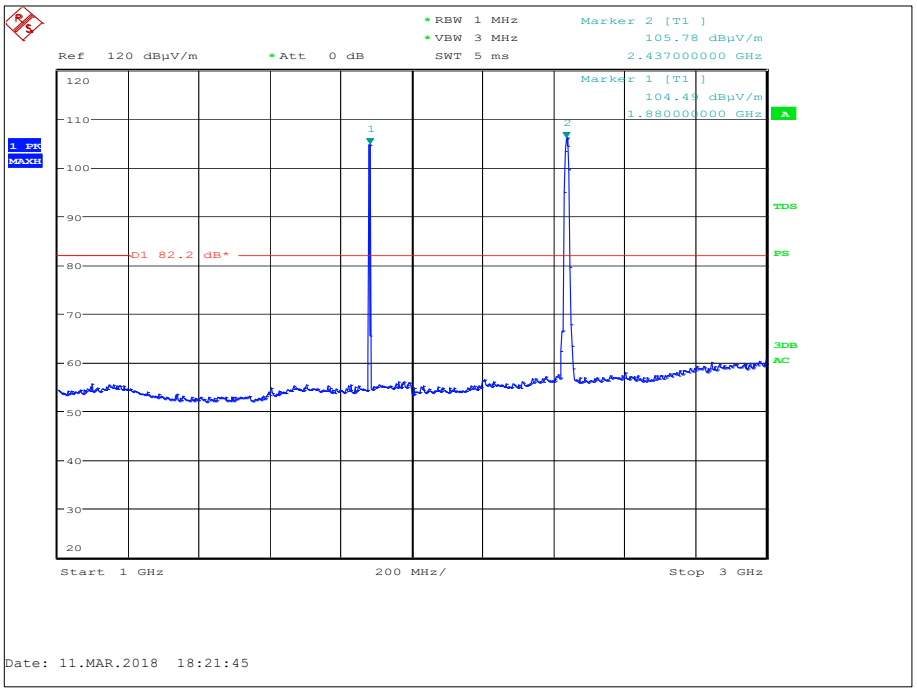

Figure 47 - 1 GHz to 3 GHz - Horizontal and Vertical

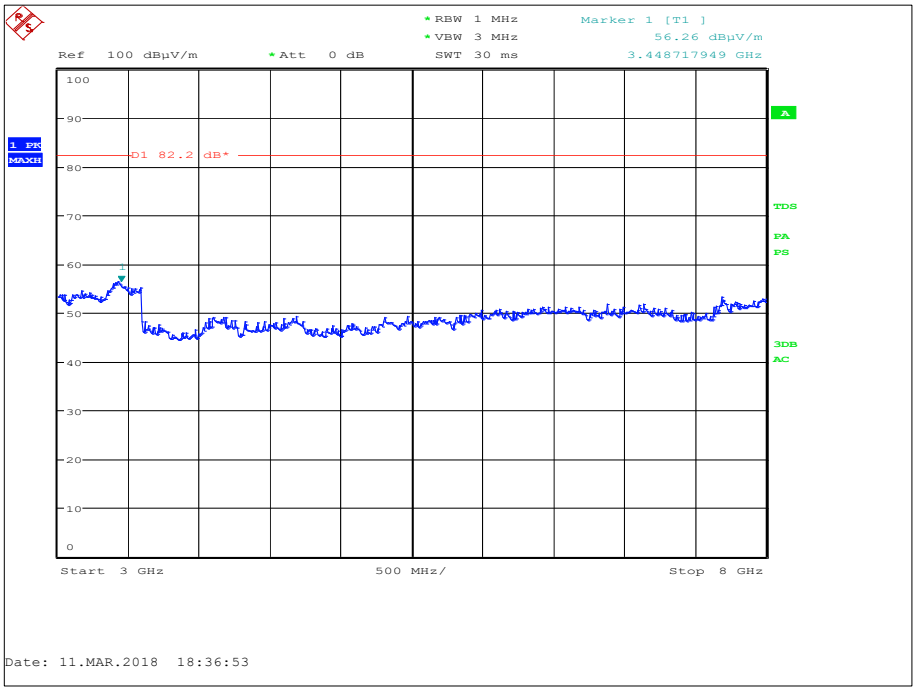

Figure 48 - 3 GHz to 8 GHz - Horizontal and Vertical

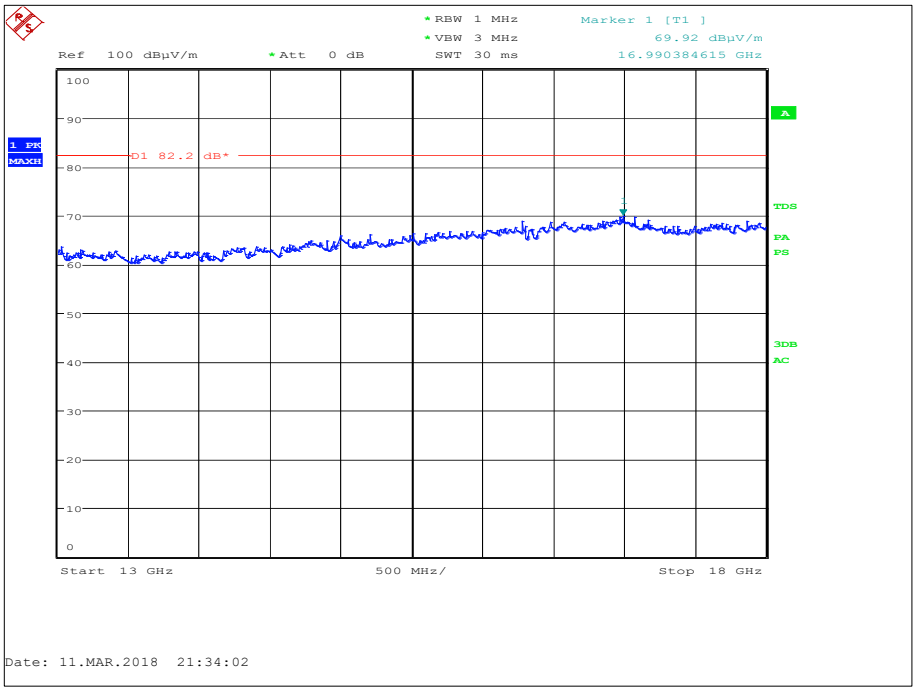

Figure 49 - 8 GHz to 18 GHz - Horizontal and Vertical

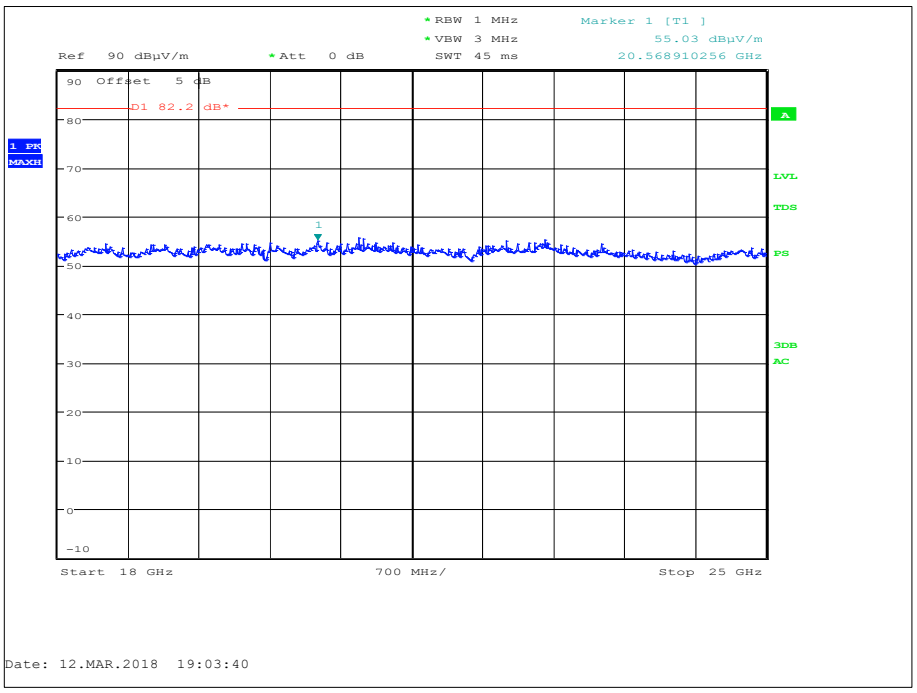

Figure 50 - 18 GHz to 25 GHz - Horizontal and Vertical

FCC 47 CFR Parts 15.247(d), 15.205, and 24.238(a)

The least stringent limit from the applicable rule parts was used to determine compliance for Radiated Emissions testing of multiple transmission sources.

The least stringent applicable limit was:

Rule Part	Limit
Part 24.238 (a)	-13 dBm (EIRP) / 82 dBµV/m at 3m.

Table 44 - Limit Table

2.1.7 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 5.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Antenna 18-40GHz (Double Ridge Guide)	Link Microtek Ltd	AM180HA-K-TU2	230	24	30-Jan-2020
Antenna (Bilog)	Schaffner	CBL6143	287	24	18-Apr-2018
Signal Generator (10MHz to 40GHz)	Rohde & Schwarz	SMR40	1002	12	20-Oct-2018
18GHz - 40GHz Pre-Amplifier	Phase One	PSO4-0087	1534	12	02-Feb-2019
Screened Room (5)	Rainford	Rainford	1545	36	09-Jun-2018
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Hygromer	Rotronic	A1	2138	12	21-Feb-2019
Digital Multimeter	Iso-tech	IDM-101	2895	12	20-Jul-2018
Cable (N-N, 8m)	Rhophase	NPS-2302-8000-NPS	3248	12	02-May-2018
Tilt Antenna Mast	maturo Gmbh	TAM 4.0-P	3916	-	TU
Mast Controller	maturo Gmbh	NCD	3917	-	TU
2 Metre SMA Type Cable	Rhophase	3PS-1801A-2000-3PS	4113	12	20-Dec-2018
Suspended Substrate Highpass Filter	Advance Power Components	11SH10-3000/X18000-O/O	4412	12	03-Apr-2018
Cable (Rx, Km-Km 2m)	Scott Cables	KPS-1501-2000-KPS	4526	6	22-May-2018
Cable (Yellow, Rx, Km-Km 2m)	Scott Cables	KPS-1501-2000-KPS	4527	6	15-Aug-2018
Double Ridged Waveguide Horn Antenna	ETS-Lindgren	3117	4722	12	01-Mar-2019
Double Ridge Broadband Horn Antenna	Schwarzbeck	BBHA 9120 B	4848	12	12-Feb-2019

TU - Traceability Unscheduled

3 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

Test Name	Measurement Uncertainty
Radiated Spurious Emissions (Simultaneous Transmission)	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB

Table 45