



Test Report Serial Number:

45461690 R6.0

Test Report Date:

15 February 2022

Project Number:

1557

EMC Test Report - Appendix G

Applicant:



**Garmin International Inc.
1200 East 151 St
Olathe, KS, 66062
USA**

FCC ID:

IPH-04247

Product Model Number / HVIN

A04247

IC Registration Number

1792A-04247

Product Marketing Name / PMN

A04247

In Accordance With:

CFR Title 47, Part 15 Subpart C (§15.247), Part 15 Subpart B

Digital Transmission System (DTS)

RSS-Gen, RSS-247 Issue 2

Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

Approved By:

Ben Hewson, President

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21-364 Lougheed Rd.
Kelowna, BC, V1X 7R8
Canada



Test Lab Certificate: 2470.01



**Industry
Canada**

IC Registration 3874A-1



FCC Registration: CA3874

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Revision History				
Samples Tested By:		Art Voss, P.Eng.		Date(s) of Evaluation:
Report Prepared By:		Art Voss, P.Eng.		1 Oct - 1 Dec, 2021
		Report Reviewed By:		Ben Hewson
Report Revision	Description of Revision	Revised Section	Revised By	Revision Date
0.1	Draft Release	n/a	Art Voss	4 December, 2022
1.0	Initial Release	n/a	Art Voss	25 January, 2022
2.0	Revised Plot Headings	16.0	Art Voss	2 February, 2022
3.0	Revised Scope	3.0	Art Voss	3 February, 2022
4.0	Added DSS Equipment Class	Cover	Art Voss	9 February, 2022
5.0	Revised BLE Info	7-14	Art Voss	14 February, 2022
6.0	Revised Appendices	D-H	Art Voss	15 February, 2022
	Revised Filing from DSS to DTS	n/a		

Band Edge Measurement Results: 802.11

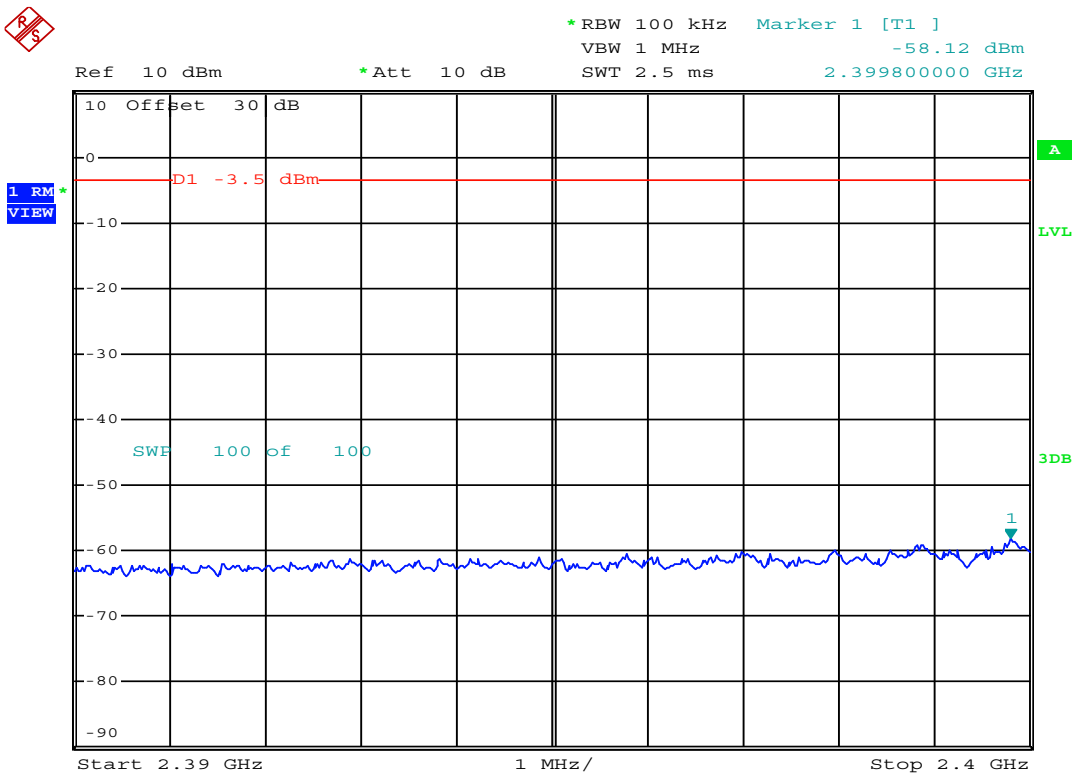
Mode	Channel Number	Frequency (MHz)	Modulation	Bit Rate (Mbps)	Emission Power [P _{Em}] (dBm)	Fundamental Power [P _{Fund}] (dBm)	Attenuation [Atten] (dB)	Limit (dB)	Margin (dB)
802.11g	1	2412.00	OFDM	6	-58.12	-3.50	54.62	30	24.6
	11	2462.00			-61.57		58.07		28.1
Result:								Complies	

Attenuation [Atten] = [P_{Fund}] - [P_{Em}]

Margin = Attenuation - Limit

* Information regarding antenna gain provided by applicant

Lower Band Edge: 802.11b



Date: 21.NOV.2021 13:03:54

Channel Number: 1	Channel Frequency (MHz): 2412	Measured Emission	-58.12
Modulation: OFDM	Bit Rate (Mbps): 6		

Ref 10 dBm

- *Att 10 dB

SWT 2.5 ms

2.483599000 GHz



Channel Number: 11

Channel Frequency (MHz): **2462**Modulation: **OFDM**

Bit Rate (Mbps): **6**

Measured Emission

-61.57

Band Edge Measurement Results: BLE

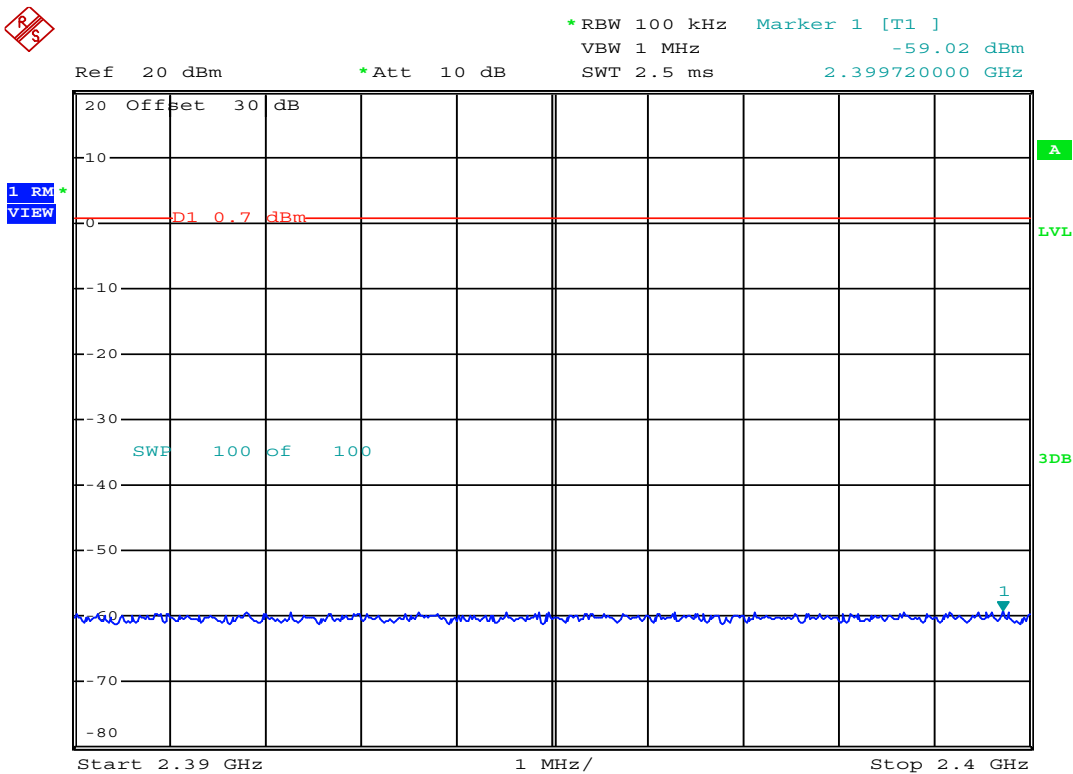
Mode	Channel Number	Frequency (MHz)	Modulation	Bit Rate (Mbps)	Emission Power [P _{Em}] (dBm)	Fundamental Power [P _{Fund}] (dBm)	Attenuation [Atten] (dB)	Limit (dB)	Margin (dB)
BLE	2	2402.00	GMSK	1	-59.02	0.70	59.72	30	29.7
	39	2480.00			-59.18		59.88		29.9
Result:								Complies	

Attenuation [Atten] = [P_{Fund}] - [P_{Em}]

Margin = Attenuation - Limit

* Information regarding antenna gain provided by applicant

Lower Band Edge: BLE



Date: 21.NOV.2021 13:12:12

Channel Number: 2	Channel Frequency (MHz): 2402	Measured Emission (dBm): -59.02
Modulation: GMSK	Bit Rate (Mbps): 1	

Upper Band Edge: BLE

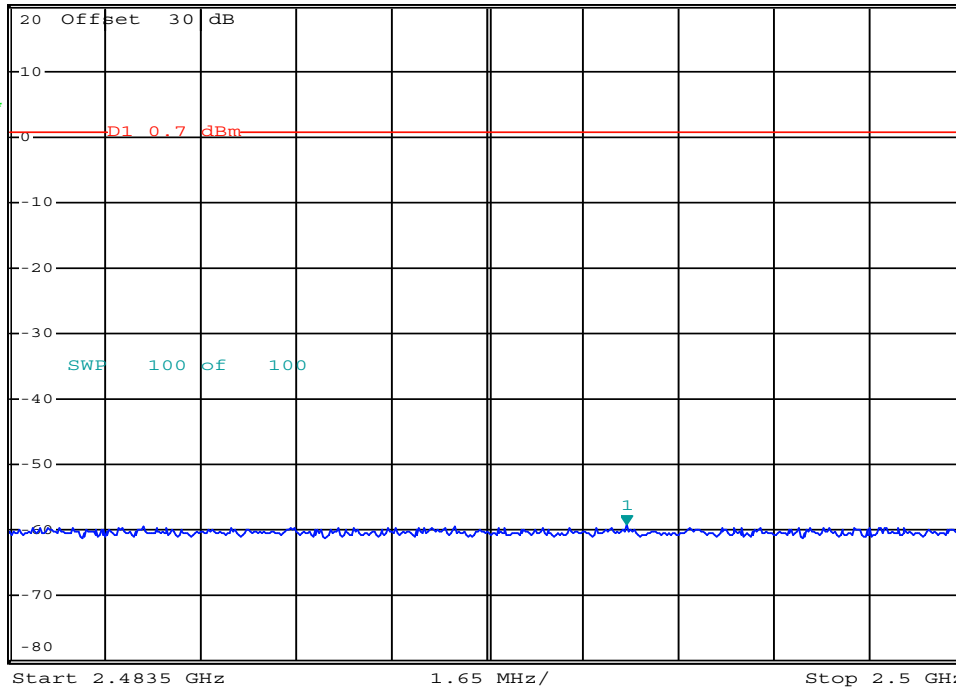


*RBW 100 kHz Marker 1 [T1]
VBW 1 MHz -59.18 dBm
SWT 2.5 ms 2.494159000 GHz

Ref 20 dBm

*Att 10 dB

1 RM
VIEW



Date: 21.NOV.2021 13:14:11

Channel Number: **39**

Channel Frequency (MHz): **2480**

Modulation: **GMSK**

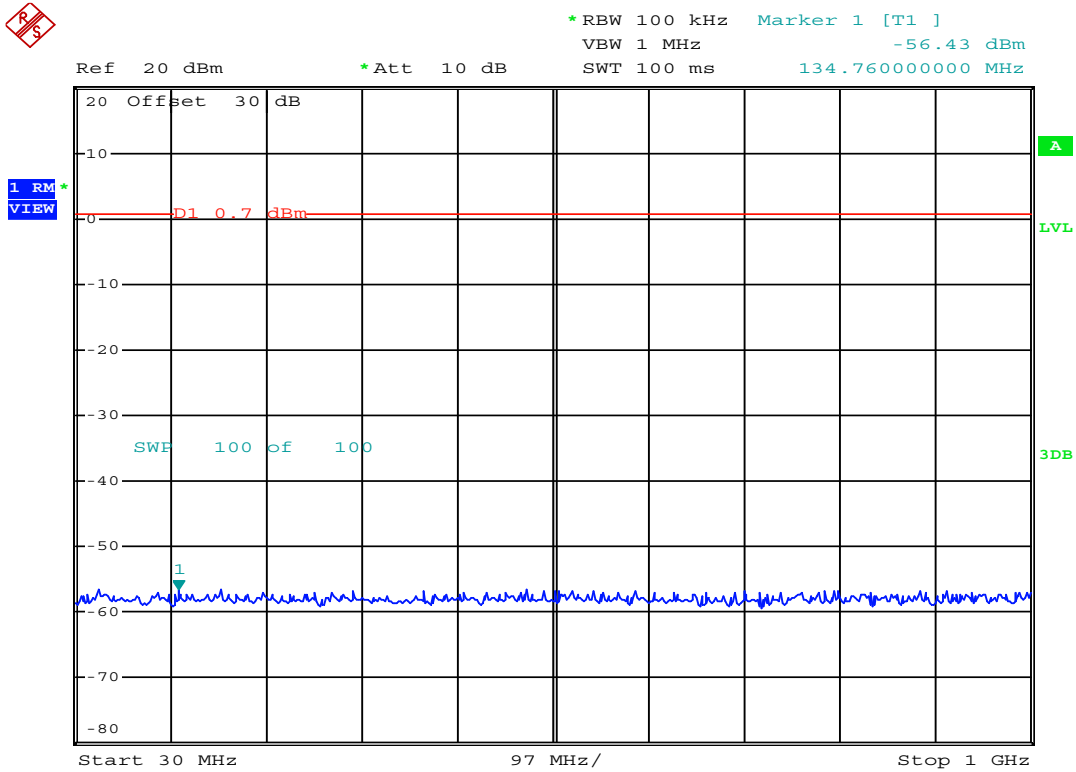
Bit Rate (Mbps): **1**

Measured Emission (dBm): **-59.18**

Spurious Domain Emissions: WiFi								
Mode	Channel Number	Frequency (MHz)	Modulation	Bit Rate (Mbps)	Emission Frequency (MHz)	Measured Emission [P _{Meas}] (dBm)	Emission Limit [P _{Lim}] (dBm)	Margin
802.11g	1	2412	OFDM	6.0	ND	ND	30	n/a
Result:							Complies	

ND: No Emissions Detected

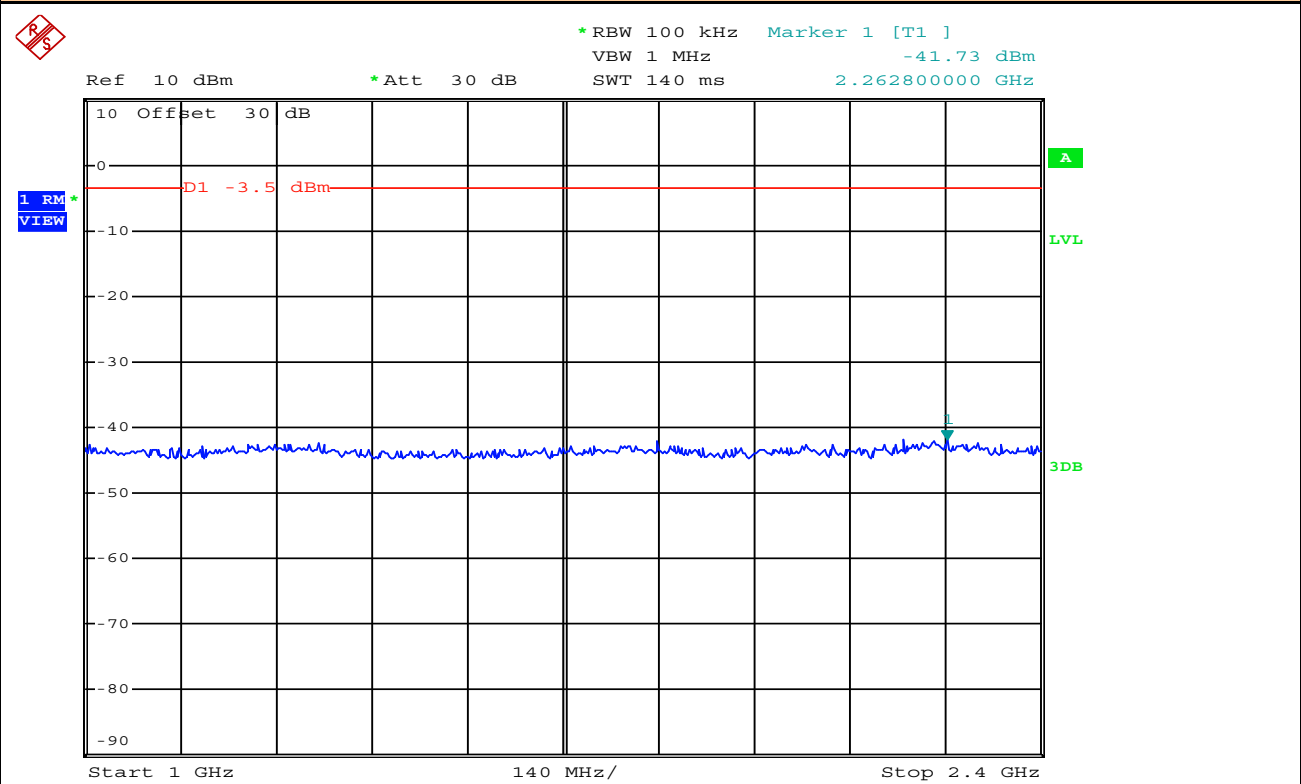
Conducted Spurious Emissions: WiFi



Date: 21.NOV.2021 13:07:36

Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Measured Emission
802.11g	1	2412	OFDM	6	ND

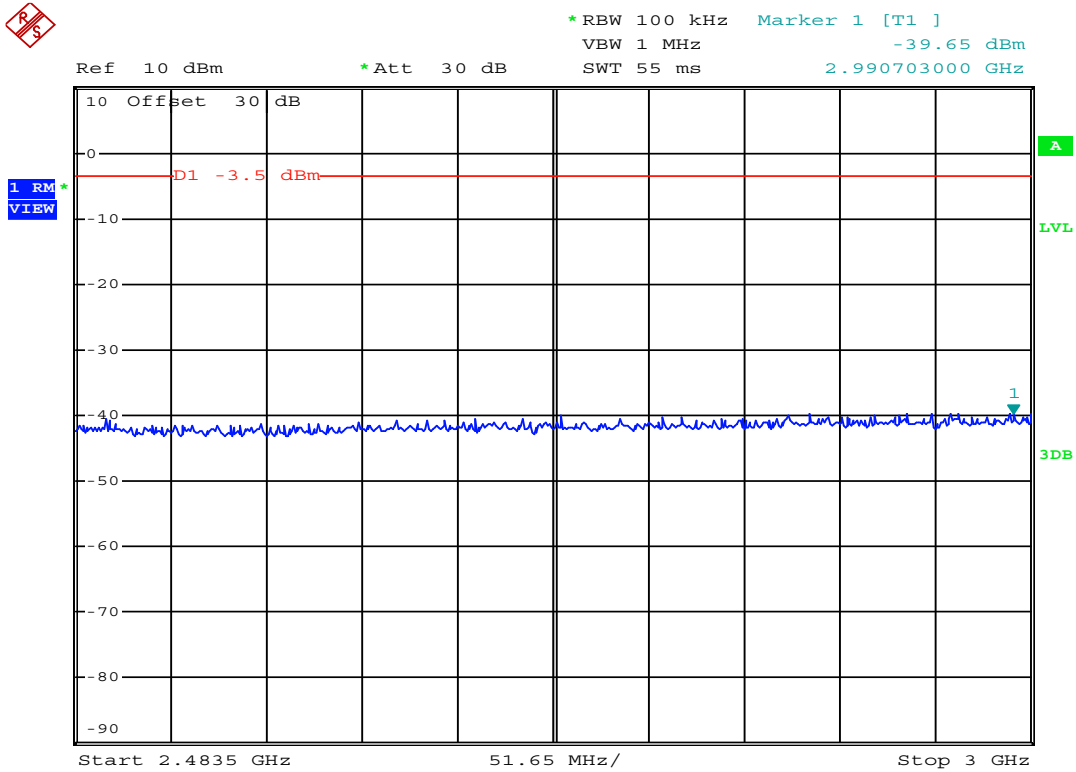
Conducted Spurious Emissions: WiFi



Date: 21.NOV.2021 12:54:59

Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Measured Emission
802.11g	1	2412	OFDM	6	ND

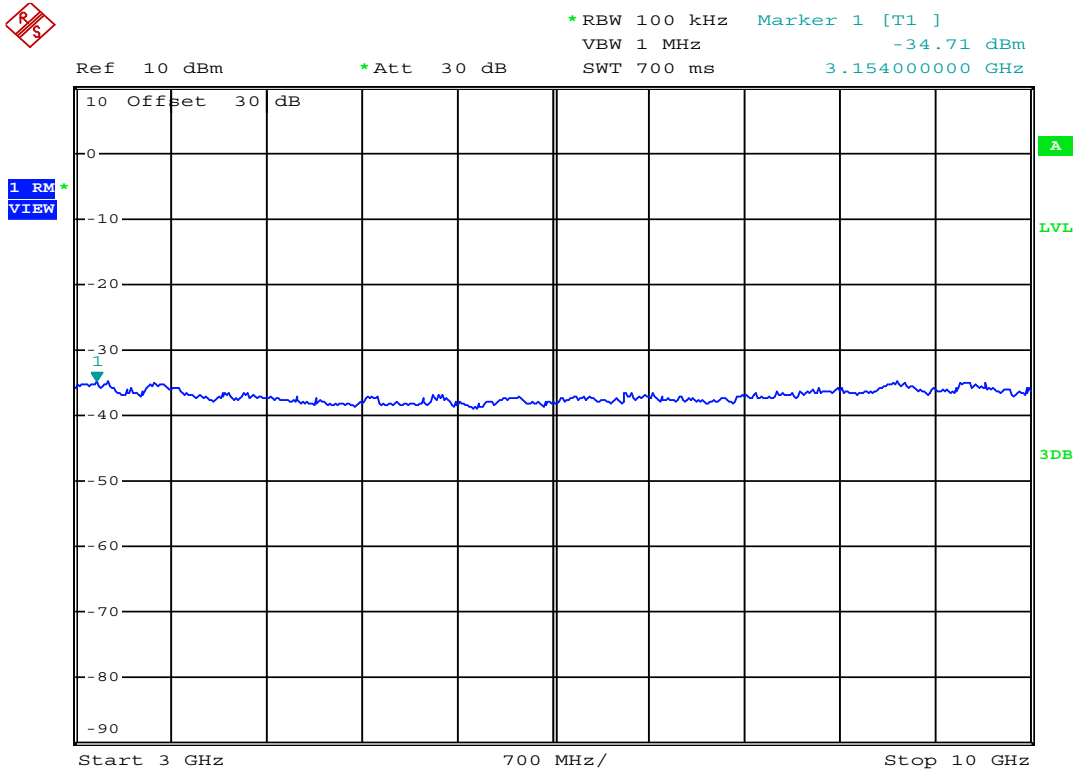
Conducted Spurious Emissions: WiFi



Date: 21.NOV.2021 12:55:46

Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Measured Emission
802.11g	1	2412	OFDM	6	ND

Conducted Spurious Emissions: WiFi



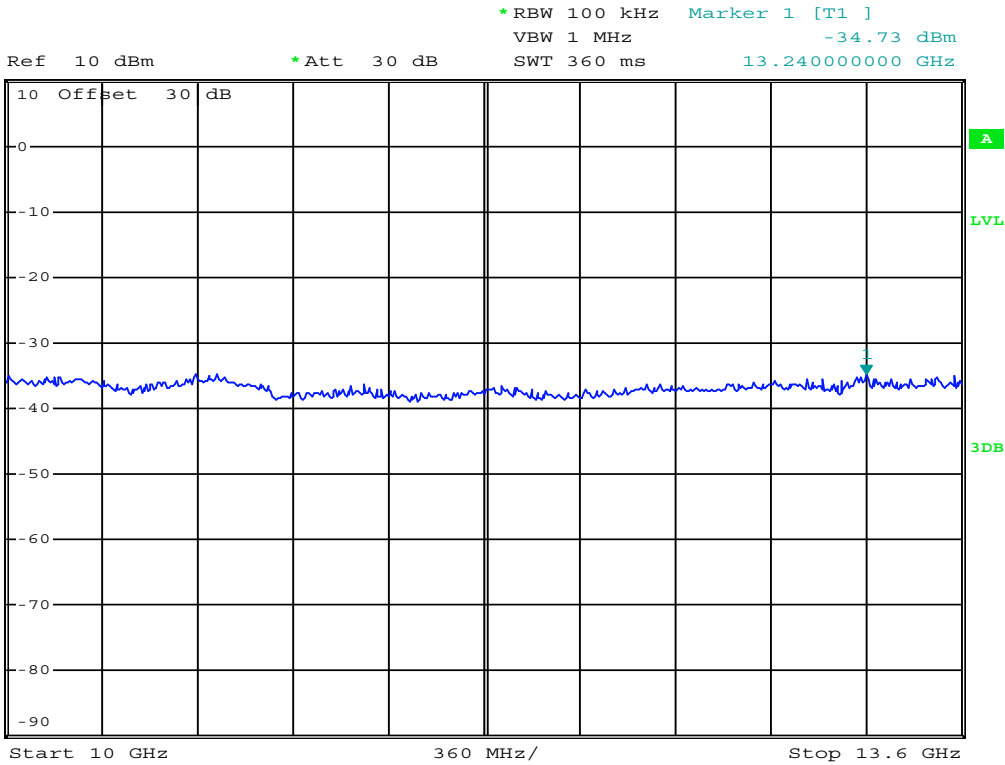
Date: 21.NOV.2021 12:56:39

Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Measured Emission
802.11g	1	2412	OFDM	6	ND

Conducted Spurious Emissions: WiFi



1 RM
VIEW



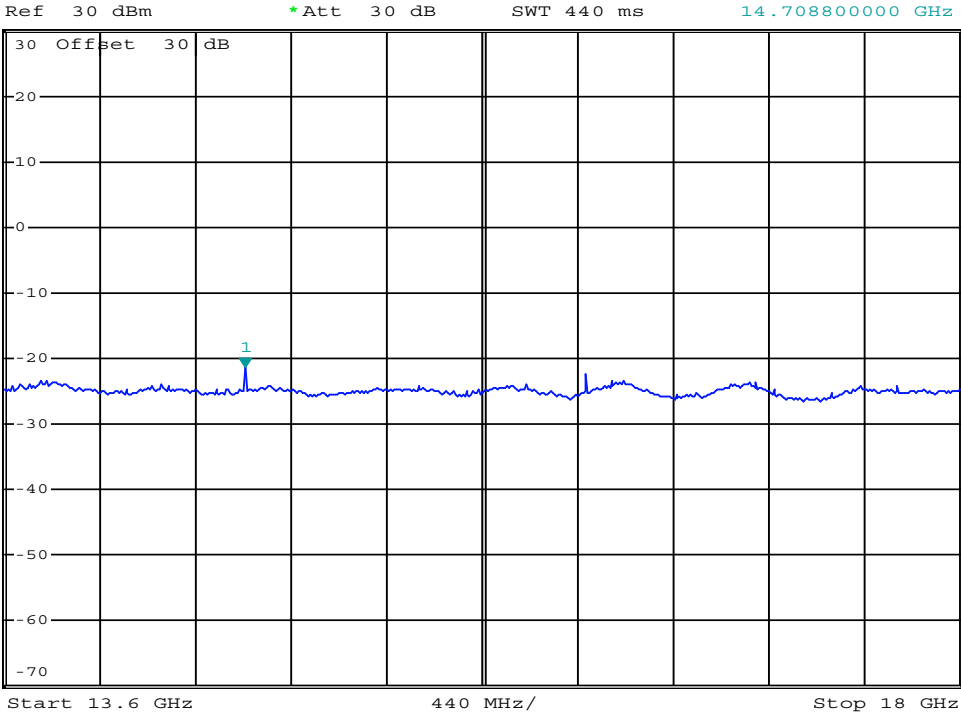
Date: 21.NOV.2021 12:57:04

Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Measured Emission
802.11g	1	2412	OFDM	6	ND

Conducted Spurious Emissions: WiFi



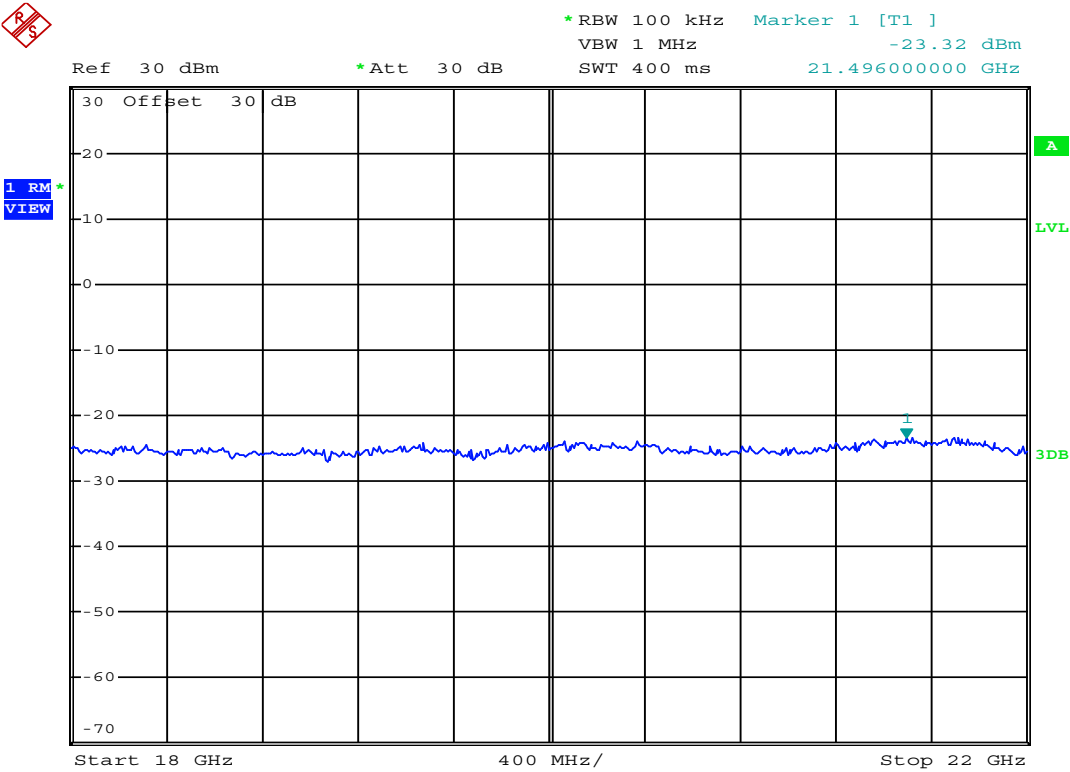
*RBW 100 kHz Marker 1 [T1]
VBW 1 MHz -21.32 dBm
SWT 440 ms 14.708800000 GHz



Date: 21.NOV.2021 12:57:46

Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Measured Emission
802.11g	1	2412	OFDM	6	ND

Conducted Spurious Emissions: WiFi



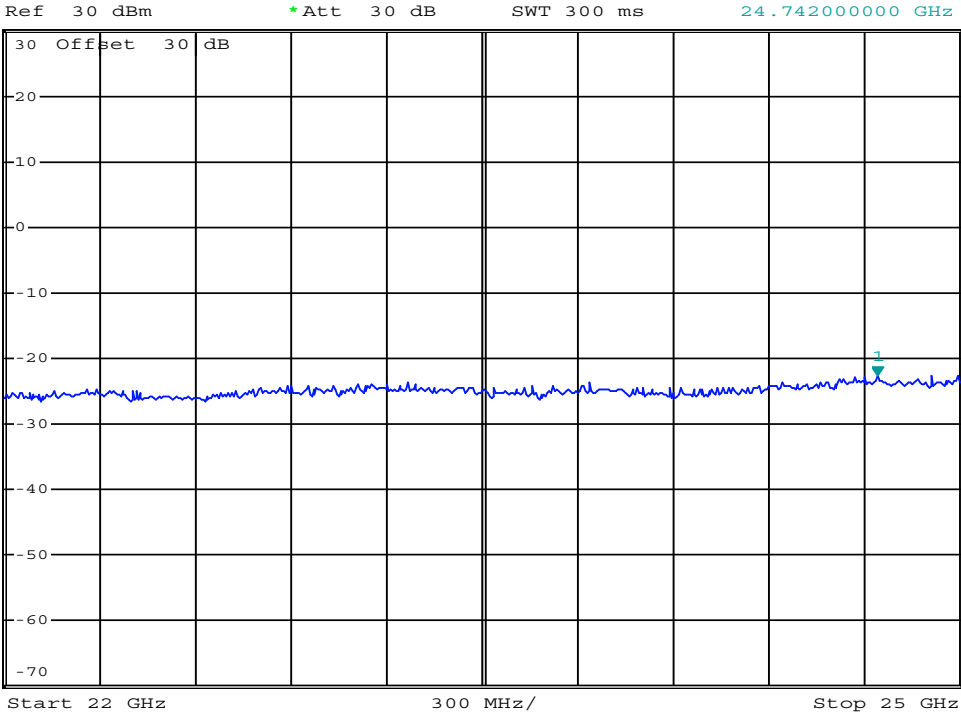
Date: 21.NOV.2021 12:58:01

Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Measured Emission
802.11g	1	2412	OFDM	6	ND

Conducted Spurious Emissions: WiFi



*RBW 100 kHz Marker 1 [T1]
VBW 1 MHz -22.61 dBm
SWT 300 ms 24.742000000 GHz



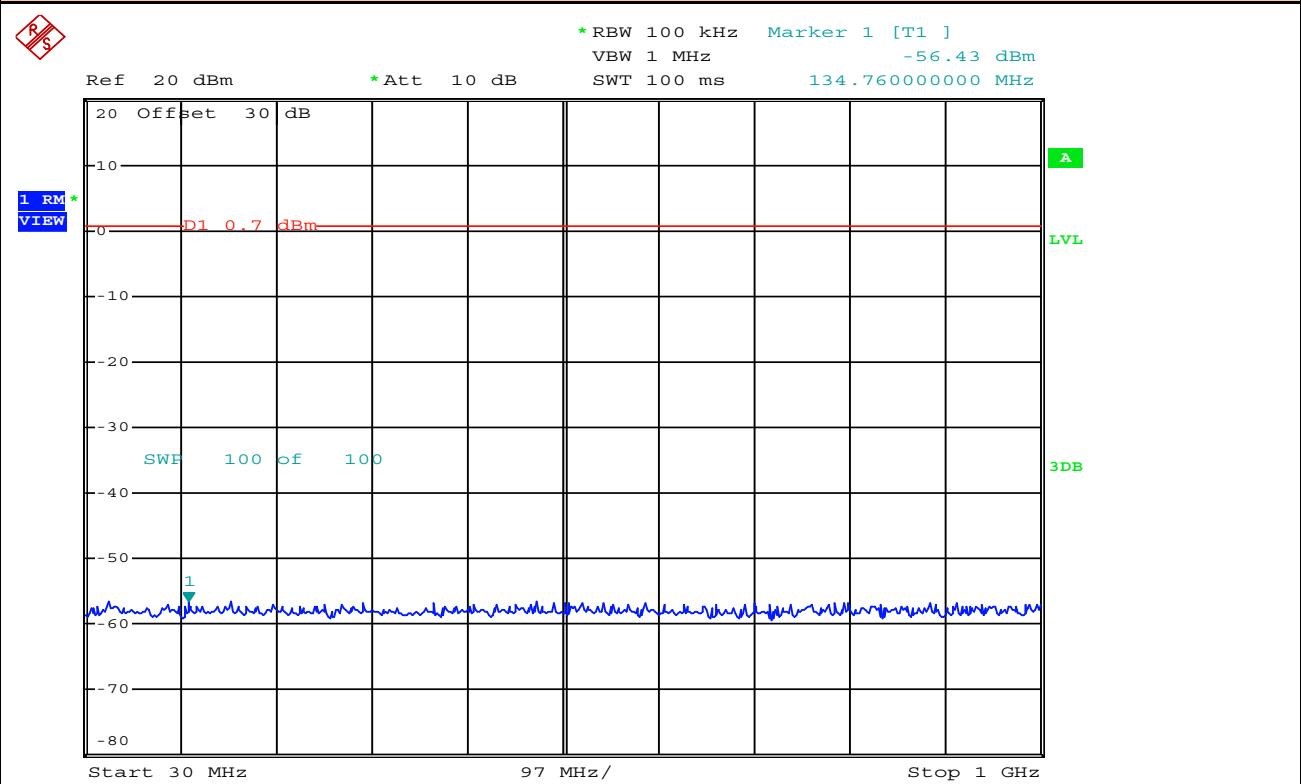
Date: 21.NOV.2021 12:58:15

Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Measured Emission
802.11g	1	2412	OFDM	6	ND

Spurious Domain Emissions: BLE								
Mode	Channel Number	Frequency (MHz)	Modulation	Bit Rate (Mbps)	Emission Frequency (MHz)	Measured Emission [P _{Meas}] (dBm)	Emission Limit [P _{Lim}] (dBm)	Margin
BLE	18	2442	GMSK	1.0	ND	ND	30	n/a
Result:							Complies	

ND: No Emissions Detected

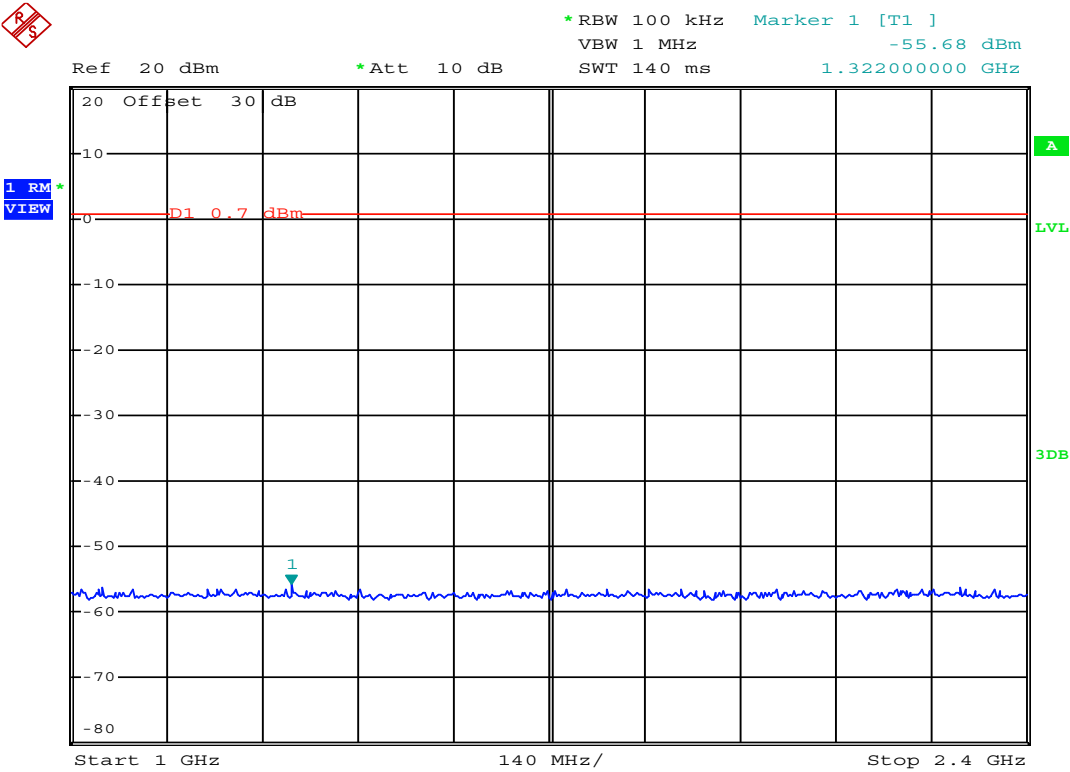
Conducted Spurious Emissions: BLE



Date: 21.NOV.2021 13:07:36

Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Measured Emission
BLE	18	2442	GMSK	1	ND

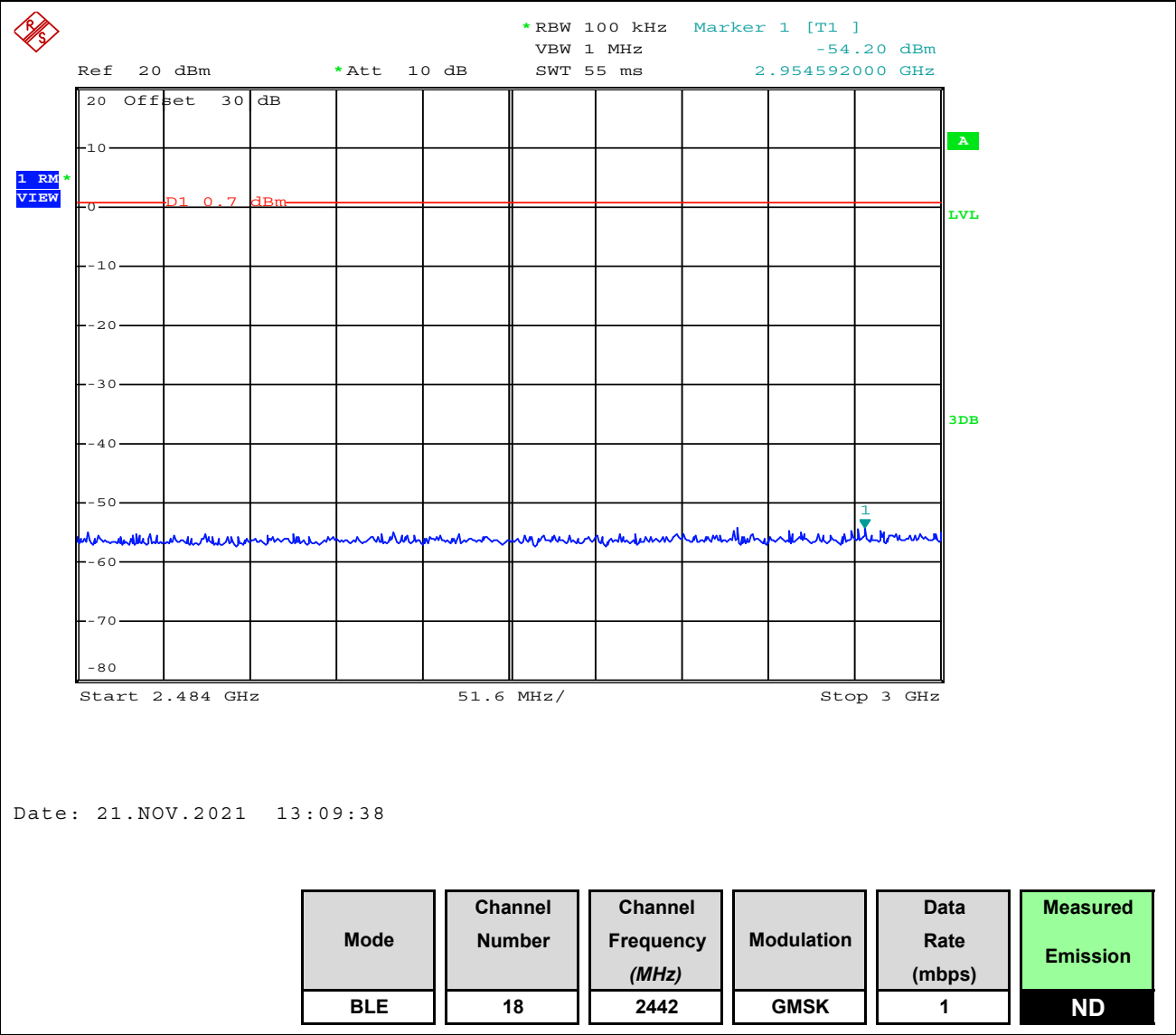
Conducted Spurious Emissions: BLE



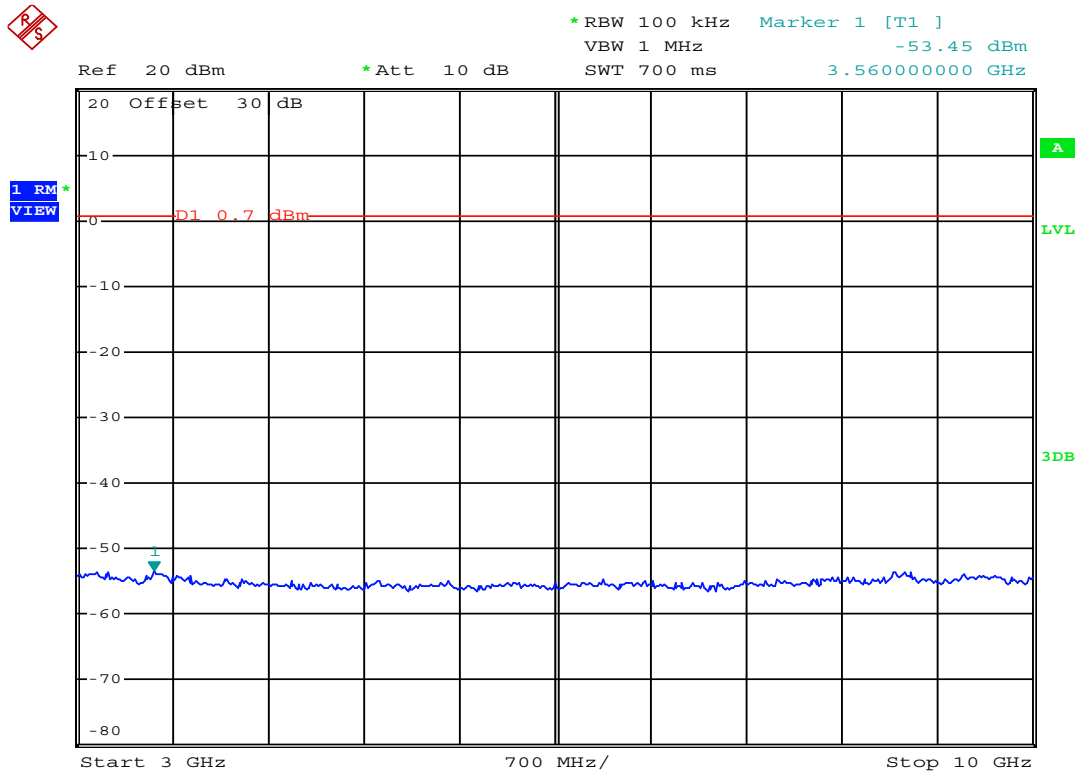
Date: 21.NOV.2021 13:08:14

Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Measured Emission
BLE	18	2442	GMSK	1	ND

Conducted Spurious Emissions: BLE



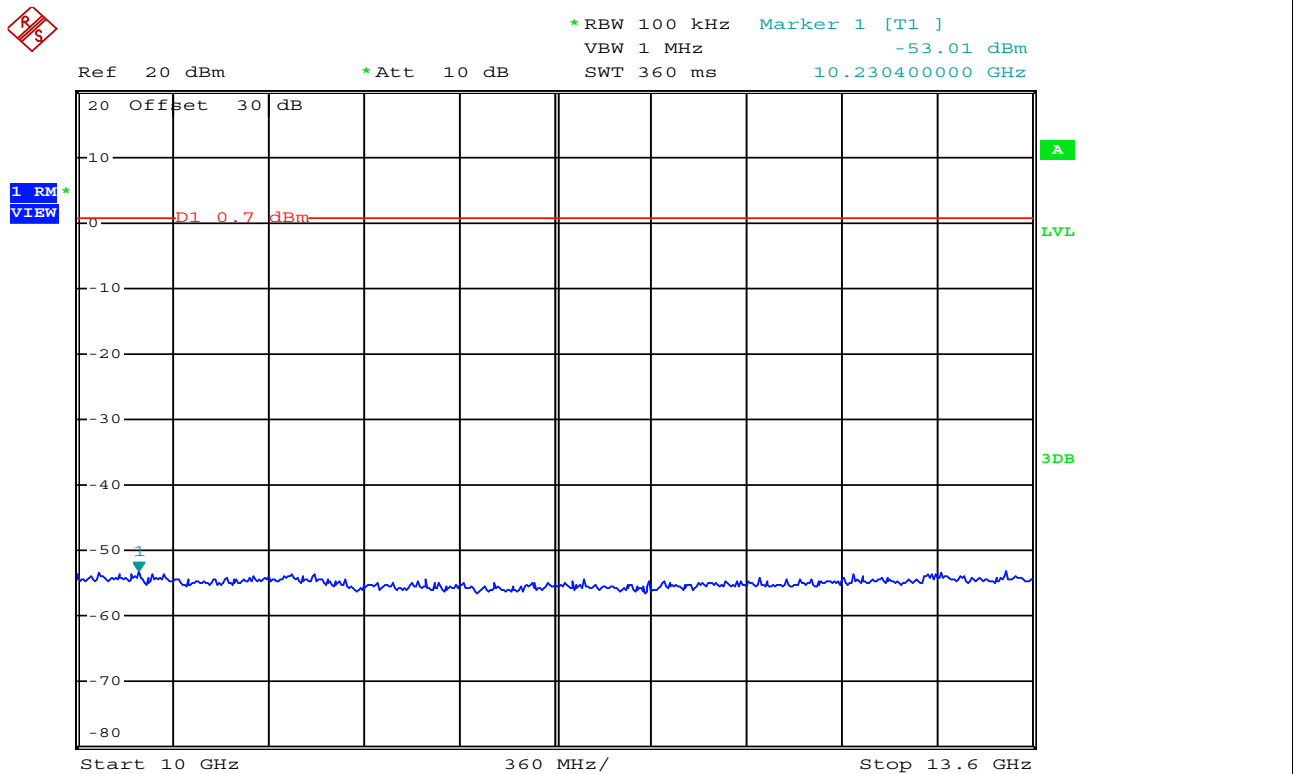
Conducted Spurious Emissions: BLE



Date: 21.NOV.2021 13:10:04

Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Measured Emission
BLE	18	2442	GMSK	1	ND

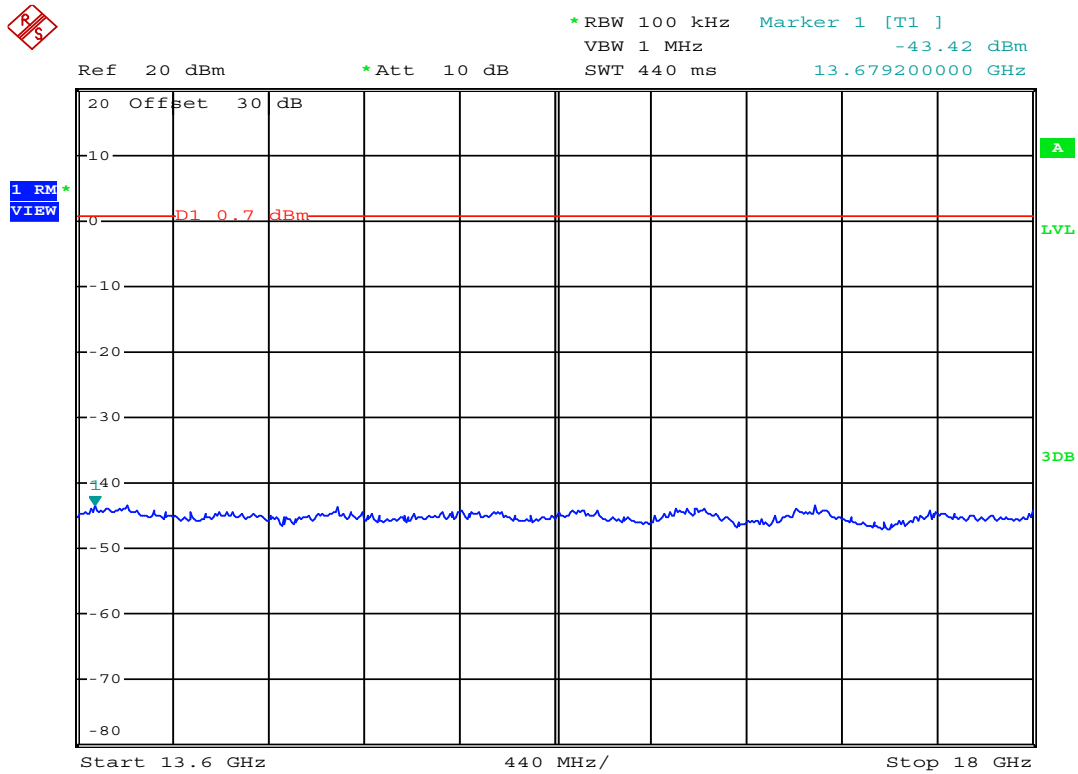
Conducted Spurious Emissions: BLE



Date: 21.NOV.2021 13:10:19

Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Measured Emission
BLE	18	2442	GMSK	1	ND

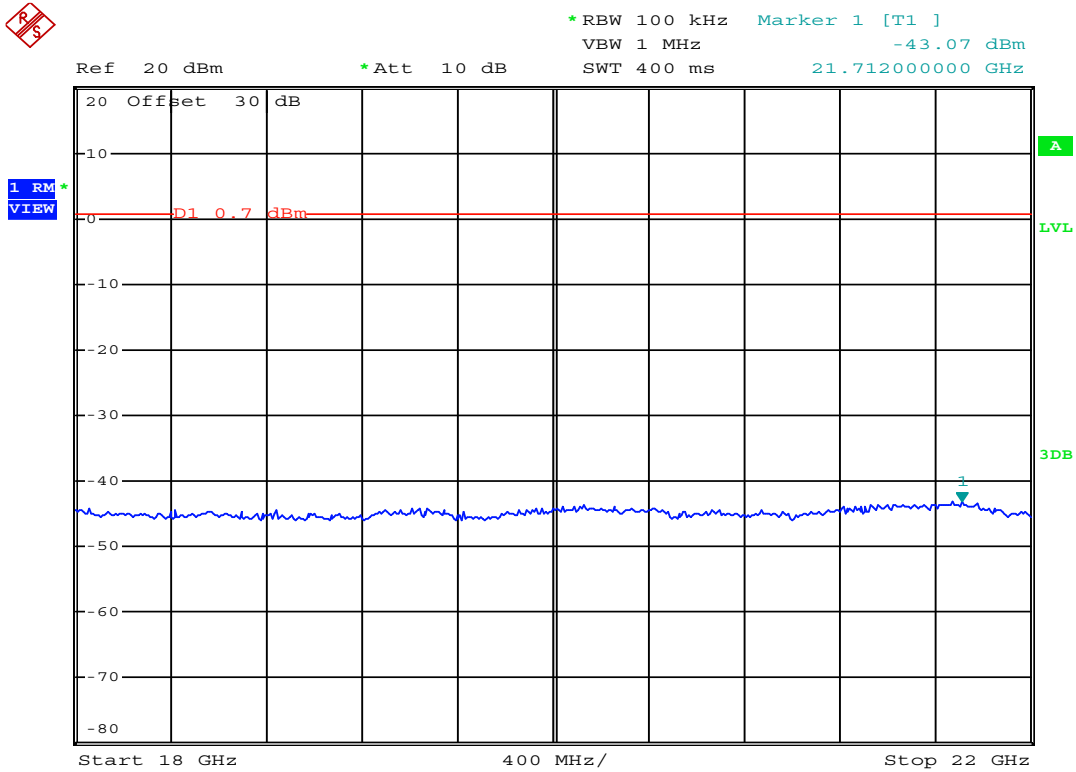
Conducted Spurious Emissions: BLE



Date: 21.NOV.2021 13:10:34

Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Measured Emission
BLE	18	2442	GMSK	1	ND

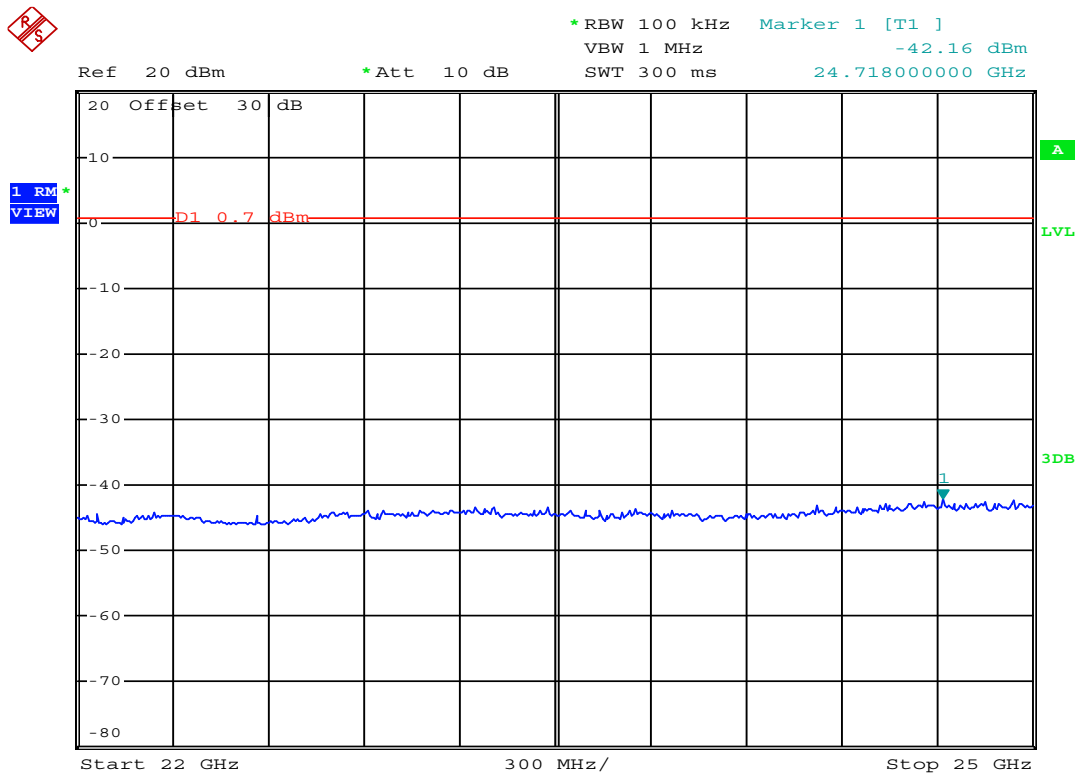
Conducted Spurious Emissions: BLE



Date: 21.NOV.2021 13:10:50

Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Measured Emission
BLE	18	2442	GMSK	1	ND

Conducted Spurious Emissions: BLE



Date: 21.NOV.2021 13:11:13

Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Measured Emission
BLE	18	2442	GMSK	1	ND